


A. Transportation Impact Study

Harvard Kennedy School of Government

Cambridge,
Massachusetts

Submitted to: City of Cambridge
Traffic, Parking and Transportation Department

Submitted by: Harvard University's Kennedy School of Government

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Introduction & Project Overview

On behalf of Harvard University, Vanasse Hangen Brustlin, Inc. (VHB) has conducted a Transportation Impact Study (TIS) for the proposed expansion of the existing Harvard Kennedy School of Government (HKS) at 79 John F. Kennedy Street in Cambridge, MA.

The TIS responds to the scope dated May 22, 2014 defined by the City of Cambridge Traffic, Parking and Transportation (TP&T) Department in response to VHB's Request for Scoping dated April 24, 2014. A copy of the City's scoping letter is included in the Appendix. The TIS has been prepared in conformance with the current City of Cambridge Guidelines for Transportation Impact Study required under the Article 19 Special Permit Project Review. This document comprises three components, as follows:

- *Introduction and Project Overview*, describing the framework in which the transportation component of this Project was evaluated;
- *Transportation Impact Study*, presenting the technical information and analysis results as required under the guidelines; and,
- *Planning Board Special Permit Criteria*, summarizing the evaluation of the proposed Project as defined under the guidelines.

The required TIS Summary Sheets and Planning Board Criteria Performance Summary are included. Supplementary data and analysis worksheets are provided in the Appendix. Electronic files for Turning Movement Counts (TMC), Automatic Traffic Recorder (ATR), and Synchro analyses are included on an accompanying CD.

Project Overview

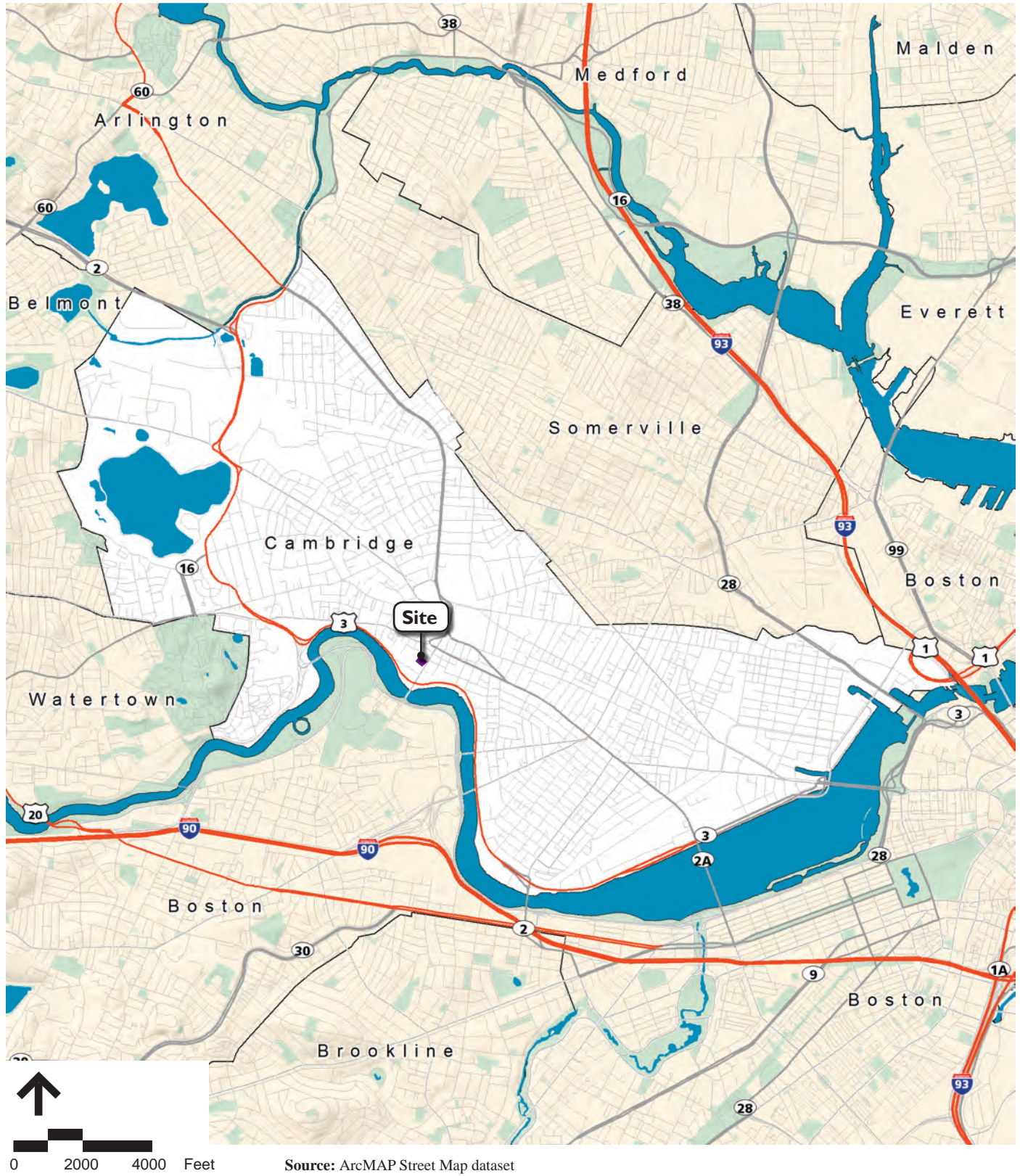
The proposed Project consists of approximately 91,200 SF of administrative offices and classroom space. The Project will primarily allow for decompression of existing space and improve constraints on the campus today. The existing 13 on-site parking spaces will be removed with this expansion and no new parking will be constructed. A secure arrival/departure area will be provided on site (within the proposed loading facility) for

visiting dignitaries. Existing on-site parking will be relocated to other existing lots/garages on the Harvard Campus. Harvard will allocate the required number of parking spaces for the Project which meets the requirements of the Cambridge Zoning Ordinance from existing available spaces in the University's parking pool. Based on the school's existing parking permit data, the Project will generate the demand for approximately 17 additional parking permits. A new off-street loading dock will be created with access/egress to Eliot Street, as illustrated in the relevant figures.

As shown in Figures A and B, the Project site is located between Harvard Square and the Charles River on John F. Kennedy (JFK) Street. The Project's building parcel is bounded by Eliot Street to the north, JFK Street to the east, the JFK Park and Memorial Drive to the south, and the Charles Hotel and supporting retail to the west.

The following graphics have been provided as an overview of the Project location, existing and proposed site plan conditions and the traffic study area analyzed:

- Figure A presents a site location map
- Figure B presents an aerial view of the proposed site and its neighborhood context
- Figure C presents the existing site plan
- Figure D presents the proposed Project site plan
- Figure E presents the TIS study area



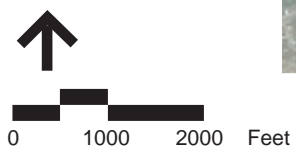
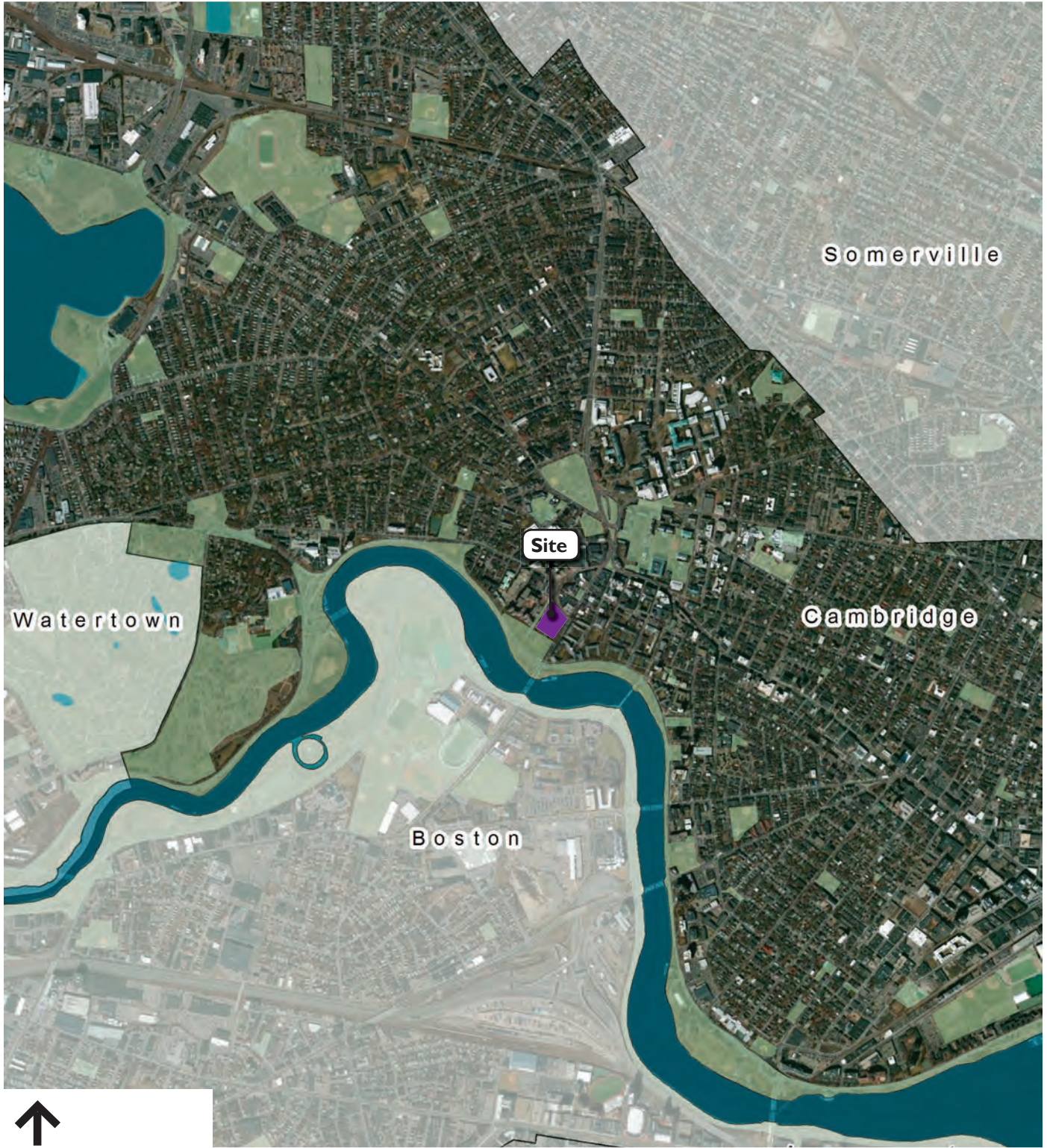
Source: ArcMAP Street Map dataset

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Site Location Map

Figure A

Harvard Kennedy School TIS
Cambridge, MA



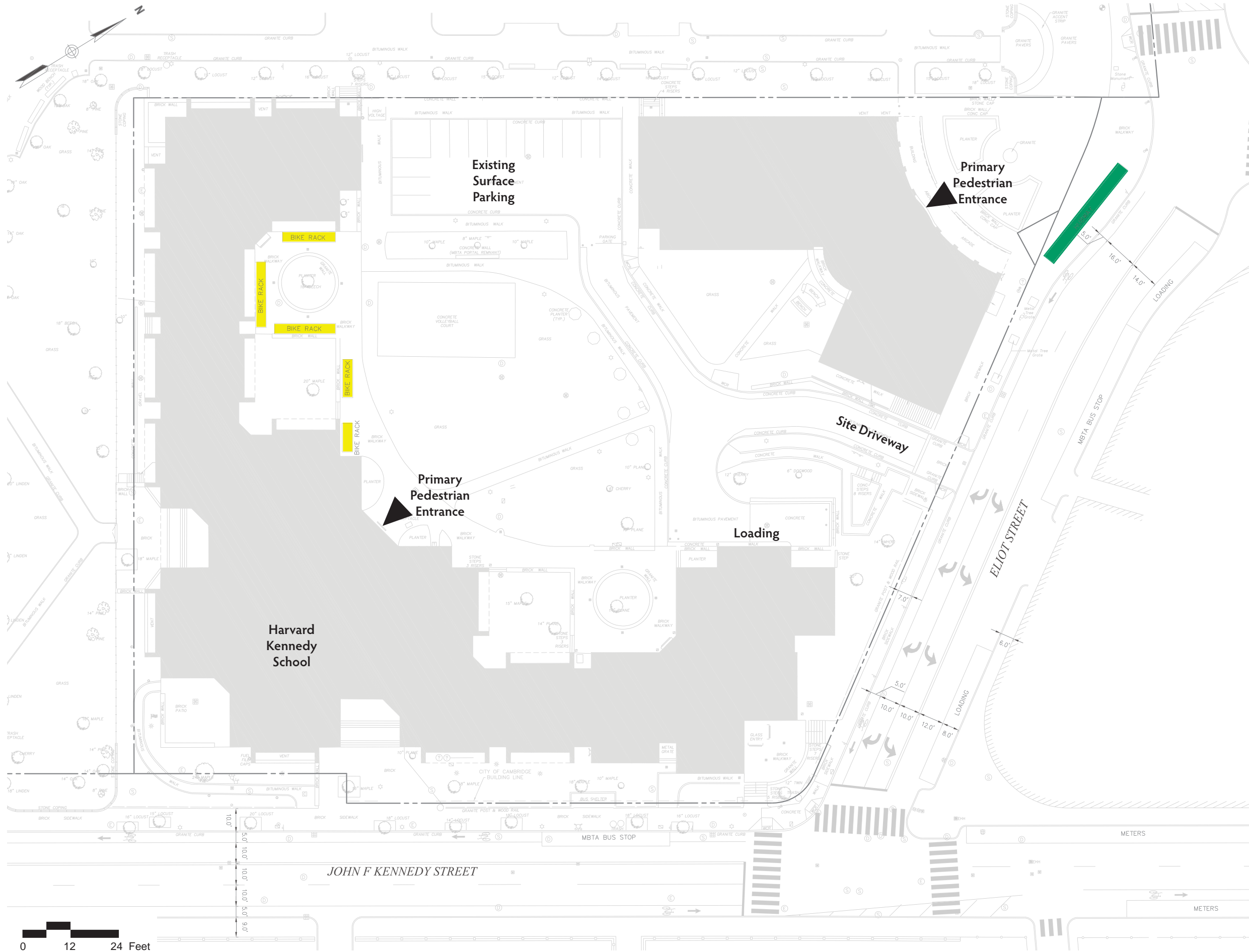
Source: MassGIS 2008 aerial




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Neighborhood Context

Figure B

Harvard Kennedy School TIS
Cambridge, MA

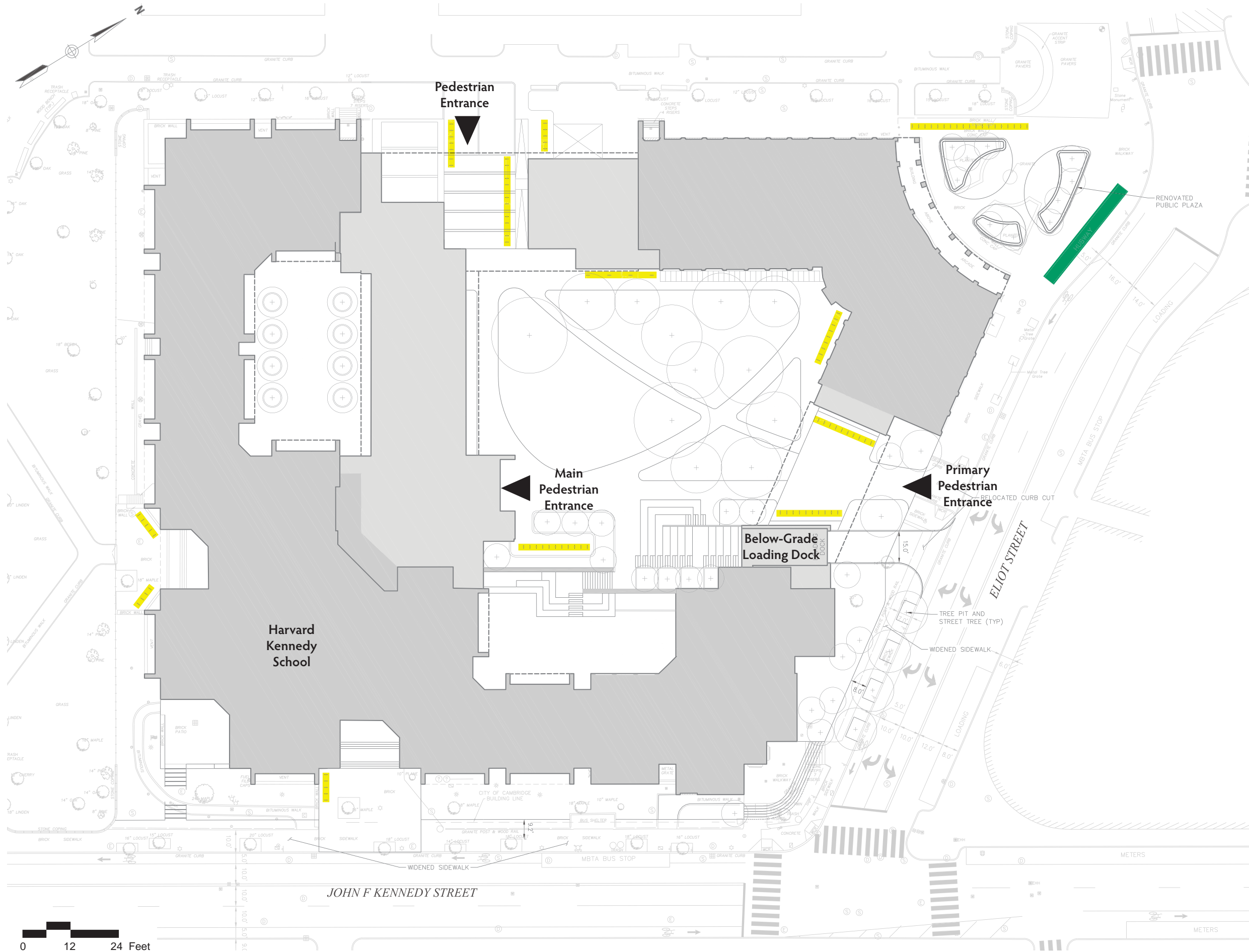





-  Pedestrian Entrance
-  Bicycle Rack
-  Hubway

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Figure C
Existing Conditions Plan

Harvard Kennedy School TIS
Cambridge, MA

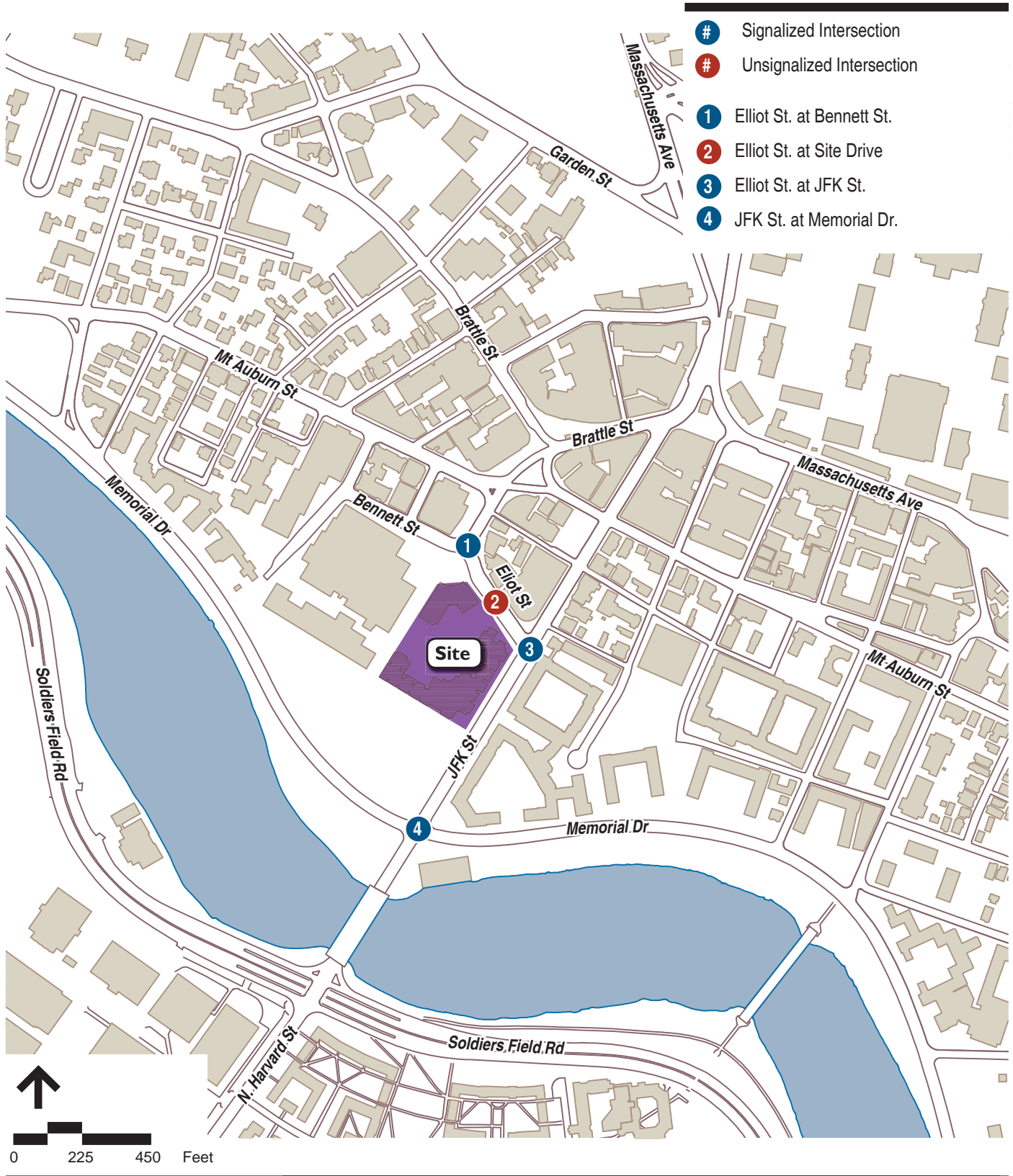


-  Pedestrian Entrance
-  Bicycle Rack
-  Hubway



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Figure D
 Transportation Improvement Summary Plan
 Harvard Kennedy School TIS
 Cambridge, MA



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TIS Study Area

Figure E

Harvard Kennedy School TIS
Cambridge, MA

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2

Planning Board Criteria Summary

Based on the TIS analysis, the Project has been evaluated within the context of the Planning Board Criteria to determine if the Project has any *potential* adverse transportation impacts. Exceeding one or more of the Criteria is indicative of a *potentially* adverse impact on the City's transportation network. However, the Planning Board will consider mitigation efforts, their anticipated effectiveness, and other information that identifies a reduction in adverse transportation impacts.

The Planning Board Criteria consider the Project's vehicular trip generation, impact to intersection level of service and queuing, and increase of volume on residential streets. In addition, pedestrian and bicycle conditions are considered. A discussion of the Criteria set forth by the Planning Board is presented in the final section of this TIS and the Planning Board Criteria Performance Summary is presented below.

Planning Board Permit Number: _____

Project Name: Harvard Kennedy School of Government
Total Data Entries = 59
Total Number of Criteria Exceedences = 0
a. Project Vehicle Trip Generation

Time Period	Build	Exceeds Criterion?
Weekday Daily	138	N
AM Peak	25	N
PM Peak	25	N

b. Level of Service (VLOS) at Signalized Intersections

Intersection	AM Peak Hour			PM Peak Hour		
	Existing	Build	Exceeds Criterion?	Existing	Build	Exceeds Criterion?
Eliot Street at Bennett Street	B	B	N	B	B	N
Eliot Street at JFK Street	C	C	N	C	C	N
JFK Street at Memorial Drive	D	D	N	D	D	N

c. Traffic on Residential Streets

There are no Residential Streets in the study area.

d. Lane Queue (for signalized intersections critical lane)

Intersection	Approach	AM Peak Hour			PM Peak Hour		
		Theoretical Existing	Build	Exceeds Criterion?	Theoretical Existing	Build	Exceeds Criterion?
Eliot Street at Bennett Street	Eastbound Thru	1	1	N	1	1	N
	Westbound Thru	3	3	N	2	2	N
	Southbound Left	2	2	N	2	2	N
	Southbound Left/Right	2	2	N	2	2	N
Eliot Street at JFK Street	Eastbound Left	1	1	N	2	2	N
	Eastbound Right	3	3	N	3	3	N
	Northbound Left/Thru	5	5	N	5	5	N
	Northbound Thru	5	5	N	5	5	N
JFK Street at Memorial Drive	Eastbound Thru	7	7	N	5	5	N
	Eastbound Thru/Right	7	7	N	5	5	N
	Westbound Thru	4	4	N	7	7	N
	Westbound Thru/Right	4	4	N	7	7	N
	Northbound Thru/Right	10	10	N	11	11	N
	Southbound Thru/Right	9	9	N	11	10	N

e. Pedestrian and Bicycle Facilities
Signalized Intersections

Intersection	Crosswalk	AM Peak Hour			PM Peak Hour		
		Theoretical Existing	Build	Exceed Criterion?	Theoretical Existing	Build	Exceeds Criterion?
Eliot Street at Bennett Street	West	B	B	N	B	B	N
	North	B	B	N	B	B	N
Eliot Street at JFK Street	West	D	D	N	D	D	N
	North	D	D	N	D	D	N
	South	D	D	N	D	D	N
JFK Street at Memorial Drive	East	C	C	N	C	C	N
	West	C	C	N	C	C	N
	North	C	C	N	C	C	N
	South	C	C	N	C	C	N

Sidewalk and Bicycle Facilities

Adjacent Street	Link (between)	Sidewalks or Walkways Present?	Exceeds Criteria?	Bicycle Facilities or Right of Ways Present?	Exceeds Criteria?
Eliot Street	Bennett Street and JFK Street	Y	N	Y	N
JFK Street	Eliot Street and Memorial Drive	Y	N	Y	N

Planning Board Permit Number: _____

Project Name: Harvard Kennedy School of Government

Address: 79 John F. Kennedy Street, Cambridge, MA

Owner/Developer Name: Harvard University

Contact Person: Arthi Kasetty, Director of Facilities Management & Services

Contact Address: 79 John F. Kennedy Street, Cambridge MA 02138

Contact Phone: 617-495-1120

Size:

ITE sq. ft.: 91,200 of administrative offices and classroom space

Zoning sq. ft.: 76,862 (gross floor area)

Land Use Type: Institutional

Parking:

Existing Parking Spaces: 13 Use: On-Site Parking

New Parking Spaces: 0

Net Increase Parking Spaces: (-13)

Date of Parking Registration Approval: N/A

Trip Generation:

	<u>Daily</u>	<u>AM Peak Hour</u>	<u>PM Peak Hour</u>
Total Trips	822	148	178
Drive Alone	106	19	19
Carpool/Vanpool	32	6	6
Transit	292	52	52
Pedestrian	240	43	43
Bicycle	120	22	21
Telecommute	32	6	6

Mode Split (person trips): PTDM 2013

Drive Alone: 12.8% Pedestrian: 29.2%

Carpool/Vanpool: 3.9% / 0.07% Bicycle: 14.5%

Transit: 35.4% Telecommute: 3.9%

Transportation Consultant:

Company Name: Vanasse Hangen Brustlin, Inc.

Contact Name: Ellen Donohoe

Phone: 617.728.7777

Date of Building Permit Approval: _____

3

Transportation Impact Study

This TIS for the proposed expansion of the HKS in Harvard Square, Cambridge, Massachusetts (the Project) describes existing and future transportation conditions in the study area in accordance with the City of Cambridge Fifth Revision (April 27, 2004) of the TIS Guidelines. The study area for the TIS includes three (3) signalized intersections and one (1) unsignalized intersection as previously shown in Figure E.

This section includes inventories of physical and operational conditions in the study area including roadways, intersections, crosswalks, sidewalks, on-street and off-street parking, transit facilities, and land uses in the study area. Transportation data that were collected and compiled are presented, including intersection turning movement counts, pedestrian and bicycle counts, vehicle crash data, and transit service data.

Existing Conditions



Existing Harvard Kennedy School Conditions

Building Program

The existing HKS buildings were constructed over a 12 year period from 1978 to 1990. The school's campus incorporates the physical organization principles of the larger Harvard campus constructed over three centuries, and a contemporary forum for public discourse creating "an open marketplace alive with both commerce and politics."¹ The existing buildings include a total of 258,628 gross square feet of space that includes classrooms, administrative offices, faculty offices, and building support. Currently there are 13 classrooms throughout the HKS main campus. HKS also uses off-site building space on Mount Auburn Street.



1 Kennedy School Bulletin (Autumn, 2003), The Presidents and Fellows of Harvard College, www.hks.harvard.edu/about/tour, (June 12, 2014)

HKS Population

The HKS currently enrolls 1,221 full time students compared to the 1,175 enrolled in the 2011-2012 school year. Approximately 100 students were enrolled in the executive education program offered at HKS in the 2013-2014 school year. Table 1 presents the population of faculty, staff, and fellows for the 2013-2014 school year.

Table 1 HKS Employee Population

Employee Type	Population¹
Faculty	192
Staff	478
<u>Fellows</u>	<u>213</u>
Total	883

Source: Harvard Kennedy School, May 2014

1 Population for the 2013/2014 School Year

Site Access/Circulation

Existing vehicular access to the campus is provided from Eliot Street, as shown in Figure C.

Loading and Service

Loading and trash removal is accommodated primarily within the designated loading area as shown on the site plan. Vehicles access the courtyard via the curb cut on Eliot Street and maneuver to access the loading dock within the site. Approximately 30 deliveries take place per day within the HKS courtyard with half the deliveries being related to food and dining services and a third being related mail services. Recycling and waste are stored primarily in the area outside the Belfer basement. Compactor pickup is scheduled twice a week and removal takes approximately five minutes.²

Parking

On the existing site, there are 13 surface parking spaces located at the southwest corner of the courtyard. These spaces are permitted for senior administration or faculty. According to HKS administration, this lot is typically full.

The Harvard Parking Office provides permits for University parking garages and lots throughout the Cambridge and Allston Campus. Existing parkers at HKS are assigned to specific parking facilities based on space availability. Table 2 presents the parking locations used in 2014 and the number of HKS permits associated with each garage/lot. The locations of these parking garages/lots are shown in Figure 3.a.1. A list of all Harvard



² [Harvard Kennedy School: Pavilions and Raised Courtyard Project Materials Management, Planning, and Design: Initial Assessment and Recommendations](#); Harvard Kennedy School and Kleinfelder, December 2013.

University's parking locations is provided in the Appendix. Utilization of these parking facilities is reported annually to the City of Cambridge in Harvard's PTDM Report Update.

Table 2 2014 HKS Parking Permit Locations

	Parking Garage/Lot	HKS Permits
A	Business School Open Lot	20
B	Dillon Lot	12
C	5 Cowperthwaite Street Garage	10
D	Soldiers Field Park Garage	10
E	Charles Square	9
F	Broadway Garage	7
G	Peabody Terrace Garage	6
H	10 Everett Street Garage	5
I	DeWolfe Street Garage	4
J	Malkin Lot	3
K	Mill Street	3
L	18 Sumner Road	2
M	52 Oxford Street Garage	2
N	Eliot Triangle	2
O	1 Western Avenue Garage	1
P	Apley Court	1
Q	Francis Avenue*	1
R	Murr Lot	1
S	Grant Street Lot	1
T	HKS Courtyard Lot**	13
U	Gordon Track and Field***	8

Source: Harvard Kennedy School, June 2014

* Outside of Study Area

** 13 spaces to be removed with Project

*** To be removed with Allston Campus Construction

Curbside Operations

On May 14, 2014, drop-off operations within the HKS courtyard and along Eliot Street adjacent to the site were observed from 7:00 AM to 6:00 PM. During the morning hours, an event was taking place at the HKS and increased the overall passenger drop-off activity relative to a non-event day. Personal vehicles dropping-off along Eliot Street on either side and within the courtyard are presented by hour in Table 3.

It was observed that the drop-offs happening within the courtyard were assumed primarily to be staff/faculty, while the on-street drop-offs were more of a mix of students and staff/faculty.



Table 3 HKS Personal Vehicle Drop-off by Hour

Time	Total Drop-offs	South Side of Eliot Street	North Side of Eliot Street	HKS Courtyard
7:00 AM – 8:00 AM	5	0	2	3
8:00 AM – 9:00 AM	9	1	6	2
9:00 AM – 10:00 AM	10	5	3	2
10:00 AM – 11:00 AM	5	2	3	0
11:00 AM – 12:00 PM	18	8	8	2
12:00 PM – 1:00 PM	8	2	4	2
1:00 PM – 2:00 PM	6	1	3	2
2:00 PM – 3:00 PM	5	2	0	3
3:00 PM – 4:00 PM	1	0	0	1
4:00 PM – 5:00 PM	5	1	1	3
5:00 PM – 6:00 PM	3	1	0	2

Source: VHB May 14, 2014

Building Entrances

The primary entrances to the HKS campus are from the southeast corner of the courtyard into the Rubenstein Building and off Eliot Street at the northwest corner of the Taubman Building.

Bicycle Accommodations

HKS provides 99 uncovered bicycle parking spaces within the site’s courtyard and along the perimeter of the site as shown previously in Figure C. On a typical day, there may be in excess of 200 bikes/day utilizing these spaces.

Additionally, Harvard University’s PTDM 2013 Annual Progress Report discusses the University’s support of CommuterChoice programs, including bicycling to and from the campus. The services provided by Harvard range from discounted annual Hubway memberships of \$50 for all members of the Harvard Community, installation of new bicycle racks, and the sale of discounted bicycle helmets to promote bike safety.



Existing Study Area Conditions

Roadways

The Project site is comprised of one parcel located on the corner of Eliot Street and JFK Street. JFK Street provides two-way travel adjacent to the site connecting the Boston neighborhood of Allston, across the Charles River, to Cambridge’s Harvard Square in the



northeast/southwest direction. Northeast of the site, JFK Street becomes one-way in the northeast direction. Eliot Street is a short, local roadway connecting Brattle Street and JFK Street with two-way traffic adjacent to the site, and predominately allows for the southbound traffic to reconnect to JFK Street from Harvard Square.

Figure C, previously presented, shows the roadway layout surrounding the Project site.

Intersections

The Project study area includes the following four study intersections which are presented in Figure E and illustrated in Figures 1.b.1 through 1.b.4.

- 1) Eliot Street/Bennett Street
- 2) Eliot Street/Site Driveway
- 3) JFK Street/Eliot Street
- 4) JFK Street/Memorial Drive

Transit Services

The Project site is easily accessible by public and private transportation systems. The Massachusetts Bay Transportation Authority's (MBTA) operates fourteen bus routes that have stops close to the site as shown in Figure 1.d. The closest bus stop is JFK Street/Eliot Street on the MBTA Bus 66 and 86 routes. The closest Subway stop is Harvard Square on the Red Line, which is a 5 minute walk from the site. Harvard University provides one shuttle service in the morning and afternoon to its faculty, staff, and students that stops directly at the site and eight additional routes servicing other areas of the Harvard Campus. The following services are located within a one-half mile radius to the site:

Public Services

MBTA Subway Services

Red Line

The Red Line starts in North Cambridge at Alewife, and continues south through Boston until it splits into two branches at JFK/UMass Station that go to Ashmont and Braintree, respectively. The Red Line runs from 5:15 AM to 12:30 AM on weekdays, with a combined 4.5 minute headway at Harvard Square during peak hours. The Red Line provides connections with the Green Line at Park Street and with the Orange Line at Downtown Crossing. It connects to the Silver Line at Downtown Crossing, and South Station. The Commuter Rail connections can be accessed from the Red Line at Porter Square, South Station, JFK/UMass, Quincy Center, and Braintree.



MBTA Bus Services

#1: Harvard/Holyoke Gate – Dudley Station via Massachusetts Avenue

This route connects Dudley Square to Harvard Square via Massachusetts Avenue in Boston and Cambridge. The closest stop to the site is at Massachusetts Ave/Holyoke St, which is the first stop going inbound and the last stop going outbound on this route.

#66: Harvard Square – Dudley Station via Allston

This route connects Dudley Square to Harvard Square. Near the site, this route travels along JFK Street and Eliot Street. The closest inbound and outbound stop to the site is JFK St/Eliot St.

#68: Harvard/Holyoke Gate – Kendall/M.I.T. via Broadway

This route connects Kendall/M.I.T to Harvard Square in Cambridge, travelling along Broadway and then onto Massachusetts Avenue near the site. The closest stop to the site is Massachusetts Ave/Holyoke St, which is the first stop going inbound and the last stop going outbound on this route.

#69: Harvard/Holyoke Gate – Lechmere Station via Cambridge Street

This route connects Lechmere to Harvard Square, travelling along Cambridge Street and then onto Massachusetts Avenue near the site. The closest stop to the site is Massachusetts Ave/Holyoke St, which is the first stop going inbound and the last stop going outbound on this route.

#71: Watertown Square – Harvard Station via Mt. Auburn Street

This route connects Harvard Square to Watertown Square, travelling on Mt. Auburn Street near the site. The closest stop to the site is 114 Mt. Auburn Street (inbound) and Mt. Auburn St/Story St (outbound).

#72: Huron Ave – Harvard Station via Concord Ave

This route connects Harvard Square to the intersection of Mt. Auburn Street and Aberdeen Avenue in Cambridge. The closest stop to the site is Eliot St/Bennett St (inbound) and Harvard Station (outbound).

#72/75: Belmont Center via Huron Ave/ Harvard Square via Huron Ave

This route connects Harvard Square to Belmont Center, travelling along Huron Avenue. The closest stop to the site is Eliot St/Bennett St for inbound and outbound services.

#73: Waverly Square – Harvard Station via Trapelo Road

This route connects Harvard Square to Waverley Square in Cambridge. Near the site, this route travels along Mt. Auburn Street. The closest stop to the site is 114 Mt. Auburn Street (inbound) and Mt. Auburn St/Story St (outbound).

#74: Belmont Center – Harvard Station via Concord Ave

This route connects Harvard Square to Belmont Center, travelling along Concord Avenue. The closest stop to the site is Eliot St/Bennett St (inbound) and Harvard Station (outbound).



#75: Belmont Center – Harvard Station via Concord Ave

This route connects Harvard Square to Belmont Center, travelling along Fresh Pond Parkway and Grove Street. The closest stop to the site is Eliot St/Bennett St (inbound) and Harvard Station (outbound).

#77: Arlington Heights – Harvard Station via Massachusetts Ave

This route connects Harvard Square to Arlington Heights via Massachusetts Avenue. The closest stop to the site is Eliot St/Bennett St (inbound) and Harvard Station (outbound).

#78: Arlmont Village – Harvard Station via Park Circle

This route connects Harvard Square to Arlmont Village. The closest stop to the site is Eliot St/Bennett St (inbound) and Harvard Station (outbound).

#86: Sullivan Square Station – Reservoir (Cleveland Circle) via Harvard/Johnston Gate

This route connects Cleveland Circle in the Boston neighborhood of Brighton to Sullivan Square in Cambridge. Near the site, it travels along Eliot Street and JFK Street. The closest stop to the site is JFK St/Eliot St inbound and outbound.

#96: Medford Square – Harvard Station via George Street and Davis Square Station

This route connects Harvard Square to Medford Square. The closest stop to the site is Eliot St/Bennett St (inbound) and Harvard Station (outbound).

MBTA Operations/Services

Operating hours, weekday daily ridership, and peak-hour headways for each MBTA service are presented in Table 4.

Harvard Shuttle

Harvard University provides shuttle services to its faculty, staff, and students. Nine routes serve the Harvard University Campus with one route directly servicing the HKS Campus. The Allston Campus Express provides service directly to the Harvard Kennedy School on JFK Street with service from Soldiers Field Park to Lamont Library from 7:00 AM to 10:15 PM, Monday through Friday with fifteen minute headways. The shuttle operates from 10:15 PM to 12:25 AM with half hour headways.

Bicycles and Pedestrians

The study area infrastructure supports the existing pedestrians and bicycles in the area. Sidewalks, crosswalks, and pedestrian phases are provided throughout the study area as shown in Figure C. A bicycle lane is provided along Eliot Street in the eastbound direction only.

Hubway, which provides more than 1,300 bicycles at 140 stations throughout Boston, Brookline, Cambridge, and Somerville, provides a Harvard-supported station adjacent to the HKS campus on Eliot Street.

Land Use

Figure 1.e illustrates land uses in the area surrounding the HKS Project site. The study area is primarily composed of educational, commercial, and mixed-use land uses. To the south of the site is a large area of public open space, the JFK Park. Residential neighborhoods surround the Harvard Campus area approximately two blocks to the west and 8-10 blocks to the east of the Project site.

Crash Analysis

Study area crash data were obtained from Mass Highway records for the three-year period from January 2009 through December 2011 (the most recent data available). A detailed summary by crash type is provided in Table 5. The Project site is within MassDOT's District 6, which has an average signalized crash rate of 0.76 crashes per million entering vehicles. The statewide average is 0.80 crashes per million entering vehicles.

As shown in Table 5, the three signalized intersections within the study area are over the average crashes per million entering vehicles. The majority of the accidents were rear-end and sideswipe collisions. No fatal accidents were reported during the three year period, however 3 accidents at Eliot Street/Bennett Street and 7 accidents at JFK Street/Eliot Street reported non-fatal injuries. The majority of the accidents at the three intersections occurred during off-peak hours on a weekday.



Table 5 Vehicular Crash Summary (2009 - 2011) Details

	Eliot St at Bennett St	JFK St at Eliot St	JFK St at Memorial Dr
Year			
2009	1	3	9
2010	9	7	10
<u>2011</u>	<u>2</u>	<u>6</u>	<u>8</u>
Total	12	16	27
Average per year	4	5	9
Collision Type			
Angle	0	1	7
Head-on	0	0	2
Rear-end	1	2	9
Rear-to-Rear	0	1	0
Sideswipe, opposite direction	1	0	1
Sideswipe, same direction	2	6	5
Single vehicle crash	5	3	2
Unknown	1	0	0
<u>Not reported</u>	<u>2</u>	<u>3</u>	<u>1</u>
Total	12	16	27
Crash Severity			
Fatal injury	0	0	0
Non-fatal injury	3	7	8
Property damage only	5	5	18
Not Reported	4	4	1
<u>Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	12	16	27
Time of Day			
Weekday, 7:00 AM - 9:00 AM	3	5	3
Weekday, 4:00 PM - 6:00 PM	0	2	1
Saturday, 11:00 AM - 2:00 PM	1	1	3
Weekday, other time	4	7	13
<u>Weekend, other time</u>	<u>4</u>	<u>1</u>	<u>7</u>
Total	12	16	27
Pavement Conditions			
Dry	9	10	21
Wet	1	3	4
Snow	0	0	1
Ice	0	0	0
Sand, mud, dirt, oil, gravel	0	0	0
Water (standing, moving)	0	0	0
Slush	0	0	0
Other	0	0	0
Unknown	1	1	0
<u>Not reported</u>	<u>1</u>	<u>2</u>	<u>1</u>
Total	12	16	27
Non Motorist			
Pedestrian	2	0	0
<u>Bicycle</u>	<u>1</u>	<u>7</u>	<u>0</u>
Total	3	7	0
MassHighway Crash Rates			
	1.32	1.04	0.83

Source: Massachusetts Department of Transportation

Data Collection

Traffic volumes were collected in April and June of 2014 and used to represent the 2014 Existing Condition within the study area. The data was collected at a time when the Anderson Memorial Bridge was under construction providing only one lane of travel in the northbound direction at the intersection of Memorial Drive at JFK Street. Final southbound geometry was completed at the time of the study. Once construction of the bridge is complete, the northbound approach will operate with two lanes, one through and one through/right turn lane. To understand the true impacts of the Project on the study area, the City requested a 2014 Theoretical Existing Condition which analyzes the northbound approach as two lanes and increased vehicle volumes that would correlate with the increased capacity.

2014 Existing Condition Data

The 2014 Existing Condition vehicle, pedestrian, and bicycle peak hour volumes were generated from the raw turning movement counts done in April of 2014 as presented below.

ATR Counts

An automatic traffic recorder (ATR) was installed on June 4, 2014 for 48 consecutive hours on JFK Street adjacent to the Project site between Eliot Street and Memorial Drive as requested by the City of Cambridge.

Traffic volume summaries for this ATR location is presented in Table 6 and Table 7. These data, representing the averages of data collected over two weekdays, indicate the variations of traffic volume and the directional distribution of traffic over the course of an average weekday. Count data sheets are included in the Appendix.

Table 6 2014 Existing Traffic Volume Summary

Location	Daily ^a	Weekday AM Peak Hour		Weekday PM Peak Hour			
		Volume ^b	K ^c	Peak Direction	Volume ^b	K ^c	Peak Direction
John F. Kennedy Street North of Memorial Drive	17,928	1,154	6%	64% NB	1,110	6%	67% NB

a vehicles per day

b vehicles per peak hour

c percentage of daily traffic that occurs during the peak hour

Table 7 2014 Existing Hourly Traffic Summary

John F. Kennedy Street (North of Memorial Drive)			
Start Time	NB	SB	Total
12:00	154	151	305
1:00	81	80	161
2:00	58	50	108
3:00	34	24	58
4:00	47	32	79
5:00	183	119	302
6:00	463	269	732
7:00	612	407	1,019
8:00	739	410	1,149
9:00	673	394	1,067
10:00	644	379	1,023
11:00	618	340	958
12:00	592	370	962
13:00	562	352	914
14:00	566	344	910
15:00	630	324	954
16:00	686	348	1,034
17:00	756	320	1,076
18:00	734	354	1,088
19:00	704	374	1,078
20:00	528	356	884
21:00	466	369	835
22:00	396	378	774
<u>23:00</u>	<u>242</u>	<u>216</u>	<u>458</u>
Total*	11,168	6,760	17,928

* Note: values represented in table are rounded numbers; therefore the "Total" row takes into consideration these decimals

Pedestrian and Bicycle Counts

Twelve hour pedestrian and bicycle counts were not required to support the traffic analysis.

Intersection Turning Movement Counts

Manual turning movement counts, including pedestrians and bicycles, were conducted at study intersections on April 2, 2014. Detailed count sheets are included in the Appendix. The results of these counts indicate that the overall weekday peak traffic hours in the study area occur from 8:30 - 9:30 AM and 5:00 – 6:00 PM. Figure 2.c.1 and Figure 2.c.2 summarize these traffic counts for the morning and evening peaks, respectively.

Peak hour pedestrian and bicycle movements at study area intersections, collected during the vehicle turning movement counts, are presented in Figures 2.c.3 and 2.c.4, and Figures 2.c.5 and 2.c.6, respectively.



Theoretical Data

Vehicle volumes for the 2014 Theoretical Existing Condition were developed using historical 2008 volumes for the northbound approach at Memorial Drive/JFK Street that will have increased capacity upon completion of the Anderson Memorial Bridge Rehabilitation Project. The morning and evening peak hour vehicle volumes for the 2014 Theoretical Existing Condition are presented in Figure 2.c.7 and Figure 2.c.8. The JFK Street/Memorial Drive intersection signal timings were adjusted to match the future signal plans provided in the Massachusetts Department of Transportation Highway Division Plan and Profile of Rehabilitation of the Anderson Memorial Bridge, stamped and dated August 24, 2011, sheet 33 of 184.

Project Description

The proposed Project consists of approximately 91,200 SF of administrative offices and classroom space. The administrative offices and 6 additional classrooms will primarily allow for decompression of existing space and improve constraints on the campus today. The existing 13 on-site parking spaces will be removed with this expansion and no new parking will be constructed. The existing parking permits assigned to these spaces will be relocated on the Harvard Campus. Off-street loading docks will be provided with access/egress to Eliot Street as shown in Figure D.



Project Population

It is expected that the HKS will continue to grow at a consistent population growth rate. Based on population data from the past two years, an additional 412 persons are expected to populate the school by the year 2019. Table 8 provides a breakdown of the anticipated population by user type.

Table 8 HKS 2019 Population

User	Population
Full Time Student	1,479
Faculty	202
Staff	515
Fellows	292
<u>Executive Education</u>	<u>130</u>
Total	2,618

Source: Harvard Kennedy School, May 2014



Project Site Plan

The Project site plan is shown previously in Figure D. As shown in the site plan, access will continue to be from Eliot Street and new bicycle parking will be provided, as described below.

Access/Circulation

The Project removes the existing 13 on-site parking spaces and creates a new loading facility to be located beneath a raised central courtyard with dedicated access from Eliot Street. The proposed loading facility is sized to meet City of Cambridge zoning requirements and to accommodate all anticipated HKS loading needs based on extensive studies of the existing deliveries to the campus. The proposed facility includes 4 loading bays, 3 for delivery vehicles, and one which will accommodate the trash compactor, and a secure arrival/drop-off area for visiting dignitaries. A dedicated, single, alternating one-way driveway will be provided on Eliot Street.

Pedestrian access to the raised central courtyard from Eliot Street will be immediately north of the loading facility driveway with an entrance to campus buildings at the southeast corner of the courtyard. A new pedestrian entrance will be created along the JFK Park pedestrian connector between the existing Taubman and Rubenstein buildings as part of the new development of this location. This entrance will create a new access point to the campus for pedestrians and cyclists, and also permit circulation through the campus from the connector to Eliot Street and Harvard Square. Access to the Taubman Building will continue to be from the northwest corner of the building on Eliot Street.

Bicycle Accommodations

The Project will provide 204 bicycle spaces (140 short-term and 64 long-term spaces), which meets the Cambridge Zoning Ordinance requirements for the HKS campus.

Project Trip Generation



Trip Generation

Utilizing data provided by HKS, the estimated Project generated trips to the HKS campus were calculated. HKS provided population data for the last two school years broken down by full time students, faculty, staff, fellows, and executive education students. Based on the data provided, it was calculated (see Appendix) that the HKS population would increase by 412 persons, as presented in Table 9.



Table 9 HKS Net-New Population

User	Population
Full Time Student	258
Faculty	10
Staff	37
Fellows	79
<u>Executive Education</u>	<u>28</u>
Total	412

Source: Harvard Kennedy School, May 2014



Mode Splits

Harvard University’s PTDM Annual Progress Report 2013 mode splits were used to calculate the estimated number of trips by mode. The University’s Drive Alone percentage over the past year was 12.8 percent, which is a decrease from previous years. The University’s Commute Mode Shares for the past 5 years is presented below in Table 10.

Table 10 Harvard University Commute Mode Splits by Year

Commute Mode	PTDM 2009	PTDM 2010	PTDM 2011	PTDM 2012	PTDM 2013
Drive Alone	13.2%	11.3%	15.9%	13.2%	12.8%
Carpool	2.2%	4.8%	3.6%	2.6%	3.9%
Vanpool	0%	0.2%	0.2%	0.05%	0.07%
Transit	32.8%	31.7%	35.1%	38.4%	35.4%
Bicycle	17.7%	12.8%	14.3%	17.3%	14.5%
Walk	35.2%	36.5%	27.6%	25.2%	29.2%
Telework/ CWW/Flextime	N/A	2.8%	3.1%	3.1%	3.9%

Source: Harvard Kennedy School, May 2014

The HKS, separate from Harvard University as a whole, has a significantly lower drive-alone mode split of 9.5 percent for the year 2013 based on PTDM surveys from HKS affiliates for the 2013-2014 academic year. The Harvard University mode splits provide a more conservative analysis of the potential impacts to the study area.



Project Trips

The net-new HKS population was applied to the Harvard University Mode Splits for 2013 to calculate the Project generated daily and peak hour trips by mode. Peak hour trip distribution was calculated using the Institute of Transportation Engineers (ITE) land use code 550 for College/University. Table 11 presents the Project generated trips by mode.

Table 11 Project Generated Trips

Commute Mode	Daily Trips (Two-Way)	AM Peak Hour Trips	PM Peak Hour Trips
Drive Alone			
In	53	15	6
Out	53	4	13
Carpool			
In	16	4	2
Out	16	2	4
Vanpool			
In	0	0	0
Out	0	0	0
Total Vehicle Trips			
In	69	19	8
Out	69	6	17
Transit			
In	146	40	17
Out	146	12	35
Bicycle			
In	60	17	7
Out	60	5	14
Walk			
In	120	33	14
Out	120	10	29
Telecommute	32	6	6
Total	822	148	178

The Project generated trips were assigned to Harvard University garages and parking lots based on existing parking permit data provided by the HKS exclusively. These parking locations are shown in Figure 3.a.1. It is assumed that the same percentage of permits at each garage/parking lot will be provided to the Project generated trips. Table 12 presents the number of Project peak hour trips in and out of each garage/lot for the morning and evening peak hours.

Using this data and Harvard University employee zip code data, the vehicle trips were distributed to the surrounding roadway networks. Figure 3.a.2.a presents the regional distribution for HKS commuters. Figure 3.a.2.b shows the general directions from which the Project generated trips will be approaching and departing the Project site. Figure 3.a.3 and Figure 3.a.4 present the number of trips entering and existing the Harvard University garages/parking lots for the morning and evening peak hour, respectively. Figure 3.a.5 and Figure 3.a.6 present the Project generated trips at the study area intersections based on their travel patterns to the Harvard University parking locations.

Table 12 Project Generated Trips Entering/Exiting Garages/Lots

Parking Garage/Lot	AM Peak Trips		PM Peak Trips	
	Enter	Exit	Enter	Exit
Business School Open Lot	4	1	1	3
Dillon Lot	2	1	1	2
5 Cowperthwaite Street Garage	2	1	1	2
Soldiers Field Park Garage	2	1	1	2
Charles Square	2	1	1	1
Broadway Garage	1	1	1	1
Peabody Terrace Garage	1	0	1	1
10 Everett Street Garage	1	0	1	1
DeWolfe Street Garage	1	0	0	1
Malkin Lot	1	0	0	1
Mill Street	1	0	0	1
<u>18 Sumner Road</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
Total Trips	19	6	8	17

The 13 parking spaces that are being removed from the HKS campus are permitted for senior level administration and faculty at HKS. These 13 permits will be relocated to Eliot Triangle and the Mill Street lot on the east side of JFK Street. These trips were removed from the HKS campus and redistributed through the study area to the respective lots. These redistributed morning and evening trips are presented in Figure 3.a.7 and Figure 3.a.8, respectively.

Traffic Analysis Scenarios

Traffic networks were developed, in accordance with the City's Scoping Letter and the TIS Guidelines, for the following scenarios:



2014 Existing Condition

The 2014 Existing Condition analysis is based on existing (2014) vehicle, bicycle, and pedestrian counts at the study area intersections as presented previously in *Data Collection*. Signal timings were confirmed with the City of Cambridge's Senior Traffic Engineer in June of 2014.



2014 Theoretical Existing Condition

The 2014 Theoretical Existing Condition takes into account the future alignment of the Anderson Memorial Bridge with two travel lanes in the northbound direction on JFK Street and the increased northbound volumes associated with this additional capacity. The increased volume was carried through the study area intersections utilizing the existing proportions between turning and through movements at each intersection.



2014 Build Condition

The Build Condition (2014) assumes full occupancy of the HKS Expansion Project. Project-generated vehicles and relocated vehicle volumes are added to the 2014 Theoretical Existing Condition study area intersections to create the Build networks. These volumes are presented in Figure 5.b.1 and Figure 5.b.2 for the morning and evening peak hours, respectively.



2019 Future Condition

The Future Condition (2019) includes future background growth and traffic associated with other specific projects planned or under construction within the area per the TP&T Scoping letter. Background traffic growth was assumed to occur at one-half a percent per year for a five-year time horizon. The following developments were included in the background traffic growth:

- Proposed Conductor's Building Restoration Project
- Barry's Corner Residential and Retail Commons Project
- Harvard University's Allston Science Complex
- Charlesview Redevelopment
- New Brighton Landing
- Harvard Business School Faculty and Administrative Offices

Vehicle Capacity Analysis

Capacity Analysis

Synchro 7 software was used to determine the vehicle level of service (VLOS) for signalized and unsignalized study intersections. Synchro software is based on the 2000 Highway Capacity Manual. Results for the Existing (2014), Theoretical Existing (2014), Build (2014) and Future (2019) conditions are presented in Table 13 and Table 14 for signalized intersections and Table 15 and Table 16 for the unsignalized intersection. A summary of the analysis results follows.

Table 13 Signalized Intersection Level of Service Results – AM Peak Hour

Intersection	Approach	Existing (2014) Condition			Theoretical Existing (2014) Condition			Build (2014) Condition			Future (2019) Condition		
		v/c	Delay	VLOS	v/c	Delay	VLOS	v/c	Delay	VLOS	v/c	Delay	VLOS
Eliot Street at Bennett Street	Bennett EB	0.15	13.3	B	0.15	13.3	B	0.16	13.4	B	0.19	13.7	B
	Eliot WB	0.36	15.3	B	0.43	16.2	B	0.42	16.1	B	0.49	17.1	B
	Eliot SB	0.54	17.3	B	0.54	17.3	B	0.54	17.3	B	0.60	18.4	B
	Overall	0.40	16.3	B	0.43	16.5	B	0.42	16.5	B	0.48	17.5	B
Eliot Street at JFK Street	Eliot EB	0.48	8.3	A	0.48	8.3	A	0.47	8.5	A	0.52	8.9	A
	JFK NB	0.66	24.0	C	0.77	27.5	C	0.77	27.5	C	0.83	30.5	C
	Overall	0.57	17.9	B	0.64	20.8	C	0.63	20.8	C	0.69	22.9	C
JFK Street at Memorial Drive	Memorial EB	>1.0	>80	F	0.95	45.8	D	0.95	45.8	D	0.98	50.8	D
	Memorial WB	0.83	41.9	D	0.64	27.1	C	0.65	27.1	C	0.67	27.8	C
	JFK NB	0.90	41.3	D	0.81	34.4	C	0.81	34.4	C	0.87	38.1	D
	JFK SB	0.60	24.1	C	0.71	33.4	C	0.70	33.1	C	0.77	36.5	D
	Overall	>1.0	>80	F	0.88	36.6	D	0.88	36.5	D	0.92	39.9	D

v/c volume-to-capacity ratio
 Delay average delay expressed in seconds per vehicle
 VLOS vehicular level of service

Table 14 Signalized Intersection Level of Service Results – PM Peak Hour

Intersection	Approach	Existing (2014) Condition			Theoretical Existing (2014) Condition			Build (2014) Condition			Future (2019) Condition		
		v/c	Delay	VLOS	v/c	Delay	VLOS	v/c	Delay	VLOS	v/c	Delay	VLOS
Eliot Street at Bennett Street	Bennett EB	0.25	14.2	B	0.25	14.2	B	0.25	14.2	B	0.33	15.1	B
	Eliot WB	0.27	14.4	B	0.35	15.3	B	0.34	15.2	B	0.39	15.8	B
	Eliot SB	0.56	17.4	B	0.56	17.4	B	0.55	17.3	B	0.62	18.4	B
	Overall	0.36	16.2	B	0.40	16.4	B	0.40	16.3	B	0.44	17.2	B
Eliot Street at JFK Street	Eliot EB	0.44	10.7	B	0.44	10.7	B	0.44	10.8	B	0.51	11.3	B
	JFK NB	0.62	22.9	C	0.81	22.0	C	0.81	29.0	C	0.87	32.9	C
	Overall	0.53	17.8	B	0.64	22.5	C	0.64	22.5	C	0.71	24.9	C
JFK Street at Memorial Drive	Memorial EB	0.76	31.3	C	0.80	34.8	C	0.80	34.8	C	0.83	36.6	D
	Memorial WB	0.94	44.2	D	1.00	58.3	E	1.00	59.1	E	>1.0	67.2	E
	JFK NB	1.00	66.4	E	0.80	31.8	C	0.80	31.8	C	0.87	35.7	D
	JFK SB	1.05	>80	F	0.93	56.1	E	0.93	55.4	E	>1.0	>80.0	F
	Overall	0.99	51.9	D	0.96	44.4	D	0.96	44.5	D	>1.0	55.2	E

v/c volume-to-capacity ratio
 Delay average delay expressed in seconds per vehicle
 VLOS vehicular level of service

Table 15 Unsignalized Intersection Level of Service Results – AM Peak Hour

Intersection	Approach	Existing (2014) Condition			Theoretical Existing (2014) Condition			Build (2014) Condition			Future (2019) Condition		
		Demand	Delay	VLOS	Demand	Delay	VLOS	Demand	Delay	VLOS	Demand	Delay	VLOS
Eliot Street at Site Driveway	EB	10	16.0	C	10	16.6	C	2	15.8	C	2	17.0	C

Demand vehicular demand on critical approach
 Delay average delay expressed in seconds per vehicle
 VLOS vehicular level of service

Table 16 Unsignalized Intersection Level of Service Results – PM Peak Hour

Intersection	Approach	Existing (2014) Condition			Theoretical Existing (2014) Condition			Build (2014) Condition			Future (2019) Condition		
		Demand	Delay	VLOS	Demand	Delay	VLOS	Demand	Delay	VLOS	Demand	Delay	VLOS
Eliot Street at Site Driveway	EB	10	18.8	C	10	19.6	C	4	18.8	C	4	20.9	C

Demand vehicular demand on critical approach
 Delay average delay expressed in seconds per vehicle
 VLOS vehicular level of service

As shown in Table 13 through Table 16, the proposed Project will not impact the surrounding intersections in terms of delay or level of service.

Queue Analysis

Queue analysis was performed in conjunction with the LOS analysis. Additionally, field observations of vehicle queues at signalized intersections were performed on April 2, 2014 during the traffic counts. Tables 17 and 18 present results for observed and modeled average queues for each scenario for the morning and evening peak hours, respectively.

Table 17 Signalized Intersection Queue Analysis - AM Peak Hour

Intersection	Lane	Average Queue in Vehicles				
		2014				
		2014 Observed	2014 Existing	2014 Existing Theoretical	2014 Build	2019 Future
Eliot Street at Bennett Street	Eastbound Thru	1	1	1	1	1
	Westbound Thru	1	2	3	3	4
	Southbound Left	2	2	2	2	2
	Southbound Left/Right	3	2	2	2	2
Eliot Street at JFK Street	Eastbound Left	1	1	1	1	1
	Eastbound Right	2	3	3	3	4
	Northbound Left/Thru	6	4	5	5	5
	Northbound Thru	6	4	5	5	5
JFK Street at Memorial Drive	Eastbound Thru	71	~9	7	7	7
	Eastbound Thru/Right	71	~9	7	7	7
	Westbound Thru	6	4	4	4	4
	Westbound Thru/Right	8	4	4	4	4
	Northbound Thru/Right	14	15	10	10	11
	Southbound Thru/Right	6	8	9	9	10

~Volume exceeds capacity, queue is theoretically infinite

Table 18 Signalized Intersection Queue Analysis - PM Peak Hour

Intersection	Lane	Average Queue in Vehicles				
		2014				
		2014 Observed	2014 Existing	2014 Existing Theoretical	2014 Build	2019 Future
Eliot Street at Bennett Street	Eastbound Thru	1	1	1	1	2
	Westbound Thru	1	2	2	2	3
	Southbound Left	1	2	2	2	2
	Southbound Left/Right	2	2	2	2	2
Eliot Street at JFK Street	Eastbound Left	3	2	2	2	2
	Eastbound Right	9	3	3	3	4
	Northbound Left/Thru	6	4	5	5	6
	Northbound Thru	5	4	5	5	6
JFK Street at Memorial Drive	Eastbound Thru	7	5	5	5	5
	Eastbound Thru/Right	5	5	5	5	5
	Westbound Thru	7	7	7	7	~8
	Westbound Thru/Right	6	7	7	7	~8
	Northbound Thru/Right	22	15	11	11	12
	Southbound Thru/Right	23	~12	11	10	~15

~Volume exceeds capacity, queue is theoretically infinite

Residential Street Volume Analysis

Per discussions with TP&T on April 7, 2014, the roadways within the study area are not considered residential and therefore do not require a residential street volume analysis.

Transit Analysis

The following section presents the capacities of the various MBTA transit services in the area. The first step in analyzing the public transit system availability is to quantify the capacity of existing transit services. The second step then adds the Project-generated trips to the system.



Existing Transit Ridership

The MBTA Ridership and Service Statistics, Thirteenth Edition 2010 does not provide hourly or stop-based ridership information. Therefore, data provided by the MBTA was used to determine hourly ridership. This data includes hourly line volumes from Fall 2013 for the subway system.

Table 19 presents the volume-to-capacity, or availability, of passenger loads for the subway lines serving the site. The subway capacity used in the volume-to-capacity analysis is the fleet’s policy capacity which assumes 167 passengers per Red Line car. Crush load capacity is actually much higher with 277 passengers per Red Line car. For a conservative analysis the more comfortable policy capacity of 167 passengers was used in this analysis.

Table 19 MBTA Subway Peak Hour Utilization (2014 Existing Condition)

Route and Direction	Frequency (trains/hr)	Capacity* (riders/hr)	Existing Ridership		V/C Ratio (Utilization)	
			AM Peak	PM Peak	AM Peak	PM Peak
Red Line						
Inbound – Arriving Harvard Square	13	13,026	7,209	1,709	0.55	0.13
Inbound – Leaving Harvard Square	13	13,026	8,258	3,367	0.63	0.26
Outbound – Arriving Harvard Square	13	13,026	2,541	7,698	0.20	0.59
Outbound – Leaving Harvard Square	13	13,026	1,020	6,407	0.08	0.49

Source: MBTA May 2014

* Assumes passenger policy capacity of six-car train sets on Red Line. This data assumes an evenly spaced out arrival and departure of trains operating at scheduled headways.

As shown in Table 19, there is adequate capacity on the Red Line to accommodate the peak hour loads today. This analysis assumes that all trains arrive on schedule and that passengers are evenly distributed throughout the hour. In reality, passenger loads can vary and some trains become more congested than others. As noted previously, the trains have a much higher “crush load capacity” than the capacity used in this analysis.

Bus System Capacity

Bus route capacity is a function of vehicle size and frequency of service. The peak hour capacities estimated in Table 20 are based on a bus capacity of 60 passengers for a standard MBTA bus. Crush capacities on MBTA buses are higher. The service rush-hour frequencies presented in Table 20 and Table 21 are based on the most current schedules.

Load profiles by bus route collected in fall 2012 and spring 2013 were provided by the MBTA. Data collected during this time period does not provide information for all routes arriving and departing the stop closest to the site; these locations are noted in the tables. These load profiles detail the passenger loads by bus and by stop over a typical day. These bus loads are shown in Table 20 and Table 21. These tables also present ridership and utilization (percent occupancy). This analysis uses the closest bus stop to the Project site to determine hourly ridership.

Table 20 MBTA Bus Route AM Peak Hour Utilization (2014 Existing Condition)

Route and Direction	Frequency (buses/hr)	Capacity (buses/hr)	Hourly Ridership*		V/C Ratio (Utilization)		
			Arriving	Leaving	Arriving	Leaving	
<i>Weekday AM Peak</i>							
1 Inbound	+	420	N/A	50	N/A	0.12	
Outbound	7	420	105	N/A	0.25	N/A	
66 Inbound	7	420	85	95	0.20	0.23	
Outbound	7	420	290	215	0.69	0.51	
68 Inbound	2	120	N/A	5	N/A	0.04	
Outbound	2	120	10	N/A	0.08	N/A	
69 Inbound	6	360	N/A	20	N/A	0.06	
Outbound	6	360	125	N/A	0.35	N/A	
71 Inbound	8	480	310	300	0.65	0.63	
Outbound	9	540	235	245	0.44	0.45	
72 Inbound	3	180	50	N/A	0.28	N/A	
Outbound	4	240	N/A	20	N/A	0.08	
73 Inbound	11	660	570	505	0.86	0.77	
Outbound	9	540	150	160	0.28	0.30	
74 Inbound	3	180	5	N/A	0.03	N/A	
Outbound	2	120	N/A	35	N/A	0.29	
75 Inbound	1	60	5	N/A	0.08	N/A	
Outbound	1	60	N/A	10	N/A	0.17	
77 Inbound	8	480	35	N/A	0.07	N/A	
Outbound	7	420	N/A	70	N/A	0.17	
78 Inbound	2	120	10	N/A	0.08	N/A	
Outbound	3	180	N/A	60	N/A	0.33	
86 Inbound	5	300	100	115	0.33	0.38	
Outbound	6	360	280	220	0.78	0.61	
96 Inbound	3	180	10	N/A	0.06	N/A	
Outbound	3	180	N/A	30	N/A	0.17	

* MBTA Bus Route operations 2012, 2013

N/A Not Available



Table 21 MBTA Bus Route PM Peak Hour Utilization (2014 Existing Condition)

Route and Direction	Frequency (buses/hr)	Capacity (buses/hr)	Hourly Ridership*		V/C Ratio (Utilization)	
			Arriving	Leaving	Arriving	Leaving
<i>Weekday PM Peak</i>						
1 Inbound	8	480	N/A	60	N/A	0.13
1 Outbound	8	480	145	N/A	0.30	N/A
66 Inbound	6	360	185	205	0.51	0.57
66 Outbound	6	360	145	100	0.40	0.28
68 Inbound	2	120	N/A	10	N/A	0.08
68 Outbound	2	120	10	N/A	0.08	N/A
69 Inbound	3	180	N/A	50	N/A	0.28
69 Outbound	4	240	105	N/A	0.44	N/A
71 Inbound	7	420	140	110	0.33	0.26
71 Outbound	7	420	275	305	0.65	0.73
72 Inbound	3	180	30	N/A	0.17	N/A
72 Outbound	3	180	N/A	75	N/A	0.42
73 Inbound	13	780	185	160	0.24	0.21
73 Outbound	12	720	480	515	0.67	0.72
74 Inbound	2	120	5	N/A	0.04	N/A
74 Outbound	2	120	N/A	5	N/A	0.04
75 Inbound	2	120	5	N/A	0.04	N/A
75 Outbound	2	120	N/A	5	N/A	0.04
77 Inbound	7	420	10	N/A	0.02	N/A
77 Outbound	8	480	N/A	25	N/A	0.05
78 Inbound	3	180	5	N/A	0.03	N/A
78 Outbound	2	120	N/A	5	N/A	0.04
86 Inbound	3	180	125	140	0.69	0.78
86 Outbound	4	240	105	100	0.44	0.42
96 Inbound	3	180	5	N/A	0.03	N/A
96 Outbound	3	180	N/A	20	N/A	0.11

* MBTA Bus Route operations 2012, 2013

N/A Not Available

As shown in Table 20 and Table 21, the existing bus services have a volume-to-capacity (v/c) ratio well under 1.0 with the Route 73 bus inbound having the highest morning v/c ratio of 0.86 and the Route 86 bus inbound having the highest evening v/c ratio of 0.78.



Future Capacities

The Project increases the overall peak hour transit trips by a total of 52 trips in both the morning and evening peak hour. Approximately 40 trips in and 12 trips out during the morning peak and 17 trips in and 35 trips out during the evening peak hour are estimated with the expansion of the HKS. These additional trips spread across the multiple bus and subway lines throughout the peak hour will not impact the transit operations.

To understand any potential impacts, the Project generated transit trips were distributed between bus and subway users based on the American Community Survey (2006-2010) for Census Tract 3541. Within the study area an estimated 36.5% take the bus and 63.5% take the subway. The resulting assignment is presented in Table 22. During the peak hour commute the Project will result in approximately 33 – 34 trips on the Red Line and approximately 18 – 19 trips by bus.

Table 22 Project Transit Trip Assignment

	Morning Peak			Evening Peak		
	In	Out	Total	In	Out	Total
Subway (Red Line)	27	7	34	11	22	33
Buses (all)	<u>13</u>	<u>5</u>	<u>18</u>	<u>6</u>	<u>13</u>	<u>19</u>
Total	40	12	52	17	35	52

The Red Line is accessible at the Harvard Square station within ¼ mile of the Project site. All trips using the subway are assumed to use the Harvard Square station. With a combined Red Line headway of 4.5 minutes, equivalent to just over 13 trains per peak hour direction, the Project would be expected to add an average of one (1) rider per train during the morning peak and approximately one (1) rider per train during the evening peak, based on the assumption that trips are distributed evenly between inbound and outbound trains.

The impacts of the Project trips to Red Line volume/capacity operations during the peak hours are presented in Table 23. The addition of Project trips is expected to result in only minor changes in volume/capacity ratios, confirming that there will be no real impact to the Red Line.

It is important to note that this analysis may not represent true peak hour experiences due to the lack of availability of 2013 data and the inability to measure the bunching of trains and irregularity of arrivals throughout the peak hours.

Table 23 Red Line Capacity Analysis – Peak Load/Peak Direction

Segment	Capacity	AM Peak					PM Peak				
		Existing Ridership	Existing V/C	Project Trips	Build Ridership	Build V/C	Existing Ridership	Existing V/C	Project Trips	Build Ridership	Build V/C
Inbound – Arriving Harvard Square	13,026	7,209	0.55	13	7,222	0.55	1,709	0.13	5	1,714	0.13
Inbound – Leaving Harvard Square	13,026	8,258	0.63	14	8,272	0.64	3,367	0.26	6	3,373	0.26
Outbound – Arriving Harvard Square	13,026	2,541	0.20	4	2,545	0.20	7,698	0.59	11	7,709	0.59
Outbound – Leaving Harvard Square	13,026	1,020	0.08	3	1,023	0.08	6,407	0.49	11	6,418	0.49

Source: MBTA Capacity/Ridership Data

Bus routes within the study area operate with approximately 6-30 minute headways during the peak hours, together providing service every 3-4 minutes along the study area street. Distribution of the new transit trips between all the bus routes over the course of the hour will result in up to one additional inbound (towards Harvard Square) rider per bus and one additional outbound rider per bus during the morning and evening peak hours.

It is expected that many of the bus transit trips will utilize the Harvard Shuttles as opposed to the MBTA busses. This will further reduce the impacts to the MBTA bus routes within the area. The addition of Project trips is expected to result in unnoticeable changes in volume/capacity ratios, confirming that there will be no real impact to the bus routes.

Pedestrian Analysis

The results of pedestrian level-of-service (PLOS) analysis at intersection crosswalks are presented in Table 24 and Table 25 for signalized and unsignalized intersections respectively during both the morning and evening peak conditions. Equations 18-5 and 18-21 from the Highway Capacity Manual 2000 have been used to determine the delays at signalized and unsignalized intersections in the study area respectively.

Pedestrian level-of-service at signalized intersections is dictated by the portion of the signal cycle dedicated to pedestrian crossings. Accordingly, increasing pedestrian volumes does not alter pedestrian level of service at signalized intersections, and no changes in PLOS are projected under build or future conditions from the 2014 Theoretical Existing condition. The presence of concurrent pedestrian phases results in good PLOS at most locations.

Within and around the Project site, pedestrian facilities will be designed to meet appropriate safety and accessibility standards.

The determination of pedestrian level-of-service at unsignalized intersections differs from signalized intersections. In practice, under Massachusetts State Law, vehicles are required to stop for pedestrians in crosswalks. However, the unsignalized intersection pedestrian LOS summary analysis has been performed as required by the TIS Guidelines using HCM equation 18-21. The PLOS results provided in Table 25 assume that the pedestrian experiences delay due to waiting in the crosswalk, and therefore provides a significantly more conservative analysis than what is actually experienced in the field.

Table 24 Signalized Intersection - Pedestrian Level of Service Summary

Intersection	Crosswalk	AM Peak Hour				PM Peak Hour			
		Existing 2014	Theoretical 2014	Build 2014	Future 2019	Existing 2014	Theoretical 2014	Build 2014	Future 2019
Eliot Street at Bennett Street	West	B	B	B	B	B	B	B	B
	North	B	B	B	B	B	B	B	B
Eliot Street at JFK Street	West	D	D	D	D	D	D	D	D
	North	D	D	D	D	D	D	D	D
	South	D	D	D	D	D	D	D	D
JFK Street at Memorial Drive	East	B	C	C	C	C	C	C	C
	West	B	C	C	C	C	C	C	C
	North	D	C	C	C	D	C	C	C
	South	D	C	C	C	D	C	C	C

Table 25 Unsignalized Intersection - Pedestrian Level of Service Summary

Intersection	Crosswalk	AM Peak Hour				PM Peak Hour			
		Existing 2014	Theoretical 2014	Build 2013	Future 2018	Existing 2014	Theoretical 2014	Build 2013	Future 2018
Site Driveway at Eliot Street	East	A	A	A	A	A	A	A	A

Bicycle Analysis

As shown in Figure 6, the study area is well served by bicycle facilities, with bike lanes provided and planned on several main corridors, including Eliot Street and JFK Street.

Conflicting vehicle turning movements were identified at study area locations with bicycle facilities or peak hour bicycle volumes greater than 10 bikes. The conflicting movements at all study area intersections are presented in Table 26 for the analysis conditions.

Table 26 Conflicting Bicycle/Vehicle Movements at Study Intersections

Intersection	Time Period	Bicycle Direction	Existing Peak Hour Bicycle Volume	Conflicting Vehicle Movements							
				Existing 2014		Theoretical 2014		Build 2014		Future 2019	
				Right Turn ^a	Left Turn ^b	Right Turn ^a	Left Turn ^b	Right Turn ^a	Left Turn ^b	Right Turn ^a	Left Turn ^b
Eliot Street at Bennett Street	AM	EB	70	0	0	0	0	0	0	0	0
		WB	12	0	0	0	0	0	0	0	0
		SB	80	75	0	75	0	75	0	94	0
	PM	EB	10	0	0	0	0	0	0	0	0
		WB	2	0	0	0	0	0	0	0	0
		SB	29	60	0	60	0	60	0	70	0
Eliot Street at Site Driveway	AM	EB	40	5	10	5	10	1	1	1	1
		WB	7	0	0	0	0	0	0	0	0
		NB	0	5	0	5	0	1	0	1	0
	PM	EB	32	5	5	5	5	1	2	1	2
		WB	4	0	0	0	0	0	0	0	0
		NB	13	5	0	5	0	2	0	2	0
JFK Street at Eliot Street	AM	EB	19	390	0	390	0	386	0	424	0
		NB	69	0	0	0	0	0	0	0	0
		SB	9	0	215	0	255	0	246	0	286
	PM	EB	35	410	0	410	0	408	0	468	0
		NB	58	0	0	0	0	0	0	0	0
		SB	18	0	145	0	190	0	187	0	214
JFK Street at Memorial Drive	AM	EB	86	135	0	135	0	135	0	141	0
		WB	56	170	0	170	0	170	0	181	0
		NB	74	105	0	190	0	190	0	196	0
		SB	41	10	0	10	0	10	0	10	0
	PM	EB	54	160	0	160	0	160	0	171	0
		WB	68	200	0	200	0	200	0	209	0
		NB	70	50	0	140	0	140	0	148	0
		SB	40	25	0	25	0	25	0	27	0

a advancing volume
b opposing volume

Transportation Demand Management Plan

Harvard University currently supports transportation demand management (TDM) programs to reduce automobile trips generated by campus users. The *Harvard University 2013 Town Gown Report for the City of Cambridge* presents the TDM programs supported by the University. Additionally, the *Harvard University Cambridge Campus Parking and Transportation Demand Management Plan 2013 Annual Progress Report* presents the monitoring of the TDM programs and how each program has grown and improved since the start of the PTDM process in 2003. The following is a general overview of the TDM programs sponsored by Harvard:

Transit Pass Program

- Offers 50% MBTA monthly pass subsidy to commuters;
- Offers pre-tax savings on purchase of commuter and private transit passes, parking at MBTA lots and garage; and,
- Offers the Emergency Ride Home Program – open to all green commuters.

Ridesharing/Car-Sharing

- Offers discounted Zipcar memberships for University affiliates 18 and older;
- Provides a total of 32 vehicle spaces for Zipcar;
- Offers carpool partner matching and carpool registration;
- Offers discounted and preferential parking for carpools and vanpools;
- Provides assistance with vanpool formation; and,

Bicycles

- Supports Hubway Regional Bike Sharing program;
- Distributes free one-day Hubway membership to all undergraduates at the beginning of the school year;
- Offers Hubway Champion Level discount annual memberships of \$50 to all members of the Harvard community;
- Provides a Bike Commuter Benefit for the reimbursement of purchase, repair, maintenance, and storage of bicycles;
- Offers Harvard affiliated bike registration program in conjunction with the Harvard University Police Department;
- Distributes information on bicycle routes and general bicycle safety; and,
- Provides an updated campus bicycle rack map.

Walking

- Manages Walk-to-Work programs and information; and,
- Distributes Harvard Walks Maps to members of the Harvard Community.

Shuttle Services

- Provides the Harvard Community with private shuttle services to Cambridge and surrounding campus areas; and,
- Promotes iPhone application showing real time location of Harvard Shuttle fleet vehicles.

4

Planning Board Special Permit Criteria

Consistent with Section IV, “Guidelines for Presenting Information to the Planning Board” of the City of Cambridge “Transportation Impact Study Guidelines,” Sixth Revision dated November 28, 2011; this section presents a summary of potential impacts to the transportation network as a result of the proposed Project.

According to the guidelines, exceeding one or more of the criteria shall be indicative of a *potentially* adverse impact on City’s transportation network; however, the Planning Board will consider mitigation efforts, their anticipated effectiveness, and other information that identifies a reduction in adverse traffic impacts.

Criterion A – Project Vehicle Trip Generation

Table A-1 presents the Project vehicle trip generation criterion. Project vehicle trip generation is based on ITE trip rates, adjusted for local mode split and vehicle occupancy rates as discussed previously.

The Project is not expected to exceed the criteria for Project vehicle trip generation established by the Planning Board under the Build program.

Table A-1 Project Vehicle Trip Generation

Time Period	Criteria (trips)	Build	Exceeds Criterion?
Weekday Daily	2,000	138	No
Weekday AM Peak Hour	240	25	No
Weekday PM Peak Hour	240	25	No

Criterion B – Vehicular LOS at Signalized Intersections

The criteria for a project’s impact to traffic operations at signalized intersections are summarized in Table B-1 below. These criteria are evaluated for each signalized study-area intersection and presented in Tables B-2.

Table B-1 Criterion: Vehicular Level of Service

Existing	With Project
VLOS A	VLOS C
VLOS B, C	VLOS D
VLOS D	VLOS D or 7% roadway volume increase
VLOS E	7% roadway volume increase
VLOS F	5% roadway volume increase

Table B-2 Vehicular Level of Service

Intersection	AM Peak Hour				PM Peak Hour			
	Existing Condition	Build Condition	Traffic Increase	Exceeds Criterion?	Existing Condition	Build Condition	Traffic Increase	Exceeds Criterion?
Eliot Street at Bennett Street	B	B	0.4%	N	B	B	0.1%	N
Eliot Street at JFK Street	C	C	0.2%	N	C	C	0.1%	N
JFK Street at Memorial Drive	D	D	0.0%	N	D	D	0.1%	N

Project-induced vehicle level-of-service criteria are not exceeded for any intersection.

Criterion C – Traffic on Residential Streets

This criterion considers the increase of traffic on residential streets generated by the proposed Project. The threshold for this criterion is dependent on the existing street volume and the amount of residential land use frontage. None of the study-area roadways analyzed have first floor residential frontage comprising more than 1/3 of the total street frontage. Accordingly none of the segments exceed the criteria of vehicles on residential streets.

Criterion D – Lane Queue

The criteria for a project’s impact to queues at signalized intersections are summarized in Table D-1 below. These criteria are evaluated for each lane group at study-area signalized intersections and presented in Table D-2.

Table D-1 Criterion: Vehicular Queues at Signalized Intersections

Existing	With Project
Under 15 vehicles	Under 15 vehicles, or 15+ vehicles with an increase of 6 vehicles
15 or more vehicles	Increase of 6 vehicles

Table D-2 Length of Vehicle Queues at Signalized Intersections

Intersection	Approach	AM Peak Hour			PM Peak Hour		
		Theoretical Existing	Build	Exceeds Criterion?	Theoretical Existing	Build	Exceeds Criterion?
Eliot Street at Bennett Street	EBT	1	1	N	1	1	N
	WBT	3	3	N	2	2	N
	SBL	2	2	N	2	2	N
	SBLR	2	2	N	2	2	N
Eliot Street at JFK Street	EBL	1	1	N	2	2	N
	EBR	3	3	N	3	3	N
	NBLT	5	5	N	5	5	N
	NBT	5	5	N	5	5	N
JFK Street at Memorial Drive	EBT	7	7	N	5	5	N
	EBTR	7	7	N	5	5	N
	WBT	4	4	N	7	7	N
	WBTR	4	4	N	7	7	N
	NBTR	10	10	N	11	11	N
	SBTR	9	9	N	11	10	N

While some increases in vehicle queuing at study intersections will result from the additional trips generated by the proposed Project under the Build analysis, the lane queue criterion is not exceeded in any instance.

Criterion E – Pedestrian and Bicycle Facilities

The pedestrian and bicycle criterion has the following three components:

a. Pedestrian Delay

Pedestrian delay is a measure of the pedestrian crossing delay on a crosswalk during the peak hour as determined by the pedestrian level of service analysis in the HCM 2000.

Table E-1 presents the indicators for this criterion. **Table E-2** presents the evaluation of PLOS criteria for each crosswalk at study area intersections under 2014 Theoretical Existing and 2014 Build Conditions.

Table E- 1 Criterion: Pedestrian Level-of-Service Indicators

Existing	With Project
PLOS A	PLOS A
PLOS B	PLOS B
PLOS C	PLOS C
PLOS D	PLOS D or increase of 3 seconds
PLOS E, F	PLOS D

Table E-2 Pedestrian Level-of-Service Summary

Intersection	Crosswalk	AM Peak Hour			PM Peak Hour		
		Existing 2014	Build 2014	Exceed Criterion?	Existing 2014	Build 2014	Exceeds Criterion?
Eliot Street at Bennett Street	West	B	B	N	B	B	N
	North	B	B	N	B	B	N
Eliot Street at JFK Street	West	D	D	N	D	D	N
	North	D	D	N	D	D	N
	South	D	D	N	D	D	N
JFK Street at Memorial Drive	East	C	C	N	C	C	N
	West	C	C	N	C	C	N
	North	C	C	N	C	C	N
	South	C	C	N	C	C	N

The PLOS criteria are not exceeded during the morning and evening peak hours under Build conditions.

b. Safe Pedestrian Facilities

The Project site is well connected to existing pedestrian sidewalks along surrounding streets providing access to the Project.

Within the Project site, pedestrian facilities will be designed to meet appropriate safety and accessibility standards.

c. Safe Bicycle Facilities

As shown in **Figure 6**, the area around the Project is well-served by several multi-use/bicycle paths and bicycle lanes. Multi-use/bicycle paths are distinguished by their physical separation from vehicular traffic and by the various types of modes that utilize them. Bike lanes are located on all the study area roadways except along JFK Street between Eliot Street and Solders Field Road where the installation of bike lanes have been planned.

Currently, HKS provides 99 uncovered bicycle parking spaces within the site’s courtyard and along the perimeter of the site as shown in Figure C. The Project will provide a total of 204 bicycle spaces (140 short-term and 64 long-term spaces) almost doubling the bicycle parking capacity on the campus.

Table E-3 summarizes the presence of pedestrian and bicycle facilities for all street adjacent to the Project site.

