PUBLIC NOTICE

The Boston Redevelopment Authority ("BRA"), pursuant to Article 80 of the Boston Zoning Code, hereby gives notice that a Draft Project Impact Report for Large Project Review ("DPIR") was filed by Boston Development Group (the "Proponent"), on March 13, 2013 for the 375-399 Chestnut Hill Avenue project (the "Proposed Project"), to be constructed on the site of the existing Circle Cinema and Applebee's buildings adjacent to Cleveland Circle in Boston and Brookline.

The Proposed Project is a mixed-used development with an approximately 196 room hotel, approximately 74 residential units, approximately 18,000 sf of medical office space, and approximately 14,200 sf of ground floor retail/restaurant space. The site also includes approximately 203 parking spaces, some underground and some at grade. The existing buildings on the Project site will be demolished.

The Proponent is seeking the issuance of an Adequacy Determination and a Certificate of Compliance by the Director of the BRA pursuant to Section 80B-5. The BRA, in the Preliminary Adequacy Determination regarding the DPIR, may waive further review requirements pursuant to Section 80B-5.4(c)(iv) of the Code, if after reviewing public comments, the BRA finds that such DPIR adequately described the Project's impacts.

The DPIR may be reviewed in the office of the Secretary of the BRA, Room 910, Boston City Hall, 9th Floor, Boston MA 02201 between 9:00 AM and 5:00 PM, Monday through Friday, except legal holidays. Public comments on the DPIR, including the comments of public agencies, should be submitted in writing to Erico Lopez, BRA, at the address stated above within 45 days of this notice.

BOSTON REDEVELOPMENT AUTHORITY
Brian P. Golden, Executive Director/Secretary

Draft Project Impact Report

375-399 Chestnut Hill Avenue



Submitted to:

Boston Redevelopment Authority
One City Hall Square
Boston, Massachusetts 02201

Prepared by:

Epsilon Associates, Inc.
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Submitted by:

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93 Union Street, Suite 315
Newton Centre, Massachusetts 02459

In Association with:

ADD, Inc.
Goulston & Storrs
Howard/Stein-Hudson Associates, Inc.
Geotechnical Services

March 13, 2013

Epsilon
ASSOCIATES INC.

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March 13, 2013

Table of Contents

Table of Contents

1.0 INTRODUCTION / PROJECT DESCRIPTION 1-1
- 1.1 Introduction 1-1
- 1.2 Project Identification 1-1
- 1.3 Project Description 1-3
  - 1.3.1 Project Site 1-3
  - 1.3.2 Proposed Development 1-3
    - 1.3.2.1 Project Description 1-3
    - 1.3.2.2 Parking and Access 1-20
    - 1.3.2.3 Project Changes 1-21
  - 1.3.3 Alternatives 1-35
    - 1.3.3.1 Separate Office and Hotel Alternative 1-35
    - 1.3.3.2 Hotel on Cleveland Circle Alternative 1-36
- 1.4 Public Benefits 1-37
- 1.5 City of Boston Zoning 1-39
- 1.6 Legal Information 1-40
  - 1.6.1 Legal Judgments Adverse to the Proposed Project 1-40
  - 1.6.2 History of Tax Arrears on Property 1-40
  - 1.6.3 Site Control / Public Easements 1-40
- 1.7 Anticipated Permits 1-40
- 1.8 Schedule 1-41
- 1.9 Public Participation 1-41

2.0 TRANSPORTATION 2-1
- 2.1 Introduction 2-1
  - 2.1.1 Project Description 2-1
  - 2.1.2 Methodology 2-2
  - 2.1.3 Study Area 2-2
- 2.2 Existing Transportation Conditions 2-3
  - 2.2.1 Existing Roadway Conditions 2-3
  - 2.2.2 Existing Intersection Conditions 2-4
  - 2.2.3 Existing Traffic Volumes 2-7
    - 2.2.3.1 Recent Study Area Counts 2-7
    - 2.2.3.2 Historical Data with Cinema Operational 2-8
  - 2.2.4 Crash Data 2-9
  - 2.2.5 Existing Traffic Operations 2-9
    - 2.2.5.1 Methodology and Level of Service 2-9
    - 2.2.5.2 Trolley Operation at Beacon Street/ Chestnut Hill Avenue (Cleveland Circle) 2-10

Table of Contents (continued)

			2.2.5.3 Chestnut Hill Avenue Curb Cuts at Project Site	2-11
			2.2.5.4 Existing Conditions Level of Service	2-11
		2.2.6	Existing Parking	2-16
		2.2.7	Existing Site Access and Circulation	2-16
		2.2.8	Existing Public Transportation	2-17
		2.2.9	Car Sharing Locations	2-18
		2.2.10	Existing Pedestrian and Bicycle Conditions	2-18
	2.3		Evaluation of Long-term Impacts	2-19
		2.3.1	No-Build Conditions	2-19
			2.3.1.1 Background Traffic Growth	2-19
			2.3.1.2 No-Build Conditions Traffic Operations	2-20
		2.3.2	Build Conditions	2-25
			2.3.2.1 Trip Generation	2-25
			2.3.2.2 Pass-by Trips	2-26
			2.3.2.3 Mode Split	2-26
			2.3.2.4 Existing Site Trip Generation	2-27
			2.3.2.5 Project Trip Generation	2-27
			2.3.2.6 Trip Distribution	2-29
			2.3.2.7 Build Conditions Traffic Operations	2-29
			2.3.2.8 Proposed Parking	2-34
			2.3.2.9 Future Public Transportation	2-37
			2.3.2.10 Pedestrian and Bicycles	2-38
			2.3.2.11 Future Loading and Service Activity	2-38
			2.3.2.12 Vehicle Access/Egress Driveways	2-39
			2.3.2.13 On-Site Circulation	2-40
	2.4		Transportation Mitigation Measures	2-41
		2.4.1	Intersection Improvements	2-41
		2.4.2	Pedestrian Improvements	2-48
		2.4.3	Bicycle Accommodations	2-49
		2.4.4	Travel Demand Management Measures	2-49
	2.5		Evaluation of Short-term Construction Impacts	2-50
3.0			**ENVIRONMENTAL REVIEW COMPONENT**	**3-1**
	3.1		Wind	3-1
		3.1.1	Introduction	3-1
		3.1.2	Local Weather Data	3-1
		3.1.3	Wind Comfort Criteria	3-3
		3.1.4	Summary of Results	3-3
	3.2		Shadow	3-4
	3.3		Daylight	3-4

Table of Contents (continued)

	3.3.1	Introduction	3-4
	3.3.2	Methodology	3-5
	3.3.3	Results	3-5
	Area Context View		3-8
	3.3.4	Conclusion	3-8
3.4	Solid and Hazardous Waste		3-8
	3.4.1	Hazardous Waste	3-8
	3.4.2	Solid Waste	3-9
3.5	Sustainable Design		3-9
4.0	**URBAN DESIGN**		**4-1**
4.1	Project Context		4-1
4.2	Project Design		4-1
	4.2.1	Height and Massing	4-3
		4.2.1.1 Height	4-3
		4.2.2.1 Massing	4-3
4.3	Landscape Design		4-7
	4.3.1	Interface With Cassidy Playground	4-7
	4.3.2	Streetscape	4-10
	4.3.3	Courtyard	4-10
	4.3.4	Western Portion of Site	4-12
	4.3.5	Façade Facing the MBTA Right-of-way	4-12
5.0	**HISTORIC AND ARCHAEOLOGICAL RESOURCES**		**5-1**
5.1	Buildings on the Project Site		5-1
5.2	Historic Resources in the Project Vicinity		5-1
5.3	Impacts to Historic Resources		5-3
5.4	Archaeological Resources		5-3
6.0	**INFRASTRUCTURE**		**6-1**
6.1	Wastewater		6-1
	6.1.1	Existing Sewer System	6-1
	6.1.2	Project-Generated Sanitary Sewer Flow	6-2
	6.1.3	Sanitary Sewer Connection	6-2
6.2	Water System		6-3
	6.2.1	Existing Water Service	6-3
	6.2.2	Anticipated Water Consumption	6-3
	6.2.3	Proposed Water Service	6-3
	6.2.4	Water Supply Conservation and Mitigation Measures	6-4
6.3	Storm Drainage System		6-4
	6.3.1	Existing Storm Drainage System	6-4

Table of Contents (continued)

	6.3.2 Proposed Storm Drainage System	6-5
6.4	Electrical Service	6-5
6.5	Telecommunications Systems	6-6
6.6	Gas Systems	6-6
6.7	Utility Protection During Construction	6-6

7.0 RESPONSE TO COMMENTS

List of Figures

Figure 1-1	Aerial View of Existing Site	1-4
Figure 1-2	Site Area	1-5
Figure 1-3	Site Plan	1-6
Figure 1-4	Comparison of Existing and Proposed Ground Floor and Roof Plans	1-7
Figure 1-5	Existing Site	1-9
Figure 1-6	Proposed Massing	1-10
Figure 1-7	Garage Floor Plan	1-11
Figure 1-8	Ground Floor Plan	1-12
Figure 1-9	Second Floor Plan	1-13
Figure 1-10	Third Floor Plan	1-14
Figure 1-11	Fourth Floor Plan	1-15
Figure 1-12	Fifth Floor Plan	1-16
Figure 1-13	Cross and Longitudinal Sections	1-17
Figure 1-14	Cassidy Playground and MBTA Right-of-way Elevations	1-18
Figure 1-15	East Elevation	1-19
Figure 1-16	Previously and Currently Proposed Courtyard	1-22
Figure 1-17	Enlarged Landscape Plan	1-23
Figure 1-18	Comparison – Hotel View	1-25
Figure 1-19	North Elevation Comparison	1-26
Figure 1-20	View From Cassidy Playground	1-27
Figure 1-21	Architectural Expression – Cleveland Circle	1-28
Figure 1-22	Architectural Context	1-30

List of Figures (continued)

Figure 1-23	View from Chestnut Hill Reservoir	1-31
Figure 1-24	View From Cleveland Circle	1-32
Figure 1-25	View From Chestnut Hill Avenue Looking Northwest	1-33
Figure 1-26	Interface With Cassidy Playground	1-34
Figure 2-1	Locus Map	2-51
Figure 2-2	Study Area Intersections	2-52
Figure 2-3	Existing Conditions (2012) Turning Movement Counts, a.m. Peak Hour	2-53
Figure 2-4	Existing Conditions (2012) Turning Movement Counts, p.m. Peak Hour	2-54
Figure 2-5	On-Street Parking in the Study Area	2-55
Figure 2-6	Public Transportation in the Study Area	2-56
Figure 2-7	Car Sharing Locations	2-57
Figure 2-8	Existing Conditions (2012) Pedestrian Volumes, a.m. Peak Hours	2-58
Figure 2-9	Existing Conditions (2012) Pedestrian Volumes, p.m. Peak Hours	2-59
Figure 2-10	No-Build Conditions (2017) Intersection Volumes, a.m. Peak Hour	2-60
Figure 2-11	No-Build Conditions (2017) Intersection Volumes, p.m. Peak Hour	2-61
Figure 2-12	Ground Floor Plan	2-62
Figure 2-13	Vehicle Trip Entering/Exiting Distribution	2-63
Figure 2-14	Project-generated Vehicle Trips	2-64
Figure 2-15	Project-generated Vehicle Trips, p.m. Peak Hour	2-65
Figure 2-16	Build Conditions (2017) Intersection Volumes, a.m. Peak Hour	2-66
Figure 2-17	Build Conditions (2017) Intersection Volumes, p.m. Peak Hour	2-67
Figure 2-18	Project Parking Demand by Time of Day	2-68
Figure 2-19	Curbside Vehicle Activity by Time of Day (Average per Hour)	2-69
Figure 3-1	Wind Roses	3-2
Figure 3-2	Viewpoint Locations	3-6
Figure 3-3	BRADA Results	3-7
Figure 4-1	Cassidy Playground and MBTA Right-of-way Elevations	4-2
Figure 4-2	East Elevation	4-4
Figure 4-3	View From Chestnut Hill Avenue Looking Northwest	4-5
Figure 4-4	View From Cassidy Playground	4-6

List of Figures (continued)

Figure 4-5	Landscape Plan	4-8
Figure 4-6	Detailed Elevation From Cassidy Playground	4-9
Figure 4-7	Enlarged Landscape Plan	4-11
Figure 4-8	View of Courtyard From Residential Unit	4-13
Figure 4-9	Cross Section	4-15
Figure 5-1	Historical Resources Map	5-2

List of Tables

Table 1-1	Proposed Program	1-3
Table 1-2	List of Anticipated Permits and Approvals	1-40
Table 2-1	Project Program	2-1
Table 2-2	Level of Service Criteria (HCM Excerpt)	2-10
Table 2-3	Existing Conditions (2012) Level of Service Summary, a.m. Peak Hour	2-12
Table 2-4	Existing Conditions (2012) Level of Service Summary, p.m. Peak Hour	2-14
Table 2-5	Public Transportation in the Study Area	2-17
Table 2-6	Car Sharing Locations	2-18
Table 2-7	Bicycle Rack Locations	2-19
Table 2-8	No-Build (2017) Level of Service Summary, a.m. Peak Hour	2-21
Table 2-9	No-Build (2017) Level of Service Summary, p.m. Peak Hour	2-23
Table 2-10	Travel Mode Shares	2-27
Table 2-11	Project Trips by Land Use and Travel Mode	2-28
Table 2-12	Vehicle Trip Distribution	2-29
Table 2-13	Build Conditions (2017) Level of Service Summary, a.m. Peak Hour	2-30
Table 2-14	Build Conditions (2017) Level of Service Summary, p.m. Peak Hour	2-32
Table 2-15	Project Parking Ratios and Parking Supply	2-36
Table 2-16	Delivery Activity by Land Use	2-39
Table 2-17	Build Conditions (2017) with Mitigation, Level of Service Summary, a.m. Peak Hour	2-43

List of Tables (continued)

Table 2-18	Build Conditions (2017) with Mitigation, Level of Service Summary, p.m. Peak Hour	2-45
Table 2-19	On-Site Bicycle Accommodations	2-49
Table 3-1	Daylight Obstruction Values	3-5
Table 5-1	State and National Register-Listed Properties and Historic Districts	5-1
Table 6-1	Projected Sanitary Sewer Flows	6-2

List of Appendices

Appendix A	Site Survey
Appendix B	Transportation
Appendix C	Pedestrian Wind Assessment
Appendix D	LEED Checklist

Section 1.0

Introduction/Project Description

1.0 INTRODUCTION / PROJECT DESCRIPTION

1.1 Introduction

Boston Development Group (the Proponent) proposes to redevelop an approximately 2.56-acre site at 375-399 Chestnut Hill Avenue adjacent to Cleveland Circle (the Project). The site of the Project comprises land in both Boston and Brookline that currently includes the former Circle Cinema (closed since 2008) and an Applebee's restaurant (collectively the Project Site). The existing buildings will be demolished and replaced with a mixed-use development that includes approximately 234,550 square feet (sf) of hotel, medical office, residential and retail space in Brookline and Boston, on the consolidated site.

The Proponent seeks to replace the existing buildings, which are set back from the street, with a new mixed-use building with hotel, residential and office space, as well as ground floor retail/restaurant space along Chestnut Hill Avenue. The new complex will increase desirable pedestrian activity and improve the urban aesthetics of the Project Site. A goal of the Project design is to integrate the Project Site into the urban context of Cleveland Circle. The Project includes a new plaza and a façade that faces Cleveland Circle at the intersection of the Project Site, Chestnut Hill Avenue and Cassidy Playground (or the park). The two restaurants, the pool terrace and some residential units will be located in the side of the building facing the park, offering views across the open space toward the Chestnut Hill Reservoir. The placement of different uses will encourage a variety of positive activities throughout the day. For example, both hotel and residential uses border Cassidy Playground and will both enliven the park with new visitors and also make the park safer by increasing the activity at its edges. In addition, the retail and office spaces will be more active during the day, while the hotel and residential spaces will be more active in the evenings. The Project takes advantage of the urban nature of Cleveland Circle and its close proximity to two Massachusetts Bay Transportation Authority (MBTA) Green Line stations.

An Expanded Project Notification Form (PNF) for the Project was submitted to the BRA on August 16, 2012. This Draft Project Impact Report (DPIR) is being submitted to the Boston Redevelopment Authority (BRA) in response to the Scoping Determination issued on January 22, 2013.

1.2 Project Identification

Address/Location:	375-399 Chestnut Hill Avenue, adjacent to Cleveland Circle in Boston/Brookline.

Developer:	Boston Development Group 93 Union Street, Suite 315 Newton Centre, MA 02459 (617) 332-6400 John Meunier
Architect:	ADD, Inc. 311 Summer Street Boston, MA 02110 (617) 234-3139 Larry Grossman
Legal Counsel:	Goulston & Storrs 400 Atlantic Avenue Boston, MA 02110 (617) 482-1776 Peter Kochansky
Permitting Consultant:	Epsilon Associates, Inc. 3 Clock Tower Place, Suite 250 Maynard, MA 01754 (978) 897-7100 Geoff Starsiak
Transportation and Parking Consultant/Civil Engineer:	Howard/Stein-Hudson Associates, Inc. 38 Chauncy Street Boston, MA 02111 (617) 482-7080 Robbie Burgess Elizabeth Peart Richard Latini
Geotechnical Consultant:	Geotechnical Services 201 Boston Post Road West Marlborough, MA 01752 (508) 229-0900 Paul Sousa

1.3 Project Description

1.3.1 Project Site

The Project Site is an approximately 2.56 acre parcel of land on the south side of Chestnut Hill Avenue adjacent to Cleveland Circle (see Figure 1-1). The Circle Cinema parcel has two addresses: 375 Chestnut Hill Avenue in Boston and 399 Chestnut Hill Avenue in Brookline. The address of the Applebee's parcel is 381 Chestnut Hill Avenue in Boston. The Project site is divided by the Boston/Brookline line such that generally the surface parking lot currently in front of the Circle Cinema building is in Brookline. Of the approximately 2.56 acre total site area, approximately 2.14 acres are within Boston (see Figure 1-2 and the survey in Appendix A).

The Project Site is occupied by the former Circle Cinema, an Applebee's restaurant, and surface parking. Cassidy Playground is approximately north of the Project Site; the MBTA's Green Line Reservoir Station is opposite the Project Site on the east side of Chestnut Hill Avenue; an MBTA right-of-way and the rear of residences along Clinton Road are approximately south of the Project Site; and the Waterworks Condominiums are approximately to the west, or rear, of the Project Site.

1.3.2 Proposed Development

1.3.2.1 Project Description

The proposed Project includes the construction of approximately 234,550 sf of new hotel, residential, office and retail space, as shown in Table 1-1. The Project Site also includes approximately 203 parking spaces, a portion of which will be surface parking and a portion that will be located in a below-grade garage. The existing buildings on the Project Site will be demolished. A site plan is shown in Figure 1-3. A comparison of the existing and proposed ground floor and roof plans is shown in Figure 1-4. Since the Expanded PNF, the number of residential units and the size of the medical office space have decreased, while the number of hotel rooms has increased.

Table 1-1 Proposed Program

Use	Approximate Dimensions	
	Boston	Brookline
Hotel	156 rooms/ 95,700 sf	40 rooms/ 17,250 sf
Residential	74 units/ 89,400 sf	N/A
Medical Office	N/A	18,000 sf
Retail/Restaurant	6,900 sf	7,300 sf
Approximate Parking Spaces	178 spaces	25 spaces

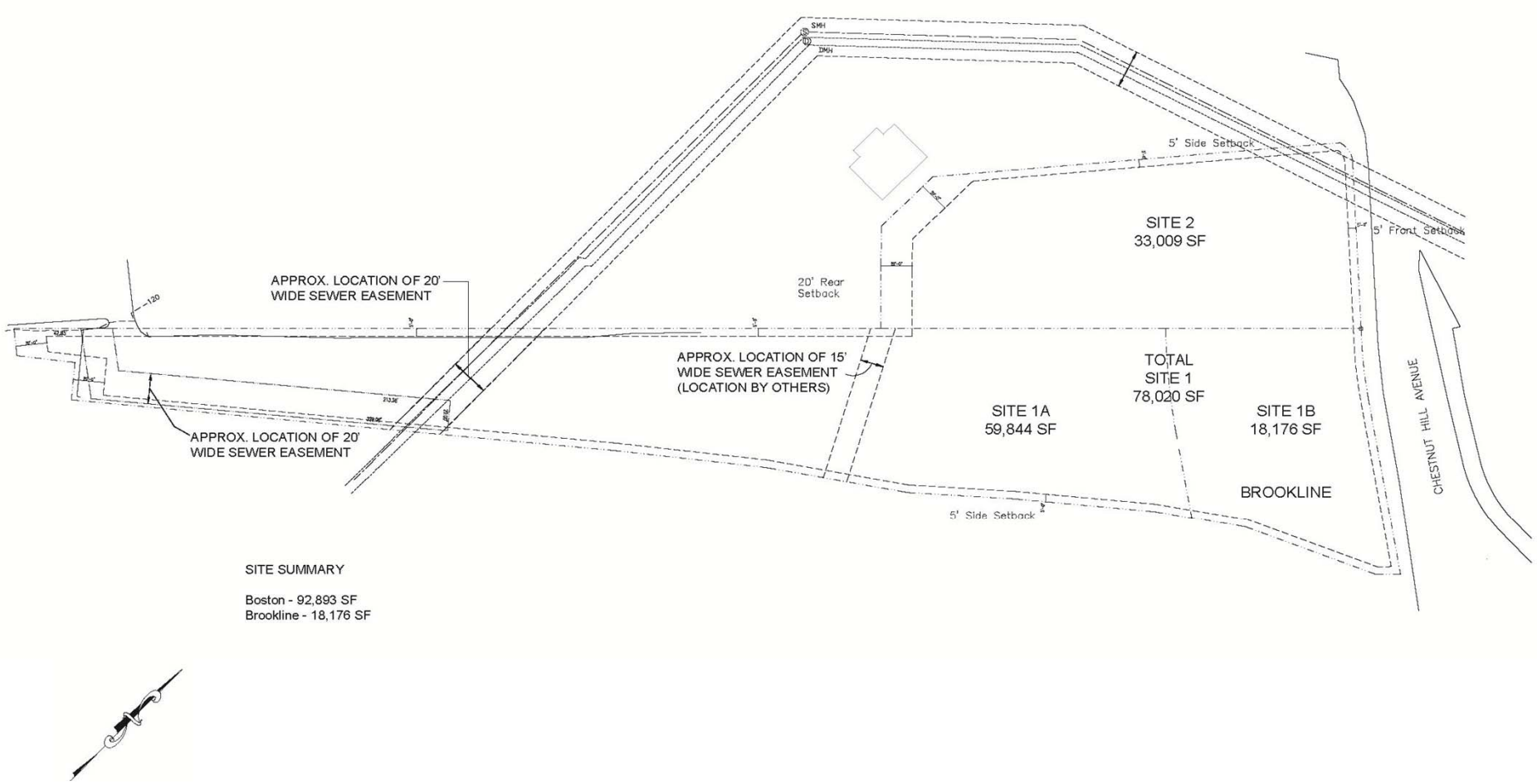


375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-1

Aerial Locus Map



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-2

Site Area



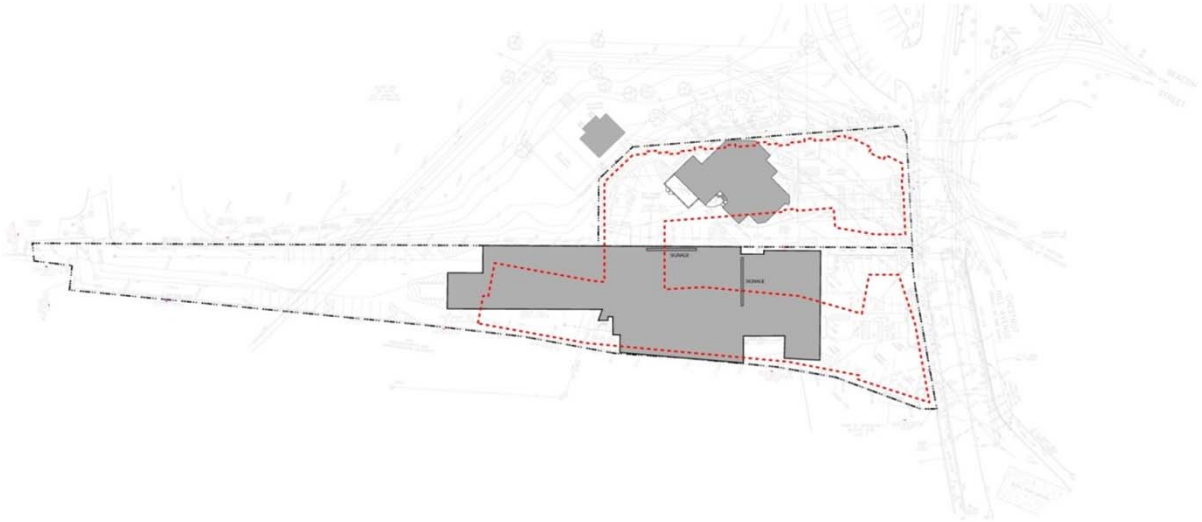
375-399 Chestnut Hill Avenue Boston/Brookline, MA

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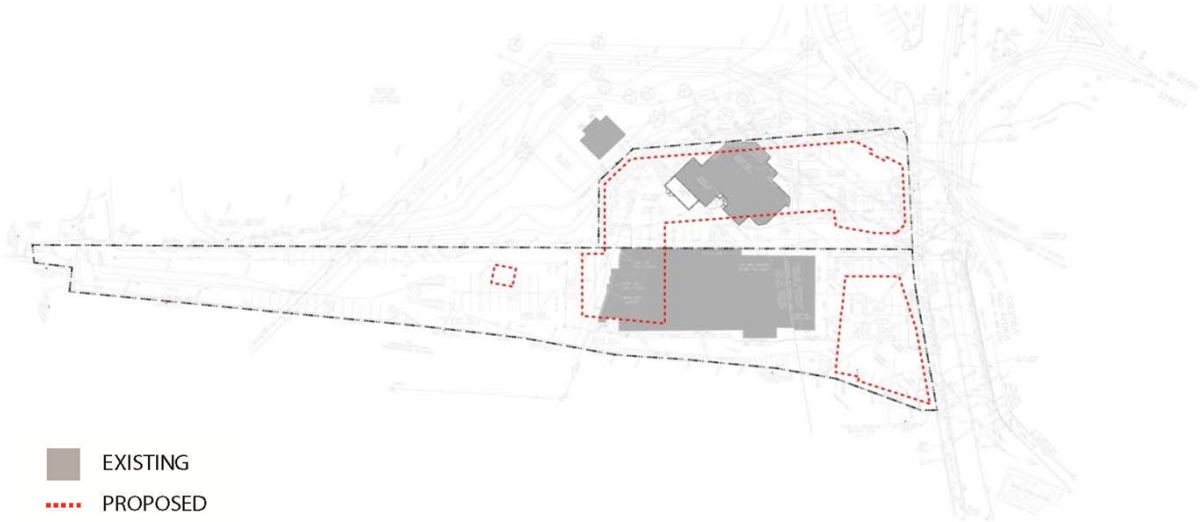
Figure 1-3

Site Plan

UPPER



LOWER





EXISTING

PROPOSED

375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-4

Comparison of Existing and Proposed Ground Floor and Roof Plans

The new building will be organized into a roughly Y-shaped footprint that includes an approximately 196 room hotel, approximately 74 residential units, approximately 18,000 sf of office space, and approximately 14,200 sf of ground floor retail/restaurant space. The existing site and proposed massing are shown in Figures 1-5 and 1-6. The hotel and the residential portion of the Project closest to Cleveland Circle are mostly five stories, while the office portion is three stories over a single story of retail/restaurant space. The residential portion steps down to four stories towards the western side of the site. The ground floor includes active uses such as the retail space, the residential entry and lobby, the hotel entry and lobby, hotel support spaces, and a fitness and pool area that will be shared by the hotel and residential components. An underground parking garage supports approximately 126 cars in addition to mechanical and storage spaces. The balance of the parking is provided at grade. Table 1-1 shows the Project program. Figures 1-7 to 1-12 show floor plans. Sections and Elevations are shown in Figures 1-13 to 1-15.

Throughout the design process, careful attention has been paid by the Proponent to increase the pedestrian friendliness of the surrounding area. Design efforts include significant upgrades to the local streetscape, such as new sidewalks, street lighting, landscaping, signage, fencing and new paving. In addition, the Project places the public elements of the program on Chestnut Hill Avenue and the edge of Cassidy Playground, including ground floor retail and entrances to the hotel, office and residential components. The new streetscape on Chestnut Hill Avenue will complement the urban context of Cleveland Circle and take full advantage of the transit-oriented location by placing the buildings on the street edge, unlike the current site which features parking areas between the streets and existing buildings.

The Project is designed to respect and also make some improvements to Cassidy Playground. The hotel portion of the Project will be located adjacent to the MBTA Green Line tracks, while for the residential portion of the Project will face Cassidy Playground, in effect putting more "eyes on the park" for increased safety, and also providing desirable views for the residents. The Project is proposed to include ground floor restaurant space along the corner of Cassidy Playground. This highly visible and public use will further enliven the pedestrian experience within Cleveland Circle.

The idea for the courtyard is to bring hotel and residential traffic quickly off Chestnut Hill Avenue and deep inside the Project's boundaries. The courtyard is set behind the active street edge and away from the pedestrian edge along the street. A focus of the design of the courtyard is to include as much landscaping as possible, while efficiently managing vehicular movement. The design of the courtyard seeks to manage all users efficiently and safely.



Figure 1-5

Existing Site



Figure 1-6

Proposed Massing

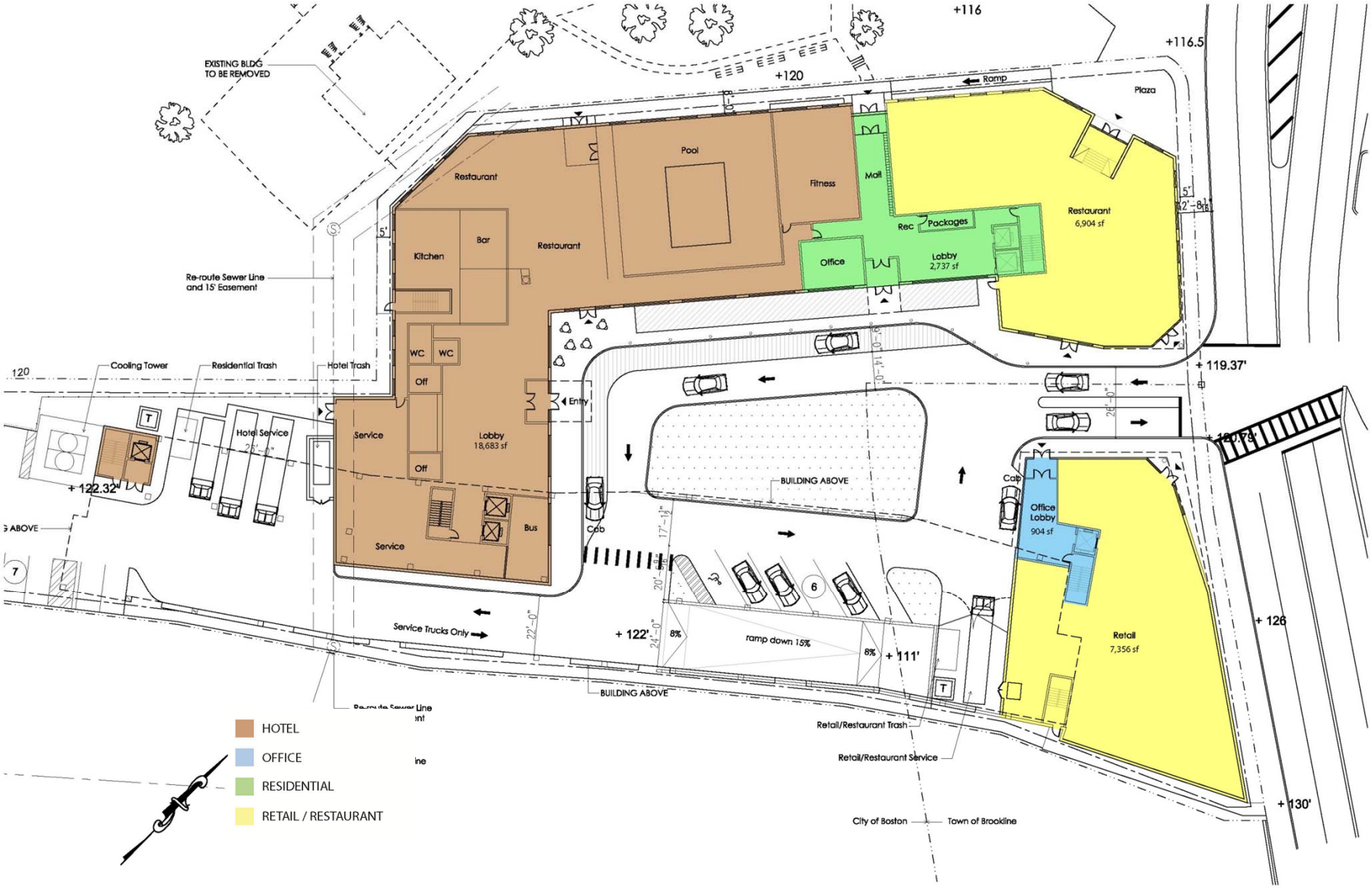


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Figure 1-7

Garage Floor Plan



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Figure 1-8

Ground Floor Plan



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Figure 1-9

Second Floor Plan



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Figure 1-10

Third Floor Plan



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-11

Fourth Floor Plan

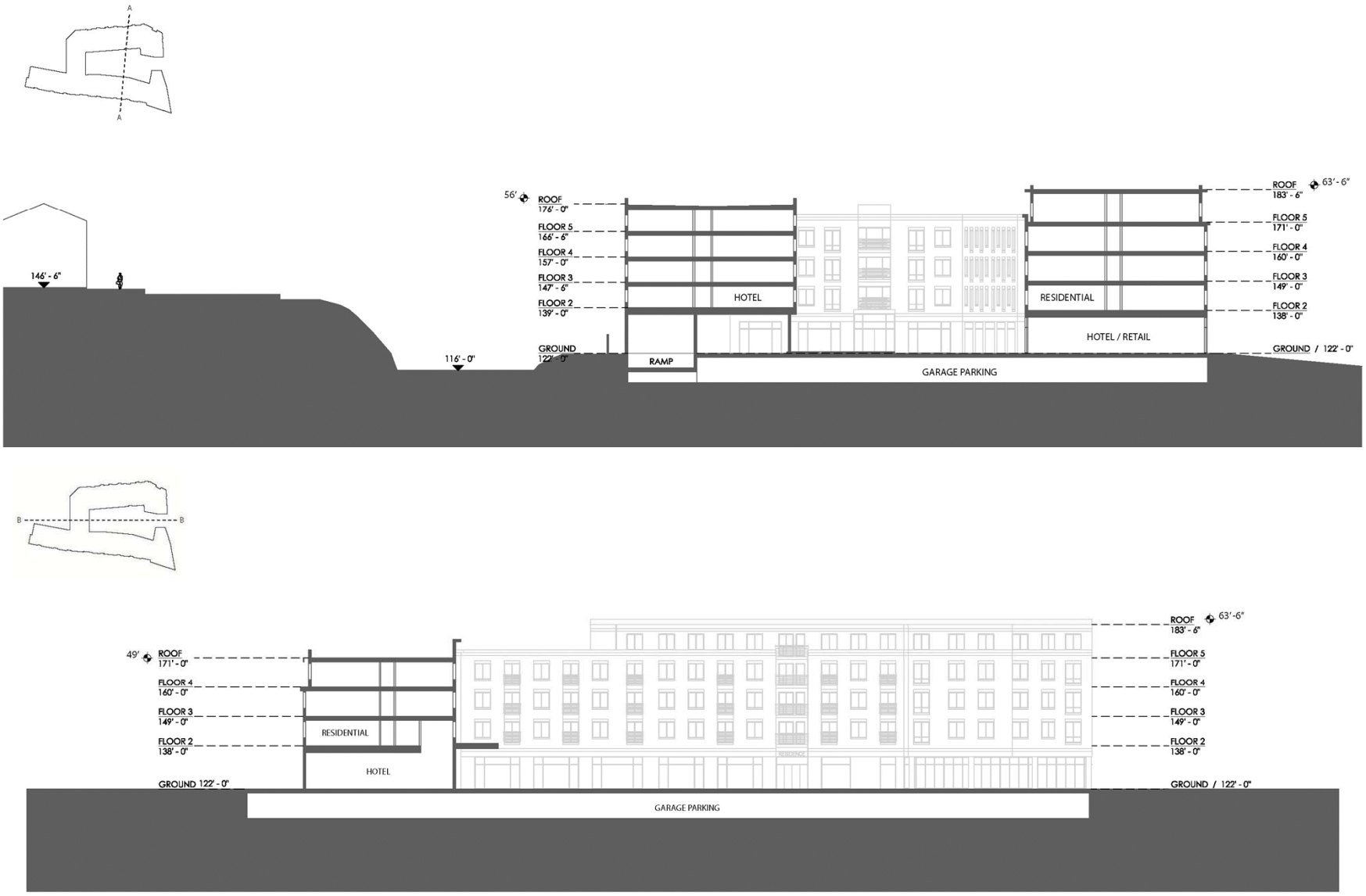


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Figure 1-12

Fifth Floor Plan



375-399 Chestnut Hill Avenue Boston/Brookline, MA

Figure 1-13

Cross and Longitudinal Sections





375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-14

Cassidy Playground and MBTA Right-of-way Elevations



Figure 1-15

East Elevation

1.3.2.2 Parking and Access

The Project Site will include approximately 203 total parking spaces, including surface spaces and others located in a below-grade garage.

Surface Parking

There will be approximately 77 surface spaces. All of these spaces are specifically dedicated to the hotel. Consistent with Brookline zoning, 60 parking spaces will be located behind a gate on the western side of the site. All hotel traffic will exit the parking lot via a driveway adjacent to the Watermark Condominium building. These vehicles will exit onto Beacon Street.

Underground Parking

The underground parking garage will contain approximately 126 spaces. Of these, 74 will be dedicated to the residents of the housing component. The remaining spaces will be open for both the office and retail uses. The resident parking area will be separated from public spaces by a gate. Residents will use a pass card to gain access to their designated parking area.

Vehicular Access

A single 25-foot wide curb cut off of Chestnut Hill Avenue will provide access for all vehicles entering the site. A new site driveway signal phase will be combined into the existing phases of the existing Cleveland Circle traffic signal, and a new crosswalk will be located at this location which will facilitate access for both vehicular and pedestrian traffic. The entry drive will lead to a courtyard where all major Project uses (residential, hotel and office/retail) will have clearly marked entry points. There will also be a passenger drop-off in front of each major entry point. These layover areas will be identified by bollards and a change in paving material/pattern.

The driveway will continue underneath the hotel wing. From here, vehicles can loop around and descend down a two-way ramp that leads to the underground parking garage, or they can continue in a westward direction towards the back of the site. Hotel guests will be given a security card that will enable them to pass through a gateway to a dedicated overflow surface parking lot.

There are two loading areas: one behind the retail/office space in Brookline, and a larger loading and trash area for the hotel, restaurant and residential spaces near the rear of the building. All service vehicle access and egress will be via the Chestnut Hill Avenue curb cut. In the revised design, internal roadways and curbs have been adjusted to allow for improved vehicular maneuverability, as described in further detail below.

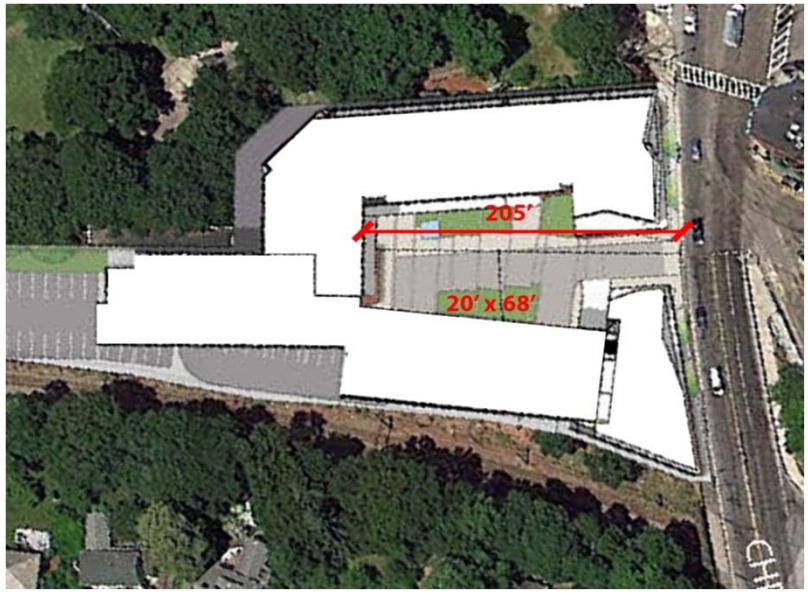
1.3.2.3 Project Changes

As a result of input from the BRA, the Boston Civic Design Commission (BCDC) and the community, the Project design has evolved since the Expanded PNF. The Proponent has worked diligently to address the many concerns of all interested parties. The Project revisions address many aspects of the design, with focus on: the courtyard layout and redefinition of vehicular and pedestrian movements, hotel visibility, architectural interface on Cleveland Circle and corner visibility, architectural expression, building massing and building materials, the edge condition along Cassidy Playground, and quantity of parking.

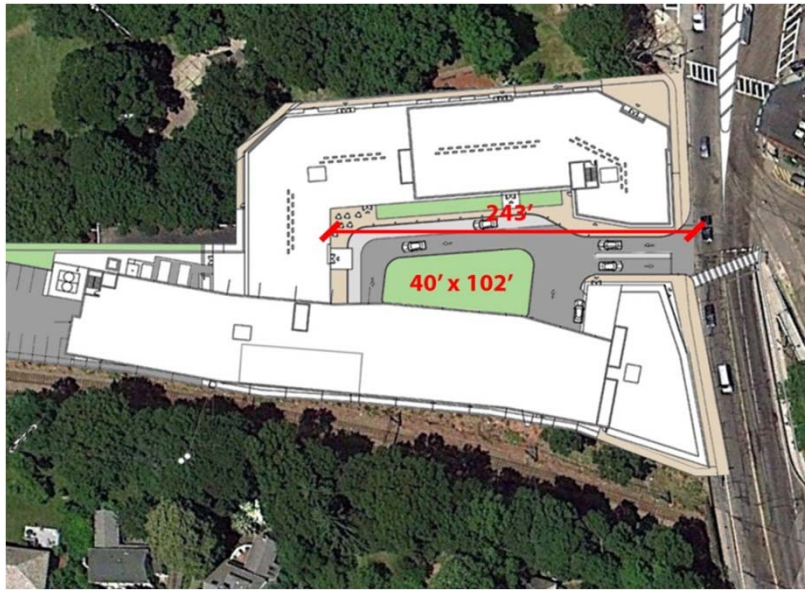
Courtyard

In the revised design, the drop-off, pick-up and access to parking will continue to take place on site in the courtyard and not on Chestnut Hill Avenue. The hotel, in particular, needs ample space for queuing and pick-up/drop-off, which is accommodated within the courtyard. Some deliveries and services will also take place within the courtyard, with the major service area tucked around the back of the hotel away from public view and traffic. Due to concerns about the amount of space within the courtyard and conflicts between trucks and vehicles, the size of the courtyard has increased by approximately 38 feet in the easterly-westerly direction (see Figure 1-16). This additional space provides more room for queuing and also for larger vehicles to maneuver through the court. The main roadway, which was previously two-way, has been redesigned to be a one-way loop which improves way-finding and generally creates a simpler and more efficient flow of traffic through the site. The redesign of the courtyard roadway has reduced the driveway width by approximately 14 feet, decreasing the paved area and providing a clearer and safer vehicular movement through the courtyard. The roadway within the courtyard will be paved with standard roadway bituminous asphalt paving to ensure long term durability. The pedestrian ways and loading drive will be paved with concrete unit pavers (vehicular depth in drop-off lane) to provide texture and pedestrian scale to the space (see Figure 1-17).

Acknowledging that the courtyard will have vehicular movement, the design team was advised by the BRA to incorporate more landscaping elements and strive to improve the aesthetics of the courtyard in general. The reduced driveway width (described above) increases the area available for landscaping. The revised landscape design concept for the courtyard seeks to "soften" the hard angles and surfaces of the building with gentle, free-form planted areas, while also introducing human-scaled elements, such as decorative planters and a water feature (see Figure 1-17). The revised landscape design also takes advantage of the larger island to introduce more greenery. The large island will be shaped and bermed to create more depth for larger flowering trees. On the opposite side, at the drop-off/pick-up areas, the design exploits the southern sun exposure and proposes 15-foot tall flowering trees and an array of different flowers, plants and shrubs. In addition, colorful pots and planters and two different seating areas will add a pedestrian-friendly dimension to the courtyard space.



Previously Proposed Courtyard



Currently Proposed Courtyard

Notes:

1. New Path and Seating Area with plantings
2. Promote Health of Existing Trees by improving soils
3. Remove Existing Storage Building and Concrete Walkway
4. New Fence Around Parking Areas and MBTA Property Line.
5. Additional Planting Along Park Side of the Fence
6. Large Green Space
7. Asphalt Paving
8. Concrete Unit Pavers
9. New Paving and Street Trees along Chestnut Hill Ave



Figure 1-17

Landscape Plan

Hotel Visibility

The previous design marked the entrance to the hotel with a two-story entry "portal" and a projecting canopy that included hotel signage. The hotel is located in roughly the same location, but through its design expression, detail and more prominently displayed signage, it now has an enhanced visual presence (see Figure 1-18). The design relies on its symmetry and a vertically elongated centerpiece to draw attention. The signage for the hotel is placed on top of the centerpiece which makes it far more visible than in the previous design.

Massing Strategies Along Cassidy Playground

In the original design, a "crenellated" white metal panel façade extended the entire length of the site along the edge of Cassidy Playground with little variation, with the exception of the corner facing Cleveland Circle (see Figures 1-19). At the corner, the building rose up an extra story and also pushed forward in the corner. In response to suggestions from the BRA and the community, the design has been revised to reduce and vary the mass of the building in a variety of ways. As suggested, the design continues to be taller at the corner along Cleveland Circle, but steps down in height as it extends toward the west along the Cassidy Playground edge, resulting in a reduced number of residential floors in this area (see Figures 1-14 and 1-20). This considerable reduction of mass makes the building appear to literally step down in scale as it marches along the edge of the park.

Architectural Expression

The most dramatic change to the Project has been to the architectural expression of the exterior design. The community and BRA expressed a desire to have a design that would fit in better to the existing building stock in Cleveland Circle. In response, the Proponent has made significant changes to the architectural expression. The design team studied the architecture in Cleveland Circle and, in response, has made substantive modifications to the Project.

As described above, in the previous design the main corner of the building (facing Cleveland Circle) extended to the edge of the allowable setback in the plan shape of a prow or a point. Moreover, the prow was one full story taller than the rest of the building. In looking at other buildings in the Cleveland Circle area, in most cases, building edges were chamfered and flattened (see Figure 1-21). The larger urban effect of chamfering the corner of each of these buildings is to create a shape of the circle, namely Cleveland Circle. The design has been revised with the adoption of an angled corner facing Cleveland Circle, which contributes and reinforces this concept.



Previous Proposal - Courtyard Perspective



Current Proposal - Courtyard Perspective



Previous Proposal – Cassidy Playground Elevation

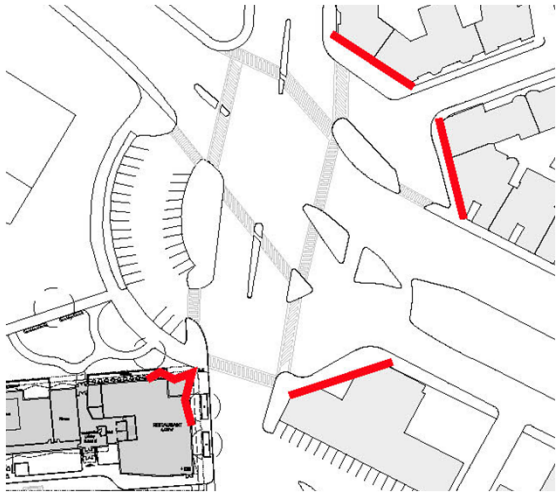


Current Proposal – Cassidy Playground Elevation



Figure 1-20

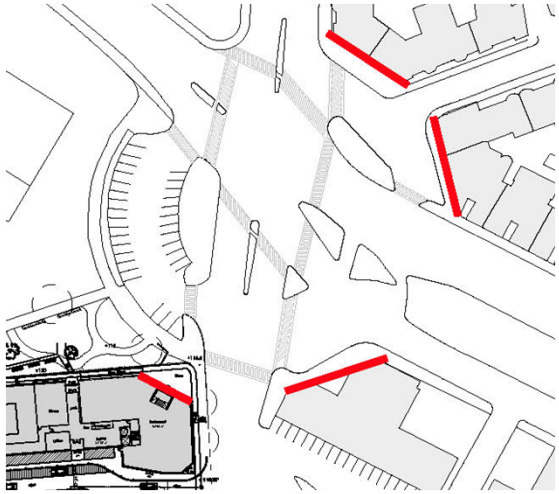
View from Cassidy Playground



Prow Plan



Prow Perspective



Chamfered Context



Chamfered Perspective

In addition to looking to other buildings in Cleveland Circle, the Proponent studied some of the more prominent and distinguished residential buildings in the surrounding vicinity, including the Watermark Condominium building at 2400 Beacon Street and Reservoir Place at the corner of Chestnut Hill Avenue and Sutherland Road as well as other similarly scaled residential projects in the area (see Figures 1-22 and 1-23). After studying the different precedents, the Proponent identified certain features and details that could be incorporated into the Project's design. The revised design adopts a traditional organization of a base, field and top with each rendered in a different material (see Figures 1-24 and 1-25). More specifically, the base is a larger masonry unit, the field or middle part is brick masonry with vertically-oriented, punched windows, and the top, which is separated from the field by a cornice and is set back two feet from the major wall-plane of the building, is dark brown metal. In addition, there are elements such as bay windows, Juliet balconies, and details such as lintels and window sills, all of which borrow from a more familiar and traditional architectural vocabulary. The entryways are marked with recessed brown metal which extend from the top floor down to the first floor canopy. This device helps to break up the mass of the building from a singular block into three smaller parts. In addition to the vertical slots, there are metal clad projecting bays which introduce yet another design element that provides visual interest.

The previous design sought to unify the different building functions by using a singular material, white metal panel. The current design maintains this intention, but each use is expressed differently in both material and detail. The overall material palette has been expanded to allow for different treatments, but at the same time the selected materials are complementary to each other (see Figure 1-24). Specifically, the residential component has a beige large unit masonry base, beige brick field, beige pre-cast concrete accents and brown metal panel top. The hotel is mostly a beige metal panel with gray metal panel accents and a brown metal top. The office is a beige large-unit masonry base with beige metal panel accents and a brown metal roof. Overall, there is a range of materials that allow for each use to maintain its own identity but without sacrificing the coherence of the Project.

Interface With Cassidy Playground

In response to comments from the Boston Parks and Recreation Department, the design team has made a number of revisions to the Project at the edge of Cassidy Playground (see Figure 1-26). The previous design included pathways leading from the residential lobby directly to the park. The current design has increased the buffer between the building and the park, setting the building back an additional five feet from its previous position. Within this new space, the Project includes a new five-foot-wide sidewalk within the Project Site that will connect the hotel and residential lobbies on the park side of the building to a small patio/entry plaza at the edge of Chestnut Hill Avenue. The plaza area will be paved with unit pavers, contain bike racks, and have seasonal container plantings. Adjacent to the sidewalk will be a seating area with additional plantings near the building corner.







375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 1-22

Architectural Context



Figure 1-23

View from Chestnut Hill Reservoir



375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 1-24

View from Cleveland Circle

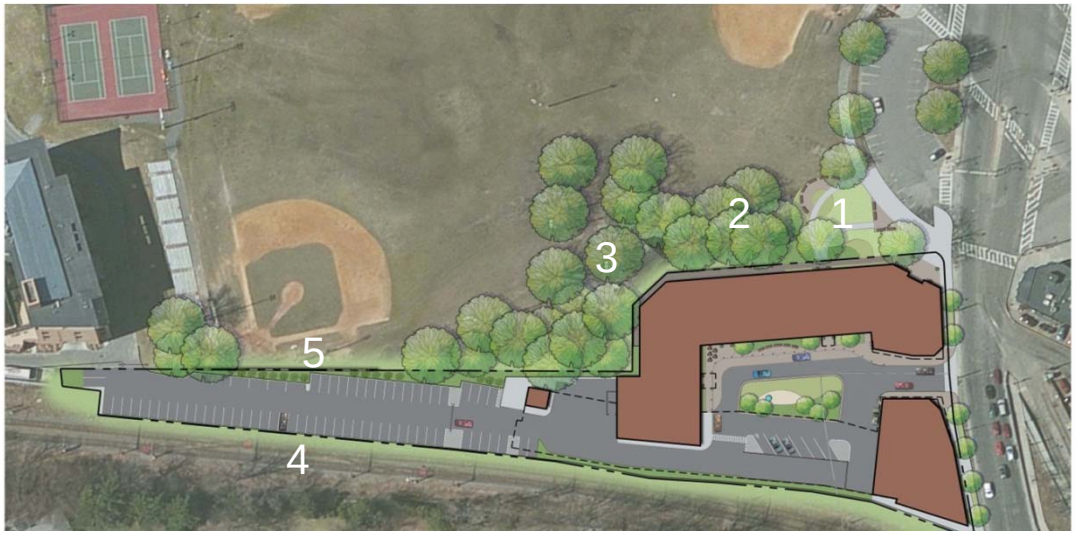


Figure 1-25

View From Chestnut Hill Avenue Looking Northwest



Existing Conditions



Proposed Conditions

Notes:

1. New Path and Seating Area with plantings
2. Promote Health of Existing Trees by improving soils
3. Remove Existing Storage Building and Concrete Walkway
4. New Fence Around Parking Areas and MBTA Property Line.
5. Additional Planting Along Park Side of the Fence

In order to eliminate the views of parked cars and the rear loading area from Cassidy Playground, a solid fence will be installed the entire length of the parking area and loading dock area. Additional landscaping will occur on the park side of the new fence to soften the edge and continue the park-like character. Also, a new fence will be installed along the entire length of the adjacent MBTA property line to shield the site from the Clinton Road residences.

Parking

In the Expanded PNF, the Proponent proposed a total of 228 parking spaces; 141 garage spaces and 78 surface spaces. In response to City comments and acknowledgement of the Project's location adjacent to significant public transportation options, the number of parking spaces has been reduced to 203. Please see Section 2.3.2.8 for a discussion of proposed parking and its adequacy to serve the Project.

1.3.3 Alternatives

The Proponent has studied a number of alternatives for the Project Site. These alternatives are discussed in further detail below.

1.3.3.1 Separate Office and Hotel Alternative

One alternative that was studied included an office building on the area of the site closest to Cleveland Circle with restaurant space on the ground floor and a hotel building located on the site of the Circle Cinema building. Retail space was located on the ground floor along Chestnut Hill Avenue. The location of the hotel was determined by the zoning requirements for the portion of the site located in Brookline which require a certain number of hotel rooms. This alternative included surface parking only, with a portion to the west of the office building, some parking at ground level with the hotel building built above, and parking on the west side of the hotel building. The parking would have been shared between uses. A central courtyard was located between the two buildings with one access/egress location on Chestnut Hill Avenue and an exit only route along the Waterworks driveway.

The physical massing of this alternative would create less of an impact with fewer new shadows on Cassidy Playground—although the areas not impacted by shadow would be predominantly in the area of the existing building on the park—and a smaller impact on daylight obstruction. The number of vehicle trips per day would be only slightly less than the proposed Project, even though the size of the alternative is smaller, since the intensity of the office use is greater than residential use.

Office uses, however, do not have the same positive impact when located adjacent to a public open space when compared to residential uses which put "eyes on the park" throughout the day and night. The hotel also enlivens this area with its lobby and pool area looking onto the park. Some members of the community also expressed a desire to include residential uses within the Project, and to have the residential use adjacent to the park.

1.3.3.2 Hotel on Cleveland Circle Alternative

The design team studied an alternative that placed the hotel on Cleveland Circle. This alternative would create one continuous building mass along Chestnut Hill Avenue with a driveway adjacent to the MBTA right-of-way. The retail would be located on the street, but would be impacted by the grade change of close to 12 feet. This variance would limit the size of each retail space and decrease the quality of the store front. The hotel would be located at the edge of Cassidy Playground and Cleveland Circle, allowing the hotel component to take advantage of the park views. Due to the space requirements of the hotel ground floor, an independent restaurant would not be able to be located adjacent to Cassidy Playground. The residential component would be located on the western side of the site. This location would place the residences away from Chestnut Hill Avenue, and provide a portion of the units views of Cassidy Playground and the Reservoir. Residential units on the southern side of the site would be adjacent to the MBTA tracks. To gain access to the residential component, residents would either need to walk along the edge of the building adjacent to the park, walk through the hotel component, or walk up the hill on Chestnut Hill Avenue, into the courtyard and down approximately 10 feet to the main residential entrance. The office component in this alternative would be located on top of the hotel component with access from Chestnut Hill Avenue.

As mentioned above, the access/egress to the site from Chestnut Hill Avenue for this alternative would be located adjacent to the MBTA right-of-way. This entrance roadway would slope down approximately 6-10 feet into the courtyard. Due to the placement of the building, the ramp to the underground parking garage would be located in the middle of the courtyard. Service and loading areas would also be located within the courtyard area.

The environmental impacts of the Project would be similar to the currently proposed design. The program uses would be similar in size, and therefore the generated trips, and associated effect on air quality, as well as the use of utility infrastructure would be similar. The alternative would provide more massing along Cassidy Playground which would increase shadow and daylight impacts. Noise impacts from trucks could be greater due to the courtyard design which would keep it open towards the south and the residential area on Clinton Street. Because of the location of the housing and access to the residential units as well as the decrease in the amount and quality of the retail space, this alternative would result in lower quality housing units as well as a reduced level of public benefits.

1.4 Public Benefits

The Project will include numerous benefits to the neighborhood and the City of Boston, including:

- Replacing a sprawling, vacant building that is a safety hazard and set back from the street with a new development that creates a distinctive and lively urban edge fronting Chestnut Hill Avenue and Cleveland Circle.
- Locating retail space close to Chestnut Hill Avenue, encouraging pedestrian activity.
- Providing a vehicular courtyard off Chestnut Hill Avenue that provides access to all program uses, taxi stands, and off-street loading and trash removal.
- Removing the existing "Field House" building in Cassidy Playground and the associated concrete pad and walkway, and constructing a new storage building within Cassidy Playground at a site chosen by the Boston Parks and Recreation Department.
- Improving the soils below the large stand of trees adjacent to the site within Cassidy Playground to promote the general health and well-being of the existing trees.
- Retaining a botanist—Bartlett Tree Experts—to perform a Tree Inventory and Management Plan that focuses on existing trees and plants within a close proximity to the Project.
- Providing a scope of work to mitigate the drainage problem identified by the Boston Parks and Recreation Department, and working with the Boston Parks and Recreation Department to reach a mutually acceptable action plan for the correction of this drainage problem.
- Financial support for Waterworks Museum from payments for egress rights over the roadway to Beacon Street, as dictated by the Commonwealth in the Waterworks project development agreements.
- Creating approximately 100 construction jobs and approximately 120 full-time jobs.
- Creating the following anticipated tax benefits for the City of Boston, on an annual basis: (a) approximately $900,000 in property tax revenue, (b) approximately $515,000 and $545,000 in state and local hotel occupancy taxes, respectively, and (c) approximately $250,000 toward the convention center financing fee.
- Creating approximately 10 units of affordable housing onsite.

Urban Design Benefits

The development of the Project will help to define the image and design quality of Cleveland Circle and specifically along Chestnut Hill Avenue and also the bordering edge of Cassidy Playground. The Project will improve the immediate area in many ways including:

Cleveland Circle

- Introducing transparent ground floor retail spaces which will activate the streetscape and enliven the area;
- Replacing open parking lots with building masses that form a desirable street edge;
- Providing a complementary mix of uses for a vibrant 24/7 environment; and
- Creating a plaza at the Cleveland Circle corner portion of the site.

Chestnut Hill Avenue

- Consolidating four existing curb cuts on the existing site into one signalized curb cut;
- Improving the public sidewalk along Chestnut Hill Avenue to include new street trees and concrete paved sidewalk along the majority of the walking surface with accent areas of unit pavers;
- Replacing the deteriorating sidewalks along Chestnut Hill Avenue with a combination of new concrete unit pavers and scored concrete;
- Introducing new street lighting which is consistent with City standards and will help to unify the overall appearance of the street edge with Cleveland Circle;
- Introducing a new traffic signal and pedestrian crosswalks that will help to improve the safety for pedestrians on and near the site;

Interface with Cassidy Playground

- Introducing public uses such as a restaurant and plaza that will enliven the edge along the park;
- Removing invasive plants, selectively pruning to ensure good health and removing dead trees and replacing with native species along narrow portions of the site; and
- Creating a landscaped buffer edge and also a decorative fence along the existing parking area.

Along MBTA Tracks

- Replacing existing layers of fence with a new, eight-foot tall decorative wood fence along the length of the development.

1.5 City of Boston Zoning

The Boston portion of the Project Site is located within the Neighborhood Shopping Subdistrict ("NS Subdistrict") of the Allston-Brighton Neighborhood District governed by Article 51 of the City of Boston Zoning Code (the "Code"). As discussed in greater detail below, the remainder of the site is located in the Town of Brookline. The Boston portion of the Project Site is not located within any overlay districts. The Project has been designed generally to comply with the requirements of the Code, although certain zoning relief, in the form of the adoption of a Planned Development Area Development Plan ("PDA Plan") by the Boston Zoning Commission, will be required as described in greater detail herein.

A portion of the site also lies within the Town of Brookline's Hotel Overlay District. The Project as currently designed is within the limits set forth in the Overlay District. As such, it is not anticipated that any additional zoning relief will be needed for the Brookline portion of the Project.

As described in more detail above, the Project is anticipated to include hotel use, residential use, retail/restaurant use, medical office use (in Brookline only), and approximately 203 parking spaces, including approximately 126 spaces in the parking garage and approximately 77 surface spaces. Retail and restaurant uses are allowed in the NS Subdistrict. Hotel use is forbidden and residential uses are conditional, so zoning approval will be required to allow those uses.

The NS Subdistrict provides for a maximum building height of 35 feet for all uses and a maximum floor area ratio ("FAR") of 1.0. Using the average elevation of the portion of Chestnut Hill Avenue along the Brookline portion of the Project Site as the grade for measuring building height, the majority of the hotel component of the portion of the building in Boston will have a building height of approximately 53 feet, with one section along the MBTA line having a height of 56 feet. The building height of the residential component of the building will be approximately 66.5 feet (using the average elevation of the portion of Chestnut Hill Avenue along the Boston portion of the Project Site as the grade).

The current development plans call for approximately 192,000 square feet of gross floor area on the Boston portion of the Project Site, resulting in an FAR of approximately 2.1. Based on the foregoing, the PDA Plan will allow increases in both the maximum building height and FAR requirements of the underlying zoning. When the Brookline land and building program is added, the Project has an overall FAR of approximately 2.15.

Pursuant to Section 51-56, off-street parking and loading requirements will be determined by the BRA during Large Project Review.

1.6 Legal Information

1.6.1 Legal Judgments Adverse to the Proposed Project

The Proponent is not aware of any legal judgments in effect or legal actions pending that are adverse to the Project.

1.6.2 History of Tax Arrears on Property

The Proponent is not in tax arrears on any property owned within the City of Boston.

1.6.3 Site Control / Public Easements

The Project Site is currently comprised of two parcels of land. The Proponent has entered into agreements with the property owners of both parcels to acquire them. Both agreements permit the Proponent to seek public approvals for the Project.

There are no public easements on the Project Site, with the exception of several sewer easements as shown on Figure 1-2, above.

1.7 Anticipated Permits

The Proponent does not expect that the Project will require review by the Massachusetts Environmental Policy Act (MEPA) Office of the Massachusetts Executive Office of Energy and Environmental Affairs. Current plans do not call for the Project to receive any state funding or involve any state land transfers, nor will it exceed any MEPA review thresholds that are conceptually related to a required state permit or approval.

Permits and approvals likely to be required for the Project are listed in Table 1-2.

Table 1-2 List of Anticipated Permits and Approvals

AGENCY	APPROVAL
Local	
Boston Redevelopment Authority	Article 80 Large Project Review
Boston Zoning Commission	Approval of PDA Plan
Boston Civic Design Commission	Advisory Review
Boston Committee on Licenses	Parking Garage License Flammable Storage License
Boston Parks and Recreation Department	Approval of demolition and construction within 100 feet of a park or parkway

Table 1-2 List of Anticipated Permits and Approvals (Continued)

AGENCY	APPROVAL
Boston Water and Sewer Commission	Water and Sewer Connection Permits Temporary Construction Dewatering Permit General Service Application Site Plan Review
Boston Transportation Department	Construction Management Plan Transportation Access Plan Agreement
Boston Public Improvement Commission/Boston Department of Public Works	Street/Sidewalk Repair Plan Permits for street occupancy and opening permit
Boston Fire Department	Approval of Fire Safety Equipment
Boston Inspectional Services Department	Building Permit
Town of Brookline Department of Public Works	Street Opening Permit (if required) Occupancy Permit (if required) Special Permit (if curb cut location is or width is altered)
State	
Department of Environmental Protection, Division of Water Pollution Control	Self-certification for sewer discharges
Department of Environmental Protection	Notification of Demolition and Construction
Massachusetts Department of Transportation	Approval under Chapter 40, Section 54A (if required)
Federal	
Environmental Protection Agency	National Pollution Discharge Elimination System

1.8 Schedule

The Proponent anticipates that construction on the Project will commence in the fourth quarter of 2013 and will finish approximately around the first quarter of 2015.

1.9 Public Participation

The Proponent has continued to meet with the BRA, Boston Civic Design Commission, other City of Boston departments, Impact Advisory Group, Brighton community, Brighton Allston Improvement Association, Waterworks Condominium Association, Waterworks Museum, Town of Brookline, Brookline Design Advisory Team, Brookline Town Meeting, Brookline Planning Board and other members of the community as the review of the Project has progressed.

Section 2.0

Transportation

2.0 TRANSPORTATION

2.1 Introduction

In the Expanded PNF, dated August 16, 2012, Chapter 2 presented transportation issues associated with the Project. In response to the BRA's Scoping Determination and comments from the Boston Transportation Department (BTD) and the Town of Brookline traffic consultant, this chapter presents additional transportation material and a revised transportation analysis. Subsequent to the Expanded PNF, the Project's program and site plan have been updated and those changes are reflected in this chapter.

In accordance with the City of Boston's Transportation Access Plan Guidelines, this chapter describes roadway, pedestrian, and bicycle conditions; transportation issues; parking and loading; pedestrian and bicycle circulation; proposed mitigation; and transportation goals for the proposed Project.

The 2.56-acre Project Site, as shown in Figure 2-1, is located near the intersection of Beacon Street and Chestnut Hill Avenue, known as Cleveland Circle in Boston, with a small portion of the site in Brookline. (Figures are included at the end of this chapter.) As such, the Project is subject to review in both the City of Boston and the Town of Brookline.

2.1.1 Project Description

The Proponent proposes to redevelop the site at 375-399 Chestnut Hill Avenue adjacent to Cleveland Circle. The site contains land in both the City of Boston and the Town of Brookline, and currently includes the vacant Circle Cinema (closed since 2008) and an Applebee's restaurant. The existing buildings will be demolished and replaced with a mixed-use development that includes approximately 234,200 sf of hotel, residential, medical office, and retail/restaurant space. Approximately 203 on-site parking spaces will be provided.

Table 2-1 shows the summary of proposed land uses.

Table 2-1 Project Program

Land Use	Quantity
Hotel	112,900 sf / 196 rooms
Residential	89,200 sf / 74 units
Medical Office	18,000 sf
Retail	7,300 sf
Restaurant	6,900 sf

The only public street bordering the Project Site is Chestnut Hill Avenue to the east. The site is bordered on the south by the Massachusetts Bay Transportation Authority (MBTA) Green Line trolley tracks and on the north by the nine-acre Cassidy Playground and playing fields. The western portion of the site tapers to a narrow width and abuts the Waterworks at Chestnut Hill, a residential development located in the City of Boston.

2.1.2 Methodology

In accordance with BTD Transportation Access Plan Guidelines (2001), the study team conducted a transportation analysis for the proposed Project. The analysis is summarized in the following sections:

- Section 2.2 (Existing Transportation Conditions) includes an inventory of existing transportation conditions, including intersection operation, parking, site access and circulation, public transportation, car sharing and pedestrian and bicycle conditions.

- Section 2.3 (Evaluation of Long-term Impacts) includes future transportation conditions and assesses potential traffic impacts associated with the proposed development and other neighboring projects. Long-term impacts are evaluated for the year 2017, based on a five-year horizon from the 2012 base year. Expected roadway, parking, transit, pedestrian/bicycle, and loading conditions are identified. This section includes the following scenarios:

  - The No-Build Scenario (2017) includes general background growth; and

  - The Build Scenario (2017) includes specific travel demand forecasts for the Project.

- Transportation Mitigation Measures including Transportation Demand Management are presented in Section 2.4. Short-term traffic impacts associated with construction activities are included in Section 2.5.

2.1.3 Study Area

The study team, in consultation with the Town of Brookline and City of Boston, identified the following study area intersections:

- Commonwealth Avenue/Chestnut Hill Avenue (signalized)
- Beacon Street/Chestnut Hill Avenue (Cleveland Circle) (signalized)
- Beacon Street/Englewood Avenue (signalized)
- Beacon Street/Washington Street (signalized)
- Chestnut Hill Avenue/Dean Road (signalized)
- Chestnut Hill Avenue/Boylston Street (signalized)

- Chestnut Hill Avenue/Clinton Road (unsignalized)
- Beacon Street/Waterworks Driveway (unsignalized)
- Beacon Street/Waterworks Exit Only Driveway (unsignalized)
- Chestnut Hill Avenue/Applebee's Driveway (unsignalized, two curb-cuts)
- Chestnut Hill Avenue/Cinema Driveway (unsignalized, two curb-cuts)
- In future: Chestnut Hill Avenue/Project Driveway, replacing four existing curb cuts

The existing intersections are mapped in Figure 2-2.

2.2 Existing Transportation Conditions

2.2.1 Existing Roadway Conditions

The study area includes the following roadways, which are categorized according to the Massachusetts Department of Transportation Office of Transportation Planning functional classifications:

Commonwealth Avenue runs parallel to Beacon Street between downtown Boston and the City of Newton. In the study area, the MBTA Green Line B Branch divides the east- and westbound travel lanes. Two travel lanes are provided on each side of the tracks. On-street parking is allowed on the westbound side of Commonwealth Avenue. These spaces are primarily unregulated and are typically used by residents in the area. The eastbound side also has unregulated parking; however, this parking is on a parallel service road that is divided from the travel lanes by a raised median.

Chestnut Hill Avenue connects Route 9 in the Town of Brookline in the south with Brighton Center in the north. Two-way travel is separated by a double yellow centerline. In the study area, two-hour parking is provided on Chestnut Hill Avenue south of Cleveland Circle. To the north of Cleveland Circle, metered parking is provided on both sides of the street. Sidewalks are provided on both sides of the roadway throughout the study area. MBTA bus Route 86 and Route 51 run along the roadway within the study area.

Beacon Street runs in an east–west direction between Kenmore Square and the City of Newton. To the east of Cleveland Circle, the MBTA Green Line C Branch separates the two eastbound and three westbound travel lanes. Angled meter parking is provided adjacent to the C Branch to the north. Parallel parking is also provided on both sides of the street. This parking is two-hour, as regulated by the Town of Brookline. To the west of Cleveland Circle, Beacon Street is a two-lane roadway with a double yellow centerline. Allston/Brighton resident parking is provided on the north side of the street and unregulated on the south side adjacent to Cassidy Playground. Sidewalks are provided on both sides of the street within the study area.

Englewood Avenue is a local roadway that runs generally east-west from Chestnut Hill Avenue in the west to Beacon Street in the east. Englewood Avenue is one-way westbound west of Sutherland Road. This roadway is used by residents to bypass the intersection of Beacon Street/Chestnut Hill Avenue (Cleveland Circle). The roadway provides a mix of residential, unrestricted, and metered parking. Sidewalks are provided on both sides of the roadway.

Dean Road is a two-way local road that runs east-west from Elliot Street in the west to Beacon Street in the east. The roadway connects the residential area to Beacon Street. Two-hour parking is provided in select locations on the roadway. Sidewalks with landscaped buffers are provided on both sides of the roadway.

Clinton Road is a two-way local road that runs in an east–west direction with one lane for each direction. It provides access and egress single-family homes in the Town of Brookline. Resident/permit parking, as regulated in Brookline, is provided in select locations. Left turns onto Clinton Road from Chestnut Hill Avenue are prohibited during morning peak hours. Sidewalks with landscaped buffers are provided on both sides of the roadway.

Boylston Street is an urban minor arterial that runs from Brookline Avenue in the Fens to Washington Street, where it becomes Essex Street, terminating at Atlantic Avenue. Within the study area, Boylston Street has a median between the two directions of travel. There are three lanes in each direction within the study area. Sidewalks are provided on both sides of the roadway.

Washington Street is an urban minor arterial that runs north-south from Cambridge Street in Boston in the north to Boylston Street in the south. Washington Street is two-way with one or two lanes in each direction. Sidewalks are provided on both sides of the roadway. Within the study area, metered parking is provided on both sides of the roadway. MBTA bus Route 65 runs along Washington Street within the study area.

2.2.2 Existing Intersection Conditions

Commonwealth Avenue/Chestnut Hill Avenue is a signalized intersection. The Green Line B Branch train passes through the intersection at-grade between the eastbound and westbound Commonwealth Avenue travel lanes. The eastbound and westbound Commonwealth Avenue approaches have one exclusive left-turn lane, one exclusive through lane, and one shared through/right-turn lane. The northbound approach operates with two lanes: one exclusive left-turn lane and one shared through/right lane. The southbound approach has a channelized right-turn lane and operates with one or two lanes, depending on where the first stopped vehicle positions itself in the travel lane. Unrestricted parking is provided on the north side of the Commonwealth Avenue westbound approach. Metered parking is provided on the west side of the Chestnut Hill Avenue northbound approach. Pedestrian pushbuttons and crosswalks are provided across all approaches. The Commonwealth Avenue crossing is not handicapped accessible. The MBTA Route 86 bus

stops are located on both sides of the Chestnut Hill Avenue southbound approach and the east side of the Chestnut Hill northbound approach. The Chestnut Hill Avenue MBTA Green Line stop on the B Branch is located within the Commonwealth Avenue median adjacent to the intersection to the east.

Beacon Street/Chestnut Hill Avenue (Cleveland Circle) is a signalized intersection at the junction of Beacon Street/Chestnut Hill Avenue. This intersection was once a traffic circle and provides Green Line train access between the MBTA train yard and the B Branch. The Beacon Street eastbound approach operates with two shared approach lanes. The Beacon Street westbound approach has a designated left-turn lane (however, since the left-turn movement is not protected, vehicles typically form two left-turn lanes), two exclusive through lanes and one shared through/right-turn lane. The northbound and southbound approaches generally operate with two shared lanes. The Chestnut Hill northbound approach also has a channelized right-turn lane. Metered parking is provided adjacent to the intersection where the previous traffic circle was located in the northeast and southwest corners of the intersection. Metered parking is also located on the east side of the southbound approach. An MBTA bus stop for Route 86 and Route 51 is provided on the west side of the southbound approach. Pedestrians are accommodated in an exclusive walk phase during each signal cycle. Crosswalks and pedestrian pushbuttons, as well as handicapped ramps, are provided. The Cleveland Circle MBTA Green Line stop on the C Branch is located within the Beacon Street median adjacent to the intersection to the east.

Beacon Street/Englewood Avenue is a signalized intersection with three approaches. The Beacon Street eastbound approach consists of one left-turn/U-turn only lane and two through lanes. The Beacon Street westbound approach consists of one exclusive U-turn lane, one exclusive through lane, one shared through/right-turn lane, and one bike lane. The Englewood Avenue southbound approach consists of one shared left-turn/right-turn lane. Two hour and angled metered parking are available on the north and south sides of the Beacon Street westbound approach, respectively. Unrestricted parking is available on the east side, and metered parking is available on the west side of the Englewood Avenue southbound approach. Sidewalks are provided on all roadways, and crosswalks are provided across all approaches as well as provided on the far side of the Beacon Street westbound approach and across the Beacon Street median. All crosswalks include wheelchair ramps. The Englewood Avenue MBTA Green Line stop on the C Branch is located within the Beacon Street median adjacent to the intersection to the west.

Beacon Street/Washington Street is a signalized intersection with four approaches. The Beacon Street eastbound approach consists of one exclusive left-turn lane, one exclusive through lane, and one shared through/right-turn lane. The Beacon Street westbound approach consists of one exclusive through lane and one shared through/right-turn lane; left-turns are prohibited at this approach. Both the Washington Street northbound and southbound approaches consist of one exclusive left-turn lane and one shared through/right-turn lane. Metered parking is provided on the south side of the eastbound approach, the

north side of the westbound approach, the west side of the northbound approach, and the east side of the southbound approach. An MBTA bus stop for Route 65 is located on the east side of the northbound approach. Sidewalks are provided on all roadways and crosswalks with wheelchair ramps provided at all approaches, including a crosswalk connecting the Beacon Street median in the middle of the intersection. The Washington Street MBTA Green Line stop on the C Branch is located within the Beacon Street median adjacent to the intersection to the east.

Chestnut Hill Avenue/Dean Road is a signalized intersection with four approaches. Both the Dean Road eastbound and westbound approaches consist of one general use lane. The Chestnut Hill Avenue northbound approach consists of one shared left-turn/through lane and one exclusive right-turn lane. The southbound approach consists of one shared left-turn/through/right-turn lane. Resident parking is provided on both sides of the southbound approach and two-hour parking is provided on the west side of the northbound approach. Sidewalks are provided on both sides of all approaches. Crosswalks are provided across each approach with apex wheelchair ramps.

Chestnut Hill Avenue/Boylston Street is a signalized intersection with three approaches; the fourth northbound leg is a one-way road away from the intersection. The Boylston Street eastbound approach consists of one left-turn/U-turn lane, one exclusive though lane, and one shared through/right-turn lane. The Boylston Street westbound approach consists of one exclusive left-turn lane, two exclusive through lanes, and one exclusive right-turn lane. The Chestnut Hill Avenue southbound approach consists of one exclusive left-turn lane, one through lane, and one channelized right-turn lane. Parking is prohibited adjacent to the intersection at all approaches. An MBTA bus stop for Route 51 is located on the east side of the southbound approach. Sidewalks are provided on both sides of each approach. Crosswalks with wheelchair ramps are provided across the southbound and eastbound approaches.

Chestnut Hill Avenue/Clinton Road is an unsignalized intersection with four approaches. The two Clinton Road eastbound and westbound approaches are stop-controlled and consist of one general travel lane. The two Chestnut Hill Avenue northbound and southbound lanes are free controlled and both consist of one general use lane. Left turns from southbound Chestnut Hill Avenue are prohibited during the morning peak hours. Vehicles were observed making this turn despite the posted restriction. Permit parking is provided on both sides of the northbound and westbound approaches and on the north side of the eastbound approach. Crosswalks are provided across the eastbound and westbound approaches.

Beacon Street/Waterworks Driveway is an unsignalized intersection with three approaches. The Beacon Street eastbound approach consists of one shared through/right-turn lane, a pavement marked buffer and a bike lane. The Beacon Street westbound approach consists of one shared left-turn/through lane, a pavement marked buffer, and a bike lane. The Waterworks Driveway northbound approach is stop-controlled and consists of one shared

left-turn/right-turn lane. Parking is not provided at any approach of this intersection. Sidewalks are provided on both sides of Beacon Street and a crosswalk is provided across the northbound approach.

Beacon Street/Waterworks Exit Only Driveway is an unsignalized intersection with three approaches. The Beacon Street eastbound approach consists of one exclusive through lane, a pavement marked buffer and a bike lane. The Beacon Street westbound approach consists of one exclusive through lane and a bike lane. The Waterworks Driveway northbound approach is one-way northbound, stop-controlled, and consists of one shared left-turn/right-turn lane. Parking is provided on both sides of the westbound approach. Sidewalks are provided on both sides of Beacon Street and crosswalks are provided across the westbound and northbound approaches.

In addition to the study intersections described above, four unsignalized curb cuts on Chestnut Hill Avenue exist at the Project Site, with two serving the Applebee's restaurant and two serving the vacant cinema. Each driveway accommodates both entering and exiting traffic. No traffic control signage exists at the driveways. For analysis purposes, these four driveways are aggregated into two driveways, referred to as **Chestnut Hill Avenue/Applebee's Driveway** and **Chestnut Hill Avenue/Cinema Driveway**.

2.2.3 Existing Traffic Volumes

2.2.3.1 Recent Study Area Counts

Peak hour turning movement counts were obtained from data collected during the weekday morning (7:00 a.m. to 9:00 a.m.) and evening (4:00 p.m. to 6:00 p.m.) peak periods on Thursday, December 9, 2010, Wednesday, January 19, 2011, and Thursday, February 17, 2011.[1] The peak hour counts, collected on different dates as the study team responded to additional requests from the City of Boston and the Town of Brookline, were adjusted by seasonal factors and balanced appropriately between closely spaced intersections.

There was a time lag between the data collection efforts in 2010 and 2011, and the submission of the Expanded PNF in August 2012. To estimate the existing volumes for Year 2012, historical counts were reviewed to determine the growth factor to be applied to 2010 and 2011 counts. Peak hour counts taken at Beacon Street/Chestnut Hill Avenue in 2008 and again in 2011 show that peak hour counts decreased by 7% in the a.m. peak hour and 5% in the p.m. peak hour. Because the change is negative, no growth factor was applied to the counts to estimate the 2012 volumes. As is standard practice when preparing a DPIR subsequent to an Expanded PNF, the designation of the analysis years remains at 2012 and 2017 for existing and future conditions, respectively.

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[1] Note that the Massachusetts Environment Policy Act (MEPA) office, Massachusetts Department of Transportation, and BTD sanction the use of traffic data that has been collected within three years prior to a proposed project's transportation evaluation.

Automatic traffic recorder (ATR) data on Chestnut Hill Avenue was collected for this study on Wednesday, December 8, 2012 to confirm peak traffic periods. The count location was between Beacon Street and Clinton Road, at a point just north of the Reservoir drop-off driveway.

Based on the turning movement counts, the peak hours were identified as 7:45 to 8:45 a.m. and 5:00 to 6:00 p.m. Figures 2-3 and 2-4 show the existing peak-hour turning volumes for a.m. peak and p.m. peak hours, respectively.

Traffic count data are provided in Appendix B.

2.2.3.2 Historical Data with Cinema Operational

In 2003, Howard/Stein-Hudson was part of the development/design team evaluating the proposed Waterworks at Chestnut Hill residential project at 2400 Beacon Street (in Boston) adjacent to the 375-399 Chestnut Hill Avenue Project Site. A variety of traffic data was collected when the Cleveland Circle Cinema was operational, including an October 2003 count on the rear, exit-only driveway from the Cinema parking lot to Beacon Street. (The Cinema closed in 2008.)

On the rear, exit-only driveway, an automatic traffic recorder (ATR) tube count was conducted for 48 continuous hours on a Friday and Saturday in October 2003. The Cinema generated 205 exiting vehicle trips to Beacon Street on a Friday and 355 exiting vehicle trips on a Saturday. The exiting Cinema trips were concentrated between 3:00 p.m. and 11:00 p.m., with about 25% of trips occurring after 9:00 p.m. During the highest hours, about 50 vehicles exited the Cinema via the rear driveway to Beacon Street. It is worth noting that movie theaters experience predictable, seasonable variation in attendance throughout the year, with peak attendance occurring during June, July, and December.[2] October attendance at movie theaters is typically about 60% of peak attendance, indicating that the 2003 driveway counts are representative of average conditions when the Cinema was open. During peak attendance months of the year, however, exiting daily volumes on the rear, exit-only driveway were likely higher than those summarized above.

The October 2003 traffic count data from the Cinema's rear, exit-only driveway are provided in Appendix B.

[2] Smith, Mary S. "Shared Parking", Second Edition, Washington D.C.; ULI – the Urban Land Institute and the International Council of Shopping Centers, 2005.

2.2.4 Crash Data

Motor vehicle crash data from the Massachusetts Department of Transportation (MassDOT) Crash Records System was compiled for the most recent three-year period (2008-2010). Crash rates for the study area intersections were calculated and compared to the district averages for signalized and unsignalized intersections. Typically, intersections with crash rates higher than the district crash rates should be studied further by the jurisdictional agency.

In MassDOT Highway District 6, where the Project Site is located, the average number of crashes at a signalized intersection is 0.77 crashes per million entering vehicles (MEV). For unsignalized intersections, the average is 0.57 crashes per MEV.

All study intersections have crash rates lower than these district averages, which indicates there is likely not an existing condition affecting safety. In addition to the intersection review, the segment of Chestnut Hill Avenue containing the four existing site curb cuts was checked. No crashes were reported on this segment.

The crash summaries from the three most recent complete years (2008 through 2010) are shown in Appendix B.

2.2.5 Existing Traffic Operations

This section provides information on traffic modeling methodology and level of service criteria. The specialized treatment of trolley operations at Beacon Street/Chestnut Hill Avenue and the Project Site's curb cuts on Chestnut Hill Avenue is discussed, and the Existing Conditions operational results for all study intersections are presented.

2.2.5.1 Methodology and Level of Service

Traffic operations are determined through an analysis of intersection Level of Service (LOS). LOS and delay at the intersections were analyzed using the Synchro software developed by Trafficware. Synchro 6 was used to evaluate the effects that closely spaced intersections may have on one another. Synchro is based on the traffic operational analysis methodology of the Transportation Research Board's *2000 Highway Capacity Manual* (HCM); LOS and delay (in seconds) are determined based on intersection geometry and available traffic data for each intersection. Signal timings and phasing used in this analysis were provided by BTD and the Town of Brookline.

Table 2-2, derived from the HCM, provides LOS criteria for signalized and unsignalized intersections. LOS A defines the most favorable condition, with minimum traffic delay. LOS F represents the worst condition, with significant traffic delay. LOS D is generally considered acceptable in an urban environment, such as the Cleveland Circle area.

Table 2-2 Level of Service Criteria (HCM Excerpt)

Level of Service	Average Stopped Delay (sec./veh.)	
	Signalized Intersections	Unsignalized Intersections
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

2.2.5.2 Trolley Operation at Beacon Street/Chestnut Hill Avenue (Cleveland Circle)

Trolleys on the MBTA's Green Line C Branch operate between Cleveland Circle and North Station, and in the immediate study area, on at-grade tracks along Beacon Street. The Cleveland Circle stop is located on Beacon Street, east of Chestnut Hill Avenue. Trolleys that have arrived at the Cleveland Circle stop on the C Branch and are not going out of service simply reverse direction. The C Branch trolleys that are going out of service, however, proceed to the MBTA's Carhouse and Yard facility located adjacent to the MBTA Reservoir Station on Chestnut Hill Avenue. Tracks connect from the Cleveland Circle stop through the intersection of Beacon Street/Chestnut Hill Avenue to the Yard. Trolleys are controlled by trolley-specific signals located on westbound Beacon Street (for trolleys entering the MBTA Yard) and at the MBTA driveway on Chestnut Hill Avenue (for trolleys exiting the MBTA Yard). When the trolley signal is triggered, a 23-second exclusive pedestrian/trolley phase is activated at the Beacon Street/Chestnut Hill Avenue intersection and all automobile traffic is stopped. The signal for southbound Chestnut Hill Avenue traffic located immediately north of the Applebee's driveway does remain green during this phase to clear any "trapped" southbound traffic on Chestnut Hill Avenue.

Observations on a typical weekday showed that trolleys triggered the pedestrian/trolley phase five times during the a.m. peak hour and four times during the p.m. peak hour. Trolley maneuvers through the intersection typically take about 45 seconds. While the pedestrian/trolley phase is only occasionally triggered by a trolley during the peak hour, pedestrians more frequently trigger the phase. Consequently, the trolley/pedestrian phase is modeled in Synchro to be called up every cycle, or about 30 times during each peak hour, resulting in a conservative (highest) estimate of delay during peak hours.

Out-of-service Green Line cars from the B Branch (Boston College) also utilize the MBTA Yard on Chestnut Hill Avenue. These trolleys travel south on Chestnut Hill Avenue tracks, but do not have a specific signal phase, and travel with traffic along southbound Chestnut Hill Avenue[3].

2.2.5.3 Chestnut Hill Avenue Curb Cuts at Project Site

The Project Site has four unsignalized curb cuts along Chestnut Hill Avenue: two serve the existing Applebee's restaurant and two serve the vacant cinema site. For analysis purposes, the volumes at these four driveways were aggregated into two driveways and are shown in Figures 2-3 and 2-4, for the a.m. and p.m. peak hours under Existing Conditions. The study team believes that the operation of the four existing site driveways relative to the traffic environment formed by the Beacon Street/Chestnut Hill Avenue intersection (including the southernmost stop line/signal head on northbound Chestnut Hill Avenue at the MBTA Yard) is difficult to realistically assess using the standard unsignalized analysis methodology. For reference, however, unsignalized analysis of the two aggregated driveways has been conducted. Only the results for the driveways (minor approaches) are summarized, though, as the operation of this Chestnut Hill Avenue segment (major approach) should be ascertained from the signalized analysis results at Beacon Street/Chestnut Hill Avenue (Cleveland Circle) and not from the unsignalized analysis.

2.2.5.4 Existing Conditions Level of Service

Tables 2-3 and 2-4 show the Existing Conditions LOS summary for study area intersections during the a.m. peak hour and p.m. hour, respectively. The tables show LOS, average delay, volume to capacity ratio, and 95th percentile queue length (feet) for the overall intersection and each approach.

Complete Synchro reports are provided in Appendix B.

[3] It is the Proponent's understanding from on-going discussions with the MBTA that a detector signal will be installed for these out-of-service Boston College trolleys to allow faster processing of these vehicles as they proceed from Commonwealth Avenue south along Chestnut Hill Avenue, thereby reducing traffic blockages on Chestnut Hill Avenue.

Table 2-3 Existing Conditions (2012) Level of Service Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**E**	**65.5**		
Commonwealth EB left	B	19.1	0.42	100
Commonwealth EB thru | thru/right	C	25.7	0.53	248
Commonwealth WB U-turn/left	C	26.6	0.64	122
Commonwealth WB thru | thru/right	C	25.3	0.30	137
Chestnut NB left	D	52.2	0.56	m136
Chestnut NB thru | thru/right	F	>80.0	>1.00	m#682
Chestnut SB left/thru | thru	F	>80.0	>1.00	#339
Chestnut SB right	C	23.8	0.05	28
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**F**	**>80.0**		
Beacon EB left*	F	>80.0	>1.00	#241
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#447
Beacon WB U-turn/left	E	55.9	0.79	#197
Beacon WB thru | thru	D	48.1	0.89	#300
Beacon WB right/hard right	C	28.4	0.32	176
Chestnut NB left/thru | thru	F	>80.0	>1.00	#428
Chestnut NB right	A	0.1	0.12	m0
Chestnut SB left/thru | thru/right	F	>80.0	>1.00	m#515
At stop line south of MBTA Yard driveway:				
Chestnut Hill NB left/thru|thru	E	76.3	0.82	376
Chestnut Hill SB thru| thru/right	A	0	0.27	m0
Chestnut Hill Avenue/Dean Road	**D**	**35.6**		
Dean EB left/thru/right	C	24.7	0.45	125
Dean WB left/thru/right	D	36.4	0.68	#177
Chestnut NB left/thru	B	18.8	0.68	461
Chestnut NB right	A	2.8	0.14	28
Chestnut SB left/thru/right	E	57.1	1.02	#807
Chestnut Hill Avenue/Boylston Street	**D**	**41.4**		
Boylston EB U-turn/left	E	69.2	0.74	#307
Boylston EB thru | thru	C	22.2	0.64	473
Boylston WB U-turn/left	F	>80.0	0.93	m#134
Boylston WB thru | thru	D	52.1	0.81	m663
Boylston WB right	A	3.5	0.44	m121
Chestnut SB left	F	>80.0	>1.00	#683
Chestnut SB thru	D	41.3	0.14	58
Chestnut SB right	A	8.7	0.48	87

Table 2-3 Existing Conditions (2012) Level of Service Summary, a.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Edgewood Avenue	**A**	**9.5**		
Beacon EB U-turn/left	D	37.6	0.33	75
Beacon EB thru | thru	A	9.5	0.38	223
Beacon WB U-turn	B	18.2	0.09	m6
Beacon WB thru | thru/right	A	4.8	0.39	m73
Englewood SB left/right	C	24.8	0.33	60
Beacon Street/Washington Street	**C**	**26.6**		
Beacon EB U-turn/left	D	45.0	0.49	105
Beacon EB thru | thru/right	B	11.1	0.61	124
Beacon WB thru | thru/right	C	33.6	0.72	216
Washington NB left	C	24.5	0.24	32
Washington NB thru/right	C	34.4	0.76	264
Washington SB left	C	33.6	0.54	81
Washington SB thru/right	D	37.8	0.83	235
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	-
Clinton WB left/thru/right	F	>50.0	>1.00	291
Chestnut NB left/thru/right	A	0.3	0.01	1
Chestnut SB left/thru/right	A	2.6	0.08	7
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	21.0	0.07	5
Beacon NB thru/right	A	0.0	0.41	0
Beacon SB left/thru	A	0.2	0.01	1
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	20.6	0.17	15
Beacon NB thru	A	0.0	0.42	0
Beacon SB thru	A	0.0	0.38	0
Chestnut Hill Avenue/Applebee's Driveway				
Driveway EB left/right	C	24.3	0.02	2
Chestnut NB left/thru	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			
Chestnut SB thru/right				
Chestnut Hill Avenue/Cinema Driveway				
Driveway EB left/right	B	13.5	0.02	2
Chestnut NB left/thru	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			
Chestnut SB thru/right				

* = Storage lane included for calibration.
= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates LOS E or LOS F.

Table 2-4 Existing Conditions (2012) Level of Service Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**E**	**60.9**		
Commonwealth EB left	B	16.0	0.35	73
Commonwealth EB thru | thru/right	C	20.7	0.42	199
Commonwealth WB U-turn/left	D	39.9	0.81	#137
Commonwealth WB thru | thru/right	C	22.0	0.30	155
Chestnut NB left	D	53.7	0.73	160
Chestnut NB thru | thru/right	F	>80.0	>1.00	#774
Chestnut SB left/thru | thru	F	>80.0	>1.00	#356
Chestnut SB right	C	23.0	0.08	16
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**F**	**>80.0**		
Beacon EB left*	F	>80.0	>1.00	#201
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#496
Beacon WB U-turn/left	F	>80.0	>1.00	#225
Beacon WB thru | thru	F	>80.0	>1.00	#442
Beacon WB right/hard right	D	38.4	0.41	180
Chestnut NB left/thru | thru	C	26.0	0.76	326
Chestnut NB right	A	0.2	0.14	0
Chestnut SB left/thru | thru/right	D	40.3	0.88	#369
At stop line south of MBTA Yard driveway:				
Chestnut Hill NB left/thru|thru	D	35.3	0.59	340
Chestnut Hill SB thru| thru/right	A	0	0.27	m0
Chestnut Hill Avenue/Dean Road	**C**	**22.6**		
Dean EB left/thru/right	C	20.8	0.19	79
Dean WB left/thru/right	C	28.8	0.57	183
Chestnut NB left/thru	C	20.7	0.74	#483
Chestnut NB right	A	3.3	0.14	25
Chestnut SB left/thru/right	C	25.5	0.83	#696
Chestnut Hill Avenue/Boylston Street	**E**	**60.4**		
Boylston EB U-turn/left	F	>80.0	0.95	#338
Boylston EB thru | thru	B	19.0	0.52	342
Boylston WB U-turn/left	F	>80.0	0.75	m#133
Boylston WB thru | thru	C	34.9	0.69	522
Boylston WB right	A	4.6	0.29	122
Chestnut SB left	F	>80.0	>1.00	#826
Chestnut SB thru	D	40.7	0.11	54
Chestnut SB right	A	6.5	0.38	64

Table 2-4 Existing Conditions (2012) Level of Service Summary, p.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Edgewood Avenue	**A**	**9.3**		
Beacon EB U-turn/left	D	37.5	0.36	65
Beacon EB thru | thru	A	9.1	0.32	183
Beacon WB U-turn	C	20.2	0.11	m16
Beacon WB thru | thru/right	A	5.7	0.43	119
Englewood SB left/right	C	26.0	0.19	50
Beacon Street/Washington Street	**C**	**23.0**		
Beacon EB U-turn/left	D	53.0	0.44	115
Beacon EB thru | thru/right	A	8.5	0.48	79
Beacon WB thru | thru/right	C	23.2	0.48	231
Washington NB left	D	50.7	0.72	#129
Washington NB thru/right	C	26.6	0.55	194
Washington SB left	C	24.7	0.30	56
Washington SB thru/right	C	34.1	0.75	256
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	-
Clinton WB left/thru/right	F	>50.0	>1.00	220
Chestnut NB left/thru/right	A	0.2	0.01	0
Chestnut SB left/thru/right	A	4.0	0.14	12
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	17.0	0.05	4
Beacon NB thru/right	A	0.0	0.37	0
Beacon SB left/thru	A	0.8	0.03	2
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	24.4	0.08	7
Beacon NB thru	A	0.0	0.36	0
Beacon SB thru	A	0.0	0.41	0
Chestnut Hill Avenue/Applebee's Driveway				
Driveway EB left/right	C	22.2	0.02	4
Chestnut NB left/thru Chestnut SB thru/right	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			
Chestnut Hill Avenue/Cinema Driveway				
Driveway EB left/right	B	14.6	0.02	2
Chestnut NB left/thru Chestnut SB thru/right	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates LOS E or LOS F.

In the a.m. peak hour, two signalized intersections operate at overall LOS E or LOS F:

- Commonwealth Avenue/Chestnut Hill Avenue
- Beacon Street/Chestnut Hill Avenue (Cleveland Circle)

For unsignalized locations during the a.m. peak hour, one intersection has associated individual approaches that operate at LOS E or LOS F:

- Chestnut Hill Avenue/Clinton Road, where the eastbound and westbound Clinton Road traffic operates at LOS F.

In the p.m. peak hour, three signalized intersections operate at overall LOS E or LOS F:

- Commonwealth Avenue/Chestnut Hill Avenue
- Beacon Street/Chestnut Hill Avenue (Cleveland Circle)
- Chestnut Hill Avenue/Boylston Street

For unsignalized locations, one intersection has associated individual approaches that operate at LOS E or LOS F:

- Chestnut Hill Avenue/Clinton Road, where the eastbound and westbound Clinton Road traffic operates at LOS F.

2.2.6 Existing Parking

The Project Site currently contains 122 parking spaces. Of these, 82 are on the cinema site and have been generally vacant since the cinema closed in 2008. Applebee's, which is currently operational, has 40 parking spaces.

On-street parking along Chestnut Hill Avenue includes a mix of two-hour parking, permit/resident parking, and metered parking, as shown in Figure 2-5. Parking is prohibited along Chestnut Hill Avenue near the Project Site. On-street parking along Beacon Street includes a mix of two-hour parking and metered parking.

No public off-street parking facilities are located within the study area.

2.2.7 Existing Site Access and Circulation

Currently, the Project Site has four unsignalized curb cuts along Chestnut Hill Avenue to serve entering and exiting vehicles. Two serve the existing Applebee's restaurant and two serve the vacant cinema site. When the cinema was open, patrons who parked on site were required to exit via the Waterworks driveway to Beacon Street.

2.2.8 Existing Public Transportation

The Project Site is well-served by MBTA trolley services, with two adjacent Green Line stations at the Cleveland Circle stop on the C Branch and the Reservoir Stop on the D Branch. The Chestnut Hill Avenue stop on the B Branch is located about ¼ mile north of the site. (See Section 2.2.5.2 for a discussion of out-of-service trolley operations through the intersection at Beacon Street/Chestnut Hill Avenue (Cleveland Circle)).

Nearby MBTA bus service includes the Route 86 bus that operates between Cleveland Circle and Sullivan Square in Somerville, and the Route 51 bus that operates between Reservoir Station on the D Branch and Forest Hills Station in Jamaica Plain. Route 65, which operates between Brighton Center and Kenmore Square via Washington Street, serves the eastern edge of the study area.

Boston College operates a shuttle bus service in the study area, taking students between the nearby campus and Reservoir Station (with other stops in the study area) every 15-20 minutes on weekdays from 7:00 a.m. to 2:00 a.m. and weekends from 8:00 a.m. to 2:00 a.m.

Transit services are shown in Figure 2-6 and listed in Table 2-5.

Table 2-5 Public Transportation in the Study Area

Transit Service	Description	Peak-hour Headway (in minutes)*
Rapid Transit Routes		
Green Line B Branch	Boston College-Government Center	6
Green Line C Branch	Cleveland Circle-North Station	7
Green Line D Branch	Riverside-Government Center	6
Local Bus Routes		
Route 51	Cleveland Circle–Forest Hills Station via Hancock Village	25
Route 65	Brighton Center-Kenmore Station via Washington Street	8-15
Route 86	Sullivan Square Station-Reservoir (Cleveland Circle) via Harvard/Johnson Gate	15
Shuttle Bus Routes		
Boston College	Boston Direct Monday-Friday 7:00 a.m.-12:00 p.m.	15-20
Boston College	All Stops Monday-Friday 12:00 p.m.- 2:00 a.m.; Saturday-Sunday 8:00 a.m.-2:00 a.m.	15-20

* Headway is the time between trains or buses.

2.2.9 Car Sharing Locations

The increasingly popular car-sharing services provide easy access to vehicular transportation for urban residents who do not own cars. The local car-sharing provider, Zipcar, offers short-term rental service for members. Vehicles are rented on an hourly and per-mile basis, and all vehicle costs (gas, maintenance, insurance, and parking) are included in the rental fee. Vehicles are checked out for a specific time period and returned to their designated location. The nearby Zipcar services provide an important transportation option for area residents, reducing the need for vehicle ownership.

As shown in Figure 2-7 and summarized in Table 2-6, Zipcar has six locations with a total of nine vehicles available within ½ mile of the Project Site. A location on Commonwealth Avenue (US Petroleum) is slightly beyond ½ mile from the site and offers two vehicles. Three additional locations, with six vehicles, are located about one mile east on Beacon Street, near Washington Square.

Table 2-6 Car Sharing Locations

Zipcar Location	Number of Vehicles
Within ¼ mile of Project Site	
Cleveland Circle T	2
Within ½ mile of Project Site	
Commonwealth Avenue/Strathmore	2
1740 Commonwealth Avenue	1
Sutherland Road/Selkirk	2
Cleveland Circle/Sutherland	1
Englewood T	1
Between ½ mile and one mile of the Project Site	
US Petroleum/Commonwealth Avenue	2
Washington Square	3
Beacon Street/Brandon Hall	1
1571 Beacon Street	2

2.2.10 Existing Pedestrian and Bicycle Conditions

Pedestrian counts were taken as part of the intersection turning movement counts and are shown in Figures 2-8 and 2-9, for the a.m. and p.m. peak hours, respectively. An inventory of sidewalks and crosswalks is provided in the intersection descriptions in Section 2.2.2. Sidewalks are generally provided along both sides of the study area roadways, with marked crosswalks provided at the signalized intersections.

Bicycle accommodations vary within the study area. Brighton and Allston have many City of Boston designated bicycle routes, but very few have physical bicycle accommodation facilities. There are bicycle lanes completed or under design on Commonwealth Avenue and Beacon Street and Chestnut Hill Avenue, north of Commonwealth Avenue. Chestnut Hill Avenue has shared bicycle lane markings on the section between Commonwealth Avenue and Cleveland Circle.

Several bicycle racks exist in the area as listed in Table 2-7.

Table 2-7 Bicycle Rack Locations

Location	Number of Racks	Bicycle Capacity
Applebee's Restaurant	1	5
MBTA Reservoir Station	4	22
Beacon Street at MBTA Cleveland Circle stop	2	22

No Hubway bicycle sharing stations are located in the study area.

2.3 Evaluation of Long-term Impacts

It is standard practice to evaluate No-Build Conditions (without project) and Full-Build Conditions (with project) and determine to what extent the traffic operations will be affected. Because these conditions are typically projected to a future date five years from the Existing Conditions year, Year 2017 has been designated as the future design year. This section describes and evaluates the projected 2017 No-Build and 2017 Build Conditions.

2.3.1 No-Build Conditions

2.3.1.1 Background Traffic Growth

The general background growth rate accounts for changes in demographics, auto usage and auto ownership. Based on a review of historical and recent traffic counts, a 0.5% annual rate was applied to the existing intersection volumes to account for background growth.

In addition to the background growth rate, the Town of Brookline identified two nearby residential developments to be included in future traffic volumes, including:

75-99 Fisher Avenue – This project involves subdivision of a 5-acre site into ten lots for market-rate single-family homes and one large lot for a multi-family affordable condominium complex in three buildings with garage parking.

1842 Beacon Street - This project involves subdivision of an existing lot and construction of 20 new apartment units.

The new vehicle trips were estimated by generating site trips for appropriate residential land uses. (The trip generation worksheet for these developments is shown in Appendix B.) Vehicle trips were assigned to travel routes based on distribution patterns presented in Section 2.3.2.6.

The resulting No-Build traffic volumes are shown in Figures 2-10 and 2-11, for the a.m. and p.m. peak hours, respectively.

2.3.1.2 No-Build Conditions Traffic Operations

The 2017 No-Build analysis uses the methodology described under Existing Conditions. The resulting intersection operations are shown in Tables 2-8 and 2-9. The tables show LOS, average delay, volume to capacity ratio, and 95th percentile queue length (feet) for the overall intersection and each approach.

Complete Synchro reports are provided in Appendix B.

Under No-Build Conditions, all locations continue to operate at the same overall level of service as under Existing Conditions.

Three individual moves deteriorate during the a.m. peak hour, due to minor increases in background traffic:

- At Beacon Street/Chestnut Hill Avenue, the northbound Chestnut Hill Avenue through/left lanes (at the stop line south of the MBTA Yard driveway) will operate at LOS F.
- At Chestnut Hill Avenue/Dean Road, the southbound Chestnut Hill Avenue left/through/right lane will operate at LOS F.
- At Chestnut Hill Avenue/Boylston Street, the westbound through move on Boylston Street will operate at LOS E.

Three individual moves, as listed below, deteriorate during the p.m. peak hour, due to minor increases in background traffic:

- At Commonwealth Avenue/Chestnut Hill Avenue, the northbound left on Chestnut Hill Avenue will operate at LOS E.
- At Beacon Street/Washington Street, the northbound left on Washington Street will operate at LOS F.

Table 2-8 No-Build (2017) Level of Service Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**E**	**72.1**		
Commonwealth EB left	B	19.5	0.44	102
Commonwealth EB thru | thru/right	C	26.0	0.54	256
Commonwealth WB U-turn/left	C	27.8	0.66	125
Commonwealth WB thru | thru/right	C	25.4	0.31	141
Chestnut NB left	D	52.9	0.59	m135
Chestnut NB thru | thru/right	F	>80.0	>1.00	m#683
Chestnut SB left/thru | thru	F	>80.0	>1.00	#353
Chestnut SB right	C	23.8	0.05	28
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**F**	**>80.0**		
Beacon EB left*	F	>80.0	>1.00	#237
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#491
Beacon WB U-turn/left	E	59.4	0.82	#208
Beacon WB thru | thru	D	51.3	0.91	#320
Beacon WB right/hard right	C	28.5	0.33	180
Chestnut NB left/thru | thru	F	>80.0	>1.00	#456
Chestnut NB right	A	0.1	0.12	m0
Chestnut SB left/thru | thru/right	F	>80.0	>1.00	m#527
At stop line south of MBTA Yard driveway:				
Chestnut Hill NB left/thru|thru	F	>80.0	0.85	#396
Chestnut Hill SB thru| thru/right	A	0	0.27	m0
Chestnut Hill Avenue/Dean Road	**D**	**47.3**		
Dean EB left/thru/right	C	24.9	0.46	128
Dean WB left/thru/right	D	38.1	0.71	#194
Chestnut NB left/thru	B	19.4	0.70	#497
Chestnut NB right	A	2.9	0.15	29
Chestnut SB left/thru/right	F	>80.0	>1.00	#860
Chestnut Hill Avenue/Boylston Street	**D**	**45.1**		
Boylston EB U-turn/left	E	71.0	0.76	#322
Boylston EB thru | thru	C	22.7	0.66	490
Boylston WB U-turn/left	F	>80.0	0.95	m#136
Boylston WB thru | thru	E	60.1	0.84	m667
Boylston WB right	A	3.7	0.45	m115
Chestnut SB left	F	>80.0	>1.00	#710
Chestnut SB thru	D	41.3	0.14	58
Chestnut SB right	A	9.6	0.50	100

Table 2-8 No-Build (2017) Level of Service Summary, a.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Edgewood Avenue	**A**	**10.0**		
Beacon EB U-turn/left	D	37.6	0.34	77
Beacon EB thru | thru	A	9.7	0.39	236
Beacon WB U-turn	B	18.8	0.10	m7
Beacon WB thru | thru/right	A	5.4	0.40	m88
Englewood SB left/right	C	26.0	0.36	67
Beacon Street/Washington Street	**C**	**27.5**		
Beacon EB U-turn/left	D	44.9	0.49	108
Beacon EB thru | thru/right	B	11.5	0.63	128
Beacon WB thru | thru/right	D	35.1	0.75	225
Washington NB left	C	25.6	0.26	33
Washington NB thru/right	D	35.2	0.77	272
Washington SB left	D	35.9	0.57	86
Washington SB thru/right	D	39.1	0.84	242
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	-
Clinton WB left/thru/right	F	>50.0	>1.00	-
Chestnut NB left/thru/right	A	0.3	0.01	1
Chestnut SB left/thru/right	A	3.0	0.10	8
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	21.8	0.07	5
Beacon NB thru/right	A	0.0	0.42	0
Beacon SB left/thru	A	0.2	0.01	1
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	20.6	0.17	15
Beacon NB thru	A	0.0	0.41	0
Beacon SB thru	A	0.0	0.40	0
Chestnut Hill Avenue/Applebee's Driveway				
Applebee's EB left/right	D	25.5	0.02	2
Chestnut NB left/thru | thru	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			
Chestnut SB thru | thru/right				
Chestnut Hill Avenue/Cinema Driveway				
Cinema EB left/right	B	13.9	0.02	2
Chestnut NB left/thru | thru	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			
Chestnut SB thru | thru/right				

* = Storage lane included for calibration.
= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates a worsening in level of service from Existing Conditions that bring operations to LOS E or LOS F.

Table 2-9 No-Build (2017) Level of Service Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**E**	**69.0**		
Commonwealth EB left	B	16.2	0.37	74
Commonwealth EB thru | thru/right	C	20.9	0.43	205
Commonwealth WB U-turn/left	D	54.3	0.90	#187
Commonwealth WB thru | thru/right	C	22.1	0.31	160
Chestnut NB left	E	57.6	0.77	164
Chestnut NB thru | thru/right	F	>80.0	>1.00	#820
Chestnut SB left/thru | thru	F	>80.0	>1.00	#373
Chestnut SB right	C	23.0	0.08	16
Beacon Street/Chestnut Hill Avenue	**F**	**>80.0**		
Beacon EB left*	F	>80.0	>1.00	#198
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#525
Beacon WB U-turn/left	F	>80.0	>1.00	#241
Beacon WB thru | thru	F	>80.0	>1.00	#465
Beacon WB right/hard right	D	38.3	0.41	177
Chestnut NB left/thru | thru	C	30.5	0.80	345
Chestnut NB right	A	0.2	0.15	0
Chestnut SB left/thru | thru/right	D	44.5	0.91	#410
At stop line south of MBTA Yard driveway:				
Chestnut Hill NB left/thru|thru	D	36.0	0.61	#352
Chestnut Hill SB thru| thru/right	A	0	0.27	m0
Chestnut Hill Avenue/Dean Road	**C**	**24.7**		
Dean EB left/thru/right	C	21.2	0.20	83
Dean WB left/thru/right	C	29.7	0.60	191
Chestnut NB left/thru	C	21.5	0.76	#545
Chestnut NB right	A	3.4	0.15	26
Chestnut SB left/thru/right	C	29.8	0.88	#740
Chestnut Hill Avenue/Boylston Street	**E**	**64.7**		
Boylston EB U-turn/left	F	>80.0	0.98	#372
Boylston EB thru | thru	B	19.2	0.53	354
Boylston WB U-turn/left	F	>80.0	0.77	m#134
Boylston WB thru | thru	D	35.1	0.71	538
Boylston WB right	A	4.4	0.30	127
Chestnut SB left	F	>80.0	>1.00	#864
Chestnut SB thru	D	40.7	0.11	56
Chestnut SB right	A	6.5	0.39	64

Table 2-9 No-Build (2017) Level of Service Summary, p.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Edgewood Avenue	**A**	**9.4**		
Beacon EB U-turn/left	D	37.5	0.37	67
Beacon EB thru | thru	A	9.0	0.33	187
Beacon WB U-turn	C	21.7	0.12	m16
Beacon WB thru | thru/right	A	5.8	0.44	123
Englewood SB left/right	C	25.2	0.21	53
Beacon Street/Washington Street	C	23.5		
Beacon EB U-turn/left	D	52.4	0.45	120
Beacon EB thru | thru/right	A	9.1	0.50	84
Beacon WB thru | thru/right	C	24.2	0.51	240
Washington NB left	E	56.2	0.77	#141
Washington NB thru/right	C	26.2	0.55	200
Washington SB left	C	24.7	0.32	58
Washington SB thru/right	C	33.7	0.75	266
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	-
Clinton WB left/thru/right	F	>50.0	>1.00	-
Chestnut NB left/thru/right	A	0.2	0.01	1
Chestnut SB left/thru/right	A	4.6	0.16	14
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	17.4	0.05	4
Beacon NB thru/right	A	0.0	0.38	0
Beacon SB left/thru	A	0.8	0.03	2
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	23.1	0.09	7
Beacon NB thru	A	0.0	0.37	0
Beacon SB thru	A	0.0	0.44	0
Chestnut Hill Avenue/Applebee's Driveway				
Applebee's EB left/right	C	23.5	0.05	4
Chestnut NB left/thru | thru	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			
Chestnut SB thru | thru/right				
Chestnut Hill Avenue/Cinema Driveway				
Cinema EB left/right	C	15.1	0.02	2
Chestnut NB left/thru | thru	*See signalized results at Beacon Street/Chestnut Hill Avenue for prevailing conditions on Chestnut Hill Avenue.*			
Chestnut SB thru | thru/right				

* = Storage lane included for calibration.
= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates a worsening in level of service from Existing Conditions that bring operations to LOS E or LOS F.

2.3.2 Build Conditions

As summarized in Table 2-1, the Project will include approximately 196 hotel rooms, 74 residential units, 18,000 sf of medical office, 7,300 sf of retail, and 6,900 sf of restaurant. Approximately 203 parking spaces will be provided, with 126 underground spaces and 77 at-grade spaces.

As shown in the site plan in Figure 2-12, the Project will replace the existing four curb cuts with one driveway on Chestnut Hill Avenue, simplifying traffic patterns and minimizing turning movement conflicts on Chestnut Hill Avenue. All Project traffic will enter via this main driveway on Chestnut Hill Avenue. Egress from the site will be available to both Chestnut Hill Avenue and Beacon Street, depending on where the driver has parked on the Project Site.

Sixty spaces in the Project's rear parking lot will be for the exclusive use of hotel guests. Parking management controls will force all hotel guests to exit via the Waterworks driveway to the intersection of Beacon Street/Waterworks Driveway. (A detailed discussion of site access and the on-site vehicular circulation plan is presented in Section 2.3.2.13.)

This section presents the following aspects of the Project: the number and travel pattern of new trips, LOS analysis for Build Conditions, an evaluation of the parking plan, the impact to the public transportation system, loading and service activity, vehicle access/egress driveways, and on-site circulation.

2.3.2.1 Trip Generation

The methodology used to estimate trips follows standard traffic engineering practice using the Institute of Transportation Engineers (ITE) trip generation rates and applying the specific mode split data from the BTD for the Project Site. Trip generation rates for the Project land uses were derived from the ITE's publication *Trip Generation* (8th edition, 2008), using the following Land Use Codes (LUC):

ITE LUC 310 - Hotel. The hotel land use is defined as a place of lodging that provides sleeping accommodations and supporting facilities. Calculation of the number of vehicle trips uses ITE's average rate per room for daily trips and p.m. peak hour trips, and ITE's fitted curve rate per room for the a.m. peak hour. While trip generation is based on full occupancy of the hotel, hotels rarely operate at full occupancy. Establishing trip generation on full occupancy is most conservative (highest impact).

ITE LUC 220 - Residential Apartment. Apartments are defined as rental dwelling units in the same building as at least three other such units. Calculations of the number of trips use ITE's fitted curve rate per number of dwelling units.

ITE LUC 720 – Medical-Dental Office Building. A medical-dental office building is a facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical and surgical care. Calculations of the number of trips use ITE's fitted curve rate per 1,000 sf for daily and p.m. peak hours. For the a.m. peak hour, ITE's average rate per 1,000 sf was used to calculate trips.

ITE LUC 820 - Retail/Shopping. A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. Note that LUC 814 for Specialty Retail was also reviewed for this analysis. Because LUC 820 yields a higher number of trips, it was chosen to be most conservative (highest impact). Calculations of the number of trips use ITE's average rate per 1,000 sf.

ITE LUC 831 - Quality Restaurant. This land use consists of eating establishments of high quality, with average turnover rates of at least one hour or longer. Generally, quality restaurants do not serve breakfast, some do not serve lunch, and all serve dinner. Calculations of the number of trips use ITE's average rate per 1,000 sf.

The detailed trip generation worksheet is presented in Appendix B. (The current building program, as shown in Table 2-1, is slightly different from the program presented in the trip generation worksheet of Appendix B and studied in this DPIR's transportation section. The current building program would result in the same number of vehicle trips during the a.m. peak hour and two more vehicle trips during the p.m. peak hour. This change is inconsequential to traffic operations analysis.)

2.3.2.2 Pass-by Trips

A portion of trips to the Project will be pass-by trips, which are already in the transportation network and not specifically destined to the proposed uses. ITE defines pass-by trips as trips "made as intermediate stops on the way from an origin to a primary destination without a route diversion." This accounts for trips generated by people already in the area, as in common shopping districts or denser development blocks.

For all time periods, a pass-by rate of 25% was applied to the retail/restaurant uses, based on ITE data and the nature of the area around the Project Site.

2.3.2.3 Mode Split

BTD publishes vehicle, transit, and walking mode split rates for different areas of Boston; the Project is located within designated Area 10. Mode split assumptions based on BTD's Area 10 data and local vehicle occupancy rates from the *2009 National Household Travel Survey* are summarized in Table 2-10 for existing and future Project land uses.

Table 2-10 Travel Mode Shares

Land Use	Direction	Vehicle Share	Transit Share	Walk/Bicycle Share	Vehicle Occupancy Rate
Daily					
Hotel	In Out	65% 65%	5% 5%	30% 30%	2.1
Residential	In Out	59% 59%	19% 19%	22% 22%	1.1
Medical Office	In Out	76% 76%	9% 9%	15% 15%	1.2
Retail/Restaurant	In Out	65% 65%	5% 5%	30% 30%	1.8
a.m. Peak hour					
Hotel	In Out	55% 61%	5% 10%	40% 29%	2.1
Residential	In Out	51% 50%	19% 30%	30% 20%	1.1
Medical Office	In Out	69% 69%	10% 17%	21% 14%	1.2
Retail/Restaurant	In Out	55% 61%	5% 10%	40% 29%	1.8
p.m. Peak hour					
Hotel	In Out	61% 55%	10% 5%	29% 40%	2.1
Residential	In Out	50% 51%	30% 19%	20% 30%	1.1
Medical Office	In Out	69% 69%	17% 10%	14% 21%	1.2
Retail/Restaurant	In Out	61% 55%	10% 5%	29% 40%	1.8

2.3.2.4 Existing Site Trip Generation

While it is standard practice for a future year analysis to subtract trips generated by existing uses prior to adding in new Projects trips, no credit for existing uses has been taken. The Cleveland Circle Cinema has been vacant since 2008, so no trip reduction was applied. While the Applebee's restaurant is still operating, no credit was taken for the Applebee's trips because the associated volumes are relatively minor during the peak hours. This methodology is most conservative (highest impact).

2.3.2.5 Project Trip Generation

Based on the proposed land uses, ITE trip generation rates, mode split data, and local vehicle occupancy rates, the new Project trips were estimated and are summarized in Table 2-11 for each time period and travel mode.

Table 2-11 Project Trips by Land Use and Travel Mode

Land Use	Direction	Vehicle Trips	Transit Trips	Walk/Bicycle Trips
Daily				
Hotel	In	520	84	504
	Out	520	84	504
Residential	In	169	60	69
	Out	169	60	69
Medical Office	In	200	29	47
	Out	200	29	47
Retail/Restaurant	In	212	29	177
	Out	212	29	177
Total	**In**	**1,101**	**202**	**797**
	Out	**1,101**	**202**	**797**
a.m. peak hour				
Hotel	In	32	6	48
	Out	22	8	22
Residential	In	6	3	4
	Out	16	10	7
Medical Office	In	23	4	9
	Out	6	2	1
Retail/Restaurant	In	3	0	4
	Out	2	0	2
Total	**In**	**64**	**13**	**65**
	Out	**46**	**20**	**32**
p.m. peak hour				
Hotel	In	37	13	37
	Out	30	6	46
Residential	In	18	12	8
	Out	12	5	8
Medical Office	In	12	3	3
	Out	32	4	11
Retail/Restaurant	In	17	5	14
	Out	15	4	20
Total	**In**	**84**	**33**	**62**
	Out	**89**	**19**	**85**

2.3.2.6 Trip Distribution

A vehicular trip distribution pattern was developed based on origin-destination data from BTD for Area 10 and knowledge of the local roadway network. The vehicle trip distribution is summarized in Table 2-12 and shown on the local roadway network in Figure 2-13.

Table 2-12 Vehicle Trip Distribution

Route	Entering/Exiting Traffic
Chestnut Hill Avenue to/from south	
Route 9 to/from east	7%
To/from Heath Street	5%
Route 9 to/from west	24%
Subtotal	**36%**
Chestnut Hill Avenue to/from north	
To/from Chestnut Hill Avenue	7%
Commonwealth Avenue to/from east	29%
Subtotal	**36%**
Beacon Street to/from east	
To/from Beacon Street	13%
Washington Street to/from north	5%
Subtotal	**18%**
Beacon Street to/from west	**10%**
Total	**100%**

Project trips added to the study area intersections are shown in Figures 2-14 and 2-15 for the a.m. and p.m. peak hour, respectively.

2.3.2.7 Build Conditions Traffic Operations

To estimate 2017 Build traffic volumes, the Project-generated trips were added to the 2017 No-Build traffic volumes. The Year 2017 Build traffic volumes are shown in Figures 2-16 and 2-17 for the a.m. and p.m. peak hour, respectively.

The resulting LOS analysis summaries for Build Conditions are shown in Tables 2-13 and 2-14. The tables show LOS, average delay, volume to capacity ratio, and 95th percentile queue length (feet) for the overall intersection and each approach.

Under Build Conditions, the Project's site driveway at Chestnut Hill Avenue will operate as part of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. Today, the signal system at this intersection already controls traffic on northbound Chestnut Hill Avenue via a signal located opposite the proposed Project driveway and controls movements of the Green Line C Branch trolleys into and out of the MBTA Yard. Because

traffic on the Project driveway will also become part of this signal controller, the results for the driveway are included under the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection.

Complete Synchro reports are provided in Appendix B.

Table 2-13 Build Conditions (2017) Level of Service Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**E**	**75.3**		
Commonwealth EB left	B	19.5	0.44	102
Commonwealth EB thru | thru/right	C	26.0	0.54	256
Commonwealth WB U-turn/left	C	32.5	0.73	#156
Commonwealth WB thru | thru/right	C	25.4	0.31	141
Chestnut NB left	D	51.6	0.59	m117
Chestnut NB thru | thru/right	F	>80.0	>1.00	m#615
Chestnut SB left/thru | thru	F	>80.0	>1.00	#358
Chestnut SB right	C	23.8	0.05	28
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**F**	**>80.0**		
Beacon EB left*	F	>80.0	>1.00	#241
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#499
Beacon WB U-turn/left	E	75.3	0.83	#218
Beacon WB thru | thru	E	59.2	0.87	#306
Beacon WB right/hard right	C	26.6	0.31	176
Chestnut NB left/thru | thru	F	>80.0	>1.00	m#405
Chestnut NB right	A	0.1	0.12	m0
Chestnut SB left/thru | thru/right	F	>80.0	>1.00	m#461
At Project Site Driveway				
Site Driveway EB left/right	C	23.2	0.05	32
Chestnut Hill NB left/thru|thru	F	>80.0	0.97	#471
Chestnut Hill SB thru| thru/right	F	>80.0	0.13	M98
Chestnut Hill Avenue/Dean Road	**E**	**61.2**		
Dean EB left/thru/right	C	24.9	0.46	128
Dean WB left/thru/right	D	38.1	0.71	#194
Chestnut NB left/thru	C	20.4	0.72	#557
Chestnut NB right	A	3.1	0.15	31
Chestnut SB left/thru/right	F	>80.0	>1.00	#906

Table 2-13 Build Conditions (2017) Level of Service Summary, a.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Chestnut Hill Avenue/Boylston Street	**D**	**45.6**		
Boylston EB U-turn/left	E	76.1	0.82	#360
Boylston EB thru | thru	C	22.7	0.66	490
Boylston WB U-turn/left	F	>80.0	0.95	m#136
Boylston WB thru | thru	E	60.1	0.84	m667
Boylston WB right	A	4.1	0.46	m137
Chestnut SB left	F	>80.0	>1.00	#717
Chestnut SB thru	D	41.4	0.15	61
Chestnut SB right	B	10.7	0.52	114
Beacon Street/Edgewood Avenue	**B**	**10.5**		
Beacon EB U-turn/left	D	37.6	0.34	77
Beacon EB thru | thru	A	9.8	0.39	240
Beacon WB U-turn	B	19.6	0.10	m7
Beacon WB thru | thru/right	A	6.4	0.41	m107
Englewood SB left/right	C	26.8	0.37	72
Beacon Street/Washington Street	**C**	**28.1**		
Beacon EB U-turn/left	D	44.0	0.51	113
Beacon EB thru | thru/right	B	11.6	0.64	131
Beacon WB thru | thru/right	D	37.1	0.78	#250
Washington NB left	C	25.9	0.27	33
Washington NB thru/right	C	34.9	0.77	272
Washington SB left	D	35.7	0.57	86
Washington SB thru/right	D	39.3	0.84	245
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	153
Clinton WB left/thru/right	F	>50.0	0.70	102
Chestnut NB left/thru/right	A	0.5	0.01	1
Chestnut SB left/thru/right	A	3.3	0.10	8
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	22.0	0.07	6
Beacon NB thru/right	A	0.0	0.42	0
Beacon SB left/thru	A	0.2	0.01	1
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	21.1	0.29	30
Beacon NB thru	A	0.0	0.41	0
Beacon SB thru	A	0.0	0.40	0

* Storage lane included for calibration.
= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates a change in level of service from No-Build conditions that bring operations into LOS E or LOS F.

Table 2-14 Build Conditions (2017) Level of Service Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**E**	**79.0**		
Commonwealth EB left	B	16.3	0.37	74
Commonwealth EB thru | thru/right	C	20.9	0.43	205
Commonwealth WB U-turn/left	F	>80.0	>1.00	#238
Commonwealth WB thru | thru/right	C	22.1	0.31	160
Chestnut NB left	E	58.6	0.77	#165
Chestnut NB thru | thru/right	F	>80.0	>1.00	#886
Chestnut SB left/thru | thru	F	>80.0	>1.00	#379
Chestnut SB right	C	23.0	0.08	16
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**F**	**>80.0**		
Beacon EB left*	F	>80.0	>1.00	#216
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#576
Beacon WB U-turn/left	F	>80.0	>1.00	#260
Beacon WB thru | thru	F	>80.0	>1.00	#473
Beacon WB right/hard right	D	38.3	0.41	177
Chestnut NB left/thru | thru	F	>80.0	0.88	#388
Chestnut NB right	A	0.1	0.16	m0
Chestnut SB left/thru | thru/right	D	50.8	0.95	#455
At Project Site Driveway				
Site Driveway EB left/right	D	44.3	0.24	#124
Chestnut Hill NB left/thru|thru	D	49.2	0.74	401
Chestnut Hill SB thru| thru/right	F	>80.0	0.41	m163
Chestnut Hill Avenue/Dean Road	**C**	**31.9**		
Dean EB left/thru/right	C	21.2	0.20	83
Dean WB left/thru/right	C	29.7	0.60	191
Chestnut NB left/thru	C	23.1	0.79	#585
Chestnut NB right	A	3.6	0.15	28
Chestnut SB left/thru/right	D	46.4	0.98	#817
Chestnut Hill Avenue/Boylston Street	**E**	**67.5**		
Boylston EB U-turn/left	F	>80.0	>1.00	#419
Boylston EB thru | thru	B	19.2	0.53	354
Boylston WB U-turn/left	F	>80.0	0.77	m#134
Boylston WB thru | thru	D	35.1	0.71	538
Boylston WB right	A	4.5	0.31	130
Chestnut SB left	F	>80.0	>1.00	#875
Chestnut SB thru	D	40.9	0.12	60
Chestnut SB right	A	6.4	0.41	67

Table 2-14 Build Conditions (2017) Level of Service Summary, p.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Edgewood Avenue	**B**	**10.0**		
Beacon EB U-turn/left	D	37.4	0.37	68
Beacon EB thru | thru	A	9.5	0.35	190
Beacon WB U-turn	C	21.6	0.12	m16
Beacon WB thru | thru/right	A	6.7	0.48	126
Englewood SB left/right	C	25.1	0.22	55
Beacon Street/Washington Street	**C**	**24.2**		
Beacon EB U-turn/left	D	53.8	0.47	124
Beacon EB thru | thru/right	A	9.1	0.50	86
Beacon WB thru | thru/right	C	26.0	0.57	245
Washington NB left	E	58.0	0.78	#143
Washington NB thru/right	C	26.0	0.55	200
Washington SB left	C	24.6	0.32	58
Washington SB thru/right	C	33.9	0.76	270
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	0.95	93
Clinton WB left/thru/right	E	48.9	0.63	92
Chestnut NB left/thru/right	A	0.3	0.01	1
Chestnut SB left/thru/right	A	5.3	0.17	15
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	17.8	0.05	4
Beacon NB thru/right	A	0.0	0.38	0
Beacon SB left/thru	A	0.8	0.03	2
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	18.7	0.20	19
Beacon NB thru	A	0.0	0.37	0
Beacon SB thru	A	0.0	0.42	0

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates a change in LOS from No-Build conditions that bring operations into LOS E or LOS F.

Under Build conditions, with the additional trips from the Project, only one intersection experiences an overall change in LOS. The intersection of Chestnut Hill Avenue/Dean Road worsens from an overall LOS D to LOS E during the a.m. peak hour.

Two individual moves deteriorate during the a.m. peak hour:

- At the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection, the Beacon Street westbound through movement worsens from LOS D to LOS E.

- At the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection, the southbound Chestnut Hill Avenue approach at the Project driveway would operate at LOS F. See Section 2.4 for recommended mitigation at this location.

Three individual moves, as listed below, deteriorate from LOS D to LOS E during the p.m. peak hour:

- Commonwealth Avenue/Chestnut Hill Avenue, the westbound Chestnut Hill U-turn/ left turn deteriorates from LOS E to LOS F. See Section 2.4 for recommended mitigation at this location.

- At Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection, the northbound Chestnut Hill Avenue left/thru lanes deteriorate from LOS C to LOS F and the southbound Chestnut Hill Avenue approach at the Project driveway would operate at LOS F. See Section 2.4 for recommended mitigation at this location.

The new site driveway will be signalized and operate as part of the Beacon Street/Chestnut Hill (Cleveland Circle) intersection. The proposed site driveway is an improvement to the existing four unsignalized curb cuts that are located on Chestnut Hill Avenue. By minimizing the curb cuts located adjacent to the intersection of Beacon Street/Chestnut Hill Avenue and providing a signalized approach, vehicles entering and exiting the proposed site will have improved safety and traffic operations. While the results in Tables 2-13 and 2-14 show that the site driveway at Chestnut Hill Avenue would operate at LOS C and LOS D during the a.m. and p.m. peak hours, respectively, additional evaluation of the driveway is presented in Section 2.4, Transportation Mitigation.

During the a.m. peak hour, only one of nine intersections would experience a change into LOS E, while during the p.m. peak hour no intersections would experience a change in LOS. Within the study intersections, only five of 106 moves during either the a.m. or p.m. peak hours decrease to LOS E or LOS F as compared to No-Build Conditions. The remaining 101 moves will not experience a change in level of service.

While the overall impact of the new Project trips is minimal to the study intersections, the Proponent has developed several signal operation improvements to help traffic flow in the study area, as presented in Section 2.4, Transportation Mitigation.

2.3.2.8 Proposed Parking

This section presents the Project's parking supply, an evaluation of the Project's parking activity, and an overview of the courtyard's drop-off/pick-up spaces.

Parking Supply

As shown in the site plan (Figure 2-12), on-site parking will include approximately 203 spaces, including a mix of garage and at-grade surface spaces as described below:

- Underground parking spaces
  - About 126 underground spaces will be provided in the parking garage. Elevators will provide access in the first floor lobbies.
  - About 74 spaces will be designated for residential use.
  - The remaining spaces will be used by visitors to and employees of the office, retail, restaurant, and hotel.
- At-grade spaces
  - About 77 at-grade parking spaces will be provided.
  - Six spaces will be angled spaces located along the southern perimeter wall of the courtyard. These spaces will be signed for short-term parking (envisioned as 15 minutes or less), including hotel guest check-in/check-out.
  - Eleven spaces will be near the hotel service area and available to all users.
  - Sixty spaces in the Project's rear parking lot will be for the exclusive use of hotel guests. Parking management controls will force all hotel guests to exit via the Waterworks driveway to the intersection of Beacon Street/Waterworks Driveway.
- Courtyard curb lane
  - The continuous curb lane along the north and west perimeter of the courtyard will be signed for drop-off/pick-up activity and surfaced with special pavement to differentiate it from the travel lanes. The curb lane will have one space near the hotel entrance designated as a Boston taxicab stand. The remainder of this drop-off/pick-up curb will accommodate about seven vehicles. One space (within the Town of Brookline) on the eastern courtyard perimeter near the office lobby will be designated as a Brookline taxicab stand. The curb lane spaces and taxicab spaces are not included in the tally of the Project's 203 parking spaces.

Table 2-15 presents the recommended parking ratios, as obtained from BTD, and the associated estimate of spaces. The Project's planned parking supply of 203 spaces is comparable to the recommended supply based on the BTD ratios and, therefore, is providing an appropriate number of parking spaces. The Proponent anticipates dedicating spaces to hotel guests, residents, tenants, and visitors as applicable.

Table 2-15 Project Parking Ratios and Parking Supply

Land Use	BTD Parking Ratio	Parking Supply based on BTD Ratio	Project Parking Supply
Hotel	0.5 spaces/room	98 spaces	
Residential	0.75-1.25 spaces/unit	74 spaces *Based on 1.0 spaces/unit*	
Medical Office	1.0 spaces/1,000 sf	19 spaces	
Retail/Restaurant	0.75 spaces/1,000 sf	10 spaces	
Total		201 spaces	203 spaces

Parking Activity

As compared to those that serve only one land use, parking spaces that serve complementary land uses can potentially reduce the number of necessary spaces or, at least, provide spare capacity during certain periods of the day. Shared parking activity occurs when a group of parking spaces is used (or *shared*) by different parkers throughout the day, thereby increasing the overall utilization of each space. For example, hotel parking demand peaks from late evening until early morning, while guests are in their room. By contrast, office parking demand peaks between mid-morning and late afternoon. Peak hotel occupancy occurs on weekends, while office space is generally empty.

Time-of-day parking demand profiles from the Urban Land Institute and Institute of Transportation Engineers for the Project's various land uses, along with the BTD's recommended parking ratios, were adopted to create an aggregate pattern of parking demand throughout the day. Note that the BTD's recommended parking ratios reflect the availability of nearby MBTA's Green Line transit service at both the Cleveland Circle stop (C Branch) and Reservoir Station (D Branch).

Figure 2-18 graphically shows Project's parking demand pattern compared to the Project's parking supply of 203 spaces. The graph shows projected occupied and empty spaces by time of day, revealing that an adequate number of spaces will be available to serve the Project's guests, tenants, and visitors and absorb realistic fluctuations in parking demand.

Curbside Activity

As shown in the site plan (Figure 2-12), the continuous curb lane along the north and west perimeter of the courtyard will be signed for drop-off/pick-up activity and surfaced with special pavement to differentiate it from the travel lane. The drop-off/pick-up curb will accommodate one Boston taxicab stand and about seven vehicles. One curbside space on the eastern courtyard perimeter (in Brookline) near the office lobby will be designated as a Brookline taxicab stand. Note that the capacity along the pick-up/drop-off curb and the taxicab spaces are not included in the Project's overall parking supply of 203 spaces.

To assess the operational capacity of the seven curbside spaces, a profile of curbside activity by time of day was developed. The estimated percent of total vehicle trips that will stop at the curb lane and discharge/pick-up a passenger was based on knowledge of drop-off activity patterns, automobile occupancy by land use, and engineering judgment.

Combined, the seven curbside spaces have an hourly capacity of 420 vehicles-minutes (60 minutes x seven spaces). Throughout one hour, the seven spaces will be either vacant or occupied with a vehicle dropping off/picking up a passenger. Based on the time-of-day pattern of vehicle arrivals/departures and assumed curb dwell times per trip type, the number of occupied vehicle-minutes per hour was calculated and graphed in Figure 2-19. Dwell time assumptions for trip types are listed in the graph.

The graph generally shows increasing hourly drop-off/pick-up activity from 6:00 a.m. until 11:00 a.m., steady activity between about 11:00 a.m. and 8:00 p.m., and decreasing activity after 10:00 p.m. Hotel activity comprises the largest share. Residential activity peaks late afternoon into early evening, while the medical office activity is highest during the mid-day. The retail/restaurant activity peaks during the evening. Taxicab activity is steady throughout the day. The projected occupancy of the curb lane is generally no higher than 50% of the capacity, indicating that the curb lane will adequately serve the Project's drop-off/pick-up demand.

In addition to the curb lane, the six angled spaces (including one accessible space) located along the southern perimeter wall of the courtyard will be signed for short-term parking (envisioned as 15 minutes or less).

2.3.2.9 Future Public Transportation

As summarized in Table 2-11, the number of new daily transit trips associated with the Project Site will increase by 404 trips. During the a.m. peak, the Project Site will generate 33 new trips. There will be an increase of 52 transit trips during p.m. peak hour. While the overall change in transit trips is small and will not adversely affect transit services in the study area, the Proponent is committed to promoting transit use among hotel guests, residents, tenants, and visitors, as discussed under the Transportation Demand Management section below.

2.3.2.10 Pedestrian and Bicycles

As summarized in Table 2-11, the number of new daily walk/bicycle trips will increase by 1,594 trips. During the a.m. and p.m. peak hours, the increase will be 97 trips and 147 trips, respectively.

As discussed below in the Transportation Demand Management section, the Proponent will install new sidewalks along Chestnut Hill Avenue and work with the BTD to install a new crosswalk on Chestnut Hill Avenue at the site driveway intersection. With the inclusion of the new sidewalks and the closing of the curb cuts on Chestnut Hill Avenue, pedestrian service and safety will increase in the build condition.

The Proponent will provide adequate secured bicycle storage and racks to encourage bicycle use.

2.3.2.11 Future Loading and Service Activity

As shown in the site plan in Figure 2-12, the Project will provide two service areas. All delivery vehicles will enter and exit via the Chestnut Hill Avenue driveway. No service or loading will take place on public streets. Adequate roadway width and clearances will be provided for truck access, egress, and circulation within the site. The associated truck movement paths are shown in Appendix B and were developed using AutoTURN, an engineering software program that analyzes and evaluates vehicle maneuvers.

Because pedestrian activity will be limited near all loading dock curb cuts, conflicts between delivery vehicles and pedestrians is anticipated to be minimal.

Delivery trip estimates were based on National Cooperative Highway Research Program (NCHRP) data for Boston[4]. A description of the anticipated loading/ service activity by land use is presented below.

Hotel Use. Hotel deliveries include primarily linens and food.

Residential Use. Residential units primarily generate delivery trips related to small packages and prepared food.

Medical Office Use. Deliveries for office use are related primarily to office supplies and couriers, depending on the nature of the office tenants.

Retail Use. Merchants will have different suppliers for their particular merchandise.

Restaurant. Deliveries include food and linens.

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[4] "Truck Trip Generation Data –Synthesis 298", NCHRP, Transportation Research Board, Washington D.C. 2001.

A summary of loading/service activity by land use is presented in Table 2-16.

Table 2-16 Delivery Activity by Land Use

Land Use	Daily (Weekday) Deliveries
Hotel	3
Residential	1
Medical Office	2
Retail/Restaurant	5
Total	11

Overall, the Project will generate approximately 11 deliveries per day. It is anticipated that most of these deliveries will occur between 7:00 a.m. and 5:00 p.m. However, whenever possible, loading and service activities will be requested to occur during off-peak hours. Based on observations of deliveries at other Boston mixed-use developments, the average duration of a delivery is about 15 minutes. Based on this duration of 15 minutes per delivery, each dock could accommodate up to four deliveries per hour. Given the number of available delivery bays and the projected number of deliveries, sufficient loading capacity is provided in the Project. While some deliveries will be via truck, most occur via cars/vans.

2.3.2.12 Vehicle Access/Egress Driveways

As shown in the site plan in Figure 2-12, the Project will replace the existing four curb cuts with one driveway on Chestnut Hill Avenue, simplifying traffic patterns and minimizing turning movement conflicts on Chestnut Hill Avenue. This driveway will be signalized by combining a new site driveway signal phase into the existing phases of the existing Cleveland Circle traffic signal. By utilizing the existing traffic signal equipment and traffic signal phasing, the Project will avoid creating an isolated traffic signal near the existing new Cleveland Circle signal, and avoid possible complication of two closely spaced traffic signals. All Project traffic will enter via this main driveway on Chestnut Hill Avenue.

Except for hotel guests, egress from the site will be via the Chestnut Hill Avenue driveway. The existing rear, exit-only driveway will continue to operate at the western end of the site and connect directly to the Waterworks driveway and Beacon Street. Parking management controls will force all parked hotel guests to exit via the Waterworks driveway. Project vehicles using the rear driveway will turn either left or right onto Beacon Street at the unsignalized Beacon Street/Waterworks Driveway intersection. (Note that an evaluation of future conditions at the Beacon Street/Waterworks Driveway with Project traffic using the rear driveway showed that a traffic signal is not warranted at this location.)

Level of service analysis results (see Tables 2-17 and 2-18 in Section 2.4) show that the access/egress plan with a two-way driveway on Chestnut Hill Avenue and an exit-only driveway to Beacon Street will adequately process Project vehicles and will not produce queues that would block access, egress, or courtyard circulation. No additional Project driveways are necessary.

2.3.2.13 On-Site Circulation

All Project vehicles will enter via the Chestnut Hill Avenue driveway. Most vehicles will proceed directly to parking either at the underground garage or the surface spaces located at the western end of the site. A central courtyard will channel and direct vehicles to parking areas and provide several short-term parking spaces for hotel guest check-in. Appropriate directional signage will be provided.

All delivery vehicles will enter and exit via the Chestnut Hill Avenue driveway. No delivery vehicles will exit the Project Site via the rear driveway to Beacon Street. Two service areas will be provided on site and no service/loading activity will take place on public streets.

The site plan design has been evaluated using AutoTURN, an engineering software program that analyzes vehicle maneuvers. Through an iterative assessment of the site plan and vehicle maneuvers, an optimal design was developed for the Project Site that provides adequate roadway width/clearance for automobiles and delivery vehicles as they access, egress, and circulate within the site. While most deliveries will occur via car/van, the site and loading areas have been designed to accommodate a 36-foot single-unit truck. The associated automobile and delivery vehicle movement paths are shown in Appendix B.

As presented in Section 2.3.2.8, six angled parking spaces designated for short-term use will be provided along the southern perimeter wall of the courtyard island. These spaces will be signed for short-term parking (envisioned as 15 minutes or less) and serve hotel guest check-in.

The continuous curb lane along the north and west perimeter of the courtyard will be signed for drop-off/pick-up activity and surfaced with special pavement to differentiate it from the travel lanes. The curb lane will have one space near the hotel entrance designated as a Boston taxicab stand. The remainder of this drop-off/pick-up curb will accommodate about seven vehicles and will be signed as live parking only. Note that the capacity along the pick-up/drop-off curb is not included in the Project's parking supply of 203 spaces. One space (within the Town of Brookline) on the eastern courtyard perimeter near the office lobby will be designated as a Brookline taxicab stand.

2.4 Transportation Mitigation Measures

The Proponent will continue to work with the City of Boston and Town of Brookline to create a development that balances the needs of the various transportation modes.

During the a.m. peak hour, only one of nine intersections would experience a change into LOS E, while during the p.m. peak hour no intersections would experience a change in LOS. Within the study intersections, only four of 106 movements during the a.m. and p.m. peak hours decrease to LOS E or F as compared to No-Build Conditions.

While the traffic impacts associated with the new Project trips are minimal—one of nine intersections decreases to LOS E only during the a.m. peak hour, and only four of 106 movements during either the a.m. or p.m. peak hours decrease to LOS E or F from the No-Build Condition—the Proponent has developed several signal operation recommendations that would improve general traffic operations in the study area, including a significant improvement at the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. The Proponent will continue to work with the BTD and the Town of Brookline's Transportation Department to finalize the design of these improvements.

Note that the Proponent is responsible for preparation of the Transportation Access Plan Agreement (TAPA), a formal legal agreement between the Proponent and the BTD. The TAPA formalizes the findings of the transportation study, mitigation commitments, elements of access and physical design, travel demand management measures, and any other responsibilities that are agreed to by both the Proponent and the BTD. Because the TAPA must incorporate the results of the technical analysis, it must be executed after these other processes have been completed. The transportation mitigation elements that the Proponent has recommended in this section will be discussed with BTD and if committed to, will be documented in the TAPA.

2.4.1 Intersection Improvements

Recommended intersection improvements are listed below and associated traffic operation impacts are presented in Section 2.4.2.

Commonwealth Avenue/Chestnut Hill Avenue

- Modify traffic signal phase times.

Beacon Street/Chestnut Hill Avenue (Cleveland Circle)

- The Project Site driveway at Chestnut Hill Avenue will be signalized and tied into the existing signal operations at Beacon Street/Chestnut Hill Avenue.

- On the eastbound Beacon Street approach, there is currently one left/through travel lane and one through/right travel lane. The study team recommends that a 200-foot exclusive right-turn storage bay be designated on this approach. This lane use change will require some roadway geometry modifications.

- On the northbound Chestnut Hill Avenue approach, there are currently two wide approach lanes used as one left/through lane, one through lane, and one channelized right-turn lane. Based on the travel volumes, the study team recommends adding a 50-foot exclusive left-turn storage bay. This storage bay can be provided within the existing roadway right-of-way.

- On the southbound Chestnut Hill Avenue approach, there are currently two travel lanes used as one left/through lane and one through/right lane. Based on travel volumes, the study team recommends adding a 150-foot left-turn storage bay. This storage bay can be provided within the existing roadway right-of-way, although an MBTA bus stop will need to be relocated and a few parking spaces will need to be eliminated along the western curb.

- Pedestrians will proceed during concurrent phases, rather than during an exclusive pedestrian phase[5]

- The exclusive signal phase for Green Line vehicles will be maintained and slightly lengthened to provide more clearance time for Green Line trolleys.

Chestnut Hill Avenue/Dean Road

- Modify traffic signal phase times during both peak hours.