Table E-3 Pedestrian and Bicycle Facilities

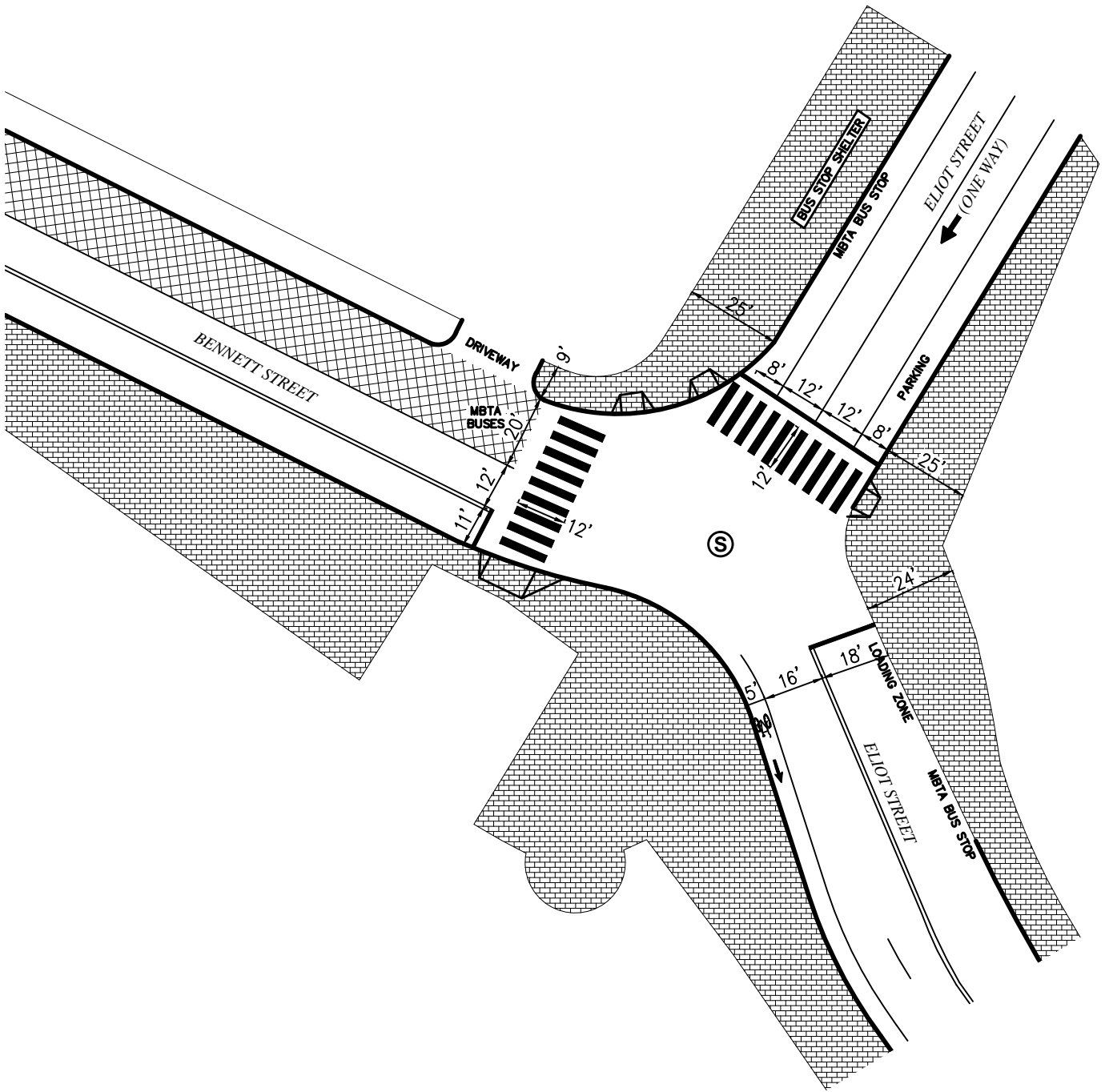
Adjacent Street	Link (between)	Sidewalks or Walkways Present?	Exceeds Criteria?	Bicycle Facilities or Right of Ways Present?	Exceeds Criteria?
Eliot Street	Bennett Street and JFK Street	Y	N	Y	N
JFK Street	Eliot Street and Memorial Drive	Y	N	Y	N

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■

TIS Figures

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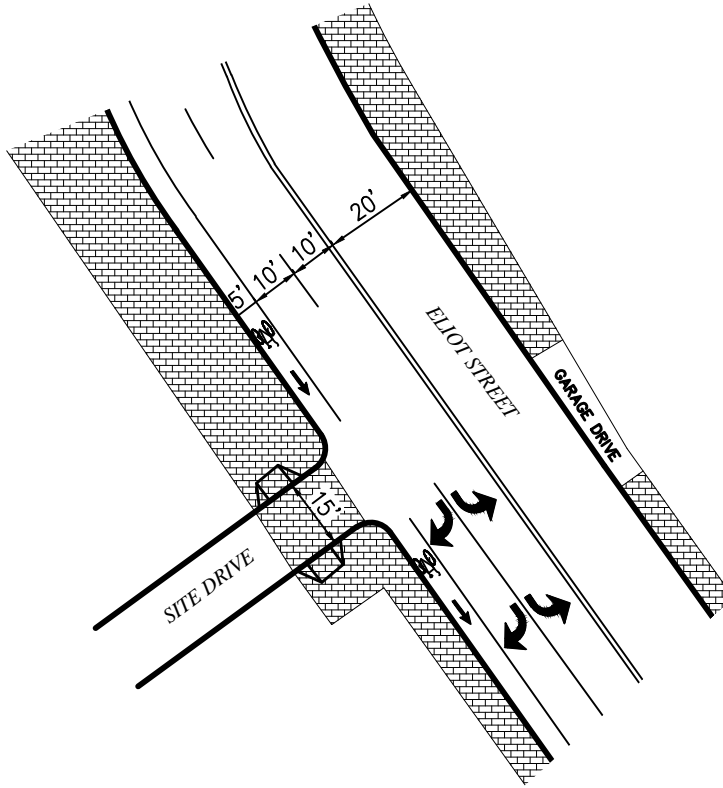


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Existing Condition Intersection Geometry Eliot Street at Bennett Street Figure 1.b.1



Harvard Kennedy TIS
Cambridge, MA



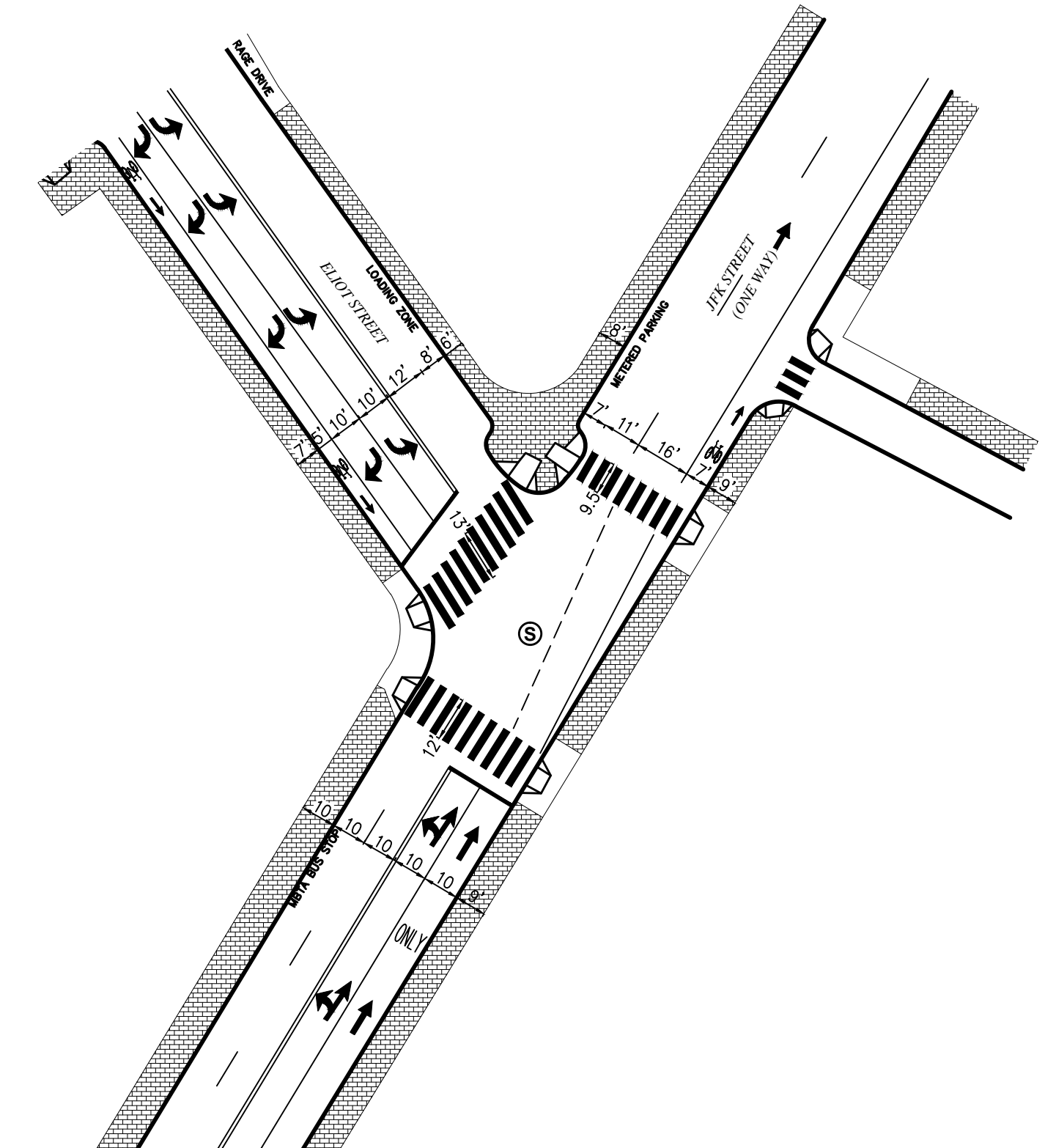
Vanasse Hangen Brustlin, Inc.

Existing Condition Intersection Geometry Figure 1.b.2
Eliot Street at Site Drive



Harvard Kennedy School TIS
Cambridge, MA

Ⓢ Traffic Signal

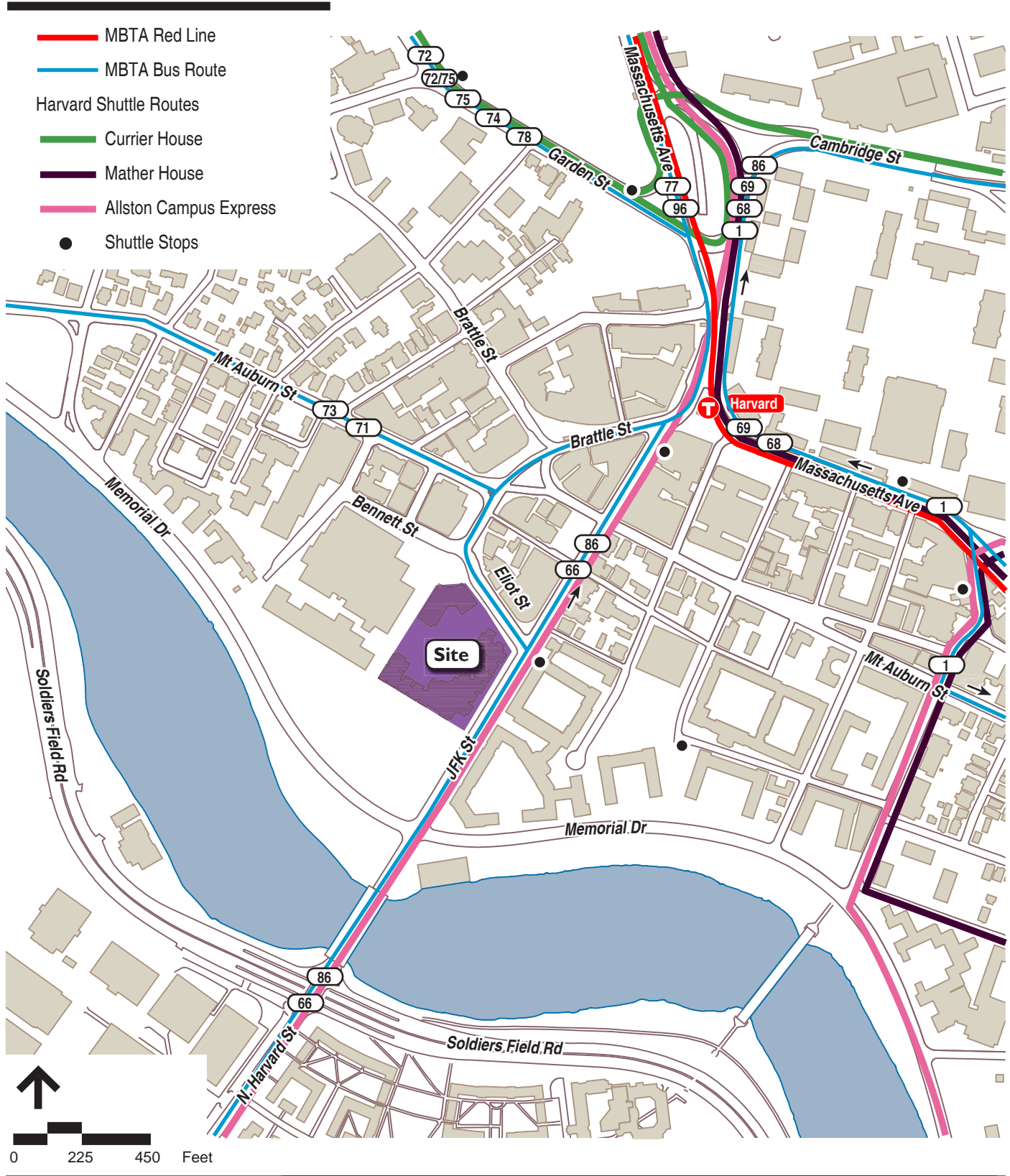


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Existing Condition Intersection Geometry Figure 1.b.3
Eliot Street at JFK Street



Harvard Kennedy School TIS
Cambridge, MA

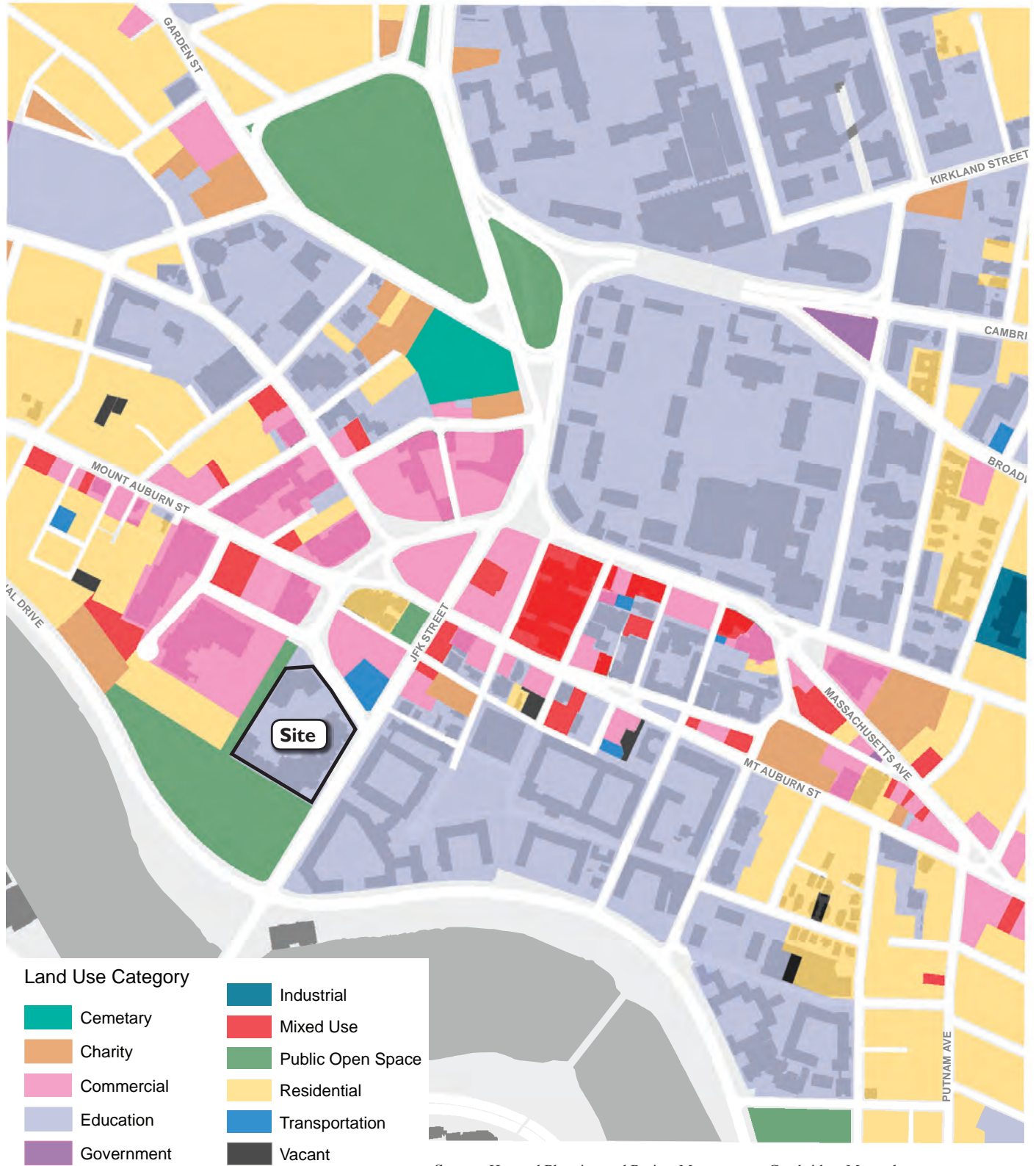


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Public Transportation Map

Figure 1.d

Harvard Kennedy School TIS
Cambridge, MA



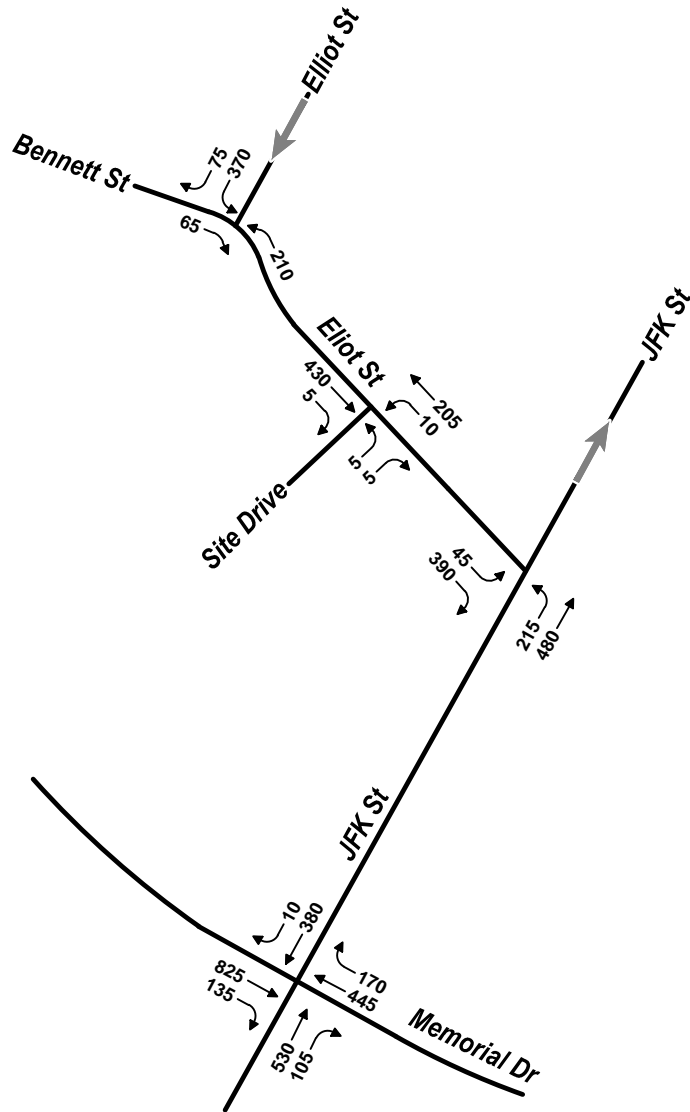
Source: Harvard Planning and Project Management, Cambridge, Massachusetts

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Land Use Map

Figure 1.e

Harvard Kennedy School TIS
Cambridge, MA



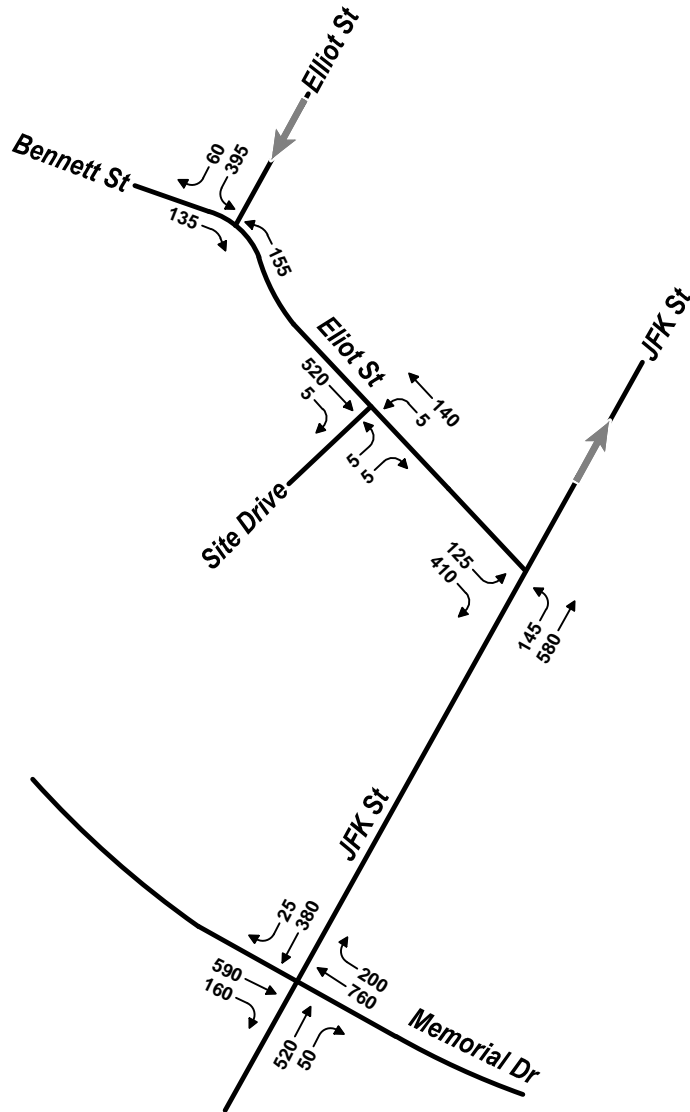
Note: Counts on April 2, 2014

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Not to Scale

Vanasse Hangen Brustlin, Inc.

2014 Existing Conditions
AM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.1
8:30 AM - 9:30 AM



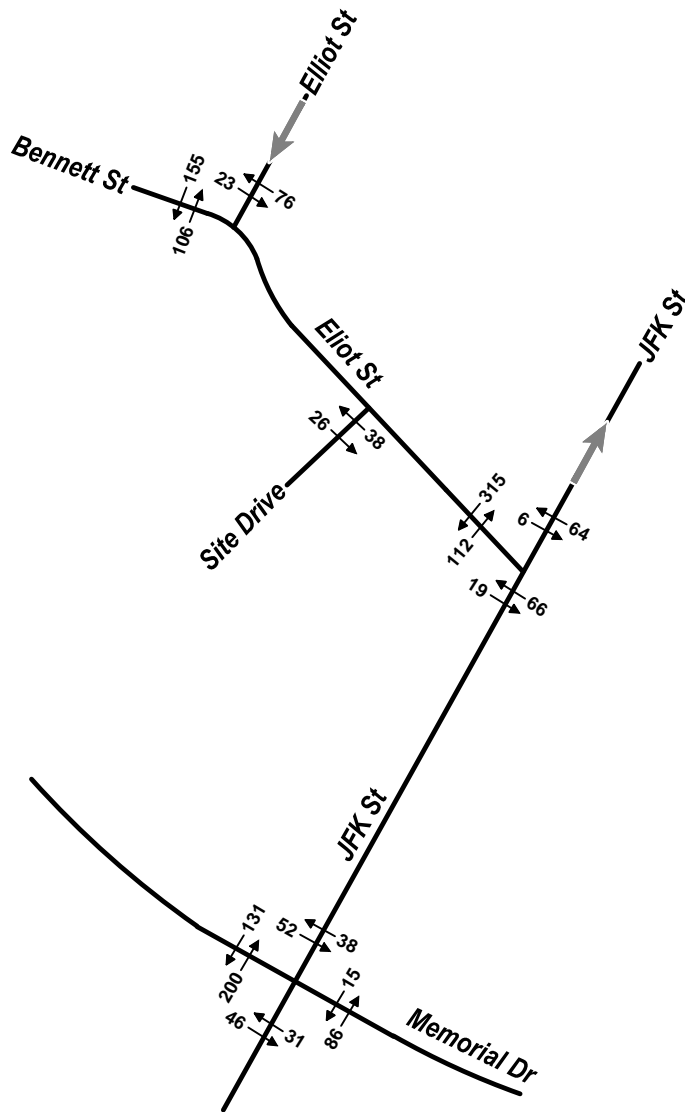
Note: Counts on April 2, 2014

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Not to Scale

Vanasse Hangen Brustlin, Inc.

2014 Existing Condition
PM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.2
5:00 PM - 6:00 PM



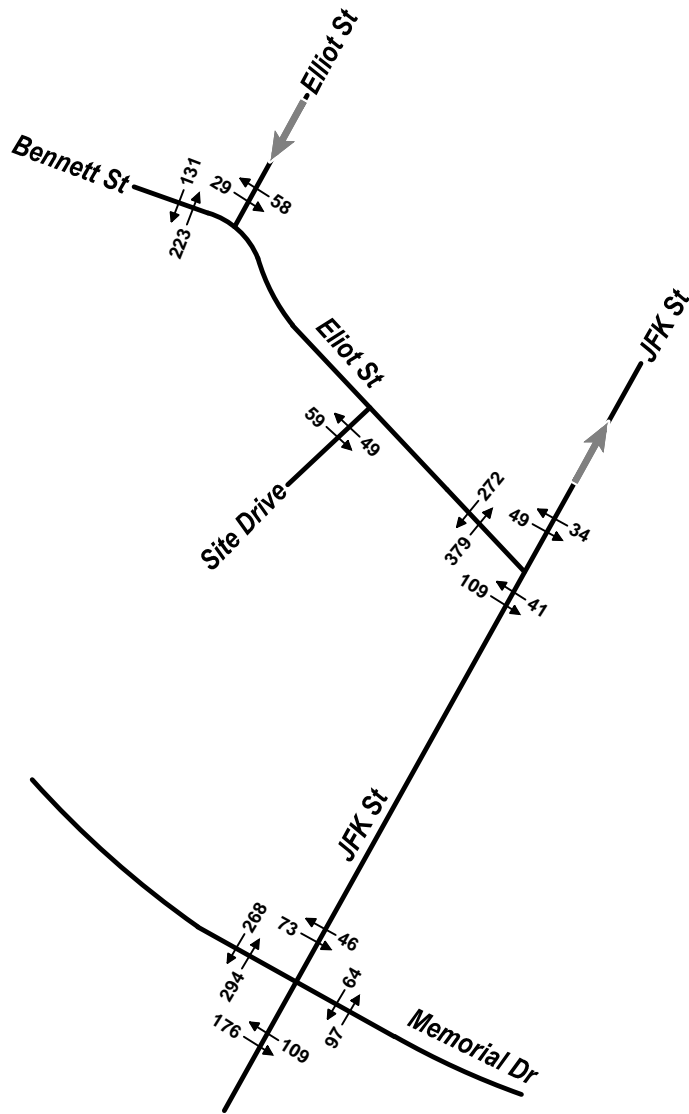
Note: Counts on April 2, 2014



Vanasse Hangen Brustlin, Inc.

2014 Existing Condition
AM Peak Hour Pedestrian Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.3
8:30 AM - 9:30 AM



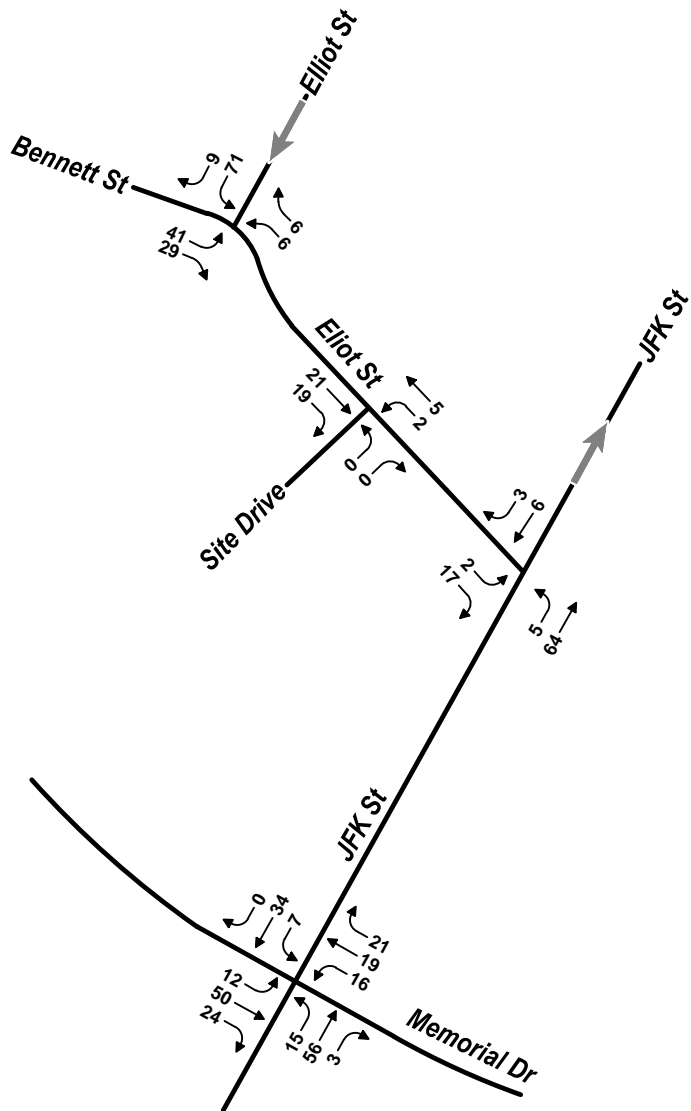
Note: Counts on April 2, 2014



Vanasse Hangen Brustlin, Inc.

2014 Existing Condition
PM Peak Hour Pedestrian Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.4
5:00 PM - 6:00 PM



Note: Counts on April 2, 2014

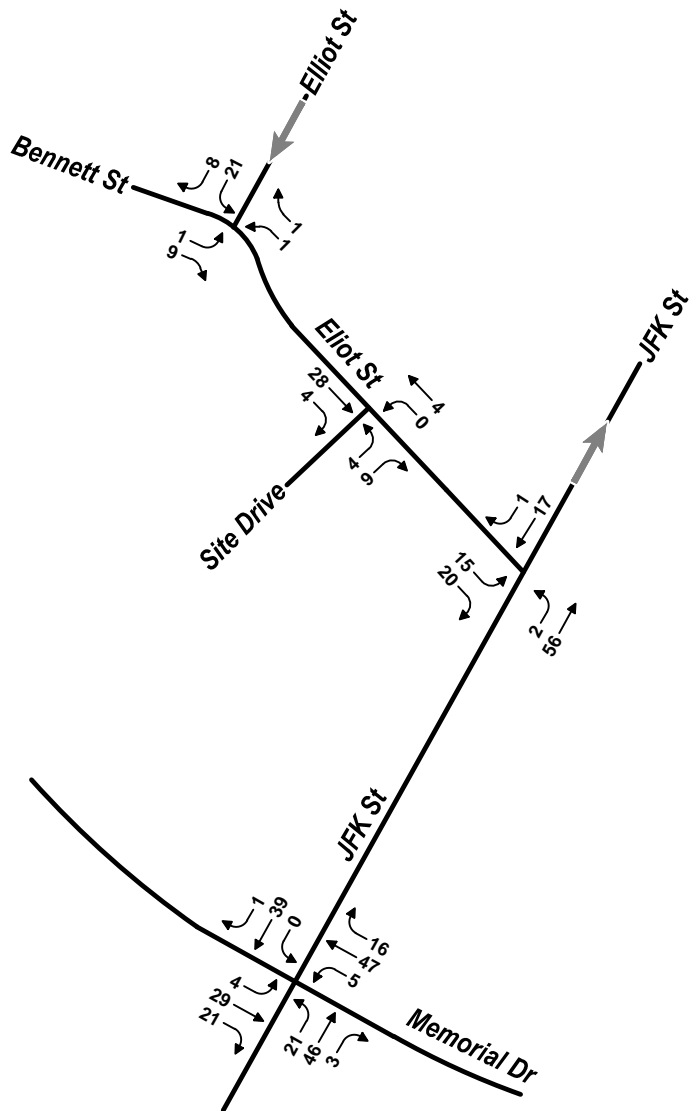


Not to Scale

Vanasse Hangen Brustlin, Inc.

2014 Existing Condition
AM Peak Hour Bicycle Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.5
8:30 AM - 9:30 AM



Note: Counts on April 2, 2014

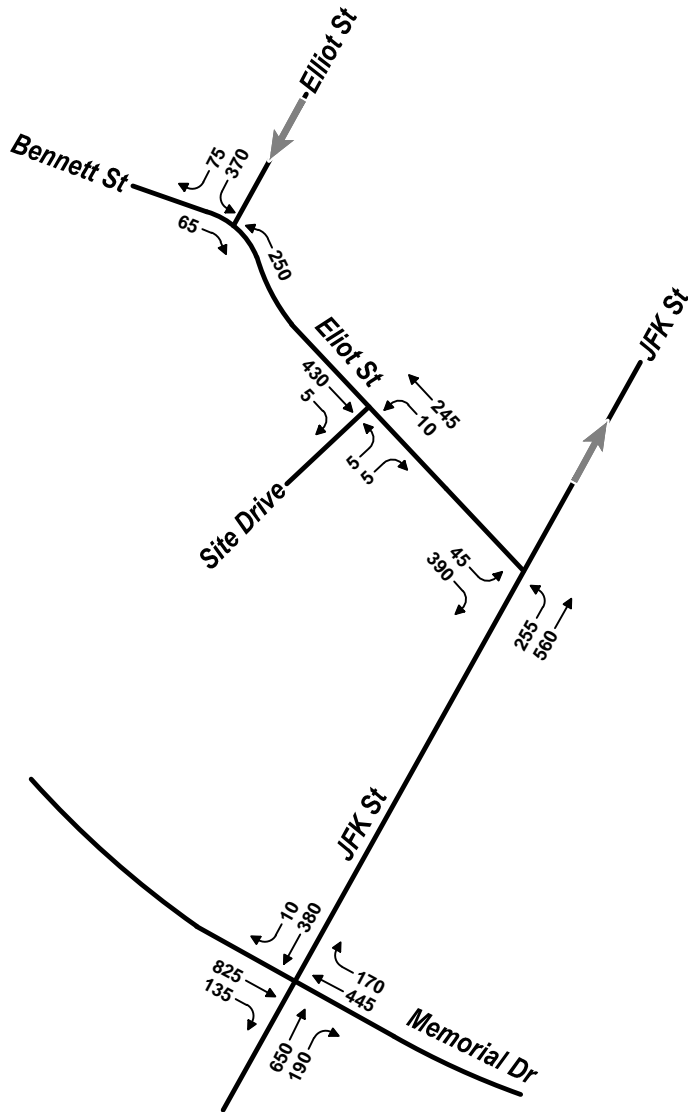


Not to Scale

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2014 Existing Condition
PM Peak Hour Bicycle Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.6
5:00 PM - 6:00 PM

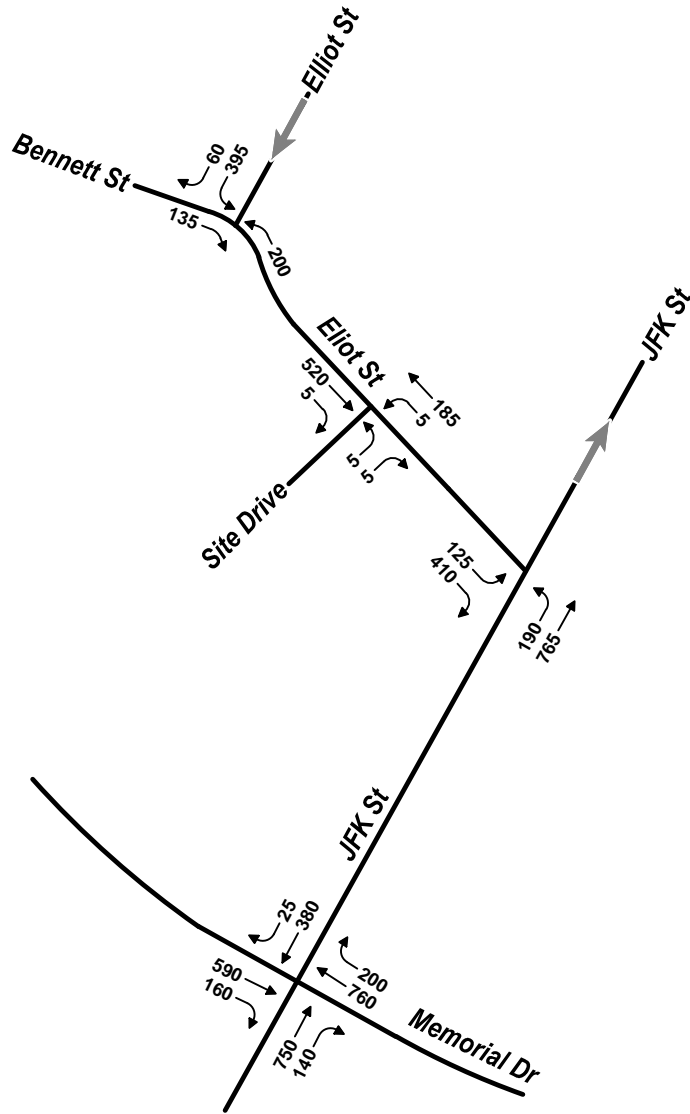


↑ Not to Scale

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2014 Theoretical Existing Conditions
AM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.7
8:30 AM - 9:30 AM

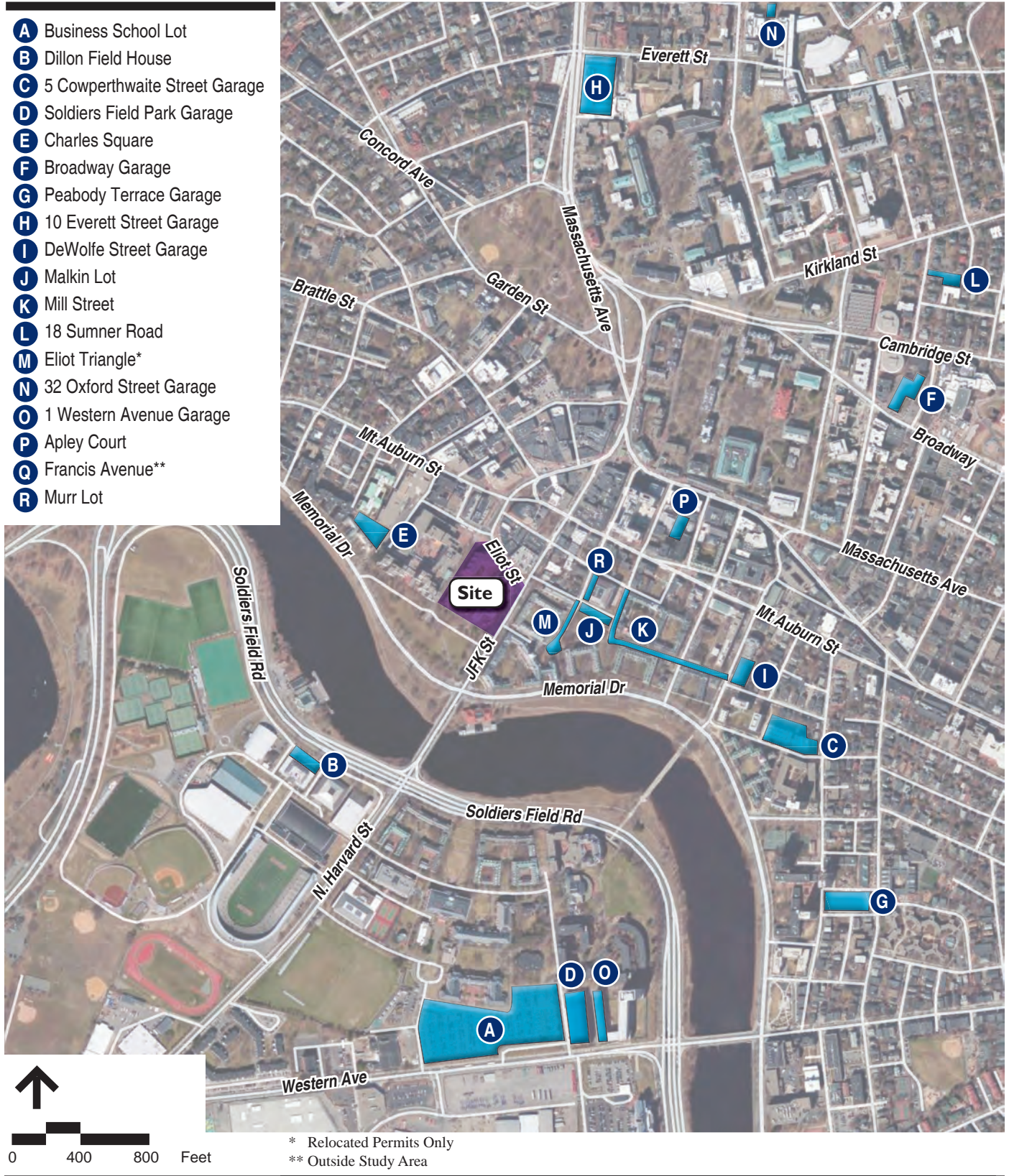


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Vanasse Hangen Brustlin, Inc.

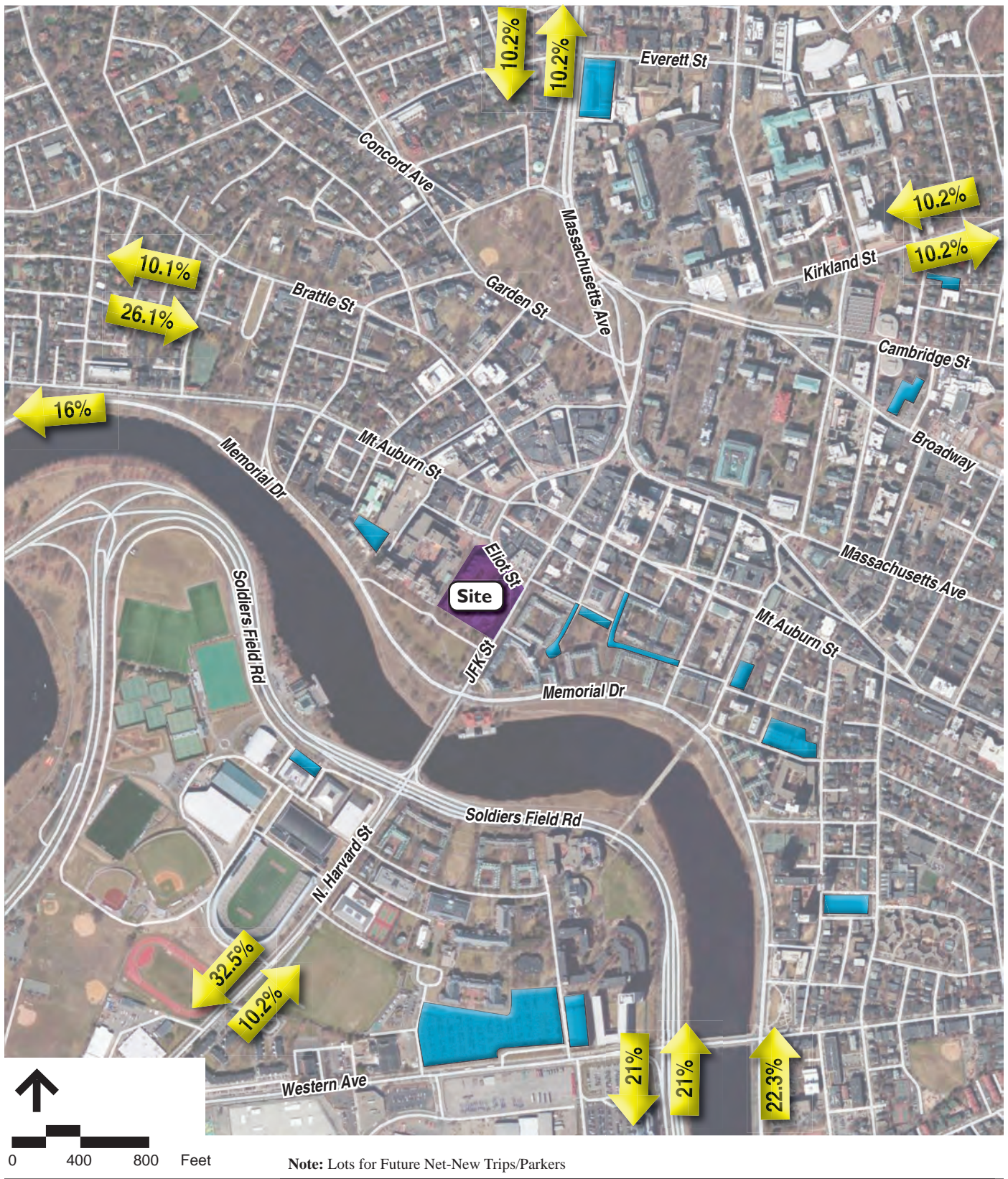
2014 Theoretical Existing Condition
PM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 2.c.8
5:00 PM - 6:00 PM



Harvard Kennedy School
 Parking Locations
 Harvard Kennedy School TIS
 Cambridge, MA

Figure 3.a.1

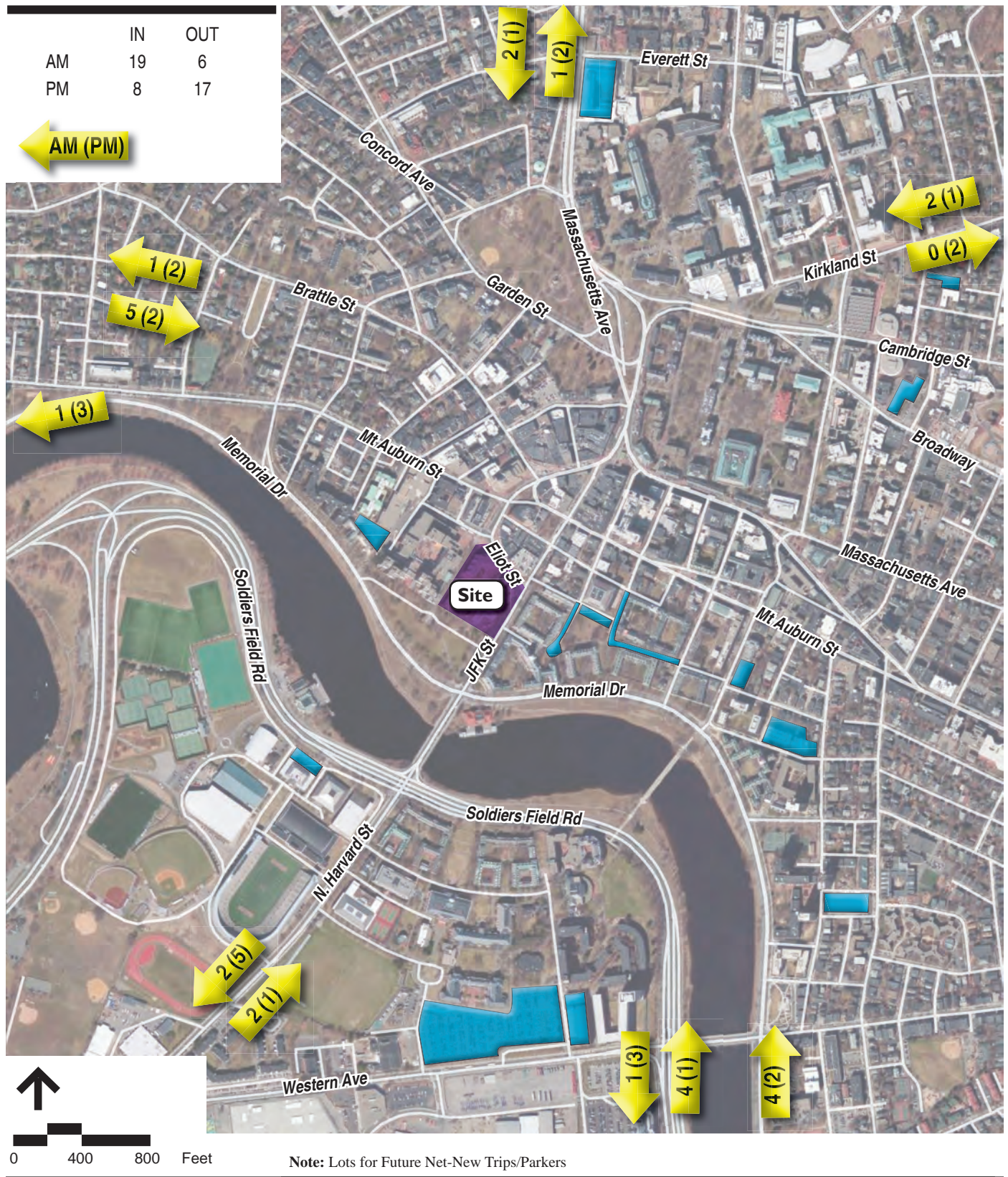


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HKS Regional Distribution

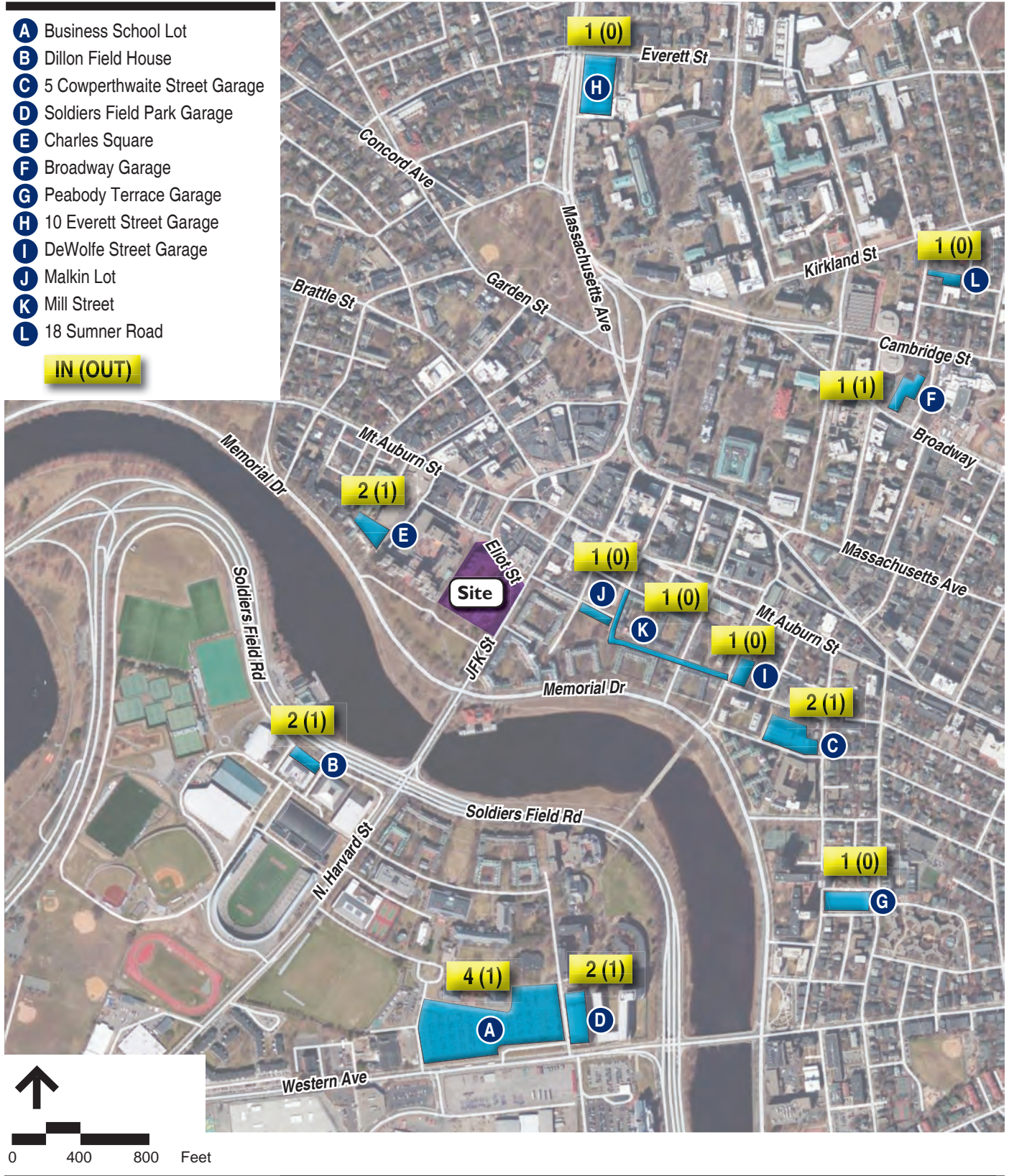
Figure 3.a.2.a

Harvard Kennedy School TIS
Cambridge, MA



Project Generated Trips
 Regional Distribution
 Harvard Kennedy School TIS
 Cambridge, MA

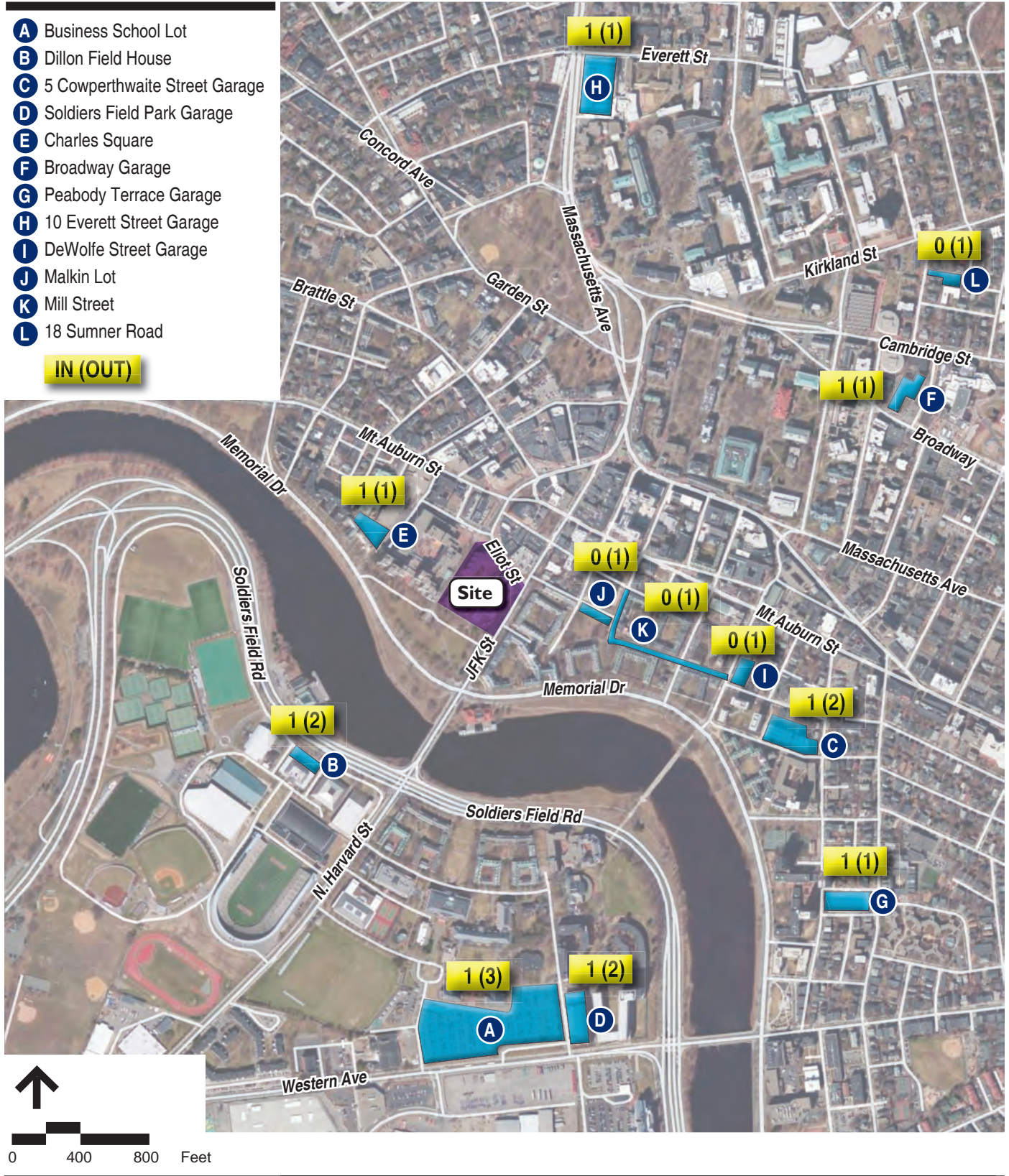
Figure 3.a.2.b



Vanasse Hangen Brustlin, Inc.

Project Generated Trips
 In/Out Parking Locations
 Morning Peak Hour
 Harvard Kennedy School TIS
 Cambridge, MA

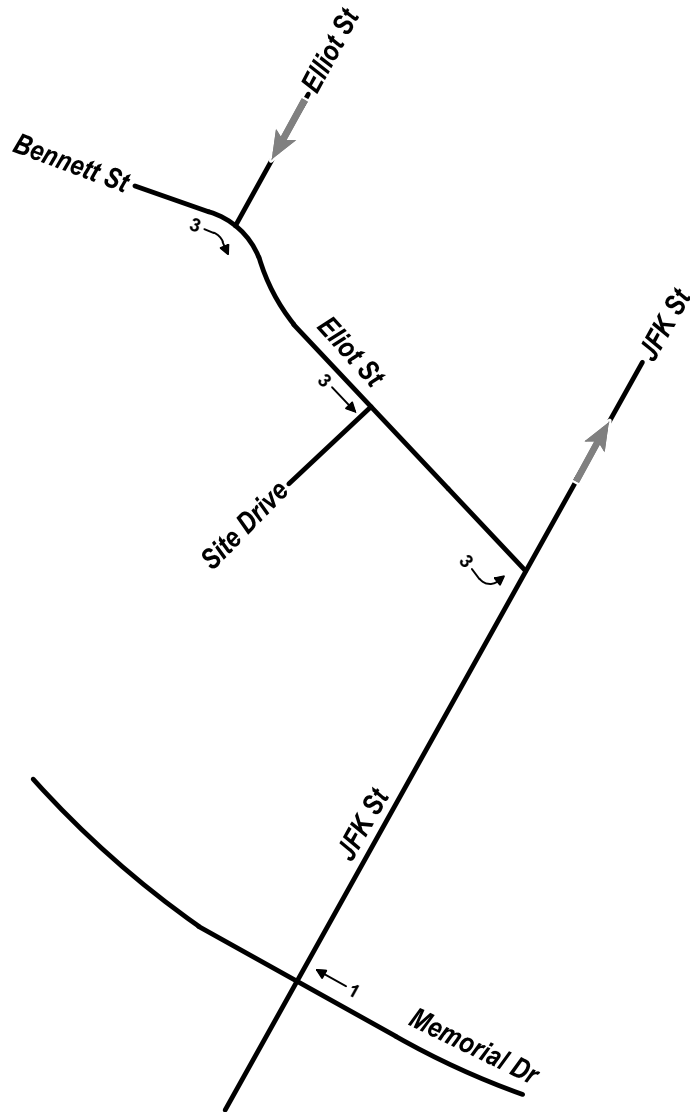
Figure 3.a.3



Vanasse Hangen Brustlin, Inc.

Project Generated Trips
 In/Out Parking Locations
 Evening Peak Hour
 Harvard Kennedy School TIS
 Cambridge, MA

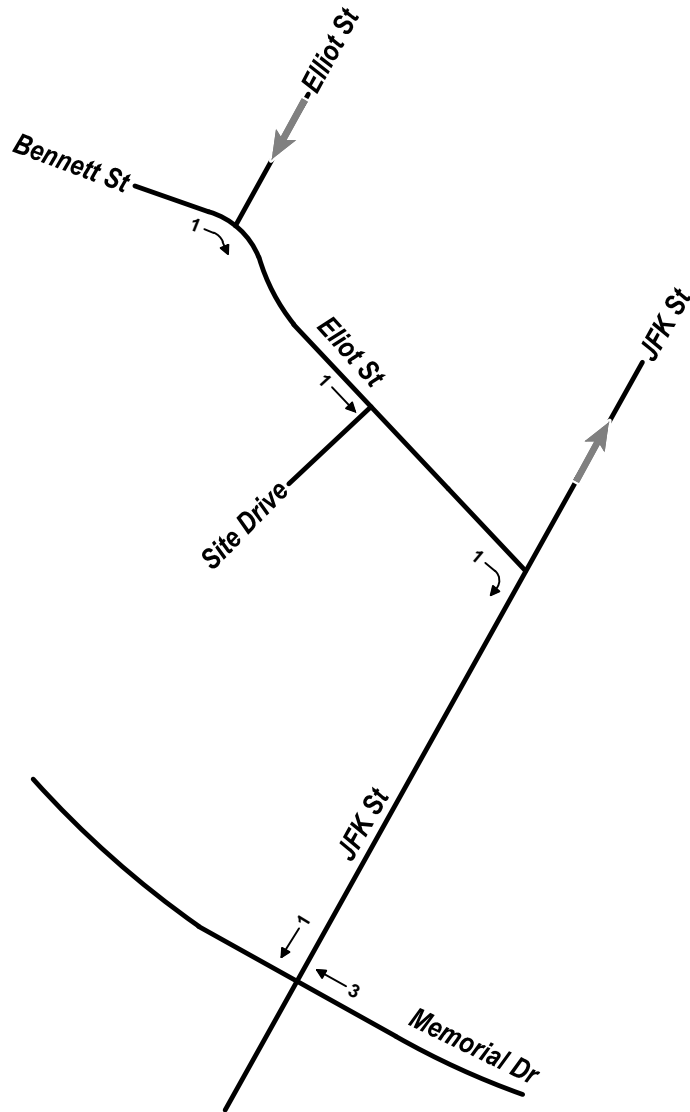
Figure 3.a.4



Vanasse Hangen Brustlin, Inc.

Project Generated
AM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

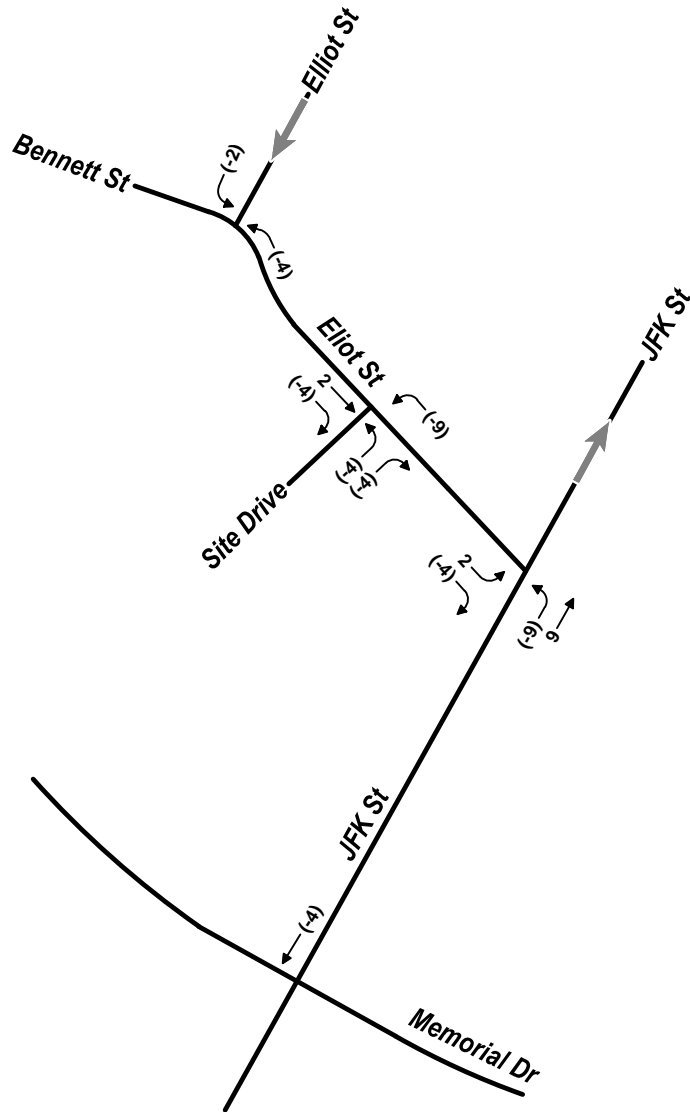
Figure 3.a.5
8:30 AM - 9:30 AM



Vanasse Hangen Brustlin, Inc.

Project Generated
PM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

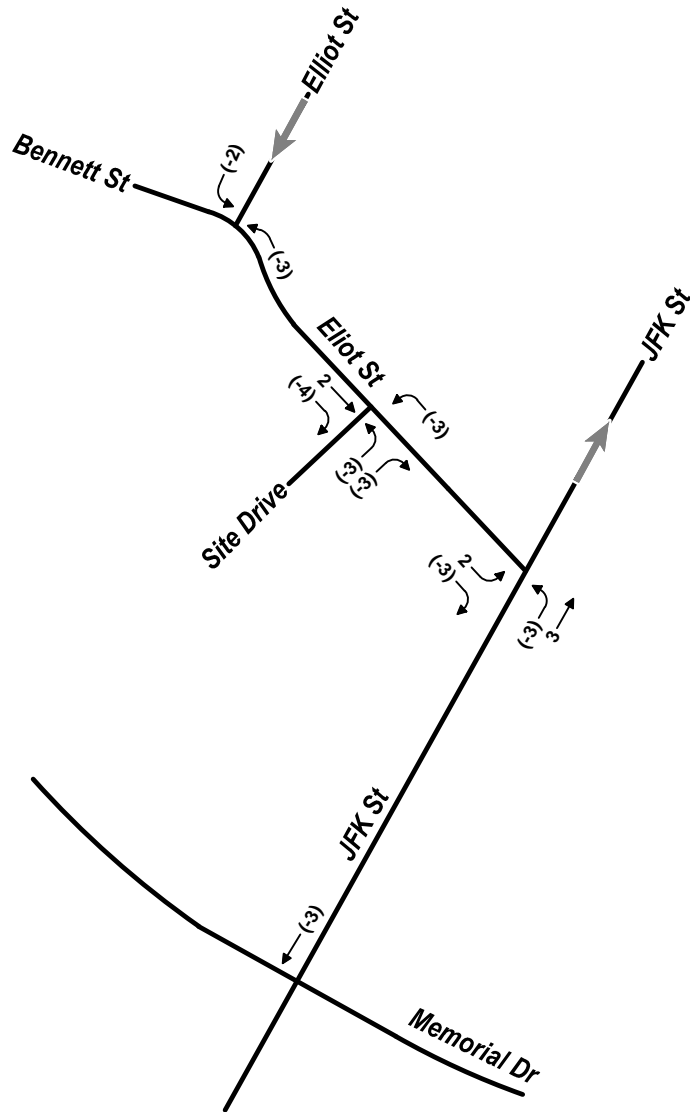
Figure 3.a.6
5:00 PM - 6:00 PM



Vanasse Hangen Brustlin, Inc.

Relocated HKS Vehicle Trips
AM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

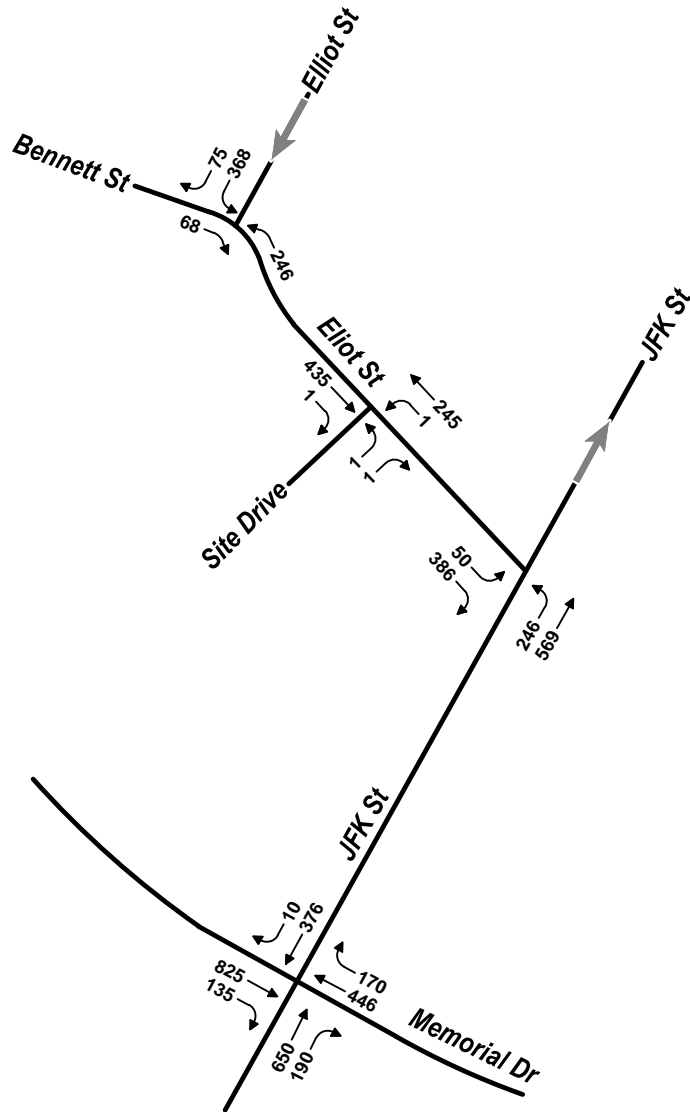
Figure 3.a.7
8:30 AM - 9:30 AM



Vanasse Hangen Brustlin, Inc.

Relocated HKS Vehicle Trips
PM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 3.a.8
5:00 PM - 6:00 PM

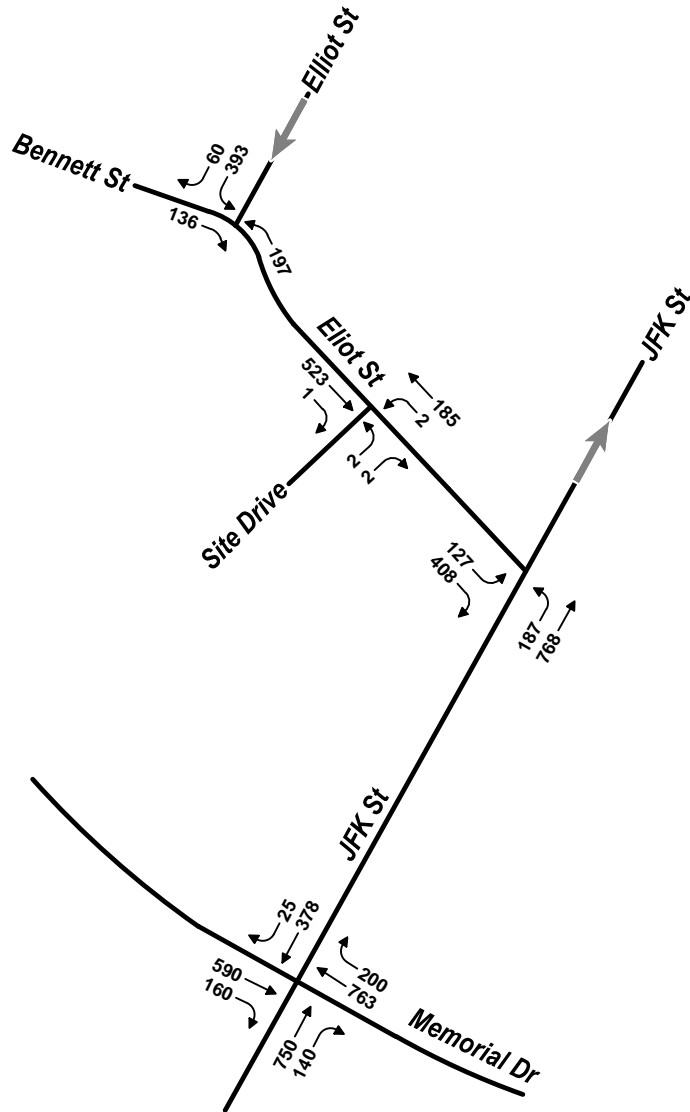


↑
Not to Scale

Vanasse Hangen Brustlin, Inc.

2014 Build Conditions
AM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 5.b.1
8:30 AM - 9:30 AM

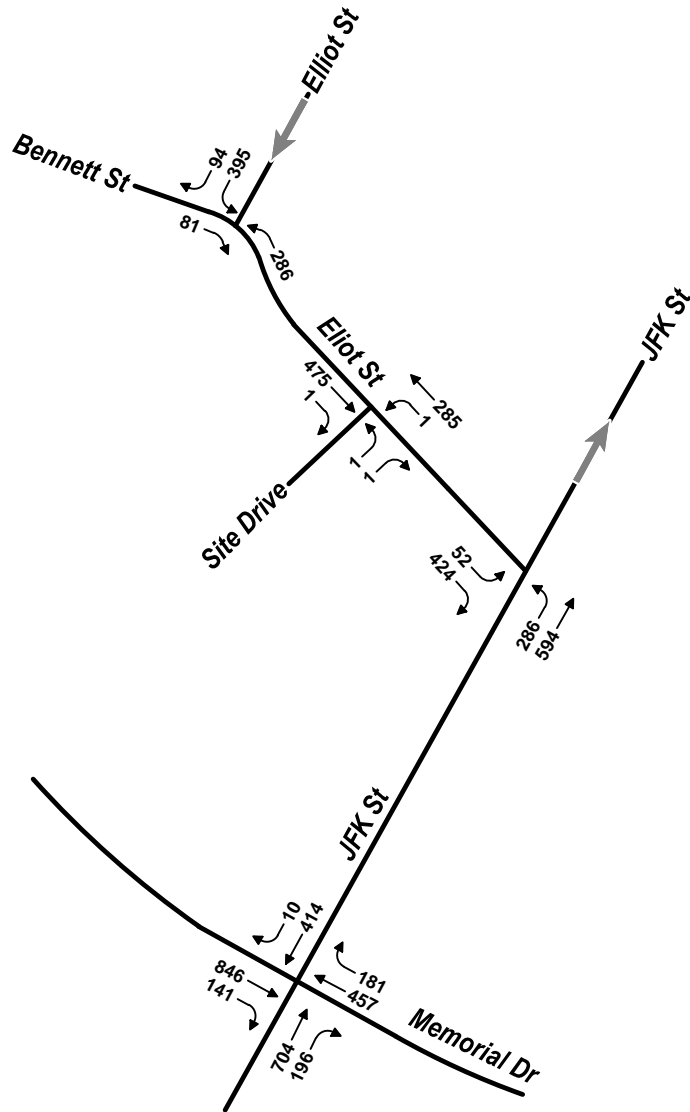


↑
Not to Scale

Vanasse Hangen Brustlin, Inc.

2014 Build Condition
PM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

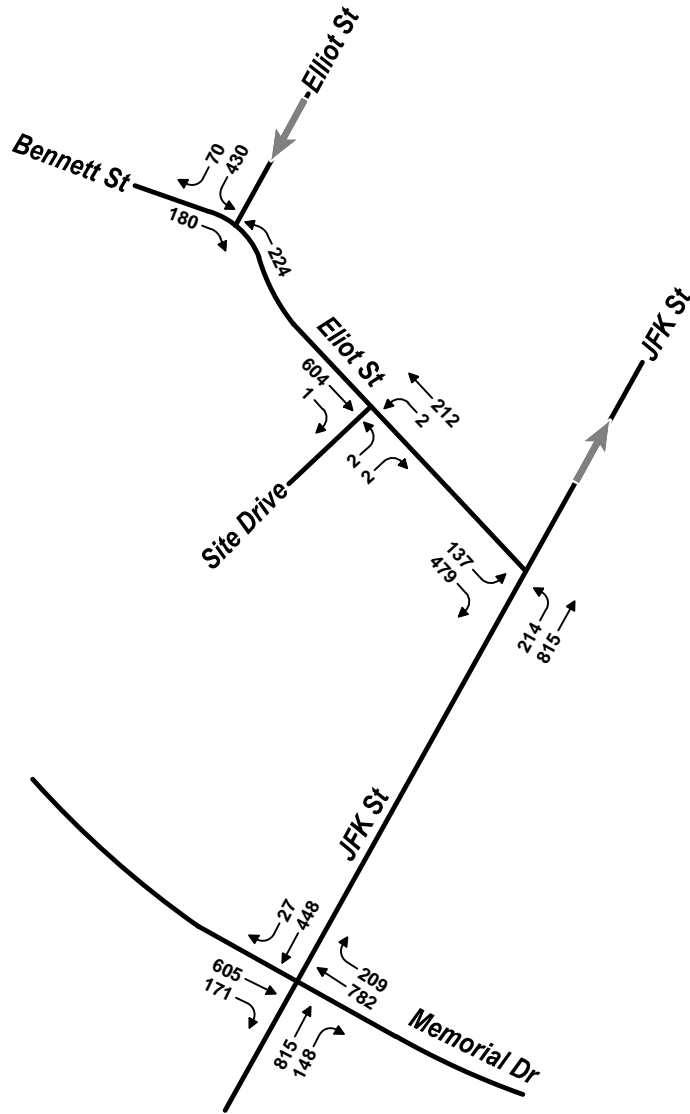
Figure 5.b.2
5:00 PM - 6:00 PM



Vanasse Hangen Brustlin, Inc.

2019 Future Conditions
AM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 5.d.1
8:30 AM - 9:30 AM

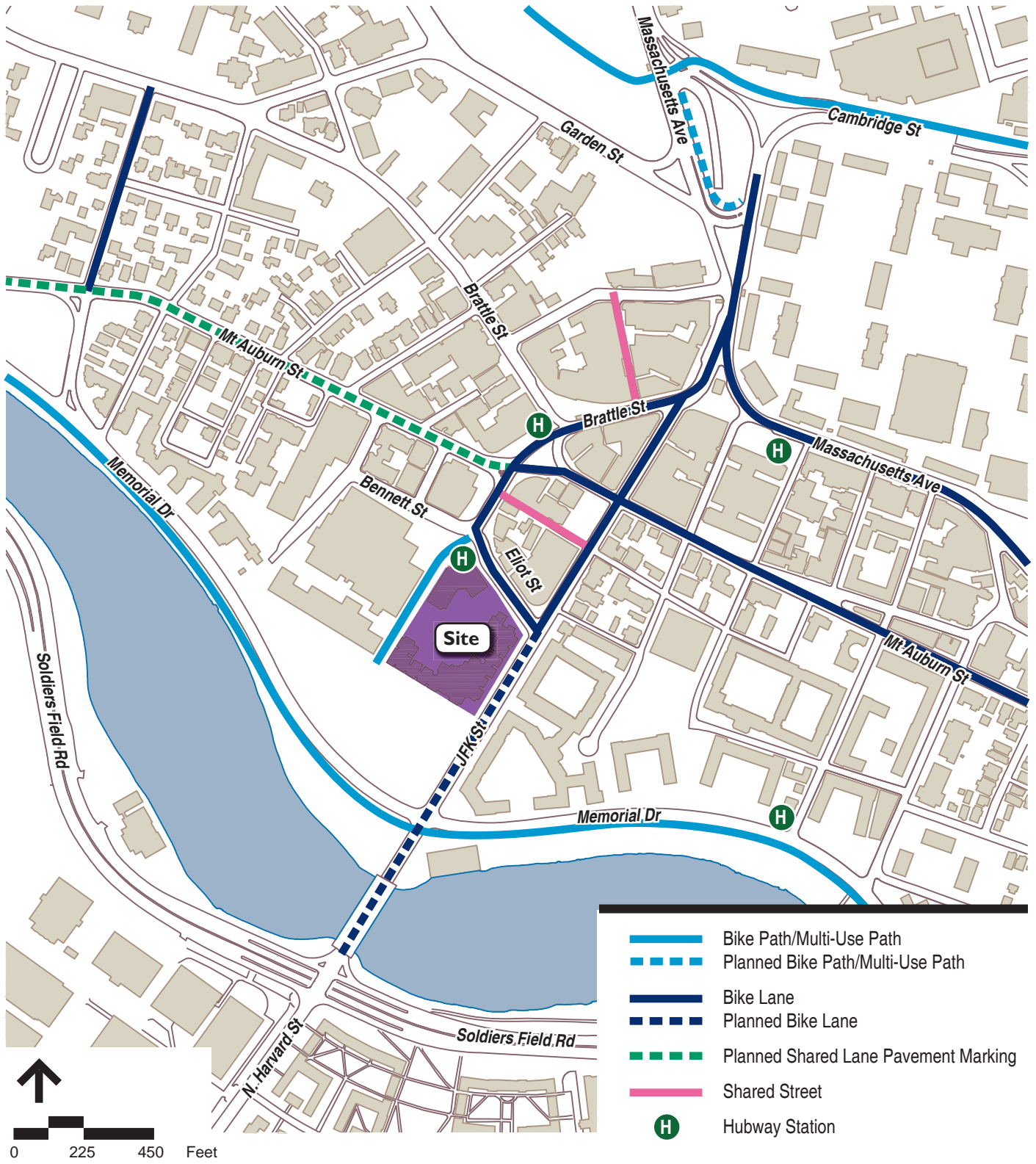


↑
Not to Scale

Vanasse Hangen Brustlin, Inc.

2019 Future Condition
PM Peak Hour Traffic Volumes
Harvard Kennedy School TIS
Cambridge, MA

Figure 5.d.2
5:00 PM - 6:00 PM



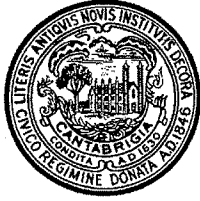
Vanasse Hangen Brustlin, Inc.

Bicycle Facilities

Figure 6

Harvard Kennedy School TIS
Cambridge, MA

**Harvard University's
Kennedy School of Government
Transportation Impact Study
Technical Appendix
Scoping Letter**



CITY OF CAMBRIDGE
Traffic, Parking and Transportation
344 Broadway
Cambridge, Massachusetts 02139

www.cambridgema.gov/traffic

Susan E. Clippinger, Director
Brad Gerratt, Deputy Director

Phone: (617) 349-4700
Fax: (617) 349-4747

May 22, 2014

Ellen Donohoe
Project Manger
Vanasse Hangen Brustlin, Inc.
99 High Street
Boston, MA 02110-2354

RE: Harvard Kennedy School of Government Expansion

Dear Ellen,

Below is your Traffic Impact Study (TIS) scope for the proposed Harvard Kennedy School of Government Expansion project located at 79 John F. Kennedy Street. The proposed project consists of approximately 91,200 sf of administrative offices and classroom space. It proposes to remove the existing 13 on-site parking spaces. Parking will be provided using the existing University parking pool. No new parking will be constructed. Off-street loading docks will be provided with access/egress off Eliot Street as the campus is served today. No new curb cuts are proposed.

The TIS shall comply with the Cambridge Traffic, Parking and Transportation Department's TIS Guidelines. It should be printed double sided and include the following information:

1. Existing Conditions.

- Provide existing site plan(s), including property lines, sidewalks on both sides of JFK Street and Eliot Street, curb regulations, sidewalk and travel lanes widths, pavement markings, curb cuts, street trees, street furniture, bus stops, bicycle racks, signs, poles etc.
- Describe existing site conditions, including square footage, use, number of classrooms, driveways, loading, parking, doorways, trash pick-up, bicycle accommodations and utilization.
- Describe the Harvard Kennedy School of Government's existing number of employees by type (faculty, staff, fellows, administration, executive education personnel, full and part time). Provide student enrollment for at least the past two years. Indicate employee density.
- Describe existing traffic, public transit, bicycle and pedestrian conditions in the study area.

2. Project Description.

- Describe the proposed project, including square footage, use, number of net new classrooms, number of net new employees, staff, fellows and students by type (full-time, part-time, etc.).
- Provide project site plan(s) showing the proposed project in heavy black over existing conditions in light gray.

3. Data collection.

- Provide vehicle turning movement counts (TMCs) at the following study area intersection, including bicycle and pedestrian counts.
 1. Eliot Street/Bennett Street

2. Eliot Street/Harvard Kennedy School Driveway
3. Eliot Street/John F. Kennedy (JFK) Street
4. JFK Street/Memorial Drive

- Collect a 48-hour automatic traffic recorder (ATR) count in 15-minute and 1-hour increments at the following location:
 1. JFK Street between Eliot Street and Memorial Drive.
- All traffic count data should be provided in the Appendix in pdf format. Please provide all raw traffic count data in a Microsoft Excel file.
- Determine crash data for study area intersections from the MassDOT for the three most recent calendar years. The report should separate out the bicycle crashes and pedestrian crashes.

4. Site Trip Generation.

- The TIS shall provide trip generation for the proposed project.
 - You may use your estimated number (412) new students, staff, faculty, fellows, administration, and executive education to determine the project's trip generation. The number of people by type should be provided in as much detail as possible.
 - You may use the Harvard University PTDM 2013 Annual report for mode splits. All data and assumptions must be clearly documented in the Appendix.

Drive Alone	Rideshare	Vanpool.	Transit	Bike	Walk	Telecommute
12.8%	3.9%	0.07%	35.4%	14.5%	29.2%	3.9%

- Source: Harvard 2013 PTDM annual report
 - The TIS should provide a table showing Harvard University commuter mode shares over the past 5 years.
 - Trip Generation should be provided for daily and peak hours. All assumptions must be clearly documents. Excel spreadsheets of calculations should be provided to TPT.
 - Use Enter/Exit splits from the ITE Land Use Code 550 (University/College).

5. As suggested in your scoping letter, you should assign project trips to area roadways and study area intersections based on Harvard University's employee zip code data and area parking facilities. The TIS should clearly document all data and assumptions, including where the parking facilities that will be used are located.

6. Capacity Analysis.

- 1.) Existing Condition, 2.) Build Condition (existing conditions plus project trips), 3.) Future Condition (0.5% per year traffic growth over five year time horizon, plus other development projects in the area including the 114 Mount Auburn Project.

7. Bicycle Parking.

- Describe the project's bicycle parking supply, demand and zoning requirements. Show on a 1:10 scale plan short-term and long-term bicycle spaces.

8. Parking.

- Describe Harvard University's parking supply (locations and number of spaces), daily and peak hour parking utilization
- Estimated number of parking spaces needed for the project.

Harvard Kennedy School of Government Expansion

- Indicate which parking facilities will accommodate parkers and demonstrate Harvard has sufficient parking to meet the project's parking demand.
 - Explain why 13 on-site spaces should be removed instead of using them to meet the project's parking needs for drop-off/pick up activities and dignitary parking needs.
 - Indicate the zoning minimum number of parking spaces required for the project. (TPT recommends Harvard consider a reduction of zoning required parking to zero, which would allow Harvard to use it's institutional parking pool in the most flexibly way possible to meet parking needs without having to be allocated to specific buildings).
9. The TIS shall analyze the project against the Planning Board Special Permit Transportation criteria and to determine whether the project will have a substantial adverse impact on City traffic.
10. Describe any proposed project mitigation, including Transportation Demand Management measures. (Note, bicycle parking is required by zoning and is not mitigation unless you are providing more than required).

If you have any questions, feel free to contact me at 617-349-4745.

Sincerely,



Sue Clippinger
Director

cc: Adam Shulman, TP&T

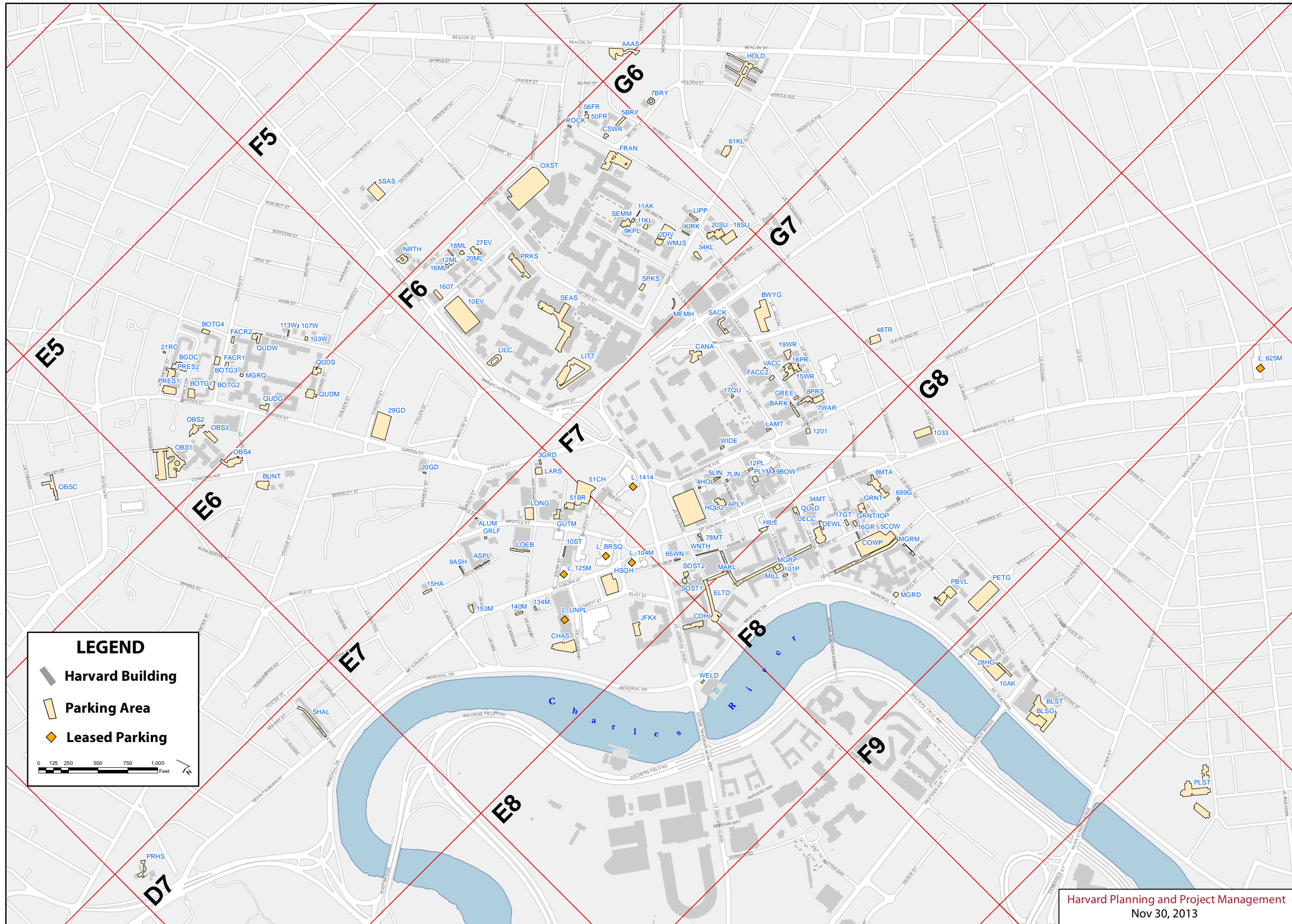
Harvard University's
Kennedy School of Government
Transportation Impact Study
Technical Appendix
Harvard Parking Locations

Harvard Parking Facility Inventory, Cambridge - November 2013 Parking Inventory

Date of Inventory	10/30/13
Date Prepared	11/30/13
Total Non-Comm/Supporting Spces	4,576
Total Non-Comm/Non-Supporting Spaces	95
Total Commercial Spaces	281

Page #	Park ID	LOT_NAME	ADDRESS	MGR	Owner	COMM	SUPP	NON S	OFFLINE	NOTES	GRID
1	101P	101-102 PLYMPTON ST	101-102 PLYMPTON ST	PKO	HRES/RES		2				F8
2	1033	1033 MASSACHUSETTS AVE	1033 MASSACHUSETTS AVE	PKO	HRES/COM		64	4		non affiliated leases 4 spaces	F8
3	103W	103 WALKER ST	103 WALKER ST	FAS	FAS		2				E5
4	107W	107 WALKER ST	107 WALKER ST	FAS	FAS		3				E5
5	113W	113 WALKER ST	113 WALKER	FAS	FAS		2				E5
6	11AK	11A KIRKLAND PLACE	11A KIRKLAND PLACE	HRES	HRES		1				F6
7	11KL	11 KIRKLAND PLACE	11 KIRKLAND PLACE	HRES	HRES		1				F6
8	10AK	10 AKRON GARAGE	10 Akron St	PKO/HRES	PKO/HRES		115				F9
9	10EV	10 EVERETT ST GARAGE	10 EVERETT STREET	PKO	PKO		607			88 of the 695 spaces are offline	F6
10	10ST	10 STORY	8 - 12 STORY ST	HRES/COM	HRES/COM		2				E7
11	12ML	12 MELLEN ST	12 MELLEN ST	PKO	HRES/RES		2				F6
12	12PL	12-12A PLYMPTON ST	12-12A PLYMPTON ST	HRES	HRES/RRE		5				F7
13	134M	134 MT. AUBURN ST	134 MOUNT AUBURN ST	HRES/COM	HRES/COM		0	3			E7
14	140M	140 MT. AUBURN ST	140 MOUNT AUBURN ST	HRES/COM	HRES/COM		0	5			E7
15	153M	153 MT. AUBURN ST	153 MOUNT AUBURN ST	Doebele House	Doebele House		5				E7
16	15HA	15 HAWTHORN STREET	15 HAWTHORN ST	HRES	HRES		4				E7
17	15WR	15 WARE ST	15 WARE ST	PKO	HRES/RES		11				F7
18	1607	1607 MASSACHUSETTS AVE	1607 MASSACHUSETTS AVE	HRES/COM	HRES/COM		0	9 9		9 offline	F6
19	16GR	16 GRANT STREET	14 GRANT ST	PKO	HRES/RES		2				F8
20	16ML	16 MELLEN ST	16 MELLEN ST	PKO	HRES/RES		6				F6
21	16PR	16 PRESCOTT ST	16 PRESCOTT ST	PKO	HRES/RES		13				F7
22	17GT	17 GRANT ST	17 GRANT ST	PKO	HRES/RES		5				F8
23	17QU	17 QUINCY ST	17 QUINCY ST	HRES/COM	HRES/COM		2				F7
24	18ML	18 MELLEN ST	18 MELLEN ST	HRES/RES	HRES/RES		3				F6
25	18SU	18 SUMNER ROAD	18 SUMNER ROAD	PKO	HRES/RES		24				F6
26	19WR	19 WARE ST	19 WARE ST	PKO	HRES/RES		11				F7
27	20GD	20 GARDEN ST	20 GARDEN ST	FAS	FAS		1				E6
28	20ML	20 MELLEN ST	20 MELLEN ST	PKO	HRES/RES		3				F6
29	20SU	20 SUMNER ROAD	20 SUMNER ROAD	GSD	GSD		22			Includes 3 Addresses	
30	21RO	21 ROBINSON ST	21 ROBINSON ST	HRES/RES	HRES/RES		2				E5
31	27EV	27 EVERETT ST	27 EVERETT ST	PKO	HRES/RES		6				F6
32	28HG	28 HINGHAM ST	28 HINGHAM ST	PKO	HRES		5				F9
33	29GD	29 GARDEN ST	29 GARDEN ST	PKO	HRES/RES		62				E6
34	2DIV	2 DIVINITY AVENUE	2 DIVINITY AVENUE	PKO	PKO		4				F6
35	34KL	34 KIRKLAND ST	34 KIRKLAND ST	PKO	PKO		1				F6
36	34MT	ST. PAUL'S RECTORY	34 MOUNT AUBURN ST.	HRES/COM	HRES/COM		0	9			F8
37	3GRD	3 GARDEN ST	3 GARDEN ST	PKO	PKO		2				E7
38	48TR	48 TROWBRIDGE ST	48 TROWBRIDGE ST	PKO	HRES/RES		18				G7
39	4HOL	4 HOLYOKE ST	4 HOLYOKE ST	HRES/RES	HRES/RES		1				F7
40	50FR	50 FRANCIS AVENUE	50 FRANCIS AVENUE	HDS	HDS		2				F6
41	51BR	51 BRATTLE ST	51 BRATTLE ST	PKO	HRES/COM		16				E7
42	56FR	56 FRANCIS AVENUE	56 FRANCIS AVENUE	HDS	HDS		1				F6
43	5BRY	5 BRYANT ST	5 BRYANT ST	PKO	PKO		4				F6
44	5COW	5 COWPERTHWATE ST	5 COWPERTHWATE ST	PKO/HRES	PKO/HRES		189				F8
45	5LIN	5 LINDEN ST	5 LINDEN ST	PKO	PKO		2				F7
46	5SAS	5 SACRAMENTO ST	5 SACRAMENTO ST	HRES/COM	HRES/COM		30				F5
47	61KL	61 KIRKLAND ST	61 KIRKLAND ST	PKO	PKO		16				G6
48	65WN	65 - 67 WINTHROP ST	65 WINTHROP ST	HRES/COM	HRES/COM		2				F7
49	699G	REAR OF 48 BANKS ST	699 GREEN ST	PKO	HRES/RES		2				F8
50	78MT	78 MT. AUBURN ST	78 MOUNT AUBURN ST	HRES/COM	HRES/COM		5				F7
51	7BRY	7 BRYANT ST	7 BRYANT ST	FAS	FAS		6				G6
52	7LIN	7 LINDEN ADAMS HOUSE MASTERS	7 LINDEN	FAS	FAS		1				F7
53	7WAR	7 WARE ST	7 WARE ST	PKO	HRES/RES		14				F7
54	8MTA	8 MT. AUBURN ST	8 MOUNT AUBURN ST	PKO	HRES/RES		38				F8
55	8PRS	8 PRESCOTT	8 PRESCOTT ST	PKO	PKO		9				F7
56	9ASH	9 ASH STREET	9 ASH STREET	GSD	GSD		2				E7
57	9BOW	9 BOW ST	9 BOW ST	SPH	SPH		9				F7
58	9KPL	9 KIRKLAND PLACE	9 KIRKLAND PLACE	PKO	PKO		4				F6
59	AAAS	AMERICAN ACADEMY OF ARTS & SCI	70 FRANCIS AVENUE	HRES/COM	AAAS		0	27		Controlled by lessee	G6
60	ALUM	ALUMNAE HOUSE	79 BRATTLE ST	RAD	RAD		1				E7
61	APLY	APLEY COURT	65 MOUNT AUBURN ST	PKO	PKO		14				F7
62	ASPL	1 ASH ST PLACE	1 ASH ST PLACE	PKO	PKO		5				E7
63	BARK	BARKER CENTER/PRESCOTT FOOD	7 PRESCOTT ST	PKO	PKO		7				F7
64	BGDC	BOTANIC GARDEN GARAGE	ROBINSON ST	PKO	HRES/RES		22				E5
65	BLSG	BLACKSTONE STEAM PLANT GARAGE	MEMORIAL DRIVE	PKO	UOS		10	10			F9
66	BLST	BLACKSTONE STEAM PLANT	BLACKSTONE ST	PKO	UOS		48				F9
67	BOTG1	BOTANIC GARDENS	77 GARDEN ST	PKO	HRES/RES		11				E5
68	BOTG2	BOTANIC GARDENS	78 GARDEN ST	PKO	HRES/RES		8				E5
69	BOTG3	BOTANIC GARDENS	79 GARDEN ST	PKO	HRES/RES		8				E5
70	BOTG4	BOTANIC GARDENS	80 GARDEN ST	PKO	HRES/RES		6				E5
71	BUNT	BUNTING INSTITUTE	38 CONCORD AVENUE	PKO	PKO		22				E6
72	BWYG	BROADWAY GARAGE	7 FELTON ST	PKO	PKO		442				F7
73	CANA	CANADAY HALL	500 BROADWAY	UOS	UOS		14				F7
74	CDHL	BOYLSTON FOOD/DINING HALL LOT	80 JFK ST	PKO	PKO		11				E8
75	CHAS	CHARLES SQUARE	3 UNIVERSITY ROAD	PKO	PKO		18				E7
76	COWP	COWPERTHWATE ST	COWPERTHWATE ST	PKO	PKO		17				F8
77	CSWR	CTR FOR WORLD RELIGIONS	42 FRANCIS AVENUE	HDS	HDS		2				F6

PARKING LOCATOR MAP FOR CAMBRIDGE



Harvard University's
Kennedy School of Government
Transportation Impact Study
Technical Appendix
ATR Count Data

Accurate Counts
978-664-2565

Location : JFK Street
Location : North of Memorial Drive
City/State: Cambridge, MA

Site Code: 12622001
12622001

Start Time	04-Jun-14 Wed	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		54	142			51	99				
12:15		45	145			45	88				
12:30		38	146			41	80				
12:45		29	146	166	579	28	80	165	347	331	926
01:00		18	150			26	88				
01:15		21	132			18	84				
01:30		18	124			20	103				
01:45		11	134	68	540	12	85	76	360	144	900
02:00		22	143			14	94				
02:15		17	130			13	78				
02:30		17	137			13	86				
02:45		10	132	66	542	7	103	47	361	113	903
03:00		6	134			8	81				
03:15		11	160			4	91				
03:30		7	162			4	62				
03:45		9	176	33	632	9	90	25	324	58	956
04:00		6	176			5	87				
04:15		8	170			3	99				
04:30		10	180			12	82				
04:45		27	186	51	712	12	75	32	343	83	1055
05:00		14	177			22	95				
05:15		31	184			29	74				
05:30		48	181			24	84				
05:45		74	205	167	747	42	82	117	335	284	1082
06:00		105	195			52	79				
06:15		103	196			65	91				
06:30		115	182			81	80				
06:45		143	208	466	781	90	91	288	341	754	1122
07:00		139	203			110	94				
07:15		174	179			109	106				
07:30		157	175			89	78				
07:45		178	172	648	729	109	91	417	369	1065	1098
08:00		167	148			105	91				
08:15		190	135			107	79				
08:30		183	116			107	76				
08:45		211	133	751	532	90	84	409	330	1160	862
09:00		191	137			102	98				
09:15		158	125			98	103				
09:30		172	107			113	98				
09:45		153	101	674	470	77	97	390	396	1064	866
10:00		160	103			109	119				
10:15		158	123			83	118				
10:30		160	105			93	113				
10:45		175	80	653	411	74	77	359	427	1012	838
11:00		162	67			89	75				
11:15		147	71			64	84				
11:30		159	70			101	47				
11:45		166	49	634	257	92	36	346	242	980	499
Total		4377	6932			2671	4175			7048	11107
Percent		38.7%	61.3%			39.0%	61.0%			38.8%	61.2%

Accurate Counts
978-664-2565

Location : JFK Street
Location : North of Memorial Drive
City/State: Cambridge, MA

Site Code: 12622001
12622001

Start Time	02-Jun-14		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	*	*	166	165	141	137	*	*	*	*	*	*	154	151
01:00	*	*	*	*	68	76	94	85	*	*	*	*	*	*	81	80
02:00	*	*	*	*	66	47	51	54	*	*	*	*	*	*	58	50
03:00	*	*	*	*	33	25	34	23	*	*	*	*	*	*	34	24
04:00	*	*	*	*	51	32	43	32	*	*	*	*	*	*	47	32
05:00	*	*	*	*	167	117	199	121	*	*	*	*	*	*	183	119
06:00	*	*	*	*	466	288	460	250	*	*	*	*	*	*	463	269
07:00	*	*	*	*	648	417	577	397	*	*	*	*	*	*	612	407
08:00	*	*	*	*	751	409	727	411	*	*	*	*	*	*	739	410
09:00	*	*	*	*	674	390	672	397	*	*	*	*	*	*	673	394
10:00	*	*	*	*	653	359	634	399	*	*	*	*	*	*	644	379
11:00	*	*	*	*	634	346	603	334	*	*	*	*	*	*	618	340
12:00 PM	*	*	*	*	579	347	605	393	*	*	*	*	*	*	592	370
01:00	*	*	*	*	540	360	583	343	*	*	*	*	*	*	562	352
02:00	*	*	*	*	542	361	591	328	*	*	*	*	*	*	566	344
03:00	*	*	*	*	632	324	629	324	*	*	*	*	*	*	630	324
04:00	*	*	*	*	712	343	659	353	*	*	*	*	*	*	686	348
05:00	*	*	*	*	747	335	766	304	*	*	*	*	*	*	756	320
06:00	*	*	*	*	781	341	687	366	*	*	*	*	*	*	734	354
07:00	*	*	*	*	729	369	678	380	*	*	*	*	*	*	704	374
08:00	*	*	*	*	532	330	525	383	*	*	*	*	*	*	528	356
09:00	*	*	*	*	470	396	463	342	*	*	*	*	*	*	466	369
10:00	*	*	*	*	411	427	382	329	*	*	*	*	*	*	396	378
11:00	*	*	*	*	257	242	227	190	*	*	*	*	*	*	242	216
Lane Day	0	0	0	0	11309	6846	11030	6675	0	0	0	0	0	0	11168	6760
AM Peak	-	-	-	-	08:00	07:00	08:00	08:00	-	-	-	-	-	-	08:00	08:00
Vol.	-	-	-	-	751	417	727	411	-	-	-	-	-	-	739	410
PM Peak	-	-	-	-	18:00	22:00	17:00	12:00	-	-	-	-	-	-	17:00	22:00
Vol.	-	-	-	-	781	427	766	393	-	-	-	-	-	-	756	378

Comb. Total 0 0 18155 17705 0 0 0 17928

ADT ADT 17,930 AADT 17,930

**Harvard University's
Kennedy School of Government
Transportation Impact Study
Technical Appendix
TMC Count Data**

Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	83	22	45	0	0	16	166
07:45 AM	87	20	43	0	0	14	164
Total	170	42	88	0	0	30	330
08:00 AM	89	19	45	0	0	23	176
08:15 AM	103	11	57	0	0	9	180
08:30 AM	83	24	51	0	0	12	170
08:45 AM	87	23	44	0	0	22	176
Total	362	77	197	0	0	66	702
09:00 AM	84	17	58	0	0	15	174
09:15 AM	112	12	46	0	0	16	186
Grand Total	728	148	389	0	0	127	1392
Apprch %	83.1	16.9	100	0	0	100	
Total %	52.3	10.6	27.9	0	0	9.1	
Cars	682	96	380	0	0	123	1281
% Cars	93.7	64.9	97.7	0	0	96.9	92
Trucks	17	3	3	0	0	4	27
% Trucks	2.3	2	0.8	0	0	3.1	1.9
Buses	29	49	6	0	0	0	84
% Buses	4	33.1	1.5	0	0	0	6

Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:30 AM

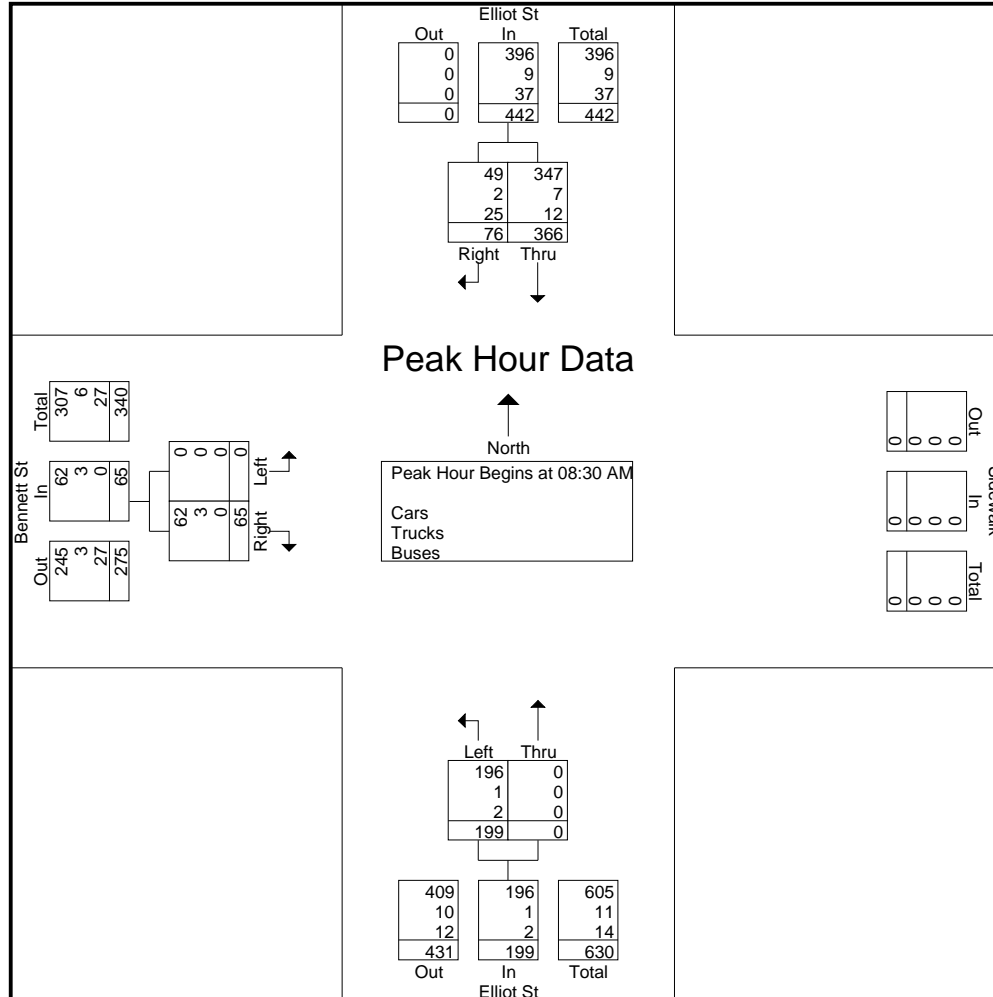
08:30 AM	83	24	107	0	51	0	51	0	12	12	170
08:45 AM	87	23	110	0	44	0	44	0	22	22	176
09:00 AM	84	17	101	0	58	0	58	0	15	15	174
09:15 AM	112	12	124	0	46	0	46	0	16	16	186
Total Volume	366	76	442	0	199	0	199	0	65	65	706
% App. Total	82.8	17.2			100	0		0	100		
PHF	.817	.792	.891	.000	.858	.000	.858	.000	.739	.739	.949
Cars	347	49	396	0	196	0	196	0	62	62	654
% Cars	94.8	64.5	89.6	0	98.5	0	98.5	0	95.4	95.4	92.6
Trucks	7	2	9	0	1	0	1	0	3	3	13
% Trucks	1.9	2.6	2.0	0	0.5	0	0.5	0	4.6	4.6	1.8
Buses	12	25	37	0	2	0	2	0	0	0	39
% Buses	3.3	32.9	8.4	0	1.0	0	1.0	0	0	0	5.5

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

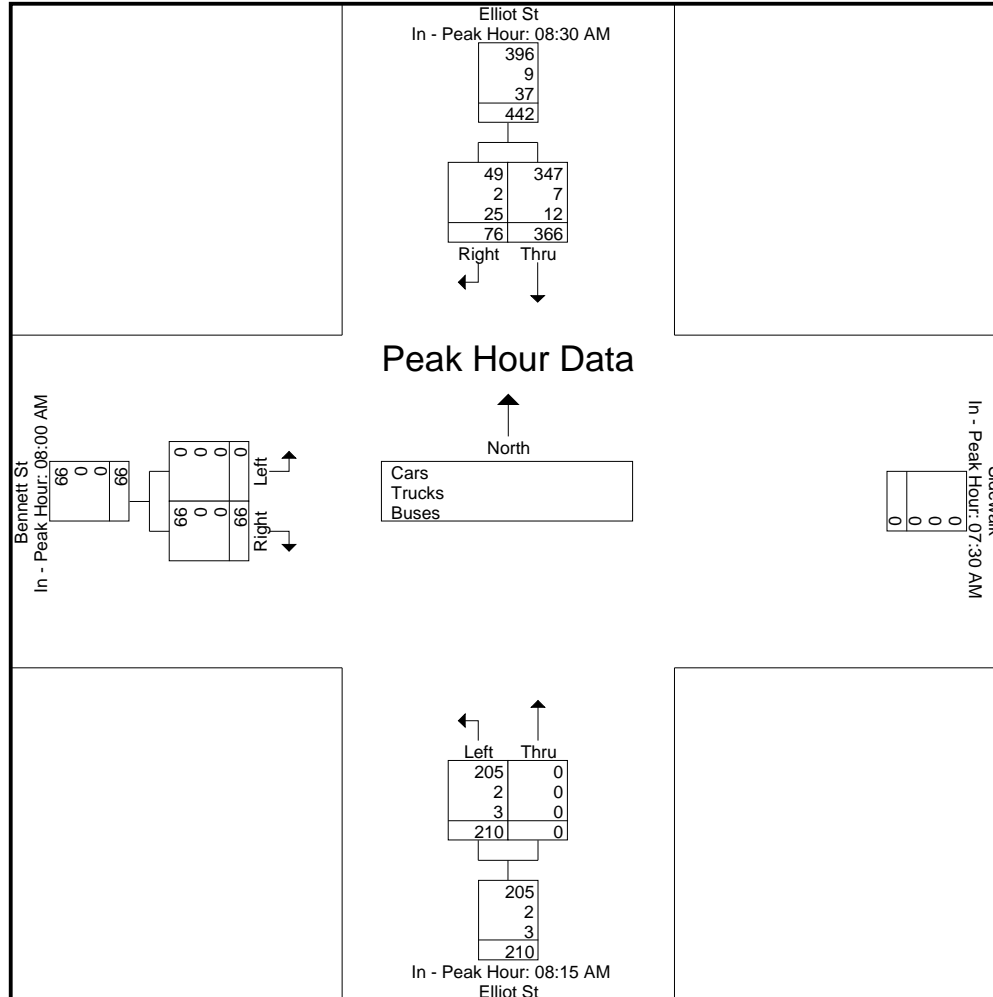
	08:30 AM			07:30 AM	08:15 AM			08:00 AM		
+0 mins.	83	24	107	0	57	0	57	0	23	23
+15 mins.	87	23	110	0	51	0	51	0	9	9
+30 mins.	84	17	101	0	44	0	44	0	12	12
+45 mins.	112	12	124	0	58	0	58	0	22	22
Total Volume	366	76	442	0	210	0	210	0	66	66
% App. Total	82.8	17.2			100	0		0	100	
PHF	.817	.792	.891	.000	.905	.000	.905	.000	.717	.717
Cars	347	49	396	0	205	0	205	0	66	66
% Cars	94.8	64.5	89.6	0	97.6	0	97.6	0	100	100
Trucks	7	2	9	0	2	0	2	0	0	0
% Trucks	1.9	2.6	2	0	1	0	1	0	0	0
Buses	12	25	37	0	3	0	3	0	0	0
% Buses	3.3	32.9	8.4	0	1.4	0	1.4	0	0	0

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	74	14	45	0	0	15	148
07:45 AM	83	13	41	0	0	14	151
Total	157	27	86	0	0	29	299
08:00 AM	80	14	44	0	0	23	161
08:15 AM	98	6	54	0	0	9	167
08:30 AM	78	18	50	0	0	12	158
08:45 AM	82	12	44	0	0	22	160
Total	338	50	192	0	0	66	646
09:00 AM	79	10	57	0	0	13	159
09:15 AM	108	9	45	0	0	15	177
Grand Total	682	96	380	0	0	123	1281
Apprch %	87.7	12.3	100	0	0	100	
Total %	53.2	7.5	29.7	0	0	9.6	

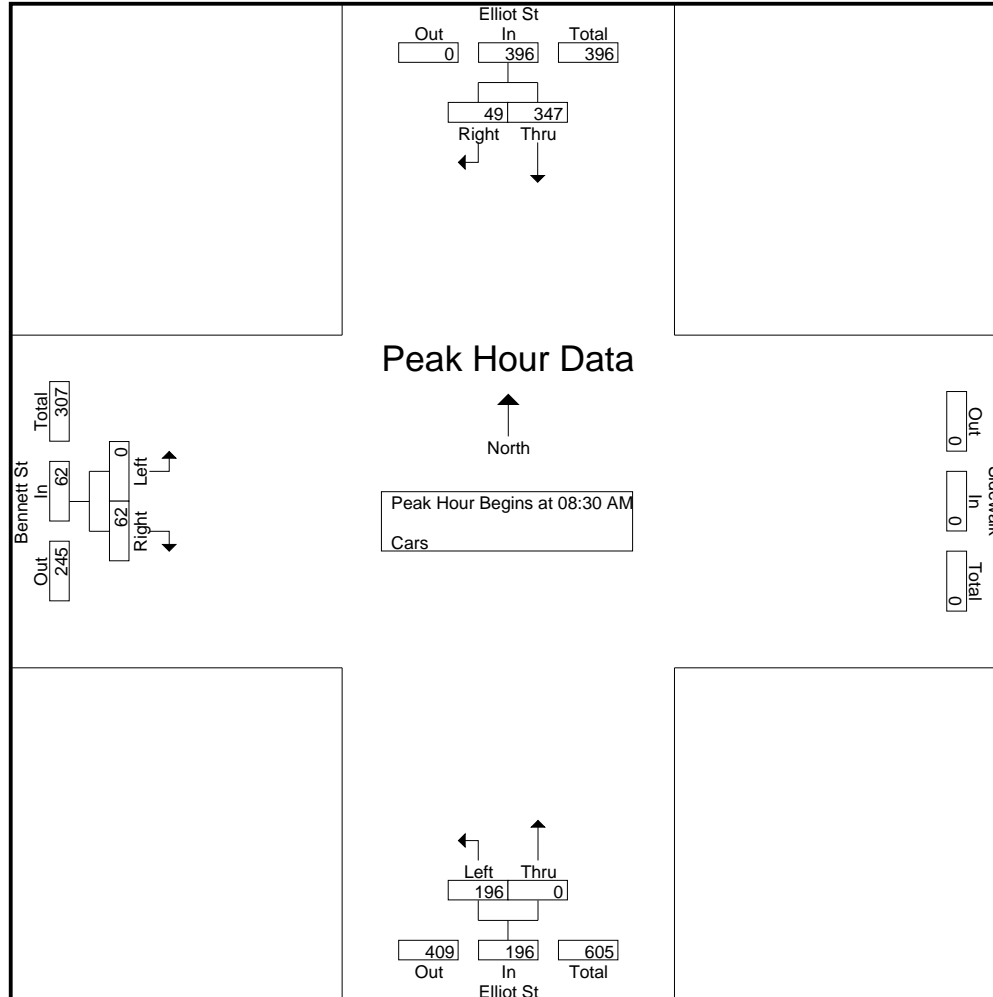
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total		App. Total	Left	Thru	App. Total	Left	Right	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:30 AM											
08:30 AM	78	18	96	0	50	0	50	0	12	12	158
08:45 AM	82	12	94	0	44	0	44	0	22	22	160
09:00 AM	79	10	89	0	57	0	57	0	13	13	159
09:15 AM	108	9	117	0	45	0	45	0	15	15	177
Total Volume	347	49	396	0	196	0	196	0	62	62	654
% App. Total	87.6	12.4			100	0		0	100		
PHF	.803	.681	.846	.000	.860	.000	.860	.000	.705	.705	.924

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

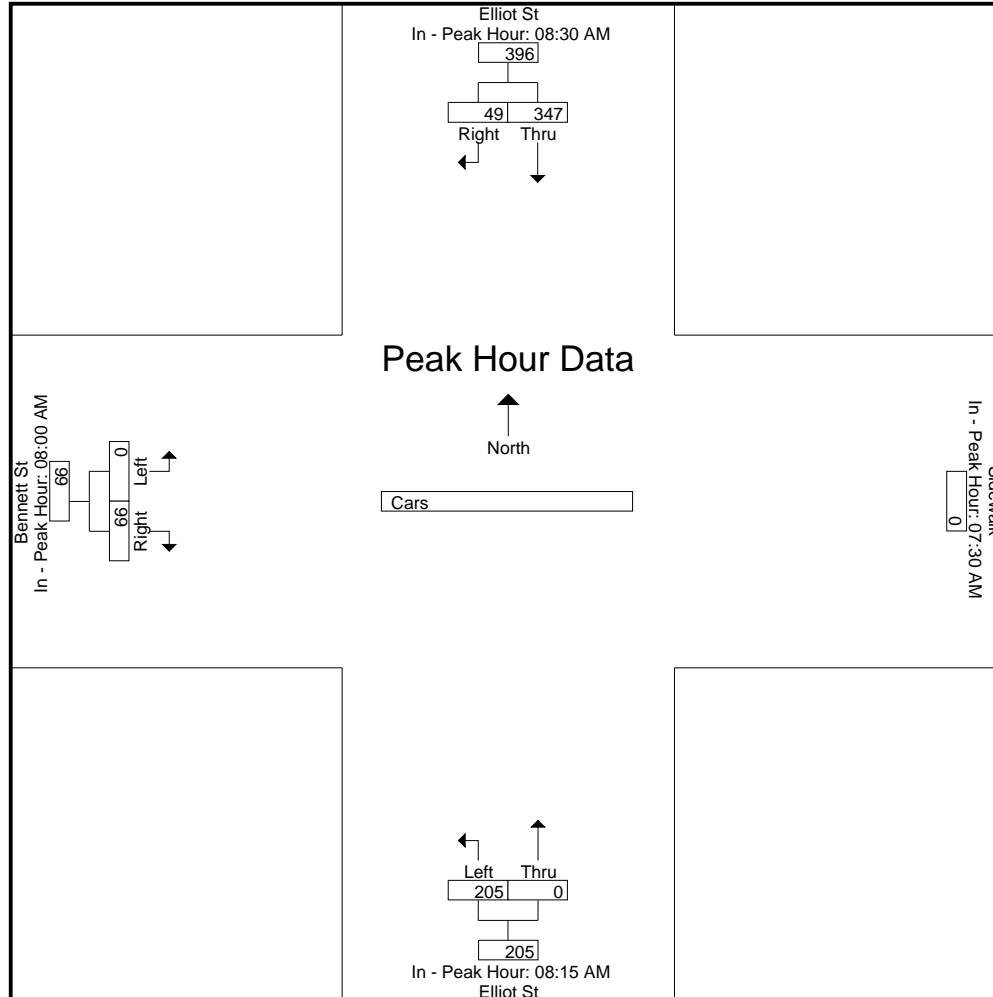
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	08:30 AM			07:30 AM	08:15 AM			08:00 AM			
+0 mins.	78	18	96	0	54	0	54	0	23	23	
+15 mins.	82	12	94	0	50	0	50	0	9	9	
+30 mins.	79	10	89	0	44	0	44	0	12	12	
+45 mins.	108	9	117	0	57	0	57	0	22	22	
Total Volume	347	49	396	0	205	0	205	0	66	66	
% App. Total	87.6	12.4			100	0		0	100		
PHF	.803	.681	.846	.000	.899	.000	.899	.000	.717	.717	

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Trucks

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	4	0	0	0	0	1	5
07:45 AM	2	0	1	0	0	0	3
Total	6	0	1	0	0	1	8
08:00 AM	2	1	0	0	0	0	3
08:15 AM	2	0	1	0	0	0	3
08:30 AM	2	1	0	0	0	0	3
08:45 AM	2	1	0	0	0	0	3
Total	8	3	1	0	0	0	12
09:00 AM	1	0	1	0	0	2	4
09:15 AM	2	0	0	0	0	1	3
Grand Total	17	3	3	0	0	4	27
Apprch %	85	15	100	0	0	100	
Total %	63	11.1	11.1	0	0	14.8	

Start Time	Elliot St From North		From East	Elliot St From South		Bennett St From West		Int. Total
	Thru	Right		Left	Thru	Left	Right	
07:30 AM	4	0	0	0	0	1	5	
07:45 AM	2	0	1	0	0	0	3	
08:00 AM	2	1	0	0	0	0	3	
08:15 AM	2	0	1	0	0	0	3	
Total Volume	10	1	0	2	0	1	14	
% App. Total	90.9	9.1		100	0	100		
PHF	.625	.250	.688	.000	.500	.250	.700	

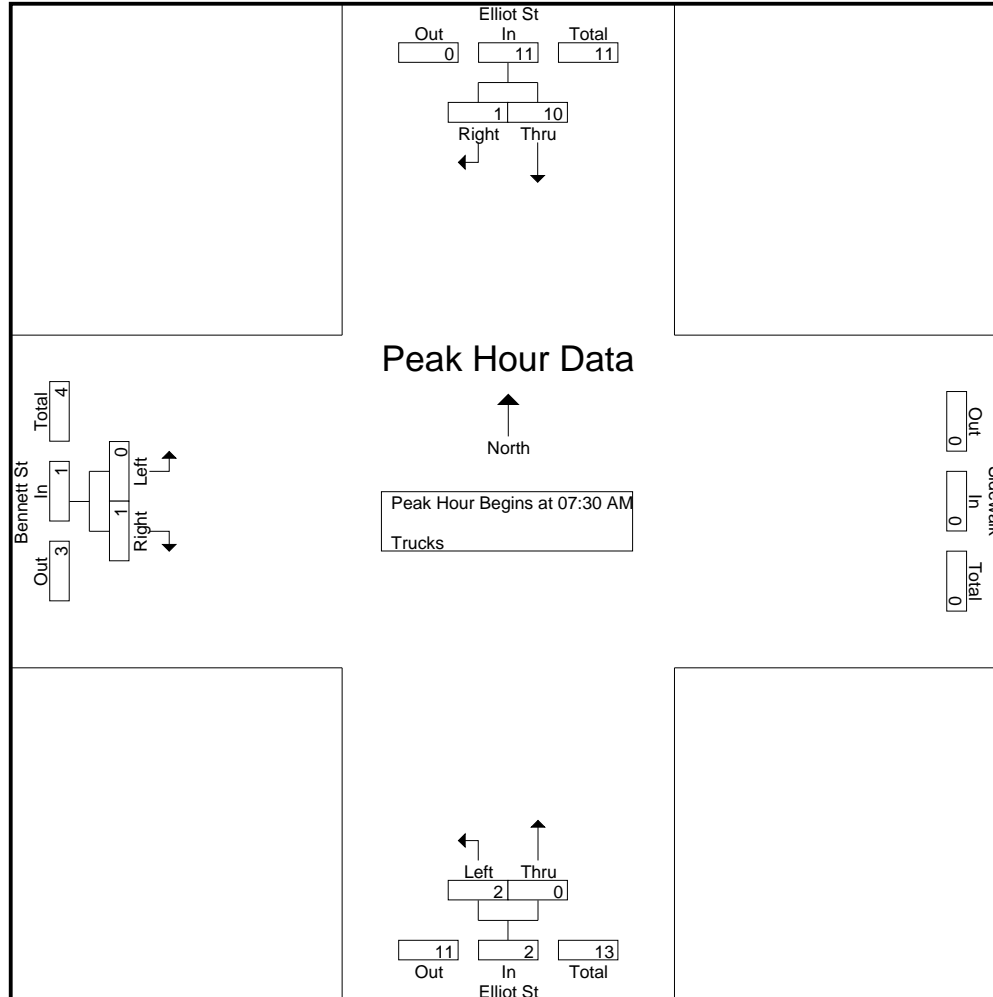
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

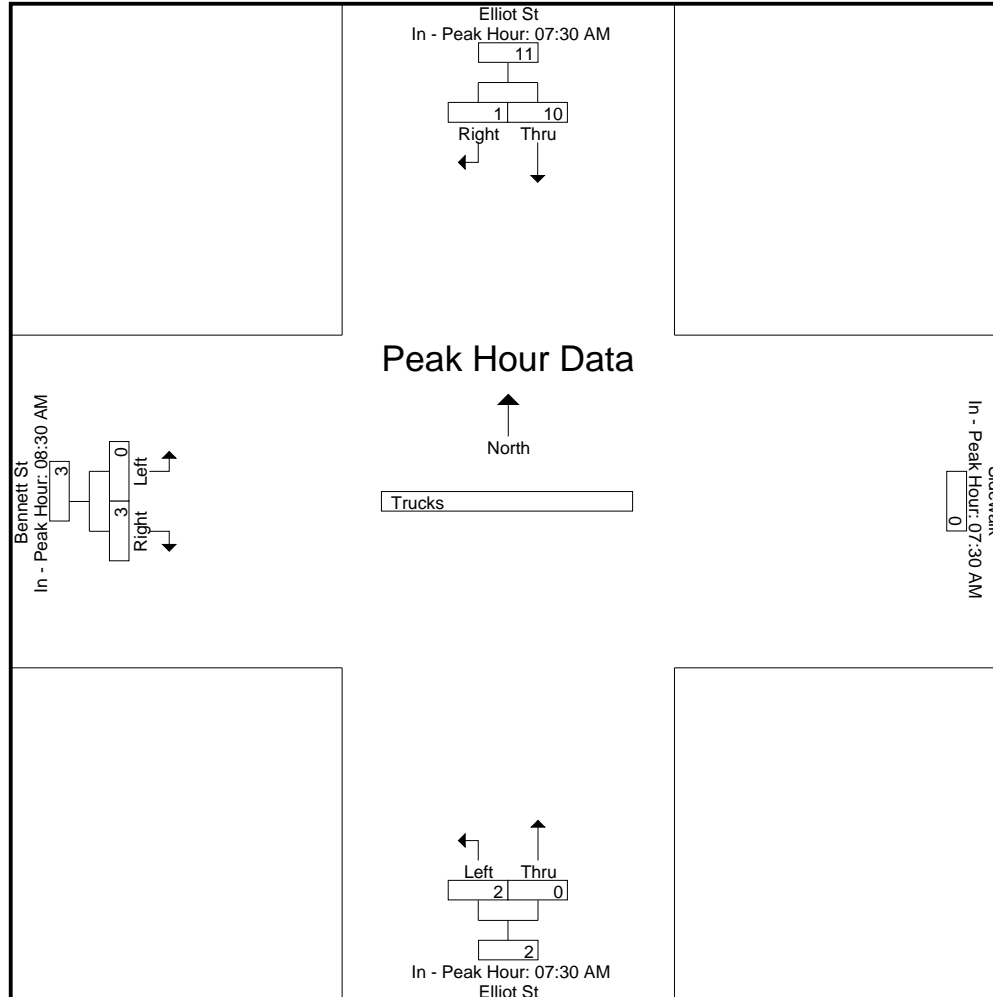
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	07:30 AM			07:30 AM	07:30 AM			08:30 AM			
+0 mins.	4	0	4	0	0	0	0	0	0	0	0
+15 mins.	2	0	2	0	1	0	1	0	0	0	0
+30 mins.	2	1	3	0	0	0	0	0	2	2	2
+45 mins.	2	0	2	0	1	0	1	0	1	1	1
Total Volume	10	1	11	0	2	0	2	0	3	3	3
% App. Total	90.9	9.1			100	0		0	100		
PHF	.625	.250	.688	.000	.500	.000	.500	.000	.375	.375	

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	5	8	0	0	0	0	13
07:45 AM	2	7	1	0	0	0	10
Total	7	15	1	0	0	0	23
08:00 AM	7	4	1	0	0	0	12
08:15 AM	3	5	2	0	0	0	10
08:30 AM	3	5	1	0	0	0	9
08:45 AM	3	10	0	0	0	0	13
Total	16	24	4	0	0	0	44
09:00 AM	4	7	0	0	0	0	11
09:15 AM	2	3	1	0	0	0	6
Grand Total	29	49	6	0	0	0	84
Apprch %	37.2	62.8	100	0	0	0	
Total %	34.5	58.3	7.1	0	0	0	

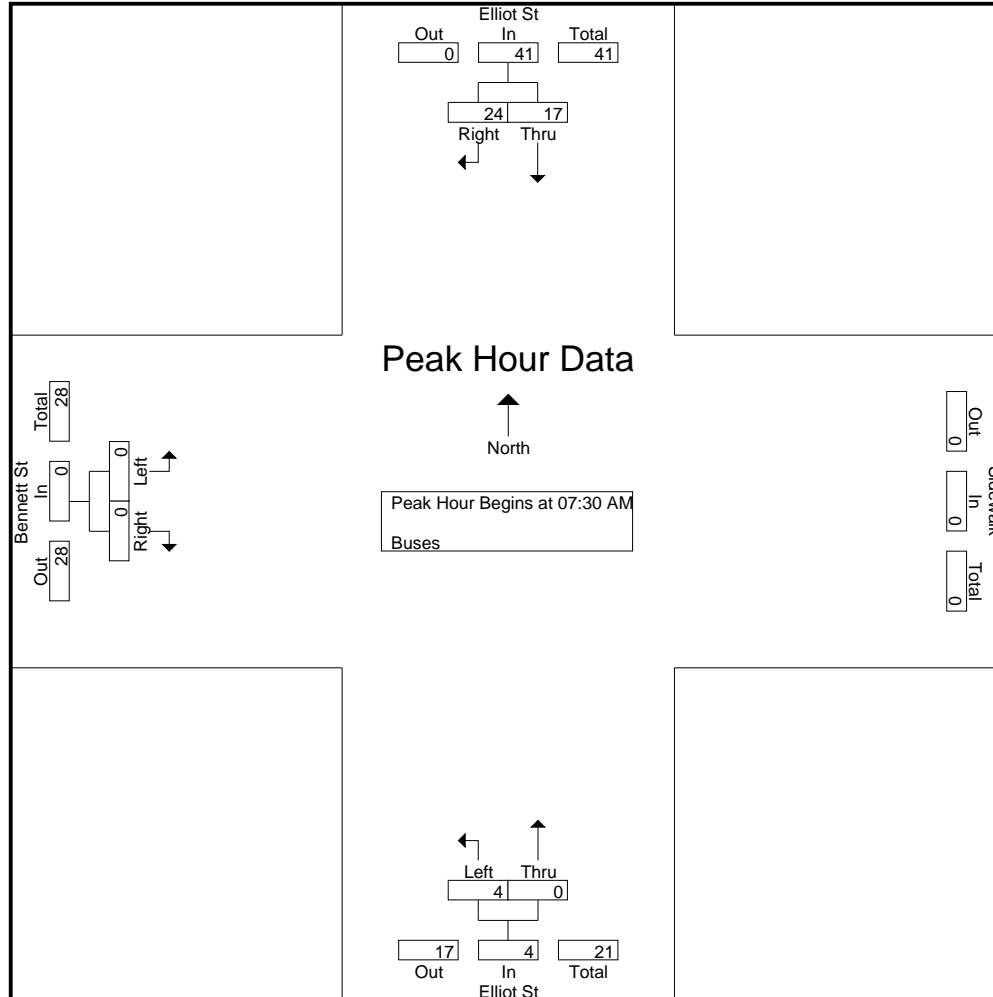
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:30 AM											
07:30 AM	5	8	13	0	0	0	0	0	0	0	13
07:45 AM	2	7	9	0	1	0	1	0	0	0	10
08:00 AM	7	4	11	0	1	0	1	0	0	0	12
08:15 AM	3	5	8	0	2	0	2	0	0	0	10
Total Volume	17	24	41	0	4	0	4	0	0	0	45
% App. Total	41.5	58.5			100	0		0	0		
PHF	.607	.750	.788	.000	.500	.000	.500	.000	.000	.000	.865

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

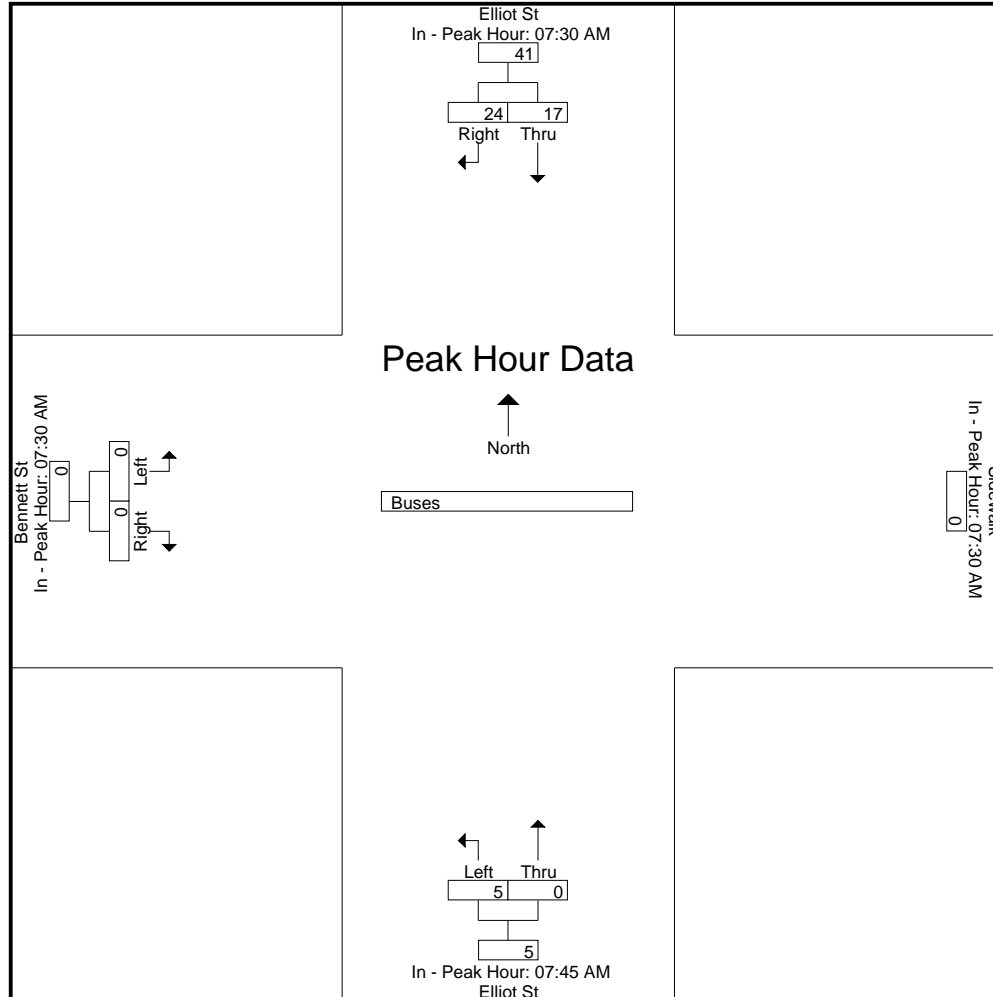
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	07:30 AM			07:30 AM	07:45 AM			07:30 AM			
+0 mins.	5	8	13	0	1	0	1	0	0	0	0
+15 mins.	2	7	9	0	1	0	1	0	0	0	0
+30 mins.	7	4	11	0	2	0	2	0	0	0	0
+45 mins.	3	5	8	0	1	0	1	0	0	0	0
Total Volume	17	24	41	0	5	0	5	0	0	0	0
% App. Total	41.5	58.5			100	0		0	0		
PHF	.607	.750	.788	.000	.625	.000	.625	.000	.000	.000	.000

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	9	0	0	0	6	3	18
07:45 AM	8	0	0	0	2	4	14
Total	17	0	0	0	8	7	32
08:00 AM	7	0	1	2	4	3	17
08:15 AM	22	0	3	3	8	14	50
08:30 AM	23	1	1	4	19	4	52
08:45 AM	17	0	1	1	7	10	36
Total	69	1	6	10	38	31	155
09:00 AM	12	0	3	1	6	6	28
09:15 AM	18	3	0	0	9	9	39
Grand Total	116	4	9	11	61	53	254
Apprch %	96.7	3.3	45	55	53.5	46.5	
Total %	45.7	1.6	3.5	4.3	24	20.9	

Start Time	Elliot St From North		From East	Elliot St From South		Bennett St From West		Int. Total
	Thru	Right		Left	Thru	Left	Right	
08:15 AM	22	0	0	3	3	8	14	22
08:30 AM	23	1	0	1	4	19	4	23
08:45 AM	17	0	0	1	1	7	10	17
09:00 AM	12	0	0	3	1	6	6	12
Total Volume	74	1	0	8	9	40	34	74
% App. Total	98.7	1.3	.000	47.1	52.9	54.1	45.9	.781
PHF	.804	.250	.781	.667	.563	.708	.526	.607

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

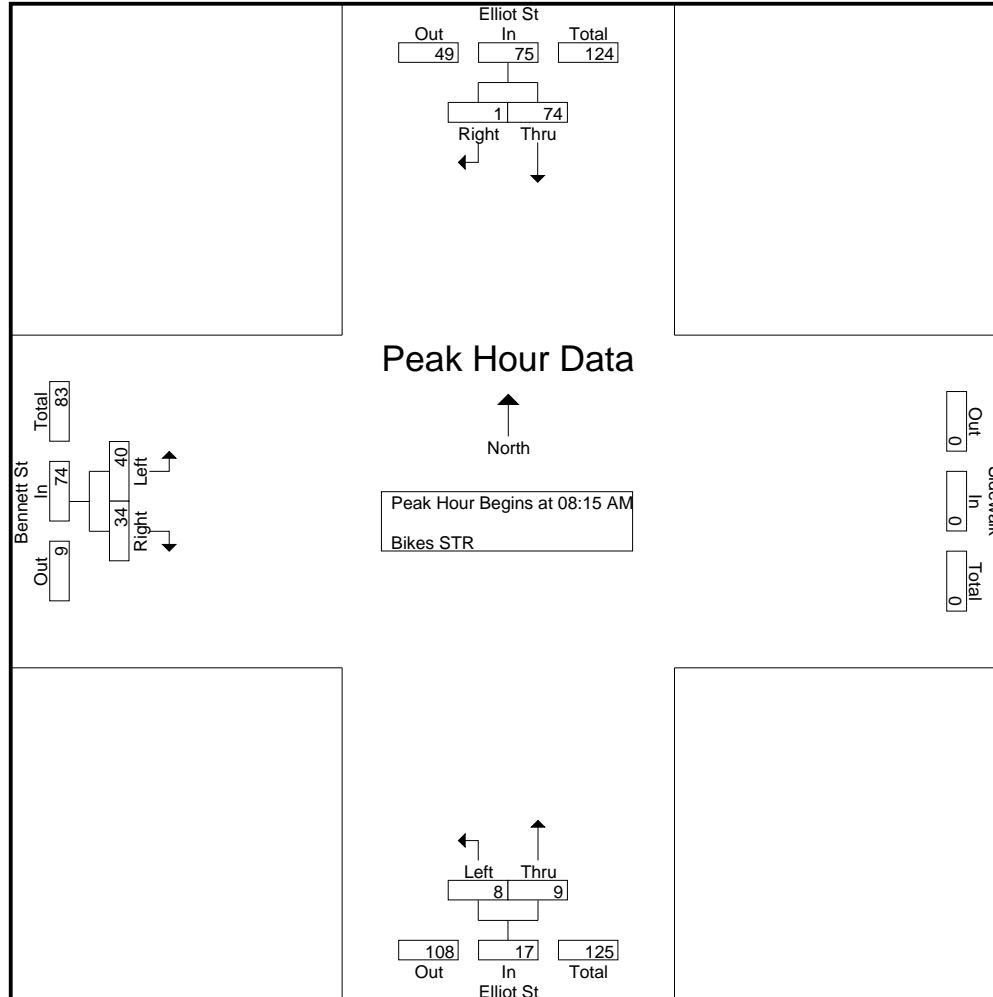
Peak Hour for Entire Intersection Begins at 08:15 AM

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

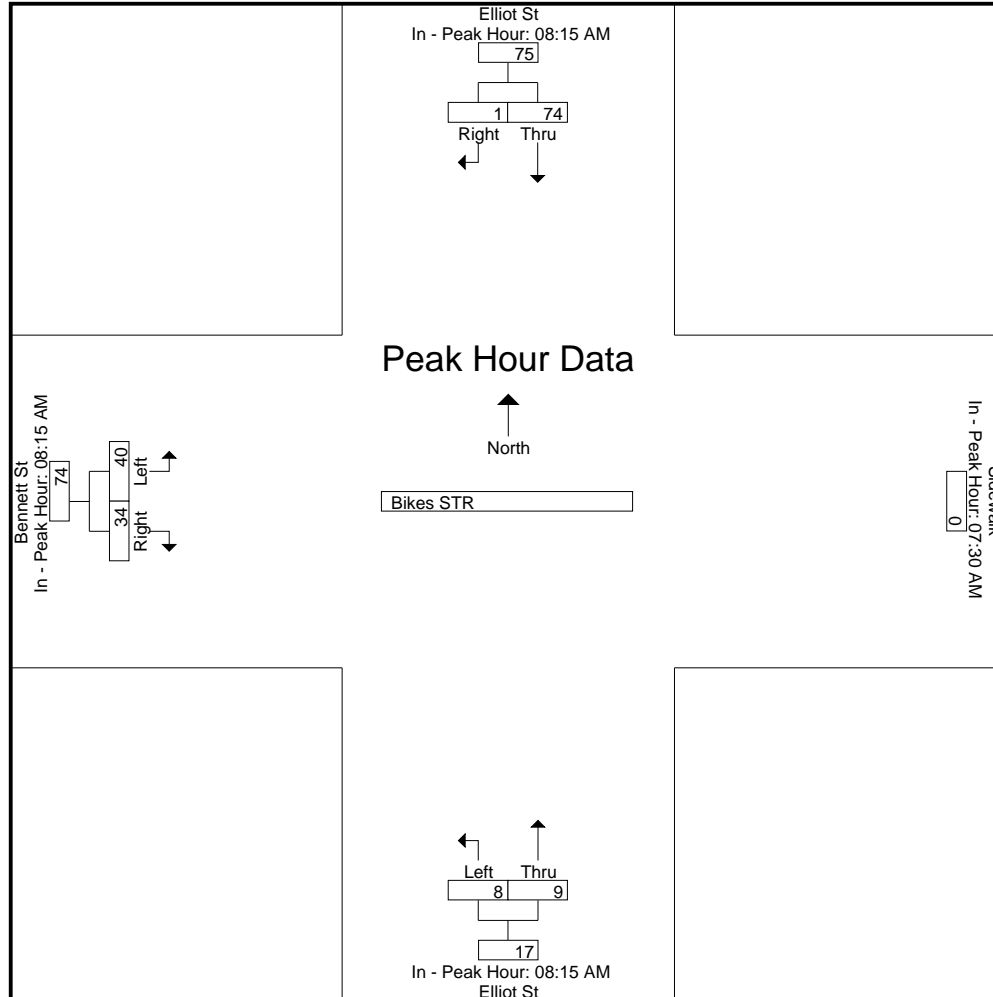
	08:15 AM			07:30 AM	08:15 AM			08:15 AM		
+0 mins.	22	0	22	0	3	3	6	8	14	22
+15 mins.	23	1	24	0	1	4	5	19	4	23
+30 mins.	17	0	17	0	1	1	2	7	10	17
+45 mins.	12	0	12	0	3	1	4	6	6	12
Total Volume	74	1	75	0	8	9	17	40	34	74
% App. Total	98.7	1.3			47.1	52.9		54.1	45.9	
PHF	.804	.250	.781	.000	.667	.563	.708	.526	.607	.804

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	0	0	0	0	0	0	0
07:45 AM	2	1	0	0	0	0	3
Total	2	1	0	0	0	0	3
08:00 AM	0	1	1	0	0	0	2
08:15 AM	0	0	0	0	0	0	0
08:30 AM	1	0	0	0	0	0	1
08:45 AM	0	3	0	0	0	0	3
Total	1	4	1	0	0	0	6
09:00 AM	0	1	1	0	0	0	2
09:15 AM	0	1	0	0	0	0	1
Grand Total	3	7	2	0	0	0	12
Apprch %	30	70	100	0	0	0	
Total %	25	58.3	16.7	0	0	0	

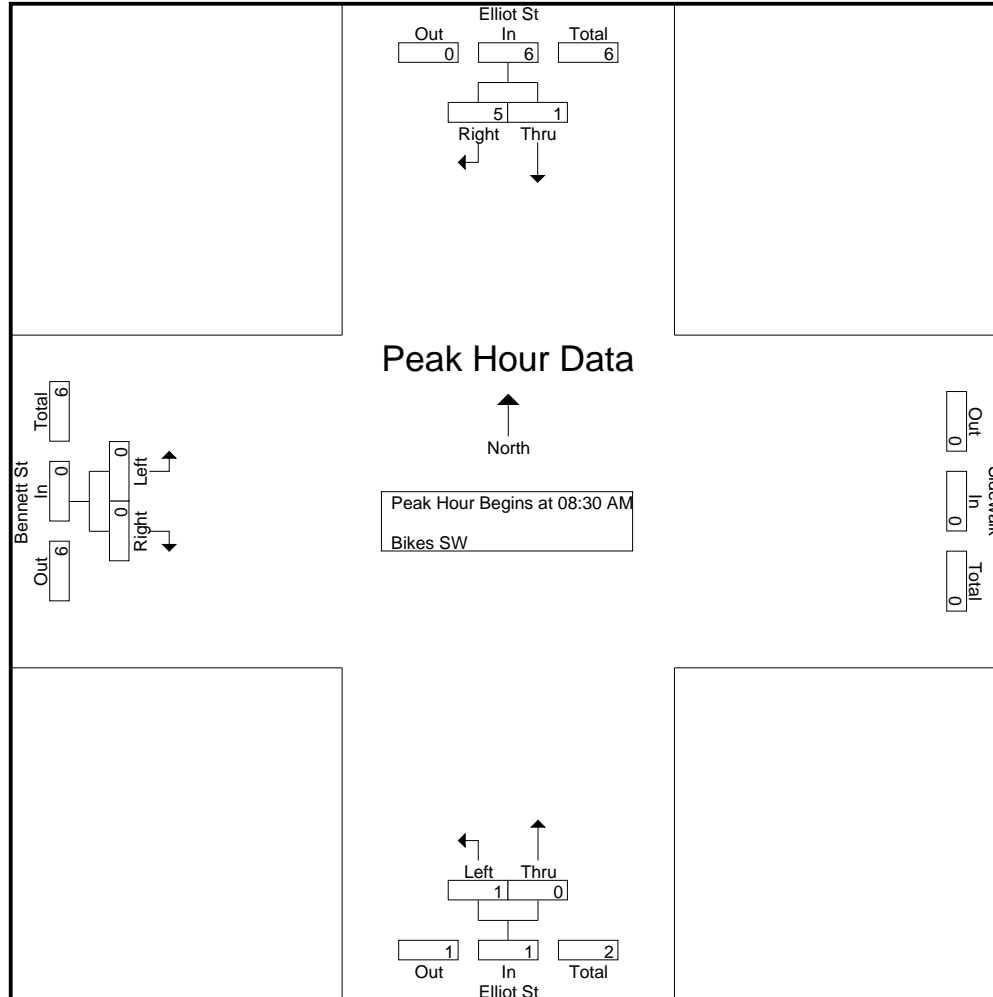
Start Time	Elliot St From North		From East	Elliot St From South		Bennett St From West			Int. Total
	Thru	Right		Left	Thru	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 08:30 AM									
08:30 AM	1	0	0	0	0	0	0	0	1
08:45 AM	0	3	0	0	0	0	0	0	3
09:00 AM	0	1	0	1	0	1	0	0	2
09:15 AM	0	1	0	0	0	0	0	0	1
Total Volume	1	5	0	1	0	1	0	0	7
% App. Total	16.7	83.3		100	0		0	0	
PHF	.250	.417	.500	.000	.250	.000	.250	.000	.583

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

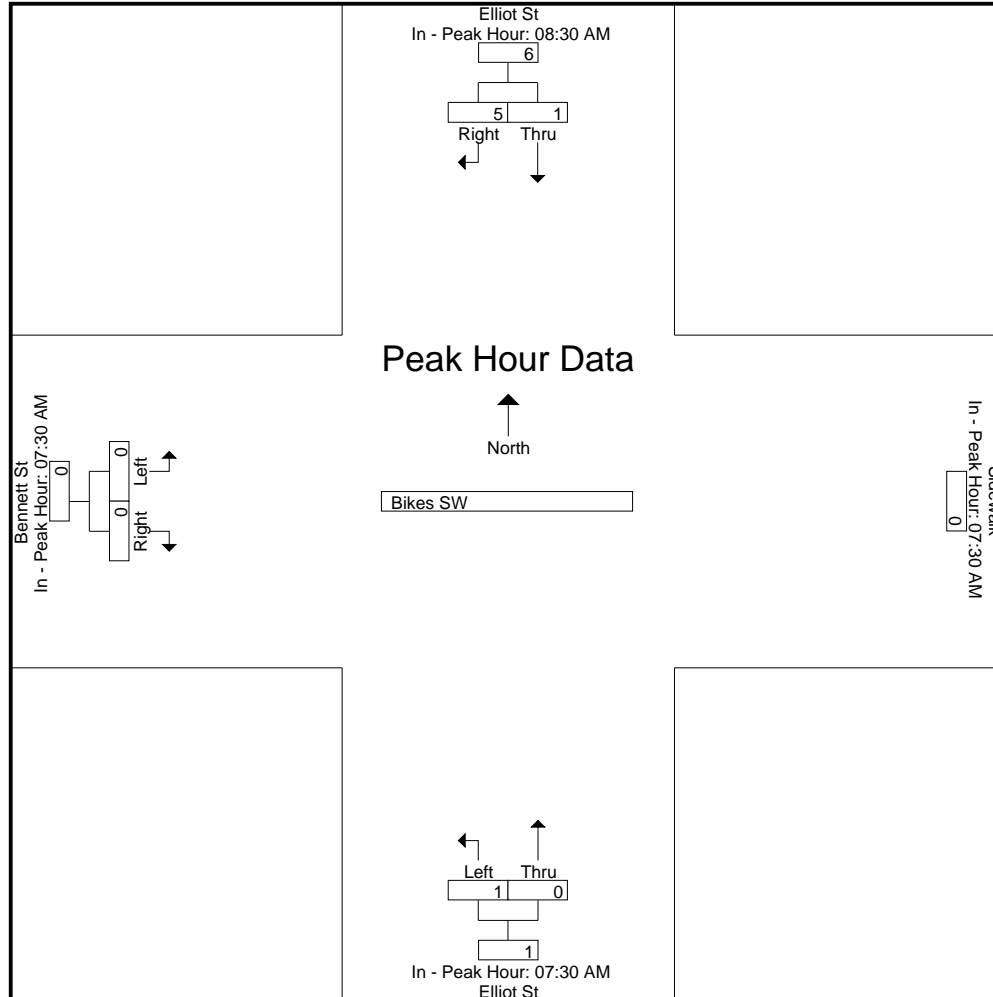
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	08:30 AM			07:30 AM	07:30 AM			07:30 AM			
+0 mins.	1	0	1	0	0	0	0	0	0	0	0
+15 mins.	0	3	3	0	0	0	0	0	0	0	0
+30 mins.	0	1	1	0	1	0	1	0	0	0	0
+45 mins.	0	1	1	0	0	0	0	0	0	0	0
Total Volume	1	5	6	0	1	0	1	0	0	0	0
% App. Total	16.7	83.3			100	0		0	0		
PHF	.250	.417	.500	.000	.250	.000	.250	.000	.000	.000	.000

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	Elliot St From North		Sidewalk From East		Elliot St From South		Bennett St From West		Int. Total
	WB	EB	NB	SB	EB	WB	SB	NB	
07:30 AM	5	3	8	5	20	14	5	3	63
07:45 AM	10	6	5	2	37	15	10	6	91
Total	15	9	13	7	57	29	15	9	154
08:00 AM	6	5	1	4	21	18	6	5	66
08:15 AM	14	5	7	0	52	24	14	5	121
08:30 AM	21	4	19	2	59	27	21	4	157
08:45 AM	9	5	6	7	27	34	9	5	102
Total	50	19	33	13	159	103	50	19	446
09:00 AM	27	8	4	5	41	29	27	8	149
09:15 AM	19	6	9	0	28	16	19	6	103
Grand Total	111	42	59	25	285	177	111	42	852
Apprch %	72.5	27.5	70.2	29.8	61.7	38.3	72.5	27.5	
Total %	13	4.9	6.9	2.9	33.5	20.8	13	4.9	

Start Time	Elliot St From North			Sidewalk From East			Elliot St From South			Bennett St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	
08:15 AM	14	5	19	7	0	7	52	24	76	14	5	19	121
08:30 AM	21	4	25	19	2	21	59	27	86	21	4	25	157
08:45 AM	9	5	14	6	7	13	27	34	61	9	5	14	102
09:00 AM	27	8	35	4	5	9	41	29	70	27	8	35	149
Total Volume	71	22	93	36	14	50	179	114	293	71	22	93	529
% App. Total	76.3	23.7		72	28		61.1	38.9		76.3	23.7		
PHF	.657	.688	.664	.474	.500	.595	.758	.838	.852	.657	.688	.664	.842

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

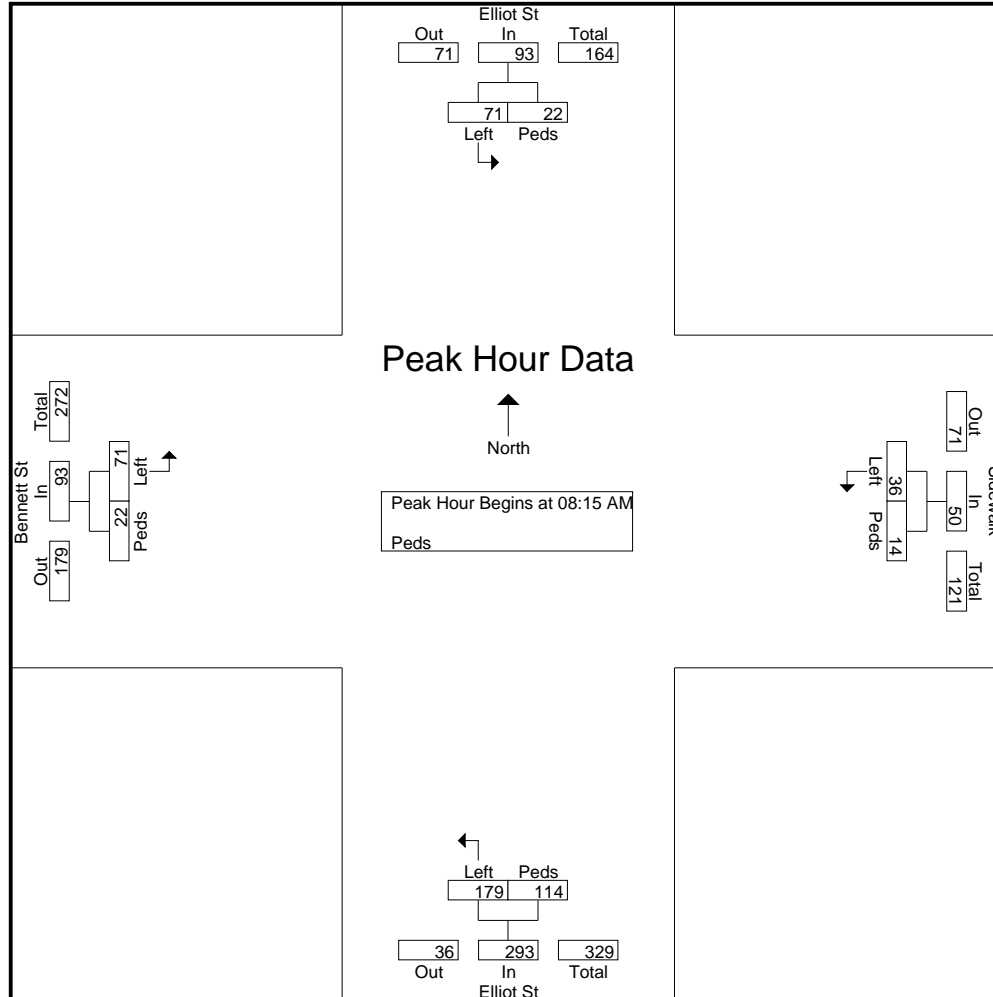
Peak Hour for Entire Intersection Begins at 08:15 AM

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

Start Time	Elliot St From North			Sidewalk From East			Elliot St From South			Bennett St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

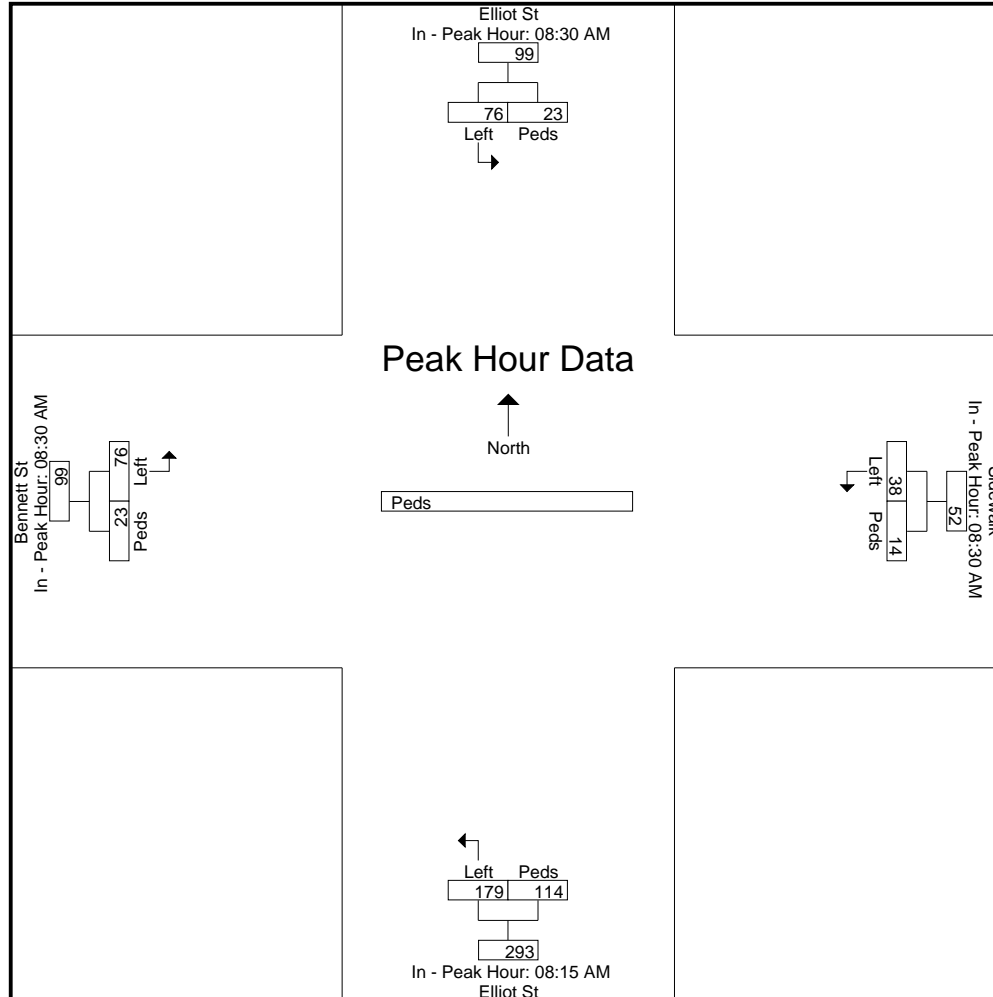
	08:30 AM			08:30 AM			08:15 AM			08:30 AM		
+0 mins.	21	4	25	19	2	21	52	24	76	21	4	25
+15 mins.	9	5	14	6	7	13	59	27	86	9	5	14
+30 mins.	27	8	35	4	5	9	27	34	61	27	8	35
+45 mins.	19	6	25	9	0	9	41	29	70	19	6	25
Total Volume	76	23	99	38	14	52	179	114	293	76	23	99
% App. Total	76.8	23.2		73.1	26.9		61.1	38.9		76.8	23.2	
PHF	.704	.719	.707	.500	.500	.619	.758	.838	.852	.704	.719	.707

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	77	16	32	0	0	24	149
04:45 PM	72	15	33	0	0	28	148
Total	149	31	65	0	0	52	297
05:00 PM	110	17	45	0	0	29	201
05:15 PM	86	11	33	0	0	37	167
05:30 PM	90	16	31	0	0	36	173
05:45 PM	104	15	38	0	0	31	188
Total	390	59	147	0	0	133	729
06:00 PM	88	25	42	0	0	30	185
06:15 PM	87	12	40	0	0	17	156
Grand Total	714	127	294	0	0	232	1367
Apprch %	84.9	15.1	100	0	0	100	
Total %	52.2	9.3	21.5	0	0	17	
Cars	687	84	289	0	0	232	1292
% Cars	96.2	66.1	98.3	0	0	100	94.5
Trucks	8	0	0	0	0	0	8
% Trucks	1.1	0	0	0	0	0	0.6
Buses	19	43	5	0	0	0	67
% Buses	2.7	33.9	1.7	0	0	0	4.9

Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

05:00 PM	110	17	127	0	45	0	45	0	29	29	201
05:15 PM	86	11	97	0	33	0	33	0	37	37	167
05:30 PM	90	16	106	0	31	0	31	0	36	36	173
05:45 PM	104	15	119	0	38	0	38	0	31	31	188
Total Volume	390	59	449	0	147	0	147	0	133	133	729
% App. Total	86.9	13.1			100	0		0	100		
PHF	.886	.868	.884	.000	.817	.000	.817	.000	.899	.899	.907
Cars	375	41	416	0	144	0	144	0	133	133	693
% Cars	96.2	69.5	92.7	0	98.0	0	98.0	0	100	100	95.1
Trucks	4	0	4	0	0	0	0	0	0	0	4
% Trucks	1.0	0	0.9	0	0	0	0	0	0	0	0.5
Buses	11	18	29	0	3	0	3	0	0	0	32
% Buses	2.8	30.5	6.5	0	2.0	0	2.0	0	0	0	4.4

Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

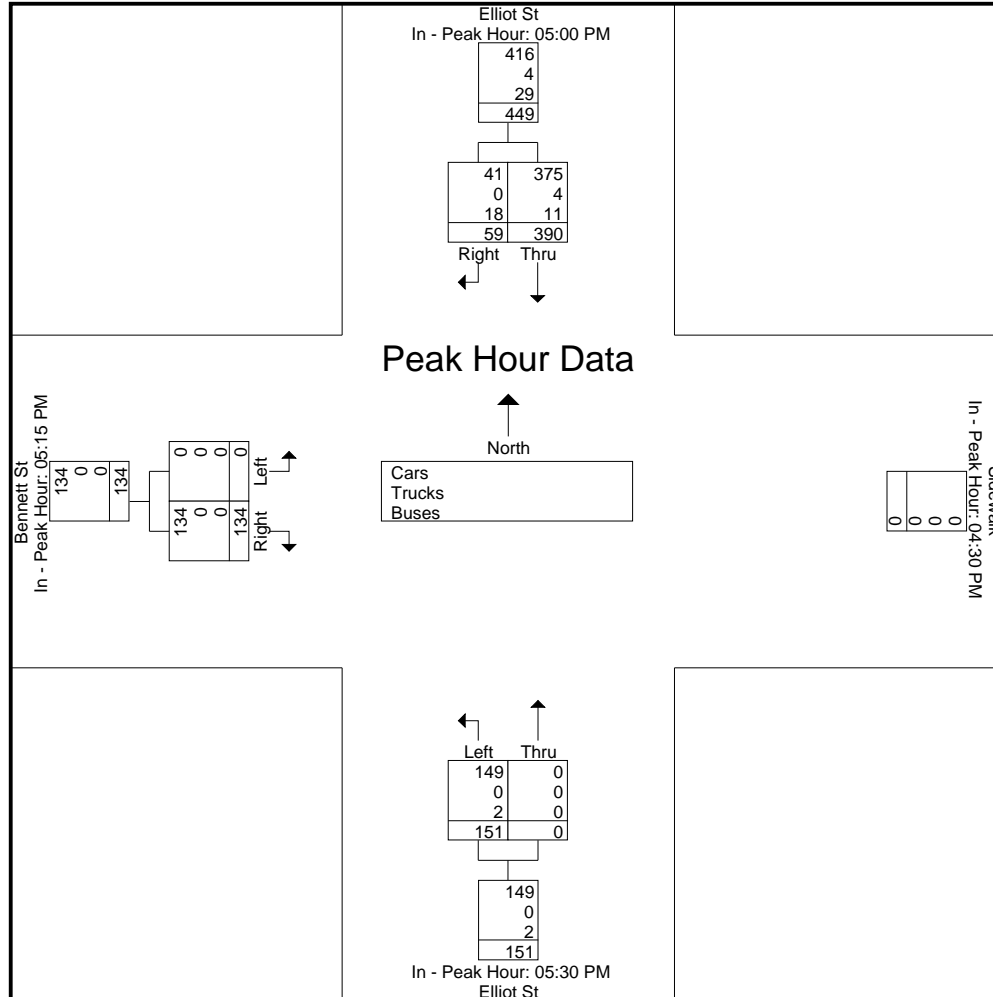
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	05:00 PM			04:30 PM	05:30 PM			05:15 PM			
+0 mins.	110	17	127	0	31	0	31	0	37	37	
+15 mins.	86	11	97	0	38	0	38	0	36	36	
+30 mins.	90	16	106	0	42	0	42	0	31	31	
+45 mins.	104	15	119	0	40	0	40	0	30	30	
Total Volume	390	59	449	0	151	0	151	0	134	134	
% App. Total	86.9	13.1			100	0			100		
PHF	.886	.868	.884	.000	.899	.000	.899	.000	.905	.905	
Cars	375	41	416	0	149	0	149	0	134	134	
% Cars	96.2	69.5	92.7	0	98.7	0	98.7	0	100	100	
Trucks	4	0	4	0	0	0	0	0	0	0	
% Trucks	1	0	0.9	0	0	0	0	0	0	0	
Buses	11	18	29	0	2	0	2	0	0	0	
% Buses	2.8	30.5	6.5	0	1.3	0	1.3	0	0	0	

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	71	7	31	0	0	24	133
04:45 PM	70	10	32	0	0	28	140
Total	141	17	63	0	0	52	273
05:00 PM	107	12	45	0	0	29	193
05:15 PM	83	7	32	0	0	37	159
05:30 PM	86	12	30	0	0	36	164
05:45 PM	99	10	37	0	0	31	177
Total	375	41	144	0	0	133	693
06:00 PM	86	16	42	0	0	30	174
06:15 PM	85	10	40	0	0	17	152
Grand Total	687	84	289	0	0	232	1292
Apprch %	89.1	10.9	100	0	0	100	
Total %	53.2	6.5	22.4	0	0	18	

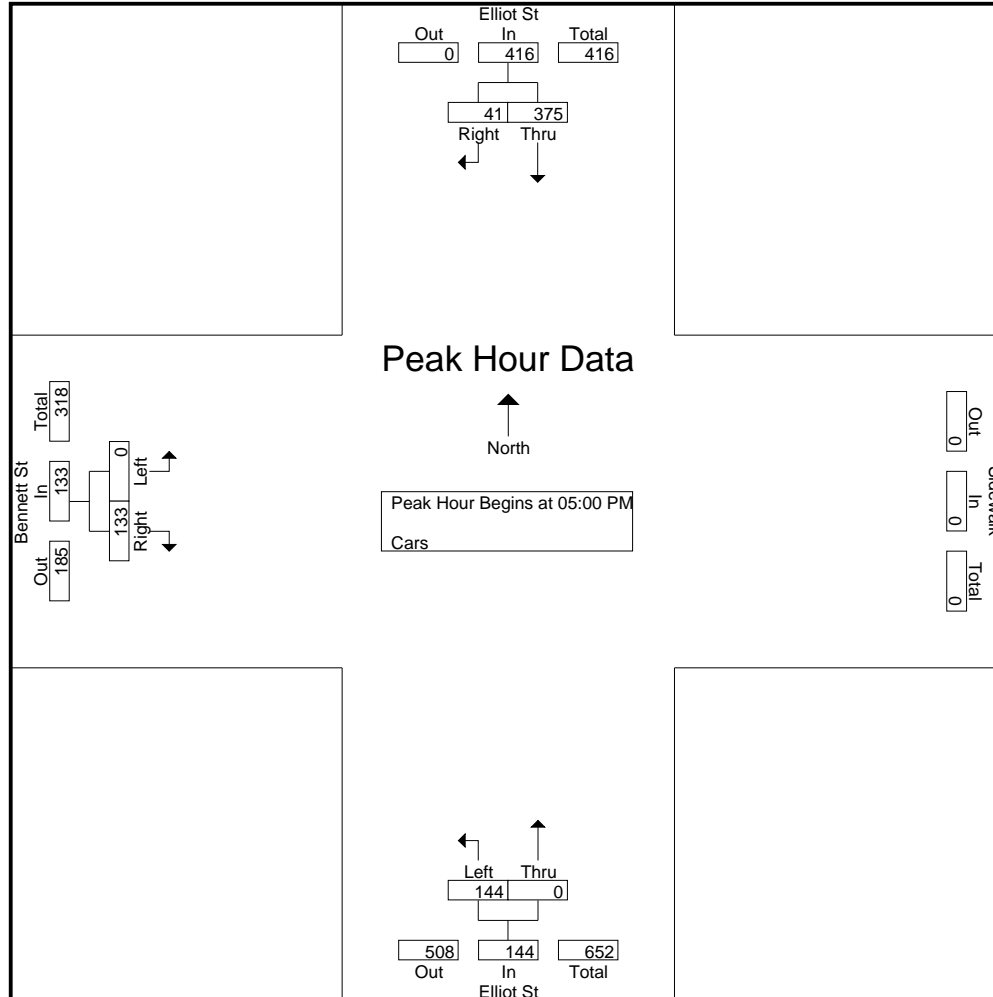
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:00 PM											
05:00 PM	107	12	119	0	45	0	45	0	29	29	193
05:15 PM	83	7	90	0	32	0	32	0	37	37	159
05:30 PM	86	12	98	0	30	0	30	0	36	36	164
05:45 PM	99	10	109	0	37	0	37	0	31	31	177
Total Volume	375	41	416	0	144	0	144	0	133	133	693
% App. Total	90.1	9.9			100	0		0	100		
PHF	.876	.854	.874	.000	.800	.000	.800	.000	.899	.899	.898

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

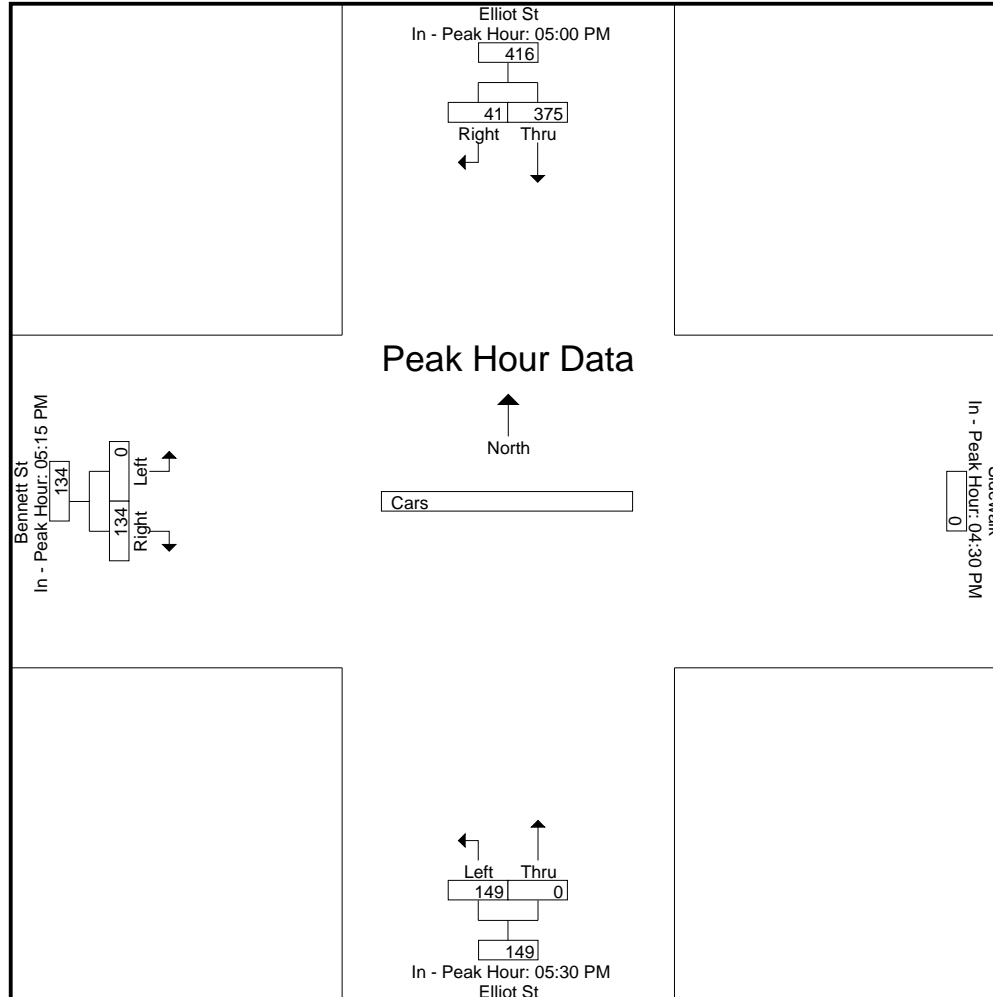
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	05:00 PM			04:30 PM	05:30 PM			05:15 PM			
+0 mins.	107	12	119	0	30	0	30	0	37	37	
+15 mins.	83	7	90	0	37	0	37	0	36	36	
+30 mins.	86	12	98	0	42	0	42	0	31	31	
+45 mins.	99	10	109	0	40	0	40	0	30	30	
Total Volume	375	41	416	0	149	0	149	0	134	134	
% App. Total	90.1	9.9			100	0		0	100		
PHF	.876	.854	.874	.000	.887	.000	.887	.000	.905	.905	