Chestnut Hill Avenue/Boylston Street

- Modify traffic signal phase times during both peak hours.

Beacon Street/Englewood Street

- Modify traffic signal phase times in the a.m. peak hour.

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[5] An exclusive pedestrian phase occurs when all vehicular traffic is stopped to allow pedestrians to cross on all crosswalks in the intersection. A concurrent pedestrian phase allows pedestrians to cross in crosswalks that are parallel to moving traffic. Concurrent phasing is widely used throughout the country and is becoming the standard in the City of Boston. While pedestrians must exercise more caution and judgment with concurrent phasing, the result is less delay and frustration for both pedestrians and vehicles alike.

Beacon Street/Washington Street

- Modify traffic signal phase times in the p.m. peak hour.

The measures described above have been incorporated into the Year 2017 Build Conditions with Mitigation. The results are presented in Tables 2-16 and 2-17 and the comparisons to Year 2017 No-Build conditions are described below:

- At Commonwealth Avenue/Chestnut Hill Avenue, overall operations would improve from LOS E to LOS D during the a.m. and p.m. peak hours. The northbound and southbound Chestnut Hill Avenue through move would improve from LOS F to LOS D during the a.m. peak hour. During the p.m. peak hour, the northbound Chestnut Hill Avenue left turn would improve from LOS E to LOS D, the southbound left/thru would improve from LOS F to LOS E. The southbound right lane would improve slightly from LOS C to LOS B.

Table 2-17 Build Conditions (2017) with Mitigation, Level of Service Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**D**	**40.6**		
Commonwealth EB left	C	31.3	0.58	122
Commonwealth EB thru | thru/right	C	32.4	0.63	286
Commonwealth WB U-turn/left	D	43.1	0.76	#190
Commonwealth WB thru | thru/right	C	30.7	0.36	156
Chestnut NB left	C	28.4	0.52	103
Chestnut NB thru | thru/right	D	57.9	0.99	#855
Chestnut SB left/thru | thru	D	38.1	0.85dl	245
Chestnut SB right	B	14.8	0.03	22
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**D**	**50.7**		
Beacon EB left/thru | thru	E	62.5	0.95	#470
Beacon EB right	E	68.8	0.49	97
Beacon WB U-turn/left	F	>80.0	>1.00	#429
Beacon WB thru | thru	B	18.8	0.31	170
Beacon WB right/hard right	D	40.0	0.48	221
Chestnut NB left	C	23.5	0.39	m8
Chestnut NB thru | thru	C	25.2	0.59	m47
Chestnut NB right	A	0.0	0.12	m0
Chestnut SB left	F	>80.0	0.95	#242
Chestnut SB thru | thru/right	D	40.2	0.66	345
At Project Site Driveway				
Site Driveway EB left/right	D	48.2	0.25	44
Chestnut Hill NB left/thru|thru	F	>80.0	>1.00	#547
Chestnut Hill SB thru| thru/right	A	2.0	0.44	M134

Table 2-17 Build Conditions (2017) with Mitigation, Level of Service Summary, a.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Chestnut Hill Avenue/Dean Road	**D**	**40.1**		
Dean EB left/thru/right	C	27.4	0.50	133
Dean WB left/thru/right	D	48.1	0.79	#214
Chestnut NB left/thru	B	17.9	0.69	#489
Chestnut NB right	A	2.6	0.14	28
Chestnut SB left/thru/right	E	65.3	>1.00	#853
Chestnut Hill Avenue/Boylston Street	**D**	**47.9**		
Boylston EB U-turn/left	F	>80.0	0.88	#382
Boylston EB thru | thru	C	30.2	0.73	564
Boylston WB U-turn/left	E	78.2	0.75	m128
Boylston WB thru | thru	E	74.8	0.88	m680
Boylston WB right	A	3.4	0.45	m99
Chestnut SB left	E	76.1	0.94	#658
Chestnut SB thru	D	37.5	0.13	58
Chestnut SB right	B	10.4	0.48	117
Beacon Street/Edgewood Avenue	**B**	**10.2**		
Beacon EB U-turn/left	D	37.6	0.34	77
Beacon EB thru | thru/right	A	9.8	0.39	240
Beacon WB U-turn	B	17.3	0.10	m6
Beacon WB thru | thru/right	A	5.7	0.41	m94
Englewood SB left/right	C	26.8	0.37	72
Beacon Street/Washington Street	**C**	**28.2**		
Beacon EB U-turn/left	D	45.3	0.51	116
Beacon EB thru | thru/right	B	11.8	0.64	135
Beacon WB thru | thru/right	D	37.1	0.78	#250
Washington NB left	C	25.9	0.27	33
Washington NB thru/right	C	34.9	0.77	272
Washington SB left	D	35.7	0.57	86
Washington SB thru/right	D	39.3	0.84	245
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	205
Clinton WB left/thru/right	F	>50.0	0.67	165
Chestnut NB left/thru/right	A	0.4	0.01	1
Chestnut SB left/thru/right	A	3.3	0.10	8

Table 2-17 Build Conditions (2017) with Mitigation, Level of Service Summary, a.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Unsignalized Intersections				
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	22.0	0.07	6
Beacon NB thru/right	A	0.0	0.42	0
Beacon SB left/thru	A	0.2	0.01	1
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	21.1	0.29	30
Beacon NB thru	A	0.0	0.41	0
Beacon SB thru	A	0.0	0.40	0

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates a worsening in level of service from Year 2017 No-Build Conditions that bring operations into LOS E or LOS F.
Black shading indicates an improvement in level of service from Year 2017 No-Build Conditions that bring operations out of LOS E or LOS F..

Table 2-18 Build Conditions (2017) with Mitigation, Level of Service Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Commonwealth Avenue/Chestnut Hill Avenue	**D**	**52.7**		
Commonwealth EB left	C	20.7	0.45	82
Commonwealth EB thru | thru/right	C	26.0	0.50	231
Commonwealth WB U-turn/left	D	49.0	0.88	#190
Commonwealth WB thru | thru/right	C	27.1	0.36	178
Chestnut NB left	D	46.5	0.70	152
Chestnut NB thru | thru/right	F	>80.0	>1.00	#826
Chestnut SB left/thru | thru	E	63.8	0.93	#327
Chestnut SB right	B	18.8	0.06	15
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**D**	**45.8**		
Beacon EB left/thru | thru	D	40.3	0.67	285
Beacon EB right	E	69.3	0.68	137
Beacon WB U-turn/left	F	>80.0	>1.00	#409
Beacon WB thru | thru	B	17.3	0.28	160
Beacon WB right/hard right	C	34.3	0.40	176
Chestnut NB left	D	35.8	0.40	m7
Chestnut NB thru | thru	C	22.3	0.51	m33

Table 2-18 Build Conditions (2017) with Mitigation Level of Service Summary, p.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Chestnut NB right	A	0.0	0.16	m0
Chestnut SB left	E	65.8	0.80	#241
Chestnut SB thru | thru/right	D	44.4	0.73	376
At Project Site Driveway				
Site Driveway EB left/right	E	58.6	0.51	87
Chestnut Hill NB left/thru|thru	F	>80.0	>1.00	#579
Chestnut Hill SB thru| thru/right	A	2.0	0.44	m137
Chestnut Hill Avenue/Dean Road	**C**	**26.5**		
Dean EB left/thru/right	C	22.0	0.21	84
Dean WB left/thru/right	C	31.6	0.62	195
Chestnut NB left/thru	C	21.5	0.77	#572
Chestnut NB right	A	3.3	0.14	26
Chestnut SB left/thru/right	C	33.6	0.92	#784
Chestnut Hill Avenue/Boylston Street	**E**	**56.2**		
Boylston EB U-turn/left	F	>80.0	>1.00	#419
Boylston EB thru | thru	C	32.5	0.68	468
Boylston WB U-turn/left	E	77.1	0.65	m127
Boylston WB thru | thru	E	72.8	0.91	616
Boylston WB right	A	4.7	0.31	130
Chestnut SB left	E	77.8	0.99	#692
Chestnut SB thru	C	29.8	0.09	51
Chestnut SB right	A	4.4	0.33	57
Beacon Street/Edgewood Avenue	**B**	**10.1**		
Beacon EB U-turn/left	D	37.4	0.37	68
Beacon EB thru | thru	A	9.5	0.35	190
Beacon WB U-turn	B	19.8	0.12	m16
Beacon WB thru | thru/right	A	7.0	0.48	114
Englewood SB left/right	C	25.1	0.22	55
Beacon Street/Washington Street	**C**	**24.9**		
Beacon EB U-turn/left	D	51.3	0.42	125
Beacon EB thru | thru/right	B	10.2	0.50	105
Beacon WB thru | thru/right	C	28.9	0.60	#298
Washington NB left	D	53.2	0.75	#136
Washington NB thru/right	C	25.9	0.55	196
Washington SB left	C	24.2	0.31	57
Washington SB thru/right	C	33.8	0.76	265

Table 2-18 Build Conditions (2017) with Mitigation Level of Service Summary, p.m. Peak Hour (cont'd)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	0.75	77
Clinton WB left/thru/right	E	41.3	0.58	80
Chestnut NB left/thru/right	A	0.3	0.01	1
Chestnut SB left/thru/right	A	5.3	0.17	15
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	17.8	0.05	4
Beacon NB thru/right	A	0.0	0.38	0
Beacon SB left/thru	A	0.8	0.03	2
Beacon Street/Waterworks Driveway Exit				
Waterworks WB left/right	C	18.7	0.20	19
Beacon NB thru	A	0.0	0.37	0
Beacon SB thru	A	0.0	0.42	0

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.
m = volume for 95th percentile queue is metered by upstream signal.
Light grey cell shading indicates a worsening in level of service from Year 2017 No-Build Conditions that bring operations into LOS E or LOS F.
Black shading indicates an improvement in level of service from Year 2017 No-Build Conditions that bring operations out of LOS E or LOS F.

- At Beacon Street/Chestnut Hill Avenue (Cleveland Circle), overall intersection conditions would improve from LOS F to LOS D during each peak hour, representing a significant improvement over both Existing and projected No-Build Conditions. During the a.m. peak hour, the eastbound Beacon Street through lanes would improve from LOS F to LOS E, while the left lane would degrade from LOS E to LOS F. The westbound Beacon Street through lanes would improve from LOS D to LOS B. The new northbound left lane would operate at LOS C, while the northbound through lanes improve from LOS F to LOS C. The new southbound left lane would allow the Chestnut Hill Avenue through and right turns to improve to LOS D. During the p.m. peak hour, the eastbound and westbound Beacon Street through lanes would improve from LOS F to LOS D or better. The westbound right improves from LOS D to LOS C.

- The Project's site driveway at Chestnut Hill Avenue will be signalized and operate as part of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. The driveway approach will operate at LOS D in the a.m. peak hour and LOS E

during the p.m. peak hour. The maximum queue on the driveway during peak hours will be three to four vehicles and will not cause congestion in the Project's courtyard nor affect courtyard circulation.

- At Chestnut Hill Avenue/Dean Road, the overall operation would improve from LOS D to LOS C during the a.m. peak hour. During the a.m. peak hour, the northbound Chestnut Hill through travel lanes would improve from LOS C to LOS B. The southbound Chestnut Hill travel lane would improve from LOS F to LOS E in the a.m. peak hour and to LOS C during the p.m. peak hour.

- At Chestnut Hill Avenue/Boylston Street, overall operations would remain at LOS D and LOS E, during the a.m. peak and p.m. peak hour, respectively. The eastbound U-turn would degrade from LOS E to LOS F while the westbound U-turn/left lane would improve from LOS F to LOS E during each peak hour. The southbound Chestnut Hill Avenue left would improve from LOS F to LOS E during both peak hours.

- At Beacon Street/Edgewood Avenue, overall operations would remain at LOS B during each peak hour with all approaches operating at LOS D or better.

- At Beacon Street/Washington Street, overall operations would remain at LOS C during each peak hour with all approaches operating at LOS D or better.

In summary, the mitigation improvements would result in better overall operation at Commonwealth Avenue/Chestnut Hill Avenue and Beacon Street/Chestnut Hill Avenue during each peak hour, as compared to No-Build Conditions. Within the study area intersections, five of 106 moves during the a.m. or p.m. peak hours would decrease to LOS E or LOS F, while 18 moves would improve out of LOS E of LOS F.

The Proponent will continue to work with the BTD and the Town of Brookline's Transportation Department to finalize the design of these recommendations.

2.4.2 Pedestrian Improvements

The Proponent will enhance the pedestrian environment and pedestrian safety along the Chestnut Hill Avenue corridor by reducing the number of existing curb cuts at the site from four to one, and installing new sidewalks adjacent to the Project Site. The recommended improvements to the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection include changing from an exclusive pedestrian walk phase to concurrent pedestrian walk phases, thereby reducing delay for pedestrians and vehicles.

2.4.3 Bicycle Accommodations

The Proponent will provide bicycle amenities for the Project's residents, guests, tenants, and visitors to encourage bicycle use. BTD has established guidelines requiring projects subject to Transportation Access Plan Agreements (TAPA) to provide secure bicycle parking for employees and short-term bicycle racks for visitors. Based on BTD guidelines, Table 2-19 presents a breakdown of the Project's on-site bicycle accommodation for the Project.

Table 2-19 On-Site Bicycle Accommodations

Use	Bicycle Storage *for employees/residents*	Showers[1)]	Bicycle Racks *for visitors*
Hotel	10	na	3
Residential	74	na	15
Medical Office	5	1	1
Retail/Restaurant	4	na	2
Total	93	1	21

1) Shower facilities at the hotel will be made available for Project employees who bicycle to work

Bicycle storage will be provided in the underground garage and bicycle racks will be provided near primary entrances. Bicycle racks, signs, and parking areas will conform to BTD standards.

There are currently no Hubway bicycle sharing stations in the area.

2.4.4 Travel Demand Management Measures

The Proponent is committed to implementing a Transportation Demand Management (TDM) program, through the commitments listed below, that supports the City's efforts to reduce dependency on the automobile use by encouraging travelers to use alternatives to driving alone, especially during peak time periods. TDM will be facilitated by the Project's proximity to available Green Line and local bus services.

- Orientation Packets: The Proponent will provide orientation packets to new residents and tenants containing information on available transportation choices, including transit routes and schedules. On-site management will work with residents and tenants as they move in to help facilitate transportation for new arrivals. The Proponent will encourage the hotel operator to provide guests with public transit system maps and schedules, and provide such information in a prominent location within the hotel, as well as on the hotel's website.

- Car-Sharing Service: The Proponent will promote the use of the six nearby Zipcar stations and offer on-site space for a Zipcar station.

- As demand mandates, the Project will commit to providing up to 5% of total on-site parking supply with electric vehicle charging stations.

- Transit Passes: The Proponent will encourage commercial tenants to subsidize transit passes for their employees.

- Transportation Coordinator: The Proponent will designate a transportation coordinator to manage loading and service activities, move-in/move-out activities, and provide alternative transportation materials to residents and tenants.

- On-site parking: The Proponent will manage on-site parking to prevent non-Project related parking activity.

A TAPA will be entered into between the Proponent and BTD. The TAPA will codify the specific measures and agreements between the Proponent and the City of Boston.

2.5 Evaluation of Short-term Construction Impacts

Most construction activities will be accommodated within the current site boundaries. Details of the overall construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and routes will be addressed in detail in a Construction Management Plan to be filed with BTD and the Town of Brookline.

To minimize transportation impacts during the construction period, the following measures will be considered for the Construction Management Plan:

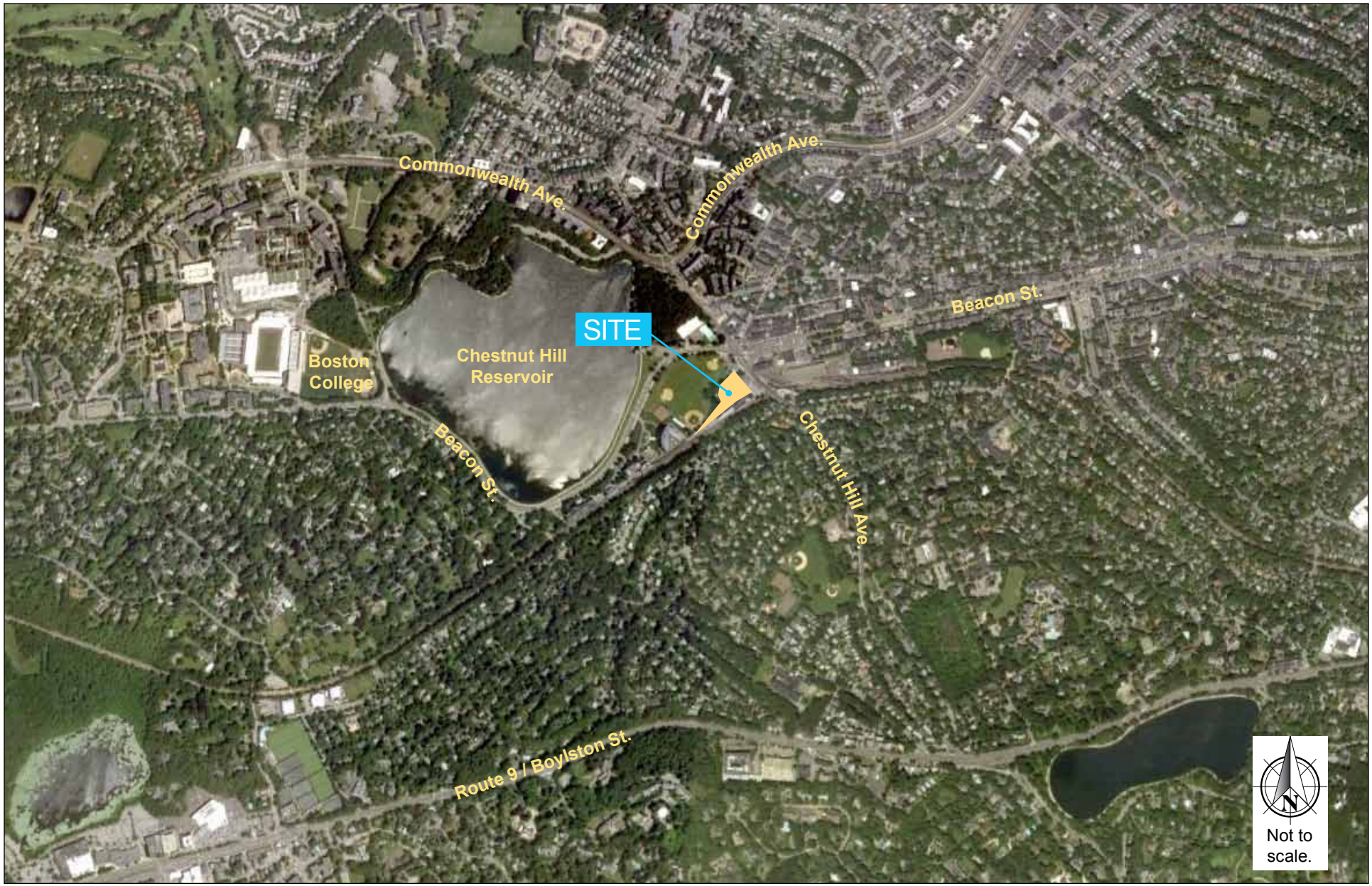
- Limited construction worker parking on-site;

- Encouragement of worker carpooling;

- Consideration of a subsidy for MBTA passes for full-time employees; and

- Providing secure spaces on-site for workers' supplies and tools so they do not have to be brought to the site each day.

The Construction Management Plan, to be executed with the City prior to commencement of construction, will document all committed measures.

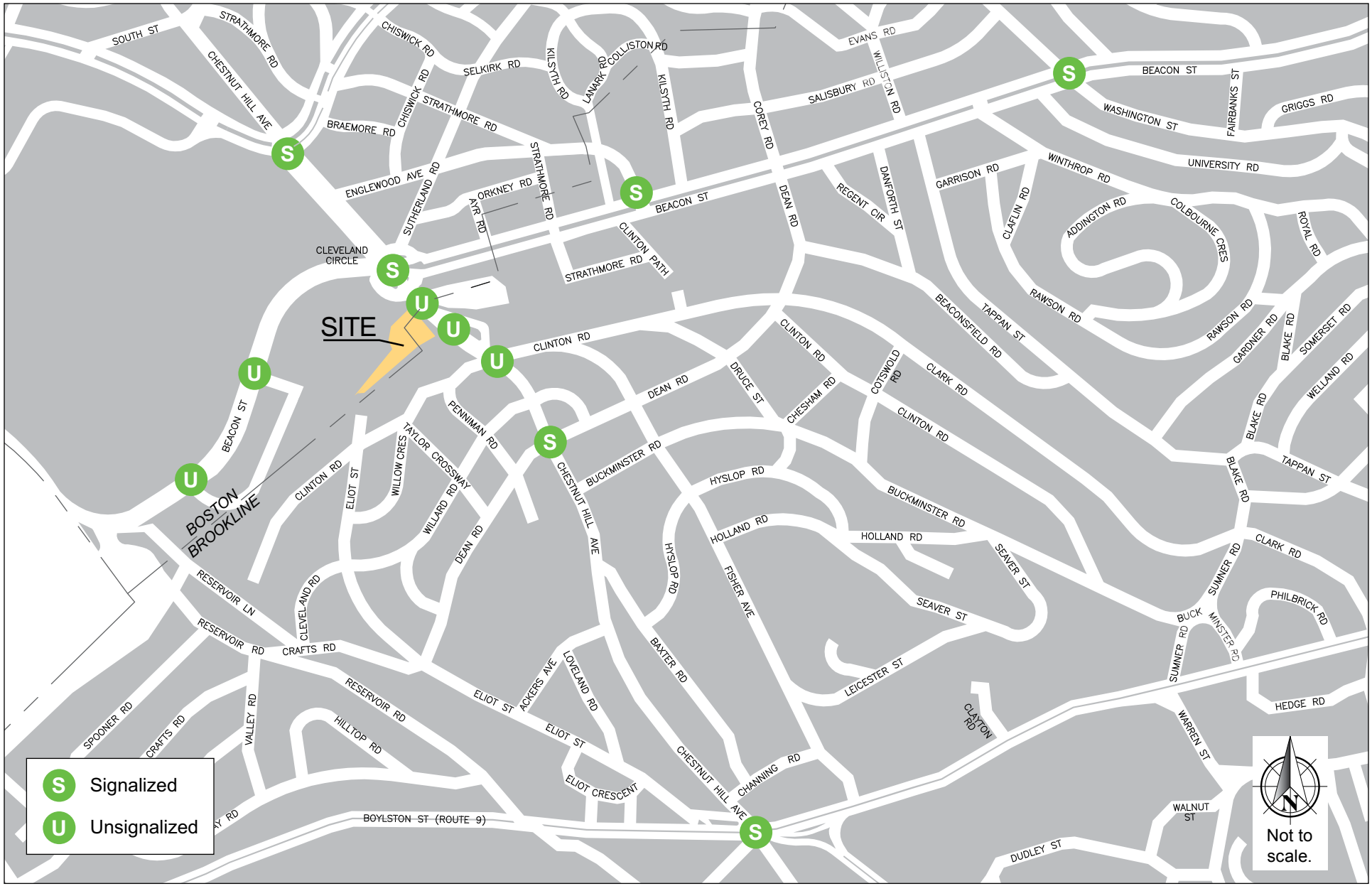


Source: Google Maps

375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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Figure 2-1
Locus Map



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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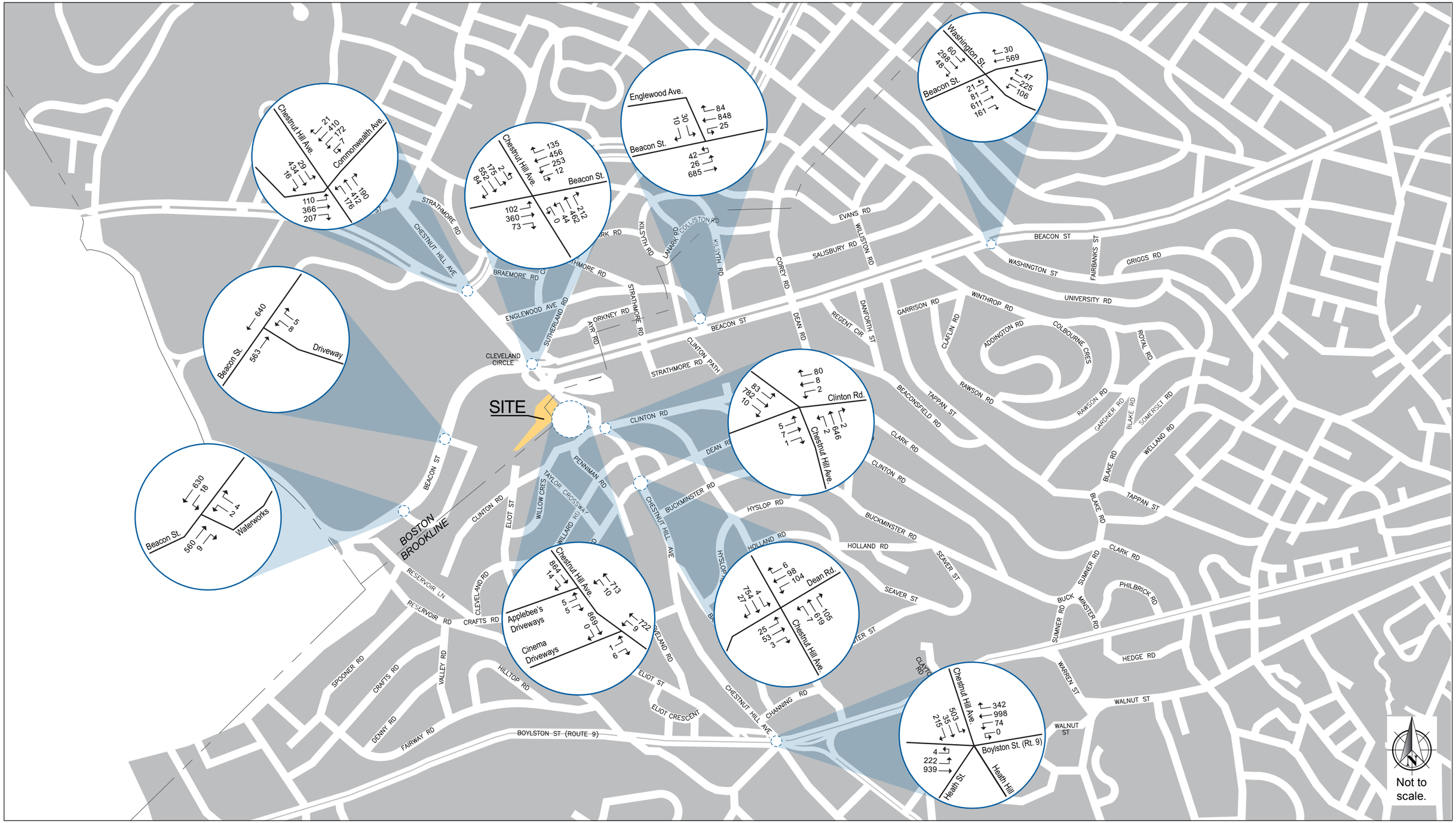
Figure 2-2
Study Area Intersections



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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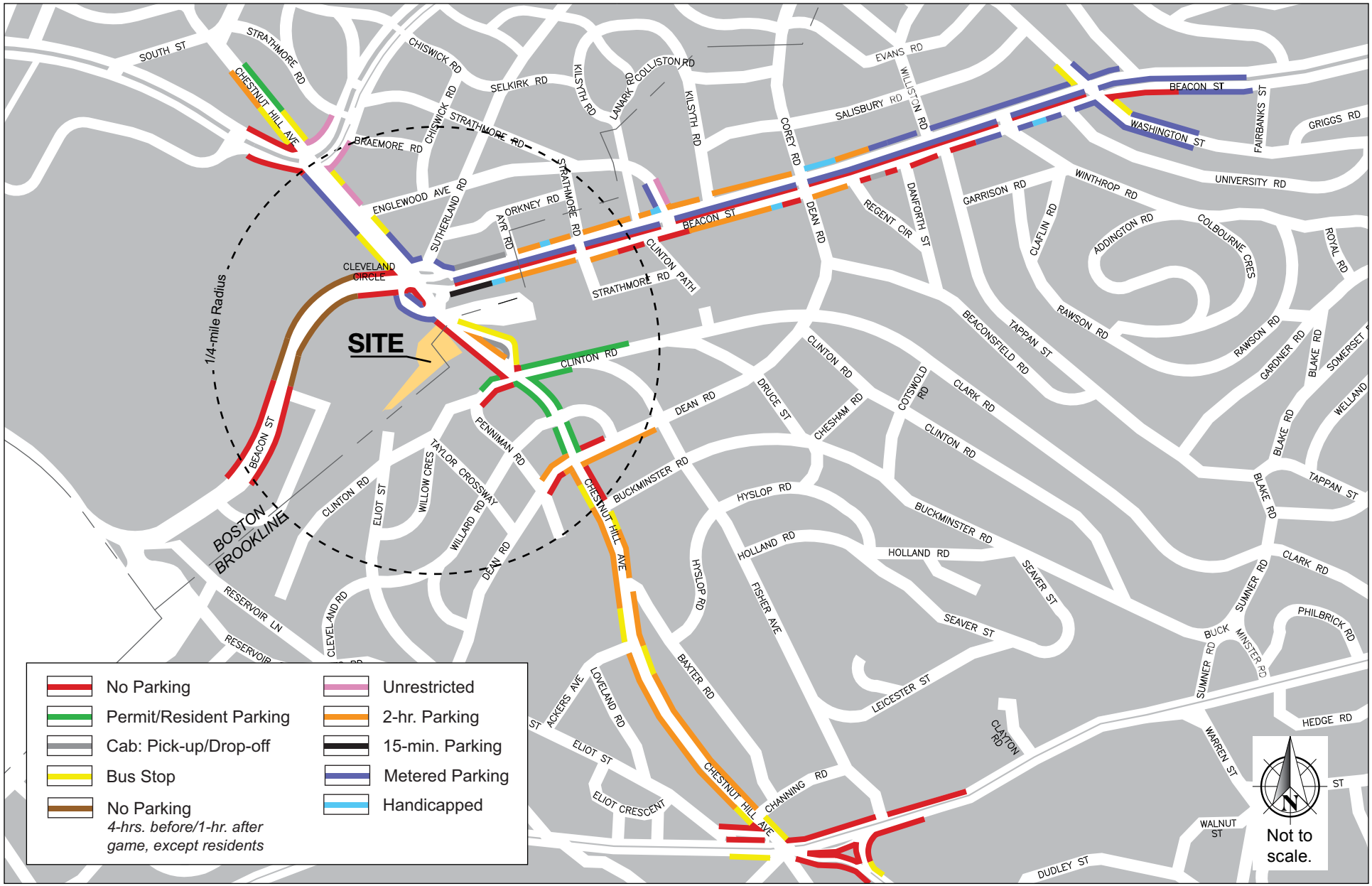
Figure 2-3
Existing Conditions (2012) Turning Movement Counts, a.m. Peak Hour



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Figure 2-4
Existing Conditions (2012) Turning Movement Counts, p.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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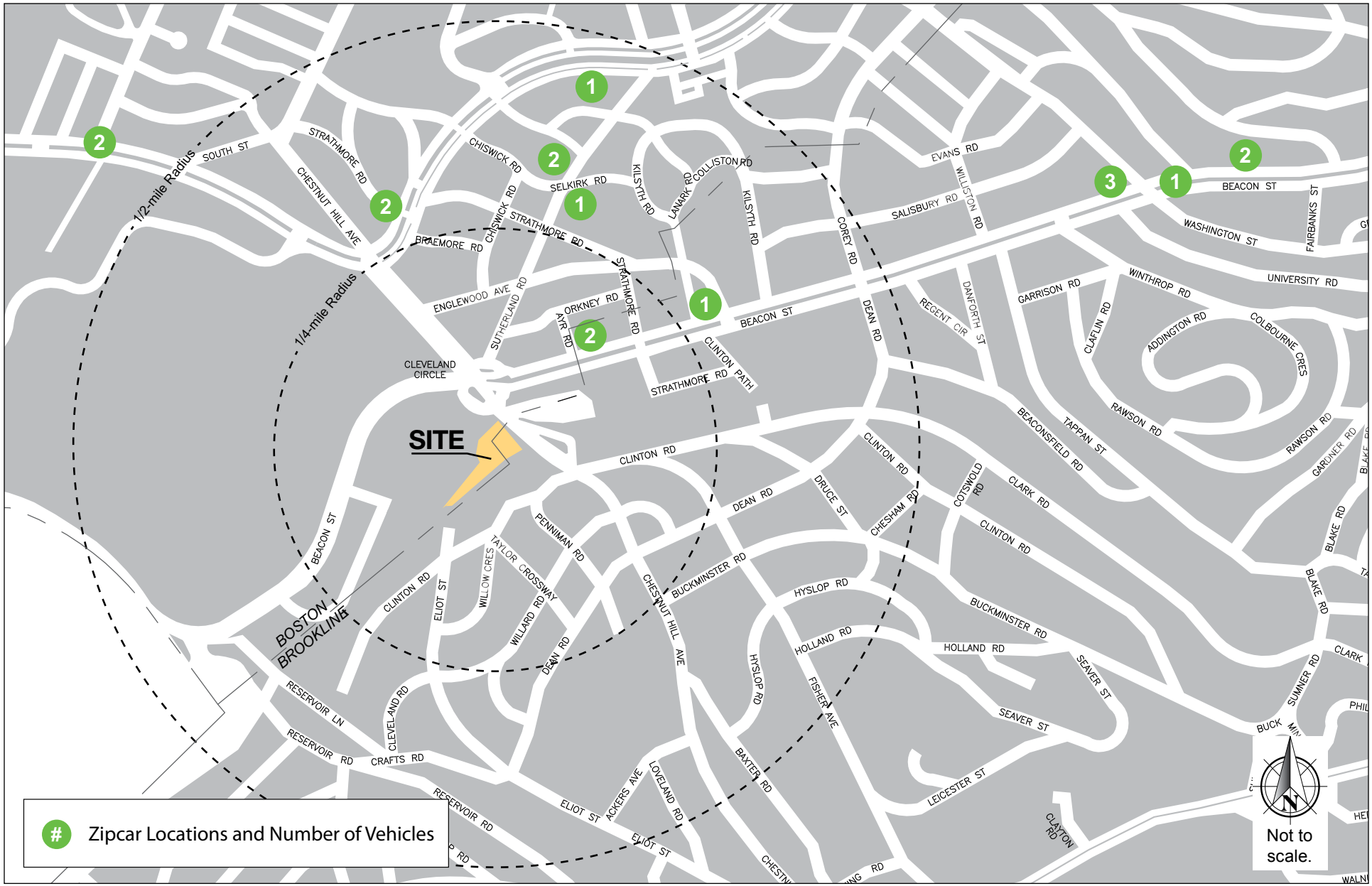
Figure 2-5
On-street Parking in the Study Area



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Figure 2-6
Public Transportation in the Study Area



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Figure 2-7
Car Sharing Locations



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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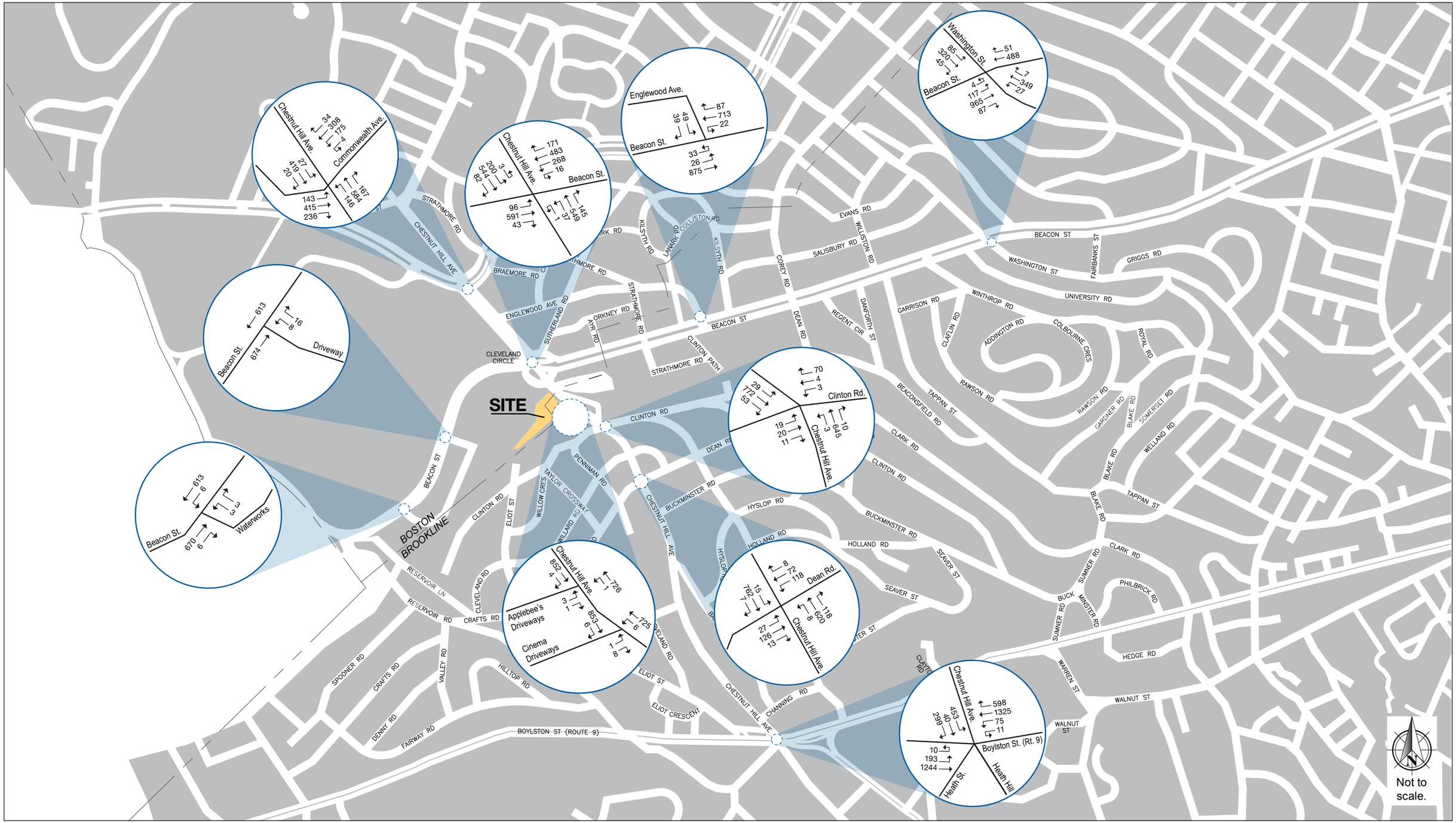
Figure 2-8
Existing Conditions (2012) Pedestrian Volumes, a.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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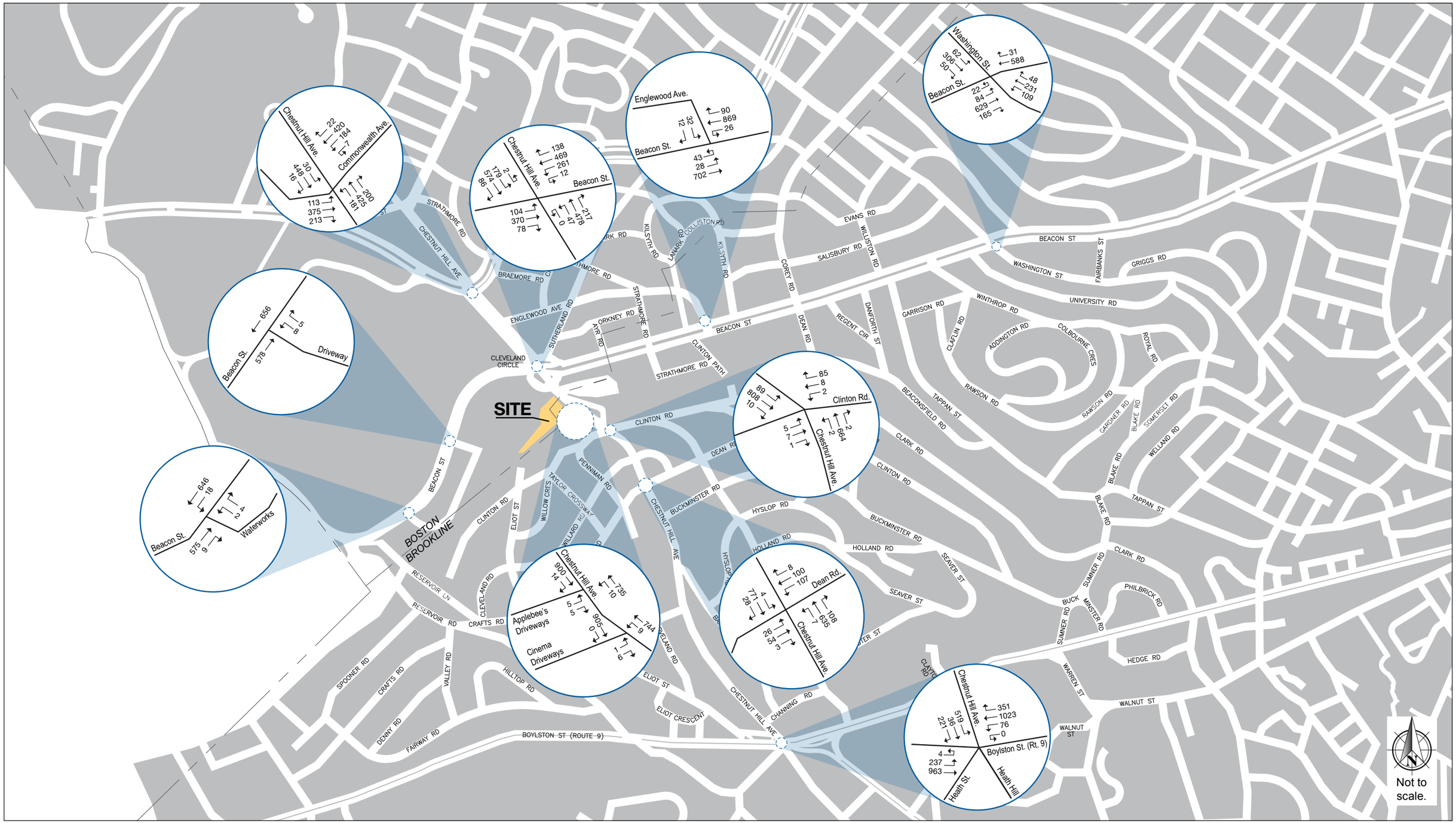
Figure 2-9
Existing Conditions (2012) Pedestrian Volumes, p.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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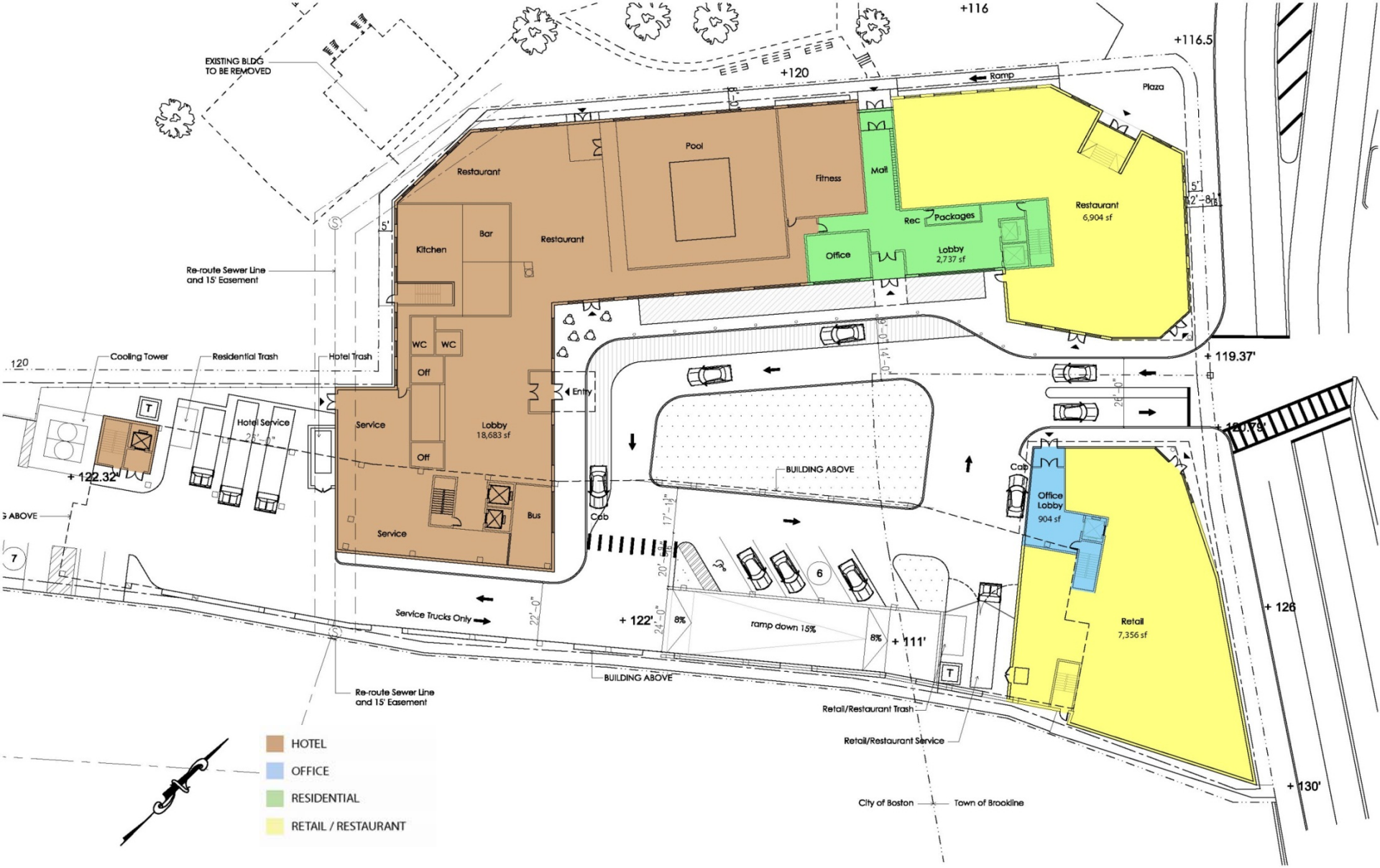
Figure 2-10
No-Build Conditions (2017) Intersection Volumes, a.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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Figure 2-11
No-Build Conditions (2017) Intersection Volumes, p.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 2-12

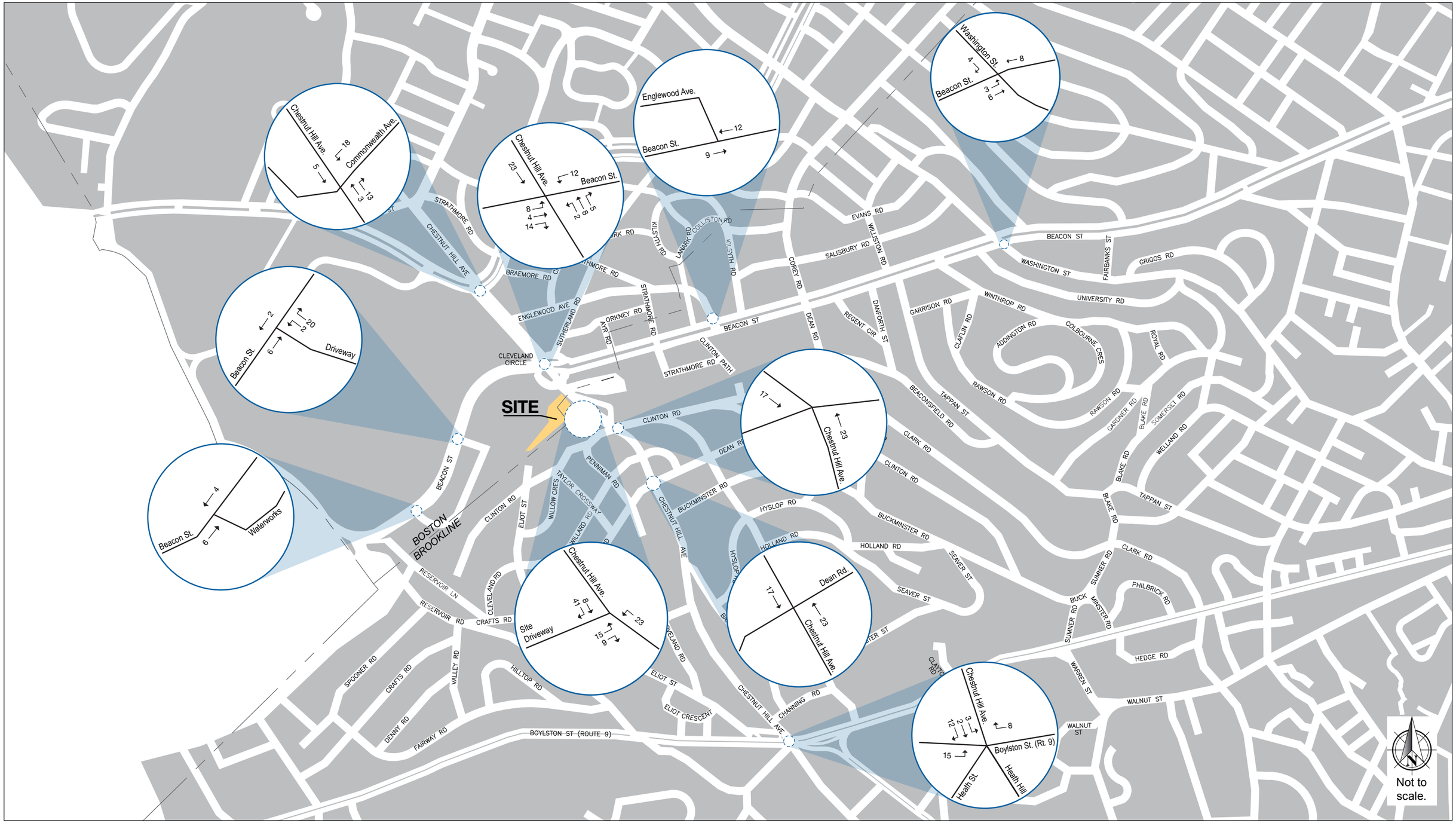
Ground Floor Plan



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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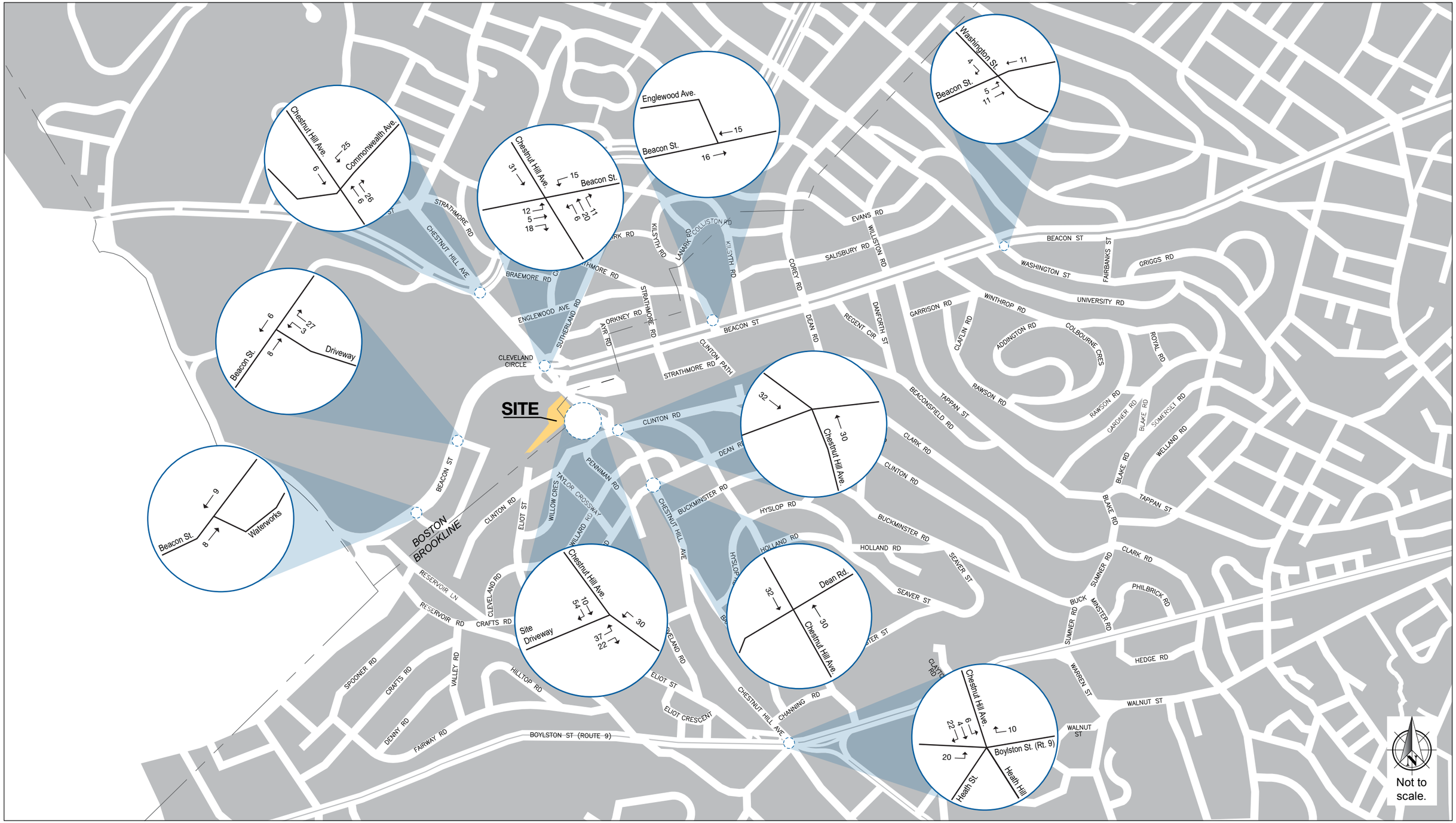
Figure 2-13
Vehicle Trip Entering/Exiting Distribution



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Figure 2-14
Project-generated Vehicle Trips, a.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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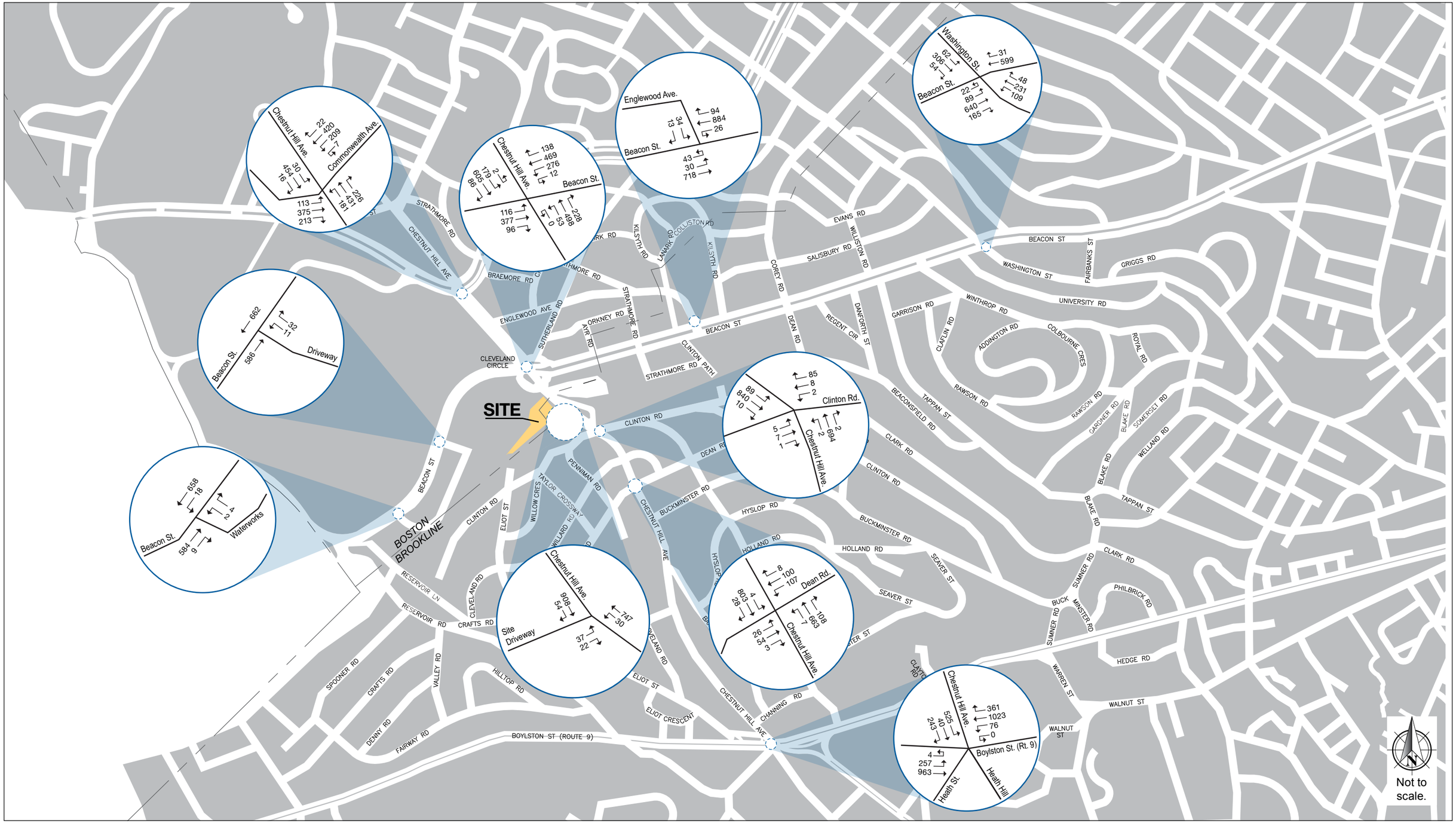
Figure 2-15
Project-generated Vehicle Trips, p.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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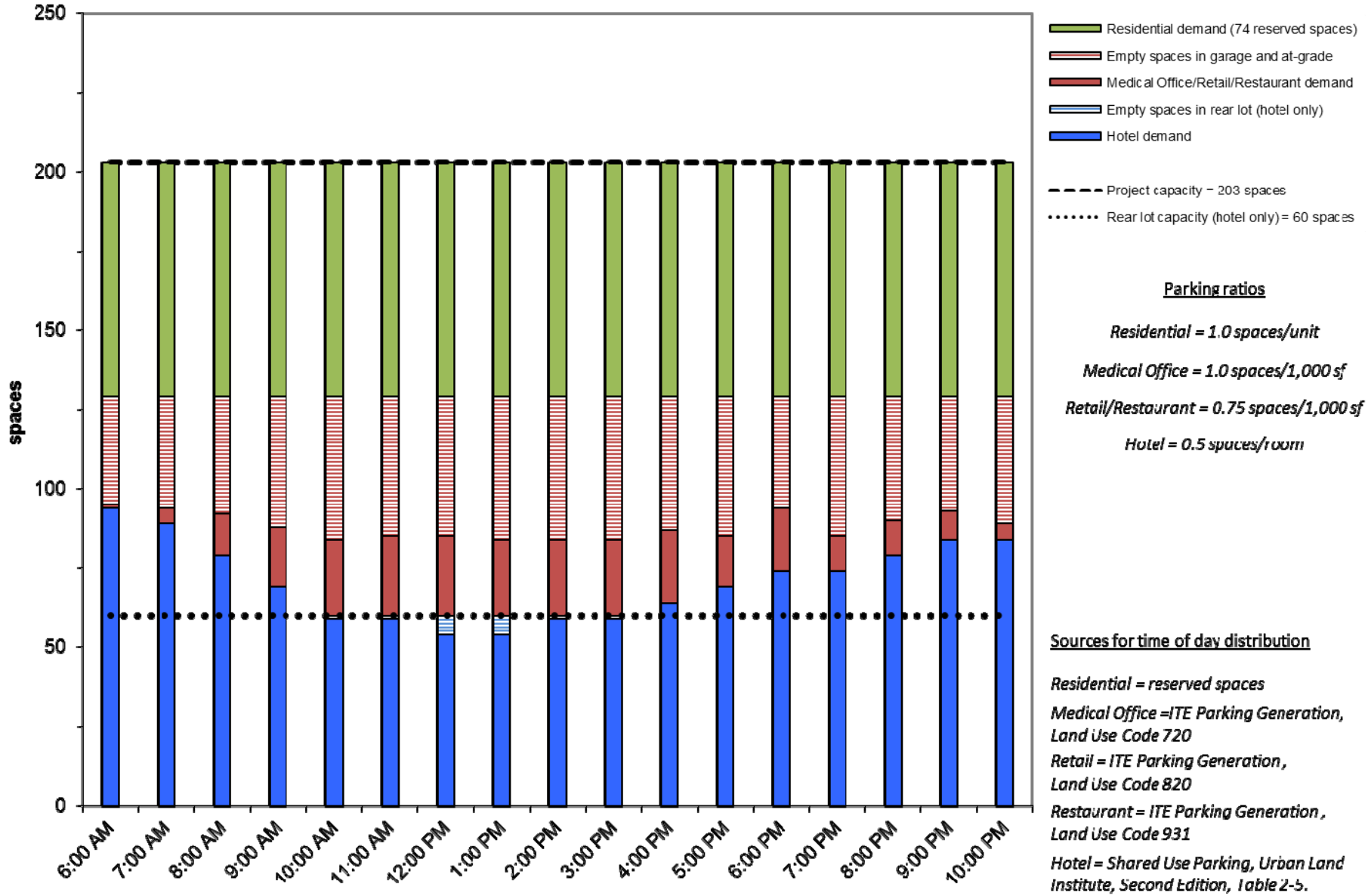
Figure 2-16
Build Conditions (2017) Intersection Volumes, a.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

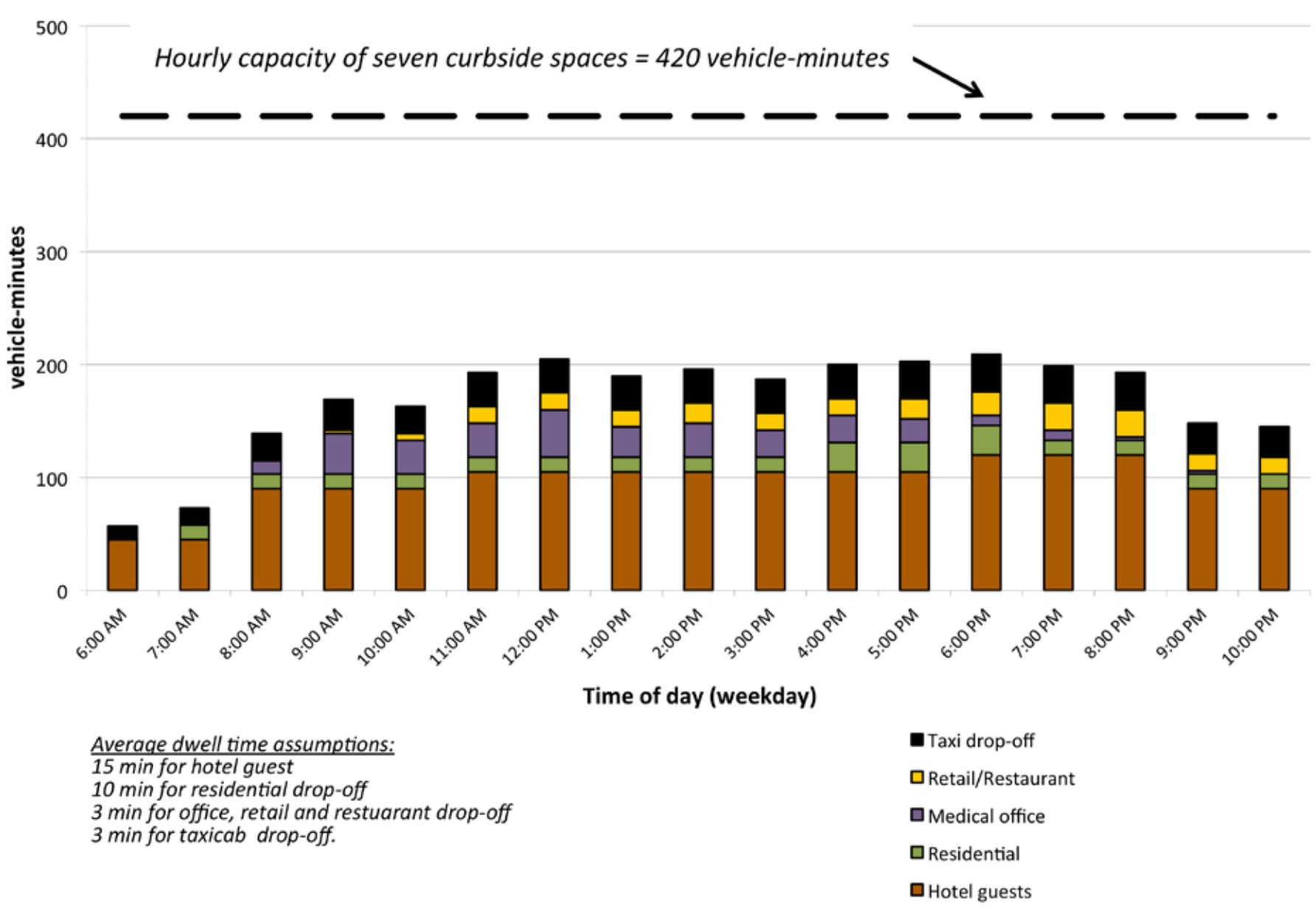
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Figure 2-17
Build Conditions (2017) Intersection Volumes, p.m. Peak Hour



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

Figure 2-18
Project Parking Demand by Time of Day



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

Figure 2-19
Curbside Vehicle Activity by Time of Day (Average per Hour)

Section 3.0

Environmental Review Component

3.0 ENVIRONMENTAL REVIEW COMPONENT

3.1 Wind

3.1.1 Introduction

Rowan Williams Davies & Irwin Inc. (RWDI) assessed the potential wind conditions for the proposed Project. The objective of this assessment was to provide a qualitative evaluation of wind comfort conditions on and around the development and recommend mitigation measures, if necessary.

This qualitative assessment is based on the following:

- a review of regional long-term meteorological data;
- RWDI's previous wind-tunnel tests on buildings in Boston;
- design drawings;
- RWDI's engineering judgment and expert knowledge of wind flows around buildings[1,2]; and
- use of software developed by RWDI (Windestimator[3]) for estimating the potential wind comfort conditions around generalized building forms.

3.1.2 Local Weather Data

Wind roses presented in Figure 3-1 summarize the annual and seasonal wind climates in the Boston area, based on the long-term data from the Boston Logan International Airport between 1982 and 2011. The prevailing winds are from the west-northwest year-round, especially in the spring and winter seasons. Easterly winds are also frequent. In the summer and fall, the prevailing winds are from the southwest direction, but of lower speeds in general.

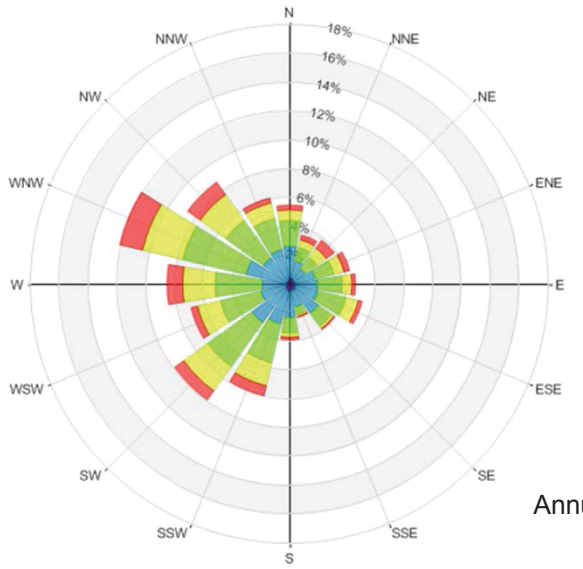
On an annual basis, the most common wind directions are those that originate between the southwest and northwest. Winds from the east are also relatively common. In the case of

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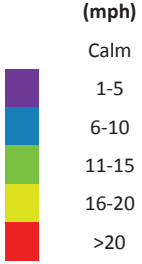
[1] H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", *Journal of Wind Engineering and Industrial Aerodynamics*, vol.104-106, pp.397-407.

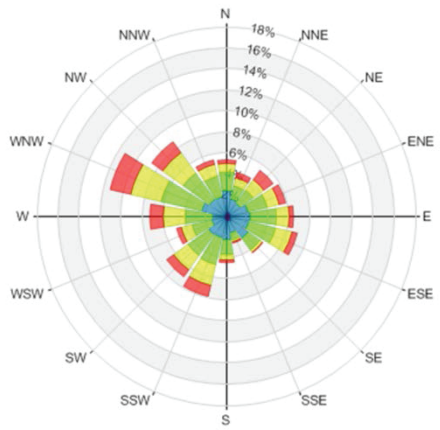
[2] C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", *10th International Conference on Wind Engineering*, Copenhagen, Denmark.

[3] H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004), "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions", *ASCE Structure Congress 2004*, Nashville, Tennessee.

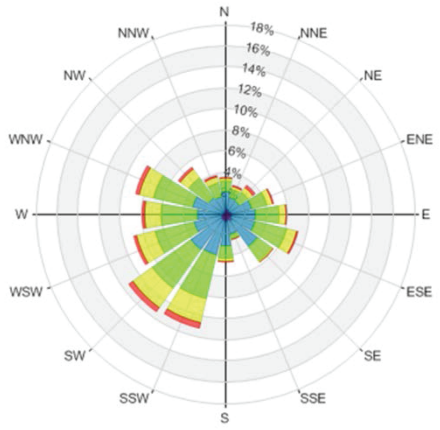


Annual

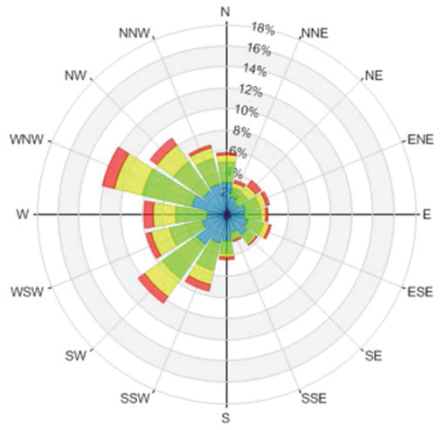




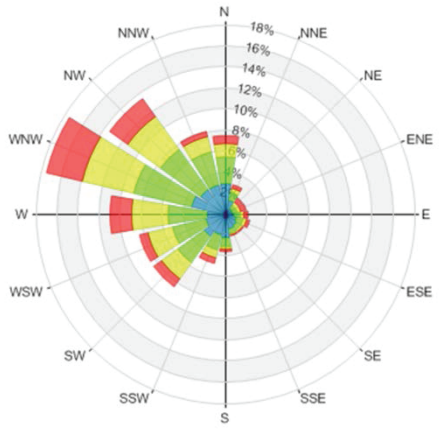
Spring (Mar. – May)



Summer (Jun. – Aug.)



Fall (Sep. – Nov.)



Winter (Dec. – Feb.)

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Figure 3-1
Annual and Seasonal Wind Directionality

strong winds, west-northwest and northeast are the dominant directions. Based on the local wind directionality and the orientation of the buildings and streets in the area, winds from the west-northwest and northeast are considered most important, although winds from all other directions have also been taken into account in the analysis.

3.1.3 Wind Comfort Criteria

The BRA has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BRA wind design guidance criterion states that an effective gust velocity (hourly mean wind speed plus 1.5 times the root-mean-square wind speed) of 31 mph should not be exceeded more than 1% of the time.

The second set of criteria used by the BRA to determine the acceptability of specific locations is based on the work of Melbourne[4]. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the one-hour mean wind speed exceeded 1% of the time (i.e., the 99-percentile mean wind speed). They are as follows:

Dangerous	$>$ 27 mph
Uncomfortable for Walking	$>$ 19 mph and $\leq$ 27 mph
Comfortable for Walking	$>$ 15 mph and $\leq$ 19 mph
Comfortable for Standing	$>$ 12 mph and $\leq$ 15 mph
Comfortable for Sitting	$<$ 12 mph

* Applicable to the hourly mean wind speed exceeded 1% of the time.

3.1.4 Summary of Results

Wind activity around the proposed Project is expected to be appropriate for pedestrian activity overall. The low-rise nature of the development and the low-rise surroundings are both conducive to favorable wind conditions.

In general, wind activity is not expected to be dangerous, and effective gust criterion exceedances are not anticipated.

During the winter and spring, winds may be comfortable for walking around the perimeter of the building. This is higher than ideal along the north façade, which is a key pedestrian area. Recessing entrances and providing wind control measures around key areas may be desired.

[4] Melbourne, W.H. (1978), "Criteria for Environmental Wind Conditions", *Journal of Industrial Aerodynamics*, vol. 3, pp. 241-249.

During the summer and fall, winds will generally be comfortable for sitting or standing and suitable for the intended use.

Due to the location of the building in relation to Cassidy Playground and the prevailing winds, it is not expected that this development will have a negative impact on the current wind environment at Cassidy Playground.

While there may be localized wind speed increases near the building corners along Chestnut Hill Avenue, it is expected that the proposed building will provide sheltering from the wind for many of the adjacent areas along this street.

The complete wind analysis can be found in Appendix C. Note that minor revisions to the Project have occurred since the wind analysis was completed. However, the wind impacts are anticipated to be similar.

3.2 Shadow

The building massing has been moved five feet back from its previous location on the Cassidy Playground edge, and except for a portion of the building closest to Chestnut Hill Avenue, the building height for the residential component along Cassidy Playground has been decreased. Therefore, shadow impacts to the Playground are anticipated to be less than for the previously proposed design.

3.3 Daylight

3.3.1 Introduction

The purpose of the daylight analysis is to estimate the extent to which a proposed project will affect the amount of daylight reaching the streets, sidewalks and other pedestrian areas in the immediate vicinity of a project site.

The Expanded PNF included a daylight analysis that studied the Project Site (both the existing and proposed conditions) from Chestnut Hill Avenue. The daylight obstruction values from the existing and proposed conditions are 4.1% and 53.8%, respectively. The daylight obstruction values for the Site were compared to two area context points to in the nearby area which have daylight obstruction values of 45.0% and 54.8%.

The BRA Scoping Determination requests an additional daylight analysis for the Project Site from Cassidy Playground, and one area context point from the Playground for comparison.