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear

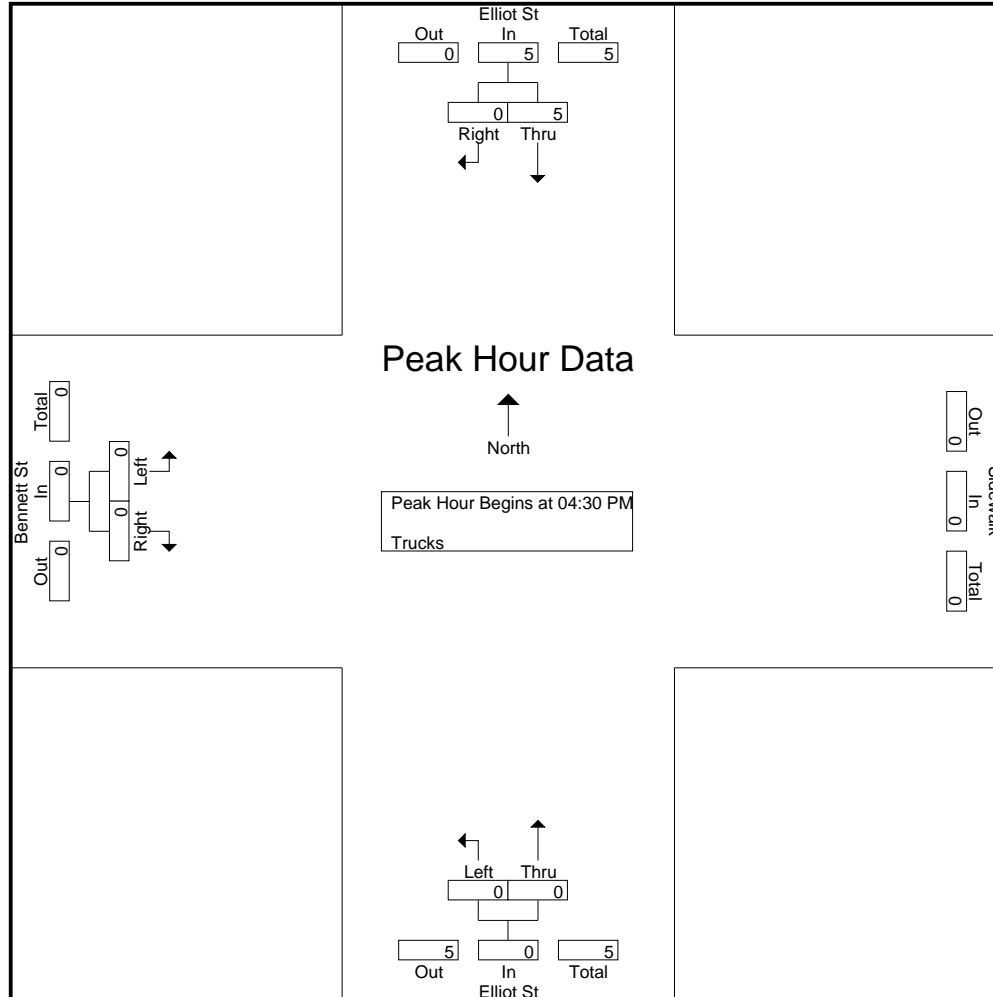


Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

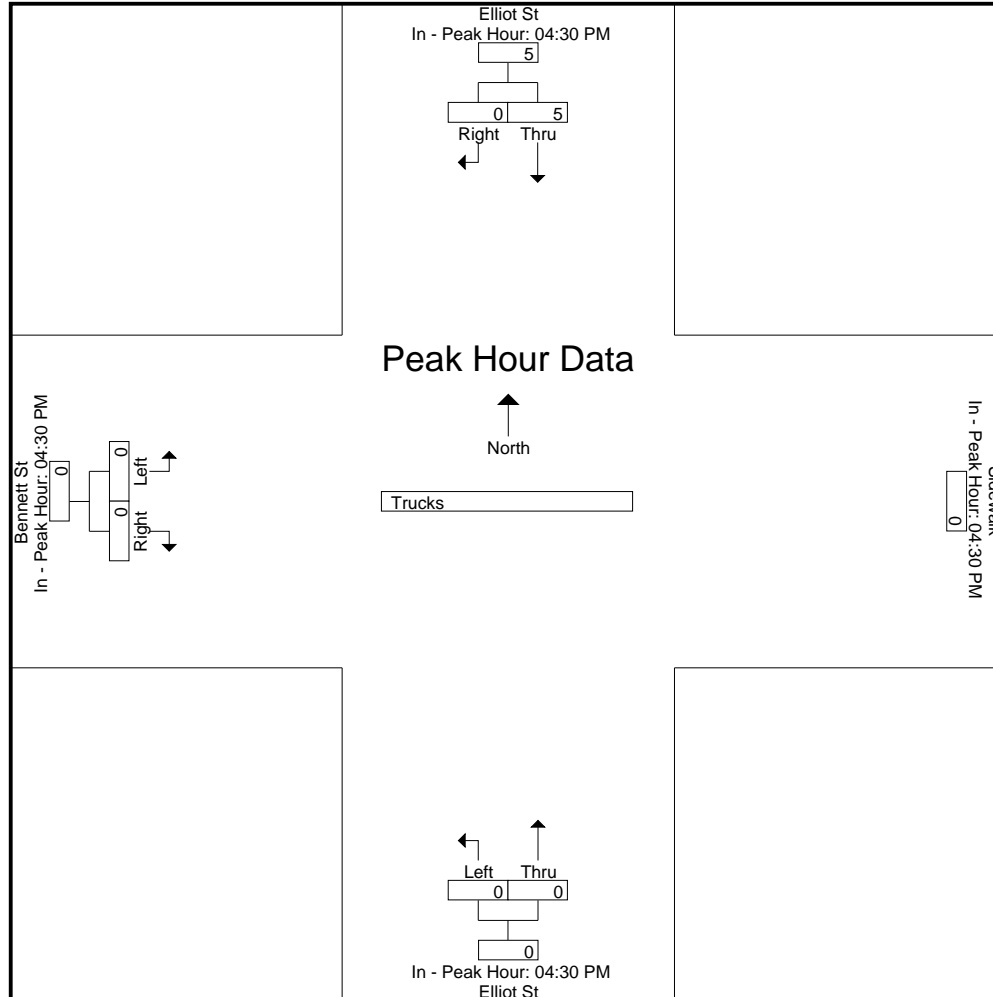


Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	5	9	1	0	0	0	15
04:45 PM	1	5	1	0	0	0	7
Total	6	14	2	0	0	0	22
05:00 PM	2	5	0	0	0	0	7
05:15 PM	1	4	1	0	0	0	6
05:30 PM	4	4	1	0	0	0	9
05:45 PM	4	5	1	0	0	0	10
Total	11	18	3	0	0	0	32
06:00 PM	1	9	0	0	0	0	10
06:15 PM	1	2	0	0	0	0	3
Grand Total	19	43	5	0	0	0	67
Apprch %	30.6	69.4	100	0	0	0	
Total %	28.4	64.2	7.5	0	0	0	

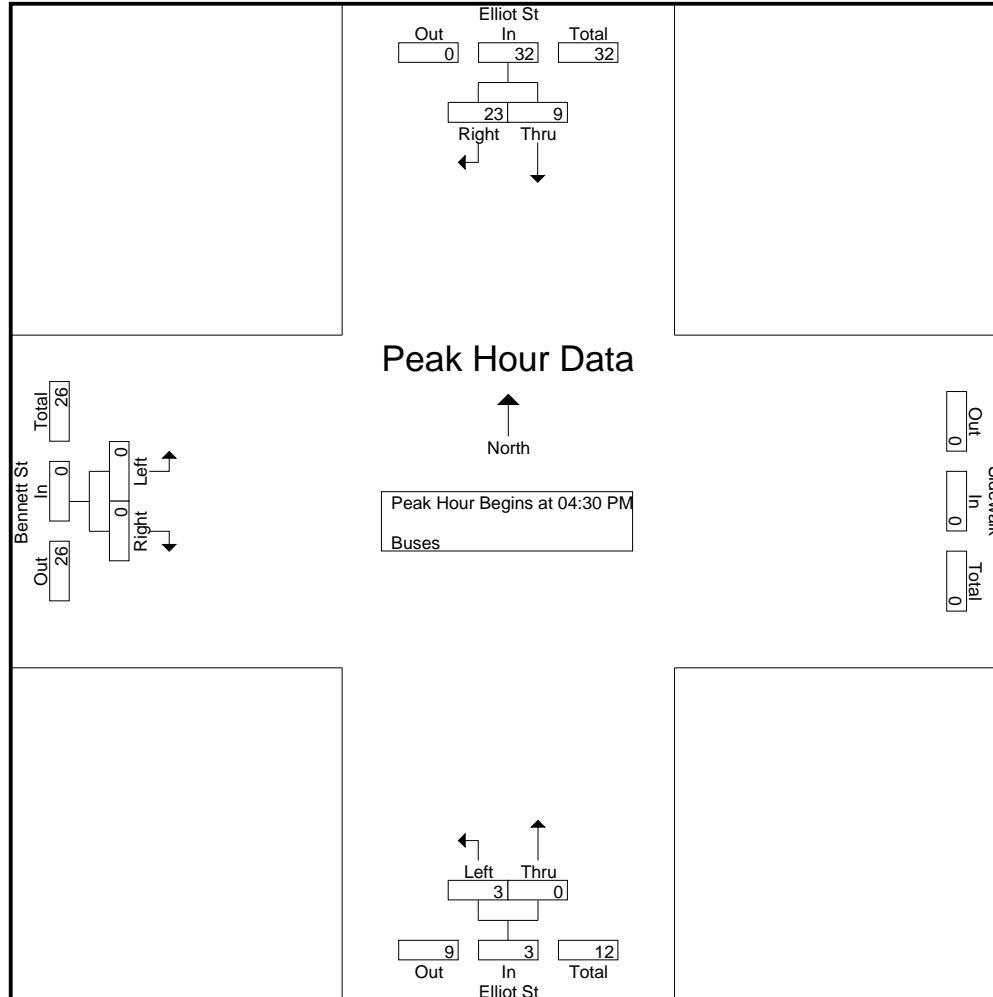
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:30 PM											
04:30 PM	5	9	14	0	1	0	1	0	0	0	15
04:45 PM	1	5	6	0	1	0	1	0	0	0	7
05:00 PM	2	5	7	0	0	0	0	0	0	0	7
05:15 PM	1	4	5	0	1	0	1	0	0	0	6
Total Volume	9	23	32	0	3	0	3	0	0	0	35
% App. Total	28.1	71.9			100	0		0	0		
PHF	.450	.639	.571	.000	.750	.000	.750	.000	.000	.000	.583

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

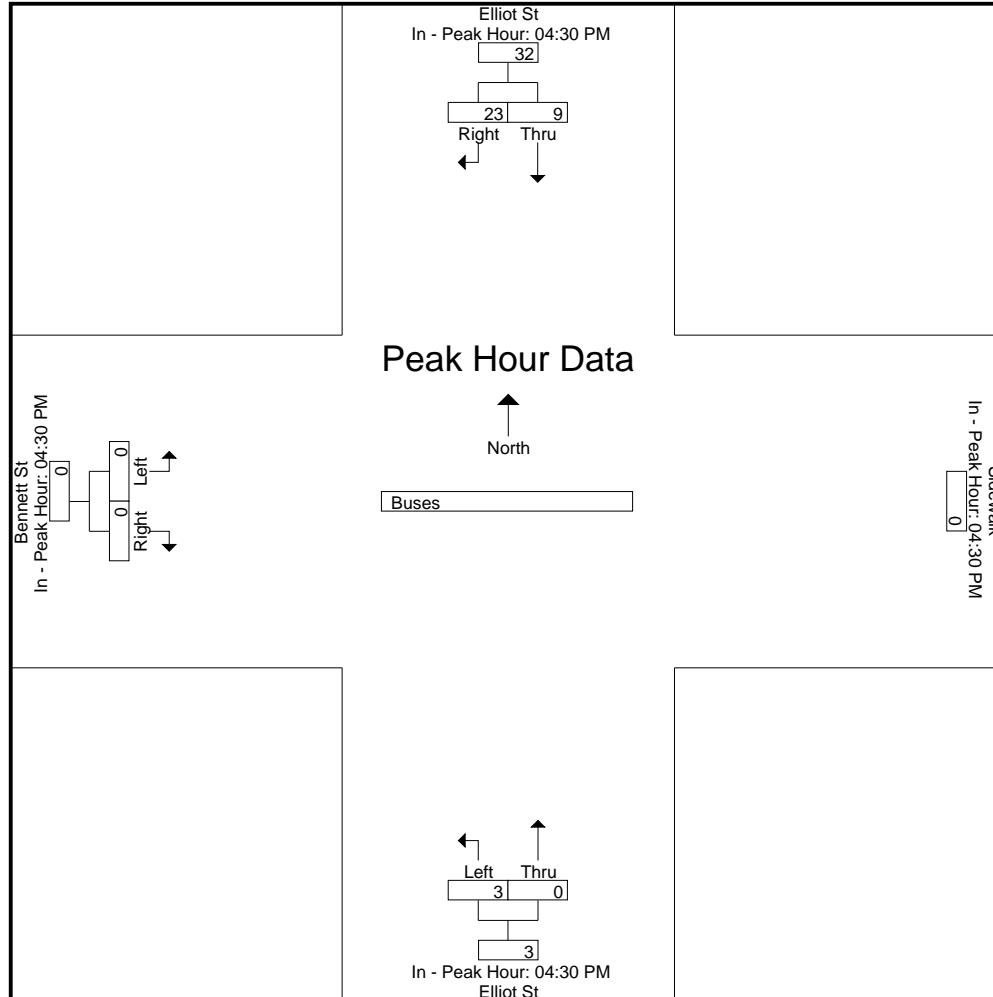
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	04:30 PM			04:30 PM	04:30 PM			04:30 PM			
+0 mins.	5	9	14	0	1	0	1	0	0	0	0
+15 mins.	1	5	6	0	1	0	1	0	0	0	0
+30 mins.	2	5	7	0	0	0	0	0	0	0	0
+45 mins.	1	4	5	0	1	0	1	0	0	0	0
Total Volume	9	23	32	0	3	0	3	0	0	0	0
% App. Total	28.1	71.9			100	0		0	0		
PHF	.450	.639	.571	.000	.750	.000	.750	.000	.000	.000	.000

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	4	2	1	0	0	0	7
04:45 PM	2	3	2	0	0	1	8
Total	6	5	3	0	0	1	15
05:00 PM	5	3	0	0	0	2	10
05:15 PM	5	0	0	0	1	1	7
05:30 PM	4	4	1	0	0	2	11
05:45 PM	5	1	0	1	0	3	10
Total	19	8	1	1	1	8	38
06:00 PM	8	4	0	1	0	1	14
06:15 PM	5	1	0	0	0	2	8
Grand Total	38	18	4	2	1	12	75
Apprch %	67.9	32.1	66.7	33.3	7.7	92.3	
Total %	50.7	24	5.3	2.7	1.3	16	

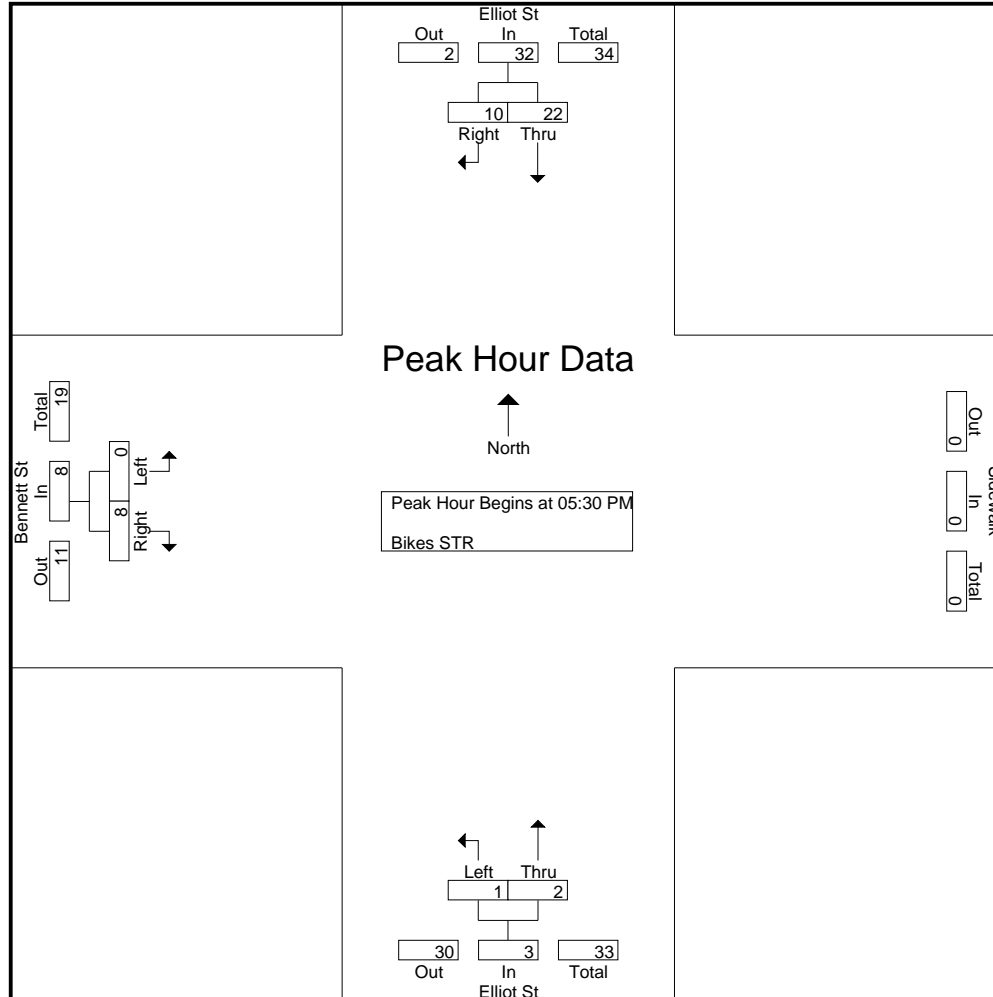
Start Time	Elliot St From North		From East	Elliot St From South		Bennett St From West			Int. Total		
	Thru	Right		Left	Thru	Left	Right	App. Total			
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:30 PM											
05:30 PM	4	4	8	0	1	0	1	0	2	2	11
05:45 PM	5	1	6	0	0	1	1	0	3	3	10
06:00 PM	8	4	12	0	0	1	1	0	1	1	14
06:15 PM	5	1	6	0	0	0	0	0	2	2	8
Total Volume	22	10	32	0	1	2	3	0	8	8	43
% App. Total	68.8	31.2			33.3	66.7		0	100		
PHF	.688	.625	.667	.000	.250	.500	.750	.000	.667	.667	.768

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

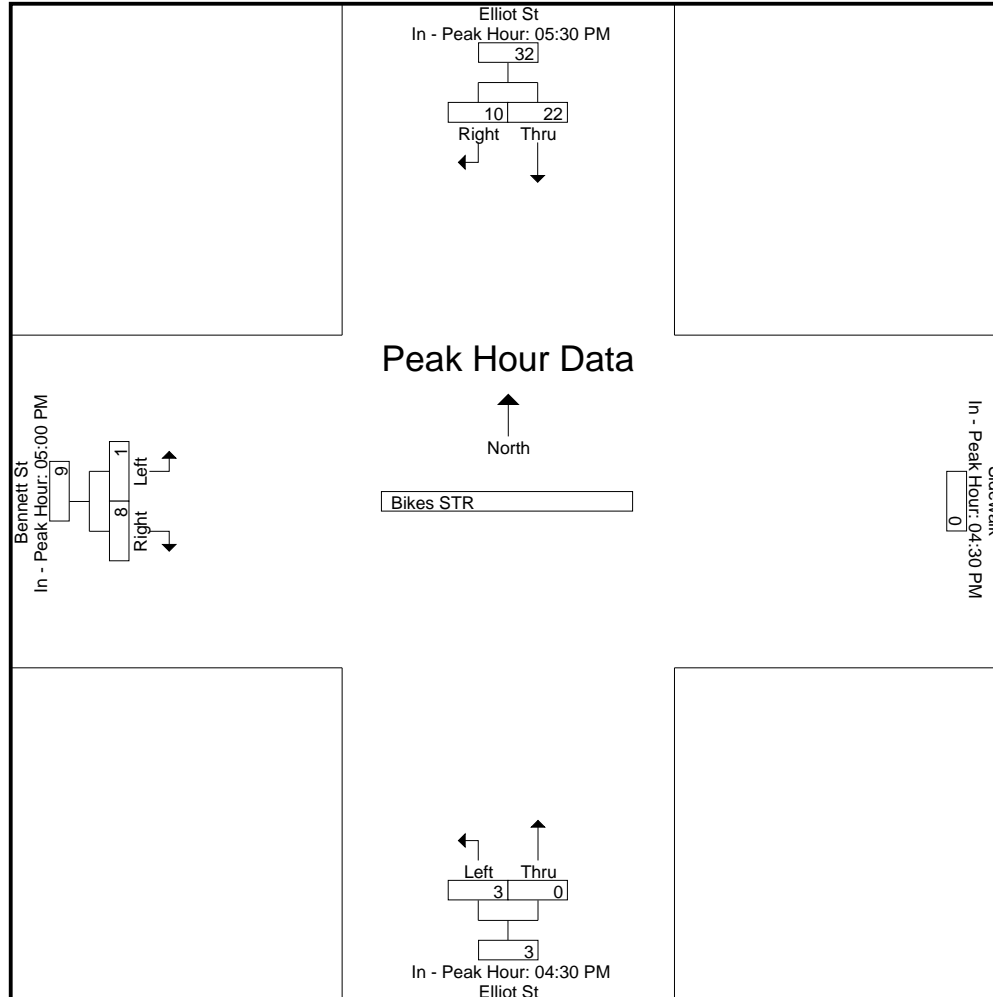
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	05:30 PM			04:30 PM	04:30 PM			05:00 PM			
+0 mins.	4	4	8	0	1	0	1	0	2	2	
+15 mins.	5	1	6	0	2	0	2	1	1	2	
+30 mins.	8	4	12	0	0	0	0	0	2	2	
+45 mins.	5	1	6	0	0	0	0	0	3	3	
Total Volume	22	10	32	0	3	0	3	1	8	9	
% App. Total	68.8	31.2			100	0		11.1	88.9		
PHF	.688	.625	.667	.000	.375	.000	.375	.250	.667	.750	

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	Elliot St From North		Elliot St From South		Bennett St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	0	0	0	1	1	0	2
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	2
05:00 PM	1	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	1	1
05:30 PM	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0
Total	2	0	0	0	0	1	3
06:00 PM	0	1	0	0	0	1	2
06:15 PM	0	0	0	0	0	2	2
Grand Total	2	1	0	1	1	4	9
Apprch %	66.7	33.3	0	100	20	80	
Total %	22.2	11.1	0	11.1	11.1	44.4	

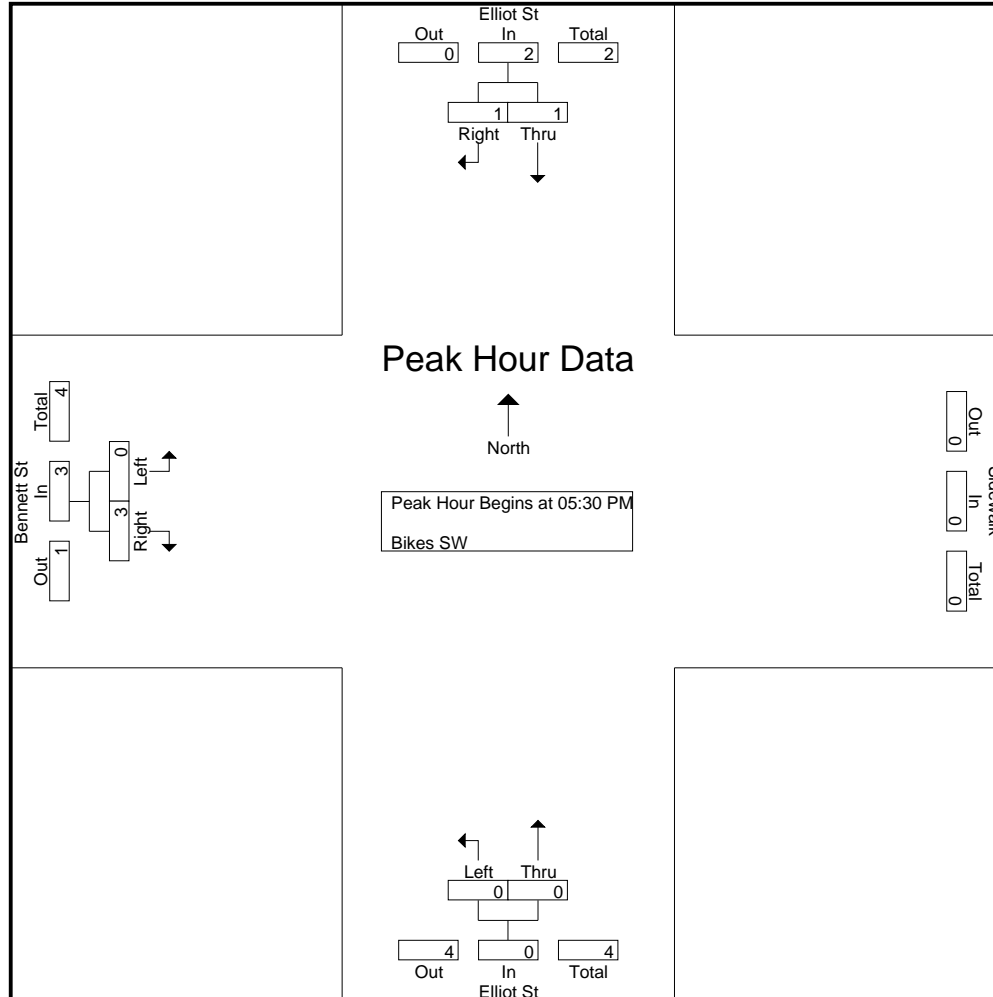
Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:30 PM											
05:30 PM	1	0	1	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	1	1	0	0	0	0	0	1	1	2
06:15 PM	0	0	0	0	0	0	0	0	2	2	2
Total Volume	1	1	2	0	0	0	0	0	3	3	5
% App. Total	50	50			0	0			100		
PHF	.250	.250	.500	.000	.000	.000	.000	.000	.375	.375	.625

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

Start Time	Elliot St From North			From East	Elliot St From South			Bennett St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

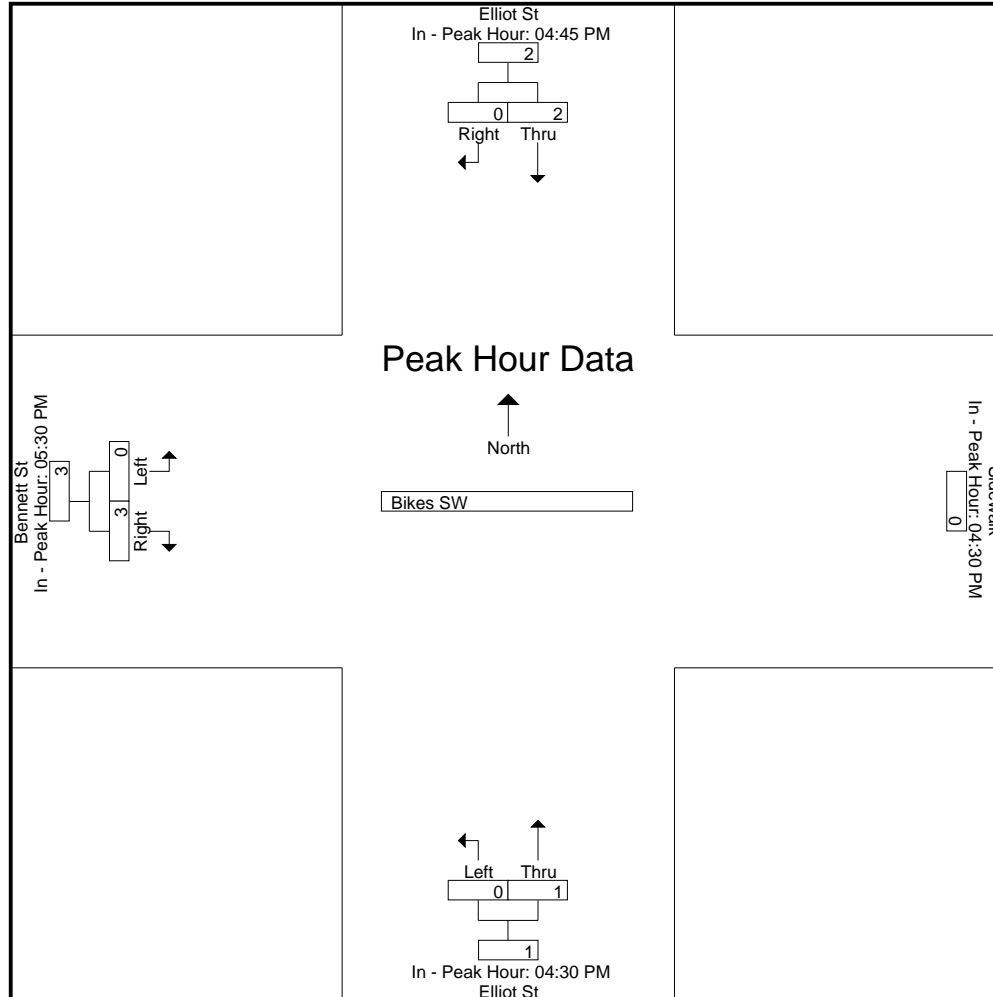
	04:45 PM			04:30 PM	04:30 PM			05:30 PM		
+0 mins.	0	0	0	0	0	1	1	0	0	0
+15 mins.	1	0	1	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	1	1
+45 mins.	1	0	1	0	0	0	0	0	2	2
Total Volume	2	0	2	0	0	1	1	0	3	3
% App. Total	100	0			0	100		0	100	
PHF	.500	.000	.500	.000	.000	.250	.250	.000	.375	.375

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	Elliot St From North		Sidewalk From East		Elliot St From South		Bennett St From West		Int. Total
	WB	EB	NB	SB	EB	WB	SB	NB	
04:30 PM	25	14	14	20	2	1	37	25	138
04:45 PM	10	4	16	14	4	1	32	41	122
Total	35	18	30	34	6	2	69	66	260
05:00 PM	20	14	18	13	3	0	24	63	155
05:15 PM	18	6	18	8	2	3	36	41	132
05:30 PM	14	7	12	8	3	2	39	75	160
05:45 PM	6	2	13	6	1	1	32	44	105
Total	58	29	61	35	9	6	131	223	552
06:00 PM	18	6	26	19	2	3	38	38	150
06:15 PM	25	13	10	21	5	1	41	30	146
Grand Total	136	66	127	109	22	12	279	357	1108
Apprch %	67.3	32.7	53.8	46.2	64.7	35.3	43.9	56.1	
Total %	12.3	6	11.5	9.8	2	1.1	25.2	32.2	

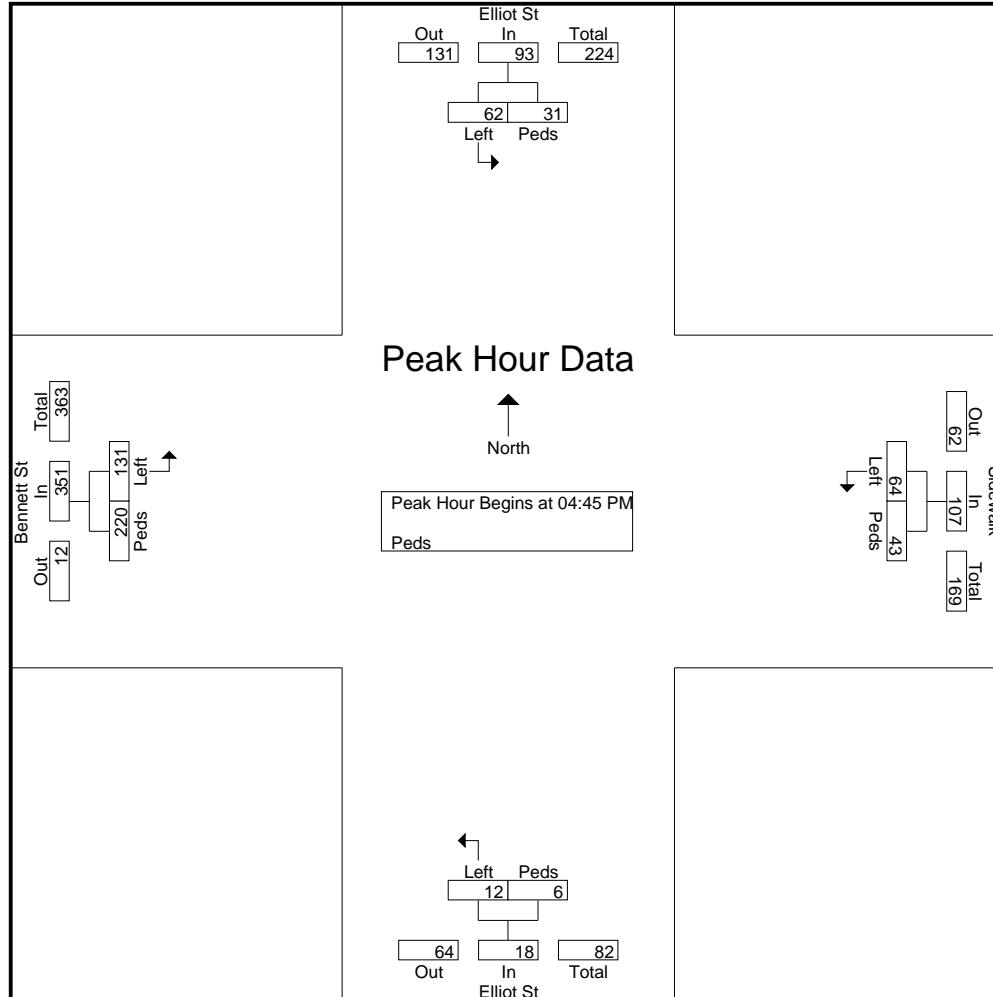
Start Time	Elliot St From North			Sidewalk From East			Elliot St From South			Bennett St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	10	4	14	16	14	30	4	1	5	32	41	73	122
05:00 PM	20	14	34	18	13	31	3	0	3	24	63	87	155
05:15 PM	18	6	24	18	8	26	2	3	5	36	41	77	132
05:30 PM	14	7	21	12	8	20	3	2	5	39	75	114	160
Total Volume	62	31	93	64	43	107	12	6	18	131	220	351	569
% App. Total	66.7	33.3		59.8	40.2		66.7	33.3		37.3	62.7		
PHF	.775	.554	.684	.889	.768	.863	.750	.500	.900	.840	.733	.770	.889

Accurate Counts

978-664-2565

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Elliot Street
 E/W Street : Bennett Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622001
 Site Code : 12622001
 Start Date : 4/2/2014
 Page No : 3

Start Time	Elliot St From North			Sidewalk From East			Elliot St From South			Bennett St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

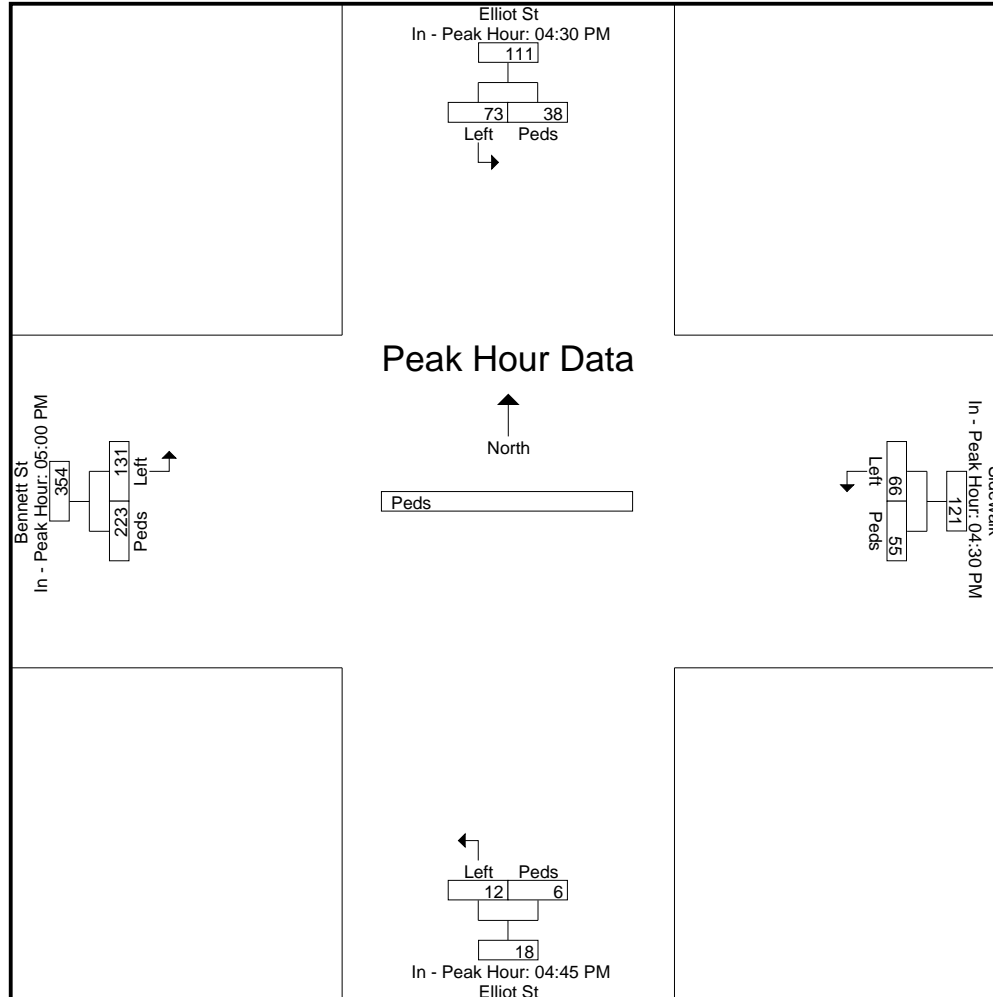
	04:30 PM			04:30 PM			04:45 PM			05:00 PM		
+0 mins.	25	14	39	14	20	34	4	1	5	24	63	87
+15 mins.	10	4	14	16	14	30	3	0	3	36	41	77
+30 mins.	20	14	34	18	13	31	2	3	5	39	75	114
+45 mins.	18	6	24	18	8	26	3	2	5	32	44	76
Total Volume	73	38	111	66	55	121	12	6	18	131	223	354
% App. Total	65.8	34.2		54.5	45.5		66.7	33.3		37	63	
PHF	.730	.679	.712	.917	.688	.890	.750	.500	.900	.840	.743	.776

Accurate Counts

978-664-2565

File Name : 12622001
Site Code : 12622001
Start Date : 4/2/2014
Page No : 4

N/S Street : Elliot Street
E/W Street : Bennett Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Start Time													
07:30 AM	0	0	1	0	45	0	1	0	0	0	101	1	149
07:45 AM	0	0	1	0	44	0	0	0	0	2	98	0	145
Total	0	0	2	0	89	0	1	0	0	2	199	1	294
08:00 AM	0	0	0	0	50	0	0	0	1	0	109	2	162
08:15 AM	0	0	0	0	52	0	0	0	1	1	102	3	159
08:30 AM	2	0	0	1	54	0	0	0	0	1	99	0	157
08:45 AM	0	0	0	5	44	0	0	0	2	0	105	1	157
Total	2	0	0	6	200	0	0	0	4	2	415	6	635
09:00 AM	0	0	0	1	57	0	1	0	1	1	100	2	163
09:15 AM	0	0	0	1	48	0	0	0	3	0	125	2	179
Grand Total	2	0	2	8	394	0	2	0	8	5	839	11	1271
Apprch %	50	0	50	2	98	0	20	0	80	0.6	98.1	1.3	
Total %	0.2	0	0.2	0.6	31	0	0.2	0	0.6	0.4	66	0.9	
Cars	2	0	2	8	381	0	2	0	8	5	790	9	1207
% Cars	100	0	100	100	96.7	0	100	0	100	100	94.2	81.8	95
Trucks	0	0	0	0	4	0	0	0	0	0	20	2	26
% Trucks	0	0	0	0	1	0	0	0	0	0	2.4	18.2	2
Buses	0	0	0	0	9	0	0	0	0	0	29	0	38
% Buses	0	0	0	0	2.3	0	0	0	0	0	3.5	0	3

	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:30 AM

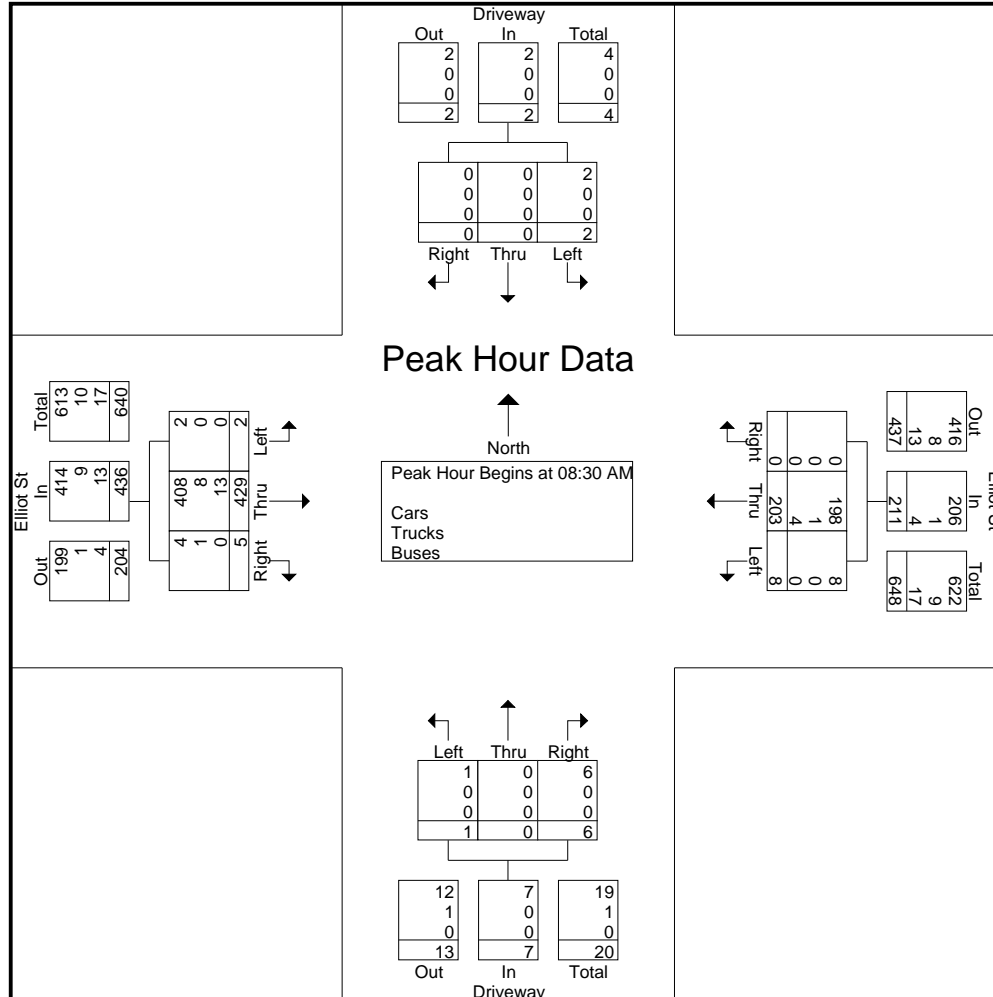
08:30 AM	2	0	0	2	1	54	0	55	0	0	0	0	1	99	0	100	157
08:45 AM	0	0	0	0	5	44	0	49	0	0	2	2	0	105	1	106	157
09:00 AM	0	0	0	0	1	57	0	58	1	0	1	2	1	100	2	103	163
09:15 AM	0	0	0	0	1	48	0	49	0	0	3	3	0	125	2	127	179
Total Volume	2	0	0	2	8	203	0	211	1	0	6	7	2	429	5	436	656
% App. Total	100	0	0		3.8	96.2	0		14.3	0	85.7		0.5	98.4	1.1		
PHF	.250	.000	.000	.250	.400	.890	.000	.909	.250	.000	.500	.583	.500	.858	.625	.858	.916
Cars	2	0	0	2	8	198	0	206	1	0	6	7	2	408	4	414	629
% Cars	100	0	0	100	100	97.5	0	97.6	100	0	100	100	100	95.1	80.0	95.0	95.9
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	8	1	9	10
% Trucks	0	0	0	0	0	0.5	0	0.5	0	0	0	0	0	1.9	20.0	2.1	1.5
Buses	0	0	0	0	0	4	0	4	0	0	0	0	0	13	0	13	17
% Buses	0	0	0	0	0	2.0	0	1.9	0	0	0	0	0	3.0	0	3.0	2.6

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

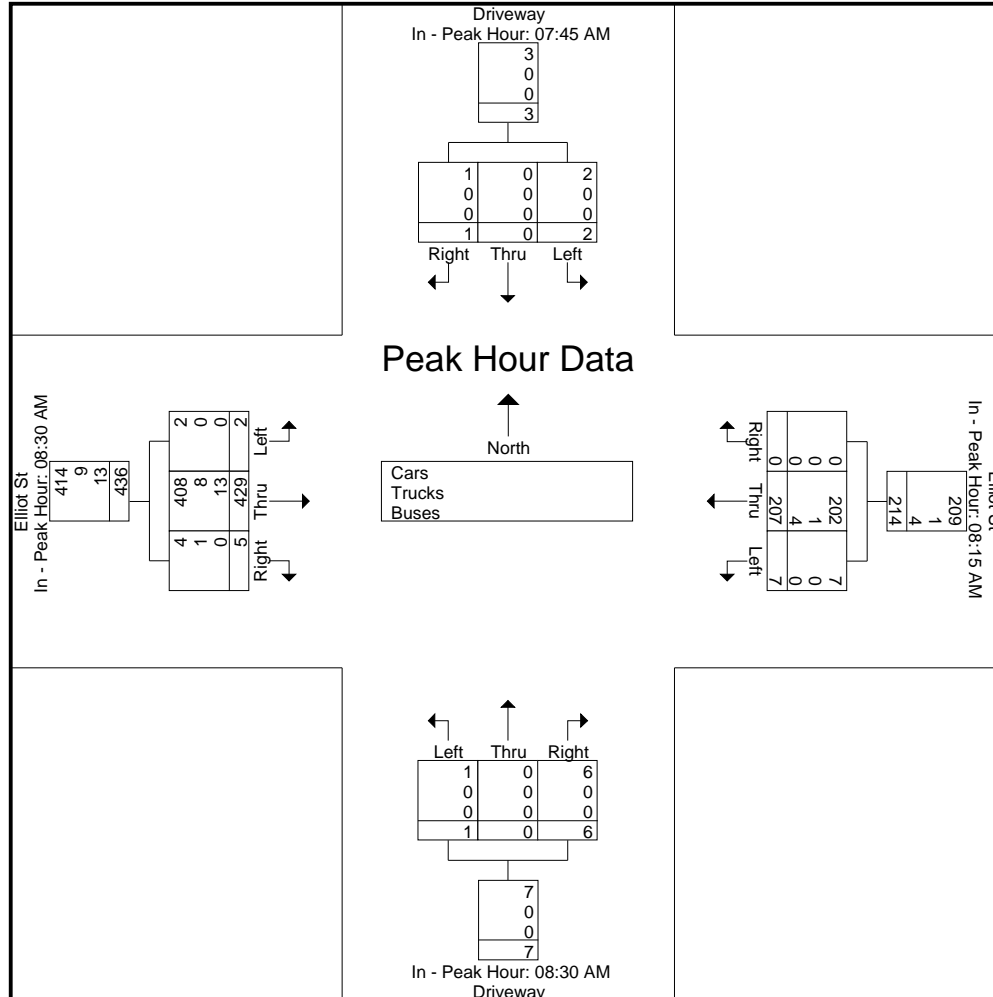
	07:45 AM				08:15 AM				08:30 AM				08:30 AM			
+0 mins.	0	0	1	1	0	52	0	52	0	0	0	0	1	99	0	100
+15 mins.	0	0	0	0	1	54	0	55	0	0	2	2	0	105	1	106
+30 mins.	0	0	0	0	5	44	0	49	1	0	1	2	1	100	2	103
+45 mins.	2	0	0	2	1	57	0	58	0	0	3	3	0	125	2	127
Total Volume	2	0	1	3	7	207	0	214	1	0	6	7	2	429	5	436
% App. Total	66.7	0	33.3		3.3	96.7	0		14.3	0	85.7		0.5	98.4	1.1	
PHF	.250	.000	.250	.375	.350	.908	.000	.922	.250	.000	.500	.583	.500	.858	.625	.858
Cars	2	0	1	3	7	202	0	209	1	0	6	7	2	408	4	414
% Cars	100	0	100	100	100	97.6	0	97.7	100	0	100	100	100	95.1	80	95
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	8	1	9
% Trucks	0	0	0	0	0	0.5	0	0.5	0	0	0	0	0	1.9	20	2.1
Buses	0	0	0	0	0	4	0	4	0	0	0	0	0	13	0	13
% Buses	0	0	0	0	0	1.9	0	1.9	0	0	0	0	0	3	0	3

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	0	1	0	43	0	1	0	0	0	91	1	137
07:45 AM	0	0	1	0	41	0	0	0	0	2	94	0	138
Total	0	0	2	0	84	0	1	0	0	2	185	1	275
08:00 AM	0	0	0	0	49	0	0	0	1	0	101	2	153
08:15 AM	0	0	0	0	50	0	0	0	1	1	96	2	150
08:30 AM	2	0	0	1	52	0	0	0	0	1	93	0	149
08:45 AM	0	0	0	5	44	0	0	0	2	0	101	1	153
Total	2	0	0	6	195	0	0	0	4	2	391	5	605
09:00 AM	0	0	0	1	56	0	1	0	1	1	94	1	155
09:15 AM	0	0	0	1	46	0	0	0	3	0	120	2	172
Grand Total	2	0	2	8	381	0	2	0	8	5	790	9	1207
Apprch %	50	0	50	2.1	97.9	0	20	0	80	0.6	98.3	1.1	
Total %	0.2	0	0.2	0.7	31.6	0	0.2	0	0.7	0.4	65.5	0.7	

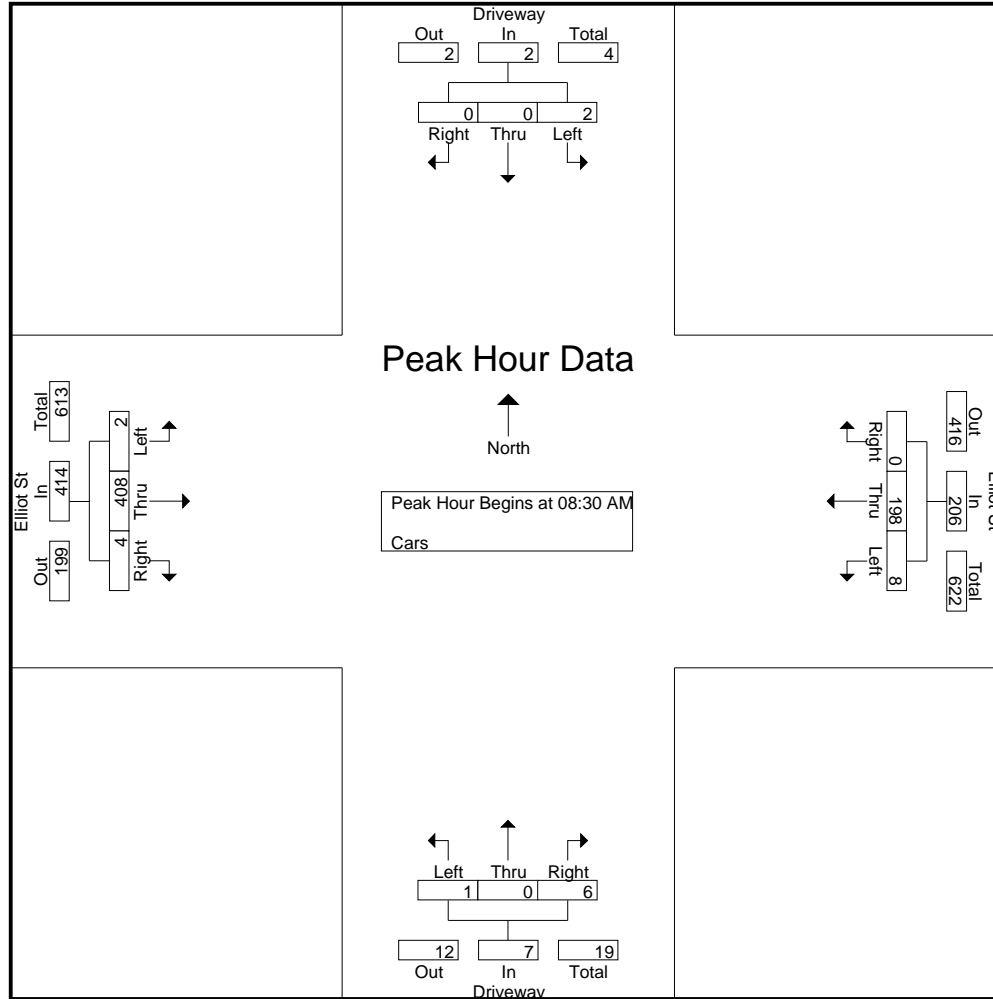
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30 AM																	
08:30 AM	2	0	0	2	1	52	0	53	0	0	0	0	1	93	0	94	149
08:45 AM	0	0	0	0	5	44	0	49	0	0	2	2	0	101	1	102	153
09:00 AM	0	0	0	0	1	56	0	57	1	0	1	2	1	94	1	96	155
09:15 AM	0	0	0	0	1	46	0	47	0	0	3	3	0	120	2	122	172
Total Volume	2	0	0	2	8	198	0	206	1	0	6	7	2	408	4	414	629
% App. Total	100	0	0		3.9	96.1	0		14.3	0	85.7		0.5	98.6	1		
PHF	.250	.000	.000	.250	.400	.884	.000	.904	.250	.000	.500	.583	.500	.850	.500	.848	.914

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

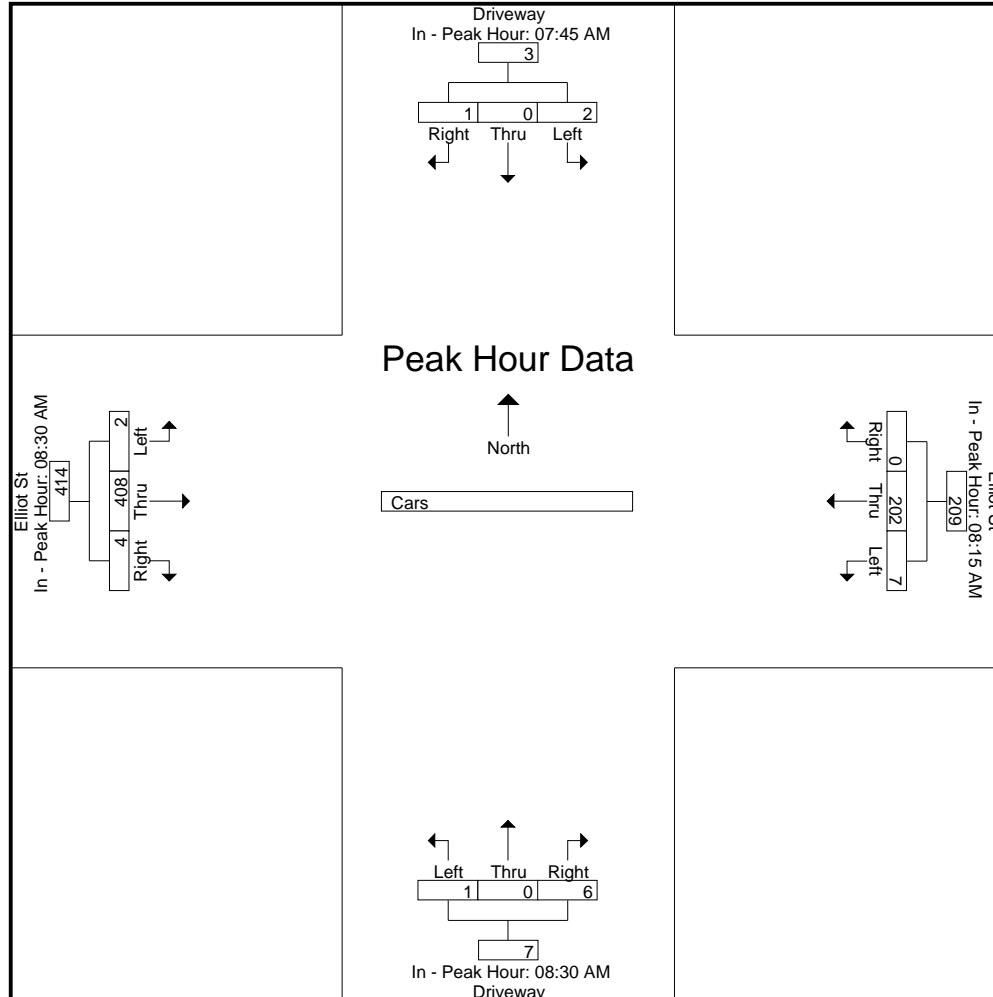
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:45 AM				08:15 AM				08:30 AM				08:30 AM				
+0 mins.	0	0	1	1	0	50	0	50	0	0	0	0	1	93	0	94	
+15 mins.	0	0	0	0	1	52	0	53	0	0	2	2	0	101	1	102	
+30 mins.	0	0	0	0	5	44	0	49	1	0	1	2	1	94	1	96	
+45 mins.	2	0	0	2	1	56	0	57	0	0	3	3	0	120	2	122	
Total Volume	2	0	1	3	7	202	0	209	1	0	6	7	2	408	4	414	
% App. Total	66.7	0	33.3		3.3	96.7	0		14.3	0	85.7		0.5	98.6	1		
PHF	.250	.000	.250	.375	.350	.902	.000	.917	.250	.000	.500	.583	.500	.850	.500	.848	

Accurate Counts

978-664-2565

File Name : 12622002
Site Code : 12622002
Start Date : 4/2/2014
Page No : 4

N/S Street : Driveways
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Trucks

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	0	0	0	1	0	0	0	0	0	6	0	7
07:45 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
Total	0	0	0	0	2	0	0	0	0	0	8	0	10
08:00 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	0	1	0	0	0	0	0	8	1	10
09:00 AM	0	0	0	0	1	0	0	0	0	0	2	1	4
09:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
Grand Total	0	0	0	0	4	0	0	0	0	0	20	2	26
Apprch %	0	0	0	0	100	0	0	0	0	0	90.9	9.1	
Total %	0	0	0	0	15.4	0	0	0	0	0	76.9	7.7	

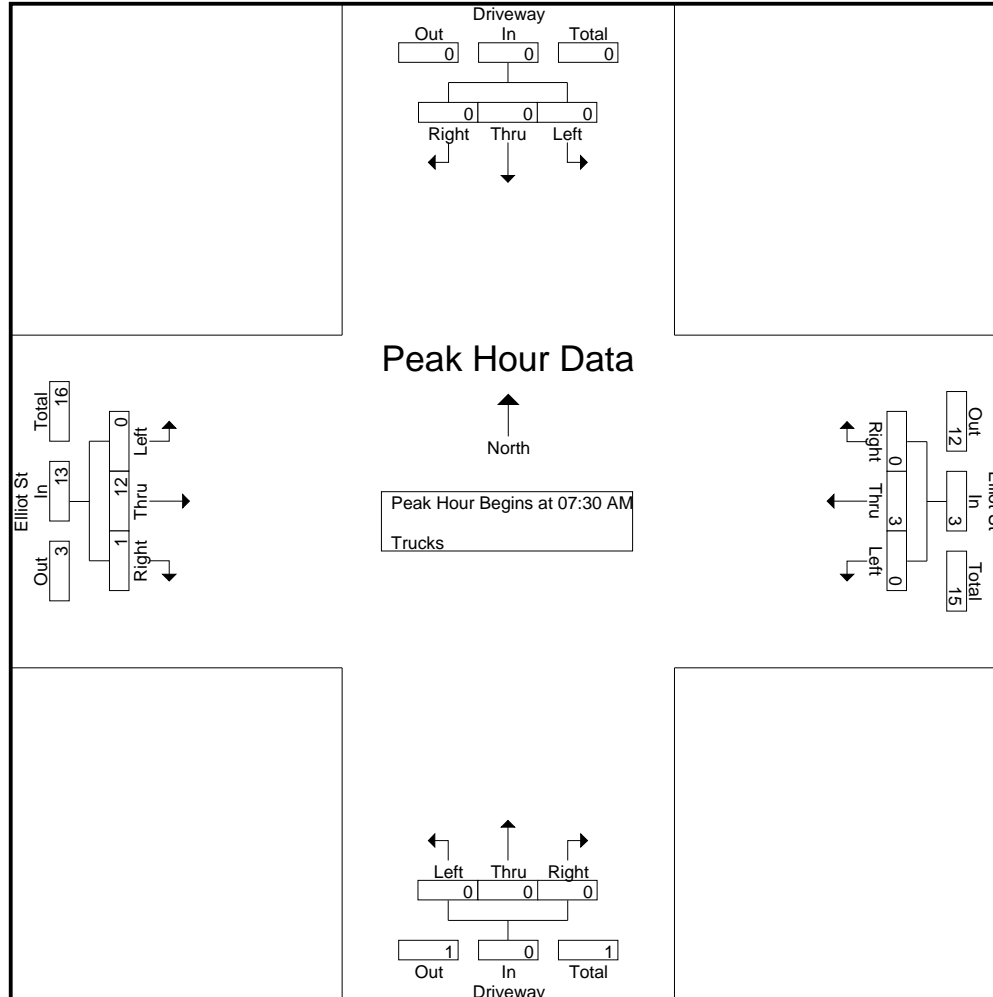
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	6	0	6	7
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	12	1	13	16
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	92.3	7.7		
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.500	.250	.542	.571

Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

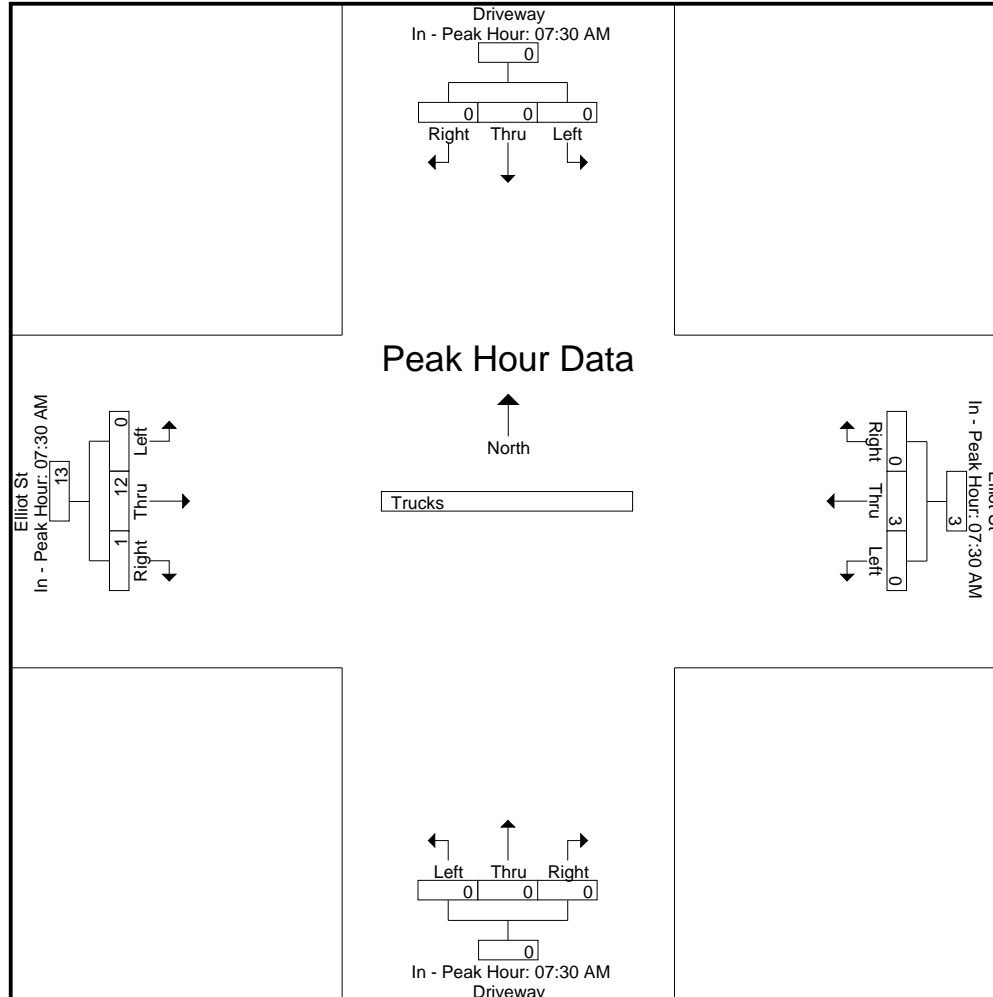
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	6	0	6	
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	12	1	13	
% App. Total	0	0	0	0	0	100	0	3	0	0	0	0	0	92.3	7.7		
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.500	.250	.542	

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	0	0	0	1	0	0	0	0	0	4	0	5
07:45 AM	0	0	0	0	2	0	0	0	0	0	2	0	4
Total	0	0	0	0	3	0	0	0	0	0	6	0	9
08:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	6
08:15 AM	0	0	0	0	2	0	0	0	0	0	4	0	6
08:30 AM	0	0	0	0	2	0	0	0	0	0	4	0	6
08:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	0	4	0	0	0	0	0	16	0	20
09:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	4
09:15 AM	0	0	0	0	2	0	0	0	0	0	3	0	5
Grand Total	0	0	0	0	9	0	0	0	0	0	29	0	38
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	23.7	0	0	0	0	0	76.3	0	

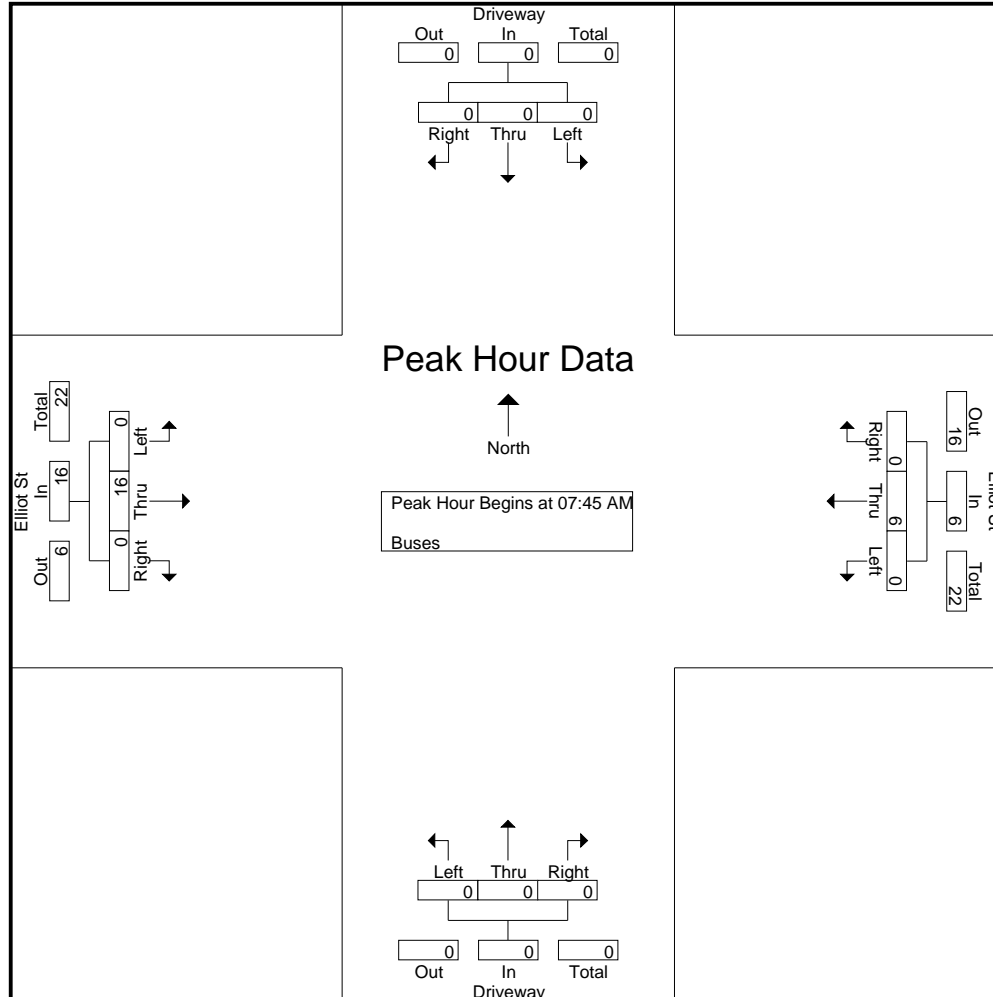
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	6
08:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	6
08:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	6
Total Volume	0	0	0	0	0	6	0	6	0	0	0	0	0	16	0	16	22
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.667	.000	.667	.917

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

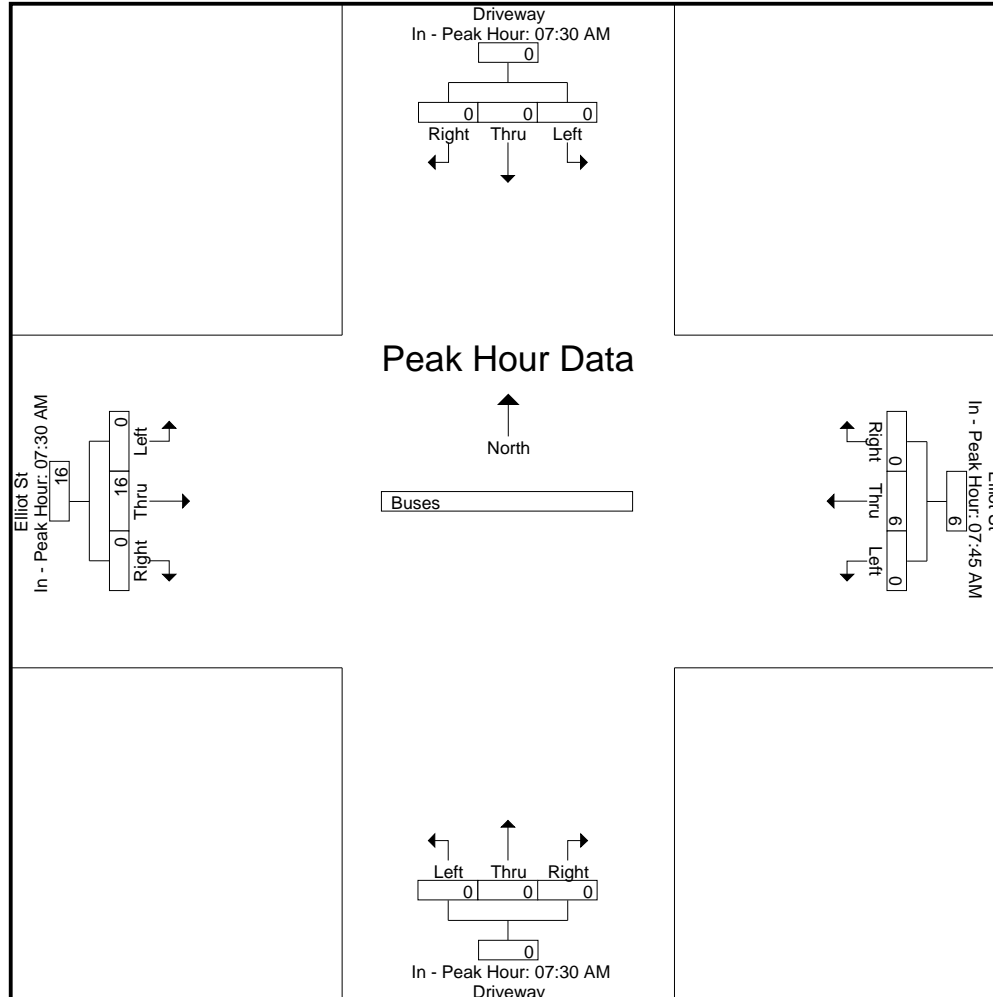
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:45 AM				07:30 AM				07:30 AM				
+0 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	6	0	6	
+45 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	
Total Volume	0	0	0	0	0	6	0	6	0	0	0	0	0	16	0	16	
% App. Total	0	0	0	0	0	100	0	6	0	0	0	0	0	100	0	6	
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.667	.000	.667	

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	6
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	0	0	0	0	0	0	0	0	0	0	7	1	8
08:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	4
08:15 AM	0	0	0	1	0	0	0	0	0	0	3	5	9
08:30 AM	0	0	0	2	1	0	0	0	0	0	7	9	19
08:45 AM	0	0	0	0	2	0	0	0	0	0	7	0	9
Total	0	0	0	3	3	0	0	0	0	0	21	14	41
09:00 AM	0	0	0	0	2	0	0	0	0	0	2	4	8
09:15 AM	0	0	0	0	0	0	0	0	0	0	3	2	5
Grand Total	0	0	0	3	5	0	0	0	0	0	33	21	62
Apprch %	0	0	0	37.5	62.5	0	0	0	0	0	61.1	38.9	
Total %	0	0	0	4.8	8.1	0	0	0	0	0	53.2	33.9	

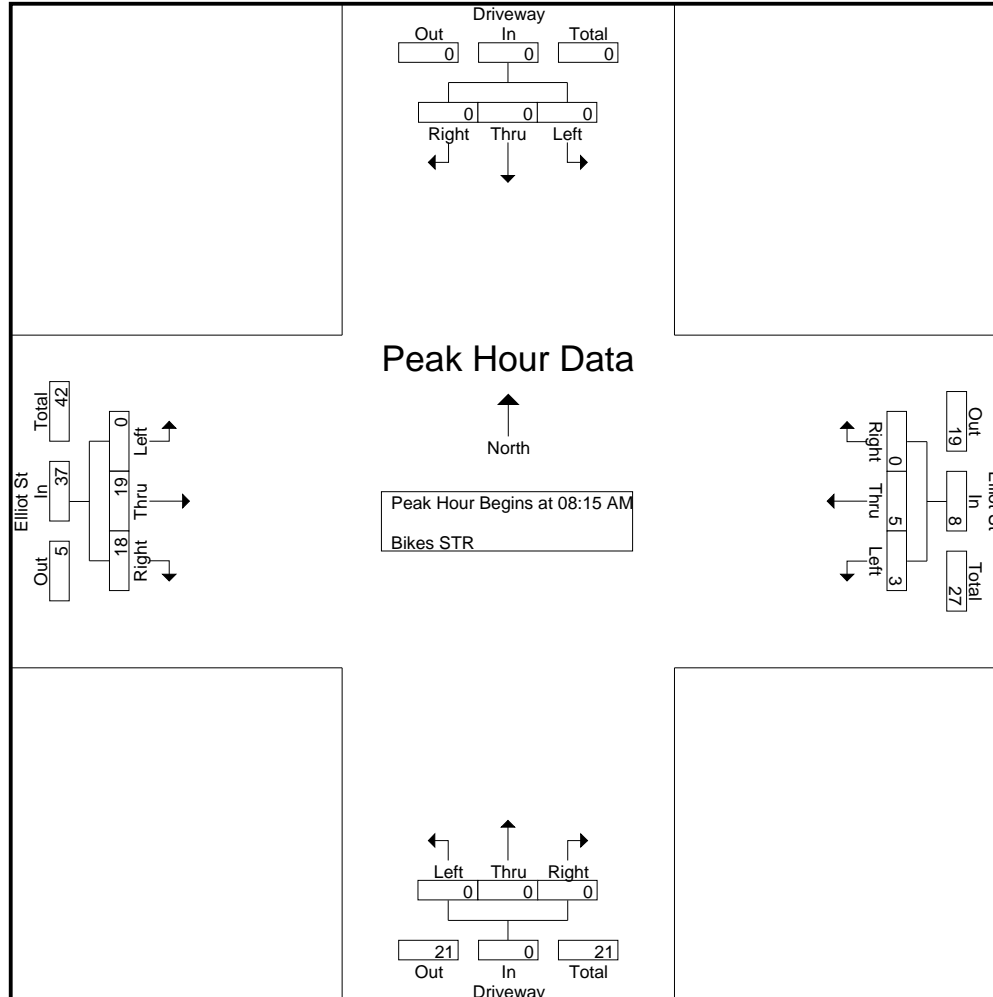
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:15 AM																		
08:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	3	5	8	9	
08:30 AM	0	0	0	0	2	1	0	3	0	0	0	0	0	7	9	16	19	
08:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	7	0	7	9	
09:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	4	6	8	
Total Volume	0	0	0	0	3	5	0	8	0	0	0	0	0	19	18	37	45	
% App. Total	0	0	0	0	37.5	62.5	0	0	0	0	0	0	0	51.4	48.6	0	0	
PHF	.000	.000	.000	.000	.375	.625	.000	.667	.000	.000	.000	.000	.000	.000	.679	.500	.578	.592

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

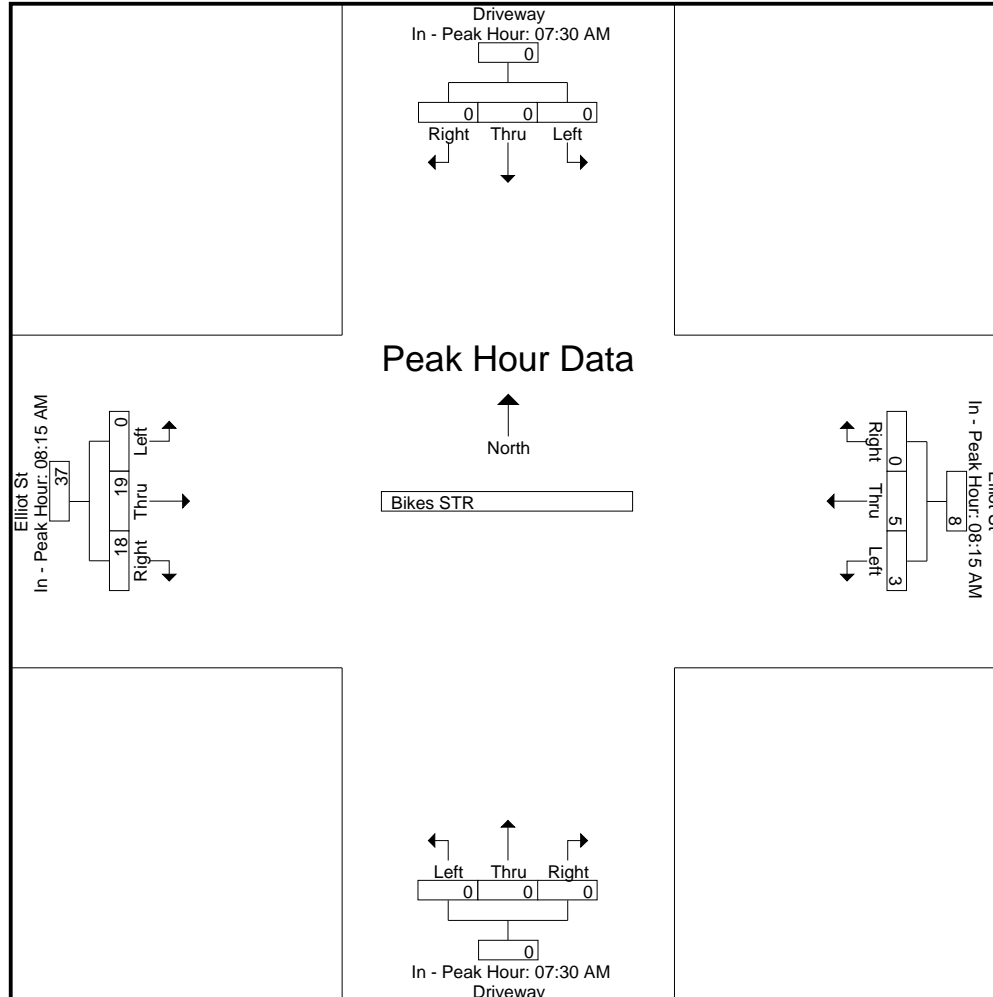
	07:30 AM				08:15 AM				07:30 AM				08:15 AM			
+0 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	3	5	8
+15 mins.	0	0	0	0	2	1	0	3	0	0	0	0	0	7	9	16
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	7	0	7
+45 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	2	4	6
Total Volume	0	0	0	0	3	5	0	8	0	0	0	0	0	19	18	37
% App. Total	0	0	0	0	37.5	62.5	0		0	0	0	0	0	51.4	48.6	
PHF	.000	.000	.000	.000	.375	.625	.000	.667	.000	.000	.000	.000	.000	.679	.500	.578

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
08:15 AM	0	0	0	0	1	0	0	0	0	0	0	3	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	1	0	0	0	0	0	1	5	7
09:00 AM	0	0	0	0	0	0	0	0	0	0	1	3	4
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	1	0	0	0	0	0	3	8	12
Apprch %	0	0	0	0	100	0	0	0	0	0	27.3	72.7	
Total %	0	0	0	0	8.3	0	0	0	0	0	25	66.7	

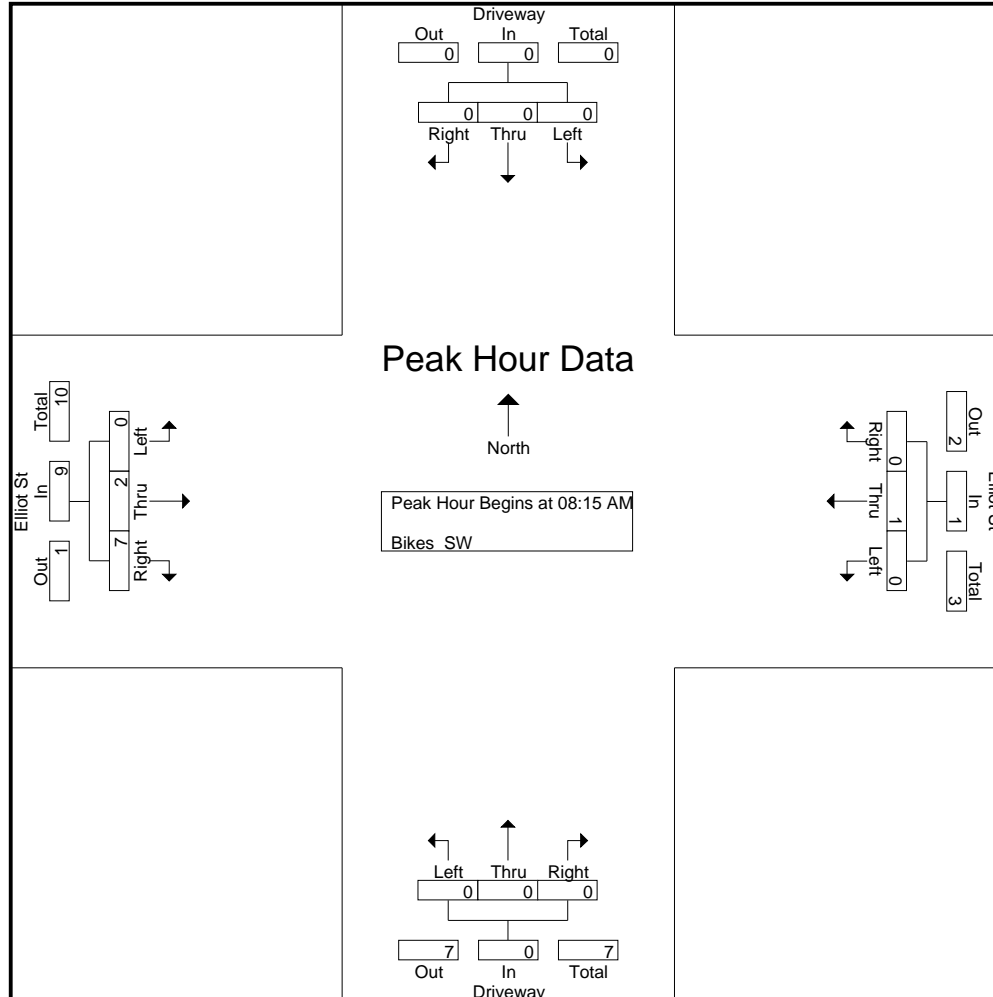
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:15 AM																	
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	3	3	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	2	7	9	10
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	22.2	77.8		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.500	.583	.625

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

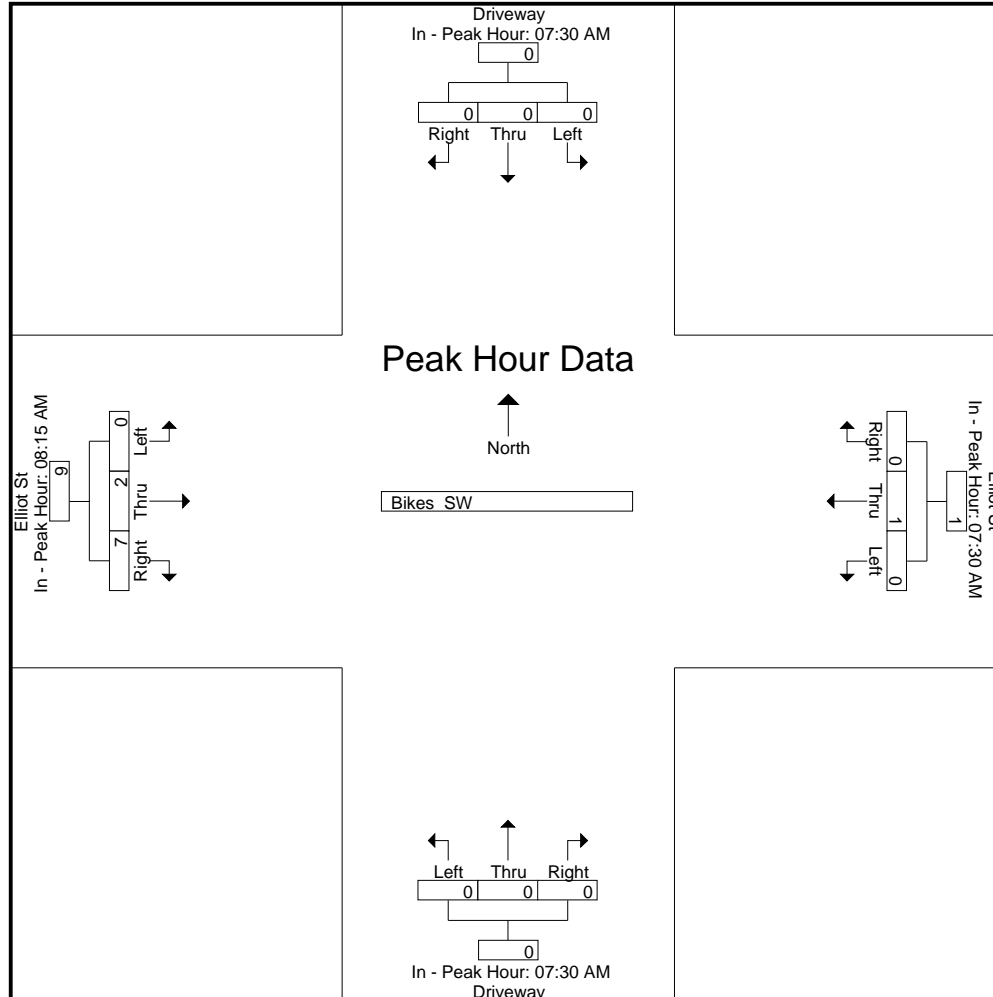
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				08:15 AM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	3	4	
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	2	7	9	
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	22.2	77.8		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.583	.563	

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	Driveway From North		Elliot St From East		Driveway From South		Elliot St From West		Int. Total
	EB	WB	SB	NB	WB	EB	NB	SB	
07:30 AM	3	6	0	0	3	5	1	1	19
07:45 AM	5	11	1	0	9	2	0	1	29
Total	8	17	1	0	12	7	1	2	48
08:00 AM	1	5	0	0	9	2	1	0	18
08:15 AM	14	5	2	0	7	2	1	0	31
08:30 AM	23	11	1	0	2	8	2	2	49
08:45 AM	9	13	2	0	16	2	2	2	46
Total	47	34	5	0	34	14	6	4	144
09:00 AM	5	12	2	3	15	7	1	1	46
09:15 AM	14	9	3	0	5	9	0	3	43
Grand Total	74	72	11	3	66	37	8	10	281
Apprch %	50.7	49.3	78.6	21.4	64.1	35.9	44.4	55.6	
Total %	26.3	25.6	3.9	1.1	23.5	13.2	2.8	3.6	

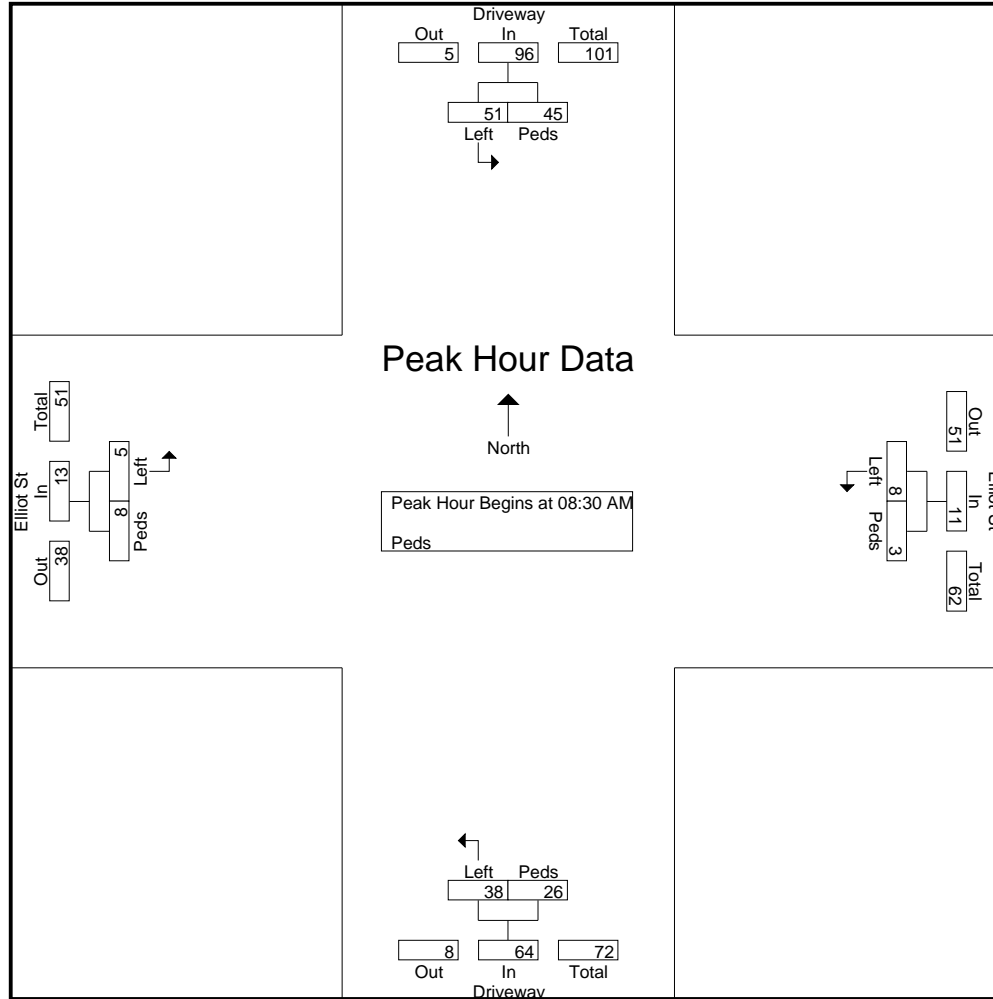
Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:30 AM													
08:30 AM	23	11	34	1	0	1	2	8	10	2	2	4	49
08:45 AM	9	13	22	2	0	2	16	2	18	2	2	4	46
09:00 AM	5	12	17	2	3	5	15	7	22	1	1	2	46
09:15 AM	14	9	23	3	0	3	5	9	14	0	3	3	43
Total Volume	51	45	96	8	3	11	38	26	64	5	8	13	184
% App. Total	53.1	46.9		72.7	27.3		59.4	40.6		38.5	61.5		
PHF	.554	.865	.706	.667	.250	.550	.594	.722	.727	.625	.667	.813	.939

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

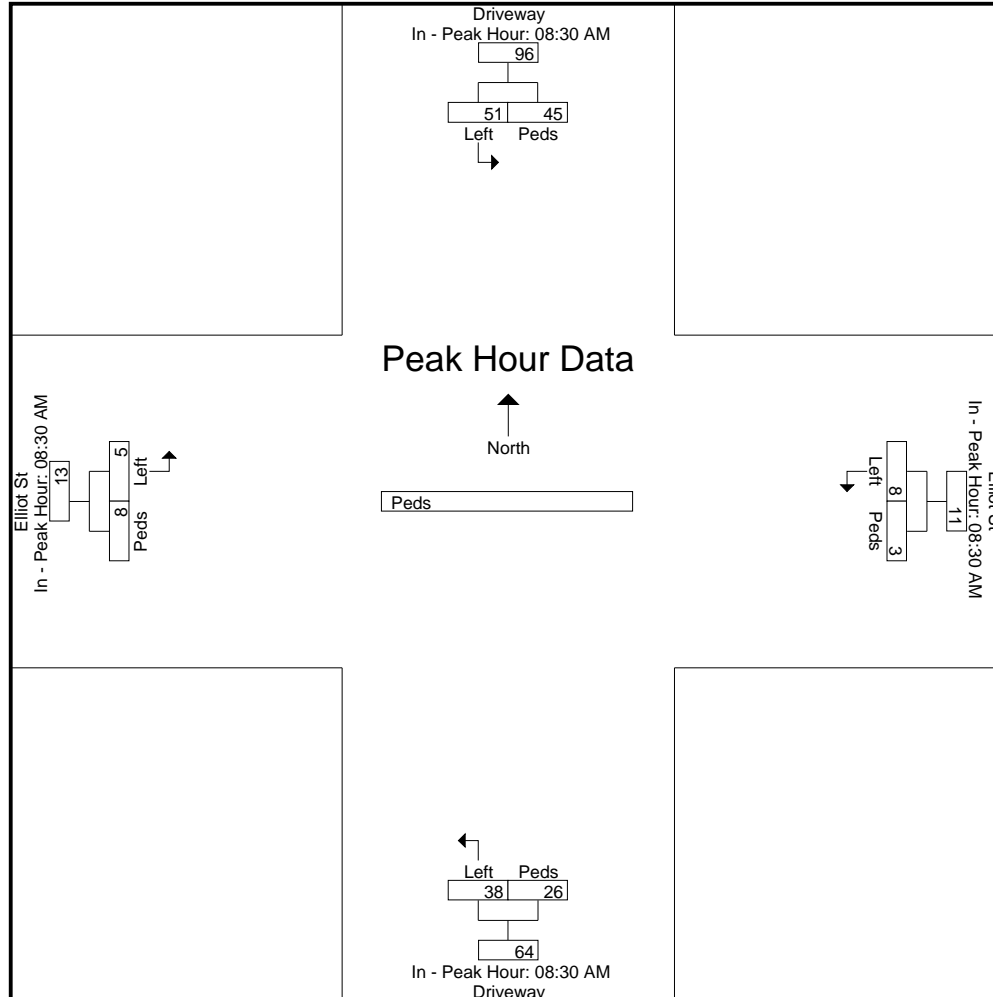
	08:30 AM			08:30 AM			08:30 AM			08:30 AM		
+0 mins.	23	11	34	1	0	1	2	8	10	2	2	4
+15 mins.	9	13	22	2	0	2	16	2	18	2	2	4
+30 mins.	5	12	17	2	3	5	15	7	22	1	1	2
+45 mins.	14	9	23	3	0	3	5	9	14	0	3	3
Total Volume	51	45	96	8	3	11	38	26	64	5	8	13
% App. Total	53.1	46.9		72.7	27.3		59.4	40.6		38.5	61.5	
PHF	.554	.865	.706	.667	.250	.550	.594	.722	.727	.625	.667	.813

Accurate Counts

978-664-2565

File Name : 12622002
Site Code : 12622002
Start Date : 4/2/2014
Page No : 4

N/S Street : Driveways
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	2	0	0	1	32	0	1	0	2	0	104	0	142
04:45 PM	7	0	2	0	31	0	0	0	1	2	97	1	141
Total	9	0	2	1	63	0	1	0	3	2	201	1	283
05:00 PM	0	0	3	1	42	0	0	0	1	1	134	1	183
05:15 PM	1	0	3	0	32	0	0	0	0	1	121	1	159
05:30 PM	4	0	2	0	28	0	0	0	2	0	125	2	163
05:45 PM	5	0	0	1	37	0	1	0	2	1	126	2	175
Total	10	0	8	2	139	0	1	0	5	3	506	6	680
06:00 PM	4	0	7	0	32	1	2	0	2	2	118	2	170
06:15 PM	1	0	3	0	34	0	3	0	1	3	100	0	145
Grand Total	24	0	20	3	268	1	7	0	11	10	925	9	1278
Apprch %	54.5	0	45.5	1.1	98.5	0.4	38.9	0	61.1	1.1	98	1	
Total %	1.9	0	1.6	0.2	21	0.1	0.5	0	0.9	0.8	72.4	0.7	
Cars	24	0	20	3	263	1	7	0	11	10	902	9	1250
% Cars	100	0	100	100	98.1	100	100	0	100	100	97.5	100	97.8
Trucks	0	0	0	0	0	0	0	0	0	0	5	0	5
% Trucks	0	0	0	0	0	0	0	0	0	0	0.5	0	0.4
Buses	0	0	0	0	5	0	0	0	0	0	18	0	23
% Buses	0	0	0	0	1.9	0	0	0	0	0	1.9	0	1.8

Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

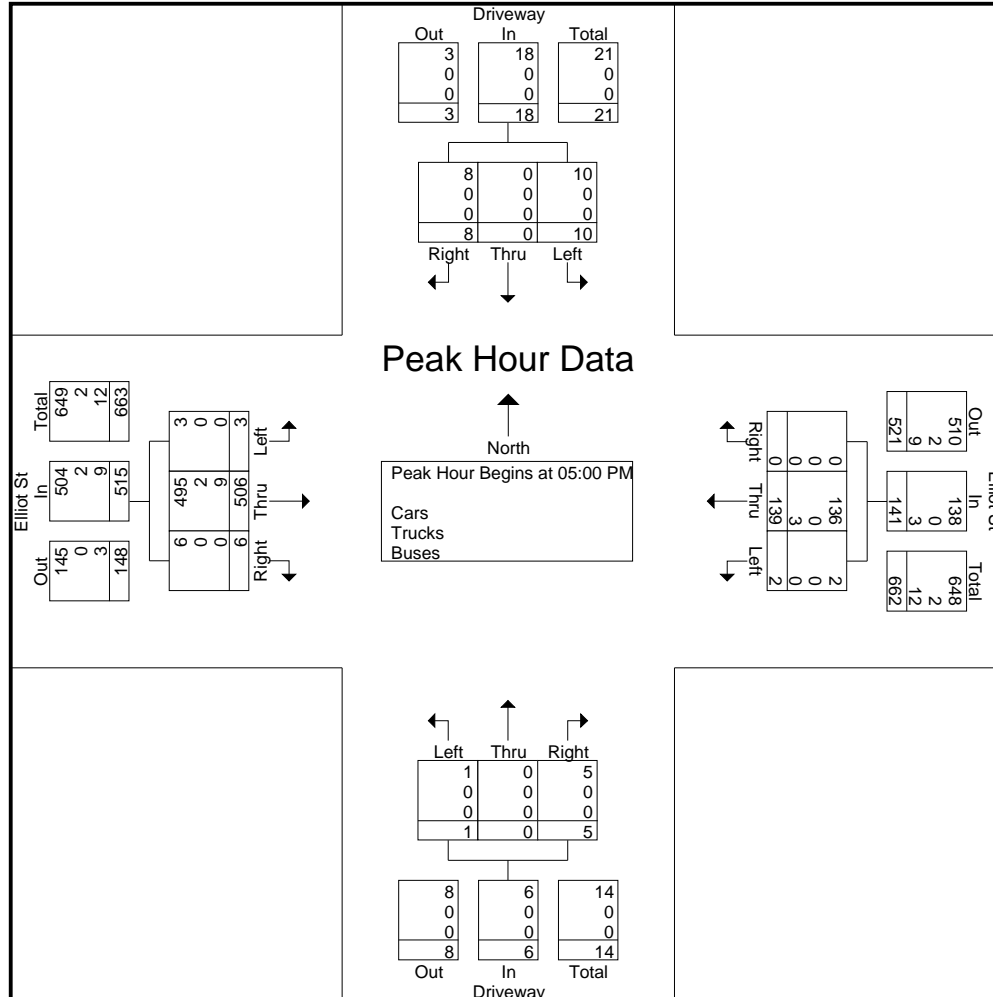
05:00 PM	0	0	3	3	1	42	0	43	0	0	1	1	1	134	1	136	183
05:15 PM	1	0	3	4	0	32	0	32	0	0	0	0	1	121	1	123	159
05:30 PM	4	0	2	6	0	28	0	28	0	0	2	2	0	125	2	127	163
05:45 PM	5	0	0	5	1	37	0	38	1	0	2	3	1	126	2	129	175
Total Volume	10	0	8	18	2	139	0	141	1	0	5	6	3	506	6	515	680
% App. Total	55.6	0	44.4		1.4	98.6	0		16.7	0	83.3		0.6	98.3	1.2		
PHF	.500	.000	.667	.750	.500	.827	.000	.820	.250	.000	.625	.500	.750	.944	.750	.947	.929
Cars	10	0	8	18	2	136	0	138	1	0	5	6	3	495	6	504	666
% Cars	100	0	100	100	100	97.8	0	97.9	100	0	100	100	100	97.8	100	97.9	97.9
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0.4	0.3
Buses	0	0	0	0	0	3	0	3	0	0	0	0	0	9	0	9	12
% Buses	0	0	0	0	0	2.2	0	2.1	0	0	0	0	0	1.8	0	1.7	1.8

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

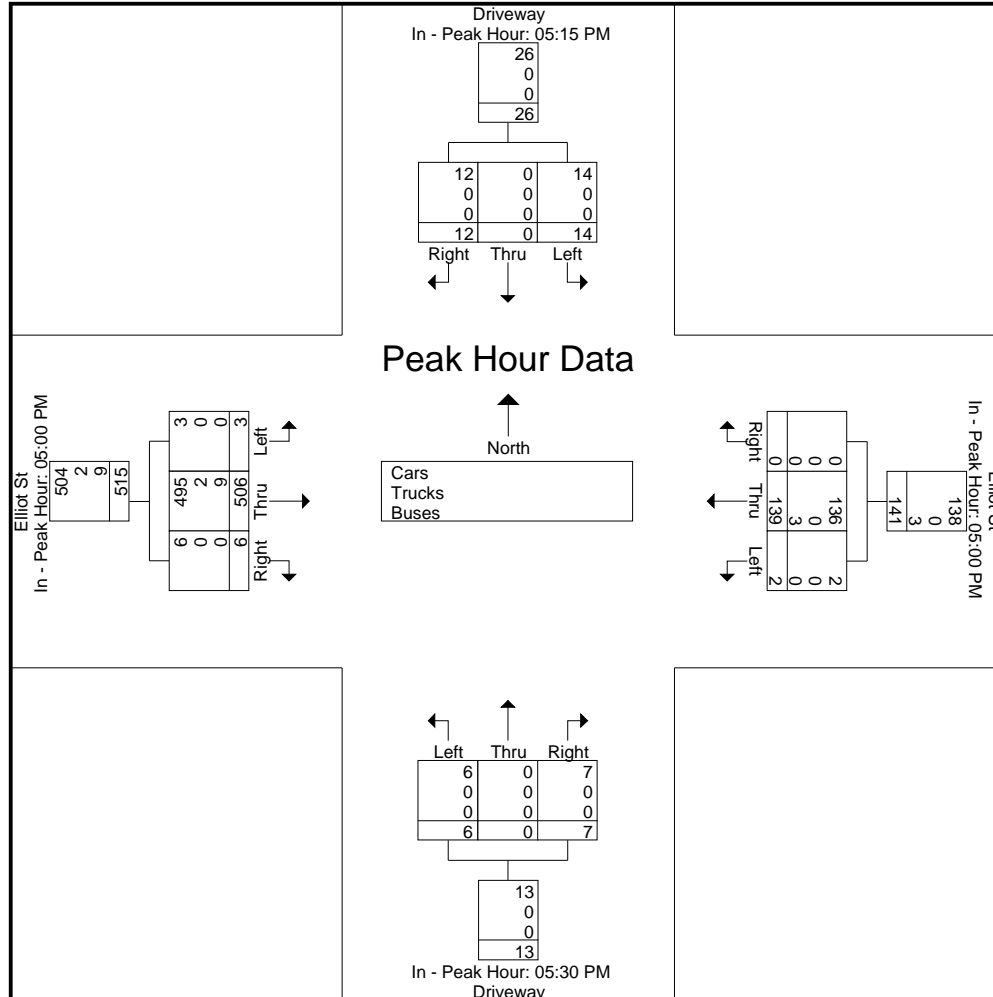
	05:15 PM				05:00 PM				05:30 PM				05:00 PM			
+0 mins.	1	0	3	4	1	42	0	43	0	0	2	2	1	134	1	136
+15 mins.	4	0	2	6	0	32	0	32	1	0	2	3	1	121	1	123
+30 mins.	5	0	0	5	0	28	0	28	2	0	2	4	0	125	2	127
+45 mins.	4	0	7	11	1	37	0	38	3	0	1	4	1	126	2	129
Total Volume	14	0	12	26	2	139	0	141	6	0	7	13	3	506	6	515
% App. Total	53.8	0	46.2		1.4	98.6	0		46.2	0	53.8		0.6	98.3	1.2	
PHF	.700	.000	.429	.591	.500	.827	.000	.820	.500	.000	.875	.813	.750	.944	.750	.947
Cars	14	0	12	26	2	136	0	138	6	0	7	13	3	495	6	504
% Cars	100	0	100	100	100	97.8	0	97.9	100	0	100	100	100	97.8	100	97.9
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0.4
Buses	0	0	0	0	0	3	0	3	0	0	0	0	0	9	0	9
% Buses	0	0	0	0	0	2.2	0	2.1	0	0	0	0	0	1.8	0	1.7

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	2	0	0	1	31	0	1	0	2	0	98	0	135
04:45 PM	7	0	2	0	30	0	0	0	1	2	96	1	139
Total	9	0	2	1	61	0	1	0	3	2	194	1	274
05:00 PM	0	0	3	1	42	0	0	0	1	1	132	1	181
05:15 PM	1	0	3	0	31	0	0	0	0	1	118	1	155
05:30 PM	4	0	2	0	27	0	0	0	2	0	121	2	158
05:45 PM	5	0	0	1	36	0	1	0	2	1	124	2	172
Total	10	0	8	2	136	0	1	0	5	3	495	6	666
06:00 PM	4	0	7	0	32	1	2	0	2	2	115	2	167
06:15 PM	1	0	3	0	34	0	3	0	1	3	98	0	143
Grand Total	24	0	20	3	263	1	7	0	11	10	902	9	1250
Apprch %	54.5	0	45.5	1.1	98.5	0.4	38.9	0	61.1	1.1	97.9	1	
Total %	1.9	0	1.6	0.2	21	0.1	0.6	0	0.9	0.8	72.2	0.7	

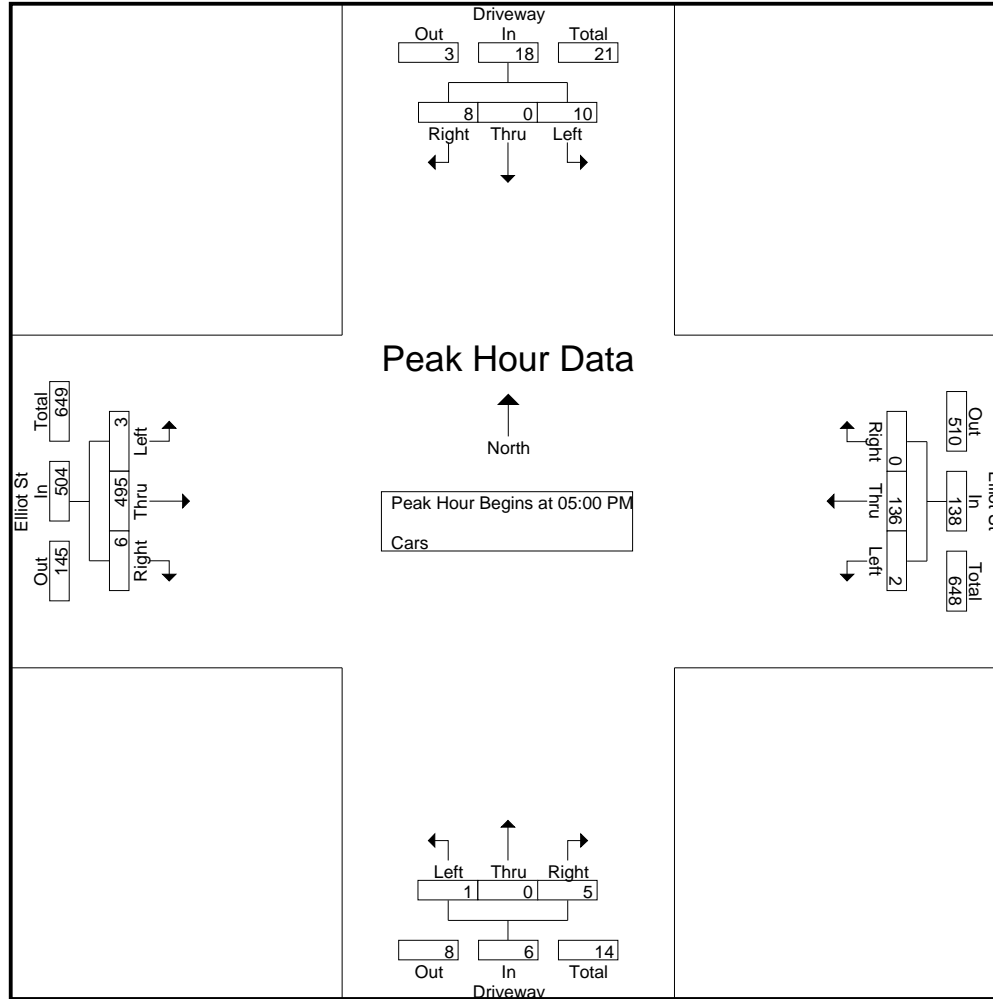
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	3	3	1	42	0	43	0	0	1	1	1	132	1	134	181
05:15 PM	1	0	3	4	0	31	0	31	0	0	0	0	1	118	1	120	155
05:30 PM	4	0	2	6	0	27	0	27	0	0	2	2	0	121	2	123	158
05:45 PM	5	0	0	5	1	36	0	37	1	0	2	3	1	124	2	127	172
Total Volume	10	0	8	18	2	136	0	138	1	0	5	6	3	495	6	504	666
% App. Total	55.6	0	44.4		1.4	98.6	0		16.7	0	83.3		0.6	98.2	1.2		
PHF	.500	.000	.667	.750	.500	.810	.000	.802	.250	.000	.625	.500	.750	.938	.750	.940	.920

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

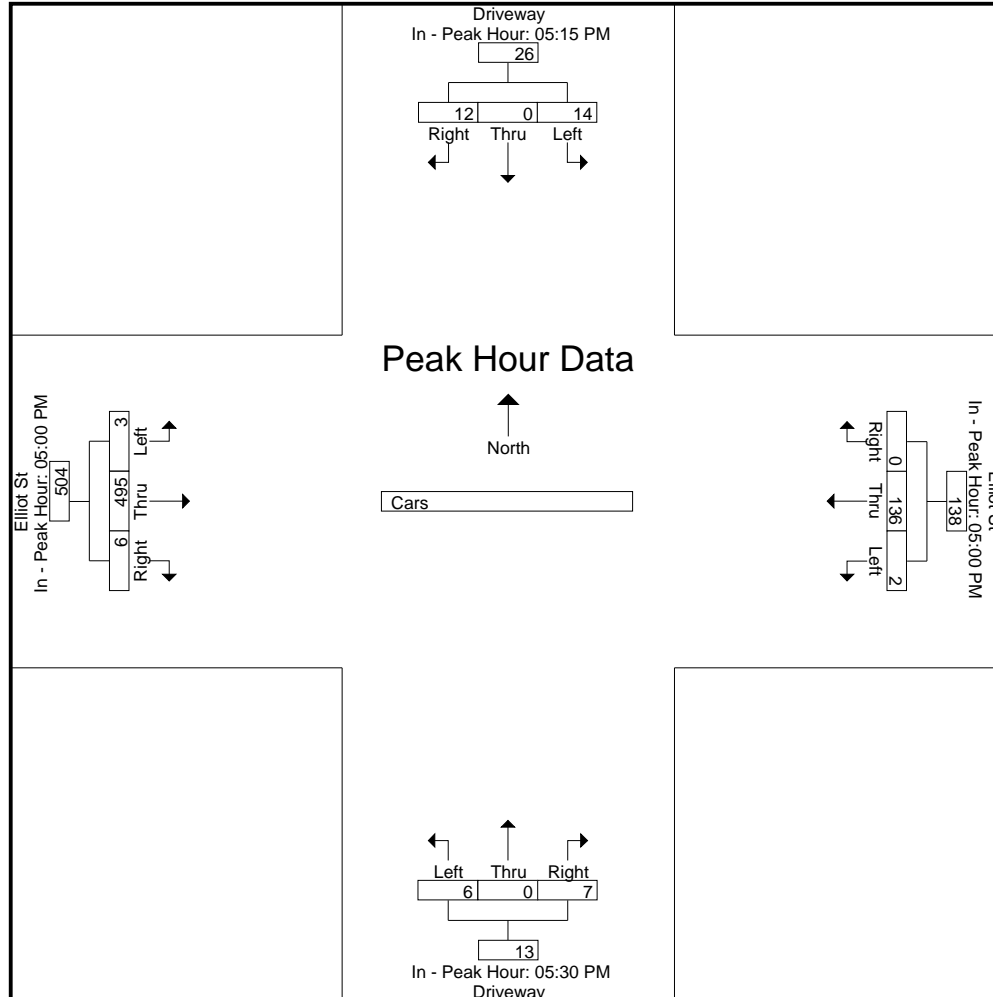
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:15 PM				05:00 PM				05:30 PM				05:00 PM				
+0 mins.	1	0	3	4	1	42	0	43	0	0	2	2	1	132	1	134	
+15 mins.	4	0	2	6	0	31	0	31	1	0	2	3	1	118	1	120	
+30 mins.	5	0	0	5	0	27	0	27	2	0	2	4	0	121	2	123	
+45 mins.	4	0	7	11	1	36	0	37	3	0	1	4	1	124	2	127	
Total Volume	14	0	12	26	2	136	0	138	6	0	7	13	3	495	6	504	
% App. Total	53.8	0	46.2		1.4	98.6	0		46.2	0	53.8		0.6	98.2	1.2		
PHF	.700	.000	.429	.591	.500	.810	.000	.802	.500	.000	.875	.813	.750	.938	.750	.940	

Accurate Counts

978-664-2565

File Name : 12622002
Site Code : 12622002
Start Date : 4/2/2014
Page No : 4

N/S Street : Driveways
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Trucks

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	0	1
05:00 PM	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	2	0	2
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	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	0	2
06:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
06:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	5	0	5
Apprch %	0	0	0	0	0	0	0	0	0	0	100	0	
Total %	0	0	0	0	0	0	0	0	0	0	100	0	

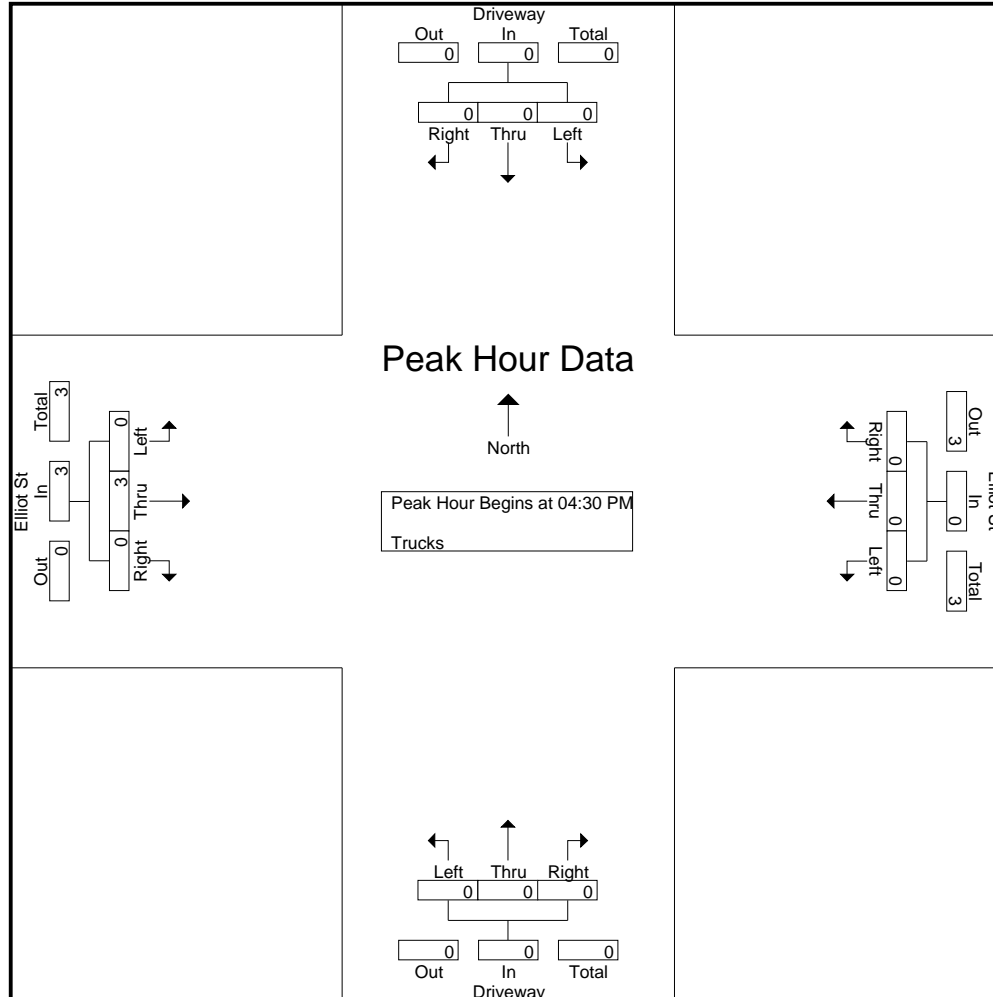
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:00 PM	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	2	0	2	2	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.375	.000	.375	

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

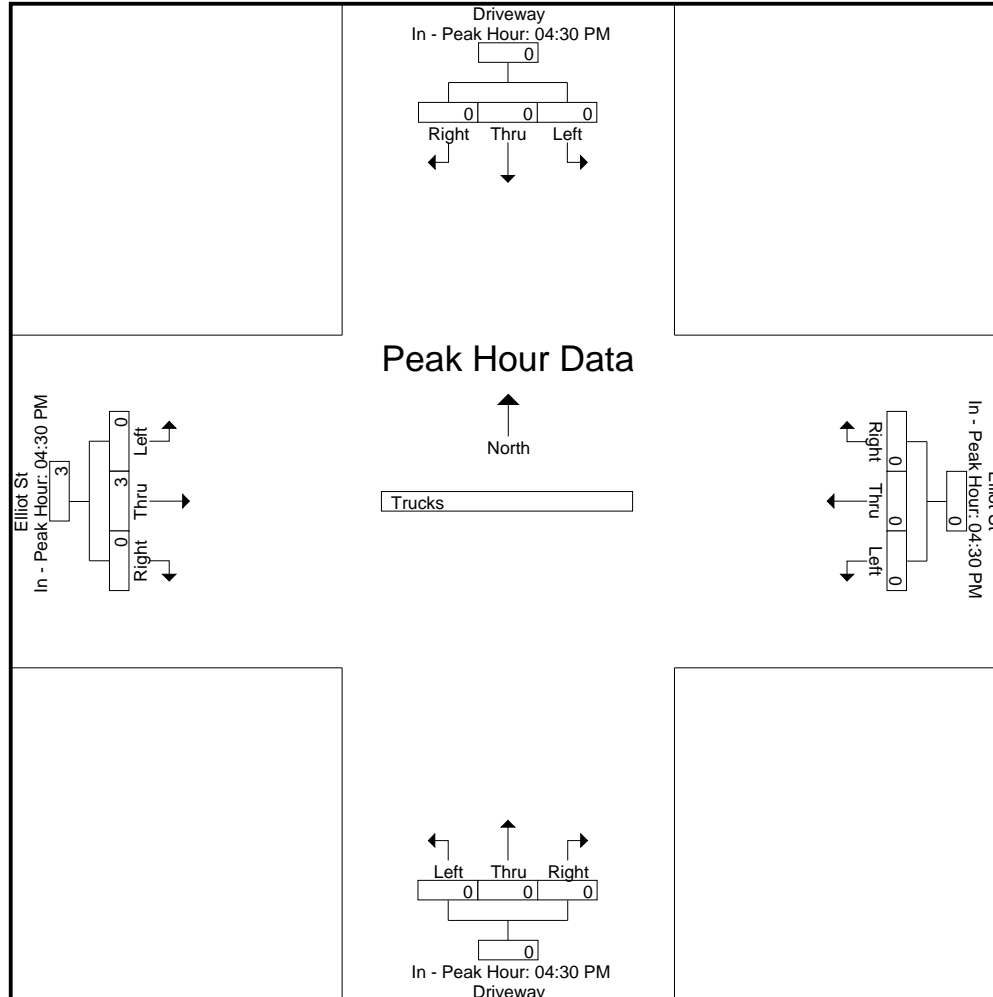
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.375	.000	.375	

Accurate Counts

978-664-2565

File Name : 12622002
Site Code : 12622002
Start Date : 4/2/2014
Page No : 4

N/S Street : Driveways
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	0	0	0	0	1	0	0	0	0	0	5	0	6
04:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	0	0	2	0	0	0	0	0	6	0	8
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
05:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
05:30 PM	0	0	0	0	1	0	0	0	0	0	4	0	5
05:45 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
Total	0	0	0	0	3	0	0	0	0	0	9	0	12
06:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
06:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Grand Total	0	0	0	0	5	0	0	0	0	0	18	0	23
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	21.7	0	0	0	0	0	78.3	0	

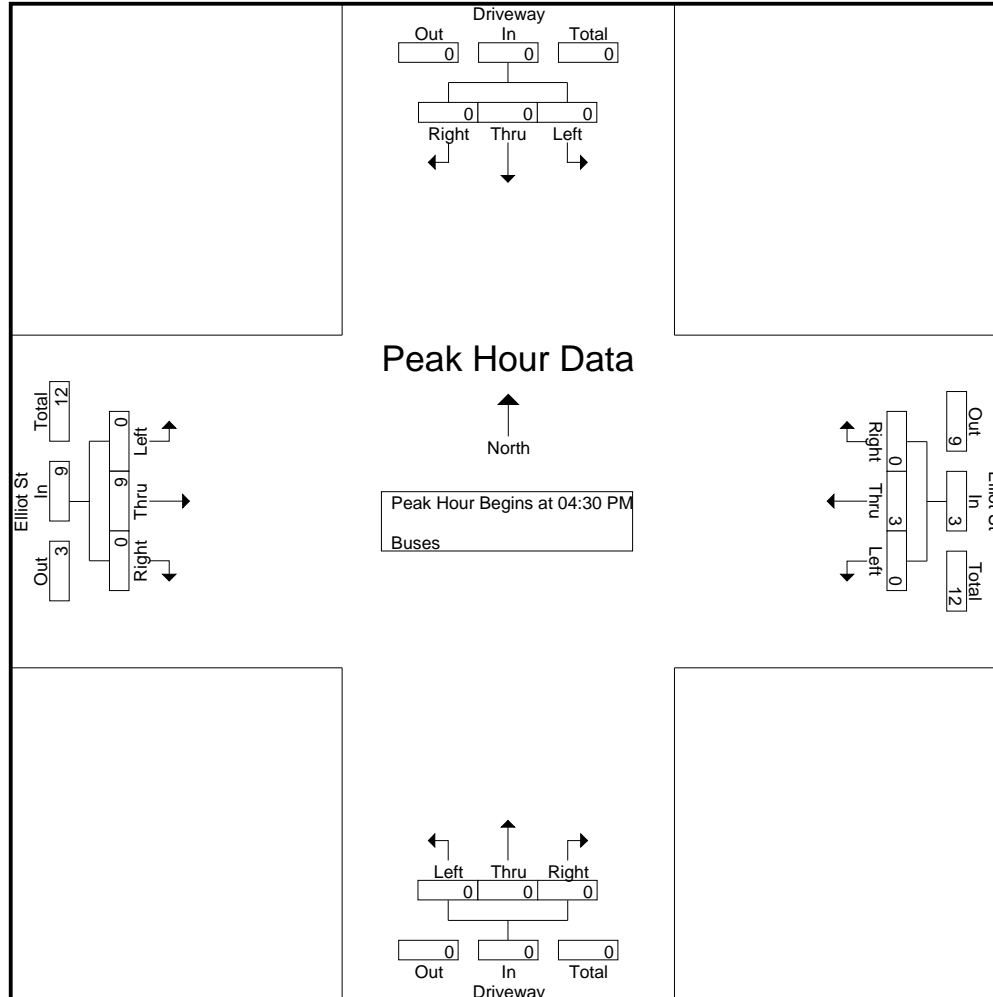
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5	6
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	9	0	9	12
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.450	.000	.450	.500

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

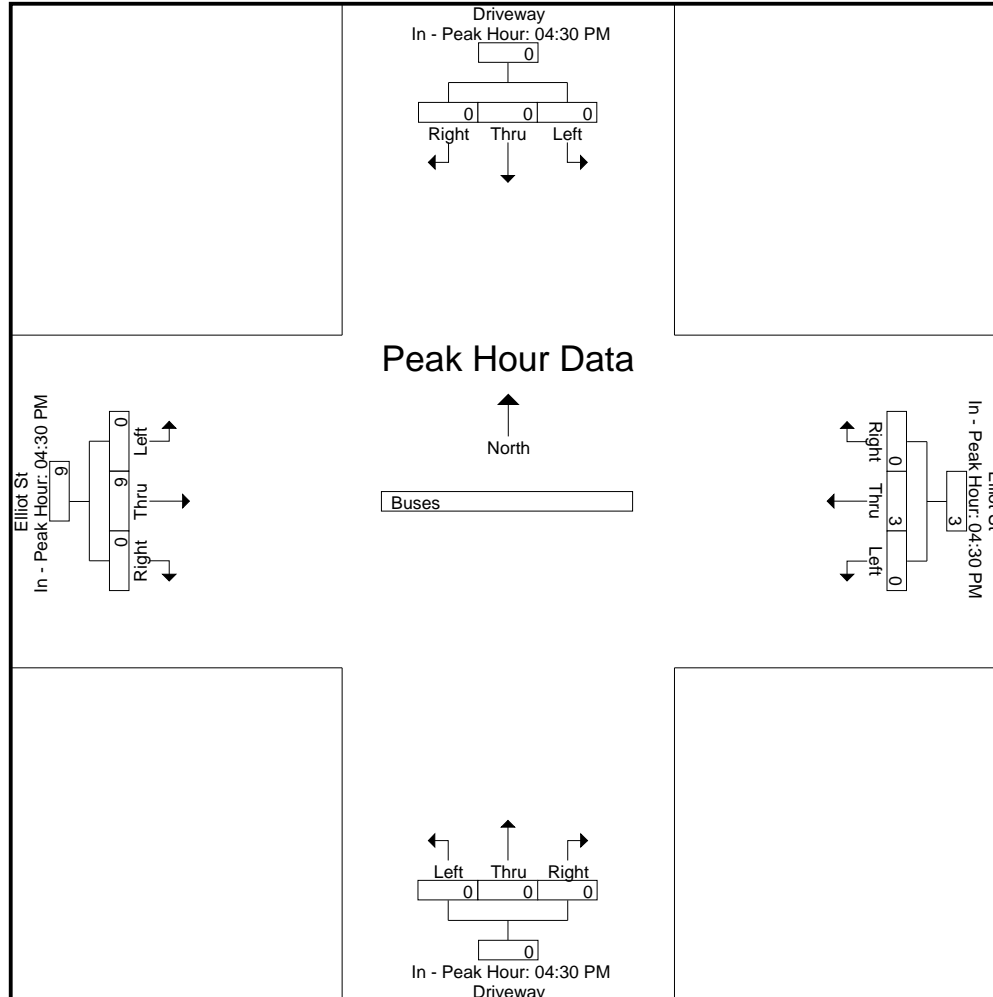
	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	9	0	9
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.450	.000	.450

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	0	0	0	0	2	0	0	0	3	0	4	1	10
04:45 PM	0	0	0	0	3	0	0	0	2	0	3	0	8
Total	0	0	0	0	5	0	0	0	5	0	7	1	18
05:00 PM	0	0	0	0	0	0	0	0	5	0	7	0	12
05:15 PM	0	0	0	0	0	0	0	0	0	0	7	0	7
05:30 PM	0	0	0	0	1	0	0	0	4	0	6	2	13
05:45 PM	0	0	0	0	3	0	0	0	0	0	6	2	11
Total	0	0	0	0	4	0	0	0	9	0	26	4	43
06:00 PM	0	0	0	0	1	0	0	0	4	0	9	0	14
06:15 PM	0	0	0	0	2	0	0	0	3	0	9	0	14
Grand Total	0	0	0	0	12	0	0	0	21	0	51	5	89
Apprch %	0	0	0	0	100	0	0	0	100	0	91.1	8.9	
Total %	0	0	0	0	13.5	0	0	0	23.6	0	57.3	5.6	

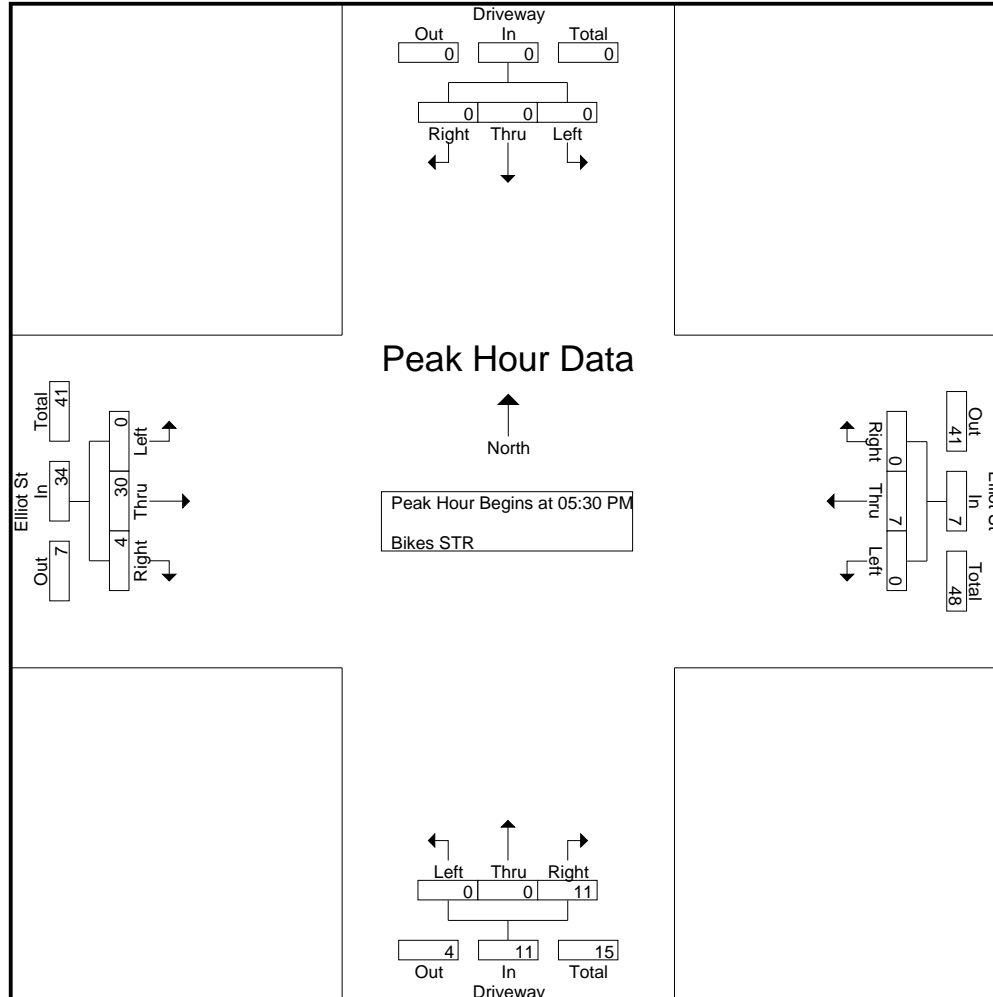
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:30 PM																	
05:30 PM	0	0	0	0	0	1	0	1	0	0	4	4	0	6	2	8	13
05:45 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	6	2	8	11
06:00 PM	0	0	0	0	0	1	0	1	0	0	4	4	0	9	0	9	14
06:15 PM	0	0	0	0	0	2	0	2	0	0	3	3	0	9	0	9	14
Total Volume	0	0	0	0	0	7	0	7	0	0	11	11	0	30	4	34	52
% App. Total	0	0	0	0	0	100	0	0	0	0	100	100	0	88.2	11.8	0	0
PHF	.000	.000	.000	.000	.000	.583	.000	.583	.000	.000	.688	.688	.000	.833	.500	.944	.929

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

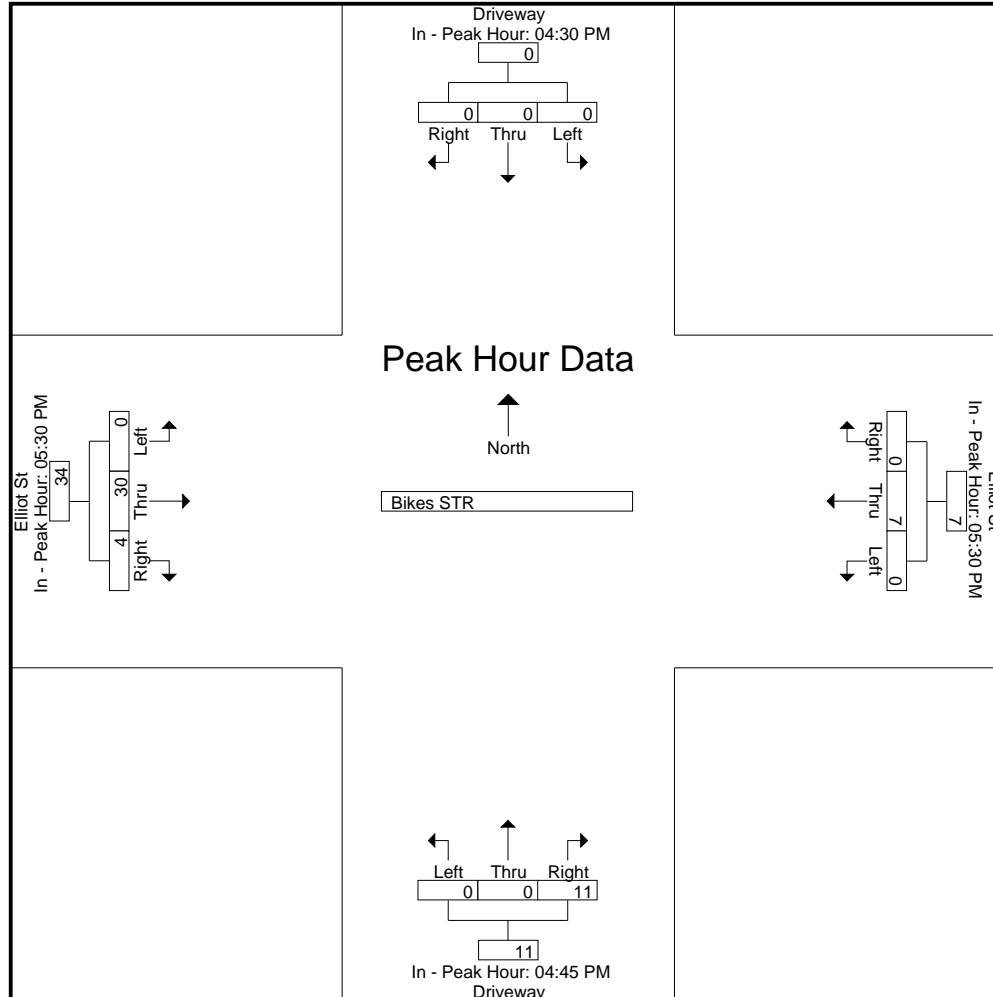
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				05:30 PM				04:45 PM				05:30 PM				
+0 mins.	0	0	0	0	0	1	0	1	0	0	2	2	0	6	2	8	
+15 mins.	0	0	0	0	0	3	0	3	0	0	5	5	0	6	2	8	
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	9	0	9	
+45 mins.	0	0	0	0	0	2	0	2	0	0	4	4	0	9	0	9	
Total Volume	0	0	0	0	0	7	0	7	0	0	11	11	0	30	4	34	
% App. Total	0	0	0	0	0	100	0	100	0	0	100	100	0	88.2	11.8	100	
PHF	.000	.000	.000	.000	.000	.583	.000	.583	.000	.000	.550	.550	.000	.833	.500	.944	

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 4

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	0	0	0	0	0	0	1	0	0	0	3	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	1	0	0	0	3	1	5
05:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	2
05:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	4	0	0	0	2	0	6
06:00 PM	0	0	0	0	0	0	0	0	0	0	2	1	3
06:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Grand Total	0	0	0	0	1	0	5	0	0	0	8	2	16
Apprch %	0	0	0	0	100	0	100	0	0	0	80	20	
Total %	0	0	0	0	6.2	0	31.2	0	0	0	50	12.5	

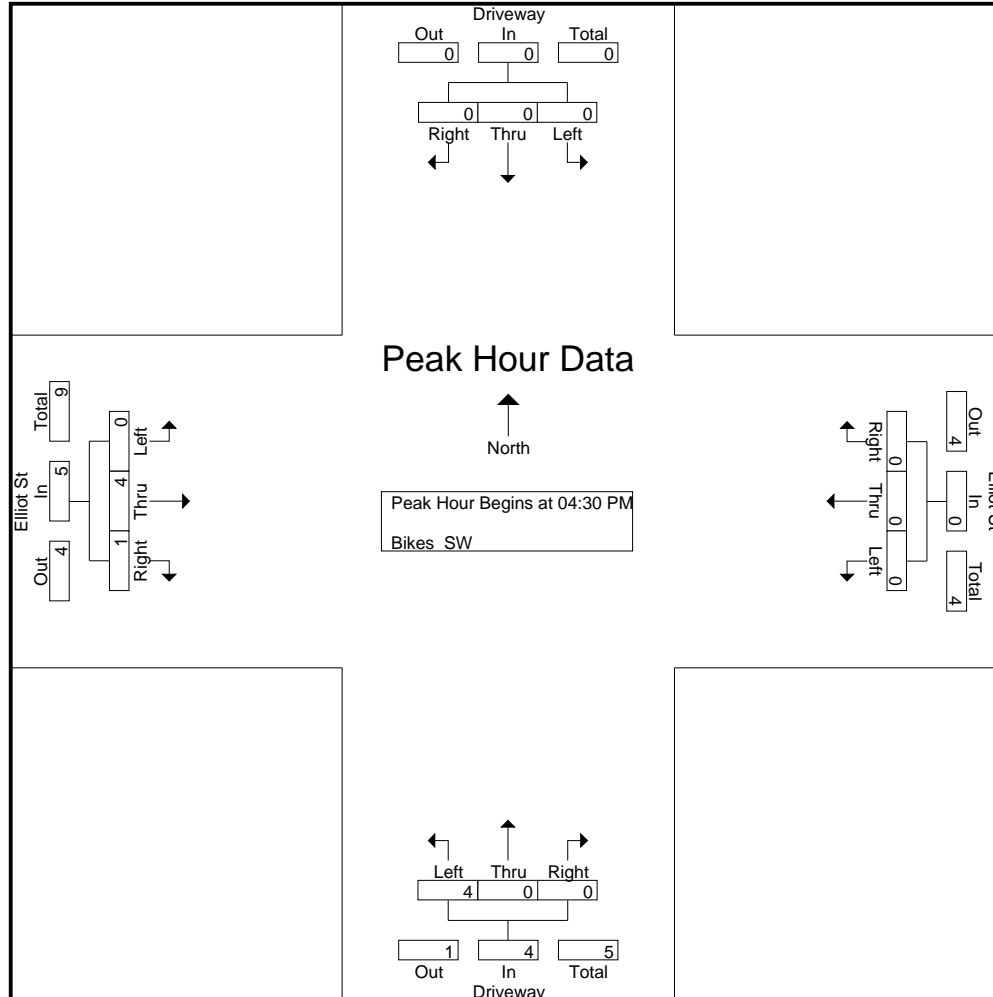
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	3	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	4	0	0	4	0	4	1	5	9
% App. Total	0	0	0	0	0	0	0	0	100	0	0	100	0	80	20	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.333	.250	.417	.563

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

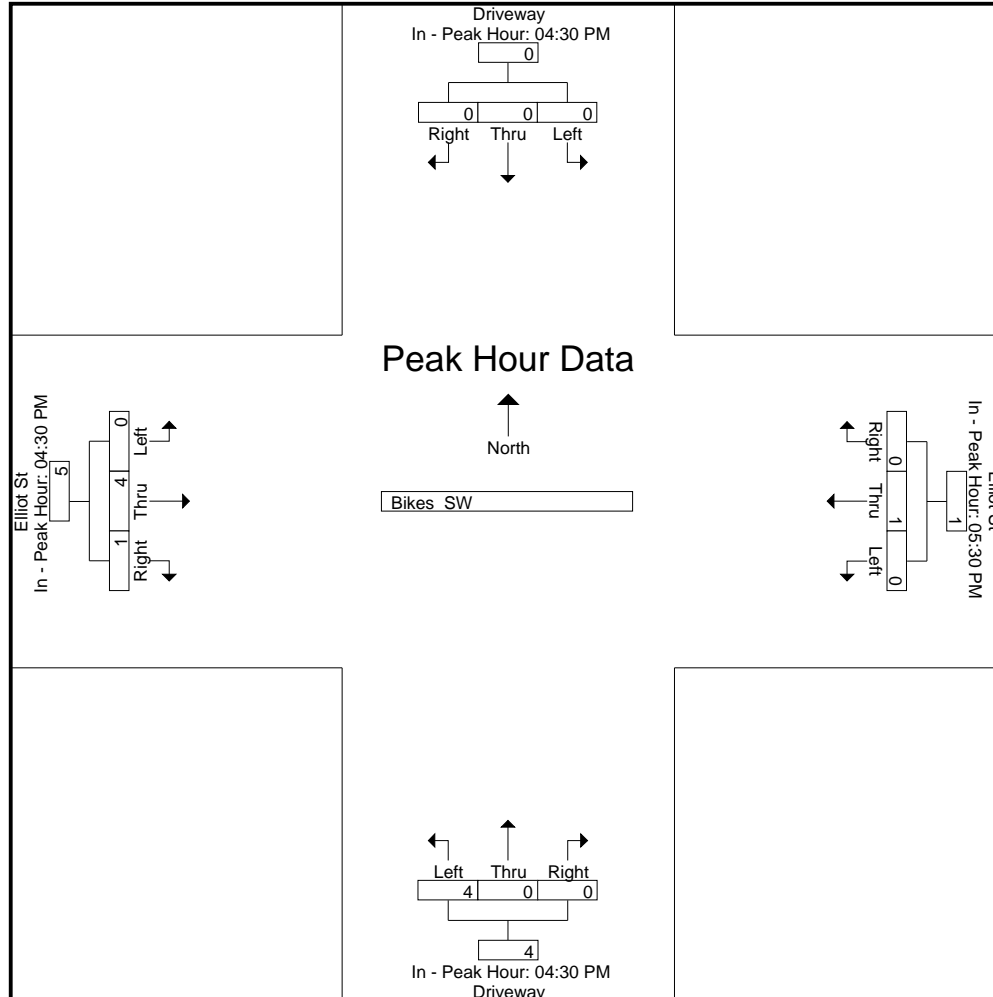
Start Time	Driveway From North				Elliot St From East				Driveway From South				Elliot St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				05:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	3	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	
+45 mins.	0	0	0	0	0	1	0	1	2	0	0	2	0	0	0	0	
Total Volume	0	0	0	0	0	1	0	1	4	0	0	4	0	4	1	5	
% App. Total	0	0	0	0	0	100	0	100	100	0	0	100	0	80	20	100	
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.500	.000	.000	.500	.000	.333	.250	.417	

Accurate Counts

978-664-2565

File Name : 12622002
Site Code : 12622002
Start Date : 4/2/2014
Page No : 4

N/S Street : Driveways
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	Driveway From North		Elliot St From East		Driveway From South		Elliot St From West		Int. Total
	EB	WB	SB	NB	WB	EB	NB	SB	
04:30 PM	15	20	0	3	12	12	3	1	66
04:45 PM	17	17	0	6	8	9	3	0	60
Total	32	37	0	9	20	21	6	1	126
05:00 PM	11	20	2	5	12	16	2	0	68
05:15 PM	16	7	1	2	11	11	9	3	60
05:30 PM	10	15	1	1	13	23	2	0	65
05:45 PM	2	4	3	3	13	9	3	2	39
Total	39	46	7	11	49	59	16	5	232
06:00 PM	17	8	0	4	21	20	4	1	75
06:15 PM	15	18	1	4	26	8	0	1	73
Grand Total	103	109	8	28	116	108	26	8	506
Apprch %	48.6	51.4	22.2	77.8	51.8	48.2	76.5	23.5	
Total %	20.4	21.5	1.6	5.5	22.9	21.3	5.1	1.6	

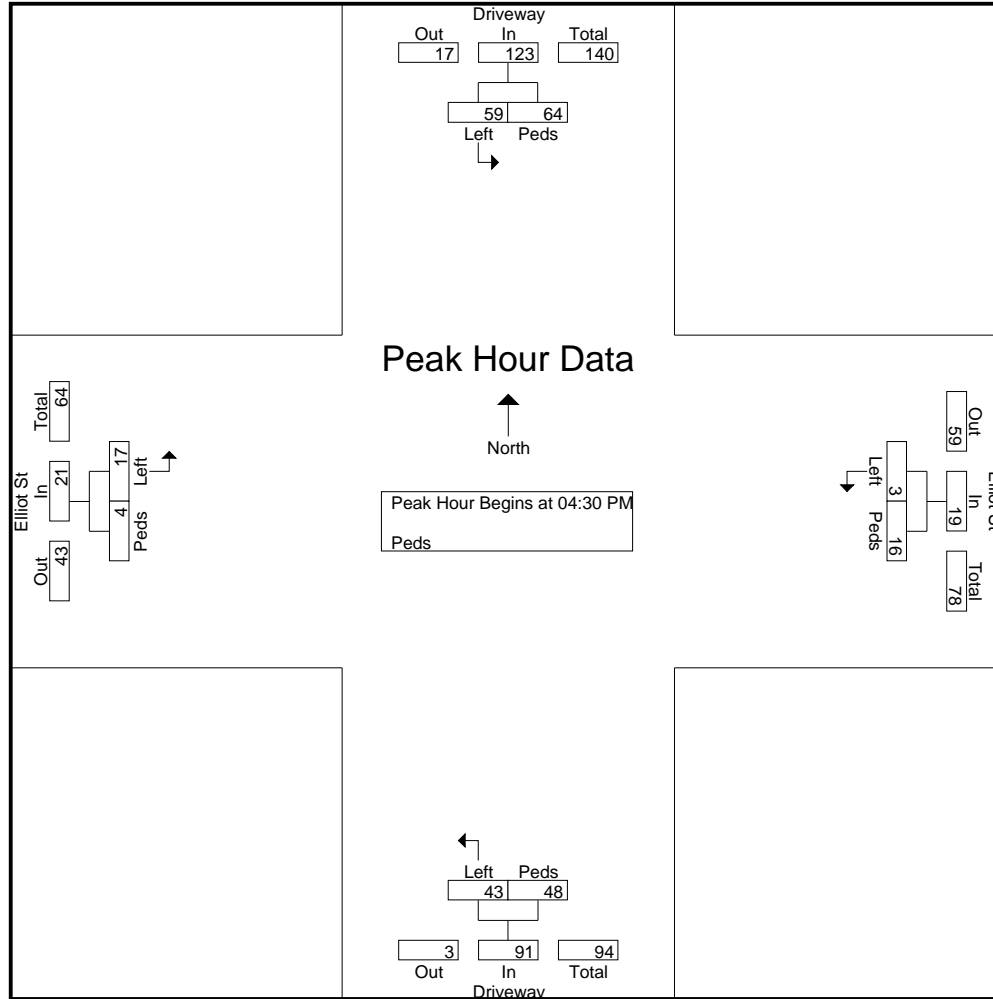
Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	15	20	35	0	3	3	12	12	24	3	1	4	66
04:45 PM	17	17	34	0	6	6	8	9	17	3	0	3	60
05:00 PM	11	20	31	2	5	7	12	16	28	2	0	2	68
05:15 PM	16	7	23	1	2	3	11	11	22	9	3	12	60
Total Volume	59	64	123	3	16	19	43	48	91	17	4	21	254
% App. Total	48	52		15.8	84.2		47.3	52.7		81	19		
PHF	.868	.800	.879	.375	.667	.679	.896	.750	.813	.472	.333	.438	.934

Accurate Counts

978-664-2565

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 2

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Driveways
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622002
 Site Code : 12622002
 Start Date : 4/2/2014
 Page No : 3

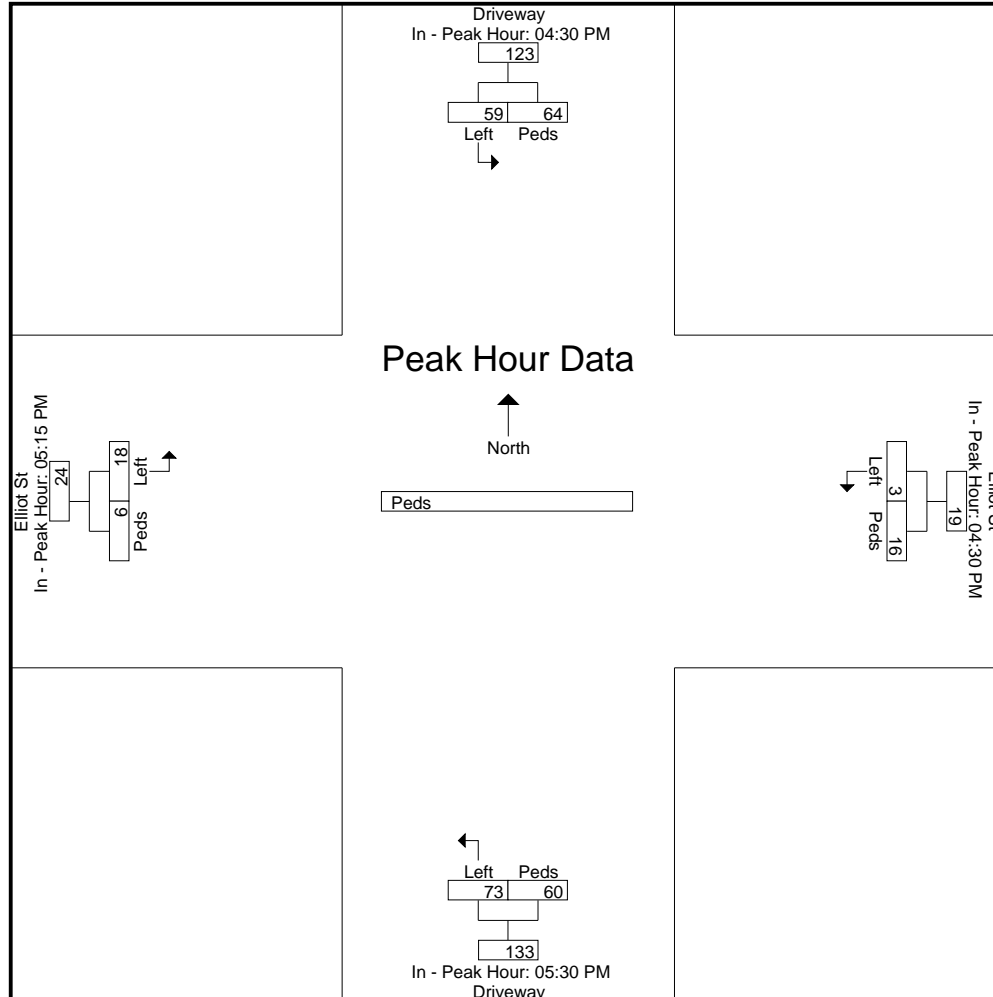
Start Time	Driveway From North			Elliot St From East			Driveway From South			Elliot St From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:30 PM			04:30 PM			05:30 PM			05:15 PM			
+0 mins.	15	20	35	0	3	3	13	23	36	9	3	12	
+15 mins.	17	17	34	0	6	6	13	9	22	2	0	2	
+30 mins.	11	20	31	2	5	7	21	20	41	3	2	5	
+45 mins.	16	7	23	1	2	3	26	8	34	4	1	5	
Total Volume	59	64	123	3	16	19	73	60	133	18	6	24	
% App. Total	48	52		15.8	84.2		54.9	45.1		75	25		
PHF	.868	.800	.879	.375	.667	.679	.702	.652	.811	.500	.500	.500	

Accurate Counts

978-664-2565

File Name : 12622002
Site Code : 12622002
Start Date : 4/2/2014
Page No : 4

N/S Street : Driveways
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	0	0	44	88	6	95	233
07:45 AM	0	0	39	117	11	90	257
Total	0	0	83	205	17	185	490
08:00 AM	0	0	50	112	13	94	269
08:15 AM	0	0	55	102	12	92	261
08:30 AM	0	0	55	119	8	89	271
08:45 AM	0	0	52	118	8	100	278
Total	0	0	212	451	41	375	1079
09:00 AM	0	0	61	133	14	90	298
09:15 AM	0	0	48	105	14	109	276
Grand Total	0	0	404	894	86	759	2143
Apprch %	0	0	31.1	68.9	10.2	89.8	
Total %	0	0	18.9	41.7	4	35.4	
Cars	0	0	391	836	77	715	2019
% Cars	0	0	96.8	93.5	89.5	94.2	94.2
Trucks	0	0	4	29	5	20	58
% Trucks	0	0	1	3.2	5.8	2.6	2.7
Buses	0	0	9	29	4	24	66
% Buses	0	0	2.2	3.2	4.7	3.2	3.1

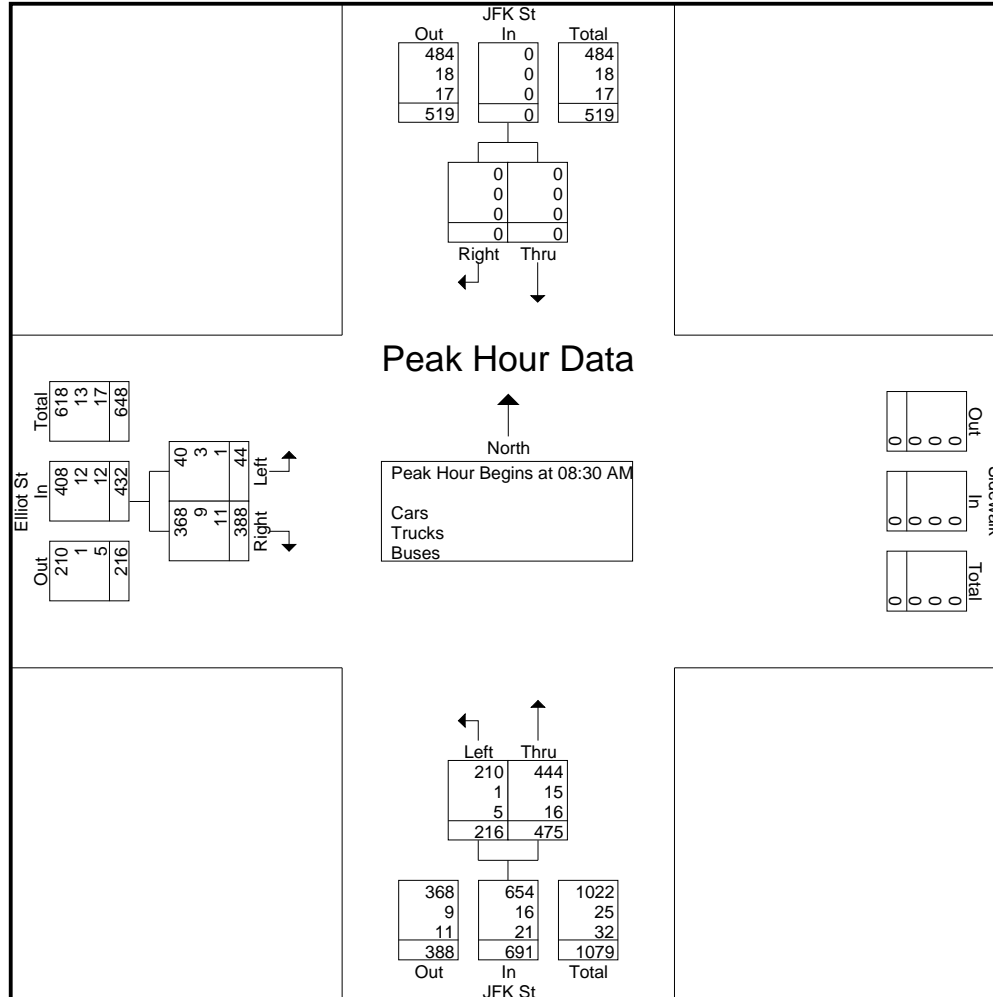
Start Time	JFK St From North			From East App. Total	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:30 AM											
08:30 AM	0	0	0	0	55	119	174	8	89	97	271
08:45 AM	0	0	0	0	52	118	170	8	100	108	278
09:00 AM	0	0	0	0	61	133	194	14	90	104	298
09:15 AM	0	0	0	0	48	105	153	14	109	123	276
Total Volume	0	0	0	0	216	475	691	44	388	432	1123
% App. Total	0	0			31.3	68.7		10.2	89.8		
PHF	.000	.000	.000	.000	.885	.893	.890	.786	.890	.878	.942
Cars	0	0	0	0	210	444	654	40	368	408	1062
% Cars	0	0	0	0	97.2	93.5	94.6	90.9	94.8	94.4	94.6
Trucks	0	0	0	0	1	15	16	3	9	12	28
% Trucks	0	0	0	0	0.5	3.2	2.3	6.8	2.3	2.8	2.5
Buses	0	0	0	0	5	16	21	1	11	12	33
% Buses	0	0	0	0	2.3	3.4	3.0	2.3	2.8	2.8	2.9

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

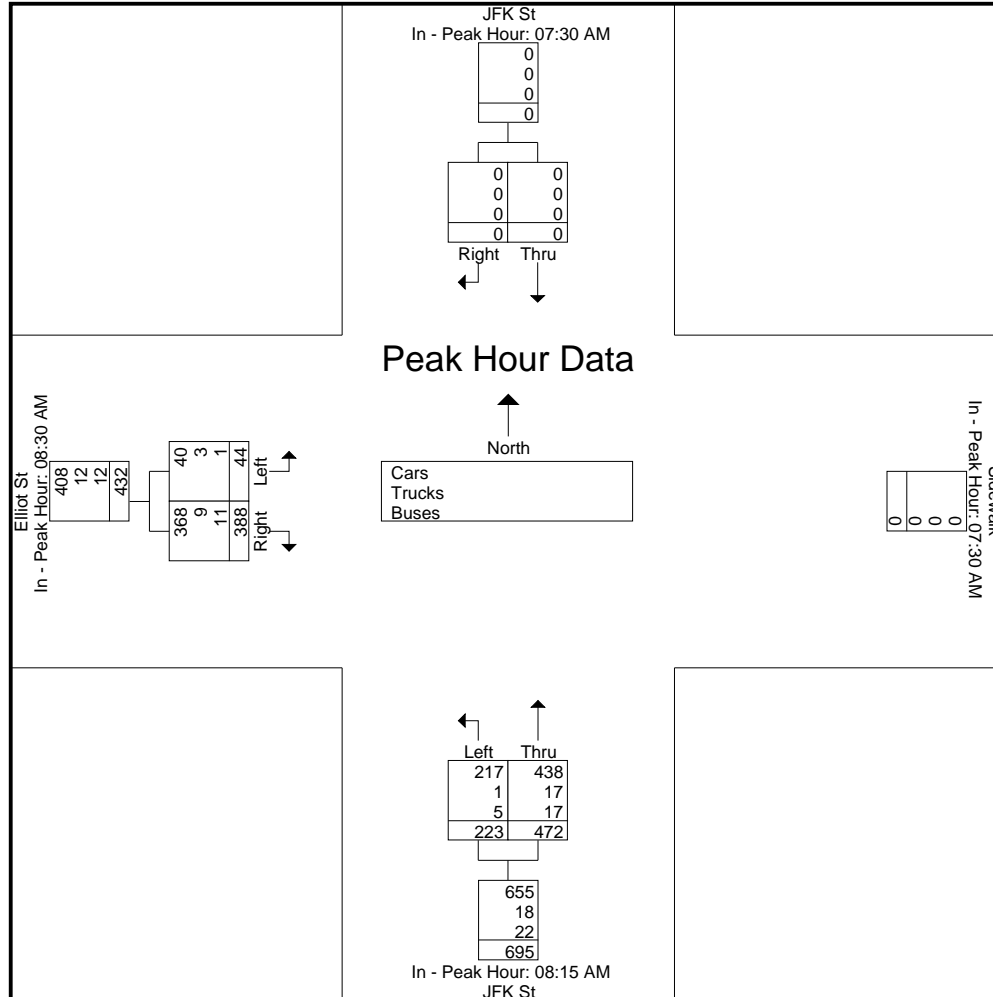
	07:30 AM			07:30 AM	08:15 AM	08:30 AM				
+0 mins.	0	0	0	0	55	102	157	8	89	97
+15 mins.	0	0	0	0	55	119	174	8	100	108
+30 mins.	0	0	0	0	52	118	170	14	90	104
+45 mins.	0	0	0	0	61	133	194	14	109	123
Total Volume	0	0	0	0	223	472	695	44	388	432
% App. Total	0	0			32.1	67.9		10.2	89.8	
PHF	.000	.000	.000	.000	.914	.887	.896	.786	.890	.878
Cars	0	0	0	0	217	438	655	40	368	408
% Cars	0	0	0	0	97.3	92.8	94.2	90.9	94.8	94.4
Trucks	0	0	0	0	1	17	18	3	9	12
% Trucks	0	0	0	0	0.4	3.6	2.6	6.8	2.3	2.8
Buses	0	0	0	0	5	17	22	1	11	12
% Buses	0	0	0	0	2.2	3.6	3.2	2.3	2.8	2.8

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	0	0	42	84	5	86	217
07:45 AM	0	0	37	107	10	85	239
Total	0	0	79	191	15	171	456
08:00 AM	0	0	49	106	12	87	254
08:15 AM	0	0	53	95	10	89	247
08:30 AM	0	0	53	112	8	82	255
08:45 AM	0	0	51	108	7	95	261
Total	0	0	206	421	37	353	1017
09:00 AM	0	0	60	123	13	85	281
09:15 AM	0	0	46	101	12	106	265
Grand Total	0	0	391	836	77	715	2019
Apprch %	0	0	31.9	68.1	9.7	90.3	
Total %	0	0	19.4	41.4	3.8	35.4	

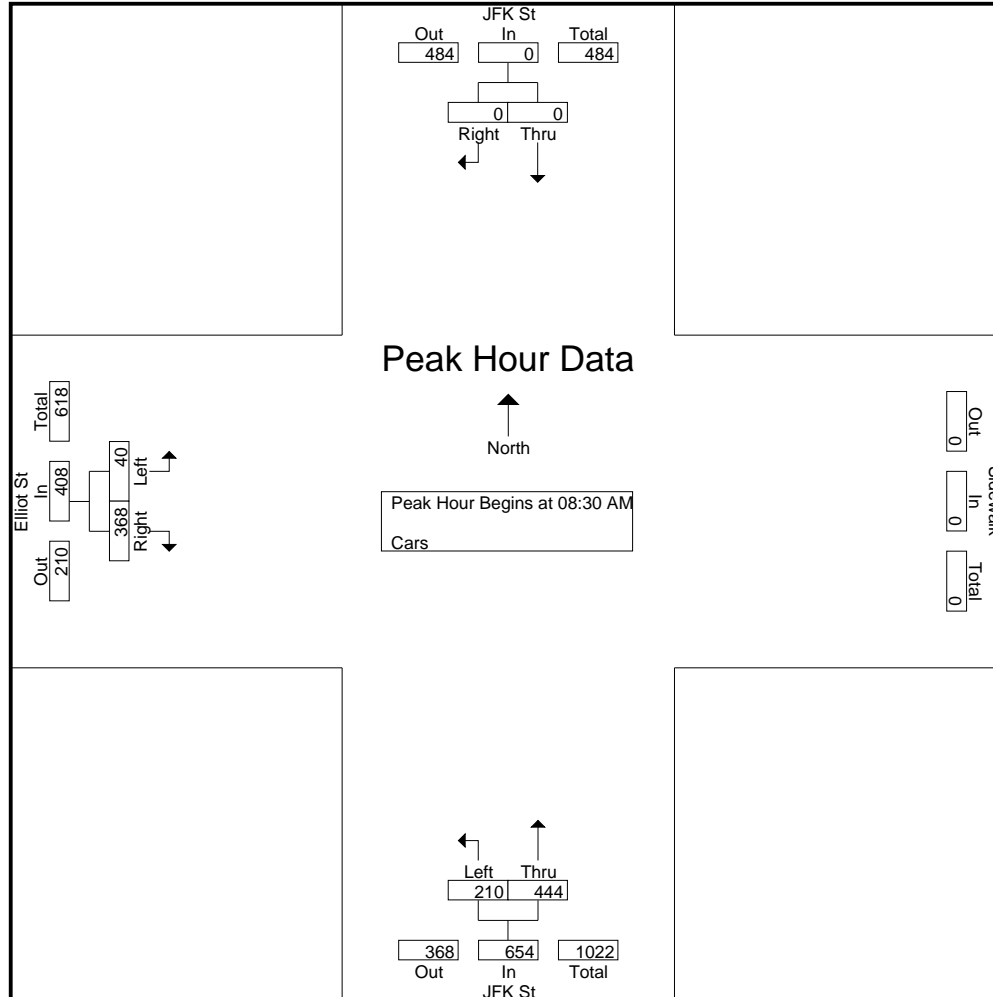
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:30 AM											
08:30 AM	0	0	0	0	53	112	165	8	82	90	255
08:45 AM	0	0	0	0	51	108	159	7	95	102	261
09:00 AM	0	0	0	0	60	123	183	13	85	98	281
09:15 AM	0	0	0	0	46	101	147	12	106	118	265
Total Volume	0	0	0	0	210	444	654	40	368	408	1062
% App. Total	0	0	0	0	32.1	67.9		9.8	90.2		
PHF	.000	.000	.000	.000	.875	.902	.893	.769	.868	.864	.945

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

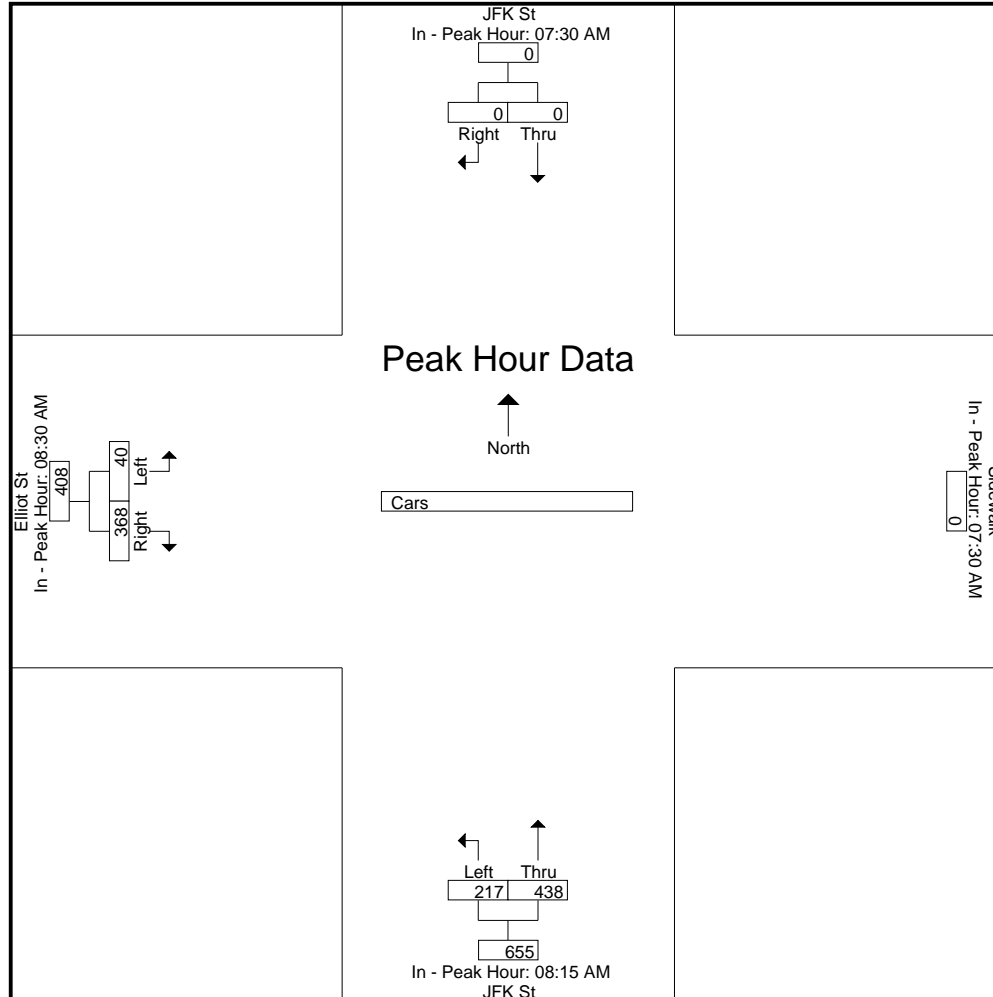
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	07:30 AM			07:30 AM	08:15 AM			08:30 AM			
+0 mins.	0	0	0	0	53	95	148	8	82	90	
+15 mins.	0	0	0	0	53	112	165	7	95	102	
+30 mins.	0	0	0	0	51	108	159	13	85	98	
+45 mins.	0	0	0	0	60	123	183	12	106	118	
Total Volume	0	0	0	0	217	438	655	40	368	408	
% App. Total	0	0			33.1	66.9		9.8	90.2		
PHF	.000	.000	.000	.000	.904	.890	.895	.769	.868	.864	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Trucks

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	0	0	1	2	1	5	9
07:45 AM	0	0	1	5	0	4	10
Total	0	0	2	7	1	9	19
08:00 AM	0	0	1	4	0	2	7
08:15 AM	0	0	0	3	1	0	4
08:30 AM	0	0	0	4	0	4	8
08:45 AM	0	0	0	4	1	2	7
Total	0	0	1	15	2	8	26
09:00 AM	0	0	1	6	0	2	9
09:15 AM	0	0	0	1	2	1	4
Grand Total	0	0	4	29	5	20	58
Apprch %	0	0	12.1	87.9	20	80	
Total %	0	0	6.9	50	8.6	34.5	

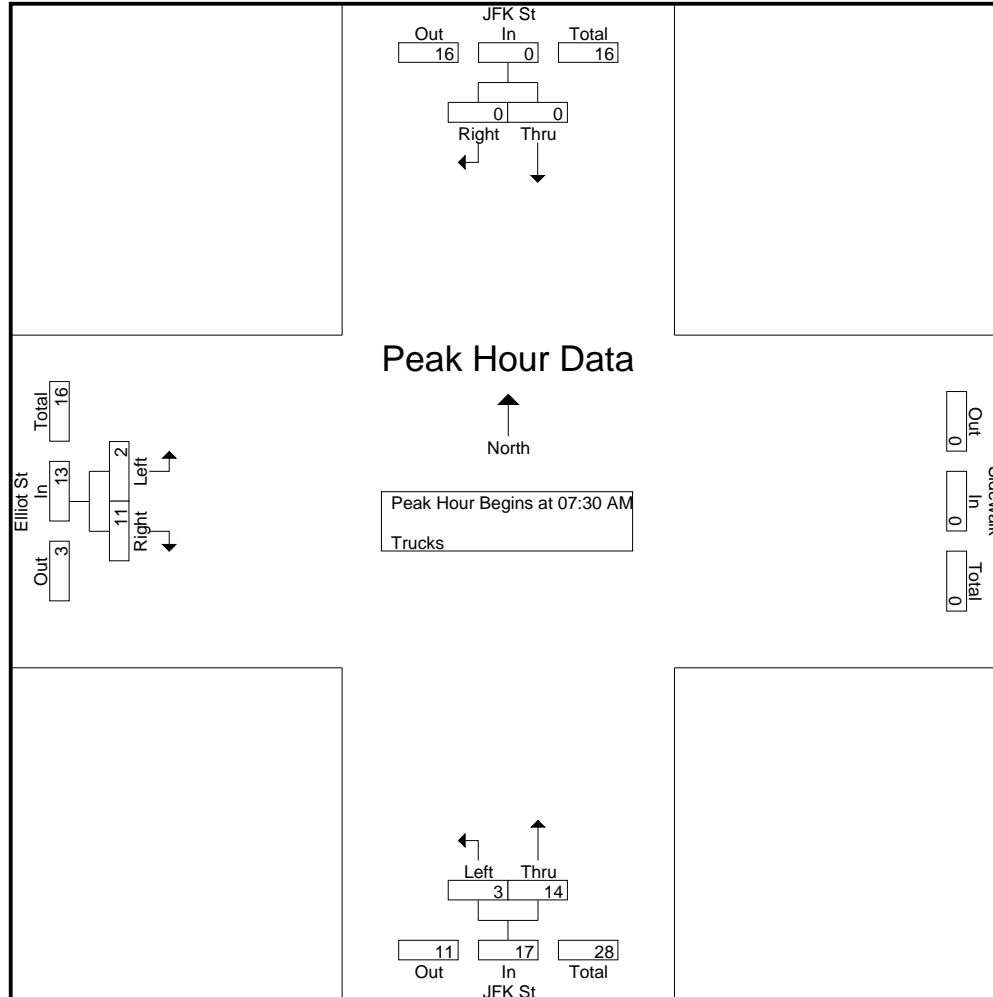
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:30 AM											
07:30 AM	0	0	0	0	1	2	3	1	5	6	9
07:45 AM	0	0	0	0	1	5	6	0	4	4	10
08:00 AM	0	0	0	0	1	4	5	0	2	2	7
08:15 AM	0	0	0	0	0	3	3	1	0	1	4
Total Volume	0	0	0	0	3	14	17	2	11	13	30
% App. Total	0	0	0	0	17.6	82.4	17	15.4	84.6	13	30
PHF	.000	.000	.000	.000	.750	.700	.708	.500	.550	.542	.750