Because the Project Site currently consists of low-rise buildings that are set back from Cassidy Playground and surface parking lots, the proposed Project will increase daylight obstruction; however, the resulting conditions will be typical of the Cleveland Circle area and will be similar to the daylight obstruction conditions near the Site.

3.3.2 Methodology

The daylight analysis was performed using the Boston Redevelopment Authority Daylight Analysis (BRADA) computer program[5]. This program measures the percentage of sky-dome that is obstructed by a project and is a useful tool in evaluating the net change in obstruction from existing to build conditions at a specific site.

Using BRADA, a silhouette view of the building is taken at ground level from the middle of the adjacent city streets or pedestrian ways centered on the proposed building. The façade of the building facing the viewpoint, including heights, setbacks, corners and other features, is plotted onto a base map using lateral and elevation angles. The two-dimensional base map generated by BRADA represents a figure of the building in the "sky dome" from the viewpoint chosen. The BRADA program calculates the percentage of daylight that will be obstructed on a scale of 0 to 100 percent based on the width of the view, the distance between the viewpoint and the building, and the massing and setbacks incorporated into the design of the building; the lower the number, the lower the percentage of obstruction of daylight from any given viewpoint.

The analysis compares three conditions: Existing Condition; Proposed Condition; and the context of the area.

The Expanded PNF included an analysis from Chestnut Hill Avenue and two area context points. This analysis includes one viewpoint from Cassidy Playground looking at the Project Site, and one viewpoint from Cassidy Playground towards the Watermark Condominium building from Cassidy Playground. The viewpoint and area context viewpoints were taken in the following locations and are shown on Figure 3-2.

3.3.3 Results

The results for the analysis area shown in Table 3-1. Figure 3-3 illustrates the BRADA results for each analysis.

Table 3-1 Daylight Obstruction Values

Viewpoint Locations		Existing Conditions	Proposed Conditions
Viewpoint 1	Project Site from Cassidy Playground	1.3%	14.5%
AC	Cassidy Playground looking at the Watermark Condominium Building	12.7%	N/A

[5] Method developed by Harvey Bryan and Susan Stuebing, computer program developed by Ronald Fergle, Massachusetts Institute of Technology, Cambridge, MA, September 1984.

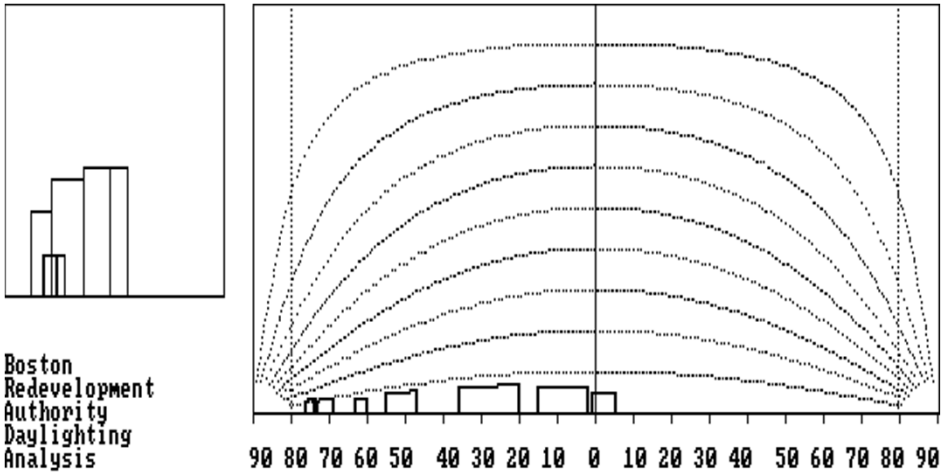


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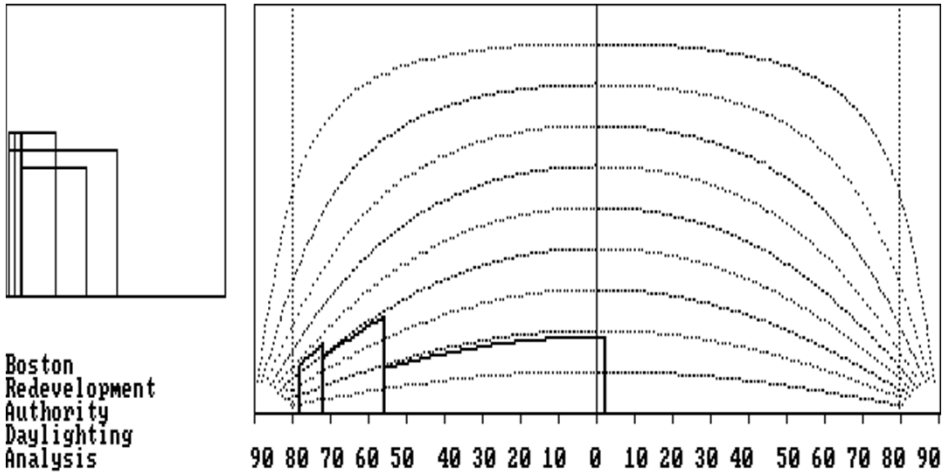
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Figure 3-2
Daylight Analysis - Viewpoints

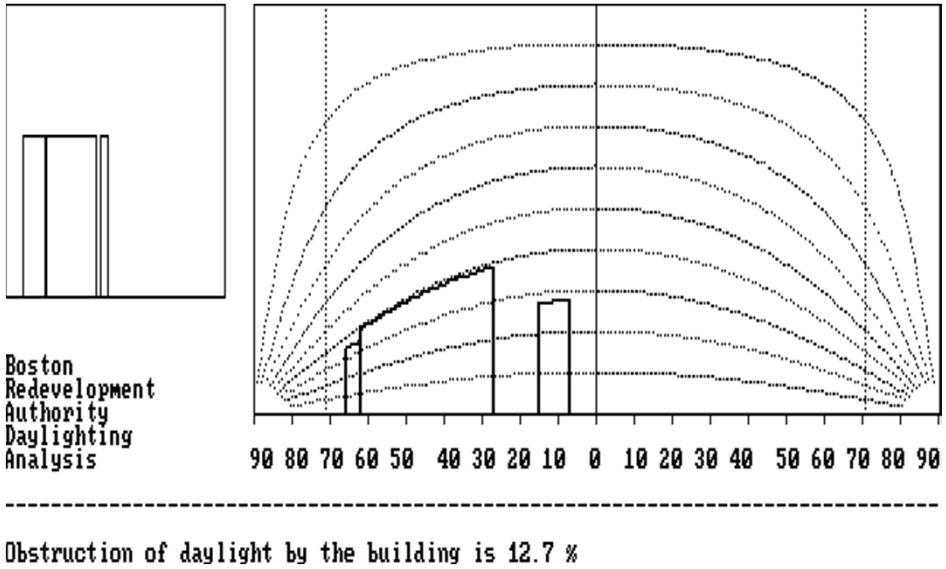
Viewpoint 1 – Existing Condition



Viewpoint 1 – Proposed Condition



Area Context Viewpoint



Viewpoint 1 – Project Site from Cassidy Playground

Cassidy Playground is located along the northern side of the Project Site. Viewpoint 1 was taken from the pedestrian path in Cassidy Playground looking towards the Site. The Site is currently occupied by the closed movie theater alongside an Applebee's restaurant and has an existing daylight obstruction value of 1.3% from this viewpoint due to the height of the Applebee's building, its location on the Site, and the location of the cinema building set back from the Playground edge. The development of the Project will increase daylight obstruction value to 14.5% because the building is located closer to the Playground edge and includes more of the Site than the previous buildings. While this is an increase over existing conditions, the daylight obstruction value for the Project is consistent with the Area Context.

Area Context View

One viewpoint was analyzed from Cassidy Playground towards the one other building adjacent to the Playground, the Watermark Condominium building. The viewpoint was taken from the closest pedestrian path looking towards the building. The daylight obstruction value for this viewpoint is 12.7%. This low daylight obstruction value is due to the large landscape space between the building and the edge of the site at Beacon Street.

3.3.4 Conclusion

The additional daylight analysis conducted for the Project site describes existing and proposed daylight obstruction conditions at the Project Site from Cassidy Playground and a comparable view. The results of the BRADA analysis indicate that while the development of the Project will result in increased daylight obstruction over existing conditions, the resulting conditions will be similar to the daylight obstruction value of the other building that is located adjacent to Cassidy Playground.

3.4 Solid and Hazardous Waste

3.4.1 Hazardous Waste

Preliminary surveys have indicated that there are areas of the Project Site that will need to be abated for asbestos-containing materials as a precursor to demolition and for construction of the Project. All abatement will be conducted in accordance with applicable regulatory procedures. If other hazardous materials are found during demolition or construction, they will be disposed of in accordance with applicable regulatory procedures.

A Phase I Environmental Site Assessment (ESA) was conducted in November 2011 by ENSTRAT, Inc. The Phase I ESA concluded that available information and Site observations do not indicate the use, storage, release, generation, or disposal of hazardous substances or petroleum products at the Site, with the exception of the historical coal company which was previously located at the Site. The Site is not listed by MassDEP as a location of an

existing release or past release of hazardous substances or petroleum products. In addition, indications of an existing release, past release, or a threat of release at the Site or adjoining properties were not identified during the visual evaluation or documented at the Boston or Brookline Fire Departments. Lastly, available information and observations do not suggest that above-ground storage tanks and/or underground storage tanks have been or are presently located at the Site or adjoining properties.

Prior to commencement of the work, investigations will be performed at the Project Site and in the existing buildings to confirm that there are no additional contaminated soils, groundwater, asbestos, lead paint, or other hazardous materials present. If such materials are present, they will be characterized based on the type, composition and level of the contaminants. Work plans will be prepared by appropriately licensed professionals to identify the means and methods for safe removal and legal disposal or recycling of these materials.

3.4.2 Solid Waste

The Project will generate solid waste typical of office, hotel, residential, restaurant and retail uses. Solid waste is expected to include wastepaper, cardboard, glass bottles and food. Recyclable materials will be recycled through a program implemented by building management. The Project will generate approximately 324 tons of solid waste per year.

With the exception of household hazardous wastes typical of hotel and residential developments (e.g., cleaning fluids and paint), the Project will not involve the generation, use, transportation, storage, release, or disposal of potentially hazardous materials. Typical waste generated by the medical office use will be handled in compliance with all local, state and federal regulations.

Each floor of the residential portion of the Project will have a trash room for solid waste and recycling. A main trash room will be located in the below-grade garage. Recyclables from the hotel will be collected and taken to the trash room on the ground floor next to the loading dock. Retail and office recyclables will be stored locally at each tenant space and removed to the trash room and loading dock for pick-up.

3.5 Sustainable Design

To comply with Article 37, the Proponent intends to measure the results of its sustainability initiatives using the framework of the Leadership in Energy and Environmental Design (LEED) rating system. As new construction for hotel, residential, medical office and retail uses, the Project will use the LEED V3 NC 2009 (New Construction) as a rating system to show compliance with Article 37. The LEED rating system tracks the sustainable features of a project by achieving points in the following categories: Sustainable Sites; Water Efficiency; Energy and Atmosphere; Materials and Resources; Indoor Environmental Quality; and Innovation in Design.

A LEED checklist is included in Appendix D, and shows the credits the Project anticipates to achieve. The checklist will be updated regularly as the design develops and engineering assumptions are substantiated. Presently, 46 points have been targeted, not including any of the potential Boston Zoning Code Article 37 points.

Sustainable Sites

SS Prerequisite 1, Construction Activity Pollution Prevention. An erosion and sedimentation control plan will be created and implemented to reduce pollution from construction activity.

SS Credit 1, Site Selection. The Project Site is currently completely developed and is located in an urban area. The site is not prime farmland, is not habitat for species on federal or state threatened or endangered lists, not located within 100 feet of wetlands, or public parkland.

SS Credit 2, Development Density and Community Connectivity. The development is adjacent to Cleveland Circle, an urban area with existing infrastructure and basic services. The Project Site is located within ½ mile of a dense residential area, and is close to at least 10 basic services than can be accessed by pedestrians from the Project Site.

SS Credits 4.1, 4.3 and 4.4, Alternative Transportation – Public Transportation Access. The Project is sited near several heavily served mass transit stops, including Reservoir Station and Cleveland Circle Station on the MBTA Green Line. The Project is anticipated to include preferred parking for low-emitting and fuel efficient vehicles.

SS Credit 6.1, Stormwater Design - Quantity Control. The Project will reduce the volume of stormwater runoff by 25%.

SS Credit 7.2, Heat Island Effect – Roof. The Project will include a roofing material that has an appropriate Solar Reflectance Index (SRI) to achieve this credit.

Water Efficiency

WE Prerequisite 1, Water Use Reduction. The Project will include water conserving toilets and fixtures to result in a decrease of water use of at least 20% from the LEED calculated baseline.

WE Credit 1, Water Efficient Landscaping. The use of potable water for landscaping will be limited with strategies such as using adaptive plants, efficient irrigation systems and climate base controllers.

WE Credit 3, Water Use Reduction. The Project will reduce potable water use by 30% from the LEED calculated baseline by incorporating water conservation strategies that include low flow plumbing fixtures for water closets and faucets.

Energy and Atmosphere

EA Prerequisite 1, Fundamental Commissioning of the Building Energy Systems. The Project will engage a commission agent for the commissioning process and to verify that the building's related systems are installed and perform as intended.

EA Prerequisite 2, Minimum Energy Performance. The Project will design the building and its mechanical systems to achieve an energy efficient design. The building is designed to optimize energy efficiency and will comply with the Stretch Energy Code, whereby energy use is reduced from the baseline energy conservation code by 20%. The prescriptive approach will be employed to demonstrate Stretch Energy Code compliance.

EA Prerequisite 3, Fundamental Refrigerant Management. The Project will use refrigerants that are chlorofluorocarbon (CFC) free.

EA Credit 1, Optimize Energy Performance. The Proponent will reduce the environmental impacts associated with energy use via means of increased energy performance and to exceed ASHRAE 90.1 by 20%.

EA Credit 6, Green Power. The Proponent will engage in a two-year renewable energy contract to provide at least 35% of the building's electricity from renewable resources.

Materials and Resources

MR Prerequisite 1, Storage and Collection of Recyclables. The Project will reduce the amount of building waste that is taken to landfills by supporting occupant recycling efforts. A central area for the collection of recyclables will be included in the building.

MR Credits 2, Construction Waste Management. The Proponent will divert construction and demolition debris from landfills through the use of a construction waste management plan.

Indoor Environmental Quality

IEQ Prerequisite 1, Minimum Indoor Air Quality. The Project will meet the minimum requirements of Sections 4 and 7 of ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality.

IEQ Prerequisite 2, Environmental Tobacco Smoke Control. The Project will be designed to minimize the exposure of building occupants, indoor surfaces and ventilation air distribution systems to Environmental Tobacco Smoke (ETS).

IEQ Credit 3.1, Construction IAQ Management Plan. A Construction IAQ Management Plan will be developed for the construction time period.

IEQ Credits 4.1, 4.2, 4.3 and 4.4, Low Emitting Materials. The Project will specify the use of adhesives and sealants, paints, carpet, and composite woods with low VOC content to reduce the quantity of indoor air contaminants.

IEQ Credit 5, Indoor Chemical and Pollutant Source Control. The Project design will minimize the exposure of building occupants to potentially hazardous particulates and chemical pollutants.

IEQ Credit 6.1, Controllability of Systems – Lighting. The Project will provide access to lighting systems controls for 90% of building occupants.

IEQ Credit 6.2, Controllability of Systems – Thermal Comfort. The Project will provide access to thermal systems controls for at least 50% of building occupants.

IEQ Credit 8.2, Daylight and Views. The Project will provide a connection between the indoor and outdoor spaces through the incorporation of daylight and views.

Innovation in Design

The Project anticipates that several points will be achieved in the Innovation & Design category.

ID Credit 1.1, Exemplary Performance – Public Transportation Access. The Project is sited near several heavily served mass transit stops.

ID Credit 1.2, Energy Star Appliances. The Project will include energy star appliances as appropriate.

ID Credit 2, Innovation in Design – LEED AP. The Project team includes at least one LEED Accredited Professional.

Regional Priority

The Project anticipates that several points will be achieved in the Regional Priority category.

1. Regional Priority – SS Credit 6.1 - Stormwater Design

2. Regional Priority –SS Credit 7.2 - Heat Island, Roof

Section 4.0

Urban Design

4.0 URBAN DESIGN

4.1 Project Context

Immediate Context

The Project Site is occupied by the former Circle Cinema, an Applebee's restaurant and surface parking. Cassidy Playground is north of the Project Site; the MBTA's Green Line Reservoir Station is opposite the Project Site on the east side of Chestnut Hill Avenue; the MBTA's Green Line D Branch right-of-way is adjacent to the Project's southern border; and the Watermark Condominium building is to the west end of the Project Site.

Local Context

The Project Site is bordered by a range of contextual conditions. In general terms, there is a park and reservoir to the northwest, a residential area to the south, and a commercial district to the north and east. Most notably, the Project Site forms one edge to Cleveland Circle. This is a major focal point of area vehicular routes and public transportation systems.

4.2 Project Design

The Project's architectural design reflects the diverse local building context, landscape and topographic conditions. There are two main guiding design principles that organize the Project:

1) Each of the Project's edges responds differently to its unique surroundings.

The roughly Y-shaped site is comprised of three very distinct edges: a park, an MBTA line, and a key roadway between Cleveland Circle and Route 9. The Project responds differently to each of these unique conditions.

At Cassidy Playground, the Project has an active, highly permeable ground floor with residential use above. As a general concept, the building is tallest at the corner and then begins to progressively step down in height as it extends to the west along the park edge. At its furthest point away from the corner, the building drops from an apparent 5½ story expression to 3½ story read (see Figure 4-1).

At the MBTA line, the Project counteracts the length of the site by giving the impression that the building is made up of different sized blocks that are linked together. Each block is roughly sized to simulate the scale of the houses on Clinton Road which are immediately opposite the hotel.





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Figure 4-1

Cassidy Playground and MBTA Right-of-way Elevations

At Chestnut Hill Avenue, the road drops approximately 18 feet from a high point at the MBTA bridge southward to Cassidy Playground. The design intent is to create a street wall that has a low profile at the upper part of the site, then steps up as it gets closer to the corner facing towards Cleveland Circle (see Figures 4-2 and 4-3).

2) Each of the three major building programs is expressed differently.

The Project is a significant and complex urban project that is set within the context of a rich and varied building stock. Generally speaking, the buildings that make up the existing context are blocks of different sizes and rendered in different materials—mostly different kinds of masonry. The assembly and material treatment of the current design reflects the context, while distinguishing between the different uses with variations to those materials, as well as window types and sizes to match the uses. The residential building has a beige large unit masonry base, beige brick field, beige pre-cast concrete accents and brown metal panel top level. Living rooms and bedrooms are expressed with different windows (see Figure 4-4). The hotel is mostly a beige metal panel with gray metal panel accents and a brown metal top level. The office is made up of a beige large-unit masonry base with beige metal panel accents and a brown metal top level. At the building's base, a regular rhythm of large unit masonry piers interspersed with glass store fronts unifies the overall composition of the Project.

4.2.1 Height and Massing

4.2.1.1 Height

The site is comprised of a parcel that includes areas in both Brookline and Boston. The height limit for the Brookline portion of the site is 56 feet. The proposed building will not exceed this height limit (excluding mechanical equipment and penthouse). On the Boston portion of the site, the overall massing of the Project varies depending upon its specific location on the site, but never exceeds 66.5' (Using the average elevation of the portion of Chestnut Hill Avenue along the Boston portion of the Project Site as the grade) at its highest point—the corner facing Cleveland Circle. The height at this location creates a prominent gesture on Cleveland Circle, an expression supported by many in the community and the City.

4.2.2.1 Massing

The Proponent has made an effort to address the concerns of both the City and community. The Proponent was asked to develop an architectural vocabulary that was more responsive to the scale and varied fabric of the immediate local context. Moreover, the Proponent was asked to explore different strategies in varying and reducing the mass of building along Cassidy Playground. The revised design directly addresses these concerns, and are described in Section 1.3.2.3



Figure 4-2

East Elevation



Figure 4-3

View From Chestnut Hill Avenue Looking Northwest



Figure 4-4

View from Cassidy Playground

Despite the revisions, most of the guiding design principles remain consistent. These include:

- Developing an architectural expression that is sympathetic to the surrounding urban context;
- Creating a pedestrian-friendly new development that incorporates neighborhood-friendly retail programs;
- Locating a high quality residential use directly adjacent to Cassidy Playground;
- Introducing a ground floor restaurant immediately adjacent to Cassidy Playground;
- Respecting and supporting the integrity of Cassidy Playground, including assistance in making improvements in collaboration with the Boston Parks and Recreation Department.
- Providing streetscape and public realm improvements through upgrades/additions to sidewalks, street lighting, landscaping, signage, fencing and paving;
- Designing a well-functioning traffic management and circulation plan; and
- Designing the Project in a way that encourages the use of readily accessible public transportation.

4.3 Landscape Design

4.3.1 Interface With Cassidy Playground

The landscape improvements on the north side of the building, at the interface with Cassidy Playground, will continue the existing park's landscape design of trees spread out over gently sloped lawn, concrete paths, and strategically placed benches (see Figures 4-5 and 4-6).

The Boston Parks and Recreation Department has made several recommendations to the Proponent over the past several months. One main concern was about the privatization of open space or public park. The previous design proposed a path that would lead from the residential lobby and extend directly into the park for pedestrian access to Cleveland Circle. The Boston Parks and Recreation Department requested that the Proponent create a walkway within its own boundary and not rely on park land. To this end, the Proponent has created a five-foot-wide walkway *within* its own property that connects the residential and hotel lobbies to Chestnut Hill Avenue.

Notes:

1. New Path and Seating Area with plantings
2. Promote Health of Existing Trees by improving soils
3. Remove Existing Storage Building and Concrete Walkway
4. New Fence Around Parking Areas and MBTA Property Line.
5. Additional Planting Along Park Side of the Fence
6. Large Green Space
7. Asphalt Paving
8. Concrete Unit Pavers
9. New Paving and Street Trees along Chestnut Hill Ave





Figure 4-6

Detailed Elevation From Cassidy Playground

The Boston Parks and Recreation Department expressed the sentiment that the interface between Cassidy Playground and the Project be defined in some way, but in no way be perceived as a barrier. The landscape strategy will give the appearance of a seamless transition between the Project Site and the park while respecting the boundaries. The preliminary design concept includes a number of improvements on the north side of the building, at the interface with Cassidy Playground, which will continue the existing park's landscape design of trees spread out over gently sloped lawn, concrete paths, and strategically placed benches. Specifically, the design proposes to remove most of the existing sidewalks closest to the building and reconfigure them in the form of two sidewalks that emanate from the residential entry. There will be new flowering trees planted over a new lawn and also new benches (see Figure 4-7.) The pool patio and dining terrace will be paved with concrete unit pavers. A low planted buffer and small painted steel fence will define the edge from the pool terrace to separate it from the park, while the dining terrace will rely on a small level change and also low plantings as a buffer.

The design intent for the interface between the Project and Cassidy Playground is to create a welcoming and attractive space that will encourage pedestrians to actively use the park. It follows that a well-maintained and active park edge will also enhance security in this location.

4.3.2 Streetscape

The streetscape along Chestnut Hill Avenue will be composed of new street trees along the curb line installed in six-foot-wide raised curbed planting beds at the upper part of the site and in flush tree grates at the lower end. Deciduous street trees will be selected to have vegetated canopies to maintain clear views to and from the site, while creating a separation between the pedestrian realm and the roadway, which is lacking in the current site. The sidewalk will be designed to give priority to pedestrians by having the driveway into the site cross the sidewalk at a raised level flush with the surrounding sidewalks. The entries to the retail spaces will be highlighted with threshold paving of concrete unit pavers, while the remainder of the sidewalk will be scored concrete. New street lighting consistent with City standards will be installed within this streetscape area and will help tie the Project into the Cleveland Circle context.

4.3.3 Courtyard

The design includes a central courtyard to be used for vehicular circulation and drop-off/pick-up to mitigate concern regarding congestion on Chestnut Hill Avenue. All of the drop-off/pick-up and access to parking will take place on site in the courtyard and not on Chestnut Hill Avenue. All traffic moves in a one-way direction around a large landscaped island. This configuration, which is different than the previous design that included a two-way roadway within the courtyard, increases the area available for landscaping and allows for clear and efficient wayfinding for all vehicles. The courtyard is also designed to create

Notes:

1.Large Green Space

2. Asphalt Paving

3. Concrete Unit Pavers

4. New Fence

5. Remove Storage Building

6. New Path and Seating Area in Park

7. New Paving and Street Trees along Chestnut Hill Ave



Figure 4-7

Enlarged Landscape Plan

an inviting space for pedestrians. A clearly marked sidewalk and landscaped area parallels the movement of the cars through the courtyard. Figure 4-8 shows a view of the courtyard from a residential unit.

The material used in the ground plane will create a unified appearance and will be durable and visually interesting. The roadway within the courtyard will be paved with standard roadway bituminous asphalt paving to ensure long term durability. The pedestrian ways and loading drive will be paved with concrete unit pavers (vehicular depth in drop-off lane) to provide texture and pedestrian scale to the space. The design concept seeks to "soften" the angles and surfaces of the building with gentle, free-form planted areas, while also introducing human-scaled elements, such as decorative planters and a water feature. The design also takes advantage of the larger island to introduce more greenery. The large island will be shaped and bermed to create more depth for larger flowering trees. On the opposite side, at the drop-off/pick-up areas, the design exploits the southern sun exposure and proposes 15-foot tall flowering trees and an array of different flowers, plants and shrubs. In addition, colorful pots and planters and two different seating areas will add a pedestrian-friendly dimension to the courtyard space.

4.3.4 Western Portion of Site

The remainder of the site will be comprised mainly of asphalt and concrete walks to accommodate parking, service and circulation. In order to eliminate the views of parked cars and the rear loading area from Cassidy Playground, a solid fence will be installed the entire length of the parking area and loading dock area. A visual buffer that is comprised of a six-foot wood fence and a line of evergreen bushes will be planted between the park and fence.

There will also be a new 8′ high solid wood fence installed along the MBTA property line. The new fence will hide parking and vehicular movements as seen from the residents on Chestnut Hill Avenue.

4.3.5 Façade Facing the MBTA Right-of-way

The south façade along the MBTA right-of-way is approximately 450 feet long. The office use is located at the corner, near the intersection of Chestnut Hill Avenue and the MBTA bridge, and runs parallel to the MBTA right-of-way for approximately 80 feet. The remaining portion of the building includes the hotel.

To counteract the length and the repetitive nature of hotel rooms, the design has been revised to give the impression that the building is made up of different sized blocks that are linked together. Each block is roughly sized to simulate the scale of the houses on Clinton Road which are immediately opposite the hotel (see Figure 4-1). The blocks are made up of four material treatments: a concrete block base, and gray, brown and beige metal panel. To



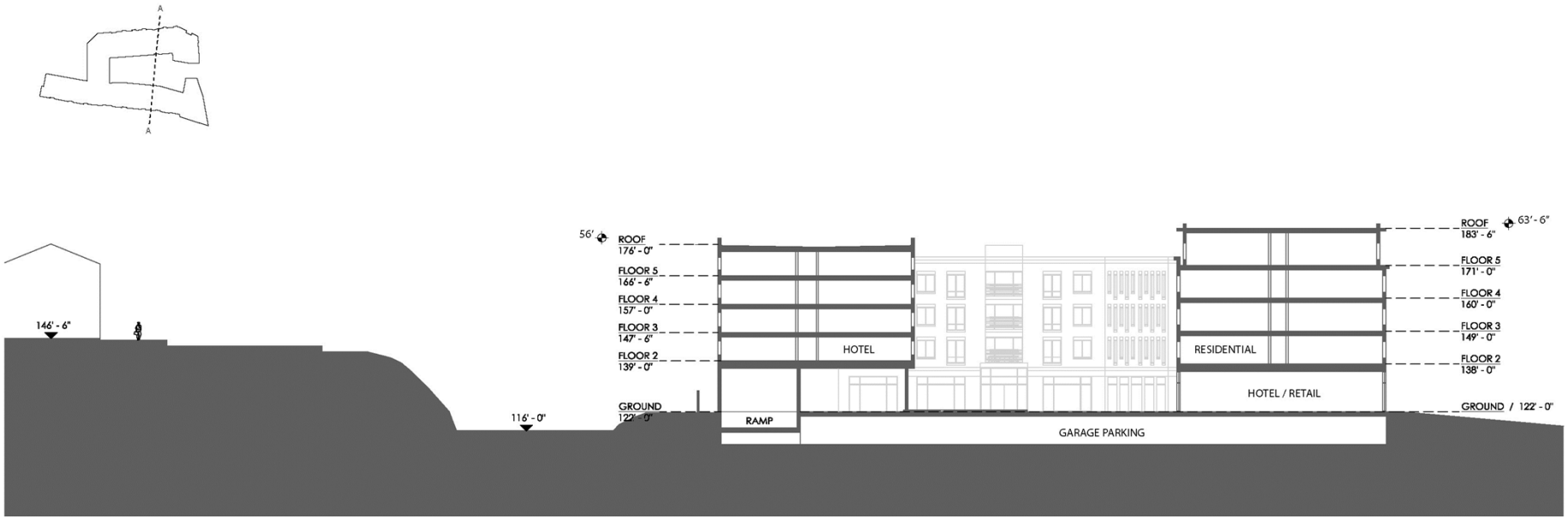
Figure 4-8

View of Courtyard From Residential Unit

add another layer of visual interest, the brown metal panel is set back two feet from the surface of the other metal panels. This offset helps to highlight each of the building blocks and separates them from the background.

The appearance of the Project on this side of the site, especially from Clinton Road, has been carefully studied. The revised design improves this view by breaking up the mass of the building and also providing visual interest.

Finally, it should be noted that the new building does not exceed the height of the roof lines of the homes on the upper part of Clinton Road (see Figure 4-9).


A
A
146' - 6"
56'
ROOF
176' - 0"
FLOOR 5
166' - 6"
FLOOR 4
157' - 0"
FLOOR 3
147' - 6"
FLOOR 2
139' - 0"
GROUND
122' - 0"
116' - 0"
HOTEL
RAMP
RESIDENTIAL
HOTEL / RETAIL
GARAGE PARKING
63' - 6"
ROOF
183' - 6"
FLOOR 5
171' - 0"
FLOOR 4
160' - 0"
FLOOR 3
149' - 0"
FLOOR 2
138' - 0"
GROUND / 122' - 0"

Section 5.0

Historic and Archaeological Resources

5.0 HISTORIC AND ARCHAEOLOGICAL RESOURCES

5.1 Buildings on the Project Site

There are two existing buildings on the Project Site, the Circle Cinema dating from the mid-1960s and an Applebee's restaurant constructed within the past 10 years. Neither of the two existing buildings is listed in the State or National Register of Historic Places.

Originally constructed in the mid 1960s, the Circle Cinema building is a single story, flat roof structure set back from the Chestnut Hill Avenue by approximately 100 feet. A large surface parking lot separates the Cinema building from the street edge. Typical of movie cinemas dating from the mid 20th century, the Circle Cinema building features a glass and steel frame façade, enclosing a double height interior lobby and concession area. Large rectangular concrete columns support the flat roof which projects over the entries. Several additions were added to the rear of the building during the late 20th century.

At a March 13, 2012 public hearing for Brookline's Demolition By-law, the Brookline Preservation Commission (BPC) determined the Circle Cinema building was not historically or architecturally significant and stated that the building could be demolished. In a letter dated March 20, 2012 the staff of the Boston Landmarks Commission (BLC) found the Circle Cinema building exempt from Article 85 (Demolition Delay) review; no further BLC review is required under Article 85.

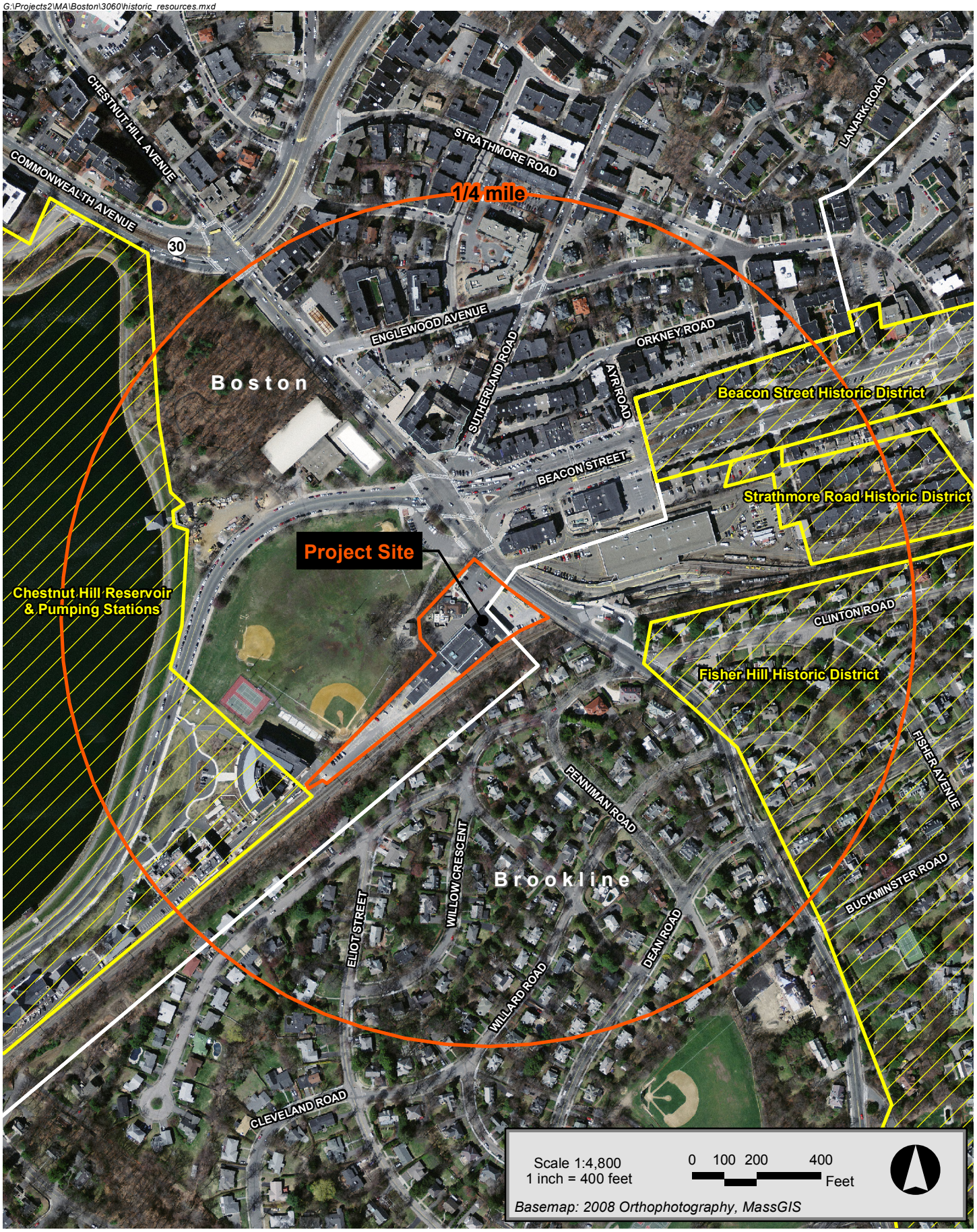
5.2 Historic Resources in the Project Vicinity

Table 5-1 lists State and National Register-listed properties and historic districts located within a quarter mile radius of the Project Site. Figure 5-1 identifies the locations of these properties and historic districts.

Table 5-1 State and National Register-Listed Properties and Historic Districts

Historic Resource	Address	Designation
Chestnut Hill Reservoir and Pumping Stations, Brighton	2400-2500 Beacon Street	Local Landmark and National Register District
Chestnut Hill Reservoir Hist. Dist., Brighton	Beacon Street and Commonwealth Avenue	National Register Historic District
Fisher Hill Historic District, Brookline	Bounded by Clinton Road, Summer Road, Boylston Street and Chestnut Hill Avenue	National Register Historic District
Beacon Street Historic District	Beacon Street, St. Mary's to Ayer Road	National Register Historic District
Strathmore Historic District	Strathmore Road and Clinton Path	National Register Historic District

G:\Projects2\MA\Boston\3060\historic_resources.mxd



375-399 Chestnut Hill Avenue Boston/Brookline, MA

Epsilon Associates Inc.

Figure 5-1
Historic Resource Areas

5.3 Impacts to Historic Resources

The Project will be taller in height than the existing buildings on the site, thereby resulting in some areas of new shadow. However, no new shadow will be cast on any of the historic properties or districts listed above.

As noted above, the BPC and BLC have reviewed the proposed demolition of the existing buildings and have both determined that no further review is warranted.

5.4 Archaeological Resources

The Project Site consists of previously developed urban parcels. Due to previous development activities and disturbances, it is not anticipated that the Project Site contains significant archaeological resources.

Section 6.0

Infrastructure

6.0 INFRASTRUCTURE

6.1 Wastewater

6.1.1 Existing Sewer System

There are three existing sewer easements located on the site. Of the three easements, one contains infrastructure owned and maintained by the Boston Water and Sewer Commission (BWSC), another by the Town of Brookline, and a third contains a privately owned sewer line.

In the rear (southwest) portion of the site there is a 20-foot-wide sewer easement in place for a privately owned sewer line originating from the abutting condominium property (block 93A lot 2439). This 12-inch RCP line enters the site heading southeast towards a sewer manhole, then turns to run east where it ties into an existing 21-inch sewer line owned by BWSC.

The 21-inch vitrified clay (VC) sewer line enters the site from the south and heads north, cutting though the rear half of the site for approximately 150 feet. This sewer line is located inside a larger 78″ x 84″ storm drain box culvert. The culvert structure falls within a 25-foot-wide sewer easement going through the Project Site and continuing into the adjacent park property where the easement and culvert turn to run northeast towards Cleveland Circle for approximately 175 feet, where the culvert turns again to run east, cutting through the north corner of the site and out to cross Chestnut Hill Avenue. These lines eventually continue northeast parallel to the MBTA train tracks in Beacon Street.

The third sewer easement onsite is 15 feet wide and corresponds to a portion of an 18-inch sewer line owned by the Town of Brookline. This sewer line and easement enters from the south, and heads northwest cutting through the middle of the site along the rear of the existing movie theater building. The easement ends at the property line of the movie theater, but the sewer line continues north through the restaurant property. After leaving the site, this 18-inch line turns to head north towards Cleveland Circle. The Field House structure located on the park property abutting the site has its sanitary sewer feeding into this 18-inch sewer line.

BWSC also owns and maintains a 10-inch sewer line in front of the site in Chestnut Hill Avenue. Both the existing restaurant and movie theater located onsite have sanitary sewer connections to this 10-inch line.

6.1.2 Project-Generated Sanitary Sewer Flow

The Project will generate an estimated 48,390 gallons per day (gpd) of wastewater based on design sewer flows provided in 314 CMR 7.00-Sewer System Extension and Connection Permit Program as summarized in Table 6-1. The net new wastewater generation is less since the Applebee's currently generate wastewater, which is not accounted for in Table 6- 1.

Table 6-1 Projected Sanitary Sewer Flows

Use	Quantity	Unit Flow Rate	Estimated Maximum Daily Flow (gpd)
Residential Units	109 beds	110 gpd/bedroom	11,990 gpd
Hotel Rooms	196 rooms	110 gpd/bedroom	21,560 gpd
Restaurant	375 Seats	35 gpd/seat	13,125 gpd
Retail	7,300 sf	50 gpd/1,000 sf	365 gpd
Medical Office	18,000 sf	75 gpd/1,000 sf	1,350 gpd
Total			**48,390 gpd**

6.1.3 Sanitary Sewer Connection

The proposed building's sanitary services are expected to tie into the 10-inch sewer main in Chestnut Hill Avenue. It is expected that there will be a total of three 6-inch sanitary sewer connections to service the proposed facilities. Existing building services will be cut and capped at the main if the wyes are not reused. A grease trap will be provided for the service from the proposed restaurant. The oil and grease separator is needed for floor drains prior to tying into the sanitary sewer.

The flow capacity of the 10-inch sanitary sewer adjacent to the site is 4.7 cubic feet per second (cfs), or 3.04 million gallons per day (MGD). The projected maximum daily sewer flow for the Project is 0.048 MGD, which is approximately 1.7% of this line's capacity.

Based on the layout of the proposed building footprint, the proposed design will call for a portion of the existing 18-inch sewer line to be re-routed. The line and easement will begin at the same spot on the south side of the site, then head west before turning to tie back into the original alignment off the northwest corner of the proposed building. A new easement will be established to contain this new section of sewer line. The re-routing is necessary to ensure the proposed building does not fall on top of this sewer line or easement.

The Proponent will submit a Site Plan to the BWSC for review and approval. Based on the proposed estimated sanitary flow, a Sewer Connection and Extension Permit will be required by the Massachusetts Department of Environmental Protection (MassDEP).

6.2 Water System

6.2.1 Existing Water Service

The water mains in the vicinity of the Project Site are predominantly owned and maintained by the Massachusetts Water Resources Authority (MWRA). There are a 36-inch and 30-inch pit cast iron (PCI) distribution lines located in Chestnut Hill Avenue in front of the Project Site. Both are part of the MWRA Southern High service network; originally installed in 1894, and 1887 respectively.

There is also an 8-inch PCI water main in Chestnut Hill Avenue, part of the BWSC's Southern High service network dating from 1919.

According to BWSC records, the existing movie theater building has a 6-inch fire protection service and a 2-inch copper domestic service line; the restaurant has a 3-inch domestic service line with a branch from this line also covering the Field House on the abutting park property. The services to the theater and to the restaurant tie into the existing Southern High (SH) 8-inch PCI line within Chestnut Hill Avenue.

There is one fire hydrant across the street from the site. The Proponent will coordinate with BWSC and the Boston and Brookline Fire Departments during the detailed design phase to determine the need for an additional hydrant on-site.

6.2.2 Anticipated Water Consumption

The maximum daily water demand is estimated to be 53,200 gpd based on the sewage flow estimate and an added factor for system losses including the average requirements for the Project's cooling system. More detailed water use and meter sizing calculations will be submitted to BWSC as part of the Site Plan approval process.

6.2.3 Proposed Water Service

It is assumed that the development will be served by a new 4-inch cement-lined ductile iron (class 56) pipe with a 3-inch meter. Calculations for sizing the water meter will be provided as part of the Site Plan submittal to BWSC. The domestic water service will be tied into the 8-inch water main (SH) with a tapping sleeve and valve. Water meters will be of a type approved by BWSC and tied into the BWSC's Automatic Meter Reading system. The Project will also be served by dedicated fire protection lines. The fire protection services will have separate taps into the 8-inch water main (SH) and will be provided with backflow prevention devices.

The Proponent's engineer will coordinate with the Boston Fire Department regarding the availability and accessibility to siamese connection locations. The design will meet BWSC and Boston Fire Department requirements for spacing between hydrants and siamese connections.

Irrigation will be needed for the proposed planter beds and other landscaped areas on-site. The Proponent will provide BWSC an estimate of the water usage once the final landscape design has been determined. Also, methods to reduce water usage will be investigated including soil moisture indicators and the use of water efficient landscaping.

Existing water services to be abandoned will be cut and capped at the main with the valve box, frame and cover removed, and the water meters returned to BWSC. Fire protection service removal will be coordinated with BWSC, Boston Fire Department, and Inspectional Services Department. A Termination Verification Approval Form for Demolition will be submitted for approval by BWSC prior to demolition of the existing structures. The Contractor will obtain a Hydrant Meter Permit from BWSC if hydrant use is required during construction. Additionally, an 8(m) permit will be needed from the MWRA to cross their infrastructure.

6.2.4 Water Supply Conservation and Mitigation Measures

It is expected that low-flow water closets and showers will be used. Lavatories are expected to have aerated faucets to reduce water usage.

Also as mentioned before, soil moisture indicators and the use of water efficient landscaping will be investigated as possible methods to reduce irrigation water usage.

6.3 Storm Drainage System

6.3.1 Existing Storm Drainage System

BWSC owns and maintains a 78″ x 84″ concrete storm drain within an existing 25-foot-wide sewer easement that cuts through the rear half of the site in a north/south direction. This larger storm drain contains an existing 21-inch VC sewer line running inside of it. The existing closed drainage system on-site, which consists of catch basins found to the side and rear of the movie theater, conveys stormwater directly into this BWSC concrete storm drain. Little water quality improvement is provided to the stormwater before it leaves the site and almost no recharge is provided. The roof drain of the movie theater building also ties into this closed drainage system.

The parking areas in the front (northerly) portion of the lot are graded to drain in a northerly direction overland, off site, and eventually captured by a catch basin in Chestnut Hill Avenue just northwest of the Project Site. This closed drainage system in Chestnut Hill Avenue eventually ties into the 78″ x 84″ concrete storm drain at a location approximately 250 feet northeast of the site.

6.3.2 Proposed Storm Drainage System

The Project will improve both the quality and quantity of stormwater runoff. Quality will be improved through the installation of deep sump catch basins, a water quality inlet, and on-site infiltration systems. The quantity of runoff will be reduced through additional landscaped area and the proposed stormwater infiltration system.

Runoff from the surface parking area will be collected by deep sump catch basins. Flows to the catch basins will be routed through water quality inlets (e.g., particle separator) and subsurface infiltration systems before being conveyed to the existing 78″ x 84″ concrete storm drain that runs through the site.

The storm drainage collected in the proposed underground parking structure will be captured by floor drains and pumped to an oil and gasoline interceptor prior to being piped to the sanitary sewer system.

Runoff from the building's rooftop will be collected and sent to a proposed infiltration system. Runoff from most rainfall events will be infiltrated to the ground. The infiltration system is expected to have an overflow structure in case the system gets inundated by larger storm events. The overflow structure will be tied into the proposed closed drainage system on-site.

Surface parking runoff will be collected by deep sump catch basins and conveyed through a water quality inlet prior to tying into the BWSC's storm drain on-site. The storm drain system will be designed in accordance with BWSC's design standards and the BWSC "Requirements for Site Plans." A Site Plan will be submitted for BWSC approval and a General Service Application will be completed prior to any off-site drain work. Any drain connections terminated as a result of construction will be cut and capped at the storm drain in the street in accordance with BWSC standards.

An operation and maintenance plan will be developed to support the long-term functionality of the proposed stormwater management system.

Erosion and sediment controls will be used during construction to protect adjacent properties, the municipal storm drain system and the on-site storm drain system. A pollution prevention plan will be prepared for use during construction including during demolition activity.

6.4 Electrical Service

The existing electrical services to the theater and restaurant on-site are underground and are fed from NSTAR's manhole in Chestnut Hill Avenue. There is an electrical transformer located on-site near the northwest property line close to the restaurant. The underground service from the street as well as the restaurant both connect to an existing utility pole near the southwest property line behind the restaurant.

The primary feed to service the development is expected to continue to come from a manhole on Chestnut Hill Avenue and connect to a new pad mounted transformer on-site. The existing transformer will be removed. The electrical demand will be determined during design development and the new services will be coordinate with NSTAR.

6.5 Telecommunications Systems

There is an existing telecommunications manhole within Chestnut Hill Avenue on the Brookline side of the project. During the design phase, the Project's engineer will coordinate with local private utility companies in the area, such as Comcast and Verizon to determine how connections will be made to the future development.

6.6 Gas Systems

National Grid owns and maintains the gas mains in Chestnut Hill Avenue. There is an 8-inch cast iron (CI) low pressure (LP) main, installed in 1899, running within Chestnut Hill Avenue from the northwest and stopping approximately at the Brookline town line. From here, the 8-inch CI line turns into a 12-inch bare steel (BS) LP main installed in 1964. There are connections coming off the 8-inch line in Chestnut Hill Avenue, onto the site, connecting to the movie theater and the restaurant. A 3-inch steel service connection is made to the theater, and a 4-inch plastic and 2-inch steel connection is made to the restaurant. The Project is expected to use natural gas for heating and domestic hot water. There will be separate services for the residential units and the rest of the building. The actual size and location of the building services will be coordinated with National Grid.

6.7 Utility Protection During Construction

The Project's construction contractor will notify utility companies and call "Dig Safe" prior to excavation. During construction, infrastructure will be protected using sheeting and shoring, temporary relocations, and construction staging as required. The construction contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all utilities with the appropriate utility owners and/or agencies. The construction contractor will also be required to provide adequate notification to the utility owner prior to any work commencing on their utility. Also, in the event a utility cannot be maintained in service during switch over to a temporary or permanent system, the construction contractor will be required to coordinate the shutdown with the utility owners and Project abutters to minimize impacts and inconveniences.

Section 7.0

Response to Comments

7.0 RESPONSE TO COMMENTS

7.1 Introduction

This Chapter provides responses to the BRA Scoping Determination and the associated comment letters that were received on the Expanded PNF filed with the BRA on August 16, 2012. The letters have been reproduced and individual comments coded in the margins. Responses to the comments follow each individual letter and can be matched using the comment code numbers. Letters were received from the following City of Boston Departments, organizations, and individuals:

BRA Scoping Determination and Letters Received on the Expanded PNF

Section 7.3
Boston Redevelopment Authority Scoping Determination
Boston Transportation Department (11/19/2012, 11/9/2012)
Boston Fire Department
Boston Water and Sewer Commission
Boston Police Department
Boston Parks and Recreation Department (8/28/2012, 9/27/2012, 12/14/2012)
Katie Pedersen, BRA
BETA Group (for the Town of Brookline)
Councilor Mark Ciommo, Boston City Council, District 9
Section 7.4
Impact Advisory Group
Impact Advisory Group, Sharon Cayley, Mary Cronin, John Ellis & Ruth Scheer
Impact Advisory Group, Eva M.Webster
Section 7.5
Marla Scheer
Pamela A. Manolakis
Scott Guthery
Meghan McGee
Eleanor Druckman (9/21/2012, 9/23/2012, 10/7/2012)
Jennifer Lewis, MD
Brad Walmsley
Michelle Lapides
Stephen Dreier, The Waterworks at Chestnut Hill Trust
Celine Sellam and Rony Sellam
Gerald and Elsa Ramin
Kurt J. Bloch, MD
Paula Berman
Rollin Crittendon

Faye and Charlie Ruopp
Stan Kugell
Matthew Danish
Susan W. Martin
Mike Rosloff
Mimi Iantosca Costa
Lewis Shepard (9/21/2012, 10/4/2012)
Edna Pressler
Sandra Rothenberg
Howard and Karen Glaser
Vesna Besarabic
Alexander Poulos
Leslee Winston
Watermark Resident Group
Charlotte Knox & Kenneth Stein (9/16/2012, 9/12/2012)
Besty Glaser
John D. Kibrick
Susan Heideman
Metropolitan Waterworks Museum, Inc.
Amy Burdick
Andrea & Geoff Young
Amy Catherine Climo
Christine Corcoran Cox
John Doggett
John Ryan
Ludwik Gorzanski
Roger Blood
Brookline Town Meeting
Leland C. Webster, PhD
Lauren Mattison
Philip Tackel
Carl O. Richardson, III
Beverly Ross
Rich Hoss
Barbara Brilliant
Jonas cox
Cynthia Taft
Lauri Mitchell

BRA Scoping Determination and Letters Received on the Expanded PNF (continued)

Beth Kemler
Lissa R. Kapust
Neal Solomon
Aaron and Suzanne Kleiner
Ann M. Sobolewski, Hamilton Cleveland
John Spritzler
Arlene Wolk
Ellen Berezin
Albert Hyman, MD
Mark Lewis
Lillian Levith
Michael Lin
Dr. Leslie & Esther Silverstone
Naomi B. Isler
Sharon Cayley
Janet Kenney
Gabor J. Kalman
Genae Johnson
Nicholas Choumenkovitch
Krzysztof Kempa
Aberdeen-Brighton Residents Association, Inc.
Anabela Gomes, Brighton Allston Improvement Association
Mildred Rein
Hilary Forbes
Keith L. Ligon
The Watermark

Letters on the Expanded PNF Supporting the Project (*Section 7.6*)

George Haivanis
Francis E. Farrell
Alfredo Lopes
Derrick Nelson
[Illegible] Oubaid
Marcia Williams-White
Jason Perkins
Brian Donoghue
Daniel Van Heest
Kevin Garrity
Narcisse Germain
Richard Gibson
Bob Murphy
Brian Curley
Rafael Wallace
Carmine D'Amelio
John Jay
Derrick Hobson

Letters on the Expanded PNF Supporting the Project (continued)

Dan Mariano	Garnet Jones
Brian Magee	William D. Watson
Joseph D. Priven	Hecter Cusado
Michael Kerin	Alex M. Delgado Ruiz
Charles CoField	Pablo J. Lopez
Mark Erlich	Eric J. Gonzalez
Elmer Boyd	Ramon Alicea
Aaron Krakow	Moses Destouche
Richard Scaramozza	Brendan Perechodick
G. Steven Tewksbury	Ravi Mahabi
James O'Neill	Cedric Mitchell
Martin Haudman	Rick Petitti
Luis O. Duarte	Graling Primas
Jan Ostrowshi	Jen Ace
Kendy Amazan	Victor Carrara
Samuel Barbosa	John C. Rogaris
Jerome Whitley	Stephen Whalen
John Fitzgerald	Elliot Peng
Kevin McLaughlin	Lloyd Mahler, DMD
John R. Cusack	Tom Puglia (Boston District Council of Carpenters)
Nicholas Jett	

7.2 Responses to the Main Concerns Raised in the Public's Comment Letters

The majority of the public's letters focused on several main themes, such as the Project's size, the size and variety of residential units, hotel location, and use of the Waterworks driveway. Therefore, in the interest of conciseness, the Proponent has prepared summary responses addressed nine topics, which it believes will address the great majority of issues and concerns raised in the public comment letters. Additional comments are responded to in the next section of this chapter. These main topics, which are discussed fully in the following section, include the following:

- Project size/density;
- Size and variety of residential units;
- Hotel location;

- « Use and safety of the Waterworks driveway;
- « Proposed uses;
- « Building architecture;
- « Courtyard size and circulation;
- « Traffic study; and
- « Parking.

Copies of the public's letters have been included later in this chapter.

7.2.1 Project Size/Density

Many commenters wrote that they believed the Project as proposed in the Expanded PNF was too dense for the site, which would lead to traffic concerns. Those commenters encouraged a smaller Project.

The proposed Project Site is an "urban in-fill site" located adjacent to the dense, urban area of Cleveland Circle in the Brighton neighborhood. Other buildings that front Cleveland Circle and buildings in the area are one to seven stories and occupy the majority of their sites. Further away on Commonwealth Avenue, buildings are even larger. The Project Site has excellent transit access because of its proximity to two MBTA Green Line stations on the Cleveland Circle (C) Branch and Riverside (D) Branch. The primary entryway to the Project is located approximately 500 feet from the Cleveland Circle stop on Beacon Street and approximately 300 feet from Reservoir Station (D Branch). Two MBTA bus routes also operate near the site. The influence of these transit services are reflected in the Boston Transportation Department travel mode shares for this neighborhood (Area 10). For example, the residential travel mode shares of this neighborhood reflect the fact that 30% of residents do not own a vehicle, a growing trend highlighted by the popularity of Zipcar car-sharing service.

The Project has undergone extensive review and has evolved as a result of agency and community input from the project proposed in the PNF submitted in April 2011 and from the Expanded PNF submitted in August 2012. In particular, as a result of community input, the majority of the office use was eliminated and replaced with residential use. Initially, the Proponent anticipated that the office and hotel uses could share parking spaces, minimizing the number of spaces on the site. However, since residential and hotel uses are unable to share spaces, as their peak need occurs at the same times of day, additional parking on the site is required. With the addition of residential space, additional parking was required to support the residences—a below-grade parking garage was added to the Project to accommodate the increased parking need. To offset the extraordinary expense of the below-grade parking, additional square footage was added in the residential portion of the

Project. With the additional square footage required to make the Project financially feasible, the trip generation remains similar to the trip generation related to the previous design. As noted in the scoping comment letter in Appendix 1 of the Scoping Determination, "The BRA staff is supportive of the FAR density proposed."

Currently, a smaller project at that site would not be financially feasible, and the public benefits from the Project, especially the redevelopment of an underused site partially occupied by a large, vacant cinema building, would not be realized. Since the additional square footage has been added to the Boston portion of the site, the public financial benefits are now more equitably distributed between Boston and Brookline. The additional square footage in Boston results in increased tax revenue for the City, even though the transportation impacts will be similar to the previous design. In addition, the Proponent has provided a number of mitigation measures to improve the traffic conditions in Cleveland Circle that exist and are projected to occur without the Project.

It is not the size of a development that dictates the associated degree of traffic impacts, but rather the individual trip-making characteristics of the land uses and the availability of convenient transit options. Approximately 85% of the Project's square footage will be allocated to the 196-room hotel and the 74 residential units. Unlike office complexes that generate about 50% of all daily trips during the two peak commuter hours, hotels and residential uses generate only about 15% of their activity during peak hours. With trip activity distributed throughout the day, and not concentrated during peak hours, the result is fewer traffic impacts to the surrounding area.

Retail/restaurant uses generate trips differently than the other uses of the Project, with little activity (about 1% of daily trips) during the a.m. peak hour. Trips generated by these uses are distributed throughout the day starting mid-morning through the evening. Restaurant activity typically peaks during the evening, after the p.m. peak hour. In total, only about 8% of the retail/restaurant trips occur during the p.m. peak hour.

While the medical office only accounts for 18% of the Project's daily trips, they are more concentrated in the peak hours, with about 25% of daily medical trips occurring during peak commuting hours. As described in Chapter 2, while the traffic impacts associated with the new Project trips are minimal—one of nine intersections decreases to LOS E only during the a.m. peak hour, and only four of 106 movements during either the a.m. or p.m. peak hours decrease to LOS E or F from the No-Build Condition—the Proponent has developed several signal operation recommendations that would improve general traffic operations in the study area, including a significant improvement at the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. The Proponent will continue to work with the BTD and the Town of Brookline's Transportation Department to finalize the design of these improvements.

7.2.2 Housing Profile

Many commenters expressed concern that the residential units as proposed in the Expanded PNF were too small, and that there were too many proposed one bedroom units. The commenters expressed that they would like to see larger units that would be more appealing to families and long-term residents.

The proposal in the Expanded PNF included 82 residential units with approximately 34 percent being two-bedroom units. In response to comments from the community, the Proponent has decreased the number of residential units to 74 and increased the number of two bedroom units to 47 percent. The Project includes one bedroom units, one bedroom units with a den, two bedroom units, and larger two bedroom units with a den.

Due to the Project's excellent proximity to public transportation, including the C and D Branches of the Green Line, the marketing studies completed for the Project have indicated that the primary target for renters will be empty nesters, couples, and young families commuting to Downtown Boston for work. The units will therefore be sized, designed and priced to appeal to young professional commuters. The rental rates will be lower than some of the other new rental buildings in Boston, but more than the rates for the existing Cleveland Circle rental market. The rate difference provides more diverse opportunities for renters wanting to live in the area.

7.2.3 Location of Uses

Many letters commented that the hotel entrance should be placed on Cleveland Circle, and that a prominent building presence on Cleveland Circle is important. Some commenters believe that the hotel should be on Chestnut Hill Avenue and that the residential component should be away from Chestnut Hill Avenue and closer to the Waterworks site. Some letters stated that the restaurant should not be located on Cleveland Circle at the corner of the site.

Numerous options for the best placement of the hotel have been suggested and considered, including on the corner facing Cleveland Circle, which some consider the most visible way to express the hotel's importance. In this scenario, the hotel would occupy the north side of the development closest to Cassidy Playground, and the hotel rooms would overlook the park. While this would benefit the hotel guests, the financial feasibility of the Project requires that the residential element of the Project, as well as the ground floor restaurant, take advantage of the park views. The decision to place the residential component in the corner facing Cleveland Circle allows for the hotel and, in particular, the guest room wing to be located adjacent to the MBTA right-of-way. Given the transient nature of hotel guests, hotel rooms looking over the MBTA tracks is the preferred option.

Alternatively, the residential units are expected to be converted eventually from apartments to condominiums. Placing the residential units onto the western side of the Project Site

would place more units adjacent to the MBTA tracks. Based on the Proponent's extensive past experience in residential real estate, they know how challenging it is to sell residential units adjacent to railways. This location would also force residents to access their units by either walking along the edge of Cassidy Playground toward the back of the building, walking through the hotel, or walking a longer distance and up and down a steep grade change from Chestnut Hill Avenue. Given the transit-oriented nature of the Project Site, these access options would be less desirable to residents. In the current design, residential tenants or owners will enjoy a location adjacent to an urban street, and the wide views across Cleveland Circle will be considered an asset by many.

Placing the hotel on Cleveland Circle and the northern portion of the site would locate the drop-off area on the northern side of the courtyard, an area less visible from the street, which would create two potential transportation-related issues:

1) The majority of hotel guests arrive by car. As such, the drop-off/pick-up area needs space for queuing for both cars and taxis. This scenario would not afford the required distances for drop-off/pick-up, as cars would attempt to park as close to the entrance as possible, without pushing traffic onto Chestnut Hill Avenue.

2) Given the prominence of the hotel entry at the corner, it is likely that taxis and service vehicles would stop directly in front of the entrance to drop-off/pick-up or attempt to use the crescent parking lot immediately adjacent, which is meant for Cassidy Playground visitors. In both cases, the traffic in Cleveland Circle and Chestnut Hill Avenue would be significantly worsened.

After thorough study, it was determined that a restaurant would be the best use of the corner. Unlike a hotel, which is frequented by visitors to the area, a restaurant would be for the residents of the area. As such, the restaurant would be used by both hotel guests and local residents, and would not result in the increased traffic impacts that would occur with the hotel entry at the corner location. The visibility of the restaurant on Cleveland Circle will be a benefit to the restaurant and will draw both tourists and residents of the area.

The revised design includes a small plaza in front of the entrance to the restaurant, which will better connect the Project Site to Cassidy Playground and Cleveland Circle. New planting, benches and other decorative landscape elements will make this an attractive and inviting place. The park side of the restaurant will have windows that slide open during nice weather so that diners will be directly connected to the views and activities in the park. Park visitors will benefit from the activity at the restaurant, as the increase in "eyes on the park" will enhance safety.

7.2.4 Use and Safety of the Waterworks Driveway

Many comments expressed concern about the proposed use of the Waterworks driveway as an exit from the property. The main concern was safety, given the alignment of the driveway and its location adjacent to Cassidy Playground.

The existing rear, exit-only driveway from the Project Site to Beacon Street will continue to operate at the western end of the site by connecting directly to the Waterworks driveway. This driveway was active when the Cinema was open and allowed vehicles parked in the rear lot to exit onto Beacon Street. The use of the rear egress for the Project was specifically contemplated by the project agreements for the Waterworks development. The Project's use of this exit way will activate the Commonwealth's plan to financially support the Waterworks Museum, which will receive the proceeds of the easement payments by the Proponent, as dictated by the Waterworks development agreements.

Parking management controls will force all hotel guests to exit via the Waterworks driveway to the intersection of Beacon Street/Waterworks Driveway. Vehicles using the rear driveway will travel along the Waterworks exit only driveway and turn either left or right onto Beacon Street at the unsignalized Beacon Street/Waterworks Driveway intersection. Under existing conditions, 24 vehicles use the rear driveway from the Waterworks development during the a.m. peak hour and 13 vehicles use it during the p.m. peak hour. When the hotel is at 100% occupancy, the Project will add 22 vehicle trips during the a.m. peak hour and 30 during the p.m. peak hour. Both of these conditions were evaluated to determine peak hour operations using Synchro software. The results indicate that with the Project, the Waterworks Driveway will operate at LOS C in the a.m. peak hour and LOS C in the p.m. peak hour; both of which are considered satisfactory in an urban setting such as the Cleveland Circle area.

For comparison, a traffic count from October 2003, when the Cinema was operational, shows that the rear-exit driveway processed 205 vehicles on a Friday and 355 vehicles on a Saturday. Exiting Cinema trips were clustered together as groups of patrons left at the same time. This differs from the proposed Project, where hotel trips will occur throughout the day without a particular surge of activity.

The Proponent is committed to ensuring that the use of the exit drive be maintained as a safe and efficient right of way for all users, both the present residential users and the future hotel guests. Signage will be posted at the rear hotel exit alerting drivers to travel slowly as they proceed to Beacon Street. The existing curvature of the roadway acts as a traffic calming measure, inhibiting high travel speeds. The Proponent will work with the Waterworks Museum and the residential community on the installation of traffic control signage, and to ensure that the driveway is used properly and safely with minimal impact on Cassidy Playground and Waterworks.

7.2.5 Medical Office Space

Some commenters wrote that medical office space was not appropriate for the site, and that the proposed parking would not be adequate for this use.

A portion of the Project, approximately 18,000 sf, is planned for medical office use. The Proponent's experience in owning and managing medical office space in the Brookline area has indicated that there is a shortage of medical office space that is sized and priced appropriately for either individual or small physician team practices. The site is a central location in the community with significant public transit access and will enhance community access to health care providers. Creating appropriately priced space for these users will place more medical practitioners in close proximity to the Brighton/Brookline community.

The Proponent has estimated the number of new vehicle trips generated by the medical office on standard trip generation rates specifically for medical office land use from the Institute of Transportation Engineers.

The approximately 18,000 sf of medical office space will generate approximately 10% of the Project's daily person trips, but about 18% of daily vehicle trips, reflecting higher auto use among patients as compared to the hotel guests and residents. These new trips, along with trips from the other Project uses, have been incorporated into the traffic analysis presented in Chapter 2. As mentioned in Chapter 2, while the traffic impacts associated with the new Project trips are minimal—one of nine intersections decreases to LOS E only during the a.m. peak hour, and only four of 106 movements during either the a.m. or p.m. peak hours decrease to LOS E or F from the No-Build Condition—the Proponent has developed several signal operation recommendations that would improve general traffic operations in the study area, including a significant improvement at the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. The Proponent will continue to work with BTD and the Town of Brookline's Transportation Department to finalize the design of these improvements.

The recommended parking supply ratio from the BTD for this medical office use is 1.0 space/1,000 sf, or about 18 spaces. Should the peak demand for medical parking be higher at some points during the day, parking will be available at the Project Site because the hotel parking demand will be lowest during the day. Please see Section 2.3.2.8 for more information on the Project's parking activity.

7.2.6 Building Architecture

Some commenters expressed the need for the architecture of the building to complement the architecture in the surrounding area.

Since the filing of the Expanded PNF, the Proponent has dramatically changed the architectural expression of the exterior design. The original design attempted to infuse

Cleveland Circle with a new energy and sought an iconic imagery. The building was rendered in white metal panel and had a distinctive "crennellated" façade along the park edge. The building purposely stood in sharp contrast to its more traditional neighbors. Both the community and the BRA expressed a desire for a building that was more consistent with its neighbors.

Plan

In the original design, the main corner of the building (facing Cleveland Circle) extended to the edge of the setback allowed under zoning in the shape of a prow or a point. Moreover, the prow was one full story taller than the rest of the building. As such, the prow was highly visible and a strong image for the Project. In re-evaluating the Project and with the goal of looking to its neighbors for context, the corner of the building has been chamfered so that the corner is cut away and flattened. The larger urban effect of chamfering is for the building facades to create a circle—namely Cleveland Circle (see Figure 1-21 in Chapter 1). The resulting flat surface contributes to the overall circular urban form.

Materials

In addition to looking to other buildings in Cleveland Circle, the Proponent studied some of the more prominent and distinguished residential buildings in the surrounding vicinity, including the Watermark Condominium building at 2400 Beacon Street, Reservoir Place at the corner of Chestnut Hill Avenue and Sutherland Road, as well as other similarly scaled residential projects in the area (see Figures 1-22 and 1-23 in Chapter 1). After studying the different precedents, the Proponent identified certain features and details that could be incorporated into the Project's design. The revised design adopts a traditional organization of a base, field and top with each rendered in a different material (see Figures 1-24 in Chapter 1). More specifically, the base is a larger masonry unit, the field or middle part is brick masonry with vertically-oriented, punched windows, and the top, which is separated from the field by a cornice and is set back two feet from the major wall-plane of the building, is dark brown metal. In addition, there are elements such as bay windows, Juliet balconies, and details such as lintels and window sills, all of which borrow from a more familiar and traditional architectural vocabulary. The entryways are marked with recessed brown metal which extend from the top floor down to the first floor canopy. This device helps to break up the mass of the building from a singular block into three smaller parts. In addition to the vertical slots, there are metal clad projecting bays which introduce yet another design element that provides visual interest.

Please see Section 1.3.2.3 and Chapter 4 for more information.

7.2.7 Courtyard Size and Circulation

Some commenters expressed concern that the proposed courtyard was too small to handle the number and type of vehicles (trucks, taxis, personal vehicles, etc.) anticipated. Circulation within the courtyard and impacts to Chestnut Hill Avenue were also a concern.

In response to the discussion about the size of the courtyard and its ability to accommodate all of the different movements from pedestrians, bikes, cars, and service trucks, the Proponent has expanded and redesigned the courtyard. The courtyard has been designed within the Project to limit traffic impacts on Chestnut Hill Avenue. The vehicular court allows all of the drop-off, pick-up, delivery, service, and access to parking to take place on site in the courtyard and not on Chestnut Hill Avenue. The main entrance and drop-off for the hotel in particular needs ample space for queuing and for drop-off/pick-up. In the original design, the face of the hotel entry was 205 feet away from the property line. In the revised design, the face of the hotel entry has been set back 243 feet from the property line. The added distance provides for more room for queuing and also for larger vehicles to maneuver through the courtyard.

The site plan and redesigned courtyard have been evaluated using AutoTURN, an engineering software program that analyzes vehicle maneuvers. Through an iterative assessment of the site plan and vehicle maneuvers, an optimal design was developed for the Project Site and courtyard that provides adequate roadway width/clearance for automobiles and delivery vehicles as they access, egress, and circulate within the site. The courtyard is designed to allow passenger cars to pull over to a dedicated parking lane and allow vehicles destined for the parking areas to continue without impediment. This is intended to minimize interior vehicle conflicts and keep drive aisles clear to avoid any spill back of vehicles onto Chestnut Hill Avenue. While most deliveries will occur via car/van, the site and loading areas have been designed to accommodate a 36-foot single-unit truck. The associated automobile and delivery vehicle movement paths are shown in Appendix B.

The traffic queues along the exit driveway to Chestnut Hill Avenue have been estimated using Synchro analysis. The driveway at Chestnut Hill Avenue will be approximately 75 feet long between the street and courtyard—about three car lengths. Additionally, the travel lane around the courtyard has capacity for 15 vehicles. The average queue on the exit driveway to Chestnut Hill Avenue will be approximately 13 feet (less than one car length) during the a.m. peak hour and approximately 38 feet (about 1.5 car lengths) during the p.m. peak hour. The maximum 95th percentile queue (which occurs 5% of the time or less) will be approximately 85 feet long (about three car lengths). The exit driveway and courtyard have capacity for up to 18 vehicles in the courtyard and another seven vehicles in the curb lane. The interior of the courtyard is designed to accommodate peak traffic on-site with minimal impact to courtyard operations and no impact off-site.

Vehicles entering the site will proceed into the courtyard and either drop off passengers at the curb, proceed to short-term parking, proceed to the parking garage, or proceed to rear

hotel guest parking. The courtyard has capacity for up to 15 vehicles on the travel lane and another seven vehicles in the curb lane. Ample maneuverability in and around the courtyard will exist to prevent traffic queues at the entrance driveway. The operation of the courtyard will be managed by the hotel operator.

While acknowledging that the court will accommodate a great deal of vehicular movement, the BRA suggested that the space be landscaped attractively. To this end, the amount of planting area has increased by narrowing the main entry drive which was previously two-way, and has been redesigned to be a one-way loop which improves way-finding and generally creates a simpler and more efficient flow of traffic through the site. The redesign of the courtyard roadway has reduced the driveway width by approximately 14 feet, decreasing the paved area and providing a clearer and safer vehicular movement through the courtyard.

The revised landscape design concept seeks to "soften" the hard angles and surfaces of the building with gentle, free-form planted areas and also to introduce more human-scaled elements such as pots and decorative planters. The revised landscape design takes advantage of the larger island to introduce more greenery. The ground will be shaped and bermed to create more depth for larger flowering trees. On the opposite side, at the drop-off/pick-up areas, the design exploits the southern sun exposure and proposes 15-foot-tall flowering trees, and an array of different flowers, plants and shrubs. In addition, colorful pots and planters and two different seating areas will add a pedestrian-friendly dimension to the quality of the courtyard space. Figure 4-8 shows a view of the courtyard from a residential unit.

7.2.8 Traffic Study

Some commenters expressed the view that the traffic study in the Expanded PNF did not show the full impacts of the Project on the surrounding roadways.

The Project's traffic study follows standard guidelines established by the Boston Transportation Department and the Town of Brookline, and uses methodologies established by the Institute of Transportation Engineers for estimating new trips and evaluating existing and future intersection operations.

The transportation study was prepared following standard guidelines used to assess new projects, including the number of new trips and the associated impact of those trips. Because the Project Site spans two jurisdictions, the study area was defined in consultation with the Boston Transportation Department and Town of Brookline.

As is standard, future conditions were designated as five years into the future: No-Build and Build Conditions were assessed for Year 2017.

Data collection and field observations were made for this study starting in December 2010 through October 2012. Note that the Massachusetts Environment Policy Act office, Massachusetts Department of Transportation, and the Boston Transportation Department sanction the use of traffic data that has been collected within three years prior to a proposed project's transportation evaluation.

The Project Site has excellent transit access because of its proximity to two MBTA Green Line stations on the Cleveland Circle (C) Branch and Riverside (D) Branch and the influence of these transit services are reflected in the Boston Transportation Department's travel mode shares for this neighborhood (Area 10). For example, the residential travel mode shares of this neighborhood reflect the fact that 30% of residents do not own a vehicle, a growing trend highlighted by the popularity of Zipcar car-sharing service.

The transportation study was published as Chapter 2 in the August 16, 2012 Expanded PNF (for Boston) and as a stand-alone transportation report (for Brookline) dated August 7, 2012. The appropriate transportation engineering professionals from Boston and the Town of Brookline then reviewed and prepared comments/questions for the study team.