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

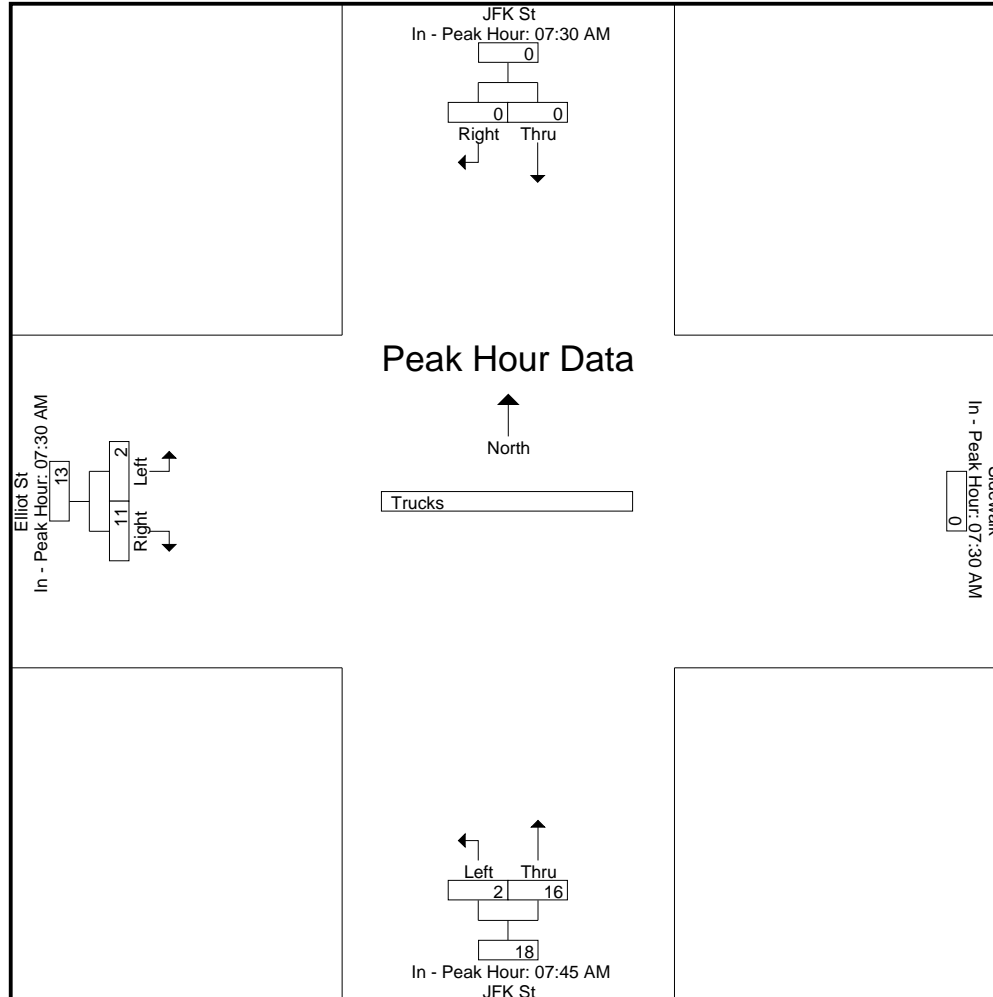
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	07:30 AM			07:30 AM	07:45 AM			07:30 AM			
+0 mins.	0	0	0	0	1	5	6	1	5	6	
+15 mins.	0	0	0	0	1	4	5	0	4	4	
+30 mins.	0	0	0	0	0	3	3	0	2	2	
+45 mins.	0	0	0	0	0	4	4	1	0	1	
Total Volume	0	0	0	0	2	16	18	2	11	13	
% App. Total	0	0			11.1	88.9		15.4	84.6		
PHF	.000	.000	.000	.000	.500	.800	.750	.500	.550	.542	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	0	0	1	2	0	4	7
07:45 AM	0	0	1	5	1	1	8
Total	0	0	2	7	1	5	15
08:00 AM	0	0	0	2	1	5	8
08:15 AM	0	0	2	4	1	3	10
08:30 AM	0	0	2	3	0	3	8
08:45 AM	0	0	1	6	0	3	10
Total	0	0	5	15	2	14	36
09:00 AM	0	0	0	4	1	3	8
09:15 AM	0	0	2	3	0	2	7
Grand Total	0	0	9	29	4	24	66
Apprch %	0	0	23.7	76.3	14.3	85.7	
Total %	0	0	13.6	43.9	6.1	36.4	

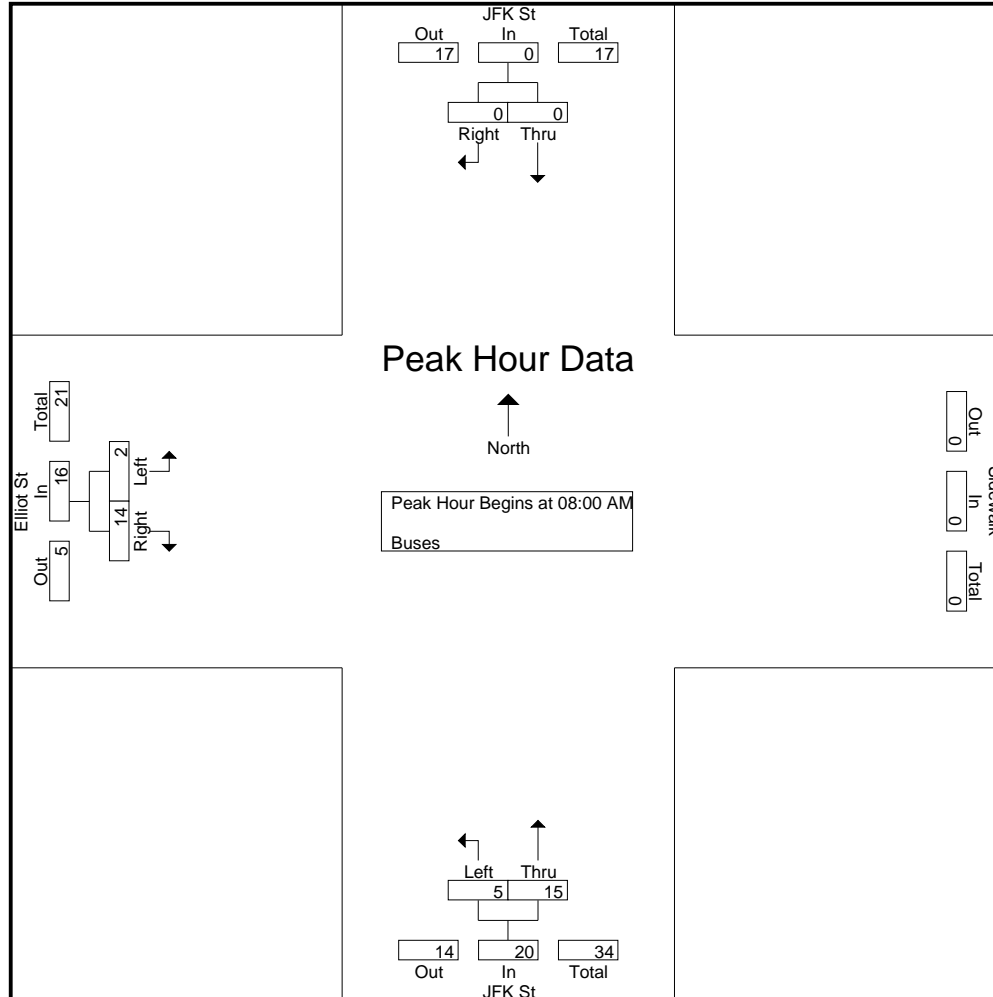
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:00 AM											
08:00 AM	0	0	0	0	2	2	1	5	6	8	
08:15 AM	0	0	0	0	2	6	1	3	4	10	
08:30 AM	0	0	0	0	2	5	0	3	3	8	
08:45 AM	0	0	0	0	1	7	0	3	3	10	
Total Volume	0	0	0	0	5	20	2	14	16	36	
% App. Total	0	0	0	0	25	75	12.5	87.5	16	36	
PHF	.000	.000	.000	.000	.625	.625	.500	.700	.667	.900	

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

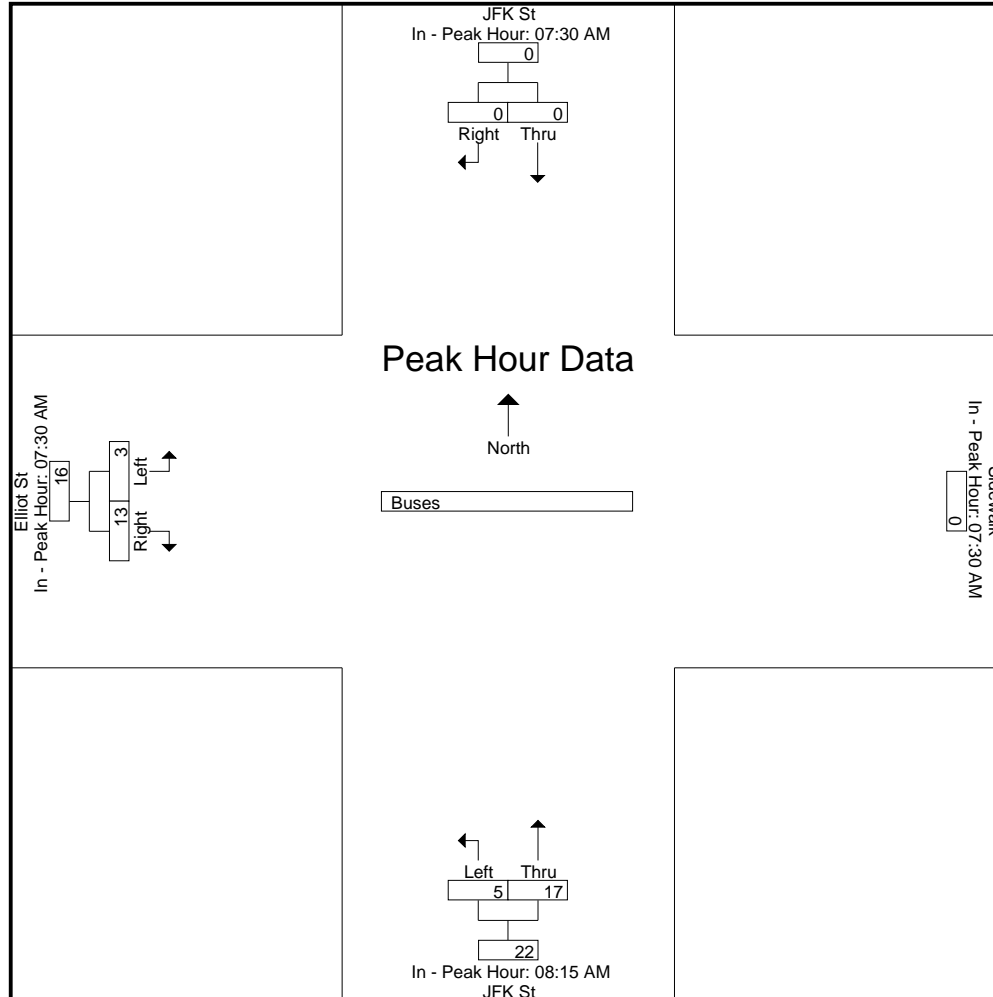
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	07:30 AM			07:30 AM	08:15 AM			07:30 AM			
+0 mins.	0	0	0	0	2	4	6	0	4	4	
+15 mins.	0	0	0	0	2	3	5	1	1	2	
+30 mins.	0	0	0	0	1	6	7	1	5	6	
+45 mins.	0	0	0	0	0	4	4	1	3	4	
Total Volume	0	0	0	0	5	17	22	3	13	16	
% App. Total	0	0			22.7	77.3		18.8	81.2		
PHF	.000	.000	.000	.000	.625	.708	.786	.750	.650	.667	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	0	0	0	16	2	2	20
07:45 AM	3	1	0	12	0	0	16
Total	3	1	0	28	2	2	36
08:00 AM	0	1	1	11	1	4	18
08:15 AM	0	0	2	10	1	5	18
08:30 AM	2	2	1	11	1	7	24
08:45 AM	1	0	1	27	0	4	33
Total	3	3	5	59	3	20	93
09:00 AM	1	1	2	8	0	2	14
09:15 AM	0	0	1	12	1	3	17
Grand Total	7	5	8	107	6	27	160
Apprch %	58.3	41.7	7	93	18.2	81.8	
Total %	4.4	3.1	5	66.9	3.8	16.9	

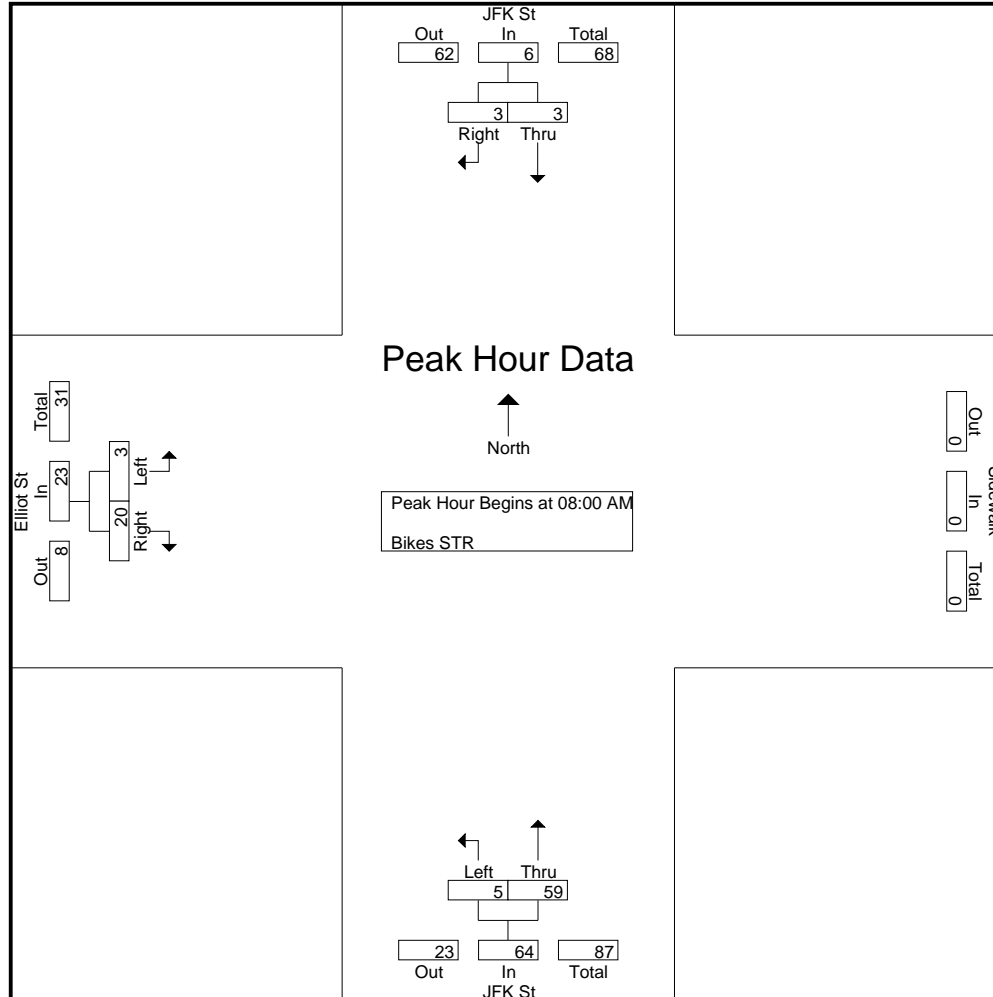
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:00 AM											
08:00 AM	0	1	1	0	1	11	12	1	4	5	18
08:15 AM	0	0	0	0	2	10	12	1	5	6	18
08:30 AM	2	2	4	0	1	11	12	1	7	8	24
08:45 AM	1	0	1	0	1	27	28	0	4	4	33
Total Volume	3	3	6	0	5	59	64	3	20	23	93
% App. Total	50	50			7.8	92.2		13	87		
PHF	.375	.375	.375	.000	.625	.546	.571	.750	.714	.719	.705

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

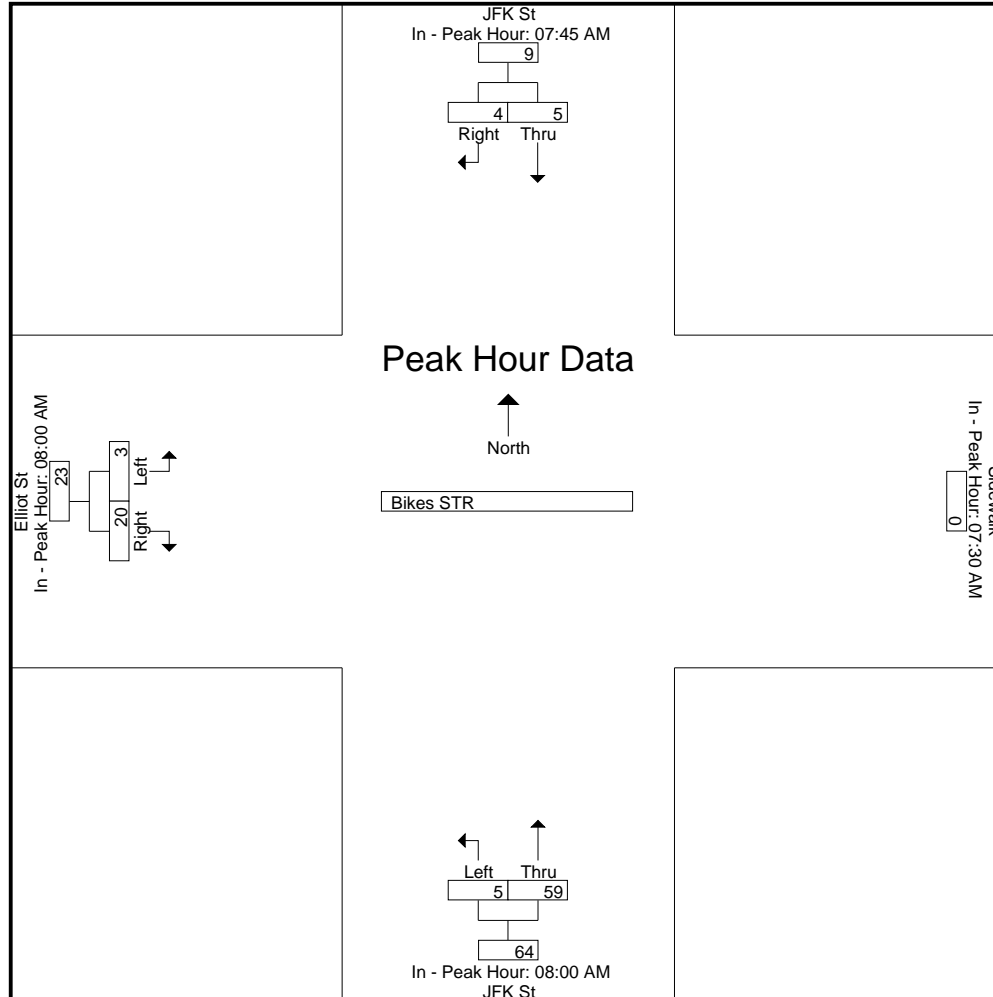
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	07:45 AM			07:30 AM	08:00 AM			08:00 AM			
+0 mins.	3	1	4	0	1	11	12	1	4	5	
+15 mins.	0	1	1	0	2	10	12	1	5	6	
+30 mins.	0	0	0	0	1	11	12	1	7	8	
+45 mins.	2	2	4	0	1	27	28	0	4	4	
Total Volume	5	4	9	0	5	59	64	3	20	23	
% App. Total	55.6	44.4			7.8	92.2		13	87		
PHF	.417	.500	.563	.000	.625	.546	.571	.750	.714	.719	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
07:30 AM	0	0	2	1	0	0	3
07:45 AM	0	0	0	5	0	0	5
Total	0	0	2	6	0	0	8
08:00 AM	0	0	0	0	0	0	0
08:15 AM	2	0	0	4	0	0	6
08:30 AM	1	0	0	1	0	0	2
08:45 AM	1	0	0	0	0	0	1
Total	4	0	0	5	0	0	9
09:00 AM	0	0	0	4	0	0	4
09:15 AM	0	0	0	1	0	1	2
Grand Total	4	0	2	16	0	1	23
Apprch %	100	0	11.1	88.9	0	100	
Total %	17.4	0	8.7	69.6	0	4.3	

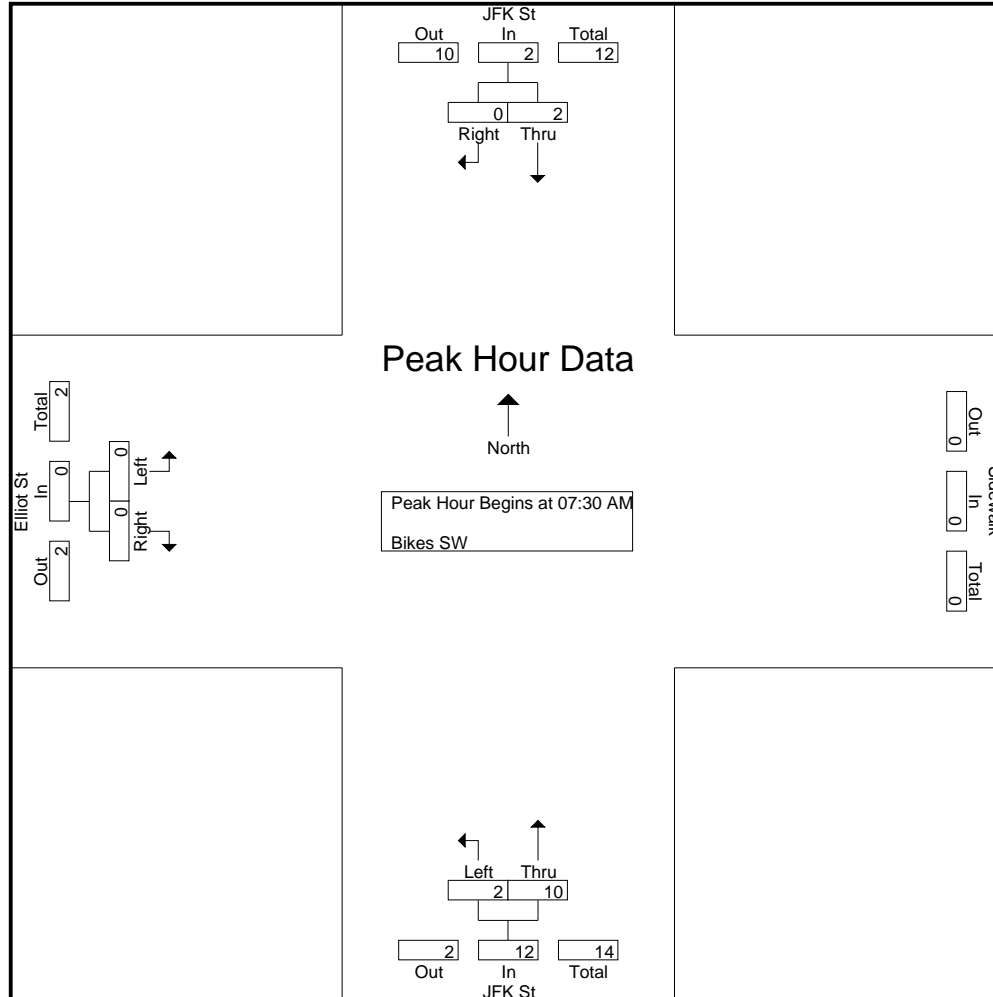
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:30 AM											
07:30 AM	0	0	0	0	2	1	3	0	0	0	3
07:45 AM	0	0	0	0	0	5	5	0	0	0	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	2	0	2	0	0	4	4	0	0	0	6
Total Volume	2	0	2	0	2	10	12	0	0	0	14
% App. Total	100	0	0	0	16.7	83.3	0	0	0	0	0
PHF	.250	.000	.250	.000	.250	.500	.600	.000	.000	.000	.583

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

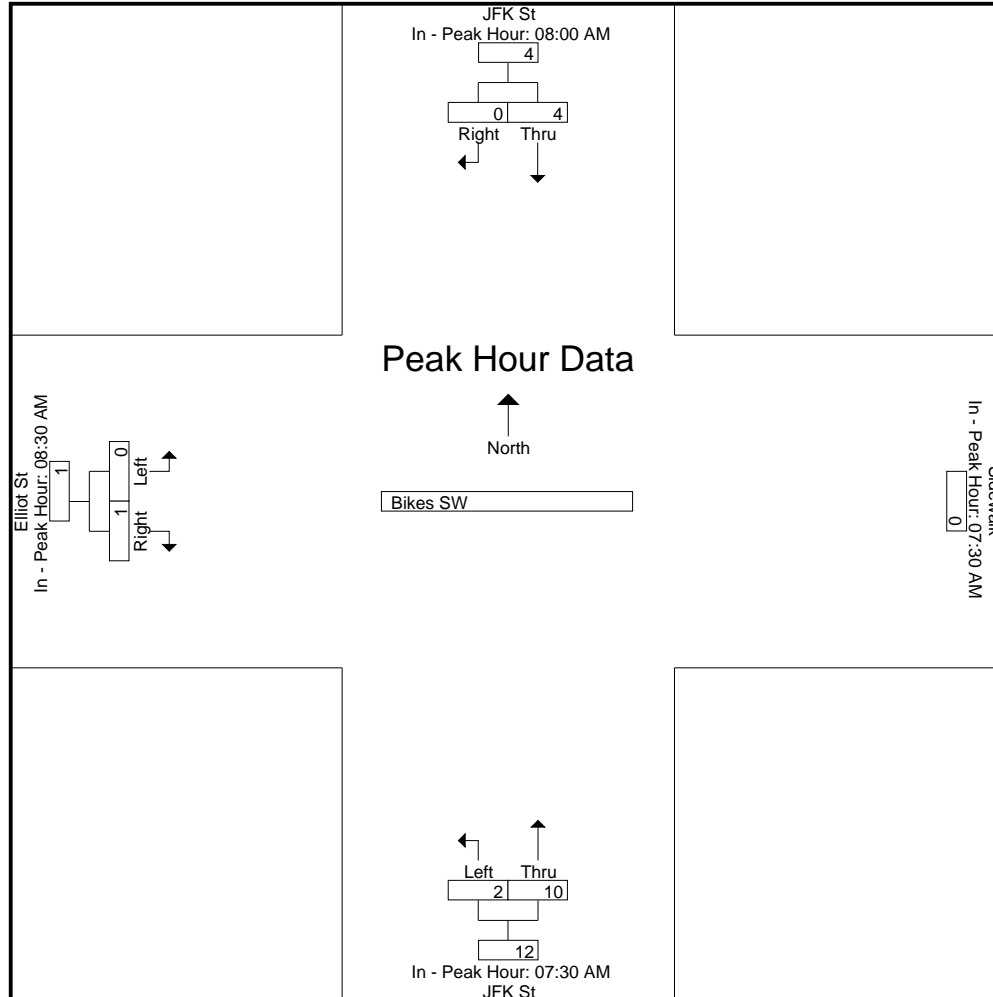
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	08:00 AM			07:30 AM	07:30 AM			08:30 AM			
+0 mins.	0	0	0	0	2	1	3	0	0	0	
+15 mins.	2	0	2	0	0	5	5	0	0	0	
+30 mins.	1	0	1	0	0	0	0	0	0	0	
+45 mins.	1	0	1	0	0	4	4	0	1	1	
Total Volume	4	0	4	0	2	10	12	0	1	1	
% App. Total	100	0			16.7	83.3		0	100		
PHF	.500	.000	.500	.000	.250	.500	.600	.000	.250	.250	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	JFK St From North		Sidewalk From East		JFK St From South		Elliot St From West		Int. Total
	WB	EB	NB	SB	EB	WB	SB	NB	
07:30 AM	4	3	14	5	2	0	29	33	90
07:45 AM	5	2	11	12	3	9	40	34	116
Total	9	5	25	17	5	9	69	67	206
08:00 AM	2	3	22	12	4	6	56	15	120
08:15 AM	6	1	27	32	5	17	88	14	190
08:30 AM	22	0	38	59	11	24	139	30	323
08:45 AM	17	0	24	16	0	10	61	26	154
Total	47	4	111	119	20	57	344	85	787
09:00 AM	18	4	39	12	2	15	73	37	200
09:15 AM	7	2	29	13	6	17	42	19	135
Grand Total	81	15	204	161	33	98	528	208	1328
Apprch %	84.4	15.6	55.9	44.1	25.2	74.8	71.7	28.3	
Total %	6.1	1.1	15.4	12.1	2.5	7.4	39.8	15.7	

Start Time	JFK St From North			Sidewalk From East			JFK St From South			Elliot St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	
08:15 AM	6	1	7	27	32	59	5	17	22	88	14	102	190
08:30 AM	22	0	22	38	59	97	11	24	35	139	30	169	323
08:45 AM	17	0	17	24	16	40	0	10	10	61	26	87	154
09:00 AM	18	4	22	39	12	51	2	15	17	73	37	110	200
Total Volume	63	5	68	128	119	247	18	66	84	361	107	468	867
% App. Total	92.6	7.4		51.8	48.2		21.4	78.6		77.1	22.9		
PHF	.716	.313	.773	.821	.504	.637	.409	.688	.600	.649	.723	.692	.671

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

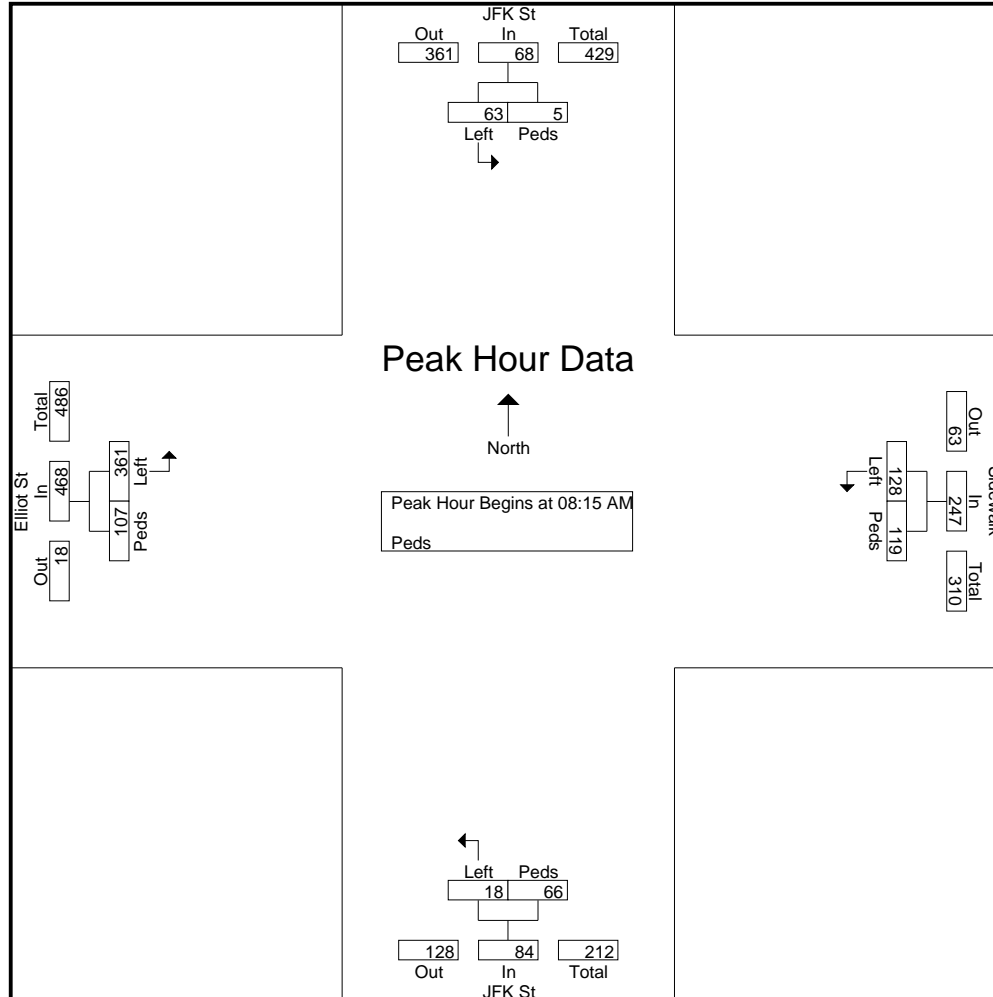
Peak Hour for Entire Intersection Begins at 08:15 AM

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North			Sidewalk From East			JFK St From South			Elliot St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

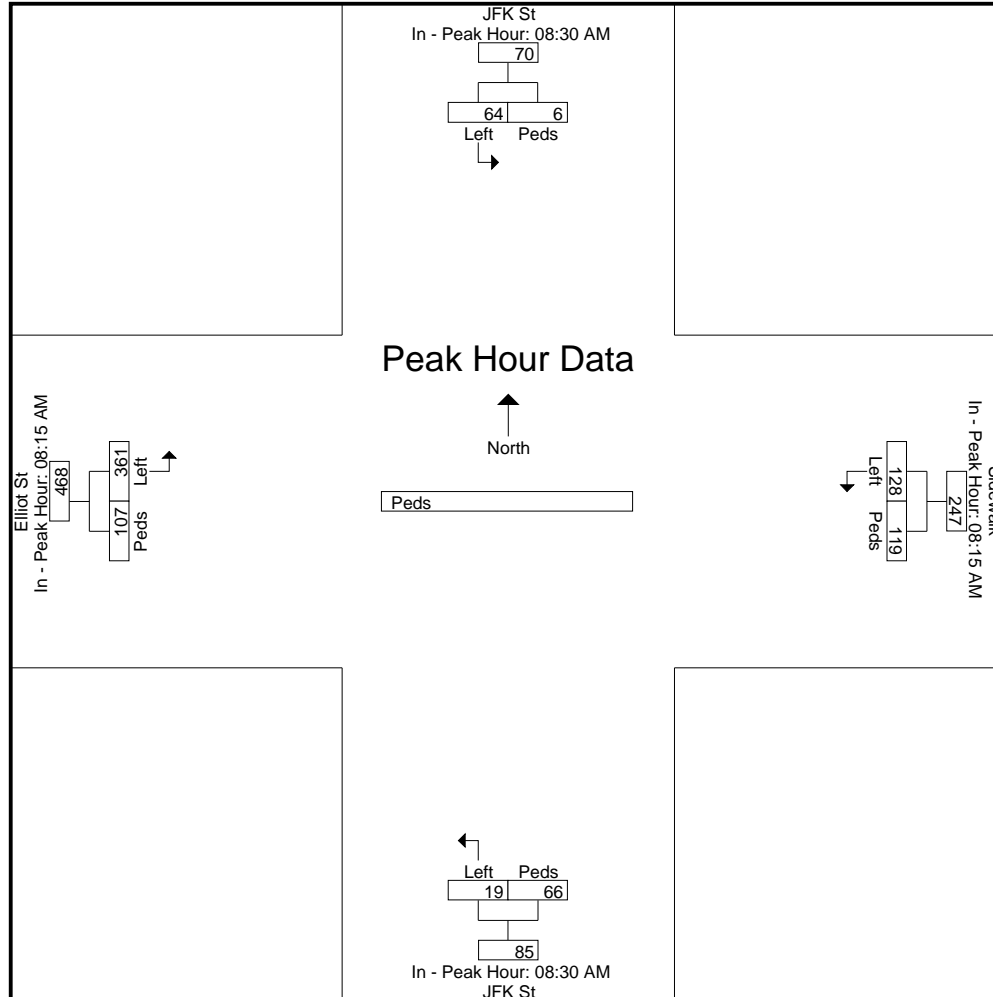
	08:30 AM			08:15 AM			08:30 AM			08:15 AM		
+0 mins.	22	0	22	27	32	59	11	24	35	88	14	102
+15 mins.	17	0	17	38	59	97	0	10	10	139	30	169
+30 mins.	18	4	22	24	16	40	2	15	17	61	26	87
+45 mins.	7	2	9	39	12	51	6	17	23	73	37	110
Total Volume	64	6	70	128	119	247	19	66	85	361	107	468
% App. Total	91.4	8.6		51.8	48.2		22.4	77.6		77.1	22.9	
PHF	.727	.375	.795	.821	.504	.637	.432	.688	.607	.649	.723	.692

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	0	0	35	120	12	108	275
04:45 PM	0	0	35	139	19	87	280
Total	0	0	70	259	31	195	555
05:00 PM	0	0	40	143	31	105	319
05:15 PM	0	0	34	143	31	100	308
05:30 PM	0	0	33	154	32	98	317
05:45 PM	0	0	34	139	29	109	311
Total	0	0	141	579	123	412	1255
06:00 PM	0	0	39	142	31	93	305
06:15 PM	0	0	30	155	27	86	298
Grand Total	0	0	280	1135	212	786	2413
Apprch %	0	0	19.8	80.2	21.2	78.8	
Total %	0	0	11.6	47	8.8	32.6	
Cars	0	0	275	1111	211	758	2355
% Cars	0	0	98.2	97.9	99.5	96.4	97.6
Trucks	0	0	0	2	1	10	13
% Trucks	0	0	0	0.2	0.5	1.3	0.5
Buses	0	0	5	22	0	18	45
% Buses	0	0	1.8	1.9	0	2.3	1.9

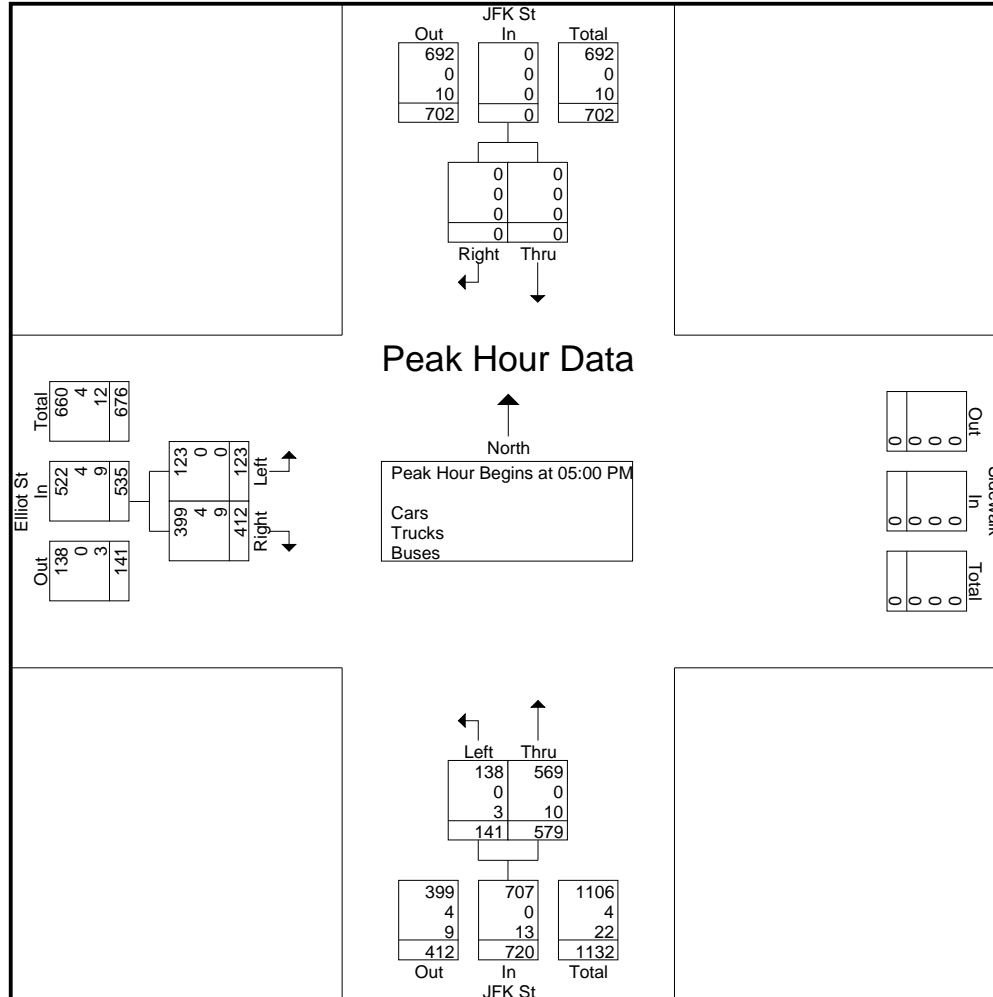
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:00 PM											
05:00 PM	0	0	0	0	40	143	183	31	105	136	319
05:15 PM	0	0	0	0	34	143	177	31	100	131	308
05:30 PM	0	0	0	0	33	154	187	32	98	130	317
05:45 PM	0	0	0	0	34	139	173	29	109	138	311
Total Volume	0	0	0	0	141	579	720	123	412	535	1255
% App. Total	0	0			19.6	80.4		23	77		
PHF	.000	.000	.000	.000	.881	.940	.963	.961	.945	.969	.984
Cars	0	0	0	0	138	569	707	123	399	522	1229
% Cars	0	0	0	0	97.9	98.3	98.2	100	96.8	97.6	97.9
Trucks	0	0	0	0	0	0	0	0	4	4	4
% Trucks	0	0	0	0	0	0	0	0	1.0	0.7	0.3
Buses	0	0	0	0	3	10	13	0	9	9	22
% Buses	0	0	0	0	2.1	1.7	1.8	0	2.2	1.7	1.8

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM	05:30 PM	05:00 PM				
+0 mins.	0	0	0	0	33	154	187	31	105	136
+15 mins.	0	0	0	0	34	139	173	31	100	131
+30 mins.	0	0	0	0	39	142	181	32	98	130
+45 mins.	0	0	0	0	30	155	185	29	109	138
Total Volume	0	0	0	0	136	590	726	123	412	535
% App. Total	0	0			18.7	81.3		23	77	
PHF	.000	.000	.000	.000	.872	.952	.971	.961	.945	.969
Cars	0	0	0	0	134	577	711	123	399	522
% Cars	0	0	0	0	98.5	97.8	97.9	100	96.8	97.6
Trucks	0	0	0	0	0	0	0	0	4	4
% Trucks	0	0	0	0	0	0	0	0	1	0.7
Buses	0	0	0	0	2	13	15	0	9	9
% Buses	0	0	0	0	1.5	2.2	2.1	0	2.2	1.7

Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	0	0	34	116	11	103	264
04:45 PM	0	0	34	136	19	84	273
Total	0	0	68	252	30	187	537
05:00 PM	0	0	40	139	31	103	313
05:15 PM	0	0	33	143	31	96	303
05:30 PM	0	0	32	149	32	95	308
05:45 PM	0	0	33	138	29	105	305
Total	0	0	138	569	123	399	1229
06:00 PM	0	0	39	138	31	90	298
06:15 PM	0	0	30	152	27	82	291
Grand Total	0	0	275	1111	211	758	2355
Apprch %	0	0	19.8	80.2	21.8	78.2	
Total %	0	0	11.7	47.2	9	32.2	

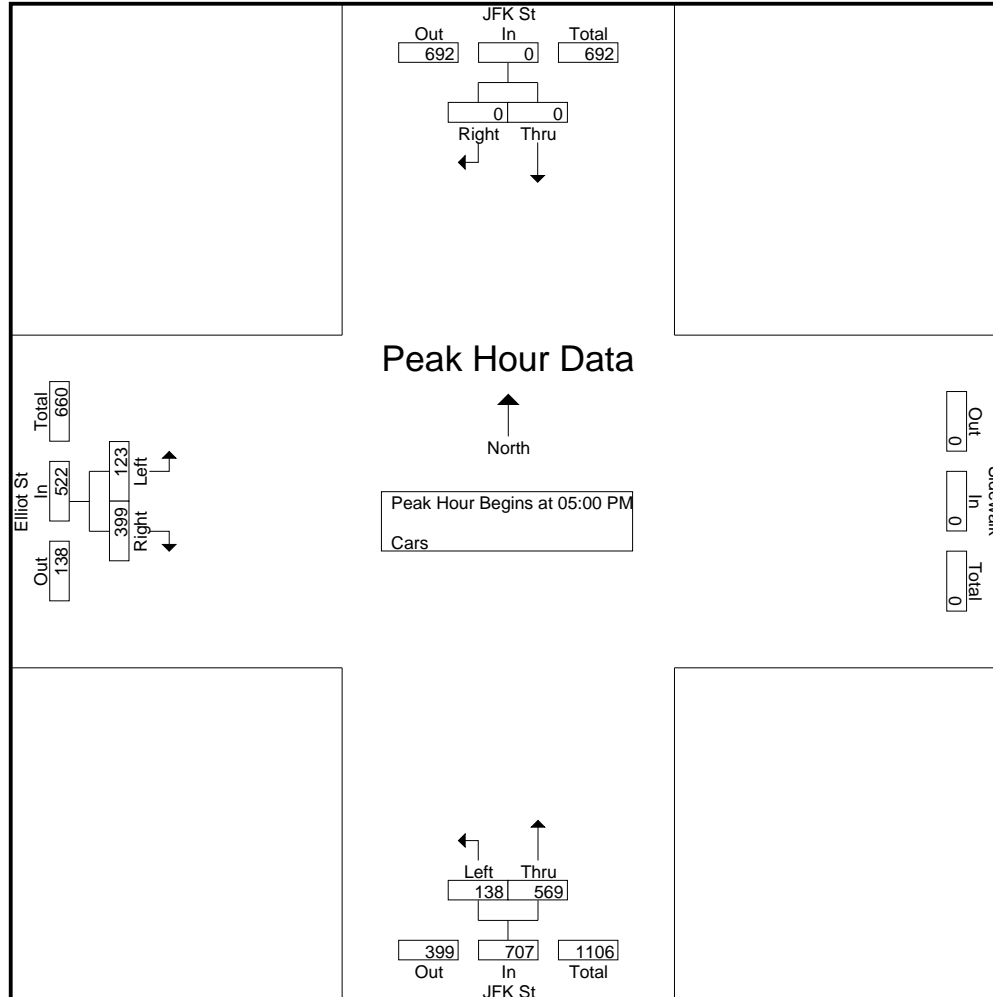
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:00 PM											
05:00 PM	0	0	0	0	40	139	179	31	103	134	313
05:15 PM	0	0	0	0	33	143	176	31	96	127	303
05:30 PM	0	0	0	0	32	149	181	32	95	127	308
05:45 PM	0	0	0	0	33	138	171	29	105	134	305
Total Volume	0	0	0	0	138	569	707	123	399	522	1229
% App. Total	0	0	0	0	19.5	80.5		23.6	76.4		
PHF	.000	.000	.000	.000	.863	.955	.977	.961	.950	.974	.982

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

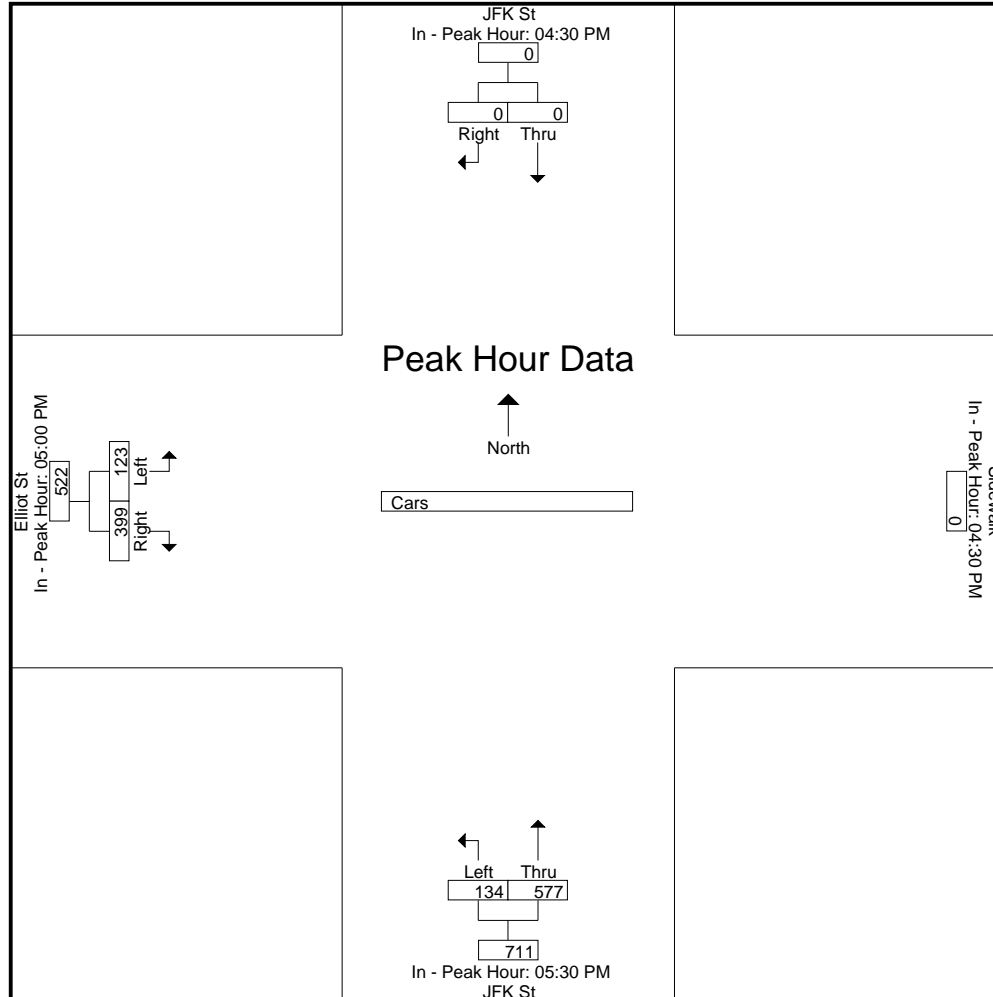
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	04:30 PM			04:30 PM	05:30 PM			05:00 PM			
+0 mins.	0	0	0	0	32	149	181	31	103	134	
+15 mins.	0	0	0	0	33	138	171	31	96	127	
+30 mins.	0	0	0	0	39	138	177	32	95	127	
+45 mins.	0	0	0	0	30	152	182	29	105	134	
Total Volume	0	0	0	0	134	577	711	123	399	522	
% App. Total	0	0			18.8	81.2		23.6	76.4		
PHF	.000	.000	.000	.000	.859	.949	.977	.961	.950	.974	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Trucks

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	0	0	0	1	1	1	3
04:45 PM	0	0	0	1	0	1	2
Total	0	0	0	2	1	2	5
05:00 PM	0	0	0	0	0	1	1
05:15 PM	0	0	0	0	0	2	2
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	1	1
Total	0	0	0	0	0	4	4
06:00 PM	0	0	0	0	0	2	2
06:15 PM	0	0	0	0	0	2	2
Grand Total	0	0	0	2	1	10	13
Apprch %	0	0	0	100	9.1	90.9	
Total %	0	0	0	15.4	7.7	76.9	

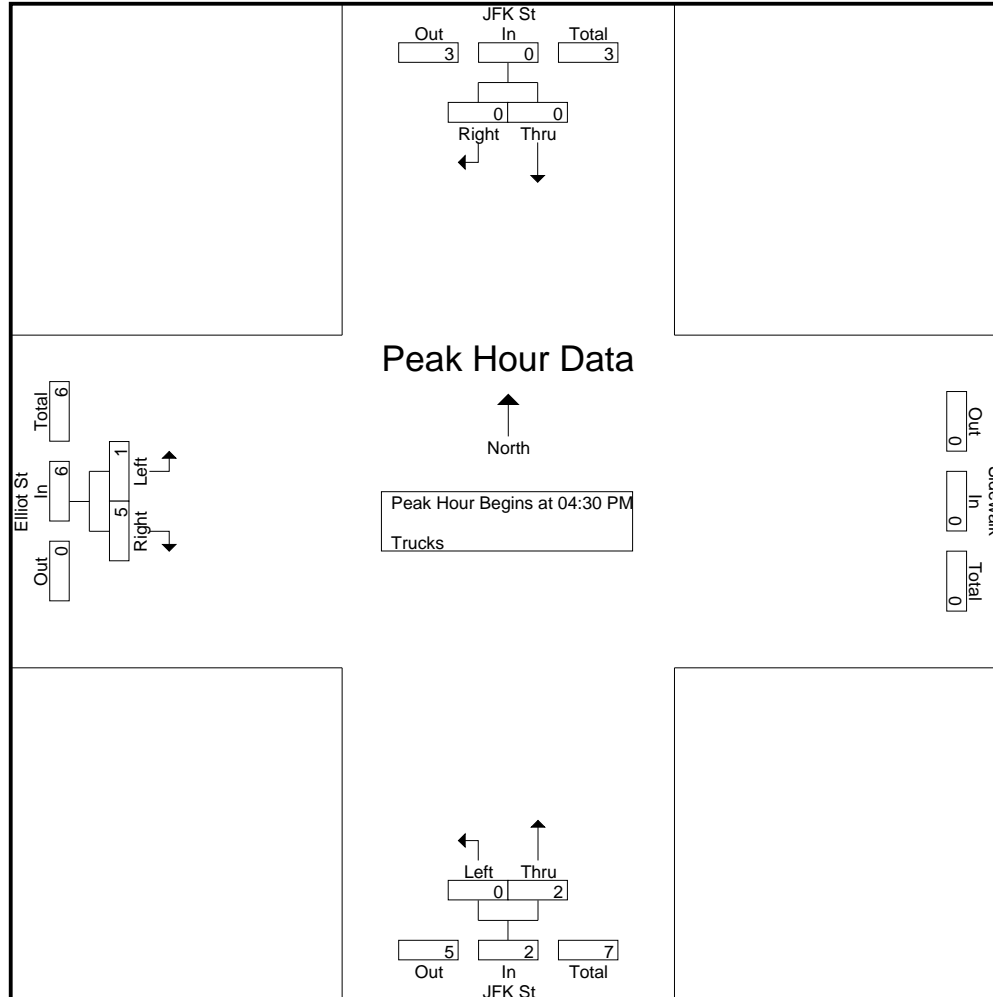
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:30 PM											
04:30 PM	0	0	0	0	1	1	1	1	2	3	
04:45 PM	0	0	0	0	1	1	0	1	1	2	
05:00 PM	0	0	0	0	0	0	0	1	1	1	
05:15 PM	0	0	0	0	0	0	0	2	2	2	
Total Volume	0	0	0	0	2	2	1	5	6	8	
% App. Total	0	0	0	0	100	100	16.7	83.3	6	8	
PHF	.000	.000	.000	.000	.500	.500	.250	.625	.750	.667	

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

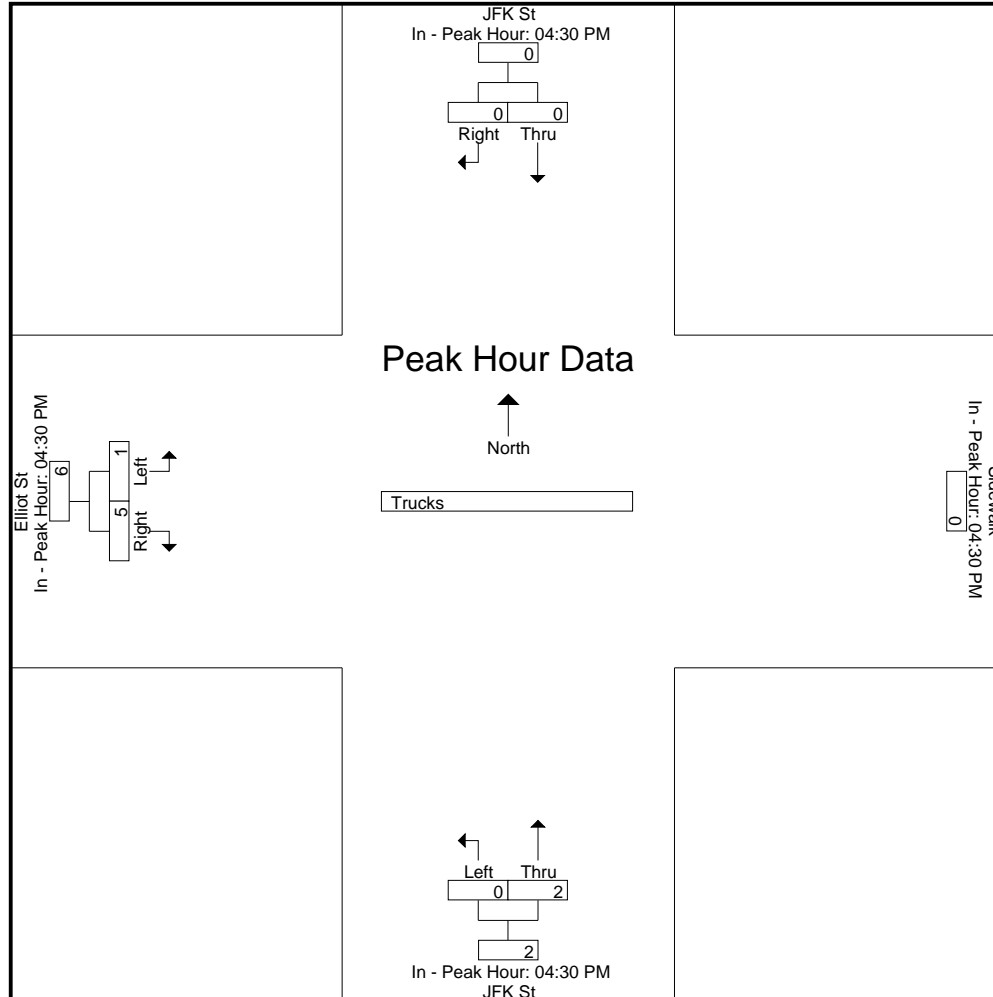
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	04:30 PM			04:30 PM	04:30 PM			04:30 PM			
+0 mins.	0	0	0	0	0	1	1	1	1	2	
+15 mins.	0	0	0	0	0	1	1	0	1	1	
+30 mins.	0	0	0	0	0	0	0	0	1	1	
+45 mins.	0	0	0	0	0	0	0	0	2	2	
Total Volume	0	0	0	0	0	2	2	1	5	6	
% App. Total	0	0			0	100		16.7	83.3		
PHF	.000	.000	.000	.000	.000	.500	.500	.250	.625	.750	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	0	0	1	3	0	4	8
04:45 PM	0	0	1	2	0	2	5
Total	0	0	2	5	0	6	13
05:00 PM	0	0	0	4	0	1	5
05:15 PM	0	0	1	0	0	2	3
05:30 PM	0	0	1	5	0	3	9
05:45 PM	0	0	1	1	0	3	5
Total	0	0	3	10	0	9	22
06:00 PM	0	0	0	4	0	1	5
06:15 PM	0	0	0	3	0	2	5
Grand Total	0	0	5	22	0	18	45
Apprch %	0	0	18.5	81.5	0	100	
Total %	0	0	11.1	48.9	0	40	

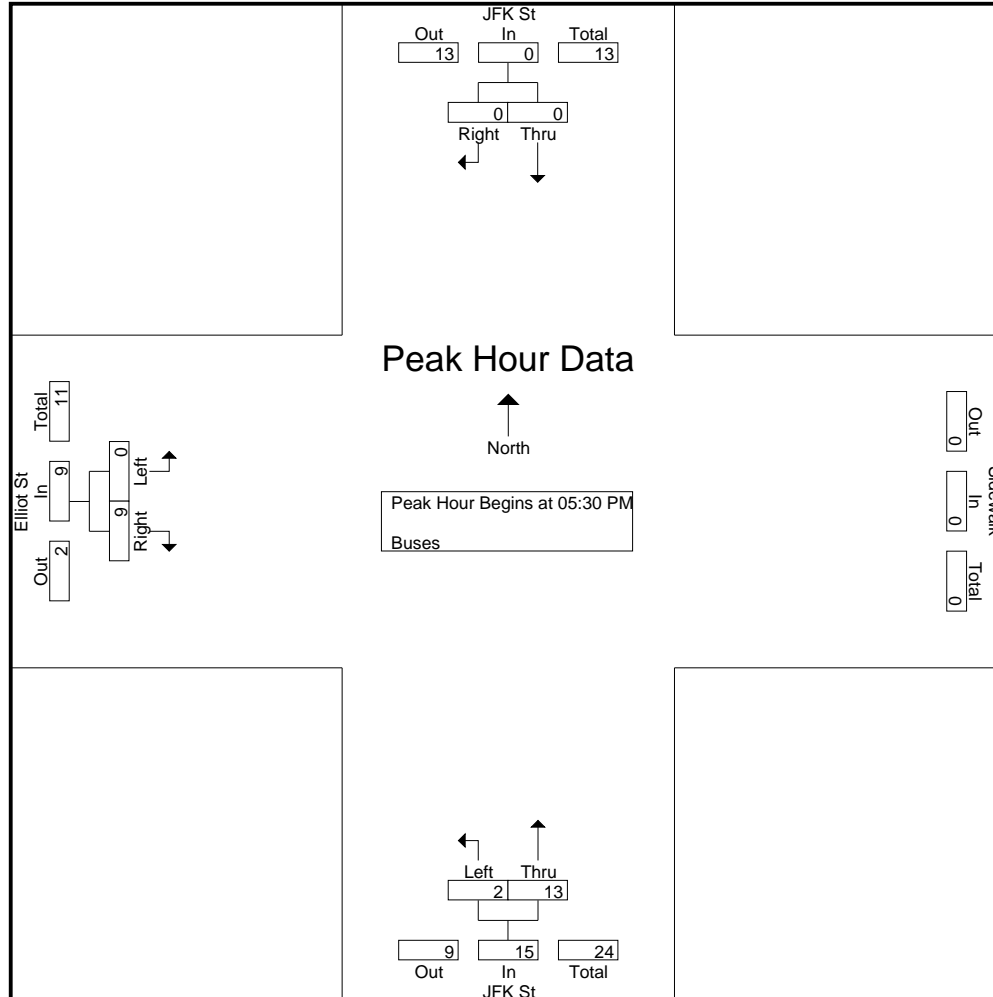
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		App. Total	Left	Thru	App. Total	Left	Right	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:30 PM											
05:30 PM	0	0	0	0	1	5	6	0	3	3	9
05:45 PM	0	0	0	0	1	1	2	0	3	3	5
06:00 PM	0	0	0	0	0	4	4	0	1	1	5
06:15 PM	0	0	0	0	0	3	3	0	2	2	5
Total Volume	0	0	0	0	2	13	15	0	9	9	24
% App. Total	0	0	0	0	13.3	86.7		0	100		
PHF	.000	.000	.000	.000	.500	.650	.625	.000	.750	.750	.667

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

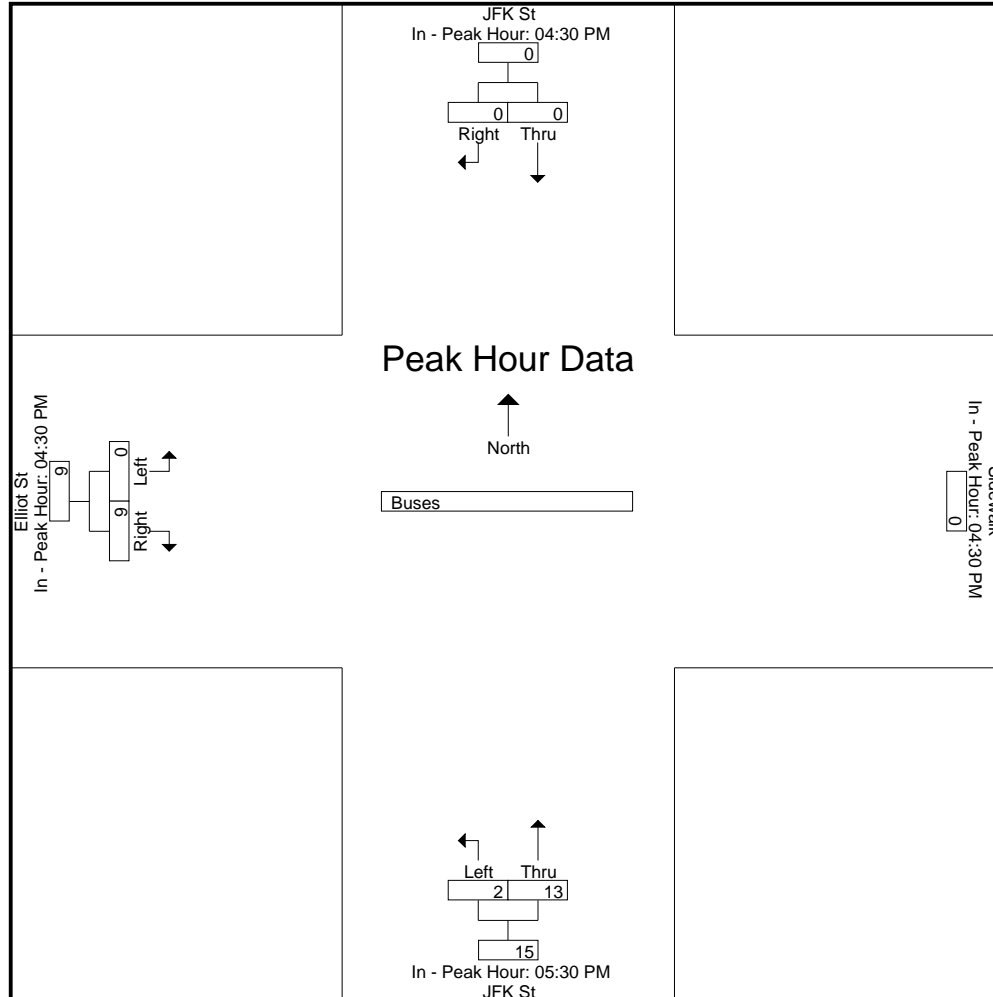
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	04:30 PM			04:30 PM	05:30 PM			04:30 PM			
+0 mins.	0	0	0	0	1	5	6	0	4	4	
+15 mins.	0	0	0	0	1	1	2	0	2	2	
+30 mins.	0	0	0	0	0	4	4	0	1	1	
+45 mins.	0	0	0	0	0	3	3	0	2	2	
Total Volume	0	0	0	0	2	13	15	0	9	9	
% App. Total	0	0			13.3	86.7		0	100		
PHF	.000	.000	.000	.000	.500	.650	.625	.000	.563	.563	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	1	0	2	6	4	5	18
04:45 PM	2	0	3	4	1	3	13
Total	3	0	5	10	5	8	31
05:00 PM	6	0	0	14	5	4	29
05:15 PM	3	0	0	12	5	6	26
05:30 PM	1	1	0	6	3	6	17
05:45 PM	1	0	2	18	1	4	26
Total	11	1	2	50	14	20	98
06:00 PM	2	1	0	28	4	10	45
06:15 PM	1	0	1	13	6	6	27
Grand Total	17	2	8	101	29	44	201
Apprch %	89.5	10.5	7.3	92.7	39.7	60.3	
Total %	8.5	1	4	50.2	14.4	21.9	

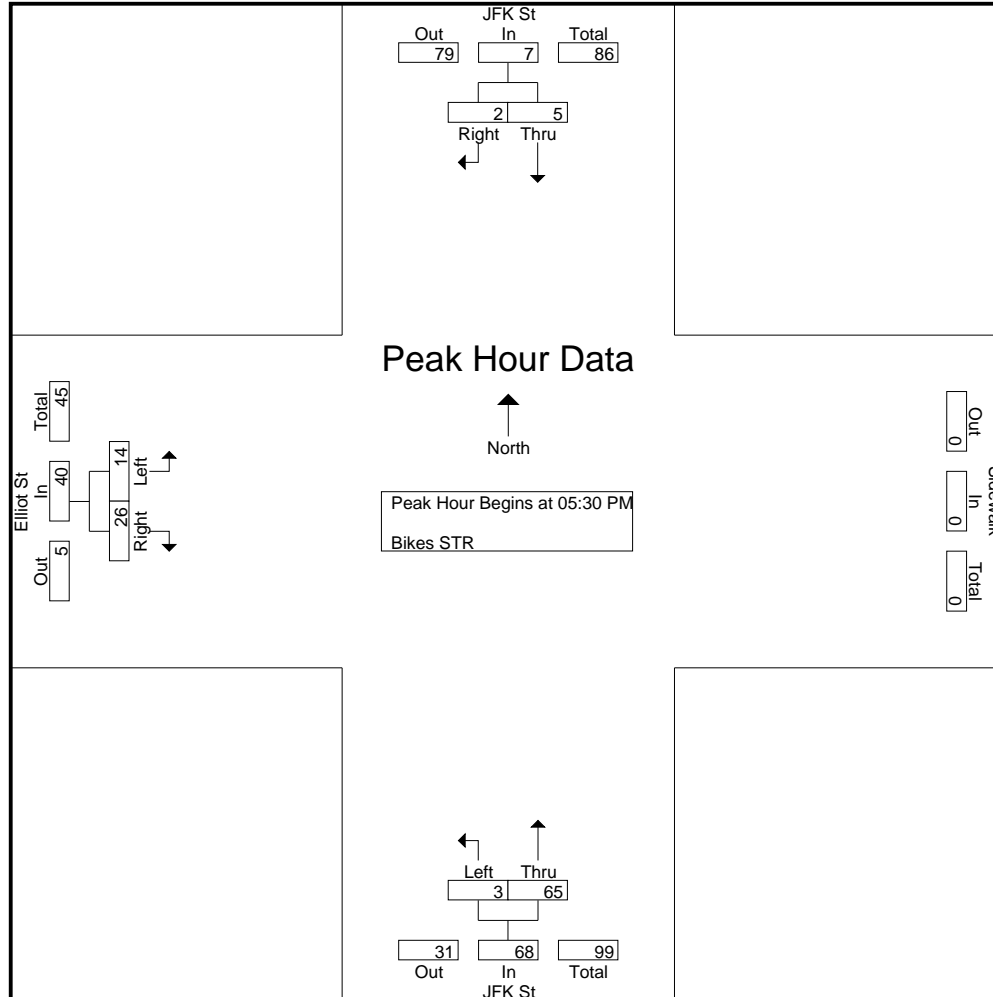
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:30 PM											
05:30 PM	1	1	2	0	0	6	6	3	6	9	17
05:45 PM	1	0	1	0	2	18	20	1	4	5	26
06:00 PM	2	1	3	0	0	28	28	4	10	14	45
06:15 PM	1	0	1	0	1	13	14	6	6	12	27
Total Volume	5	2	7	0	3	65	68	14	26	40	115
% App. Total	71.4	28.6			4.4	95.6		35	65		
PHF	.625	.500	.583	.000	.375	.580	.607	.583	.650	.714	.639

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

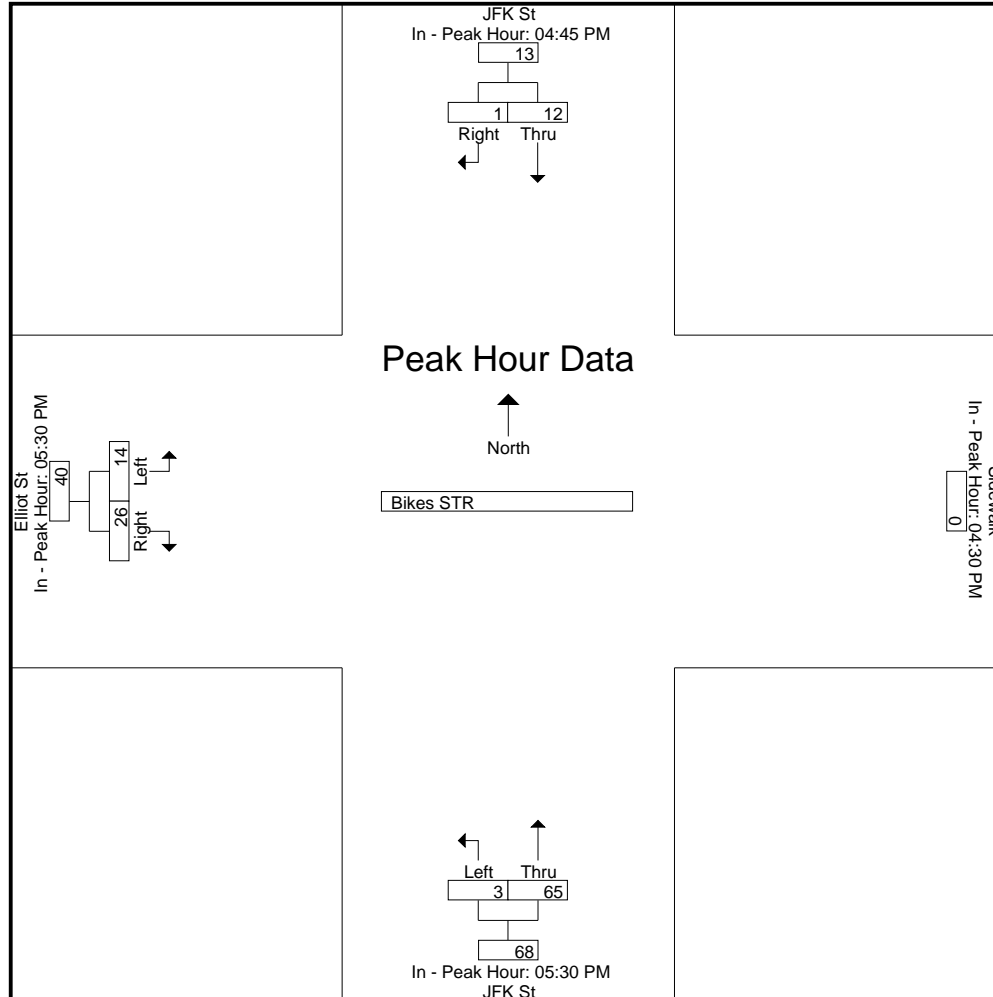
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	04:45 PM			04:30 PM	05:30 PM			05:30 PM			
+0 mins.	2	0	2	0	0	6	6	3	6	9	
+15 mins.	6	0	6	0	2	18	20	1	4	5	
+30 mins.	3	0	3	0	0	28	28	4	10	14	
+45 mins.	1	1	2	0	1	13	14	6	6	12	
Total Volume	12	1	13	0	3	65	68	14	26	40	
% App. Total	92.3	7.7			4.4	95.6		35	65		
PHF	.500	.250	.542	.000	.375	.580	.607	.583	.650	.714	

Accurate Counts

978-664-2565

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	JFK St From North		JFK St From South		Elliot St From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:30 PM	0	0	0	3	0	0	3
04:45 PM	3	0	0	1	0	0	4
Total	3	0	0	4	0	0	7
05:00 PM	1	0	0	1	0	0	2
05:15 PM	0	0	0	0	0	0	0
05:30 PM	3	0	0	3	1	0	7
05:45 PM	2	0	0	2	0	0	4
Total	6	0	0	6	1	0	13
06:00 PM	3	0	0	3	0	1	7
06:15 PM	1	0	0	1	0	0	2
Grand Total	13	0	0	14	1	1	29
Apprch %	100	0	0	100	50	50	
Total %	44.8	0	0	48.3	3.4	3.4	

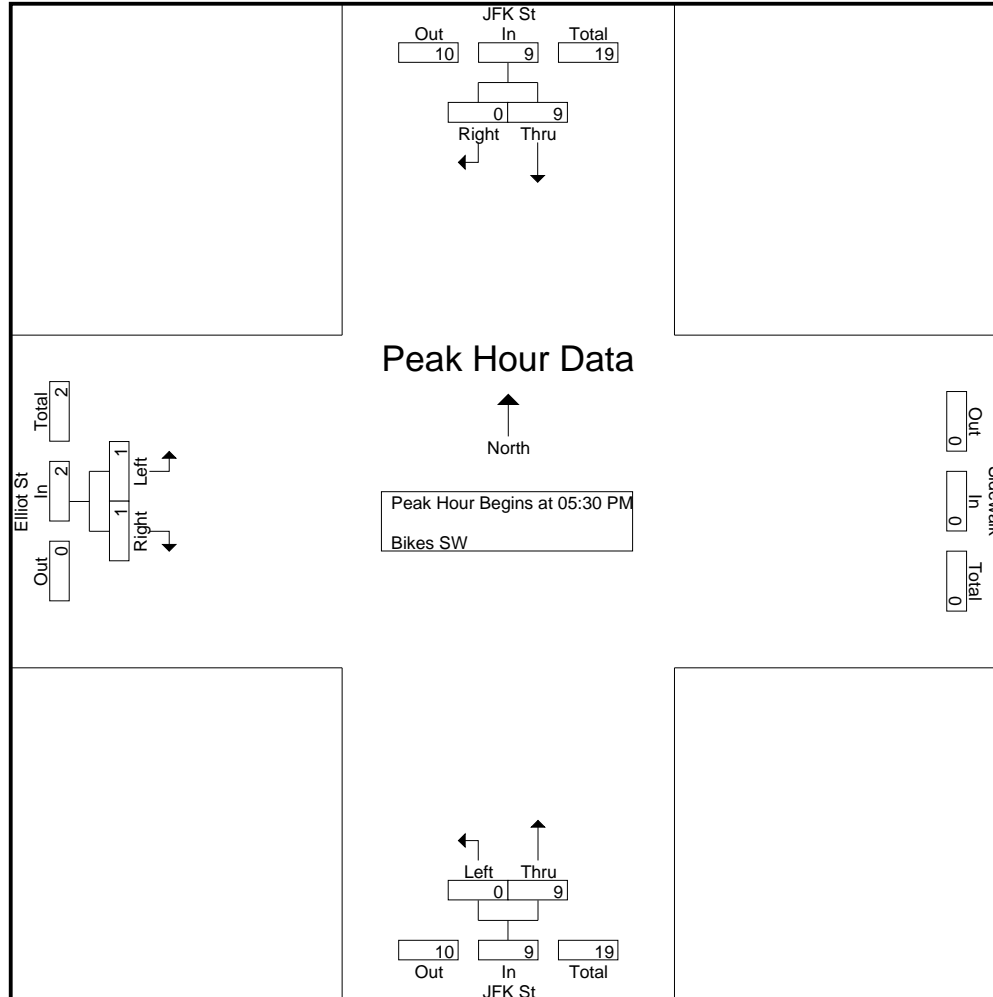
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:30 PM											
05:30 PM	3	0	3	0	0	3	3	1	0	1	7
05:45 PM	2	0	2	0	0	2	2	0	0	0	4
06:00 PM	3	0	3	0	0	3	3	0	1	1	7
06:15 PM	1	0	1	0	0	1	1	0	0	0	2
Total Volume	9	0	9	0	0	9	9	1	1	2	20
% App. Total	100	0	100	0	0	100	100	50	50	20	20
PHF	.750	.000	.750	.000	.000	.750	.750	.250	.250	.500	.714

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

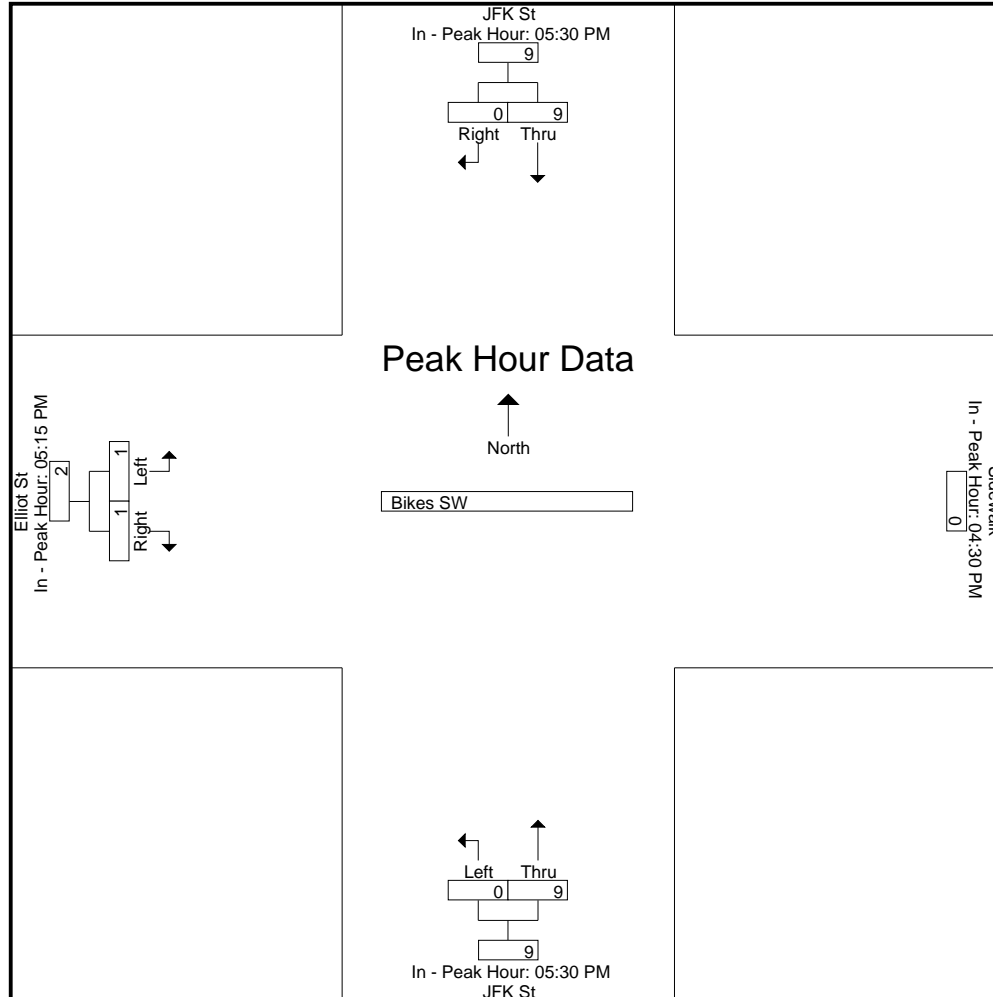
Start Time	JFK St From North			From East	JFK St From South			Elliot St From West			Int. Total
	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1											
Peak Hour for Each Approach Begins at:											
	05:30 PM			04:30 PM	05:30 PM			05:15 PM			
+0 mins.	3	0	3	0	0	3	3	0	0	0	0
+15 mins.	2	0	2	0	0	2	2	1	0	1	1
+30 mins.	3	0	3	0	0	3	3	0	0	0	0
+45 mins.	1	0	1	0	0	1	1	0	1	1	1
Total Volume	9	0	9	0	0	9	9	1	1	2	2
% App. Total	100	0			0	100		50	50		
PHF	.750	.000	.750	.000	.000	.750	.750	.250	.250	.500	

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	JFK St From North		Sidewalk From East		JFK St From South		Elliot St From West		Int. Total
	WB	EB	NB	SB	EB	WB	SB	NB	
04:30 PM	2	18	27	33	8	2	61	68	219
04:45 PM	11	13	35	44	10	3	51	79	246
Total	13	31	62	77	18	5	112	147	465
05:00 PM	1	12	60	26	28	11	78	91	307
05:15 PM	9	15	39	49	16	2	59	75	264
05:30 PM	8	12	45	23	32	10	72	96	298
05:45 PM	16	10	61	13	33	18	63	117	331
Total	34	49	205	111	109	41	272	379	1200
06:00 PM	13	20	39	20	34	3	36	112	277
06:15 PM	18	13	70	40	17	7	89	82	336
Grand Total	78	113	376	248	178	56	509	720	2278
Apprch %	40.8	59.2	60.3	39.7	76.1	23.9	41.4	58.6	
Total %	3.4	5	16.5	10.9	7.8	2.5	22.3	31.6	

Start Time	JFK St From North			Sidewalk From East			JFK St From South			Elliot St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	
05:30 PM	8	12	20	45	23	68	32	10	42	72	96	168	298
05:45 PM	16	10	26	61	13	74	33	18	51	63	117	180	331
06:00 PM	13	20	33	39	20	59	34	3	37	36	112	148	277
06:15 PM	18	13	31	70	40	110	17	7	24	89	82	171	336
Total Volume	55	55	110	215	96	311	116	38	154	260	407	667	1242
% App. Total	50	50		69.1	30.9		75.3	24.7		39	61		
PHF	.764	.688	.833	.768	.600	.707	.853	.528	.755	.730	.870	.926	.924

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

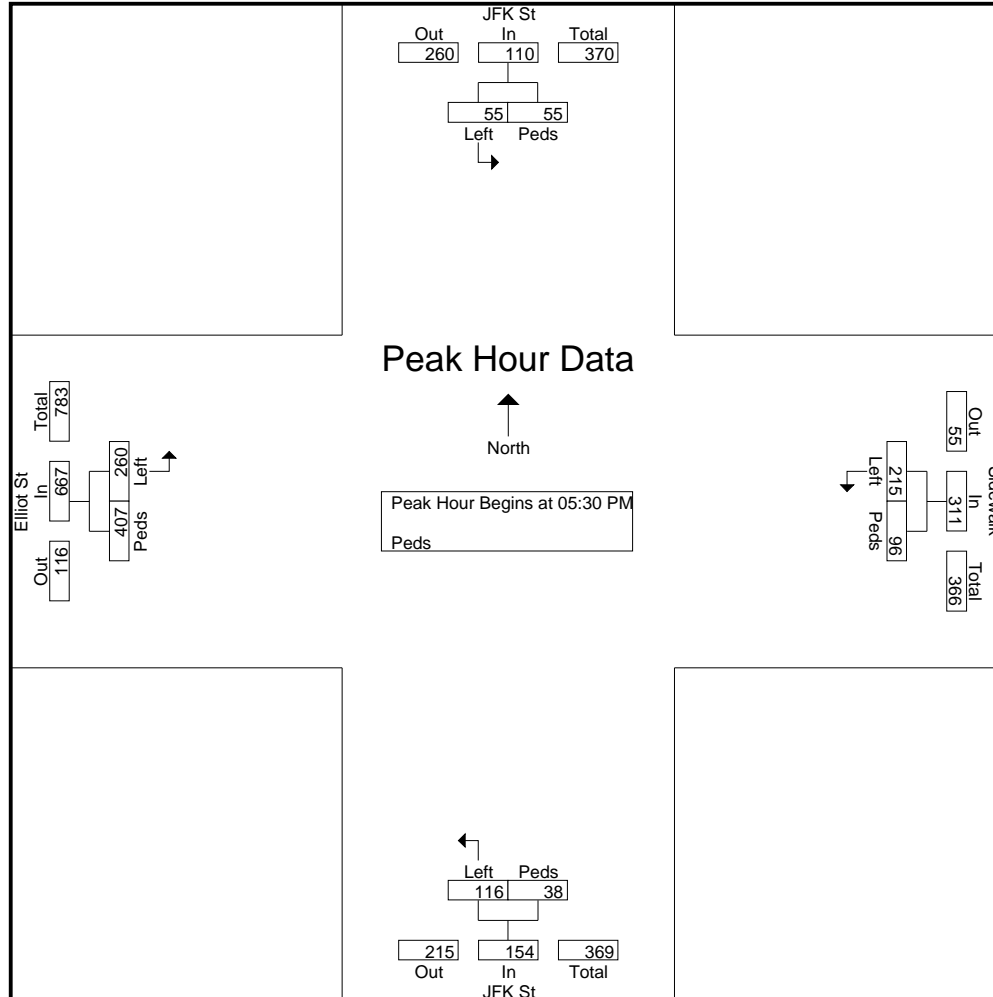
Peak Hour for Entire Intersection Begins at 05:30 PM

Accurate Counts

978-664-2565

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Elliot Street
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622003
 Site Code : 12622003
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North			Sidewalk From East			JFK St From South			Elliot St From West			Int. Total
	WB	EB	App. Total	NB	SB	App. Total	EB	WB	App. Total	SB	NB	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

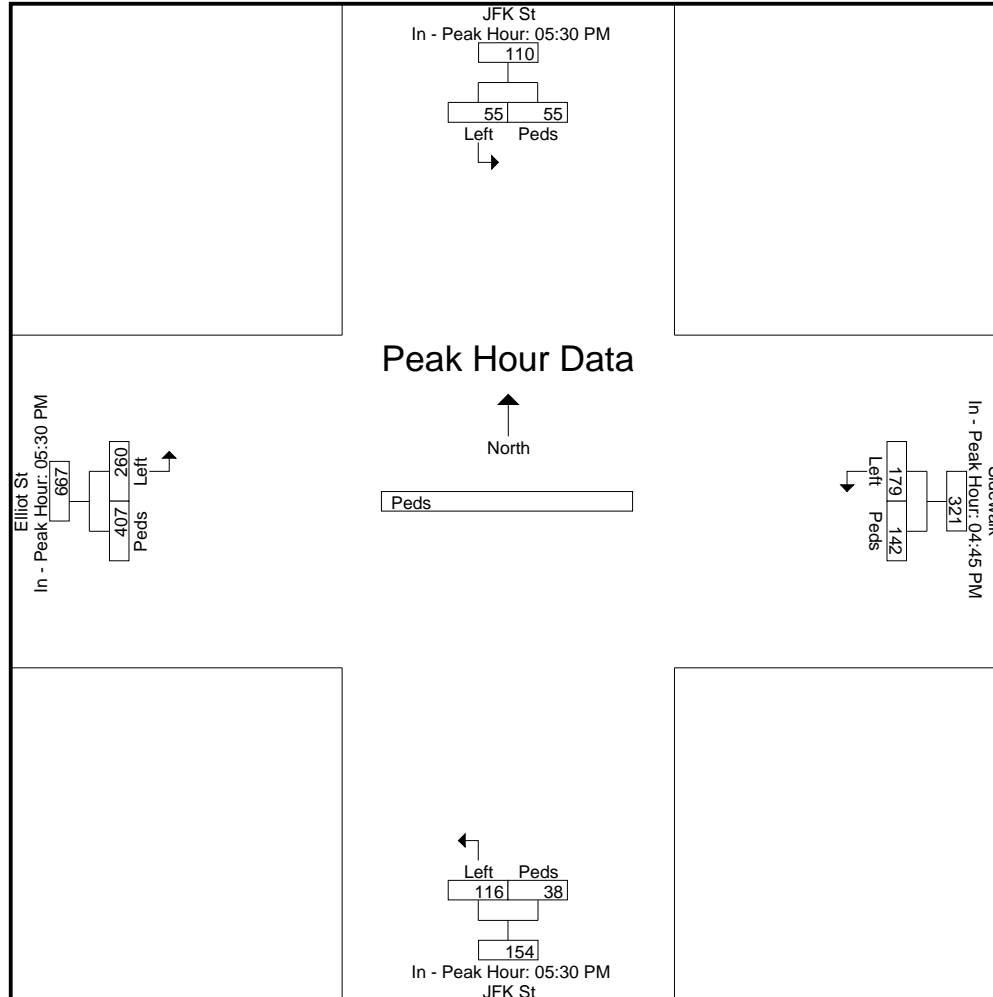
	05:30 PM			04:45 PM			05:30 PM			05:30 PM		
+0 mins.	8	12	20	35	44	79	32	10	42	72	96	168
+15 mins.	16	10	26	60	26	86	33	18	51	63	117	180
+30 mins.	13	20	33	39	49	88	34	3	37	36	112	148
+45 mins.	18	13	31	45	23	68	17	7	24	89	82	171
Total Volume	55	55	110	179	142	321	116	38	154	260	407	667
% App. Total	50	50		55.8	44.2		75.3	24.7		39	61	
PHF	.764	.688	.833	.746	.724	.912	.853	.528	.755	.730	.870	.926