The Town of Brookline/BETA Group submitted comments on October 9, 2012. The study team submitted a response to the Town of Brookline on November 20, 2012. A major part of that response was revising the analysis for Year 2017 No-Build and Build Conditions to incorporate additional background projects. A subsequent letter from the Town of Brookline/BETA Group deemed the revised analysis acceptable, but requested the revised site plan and signal plan materials, when available. The Proponent has provided the Town of Brookline/BETA Group with the updated site plan and signal plan for Beacon Street/Chestnut Hill Avenue (Cleveland Circle), including the site driveway at Chestnut Hill Avenue.

Since submission of the Expanded PNF, the study team has met with BTD staff to discuss the Project. Written comments from BTD and responses are presented later in this chapter.

7.2.9 Parking

Some commenters opined that parking for the proposed Project would be insufficient for the proposed uses.

The parking analysis in the DPIR confirms that there will be sufficient on-site parking spaces to meet the Project's parking demand. As compared to those spaces that serve only one land use, parking spaces that serve complementary land uses can potentially reduce the number of necessary spaces or, at least, provide spare capacity during certain periods of the day. Shared parking activity occurs when a group of parking spaces is used (or shared) by different parkers throughout the day, thereby increasing the overall utilization of each space.

For example, hotel parking demand peaks from late evening until early morning, while guests are in their room. In contrast, office parking demand peaks between mid-morning and late afternoon. Peak hotel occupancy occurs on weekends, while office space is generally empty. Providing a separate set of spaces for only the hotel and another set of spaces for only the office would unnecessarily result in a higher number of required spaces than designing a parking plan that allows both uses to share spaces.

Time-of-day parking demand profiles from the Urban Land Institute and Institute of Transportation Engineers for the Project's various land uses, along with the BTD's recommended parking ratios, were adopted to create an aggregate pattern of parking demand throughout the day. Note that the BTD's recommended parking ratios reflect the availability of nearby MBTA's Green Line transit service at both the Cleveland Circle stop (C Branch) and Reservoir Station (D Branch).

Figure 2-18, in Chapter 2, graphically shows Project's parking demand pattern compared to the Project's parking supply of 203 spaces. The graph shows projected occupied and empty spaces by time of day, revealing that an adequate number of spaces will be available to serve the Project's guests, tenants, and visitors and absorb realistic fluctuations in parking demand.

Response to BRA Scoping Determination and Response to Comments from City Departments, Elected Officials

7.3 Responses to BRA Scoping Determination and Responses to Comments from City Departments, Elected Officials

Responses to specific comments from the entities listed are provided following each of their letters.

Boston Redevelopment Authority

Boston's Planning & Economic Development Office

Thomas M. Menino, *Mayor*
Clarence J. Jones, *Chairman*
Peter Meade, *Director*

One City Hall Square
Boston, MA 02201-1007
Tel 617-722-4300
Fax 617-248-1937

January 22, 2013

Mr. David Zussman
Boston Development Group
93 Union Street, Suite 315
Newton Centre, MA 02459

Dear Mr. Zussman:

Re: Scoping Determination
375-399 Chestnut Hill Avenue, Brighton

Please find enclosed the Scoping Determination issued by the Boston Redevelopment Authority (the "Authority" or "BRA") pursuant to Section 80B-5.3 of the Boston Zoning Code (the "Code") in response to the Expanded Project Notification Form ("PNF") filed for the 375-399 Chestnut Hill Avenue proposal (AKA: Cleveland Circle Cinema Redevelopment), located in the Brighton neighborhood of Boston.

The 375-399 Chestnut Hill Avenue project is located on an approximately 2.56 acre parcel of land adjacent to Cleveland Circle. The site contains the former Cleveland Circle Cinema and associated parking ("Site One") and the existing Applebee's restaurant and associated parking ("Site Two"). Site One has two addresses, 375 Chestnut Hill Avenue in Boston and 399 Chestnut Hill Avenue in Brookline. The address of Site Two is 381 Chestnut Hill Avenue and is located entirely in Boston. Sites One and Two are bound by Cassidy Playground to the north, Chestnut Hill Avenue and the Green Line MBTA Reservoir Station to the east, the MBTA right-of-way and residential homes on Clinton Road in Brookline to the south and the Waterworks Condominiums to the west. A total of 2.14 acres are located in the City of Boston and 0.42 acres are located in the Town of Brookline (collectively the "Project Site").

If you have any questions regarding the Scoping Determination, please contact me at (617) 918-4429.

Sincerely,

Erico Lopez
Senior Project Manager

Cc. James M. Tierney
Heather Campisano

BOSTON REDEVELOPMENT AUTHORITY
SCOPING DETERMINATION

FOR

375-399 CHESTNUT HILL AVENUE, BRIGHTON
EXPANDED PROJECT NOTIFICATION FORM

PREAMBLE

Boston Development Group (the "Developer", "Proponent" or "Development Team") submitted to the Boston Redevelopment Authority ("BRA") an Expanded Project Notification Form (the "PNF") under Article 80 of the Boston Zoning Code (the "Code") on August 16, 2012 and noticed in the *Boston Herald* on the same day. The PNF proposes the Developer's plan to construct an approximately 236,500 square foot ("sf") mixed-use building. The Proponent seeks to raze the existing buildings on the Project Site and replace them with a new building that will be organized into a roughly Y-shaped footprint. The proposed development includes an approximately 181 key hotel, 82 residential units, 19,000 sf of medical office space, and 14,200 sf of ground floor retail/restaurant space. Both the hotel and residential portions are five stories, while the medical office portion is three stories over a single story of retail/restaurant space. The ground floor includes the retail space, the residential entry and lobby, the hotel entry and lobby, hotel support spaces, and a fitness and pool area to be shared by the hotel and residential components. The proposed development also includes 228 parking spaces of which approximately 141 of those spaces will be located in an underground parking garage supports in addition to mechanical and storage spaces. The balance of the parking (87 spaces) will be provided at grade (the "Proposed Project").

Written comments constitute an integral part of the Scoping Determination and should be responded to in the Draft Project Impact Report (the "DPIR").

SUBMISSION REQUIREMENTS

FOR

375-399 CHESTNUT HILL AVENUE, BRIGHTON
DRAFT PROJECT IMPACT REPORT

The Boston Redevelopment Authority ("BRA") is issuing this Scoping Determination ("Scope") pursuant to Section 80B-5 of the Boston Zoning Code (the "Code"), in response to a Expanded Project Notification Form (the "PNF") which Boston Development Group (the "Developer", "Proponent" or "Development Team") submitted on August 16, 2012. The Proponent seeks to raze the existing buildings on the Project Site and replace them with a new building that will be organized into a roughly Y-shaped footprint. The proposed development includes an approximately 181 key hotel, 82 residential units, 19,000 sf of medical office space, and 14,200 sf of ground floor retail/restaurant space. Both the hotel and residential portions are five stories, while the medical office portion is three stories over a single story of retail/restaurant space. The ground floor includes the retail space, the residential entry and lobby, the hotel entry and lobby, hotel support spaces, and a fitness and pool area to be shared by the hotel and residential components. The proposed development also includes 228 parking spaces of which approximately 141 of those spaces will be located in an underground parking garage supports in addition to mechanical and storage spaces. The balance of the parking (87 spaces) will be provided at grade (the "Proposed Project"). Notice of the receipt by the BRA of the PNF was published in the *Boston Herald* on August 16, 2012 initiating the public comment period that ended on October 1, 2012, extended to October 8, 2012 at the request of the Proponent. Pursuant to Section 80A-2 of the Code, the Notice and the PNF were sent to all public agencies of the City and other interested individuals and parties. Written comments in response to the Notice and the PNF that were received by the BRA prior to the end of the public comment period are included in the Appendices of this Scope. The Scope requests information that the BRA requires for its review of the Proposed Project in connection with the following:

(a) Certification of Compliance of the Proposed Project pursuant to Article 80, Section 80B-6 of the Code; and

(b) Preliminary Adequacy Determination pursuant to Article 80, Section 80B-5.4(c) of the Code; and

The BRA is reviewing the Proposed Project pursuant to Article 80, Section 80B, Large Project Review, which sets out comprehensive procedures for project review and requires the BRA to examine the urban design, transportation, environmental, and other impacts of proposed projects. The Developer is required to prepare and submit to the BRA a Draft Project Impact Report ("DPIR") that meets the requirements of the Scope by detailing the Proposed Project's expected impacts and proposing measures to mitigate,

limit, or minimize such impacts. The DPIR shall contain the information necessary to meet the specifications of Section 80B-3 (Scope of Review; Content of Reports) and Section 80B-4 (Standards for Large Project Review Approval) as required by the Scope.

Subsequent to the end of the forty-five (45) day public comment period for the DPIR, the BRA will issue a Preliminary Adequacy Determination ("PAD") that indicates the additional steps necessary for the Proponent to complete in order to satisfy the requirements of the Scope and all applicable sections of Article 80 of the Code. If the BRA finds that the PNF/DPIR adequately describe the Proposed Project's impacts and, if appropriate, proposes satisfactory measures to mitigate, limit or minimize such impacts, the PAD will announce such a determination and waive the requirements for the filing and review of a Final Project Impact Report, are waived pursuant to Section 80B-5.4(c)(iv) of the Code. Section 80B-6 requires the Director of the BRA to issue a Certification of Compliance before the Commissioner of Inspectional Services can issue any building permit for the Proposed Project.

I. PROPOSED PROJECT DESCRIPTON

The proposed 375-399 Chestnut Hill Avenue project is located on an approximately 2.56 acre parcel of land on the south side of Chestnut Hill Avenue adjacent to Cleveland Circle. The Circle Cinema parcel has two addresses: 375 Chestnut Hill Avenue in Boston and 399 Chestnut Hill Avenue in Brookline. The address of the Applebee's parcel is 381 Chestnut Hill Avenue in Boston. The Project Site is divided by the Boston/Brookline line such that the northeast portion of the Project Site is in Brookline. Of the approximately 2.56 acre total site area, approximately 2.14 acres are within Boston (the "Project Site").

The Project Site is occupied by the former Circle Cinema, an Applebee's restaurant, and surface parking. Cassidy Playground is north of the Project Site; the MBTA's Green Line Reservoir Station is opposite the Project Site on the east side of Chestnut Hill Avenue; an MBTA right-of-way and the rear of residences along Clinton Road are south of the Project Site; and the Waterworks Condominiums are to the west, or rear, of the Project Site.

Boston Development Group seeks to raze the existing buildings on the Project Site and replace them with a new building that will be organized into a roughly Y-shaped footprint. The proposed development includes an approximately 181 key hotel, 82 residential units, 19,000 sf of medical office space, and 14,200 sf of ground floor retail/restaurant space. Both the hotel and residential portions are five stories, while the medical office portion is three stories over a single story of retail/restaurant space. The ground floor includes the retail space, the residential entry and lobby, the hotel entry and lobby, hotel support spaces, and a fitness and pool area to be shared by the hotel and residential components. The proposed development also includes 228 parking spaces of which approximately 141 of those spaces will be located in an

underground parking garage supports in addition to mechanical and storage spaces. The balance of the parking (87 spaces) will be provided at grade (the "Proposed Project").

II. DEVELOPMENT REVIEW REQUIREMENTS - ARTICLE 80

SUBMISSION REQUIREMENTS

In addition to full-size scale drawings, sixty-five (65) copies of a bound report and one (1) digital PDF copy containing all submission materials reduced to size 8-1/2" x 11", except where otherwise specified, are required. The report should be printed on both sides of the page. A copy of this Scope should be included in the report submitted for review.

A. GENERAL INFORMATION

1. Applicant Information — BRA.1
   a. Development Team
      (1) Names
         (a) Developer (including description of development entity and type of corporation)
         (b) Attorney
         (c) Project consultants and architect
      (2) Business address and telephone number for each
      (3) Designated contact for each

   b. Legal Information — BRA.2
      (1) Legal judgments or actions pending concerning the Proposed Project
      (2) History of tax arrears on property owned in Boston by the Applicant
      (3) Evidence of site control over the project area, including current ownership and purchase options of all parcels in the Proposed Project, all restrictive covenants and contractual restrictions affecting the proponent's right or ability to accomplish the Proposed Project, and the nature of the agreements for securing parcels not owned by the Applicant.
      (4) Nature and extent of any and all public easements into, through, or surrounding the site.

2. Design Development Information (See **Appendix 5** for required design development and contract document submissions).
3. Project Area
   a. An area map identifying the location of the Proposed Project — BRA.3

b. Description of metes and bounds of project area or certified survey of project area

4. Public Benefits

a. Anticipated employment levels including the following:
   (1) Estimated number of construction jobs
   (2) Estimated number of permanent jobs
   The Proponent is expected to provide a workforce development plan and needs assessment for the Proposed Project. The Proponent should describe the efforts it will undertake to ensure that an appropriate share of new jobs and construction jobs will be filled by Boston residents.

BRA . 4

b. Current activities and programs which benefit adjacent neighborhoods of Boston and the city at large, such as: child care programs, scholarships, internships, elderly services, education and job training programs, etc.
c. Other public benefits, if any, to be provided.

5. Regulatory Controls and Permits

a. Existing zoning requirements, zoning computation forms, and any anticipated requests for zoning relief should be explained.

BRA . 5

b. Anticipated permits required from other local, state, and federal entities with a proposed application schedule should be noted.
c. A statement on the applicability of the Massachusetts Environmental Policy Act (MEPA) should be provided. If the Proposed Project is subject to MEPA, all required documentation should be provided to the BRA, including, but not limited to, copies of the Environmental Notification Form, decisions of the Secretary of Environmental Affairs, and the proposed schedule for coordination with BRA procedure.

6. Community Groups

a. Names and addresses of project area owners, abutters, and any community or business groups which, in the opinion of the applicant, may be substantially interested in or affected by the Proposed Project.

BRA . 6

b. A list of meetings held and proposed with interested parties, including public agencies, abutters, and community and business groups.

B. PROJECT DESCRIPTION AND ALTERNATIVES

BRA.7

1. Project Description

The DPIR shall contain a full description of the Proposed Project and its components, including its size, physical characteristics, development schedule, costs, and proposed uses. This section of the DPIR also shall present analysis of the development context of the Proposed Project. Appropriate site and building plans to illustrate clearly the Proposed Project shall be required.

2. Project Alternatives

BRA.8

A description of alternatives to the Proposed Project that were considered shall be presented and the primary differences among the alternatives, particularly as they may affect environmental conditions, shall be discussed.

C. TRANSPORTATION COMPONENT

BRA.9

Please refer the comments and information requested by the Boston Transportation Department ("BTD") included in **Appendix 1**.

D. ENVIRONMENTAL PROTECTION COMPONENT

BRA.10

Please refer to the comments and information requested by the Boston Environment Department ("BED") included in **Appendix 1**. In addition, the Proponent is requested to provide information on the following:

E. URBAN DESIGN COMPONENT

BRA.11

Please refer to the comments and information requested by the Boston Redevelopment Authority's Urban Design Department included in **Appendix 1**. In addition, the Proponent is requested to provide information on the following:

Procedures:

1. Written description of program elements and space allocation for each element

2. Plan for the surrounding area and district and sections at an appropriate scale (1" = 40' or larger) showing relationships of the Proposed Project to the surrounding area and district:

a. massing
b. building height
c. scaling elements
d. open space
e. major topographical features
f. pedestrian and vehicular circulation
g. land use

3. Black and white or color 8"x10" photographs of the site and neighborhood

4. Eye-level perspective (reproducible line drawings) showing the proposal (including main entries and public passages/areas) in the context of the surrounding area. Views from the area streets are required, showing the surrounding context, with particular emphasis on important viewing areas. Long-ranged (distanced) views of the proposed project should also be studied to assess the impact on the skyline or other view lines. Photomontages are encouraged as a technique to fully understand the contextual setting. Context and the massing of other BRA-approved projects should be included. At least one bird's-eye perspective should also be included. All perspectives should show (in separate comparative sketches) both the build and no-build conditions. The view locations should be approved by the BRA before analysis is begun. View studies should be cognizant of light and shadow, massing and bulk.

5. Site sections at 1" = 20' or larger showing relationships to adjacent buildings and spaces.

6. Site plan at an appropriate scale (1" = 20' or larger) showing:
   a. General relationships of proposed and existing adjacent buildings and open space
   b. Open spaces defined by buildings on adjacent parcels and across streets
   c. General location of pedestrian ways, driveways, parking, service areas, streets, and major landscape features
   d. Pedestrian, handicapped, vehicular and service access and flow through the parcel and to adjacent areas
   e. Survey information, such as extending elevations, benchmarks, and utilities
   f. Construction limits

7. Study building/site model at 1" = 16' or 1" = 20' showing preliminary concept of setbacks, cornice lines, fenestration (window treatment), facade composition, etc.

8. Massing model at 1" = 40' in basswood suitable for placement in the area model at the BRA (if applicable). (We do have a Dorchester section.)

9. Drawings at an appropriate scales (e.g., 1" =8', 1"-16', or 1"-20') to describe the facade design and proposed materials including:
    a. Building and site improvement plans
    b. Elevations in the context of the surrounding area
    c. Sections showing organization of functions and spaces
    d. Preliminary building plans showing ground floor and typical upper floors
    e. Phasing of the proposed project

10. A written and/or graphic description of the building materials and its texture, color, and general fenestration patterns is required for the proposed development.

11. Proposed schedule for submittal of all design or development related materials.

12. Proposed LEED certification plans and point rating goal assessment.

13. Electronic model of the Proposed Project in format suitable for use in the BRA's digital 3-D model of Boston. Format should be approved by Urban Design's Technology manager

The Boston Civic Design Commission (BCDC) to review the Proposed Project upon the submission of the DPIR. The Proponent should expect to produce a presentation if scheduled to appear in the future. When sufficient material has been developed, the Proponent should contact David Carlson, Executive Director of the BCDC. The BRA Urban Design reviewer will also assist in determining the Proponent's readiness for presentation. Monthly meetings of the BCDC are scheduled on the first Tuesday of each month. Attached is a memorandum, which briefly describes requirements (which should be considered prerequisites) for this scheduling.

INFORMATION REQUIREMENTS FOR BCDC PRESENTATION

BCDC Review is established by Article 28 of the Code and is a part of the Article 80 Project and Plan review processes. BCDC review is advisory to the BRA and should occur before the BRA Board takes action pursuant to the Article 80 process. In special cases, where this threshold is not applicable, BCDC review should occur during the schematic phase of project design or plan evolution so as to maximize the potential benefit of BCDC comments.

The Proponents should have available for presentation to the BCDC the full schematic design submission requirements as set forth in the BRA Development Review Procedures booklet. BRA Urban Design Staff shall have reviewed the Proponent's submission materials to assess their level of completeness before a

Project is submitted for BCDC review. BCDC Project Summary Booklets (15) shall be prepared and delivered to the Executive Director at least one week before the first scheduled hearing before the Commission. Summary booklets need not repeat full PNF/ENF, NPC, Master Plan, or DPIR information, but should contain a brief narrative and fact sheet explaining the Project or Plan as well as sufficient photographs, drawings and sketches to fully understand the Project as proposed in its design and neighborhood context.

In general, the following must be included:

- Site Plan with context (one or more city blocks, depending on Project size);
- Elevations, Sections, and eye-level perspectives with context (adjacent buildings and more, depending on site) showing comparative heights and relationships to buildings, structures, or topography across the street(s) or to the rear. Models are encouraged;
- Fact Sheet with underlying zoning background (including design guidelines, district criteria, status of other public reviews, etc.) as well as proposed height(s), FAR, setbacks, and all other data directly or indirectly affecting the Public Realm (parking supplied vs. required, i.e.); and
- Other Materials deemed necessary by BRA or BCDC staff.

Unless advised otherwise, presentations will be limited to a MAXIMUM of 15 minutes. Please bring easels or other equipment necessary for your presentation. BRA staff working on a Project should be present to answer questions raised by Commissioners. The major reviewing community group(s) should be informed of the presentation beforehand and ask to be represented at the meeting. Proponents should be prepared to submit presentation material to the BRA the morning of the day before a hearing, for BRA urban design staff review. David Carlson can be reached at 617-918-4284. Fax is 617-918-4329. Email is david.carlson.bra@cityofboston.gov

F. HISTORIC RESOURCES COMPONENT

The Development Team should include in the DPIR if the Proposed Project is adjacent to historic properties listed in the National and State Registers of Historic Places. The DPIR shall identify, map, and describe these historic resources and any other historic properties in the vicinity of the Proposed Project's site and shall evaluate the anticipated effects of the Proposed Project on these resources. Particular attention shall be given to the design, scale, height, massing, materials, and other architectural elements of the proposed buildings as these relate to the significant architectural and historic resources in the proposed project's vicinity. The DPIR must also include an assessment of the potential presence of archaeological resources that may be disturbed by the Proposed Project. The Proponents should also respond to the comments of the Boston Environment Department outlined in **Appendix 1**.

H. INFRASTRUCTURE SYSTEMS COMPONENT

The standard scope for infrastructure analysis is given below:

1. Utility Systems and Water Quality

a. Estimated water consumption and sewage generation from the Proposed Project and the basis for each estimate. Include separate calculations for air conditioning system make-up water;

b. Description of the capacity and adequacy of water, storm drain and sewer systems and an evaluation of the impacts of the Proposed Project on those systems;

c. Identification of measures to conserve resources, including any provisions for recycling;

d. Description of the Proposed Project's impacts on the water quality of other water bodies that could be affected by the project, if applicable;

e. Description of mitigation measures to reduce or eliminate impacts on water quality;

f. Description of impact of on-site storm drainage on water quality;

g. Detail methods of protection proposed for infrastructure conduits and other artifacts, including BSWC sewer lines and water mains, during construction; and

h. Detail the energy source of the interior space heating; how obtained, and, if applicable, plans for reuse of condensate.

Thorough consultation with the planners and engineers of the utilities will be required, and should be referenced in the Infrastructure Component section.

2. Energy Systems

a. Description of energy requirements of the Proposed Project and evaluation of the Proposed Project's impacts on resources and supply; and

b. Description of measures to conserve energy usage and consideration of the feasibility of including solar energy provisions or other on-site energy provisions.

Additional constraints or information required are described below. Any other system (emergency systems, gas, steam, optic fiber, cable, etc.) impacted by this development should also be described in brief.

- The location of transformer and other vaults required for electrical distribution or ventilation must be chosen to minimize disruption to pedestrian paths and public improvements both when operating normally and when being serviced, and must be described.

- Sewer systems and storm water systems must be separated if possible; utilization of combined systems should be avoided. Thorough analysis and continuing discussions with BWSC are required.

- Water supply systems adjacent to the Proposed Project and servicing the Proposed Project should be looped so as to minimize public hazard or inconvenience in the event of a main break.

In addition, the Proponent should respond to the comments by the Boston Water and Sewer Commission found in **Appendix 1**.

I. PUBLIC NOTICE

The Proponent will be responsible for preparing and publishing in one or more newspapers of general circulation in the city of Boston a Public Notice of the submission of the Draft Project Impact Report (DPIR) to the BRA as required by Section 80A-2. This Notice shall be published within five (5) days after the receipt of the DPIR by the BRA. Public comments shall be transmitted to the BRA within forty-five (45) days of the publication of this Notice.

Sample forms of the Public Notices are attached as **Appendix 4**.

Following publication of the Public Notice, the Proponent shall submit to the BRA a copy of the published Notice together with the date of publication.

BRA.1 Applicant information

Please see Section 1.2.

BRA.2 Legal information

Please see Section 1.6.

BRA.3 Area map and survey

Please see Figure 1-1 and Appendix A.

BRA.4 Public benefits

Please see Section 1.4.

BRA.5 Regulatory controls and permits

Please see Sections 1.5 and 1.7.

BRA.6 Community groups

Please see Section 1.9.

BRA.7 Project description

Please see Section 1.3.

BRA.8 Project alternatives

Please see Section 1.3.3.

BRA.9 Transportation

Please see Chapter 2.

BRA.10 Environmental protection

Please see Chapter 3.

BRA.11 Urban design

Please see Chapter 4. The Proponent will provide the BRA and the BCDC will the requested information as the review of the Project continues.

BRA.12 Historic resources

Please see Chapter 5.

BRA.13 Infrastructure

Please see Chapter 6.

Boston Redevelopment Authority

Boston's Planning & Economic Development Office

Thomas M. Menino, *Mayor*
Clarence J. Jones, *Chairman*
Peter Meade, *Director*

One City Hall Square
Boston, MA 02201-1007
Tel 617-722-4300
Fax 617-248-1937

MEMORANDUM

TO: Erico Lopez
FROM: David Carlson
DATE: December 3, 2012
SUBJECT: 375-399 Chestnut Hill Avenue (Cleveland Circle Mixed-Use Project)
Scoping Comments

The Proposed Project consists of approximately 82 residential units, 181 hotel rooms, 19,000 SF of medical office, and about 14,000 SF of restaurant/retail in a massing and height configuration that, by dint of this scoping, presumptively is in the process of being modified in response to comments. Therefore the comments made below should be applied or understood in their general, and not necessarily specific, sense. The Project overall contains some 237,000 SF; of this, 192,000 SF is located in the City of Boston (the rest is in Brookline). Height proposed is up to about 64'; FAR, depending upon one's calculus, is a little over 2.0.

URBAN DESIGN COMPONENT

The BCDC voted to review the Proposed Project on September 4, 2012 and saw a preliminary presentation. The Project was referred to Design Committee. When sufficient progress in preparation of a Preferred Alternative in the DPIR in response to the Scoping Document has been made on the design pursuant to preliminary BCDC, Brookline DAT, and BRA staff comments, BCDC Design Committee meetings should be scheduled by contacting David Carlson, Executive Director of the BCDC. The meeting, as communicated in meetings both at the BRA and before the BDAT, will include an invitation to members of the latter. Minutes from the Cleveland Circle portion of the September BCDC meeting are attached.

The Proposed Project creates two intertwined buildings containing three major use program elements as well as retail/restaurant uses along Chestnut Hill Avenue. The existing Circle Cinema and Appleby's buildings will be demolished; the odd-shaped and tapered site which rises between the MBTA's 'D' line and the Park will have its edges defined by the proposed 5-story structures. Parking and loading are accessed via an internal circulation system with ingress/egress from Chestnut Hill Avenue and limited egress onto Beacon Street. The massing will be the back-yard view across MBTA tracks for a number of Brookline residents and will also form the backdrop of the Park as seen from Beacon. The corner of the parcel touches the partial roadway circle which gives Cleveland Circle its name.

The following urban design objectives should be addressed in the DPIR submission.

1) Cleveland Circle is defined, for better or worse, largely by its roadways. The Project should contrive *to improve or at worst to make no worse* the traffic performance of these defining roadways. The BRA believes that the chosen entry point in the middle of the conjoined parcel, near the existing stop light, is the most reasonable location. DC.1

2) In addition, the size and configuration of the interior courtyard must allow for a managed and reasonably-performing array of necessary valet parking, drop-offs, service and loading, and residential self-parking without creating chaotic congestion that affects Chestnut Hill Avenue itself. Maximizing the courtyard for this purpose as well as increasing its access to daylight is recommended. The courtyard must be attractive and a green and pleasant environment as well for pedestrians and bicyclists, as well as those residents and hotel guests for whom it provides views. DC.2

3) Standard alternatives for study include no-build, and an 'as-of-right' build-out, somewhat complicated by the two-town presence. The BRA staff is supportive of the FAR density proposed, as well as most of the proposed uses. Different program configurations have been studied as well, giving the hotel more immediate presence along Chestnut Hill Avenue. We feel that the residential use should maximize its views toward the park - and that local 'eyes on the park' will improve park safety as well. We ask that the Proponent team study ways of visibly acknowledging the hotel use from the Avenue and, more importantly, ways of reinforcing the prominence of the Project on Cleveland Circle itself. DC.3 DC.4 DC.5

4) The Proposed Project should contrive to augment its presence at the corner facing Cleveland Circle - and to make more recessive its presence as a Park edge, by a combination of strategies that break up the sense of mass in interesting ways but also truly reduce the mass - lowering the structure, so that the height decreases by, say, a floor as one goes deeper into the park. Extending the length of the building and possibly the residential program (on a floor, say, or by introducing dual single-loaded corridor hotel and residential uses along the narrow portion of the site) can balance any loss of residential units resulting from this change. DC.6

5) Modify the primary building facade expression visible from Cleveland Circle so that it becomes a strong contemporary neighbor to those buildings closest to it in massing: the residential buildings on the adjacent Waterworks site and at the opposite corner of Cleveland Circle. DC.7

6) Work with the Parks Department to improve the adjacent edge of the Park. Consistent with the existing strategy used by Appleby's (and legally required), provide a direct path on Project property to any entries fronting onto the Park, while also considering secondary path connections directly from the more public areas of the Project to Park pathways. DC.8

7) Reduce the absolute number of parking spaces. There is no need for a multi-use Project to provide the required number of parking spaces for each component use when these uses have overlapping peak time requirements and when the Project as a whole is a model for lower T.O.D. parking ratios, sitting nearly on top of two Green Line branches (and bus connection) and a block and a half from a third. Underground spaces should be retained; surface parking should be reduced so that mitigating green buffers may be provided on DC.9

both edges of the property. Cars should not be visible from the Park; the green buffer toward the Riverside Line may act as a sonic buffer as well as a visual one from Brookline. DC.10

Among others, the refined design included in the DPIR must satisfactorily address all the above parameters. An accurate sense of scale of the building in its context must be achieved; we note that this seems highly variable within the material as currently presented in the PNF. Focus on key distanced views, as well as key intermediate/user viewpoints, to guide the design composition of the Proposed Project. Reinforce all pedestrian pathways; develop a plan which DC.11 shows the building program and how it supports such activity within the future pedestrian/public access network. Active programming that will engage the public and ideally spill seasonally DC.12 into the public realm at the ground floor should remain (and should be maximized). Take note of the fundamental contextual strengths of the site, including its connections to the Green Line trolleys, the immediate Park and Reservoir, and nearby attractions - the Waterworks Museum, Cleveland Circle.

We reserve the right to add additional concerns during the course of the process of combined BRA staff, BDAT, and BCDC review which may affect the responses detailed in the DPIR.

The following urban design materials for the Proposed Project's schematic design must be submitted for the DPIR. DC.13

1. Written description of program elements and space allocation (in square feet) for each element, as well as Project totals.
2. Neighborhood plan, elevations and sections at an appropriate scale (1"=100' or larger as determined by the BRA) showing relationships of the proposed project to the neighborhood context:
    a. massing
    b. building height
    c. scaling elements
    d. open space
    e major topographic features
    f. pedestrian and vehicular circulation
    g. land use
3. Color, or Black and white 8"x10" photographs of the site and neighborhood.
4. Sketches and diagrams to clarify design issues and massing options.
5. Eye-level perspective (reproducible line or other approved drawings) showing the proposal (including main entries and public areas) in the context of the surrounding area. Views should display a particular emphasis on important viewing areas such as key intersections, pathways, or public parks/attractions. Long-ranged (distanced) views of the proposed project must also be studied to assess the impact on the skyline or other view lines. At least one bird's-eye perspective should also be included. All perspectives should show (in separate comparative sketches) at least both the build and no-build conditions; any alternatives proposed should be compared as well. The BRA should

approve the view locations before analysis is begun. View studies should be cognizant of light and shadow, massing and bulk.

6. Additional aerial or skyline views of the project, if and as requested.
7. Site sections at 1"=20' or larger (or other scale approved by the BRA) showing relationships to adjacent buildings and spaces.
8. Site plan(s) at an appropriate scale (1"=20' or larger, or as approved by the BRA) showing:
    a. general relationships of proposed and existing adjacent buildings and open spaces
    b. open spaces defined by buildings on adjacent parcels and across streets
    c. general location of pedestrian ways, driveways, parking, service areas, streets, and major landscape features
    d. pedestrian, handicapped, vehicular and service access and flow through the parcel and to adjacent areas
    e. survey information, such as existing elevations, benchmarks, and utilities
    f. phasing possibilities
    g. construction limits
9. Massing study context model with topography for help in understanding the relationship of the Project to its surroundings
10. Study model at 1" = 16' or 1" = 20' showing preliminary concept of setbacks, cornice lines, fenestration, facade composition, etc., as deemed appropriate
11. Drawings at an appropriate scale (e.g., 1":16'0", or as determined by BRA) describing architectural massing, facade design and proposed materials including:
    a. building and site improvement plans
    b. neighborhood elevations, sections, and/or plans showing the development in the context of the surrounding area
    c. sections showing organization of functions and spaces, and relationships to adjacent spaces and structures
    d. preliminary building plans showing ground floor and typical upper floor(s).
    e. phasing, if any, of the Proposed Project
12. A written and/or graphic description of the building materials and its texture, color, and general fenestration patterns is required for the proposed development.
13. Electronic files describing the site and Proposed Project at Representation Levels one and two ("Streetscape" and "Massing") as described in the document *Boston "Smart Model": CAD & 3D Model Standard Guidelines*.
14. Full responses, which may be in the formats listed above, to any urban design-related issues raised in preliminary reviews or specifically included in the BRA scoping determination, preliminary adequacy determination, or other document requesting additional information leading up to BRA Board action, inclusive of material required for Boston Civic Design Commission review.
15. Proposed schedule for submission of all design or development-related materials.
16. Diagrammatic sections through the neighborhood (to the extent not covered in item #2 above) cutting north-south and east-west at the scale and distance indicated above.
17. True-scale three-dimensional graphic representations of the area indicated above either as aerial perspective or isometric views showing all buildings, streets, parks, and natural features.

DAYLIGHT COMPONENT

DC.14

The daylight analysis included in the expanded PNF should be expanded to include at least one view from the Park for both build and no-build conditions. A comparable for this value is also nearby.

SHADOW AND WIND COMMENTS

DC.15

Revised shadow information should be provided for any significant modifications in the Project massing made pursuant to comments and design responses.

Excerpted from the minutes of the BCDC meeting of September 4, 2012:

The next item was a presentation of the **Cleveland Circle Mixed-Use (375-399 Chestnut Hill Avenue) Project**. Steve Cheung (SC) of ADD Inc. introduced the team and then went over the Project program, a site overview, and the context, using aerials and photos. He then showed a site diagram, noting the complications of being in two communities. SC: It's a pretty gritty place (notes particularly the catenaries and other transportation infrastructure, including train tracks and the bridge; shows a series of photos of the area and of Cassidy Park). LE asked about where the parking shown was. SC: On the Cinema site, above the retaining wall. (Shows the program diagram, the circulation scheme, parking access, retail, and residential, hotel, and office lobbies. Shows upper floors.) 40 hotel rooms are within the Brookline borders; most parking is below grade. LW asked about the parking access. SC pointed it out. Daniel St. Clair (DS) asked about the parking ratio. John Meunier (JM) of the Boston Development Group gave the ratio(s), noting the total was about 228 spaces and broken down in the Commission's handout.

SC noted the axonometric diagram, and then the site plan. Bob Uhlig (BU) of The Halvorson Group: The existing trees in the park will be maintained; we will maintain and meet the slope where they are. We have a secondary egress here, and provide eyes on the park. There will be a green buffer along the surface parking. MD: Who uses the furthest spaces? JM: The hotel. MD: Do they still have access to Beacon Street? JM: Yes. BU: The idea is transparency at the base, a sense of activity, and the park coming through. The courtyard is defined, green; the entry overall is set, and the interior entries are defined within the court. (Shows a series of precedent photos.)

SC then turned to building precedent images. SC: Two of these are important. Alvar Aalto folded his MIT dorm so that the views differ, all slightly diagonal. Another Aalto is where trees and the architecture work in tandem. A London courtyard. And Boston - Wilkes Passage, the MacAllen, materials palettes that also give shadows. SC then related these to the plan, with a folded edge. SC: We are shaping the architecture so that it is sympathetic to the landscape. The corner is a special place (shows perspectives, also noting the folded planes). Light and shadow help to animate the facade. There is an active ground plane along the park and a

restaurant at the corner. (Shows a closer view.) The corner entry also helps to activate this edge. SC then showed the park elevation, then the view from Chestnut Hill Ave looking into the entry court. SC: The materials are different, but work together. (Shows a courtyard view.) The courtyard is well lit with sunlight; we are getting a sense of that. (Shows a view looking out, then another view obliquely down Chestnut Hill.) Looking back toward the Circle, there is a sense of folding, an invitation in. The material is limestone colored. (Shows an elevation with the Waterworks building ghosted in; shows a view from across Cassidy Park, then of the corner from Cleveland Circle again.)

DC: What is the relationship to the Applebee's site? SC pointed it out in the view. LE: I was curious - is there any recreation trail around the Park? I would love to see that more permeable; one could leave, walk through the Park, and go to the reservoir. SC: Interesting. We had talked to the Parks Department. There are now a series of unconnected paths; they seem less interested. LW: There is less of a relationship between the courtyard and the Park. There should be some kind of public access between the courtyard and the Park; you have to go *through* things now. DS: Like a breezeway? LW: Yes. If I'm a hotel guest, I have to go all the way around. (Discussion of this idea ensues.) LG: The Parks Department, because of the hours of the Park, discouraged the use of the Park for entry or access. DH: But the active use of public access would make it safer. MD: One of the great injustices as it is now, is it doesn't engage the Park at all. SC: The Parks Department discouraged that. MD: I understand why access is not allowed, but I can't understand how that access isn't beneficial. DS: I live near the area, and heard some scuttlebutt. But I am impressed by the scale of all this. The comments will make it better. All these uses are a huge benefit to the neighborhood. Work on the courtyard. I thought I was going to see worse - this is much better, but the courtyard has to be better; maybe a contrast between the spaces. Right now it's too car-oriented. The office is less successful than the other elevation pieces, but I think the Project is great.

DH: Can we go to the last view (corner)? I appreciate your breaking it down, enhancing the views. Here, there is a very strong horizontal line that separates the ground from the above - the building floats. It should meet the ground more; at the corner, perhaps. SC defended the design strategy, noting that the building does come down further in, and in the courtyard. DH: We can talk about that. The corner, perhaps. I wonder if it doesn't feel disconnected - the point that faces the Circle. Also, there is not a lot of white metal panel in this area. SC: That's curious; the existing building is white, and the owner wanted something light. MD: Is this the stick-built construction type? SC: Yes.

Bill Rawn (WR): Would you show the view across the park? (Done.) Would you see cars across that? I don't understand how visible they are. If you saw them from this view, would that be good? We need to understand more. Also, that elevation is perhaps not broken up enough; it should be studied more. MD: It looks perhaps sanatorium-like. KS: I was trying to understand the entry procession, not just into the courtyard, but looking through into the park at one point. That might help give some relief, to Bill's point. Can you go back to the Cleveland Circle view? There is an opportunity here, how to treat the gray and white - a gateway at the edge. Address the Circle, then the Park, and the long view. Where you have a break, a knuckle

- there's no reason to connect the building there (where you see in). LW: Maybe you could draw the Park around...it's a rel opportunity. MD: We will send this to Design Committee. WR: We'll need a better model for that. MD: Members of the community?

Eva Webster (EW) introduced herself. EW: It was hard for me to listen passively to this presentation and its inaccuracies. Some members of the Commission seem to think they are creating a nice courtyard, but there are many things that need to go on here: deliveries, moving vans, taxis, parking, etc. There are so many problems with the project if you are not just looking at prettified pictures. Like the view shown of the hotel entry, which would be filled with trash trucks, loading, etc. I know what happens on moving days - a mess - this has conflicts between users. They should redesign to eliminate those conflicts. This is a once-in-a-lifetime opportunity to have a building facing Cleveland Circle; the hotel should face that. The housing can be in back. There is a lot to be done. Come to Committee, don't panic. Roger of Brookline: I'm one of the members of the Brookline Council that approved the prior version of this project. This particular slide (entry view from Chestnut Hill Ave) struck me as being particularly misleading. Jersey barriers exist; the longer view is very misleading. The 18 sponsors of the zoning article submitted a letter with three key concerns. 1) The courtyard is the essence of the project; we need to be sure it's simply large enough. 2) There is a unanimous desire that the alignment of the roadway not bifurcate the site, but be aligned instead along the T tracks to the south. This affects traffic in the Circle as well, and provides for continuity of the streetwall. 3) There is a concern about the orientation of the courtyard to the Park and Cleveland Circle. The Park is not a single entity, a strip of land comes out. The residential lobby access point could be public access - these are close to the points the BCDC was raising. Design-wise, hotel rooms facing the tracks should not look down into bedrooms and back yards. The housing, which is mostly 1 bedroom, should instead be a mix which promotes stability, not transients.

DH asked how/whether the Brookline review had been coordinated with the BRA, and if it could be with the BCDC. DAC: It's been an interesting process. Brookline has been invited to and attends some BRA meetings; the BCDC is an open meeting, and all are welcome - we can invite them as well. MD: To recap, we support the Project generally. But concerns include the relationship of the building to the site, the long elevation, and the 'knuckle'....Cleveland Circle, and Chestnut Hill Avenue and its functionality. How the Project relates to these is important, and we have not heard so much on the courtyard. Those are big categories. With that, the Cleveland Circle Mixed-Use Project was sent to Design Committee.

DC.1 Traffic impacts and location of driveway

The Proponent has suggested a number of mitigation measures to improve the traffic conditions in the Cleveland Circle area, as discussed in Section 2.4. Comment regarding the location of the driveway from Chestnut Hill Avenue noted.

DC.2 Courtyard

The size of the courtyard has increased by approximately 38 feet in the easterly-westerly direction. This additional space provides for more room for queuing and also for larger vehicles to maneuver through the court. The main roadway, which was previously two-way, has been redesigned to be a one-way loop which improves way-finding and generally creates a simpler and more efficient flow of traffic through the site. The redesign of the courtyard roadway has reduced the driveway width by approximately 14 feet, decreasing the paved area and providing a clearer and safer vehicular movement through the courtyard.

The reduced driveway width increases the area available for landscaping. The revised landscape design concept for the courtyard seeks to "soften" the hard angles and surfaces of the building with gentle, free-form planted areas, while also introducing human-scaled elements, such as decorative planters and a water feature. The revised landscape design also takes advantage of the larger island to introduce more greenery. On the opposite side, at the drop-off/pick-up areas, the design exploits the southern sun exposure and proposes 15-foot tall flowering trees and an array of different flowers, plants and shrubs. In addition, colorful pots and planters and two different seating areas will add a pedestrian-friendly dimension to the courtyard space.

Please see Section 1.3.2.3 and the response provided in Section 7.2.9 for more information.

DC.3 Alternatives

Section 1.3.3 includes a discussion of alternatives. The No-Build Alternative would keep the vacant cinema building in place, delaying the redevelopment of the site and improvement of the area. Without the Project, its public benefits would not be realized, including a new development with retail on the street, improvements to Cassidy Playground, new eyes on the park which would increase safety, and tax benefits to the City of Boston and Town of Brookline.

The Proponent has determined that a development built as-of-right is not financially feasible, and therefore was not studied further.

DC.4 Residential use and the Park

The design places the residences adjacent to Cassidy Playground.

DC.5 Visibility of hotel and prominence of Project on Cleveland Circle

The previous design marked the entrance to the hotel with a two-story entry "portal" and canopy that included hotel signage. The hotel is located in roughly the same location, but through its design expression, detail and more prominently displayed signage, it now has an enhanced visual presence (see Figure 1-18 in Chapter 1). The design relies on its symmetry and a vertically elongated centerpiece to draw attention. The signage for the hotel is placed on top of the centerpiece which makes it far more visible than in the previous design.

In re-evaluating the Project and with the goal of looking to its neighbors for context, the corner of the building has been modified and is chamfered so that the corner is cut away and flattened. Please see Section 1.3.2.3 and response in Section 7.2.6 for more information.

DC.6 Corner and park presence

In re-evaluating the Project and with the goal of looking to its neighbors for context, the corner of the building has been modified and is chamfered so that the corner is cut away and flattened. The larger urban effect of chamfering the corner of the Cleveland Circle buildings is to create a shape of the circle—namely Cleveland Circle (see Figure 1-21 in Chapter 1). The resulting flat surface contributes to the overall circular urban form.

The design has been revised to reduce and vary the mass of the building in a variety of ways. As suggested by the community, the design continues to be taller at the corner along Cleveland Circle, but steps down in height as it extends toward the west along the Cassidy Playground edge, resulting in a reduced number of residential floors in this area. This considerable reduction of mass makes the building appear to step down in scale as it marches along the edge of the park.

Please see Section 1.3.2.3 and Chapter 4 for more information.

DC.7 Primary building façade

In addition to looking to other buildings in Cleveland Circle, the Proponent studied some of the more prominent and distinguished residential buildings in the surrounding vicinity, including the Watermark Condominium building at 2400 Beacon Street and Reservoir Place at the corner of Chestnut Hill Avenue and Sutherland Road as well as other similarly scaled residential projects in the area. After studying the different precedents, the Proponent identified certain features and

details that could be incorporated into the Project's design. The revised design adopts a traditional organization of a base, field and top, with each rendered in a different material. More specifically, the base is a larger masonry unit, the field or middle part is brick masonry with vertically-oriented, punched windows, and the top, which is separated from the field by a cornice and is set back two feet from the major wall-plane of the building, is dark brown metal. In addition, there are elements such as bay windows, Juliet balconies, and details such as lintels and window sills, all of which borrow from a more familiar and traditional architectural vocabulary. The entryways are marked with recessed brown metal which extend from the top floor down to the first floor canopy providing modulation of the façade. This device helps to break up the mass of the building from a singular block into three smaller parts. In addition to the vertical slots, there are metal clad projecting bays which introduce yet another design element providing visual interest. Please see Section 1.3.2.3 for more information.

DC.8 Edge of park

The current design has increased the buffer between the building and Cassidy Playground, setting the building back an additional five feet from the park edge. Within this new space, the Project includes a new five-foot-wide sidewalk within the Project Site that will connect the hotel and residential lobbies on the park side of the building to a small patio/entry plaza at the edge of Chestnut Hill Avenue that will be paved with unit pavers, contain bike racks, and have seasonal container plantings. Adjacent to the sidewalk will be a seating area with additional plantings near the building corner.

DC.9 Reduce parking

The number of parking spaces has been reduced from 228 to 203.

DC.10 Visibility of cars

In order to eliminate the views of parked cars and the rear loading area from Cassidy Playground, a solid fence will be installed the entire length of the parking area and loading dock area. Additional landscaping will occur on the park side of the new fence to soften the edge and continue the park-like character.

DC.11 Pedestrian pathways

The Project includes a new five-foot-wide sidewalk within the Project Site that will connect the hotel and residential lobbies on the park side of the building to a small patio/entry plaza at the edge of Chestnut Hill Avenue that will be paved with unit pavers, contain bike racks, and have seasonal container plantings.

Within the courtyard, the pedestrian areas will paved with concrete unit pavers (vehicular depth in drop-off lane) to provide texture and pedestrian scale to the space. In addition, colorful pots and planters and two different seating areas will add a pedestrian-friendly dimension to the courtyard space.

DC.12 Ground floor programming

The Project continues to include retail space on Chestnut Hill Avenue and on the edge of Cassidy Playground to activate the public realm. In addition, a new plaza at the corner of Cassidy Playground and Chestnut Hill Avenue will further improve the public realm.

DC.13 Urban design materials

The Proponent has included the requested items within this DPIR, or will provide certain items separately to the BRA.

DC.14 Daylight

An expanded daylight analysis is included in Section 3.3.

DC.15 Shadow and wind

The building massing has been moved five feet in the southern direction from Cassidy Playground from its previous location, and except for a portion of the building closest to Chestnut Hill Avenue, the building height for the residential component along Cassidy Playground has been decreased. Therefore, shadow impacts to the park are anticipated to be less than for the previously proposed design.

A wind analysis is included in Section 3.1.

BOSTON
TRANSPORTATION
DEPARTMENT

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November 19, 2012

Erico Lopez, Senior Project Manager
Boston Redevelopment Authority
Boston City Hall, 9th Floor
Boston, MA 02201

RE: Comment letter submitted for 375-379 Chestnut Hill Avenue, Expanded project Notification Form ("EPNF") on November 9, 2012

Dear Erico:

In my comment letter addressed to you on November 9, 2012 I asked that; " the proponent should consider a right in and right out from/to Chestnut Hill Ave. and vehicles, delivery trucks, etc, wanting to go north (toward Cleveland Circle) use, as mentioned in the report, the Waterworks egress onto Beacon Street."

After conversations with Commissioner Thomas J. Tinlin, and a site visit to the Waterworks Site with Councilor Mark Ciommo, BTD feels that delivery trucks should be restricted from using the Waterworks egress onto Beacon Street. This is due to the width, line of site and curvature of the roadway. BTD2.1

As always if you have any questions please feel free to contact me.

Sincerely,

William H Conroy IV

William H. Conroy IV,
Senior Transportation Planner

- Cc: Vineet Gupta, Director of Policy and Planning
- John DeBenedictis, Director of Engineering

THOMAS M. MENINO, Mayor
Thomas J. Tinlin, Commissioner

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BTD2.1 Chestnut Hill right in and right out

Comment noted.

BOSTON
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November 9, 2012

Erico Lopez, Senior Project Manager
Boston Redevelopment Authority
Boston City Hall, 9th Floor
Boston, MA 02201

RE: 375-379 Chestnut Hill Avenue, Expanded project Notification Form ("EPNF")

Dear Erico:

Thank you for the opportunity to comment on the 375-379 Chestnut Hill Avenue, Expanded project Notification Form ("EPNF") dated August 16, 2012. The Expanded Project Notification Form is initiating a review of the following proposed Project:

The 375-379 Chestnut Hill Avenue Project is located on Chestnut Hill Avenue in Brighton on the site which was formally the Cleveland Circle Cinema and Applebee's Restaurant. The current proposal includes the demolition of the existing structures and the construction of approximately 236,500 Square feet of new 181-room hotel, 19,000 sf of medical office space, 14,200 sf of restaurant/retail space and 228 parking spaces.

The Boston Transportation Department (BTD) has reviewed the EPNF and BTD has identified some concerns in the EPNF below which BTD looks forward in working with the proponent to resolve.

Section 2.3.2.1 Site Access and Circulation

A. Chestnut Hill Avenue Access/Egress

The proposed modification to the existing traffic signal to add an extra phase for the site drive is not acceptable for the following reasons: BTD.1

1. Level-of-service for the 2017 build condition for the Chestnut Hill Ave southbound movement at the site drive is a LOS "F" during the AM and PM peaks.
(This will back up into Cleveland Circle in addition, the existing southbound movement is continuous and operates with LOS "A" for both peaks)

2. The consultant analyzed the site drive as a separate intersection when it should be run as part of the Cleveland Circle intersection.
(This is due in part with how the trolley and pedestrian phases operate today)

3. It is not clear if the existing analyses for Cleveland Circle included the trolley. **(The Synchro analyses shown in the report appendix does not clearly show the information needed due to the complexity of the existing phasing)**

The proponent should consider a right in and right out from/to Chestnut Hill Ave. and vehicles, delivery trucks, etc, wanting to go north (toward Cleveland Circle) use, as mentioned in the report, the Waterworks egress onto Beacon Street.

B. Beacon Street/ Waterworks Driveway Exit

The proponent should analyze the intersection at Beacon Street and the Waterworks driveway exit to see if it meets the warrant for a signal based on the recommendation above. BTD.2

C. Traffic Circulation

The proponent should include a detailed site plan depicting but not limited to the following: BTD.3

- A detailed TDM as to how the Courtyard will be managed
- Dimensions depicting the size of the Courtyard (including setbacks) and curbside use.

BTD would like to work with the proponent in developing a more efficient traffic circulation plan than the one that is currently being proposed.

Section 2.3.2.6 Project Trip Generation/Trip

The proponent should provide a detailed traffic analysis using BTD mode share for Area 10. We feel that Table 2-10 represents a significant amount of traffic that will be introduced into a very fragile system that is there today. This analysis should also include a signal and phasing plan (MBTA trolley included) depicting how traffic will be generated and managed at the following intersections: BTD.4 BTD.5

a) Chestnut Hill Avenue/Site Driveway (signalized*)
b) Chestnut Hill Avenue/Clinton Road (unsignalized)
c) Chestnut Hill Avenue/Boylston Street
d) Chestnut Hill Avenue/Commonwealth Avenue
e) Chestnut Hill Avenue/Beacon Street
f) Chestnut Hill Avenue/Dean Street
g) Beacon Street /Englewood Avenue
h) Beacon Street/Washington Street
i) Beacon Street/Waterworks Driveway (unsignalized)
j) Beacon Street/Waterworks Exit Only Driveway (unsignalized *)

***Proponent should run Chestnut Hill Avenue/Site Driveway unsignalized and Beacon Street/Waterworks Exit Only Driveway signalized based on our recommendation above.**

Section 2.3.2.11 Pedestrian and Bicycle Access

Bicycles

The proponent should describe the existing accommodations for bicycles (including the location and number of bikes racks and bike cages) and any proposed improvements to the accommodations. The site plan should include secure covered bike parking spaces for residents and employees, and covered or open outdoor bike parking spaces for patrons and visitors. The Proponent should also consider provision of spaces for bike share facilities, and potential bike share locations. All spaces must be conveniently located near building entrances. I have attached a link of our Bicycle Facilities Policy that addresses the minimum number of spaces required. http://www.bostoncompletestreets.org/pdf/COBBikeGuideline.pd BTD.6 BTD.7

Pedestrians

BTD would like to work with the proponent in creating a plan that would establish a safe and user friendly sidewalk from Beacon Street along the Waterworks Easement into their site. BTD.8

Section2.3.2.12 Future Loading and Service Activity

The proponent should provide BTD with a detailed site plan showing truck turns and radii. The proponent should also submit a proposed and existing site plan depicting existing and proposed loading facilities for BTD review. BTD.9 BTD.10

The site plan needs to depict the following for each loading facility (on-street and off-street):

- Length, width and height.
- Trash compactor(s).
- Access/egress route in Autoturn.
- Loading zones and service routes specifically designated for the pick-up and drop-off of hazardous waste.

Off-Street Loading Guidelines – The proponent needs to adhere to BTD's 'Off-Street Loading Guidelines which can be accessed from the City of Boston website at http://www.cityofboston.gov/transportation/off_street.asp. Adherence to the 'Off-Street Loading Guidelines' will ensure safe and efficient loading access, minimize adverse impacts on traffic-flow and pedestrian safety, and provide consistent guidelines The developer should also provide a detail site plan showing the proposed traffic regulations as they relate to drop off pick up on their site. BTD.11 BTD.12

Section 2.4 Transportation Mitigation

Although the proponent states that traffic impacts associated with this Project will be minimal, we feel that the proponent has not adequately shown how this minimal amount of traffic is going to be managed both on City Streets as well as through the proposed site. BTD.13

BTD looks forward in working with the proponent in reviewing and analyzing the proposals set fourth in this section as well as the recommendation we have called for in this letter.

Section 2.5 Transportation Demand Management

BTD encourages the proponent to take transportation demand management a step further by implementing a "cash out" program for employees that receive parking as part of their compensation packages. Employees that accept the parking cash-out would agree to commute by methods that don't require parking and would receive a cash allowance equal to the employer paid parking subsidy. This would reduce the demand on existing parking and would also reduce congestion on City streets. BTD.14

Spaces for CAR Share and Low Emission Vehicles

The Proponent should explore the opportunity to provide for a car-sharing service to encourage a reduction in personal automobile use, the proponent should provide spaces for car-share services as well as, carpool, vanpool, shuttle service parking. BTD.15

Current trends indicate that electric hybrids will soon be significant percentage of all vehicles on the road. BTD is aggressively promoting the installation of a supporting infrastructure for these vehicles. We request a commitment to dedicate 5% of the total parking capacity fro low-emitting and fuel efficient vehicles, and a commitment to provide dedicated electric vehicle charging stations BTD.16

TAPA

The Proponent will also be responsible in the preparation of a Transportation Access Plan Agreement (TAPA). The TAPA is a formal legal agreement between the project proponent and the BTD. The TAPA formalizes the findings of the Transportation Access Plan, mitigation commitments, elements of access and physical design, and any other responsibilities that agreed to by both the proponent and the BTD. Since the TAPA must incorporate the results of the technical analysis, physical design, and assessment of mitigation requirements, it must be executed after these processes have been completed. However, the TAPA must be executed prior to approval of the project's design through the City of Boston's Public Improvements Commission (PIC). An electronic copy of the basic TAPA form is available from the BTD. It is the proponent's responsibility to complete the TAPA so that it reflects the specific findings and commitments for the project, and to get BTD review and approval of the document. BTD.17

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BTD looks forward in working with the proponent's from the 375-399 Chestnut Hill Avenue Redevelopment and the BRA in developing a plan that will help minimize traffic impacts and improve transportation conditions in the area.

Sincerely,

William H. Conroy IV,
Senior Transportation Planner

- Cc: Vineet Gupta, Director of Policy and Planning
- John DeBenedictis, Director of Engineering

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BTD.1 Extra phase to site drive

The Project Site driveway at Chestnut Hill Avenue will be signalized and tied into the existing signal operations at Beacon Street/Chestnut Hill Avenue. The proposed mitigation measures at the Chestnut Hill Avenue/Site Driveway intersection have been revised since the Expanded PNF. The analysis now reflects clustered operation of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection and the Chestnut Hill Avenue/Site Driveway. An exclusive trolley phase is included in the Synchro analysis.

With proposed mitigation at Beacon Street/Chestnut Hill Avenue, the resulting operation is LOS D in both the a.m. and p.m. peak hours. The southbound Chestnut Hill Avenue movement, as noted in the comment, is now forecast to operate at LOS A. The Project driveway will operate at LOS C in the a.m. peak hour and LOS D in the p.m. peak hour. The maximum 95th percentile queue on the driveway is estimated to be approximately three vehicles, occurring during the p.m. peak hour.

Please see both Section 2.2.5.2 and Section 2.4 for further discussion of Green Line operations and intersection level of service.

BTD.2 Beacon Street and Waterworks driveway intersection

A signal warrant analysis was conducted at the Beacon Street/Waterworks exit driveway for both Existing Conditions (using 2012 volumes) and Year 2017 Build projected volumes. No signal warrants were met under either condition.

BTD.3 Detailed site plan

The Proponent has met with representatives from the BRA and BTD and revised the site plan as presented in Figure 2-12. The courtyard has been enlarged in the DPIR plan as compared to that presented in the Expanded PNF.

All Project vehicles will enter via the Chestnut Hill Avenue driveway. Most vehicles will proceed directly to parking either at the underground garage or the surface spaces located at the western end of the site. The central courtyard will channel and direct vehicles to parking areas and provide several short-term parking spaces for hotel guest check-in. Appropriate directional signage will be provided.

All delivery vehicles will enter and exit via the Chestnut Hill Avenue driveway. No delivery vehicles will exit the Project Site via the rear driveway to Beacon Street.

Two service areas will be provided on site and no service/loading activity will take place on public streets.

The site plan design has been evaluated using AutoTURN, an engineering software program that analyzes vehicle maneuvers. Through an iterative assessment of the site plan and vehicle maneuvers, an optimal design was developed for the Project Site that provides adequate roadway width/clearance for automobiles and delivery vehicles as they access, egress, and circulate within the site. While most deliveries will occur via car/van, the site and loading areas have been designed to accommodate a 36-foot single-unit truck. The associated automobile and delivery vehicle movement paths are shown in Appendix B.

As presented in Section 2.3.2.8, six angled parking spaces designated for short-term use will be provided along the southern portion of the courtyard adjacent to the parking garage ramp. These spaces will be signed for short-term parking (envisioned as 15 minutes or less) and serve hotel guest check-in.

The continuous curb lane along the north and west perimeter of the courtyard will be signed for drop-off/pick-up activity and surfaced with special pavement to differentiate it from the travel lanes. The curb lane will have one space near the hotel entrance designated as a Boston taxicab stand. The remainder of this drop-off/pick-up curb will accommodate about seven vehicles. Note that the capacity along the pick-up/drop-off curb is not included in the Project's parking supply of 203 spaces, because these spaces are intended for short-term parking only. One space (within the Town of Brookline) on the eastern courtyard perimeter near the office lobby will be designated as a Brookline taxicab stand.

The operation of the courtyard will be managed by the hotel operator.

BTD.4 Detailed traffic analysis

The Project trip generation does reflect BTD's Area 10 travel mode shares, as shown in Table 2-10. Traffic analysis for the study area intersections has been completed and presented in Chapter 2 for Existing, No-Build, and Build conditions. The associated Synchro output reports are contained in Appendix B and Synchro data files have been submitted electronically to the BTD.

As noted in the response to comment BTD.2, no signal warrants are met at the Beacon Street/Waterworks driveway intersection.

BTD.5 Signal and phasing plan

The associated Synchro output reports are contained in Appendix B and Synchro data files have been submitted electronically to the BTD.

A signal warrant analysis was conducted at the Beacon Street/Waterworks exit driveway for both Existing Conditions (using 2012 volumes) and Year 2017 Build projected volumes. No signal warrants were met under either condition.

See also responses to comments BTD.1 and BTD.4.

BTD.6 Bicycle accommodations

As requested, the study team inventoried bicycle racks near the Project Site. As shown in Table 2-7, bicycle racks exist at Applebee's restaurant, the MBTA Reservoir Station, and the MBTA Cleveland Circle stop and provide, in total, seven racks with capacity for 49 bicycles.

BTD.7 Bike share

No Hubway bicycle-sharing stations are located in the study area, but the Proponent will discuss with the City of Boston opportunities to support a new, nearby Hubway station. The Proponent will provide bicycle amenities for residents, guests, tenants, and visitors to encourage bicycle use. Based on BTD guidelines, secure storage for 93 bicycles will be provided in the underground parking garage and bicycle racks for at least 21 bicycles will be provided near the main Project entrance. Shower facilities at the hotel will be made available for employees who bicycle to work. Please see Section 2.2.10 for a summary of existing bicycle conditions and Section 2.4.3 for a discussion of the Project's bicycle accommodations.

BTD.8 Sidewalk along Waterworks driveway

The Proponent has proposed a pedestrian pathway through Cassidy Playground to the Boston Parks and Recreation Department.

BTD.9 Truck turns and radii

Please see response to comment BTD.3.

BTD.10 Existing and proposed loading facilities

The cinema site has been vacant for five years and no loading activities currently occur. It is likely that all cinema loading activity occurred off-street and internal to the site. Loading activity at the Applebee's restaurant occurs off-street.

As shown in the site plan in Figure 2-12, the Project will provide two service areas. All delivery vehicles will enter and exit via the Chestnut Hill Avenue driveway. No service or loading will take place on public streets. Adequate roadway width and clearances will be provided for truck access, egress, and circulation within the site.

The associated truck movement paths are shown in Appendix B and were developed using AutoTURN.

Because pedestrian activity will be limited near all loading dock curb cuts, conflicts between delivery vehicles and pedestrians is anticipated to be minimal.

BTD.11 Off-street loading guidelines

The Proponent will ensure that off-street loading facilities comply with the BTD's off-street guidelines. Please see response to comment BTD.10. Details will be codified in the Transportation Access Plan Agreement (TAPA).

BTD.12 Drop off and pick up regulations

The TAPA will codify drop-off and pick-up regulations.

BTD.13 Management of traffic on city streets and on the site

Through mitigation measures proposed by the Proponent in Section 2.4, level of service will be improved at the Beacon Street/Chestnut Hill Avenue intersection from LOS F to LOS D during each peak hour. The associated Synchro files have been submitted electronically to BTD for internal review and the Proponent looks forward to continuing to work with the BTD to institute improvements.

BTD.14 "Cash out" program

The Proponent will encourage tenants to consider a "cash out" parking program, although only a small portion of on-site spaces will be used by employees. Most parking spaces on-site will be used by hotel guests, residents, medical office visitors, and customers of the retail and restaurant spaces.

BTD.15 Spaces for car-sharing service, carpool, vanpool, and shuttle parking

The Proponent will offer on-site space for a new Zipcar station. Currently, within ½ mile of the Project Site, there are six Zipcar locations. Another four locations are slightly further than ½ mile from the site. In total, these locations provide 17 Zipcar vehicles. The Proponent will promote the use of these near-by Zipcar locations in orientation packets to new tenants and residents. Please see Section 2.2.9 for a map of existing Zipcar locations and Section 2.4.4 for the Project's travel demand management measures.

The number of spaces that will be used by employees will only be a small portion of the Project's overall parking demand. Because most parking spaces on-site will be used by hotel guests, residents, medical office visitors, and customers of the retail and restaurant spaces, carpool or vanpool opportunities will be small. The

Proponent also wants to maximize the potential for shared parking activity, which can be hindered by reserving spaces for specific users.

BTD.16 Parking spaces for low-emitting and fuel efficient vehicles and electric vehicle charging stations

As demand mandates, the Proponent will commit to providing up to 5% of total on-site parking supply with electric vehicle charging stations.

BTD.17 Transportation Access Plan Agreement

The Proponent understands the requirement to prepare a Transportation Access Plan Agreement (TAPA), a formal legal agreement between the Proponent and the BTD. The TAPA formalizes the findings of the transportation study, mitigation commitments, elements of access and physical design, travel demand management measures, and any other responsibilities that are agreed to by both the Proponent and the BTD. Because the TAPA must incorporate the results of the technical analysis, it must be executed after these other processes have been completed.

Boston

Erico Lopez
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

August 21, 2012

Dear Mr. Lopez:

Regarding the Project Notification Form for 375-399 Chestnut Hill Ave. project submitted to the BRA on August 16, 2012 the Boston Fire Department requires the following issues addressed by a qualified individual.

1. Emergency vehicle site access to the new buildings as well as existing buildings that might be affected. BFD.1
2. Impact on availability and accessibility of hydrant locations for new buildings as well as for any existing buildings that might be impacted. BFD.2
3. Impact on availability and accessibility to siamese connection locations for new buildings as well as for any existing buildings that might be impacted. BFD.3
4. Impact that a transformer vault fire or explosion will have on the fire safety of the building. Particularly as it relates to the location of the vault. BFD.4
5. Need for Boston Fire Department permit requirements as outlined in the Boston Fire Prevention Code, the Massachusetts Fire Prevention Regulations (527 CMR), and the Massachusetts Fire Prevention Laws (MGL CH148). BFD.5
6. For projects involving air-supported structures, it is critical that the impact of the design has on fire safety relative to the interaction of the area underneath the structure to the structure as well as to the interaction of the structure to the area underneath the structure. BFD.6

These items should be analyzed for all phases of the construction as well as the final design stage. This project will need permits from the Boston Fire Department as well as the Inspectional Services Department.

Respectfully,

Bart J. Shea
Fire Marshal

Cc: Paul Donga, FPE, Plans Unit, BFD

BFD.1 Emergency vehicle site access

The Proponent will provide site plans to the Boston Fire Department for review and approval. Generally, the curbside portion of the site can be accessed from Chestnut Hill Avenue, the interior of the development can be accessed by the wide site driveway, and the rear entrance (adjacent to Waterworks) will allow for emergency access to the rear of the site from Beacon Street. It is assumed that, although less desirable, emergency access to the buildings can also occur from Cassidy Playground.

BFD.2 Hydrant locations

All hydrant locations on the Project Site will be reviewed as part of the BWSC Site Plan Review process.

BFD.3 Siamese connection locations

The Proponent's engineer will coordinate with the Boston Fire Department regarding the availability and accessibility to siamese connection locations. The design will meet BWSC and Boston Fire Department requirements for spacing between hydrants and siamese connections.

BFD.4 Transformer vault

Transformers will be pad mounted meeting design criteria that complies with Utility, Building Code, and Fire Code requirements. The Proponent will consult with the Utility provider on the locations of transformers.

BFD.5 Permit requirements

The Proponent will comply with the Boston Fire Department permitting requirements regarding proposed fire protection systems

BFD.6 Air-supported structures

The Project will comply with Fire Code requirements.

Boston Water and
Sewer Commission

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617-989-7000
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October 1, 2012

Erico Lopez, Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

Re: 375-399 Chestnut Hill Avenue - Project Notification Form

Dear Mr. Rourke:

The Boston Water and Sewer Commission (Commission) has reviewed the 375-399 Chestnut Hill Avenue, Expanded Project Notification Form (EPNF). The project site is occupied with a cinema, no longer in use, and a restaurant. The former cinema parcel has two addresses 379 Chestnut Hill Avenue in Boston and 399 Chestnut Hill Avenue in Brookline. An Applebee's Restaurant is also located in the project site at 381 Chestnut Hill Avenue in Boston. The existing buildings will be demolished and replaced with a mixed-use development which includes a hotel along with medical-office, residential and retail space.

The Commission is interested in reducing the amount of stormwater being discharged into the storm drainage system; sites being redeveloped like this site provide such an opportunity. Less stormwater from this site means less wet weather flows in the Village Brook Drain which discharges into the Muddy River. Reducing these discharges can be achieved by directing stormwater into pervious surfaces, using porous surfaces or constructing infiltration structures.

After reviewing the EPNF, pervious surfaces to route stormwater into appear to be non existent on the proposed site drawings; the building roofs, access ways and parking areas are usually impervious. BWSC.1

In a previous comment letter, the Commission suggested that the proponent construct an infiltration structure large enough to control 1-inch of runoff from this site. The EPNF mentions an infiltration structure without noting the level of control. The Commission BWSC.2

believes that the proponent should control 1-inch of runoff. The proponent is also encouraged to look at using porous surfaces in the access ways and parking areas as a way to reduce runoff. The proponent must include details on the infiltration system when submitting the site plans. The proponent should coordinate this submission with the Commission's Engineering Customer Services Department. BWSC.3 BWSC.4

The proponent plans to demolish the buildings on the project site and build new buildings. In contrast to the previous proposal; the proposed buildings will be larger. The proponent plans to locate a corner of the 5-story building on top of the Commission's 78" x 84" storm drain/24" sanitary sewer. The Commission has a 15' wide easement over these pipes, intended to protect these structures from activities that would compromise their structural integrity. The EPNF mentions that measures can be taken to protect these structures. The Commission will review these measures. However, the proponent is advised that it may be necessary to relocate these pipes and obtain appropriate easements for the new pipes. *The proponent must submit a plan showing the protective measures for the Commission's facilities to Mr. Phil Larocque at the Commission as soon as possible.* BWSC.5

The proponent estimates that both phases will generate 37,750 gallons per day (gpd) of wastewater. On subsequent documents, the proponent should supply the estimated water use for air conditioning. BWSC.6

The proponent should be aware that drainage collected within an underground garage must be controlled separately. The project will need to route stormwater collected within enclosed parking levels to an oil-water separator before being discharged to the sanitary sewer. The size and location of the oil-water separators will also be required on the site plan submitted to the Commission. BWSC.7

The proponent is reminded that the Massachusetts Department of Environmental Protection (DEP) routinely requires proponents of similar projects to assist the agency in its program to reduce infiltration and inflow (I/I). In cooperation with this effort, the Massachusetts Water Resources Authority (MWRA) and its member communities are implementing a coordinated approach to control extraneous flows such as I/I into the wastewater system. In this regard, the DEP has routinely required projects that add a significant amount of new wastewater flows to offset the increase with a reduction in I/I. Typically, the DEP uses a minimum ratio of 4 to 1; 4 gallons of I/I removed for each gallon of proposed wastewater. As a member community, the Commission supports the DEP and the MWRA, and will require the proponent to develop an I/I reduction plan that is consistent with their policy. BWSC.8

The following general comments restate our comments submitted on the previous submittal for the 375-399 Chestnut Hill Avenue site:

<u>General Comments</u>

1. If any new water mains, sewers and storm drains are required, they must be designed and constructed at the proponent's expense. Also, they must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and BWSC.9

Sewer Use Regulations, and Requirements for Site Plans. The site plan should include the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations BWSC.10

2. Prior to construction any existing water or sewer connections that are not reused must be cut and capped according to the Commission's standards. The proponent must complete a Termination Verification Approval Form for the Demolition Permit and submit a completed form to the City of Boston's Inspectional Services Department before the Demolition Permit will be issued. BWSC.11

3. The proponent is advised that the discharge of any dewatering drainage to the Commission's drainage system, whether it is temporary or on a permanent basis, requires a Drainage Discharge Permit issued by the Commission. *An NPDES Permit issued by the EPA and/or DEP does not relieve the proponent of the responsibility to obtain authorization from the Commission.* Failure to obtain a Drainage Discharge Permit from the Commission for any dewatering discharge may result in a fine of up to $ 1,000 per day per violation. BWSC.12

4. The proponent must submit a General Service Application and site plan to the Commission for review and approval. The site plan should show the location of all existing and proposed water lines, sewers and storm drains that serve the site. Separate service connections for sanitary flow and storm water will be required. To assure compliance with the Commission's requirements, site plans and General Service Applications should be submitted to the Commission for review when project design is 50 percent complete. BWSC.13

5. With the site plan, the proponent must provide detailed and updated estimates for water demand, sanitary sewer flows and stormwater runoff generation for the proposed project. The amount of potable water required for landscape irrigation must be quantified. The proponent must also provide an analysis of the impacts of the proposed project on the Commission's water, sewer and storm drainage systems. BWSC.14

6. For any proposed masonry repair and cleaning, the proponent will be required to obtain from the Boston Air Pollution Control Commission a permit for Abrasive Blasting or Chemical Cleaning. In accordance with this permit, the proponent will be required to provide a detailed description as to how chemical mist and run-off will be contained and treated before being discharged to the sewer/drainage system or disposed of off-site. A copy of the description and any related site plans must be provided to the Commission's Engineering Customer Service Department for review before masonry repair and cleaning commences. The proponent is advised that the Commission may impose additional conditions and requirements before permitting the discharge of the treated wash water into the sewer/drainage system. BWSC.15

<u>Water</u>

7. The proponent is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. BWSC.16

The proponent should contact the Commission's Operations Division for information on and to obtain a Hydrant Permit.

8. The proponent should explore opportunities for implementing water conservation measures in addition to those required by the State Plumbing Code. In particular the proponent should consider outdoor landscaping which requires minimal water. If the proponent plans to install in-ground sprinkler systems, the Commission recommends that timers, soil moisture indicators and rainfall sensors be installed. The use of sensor-operated faucets and toilets in common areas of buildings should also be considered. BWSC.17

9. The Commission utilizes a Fixed Radio Meter Reading System to obtain water meter readings. If a new water meter is needed for the proposed project, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, the proponent should contact the Commission's Meter Installation Department. BWSC.18

Wastewater and Stormwater

10. The site plan must show in detail how drainage from building roofs and from other impervious areas will be managed. Roof runoff and other stormwater runoff must be conveyed separately from sanitary waste at all times. BWSC.19

11. A Total Maximum Daily Load (TMDL) for Nutrients has been established for the Lower Charles River Watershed by the Massachusetts Department of Environmental Protection (MassDEP). In order to achieve the reductions in Phosphorus loadings required by the TMDL, phosphorus concentrations in stormwater discharges to the Lower Charles River from Boston must be reduced by 64%. To accomplish the necessary reductions in phosphorus, the Commission is requiring developers in the Lower Charles River watershed to infiltrate stormwater discharging from impervious areas in compliance with MassDEP. The proponent will be required to submit with the site plan a phosphorus reduction plan for the proposed development. The proponent must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer. The proponent must submit to the Commission's Engineering Customer Service Department a detailed stormwater management plan which: BWSC.20

    - Identifies best management practices for controlling erosion and for preventing the discharge of sediment and contaminated groundwater or stormwater runoff to the Commission's drainage system when the construction is underway.

    - Includes a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and the location of major control or treatment structures to be utilized during the construction.

- Provides a stormwater management plan in compliance with the DEP standards mentioned above. The plan should include a description of the measures to control pollutants in stormwater after construction is completed.

12. The project proponent will be required to obtain coverage under the EPA's NPDES General Permit for Construction. A copy of the Notice of Intent and the pollution prevention plan prepared pursuant to the Permit should be provided to the Commission, prior to the commencement of construction. BWSC.21

    If one acre of land or more is disturbed, then the proponent will be required to obtain an NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection. The proponent is responsible for determining if such a permit is required and for obtaining the permit.

    If such a permit is required, then a copy of the permit and any pollution prevention plan prepared pursuant to that permit should be provided to the Commission's Engineering Customer Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in Item 11 above.

13. The Commission requires oil traps on drains within an enclosed parking garage. Discharges from oil traps must be directed to the sanitary sewer and not to a storm drain. The requirements for oil traps are provided in the Commission's Requirements for Site Plans. BWSC.22

14. In accordance with the Commission's Sewer Use Regulations, grease traps will be required in any restaurant or commercial kitchen. The proponent is advised to consult with the Commission's Operations Department, prior to preparing plans for a restaurant or commercial kitchen. BWSC.23

15. The Commission requests that the proponent install a permanent "Don't Dump, Drains to the Charles River" castings next to any new or modified catch basin installed as part of this project. BWSC.24

16. If the proponent seeks to discharge dewatering drainage to the Commission's collection system, they will be required to obtain a Drainage Discharge Permit from the Commission's Engineering Customer Service Department prior to discharge BWSC.25

17. The proponent should be aware that the US Environmental Protection Agency issued a draft Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, the proponent will be required to apply for a RGP to cover these discharges. BWSC.26

18. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system. BWSC.27

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/pwk

C

John Meunier – Boston Development Group
M. Zlody, Boston Environment Department
Katie Pedersen, BRA
P. Laroque, BWSC

BWSC.1 Stormwater routing

The Proponent's engineer will look into the possibility of incorporating pervious surfaces into the site design.

BWSC.2 Infiltration structure

The proposed infiltration systems will be designed to control one inch of runoff.

BWSC.3 Porous surfaces

The Proponent's engineer will look into the possibility of incorporating pervious surfaces into the site design.

BWSC.4 Infiltration system details

A thorough design and details for the infiltration system will be submitted for review along with theSsite plan package.

BWSC.5 Protective measures for BWSC's facilities

The footprint of the proposed building has been revised and no longer falls on top of this 78″ x 84″ storm drain/sanitary sewer, or its easement.

However, the revised footprint now falls over the 18″ sewer at the northwest corner of the building. This sewer line was originally proposed to be re-routed to avoid the proposed building layout. The re-routing of this line will be revised to continue to avoid the revised building layout.

BWSC.6 Estimated water use for air conditioning

The total estimated water consumption for the HVAC system (cooling tower make-up water) will be around 550,000 gallons/year.

BWSC.7 Drainage from garage

Any stormwater runoff collected within the underground parking garage will be collected and conveyed through an oil-water separator and then pumped to the sanitary sewer. Addition details of this collection system and of the oil-water separator will be provided with the site plan package.

BWSC.8 Infiltration/inflow

As the design advances, the Proponent's engineer will develop an infiltration and inflow reduction plan as part of the construction documents.

BWSC.9 Water mains, sewers and storm drains

Any new water mains, sewer lines, and storm drains proposed as part of this Project will be designed and constructed at the Proponent's expense. The design and construction of this infrastructure will conform to the BWSC's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. This design will be submitted as part of BWSC's Site Plan Review process.

BWSC.10 Site plan

The site plan submitted as part of BWSC's Site Plan Review process will include the location of existing water mains, sewers and drains, as well as the location of such infrastructure if new or relocated by the proposed Project. The site plan will also include the location of proposed service connections and water meter locations.

BWSC.11 Cut and capped water and sewer connections and Termination Verification Approval Form

All existing water and sewer connections that are not reused will be cut and capped according to BWSC standards. A Termination Verification Form will be completed and submitted to the Inspectional Services Department before demolition on the Project Site.

BWSC.12 Discharge of dewatering drainage

If it is determined that the proposed site design will require discharging any dewatering drainage to the BWSC's drainage system, the Proponent will obtain a Drainage Discharge Permit from the Commission.

BWSC.13 General Service Application and site plan

The Proponent will submit a site plan and General Service Application for the BWSC's review. The site plan will show the location of all existing and proposed water mains, sewers, and storm drains serving the Project Site. The site plans and General Service Application will be submitted when the Project design is at 50% completion.

BWSC.14 Estimates of water demand, sanitary sewer flows and stormwater runoff generation

Included in the site plan package that is submitted to the BWSC for review will be detailed and updated estimates for water demand, sanitary sewer flows, and stormwater runoff generation for the proposed Project. Also included will be the amount of potable water required for landscaping, and an analysis of the impacts that the Project has on the BWSC's water, sewer, and drainage systems.

BWSC.15 Masonry repair and cleaning

No masonry repair or cleaning is anticipated as part of the Project.

BWSC.16 Hydrant Permit

If any hydrant is needed for use during construction, the Proponent will obtain a Hydrant Permit from the Commission.

BWSC.17 Water conservation measures

As part of the overall sustainability effort for the Project, the Proponent will install water-efficient fixtures throughout the proposed development. The use of these efficient fixtures will greatly decrease the wastewater generated by the Project.

BWSC.18 Water meter

The Proponent's engineer will design any newly proposed water meters in accordance with the BWSC standards and specifications. The design team will contact the BWSC Meter Installation Department for information regarding the installation.

BWSC.19 Drainage details

The site plan will show the proposed drainage system in detail, including how drainage from roofs and other impervious surfaces will be managed. Any stormwater runoff leaving the site will be conveyed to an existing drainage system and will not tie into any sanitary sewer systems.

BWSC.20 Stormwater retention

The proposed stormwater management system will include Best Management Practices (BMPs) for infiltrating stormwater runoff, including the use of subsurface infiltration basins. The design will also include a phosphorous reduction plan for the proposed development.

The overall stormwater management plan submitted for this Project will be designed in compliance with MassDEP stormwater standards. The plan will include BMP's

for erosion and sedimentation control, a site map identifying areas used for storage and treatment of contaminated soils, groundwater or stormwater, and the location of major control or treatment structures to be utilized during construction, and a description of the measures to control pollutants after construction is completed.

BWSC.21 EPA's NPDES General Permit for Construction

The contractor will be required to obtain a NPDES General Permit for Construction from the U.S. Environmental Protection Agency (EPA) and MassDEP. A copy of the Notice of Intent and the Stormwater Pollution Prevention Plan will be submitted to the Commission as well.

BWSC.22 Oil traps

The Proponent's engineer will design the proposed drainage systems in accordance with the BWSC standards and specifications. Oil traps will be installed on all drains discharging from all enclosed parking garages.

BWSC.23 Grease traps

Grease traps will be designed for all restaurants and commercial kitchen facilities in accordance to the BWSC sewer use regulations. The design team will consult with the BWSC prior to preparing plans for grease traps.

BWSC.24 "Don't Dump, Drains to Charles River" castings

The Proponent's engineer will design the proposed drainage systems in accordance with the BWSC standards and specifications. This will include the installation of "Don't Dump, Drains to Charles River" castings at all catch basins.

BWSC.25 Dewatering drainage

Any groundwater/dewatering will be coordinated with the Commission's Engineering Customer Service Department for Drainage Discharge Permits.

BWSC.26 Contaminated groundwater

If it is determined that there is any contaminated groundwater within the Project Site, the Proponent will apply for a Remediation General Permit from the EPA.

BWSC.27 Dye testing

Any existing stormwater and sanitary sewer systems that are proposed to be re-used by the proposed Project will be dye tested by the Proponent to confirm that they are connected to the appropriate system.

BostonPolice
DEPARTMENT
One Schroeder Plaza, Boston, MA 02120-2014

September 20, 2012

Erico Lopez
Senior Project Manager
Boston's Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: 375-399 Chestnut Hill Avenue Development Project

Dear Mr. Lopez:

I would like to thank you for the opportunity of being involved at the 375-399 Chestnut Hill Avenue Development during the scoping session. As Boston Police District 14 Commander, I am responsible for police services in the Brighton and Allston neighborhoods. I would like to call your attention to a few issues from a policing standpoint that concern me with the proposed construction.

Traffic and Parking

The Cleveland Circle area is already very congested with pedestrian and vehicular traffic. It didn't seem to me that there would be nearly enough parking spaces created to satisfy the new residential owners, hotel guests, office guest, and restaurant visitors. I also think that the design of the front entrance will create real problems with traffic entering and exiting. BPD.1 BPD.2

Apartment Units

We have concerns that these single bedroom units will be rented out every year to student population. It could easily get away and become a big dormitory. As soon as a few students get into the one bedroom apartments, the non-student owners would start marching out, subletting to other students. BPD.3

Emergency Calls for Service

As the vast majority of this construction site would be within the City of Boston, parts of it would be in Brookline. It creates jurisdictional issues. I would recommend that a joint emergency planning committee should be formed to include both Brookline and Boston emergency service departments so that all these issues can be discussed and remedied prior to final approval. BPD.4

The Restaurant

What Cleveland Circle does not need is another drinking spot for college students. Good businesses make a neighborhood strong, but I think that if we added anything less than an upscale restaurant in Cleveland Circle, it would just create more problems. Also,I would request that any restaurant be given a no later than 12am license. BPD.5

The Boston Police Department looks upon development in the community as an opportunity to prevent crime as well as eliminate blighted areas. The development process, when used properly to discuss issues openly safeguards the neighborhood. Using proper environmental design has shown to have a positive impact throughout the country. It is my hope that you will consider the issues I have brought up and we will all be proud of this phoenix rising in Cleveland Circle.

Thank you.

Respectfully,

Capt. Wayne Lanchester

Captain Wayne Lanchester
Commander District 14

cc William Evans, Superintendent, B.F.S., Bureau Chief
Bernard O'Rourke, Deputy Superintendent, B.F.S., Assistant Chief

WL/maa

BPD.1 Parking

Please see response provided in Section 7.2.9.

BPD.2 Access/egress design on Chestnut Hill Avenue

Please see Section 2.3.2.12 for a discussion of vehicle access/egress driveways.

BPD.3 Size of units, renting to students

The Project design includes one bedroom, one bedroom plus den, two bedroom and two bedroom plus den units that will meet the middle to semi-luxury segment of the market. The target group for these units is empty nesters, couples, and young families, and the units are designed, sized and priced for this market niche, and will also be available to those who meet the financial and credit qualifications for the development.

The Project management team will define and manage reasonable rules and regulations for tenants to follow. These rules and regulations will be implemented to maintain the quality standards within the development, and so that all tenants of the development and members of the broader community may experience quiet enjoyment of their respective spaces.

BPD.4 Joint emergency planning committee

The Project development and management team will convene joint meetings of the Boston and Brookline Emergency Response Departments to open discussions on the formation of a joint task force to:

1) Coordinate preconstruction plan approvals;

2) Define Construction Inspectional Protocols and Procedures;

3) Coordinate Permit and Approval procedures for Project opening; and

4) Define and Coordinate Post Opening Procedures (i.e., Emergency response, Ongoing services, Periodic Inspections)

BPD.5 Restaurant

The Proponent anticipates that a quality restaurant will occupy the restaurant space to serve the local community and hotel visitors.

BOSTON

Thomas M. Menino, Mayor

August 28, 2012

Mr. Brian P. Golden
Executive Director / Secretary
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: 375 – 399 Chestnut Hill Avenue
Expanded Project Notification Form (PNF)

Dear Mr. Golden:

The Boston Parks and Recreation Department has begun to review the Expanded PNF for the mixed-use project proposed for 375 – 399 Chestnut Hill Avenue, adjacent to Cassidy Playground in Cleveland Circle. The plans indicate that the residential lobby opens directly onto park land, utilizing park property for access to and egress from the building. This configuration cannot be approved as it results in a private use of public land and sets up a conflict with park hours of operation. Article 97 provides protections against the privatization of open space. Within this context, all building access and walkways, including the proper buffers to delineate private space from public space, should be located within the property line of the project. PRD1.1

Because entrance location and access can have a ripple effect in the overall design, we wanted to provide this response ahead of the scheduled Scoping Session. We will continue to review the submission and provide further comment as needed.

Please contact this Department with any questions.

Sincerely,

Liza Meyer

Liza Meyer, ASLA
Chief Landscape Architect
Boston Parks and Recreation

Copy: Brian McLaughlin, Executive Secretary Boston Parks Commission
Erico Lopez, BRA

Boston Parks and Recreation Department
Antonia M. Pollak, Commissioner
1010 Massachusetts Avenue, Boston MA 02118/ 617.635.4505

PRD1.1 Park property for access and egress

The design of the Project has been revised by moving the building five feet from the edge of Cassidy Playground to allow the addition of a sidewalk that is located on the Project Site to connect the hotel and residential lobbies to Chestnut Hill Avenue without the need to enter or cross any portion of the park.

BOSTON

Thomas M. Menino, Mayor

September 27, 2012

Mr. Brian P. Golden
Executive Director / Secretary
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: 375 – 399 Chestnut Hill Avenue, Cleveland Circle
Expanded Project Notification Form (PNF)

Dear Mr. Golden:

The Boston Parks and Recreation Department has reviewed the Expanded PNF for the mixed-use project proposed for 375 – 399 Chestnut Hill Avenue (the Project), adjacent to Cassidy Playground in Cleveland Circle and offers the following comments.

As noted in the letter issued by this Department on August 28th, 2012, the plans indicate that the residential lobby opens directly onto park land, utilizing park property for access to and egress from the building. This configuration cannot be approved as it results in a private use of public land and sets up a conflict with park hours of operation. Article 97 provides protections against the privatization of open space. Within this context, all building access and walkways should be located within the property line of the project. This Department is interested seeing a modified plan that meets the criteria above, while still making the most of the opportunities for a dynamic interface between the building and the park. PRD2.1

The proposed building heights of the Project will introduce new shadows to the eastern section of Cassidy Playground throughout the morning hours for most of the year. This is a substantive increase in shadow in the one passive area of the park with mature shade trees. The new shadows will impact the existing trees and lawns, as well as reduce the ability of the public to use and enjoy this part of the park. These impacts require further analysis and mitigation. PRD2.2

The functionality of vehicular and pedestrian circulation within the Project is dependent on the successful design of the multi-functional courtyard space. The courtyard dimensions and its overlapping uses will be studied in detail by transportation consultants and the Boston Transportation Department. It is paramount that the courtyard circulation functions properly. PRD2.3
The public parking lot adjacent to Cassidy Playground provides essential vehicular parking for park recreation uses and should not be viewed as a resource for the Project. PRD2.4

This Department will continue to review proposed materials, grades, setbacks, plantings and any other features proposed for the Project / park interface. We will pay particular attention to the potential impacts of construction on trees, impacts or improvements to park drainage, protection or improvement of the shared stone retaining wall including the proposed fence, and other park features. We hope that the Project can bring meaningful improvements to Cassidy Playground that will enhance the quality of the park for all users.

Boston Parks and Recreation Department
Antonia M. Pollak, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

Please contact this Department with any questions.

Sincerely,

Antonia M. Pollak
Commissioner
Boston Parks and Recreation

Copy: Brian McLaughlin, Executive Secretary Boston Parks Commission
Erico Lopez, BRA

PRD2.1 Park property for access and egress

The design of the Project has been revised by moving the building five feet from the edge of Cassidy Playground to allow the addition of a sidewalk that is located on the Project Site to connect the hotel and residential lobbies to Chestnut Hill Avenue without the need to enter or cross any portion of the park.

PRD2.2 Shadow impacts on landscaping

The building massing has been moved five feet away from the Cassidy Playground edge, and except for a portion of the building closest to Chestnut Hill Avenue, the building height for the residential component along Cassidy Playground has been decreased. Therefore, shadow impacts to the park are anticipated to be less than for the previously proposed design.

The Proponent retained a botanist—Bartlett Tree Experts—to perform a Tree Inventory and Management Plan that focused on existing trees and plants within a close proximity to the Project. Their recommendations include both removing dead trees and also pruning some existing trees to ensure their good health going forward.

PRD2.3 Courtyard circulation

Please see response provided in Section 7.2.7.

PRD2.4 Cassidy Playground public parking lot

The Proponent does not propose to use the public parking lot adjacent to the site for the purposes of the proposed Project.

BOSTON

Thomas M. Menino, Mayor

December 14, 2012

Mr. Brian P. Golden
Executive Director / Secretary
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: 375 – 399 Chestnut Hill Avenue, Cleveland Circle
Cassidy Playground Mitigation

Dear Mr. Golden:

The Boston Parks and Recreation Department has continued to review the proposed plans for the mixed-use development at 375 – 399 Chestnut Hill Avenue (the Project), adjacent to Cassidy Playground in Cleveland Circle. While the Project will bring new eyes to the park and vitality along an important park boundary, the development will also introduce long periods of new shadows over the parkland and bring increased pressure to limited park facilities and resources. We believe that it is important to balance the positive and negative impacts with specific mitigation measures within the park. To further this dialog, we have outlined below what we see at the most appropriate and necessary improvements to the park which will help mitigate the construction impacts.

The existing park "Field House" storage building is immediately adjacent to the Project site, less than 20' away from the hotel restaurant. The Field House provides crucial storage space for park maintenance and athletic team equipment; however, the building is in poor condition. Rather than invest in an expensive renovation of the existing structure in place, this Department believes that a new storage building could be sited elsewhere in the park that would meet the storage needs for the site, while also removing the declining structure from a prominent location immediately adjacent to the Project. PRD3.1

Second to the Field House, is the need to address the drainage issues in the baseball outfield along the southeastern side of the park. To correct this condition, regrading of the primary field will be necessary, with the likely addition of an underdrain system to provide an outlet for water that is otherwise trapped due to the adjacent site constraints. PRD3.2

We believe that the improvements identified above will make Cassidy Playground a more attractive amenity to the Project, while also increasing the functionality of the park. The latter is a critical accommodation with the introduction of so many new potential park users as immediate neighbors.

We look forward to continuing to work with you to see this project move forward and bring new activity into this important crossroads in Cleveland Circle.

Boston Parks and Recreation Department
Antonia M. Pollak, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

Sincerely,

Antonia M. Pollak
Commissioner
Boston Parks and Recreation

Copy: Liza Meyer, Chief Landscape Architect, Boston Parks
Erico Lopez, Senior Project Manager, Boston Redevelopment Authority

PRD3.1 "Field House" storage building

The Proponent will demolish and rebuild the current "Field House" storage building in Cassidy Playground, at a location specified by the Boston Parks and Recreation Department.

PRD3.2 Drainage

The Proponent is currently undertaking a study of the soils in the area identified as having poor drainage. The Proponent will provide a scope of work to the Boston Parks and Recreation Department for a recommended plan to mitigate the drainage problem. The Proponent will work with the Boston Parks and Recreation Department to reach a mutually acceptable action plan for the correction of this drainage problem. The costs of the required scope of work is to be determined.

BRA MEMORANDUM

TO: Erico Lopez

FROM: Katie Pedersen

DATE: October 1, 2012

RE: 375-399 Chestnut Hill Avenue
Comments on the Expanded Project Notification Form

I have reviewed the Expanded Project Notification Form (PNF) dated August 16, 2012 and submit the following comments for the Environmental Protection Component. The Boston Development Group (the "Proponent") proposes to redevelop an approximately 2.56-acre site located at 375-399 Chestnut Hill Avenue, a site that is adjacent to Cleveland Circle (the "Proposed Project"). The Proposed Project site comprises land in Boston and Brookline, which includes the former Circle Cinema and an Applebee's restaurant. The existing buildings will be demolished and replaced with a mixed-use development, consisting of approximately 236,500 square feet (sf) of hotel, medical office, residential and retail space in Brookline and Boston (a merged site).

Wind

The Proponent shall be required to conduct a qualitative analysis of the pedestrian winds for existing (no-build) and build conditions. The analysis shall determine potential pedestrian level winds adjacent to and in the vicinity of the Proposed Project site and shall identify any areas where wind velocities are expected to exceed acceptable levels, including the Boston Redevelopment Authority's guideline of an effective gust velocity of 31 miles per hour (mph) not be exceeded more than 1% of the time. ENV.1

Particular attention shall be given to building entrances, entrances to public transportation stations, crosswalks and public sidewalks, public plazas and gathering areas, parks (in particular the Cassidy Park) and green spaces.

Shadow

The shadow analysis indicates that the anticipated net new shadows will fall primarily on the sidewalks and roadways surrounding the Proposed Project site. However, the net new shadow is anticipated to be cast onto a segment of the Cassidy Playground during each of the four seasons studied; however this is the extent to which the anticipated shadow, created by the Proposed Project will adversely impact the Proposed Project site and surrounding area. No further study is required. ENV.2

Daylight

(Please refer to Urban Design comments)

Solar Glare

ENV.3

The Proponent has stated that the Proposed Project design will not incorporate the use of reflective building material. Consequently, the Proponent does not anticipate the creation of either an adverse solar glare impact or a solar heat buildup in nearby buildings. However, should the design change and incorporate substantial glass-facades, a solar glare analysis shall be required

Air Quality

A future air quality (carbon monoxide) analysis (the build year 2017) examined the intersections where the level of service (LOS) is expected to deteriorate to D and the Proposed Project causes a 10 percent increase in traffic or where the level of service is E or F and the Proposed Project contributes to a reduction in LOS.
The Proponent has stated that four intersections:

- Commonwealth Avenue and Chestnut Avenue
- Beacon Street and Chestnut Hill Avenue
- Dean Road and Chestnut Hill Avenue
- Boylston Street and Chestnut Hill Avenue

The analysis studied the existing conditions, future No-Build and future Build conditions (the build year 2017). The methodology and parameters of the air quality analysis comply with all Boston Redevelopment Authority (BRA) and the Massachusetts Department of Environmental Protection (MassDEP) requirements. Results indicate that the CO concentrations at the nearest receptors, for impacts from the intersections, in addition to monitored background values are under and thus in compliance with the CO NAAQS thresholds for all cases.

A description of the Proposed Project's heating and mechanical systems including location of buildings/garage intake and exhaust vents and specifications, and an analysis of the impact on pedestrian level air quality and on any sensitive receptors from operation of the heating, mechanical and exhaust systems, including the building's emergency generator have been included in the expanded PNF, all of which are in compliance with the MassDEP's requirements.

Solid and Hazardous Waste

A Phase I Environmental Site Assessment (ESA) was conducted in November of 2011. The ESA revealed the presence of the historical coal company was previously located on the Proposed Project site. The Proponent shall be required to provide copies of all environmental studies that were conducted. In addition, the Proponent shall be required to demonstrate that all investigations, to be performed at the Proposed Project site (and within the existing buildings) are done in compliance with appropriate City of Boston, MassDEP and EPA rules and regulations. The Proponent shall further be required to

ENV.4

ENV.5

provide a list of any known or potential contaminants on the Proposed Project site, and if applicable, a description of remediation measures to ensure their safe removal and disposal, pursuant to the M.G.L., Chapter 21E and the Massachusetts Contingency Plan.

Any potential hazardous wastes to be generated by the Proposed Project site must be identified. In addition, potential waste generation must be estimated and plans for disposal indicated and measures to promote reduction of waste generation and to promote recycling in compliance with the City of Boston's recycling program described. ENV.6

Noise

The Proponent has provided the results of the noise analysis that was conducted to establish the existing noise levels, evaluate future noise levels associated with the Proposed Project as well as a comparison to the City of Boston's Noise Ordinance criteria.

The sounds levels from all potential significant Proposed Project noise sources have been described and analyzed. The Proponent has established the existing noise levels at the Proposed Project site and as well as calculated future noise levels after the Proposed Project completion, thus demonstrating compliance with the Interior Design Noise Levels established by U.S. Department of Housing and Urban Development, as well as applicable City, State and Federal noise criteria.

The Proponent has stated that the details of the mechanical equipment have not yet been determined, but feel confident that the operational noise caused by the Proposed Project will primarily involve a minimal amount of mechanical equipment, including a cooling tower and several rooftop exhaust fans. In addition emergency generators will operate only during infrequent interruptions of the electrical grid. The Proponent has stated that efforts will be made, if deemed necessary, to minimize noise impacts from any rooftop equipment. Due to the Proposed Project's proximity to an adjacent residential neighbors the Proponent shall be required to demonstrate that the mechanical equipment, once selected, will be in compliance with the Regulations for Control of Noise in the City of Boston and the Commonwealth of Massachusetts. ENV.7

Sustainable Design/Green Buildings

The purpose of Article 37 of the Boston Zoning Code is to ensure that major buildings projects are planned, designed, constructed and managed to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in the City of Boston. Proposed projects which are subject to Section 80B of the Boston Zoning Code, Large Project Review, shall also be subject to the requirements of Article 37. Proposed projects subject to the provisions of Article 37 shall are required to demonstrate that a LEED "Certifiable" rating (per the requirements of the U.S. Green Buildings Council for a certified project) has been achieved under the most appropriate LEED rating system. Proponents are encouraged to integrate sustainable building practices beginning at the pre-design phase.

The Proponent has demonstrated that the Proposed Project will meet the requirements of Article 37. The Proponent has submitted a LEED 2009 for New Construction and Major Renovations indicating that the Proposed Project is has committed to achieving a LEED "certifiable" rating. The Proponent has indicated that the Proposed Project is striving to achieve 45 points and due to the fact that this score is just above the minimum required (40 points), the Proposed Project could be "at risk" of not meeting the requirements of Article 37. As a result, the Proponent shall be required to continue to work with the Proposed Project team and research additional sustainable and energy-efficient measures to be incorporated into the Proposed Project design and as the building design develops, strive to achieve a higher level of LEED certification. The Proponent has stated that the Proposed Project will comply with the "stretch code" requirements for new commercial buildings, indicating that the Proposed Project will achieve an approximately 24.5% better energy efficiency than is required by the state's base energy code. However, the Proponent shall be required to continue to explore ways to achieve an even greater percentage better than the state's base energy code. ENV.8

The Proponent should strive to incorporate as many of the credits indicated as "maybes" into the Proposed Project design, as there is a tendency during construction for points to be dropped. ENV.9

The Proponent shall be required to revise and update the LEED checklist as the Proposed Project design advances. Prior to the Article 80B process completion the Proponent shall be required to submit a Final Article 37 Submission Package. This package shall include the most current and accurate LEED Checklists, together with a comprehensive narrative, detailing how each of the points will be achieved. Please refer to the USGBC guidelines as to what is deemed necessary to demonstrate that the point has been achieved (or will be). ENV.10

ENV.1 Qualitative wind analysis

A qualitative wind analysis is included in Section 3.1.

ENV.2 Shadow analysis

The building massing has been moved five feet away from the Cassidy Playground edge, and except for a portion of the building closest to Chestnut Hill Avenue, the building height for the residential component along Cassidy Playground has been decreased. Therefore, shadow impacts to the park are anticipated to be less than for the previously proposed design.

ENV.3 Solar Glare

If the Project has the potential to create solar glare, a solar glare analysis will be completed.

ENV.4 Copies of environmental studies conducted

Please see Section 3.4.1 for a discussion of hazardous waste conditions on the site. The Proponent will provide the BRA copies with the Phase I Environmental Site Assessment, as requested.

ENV.5 Known and potential contaminants

The Circle Cinema building has various asbestos-containing materials (ACMs) in place. Prior to building demolition, all ACMs will be removed by a licensed environmental contractor in accordance with applicable regulatory procedures.

A Phase I Environmental Site Assessment (ESA) was conducted in November 2011 by ENSTRAT, Inc. The Phase I ESA concluded that available information and site observations do not indicate the use, storage, release, generation, or disposal of hazardous substances or petroleum products at the site, with the exception of the historical coal company which was previously located at the site. Prior to commencement of site work, investigations will be performed at the site and in the existing buildings to confirm that there are no additional contaminated soils, groundwater, asbestos, lead paint, or other hazardous materials present.

ENV.6 Generation of hazardous waste

Except for household hazardous wastes typical of residential, hotel and office uses, such as cleaning fluids and paints, the Project uses will not generate hazardous

wastes. The Project will generate approximately 324 tons per year of trash. Please see Section 3.4.2 for more information.

ENV.7 Noise analysis

The primary set of regulations relating to the potential increase in noise levels is the City of Boston Zoning District Noise Standards (City of Boston Code – Ordinances: Section 16–26 Unreasonable Noise and City of Boston Air Pollution Control Commission Regulations for the Control of Noise in the City of Boston). Additionally, the MassDEP regulates community noise by its Noise Policy: DAQC policy 90-001. The MassDEP policy limits source sound levels to a 10-dBA increase in the ambient measured noise level (L_{90}) at the Project property line and at the nearest residences. The policy further prohibits pure tone conditions—when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by three decibels or more. The Project will comply with these standards, incorporating appropriate mitigation to decrease noise levels from the Project's mechanical equipment if necessary, and to ensure that when in operation, the Project meets these standards.

ENV.8 Research additional sustainable and energy efficient measures

The Proponent will continue to analyze potential measures to increase the Project's energy efficiency and improve the green design of the building and its systems.

ENV.9 "Maybe" credits

The Proponent and its architect continue to consider additional LEED credits as the design progresses.

ENV.10 Revised LEED Checklist

A revised LEED narrative is included in Section 3.5, and a revised checklist is included in Appendix D.

ENGINEERING SUCCESS **TOGETHER**

October 9, 2012

Town of Brookline
Engineering & Transportation Division
Municipal Service Center
870 Hammond Street
Chestnut Hill, Massachusetts 02467

Attn.: Mr. Peter M. Ditto
Director

Re: **Brookline/Boston, Massachusetts**
375-399 Chestnut Hill Avenue Transportation Study

Dear Mr. Ditto:

As a follow up to our preliminary review memo dated September 27, 2012, BETA Group, Inc. (BETA) has completed our review of the *Transportation Study* prepared for the redevelopment project located within the City of Boston and Town of Brookline at 375-399 Chestnut Hill Avenue. The study was completed by Howard/Stein-Hudson Associates, Inc. (HSH), dated August 7, 2012 and submitted to the Town of Brookline by the Boston Development Group. Subsequently, BETA had received the electronic Synchro analysis from the proponent for reference. This review focused on the seven (7) intersections impacting the Town of Brookline and is based on the information provided to BETA as of September 17, 2012.

1.0 INTRODUCTION

The project site is located in both the Town of Brookline and the City of Boston on Chestnut Hill Avenue just south of its intersection with Beacon Street. All of the study area intersections within the Town of Brookline were reviewed along with one intersection within the City of Boston. The intersections included in BETA's study area are as follows:

Study Area

The study area included within this review encompasses the following intersections:

Signalized Intersections

Chestnut Hill Avenue/ Beacon Street (City of Boston)
Chestnut Hill Avenue/Dean Road
Chestnut Hill Avenue/Boylston Street (Route 9)
Beacon Street/Englewood Avenue
Beacon Street/Washington Street

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UNSIGNALIZED INTERSECTIONS
Chestnut Hill Avenue/Site Driveways
Chestnut Hill Avenue/Clinton Road

We want to note that the signalized intersection of Beacon Street/Dean Road was not included in this report. It is unclear why this intersection was not analyzed considering it is located in between two study area signalized intersections.

2.0 EXISTING TRANSPORTATION CONDITIONS

EXISTING TRAFFIC CONDITIONS

The manual turning movement counts (TMC) were conducted on multiple days between December 2010 and February 2011 for the weekday morning (7 to 9 AM) and evening (4 to 6 PM) peak commuting periods. The peak commuting hours in this area were determined to be 7:45-8:45 AM and 5:00-6:00 PM. Automatic Traffic Recorder (ATR) data was not collected for this study. ATR's collect valuable data including vehicle speeds, vehicle classification and the daily traffic volumes along the project area roadways.

When compared to the TMC data, an additional 50-200 thru vehicles along Chestnut Hill Avenue, south of the site were added to the volumes shown in Figures 3 and 4. We request the proponent validate why these thru volumes are significantly higher than the TMC at these locations.

According to the study, seasonal factors were used to adjust the traffic count volumes but no detail as to what seasonal factors were used was provided in the study. Please provide this information.

It was noted that the use of a growth factor for the 2010 and 2011 count data was determined by comparing counts performed at the intersection of Beacon Street/Chestnut Street in 2008 to 2011 volumes. A growth factor was not applied to the 2010-2011 TMC counts as a result of the comparison which showed that the 2011 volumes were 5-7% less than the 2008. We want to note that the Beacon Street/Chestnut Street TMC was performed in December of 2010, not 2011. Also, please verify the month in 2008 that the Beacon Street/Chestnut Street TMC was performed for reference purposes.

CRASH DATA

Crash data was not provided for any of the study intersections. This information is standard for a transportation study and should be summarized with calculated crash rates for each study area intersection.

EXISTING TRAFFIC OPERATIONS

Existing LOS and delay data for the existing driveways of 375-399 Chestnut Hill Avenue was not included in this report but should be provided. This information is important to understand the delay experienced exiting and entering the existing site.

Peak hour factors (PHF) were entered specific to individual turning movements and not by approach in the Synchro analysis. It is standard MassDOT practice and industry standard to use the approach PHF when performing existing analysis. We request that the proponent explain why the PHF per approach was not used in the analysis.

All of the LOS tables were compiled using Synchro methodology. It is standard MassDOT practice to compile LOS data based on the Synchro *Highway Capacity Manual* (HCM) methodology output. Although this is not a MassDOT project, we request that the proponent explain the reason for using the Synchro methodology output.

It is unclear in the analysis when the MBTA Green Line is able to access and egress the MBTA driveway across from the site. We request the proponent to verify that this was included in the analysis.

The data found in *Table 4 – Existing PM* is the same as in *Table 3 – Existing AM*. Please provide the correct Table 4.

CAR SHARING LOCATIONS

The report states that 11 vehicles are within ¼ mile of the site. Two vehicles are shown within the ¼ mile radius in *Figure 7 – Zipcar Locations*. To encompass 11 vehicles, the radius would have to be about ½ mile. Figure 7 also notes an extra 6 vehicles within a half mile. The distance to these vehicles is closer to 1 mile. We request that Figure 7 and the associated Table 6 be revised accordingly.

3.0 EVALUATION OF LONG-TERM IMPACTS

NO-BUILD CONDITIONS

Two proposed residential developments were identified by the Town of Brookline to be considered in background growth volumes. The new vehicle trips from these developments were not added to the traffic volume network but included as part of the 0.5% percent per year background growth that used for the analysis. The proposed developments would generate an estimated 40 and 45 trips per peak period. Considering the 2010-2011 traffic volumes were not increased for the year 2012, we suggest that the proposed trips associated with these developments be included in the analysis to account for these trips.

As with the existing conditions, the No-Build LOS and delay data for the existing driveways of 375-399 Chestnut Hill Avenue was not included in this report but should be provided.

BUILD CONDITIONS

For ease of review, we request that a larger site access plan with a scale be provided for review. The exact location of the proposed driveway is not clear on the site plan provided in the report. The

location of the proposed crosswalk across Chestnut Hill Avenue at the site driveway should also be shown on the site plan.

The study did not include a sight distance analysis for the proposed site driveway location. This analysis is standard when analyzing an unsignalized intersection and should have been provided for reference purposes.

The installation of a traffic signal at the site driveway was proposed as mitigation. Traffic signal warrant analysis should be provided to justify the installation of this traffic signal. This intersection should also be analyzed without a proposed signal.

TRIP GENERATION

HSH estimated trip generation based on the Institute of Transportation Engineers (ITE) data for Business Hotel, Residential Apartment, Medical-Dental Office Building, Retail/Shopping and Quality Restaurant which BETA finds satisfactory. These are reasonable land uses for this project.

MODE SPLIT

The Boston Transportation Department's (BTD) data for Area 10 and the 2009 National Household Travel Survey were used to determine the vehicle, transit and walking mode splits and vehicle occupancy rates for this project. BETA finds this approach reasonable but requests this back-up data be provided for review purposes.

TRIP DISTRIBUTION

Site generated trips were distributed onto the study area network based on the BTD origin-destination characteristics for Area 10 and existing travel patterns. The Area 10 BTD origin-destination back-up should be provided for our review. According to *Table 10 – Project Trips by Land Use and Travel Mode*, approximately 64% percent of the vehicle trips originate from or are destined to the north, east and west of the site while only 36% originate from or are destined to the south (Route 9). Please verify if consideration was given for a larger percentage of vehicles to/from Route 9 due to its highway nature.

The "p.m. peak hour" vehicle trips in "out" direction shown in Table 10 add up to 99 instead of the 89 noted in the table. Please revise.

BUILD CONDITION TRAFFIC OPERATIONS

The background growth and project-generated trips were added to the No-Build Condition volumes to obtain the 2017 Build Condition volumes. The Build analysis assumed a signalized site driveway. Although the installation of a traffic signal at the driveway was specifically outlined in the *Town of Brookline Zoning By-Laws* for this project, we request the driveway be analyzed as an unsignalized intersection under the Build condition in order to understand how the intersection would operate without a traffic signal. In addition, the MBTA driveway across from the proposed site driveway should be incorporated into the traffic signal.

We ask the proponent verify that internal traffic circulation operations will be managed properly by the proponent to ensure that vehicles entering the site will be smoothly facilitated on site and vehicles will not be queued back onto Chestnut Hill Avenue.

PROPOSED PARKING

The proponent is proposing a total of 228 parking spaces which exceeds both the BTD and *Town of Brookline By-Laws* recommended parking requirements (198-202). A shared use parking program should be considered for the site to reduce the pavement and overall impervious runoff and create more green space to compliment the adjacent parkland.

FUTURE PEDESTRIAN AND BICYCLE CONDITIONS

We recommend that the proponent ensure that there are a sufficient number of bicycle cages in the garage for office/hotel employees and residents as well as an adequate number of onsite bike racks for visitors.

We are agreeable to the relocation of the pedestrian crosswalk across Chestnut Hill Avenue to the site driveway. The proposed crosswalk will be reviewed once a larger site access plan is provided by the proponent.

LOADING AND SERVICE ACTIVITY

The proponent will provide two service areas which is consistent with the *Brookline Zoning By-Law.* The AutoTurn provided by the proponent shows a charter bus encroaching parking spaces while entering and exiting the loading area. It is unclear how a charter bus will safely enter and exit the loading area.

4.0 TRANSPORTATION MITIGATION

RECOMMENDATIONS

In addition to the design of the signalized site access driveway and Chestnut Hill Avenue intersection, analyses were performed to integrate the following off-site mitigation (Build Condition with Mitigation) proposed by the proponent:

- *Beacon Street/Chestnut Hill Avenue* - The removal of a median on the eastbound approach to the Beacon Street/Chestnut Hill Avenue intersection, the addition of turning lanes, various lane designation changes and signal timing adjustments.

- *Signalized intersections* – Retiming of traffic signals

Based on the 95th percentile queuing information presented in *Table 16 – Build Conditions (2017) With Mitigation*, the Chestnut Hill Avenue northbound queue at the proposed site will back up 600 feet which is approximately 100 feet past the unsignalized intersection of Clinton Road and

Chestnut Hill Avenue. The existing conditions analysis for this intersection has not been provided for comparison purposes but this queue problem needs to be mitigated.

According to the analysis, the Chestnut Hill Avenue and site driveway intersection degrades overall from a LOS E during the Build Condition to a LOS F during the Build Condition with Mitigation and the Chestnut Hill Avenue northbound approach degrades from a LOS D to a LOS F. The mitigation signal re-timings should not result in longer queues and delay along Chestnut Hill Avenue. We request that the traffic signal re-timing be revised to ensure an improved LOS, delay, and queue along Chestnut Hill Avenue.

A concept plan indicating the desired geometric configuration under signalized conditions of the intersection of Chestnut Hill Avenue and the site driveway should be provided for review in addition to a detailed conceptual design plan of the proposed modifications at the intersection of Beacon Street and Chestnut Hill Avenue.

APPENDIX

We request that the proponent provide the following clarifications and data which were missing from the Appendix:

- *Cleveland Circle Synchro:* Explain how the "EBL2, etc" movements and volumes were determined. These movements were not included in the TMC's.
- *Chestnut Hill Ave / Clinton Rd:* Provide a combined TMC data sheet showing "Cars – Trucks," currently two separate sheets are included (one for cars, one for trucks).
- *Chestnut Hill Ave / Site Driveway:* Synchro data sheets should be provided for the intersection of the proposed site driveway. These were not included in the Appendix.

SUMMARY OF FINDINGS

1. It is unclear why this intersection was not analyzed considering it is located in between two study area signalized intersections.

2. Automatic Traffic Recorder (ATR) data was not collected for this study.

3. Validate why an additional 50-200 thru vehicles along Chestnut Hill Avenue, south of the site were added to the volumes shown in Figures 3 and 4.

4. According to the study, seasonal factors were used to adjust the traffic count volumes but no detail as to what seasonal factors were used was provided in the study. Please provide this information.

5. Verify the month in 2008 that the Beacon Street/Chestnut Street TMC was performed for reference purposes.

6. Crash data was not provided for any of the study intersections. This information is standard for a transportation study and should be summarized with calculated crash rates for each study area intersection.

7. Existing LOS and delay data for the existing driveways of 375-399 Chestnut Hill Avenue was not included in this report but should be provided.

8. Explain why the PHF per approach was not used in the analysis.

9. Explain the reason for using the Synchro methodology output instead of HCM output.

10. Provide the correct Table 4.

11. It is unclear in the analysis when the MBTA Green Line is able to access and egress the MBTA driveway across from the site. We request the proponent to verify that this was included in the analysis.

12. Figure 7 and the associated Table 6 should be revised accordingly.

13. The proposed trips associated with these developments should be included in the analysis to account for these trips.

14. No-Build LOS and delay data for the existing driveways of 375-399 Chestnut Hill Avenue was not included in this report but should be provided.

15. A larger site access plan with a scale should be provided for review.

16. Sight distance analysis is standard when analyzing an unsignalized intersection and should have been provided for reference purposes.

17. Traffic signal warrant analysis should be provided to justify the installation of this traffic signal. This intersection should also be analyzed without a proposed signal.

18. Mode split back-up data should be provided for review.

19. Verify if consideration was given for a larger percentage of vehicles to/from Route 9 due to its highway nature.

20. The "p.m. peak hour" vehicle trips in "out" direction shown in Table 10 add up to 99 instead of the 89 noted in the table. Please revise.

21. The driveway should be analyzed as an unsignalized intersection under the Build condition in order to understand how the intersection would operate without a traffic signal. In

addition, the MBTA driveway across from the proposed site driveway should be incorporated into the traffic signal.

22. We ask the proponent verify that internal traffic circulation operations will be managed properly by the proponent to ensure that vehicles entering the site will be smoothly facilitated on site and vehicles will not be queued back onto Chestnut Hill Avenue.

23. A shared use parking program should be considered for the site.

24. It is unclear how a charter bus will safely enter and exit the loading area.

25. The Build mitigation traffic signal re-timing be revised to ensure an improved LOS, delay, and queue along Chestnut Hill Avenue.

26. A concept plan indicating the desired geometric configuration under signalized conditions of the intersection of Chestnut Hill Avenue and the site driveway should be provided for review in addition to a detailed conceptual design plan of the proposed modifications at the intersection of Beacon Street and Chestnut Hill Avenue.

27. The following data must be collected and analysis performed in order to justify the necessity for a traffic signal at the proposed driveway: Gap Analysis, Site Distance Analysis, Crash Data for the latest 3 years, and a Traffic Signal Warrant Analysis. We will review this data once it is provided.

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,
BETA Group, Inc.

Kien Ho, P.E., PTOE
Senior Associate

cc: Jaklyn Centracchio, BETA Group, Inc.

O:\3200s\3294 - Brookline On-Call\Task 11 375-399 Chestnut Hill Ave Redevelopment\3294-11 375-399 Chestnut Hill Ave Peer Review.docx

Howard-Stein/Hudson Associates responded to BETA Group's October 9, 2012 comment letter by addressing their comments and requests in a memorandum dated November 20, 2012. Attached is BETA Group's response to receiving that memorandum. Howard-Stein Hudson has provided BETA Group with the updated site plan and signal plan for Beacon Street/Chestnut Hill Avenue (Cleveland Circle), including the site driveway at Chestnut Hill Avenue.

ENGINEERING SUCCESS TOGETHER

MEMORANDUM

Date:	January 2, 2013		
To:	Mr. Peter Ditto		
Cc:	Mr. Todd Kirrane		
From:	Mr. Brian J. Beisel Mr. Kien Ho, PE PTOE	BETA Project #:	3294-11
Subject:	375-399 Chestnut Hill Avenue Redevelopment		

BETA Group, Inc. (BETA) has completed our review of the *Technical Memorandum* dated November 20, 2012 prepared for the redevelopment project located within the City of Boston and Town of Brookline at 375-399 Chestnut Hill Avenue. The follow up memorandum was completed by Howard/Stein-Hudson Associates, Inc. (HSH) in response to our initial peer review letter dated October 9, 2012.

The response memorandum addressed the concerns raised in our initial review, most notably providing backup data for the assumptions and calculations in the *Transportation Study*. Additional information was also provided regarding crash data, the trip generation associated with background developments, signal timings for the intersection of Beacon Street at Chestnut Hill Avenue, and modifications to address minor errors within the *Transportation Study*.

After a detailed review of the trip generation rates that were used in the *Transportation Study*, it appears that there are discrepancies for the land use codes that were used. In addition, several trip generation rates do not match the rates contained in Trip Generation, 8th Edition. The most notable inaccurate statement is that Business Hotel (LUC 312) rates are higher than Hotel (LUC 310) rates. However, the overall trip generation totals based on the correct rates are similar to the totals that were obtained in the *Transportation Study*. Therefore, the trip generation does not need to be recalculated.

The remaining issues that need further review at this time are the location of the site access driveway, on site circulation, and the conceptual design of the intersection of Chestnut Hill Avenue at the Site Driveway. This intersection as part of Cleveland Circle signal operations will result in the southbound Chestnut Hill Avenue receiving red time much more often than it currently does. Currently this movement only receives red time when a trolley accesses the C Line to/from the MBTA yard and for pedestrian activity. As part of this development, this movement will now receive red time essentially every cycle as vehicles exit the site. The 95th percentile southbound queue length needs to be compared to the available storage between the Site Driveway and Beacon Street to ensure that the queue does not block the Cleveland Circle intersection. To complete our review of the expected impact of this project, a detailed site plan including a conceptual design of Chestnut Hill Avenue should be provided for our review.

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MARK CIOMMO
BOSTON CITY COUNCIL
DISTRICT 9

October 12, 2012

Erico Lopez
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201

Re: 375-399 Chestnut Hill Avenue Expanded Project Notification Form

Dear Mr. Lopez,

As the delegation of local elected officials representing Allston-Brighton, we wish to provide our comments regarding the proposed 375-399 Chestnut Hill Avenue Expanded Project Notification Form (the "PNF"). These, and past comments submitted to the Boston Redevelopment Authority ("the BRA") are important measures for the BRA to have a thorough understanding of how the Cleveland Circle area will be impacted by the proposed development.

On August 16th 2012, Boston Development Group (the "Proponent") submitted an expanded PNF outlining a mixed-use development comprising approximately 236,500 square feet of hotel, medical office, retail and residential space located in Boston and Brookline. The proposed project will replace the former Circle Cinema and existing Applebee's restaurant. Pursuant to the Article 80 Large Project Review process a BRA sponsored community meeting was held on September 20th. Additional meetings occurred between various city agencies, the Impact Advisory Group, civic groups and other interested parties. It is our intention to reflect the comments and concerns raised by the community and ensure the Proponent addresses them with the guidance of the BRA and appropriate city agencies.

Residential Component

Allston-Brighton is in need of high quality housing that will help attract long term residents. The current program reflects 82 residential units comprising approximately 40% of the project. Although amenities such as assigned underground parking, access to a fitness facility, pool and concierge services will help attract stable residents. Location, unit size and views are equally important. Additionally, building condo-quality units will allow for their conversion to ownership when the real estate market reflects demand. We fully support and encourage homeownership as opposed to rentals if financing allows.

MC.1

BOSTON CITY HALL, ONE CITY HALL SQUARE, BOSTON, MASSACHUSETTS, 02201
617-635-3113 FAX: 617-635-4203 Mark.Ciommo@cityofboston.gov

PRINTED ON RECYCLED PAPER

Cassidy Park Impacts

The proposed development is located in close proximity to Cassidy Park. As a direct abutter to the park, proper measures should be put in place to ensure the development does not encroach or negatively impact the park. Existing pedestrian pathways should be improved and new pathways should be created to facilitate pedestrian traffic and enliven the park edge. Adding a transitional element and/or buffer will help delineate the project site from the park edge. Tree conditions should be studied by a qualified arborist to ensure existing trees are maintained and not damaged during construction. Year round shadow impacts should also be studied to ensure existing trees and plantings are not negatively affected. MC.2 MC.3 MC.4 MC.5

Design

The proposed development offers a unique opportunity to create a "landmark structure" fronting Cleveland Circle. Questions have been raised regarding the types of materials being proposed in the PNF. The introduction of materials and design more reflective of the bordering Aberdeen Architectural Conservation District will help establish the building as a prominent centerpiece in Cleveland Circle. The Proponent should continue to work closely with the Boston Civic Design Commission to achieve this goal. MC.6

As currently proposed, the main entrance to the hotel is situated inside the courtyard. A 6,600 square foot restaurant occupies the corner of the premises on Chestnut Hill Avenue and Cleveland Circle. This corner is an ideal location for patrons to access the hotel lobby. Creating a pedestrian connection from this focal point will help create a more prominent hotel presence in Cleveland Circle. Additionally, this location will be a more pedestrian friendly access for patrons travelling on foot. MC.7

Density

The project proposes 236,500 square feet of hotel, residential, medical office, and retail space situated on approximately 2.5 acres of land. Community comments and concerns reflect the desire for a project that is less dense. A reduction in the overall density would have many potential benefits as outlined below: MC.8

- Increased setbacks to accommodate street trees and green space will create a more pedestrian friendly street edge
- Reduction in residential unit count
- Create larger units, as well as, additional 2 bedroom units
- Increased courtyard dimensions will allow better traffic circulation
- Reduction in the number of vehicular trips traveling through Cleveland Circle to the site
- A parking supply more in line with the demands needed to accommodate a less dense proposal

Traffic

Much emphasis has been placed on the proposed Y shaped footprint of the program, its impact on traffic circulation within the courtyard and its potential impacts on Chestnut Hill Ave. Currently, there is

a single 25-foot main entrance/exit to the site and a proposed secondary egress through the rear of the site for hotel patrons. The Proponent must continue to collaborate with the Boston Transportation Department (BTD), Town of Brookline and MBTA to examine the feasibility of the recommendations below:

- Addition of a second egress to allow right hand turns onto Chestnut Hill Avenue MC.9
- Installation of traffic calming and safety measures that need to be implemented along the Waterworks easement road MC.10
- Specific recommendations and solutions for mitigating MBTA impacts MC.11
- Further study of the proposed addition of left turn storage bays in Cleveland Circle MC.12

The proposed 375-399 Chestnut Hill Avenue development offers an opportunity to establish new life and vibrancy to Cleveland Circle. While we acknowledge that positive changes have been made since the original PNF was filed, more work needs to be done to ensure the best possible project is realized. We urge the BRA and appropriate city agencies to have the Proponent address the comments and concerns raised by the community in a comprehensive way.

Thank you for your attention to this matter and the opportunity to comment on the proposal. If you have any questions, please feel free to contact us.

Sincerely,

Kevin Honan
State Representative
17th Suffolk District

Michael Moran
State Representative
18th Suffolk District

Mark Ciommo
Boston City Councilor
District 9

MC.1 Housing profile

Please see response provided in Section 7.2.2. The residential units are being designed to be condominium-quality as the residential units are expected to be eventually converted from apartments to condominiums.

MC.2 Should not encroach or negatively impact Cassidy Park

The building steps down in height as it extends toward the west from Chestnut Hill Avenue along the Cassidy Playground edge, resulting in a reduced number of residential floors in this area. This considerable reduction of mass makes the building appear to step down in scale as it marches along the edge of the park. In addition, the current design has increased the buffer between the building and the park, setting the building back an additional five feet from the park edge. Please see Section 1.3.2.3 for more information.

MC.3 Pedestrian pathways

The design now includes a sidewalk on the Project Site adjacent to Cassidy Playground that connects the residential and hotel lobbies to Chestnut Hill Avenue. The Proponent has offered to replace some existing but damaged concrete pathways within Cassidy Playground; additionally, the Proponent has suggested the addition of more pathways to create a continuous pathway through the park. The Boston Parks and Recreation Department is reviewing this suggestion to assess its compatibility with the Department's park use plan.

MC.4 Buffer from Park edge

The current design has increased the buffer between the building and the park, setting the building back an additional five feet from the park edge. In addition, in order to eliminate the views of parked cars and the rear loading area from Cassidy Playground, a solid fence will be installed the entire length of the parking area and loading dock area. Additional landscaping will occur on the park side of the new fence to soften the edge and continue the park-like character.

MC.5 Trees

The Proponent retained a botanist—Bartlett Tree Experts—to perform a Tree Inventory and Management Plan that focused on existing trees and plants within a close proximity to the Project. Their recommendations include both removing dead trees and also pruning some existing trees to ensure their good health going forward. The arborist will provide plan for the future viability of the trees, safety of

the tress during construction, and will monitor plan compliance throughout the Project development process.

MC.6 Materials and design

Please see response provided in Section 7.2.6.

MC.7 Hotel presence on Cleveland Circle

Please see response provided in Section 7.2.3.

MC.8 Density

Please see responses provided in Section 7.2 which discuss density, landscaping, housing profile, courtyard, traffic impacts and parking.

MC.9 Second egress

Level of service analysis results (see Tables 2-17 and 2-18 in Section 2.4) show that the access/egress plan with a two-way driveway on Chestnut Hill Avenue and an exit-only driveway to Beacon Street will adequately process Project vehicles and will not produce queues that would block access, egress, or courtyard circulation. No additional Project driveways are necessary.

MC.10 Waterworks driveway

The Proponent and hotel owners are committed to ensuring that the use of the exit drive be maintained as a safe and efficient right of way for all users, both the present residential users and the future hotel guests. Signage will be posted at the rear hotel exit alerting drivers to travel slowly as they proceed to Beacon Street. The existing curvature of the roadway acts as a traffic calming measure, inhibiting high travel speeds. The Proponent will work with the Waterworks Museum and the residential community to ensure sure that the driveway is used properly and safely with minimal impact on Cassidy Playground and Waterworks.

MC.11 MBTA impacts

The Proponent has met with MBTA officials several times during the permitting process to discuss MBTA trolley operations through Cleveland Circle. In fact, as a result of these meetings, the MBTA has already modified the entry procedure for out-of-service C Branch trolleys into the Yard and reduced travel time through the intersection. The mitigation proposed by the Proponent at the Beacon Street/Chestnut Hill Avenue intersection will improve level of service for automobile traffic, and will better accommodate Green Line trolley maneuvers. It is also the Proponent's understanding that a detector signal will be installed by the

MBTA for out-of-service B Branch trolleys to allow faster processing from Commonwealth Avenue south along Chestnut Hill Avenue, thereby reducing traffic blockages on Chestnut Hill Avenue.

Please see both Section 2.2.5.2 and Section 2.4 for further discussion of Green Line operations and intersection level of service.

MC.12 Left turn storage bays

After meeting with BTD, the mitigation improvements for the Beacon Street/Chestnut Hill Avenue intersection have been revised in the DPIR. The mitigation measures as presented in Section 2.4 would improve the level of service from LOS F to LOS D during each peak hour. The associated Synchro files have been submitted electronically to the BTD for internal review and the Proponent looks forward to continuing work with the BTD to institute improvements.

E Lopez

October 12, 2012

Peter Meade, Director
Brian P. Golden, Executive Secretary
Kairos Shen, Director of Planning
Erico Lopez, Senior Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

B.R.A.

2012 OCT 12 P 1:44

RE: **Impact Advisory Group Comments on the 375-399 Chestnut Hill Avenue EPNF and Project Plan**

Dear Messrs. Meade, Golden, Shen and Lopez:

As members of the Impact Advisory Group (IAG) for the above referenced project (EPNF dated August 16, 2012) we are providing comments, both in this letter and in separate IAG member reports, for your consideration.

The undersigned IAG members agree that Cleveland Circle would benefit from thoughtful, high-quality development. We also acknowledge Boston Development Group's project changes that were made in response to the critique of last year's plan, in particular the addition of a residential component.

In making changes, however, BDG has added over 60,000 square feet and additional vehicles trips to the project. As proposed, the plan for redevelopment of 375-399 Chestnut Hill Avenue is too dense. The overall FAR was increased from 1.55 to 2.13. The proposal includes high-traffic components such as medical offices and large restaurants. Implementation of the project in its current form will have significant negative impacts and will overburden the Cleveland Circle neighborhood. IAG.1

These considerations and related project issues that are discussed in more detail in separate IAG member comment documents have led us to conclude that BDG should not be allowed to proceed with the project as proposed in the current EPNF. We recommend that the BRA require reductions in project density. We also recommend that the BRA require BDG to substantively address the project issues that have been raised repeatedly in community meetings and public comment letters and that are reflected in the attached IAG comments.

Sincerely,

Sharon Cayley
sharon Cayley

Ruth L. Scheer
RUTH L. SCHEER

(Mary Cronin)

(John Ellis)

Anabela Gomes

Eva M. Webster
EVA WEBSTER

Attached: Comments from IAG Members on the 375-399 Chestnut Hill Avenue EPNF
(The attached document represents the opinions of the individual members who have signed it. Because of the complexity of the proposal and the technical nature of many of the issues, the IAG did not attempt to produce a lengthy, unanimous report.)

CC: Will Brownsberger, Mark Ciommo, Angela Holm, Kevin Honan, Michael Moran

7.4

Comments from the IAG

7.4 Comments from the IAG

IAG

IAG.1 Density

Please see response provided in Section 7.2.1.

These comments and recommendations are submitted by IAG members Sharon Cayley, Mary Cronin, John Ellis and Ruth Scheer. We have focused on several issues with BDG's current EPNF that are of great concern to the Brighton/Allston community and to project abutters. There are many other issues of concern that require BRA review and significant changes in the project plan. These include but are not limited to site design and location of project components, architectural style, building heights, feasibility of underground parking, safety issues, nature and quality of housing being proposed. Some of these issues are addressed in separate comments by our fellow IAG members.

PROJECT DENSITY

The proposed project is too dense for the site and will overburden Cleveland Circle. Comparison of the PNF filed on April 19, 2011 and EPNF filed on August 16, 2012 reveals that BDG (the developer) added a net of 60,000 square feet to the project, resulting in a significant increase in vehicle trips. The overall FAR went up from 1.55 to 2.13.

There is overwhelming community demand for downsizing this project as evidenced by comments made at the September 20, 2012 BRA community meeting and comment letters submitted to the BRA.

RECOMMENDATIONS:

Require BDG to scale back the project to reduce density to a level similar to its 2011 proposal. Consider the following specific reductions:

- Eliminate the 19,000 square feet of medical office space, as was requested on page 6 of the IAG comments submitted on June 15, 2011. CCES.1
- Reduce the overall size of the residential component. Redesign to create a smaller number of units with more square footage per unit. These larger units will more closely meet the criteria for BDG's stated plan to build luxury housing suitable for eventual condo conversion. This change would also meet community goals for attracting long-term Cleveland Circle residents and reduce the demand for parking. CCES.2
- Reduce the size of the 6,700 square foot independent restaurant or eliminate this component entirely. As explained in the comment letter submitted on behalf of the real estate firm and project abutter, Hamilton Cleveland, the proposed restaurant *"would likely contain 250-300 seats plus staff. That seat count would require 38-45 spaces under the underlying zoning. We also note that restaurant vehicles come in the evening hours, the same time as hotel guests and the same time as apartment tenants. The existence of one entrance and the small number of parking spaces could overwhelm the Circle and surrounding area with cars at night."* CCES.3

SITE PLAN AND COURTYARD TRAFFIC MANAGEMENT ISSUES

The use of a Y shaped footprint to organize the program components and the funneling of all vehicular traffic into a single internal courtyard create a fundamental problem for site traffic management and for pedestrian access to the hotel's main entrance. The courtyard's constrained size and limited vehicle stacking, parking, and truck-turning capacity raise serious questions about the potential for gridlock at times of peak use. Comment letters have pointed out serious miscalculations and undercounting the number of truck deliveries and vehicles trips to the medical offices. The absence of detailed provisions for emergency vehicle access to all portions of the project is unacceptable especially if courtyard gridlock becomes the norm.

As a result of prior agreements between BDG and the Town of Brookline, the developer has proposed a single 25-foot main access/egress road located on Chestnut Hill Avenue, directly across from the MBTA turning tracks and entrance/exit to the MBTA Reservoir train yard. Brookline has also stipulated that there be no right turn on red at this exit, further restricting the flow of traffic out of the project. As pointed out in numerous comment letters, these restrictions will tax the limited capacity of the internal courtyard as cars, trucks, cabs and service vehicles all stack up in a single lane waiting to exit. When vehicles waiting to exit the project's internal courtyard are blocked from doing so by MBTA trains turning into the yard, traffic circulation inside the courtyard will be blocked and vehicles stacked on Chestnut Hill Avenue waiting to enter the project will not be able to proceed to make a turn into the courtyard. The developer's own traffic

engineer, Howard/Stein-Hudson, acknowledges this primary access/egress intersection for the development will be sufficiently congested to immediately be rated "F" when it starts operating. (See Tables 2-12 and 2-13 in the EPNF)

RECOMMENDATIONS

Require additional independent traffic study of the proposed courtyard configuration, internal traffic circulation, and the location of the main project entrance/exit road. This study should subject BDG's projections for truck deliveries, the numbers of vehicles that will be entering the courtyard, and the probability of internal congestion to further review. Consider the following changes: CCES.4

- Add a second exit onto Chestnut Hill Avenue at the south border of the project site to allow vehicles to make a right hand only exit to reduce congestion inside the courtyard and provide direct project access by emergency vehicles as needed CCES.5
- Eliminate the restriction of turning right on red from the main entrance/exit CCES.6
- Revise the BDG/Brookline agreement to give Boston and Brookline shared control of the main entrance/exit via an easement arrangement as proposed by Kairos Shen in fall 2011 CCES.7
- Relocate hotel lobby and pedestrian entrance to the northeast corner of the site. Consider covered vehicular drop-off, pick up and guest registration area with hotel rooms above. Hotels using this model are plentiful in downtown Boston CCES.8

TRAFFIC STUDY/TRAFFIC MITIGATION PROPOSALS

There are numerous problems with BDG's current traffic study and mitigation proposals. As noted in the Hamilton Cleveland comment letter and in meetings with the IAG, the traffic study data provided in the EPNF is outdated (traffic counts were taken in 2010 and early 2011 and include a growth factor based on one location in 2008 and 2011.) The intersection vehicle counts were conducted on non-representative mid-winter dates, thereby understating overall vehicle traffic and pedestrian traffic and ignoring significant seasonal bicycle traffic at these intersections. Despite the city's goal of encouraging bicycle use, the EPNF omits any reference to bicycle lanes and provides no information regarding the number of bicyclists at the impacted intersections. There are errors in observation regarding where there is and isn't on street parking in the project vicinity. For example, the EPNF states incorrectly that there is on-street parking on Chestnut Hill Avenue south of Beacon Street and that there is no on street parking on Beacon Street west of Chestnut Hill Avenue.

The software that is used to measure LOS at nearby intersections is unable to measure further deterioration of service due to project traffic at the Cleveland Circle intersections that start out at "F" thus distorting the actual impact of the traffic volume this project will generate. As a result of errors in observation and flawed methodology, traffic mitigation proposals cannot be taken seriously. For example, take the case of proposals for the eastbound Beacon Street approach to Chestnut Hill Avenue. On pages 2-51,52 the developer recommends "a 200-foot exclusive left storage bay be designated on this approach. This lane use will require…removal of the existing median in the eastbound approach." Since on street parking and bike lanes have not been taken into account, how can we judge if a left storage bay is even feasible? In addition, an important function of the existing median is pedestrian safety. Many pedestrians need extra time to cross and wait on the median for the light to change again. There is no mention of how that need will be addressed if the median is removed.

As pointed out in numerous public comment letters and the letter from Hamilton Cleveland Circle, LLC, while the required parking ratios have been met, there is a parking deficit for the medical offices and stand alone restaurant components based on observation of actual parking demand and use patterns at comparable locations.

RECOMMENDATIONS

Require BDG to conduct an updated traffic study that provides accurate vehicle counts and includes bicyclists and the number of MBTA trains that use Chestnut Hill Avenue that is based on detail-oriented observation of impacted intersections. Traffic analysis should include methodology to capture and model the probable increased deterioration in service at intersections currently rated "F." Review actual conditions and provide measurements relevant to the CCES.9

mitigation proposals and discuss potential negative impacts of measures such as removing medians, parking spaces and relocation of MBTA bus stops as well as further analysis of the proposed left hand storage lanes. Bicycle counts should be done immediately before the onset of winter.

MBTA Issues

Trains and MBTA service vehicles and employee vehicles frequently enter and exit the Reservoir train yard immediately across from the proposed main entrance/exit. MBTA trains making a turn into the yard regularly block traffic on Chestnut Hill Ave and on Beacon Street. This juxtaposition of the new project intersection with the MBTA turning tracks creates a likelihood of massive traffic tie-ups on Chestnut Hill Avenue and nearby intersections.

These issues are not adequately addressed in the EPNF which does not provide any information about the number and frequency of MBTA trains using the tracks across from the proposed entrance. For example, there is no mention or documentation of the B-line trains that travel on Chestnut Hill Avenue from Commonwealth Avenue, across Beacon Street and turn left to go into the railroad yard, reversing this path to return to Commonwealth Avenue.

Anecdotal reports by BDG at public meetings regarding agreements with the MBTA about changing its train patterns are not a substitute for hourly counts of existing MBTA yard conditions (including hourly and total daily counts of trains, service trucks and employee vehicles) together with documented analysis of the current conditions and future build conditions in the context of current and projected MBTA activity.

Recommendations

- Require an updated traffic study to report on the number and frequency of trains and MBTA service and employee vehicles under existing and future build conditions, documenting the impact of this traffic blocking the proposed new intersection and/or through traffic on Chestnut Hill Avenue and Beacon Street. CCES.10

- Require BDG to undertake a formal joint study of alternative Cleveland Circle train turning and routing options in collaboration with the MBTA that provides specific recommendations and cost estimates for mitigating overall MBTA traffic issues in Cleveland Circle and on Chestnut Hill Ave to reduce the negative impacts of the proposed development. CCES.11

Environmental Impacts

The EPNF reports on the emissions at selected intersections in the project vicinity, but provides no estimates of the emissions on the project site itself. The courtyard design creates an emissions "hot spot" that will impact pedestrians, residents and hotel guests. Patients visiting the medical office will be particularly sensitive receptors exposed to courtyard emissions. The site emissions impacts must be studied in detail.

Funneling large numbers of vehicles into an enclosed courtyard including busses, trucks and service vehicles can be expected to cause high concentrations of vehicle emissions inside and around this courtyard. Many vehicles waiting to pick up or drop off will keep their engines idling and will be out of sign of hotel staff. BDG's proposal to post signage prohibiting idling is an inadequate emissions control plan.

The EPNF incorrectly states that the proposed building adjacent to Cassidy Playground is "similar in height to the existing buildings on the Site" (3-1) concluding that "wind conditions are anticipated to be similar." In fact, the existing Applebee's building is only one story high and 4,480 sq feet with large setbacks in front and in the rear, compared to the proposed five-story construction filling the entire parcel.

Recommendations

Require a detailed study of emissions inside the courtyard area and at the intersection of the courtyard with Chestnut Hill Avenue. Require that BDG use updated, corrected projections for truck deliveries and vehicle trips, with realistic modeling of the number of vehicles that will be standing and idling inside the courtyard (zero not to be accepted as a realistic model). In particular, CCES.12

- Require a study of the environmental impact on the western border of Cassidy Playground and the Watermark residential building in the scenario of 20 or more vehicles having to queue on the Waterworks roadway while waiting to exit onto Beacon Street CCES.13

- Require a study of expected wind conditions based on a corrected model of the building mass on the north-east portion of the site on the wind conditions in Cassidy Playground and the new street-edge buildings along Chestnut Hill Avenue. CCES.14

PROJECT ABUTTER IMPACTS

The project as proposed has significant negative impacts on all the direct abutters. The direct abutters have repeatedly expressed multiple concerns about the project at public meetings and have documented serious project issues in their public comment letters. It is notable that BDG did not address the abutter concerns that were raised during the 2011 project review period. Instead the developer has returned with a project proposal that exacerbates the negative impacts for abutters.

- Many public comment letters highlight the concerns of the abutters at the Waterworks Park condominiums regarding the use of the Waterworks private roadway as an exit for the 181 room hotel. These concerns included safety issues, overburdening, and impact of the new development traffic on the narrow roadway which borders the Waterworks Park and Cassidy Playground. As noted in the 2011 IAG comments, *"The PNF does not address the numerous safety and congestion issues and negative impacts that will be caused by use of the Waterworks Driveway by the proposed project."* In July 2012, BDG verbally proposed to the BRA an alternative plan for site development that did not use the Waterworks roadway, stating that eliminating this secondary exit road would not make a significant impact on Cleveland Circle traffic.

- A public comment letter from the owners of the office building at 398 Chestnut Hill Avenue (Hamilton Cleveland Circle, LLC) details 5 pages of concerns about the project that will cause negative impacts for the building owners and their tenants including density, traffic and parking. This letter details and documents problems with the current traffic study and inaccurate trip projections, the constraints of the single site entrance/exit, courtyard traffic circulation and inadequate project parking based on experience with managing comparable uses such as medical offices and a large restaurant.

- Brookline residents on Clinton Road, the other direct project abutters have raised also written comment letters expressing numerous concerns about the negative impact of the project on their privacy and quality of life. Hotel windows and transient hotel guests will have direct visibility into the homes and backyards of these abutters. The current design of the project courtyard, loading docks and trash pickup requires all trucks to back up in order to re-enter the courtyard and exit. Therefore, Clinton Road abutters will be subject to the constant noise of large trucks backing up from the loading dock directly behind their homes.

- The Parks and Recreation Department voiced concerns at the BRA Scoping Session on Sept 5 about the lack of an adequate buffer between the active edge of Cassidy Playground and the development. Parks has also noted that the adjacent mature trees may be damaged during project construction. There is also potential for long-term negative impacts because of project shadows on Cassidy Playground.

RECOMMENDATIONS

Require BDG to revise its proposal as necessary to address and mitigate the negative impacts of the project on the direct abutters and on Cassidy Playground.

CONCLUSION

While we strongly support redevelopment of this pivotal site, the project that is being proposed is totally inappropriate and will cause the rapid deterioration of what could be an exemplary Boston neighborhood. We have offered suggestions and recommended changes to help the developer improve this project. This is the second time in 15 months that IAG members have engaged in this activity and it has been done in good faith. However, the project as proposed has so many flaws that it would be appropriate for the BRA to reject the EPNF ask BDG either to go back to the drawing board and begin with a blank slate or to withdraw to make way for another developer who might have the vision and appropriate resources to bring to life the unique qualities of the Cleveland Circle site.

As one comment letter writer put it, development of the Applebee's/Cinema site presents "the rarest of opportunities to positively transform Cleveland Circle." It is up to the BRA to do whatever it takes to ensure that what is ultimately built on this site is reflective of its unique location abutting a magnificent recreational green space and reservoir, adjacent to the Aberdeen Architectural Preservation District and several National Historic Districts, and convenient to public transportation.

Respectfully submitted:

Sharon Cayley

Mary Cronin

John Ellis

Ruth Scheer

CCES.1 Medical office space

Please see response provided in Section 7.2.5.

CCES.2 Housing profile

Please see response provided in Section 7.2.2.

CCES.3 Reduce size of independent restaurant or eliminate it

The total square footage for the independent restaurant is currently planned to be 6,900 sf. This space must include a significant allocation for food prep, food storage, administrative area, and restroom facilities. The actual area for restaurant seating is estimated to be approximately 3,000 sf. The restaurant will be a prominent feature on Cleveland Circle and at the edge of Cassidy Playground. This portion of the Project will enliven the park edge and draw pedestrian traffic to the site. Please see response provide in Section 7.2.3.

The community had also expressed a preference for a "quality, full service restaurant" at this location. The goal is to bring a high quality dining facility to Cleveland Circle to offset the existing limited service, convenience food establishments that predominate Cleveland Circle. To maximize the pool of restaurant operators that may meet this goal, the developer has provided a maximum space of 6,900 sf. Should the selected restaurant concept require less space, the additional area will be reallocated to a retail operation. Please see Section 2.3.2 for a discussion of the Project's transportation impacts and requirements for parking.

CCES.4 Independent traffic study

The Proponent has agreed to fund an independent traffic study as directed by either Boston or Brookline. Brookline, as per its standard procedure, commissioned an independent study through BETA Group, Inc. In the City of Boston, the Transportation Department directly presides over the technical review and comment of a transportation study. Howard-Stein/Hudson Associates responded to BETA Group's October 9, 2012 comment letter by addressing their comments and requests in a memorandum dated November 20, 2012. BETA Group's response to receiving that memorandum is provided previously in this Chapter. The traffic comments and reports from Boston, Brookline, BETA Group, Inc., and HSH are available for public review.

CCES.5 Second exit onto Chestnut Hill Avenue

Locating the Project's Chestnut Hill Avenue site driveway further south would create additional traffic issues compared to the proposed central location. At the central location, a traffic signal and stop line already exists on Chestnut Hill Avenue northbound at the MBTA Yard. This existing signal, which is part of the Beacon Street/Chestnut Hill Avenue signal system, controls the flow of traffic into Cleveland Circle and allows out-of-service MBTA trolleys to move into and out of the Yard. As planned, the Project Site driveway at Chestnut Hill Avenue will be signalized and tied into the existing signal operations at Beacon Street/Chestnut Hill Avenue.