Accurate Counts

978-664-2565

File Name : 12622003
Site Code : 12622003
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Elliot Street
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	87	1	0	162	35	0	97	17	0	190	39	628
07:45 AM	0	80	4	0	144	40	3	121	26	0	211	43	672
Total	0	167	5	0	306	75	3	218	43	0	401	82	1300
08:00 AM	0	87	1	0	157	28	0	127	23	0	164	32	619
08:15 AM	0	97	1	0	148	37	1	124	38	0	169	28	643
08:30 AM	1	96	0	0	99	41	0	139	29	0	211	26	642
08:45 AM	0	101	4	0	110	41	1	132	24	2	198	32	645
Total	1	381	6	0	514	147	2	522	114	2	742	118	2549
09:00 AM	0	82	4	0	137	43	0	141	21	0	224	48	700
09:15 AM	1	103	1	0	100	43	0	116	31	0	190	27	612
Grand Total	2	733	16	0	1057	308	5	997	209	2	1557	275	5161
Apprch %	0.3	97.6	2.1	0	77.4	22.6	0.4	82.3	17.3	0.1	84.9	15	
Total %	0	14.2	0.3	0	20.5	6	0.1	19.3	4	0	30.2	5.3	
Cars	2	691	16	0	1054	302	5	928	207	2	1551	274	5032
% Cars	100	94.3	100	0	99.7	98.1	100	93.1	99	100	99.6	99.6	97.5
Trucks	0	18	0	0	1	5	0	31	1	0	1	0	57
% Trucks	0	2.5	0	0	0.1	1.6	0	3.1	0.5	0	0.1	0	1.1
Buses	0	24	0	0	2	1	0	38	1	0	5	1	72
% Buses	0	3.3	0	0	0.2	0.3	0	3.8	0.5	0	0.3	0.4	1.4

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:15 AM

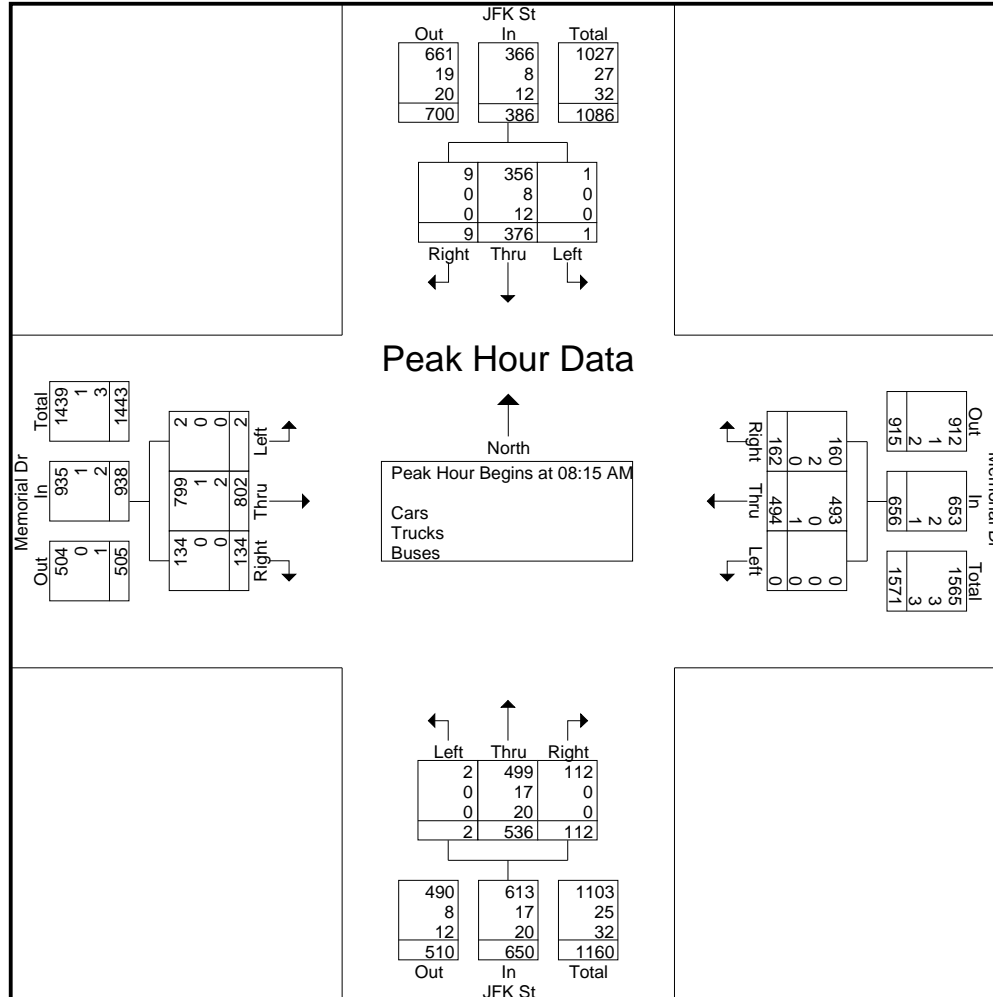
08:15 AM	0	97	1	98	0	148	37	185	1	124	38	163	0	169	28	197	643
08:30 AM	1	96	0	97	0	99	41	140	0	139	29	168	0	211	26	237	642
08:45 AM	0	101	4	105	0	110	41	151	1	132	24	157	2	198	32	232	645
09:00 AM	0	82	4	86	0	137	43	180	0	141	21	162	0	224	48	272	700
Total Volume	1	376	9	386	0	494	162	656	2	536	112	650	2	802	134	938	2630
% App. Total	0.3	97.4	2.3		0	75.3	24.7		0.3	82.5	17.2		0.2	85.5	14.3		
PHF	.250	.931	.563	.919	.000	.834	.942	.886	.500	.950	.737	.967	.250	.895	.698	.862	.939
Cars	1	356	9	366	0	493	160	653	2	499	112	613	2	799	134	935	2567
% Cars	100	94.7	100	94.8	0	99.8	98.8	99.5	100	93.1	100	94.3	100	99.6	100	99.7	97.6
Trucks	0	8	0	8	0	0	2	2	0	17	0	17	0	1	0	1	28
% Trucks	0	2.1	0	2.1	0	0	1.2	0.3	0	3.2	0	2.6	0	0.1	0	0.1	1.1
Buses	0	12	0	12	0	1	0	1	0	20	0	20	0	2	0	2	35
% Buses	0	3.2	0	3.1	0	0.2	0	0.2	0	3.7	0	3.1	0	0.2	0	0.2	1.3

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

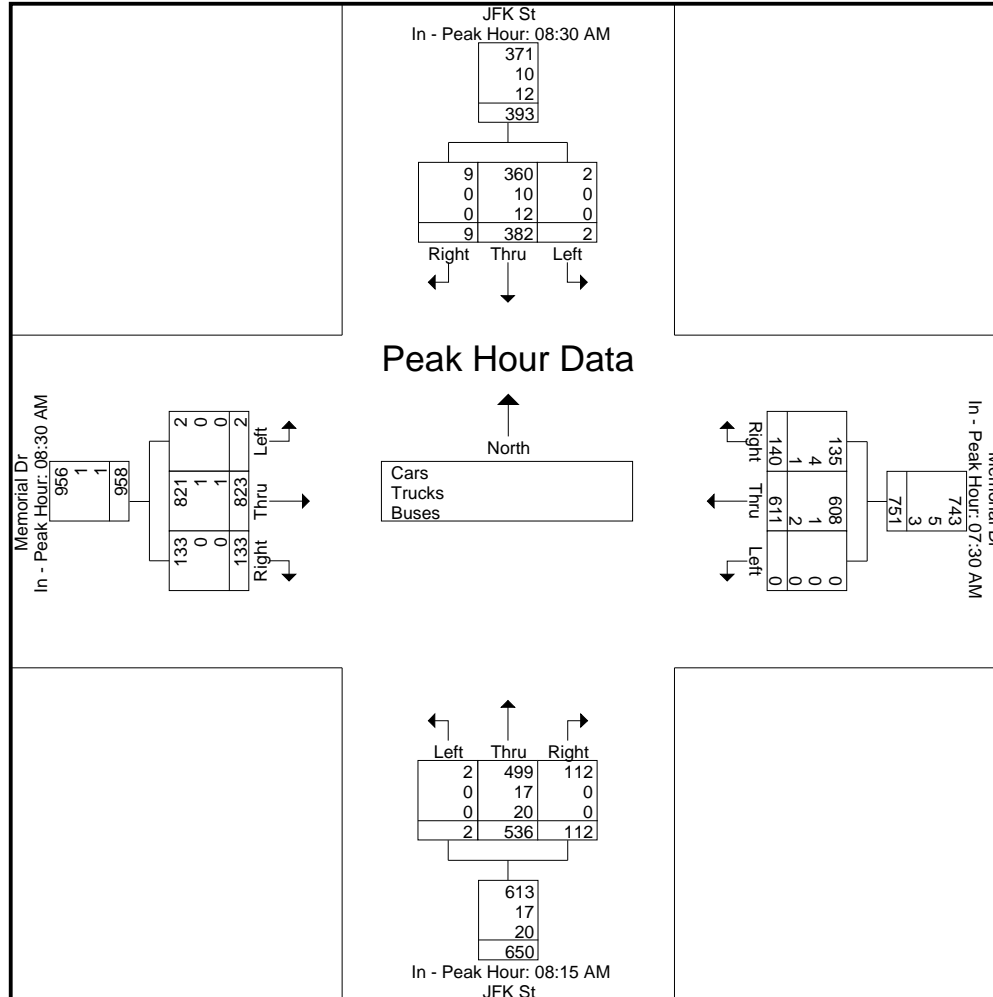
	08:30 AM				07:30 AM				08:15 AM				08:30 AM			
+0 mins.	1	96	0	97	0	162	35	197	1	124	38	163	0	211	26	237
+15 mins.	0	101	4	105	0	144	40	184	0	139	29	168	2	198	32	232
+30 mins.	0	82	4	86	0	157	28	185	1	132	24	157	0	224	48	272
+45 mins.	1	103	1	105	0	148	37	185	0	141	21	162	0	190	27	217
Total Volume	2	382	9	393	0	611	140	751	2	536	112	650	2	823	133	958
% App. Total	0.5	97.2	2.3		0	81.4	18.6		0.3	82.5	17.2		0.2	85.9	13.9	
PHF	.500	.927	.563	.936	.000	.943	.875	.953	.500	.950	.737	.967	.250	.919	.693	.881
Cars	2	360	9	371	0	608	135	743	2	499	112	613	2	821	133	956
% Cars	100	94.2	100	94.4	0	99.5	96.4	98.9	100	93.1	100	94.3	100	99.8	100	99.8
Trucks	0	10	0	10	0	1	4	5	0	17	0	17	0	1	0	1
% Trucks	0	2.6	0	2.5	0	0.2	2.9	0.7	0	3.2	0	2.6	0	0.1	0	0.1
Buses	0	12	0	12	0	2	1	3	0	20	0	20	0	1	0	1
% Buses	0	3.1	0	3.1	0	0.3	0.7	0.4	0	3.7	0	3.1	0	0.1	0	0.1

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	80	1	0	160	33	0	89	16	0	188	39	606
07:45 AM	0	77	4	0	144	39	3	111	26	0	210	42	656
Total	0	157	5	0	304	72	3	200	42	0	398	81	1262
08:00 AM	0	79	1	0	157	27	0	120	23	0	164	32	603
08:15 AM	0	95	1	0	147	36	1	117	38	0	168	28	631
08:30 AM	1	88	0	0	99	41	0	129	29	0	211	26	624
08:45 AM	0	96	4	0	110	40	1	121	24	2	197	32	627
Total	1	358	6	0	513	144	2	487	114	2	740	118	2485
09:00 AM	0	77	4	0	137	43	0	132	21	0	223	48	685
09:15 AM	1	99	1	0	100	43	0	109	30	0	190	27	600
Grand Total	2	691	16	0	1054	302	5	928	207	2	1551	274	5032
Apprch %	0.3	97.5	2.3	0	77.7	22.3	0.4	81.4	18.2	0.1	84.9	15	
Total %	0	13.7	0.3	0	20.9	6	0.1	18.4	4.1	0	30.8	5.4	

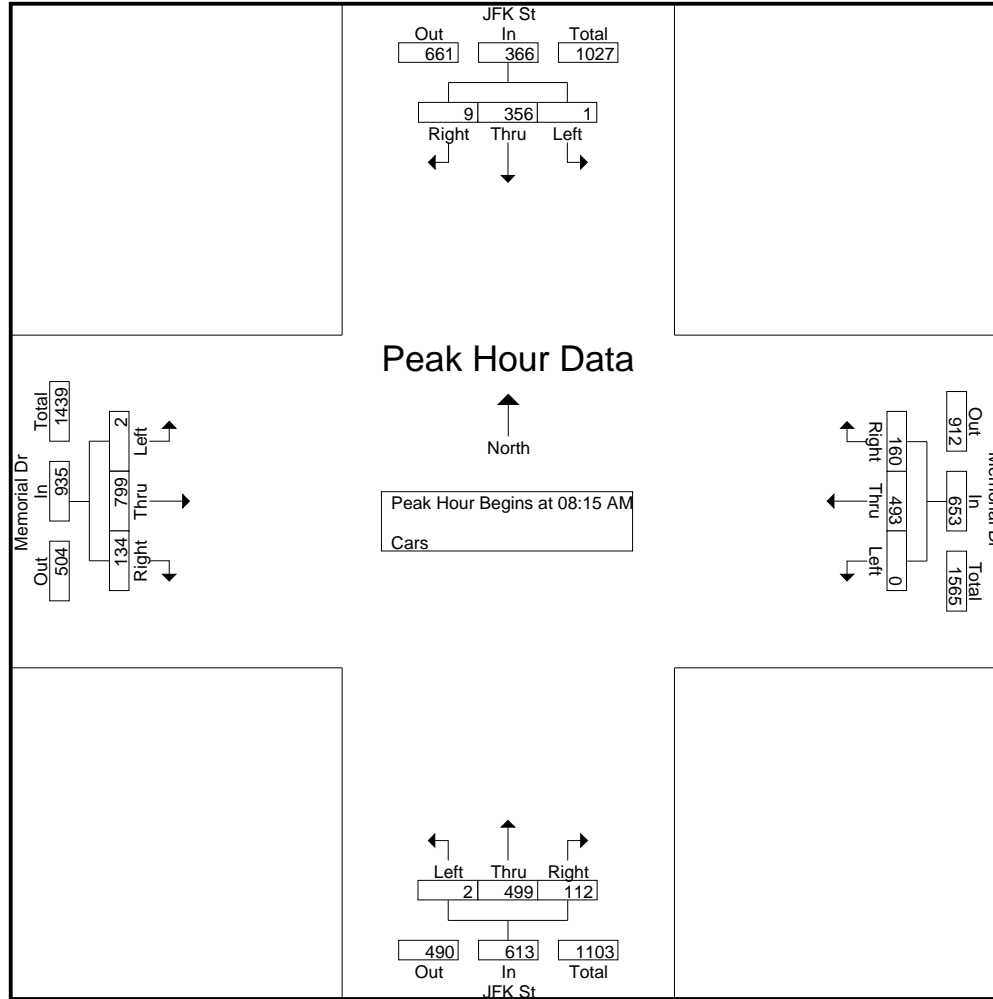
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:15 AM																	
08:15 AM	0	95	1	96	0	147	36	183	1	117	38	156	0	168	28	196	631
08:30 AM	1	88	0	89	0	99	41	140	0	129	29	158	0	211	26	237	624
08:45 AM	0	96	4	100	0	110	40	150	1	121	24	146	2	197	32	231	627
09:00 AM	0	77	4	81	0	137	43	180	0	132	21	153	0	223	48	271	685
Total Volume	1	356	9	366	0	493	160	653	2	499	112	613	2	799	134	935	2567
% App. Total	0.3	97.3	2.5		0	75.5	24.5		0.3	81.4	18.3		0.2	85.5	14.3		
PHF	.250	.927	.563	.915	.000	.838	.930	.892	.500	.945	.737	.970	.250	.896	.698	.863	.937

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

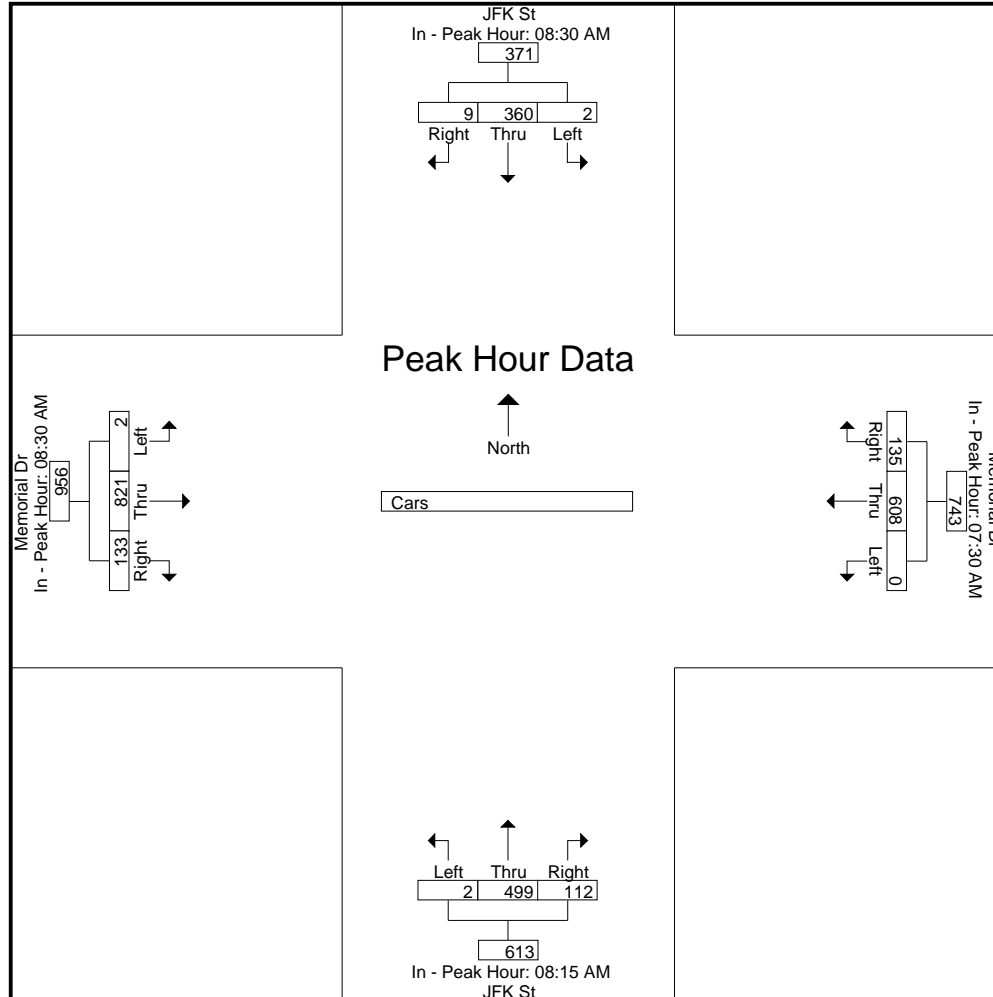
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	08:30 AM				07:30 AM				08:15 AM				08:30 AM				
+0 mins.	1	88	0	89	0	160	33	193	1	117	38	156	0	211	26	237	
+15 mins.	0	96	4	100	0	144	39	183	0	129	29	158	2	197	32	231	
+30 mins.	0	77	4	81	0	157	27	184	1	121	24	146	0	223	48	271	
+45 mins.	1	99	1	101	0	147	36	183	0	132	21	153	0	190	27	217	
Total Volume	2	360	9	371	0	608	135	743	2	499	112	613	2	821	133	956	
% App. Total	0.5	97	2.4		0	81.8	18.2		0.3	81.4	18.3		0.2	85.9	13.9		
PHF	.500	.909	.563	.918	.000	.950	.865	.962	.500	.945	.737	.970	.250	.920	.693	.882	

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Trucks

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	3	0	0	1	1	0	5	0	0	0	0	10
07:45 AM	0	3	0	0	0	1	0	4	0	0	0	0	8
Total	0	6	0	0	1	2	0	9	0	0	0	0	18
08:00 AM	0	2	0	0	0	1	0	3	0	0	0	0	6
08:15 AM	0	0	0	0	0	1	0	2	0	0	0	0	3
08:30 AM	0	4	0	0	0	0	0	4	0	0	0	0	8
08:45 AM	0	2	0	0	0	1	0	5	0	0	0	0	8
Total	0	8	0	0	0	3	0	14	0	0	0	0	25
09:00 AM	0	2	0	0	0	0	0	6	0	0	1	0	9
09:15 AM	0	2	0	0	0	0	0	2	1	0	0	0	5
Grand Total	0	18	0	0	1	5	0	31	1	0	1	0	57
Apprch %	0	100	0	0	16.7	83.3	0	96.9	3.1	0	100	0	
Total %	0	31.6	0	0	1.8	8.8	0	54.4	1.8	0	1.8	0	

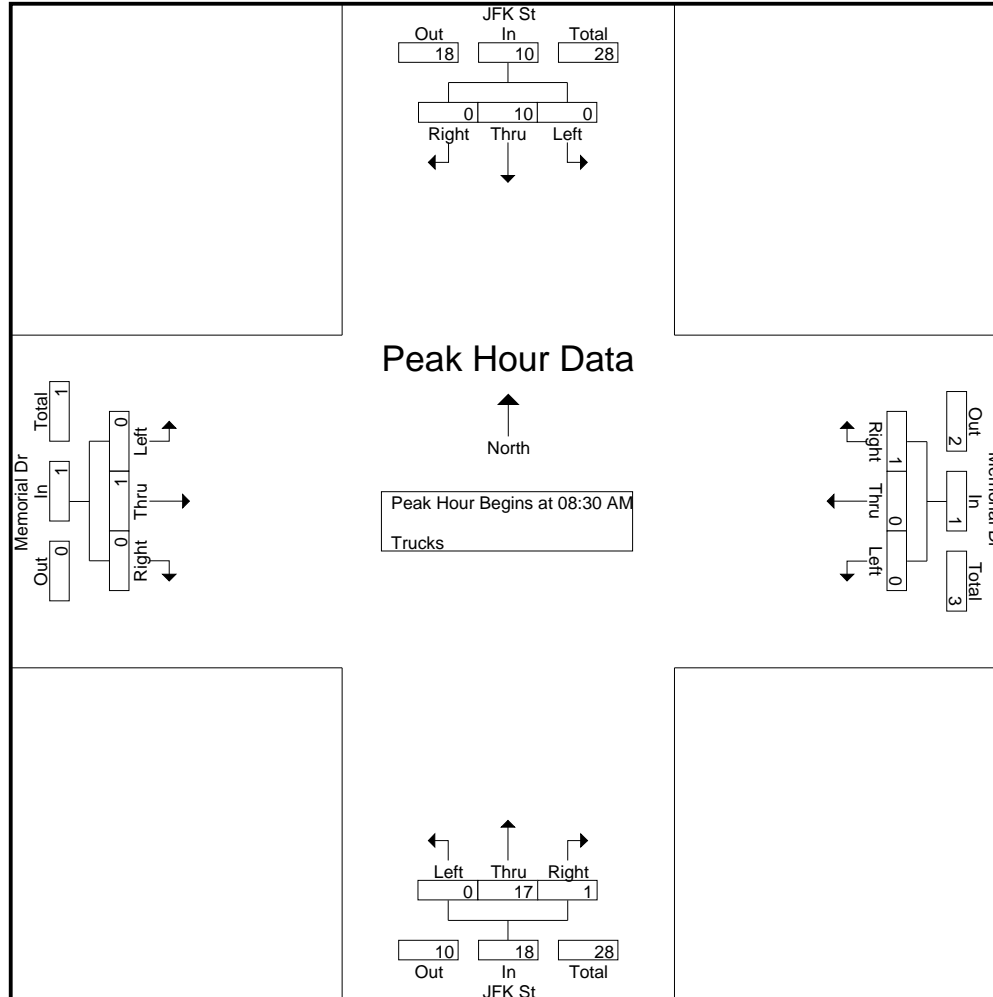
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30 AM																	
08:30 AM	0	4	0	4	0	0	0	0	0	4	0	4	0	0	0	0	8
08:45 AM	0	2	0	2	0	0	1	1	0	5	0	5	0	0	0	0	8
09:00 AM	0	2	0	2	0	0	0	0	0	6	0	6	0	1	0	1	9
09:15 AM	0	2	0	2	0	0	0	0	0	2	1	3	0	0	0	0	5
Total Volume	0	10	0	10	0	0	1	1	0	17	1	18	0	1	0	1	30
% App. Total	0	100	0		0	0	100		0	94.4	5.6		0	100	0		
PHF	.000	.625	.000	.625	.000	.000	.250	.250	.000	.708	.250	.750	.000	.250	.000	.250	.833

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

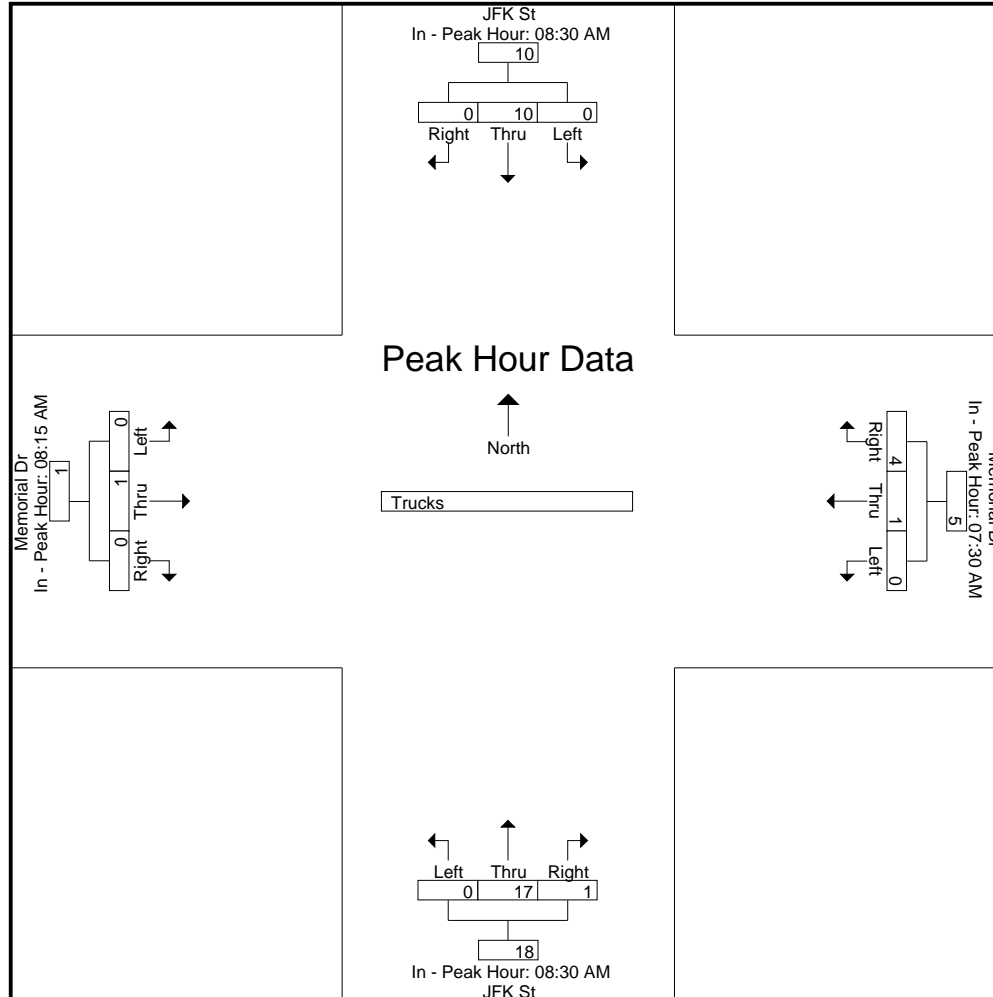
	08:30 AM				07:30 AM				08:30 AM				08:15 AM			
+0 mins.	0	4	0	4	0	1	1	2	0	4	0	4	0	0	0	0
+15 mins.	0	2	0	2	0	0	1	1	0	5	0	5	0	0	0	0
+30 mins.	0	2	0	2	0	0	1	1	0	6	0	6	0	0	0	0
+45 mins.	0	2	0	2	0	0	1	1	0	2	1	3	0	1	0	1
Total Volume	0	10	0	10	0	1	4	5	0	17	1	18	0	1	0	1
% App. Total	0	100	0		0	20	80		0	94.4	5.6		0	100	0	
PHF	.000	.625	.000	.625	.000	.250	1.000	.625	.000	.708	.250	.750	.000	.250	.000	.250

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	4	0	0	1	1	0	3	1	0	2	0	12
07:45 AM	0	0	0	0	0	0	0	6	0	0	1	1	8
Total	0	4	0	0	1	1	0	9	1	0	3	1	20
08:00 AM	0	6	0	0	0	0	0	4	0	0	0	0	10
08:15 AM	0	2	0	0	1	0	0	5	0	0	1	0	9
08:30 AM	0	4	0	0	0	0	0	6	0	0	0	0	10
08:45 AM	0	3	0	0	0	0	0	6	0	0	1	0	10
Total	0	15	0	0	1	0	0	21	0	0	2	0	39
09:00 AM	0	3	0	0	0	0	0	3	0	0	0	0	6
09:15 AM	0	2	0	0	0	0	0	5	0	0	0	0	7
Grand Total	0	24	0	0	2	1	0	38	1	0	5	1	72
Apprch %	0	100	0	0	66.7	33.3	0	97.4	2.6	0	83.3	16.7	
Total %	0	33.3	0	0	2.8	1.4	0	52.8	1.4	0	6.9	1.4	

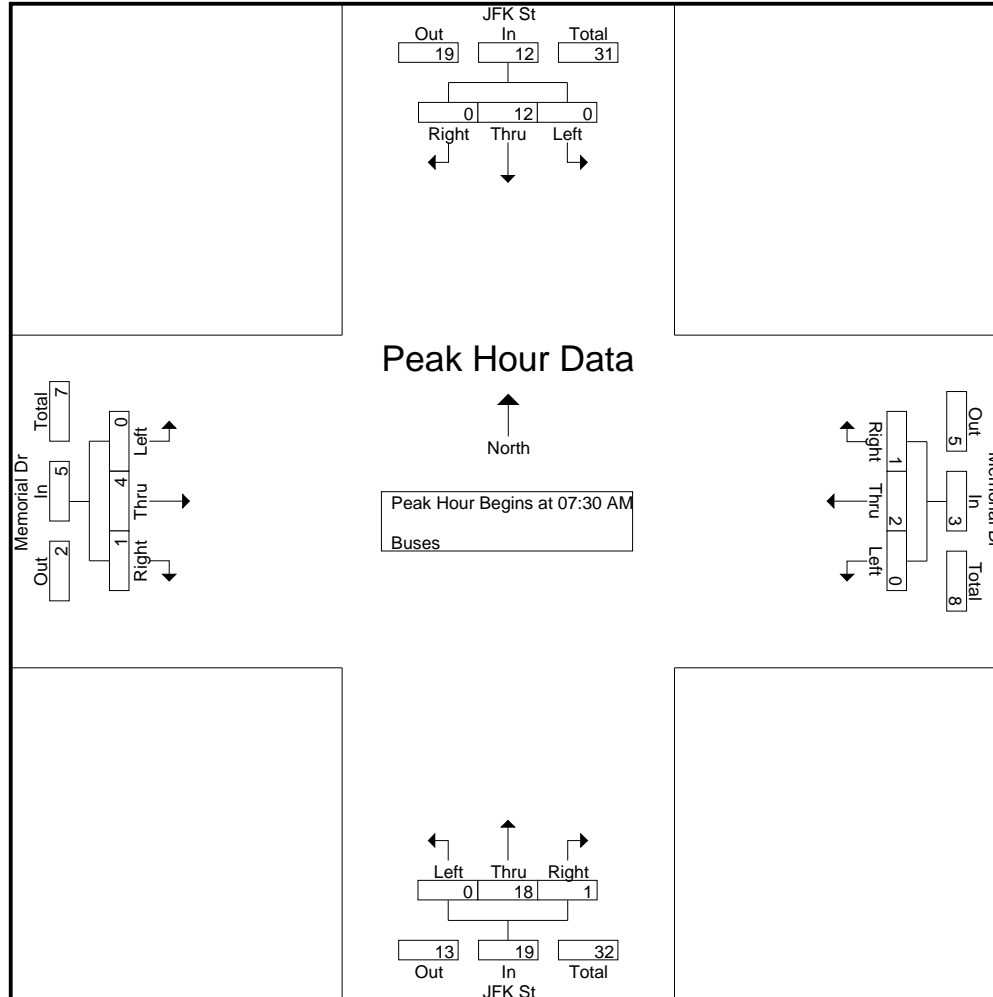
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	4	0	4	0	1	1	2	0	3	1	4	0	2	0	2	12
07:45 AM	0	0	0	0	0	0	0	0	0	6	0	6	0	1	1	2	8
08:00 AM	0	6	0	6	0	0	0	0	0	4	0	4	0	0	0	0	10
08:15 AM	0	2	0	2	0	1	0	1	0	5	0	5	0	1	0	1	9
Total Volume	0	12	0	12	0	2	1	3	0	18	1	19	0	4	1	5	39
% App. Total	0	100	0		0	66.7	33.3		0	94.7	5.3		0	80	20		
PHF	.000	.500	.000	.500	.000	.500	.250	.375	.000	.750	.250	.792	.000	.500	.250	.625	.813

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

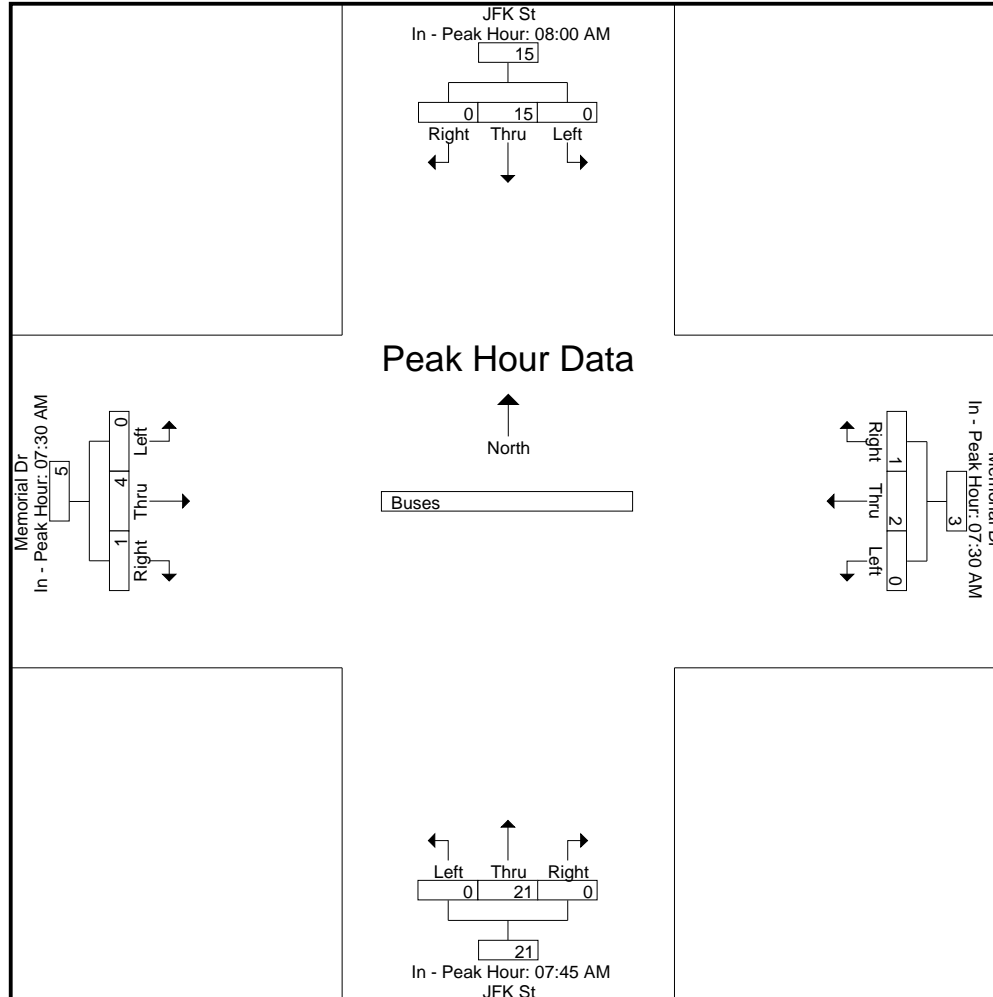
	08:00 AM				07:30 AM				07:45 AM				07:30 AM			
+0 mins.	0	6	0	6	0	1	1	2	0	6	0	6	0	2	0	2
+15 mins.	0	2	0	2	0	0	0	0	0	4	0	4	0	1	1	2
+30 mins.	0	4	0	4	0	0	0	0	0	5	0	5	0	0	0	0
+45 mins.	0	3	0	3	0	1	0	1	0	6	0	6	0	1	0	1
Total Volume	0	15	0	15	0	2	1	3	0	21	0	21	0	4	1	5
% App. Total	0	100	0		0	66.7	33.3		0	100	0		0	80	20	
PHF	.000	.625	.000	.625	.000	.500	.250	.375	.000	.875	.000	.875	.000	.500	.250	.625

Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	3	0	1	0	0	0	12	0	0	0	0	16
07:45 AM	0	2	0	0	0	0	0	11	0	0	0	0	13
Total	0	5	0	1	0	0	0	23	0	0	0	0	29
08:00 AM	0	3	0	0	0	0	0	8	1	0	0	0	12
08:15 AM	1	1	0	0	0	0	0	5	0	0	0	0	7
08:30 AM	1	3	0	0	0	0	0	8	1	0	0	0	13
08:45 AM	0	5	0	0	0	0	2	21	0	0	0	0	28
Total	2	12	0	0	0	0	2	42	2	0	0	0	60
09:00 AM	0	1	0	0	0	0	1	7	0	0	0	0	9
09:15 AM	2	3	0	0	0	0	0	7	0	0	0	0	12
Grand Total	4	21	0	1	0	0	3	79	2	0	0	0	110
Apprch %	16	84	0	100	0	0	3.6	94	2.4	0	0	0	
Total %	3.6	19.1	0	0.9	0	0	2.7	71.8	1.8	0	0	0	

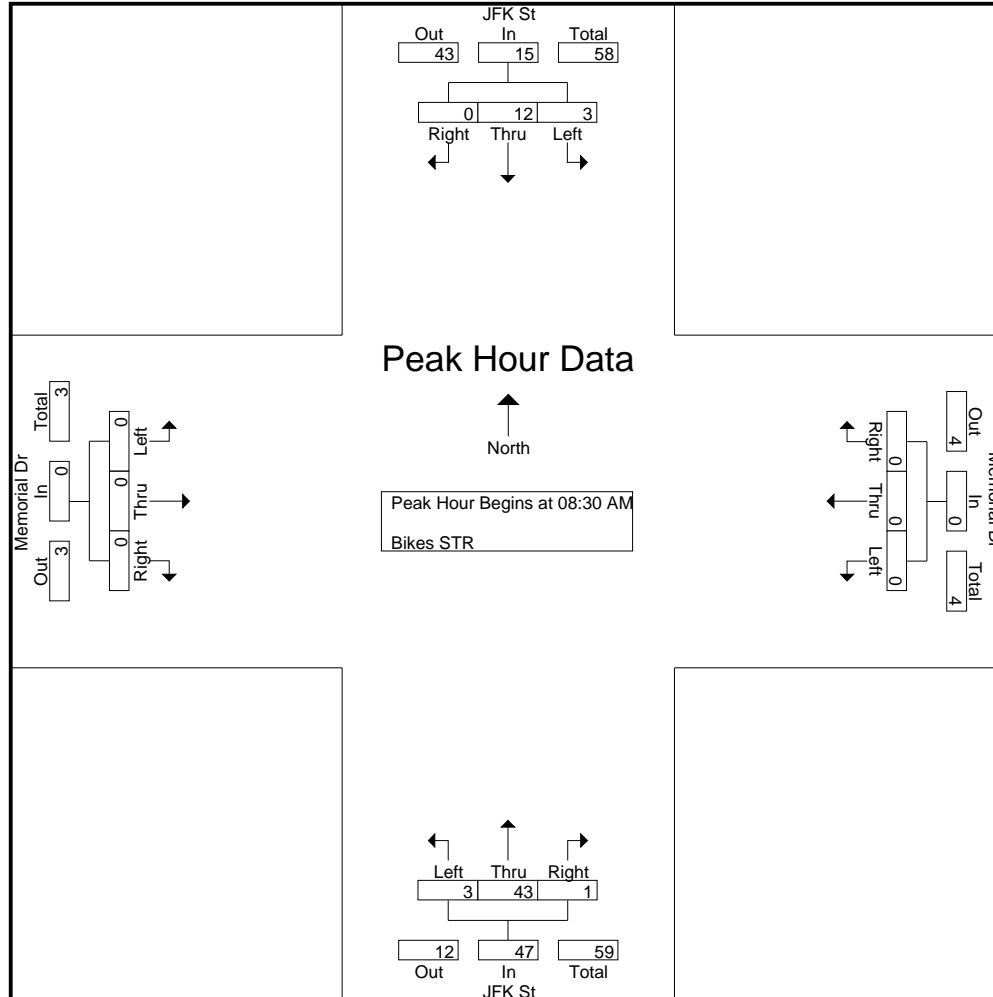
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30 AM																	
08:30 AM	1	3	0	4	0	0	0	0	0	8	1	9	0	0	0	0	13
08:45 AM	0	5	0	5	0	0	0	0	2	21	0	23	0	0	0	0	28
09:00 AM	0	1	0	1	0	0	0	0	1	7	0	8	0	0	0	0	9
09:15 AM	2	3	0	5	0	0	0	0	0	7	0	7	0	0	0	0	12
Total Volume	3	12	0	15	0	0	0	0	3	43	1	47	0	0	0	0	62
% App. Total	20	80	0		0	0	0		6.4	91.5	2.1		0	0	0		
PHF	.375	.600	.000	.750	.000	.000	.000	.000	.375	.512	.250	.511	.000	.000	.000	.000	.554

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

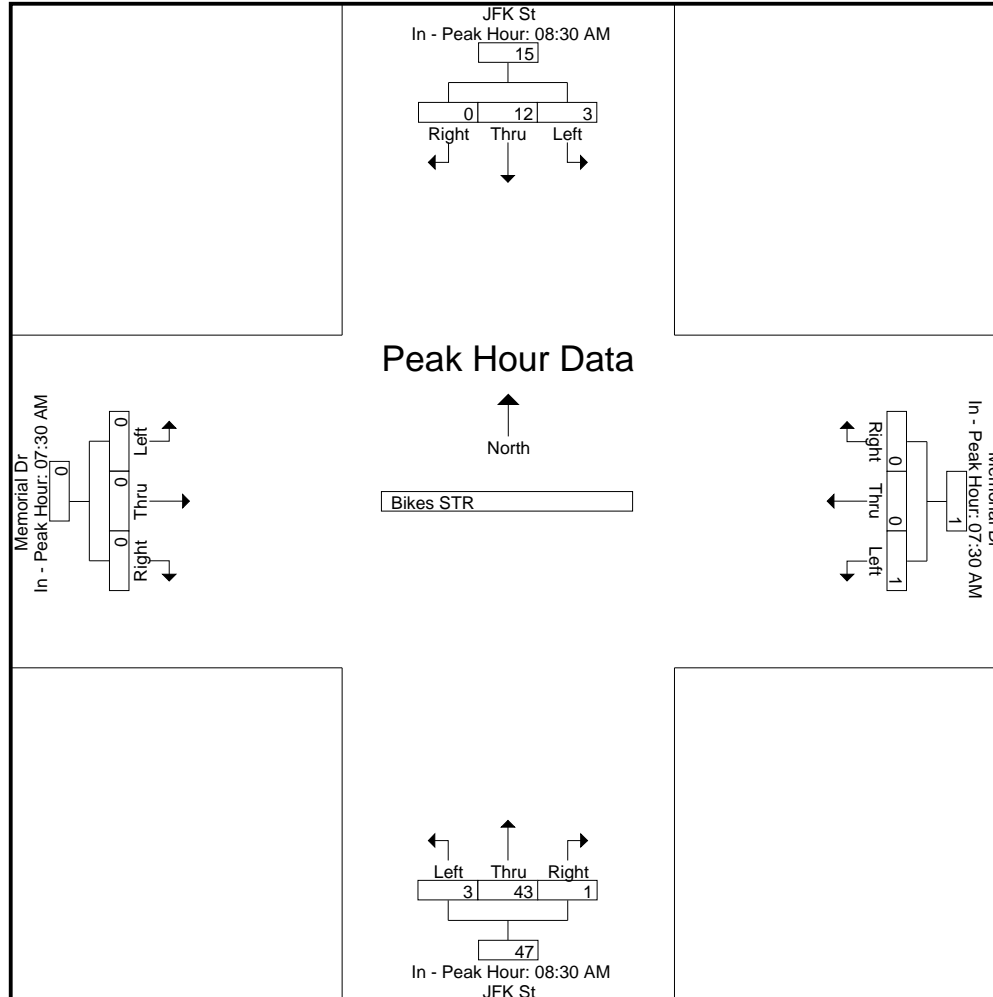
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	08:30 AM				07:30 AM				08:30 AM				07:30 AM				
+0 mins.	1	3	0	4	1	0	0	1	0	8	1	9	0	0	0	0	
+15 mins.	0	5	0	5	0	0	0	0	2	21	0	23	0	0	0	0	
+30 mins.	0	1	0	1	0	0	0	0	1	7	0	8	0	0	0	0	
+45 mins.	2	3	0	5	0	0	0	0	0	7	0	7	0	0	0	0	
Total Volume	3	12	0	15	1	0	0	1	3	43	1	47	0	0	0	0	
% App. Total	20	80	0		100	0	0		6.4	91.5	2.1		0	0	0		
PHF	.375	.600	.000	.750	.250	.000	.000	.250	.375	.512	.250	.511	.000	.000	.000	.000	

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	1	0	2	2	0	0	5	3	2	7	2	24
07:45 AM	0	1	0	1	0	5	2	1	2	1	3	4	20
Total	0	2	0	3	2	5	2	6	5	3	10	6	44
08:00 AM	0	1	0	7	8	5	1	0	0	0	15	5	42
08:15 AM	0	4	0	6	9	4	7	7	1	0	9	10	57
08:30 AM	1	9	0	6	6	3	5	3	1	1	8	7	50
08:45 AM	4	4	0	7	6	11	4	3	1	2	11	10	63
Total	5	18	0	26	29	23	17	13	3	3	43	32	212
09:00 AM	0	5	0	1	5	4	2	3	0	9	14	4	47
09:15 AM	0	4	0	2	2	3	1	4	0	0	17	3	36
Grand Total	5	29	0	32	38	35	22	26	8	15	84	45	339
Apprch %	14.7	85.3	0	30.5	36.2	33.3	39.3	46.4	14.3	10.4	58.3	31.2	
Total %	1.5	8.6	0	9.4	11.2	10.3	6.5	7.7	2.4	4.4	24.8	13.3	

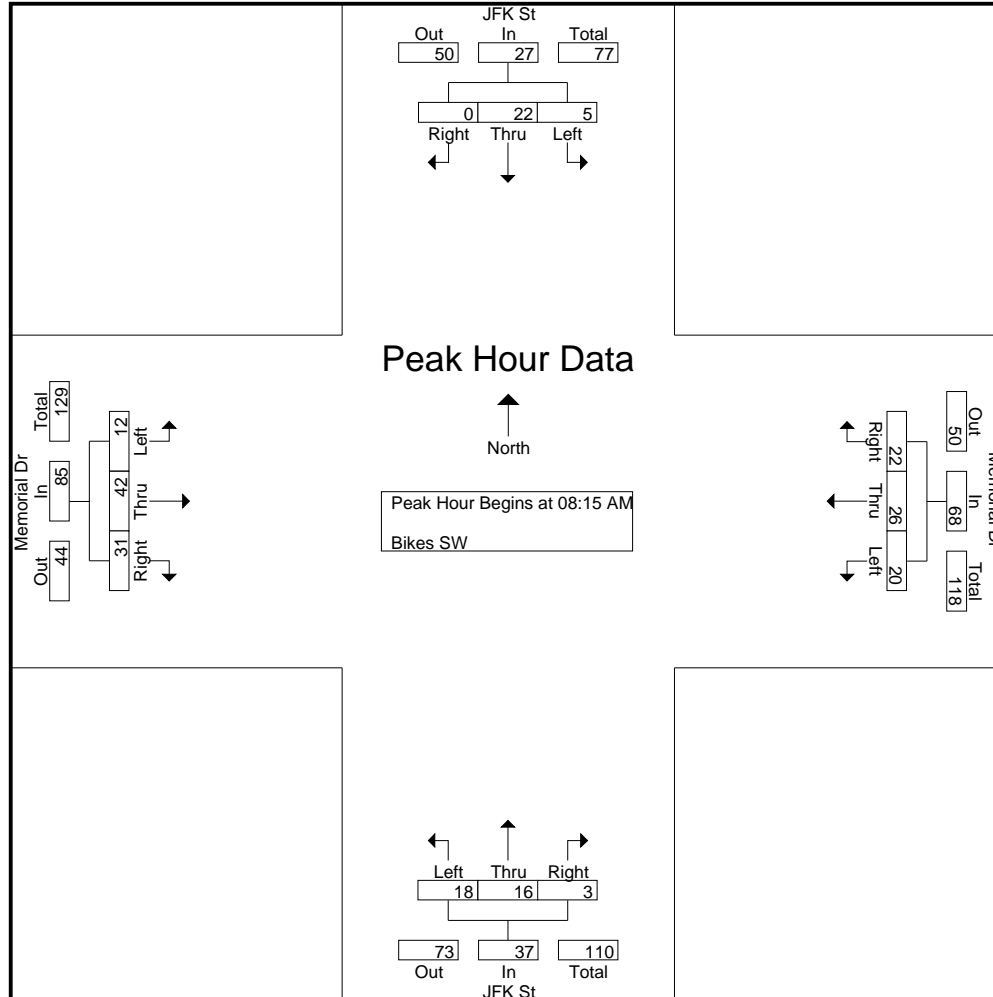
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:15 AM																	
08:15 AM	0	4	0	4	6	9	4	19	7	7	1	15	0	9	10	19	57
08:30 AM	1	9	0	10	6	6	3	15	5	3	1	9	1	8	7	16	50
08:45 AM	4	4	0	8	7	6	11	24	4	3	1	8	2	11	10	23	63
09:00 AM	0	5	0	5	1	5	4	10	2	3	0	5	9	14	4	27	47
Total Volume	5	22	0	27	20	26	22	68	18	16	3	37	12	42	31	85	217
% App. Total	18.5	81.5	0		29.4	38.2	32.4		48.6	43.2	8.1		14.1	49.4	36.5		
PHF	.313	.611	.000	.675	.714	.722	.500	.708	.643	.571	.750	.617	.333	.750	.775	.787	.861

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

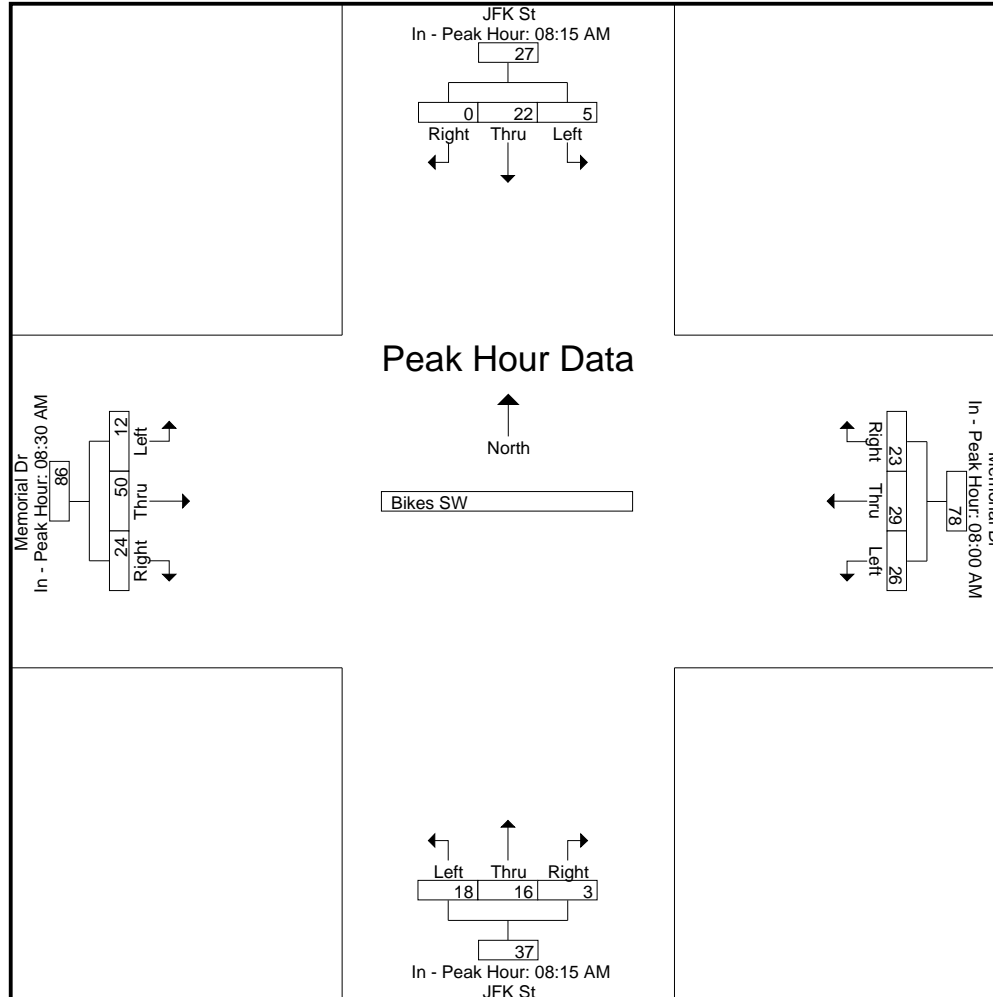
	08:15 AM				08:00 AM				08:15 AM				08:30 AM			
+0 mins.	0	4	0	4	7	8	5	20	7	7	1	15	1	8	7	16
+15 mins.	1	9	0	10	6	9	4	19	5	3	1	9	2	11	10	23
+30 mins.	4	4	0	8	6	6	3	15	4	3	1	8	9	14	4	27
+45 mins.	0	5	0	5	7	6	11	24	2	3	0	5	0	17	3	20
Total Volume	5	22	0	27	26	29	23	78	18	16	3	37	12	50	24	86
% App. Total	18.5	81.5	0		33.3	37.2	29.5		48.6	43.2	8.1		14	58.1	27.9	
PHF	.313	.611	.000	.675	.929	.806	.523	.813	.643	.571	.750	.617	.333	.735	.600	.796

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	JFK St From North		Memorial Dr From East		JFK St From South		Memorial Dr From West		Int. Total
	EB	WB	SB	NB	WB	EB	NB	SB	
07:30 AM	17	5	4	4	12	11	58	28	139
07:45 AM	8	8	4	14	12	8	43	40	137
Total	25	13	8	18	24	19	101	68	276
08:00 AM	12	10	5	25	9	6	39	34	140
08:15 AM	12	9	14	10	15	6	50	45	161
08:30 AM	5	10	7	24	10	12	56	35	159
08:45 AM	7	17	3	21	9	4	62	40	163
Total	36	46	29	80	43	28	207	154	623
09:00 AM	34	6	2	21	4	17	61	34	179
09:15 AM	6	5	3	20	8	13	21	22	98
Grand Total	101	70	42	139	79	77	390	278	1176
Apprch %	59.1	40.9	23.2	76.8	50.6	49.4	58.4	41.6	
Total %	8.6	6	3.6	11.8	6.7	6.5	33.2	23.6	

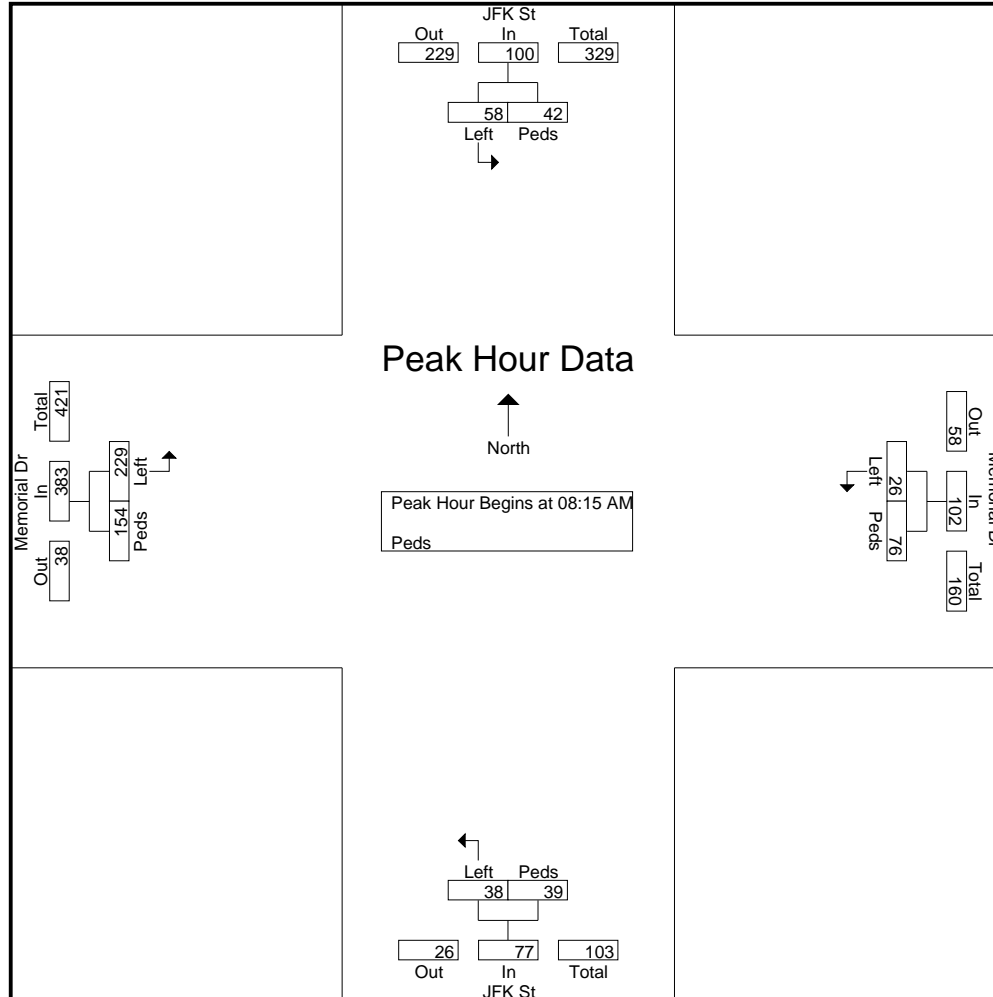
Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:15 AM													
08:15 AM	12	9	21	14	10	24	15	6	21	50	45	95	161
08:30 AM	5	10	15	7	24	31	10	12	22	56	35	91	159
08:45 AM	7	17	24	3	21	24	9	4	13	62	40	102	163
09:00 AM	34	6	40	2	21	23	4	17	21	61	34	95	179
Total Volume	58	42	100	26	76	102	38	39	77	229	154	383	662
% App. Total	58	42		25.5	74.5		49.4	50.6		59.8	40.2		
PHF	.426	.618	.625	.464	.792	.823	.633	.574	.875	.923	.856	.939	.925

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

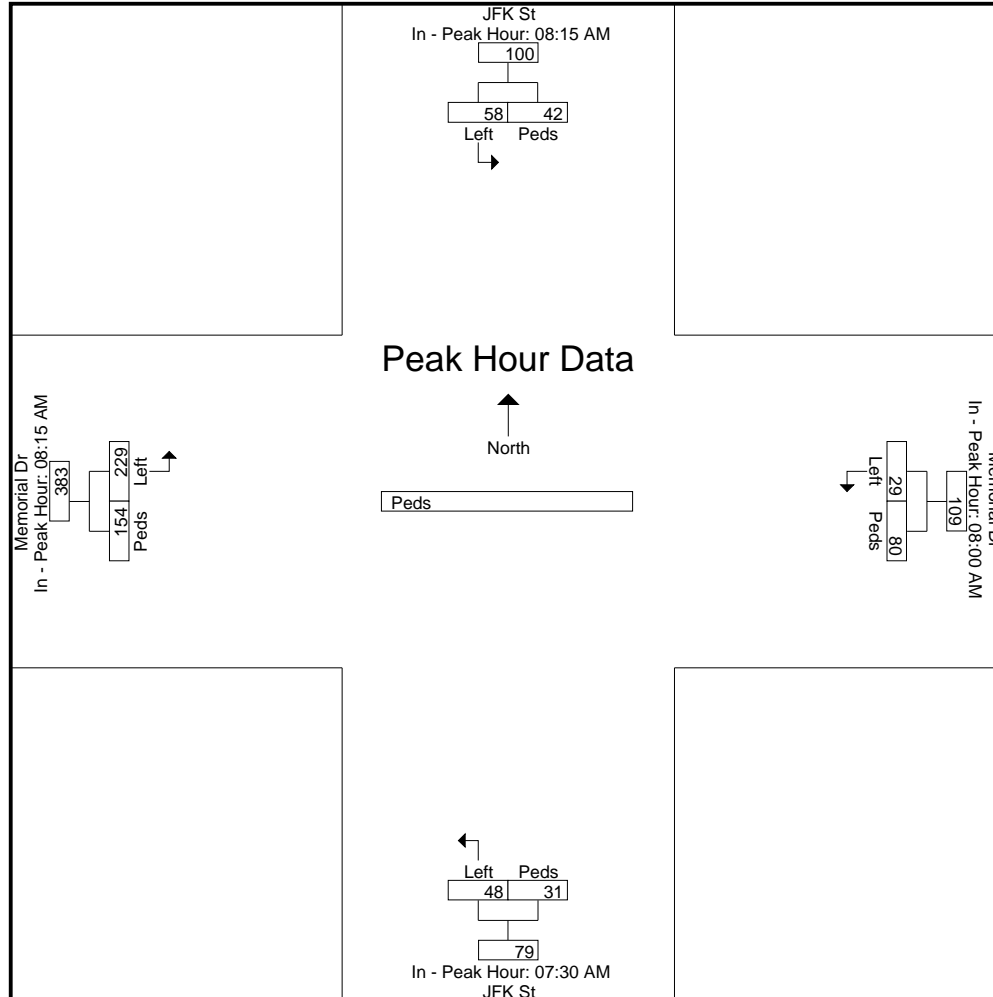
	08:15 AM			08:00 AM			07:30 AM			08:15 AM		
+0 mins.	12	9	21	5	25	30	12	11	23	50	45	95
+15 mins.	5	10	15	14	10	24	12	8	20	56	35	91
+30 mins.	7	17	24	7	24	31	9	6	15	62	40	102
+45 mins.	34	6	40	3	21	24	15	6	21	61	34	95
Total Volume	58	42	100	29	80	109	48	31	79	229	154	383
% App. Total	58	42		26.6	73.4		60.8	39.2		59.8	40.2	
PHF	.426	.618	.625	.518	.800	.879	.800	.705	.859	.923	.856	.939

Accurate Counts

978-664-2565

File Name : 12622004
Site Code : 12622004
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Memorial Drive
City/State : Cambridge, MA
Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	JFK St From North			Memorial Dr From East				JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
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	1	99	4	0	163	33	0	126	11	0	116	33	586	
04:45 PM	1	86	4	0	191	50	3	129	8	0	121	36	629	
Total	2	185	8	0	354	83	3	255	19	0	237	69	1215	
05:00 PM	2	91	5	0	192	54	0	123	13	0	134	34	648	
05:15 PM	0	90	4	1	216	44	0	128	10	0	150	38	681	
05:30 PM	2	96	4	1	207	53	1	139	13	2	152	45	715	
05:45 PM	3	99	8	1	147	45	0	124	16	0	154	44	641	
Total	7	376	21	3	762	196	1	514	52	2	590	161	2685	
06:00 PM	0	93	2	1	155	52	0	131	9	0	130	38	611	
06:15 PM	0	85	2	0	169	56	2	126	13	0	152	52	657	
Grand Total	9	739	33	4	1440	387	6	1026	93	2	1109	320	5168	
Apprch %	1.2	94.6	4.2	0.2	78.6	21.1	0.5	91.2	8.3	0.1	77.5	22.4		
Total %	0.2	14.3	0.6	0.1	27.9	7.5	0.1	19.9	1.8	0	21.5	6.2		
Cars	9	711	33	4	1437	386	6	995	92	2	1106	320	5101	
% Cars	100	96.2	100	100	99.8	99.7	100	97	98.9	100	99.7	100	98.7	
Trucks	0	9	0	0	0	0	0	4	1	0	0	0	14	
% Trucks	0	1.2	0	0	0	0	0	0.4	1.1	0	0	0	0.3	
Buses	0	19	0	0	3	1	0	27	0	0	3	0	53	
% Buses	0	2.6	0	0	0.2	0.3	0	2.6	0	0	0.3	0	1	

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

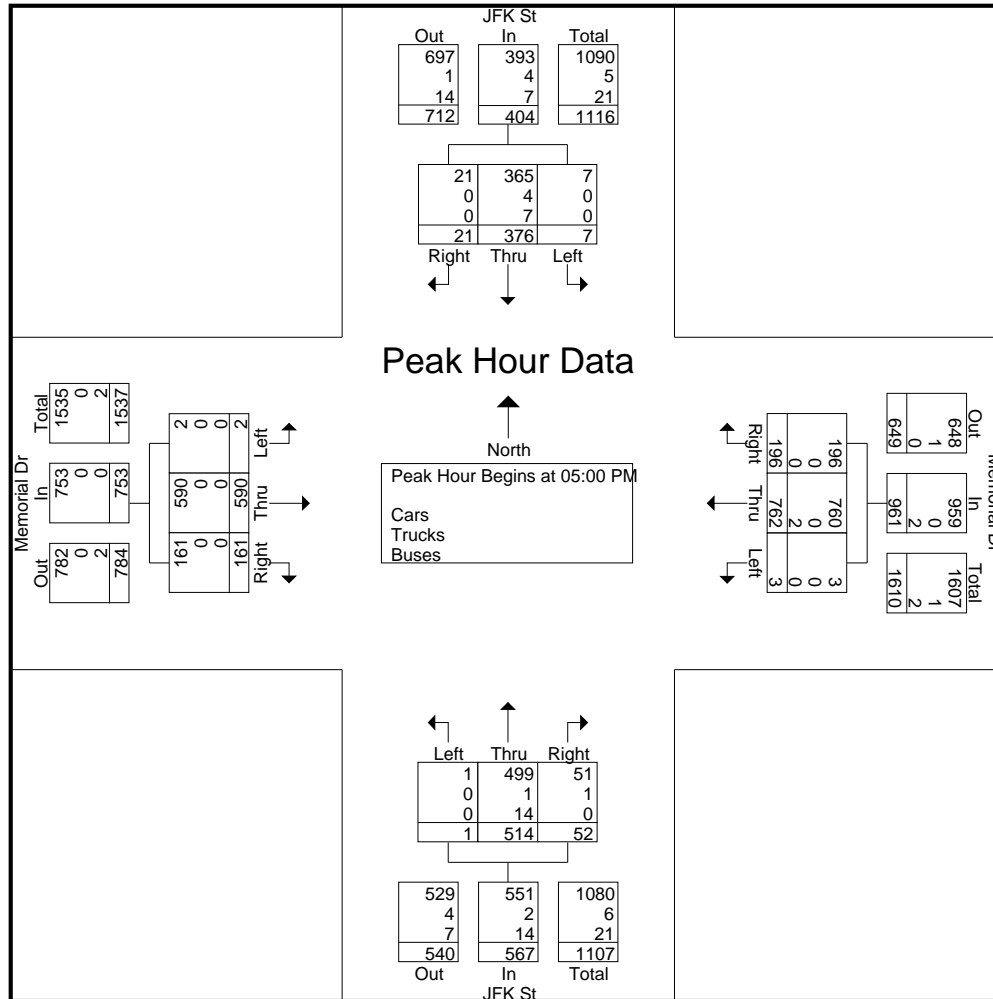
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

05:00 PM	2	91	5	98	0	192	54	246	0	123	13	136	0	134	34	168	648
05:15 PM	0	90	4	94	1	216	44	261	0	128	10	138	0	150	38	188	681
05:30 PM	2	96	4	102	1	207	53	261	1	139	13	153	2	152	45	199	715
05:45 PM	3	99	8	110	1	147	45	193	0	124	16	140	0	154	44	198	641
Total Volume	7	376	21	404	3	762	196	961	1	514	52	567	2	590	161	753	2685
% App. Total	1.7	93.1	5.2		0.3	79.3	20.4		0.2	90.7	9.2		0.3	78.4	21.4		
PHF	.583	.949	.656	.918	.750	.882	.907	.920	.250	.924	.813	.926	.250	.958	.894	.946	.939
Cars	7	365	21	393	3	760	196	959	1	499	51	551	2	590	161	753	2656
% Cars	100	97.1	100	97.3	100	99.7	100	99.8	100	97.1	98.1	97.2	100	100	100	100	98.9
Trucks	0	4	0	4	0	0	0	0	0	1	1	2	0	0	0	0	6
% Trucks	0	1.1	0	1.0	0	0	0	0	0	0.2	1.9	0.4	0	0	0	0	0.2
Buses	0	7	0	7	0	2	0	2	0	14	0	14	0	0	0	0	23
% Buses	0	1.9	0	1.7	0	0.3	0	0.2	0	2.7	0	2.5	0	0	0	0	0.9

Accurate Counts

978-664-2565



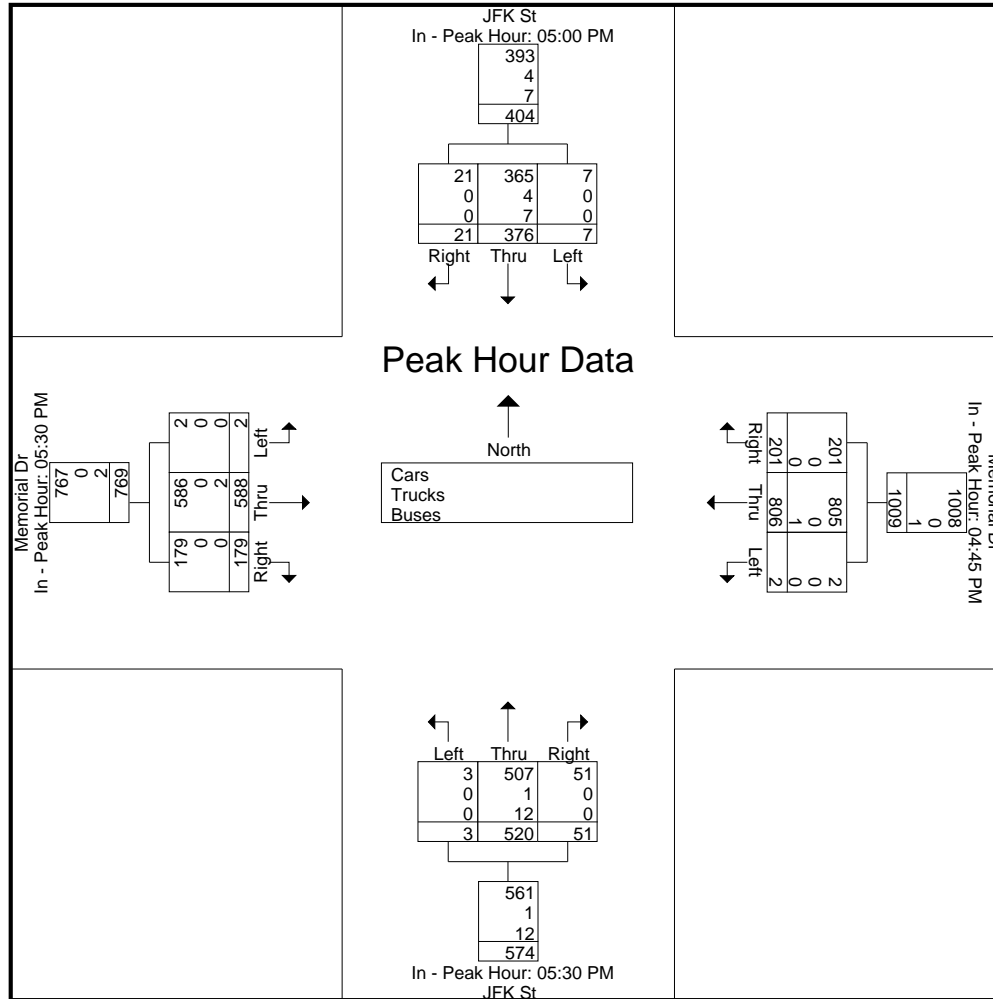
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				04:45 PM				05:30 PM				05:30 PM			
+0 mins.	2	91	5	98	0	191	50	241	1	139	13	153	2	152	45	199
+15 mins.	0	90	4	94	0	192	54	246	0	124	16	140	0	154	44	198
+30 mins.	2	96	4	102	1	216	44	261	0	131	9	140	0	130	38	168
+45 mins.	3	99	8	110	1	207	53	261	2	126	13	141	0	152	52	204
Total Volume	7	376	21	404	2	806	201	1009	3	520	51	574	2	588	179	769
% App. Total	1.7	93.1	5.2		0.2	79.9	19.9		0.5	90.6	8.9		0.3	76.5	23.3	
PHF	.583	.949	.656	.918	.500	.933	.931	.966	.375	.935	.797	.938	.250	.955	.861	.942
Cars	7	365	21	393	2	805	201	1008	3	507	51	561	2	586	179	767
% Cars	100	97.1	100	97.3	100	99.9	100	99.9	100	97.5	100	97.7	100	99.7	100	99.7
Trucks	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0
% Trucks	0	1.1	0	1	0	0	0	0	0	0.2	0	0.2	0	0	0	0
Buses	0	7	0	7	0	1	0	1	0	12	0	12	0	2	0	2

Accurate Counts

978-664-2565



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Cars

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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	1	93	4	0	162	33	0	120	11	0	116	33	573
04:45 PM	1	81	4	0	191	50	3	125	8	0	120	36	619
Total	2	174	8	0	353	83	3	245	19	0	236	69	1192
05:00 PM	2	89	5	0	192	54	0	117	12	0	134	34	639
05:15 PM	0	87	4	1	215	44	0	126	10	0	150	38	675
05:30 PM	2	92	4	1	207	53	1	134	13	2	152	45	706
05:45 PM	3	97	8	1	146	45	0	122	16	0	154	44	636
Total	7	365	21	3	760	196	1	499	51	2	590	161	2656
06:00 PM	0	89	2	1	155	51	0	128	9	0	130	38	603
06:15 PM	0	83	2	0	169	56	2	123	13	0	150	52	650
Grand Total	9	711	33	4	1437	386	6	995	92	2	1106	320	5101
Apprch %	1.2	94.4	4.4	0.2	78.7	21.1	0.5	91	8.4	0.1	77.5	22.4	
Total %	0.2	13.9	0.6	0.1	28.2	7.6	0.1	19.5	1.8	0	21.7	6.3	

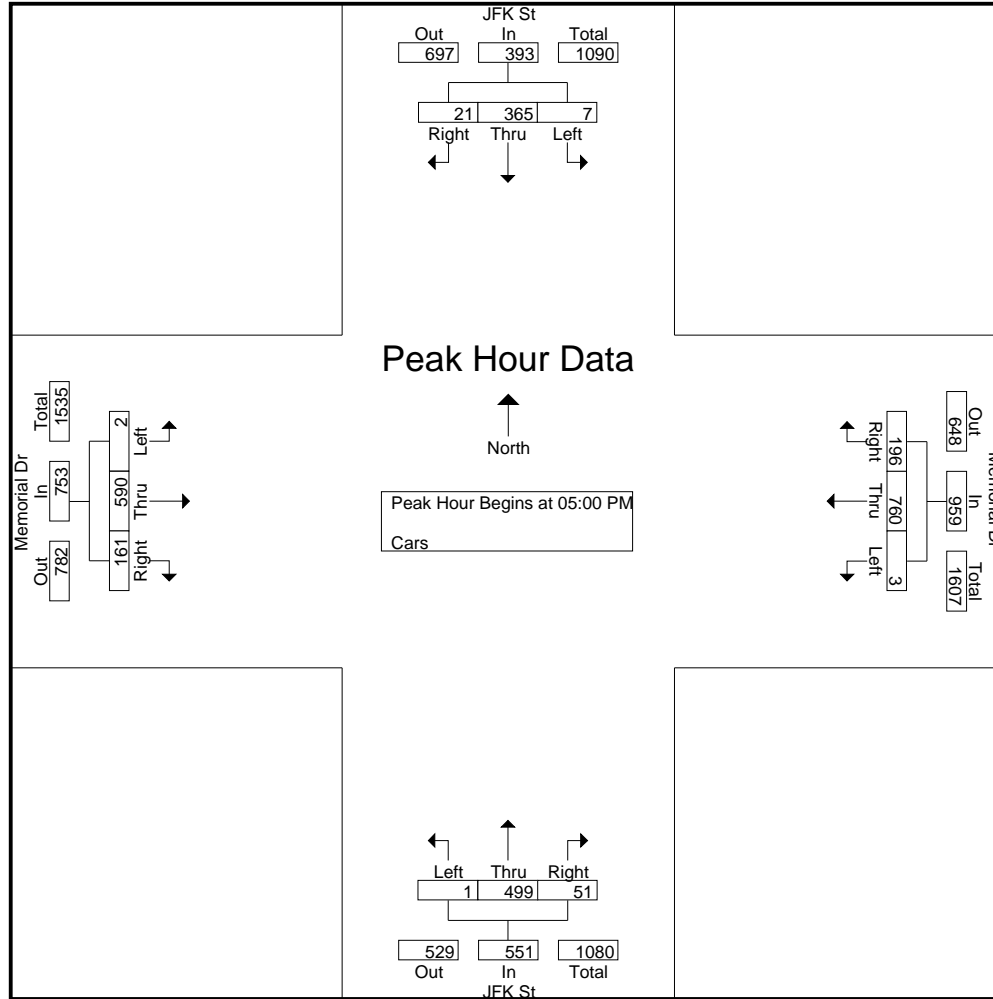
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	2	89	5	96	0	192	54	246	0	117	12	129	0	134	34	168	639
05:15 PM	0	87	4	91	1	215	44	260	0	126	10	136	0	150	38	188	675
05:30 PM	2	92	4	98	1	207	53	261	1	134	13	148	2	152	45	199	706
05:45 PM	3	97	8	108	1	146	45	192	0	122	16	138	0	154	44	198	636
Total Volume	7	365	21	393	3	760	196	959	1	499	51	551	2	590	161	753	2656
% App. Total	1.8	92.9	5.3		0.3	79.2	20.4		0.2	90.6	9.3		0.3	78.4	21.4		
PHF	.583	.941	.656	.910	.750	.884	.907	.919	.250	.931	.797	.931	.250	.958	.894	.946	.941

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

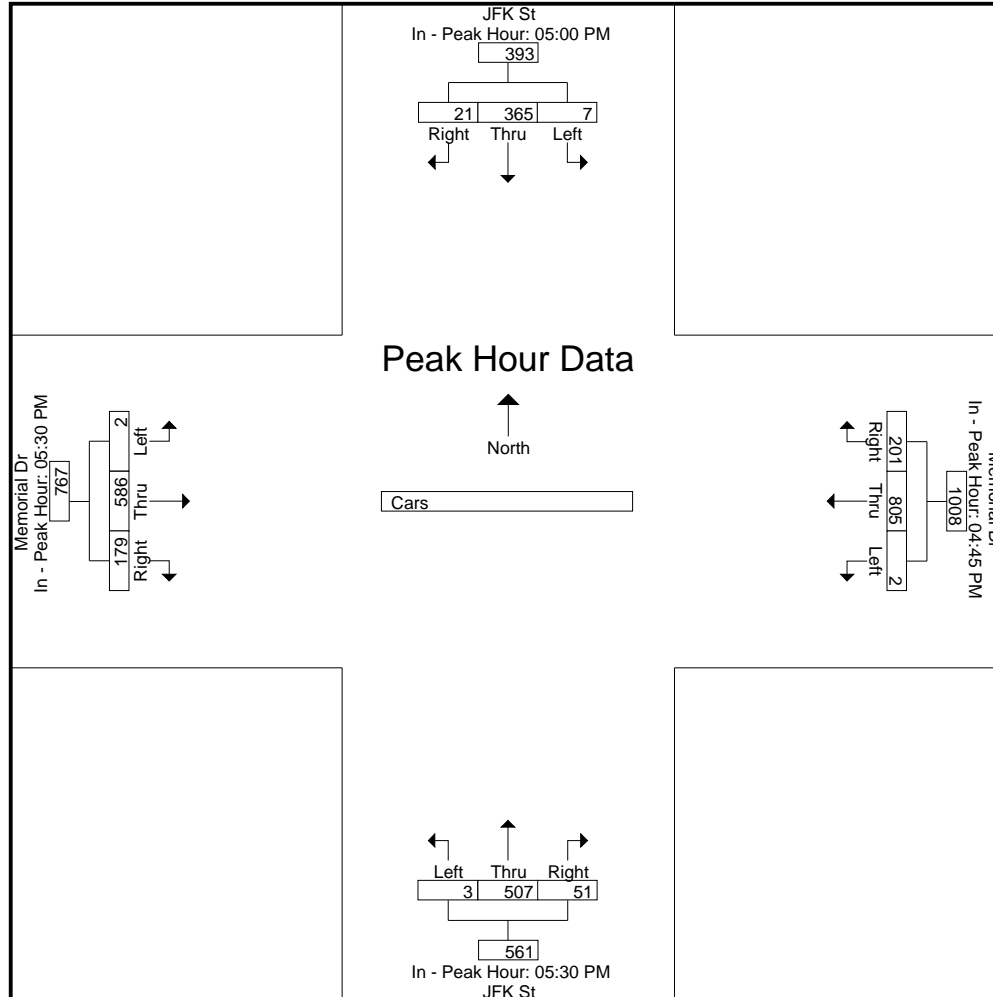
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				04:45 PM				05:30 PM				05:30 PM				
+0 mins.	2	89	5	96	0	191	50	241	1	134	13	148	2	152	45	199	
+15 mins.	0	87	4	91	0	192	54	246	0	122	16	138	0	154	44	198	
+30 mins.	2	92	4	98	1	215	44	260	0	128	9	137	0	130	38	168	
+45 mins.	3	97	8	108	1	207	53	261	2	123	13	138	0	150	52	202	
Total Volume	7	365	21	393	2	805	201	1008	3	507	51	561	2	586	179	767	
% App. Total	1.8	92.9	5.3		0.2	79.9	19.9		0.5	90.4	9.1		0.3	76.4	23.3		
PHF	.583	.941	.656	.910	.500	.936	.931	.966	.375	.946	.797	.948	.250	.951	.861	.949	

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Buses

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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	5	0	0	1	0	0	4	0	0	0	0	10
04:45 PM	0	3	0	0	0	0	0	3	0	0	1	0	7
Total	0	8	0	0	1	0	0	7	0	0	1	0	17
05:00 PM	0	1	0	0	0	0	0	6	0	0	0	0	7
05:15 PM	0	1	0	0	1	0	0	2	0	0	0	0	4
05:30 PM	0	4	0	0	0	0	0	4	0	0	0	0	8
05:45 PM	0	1	0	0	1	0	0	2	0	0	0	0	4
Total	0	7	0	0	2	0	0	14	0	0	0	0	23
06:00 PM	0	2	0	0	0	1	0	3	0	0	0	0	6
06:15 PM	0	2	0	0	0	0	0	3	0	0	2	0	7
Grand Total	0	19	0	0	3	1	0	27	0	0	3	0	53
Apprch %	0	100	0	0	75	25	0	100	0	0	100	0	
Total %	0	35.8	0	0	5.7	1.9	0	50.9	0	0	5.7	0	

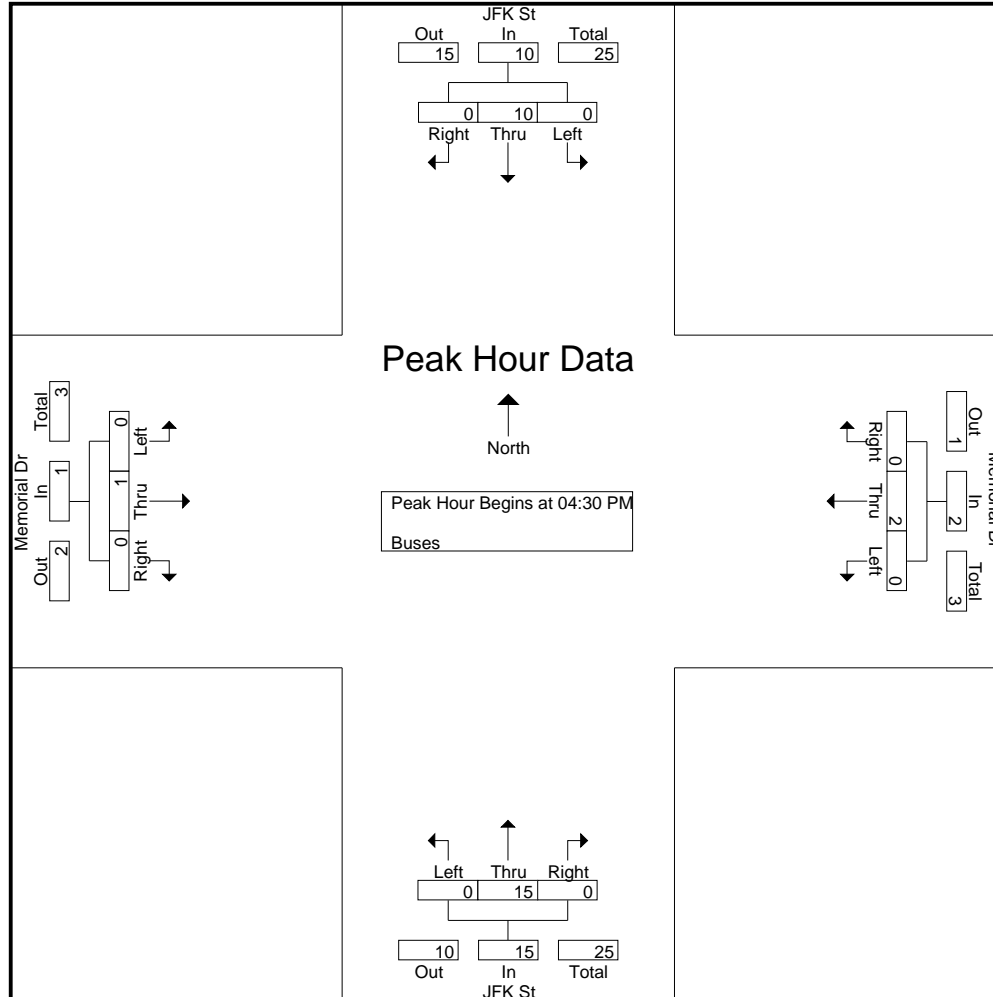
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	5	0	5	0	1	0	1	0	4	0	4	0	0	0	0	10
04:45 PM	0	3	0	3	0	0	0	0	0	3	0	3	0	1	0	1	7
05:00 PM	0	1	0	1	0	0	0	0	0	6	0	6	0	0	0	0	7
05:15 PM	0	1	0	1	0	1	0	1	0	2	0	2	0	0	0	0	4
Total Volume	0	10	0	10	0	2	0	2	0	15	0	15	0	1	0	1	28
% App. Total	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	
PHF	.000	.500	.000	.500	.000	.500	.000	.500	.000	.625	.000	.625	.000	.250	.000	.250	.700

Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

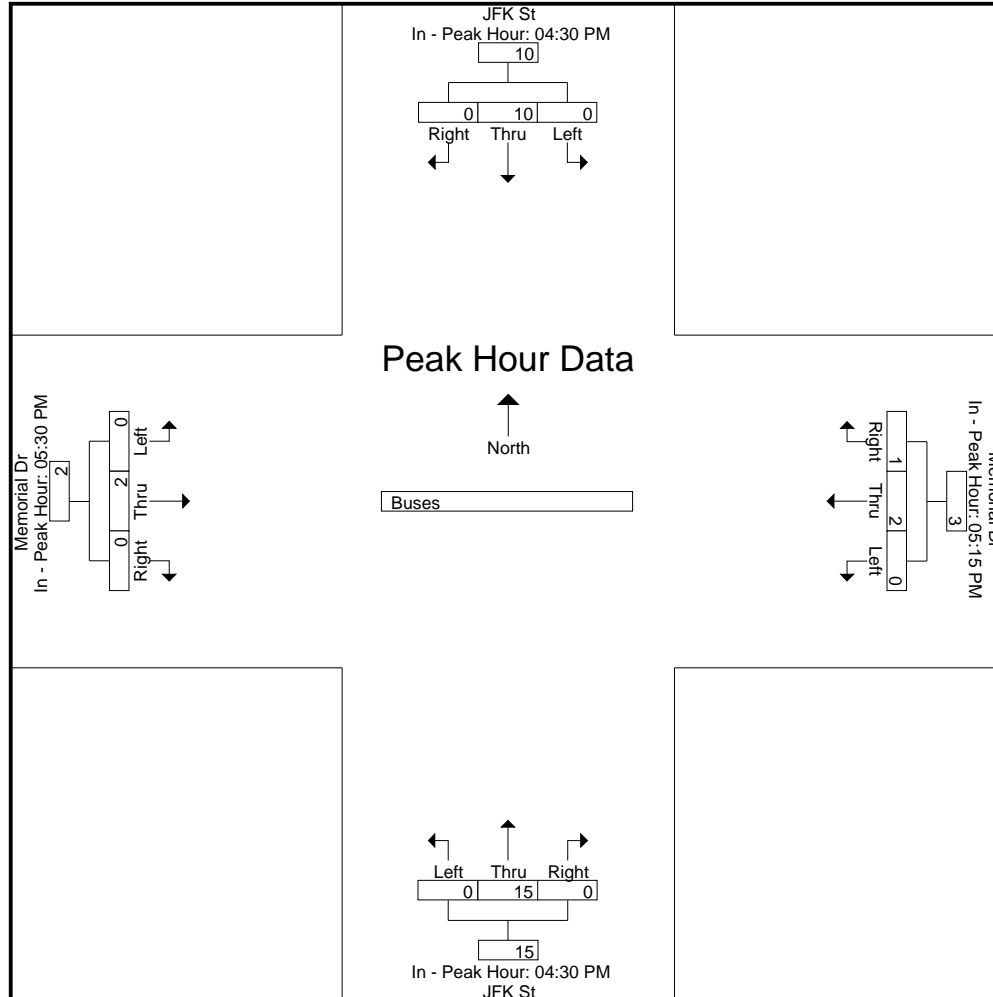
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				05:15 PM				04:30 PM				05:30 PM				
+0 mins.	0	5	0	5	0	1	0	1	0	4	0	4	0	0	0	0	
+15 mins.	0	3	0	3	0	0	0	0	0	3	0	3	0	0	0	0	
+30 mins.	0	1	0	1	0	1	0	1	0	6	0	6	0	0	0	0	
+45 mins.	0	1	0	1	0	0	1	1	0	2	0	2	0	2	0	2	
Total Volume	0	10	0	10	0	2	1	3	0	15	0	15	0	2	0	2	
% App. Total	0	100	0		0	66.7	33.3		0	100	0		0	100	0		
PHF	.000	.500	.000	.500	.000	.500	.250	.750	.000	.625	.000	.625	.000	.250	.000	.250	

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Trucks

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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	1	0	0	0	0	0	2	0	0	0	0	3
04:45 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
Total	0	3	0	0	0	0	0	3	0	0	0	0	6
05:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
05:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
05:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	0	0	0	1	1	0	0	0	6
06:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	9	0	0	0	0	0	4	1	0	0	0	14
Apprch %	0	100	0	0	0	0	0	80	20	0	0	0	0
Total %	0	64.3	0	0	0	0	0	28.6	7.1	0	0	0	0

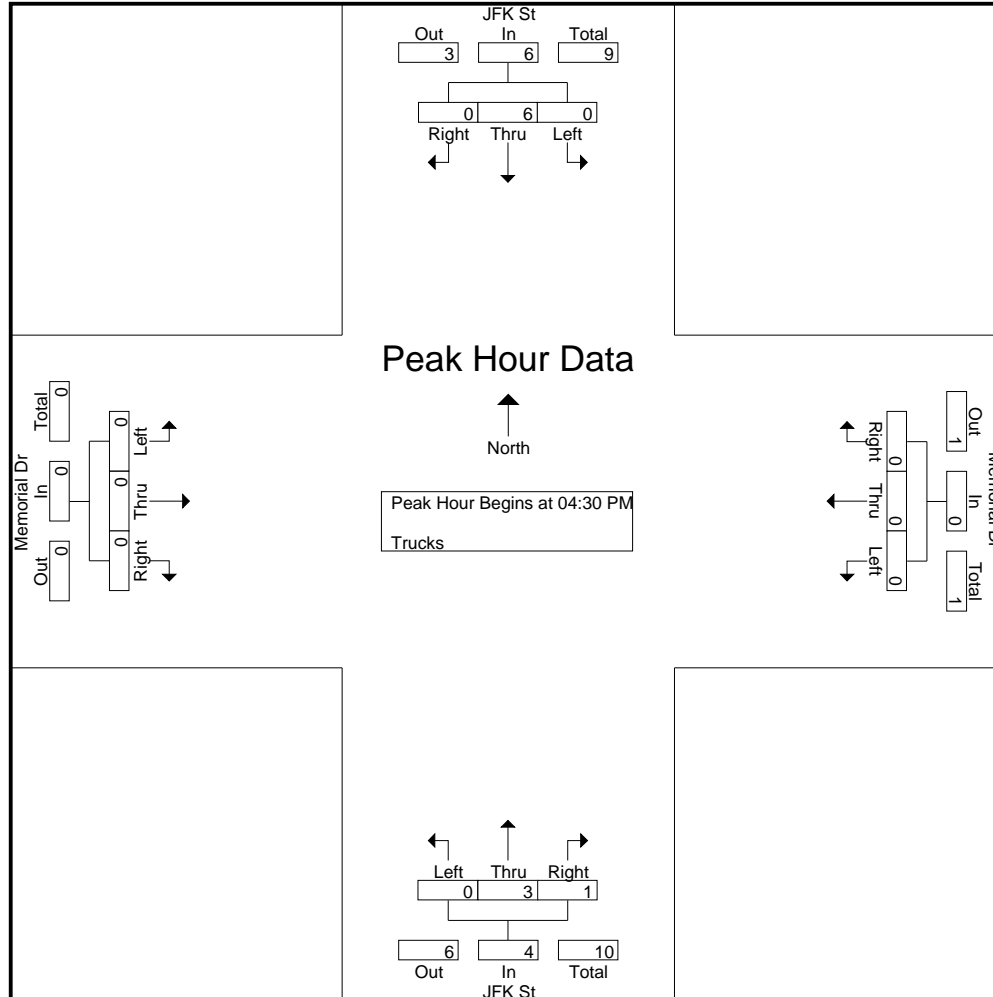
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
04:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	6	0	6	0	0	0	0	0	3	1	4	0	0	0	0	10
% App. Total	0	100	0		0	0	0		0	75	25		0	0	0		
PHF	.000	.750	.000	.750	.000	.000	.000	.000	.000	.375	.250	.500	.000	.000	.000	.000	.833

Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

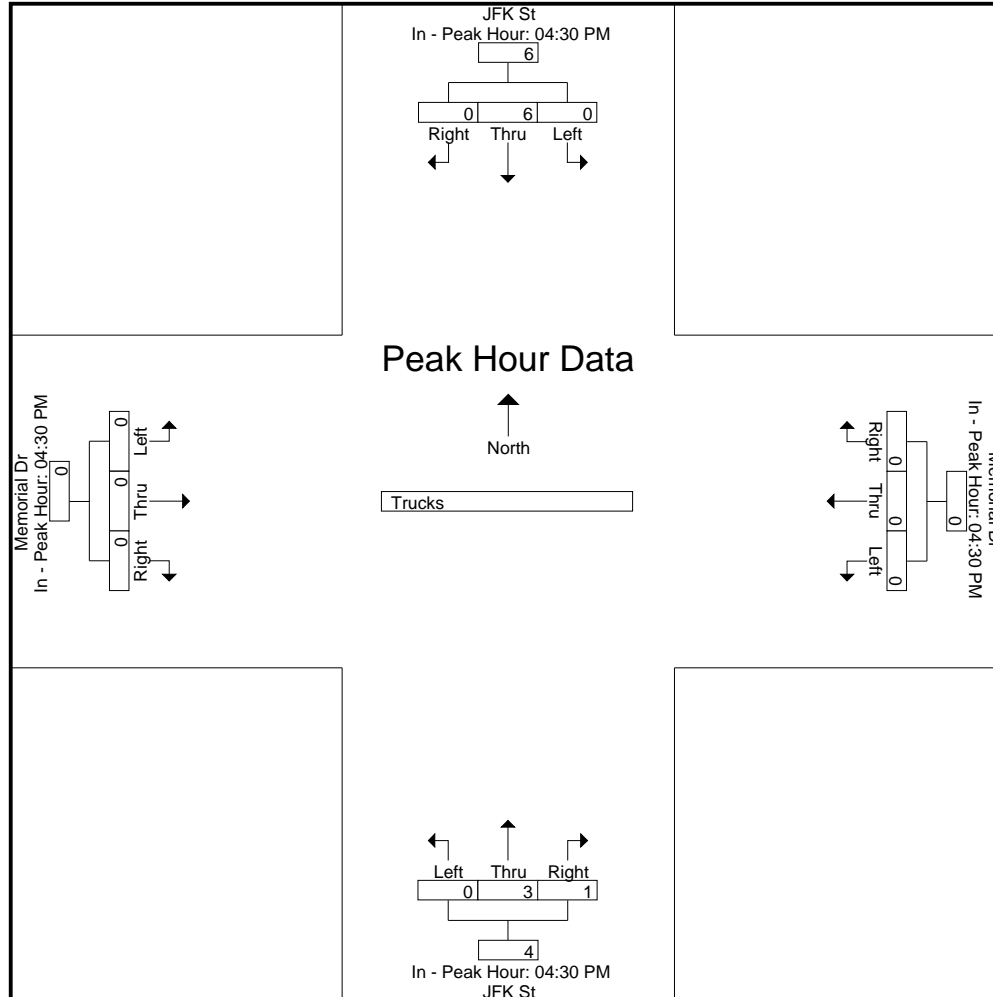
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	
+15 mins.	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	
+30 mins.	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	
+45 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	6	0	6	0	0	0	0	0	3	1	4	0	0	0	0	
% App. Total	0	100	0		0	0	0		0	75	25		0	0	0		
PHF	.000	.750	.000	.750	.000	.000	.000	.000	.000	.375	.250	.500	.000	.000	.000	.000	

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes STR

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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	1	1	0	0	0	0	1	4	0	0	0	0	7
04:45 PM	0	3	0	0	0	0	1	5	2	0	0	0	11
Total	1	4	0	0	0	0	2	9	2	0	0	0	18
05:00 PM	0	7	0	0	0	0	0	11	0	0	0	0	18
05:15 PM	0	6	0	0	0	0	0	8	0	0	0	0	14
05:30 PM	0	8	0	0	0	0	0	4	0	0	0	0	12
05:45 PM	0	5	0	0	0	0	0	13	0	0	0	0	18
Total	0	26	0	0	0	0	0	36	0	0	0	0	62
06:00 PM	1	6	0	0	0	0	0	15	2	0	0	0	24
06:15 PM	0	4	0	0	0	0	0	10	0	0	0	0	14
Grand Total	2	40	0	0	0	0	2	70	4	0	0	0	118
Apprch %	4.8	95.2	0	0	0	0	2.6	92.1	5.3	0	0	0	
Total %	1.7	33.9	0	0	0	0	1.7	59.3	3.4	0	0	0	

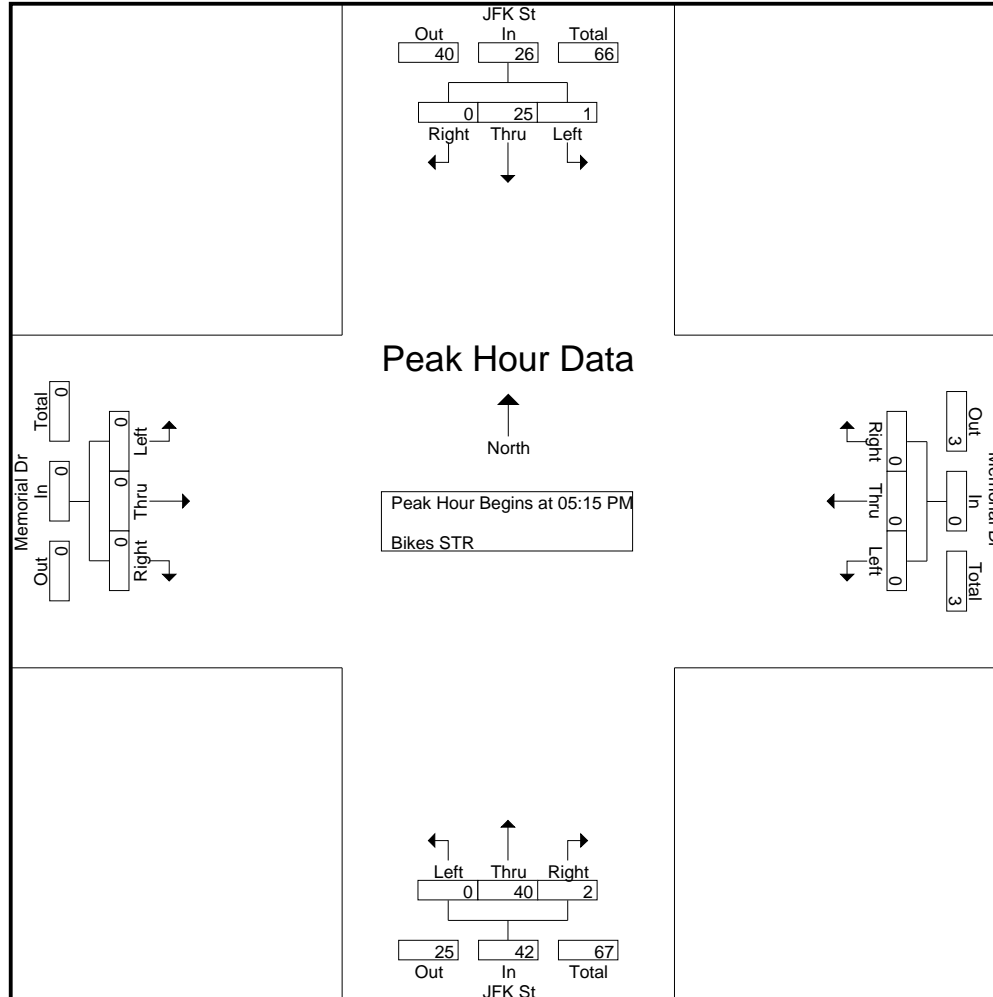
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:15 PM																	
05:15 PM	0	6	0	6	0	0	0	0	0	8	0	8	0	0	0	0	14
05:30 PM	0	8	0	8	0	0	0	0	0	4	0	4	0	0	0	0	12
05:45 PM	0	5	0	5	0	0	0	0	0	13	0	13	0	0	0	0	18
06:00 PM	1	6	0	7	0	0	0	0	0	15	2	17	0	0	0	0	24
Total Volume	1	25	0	26	0	0	0	0	0	40	2	42	0	0	0	0	68
% App. Total	3.8	96.2	0		0	0	0		0	95.2	4.8		0	0	0		
PHF	.250	.781	.000	.813	.000	.000	.000	.000	.000	.667	.250	.618	.000	.000	.000	.000	.708

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

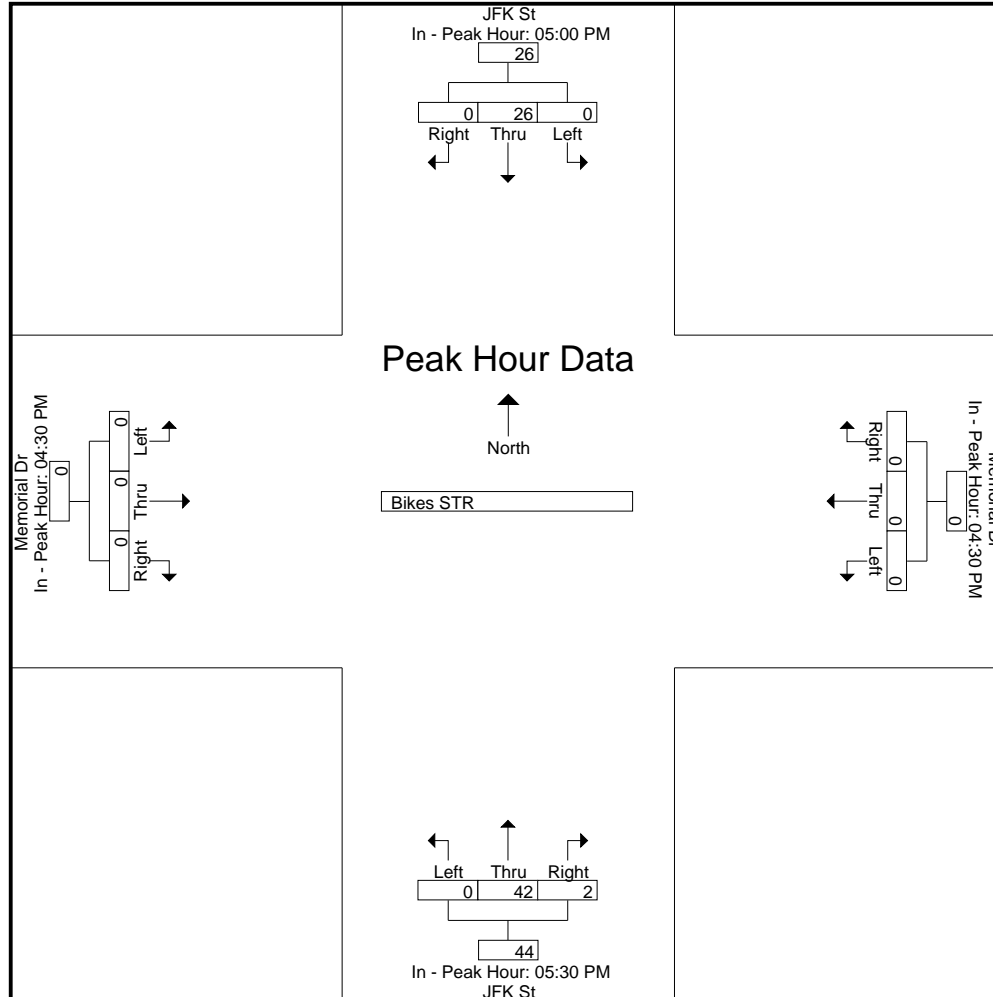
	05:00 PM				04:30 PM				05:30 PM				04:30 PM			
+0 mins.	0	7	0	7	0	0	0	0	0	4	0	4	0	0	0	0
+15 mins.	0	6	0	6	0	0	0	0	0	13	0	13	0	0	0	0
+30 mins.	0	8	0	8	0	0	0	0	0	15	2	17	0	0	0	0
+45 mins.	0	5	0	5	0	0	0	0	0	10	0	10	0	0	0	0
Total Volume	0	26	0	26	0	0	0	0	0	42	2	44	0	0	0	0
% App. Total	0	100	0		0	0	0		0	95.5	4.5		0	0	0	
PHF	.000	.813	.000	.813	.000	.000	.000	.000	.000	.700	.250	.647	.000	.000	.000	.000

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Bikes SW

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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	7	0	2	5	4	1	1	0	4	6	2	32
04:45 PM	1	7	1	5	10	4	3	1	0	1	6	4	43
Total	1	14	1	7	15	8	4	2	0	5	12	6	75
05:00 PM	0	1	0	1	11	6	6	5	0	3	8	7	48
05:15 PM	0	4	0	2	11	4	8	0	1	0	8	1	39
05:30 PM	0	6	1	1	13	3	4	2	1	0	9	8	48
05:45 PM	0	2	0	1	12	3	3	3	1	1	4	5	35
Total	0	13	1	5	47	16	21	10	3	4	29	21	170
06:00 PM	3	2	1	1	8	5	4	4	1	1	10	6	46
06:15 PM	0	2	0	3	9	3	6	3	2	0	8	7	43
Grand Total	4	31	3	16	79	32	35	19	6	10	59	40	334
Apprch %	10.5	81.6	7.9	12.6	62.2	25.2	58.3	31.7	10	9.2	54.1	36.7	
Total %	1.2	9.3	0.9	4.8	23.7	9.6	10.5	5.7	1.8	3	17.7	12	

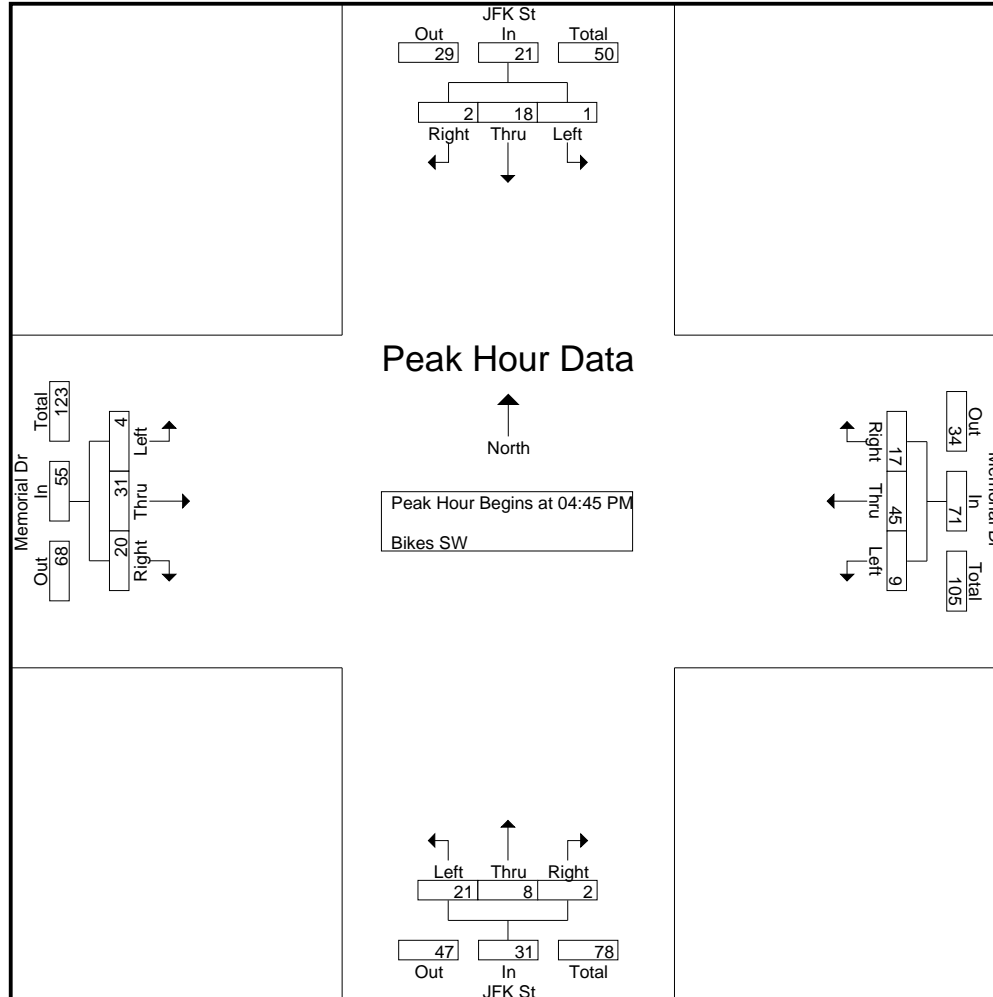
Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	7	1	9	5	10	4	19	3	1	0	4	1	6	4	11	43
05:00 PM	0	1	0	1	1	11	6	18	6	5	0	11	3	8	7	18	48
05:15 PM	0	4	0	4	2	11	4	17	8	0	1	9	0	8	1	9	39
05:30 PM	0	6	1	7	1	13	3	17	4	2	1	7	0	9	8	17	48
Total Volume	1	18	2	21	9	45	17	71	21	8	2	31	4	31	20	55	178
% App. Total	4.8	85.7	9.5		12.7	63.4	23.9		67.7	25.8	6.5		7.3	56.4	36.4		
PHF	.250	.643	.500	.583	.450	.865	.708	.934	.656	.400	.500	.705	.333	.861	.625	.764	.927

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North				Memorial Dr From East				JFK St From South				Memorial Dr From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

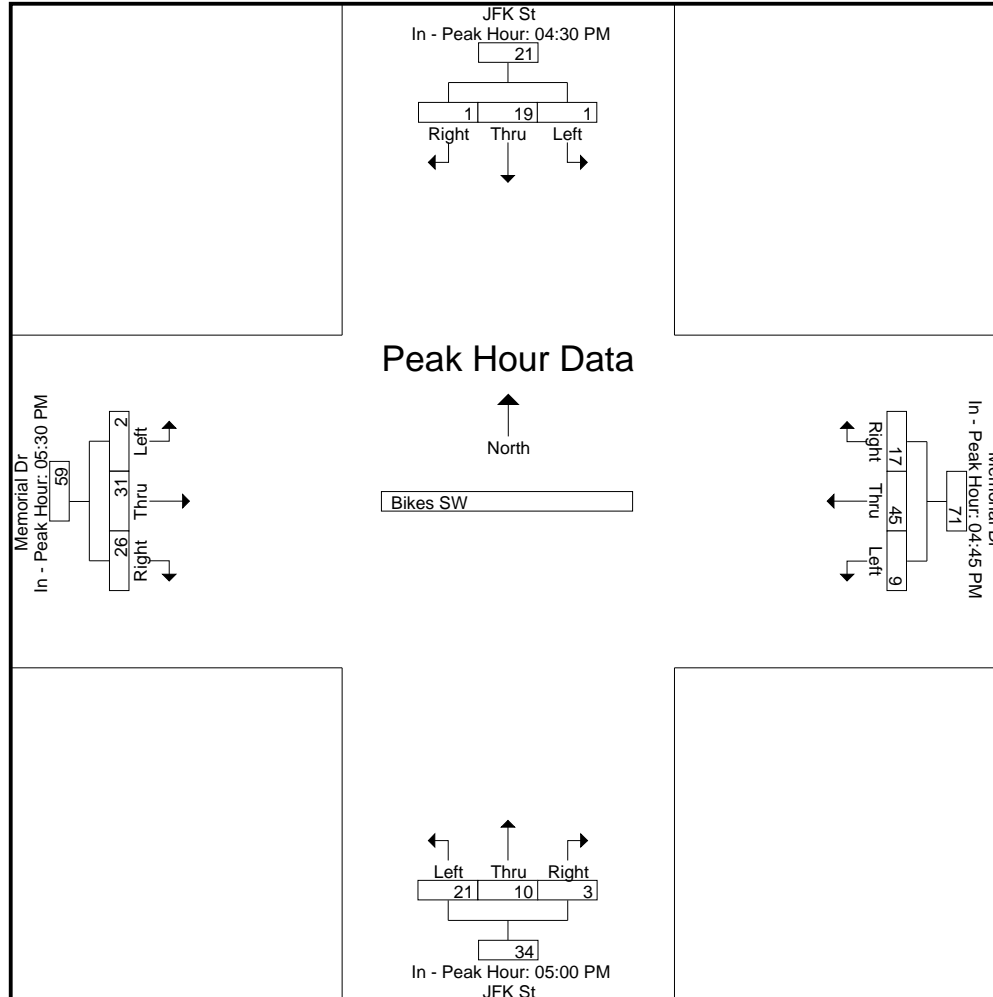
	04:30 PM				04:45 PM				05:00 PM				05:30 PM			
+0 mins.	0	7	0	7	5	10	4	19	6	5	0	11	0	9	8	17
+15 mins.	1	7	1	9	1	11	6	18	8	0	1	9	1	4	5	10
+30 mins.	0	1	0	1	2	11	4	17	4	2	1	7	1	10	6	17
+45 mins.	0	4	0	4	1	13	3	17	3	3	1	7	0	8	7	15
Total Volume	1	19	1	21	9	45	17	71	21	10	3	34	2	31	26	59
% App. Total	4.8	90.5	4.8		12.7	63.4	23.9		61.8	29.4	8.8		3.4	52.5	44.1	
PHF	.250	.679	.250	.583	.450	.865	.708	.934	.656	.500	.750	.773	.500	.775	.813	.868

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 4

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 1

Groups Printed- Peds

Start Time	JFK St From North		Memorial Dr From East		JFK St From South		Memorial Dr From West		Int. Total
	EB	WB	SB	NB	WB	EB	NB	SB	
04:00 PM	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0
04:30 PM	9	12	13	9	28	25	44	47	187
04:45 PM	26	11	12	25	30	33	55	72	264
Total	35	23	25	34	58	58	99	119	451
05:00 PM	28	13	15	14	22	40	70	88	290
05:15 PM	15	18	24	36	27	37	67	61	285
05:30 PM	20	4	21	27	34	61	88	63	318
05:45 PM	10	11	4	20	26	38	69	56	234
Total	73	46	64	97	109	176	294	268	1127
06:00 PM	23	9	15	26	18	38	90	47	266
06:15 PM	24	10	21	33	41	54	53	62	298
Grand Total	155	88	125	190	226	326	536	496	2142
Apprch %	63.8	36.2	39.7	60.3	40.9	59.1	51.9	48.1	
Total %	7.2	4.1	5.8	8.9	10.6	15.2	25	23.2	

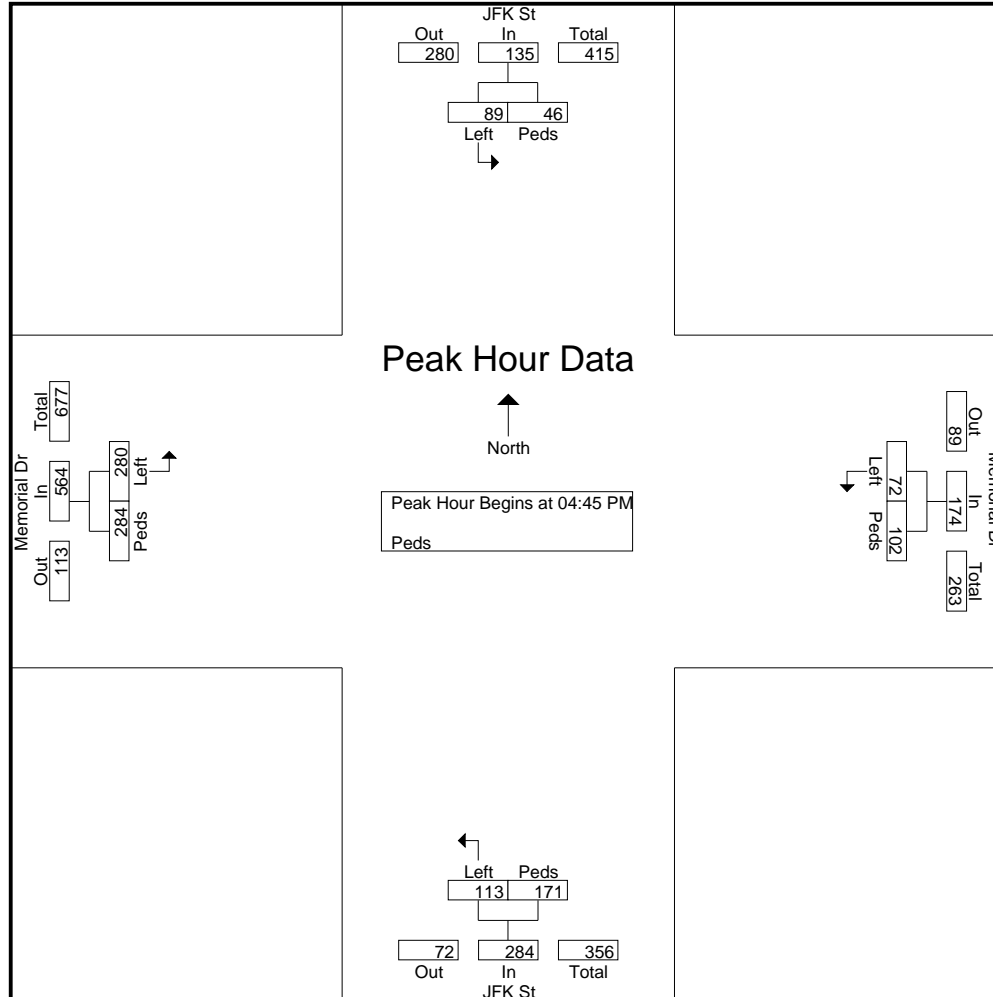
Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	26	11	37	12	25	37	30	33	63	55	72	127	264
05:00 PM	28	13	41	15	14	29	22	40	62	70	88	158	290
05:15 PM	15	18	33	24	36	60	27	37	64	67	61	128	285
05:30 PM	20	4	24	21	27	48	34	61	95	88	63	151	318
Total Volume	89	46	135	72	102	174	113	171	284	280	284	564	1157
% App. Total	65.9	34.1		41.4	58.6		39.8	60.2		49.6	50.4		
PHF	.795	.639	.823	.750	.708	.725	.831	.701	.747	.795	.807	.892	.910

Accurate Counts

978-664-2565

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 2

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : JFK Street
 E/W Street : Memorial Drive
 City/State : Cambridge, MA
 Weather : Clear

File Name : 12622004
 Site Code : 12622004
 Start Date : 4/2/2014
 Page No : 3

Start Time	JFK St From North			Memorial Dr From East			JFK St From South			Memorial Dr From West			Int. Total
	EB	WB	App. Total	SB	NB	App. Total	WB	EB	App. Total	NB	SB	App. Total	

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

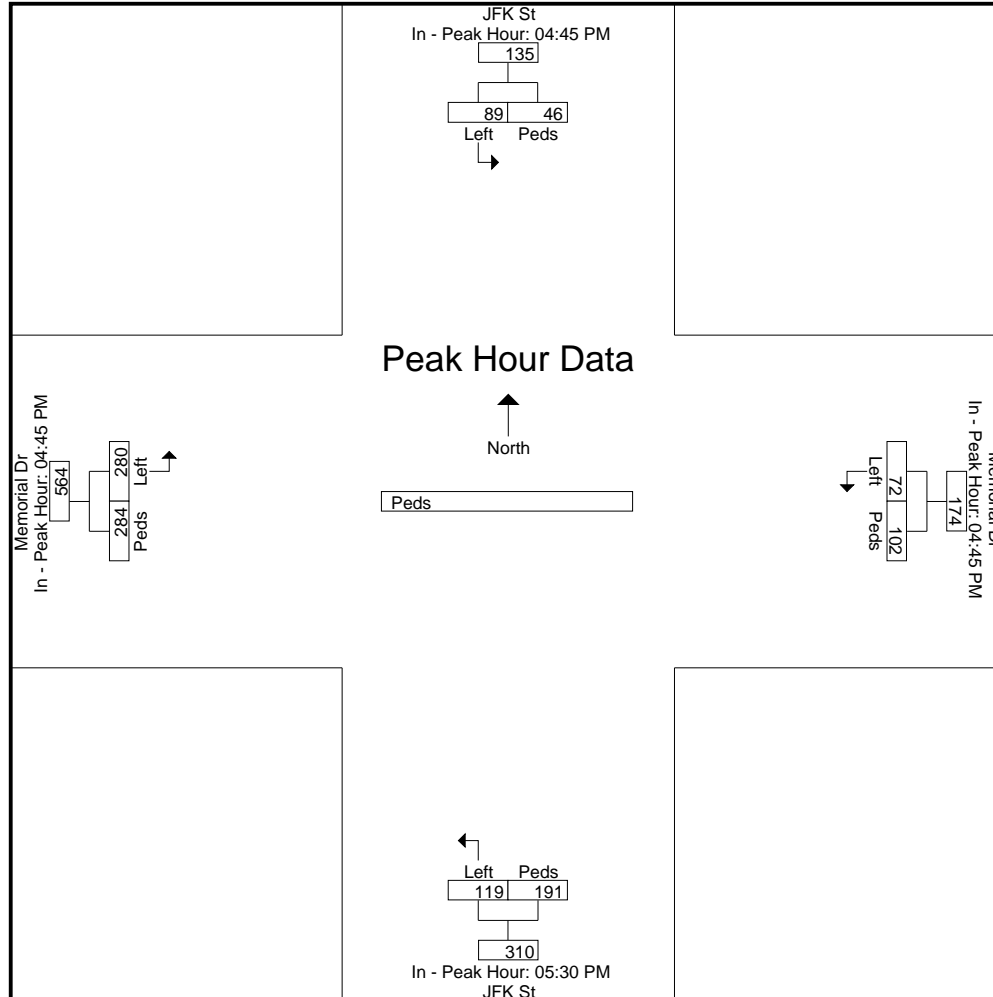
	04:45 PM			04:45 PM			05:30 PM			04:45 PM		
+0 mins.	26	11	37	12	25	37	34	61	95	55	72	127
+15 mins.	28	13	41	15	14	29	26	38	64	70	88	158
+30 mins.	15	18	33	24	36	60	18	38	56	67	61	128
+45 mins.	20	4	24	21	27	48	41	54	95	88	63	151
Total Volume	89	46	135	72	102	174	119	191	310	280	284	564
% App. Total	65.9	34.1		41.4	58.6		38.4	61.6		49.6	50.4	
PHF	.795	.639	.823	.750	.708	.725	.726	.783	.816	.795	.807	.892

Accurate Counts

978-664-2565

File Name : 12622004
Site Code : 12622004
Start Date : 4/2/2014
Page No : 4

N/S Street : JFK Street
E/W Street : Memorial Drive
City/State : Cambridge, MA
Weather : Clear



Harvard University's
Kennedy School of Government
Transportation Impact Study
Technical Appendix
Trip Generation Calculations

Future Population Estimates

User	12 soldiers field road	2013/2014 Population	Percent Grown	Anticipated Growth	Anticipated 2019 Population
Full Time Student	1175	1221	3.9%	3.9%	1479
Faculty	190	192	1.1%	1.1%	202
Staff	471	478	1.5%	1.5%	515
Fellows	200	213	6.5%	6.5%	292
Executive Ed	-	102	n/a	5.0%	130
Total		2206			2618

Trip Generation Estimate

Mode Share	Percent Mode*	Daily One-Way		AM Peak Hour Trips	PM Peak Hour Trips
		Trips**	Daily Trips		
Drive Alone	12.8%	53	105	19	19
In			53	15	6
Out			53	4	13
Carpool	3.9%	16	32	6	6
In			16	4	2
Out			16	1	4
Vanpool	0.07%	0	1	0	0
In			0	0	0
Out			0	0	0
Total Vehicle Trips			138	25	25
In			69	19	8
Out			69	6	17
Public Transit	35.4%	146	292	53	53
In			146	40	17
Out			146	12	35
Bicycle	14.5%	60	119	22	22
In			60	17	7
Out			60	5	14
Walk	29.2%	120	241	43	43
In			120	33	14
Out			120	10	29
Telecommute	3.9%	16	32	6	6
Total	99.8%	411	822	148	148

*Harvard PTDM Annual Progress Report 2013

**Assumes 412 new students, staff, faculty, fellows, and executive ed personnel

***Assumes 36% commute during peak hour per Harvard University's North Campus Transportation Study Trip distribution based on ITE LUC 550 College/University

ability in its random sample surveys. The goal for the 2013 PTDM Survey and Progress Report was to receive 907 completed surveys. Harvard's 2013 return rate was 100%.

PTDM Survey Categories

All Cambridge based applicable employees and graduate students were stratified into five basic categories based on payroll codes determined by the Senior Manager of Student Financial Policy at the Harvard University Office of Vice President for Finance (VPF) and Harvard Human Resources (HHR). The Cambridge-only responses sorted into the HR payroll categories are shown in the table below.

Employe and Graduate Student Category Chart

PTDM Category 2013	PTDM Sample Number	PTDM Sample Percent	PTDM Response Number	PTDM Response Percent
Services	46	5%	46	5%
Non-exempt	151	17%	151	17%
Faculty/PD	87	10%	87	10%
Exempt	221	24%	221	24%
Graduate Students	402	44%	402	44%
Total	907	100%	907	100%

PTDM Commute Mode

The table below shows the results of the 2010, 2011, 2012 and 2013 PTDM surveys. The results include employees and graduate students from Cambridge only. The PTDM 2013 results indicate that Harvard continues to exceed its 10% PTDM SOV reduction goal.

Commute Mode Comparison Chart

Commute Mode	PTDM Goal 2003	PTDM 2010	PTDM 2011	PTDM 2012	PTDM 2013
Drive Alone	24.7%	11.3%	15.9%	13.2%	12.8%
Carpool	5.0%	4.8%	3.6%	2.6%	3.9%
Vanpool	0%	.2%	.2%	.05%	.07%
Public Transit (Includes Private Bus and Transit)	29.3%	31.7%	35.1%	38.4%	35.4%
Bicycle	8.3%	12.8%	14.3%	17.3%	14.5%
Walk	32.7%	36.5%	27.6%	25.2%	29.2%
Telework/CWW/flextime	NA	2.8%	3.1%	3.1%	3.9%

According to the 2013 survey results, approximately 87.2% of Harvard's applicable commuting population use alternative transportation modes when traveling to work or class located in Cambridge. Commuting by alternative modes has increased slightly by .4% since 2012 when it was 86.8%. Harvard remains well below the established target PTDM SOV rate of 24.7%.

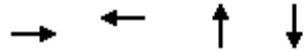
**Harvard University's
Kennedy School of Government
Transportation Impact Study
Technical Appendix
Synchro Analysis**

**Intersection *Synchro* Analysis
Weekday Morning Peak**

2014 Existing Condition

Queues
3: Memorial Drive & JFK Street

HKS 2014 Existing Condition
Morning Peak



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1091	724	648	415
v/c Ratio	1.26	0.84	0.90	0.60
Control Delay	159.5	40.0	42.2	24.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	159.5	40.0	42.2	24.7
Queue Length 50th (ft)	~461	210	363	191
Queue Length 95th (ft)	#573	262	#596	293
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	863	867	720	686
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.26	0.84	0.90	0.60

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Memorial Drive & JFK Street

HKS 2014 Existing Condition
Morning Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	825	135	0	445	170	0	530	105	0	380	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	11	12	12	12	11	10	10
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frbp, ped/bikes		0.96			0.96			0.98			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.98			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2833			2755			1550			1491	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2833			2755			1550			1491	
Peak-hour factor, PHF	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	0	938	153	0	524	200	0	541	107	0	404	11
RTOR Reduction (vph)	0	13	0	0	40	0	0	7	0	0	1	0
Lane Group Flow (vph)	0	1078	0	0	684	0	0	641	0	0	414	0
Confl. Peds. (#/hr)			77			90			101			331
Confl. Bikes (#/hr)			50			19			56			34
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	6%	6%	6%	6%	6%	6%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		30.0			30.0			46.0			46.0	
Effective Green, g (s)		30.0			30.0			46.0			46.0	
Actuated g/C Ratio		0.30			0.30			0.46			0.46	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		850			827			713			686	
v/s Ratio Prot		c0.38			0.25			c0.41			0.28	
v/s Ratio Perm												
v/c Ratio		1.27			0.83			0.90			0.60	
Uniform Delay, d1		35.0			32.6			24.9			20.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		129.9			9.3			16.5			3.9	
Delay (s)		164.9			41.9			41.3			24.1	
Level of Service		F			D			D			C	
Approach Delay (s)		164.9			41.9			41.3			24.1	
Approach LOS		F			D			D			C	

Intersection Summary

HCM Average Control Delay	85.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
6: Eliot Street & JFK Street

HKS 2014 Existing Condition
Morning Peak



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	51	443	781
v/c Ratio	0.12	0.47	0.66
Control Delay	24.3	6.3	24.4
Queue Delay	0.0	1.4	0.0
Total Delay	24.3	7.6	24.4
Queue Length 50th (ft)	21	79	183
Queue Length 95th (ft)	48	125	243
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	421	941	1185
Starvation Cap Reductn	0	300	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.12	0.69	0.66
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
6: Eliot Street & JFK Street

HKS 2014 Existing Condition
Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	45	390	215	480	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.98		
Satd. Flow (prot)	1430	1254		2844		
Flt Permitted	0.95	1.00		0.98		
Satd. Flow (perm)	1430	1254		2844		
Peak-hour factor, PHF	0.88	0.88	0.89	0.89	0.25	0.25
Adj. Flow (vph)	51	443	242	539	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	51	443	0	781	0	0
Heavy Vehicles (%)	6%	6%	5%	5%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	421	927		1185		
v/s Ratio Prot	0.04	c0.35		c0.27		
v/s Ratio Perm						
v/c Ratio	0.12	0.48		0.66		
Uniform Delay, d1	23.2	4.7		21.1		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	0.6	1.8		2.9		
Delay (s)	23.8	6.5		24.0		
Level of Service	C	A		C		
Approach Delay (s)	8.3			24.0	0.0	
Approach LOS	A			C	A	

Intersection Summary

HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
7: Bennett Street & Eliot Street

HKS 2014 Existing Condition
Morning Peak

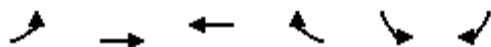


Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	88	244	500
v/c Ratio	0.15	0.36	0.54
Control Delay	13.7	15.8	17.7
Queue Delay	0.0	0.0	0.0
Total Delay	13.7	15.8	17.7
Queue Length 50th (ft)	21	62	71
Queue Length 95th (ft)	38	107	110
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	577	683	923
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.36	0.54
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

7: Bennett Street & Eliot Street

HKS 2014 Existing Condition
Morning Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑↑	
Volume (vph)	0	65	210	0	370	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.94	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1574	1862		2515	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1574	1862		2515	
Peak-hour factor, PHF	0.74	0.74	0.86	0.86	0.89	0.89
Adj. Flow (vph)	0	88	244	0	416	84
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	88	244	0	500	0
Confl. Peds. (#/hr)						261
Heavy Vehicles (%)	5%	5%	2%	2%	10%	10%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		577	683		922	
v/s Ratio Prot		0.06	c0.13		c0.20	
v/s Ratio Perm						
v/c Ratio		0.15	0.36		0.54	
Uniform Delay, d1		12.7	13.8		15.0	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.6	1.5		2.3	
Delay (s)		13.3	15.3		17.3	
Level of Service		B	B		B	
Approach Delay (s)		13.3	15.3		17.3	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			16.3		HCM Level of Service	B
HCM Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			38.9%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

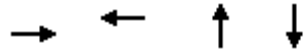
HKS 2014 Existing Condition
 Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	10	205	430	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.58	0.91	0.91	0.86	0.86
Hourly flow rate (vph)	9	9	11	225	500	6
Pedestrians	64			64	64	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	7			7	4	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	878	381	570			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	878	381	570			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	98	99			
cM capacity (veh/h)	253	535	932			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	17	236	333	172		
Volume Left	9	11	0	0		
Volume Right	9	0	0	6		
cSH	344	932	1700	1700		
Volume to Capacity	0.05	0.01	0.20	0.10		
Queue Length 95th (ft)	4	1	0	0		
Control Delay (s)	16.0	0.5	0.0	0.0		
Lane LOS	C	A				
Approach Delay (s)	16.0	0.5	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			39.8%		ICU Level of Service	A
Analysis Period (min)			15			

2014 Theoretical Existing Condition

Queues
3: Memorial Drive & JFK Street



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1091	724	857	415
v/c Ratio	0.95	0.64	0.81	0.71
Control Delay	46.7	27.5	35.1	34.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.7	27.5	35.1	34.3
Queue Length 50th (ft)	347	192	253	221
Queue Length 95th (ft)	#472	237	335	336
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	1150	1124	1058	586
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.95	0.64	0.81	0.71

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Memorial Drive & JFK Street

HKS 2014 Theoretical Existing Condition
Morning Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑			↑	
Volume (vph)	0	825	135	0	445	170	0	650	190	0	380	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	11	11	11	11	10	11	10
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			0.95			1.00	
Frbp, ped/bikes		0.98			0.98			0.97			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.97			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2875			2808			2786			1542	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2875			2808			2786			1542	
Peak-hour factor, PHF	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	0	938	153	0	524	200	0	663	194	0	404	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1091	0	0	724	0	0	857	0	0	415	0
Confl. Peds. (#/hr)			77			90			101			331
Confl. Bikes (#/hr)			50			19			56			34
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	6%	6%	6%	6%	6%	6%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		40.0			40.0			38.0			38.0	
Effective Green, g (s)		40.0			40.0			38.0			38.0	
Actuated g/C Ratio		0.40			0.40			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		1150			1123			1059			586	
v/s Ratio Prot		c0.38			0.26			c0.31			0.27	
v/s Ratio Perm												
v/c Ratio		0.95			0.64			0.81			0.71	
Uniform Delay, d1		29.0			24.3			27.8			26.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		16.8			2.9			6.7			7.1	
Delay (s)		45.8			27.1			34.4			33.4	
Level of Service		D			C			C			C	
Approach Delay (s)		45.8			27.1			34.4			33.4	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
6: Eliot Street & JFK Street



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	51	443	916
v/c Ratio	0.12	0.47	0.77
Control Delay	24.3	6.3	28.0
Queue Delay	0.0	1.4	0.0
Total Delay	24.3	7.6	28.0
Queue Length 50th (ft)	21	79	230
Queue Length 95th (ft)	48	125	303
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	421	941	1185
Starvation Cap Reductn	0	300	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.12	0.69	0.77
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
6: Eliot Street & JFK Street

HKS 2014 Theoretical Existing Condition
Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	45	390	255	560	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.98		
Satd. Flow (prot)	1430	1254		2843		
Flt Permitted	0.95	1.00		0.98		
Satd. Flow (perm)	1430	1254		2843		
Peak-hour factor, PHF	0.88	0.88	0.89	0.89	0.25	0.25
Adj. Flow (vph)	51	443	287	629	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	51	443	0	916	0	0
Heavy Vehicles (%)	6%	6%	5%	5%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	421	927		1185		
v/s Ratio Prot	0.04	c0.35		c0.32		
v/s Ratio Perm						
v/c Ratio	0.12	0.48		0.77		
Uniform Delay, d1	23.2	4.7		22.6		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	0.6	1.8		4.9		
Delay (s)	23.8	6.5		27.5		
Level of Service	C	A		C		
Approach Delay (s)	8.3			27.5	0.0	
Approach LOS	A			C	A	

Intersection Summary			
HCM Average Control Delay		20.8	HCM Level of Service C
HCM Volume to Capacity ratio		0.64	
Actuated Cycle Length (s)		90.0	Sum of lost time (s) 22.5
Intersection Capacity Utilization		35.4%	ICU Level of Service A
Analysis Period (min)		15	
c Critical Lane Group			

Queues

7: Bennett Street & Eliot Street



Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	88	291	500
v/c Ratio	0.15	0.43	0.54
Control Delay	13.7	16.7	17.7
Queue Delay	0.0	0.0	0.0
Total Delay	13.7	16.7	17.7
Queue Length 50th (ft)	21	77	71
Queue Length 95th (ft)	38	127	110
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	577	683	923
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.43	0.54

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Bennett Street & Eliot Street

HKS 2014 Theoretical Existing Condition
Morning Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑↑	
Volume (vph)	0	65	250	0	370	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.94	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1574	1862		2515	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1574	1862		2515	
Peak-hour factor, PHF	0.74	0.74	0.86	0.86	0.89	0.89
Adj. Flow (vph)	0	88	291	0	416	84
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	88	291	0	500	0
Confl. Peds. (#/hr)						261
Heavy Vehicles (%)	5%	5%	2%	2%	10%	10%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		577	683		922	
v/s Ratio Prot		0.06	c0.16		c0.20	
v/s Ratio Perm						
v/c Ratio		0.15	0.43		0.54	
Uniform Delay, d1		12.7	14.3		15.0	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.6	1.9		2.3	
Delay (s)		13.3	16.2		17.3	
Level of Service		B	B		B	
Approach Delay (s)		13.3	16.2		17.3	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			16.5		HCM Level of Service	B
HCM Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			41.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

HKS 2014 Theoretical Existing Condition
 Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	10	245	430	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.58	0.91	0.91	0.86	0.86
Hourly flow rate (vph)	9	9	11	269	500	6
Pedestrians	64			64	64	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	7			7	4	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	922	381	570			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	922	381	570			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	98	99			
cM capacity (veh/h)	237	535	932			

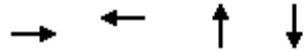
Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	17	280	333	172
Volume Left	9	11	0	0
Volume Right	9	0	0	6
cSH	329	932	1700	1700
Volume to Capacity	0.05	0.01	0.20	0.10
Queue Length 95th (ft)	4	1	0	0
Control Delay (s)	16.6	0.5	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.6	0.5	0.0	
Approach LOS	C			

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	42.2%		ICU Level of Service A
Analysis Period (min)	15		

2014 Build Condition

Queues
3: Memorial Drive & JFK Street

HKS 2014 Build Condition
Morning Peak



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1091	725	857	411
v/c Ratio	0.95	0.65	0.81	0.70
Control Delay	46.7	27.5	35.1	33.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.7	27.5	35.1	33.9
Queue Length 50th (ft)	347	192	253	218
Queue Length 95th (ft)	#472	237	335	333
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	1150	1124	1058	586
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.95	0.65	0.81	0.70

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Memorial Drive & JFK Street

HKS 2014 Build Condition
Morning Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑			↑	
Volume (vph)	0	825	135	0	446	170	0	650	190	0	376	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	11	11	11	11	10	11	10
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			0.95			1.00	
Frbp, ped/bikes		0.98			0.98			0.97			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.97			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2875			2809			2786			1542	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2875			2809			2786			1542	
Peak-hour factor, PHF	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	0	938	153	0	525	200	0	663	194	0	400	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1091	0	0	725	0	0	857	0	0	411	0
Confl. Peds. (#/hr)			77			90			101			331
Confl. Bikes (#/hr)			50			19			56			34
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	6%	6%	6%	6%	6%	6%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		40.0			40.0			38.0			38.0	
Effective Green, g (s)		40.0			40.0			38.0			38.0	
Actuated g/C Ratio		0.40			0.40			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		1150			1124			1059			586	
v/s Ratio Prot		c0.38			0.26			c0.31			0.27	
v/s Ratio Perm												
v/c Ratio		0.95			0.65			0.81			0.70	
Uniform Delay, d1		29.0			24.3			27.8			26.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		16.8			2.9			6.7			6.9	
Delay (s)		45.8			27.1			34.4			33.1	
Level of Service		D			C			C			C	
Approach Delay (s)		45.8			27.1			34.4			33.1	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
6: Eliot Street & JFK Street

HKS 2014 Build Condition
Morning Peak



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	57	439	915
v/c Ratio	0.14	0.47	0.77
Control Delay	24.5	6.2	28.0
Queue Delay	0.0	1.3	0.0
Total Delay	24.5	7.6	28.0
Queue Length 50th (ft)	24	78	229
Queue Length 95th (ft)	52	123	302
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	421	941	1185
Starvation Cap Reductn	0	302	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.14	0.69	0.77
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
6: Eliot Street & JFK Street

HKS 2014 Build Condition
Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	386	246	569	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.99		
Satd. Flow (prot)	1430	1254		2845		
Flt Permitted	0.95	1.00		0.99		
Satd. Flow (perm)	1430	1254		2845		
Peak-hour factor, PHF	0.88	0.88	0.89	0.89	0.25	0.25
Adj. Flow (vph)	57	439	276	639	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	57	439	0	915	0	0
Heavy Vehicles (%)	6%	6%	5%	5%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	421	927		1185		
v/s Ratio Prot	0.04	c0.35		c0.32		
v/s Ratio Perm						
v/c Ratio	0.14	0.47		0.77		
Uniform Delay, d1	23.3	4.7		22.6		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	0.7	1.7		4.9		
Delay (s)	24.0	6.5		27.5		
Level of Service	C	A		C		
Approach Delay (s)	8.5			27.5	0.0	
Approach LOS	A			C	A	

Intersection Summary

HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
7: Bennett Street & Eliot Street

HKS 2014 Build Condition
Morning Peak

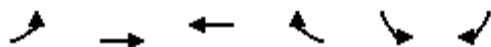


Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	92	286	497
v/c Ratio	0.16	0.42	0.54
Control Delay	13.8	16.6	17.7
Queue Delay	0.0	0.0	0.0
Total Delay	13.8	16.6	17.7
Queue Length 50th (ft)	22	75	71
Queue Length 95th (ft)	39	125	110
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	577	683	922
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.16	0.42	0.54
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

7: Bennett Street & Eliot Street

HKS 2014 Build Condition
Morning Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓↓↓	
Volume (vph)	0	68	246	0	368	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.94	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1574	1862		2514	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1574	1862		2514	
Peak-hour factor, PHF	0.74	0.74	0.86	0.86	0.89	0.89
Adj. Flow (vph)	0	92	286	0	413	84
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	92	286	0	497	0
Confl. Peds. (#/hr)						261
Heavy Vehicles (%)	5%	5%	2%	2%	10%	10%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		577	683		922	
v/s Ratio Prot		0.06	c0.15		c0.20	
v/s Ratio Perm						
v/c Ratio		0.16	0.42		0.54	
Uniform Delay, d1		12.8	14.2		15.0	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.6	1.9		2.3	
Delay (s)		13.4	16.1		17.3	
Level of Service		B	B		B	
Approach Delay (s)		13.4	16.1		17.3	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			16.5		HCM Level of Service	B
HCM Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			41.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

HKS 2014 Build Condition
 Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	1	1	245	435	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.58	0.91	0.91	0.86	0.86
Hourly flow rate (vph)	2	2	1	269	506	1
Pedestrians	64			64	64	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	7			7	4	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	906	381	571			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	906	381	571			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	246	534	931			

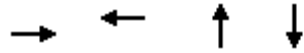
Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	3	270	337	170
Volume Left	2	1	0	0
Volume Right	2	0	0	1
cSH	337	931	1700	1700
Volume to Capacity	0.01	0.00	0.20	0.10
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	15.8	0.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.8	0.0	0.0	
Approach LOS	C			

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		34.0%	ICU Level of Service
Analysis Period (min)		15	A

2019 Future Condition

Queues
3: Memorial Drive & JFK Street

HKS 2019 Future Condition
Morning Peak



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1121	751	918	451
v/c Ratio	0.97	0.67	0.87	0.77
Control Delay	51.6	28.2	38.8	37.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.6	28.2	38.8	37.6
Queue Length 50th (ft)	362	202	280	248
Queue Length 95th (ft)	#493	248	#396	#386
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	1150	1121	1061	587
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.97	0.67	0.87	0.77

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Memorial Drive & JFK Street

HKS 2019 Future Condition
Morning Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑			↑	
Volume (vph)	0	846	141	0	457	181	0	704	196	0	414	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	11	11	11	11	10	11	10
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			0.95			1.00	
Frbp, ped/bikes		0.98			0.98			0.97			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.97			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2873			2803			2792			1544	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2873			2803			2792			1544	
Peak-hour factor, PHF	0.88	0.88	0.88	0.85	0.85	0.85	0.98	0.98	0.98	0.94	0.94	0.94
Adj. Flow (vph)	0	961	160	0	538	213	0	718	200	0	440	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1121	0	0	751	0	0	918	0	0	451	0
Confl. Peds. (#/hr)			77			90			101			331
Confl. Bikes (#/hr)			50			19			56			34
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	6%	6%	6%	6%	6%	6%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		40.0			40.0			38.0			38.0	
Effective Green, g (s)		40.0			40.0			38.0			38.0	
Actuated g/C Ratio		0.40			0.40			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		1149			1121			1061			587	
v/s Ratio Prot		c0.39			0.27			c0.33			0.29	
v/s Ratio Perm												
v/c Ratio		0.98			0.67			0.87			0.77	
Uniform Delay, d1		29.5			24.6			28.6			27.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		21.3			3.2			9.4			9.3	
Delay (s)		50.8			27.8			38.1			36.5	
Level of Service		D			C			D			D	
Approach Delay (s)		50.8			27.8			38.1			36.5	
Approach LOS		D			C			D			D	

Intersection Summary

HCM Average Control Delay	39.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
6: Eliot Street & JFK Street



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	59	482	988
v/c Ratio	0.14	0.51	0.83
Control Delay	24.6	6.9	31.2
Queue Delay	0.0	1.6	0.0
Total Delay	24.6	8.5	31.2
Queue Length 50th (ft)	25	90	257
Queue Length 95th (ft)	53	143	338
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	421	941	1184
Starvation Cap Reductn	0	284	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.14	0.73	0.83
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
6: Eliot Street & JFK Street

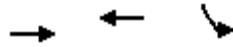
HKS 2019 Future Condition
Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	52	424	286	594	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.98		
Satd. Flow (prot)	1430	1254		2842		
Flt Permitted	0.95	1.00		0.98		
Satd. Flow (perm)	1430	1254		2842		
Peak-hour factor, PHF	0.88	0.88	0.89	0.89	0.25	0.25
Adj. Flow (vph)	59	482	321	667	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	59	482	0	988	0	0
Heavy Vehicles (%)	6%	6%	5%	5%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	421	927		1184		
v/s Ratio Prot	0.04	c0.38		c0.35		
v/s Ratio Perm						
v/c Ratio	0.14	0.52		0.83		
Uniform Delay, d1	23.4	5.0		23.5		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	0.7	2.1		7.0		
Delay (s)	24.1	7.1		30.5		
Level of Service	C	A		C		
Approach Delay (s)	8.9			30.5	0.0	
Approach LOS	A			C	A	

Intersection Summary			
HCM Average Control Delay		22.9	HCM Level of Service C
HCM Volume to Capacity ratio		0.69	
Actuated Cycle Length (s)		90.0	Sum of lost time (s) 22.5
Intersection Capacity Utilization		37.5%	ICU Level of Service A
Analysis Period (min)		15	
c Critical Lane Group			

Queues
7: Bennett Street & Eliot Street

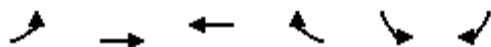


Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	109	333	550
v/c Ratio	0.19	0.49	0.60
Control Delay	14.1	17.7	18.9
Queue Delay	0.0	0.0	0.0
Total Delay	14.1	17.7	18.9
Queue Length 50th (ft)	26	90	80
Queue Length 95th (ft)	45	147	124
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	577	683	910
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.19	0.49	0.60
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

7: Bennett Street & Eliot Street

HKS 2019 Future Condition
Morning Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑↑	
Volume (vph)	0	81	286	0	395	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.93	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1574	1862		2484	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1574	1862		2484	
Peak-hour factor, PHF	0.74	0.74	0.86	0.86	0.89	0.89
Adj. Flow (vph)	0	109	333	0	444	106
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	109	333	0	550	0
Confl. Peds. (#/hr)						261
Heavy Vehicles (%)	5%	5%	2%	2%	10%	10%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		577	683		911	
v/s Ratio Prot		0.07	c0.18		c0.22	
v/s Ratio Perm						
v/c Ratio		0.19	0.49		0.60	
Uniform Delay, d1		12.9	14.7		15.5	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.7	2.5		3.0	
Delay (s)		13.7	17.1		18.4	
Level of Service		B	B		B	
Approach Delay (s)		13.7	17.1		18.4	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			17.5		HCM Level of Service	B
HCM Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			43.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

HKS 2019 Future Condition
 Morning Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	1	1	285	475	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.58	0.91	0.91	0.86	0.86
Hourly flow rate (vph)	2	2	1	313	552	1
Pedestrians	64			64	64	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	7			7	4	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	996	405	617			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	405	617			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	215	516	895			

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	3	314	368	185
Volume Left	2	1	0	0
Volume Right	2	0	0	1
cSH	303	895	1700	1700
Volume to Capacity	0.01	0.00	0.22	0.11
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	17.0	0.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.0	0.0	0.0	
Approach LOS	C			

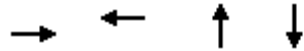
Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		36.4%	ICU Level of Service A
Analysis Period (min)		15	

**Intersection *Synchro* Analysis
Weekday Evening Peak**

2014 Existing Condition

Queues
3: Memorial Drive & JFK Street

HKS 2014 Existing Conditions
Evening Peak



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	789	1043	613	440
v/c Ratio	0.76	0.94	1.00	1.05
Control Delay	31.8	45.1	68.3	88.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.8	45.1	68.3	88.4
Queue Length 50th (ft)	224	328	384	~306
Queue Length 95th (ft)	301	#469	#619	#495
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	1033	1114	614	421
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.94	1.00	1.05

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Memorial Drive & JFK Street

HKS 2014 Existing Conditions
Evening Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	590	160	0	760	200	0	520	50	0	380	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1400	1400	1400
Lane Width	10	10	10	10	10	11	12	12	12	11	10	10
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frbp, ped/bikes		0.88			0.96			0.99			0.98	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.97			0.99			0.99	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2583			2784			1618			1108	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2583			2784			1618			1108	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	621	168	0	826	217	0	559	54	0	413	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	789	0	0	1043	0	0	613	0	0	440	0
Confl. Peds. (#/hr)			285			119			161			562
Confl. Bikes (#/hr)			29			47			46			39
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		40.0			40.0			38.0			38.0	
Effective Green, g (s)		40.0			40.0			38.0			38.0	
Actuated g/C Ratio		0.40			0.40			0.38			0.38	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1033			1114			615			421	
v/s Ratio Prot		0.31			c0.37			0.38			c0.40	
v/s Ratio Perm												
v/c Ratio		0.76			0.94			1.00			1.05	
Uniform Delay, d1		25.9			28.8			30.9			31.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.4			15.4			35.5			56.1	
Delay (s)		31.3			44.2			66.4			87.1	
Level of Service		C			D			E			F	
Approach Delay (s)		31.3			44.2			66.4			87.1	
Approach LOS		C			D			E			F	

Intersection Summary

HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
6: Eliot Street & JFK Street

HKS 2014 Existing Conditions
Evening Peak



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	129	423	755
v/c Ratio	0.29	0.43	0.62
Control Delay	26.8	5.8	23.3
Queue Delay	0.0	1.2	0.0
Total Delay	26.8	7.0	23.3
Queue Length 50th (ft)	56	72	172
Queue Length 95th (ft)	104	118	233
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	438	977	1226
Starvation Cap Reductn	0	340	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.29	0.66	0.62
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
6: Eliot Street & JFK Street

HKS 2014 Existing Conditions
Evening Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	125	410	145	580	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.99		
Satd. Flow (prot)	1486	1303		2944		
Flt Permitted	0.95	1.00		0.99		
Satd. Flow (perm)	1486	1303		2944		
Peak-hour factor, PHF	0.97	0.97	0.96	0.96	0.25	0.25
Adj. Flow (vph)	129	423	151	604	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	129	423	0	755	0	0
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	438	963		1227		
v/s Ratio Prot	0.09	c0.32		c0.26		
v/s Ratio Perm						
v/c Ratio	0.29	0.44		0.62		
Uniform Delay, d1	24.5	4.5		20.6		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	1.7	1.5		2.3		
Delay (s)	26.2	6.0		22.9		
Level of Service	C	A		C		
Approach Delay (s)	10.7			22.9	0.0	
Approach LOS	B			C	A	

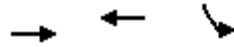
Intersection Summary

HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Queues
7: Bennett Street & Eliot Street

HKS 2014 Existing Conditions
Evening Peak



Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	150	176	555
v/c Ratio	0.25	0.27	0.56
Control Delay	14.6	14.8	17.8
Queue Delay	0.0	0.0	0.0
Total Delay	14.6	14.8	17.8
Queue Length 50th (ft)	37	43	79
Queue Length 95th (ft)	73	82	108
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	606	651	995
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.25	0.27	0.56
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
7: Bennett Street & Eliot Street

HKS 2014 Existing Conditions
Evening Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑↑	
Volume (vph)	0	135	155	0	395	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.94	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.98	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1653	1775		2714	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1653	1775		2714	
Peak-hour factor, PHF	0.90	0.90	0.88	0.88	0.82	0.82
Adj. Flow (vph)	0	150	176	0	482	73
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	150	176	0	555	0
Confl. Peds. (#/hr)						354
Heavy Vehicles (%)	0%	0%	7%	7%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		606	651		995	
v/s Ratio Prot		0.09	c0.10		c0.20	
v/s Ratio Perm						
v/c Ratio		0.25	0.27		0.56	
Uniform Delay, d1		13.2	13.4		15.1	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		1.0	1.0		2.3	
Delay (s)		14.2	14.4		17.4	
Level of Service		B	B		B	
Approach Delay (s)		14.2	14.4		17.4	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			16.2		HCM Level of Service	B
HCM Volume to Capacity ratio			0.36			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			35.7%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

HKS 2014 Existing Conditions
 Evening Peak



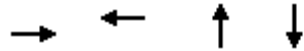
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	140	520	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.82	0.82	0.95	0.95
Hourly flow rate (vph)	10	10	6	171	547	5
Pedestrians	108			108	108	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	11			12	7	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	949	492	661			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	949	492	661			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	98	99			
cM capacity (veh/h)	214	412	820			

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	20	177	365	188
Volume Left	10	6	0	0
Volume Right	10	0	0	5
cSH	281	820	1700	1700
Volume to Capacity	0.07	0.01	0.21	0.11
Queue Length 95th (ft)	6	1	0	0
Control Delay (s)	18.8	0.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.8	0.4	0.0	
Approach LOS	C			

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		35.9%	ICU Level of Service A
Analysis Period (min)		15	

2014 Theoretical Existing Condition

Queues
3: Memorial Drive & JFK Street



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	789	1043	957	440
v/c Ratio	0.80	1.00	0.80	0.93
Control Delay	35.4	59.3	32.3	58.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.4	59.3	32.3	58.0
Queue Length 50th (ft)	233	344	276	263
Queue Length 95th (ft)	311	#493	362	#463
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	990	1047	1190	471
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	1.00	0.80	0.93

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Memorial Drive & JFK Street

HKS 2014 Theoretical Existing Conditions
Evening Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑			↑	
Volume (vph)	0	590	160	0	760	200	0	750	140	0	380	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1400	1400	1400
Lane Width	10	10	10	10	10	11	11	11	11	10	11	10
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			0.95			1.00	
Frbp, ped/bikes		0.91			0.97			0.98			0.98	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.97			0.98			0.99	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2676			2830			2904			1148	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2676			2830			2904			1148	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	621	168	0	826	217	0	806	151	0	413	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	789	0	0	1043	0	0	957	0	0	440	0
Confl. Peds. (#/hr)			285			119			161			562
Confl. Bikes (#/hr)			29			47			46			39
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		37.0			37.0			41.0			41.0	
Effective Green, g (s)		37.0			37.0			41.0			41.0	
Actuated g/C Ratio		0.37			0.37			0.41			0.41	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		990			1047			1191			471	
v/s Ratio Prot		0.29			c0.37			0.33			c0.38	
v/s Ratio Perm												
v/c Ratio		0.80			1.00			0.80			0.93	
Uniform Delay, d1		28.1			31.4			26.0			28.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.7			26.9			5.8			27.9	
Delay (s)		34.8			58.3			31.8			56.1	
Level of Service		C			E			C			E	
Approach Delay (s)		34.8			58.3			31.8			56.1	
Approach LOS		C			E			C			E	

Intersection Summary

HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
6: Eliot Street & JFK Street



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	129	423	995
v/c Ratio	0.29	0.43	0.81
Control Delay	26.8	5.8	29.7
Queue Delay	0.0	1.2	0.0
Total Delay	26.8	7.0	29.7
Queue Length 50th (ft)	56	72	255
Queue Length 95th (ft)	104	118	340
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	438	977	1226
Starvation Cap Reductn	0	340	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.29	0.66	0.81
Intersection Summary			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	125	410	190	765	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.99		
Satd. Flow (prot)	1486	1303		2944		
Flt Permitted	0.95	1.00		0.99		
Satd. Flow (perm)	1486	1303		2944		
Peak-hour factor, PHF	0.97	0.97	0.96	0.96	0.25	0.25
Adj. Flow (vph)	129	423	198	797	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	129	423	0	995	0	0
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	438	963		1227		
v/s Ratio Prot	0.09	c0.32		c0.34		
v/s Ratio Perm						
v/c Ratio	0.29	0.44		0.81		
Uniform Delay, d1	24.5	4.5		23.1		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	1.7	1.5		5.9		
Delay (s)	26.2	6.0		29.0		
Level of Service	C	A		C		
Approach Delay (s)	10.7			29.0	0.0	
Approach LOS	B			C	A	

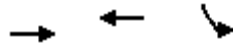
Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Queues

7: Bennett Street & Eliot Street



Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	150	227	555
v/c Ratio	0.25	0.35	0.56
Control Delay	14.6	15.7	17.8
Queue Delay	0.0	0.0	0.0
Total Delay	14.6	15.7	17.8
Queue Length 50th (ft)	37	58	79
Queue Length 95th (ft)	73	104	108
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	606	651	995
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.25	0.35	0.56

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Bennett Street & Eliot Street

HKS 2014 Theoretical Existing Conditions
Evening Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑↑	
Volume (vph)	0	135	200	0	395	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.94	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.98	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1653	1775		2714	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1653	1775		2714	
Peak-hour factor, PHF	0.90	0.90	0.88	0.88	0.82	0.82
Adj. Flow (vph)	0	150	227	0	482	73
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	150	227	0	555	0
Confl. Peds. (#/hr)						354
Heavy Vehicles (%)	0%	0%	7%	7%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		606	651		995	
v/s Ratio Prot		0.09	c0.13		c0.20	
v/s Ratio Perm						
v/c Ratio		0.25	0.35		0.56	
Uniform Delay, d1		13.2	13.8		15.1	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		1.0	1.5		2.3	
Delay (s)		14.2	15.3		17.4	
Level of Service		B	B		B	
Approach Delay (s)		14.2	15.3		17.4	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			16.4		HCM Level of Service	B
HCM Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			38.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

HKS 2014 Theoretical Existing Conditions
 Evening Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	5	185	520	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.82	0.82	0.95	0.95
Hourly flow rate (vph)	10	10	6	226	547	5
Pedestrians	108			108	108	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	11			12	7	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	1004	492	661			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1004	492	661			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	98	99			
cM capacity (veh/h)	197	412	820			

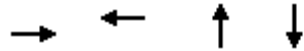
Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	20	232	365	188
Volume Left	10	6	0	0
Volume Right	10	0	0	5
cSH	267	820	1700	1700
Volume to Capacity	0.08	0.01	0.21	0.11
Queue Length 95th (ft)	6	1	0	0
Control Delay (s)	19.6	0.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	19.6	0.3	0.0	
Approach LOS	C			

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		35.9%	ICU Level of Service
Analysis Period (min)		15	A

2014 Build Condition

Queues
3: Memorial Drive & JFK Street

HKS 2014 Build Conditions
Evening Peak



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	789	1046	957	438
v/c Ratio	0.80	1.00	0.80	0.93
Control Delay	35.4	60.1	32.3	57.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.4	60.1	32.3	57.2
Queue Length 50th (ft)	233	345	276	261
Queue Length 95th (ft)	311	#495	362	#461
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	990	1047	1190	471
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	1.00	0.80	0.93

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
3: Memorial Drive & JFK Street

HKS 2014 Build Conditions
Evening Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑			↑	
Volume (vph)	0	590	160	0	763	200	0	750	140	0	378	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1400	1400	1400
Lane Width	10	10	10	10	10	11	11	11	11	10	11	10
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			0.95			1.00	
Frbp, ped/bikes		0.91			0.97			0.98			0.98	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.97			0.98			0.99	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2676			2830			2904			1148	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2676			2830			2904			1148	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	621	168	0	829	217	0	806	151	0	411	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	789	0	0	1046	0	0	957	0	0	438	0
Confl. Peds. (#/hr)			285			119			161			562
Confl. Bikes (#/hr)			29			47			46			39
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		37.0			37.0			41.0			41.0	
Effective Green, g (s)		37.0			37.0			41.0			41.0	
Actuated g/C Ratio		0.37			0.37			0.41			0.41	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		990			1047			1191			471	
v/s Ratio Prot		0.29			c0.37			0.33			c0.38	
v/s Ratio Perm												
v/c Ratio		0.80			1.00			0.80			0.93	
Uniform Delay, d1		28.1			31.5			26.0			28.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.7			27.6			5.8			27.2	
Delay (s)		34.8			59.1			31.8			55.4	
Level of Service		C			E			C			E	
Approach Delay (s)		34.8			59.1			31.8			55.4	
Approach LOS		C			E			C			E	

Intersection Summary		
HCM Average Control Delay	44.5	HCM Level of Service D
HCM Volume to Capacity ratio	0.96	
Actuated Cycle Length (s)	100.0	Sum of lost time (s) 22.0
Intersection Capacity Utilization	74.8%	ICU Level of Service D
Analysis Period (min)	15	

c Critical Lane Group

Queues
6: Eliot Street & JFK Street

HKS 2014 Build Conditions
Evening Peak



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	131	421	995
v/c Ratio	0.30	0.43	0.81
Control Delay	26.9	5.8	29.7
Queue Delay	0.0	1.2	0.0
Total Delay	26.9	7.0	29.7
Queue Length 50th (ft)	57	72	255
Queue Length 95th (ft)	106	117	340
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	438	977	1226
Starvation Cap Reductn	0	340	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.30	0.66	0.81
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
6: Eliot Street & JFK Street

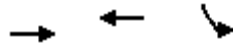
HKS 2014 Build Conditions
Evening Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	127	408	187	768	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.99		
Satd. Flow (prot)	1486	1303		2944		
Flt Permitted	0.95	1.00		0.99		
Satd. Flow (perm)	1486	1303		2944		
Peak-hour factor, PHF	0.97	0.97	0.96	0.96	0.25	0.25
Adj. Flow (vph)	131	421	195	800	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	131	421	0	995	0	0
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	438	963		1227		
v/s Ratio Prot	0.09	c0.32		c0.34		
v/s Ratio Perm						
v/c Ratio	0.30	0.44		0.81		
Uniform Delay, d1	24.6	4.5		23.1		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	1.7	1.4		5.9		
Delay (s)	26.3	6.0		29.0		
Level of Service	C	A		C		
Approach Delay (s)	10.8			29.0	0.0	
Approach LOS	B			C	A	

Intersection Summary			
HCM Average Control Delay		22.5	HCM Level of Service C
HCM Volume to Capacity ratio		0.64	
Actuated Cycle Length (s)		90.0	Sum of lost time (s) 22.5
Intersection Capacity Utilization		44.1%	ICU Level of Service A
Analysis Period (min)		15	

c Critical Lane Group



Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	151	224	552
v/c Ratio	0.25	0.34	0.56
Control Delay	14.7	15.7	17.7
Queue Delay	0.0	0.0	0.0
Total Delay	14.7	15.7	17.7
Queue Length 50th (ft)	37	57	79
Queue Length 95th (ft)	74	102	107
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	606	651	994
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.25	0.34	0.56

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Bennett Street & Eliot Street

HKS 2014 Build Conditions
Evening Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑↑	
Volume (vph)	0	136	197	0	393	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.93	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.98	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1653	1775		2713	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1653	1775		2713	
Peak-hour factor, PHF	0.90	0.90	0.88	0.88	0.82	0.82
Adj. Flow (vph)	0	151	224	0	479	73
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	151	224	0	552	0
Confl. Peds. (#/hr)						354
Heavy Vehicles (%)	0%	0%	7%	7%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		606	651		995	
v/s Ratio Prot		0.09	c0.13		c0.20	
v/s Ratio Perm						
v/c Ratio		0.25	0.34		0.55	
Uniform Delay, d1		13.2	13.8		15.1	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		1.0	1.4		2.2	
Delay (s)		14.2	15.2		17.3	
Level of Service		B	B		B	
Approach Delay (s)		14.2	15.2		17.3	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			16.3		HCM Level of Service	B
HCM Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			38.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

HKS 2014 Build Conditions
 Evening Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	2	2	185	523	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.82	0.82	0.95	0.95
Hourly flow rate (vph)	4	4	2	226	551	1
Pedestrians	108			108	108	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	11			12	7	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	998	492	660			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	998	492	660			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	200	412	820			

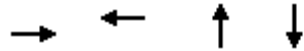
Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	8	228	367	185
Volume Left	4	2	0	0
Volume Right	4	0	0	1
cSH	269	820	1700	1700
Volume to Capacity	0.03	0.00	0.22	0.11
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	18.8	0.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.8	0.1	0.0	
Approach LOS	C			

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		35.8%	ICU Level of Service A
Analysis Period (min)		15	

2019 Future Condition

Queues
3: Memorial Drive & JFK Street

HKS 2019 Future Conditions
Evening Peak



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	817	1077	1035	516
v/c Ratio	0.83	1.03	0.87	1.09
Control Delay	37.3	67.8	36.4	99.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	37.3	67.8	36.4	99.4
Queue Length 50th (ft)	245	~388	311	~374
Queue Length 95th (ft)	#330	#518	#436	#574
Internal Link Dist (ft)	1175	1323	512	602
Turn Bay Length (ft)				
Base Capacity (vph)	986	1046	1192	472
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	1.03	0.87	1.09

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Memorial Drive & JFK Street

HKS 2019 Future Conditions
Evening Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑			↑	
Volume (vph)	0	605	171	0	782	209	0	815	148	0	448	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1400	1400	1400
Lane Width	10	10	10	10	10	11	11	11	11	10	11	10
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			0.95			1.00	
Frbp, ped/bikes		0.91			0.97			0.98			0.98	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.97			0.98			0.99	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		2664			2828			2907			1151	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		2664			2828			2907			1151	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	637	180	0	850	227	0	876	159	0	487	29
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	817	0	0	1077	0	0	1035	0	0	516	0
Confl. Peds. (#/hr)			285			119			161			562
Confl. Bikes (#/hr)			29			47			46			39
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Turn Type												
Protected Phases		3			3			1			1	
Permitted Phases												
Actuated Green, G (s)		37.0			37.0			41.0			41.0	
Effective Green, g (s)		37.0			37.0			41.0			41.0	
Actuated g/C Ratio		0.37			0.37			0.41			0.41	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		986			1046			1192			472	
v/s Ratio Prot		0.31			c0.38			0.36			c0.45	
v/s Ratio Perm												
v/c Ratio		0.83			1.03			0.87			1.09	
Uniform Delay, d1		28.6			31.5			27.0			29.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		8.0			35.7			8.7			69.1	
Delay (s)		36.6			67.2			35.7			98.6	
Level of Service		D			E			D			F	
Approach Delay (s)		36.6			67.2			35.7			98.6	
Approach LOS		D			E			D			F	

Intersection Summary

HCM Average Control Delay	55.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
6: Eliot Street & JFK Street

HKS 2019 Future Conditions
Evening Peak



Lane Group	EBL	EBR	NBT
Lane Group Flow (vph)	141	494	1072
v/c Ratio	0.32	0.51	0.87
Control Delay	27.3	6.7	33.8
Queue Delay	0.0	1.7	0.0
Total Delay	27.3	8.4	33.8
Queue Length 50th (ft)	62	91	286
Queue Length 95th (ft)	114	150	#414
Internal Link Dist (ft)	121		602
Turn Bay Length (ft)			
Base Capacity (vph)	438	977	1226
Starvation Cap Reductn	0	308	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.32	0.74	0.87

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
6: Eliot Street & JFK Street

HKS 2019 Future Conditions
Evening Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	137	479	214	815	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	11	11
Total Lost time (s)	3.5	2.5		2.5		
Lane Util. Factor	1.00	1.00		0.95		
Frt	1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.99		
Satd. Flow (prot)	1486	1303		2942		
Flt Permitted	0.95	1.00		0.99		
Satd. Flow (perm)	1486	1303		2942		
Peak-hour factor, PHF	0.97	0.97	0.96	0.96	0.25	0.25
Adj. Flow (vph)	141	494	223	849	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	141	494	0	1072	0	0
Bus Blockages (#/hr)	0	5	0	0	0	0
Turn Type		pt+ov	Split			
Protected Phases	3	2 3	2	2		
Permitted Phases						
Actuated Green, G (s)	26.5	66.5		37.5		
Effective Green, g (s)	26.5	66.5		37.5		
Actuated g/C Ratio	0.29	0.74		0.42		
Clearance Time (s)	3.5			2.5		
Lane Grp Cap (vph)	438	963		1226		
v/s Ratio Prot	0.09	c0.38		c0.36		
v/s Ratio Perm						
v/c Ratio	0.32	0.51		0.87		
Uniform Delay, d1	24.7	4.9		24.1		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	1.9	2.0		8.8		
Delay (s)	26.7	6.9		32.9		
Level of Service	C	A		C		
Approach Delay (s)	11.3			32.9	0.0	
Approach LOS	B			C	A	

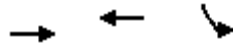
Intersection Summary

HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Queues

7: Bennett Street & Eliot Street



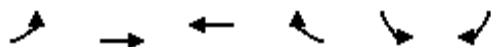
Lane Group	EBT	WBT	SBL
Lane Group Flow (vph)	200	255	609
v/c Ratio	0.33	0.39	0.62
Control Delay	15.6	16.3	18.8
Queue Delay	0.0	0.0	0.0
Total Delay	15.6	16.3	18.8
Queue Length 50th (ft)	51	66	90
Queue Length 95th (ft)	96	116	120
Internal Link Dist (ft)	352	94	522
Turn Bay Length (ft)			
Base Capacity (vph)	606	651	990
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.33	0.39	0.62

Intersection Summary

HCM Signalized Intersection Capacity Analysis

7: Bennett Street & Eliot Street

HKS 2019 Future Conditions
Evening Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑↑	
Volume (vph)	0	180	224	0	430	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	16	16	12	12
Total Lost time (s)		5.0	5.0		5.0	
Lane Util. Factor		1.00	1.00		0.97	
Frbp, ped/bikes		1.00	1.00		0.93	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.98	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1653	1775		2701	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1653	1775		2701	
Peak-hour factor, PHF	0.90	0.90	0.88	0.88	0.82	0.82
Adj. Flow (vph)	0	200	255	0	524	85
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	200	255	0	609	0
Confl. Peds. (#/hr)						354
Heavy Vehicles (%)	0%	0%	7%	7%	2%	2%
Bus Blockages (#/hr)	0	0	5	0	0	10
Parking (#/hr)					0	
Turn Type						
Protected Phases		2	2		4	
Permitted Phases						
Actuated Green, G (s)		22.0	22.0		22.0	
Effective Green, g (s)		22.0	22.0		22.0	
Actuated g/C Ratio		0.37	0.37		0.37	
Clearance Time (s)		5.0	5.0		5.0	
Lane Grp Cap (vph)		606	651		990	
v/s Ratio Prot		0.12	c0.14		c0.23	
v/s Ratio Perm						
v/c Ratio		0.33	0.39		0.62	
Uniform Delay, d1		13.7	14.1		15.5	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		1.5	1.8		2.9	
Delay (s)		15.1	15.8		18.4	
Level of Service		B	B		B	
Approach Delay (s)		15.1	15.8		18.4	
Approach LOS		B	B		B	
Intersection Summary						
HCM Average Control Delay			17.2		HCM Level of Service	B
HCM Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			39.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 10: Site Driveway & Eliot Street

HKS 2019 Future Conditions
 Evening Peak



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	2	2	212	604	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.82	0.82	0.95	0.95
Hourly flow rate (vph)	4	4	2	259	636	1
Pedestrians	108			108	108	
Lane Width (ft)	15.0			16.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	11			12	7	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				201	174	
pX, platoon unblocked						
vC, conflicting volume	1116	534	745			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1116	534	745			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	168	387	762			

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	8	261	424	213
Volume Left	4	2	0	0
Volume Right	4	0	0	1
cSH	234	762	1700	1700
Volume to Capacity	0.03	0.00	0.25	0.13
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	20.9	0.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.9	0.1	0.0	
Approach LOS	C			

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization	38.3%		ICU Level of Service A
Analysis Period (min)	15		