If the Project driveway was moved south, the associated driveway signal control would require that the stop line on Chestnut Hill, which is currently just south of the MBTA Yard, be relocated further south near the Reservoir Station drop-off driveway. Such a plan would cause longer traffic queues to block the adjacent intersection of Chestnut Hill Avenue/Clinton Road more frequently. Maneuvers out of the Reservoir driveways would also be blocked more frequently. Additional clearance (yellow) time would need to be allotted to northbound Chestnut Hill Avenue, causing longer delays at the Beacon Street/Chestnut Hill Avenue intersection.

Please also see Section 2.3.2.12.

CCES.6 Right on red onto Chestnut Hill Avenue

Right turns on red (RTOR) are restricted by the Town of Brookline's zoning.

CCES.7 Shared control of main entrance/exit

The site driveway is located in the Town of Brookline, at the center of the Project Site. This location, and two other alternatives, have been studied extensively. The current location allows for the optimum combination of key factors (i.e. site line, stacking, coordination with adjacent intersections, and site elevation). The Proponent will continue to work with BTD and the Town of Brookline on issues related to the site driveway.

CCES.8 Hotel lobby location and vehicular drop-off area on Chestnut Hill Avenue

Relocating the hotel's main entrance to the northeast corner of the site and creating a covered drop-off/pick zone would add too many uncontrolled vehicular movements to an area essentially within the Cleveland Circle intersection. The proposed site plan allows the hotel pick-up/drop-off activity to occur away from public streets.

Please see response provided in Section 7.2.3

CCES.9 Updated traffic study

The Project's traffic study follows standard guidelines established by the Boston Transportation Department and the Town of Brookline, and uses methodologies established by the Institute of Transportation Engineers for estimating new trips and evaluating existing and future intersection operations.

Data collection and field observations were made for this study starting in December 2010 through October 2012. Note that the Massachusetts Environment Policy Act office, Massachusetts Department of Transportation, and the Boston Transportation Department sanction the use of traffic data that has been collected within three years prior to a proposed project's transportation evaluation.

See Section 2.4.1 for a discussion of mitigation measures. With proposed mitigation at Beacon Street/Chestnut Hill Avenue, the resulting operation at Cleveland Circle will be LOS D in both the a.m. and p.m. peak hours.

CCES.10 Impact of MBTA trains and service vehicles on Chestnut Hill Avenue/site driveway intersection

Please see Section 2.2.5.2 for information on trolley maneuvers through Cleveland Circle, and Section 2.4.1 for a discussion of mitigation measures.

CCES.11 Joint MBTA study

The Proponent has met with MBTA officials several times during the permitting process to discuss MBTA trolley operations through Cleveland Circle. In fact, as a result of these meetings, the MBTA has already modified the entry procedure for out-of-service C Branch trolleys into the Yard and reduced travel time through the intersection. The mitigation proposed by the Proponent at the Beacon Street/Chestnut Hill Avenue intersection will improve level of service for automobile traffic, and will better accommodate Green Line trolley maneuvers. It is also the Proponent's understanding that a detector signal will be installed by the MBTA for out-of-service B Branch trolleys to allow faster processing from Commonwealth Avenue south along Chestnut Hill Avenue, thereby reducing traffic blockages on Chestnut Hill Avenue.

Please see both Section 2.2.5.2 and Section 2.4 for further discussion of Green Line operations and intersection level of service.

CCES.12 Courtyard air quality

Assuming the courtyard is an enclosed "box", one can conservatively estimate concentrations within the box. The courtyard "box" has dimensions of approximately 13,900 square feet by 55 feet high. This equals a volume of 764,500 cubic feet (or 21,648 cubic meters).

Using a conservative winter carbon monoxide (CO) idling emission factor of 46.725 grams/hour/vehicle for light duty gasoline vehicles and assuming vehicles (peak average hourly activity of seven curbside spaces) idling for 210 minutes per hour (approximately 50% of the capacity), one can estimate a total mass emissions of 163.5 grams of CO per hour.

With ZERO air changes within the courtyard, the one-hour concentration of CO would simply be the mass of CO (163.5 grams) within the volume of air inside the courtyard (21,648 cubic meters), or 7,554 $\mu g/m^3$ (6.6 ppm). With the addition of background CO in the area of 2,166 $\mu g/m^3$ (1.9 ppm), a total one-hour CO concentration of 9,720 $\mu g/m^3$ (8.5 ppm) is estimated. This is far less than the National Ambient Air Quality Standard (NAAQS) of 40,000 $\mu g/m^3$ (35 ppm) for one-hour average CO.

Using the standard factor of 0.7 to convert one-hour concentrations to eight-hour, an eight-hour CO concentration of 5,288 $\mu g/m^3$ (4.6 ppm) is found. With the addition of 1,710 $\mu g/m^3$ (1.5 ppm) background CO, a total of 6,998 $\mu g/m^3$ (6.1 ppm) results. Again, this is lower than the NAAQS for eight-hour CO of 10,000 $\mu g/m^3$ (9 ppm).

This is a highly conservative estimate, assuming there are NO air changes within the courtyard, and the vehicles are idling constantly for 210 minutes per hour. The eight-hour average assumes idling at the curbside spaces for eight consecutive hours; however, the scale factor of 0.7 does inherently assume some meteorological variability. Even with these highly conservative assumptions, it is expected that there will be no violations to the NAAQS within the courtyard.

In addition to idling vehicles, a number of vehicles will pass through the courtyard to access the parking garage. It is expected that these vehicles will not stay in the courtyard for any prolonged period and not significantly contribute to the vehicular emissions in the courtyard. Any emissions from these pass-through vehicles would not be enough to exceed the NAAQS in the courtyard.

Delivery trucks will proceed directly to loading docks and will be required to minimize idling to five minutes as required by Massachusetts law.

CCES.13 Air quality from queue on Waterworks driveway

The traffic analysis predicts no changes in Level of Service (LOS) and minimal changes in delay times at the Waterworks driveway. In addition, the number of vehicles at these intersections is far smaller than at any of the four intersections studied in the microscale analysis. Therefore, since the worst intersections in the study area show no violations, it follows that there will be no violations of the NAAQS for CO at the Waterworks intersection.

CCES.14 Wind study

A wind study is provided in Section 3.1.

Exh. 2

Eva M. Webster

B.R.A.

2012 OCT 17 A 10:

October 12, 2012

Mr. Peter Meade, Director
Mr. Brian P. Golden, Executive Secretary
Mr. Kairos Shen, Director of Planning
Mr. James M. Tierney, Chief of Staff
Mr. Erico J. Lopez, Senior Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

Re: **Impact Advisory Group comment letter**
375-399 Chestnut Hill Avenue EPNF and Project Plan

Dear Messrs. Meade, Golden, Shen, Tierney and Lopez:

This comment letter is meant to be a part of the Cleveland Circle IAG's submission that was delivered to you separately. My IAG colleagues and I had very demanding and conflicting schedules this past week, and in the end just didn't have enough time to meet to produce one collective IAG report. We agreed to divide tasks among ourselves, and my letter will mostly focus on issues that were not covered, primarily due to lack of time I assume, in the materials submitted by others.

> NOTE: This letter has a multi-page attachment -- a document that discusses a range of very important, specific recommendations that representatives of the Cleveland Circle neighborhood (from Aberdeen-Brighton, the Waterworks, and the adjacent part of Brookline) submitted to BDG last Spring. BDG's subsequent response, justifying the current plan, is included – followed by additional arguments from the community. The content of the attachment is perhaps more important than this letter. If you happen to be short on time, I urge you to go directly to the attachment.

I and the local neighborhood group I represent (Aberdeen-Brighton Residents Association) would welcome with open arms a high quality mixed-use development (hotel/retail/housing) on the combined Circle Cinema and Applebee's parcel. Nevertheless, I am in full agreement with my fellow IAG members that the current plan by Boston Development Group (BDG) has many significant flaws that would result in irreversible negative impacts on the Cleveland Circle intersection and the entire neighborhood.

In a nutshell, the project suffers from the developer's apparent inability to see what this particular parcel is all about:

- What amount, kind, and mix of development is appropriate (given traffic constraints and the overall context of the site);
- What is the best way to distribute uses across the site to make the project work well for its future users, as well as the neighborhood;

- What features are needed for this project to become a catalyst for positive change in Cleveland Circle;
- How to create not only immediate, but also long-lasting value.

The project suffers from an excess of ambition in some ways, and from not being ambitious enough in other ways. High density (the very maximum that can be built on the site by using wood-frame construction) on an overwhelmingly large footprint, and an unwelcome enmeshment of uses that are not very compatible -- seem to be the developer's primary goals.

At the same time, the high potential for desirable, upscale housing that this unique location offers (right on the Brookline border, next to a park, the elegant Waterworks development, and the Reservoir) is completely ignored.

Those and other issues have been repeatedly discussed in many community and IAG meetings with the developer, and reasonable, constructive requests for reconfiguring the plan to better address the needs of the neighborhood have been made -- but have simply fallen on BDG's deaf ears.

Consequently, the plan that has been filed by BDG is unsuccessful in effectively enhancing Cleveland Circle as a gateway location, it flat-out fails to create the kind of housing that the neighborhood truly needs, and additionally it sets the stage for a whole host of conflicts between different users, while also being hard on the abutters.

> NOTE: At the BRA's request, we assume, BDG did produce the so-called Alternative Plan that is much more neighborhood-friendly and could be further refined. But doing so appeared to be a perfunctory gesture on BDG's part, because even though the IAG stated its strong preference for the Alternative Plan last July, BDG made no effort to discuss it in detail, and decided not to adopt it -- even though, by BDG's own admission, implementing that plan would not lead to any loss of square footage. (A separate discussion to compare the two plans, with community concerns in mind, is in order. However, doing it as part of this letter would make it longer than it already is -- therefore I think it needs to be deferred to another time.)

Assessing Density

At first glance, the FAR of 2.13 seems to be perfectly reasonable – until you realize that the Cinema parcel includes a large and narrow area (the neighborhood people call it "the tail") that only lends itself to surface parking and nothing else. It is located at the far end of the parcel, and its presence is not perceptible from Chestnut Hill Ave. or Cleveland Circle.

Granted, this is an unusually shaped parcel – but that is why a normal FAR calculation should not apply. To count the tail area toward the FAR is like counting the underground parking area toward the FAR – one could try to do it, but it would give a distorted FAR reading.

To get a full sense of the effective FAR, in my opinion, one ought to subtract "the tail" from the buildable part of the site. Because of the irregular, tapered shape of the tail area, it is hard to determine its exact size, but I estimate that the space that BDG devotes to surface parking there, with roadway in the middle, is about 30,000 SF – which effectively reduces the buildable land on the combined Cinema/Applebee's parcel from 111,029 SF to 81,029 SF. Therefore, with 236,500 SF of proposed development, the effective FAR is 2.99 (almost 3).

If the development site had other points of vehicular access/egress -- besides Chestnut Hill Ave. and the one-way, very limited, not to mention controversial, Waterworks easement -- an FAR of 3 might work (especially with narrower, more slender buildings, which would enable better traffic circulation on the site). But the reality is that this site is hemmed in by Cassidy Park, the D Line corridor, and the Waterworks development. Chestnut Hill Avenue and Cleveland Circle as a whole are pretty much at capacity, and their traffic flow cannot afford the negative impact of the frequent comings and goings from the Cinema/Applebee's parcel. EW.1

Project Economics

The IAG, and a great number of neighborhood people who have been following this project, think that this development is just too dense and needs to be reduced in size -- so it can function better for all of its users down the road, and also have a lower impact on Chestnut Hill Avenue/Cleveland Circle traffic.

The arguments that BDG may bring up against reducing density is that all the square footage it wants to build (including 82 units of transient housing, and a very large restaurant) is necessary because:

- BDG has agreed to pay an X amount of dollars for the land;
- construction of underground parking is expensive;
- use of unionized labor also factors into construction costs.

The last issue is a political matter that is beyond the scope of this letter (but I personally have no problem with making developers pay fair middle-class wages to the people who build their projects).

Regarding purchase price, it is possible that BDG has agreed to pay National Amusements for the Cinema site more than they should for such an awkwardly shaped parcel that is hemmed in by the MBAT Right of Way and the City of Boston parkland; spans two municipalities, and has access only from a very busy road.

However, having agreed to possibly overpay for land cannot be an excuse for a project that is too dense and doesn't work for the neighborhood. The purchase price may have to be adjusted accordingly.

The argument about the high cost of constructing underground parking is a little more complex, and needs to be carefully and objectively analyzed. Before anyone concludes that the large number of housing units is justified by the cost of creating underground parking, lets consider the following:

BDG's decision to put all that parking underground has not resulted in a decent amount of useable open space on the site:

- no easy to navigate driveways or sidewalks for interior traffic circulation;
- no true oasis-like courtyard park like the Coolidge Corner Marriott has;
- no proper setbacks from Cassidy Park;
- no green buffer of trees for Clinton Road abutters;
- no generous restaurant patio (the current outdoor eating area is just a row of tables on what needs to be a straight unobstructed sidewalk -- and those tables are too close to the often very intense Cleveland Circle traffic — it is not really a restaurant overlooking the park, as the community, and I believe the BRA too, requested).

So what is the benefit of putting parking underground? Just so we can have a denser project, causing more congestion, on a site that has severe vehicular access/egress limitations?

But if the developer keeps saying that the underground parking is a necessity, or a "benefit" — so the project needs to be as dense as it is — what can anyone say to that?

The Commonwealth Hotel in Kenmore Square (5 stories) is an example of a hotel that has surface parking behind the building (much cheaper to build, that's for sure), and the whole parcel (hotel + parking) appears to be on 42,000 SF of land (according to the City of Boston Assessing website).

The Courtyard Marriott Hotel in Coolidge Corner was built, together with its underground garage, plus a long, very wide side driveway, AND a very nice little park (REAL green courtyard), on just 33,600 SF of land (for comparison, the Applebee's parcel is 33,009 SF, and the Cinema parcel is 78,020 SF).

The truth is that the combined Cinema/Applebee's parcel is large enough (111,029 SF = 2.55 acres; that's a lot of land in an urban area) that the developer could build a sizeable hotel, plus a significant residential building with larger units (possibly on stilts to accommodate parking underneath; there is a way to do it tastefully, as was done on Brainerd Rd. in Allston), and still have enough room left on the ground level for an adequate amount of surface parking for the hotel -- especially if BDG eliminates the medical office component (which constitutes only 8% of the project, but is a big traffic generator).

The long "tail" area of the Cinema site can provide surface parking for 50-60 units of housing. That would still leave the rest of the site (nearly 2 acres) for a residential building oriented toward the Reservoir, AND a hotel fronting Cleveland Circle. And the vehicular and pedestrian traffic circulation would not be any worse than in BDG's current plan, and in fact could be much better.

As stated on previous occasions, the IAG believes that the medical space component should be removed from the program -- because we think that this site, due to traffic problems on Chestnut Hill Ave., is not appropriate for medical office use. A nice boutique hotel of perhaps 160 rooms, about 15,000 SF of neighborhood retail (including just one large restaurant that is a part of the hotel), plus 50-60 units of high-end housing in a separate building, would be more than enough development in this location. EW.2

Any purchase price for the land should be calculated based on such a reduced, but still very reasonable program. The argument that BDG must build 82 units of housing because it costs a lot to build underground parking simply does not hold water. The underground garage is being proposed because the developer's plan is overdeveloping the site (given the site's circumstances) — that is the real reason.

If the developer wishes to provide underground parking for the hotel, as it certainly can, that has nothing to do with the number of housing units. The housing component is a part of the project that can stand completely on its own, with its own surface parking in the tail area, and preferably as a separate, well-designed residential building (not looking like a hotel or office) -- so it can be a nice place to live, and have a chance to become a truly independent (from the hotel) condo association down the road.

Nature and quality of housing
(transient vis-à-vis long-term/owner-occupied)

EW.3

The development parcel abuts a busy commercial center (Cleveland Circle), but it is large enough, and much of it is sufficiently isolated from the hustle and bustle of the Circle, that one can only wonder why BDG doesn't seem to grasp that this development should be ideally divided into two connected but separate segments: hotel/commercial uses on the Circle, and buffered, park-oriented residential use in the area that is closer to the Waterworks and the Reservoir.

The Cleveland Circle neighborhood in Brighton has a very low owner-occupancy rate -- about 10% (while Allston-Brighton as a whole has a rate of 22%, and Boston 37%). Much good work has been done in the last 10 years or so to improve the neighborhood (e.g., designation of the Aberdeen Architectural Conservation District; the Chestnut Hill Waterworks adaptive redevelopment; opening of the Reservoir to the public; establishment of the Waterworks Museum; Boston College Master Plan that commits to house 100% of BC undergraduate students).

Still, the troubling low homeownership rate in this part of Brighton persists - even though the immediate proximity to Brookline and downtown Boston makes it a very convenient location. The reason is a great shortage of spacious, truly high-quality units that appeal to middle-class/higher-income residents looking for a permanent home in this area.

Last year, when the IAG asked BDG to incorporate a housing component into their plan, we asked for the type of housing that our area truly needs - compatible with the Waterworks, comfortable and suitable for long-term residency by people who wish to grow roots in the area. Instead:

- BDG is proposing run-of-the-mill rental housing, even though the project's unique location abutting a large park, Reservoir water views that can be achieved with the proper design, the immediate proximity of the Waterworks and Brookline abutters, plus

Brighton neighborhood's need for more balanced housing stock, all call for higher-end condos.

- BDG promises that the rental building will be "condo quality" -- for possible future conversion -- but the reality of the plan/design, which is very clearly unfriendly to long-term owner-occupants, does not support that. (Sure, any units that BDG builds can be sold as condos at some point, but whether they would be purchased as investor units, or to be lived in is an issue here - it all depends on the design and quality of the development.)
- BDG has selected the least suitable part of the development parcel — exposed to constant/frequent sources of noise, or deprived of views -- to locate the housing component. Why? The neighborhood has every reason to assume and worry that this amounts to transient housing - not what we asked for.
- The proposal includes a preponderance of mostly small 1BR units - 54 out of 82 total (66%); only 28 units are 2BR. The profile of buyers or renters of small 1BR units at this location will tend to be transient (and mostly non-owner-occupied even if condos). The stable, over-35 market, including professionals and empty nesters will not be attracted by 1BR units, even if they are 1-2 person households. Condo buyers who want to live in their condo will want an extra bedroom to meet their lifestyle needs, including guests, accumulated possessions, work at home, hobbies, etc.
- The developer claims it will be building "luxury units" -- and yet many of those units are to be located directly over a very large and active restaurant (potential for a night club-like environment) with outdoor tables on one side, and deliveries, as well as intense traffic, on the other side. (Where are there truly comparable upscale apartments or condos situated just above an active restaurant with outdoor tables?)

BDG's promise that it intends to convert the apartments it will build to condos when the time is right would be much more credible if the proposed apartments were not right in Cleveland Circle, and with nearly half of them lacking views. When you build condos for sale (right away or later), that is not how you design your units — especially if you have the ability to orient them toward the Reservoir and buffer them from the noise of the Circle.

Personally, I perplexes me why BDG is fixated on putting housing (which they call "luxury") right IN Cleveland Circle — when the project site runs deep toward the Waterworks, and offers a great opportunity to have truly more desirable housing. Rentals serving the transient population can be located over a large restaurant right in Cleveland Circle -- but long-term, quiet, quality housing needs to relate to the Waterworks.

> NOTE: Just FYI, in a design review meeting in Brookline last week (Oct. 10), a member of the BDG team stated in front of a room full of people that the housing that BDG is going to build will not need to be serviced by moving trucks (after it was pointed out that the site plan had no room for them). This presumably means that BDG expects the renters who will live in those apartments to own nothing except personal belongings that fit in a few suitcases. Needless to say, the IAG and the community are adamantly opposed to that kind of housing on this very unique and beautiful site.

* * *

SUMMARY

The bottom line: It is up to BDG to figure out if it wants and can afford to build a hotel which, like the Coolidge Corner Marriott, has underground parking — or whether it wants to save money on construction costs and build a slightly smaller hotel like The Commonwealth in Kenmore Square with surface parking hidden from public view behind the hotel building.

Either way, the housing component can have its own surface parking in the "tail" area of the Cinema site — thus eliminating the possibility that hotel/commercial traffic (cars driven by possibly reckless strangers) would ever be able to use the Waterworks easement – as this happens to be a concern that many Waterworks residents have stated.

The positioning of the residential buildings toward the Reservoir could further reinforce its role as a structure that permanently buffers the Waterworks development from hotel & commercial uses in Cleveland Circle.

Whether the Waterworks easement ends up being used/shared by the new development or not (I don't wish to speculate on that, as it is a matter between two private entities), it still makes a lot of sense to ask BDG to build housing that is pushed away from Cleveland Circle and fully oriented toward the Reservoir – to take advantage of the natural beauty of the area.

Doing so would ensure the building's quiet enjoyment and water views, thus making it highly desirable and appealing to long-term residents. Also, according to BDG's architect, the residential building will have higher ceilings than the hotel, and some balconies. A nice-looking residential building would be a more harmonious use vis-à-vis the Waterworks than a commercial hotel with mostly repetitious fenestration (though we certainly hope that overall the hotel will have an attractive design as well).

Lastly, BDG's desire to have the lowest construction costs possible should not preclude having a prominent, vertical hotel structure (or a vertical architectural feature on top of the hotel building) on the corner facing Cleveland Circle. Many people think that it is necessary to enhance the Circle's gateway location. EW.4

Sincerely,



Eva M. Webster
Cleveland Circle Impact Advisory Group
Board Member of Aberdeen-Brighton Residents Association
Member of Brighton-Allston Improvement Association

CC: Mr. Jay Walsh, Mayor's Office of Neighborhood Services
Councilor Mark Ciommo

Attachment

Critical Design Features for the Redevelopment of the Circle Cinema-Applebee's Site

Community Recommendations

Background:

- A group comprised of community-minded residents from Aberdeen-Brighton, Waterworks Park, and Brookline neighborhoods that surround Cleveland Circle meets on 2/8/12; residents agree to form Cleveland Circle Community Alliance (CCCA), and subsequently meet multiple times to discuss issues concerning anticipated BDG development;
- The list of CCCA Neighborhood Recommendations (in bold and numbered below) is submitted to BDG on 4/27/12;
- BDG provides a written answer on 8/7/12, and includes it in the EPNF dated 8/16/12;
- Community generates a follow-up response on 10/8/12 (see below) that is reviewed and approved by the CCCA Steering Committee (names available upon request) including Cleveland Circle IAG members John Ellis and Eva Webster.

1. **Re-orient the main body of hotel building (including lobby) from the rear of Cinema site to Applebee's site, with hotel frontage overlooking and visible from Cleveland Circle -- while retaining approximately 40 hotel rooms on the Brookline portion of the Cinema site.**

   BDG Response: If the hotel were relocated as advised, the hotel's public areas and service areas will fill the first floor space. This would eliminate the majority of the space for "active uses" and minimize the connection to Cassidy Park. This arrangement would also minimize the queuing area for hotel arrival.

   Community Response: It is to be expected that a hotel needs to have public areas -- most essential of them, of course, a public lobby, which we consider a top "active use" that naturally belongs on a public street/square (in this case, the Circle).

   Locating the hotel lobby in the back of a congested courtyard that is not visible from Cleveland Circle is an unacceptable alternative that undermines the positive effect a hotel can have on this important gateway location.

   To have the hotel located in Cleveland Circle is an important goal, and the community must be offered an option to accept certain trade-offs that may be necessary to accomplish that goal. However, BDG is not offering the community any choice in that regard, and no constructive conversation on this subject has been encouraged. EW.5

   None of the "active uses" that BDG prefers over a hotel lobby in Cleveland Circle (specifically, a large restaurant, in addition to a separate hotel restaurant that the plan also includes) is as desirable from the neighborhood's perspective as a properly oriented hotel building that could provide, via its lobby, "the eyes" on the Circle, especially at night.

In fact, having a large restaurant/bar (that is not a part of the hotel) facing Cleveland Circle on the most prominent corner of the development is a very problematic choice from the neighborhood perspective. Such a restaurant is extremely likely to become a center of local student nightlife. Given the close proximity of many homes and Cassidy Park, the community and the neighbors strongly favor a quiet hotel restaurant that overlooks the park, not one that would become a focal point of Cleveland Circle's nightlife scene. EW.6

The amount of ground floor space that can be developed on the combined Cinema/Applebee's parcel is significant. The Prototype Hotel Lobby Floor included in the EPNF is just a prototype applicable to suburban locations; it can be tweaked or changed considerably in urban locations where space is limited. For example, certain rooms/functions can be located on the second floor if they cannot all be made to fit on the ground floor. EW.7

We disagree with the suggestion that locating the hotel on the Circle would minimize the queuing area for hotel arrivals. In fact, it's BDG's current courtyard design that minimizes the queuing area for hotel arrivals, while also creating conflicts between hotel guest arrivals and motorists who are residents or visitors to the complex. EW.8

With the hotel building facing Cleveland Circle, the amount of curbside space available to hotel arrivals accessing the rear entrance to the lobby (where check-ins must occur away from Chestnut Hill Ave.) would remain unchanged from the current plan. However, the ease of access for hotel guest arrivals would markedly improve due to being separated from short-term parking for the residential component.

Additionally, if the developer wishes to have an even longer queuing area for hotel arrivals, it can be accomplished by adopting a different site plan (the so-called Alternative Plan).

2. **Design a visually significant "landmark" structure facing Cleveland Circle, to emphasize and enhance Cleveland Circle's gateway location.**

BDG Response: The exterior design does include a focal point and the tallest part of the structure at this location. The Project's Design team is currently studying multiple floor plans in an attempt to make a pedestrian connection from this focal point to the hotel lobby. This design revision will be a key point of discussion with the BRA Design Team, the IAG, and the Brookline DAT.

Community Response: The effort to accentuate the gateway location with a landmark design has been entirely inadequate and unsuccessful. Creating a pedestrian connection to the courtyard is not going to result in a "landmark" structure overlooking Cleveland Circle. A hotel building with a prominent vertical corner feature would be far more effective at emphasizing the area's gateway

character. Our goal is for the hotel entrance to be the focal point on the ground level rather than the restaurant entrance (whose name can change every few years) in the current proposal. EW.9

3. **Ensure a high quality hotel brand, with all essential hotel amenities, including meeting/conference rooms -- but no function rooms for larger social events.**

BDG Response: Recommendation Implemented - Hotel Brand has been upgraded to Hilton Garden Inn.

Community Response: We have heard the promise to that effect, but have not seen anything that substantiates a commitment of any kind from Hilton, or even that a conversation has taken place. It is essential that the BRA ask BDG to provide credible and verifiable documentation supporting that claim. EW.10

4. **Situate residential units on the portion of development site overlooking Cassidy Park and the Reservoir, away from the traffic and commercial activity of Cleveland Circle and Chestnut Hill Avenue.**

BDG Response: The Developer's Plan does maximize the Cassidy Park and Reservoir views, but does place the buildings edge at the front of the site. This location allows the residential units to be shielded from the MBTA R.O.W., while also being positioned directly over the underground parking facility for convenient ingress/egress. This placement also allows for the hotel to have the maximum queuing capacity for hotel arrivals.

Community Response: In the BDG plan submitted as part of the EPNF, most proposed housing units' desirability is seriously compromised. 31 units (nearly 40%) have no views (they are looking directly into hotel windows across the courtyard), while additional 24 units (30%) are too close to the road noise and disturbance-causing commercial uses to be able to provide quiet enjoyment and a good quality of life for long-term residents. This amounts to 70% of units being suboptimal, if not substandard. EW.11

We question BDG's rationale for creating housing (and hotel rooms) with no views. Both Clinton Rd. homes and many Waterworks condos are located directly along the D Line tracks with practically no adverse effects on their quality of life. It is safe to say that none of them would trade nice open views from their windows for no views at all, in exchange for being shielded from the trolley corridor by a wall of hotel windows.

It is also safe to say that no residents with homes adjacent to the D Line would prefer their homes to be right in the midst of Cleveland Circle (where many housing units would be located under BDG's current plan).

Providing views to all housing units and increasing their desirability by buffering them from Cleveland Circle's traffic and commercial uses is easily achievable with a

different site plan design.

Moving the housing component farther away from Cleveland Circle would not preclude residents' access to the underground garage (since there are two sets of stairs and elevators in the garage, their allocation to the residential and hotel use could be switched). However, residents access to the garage might not be even necessary because surface parking spaces in the "tail" area of the Cinema parcel could be allocated to the housing component.

Lastly, it is not true that the current plan offers the maximum queuing capacity for hotel arrivals. With housing moved farther away from Cleveland Circle (toward the Waterworks), the hotel use would have the project's interior curb that is roughly parallel to Beacon Street entirely to itself. EW.12

Additionally, it is possible to further expand the queuing capacity for hotel arrivals by simply moving the access/egress roadway to the southern boundary of the Cinema parcel. Doing so would create a long curb, parallel to Chestnut Hill Ave., on the interior side of the development, making it possible for hotel arrivals to stop there briefly when necessary.

5. **Ensure that residential units are spacious and upscale in character, "condo-quality", with unit-dedicated parking and amenities designed for long-term occupancy.**

BDG Response: Recommendation Implemented - The project scope was revised to eliminate 30,000 SF of office space, which was replaced with 90,000 SF of residential space. The traffic generation of these two components is nearly identical. The residential use was sized to allow elimination of the shared parking credit and to support the addition of structured, non-surface parking. The residential units will have upscale characteristics to allow a future conversion to condominiums. There will be unit dedicated parking in the underground garage, access to hotel pool and fitness center, and park and water views. Units will be sized for sale in the $500k to $750k price range.

Community Response: The community did not ask for a volume of housing whose traffic impacts would be equal/identical to those of the previously proposed 30,000 SF office use. Instead, the community asked for a residential building not much bigger than the previously proposed office building, in order to lower traffic impacts.

The proposed housing is not condo quality, except perhaps as investment condos to be used for rentals in perpetuity. This is unacceptable. The neighborhood needs owner-occupied housing. Most units are just 1-bedroom, none have access to storage, too many (almost 65%) have no views or are located over noisy locations/uses. There is no visitor parking. The courtyard design guarantees frequent and aggravating conflicts between users. There are 20 apartments per floor, which will result in overuse of common areas, and is simply not suitable for up-scale condos that BDG promised in community meetings, and again in its EPNF. EW.13

Access to the hotel's fitness room and small pool is an equivalent of perhaps a $100 per month gym membership, and is not going to compensate for the above-mentioned deficiencies. Therefore, the $500k - $750 price range for this type of housing (directly in the commercial/high-traffic sphere of Cleveland Circle, instead of being closer to the Waterworks and Reservoir) appears abjectly unrealistic.

6. **Create the maximum amount of pedestrian-friendly street-edge retail on building facades facing Chestnut Hill Avenue and Cleveland Circle. Restaurant space should be oriented toward the park and have an outdoor seating area.**

BDG Response: The current plan utilizes the entire Chestnut Hill Avenue and Cassidy Park edge for active uses. The design renderings detail the floor to ceiling glass facades at all retail, restaurant and hotel edges. The restaurant is at the focal corner of the site and has an outdoor dining terrace. The Hotel's pool and fitness center have park views and the hotel dining area has an outdoor dining terrace. The proposed driveway location does bisect the Chestnut Hill elevation, for reasons that are detailed below in Response #9.

Community Response: The Chestnut Hill Ave. side of the development cannot be considered pedestrian-friendly with the busy access/egress roadway bisecting that block in the middle, and impeding pedestrian access from Cleveland Circle to the proposed retail space. EW.14

On the Cassidy Park side, the restaurants' outdoor tables/terraces are in the way of what should be an unobstructed sidewalk leading to the back of the site, to provide pedestrian connection to the rest of the development, and perhaps through the Park, to the Waterworks development. EW.15

The proposed building design, which encloses the courtyard on the D Line side, puts a spatial "squeeze" on the project (due to the need to retain adequate courtyard space), so it does not leave enough room for a proper sidewalk and a properly sized permanent restaurant patio(s) on the Cassidy Park side.

(Note: BDG stated in recent meetings that at the request of the Parks Department it had widened the sidewalk on the Cassidy Playground side by 5 feet. A question then arises, which part of the project became smaller by 5 feet as a result? Perhaps sidewalks inside the courtyard, which were narrow to begin with?)

The proposed large restaurant is located directly in Cleveland Circle, and its outdoor tables are too close to heavy vehicular traffic; plus they overlook, primarily, an adjacent parking area. This is not what the community had in mind when we asked for a restaurant with park views. EW.16

The developer has reserved better park views for the hotel restaurant, which may or may not be a full-service public restaurant. In fact, the current layout suggests that it might only serve breakfast and afternoon snacks for hotel guests.

The new complex needs, and can realistically accommodate, just one large full-service restaurant. The neighborhood wants this restaurant to be an integral part of the hotel (connected to the lobby). It should be located where the hotel fitness area and residential lobby are in the current plan (and roughly where the Applebee's terrace is right now) – because that part of the site offers the best ground-level views toward the Park. EW.17

(Suggestion: the fitness room and pool would be best located in the vicinity of the Cassidy Park field house, and for that reason have at least partially frosted glass windows. This location would make the fitness facility directly accessible to the relocated residential component.)

7. **Provide ample/sufficient dedicated parking for each designated use.**

BDG Response: Recommendation Implemented -The parking that is provided meets or exceeds BTD standards for each use and in total without any shared parking credits. The Developer changed the project scope to add 142 underground parking facility.

Community Response: This response is most baffling since the proposal does not provide adequate parking for the medical office use component, or the large restaurant, or the visitors to the residential building, or adequate short-term parking that will be needed for deliveries and other service vehicles. EW.18

Therefore, the recommendation has not been implemented. The project is far from being self-sufficient in terms of satisfying its parking needs. (By some estimates, 100 additional parking spaces would be needed to make this project comply with zoning.)

8. **Create properly sized vehicle turnaround/drop-off area inside the project site for all vehicles providing services/deliveries to all uses within the site. This area needs to be capable of servicing concurrently all site uses and all anticipated vehicle sizes and types, including delivery vans/trucks, moving trucks, tourist buses, and emergency vehicles.**

BDG Response: Recommendation Implemented: The Project will provide two service areas. All delivery vehicles will enter and exit via the Chestnut Hill Avenue driveway and all service and loading will take place off street. Adequate roadway width and clearances will be provided for truck access, egress, and circulation within the site. The associated truck movement paths are shown in Appendix A and were developed using AutoTURN, an engineering software program that analyzes and evaluates vehicle maneuvers.

Community Response: Recommendation has not been implemented. Given the multiple uses that will all converge in the courtyard, and the constrictions to traffic in the courtyard design, we believe there will be serious problems with traffic circulation on site. It is also evident that delivery trucks for the proposed large EW.19

restaurant on the corner, moving trucks, tourist buses, and emergency (fire) vehicles still cannot be properly and safely accommodated on site.

The AutoTURN software calculates the room that is needed for vehicles to maneuver, but cannot indicate, or do anything about, the congestion (and the potential for frequent fender-benders or even more serious collisions) that will occur when too many vehicles are present in the courtyard, reversing or trying to exit from the underground garage.

The idea, as stated by BDG, that a hotel employee will be available to do double duty to direct traffic in the courtyard (not exclusively hotel-related traffic) is a testimony in itself that problems with traffic circulations are expected to occur. The courtyard will be a source of constant aggravation and cause conflicts among various users. (For example, why would a resident unloading furniture in the courtyard, or a service person coming to the office building, be subject to a hotel employee telling them where and for how long they can occupy room in the courtyard?)

Additionally, the current plan creates a very bad "bottleneck" area conducive to serious vehicular conflicts near the loading area for the hotel. Each time large hotel delivery trucks and vans have to make a sharp 90-degree turn in reverse (either because they need to position themselves backwards in the loading dock, or need to back out of the dock to return to the courtyard and exit the site), they will be encountering vehicles heading for, or exiting the surface parking area in the rear of the site. As a result, congestion and difficult to untangle gridlock is likely to happen at times in that area too (not just in the courtyard).

9. **Provide vehicular access/egress road to/from the development on Chestnut Hill Avenue next to the southern boundary of the Cinema site (location of the current Cinema access roadway). Provide privacy fencing and landscaping buffer to screen the view of access road from homes on Clinton Road. Create permanent traffic circulation pattern on site that prevents any cut-through traffic, or service vehicles, from exiting via the Waterworks easement road.**

BDG Response: The Development team has studied three possible locations for the project's entry drive. The northern edge conflicts with Green Line Trolley movements. The Southern edge requires the current stop line to be moved 135 feet to the south. This placement will increase traffic clearance time to Cleveland Circle, thus less "Green" time from all intersection approaches. An additional negative factor is that with this placement, the traffic queue length will extend past the Clinton Road/Chestnut Hill Ave. intersection.

Privacy screening and or fencing will be installed to mitigate traffic views. The current conditions at the site has a significant portion of the building along the R.O.W.; however, there is and will be significant separation from the existing and proposed buildings from the nearest rear yard shed building: 120 feet.

Traffic signage and control devices will be placed to create a permanent traffic control pattern that will prevent cut-through and service vehicle traffic on the egress roadway.

Community Response: BDG has too quickly dismissed the possibility of locating the access/egress roadway at the southern boundary of the Cinema site (where the main Cinema roadway is) by saying that it would contribute to traffic back-ups on Chestnut Hill Ave. in Brookline.

According to Brookline neighbors, the Chestnut Hill Ave./Clinton Rd. intersection can be protected from back-up problems by installing "Do Not Obstruct the Box" intersection markings. Since traffic often backs up across this intersection today at peak periods, any extra traffic that this project will generate will lead to back-ups regardless of where the access/egress roadway is located.

The congestion in the courtyard and its potential to cause vehicle back-ups on Chestnut Hill Ave. (incl. Cleveland Circle) has been completely ignored by BDG and its traffic consultant. (Note: the assumptions regarding curb use activity inside the courtyard are not credible because the traffic consultant has severely underestimated the number of deliveries, service vehicles, and other pick-ups and drop-offs pertaining to all of the different uses that the proposed courtyard would have to accommodate.) EW.20

The clear advantage of locating the access/egress roadway at the southern boundary of the Cinema site is that the volume of traffic in the courtyard would be significantly reduced due to the presence of a direct vehicular passage to the underground garage, as well as the rear parking area. (That roadway could also provide straight direct, access to a drop-off/pick-up area for the residential use that the community would like to see moved to that part of the site).

Another very significant advantage of locating the access/egress roadway near the southern boundary of the Cinema property is that a new south-bound "shoulder lane" that BDG proposes to create on Chestnut Hill Ave. (for vehicles coming from Cleveland Circle and intending to turn right onto the project site) would more than double in length. So at times when the interior of the complex happens to be congested (e.g., multiple hotel arrivals coinciding with multiple deliveries or moves), a longer shoulder lane on Chestnut Hill Ave. would be able to store development-bound vehicles, preventing them from getting stranded at the edge, or in the middle of Cleveland Circle.

The increased clearance time for north-bound traffic through Cleveland Circle needs to be studied by traffic engineers to see if they can improve these intersections and their flow. Even if they are unable to, it still seems that the many advantages of locating the access/egress roadway near the southern boundary of the Cinema property outweigh the single disadvantage of presumably very slightly longer clearance time. EW.21

Historically, what we refer to as the Cinema roadway dates back to at least 1875. The site used to be owned by a coal company, and the road provided connection between Chestnut Hill Ave. and the rear of the Waterworks Pumping Stations where coal shipments were brought by rail. So it is a long-standing vehicular route, albeit a nameless one – but it is nevertheless the natural access/egress to the Cinema site, and the current project should respect that.

10. Utilize the existing crescent roadway/parking area in Cleveland Circle (adjacent to Cassidy Playground) to provide for some quick, ancillary vehicle/taxicab pick-up and drop-off options at the hotel entrance facing the intersection of Beacon Street and Chestnut Hill Avenue.

BDG Response: This area is public property and this request should be deferred at this time.

Community Response: Agreed.

11. Provide ample sidewalk setback from Chestnut Hill Avenue that can comfortably accommodate street trees.

BDG Response: Recommendation Implemented - Sidewalk width averages 15' along the property frontage, which is sufficient to include trees.

Community Response: From what point is the 15' sidewalk measured? If it's from the current curb of Chestnut Hill Ave., that width might be insufficient (for comparison, the treeless sidewalk in front of the commercial block on Beacon Street in Cleveland Circle is 10 feet wide and entirely inadequate). Chestnut Hill Ave. traffic can be very intense – there is a need for a buffer. But BDG is also planning to create a right-turn only shoulder lane – how does the 15' sidewalk factor into that? The EPNF plans have no measurements, and it is not possible to verify this and other claims. EW.22

EW.1 Traffic impacts

While the resulting traffic impacts from the Project are minimal and will not noticeably affect the existing transportation environment in the study area, the Proponent is committed to improving the operation of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. This intersection is a major crossroads location and operates under congested conditions during peak periods. Through signal phasing changes to better allocate green time, geometric changes to improve efficient movement of vehicles, and enhancements to crosswalks and pedestrian controls, delays for both vehicles and pedestrians will be reduced. The Proponent has been working with the MBTA to improve out-of-service trolley maneuvers from Beacon Street into the MBTA Yard at the Reservoir Station on Chestnut Hill Avenue.

Please see Section 2.4.1 for a discussion of mitigation measures. With proposed mitigation at Beacon Street/Chestnut Hill Avenue, the resulting operation at Cleveland Circle will be LOS D in both the a.m. and p.m. peak hours.

EW.2 Medical office space

Please see response provided in Section 7.2.5.

EW.3 Location of uses and housing profile

Please see responses provided in Sections 7.2.2 and 7.2.3.

EW.4 Enhance gateway location

As discussed in Section 7.2.3, it was determined that a hotel on the corner was not the best option for the site. However, the design continues to include a taller structure on Cleveland Circle, and the corner in the redesign is chamfered so that the corner is cut away and flattened. The resulting flat surface contributes to the overall circular urban form.

EW.5 Hotel location

Please see response provided in Section 7.2.3.

EW.6 Corner restaurant

Please see response provided in Section 7.2.3 and the response to comment BPD.5.

EW.7 Hotel ground floor design

The hotel will be a Hilton Garden Inn. The chain provides a basic prototype—in essence a floor plan—that is then adapted to a specific location. In this proposal, the main entry is set back from Chestnut Hill Avenue to allow for the required generous vehicular drop-off and pick-up area. The entry lobby is a double-height space that is open and inviting. The reception desk is at one end of the lobby and is highly visible from the courtyard. Directly adjacent to the lobby, as per Hilton Garden Inn standards, there is a hotel bar and restaurant. The restaurant has an outdoor dining terrace that overlooks the park. All of the services for the hotel are placed in the back of the building. Loading bays and trash areas are tucked away behind the building so that they are out of public view. A service corridor that runs along the back of the building connects with the hotel kitchen and other service-type functions. The large area that is located between the residential lobby and the hotel is a shared recreation area. This includes an in-ground pool, outdoor pool terrace and fitness room. Finally, there is a secondary pedestrian entrance which can be accessed from Cassidy Playground. Guests will be able to walk through the park and through this side entrance that leads directly to the hotel's main lobby.

EW.8 Courtyard

Please see response provided in Section 7.2.7.

EW.9 Hotel entrance should be focal point

The previous design marked the entrance to the hotel with a two-story entry "portal" and a projecting canopy that included hotel signage. The hotel is located in roughly the same location, but through its design expression, detail and more prominently displayed signage, it now has an enhanced visual presence (see Figure 1-18 in Chapter 1). The design relies on its symmetry and a vertically elongated centerpiece to draw attention. The signage for the hotel is placed on top of the centerpiece which makes it far more visible than in the previous design.

EW.10 Hotel flag

The hotel flag proposed for the site is the Hilton Garden Inn. The Hilton Franchising representative has agreed to accept the Proponent's application for this location.

EW.11 Courtyard views

On the ground floor, the south side of the building is very transparent. Large expanses of glass storefront allow for views through the building and to the park beyond. And since this façade is south-facing, there is generous planting and trees along this edge. On the upper floors, about one-quarter of the hotel rooms face into

the courtyard. These rooms will look directly over the landscaped island in the courtyard and also directly at the landscaped areas along the face of the building. As the hotel is a little higher than the residential building that is directly opposite, guests on the upper floors will have distant park views. One-third, or seven of 21 residential units per floor will look into the courtyard. Five of the seven will receive the desirable direct southern exposure. The other two residential units actually look out across the courtyard and to Chestnut Hill Avenue.

EW.12 Courtyard queuing capacity

Please see response provided in Section 7.2.7.

EW.13 Housing profile

Please see response provided in Section 7.2.2.

EW.14 Pedestrian friendliness of access road

At the Project main site driveway at Chestnut Hill Avenue, a new crosswalk will be installed as part of the intersection improvements. Pedestrians will be able to safely cross Chestnut Hill Avenue between the Project and the sidewalk directly serving Reservoir Station. Pedestrians walking between the Project and the Cleveland Circle station can either use the new crosswalk or walk north on Chestnut Hill Avenue and cross at Beacon Street. The proposed mitigation improvements to the Beacon Street/Chestnut Hill Avenue intersection include changing from an exclusive pedestrian walk phase to concurrent pedestrian walk phases, thereby reducing delay for pedestrians. Please see Section 2.4.1 for a discussion of proposed mitigation and an explanation of concurrent phases.

The Proponent will enhance the pedestrian environment and pedestrian safety along the Chestnut Hill Avenue corridor by reducing the number of existing curb cuts at the site from four to one, and installing new sidewalks adjacent to the Project Site.

EW.15 Room for restaurant patio and sidewalk

The edge of the site along Cassidy Playground now includes a five-foot-wide sidewalk that connects the hotel and residential lobbies to Chestnut Hill Avenue. Outdoor seating in this area is no longer proposed.

EW.16 Location of restaurant on Chestnut Hill Avenue

Please see response provided in Section 7.2.3.

EW.17 Include only one restaurant

The hotel restaurant will be designed primarily for the guests of the Hilton Garden Inn. The menu offerings and hours of operation are established by the Hilton Brand management teams to offer consistent food, beverage, and service throughout the national chain. While these hotel franchise standards serve the needs of the hotel guests, hotel restaurants have been generally unsuccessful in serving the local community. The second, independently operated, restaurant will be designed to meet the needs of local diners.

EW.18 Parking

Please see response provided in Section 7.2.9.

EW.19 Courtyard

Please see response provided in Section 7.2.7.

EW.20 Backups on Chestnut Hill Avenue from courtyard

Please see response provided in Section 7.2.7.

EW.21 Study northbound traffic through Cleveland Circle and southern boundary driveway

The Project Site driveway at Chestnut Hill Avenue will be signalized and tied into the existing signal operations at Beacon Street/Chestnut Hill Avenue. The proposed mitigation measures at the Chestnut Hill Avenue/Site Driveway intersection have been revised since the Expanded PNF. The analysis now reflects clustered operation of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection and the Chestnut Hill Avenue/Site Driveway.

Please see Section 2.4.1 for a discussion of mitigation measures.

EW.22 Width of sidewalk and street trees

Widths of sidewalk along Chestnut Hill Avenue will vary, ranging from 12 feet to 20 feet.

Lopez, Erico

From: Marla Scheer [mlbschee@yahoo.com]
Sent: Sunday, October 07, 2012 4:03 PM
To: Lopez, Erico
Cc: cleveland-circle-community@googlegroups.com
Subject: CINEMA CIRCLE PROJECT COMMENT LETTER

October 7, 2012

Mr. Erico Lopez
Project Manager, Cinema Circle Project
Boston Redevelopmenet Authority

Dear Mr. Lopez,

I am writing my comment letter regarding the Circle Cinema Project following the meeting held for concerned citizens on September 20, although I wonder how much good it will do, as I, as well as many Cleveland Circle residents, have said it all before.

With the last hearings heId, I made the initial objection to the completion of the project in two phases, and the entire project is now supposed to be completed in one phase.

My two other main objections to the project should be adopted as well; namely, that the hotel should be the centerpiece of the project and that it should front Cleveland Circle, preferably with a circular driveway. A circular driveway would not only present an attractive entry to the hotel but would also probably relieve some of the traffic problems, which the magnitude of this project will most certainly create. The hotel should be the focal point, not a box-like structure tucked in the back behind the office buildings, as it is now planned. MS.1

The traffice study presented at the meeting on September 20th, stating that there would be a negligible increase in traffic from 2012 to 2017 with the project as presented is laughable, and I shall reiterate what I stated at that meeting - that is, only if there is a mass exodus from the Cleveland Circle area because of this project. MS.2

And finally, as I boisterously stated at that meeting, this project is simply TOO MASSIVE FOR THE SITE. In his effort to squeeze the maximum profit out of every square inch of the site, the developer is totally disregarding the congestion to the area as well as the face of the neighborhood. He is disregarding the needs of the community, and the steadfast opposition of the community. The only people in favor of the project as it now stands are the developer, the design team, and the union workers who will build it, and they are not residents of the Cleveland Circle community. MS.3

Thank you for your time.

Respectfully yours,

Marla Scheer
Englewood Avenue

7.5

Comments from the Public

7.5 Comments from the Public

Marla Scheer

MS.1 Hotel location and courtyard

Please see responses provided in Sections 7.2.3 and 7.2.7.

MS.2 Traffic study

Please see response provided in Section 7.2.8.

MS.3 Project size

Please see response provided in Section 7.2.1.

Lopez, Erico

From: Pamela Manolakis [pamlakis@gmail.com]
Sent: Sunday, October 07, 2012 5:00 PM
To: Lopez, Erico
Subject: 375-399 Chestnut Hill Avenue, Circle Cinema Site

October 7, 2012

Mr. Erico Lopez

Boston Redevelopment Authority

One City Hall Square, 9th Floor

Boston, MA 02201

Via email: erico.lopez.bra@cityofboston.gov

Dear Mr. Lopez:

As an owner of a condominium at the Waterworks complex in Cleveland Circle, I am writing to express my concern about the Boston Development Group (BDG) plans for 375-399 Chestnut Hill Avenue, Circle Cinema site.

Having attended public meetings last year and this, regarding this development, it is unfortunate that the current plans of BDG chose to not address the concerns of the Allston, Brighton, Cleveland Circle, and Waterworks neighborhood groups.

BDG's proposal for the Circle Cinema site needs significant changes:

- The projected hotel and residential units, medical offices and restaurant, are too big and dense for the area; the proposal needs to be scaled down PM.1
- Because of the density of the project, the traffic volumes and parking requirements are seriously underestimated (this based on when the studies were carried out); parking for PM.2

residents, medical office visitors, restaurant patrons, visitors, delivery and maintenance vehicles, taxis, etc., needs to be reevaluated and accommodated; the ensuing traffic uptick needs to be revisited

- BDG's plans will increase the traffic and significantly impact the exit driveway planned through the Waterworks site for hotel guests. This exit driveway is not designed (blind spots) to handle the amount of traffic that would be generated by a high-density project. PM.3

Strong consideration must be given to the safety of using the narrow driveway between the Waterworks Park and Cassidy Playground as children play during the summer months, and schools and sports leagues use the park on a daily basis. It is also not uncommon to have people walking in the driveway, and to having lawn care personnel working along the driveway. The increased volume of traffic exiting would present the potential for accidents; as well as long delays when merging onto Beacon Street heading in either direction.

- The architectural design of the project is inappropriate for the surrounding area; the materials used should complement the Cleveland Circle area, not detract from it PM.4

I am very much in favor of a development project that would revitalize the Circle Cinema site, just not the current Boston Development Group's proposal. I choose to live at the Waterworks because of its being part of Boston, access to the Chestnut Hill reservoir, access to a major university, Cassidy Park and its resources, and of course Cleveland Circle businesses.

I therefore, respectfully request, that you reject the current Project Notification Form for 375-399 Chestnut Hill Avenue.

Sincerely,

Pamela A. Manolakis

2400 Beacon Street

Watermark 508

Chestnut Hill, MA 02467

PM.1 Project size

Please see response provided in Section 7.2.1.

PM.2 Traffic volumes and parking requirements

Please see responses provided in Sections 7.2.8 and 7.2.9.

PM.3 Waterworks driveway

Please see response provided in Section 7.2.4.

PM.4 Architecture context

Please see response provided in Section 7.2.6.

October 7, 2012

Mr. Lopez:

I write in response to your request for comments regarding the Boston Redevelopment (BRA) project entitled:

375-399 Chestnut Hill Ave-Cleveland Circle Cinema

I am opposed to this project as described in the project's Extended Project Notification Form (EPNF) dated August 16, 2012, for the following reasons:

INSUFFICIENT TRAFFIC MANAGEMENT RESOURCES: There is a large disparity between the vehicular access requirements of the project components (hotel, restaurant, retail, residential, medical office) and vehicular access resources (including traffic lanes, short-term waiting areas, loading docks, and allocated parking spaces) provided by the project. SG.1

> *Improvement:* The requirements of the Brookline zoning overlay have forced constraints and complexities on the project with no tangible benefit to project owners, employees, customers, guests, residents, or abutters. An exit-only/right-turn only lane from the project onto Chestnut Hill Avenue would allow transient, pass-through traffic such as deliveries to and pick-ups from all project components to flow cleanly through the inner courtyard rather than coming in conflict with vehicles coming to rest in the project complex.

INSUFFICIENT ATTENTION TO AIR QUALITY CONSIDERATIONS: The developer's EPNF includes air quality analysis at four locations between 150 yards (Cleveland Circle) and 1250 yards (Route 9) away from the project. The EPNF pays no attention whatsoever to the location that is most important; viz. the project itself. Air quality within the project and, in particular, in the project's inner courtyard will greatly affect the hundreds of people that will be flowing through the project every day. There will be at least 500 vehicles arriving at, waiting within, exiting from, and driving through the inner courtyard every day. The exhaust fumes from these vehicles will be trapped in the closed cylinder created by the buildings surrounding the small (~20,000 sq ft), highly-trafficked inner courtyard. SG.2

> *Improvement*: Require the developer to perform an air quality analysis of the project's inner courtyard to the same level of detail as is provided in four locations that were studied.

Thanking you for your attention I remain

Cordially yours,

Scott Guthery

2400 Beacon Street #208
Boston, MA 02467

SG.1 Exit only, right-turn lane onto Chestnut Hill Avenue

Locating the Project's Chestnut Hill Avenue site driveway further south would create additional traffic issues compared to the proposed central location. At the central location, a traffic signal and stop line already exists on Chestnut Hill Avenue northbound at the MBTA Yard. This existing signal, which is part of the Beacon Street/Chestnut Hill Avenue signal system, controls the flow of traffic into Cleveland Circle and allows out-of-service MBTA trolleys to move into and out of the Yard. As planned, the Project Site driveway at Chestnut Hill Avenue will be signalized and tied into the existing signal operations at Beacon Street/Chestnut Hill Avenue.

If the Project driveway was moved south, the associated driveway signal control would require that the stop line on Chestnut Hill, which is currently just south of the MBTA Yard, be relocated further south near the Reservoir Station drop-off driveway. Such a plan would cause longer traffic queues to block the adjacent intersection of Chestnut Hill Avenue/Clinton Road more frequently. Maneuvers out of the Reservoir driveways would also be blocked more frequently. Additional clearance (yellow) time would need to be allotted to northbound Chestnut Hill Avenue, causing longer delays at the Beacon Street/Chestnut Hill Avenue intersection.

Please also see Section 2.3.2.12.

SG.2 Courtyard air quality

Please see response to comment CCES.12.

Lopez, Erico

From: Meghan McGee [meghanamcgee@gmail.com]
Sent: Sunday, October 07, 2012 12:32 PM
To: Lopez, Erico
Subject: BRA Comment: Support of 375-399 Chestnut Hill Ave Proposal

October 7, 2012

Mr. Erico Lopez,
Boston Redevelopment Authority

Dear Mr. Lopez,

I am pleased to write of my conditional support of this development. Four generations of my family have lived at 340 Faneuil St. in Brighton, where I currently reside. I lived for more than a decade on Chestnut Hill Avenue within 500 feet of the old Circle Cinema. I am keenly aware of Cleveland Circle's traffic issues

We are fortunate in these challenging economic times that a developer has stepped forward willing to risk significant pre-development capital, given the challenges of the assembled sites. Cleveland Circle has long been in need of private investment. The Cinema building has greatly decayed since being closed in 2008. This development will improve the appearance of this visible site, and a limited service hotel will add economic vitality to the existing Cleveland Circle businesses, as will the office component. I also believe that a quality restaurant will be well used by neighbors from the diverse surrounding neighborhoods.

My only qualification in the Bra's approval relates to traffic. I believe the proposal will improve upon existing traffic conditions if a portion of the exiting vehicles are required to use the rear driveway that Cinema patrons for years were required to use. I also hope the housing could be made more family oriented. MM.1 MM.2

On behalf of the many long-standing working Brighton families, I urge your approval of the Cinema's timely re-development.

Sincerely,

Meghan McGee
340 Faneuil Street, Apt 2
Brighton, MA 02135

MM.1 Waterworks driveway

Please see response provided in Section 7.2.4.

MM.2 Family-oriented housing

Please see response provided in Section 7.2.2.

Lopez, Erico

From: Druckman, Eleanor [druckman@bu.edu]
Sent: Friday, September 21, 2012 9:05 AM
To: Lopez, Erico
Subject: 375 - 399 Chestnut Hill Avenue - COMMENT

Dear Erico:

I wanted to follow up the comment I made last night at the BRA Public Meeting. Cleveland Circle becomes very congested (with cars, bicycles and pedestrians) as a result of Boston College athletic events (football games), as well as public events such as the Boston Marathon and the Jimmy Fund Walk.

I believe there are 10 "home games" during the Boston College football season. These games take place on Saturdays. During these Saturday events, Cleveland Circle is saturated with people and cars. There is complete gridlock. The local police direct traffic at Cleveland Circle. The State Police close off Chestnut Hill Driveway. (It's a mess). ED.1

The same is true for the Marathon and other charity events that use Commonwealth Avenue and Beacon Street for walks and runs.

I have been a property owner/resident since 1998. My condo abuts the Chestnut Hill Reservoir. I can tell you from personal experience that the "invasion" or "congestion" on these days is very intense. Please take this into consideration as you review the proposal for development of 375 – 399 Chestnut Hill Avenue.

Thank you.

Eleanor Druckman
1990 Commonwealth Avenue
Brighton, MA 02135

ED.1 Traffic during events

The study area is a vibrant, urban neighborhood, close to a major college campus. Traffic activity associated with most Boston College (BC) sporting events occurs on weekends or on weeknights. The Project, with its mixed use of hotel, residential, medical office, and retail/restaurant spaces will generally have steady activity throughout the weekday and somewhat less activity on weekends. As such, the Project will not exacerbate traffic conditions during BC sporting activities.

Lopez, Erico

From: Eleanor Druckman [eleanor.druckman@gmail.com]
Sent: Sunday, September 23, 2012 9:59 AM
To: Lopez, Erico; jmeunier@bdg1.com
Cc: Eva Webster
Subject: Additional traffic considerations

Dear Erico and John:

I wanted to reiterate my concerns about "special event" traffic gridlock in Cleveland Circle. Currently, the gridlock occurs on Saturdays when Boston College hosts "home" football games. On these Saturdays, local police direct traffic at Cleveland Circle and the State Police close off Chestnut Hill Driveway. It's a mess and a headache for residents. ED2.1

Also, please don't forget the Boston Marathon and other charity events that use Cleveland Circle for walks, runs, etc.

Finally, have you considered how the proposed BDG project will impact the proposed development of the gas station on Chestnut Hill Avenue (between Commonwealth Avenue and Beacon Street): When considered together, these two projects will have significant traffic implications for Chestnut Hill Ave, Cleveland Circle and the surrounding area. ED2.2

Thank you.

Eleanor Druckman
1990 Commonwealth Ave
Brighton, MA 02135

ED2.1 Traffic during events

Please see response to comment ED.1 above.

ED2.2 Impacts in combination with proposed development at gas station

The study team consulted with the City of Boston and Town of Brookline to determine which future projects should be included in the future year analysis. The gas station site was not identified. Please see Section 2.3.1.1. Note that it is standard procedure to only include projects that have received permitting approvals.

Lopez, Erico

From: Eleanor Druckman [eleanor.druckman@gmail.com]
Sent: Sunday, October 07, 2012 11:29 AM
To: Lopez, Erico
Cc: cleveland-circle-community@googlegroups.com; Eva Webster; jmeunier@bdg1.com
Subject: BDG Proposed Plan for Cleveland Circle

Mr. Erico Lopez
Project Manager
Boston Redevelopment Authority

Dear Mr. Lopez:

I have lived at 1990 Commonwealth Avenue since 1998. I use public transportation to commute to my job. I am involved in the community and have attended most of the public meetings at which BDG presented plans for developing the Circle Cinema/Applebees properties.

I strongly object to BDG's proposed plan. It is too dense for the site. It will make traffic unacceptable and unsafe for vehicles and pedestrians. It does not take into consideration the proximity to Boston College and the traffic produced by collegiate athletic events. It will strain the already overcrowded MBTA Green Line. It will negatively impact the Waterworks Condominiums by misusing (and overusing) the access driveway that runs close to their building. It fails to provide housing that will attract and retain families. There is not enough parking for all of the uses planned, including people who will drive to the restaurant. The traffic report that was presented is not credible, as it is based on data from low-traffic days, and does not realistically assess the current traffic patterns or the impact of the proposed project. I join John Spritzler in concluding that BDG has lost trust and credibility in offering an inadequate traffic assessment. ED3.1 ED3.2 ED3.3 ED3.4 ED3.5 ED3.6 ED3.7

There is no need for medical office space in Cleveland Circle. The BDG proposal should focus on a quality hotel, well-appointed residences and amenities such as restaurants, small retail shops, a health club, possibly a day care center. It should be a place that will attract current residents of the greater Cleveland Circle area who may choose to walk, bike or take the MBTA to an attractive destination for shopping, eating, browsing and recreation. It should enhance the neighborhood, not overburden it. ED3.8

I believe that the residents of Boston, Brookline and Newton have given numerous suggestions for what would make a successful "win-win" project for the developer as well as the residents. It is up to the BRA to refine the approval process so that the residents' views are given more consideration and weight.

Thank you.

Sincerely,

Eleanor Druckman
1990 Commonwealth Ave
Brighton, MA 02135

ED3.1 Density

Please see response provided in Section 7.2.1.

ED3.2 Traffic during events

Please see response to comment ED.1 above.

ED3.3 MBTA Green Line capacity

See Table 2-12 for the estimated new Project trips by travel mode and time period. At most, the Project will generate 33 new hourly transit trips (per direction), spread over available MBTA services on the Green Line B Branch, Green Line D Branch, and Bus Routes 51 and 86. The area transit services will be able to accommodate these new trips.

ED3.4 Waterworks driveway

Please see response provided in Section 7.2.4.

ED3.5 Family-oriented housing

Please see response provided in Section 7.2.2.

ED3.6 Parking

Please see response provided in Section 7.2.9.

ED3.7 Traffic report

Please see response provided in Section 7.2.8.

ED3.8 Medical office space

Please see response provided in Section 7.2.5.

Mr. Erico Lopez, Snr. Project Manager
Boston Redevelopment Authority

10/7/2012

Dear Mr. Lopez,

Re: 375-399 Chestnut Hill Avenue (Cleveland Circle Cinema Redevelopment)

I am a pediatrician, a longtime resident in Brookline, and live on the corner of Clinton and Penniman Road. I am concerned about the proposed design for the Cleveland Circle Cinema site as I think that, as currently designed, it will have a negative impact on those who live and work in the vicinity. I have attended many design presentation meetings in both Brookline and Boston, reviewed the BDG presentation material and their PNF, and talked with many Brookline and Boston neighbors.

I am not in favor of the current project design. My key concerns focus on the overall density of the proposal, the design of the central courtyard and the proposed allocation of space uses. Finally, I would like to suggest some improvements that could go a long way in mitigating these concerns.

Density of the Proposal

The proposed 181 room hotel, 81appartment residence block, 19,000 sq ft medical office block, 6,700 sq ft restaurant and 7,500 sq ft retail space totaling 236,500 square feet, is a disproportionately large complex for its location on busy Chestnut Hill Avenue and adjacent to crowded Cleveland Circle. The project has 5 separate and distinct uses, each of which generates and adds its own unique demands to the site. The traffic and activity that this complex will generate is significant, and and has been, I believe, underestimated in BDG's submission. I am concerned that it will negatively impact the surrounding neighborhoods both in Brookline and Boston. The detailed analysis of the traffic assumptions made in the PNF and critique of the plan provided by www.clevelandcircle.org (post for Sept 20th, "Why the Delivery Estimates Don't Add Up") are compelling and worrisome. Even if not submitted by a traffic engineer, the discussion clearly calls into question the assumptions on which the current PNF is justified. JL.1 JL.2

Central Courtyard Design

The central courtyard design is the "heart" of this project.It circulates and regulates the traffic both into and out of the project. My concern is that the project heart will suffer "congestive cardiac failure".

I cannot see how the courtyard, as designed, can perform its vital function of keeping the traffic circulating. There are too many competing demands, and too many constrictions in the design which will frequently lead to blockages. These will have a "knock-on" impact on the junction of the site and Chestnut Hill Avenue, negatively impacting traffic within the site, on Chestnut Hill Avenue and in the surrounding Brookline neighborhood. JL.3

Likely impediments to good traffic circulation in the current design:

- Competing demands from Hotel, Residences, Restaurant, Medical Office and Retail stores for delivery truck and pedestrian/vehicular access will clog the courtyard
- A single stacking lane along the residence frontage for 4 or so vehicles will prove totally inadequate for a Boston cab stand, Hotel pick-up/drop off, residential deliveries and restaurant deliveries.

- The Brookline cab stand (not marked on the plan, but has to be on Brookline land) will add to the constrictions of the circle.
- The egress of a vehicle from the underground garage will obstruct the flow of traffic around the courtyard circle.
- Delivery trucks to both retail and Hotel when reversing in or out will cause disruptions to the flow
- Pedestrians criss-crossing the courtyard across the roadways going to their respective destinations will halt traffic

Allocation of Functional Space

The current tuning-fork design footprint - with the retail and offices located in a block south of the center entrance way, the Hotel lobby located far from the street at the back of the courtyard facing Chestnut Hill Avenue, and the restaurant and residence entrances located in a block north of the entrance way – does not augment Cleveland Circle. In fact, this is not so much a Cleveland Circle development project, as a Chestnut Hill Avenue development project.

This allocation of functions has major visual flaws and is pedestrian unfriendly. Currently a large restaurant occupies the corner of the project on Chestnut Hill Avenue and Cleveland Circle. This corner is the prime location for pedestrian traffic to access the Hotel, either directly into the Lobby if this could be relocated here, or if not, through a pedestrian friendly archway into the courtyard (think Rowes Wharf). Currently, a swimming pool and fitness center, available only to Hotel guests and residences, occupies the best outlook over Cassidy Park. This is the prime location for a public restaurant with the potential for outdoor dining and easy access from Cleveland Circle. JL.4 JL.5

The consequences of the current design are to isolate the project from Cleveland Circle and create poor utilization of the surrounding assets of the park for both project denizens and the public.

Mitigation of Design Flaws

I am in favor of development of the Cinema and Applebee's sites and, in that spirit, I would like to offer some alternatives for your consideration:

1) Removal of Medical Offices

I suggest removing one of the functional aspects entirely rather than an arbitrary across the board reduction. I propose the medical office be removed entirely from the project. It adds significant traffic to the project through the coming and going of patients, not to mention the increased delivery load of multiple doctor's offices. Without the removal of the medical offices the number of parking spaces will be totally inadequate, since BDG has allocated only 19 spaces. This is probably not even sufficient for all the office staff, let alone the daily patient flow. There appears to be plenty of medical and/or office space in the surrounding area, so this function is not vital to the project's existence. JL.6

2) Integration of Restaurant into Hotel

I suggest that the large free standing restaurant be integrated into the Hotel. Many of the new Hilton Garden Inns have a large restaurant serving breakfast lunch and dinner in the hotel. If this was placed where the pool and fitness center are currently located, it would serve as a resource to Hotel guests, residence dwellers and the surrounding neighborhood. It would also free up the corner facing Cleveland Circle for the above-mentioned lobby or arch entry way. JL.7

3) Adoption of Upper Entry Alternative

I suggest locating the vehicular entrance way on the southern boundary, by and parallel with the T-tracks, and locating the courtyard on the north side of this entrance way. In this configuration, the courtyard becomes an adjunct to circulation rather than a single bottle-neck jammed with cars and trucks. With this design (shown by BDG as the "Upper Entry Alternative" in their documentation), both the parking and delivery bays for Hotel use are a "straight shot" from Chestnut Hill Avenue and there is a direct line into the underground garage for much of the traffic. In this way the courtyard traffic is reduced to only those users who are in drop/off pick-up mode and deliveries to retail and residences. All project parking and Hotel delivery trucks would be taken out of the courtyard, greatly relieving congestion and reducing the potential for backup and spillover at the site/Chestnut Hill Avenue intersection. JL.8

This alternative should not be dismissed out of hand, as BDG has done, by saying longer transit times through Cleveland Circle makes it a "no go", especially as a central entrance design with a dysfunctional courtyard (see above) may cause just as much, or more, traffic disruption.

As a close neighbor to the site I am also concerned about the light and sound pollution from the development as a whole and hope that BDG will make every attemp to minimize the intrusion of noise from traffic on the site, of glare from both exterior and interior lighting, and will make every effort to screen the direct abuttors on Clinton Road from the visual impact of such a large building. JL.9 JL.10

Sincerely
Jennifer Lewis M.D

8 Penniman Road
Brookline MA 02445

(Letter attached as MS Word document)

JL.1 Project size

Please see response provided in Section 7.2.1.

JL.2 Traffic report

Please see response provided in Section 7.2.8.

JL.3 Courtyard

Please see response provided in Section 7.2.7.

JL.4 Hotel location

Please see response provided in Section 7.2.3.

JL.5 Restaurant location

Please see response provided in Section 7.2.3.

JL.6 Medical office space

Please see response provided in Section 7.2.5.

JL.7 Integrate restaurant into hotel

The hotel restaurant will be designed primarily for the guests of the hotel. The menu offerings and hours of operation are established by the Hilton Brand management teams to offer consistent food, beverage, and service programs throughout the national chain. While these hotel franchise standards serve the needs of the hotel guests, hotel restaurants have been generally very unsuccessful in serving the local community. The second, independently operated restaurant will be designed to meet the needs of local diners. Please also see response provided in Section 7.2.3.

JL.8 Chestnut Hill Avenue entrance

Locating the Project's Chestnut Hill Avenue site driveway further south would create additional traffic issues as compared to the proposed central location. At the central location, a traffic signal and stop line already exists on Chestnut Hill Avenue northbound at the MBTA Yard. This existing signal, which is part of the Beacon Street/Chestnut Hill Avenue signal system, controls the flow of traffic into Cleveland Circle and allows out-of-service MBTA trolleys to move into and out of the Yard. As

planned, the Project Site driveway at Chestnut Hill Avenue will be signalized and tied into the existing signal operations at Beacon Street/Chestnut Hill Avenue.

If the Project driveway was moved south, the associated driveway signal control would require that the stop line on Chestnut Hill, which is currently just south of the MBTA Yard, be relocated further south near the Reservoir Station drop-off driveway. Such a plan would cause longer traffic queues to block the adjacent intersection of Chestnut Hill Avenue/Clinton Road more frequently. Maneuvers out of the Reservoir driveways would also be blocked more frequently. Additional clearance (yellow) time would need to be allotted to northbound Chestnut Hill Avenue, causing longer delays at the Beacon Street/Chestnut Hill Avenue intersection.

Please also see Section 2.3.2.12.

JL.9 Noise

Vehicle traffic will mainly be concentrated within the courtyard which is shielded from to the south by the hotel component of the Project, and therefore noise from this traffic will be substantially attenuated due to this shielding.

The Project does not proposed exterior lighting along the southern façade of the building. The lights from within the southern facing hotel rooms will be similar to those from other nearby buildings and residences.

As mentioned in Section 4.3.5, the massing of the building has been redesigned and broken down to give the impression that the building is made up of different sized blocks that are linked together, instead of one large block. Each block is roughly sized to simulate the scale of the houses on Clinton Road which are immediately opposite the hotel. The visual impact of the building is also minimized as the roofs of the homes on the upper part of Clinton Road are similar in height to roof of the proposed building due to the lower elevation of the Project Site.

JL.10 Light impacts and visual impacts

The Project does not propose exterior lighting along the southern façade of the building. The lights from within the southern facing hotel rooms will be similar to those from other nearby buildings and residences.

As mentioned in Section 4.3.5, the massing of the building has been redesigned and broken down to give the impression that the building is made up of different sized blocks that are linked together, instead of one large block. Each block is roughly sized to simulate the scale of the houses on Clinton Road which are immediately

opposite the hotel. The visual impact of the building is also minimized as the roofs of the homes on the upper part of Clinton Road are similar in height to roof of the proposed building due to the lower elevation of the Project Site.

Lopez, Erico

From: Brad Walmsley [bradproformance@gmail.com]
Sent: Saturday, October 06, 2012 1:33 PM
To: Lopez, Erico
Subject: Comment on Cleveland Circle PNF

October 6th, 2012

Mr. Erico Lopez,

My family are Brighton residents who enjoy the Chestnut Hill Reservoir and travel through Cleveland Circle frequently. I co-own a small general contracting business that has over the last several years done considerable work on Chestnut Hill Ave. near the Applebe's/ old cinema site.

Development of the blighted cinema site will help make Cleveland Circle more vibrant, and provide much needed construction jobs for the City. My only concern is traffic congestion. I often walk our dog around the Reservoir, and since I had read of concerns by Waterworks residents concern over traffic backing up , I have tried to observe if that may be the case. Seldom is there a car, never mind a queue, trying to exit onto Beacon St. I do think it would be a good idea to eliminate a few east bound on-street parking spaces to improve sight lines at that point. BW.1

Thanks for considering my comments.

Brad Walmsley
340 Faneuil Street.

BW.1 Improve sight lines at exit to Beacon Street

The commenter's observations are confirmed by level of service analysis results (Tables 2-3 and 2-4) showing no significant delays or queues on the Waterworks driveway at the Beacon Street intersection during peak hour conditions. While the sight distance to the east (looking right from the driveway) may be somewhat limited by parked vehicles along the southern curb, no crashes have been reported at this intersection within the past three years.

Lopez, Erico

From: Michelle Lapides [mmlapides@gmail.com]
Sent: Friday, September 28, 2012 8:02 PM
To: Lopez, Erico
Subject: Cleveland Circle Project

I am sending along my feedback related to the development project at Cleveland Circle. I attended the public meeting held on September 20. I am a resident of Brookline.

First and foremost, this project is far too dense for the 2 1/2 acre property it will be situated on. And not only is it too large, it is surrounded by a neighborhood with single family homes, other residential dwellings and a park. Yet NOTHING about its design respects or collaborates with this unique setting. It is beyond belief that a building that is better suited for an office park on 495 was submitted. ML.1

The glass and concrete exterior is hideous. The architect should look to the Waterworks building for inspiration on an exterior that will blend in appropriately. ML.2
The grounds surrounding the building should include more trees. How about a row of evergreens along the T tracks to provide a natural screen?? ML.3
Light pollution from the project needs to be addressed. Whatever the regs may allow, this project abuts a quiet residential neighborhood that should not be bathed in light at night. ML.4
How will exhaust from the underground garage be handled? ML.5

The size of the project needs to be scaled back. For starters, there is absolutely no need for a medical office building when the Atrium Mall is now leasing as medical space. ML.6
Cleveland Circle cannot support the parking requirements for a medical office building. The traffic generated from a medical office building will be detrimental. It seems that the developer went with the kitchen sink approach; let's throw in the medical office building and see what happens.

The size of the project will generate traffic that simply cannot be accommodated in Cleveland Circle, both in terms of cars using the intersection and parking. I felt the traffic impact was glossed over at the meeting. It was stated that this intersection is known for heavy congestion. Let's do easy math: 80 hotel rooms + 180 residences + retail + restaurant easily adds up 1,000 trips by cars in and out in any given day. (People leave once and come back once each day so that is 2 trips a day times the 260 hotel rooms and residences = 520 trips alone daily not counting retail and deliveries, and employees who work there.) That will increase the number of cars going through the intersection by probably 30% if not more. The project needs to clearly detail the number of car trips estimated daily by each type of establishment in the project (hotel, residence, retail, deliveries). I am not even going to mention the medical office building because that is a ridiculous item to include in this project. ML.7

Where will all the cars park? it cannot end up on the residential streets of Brookline. ML.8

And speaking of deliveries, the question was asked about how many delivery trucks would come through in a day, and the answer given was one. That response is so far from reality as to be negligent and insulting. ML.9

Adding a second left turn lane on Beacon Street outbound at Chestnut Hill Avenue does not alleviate anything, because cars already form an informal second lane today when traffic is heavy. Plus that traffic will still get congested at the bridge over the T line. ML.10

In fact, a picture speaks a thousand words. The photo that was up during most of the meeting showed a large concrete block plunked down on a park. The comment was made that it looked

like the Pentagon was there, and I couldn't agree more. The project team seems not to have given any consideration to the neighborhood where this will be built. And it is a neighborhood in every sense of the word.

How can the BRA ever deem a project of this size on 2 1/2 acres of land at one of the worst traffic intersections as acceptable?

Sincerely,
Michelle Lapides

ML.1 Density

Please see response provided in Section 7.2.1.

ML.2 Architecture

Please see response provided in Section 7.2.6.

ML.3 Trees, screening of MBTA tracks

In order to eliminate the views of parked cars and the rear loading area from Cassidy Playground, a solid fence will be installed the entire length of the parking area and loading dock area. Additional landscaping will occur on the park side of the new fence to soften the edge and continue the park-like character. Also, a new fence will be installed along the entire length of the adjacent MBTA property line to shield the site from the Clinton Road residences.

ML.4 Light pollution

The Project does not proposed exterior lighting along the southern façade of the building. The lights from within the southern facing hotel rooms will be similar to those from other nearby buildings and residences.

ML.5 Exhaust from garage

The underground garage will be mechanically exhausted with outlets located to have no negative impacts on pedestrians or residents.

ML.6 Medical office space

Please see response provided in Section 7.2.5.

ML.7 Details of car trips by use

The Project's traffic study follows standard guidelines established by the Boston Transportation Department and the Town of Brookline, and uses methodologies established by the Institute of Transportation Engineers for estimating new trips and evaluating existing and future intersection operations.

See Table 2-11 for the number of Project trips by land use and travel mode.

ML.8 Parking

Please see response provided in Section 7.2.9.

ML.9 Number of delivery trucks

See Table 2-16 for the number of estimated daily deliveries by land use.

ML.10 Second left-turn lane on Beacon Street at Chestnut Hill Avenue

After meeting with the Boston Transportation Department, the study team revised the proposed improvements at the Beacon Street/Chestnut Hill Avenue intersection and eliminated the concept of a second westbound left turn lane.

Through new mitigation measures proposed by the Proponent in Section 2.4, level of service will be improved at the Beacon Street/Chestnut Hill Avenue intersection from LOS F to LOS D.

erico.lopez.bra@cityofboston.gov
peter.meade.BRA@cityofboston.gov
kairos.shen.bra@cityofboston.gov

VIA EMAIL DELIVERY

September 27, 2012

Mr. Erico Lopez, Senior Project Manager
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201

RE: Circle Cinema Development, 375-399 Chestnut Hill Avenue

Dear Mr. Lopez,

I am writing as the Chair of the Board of Trustees of the Waterworks at Chestnut Hill Trust. The Waterworks Park is an immediate abutter of the proposed development site and is possibly the entity most impacted by the BRA's decisions in this matter. While Waterworks Trustees support quality and neighborhood-friendly development in Cleveland Circle, there are a number of serious concerns shared by our membership regarding the current Boston Development Group (BDG) proposal.

These concerns with BDG's current plan include the following: the project is too large and too dense for the site; the project plan for traffic to exit via the Waterworks roadway raises serious safety issues for Waterworks residents and users of Cassidy Playground. We believe the proposal requires significant modifications before it is approved. SD.1 SD.2

We expect that there may be additional matters that require mitigation as the project continues to evolve, and, at that time, we would expect the specific mitigation required for the roadway easement, based on the revised plan, to be incorporated into any final approval. We appreciate the opportunity to register our concerns, and look forward to working with the City towards the approval of a revised and improved proposal for redevelopment of the Cleveland Circle site that will address the safety, traffic and overburdening concerns of our residents. SD.3

Respectfully submitted,

Stephen Dreier

Stephen Dreier, Chair
The Waterworks at Chestnut Hill Trust

CC: Mr. Peter Meade, Director, BRA

Mr. Kairos Shen, BRA Director of Planning

SD.1 Density

Please see response provided in Section 7.2.1.

SD.2 Waterworks driveway

Please see response provided in Section 7.2.4.

SD.3 Mitigation for roadway easement

The Proponent and hotel owners are committed to ensuring that the use of the exit drive be maintained as a safe and efficient right of way for all users, both the present residential users and the future hotel guests. Signage will be posted at the rear hotel exit alerting drivers to travel slowly as they proceed to Beacon Street. The existing curvature of the roadway acts as a traffic calming measure, inhibiting high travel speeds. The Proponent will work with the Waterworks Museum and the residential community to ensure sure that the driveway is used properly and safely with minimal impact on Cassidy Playground and Waterworks.

Lopez, Erico

From: celine sellam [celinesellam@gmail.com]
Sent: Thursday, September 27, 2012 11:48 AM
To: Lopez, Erico
Subject: 375-399 Chestnut Hill Avenue BDG project comment

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Erico,
I am writing to you today to share my thoughts on the proposed project.
As a direct abbuter (I live at 385 Clinton Rd) and a property owner in Brighton as well.

- We believe that the project is way **too dense** for the area, in term of impact on traffic, which is already a serious problem for the area with nothing at the former cleveland circle site. The traffic study is not accurate when it states that the proposed project will only add about 107 cars per day. I go through this intersection every day for the past 6 years and can tell you the having medical offices alone(where patients come and go every 15 minutes or so) will produce more traffic than that. If you add the hotel rooms, residences and restaurants, this intersection will simply be impossible to cross under 20 minutes. CS.1 CS.2
- The **size of the proposed housing units** (mostly one bedrooms) is a problem as well because it will be perfect for undergrads from Boston College to use it for housing, which would create more noise nuisance for the area with frequent parties. There is a tremendous need for housing for young families who are having a hard time finding 3 bedrooms units without lead paint issues and if this project would offer such housing it would provide the area with more long term residents and less nuisance. CS.3
- The **architecture** of the project is a serious problem: I understand that Boston wants to make a statement but because this is right next to a residential area, you might want to consider a style that blends more with the style of the area (should follow the lead of the Waterworks) , like the Courtyard Marriot in Coolidge Corner in Brookline does. It is barely noticeable, really blends into the neighborhood, with its curved brick facade and I drive there every day and never had an issue with the traffic it creates in the intersection. There are very few windows overlooking the residential building next door. To quote on the comments at last week's meeting, it feels like the Pentagon was dropped in the middle of Cleveland Circle, this building is simply too massive for the site and the design is way to contemporary for an area where brick and stone dominates. CS.4
- The fact that the developer came back with a project 50 % more dense that its last one is very concerning, it needs to be scaled down to fit the ***unique*** qualities of the site and its many challenges(residential area next to it, egress issue with the Waterworks, high traffic congestion, lack of parking etc) CS.5
- To summarize, we want the site to be developed in a sensible manner, taking into account:

1. impact on traffic
2. vicinity to residential area (architecture and visual impact, noise pollution, height of the building, impact on property values and privacy)
3. the architectural style of Cleveland Circle
4. need for green space on the site itself CS.6
5. need for adequate parking spaces as the lack of parking is already a serious concern for Cleveland Circle CS.7
6. safety of pedestrians CS.8

7. this project needs to enhance Cleveland Circle, not make it an impractical eyesore that allows a developer to make huge profits to the detriment of the Brighton and Brookline neighbors and commuters. CS.9

Thank you in advance for taking our comments into consideration,

--
Celine Sellam and Rony Sellam 385 Clinton Rd Brookline, owner of residential property in Brighton as well.

CS.1 Density

Please see response provided in Section 7.2.1.

CS.2 Traffic report

Please see response provided in Section 7.2.8.

CS.3 Size of residential units

Please see response provided in Section 7.2.2.

CS.4 Architecture context

Please see response provided in Section 7.2.6.

CS.5 Project size

Please see response provided in Section 7.2.1.

CS.6 Green space on the site

The revised landscape design concept for the courtyard seeks to "soften" the hard angles and surfaces of the building with gentle, free-form planted areas, while also introducing human-scaled elements, such as decorative planters and a water feature. The revised landscape design also takes advantage of the larger island, created with the redesign of the roadway to be one-way instead of two-way, to introduce more greenery. On the opposite side, at the drop-off/pick-up areas, the design exploits the southern sun exposure and proposes 15-foot tall flowering trees and an array of different flowers, plants and shrubs. In addition, colorful pots and planters and two different seating areas will add a pedestrian-friendly dimension to the courtyard space.

CS.7 Parking

Please see response provided in Section 7.2.9.

CS.8 Pedestrian safety

At the Project main site driveway at Chestnut Hill Avenue, a new crosswalk will be installed as part of the intersection improvements. Pedestrians will be able to safely cross Chestnut Hill Avenue between the Project and the sidewalk directly serving Reservoir Station. Pedestrians walking between the Project and the Cleveland Circle station can either use the new crosswalk or walk north on Chestnut Hill

Avenue and cross at Beacon Street. The proposed mitigation improvements to the Beacon Street/Chestnut Hill Avenue intersection include changing from an exclusive pedestrian walk phase to concurrent pedestrian walk phases, thereby reducing delay for pedestrians. Please see Section 2.4.1 for a discussion of proposed mitigation and an explanation of concurrent phases.

The Proponent will enhance the pedestrian environment and pedestrian safety along the Chestnut Hill Avenue corridor by reducing the number of existing curb cuts at the site from four to one, and installing new sidewalks adjacent to the Project Site.

CS.9 Enhance Cleveland Circle

The Project will result in a more pedestrian friendly and vibrant Cleveland Circle for the surrounding community to enjoy. In addition, the Proponent believes that the proposed uses and design of the Project will complement the Cleveland Circle area and provide new housing, new lodging, and a new destination for visitors to the Boston area.

Lopez, Erico

From: e.ramin@comcast.net
Sent: Saturday, September 15, 2012 11:17 AM
To: Lopez, Erico
Subject: proposed Cleveland Circle project

Follow Up Flag: FollowUp
Flag Status: Flagged

Dear Mr. Lopez
As abbutters of this project we have the following concerns about the use of the so-called easement road: GER.1
I. Safety - this narrow, winding driveway is approximately one to one and one half feet from the Watermark building at 2400 Beacon. It is of especial danger to children who play and picnic on its embankment.
2. Fumes - exhaust fumes from cars waiting to exit are a danger to the aforementioned children, as well to residents of the building.
3. The exit at Beacon St., already difficult because of oncoming traffic and lack of visibility, will become more dangerous and backed up. Presently it is a problem to take a left turn. Hotel guests and residents will all be impacted.
Why use this road? There are already two entrances to the proposed project - one at Aplebee's and one at the theater.
We would like to affirm that we are not against development of this site, only against this dense development which impacts adversely on its neighbors.
We hope you will take these thoughts into consideration.
Thanks you.
Gerald and Elsa Ramin
Watermark 609

GER.1 Waterworks driveway

Please see response provided in Section 7.2.4.

Lopez, Erico

From: Bloch, Kurt J.,M.D. [KBLOCH@PARTNERS.ORG]
Sent: Wednesday, September 12, 2012 11:08 PM
To: Lopez, Erico
Subject: Cleveland Circle Cinema Project

Dear Mr. Lopez

We are abutters of the proposed Cleveland Circle Cinema Redevelopment. While we strongly support the redevelopment of this site, we are strongly opposed to the plans of the Boston Development Group for many reasons:

1. Their hyper-dense, massive project creates unsolvable traffic problems for the entire neighborhood and especially for the residents of the nearby Watermark condominiums. The proposal imposes 480 vehicle trips/day (if it were strictly restricted to hotel guests only) on top of the 200 vehicle trips/day generated by the condominium on to a narrow (17 foot wide) twisting roadway exiting on Beacon Street. The BDG proposal constitutes misuse and overuse of the roadway, disturbing the peace of mind, comfort and enjoyment of the abutters and unreasonably diminishing the value of their property. KB.1

2. Overuse of land - The BDG proposal calls for a building housing 19,000 square feet of medical offices. BDG does not specify the number of physician/dentist offices to be built. Assuming a generous 1250 square feet per office results in space for 15 physician/dentists each of whom will require support of at least one nurse and receptionist. For all these individuals, the BDG plan calls for 19 parking spaces. Although employees of these offices, as well as other employees of the hotel, residential, retail and restaurants are expected to travel to work via MBTA, a large number of employees will not come by MBTA , either because they want to come by car or because they do not have easy access to the MBTA. As hospitals in the Boston area can attest, their employees travel to work by car and require parking spaces often at remote sites (Brigham and Womens employees park on Hammond Pond Parkway in Newton and are transported to the hospital by shuttle bus). If medical support personnel is not offered parking space, they will obtain positions elsewhere. KB.2

With respect to the number of patients involved in the above building,consideration must be given to the number being actively seen by the physician as well as those waiting to be seen. In the case of primary care physicians who are expected to see one patient every 10-15 minutes, it is easy to see the numbers seeking a place to park multiply rapidly. Where are the patients for these 15 offices supposed to park? -by competing with retail space owners, their employees and their patrons for the 60 unassigned underground parking spaces or by competing with restaurant owners, their employees and their patrons as well as hotel employees for these same 60 spaces - or in the 30 underground spaces shared with hotel guests? Finding no place to park, patients may clamor for access to the 60 outdoor parking spaces assigned to the hotel and from there also exit via the Watermark roadway to Beacon Street? Or do they park on nearby streets? KB.3

3. The fiction of the "courtyard" as "oasis"- The inner aspect of the hotel (on 2 sides) and the residential building form a courtyard entered on a two-lane roadway from Chestnut Hill Avenue. This space is touted as an "oasis" of calm and verdant planting. It is not an oasis. It is a very congested site where cars, bearing patients, diners, employees owners of businesses enter and circulate looking for parking spaces. Cars queue for guests to register at the hotel. Other cars bring renters or visitors to the residential building, taxicabs, trucks bearing supplies, garbage trucks removing waste from the hotel, residential building, medical offices, restaurants enter and exit via this courtyard. Buses bringing guests KB.4

traverse this site. The narrow opening assures that exhaust and other fumes will be trapped at this site and will enter any open windows in the residential building and elsewhere.

BDG claims that the apartments in the residential building will be of high quality eventually suitable for sale as condominiums. Who will wish to live in condominiums facing the courtyard with its lack of view, constant motor vehicle traffic and fumes? It may be anticipated that these will become dormitory housing, 4-6 students per apartment, that no one else wants. If so, the more desirable apartments facing the park will also be turned over to students because long-term tenant/owners will not put up with the constant noise of partying. And will the park turn into their playground? KB.5

4. Esthetics - The low, extremely long building (height in Brookline 56 feet, in Boston 62 feet) extending from Chestnut Hill Avenue to the end of the current rear wall of the Cinema building (Fig 4.1 and 4.3) resembles a factory or prison when viewed from Beacon Street or Clinton Road. It is an eyesore before it is even built and it will degrade the Cleveland Circle area rather than enhance it. KB.6

In summary - The project proposed by BDG should not be permitted to proceed. The major goal of the proposal is to enhance BDG's profits and Brookline's tax revenues. The project further degrades the Cleveland Circle area rather than enhance it. Please vote NO on this proposal.

Thank you for your attention.
Sincerely,
Kurt J. Bloch, M.D.
Professor of Medicine, emeritus
Harvard Medical School
Senior Physician, MGH

The information in this e-mail is intended only for the person to whom it is addressed. If you believe this e-mail was sent to you in error and the e-mail contains patient information, please contact the Partners Compliance HelpLine at http://www.partners.org/complianceline . If the e-mail was sent to you in error but does not contain patient information, please contact the sender and properly dispose of the e-mail.

KB.1 Density

Please see response provided in Section 7.2.1.

KB.2 Medical Office Space

Please see response provided in Section 7.2.5

KB.3 Parking

Please see response provided in Section 7.2.9.

KB.4 Courtyard and Fumes

Please see response provided in Section 7.2.7 for information regarding the courtyard. Please see response to comment CCES.12 regarding air quality in the courtyard.

KB.5 Residential units facing courtyard

The proposed site plan results in residential units that face Cassidy Playground, the Chestnut Hill Reservoir, Cleveland Circle, and the courtyard. The Proponent believes through its experience and its market study that the design will be very marketable and far more favorable than an alternate study that resulted in 50% of the residential units having a view of the MBTA right-of-way.

The target group for the residential units is empty nesters, couples, and young families, and the units are designed, sized and priced for this market niche, and will also be available to those who meet the financial and credit qualifications for the development.

The Project management team will define and manage reasonable rules and regulations for tenants to follow. These rules and regulations are implemented to maintain the quality standards within the development, and so that all tenants of the development and members of the broader community may experience quiet enjoyment of their respective spaces.

KB.6 Architecture

Please see response provided in Section 7.2.6.

Lopez, Erico

From: p.berman@comcast.net
Sent: Friday, September 28, 2012 2:33 PM
To: Lopez, Erico
Subject: feedback for cleveland circle development

Dear Mr. Lopez.
As a resident and home owner at 105 willard rd. in brookline I am most concerned about the proposed development plans for the Cleveland Circle. My concerns include the impact to the neighborhood as a result of the increase traffic demands, the ambient light the structures will give off and the fact that the design itself does not integrate in at all with the surrounding area. PB.1 PB.2 PB.3

I am hoping that you can take these concerns to the proper authorities.

Sincerely,
Paula Berman
105 Willard Rd.
Brookline, MA 02445

PB.1 Increase in traffic

While the resulting traffic impacts from the Project are minimal and will not noticeably affect the existing transportation environment in the study area, the Proponent is committed to improving the operation of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. This intersection is a major crossroads location and operates under congested conditions during peak periods. Through signal phasing changes to better allocate green time, geometric changes to improve efficient movement of vehicles, and enhancements to crosswalks and pedestrian controls, delays for both vehicles and pedestrians will be reduced. The Proponent has been working with the MBTA to improve out-of-service trolley maneuvers from Beacon Street into the MBTA Yard at the Reservoir Station on Chestnut Hill Avenue.

PB.2 Light pollution

The Project does not proposed exterior lighting along the southern façade of the building. The lights from within the southern facing hotel rooms will be similar to those from other nearby buildings and residences.

PB.3 Architecture

Please see response provided in Section 7.2.6.

Lopez, Erico

From: Crittendon, Rollin [rwag@rwag.net]
Sent: Friday, September 28, 2012 1:08 PM
To: Lopez, Erico
Subject: Comments on Cleveland Circle project

Hi Mr. Lopez,

It was great to get a chance to see the initial drawings at last Thursday's meeting.

In my initial opinion I think the "folding" of the building facade is clever.
However I think the structure is too monolithic/massive in relation to the overall Cleveland Circle area.
I wonder if they made a village-type structure, broken up into smaller buildings, if that might be more palatable. RC.1

I also think the large white facade should be something more subdued, perhaps at least a masonry appearance of some sort. RC.2

Overall the two sides might be closer than it seemed with a tweak here-and-there I think/hope.

--
==========
Rollin Crittendon

RC.1 Architecture too monolithic

Please see response provided in Section 7.2.6.

RC.2 Façade materials

Please see response provided in Section 7.2.6.

Lopez, Erico

From: Faye Ruopp [faye.ruopp@gmail.com]
Sent: Thursday, September 27, 2012 4:35 PM
To: Lopez, Erico
Subject: Cleveland Circle Project

Dear Mr. Lopez,

My husband and I are writing to you to express our serious opposition to the proposed BDG plan for Cleveland Circle. We have recently moved from Auburndale, MA to the Waterworks. In Auburndale, we were facing the over-development of the Riverside complex off of Grove St. Our community fought for several years to have the proposal for Riverside be more in keeping with the neighboring facilities. The community was supported by its aldermen, and eventually the initial proposal was down-sized and reflected more of the concerns for open space and parking.

You can imagine how dismayed we were to think that we moved to an area that is facing the same kind of over-development. Chestnut Hill Ave. and Beacon St. are already over-crowded and difficult to navigate, even under the best of circumstances. Using the Waterworks driveway for the Hotel guests is a ridiculous idea, one that is dangerous and most probably impossible to enforce. It has taken us 2 months to get used to navigating that roadway, and given that hotel guests will not know this area, we will be facing tremendous obstacles in exiting our own garage. At the moment, without this development, it is very, very difficult to make a left turn out of the exit driveway onto Beacon St. FCR.1 FCR.2

We ask that you support our neighborhood and demand that the developers scale this project down. Wouldn't it be wonderful to expand the open space of the park so that more people could use it? One small boutique hotel is plenty for that property. Let's try to find ways to support our community rather than destroy it.

Where are the Brighton city advocates in this process?

Thanks so much for your consideration.

Sincerely,

Faye and Charlie Ruopp
2400 Beacon St. Unit 201

FCR.1 Waterworks driveway

Please see response provided in Section 7.2.4.

FCR.2 Left-turn from Waterworks driveway onto Beacon Street

The Beacon Street/Waterworks Driveway exit is one of the study intersections assessed in the transportation study in Chapter 2. The intersection is currently unsignalized and traffic exiting the driveway is controlled by a stop sign. Analysis results show that, on average, drivers exiting the driveway currently experience LOS C during the a.m. peak and p.m. peak hours. With the addition of new Project trips to the Waterworks driveway, level of service would remain at LOS C. LOS D or better is considered acceptable in urban areas.

Note that an evaluation of future conditions at the Beacon Street/Waterworks Driveway with Project traffic using the rear driveway showed that a traffic signal is not warranted at this location.

Stan Kugell
831 Beacon Street, Suite 120
Newton, Massachusetts 02459 USA

September 24, 2012

Mr. Erico Lopez
Boston Redevelopment Authority
erico.lopez.bra@cityofboston.gov

RE: Public Meeting of September 20, 2012 re
375-399 Chestnut Hill Ave-Cleveland Circle Cinema

Dear Mr. Lopez,

I reside near the proposed Circle Cinema project, and was actively involved in the abutting Waterworks project from beginning to end. Please accept these comments following the September 20 public meeting.

The current proposal is a major improvement over the first round. Thanks to all who contributed to that outcome. There are several items that still need work, as follows:

(1) The parking ratio is inadequate. The project needs either less floor space or more parking. The proposed uses are sure to generate high demand on parking, especially medical office use. The nearby medical office at 850 Boylston provides a practical lesson. At 850, the circulation and parking problems are so severe that the project now maintains a full-time staff to provide free valet parking, and it's not enough. Surely we don't want to repeat that mistake in Cleveland Circle. SK.1

(2) The metal clad design should be rejected. Metal clad buildings elsewhere in the area have not aged well. SK.2

(3) Both designs submitted by the developer suffer from a "flat box" appearance. We need a more decorative, detailed façade, with real relief, not just color variation of flat elements. Perhaps there's a cost, but the neighboring Waterworks project shows it can be done. SK.3

(4) The "Frank Gehry" style wobbly-panel design should be revised. It is perhaps a well-intentioned approach to SK.4

creating visual interest out of a flat box, but we've had enough around town, and these buildings just look cluttered rather than pretty only a few years after they go up. The Pompidou Center didn't age well, and I don't hold out much hope for the faux-Gehry design fad, either. I'm sure the architect can come up with another way of making it pretty. I'd ask the architect to make reference to the decorative elements of the classic buildings of the area in a clean modern interpretation. Waterworks' new building did a good job of that.

(5) The location needs a restaurant with plenty of outdoor seating overlooking the park. I believe the developer said the current design anticipates ten feet and four tables of outdoor seating. That's inadequate. A three-season terrace, with light and provision for outdoor heating or opening doors, should be considered. Outdoor and semi-outdoor table space could be a very nice neighborhood amenity. SK.5

(6) The hotel flag was not discussed at the public meeting. The flag should be locked-in at the outset. We don't want a low-end flag, as originally proposed by the developer. The community should have third party assurances that the hotel design fully meets the requirements of at least two different flags at the Marriott Courtyard level or better. We don't want to learn down the road that we will be stuck with a Hampton Inn. SK.6

(7) Please create better pedestrian connections to Cleveland Circle and the C and D Green Line stations. The existing and proposed connections seem awkward. Can't something be done to make more pedestrian-friendly connections? SK.7

(8) The design relies on an interior courtyard for all motor vehicle traffic. The area could be too small to support all the different uses and their associated utility vehicles. With no on-street parking or standing space adjacent to the building, this courtyard must support everything – delivery, service calls, moving vans, self-move trucks, taxi, shuttle bus, valet, check-in, pickup, drop-off, trash, cleaning, plumbers, electrical, contractors, etc. The BRA should consider if there is enough room for the variety of uses and amount of floor space. Should the floor space be reduced, or should the access road and courtyard area be increased, or repositioned, or could SK.8

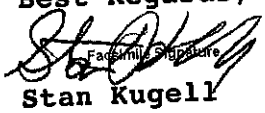
additional subsurface or rear utility parking alleviate courtyard congestion?

(9) Residents of the Waterworks objected to any use of the exit road easement to Beacon Street. This appears to be a private legal dispute over rights to a private road. That dispute should not hijack a public process. All neighbors do have legitimate concerns regarding traffic, including the Beacon Street exit at Waterworks, and the Chestnut Hill Avenue exit. However the BRA should give equal weight to the traffic concerns of all neighbors, without preference for or against Waterworks property owners. SK.9

(10) The residential units should meet the requirements of today's higher-end residential market - size, number of bedrooms and baths, kitchen design, terrace space, large windows, water views, level of finish. I'm told the developer's design has small units that may attract high turnover student rentals, with all the problems dense student population can bring. We should aim higher. Waterworks shows that the neighborhood can support higher end housing that elevates the community. SK.10

Aim high – that's the ultimate message. We want a project, and we want one that will elevate Cleveland Circle. Based on their prior projects, this particular developer may need strong oversight and encouragement towards quality over quantity, and lasting results over expediency.

Best Regards,



Stan Kugell

cc: John Meunier, Boston Development Group

SK.1 Parking

Please see response provided in Section 7.2.9.

SK.2 Metal clad design

Please see response provided in Section 7.2.6.

SK.3 Architecture

Please see response provided in Section 7.2.6.

SK.4 "Frank Gehry" design

Please see response provided in Section 7.2.6.

SK.5 Large outdoor seating area

Please see response provided in Section 7.2.3.

SK.6 Hotel flag

Please see response to comment EW.10.

SK.7 Pedestrian connections to Cleveland Circle and Green Line stations

The Project includes a five-foot-wide sidewalk on the northern side of the Project Site adjacent to Cassidy Playground that connects the hotel and residential lobbies to the park, Chestnut Hill Avenue and Cleveland Circle. The Proponent will work with BTD to install a new crosswalk across Chestnut Hill Avenue at the site driveway.

SK.8 Courtyard

Please see response provided in Section 7.2.7.

SK.9 Overall traffic concerns

Comment noted. Please see Section 7.2.4 for information regarding the exit from the Waterworks driveway and Section 7.2.7 regarding traffic at the site driveway on Chestnut Hill Avenue.

SK.10 Size of residential units

Please see response provided in Section 7.2.2.

Lopez, Erico

From: Matthew Danish [matthew.r.danish@gmail.com]
Sent: Sunday, September 23, 2012 6:01 PM
To: Lopez, Erico
Subject: Comment for 375-399 Chestnut Hill Avenue

Hi Erico,

As I mentioned at the meeting, I want to reiterate the importance of having BDG fully realize the potential of walking and MBTA access to the site. The amount of activity that they envision cannot be served by automobile alone, as it is geometrically impossible to squeeze that many cars into the site, and onto the roads around it. Building additional parking will only cause additional problems with traffic congestion. Instead, the only way this is going to work is if BDG commits to enhancing and promoting non-car access to the site.

Cleveland Circle is a unique part of Brighton and Boston in that it is the confluence of three branches of the Green Line, which only come back together at Kenmore Square. The neighborhood originally developed in the late 19th century when the electric streetcar began operating on Beacon Street. It became extremely popular and many large apartment buildings were erected there. Development along nearby Commonwealth Avenue did not begin until after the electric streetcar began operating along there as well, after 1909. Finally, the Highland branch of the Boston & Albany railroad operated adjacent to what is now the BDG site from 1884 until 1958, and became what is now known as the "D" branch of the Green Line in 1959.

Cleveland Circle directly hosts two stations of the Green Line: the terminus of the "C" branch, and the Reservoir station of the "D"
branch, which abuts the site. The "B" branch station Chestnut Hill is two blocks north. Across from the site is Reservoir Yard, a storage and maintenance facility for the Green Line, which sees frequent moves throughout the day in order to meet schedules and balance trains across the three branches.

According to MBTA statistics, Reservoir station sees 3,395 boardings per weekday, making it one of the busier surface stations on the Green Line. Cleveland Circle station has 1,557 boardings per weekday, and Chestnut Hill station has 861 boardings per weekday. If Cleveland Circle was considered a single super-station, then its combined ridership would be greater than Haymarket station downtown. In addition, according to CTPS surveys, the majority of the ridership on the outer "D" branch is to/from the Longwood Medical Area, which is 4 stops away from Reservoir station. At Reservoir station, about 25.8% of those passengers surveyed were going to Longwood Medical Area, compared to the next higher number of 8.0% going to the downtown Financial district.

Other developers seem to be noticing these facts: witness the development being planned at Riverside station in Newton. I think BDG is also interested in tapping into this market, which is why they have chosen this site. That's good: having land adjacent to MBTA stations go vacant is a tremendously irresponsible waste of the city's resources. Transit-accessible land is scarce, but too much of it has been left empty over the years, here and in other parts of Boston.

The scale of the development only makes sense in the context of the MBTA stations available at this site. Without the transit access, the local residents' fears of traffic congestion may come to fruition.
That is why I am requesting a more solid sign of commitment from BDG that they will work towards strong walking, bicycling and transit usage among the users of their site. To that end I have several suggestions, and I am always open to other ideas:

* Fix the transportation study. There is some clear evidence of cut-n-paste going on in there. I have read the same paragraph about "0.5% increase in traffic" in several such studies, even though MassDOT's data doesn't show any sign of such an exponentially increasing trend. In fact, MassDOT's data on Chestnut Hill Avenue shows a fairly flat traffic level for the past ten years. MD.1

* In addition, the use of colors is even worse than the use of letter grades to describe intersections. Making serious predictions about the activities of thousands of individuals in 2017 is not something that can be done with certainty. But I don't see a single probability distribution in the study. There is far too much certainty in the study. This kind of intellectual dishonesty leads people to disbelieve anything that traffic engineers say. No decent scientist would make such bold and specific claims about the future. MD.2

* Commit to non-car mode share targets among tenant employees on-site, and also do so as far as reasonably possible among residents and hotel guests. Study how it was done in Kendall Square. MD.3

* Hire an expert in transit accessibility to study whether and how the plans make it easier for people to access the Reservoir and Cleveland Circle stations by foot, as well as to provide guidance in promoting and reaching mode share targets. MD.4

* Reduce the number of parking spaces on-site and ensure that the remaining ones are market priced. Every parking space that is used becomes the origin or destination of an automobile trip that clogs up the roads around the site. It is impossible to provide both abundant parking and lowered traffic congestion. It's going to be either one or the other. MD.5

* Study the existing stock in Cleveland Circle and understand how development was able to succeed in the days before minimum parking requirements. Cleveland Circle was a successful neighborhood long before the spread of the personal automobile. BDG would do well to learn from the past. MD.6

In conclusion, I think this development is a great opportunity to grow the community in a sustainable way without impacting traffic congestion too greatly. I hope that BDG chooses to take advantage of the incredible public transportation resources that the cities of Boston and Brookline have made available to this site.

-Matthew Danish

MD.1 Traffic report

Please see response provided in Section 7.2.8.

MD.2 Too much certainty in traffic study

The Project's traffic study follows standard guidelines established by the Boston Transportation Department and the Town of Brookline, and uses methodologies established by the Institute of Transportation Engineers for estimating new trips and evaluating existing and future intersection operations.

MD.3 Non-car mode share targets

The estimate of new automobile, transit, and walk trips is based on travel mode shares published by the Boston Transportation Department for the Project's specific neighborhood. See Table 2-10. The Proponent will encourage reduced dependence on automobile travel through the Travel Demand Management (TDM) strategies presented in Section 2.4.4.

MD.4 Transit accessibility

At the Project's main site driveway at Chestnut Hill Avenue, a new crosswalk will be installed as part of the intersection improvements. Pedestrians will be able to safely cross Chestnut Hill Avenue between the Project and the sidewalk directly serving Reservoir Station. Pedestrians walking between the Project and the Cleveland Circle station can either use the new crosswalk or walk north on Chestnut Hill Avenue and cross at Beacon Street. The proposed mitigation improvements to the Beacon Street/Chestnut Hill Avenue intersection include changing from an exclusive pedestrian walk phase to concurrent pedestrian walk phases, thereby reducing delay for pedestrians. Please see Section 2.4.1 for a discussion of proposed mitigation and an explanation of concurrent phases.

The Proponent will also enhance the pedestrian environment and pedestrian safety along the Chestnut Hill Avenue corridor by reducing the number of existing curb cuts at the site from four to one, and installing new sidewalks adjacent to the Project Site.

MD.5 Reduce parking spaces

The number of parking spaces has been reduced from 228 to 203, reflecting a 10% reduction in the on-site parking supply. The Proponent anticipates charging market rates for parking.

MD.6 Study success with less parking in Cleveland Circle history

Many neighborhoods throughout the City of Boston and Town of Brookline thrived prior to the spread of the personal automobile and continue to be vibrant places for residents, shoppers, workers, families, and students. While the Project's residents, hotel guests, and tenants will use the nearby public transportation services, an adequate on-site parking supply is necessary to support the Project.

Lopez, Erico

From: Susan Martin [susanchiswick@comcast.net]
Sent: Saturday, September 22, 2012 4:27 PM
To: Lopez, Erico
Subject: Cleveland Circle Redevelopment Proposal

Sir:

I attended the Cleveland Circle Redevelopment Proposal on Friday 9/21/12 and concur with the objections to the project as raised. One of the project's more egregious mistakes is the building's placement and appearance. It does not take into account its unique visibility as a Cleveland Circle landmark, and from a purely aesthetic viewpoint the building's facade is extremely ugly. I hope these and all other objections will be on the agenda of future presentations and meetings. SM.1

Susan W. Martin

SM.1 Architecture

Please see response provided in Section 7.2.6.

Lopez, Erico

From: Mike Rosloff [mlrosloff@hotmail.com]
Sent: Friday, September 21, 2012 4:31 PM
To: Lopez, Erico
Subject: Cleveland Circle redevelopment project

Follow Up Flag: FollowUp
Flag Status: Completed

Dear Mr. Lopez:

I would like to submit my comments regarding the Cleveland Circle redevelopment project (375-399 Chestnut Hill Ave. in Brighton). I attended last night's community meeting on this issue and as a Cleveland Circle resident, I believe this project will have a significant impact on the surrounding neighborhood.

I believe I agree with many of my neighbors that redeveloping the site is necessary. It is my opinion that something needs to go into that vacant and frankly, ugly Cleveland Circle Cinema building. A well-designed hotel would be a huge asset to the community at large, and it seems like it would be economically viable given the neighborhood, and I'm always happy to see good restaurants and retail moving into the area.

However, based on the developer's presentation last night, I am unhappy with the proposal as currently presented. I believe the proposed office/medical space is unnecessary and this is the piece of the development I agree with the least. This would make the site too dense and although I am no commercial real estate expert, I seriously question the need for more office or medical space in this area. Especially given the recent expansion of nearby St. Elizabeth's Hospital in Brighton Center, where my doctor's office is located, I can't imagine there is a need for more medical space in the area. I would imagine most people utilizing the medical offices at the new site in Cleveland Circle would be driving; both staff and patients. And also considering the other world-class medical facilities within a short distance, it does not seem necessary to expand further. MR.1

My other major concern is traffic flow in the area as well as overall aesthetics of the building. I do appreciate the developer's apparent concern for planting trees and other landscaping and hope that they continue to design an aesthetically nice site. Although it's already a dense neighborhood with less than ideal traffic flow, I believe the site can be redeveloped without having a significant impact on parking as well as traffic flow. I would encourage further study of how the new site with hotel and restaurant use as well as new residential development would impact parking and traffic flow. I'm close enough to Cleveland Circle that I can walk there as quickly as driving, but parking is difficult enough even given the existing retail that is there. MR.2

I had been a renter in Brighton for several years before buying a condo within walking distance of Cleveland Circle three years ago. The reason I decided to stay in this area is because I love Cleveland Circle. It has almost every kind of business I regularly need/want within a short distance, great public transportation access, green space around the Chestnut Hill Reservoir, and overall, very attractive architecture. So I clearly love this neighborhood, and would really hate to see a large-scale project be built that does not fit in with the surrounding area. After all, I chose not to live in Framingham for a reason.

Thank you again for all your hard work. I understand it is not an easy task to plan this type of project given all of the constraints, but I believe this area will benefit ONLY IF the development is designed at an appropriate scale for the neighborhood, and with serious consideration given for traffic, parking, and aesthetics and landscaping.

Respectfully,

Mike Rosloff
110 Lanark Rd. #5
Brighton, MA 02135

MR.1 Medical office space

Please see response provided in Section 7.2.5.

MR.2 Traffic flow and parking

Chapter 2 presents the traffic impacts associated with the Project and an evaluation of on-site parking. Please see Section 2.3.2.8 for a discussion of the Project's parking supply and demand. All Project parking demands will be met on-site.

Please see Section 2.4.1 for a discussion of mitigation measures.

Lopez, Erico

From: Bostonmimster@aol.com
Sent: Friday, September 21, 2012 3:01 PM
To: Lopez, Erico
Subject: 375-399 Chestnut Hill Ave.

Follow Up Flag: FollowUp
Flag Status: Completed

Dear Mr. Lopez,

We were pleased to attend the meeting at the Hamilton School September 20. My husband and I were sitting towards the back and did not speak, but I'd like to express my views on traffic at Cleveland Circle:

1) During commuter rush, which seems to be getting longer and longer, it may take 3 or 4 traffic light cycles on either side of Chestnut Hill Ave. to get through the Circle.

2) Originating from the Reservoir station on Chestnut Hill Ave. are 2 MBTA bus routes as well at a Boston College bus. Their activity alone causes traffic jams in the area. MIC.1

3) The MBTA transfers Green Line cars among the B, C, and D lines, often completely blocking traffic in and around the Circle.

4) Last night someone mentioned the traffic generated from BC athletic events. This is not only because of football. It continues through the hockey and basketball seasons. Also, I have seen school teams practicing at Cassidy Park as well as many pick up soccer games. These people drive here, most do not take the T. MIC.2

5) I fear the medical offices and huge restaurant with regard to increased traffic. Doctors schedule a minimum of 4 patients an hour, sometimes more. Multiply 4 times the number of medical offices proposed. Even at a low number like 10, that would be an additional 40 patients per hour, most of whom will drive or be driven. MIC.3
As for the restaurant, if it seats 400 and only 1/3 of the patrons drive, parking will be impossible. We love the T and use it regularly, but people coming from the burbs west of the Circle will drive.

In conclusion, I believe the project is far to large for the area. You heard that again and again last night. I thank you for your attention and hope to see you at the next meting.

Sincerely,
Mimi Iantosca Costa
1933 Commonwealth Ave.
Brighton

MIC.1 Traffic

As shown in Tables 2-3 and 2-4, the average existing level of service at the Beacon Street/Chestnut Hill Avenue intersection is indeed poor with average delays greater than 80 seconds. Through mitigation measures proposed in Section 2.4, the travel delays at the Beacon Street/Chestnut Hill Avenue intersection will be reduced.

MIC.2 Traffic during events

The study area is a vibrant, urban neighborhood, close to a major college campus. Traffic activity associated with most Boston College (BC) sporting events occurs on weekends or on weeknights. The Project, with its mixed use of hotel, residential, medical office, and retail/restaurant spaces will have steady activity throughout the weekday and generally less activity on weekends. As such, the Project will not exacerbate traffic conditions during BC sporting activities.

MIC.3 Medical office space

Please see response provided in Section 7.2.5.

Lopez, Erico

From: Lewis Shepard [lewshel@mac.com]
Sent: Friday, September 21, 2012 2:38 PM
To: Lopez, Erico; Holm, Angela; Mary Cronin
Subject: Last night's meeting

Follow Up Flag: FollowUp
Flag Status: Completed

Dear Mr. Lopez,
I thought you did an excellent job at last night's meeting in keeping the flow of comments and the developer's response in balance.
I would like to repeat my suggestion last night that the project is overly ambitious for the size of the site, having been grossly inflated from last year's design.It is as if the developer was deaf to the careful articulated neighborhood attitudes.
As I said at the meeting, I don't believe that there is any need for medical offices at that spot. According to my brief research there are 270 physicians and 70 dentists in Brookline. There are more than 25 available office spaces for lease in Brookline and Chestnut Hill and 1 mile away, the Atrium Mall on Rt. 9 (300,000. square feet) is being converted medical offices. LS.1

Mr. Meunier said that his study said that there was a demand for medical space. I would like to see that assertion supported by a report.

I was not joking when I said that by eliminating 19,000 square feet he could save millions of dollars and put less stress on the traffic congestion.

I also question the need for two more taxi stands on the hotel property. LS.2
There is one already at the Reservoir MBTA stop (where there are always taxi's and buses staying with running motors>) As a resident at 2400 Beacon Street I would welcome a carefully planned hotel but I think all other parts of this project are unnecessary. There are and have been vacant storefronts on Beacon Street at Cleveland Circle. The recent addition of Starbucks has encouraged student traffic in the neighborhood. LS.3
Thank you for your efforts.

Lewis Shepard
2400 Beacon Street
#301
Chestnut Hill, MA 02467
617-232-1130

LS.1 Medical office space

Please see response provided in Section 7.2.5.

LS.2 Taxi stands

One taxicab stand will be provided near the hotel's main entrance in the City of Boston. Many hotel guests will find it convenient to have a taxicab stand close to the main entrance. The Town of Brookline directed the Proponent to include one Brookline taxicab stand on the Project Site.

LS.3 Support hotel only

Comment noted.

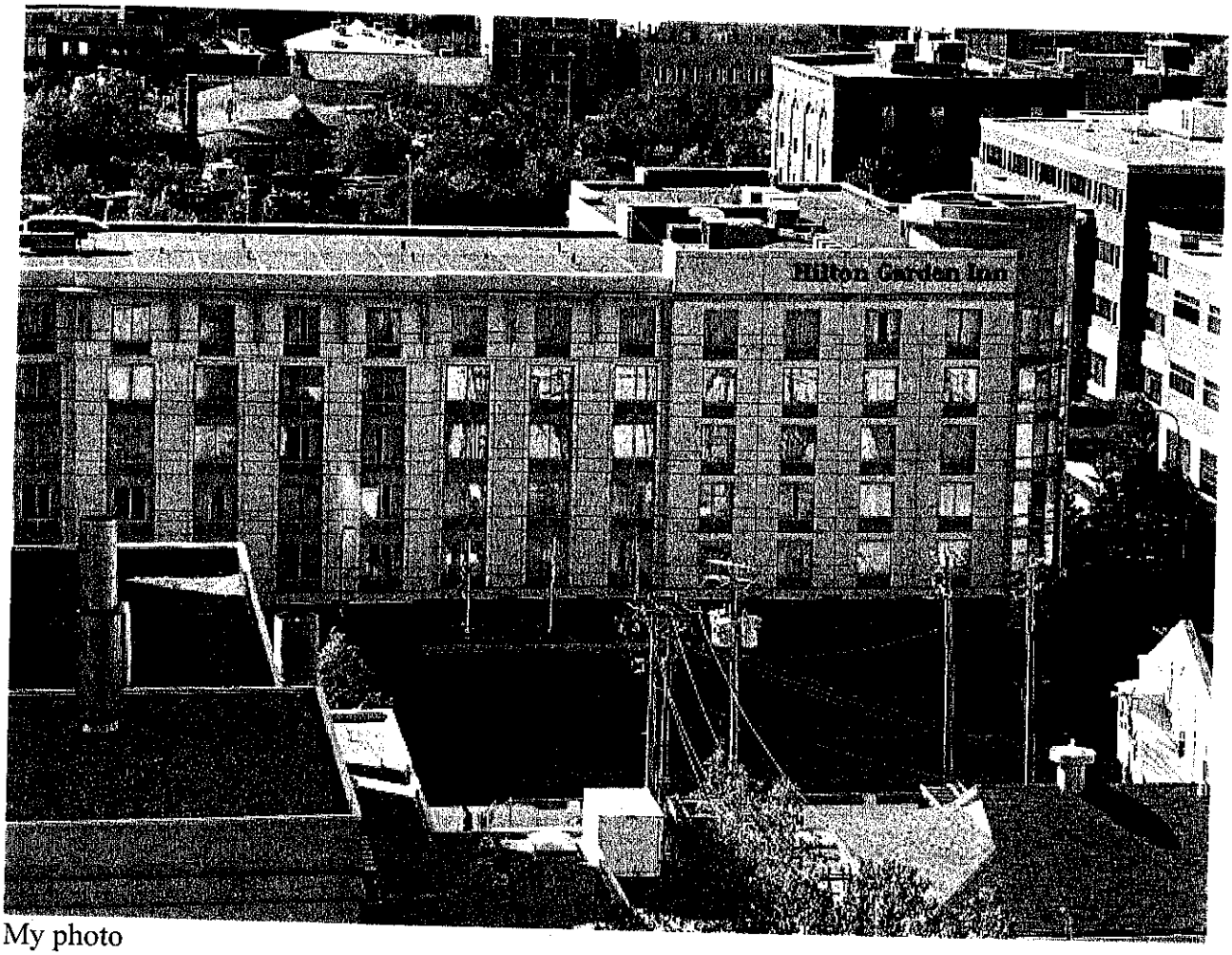
Lopez, Erico

From: cleveland-circle-community@googlegroups.com on behalf of Lewis Shepard [lewshel@mac.com]
Sent: Thursday, October 04, 2012 1:14 PM
To: cleveland-circle-community@googlegroups.com
Subject: {SPAM: 40} :[Cleveland-Circle] This is a letter I sent to Mr. Lopez this week-If I didn't have bronchitis I would be at your meeting.

Dear Mr. Lopez,
I' just like to add a further comment on my earlier email about the proposed development at the Circle Cinema site.
This past weekend I was in Evanston, Illinois staying with my son. From his apartment window I was able to look
down on the nearby Hilton Garden Inn, which contains 178 rooms according to the Internet. I'm also appending a photo from their own website. As you can see it is a massive structure, adjacent to two line of interurban Chicago transit systems.
Evanston, if you have not been there, is not unlike Brighton/Chestnut Hill/Brookline, with apartment and single family homes and a large student population from Northwestern University. I suppose that is why they used brick on the first level of the building to blend in with much of the neighborhood's surface texture.

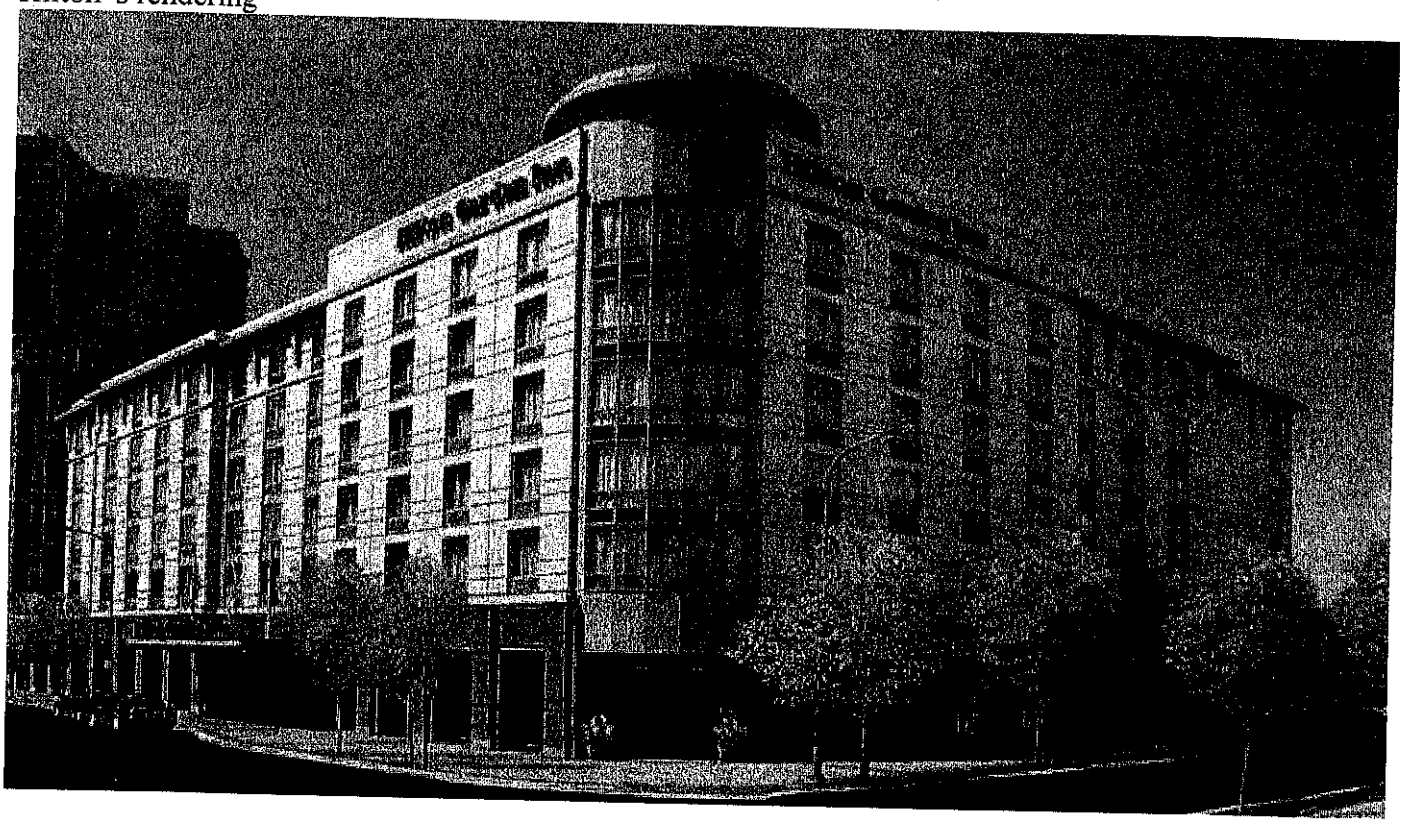
It's not a bad looking building but it is very large. The upper stories would look more at home next to WGBH or the New Balance Building.

I bring this up because the proposed scale of the BDG building does not fit at Cleveland Circle. BDG is stuffing LS2.1
medical offices and retail stores and apartments
in a space best suited just for an hotel. Chestnut Hill Avenue's traffic designation is red and would be getting LS2.2
redder, if there was a way to show it.
I want hotel rooms in the neighborhood, and if there is a restaurant integral to that structure it would be welcome. Anything more would be
a huge blight on Cleveland Circle. Let BDG orient their hotel towards the Circle, building only on Boston land and ignore the town
of Brookline's strictures.
Thank You
Lewis Shepard
2400 Beacon Street
Chestnut Hill, MA



My photo

Hilton' s rendering



LS2.1 Project size

Please see response provided in Section 7.2.1.

LS2.2 Support hotel only

Comment noted.

Lopez, Erico

From: Edna Pressler [Edna.Pressler@umb.edu]
Sent: Thursday, September 20, 2012 6:40 PM
To: Lopez, Erico
Subject: 375-399 Chestnut Hill Avenue Project

Importance: High

Edna Pressler
2400 Beacon St.
Chestnut Hill, MA 02467

September 20, 2012

Erico Lopez
Boston Development Authority
One City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Lopez,

I write to you out of grave concern over the **375-399 Chestnut Hill Avenue Project** that is proposed by BDG. Approval of this project would be in direct violation of the BRA's values of respect and balance. Rather than respecting the individuals, neighborhoods, and communities of that area who would be left to live with the consequences, approval of this project would respect the developers who would leave the area as soon as the project was complete. Rather than balance the concerns of individuals, neighborhoods, and communities of the area with those of the developers, approval of this project would tip the scale toward those who can pay the highest price for lawyers, publicists, etc. In order to remain true to the values of the BRA, **I URGE YOU TO STOP THIS PROJECT FROM GOING FORWARD.**

As we all know, the Cleveland Circle area is very special. It's unusual to have so many opportunities, so close to the city, for people to enjoy free (or nearly free) access to tennis courts, a swimming pool/ice rink, playing fields, walking/jogging path around a reservoir, and free on-street parking. **Everything must be done to protect Cleveland Circle against development that would jeopardize the safety, health, and well-being of the men, women, and children (not to mention the dogs, geese, rabbits, etc) who currently enjoy its use.** Unfortunately, the BDG proposal virtually guarantees conversion of this area into a danger zone for three reasons: traffic congestion on the main roads; inappropriate use of the Waterworks driveway; and, air/sound/light pollution.

Traffic congestion on the main roads:

In the presentation of their proposal, the BDG shows the intersection of Chestnut Hill Avenue and Beacon Street at a time when there is no traffic at all. This is almost never the case, except at an early hour of the morning. It is not the case the rest of the day and night. In fact, the results of the traffic study that the BDG also presented showed **this is actually already a heavily congested area**, even when there are no snow banks narrowing the lanes (which we know is not uncommon during the winter months). The traffic congestion on the main roads is not only a major annoyance to people traveling through the area, but it is also a **major threat** to people using the recreation areas and living in abutting areas. The reason? Because in heavy traffic, **many drivers get impatient and even angry and they end up ignoring traffic rules that are there to ensure safety**. Multiple times a day even now, drivers enter the Waterworks property via the driveway that says "DO NOT ENTER," they park past the sign that says, "No Parking Beyond this Point," and they neglect to stop when pedestrians are standing in the crosswalk. **Significantly increasing the traffic in this area (which is what the BDG proposal would do) will also significantly increase the number of people who endanger others** by ignoring traffic rules, ultimately resulting in disaster. EP.1

Inappropriate use of the Waterworks driveway:

As you know, BDG plans to use the Waterworks driveway as the exit for hotel guests (for a fee). The justification they give is that Brookline "refuses" to allow them to route traffic on to the section of Chestnut Hill Avenue that is in their jurisdiction. If the increase in traffic will be negligible--as BDG implies--there would not be any reason for Brookline to object (especially given the tax revenue they will gain by requiring as many hotel rooms in their part of the project as possible)...yet they do. Obviously, they recognize that this **traffic will have a significant negative impact on even a main road** and on the surrounding neighborhoods. **It really is unconscionable for the alternative to be routing cars and trucks through a driveway that was never meant to be a thoroughfare for such heavy traffic and that runs so close to both the Park and the Watermark**. Anyone who has spent any time in the area knows that it is quite common for balls to end up going out of the Park and into the lawn around the Watermark. **Cars going out the driveway could easily end up hitting a person chasing the ball or could run into the building in an attempt to avoid hitting a person.** EP.2

In addition, the driveway barely meets the current needs of residents. It is very narrow and blocked several times a week by moving trucks, MWRA vehicles, and/or condominium maintenance vehicles (e.g., trash collectors, lifts for window-washers, etc.). Similar to the situation on the main roads, a significant increase in the traffic through the driveway will cause major back-ups which will also significantly increase the number of people who endanger others by ignoring traffic rules, ultimately resulting in disaster. **The fact that the Museum Board is willing to sell use of the driveway to BDG does not make it right or safe!**

Air, sound, and light pollution:

While the danger posed by traffic on the main roads and on the Waterworks driveway could result in immediate injuries and fatalities, **the health and well-being of people who currently enjoy use of Cleveland Circle is likely to be compromised over time by the air, sound, and light pollution produced by this project**. Right now, Cassidy Park and the Chestnut Hill Reservoir offer a kind of city oasis, with (relatively) fresh air, the sound of fans cheering a baseball player around the bases, and beautiful views of the sunset. If the BDG project is completed, people in and around Cassidy Park and the Reservoir will breathe in exhaust fumes from all the traffic going into and out of the hotel/apartments/retail and medical offices; they will hear frequent honking and cursing of drivers frustrated by delays; and, they will see the glare of artificial lights. **What makes Cleveland Circle special, namely, that it is a place where people can go to play sports, exercise, relax, and be out in nature for free, will end.** EP.3

I realize that as a resident of the abutting property, my grave concern about the 375-399 Chestnut Hill Avenue Project may not be taken seriously or may even be dismissed as arising out of self-interest. While I fully expect my property value to go down if the BDG project is completed, I know that it will be easier for me to sell my condo and move back to Brookline (where I lived before and where the town fights for its citizens) than it will be for the parents of a child who is killed to bring their child back to life or for a driver who is paralyzed to regain use of his/her limbs. While raising the specter of such terrible events might sound like a scare tactic, it is not. **It is a realistic appraisal of the risk**, based on having seen what happens day-in and day-out in the area under consideration for this kind of redevelopment.

Please, Mr. Lopez, **do the right thing for the health, safety, and well-being of the men, women, and children who currently enjoy use of Cleveland Circle**. Do not let the 375-399 Chestnut Hill Avenue Project go forward. Uphold the BRA values of respect and balance.

Thank you very much for your consideration.

Sincerely,

Edna Pressler

PS Please know that I was not able to attend the meeting tonight due to work obligations. My absence at the meeting should **not** be taken as a sign of indifference by any means!

EP.1 Traffic congestion

As shown in Tables 2-3 and 2-4, the average existing level of service at the Beacon Street/Chestnut Hill Avenue intersection is indeed poor with average delays greater than 80 seconds. With the new Project, however, it is not the size of the development that dictates the associated degree of traffic impacts, but rather the individual trip-making characteristics of the land uses and the availability of convenient transit options. With the Project's trip activity distributed throughout the day, and not concentrated during peak hours, the result is fewer traffic impacts to the surrounding area.

Through mitigation measures proposed by the Proponent in Section 2.4, the travel delays at the Beacon Street/Chestnut Hill Avenue intersection will be reduced.

EP.2 Waterworks driveway

Please see response provided in Section 7.2.4.

EP.3 Air, sound and light pollution

The air quality analysis in the Expanded PNF showed that emissions from vehicles related to the Project will not result in studied intersections exceeding National Ambient Air Quality Standards. Similarly, the Project will meet all applicable sound level regulations as established by local and state authorities.

The Project will include street lighting at the edge of Cassidy Playground for the safety of the sidewalk that connects the residential and hotel lobbies to Chestnut Hill Avenue. The Project does not proposed significant exterior lighting on the northern façade of the building. Any impacts from lighting would be from within residential units and similar to the impacts from other residential buildings in the area.

Lopez, Erico

From: Sandra Rothenberg [artsgirl50@hotmail.com]
Sent: Thursday, September 20, 2012 2:32 PM
To: Lopez, Erico
Cc: Sandra Rothenberg
Subject: {SPAM: 40} :Development for Cleveland Circle

Dear Mr. Lopez,

I am unable to attend the meeting tonight for the hearing of the real estate development site of the former movie theater in Cleveland Circle, Brighton. However, I have looked at the plans, and believe it to be extremely detrimental for the neighborhood. I have lived and owned my condo in this neighborhood for over 10 years, and see that there are already problems with traffic and parking in the Cleveland Circle area. The current real estate proposal, not only does not accommodate extra traffic or extra cars well, but makes an already bad situation much worse. The development is way to real estate dense for this site or this neighborhood. SR.1

I also think it is wrong for Brookline to support this proposal. First of all, Brighton is not their town, and secondly, I believe it will have negative effects on the Brookline neighborhoods that border Cleveland Circle and on the traffic on Beacon Street in Brookline.

Thank you for your time and consideration.

Sincerely,

Sandra Rothenberg
9 Braemore Road, #4
Brighton, MA 02135

SR.1 Density

Please see response provided in Section 7.2.1.

Lopez, Erico

From: Hwglaser [hwglaser@aol.com]
Sent: Thursday, September 20, 2012 2:23 PM
To: Lopez, Erico
Cc: Klglaser@aol.com
Subject: BDG Cinema Developement Project at Cleveland Circle

Dear Mr. Lopez:

My wife Karen and I live at 2400 Beacon Street in the Watermark Condominium Building located within the Waterworks Park. We along with the majority of Residents living at the Waterworks Park are looking forward to the completion of improvements expected to be made to the adjacent Cinema property. It goes without saying that we are very concerned that any BRA approvals should not be unduly influenced by the Town of Brookline's effort to unfairly interfere with the enjoyment of our property or for that matter the overall proper enhancement of the Cleveland Circle Area by both restricting the use of the property and by causing the Driveway Easement running by our Unit to become Overloaded. Therefore, we want to bring the following specific matters to the attention of the BRA for consideration before the current Development Proposal is approved:

1. The Project is too large and the inner Courtyard designed to accept all incoming traffic is too small likely to cause serious backups onto Chestnut Hill Avenue; and HKG.1
2. There is inadequate parking planned for the employees, tenants, patients and hotel guests; and HKG.2
3. Unlike Waterworks Park no landscaped Green Space consistent with adjacent properties has been planned; and HKG.3
4. Little, if any, consideration has been given to mitigating the impact on the Roadway Easement running by our Unit to wit:

a. Unfamiliar Hotel Guest will be using the Roadway Easement when it would be far better for the Apartment Tenants to use it because they would become more familiar with its shared use with Waterworks Park Unit Owners, Persons using the Tennis Courts, Children crossing the Easement to play at the Park and the Roadways curves and narrowness; and HKG.4

b. The Developer has not offered any solution to the backups occurring at Beacon Street especially when making a left turn out of the Roadway Easement, nor has it considered the ability of the users to use other Waterworks Park Roadways wherein they do not have easement rights; and HKG.5

c. The Developer's Traffic Engineering Studies leave a lot to be desired for their failure to take into consideration the fact that there continues to be a lack of control of the number of vehicles allowed to use the Roadway, that the original Roadway Easement was wider and straighter then the current Roadway, and that the Cinema Lease was to expire in 2015. HKG.6

The Developer withdrew its original Plan and resubmitted the current Plan without addressing the many Community Concerns that were brought to its attention more than one year ago. We are hoping that the BRA will not rush to judgment and is now prepared to address the Community's concerns and help cause the Project to better serve the interest of the entire Cleveland Circle Area.

Please allow me to thank you and the BRA in advance for your anticipated consideration and kind attention to our situation.

Very truly yours, Howard and Karen Glaser, Unit 408, 2400 Beacon Street, Chestnut Hill, MA 02467

HKG.1 Density and courtyard

Please see responses provided in Sections 7.2.1 and 7.2.7.

HKG.2 Parking

Please see response provided in Section 7.2.9.

HKG.3 Green space on site

The revised landscape design concept for the courtyard seeks to "soften" the hard angles and surfaces of the building with gentle, free-form planted areas, while also introducing human-scaled elements, such as decorative planters and a water feature. The revised landscape design also takes advantage of the larger island, created with the redesign of the roadway to be one-way instead of two-way, to introduce more greenery. On the opposite side, at the drop-off/pick-up areas, the design exploits the southern sun exposure and proposes 15-foot tall flowering trees and an array of different flowers, plants and shrubs. In addition, colorful pots and planters and two different seating areas will add a pedestrian-friendly dimension to the courtyard space.

HKG.4 Waterworks driveway

Please see response provided in Section 7.2.4.

HKG.5 Exit to Beacon Street backups

The Beacon Street/Waterworks Driveway Exit is one of the study intersections assessed in the transportation study in Chapter 2. The intersection is currently unsignalized and traffic exiting the driveway is controlled by a stop sign. Analysis results show that that, on average, drivers exiting the driveway currently experience LOS C during the a.m. peak and p.m. peak hours. With the addition of new Project trips to the Waterworks driveway, level of service would remain at LOS C. LOS D or better is considered acceptable in urban areas.

Note that an evaluation of future conditions at the Beacon Street/Waterworks Driveway with Project traffic using the rear driveway showed that a traffic signal is not warranted at this location.

HKG.6 Traffic study of Waterworks driveway

Please see response provided in Section 7.2.4.

Lopez, Erico

From: vesna besarabic [vesna@orinoco.bz]
Sent: Wednesday, September 19, 2012 3:14 PM
To: Lopez, Erico
Subject: Cinema Project Chestnut Hill Avenue

Dear Mr. Lopez,

I am pleased that this project is proceeding and look forward to days when I will no longer look out my living room window to see a filthy parking lot, grafitti and occasionally a human corpse.

I have, however, two concerns about this development.

One, Boston Development Group is getting a lot and not giving anything in return. I would like to see improvements to the currently truly pathetic Cleveland Circle. Logic would dictate that Cleveland Circle should be converted back to a circle to eliminate traffic bottlenecks, fumes from idling cars, dangerous left turns and the ongoing menacing of pedestrians and bicyclists by careless car drivers. I ask you to think of Columbus Circle in New York, which a few years ago was converted from a dreadful place with auto lanes criss-crossing it to a far safer circle with a lovely park and fountain in the middle of it. I think BDG should be responsible for making this improvement. VB.1

The second item I am concerned about is that Brookline is dictating what traffic is allowed to exit from the Cinema property onto Chestnut Hill Avenue. I cannot understand why this municipality is dictating traffic patterns to the City of Boston. VB.2

Thank you for considering my suggestions.

Sincerely,

Vesna Besarabic
2400 Beacon Street, Unit 213
Chestnut Hill, MA 02467

VB.1 Convert Cleveland Circle back into a circle

The Proponent is recommending improvements to the intersection of Beacon Street/Chestnut Hill Avenue to improve existing traffic and pedestrians conditions. Please see Section 2.4.1 for a discussion of mitigation measures for this intersection.

VB.2 Exit pattern determined by Brookline

Level of service analysis results (see Tables 2-17 and 2-18 in Section 2.4) show that the access/egress plan with a two-way driveway on Chestnut Hill Avenue and an exit-only driveway to Beacon Street will adequately process Project vehicles and will not produce queues that would block access, egress, or courtyard circulation. No additional Project driveways are necessary.

Lopez, Erico

From: Alexander Poulos [alex@launchpad.co]
Sent: Wednesday, September 19, 2012 12:36 PM
To: Lopez, Erico
Subject: Redevelopment of Circle Cinema Site

Follow Up Flag: FollowUp
Flag Status: Completed

To: Mr. Erico Lopez, BRA

One City Hall Square, Boston MA 02201

From: Alexander Poulos

2400 Beacon Street, unit 302

Boston, MA 02467

Re: Redevelopment of former Circle Cinema site

Mr. Lopez, hello.

My wife and I have been happy residence of the Watermark building (2400 Beacon Street) for about four years now. Since moving in, we often wondered – what's going to become of that dilapidated building next to us - known as the former Circle Cinema.

When we first learned of the redevelopment plan – both for the Circle Cinema building and the current Applebee's, we were in fact quite excited. A "higher-end" restaurant and "boutique hotel" were rumored to be moving in. Those rumors were fueled by tantalizing leaks from the developers as to their plans to "greatly improve the site".

But our excitement has quelled some, as we've learned that the "plan" is for a much bigger and more intrusive undertaking - some 40% bigger then first proposed - and one that may fall well short of "improving the site" and perhaps negatively impacting our community as a whole.

I'd like to express three concerns as I see them:

· Traffic Congestion is a major concern to those who live and work in the Cleveland Circle area. Driving into the already congested and often confusing Cleveland Circle intersection can be a real challenge – particularly during the winter months when road access and lanes are restricted by snow fall and snow mounds. Frankly, and without any "official" knowledge, I dare say Cleveland Circle is one of the *worst intersections in Boston.* There is a near miss - be it driving, walking, or biking - daily. Those of us who live there, have all seen and/or experienced this. AP.1

· Related to the traffic concerns - I understand that Brookline has mandated that a large portion of site traffic needs to exit the property using the access road to Beacon Street. Beyond maps and measurements – has anyone actually looked at the road? It is narrow, winds along the Watermark building, and was clearly not meant for heavy traffic. I have personally seen mishaps by other drivers in navigating the road during snow and ice conditions, and just last year our own landscaper in a 3/4 ton truck smacked into railroad beams used as supports for the road. Increased traffic through that confined space – could very possibly result in increased incidents. Which leads me to a valid concern – who would be responsible if an incident occurs? Or say we have work going on which blocks the road – window washing, landscaping, roof repair, people moving into the build, etc., all quickly come to mind. And in my four years living at Waterworks – I have seen each of these cases "block" the road. AP.2

· Last – and this is more of a personal comment – my wife and I decided to moved to the area, as we knew it to be a revitalized and "up and coming" part of town. We both work in the area – I in Newton and my wife at BC. We dine in the area. We enjoy the parks, the reservoir paths, and the close proximity to shops and restaurants. We don't want to see the community as a whole take a big step backward - be it for us, for our neighbors in the Watermark building, and for the entire community around Cleveland Circle.

Mr. Lopez, please know that my wife and I are not opposed to redevelopment just for the sake of slowing down progress or preventing any development from happening. We are very much in favor of a well planned, well understood, attractive, and community improving project that will uplift the neighborhoods around Cleveland Circle - and not take away from Cassidy Park and the Reservoir. I simply ask that the overall scale of the project be and the use of the access road be reconsidered. Compromise is part of any project. Frankly its a part of life...there are always trade-offs. So perhaps an amicable compromise can be made, regarding building size and usage, working with the developer?

The reality is - we (the developer, the BRA, residents of the Cleveland Circle community) all have *the same goal* - a successful redevelopment of the site. With just a little common consideration - that goal can be achieved for all of us.

Thank you for your overall efforts with this matter - and for your time and consideration in reading this note.

Sincerely,

Alex Poulos

Watermark 302

Alex Poulos | LaunchPad Media
100 Galen Street, 2nd Floor
Watertown, MA 02472
P: 617.926.8700 x114
www.launchpad.co

AP.1 Traffic congestion

As shown in Tables 2-3 and 2-4, the average existing level of service at the Beacon Street/Chestnut Hill Avenue intersection is indeed poor with average delays greater than 80 seconds. Through mitigation measures proposed by the Proponent in Section 2.4, the travel delays at the Beacon Street/Chestnut Hill Avenue intersection will be reduced.

AP.2 Waterworks driveway

Please see response provided in Section 7.2.4.

Lopez, Erico

From: Leslee Winston [lesleekw@me.com]
Sent: Wednesday, September 19, 2012 8:25 AM
To: Lopez, Erico
Cc: Leslee Karol Winston
Subject: Chestnut Hill Proposed Project

Dear Mr. Lopez,

I am a resident of the Waterworks, and I am very disheartened and rather shocked with the proposed plan with use of our driveway.

It's a sorry state of affairs when money is put before safety. Sadly, we see this happening over and over. But we are going to do our best to deter you from allowing this horrendous situation to occur.

The Boston Development Group seems only concerned about making money. Their project at Cleveland Circle will create havoc on Chestnut Hill Ave and all surrounding roads. We already are dealing with a major bottleneck at Cleveland Circle. What they are proposing makes no sense, and should never be allowed.

When we, the owners of Waterworks purchased our units, we were only dealing with a cinema. The traffic was minimal, at best.

The game has changes, the players have changed, and new rules need to be applied. First and foremost, there is no way that this new project can have access to Watermark driveway, The safety hazard it will create would be disastrous. If the proposed project were to have access, eventually our driveway would become as busy as any public road, and I can assure you that was not the intention when this complex was built. That is precisely why the driveway is winding and curvy ~ so no one can speed around. Those of us who live here go slow and take caution. Before they put the fence up, we have all seen random people who have discovered they can cut through from Chestnut Hill Ave speed around our driveway, where children, adults and pets cross. LW.1

To allow access to our driveway would be asking for disaster, and setting the scene for tragedies. There is no question that this is not an option. Our driveway was not built to handle heavy traffic, and that's exactly what this project will produce.

The project proposed is much too large to facilitate the parking that would be needed. It's simply not there. Access to our driveway is a major safety hazard, and should never even be considered as part of this plan. LW.2

Please consider what I have said, and I know others here have said. We need to preserve the integrity and safety of our complex.
What you are proposing would destroy that, and we cannot allow this to happen.

Sincerely,

Leslee Winston
Unit 410
Watermark

LW.1 Waterworks driveway

Please see response provided in Section 7.2.4.

LW.2 Density and parking

Please see response provided in Section 7.2.9.

WATERMARK RESIDENT GROUP

2400 BEACON STREET CHESTNUT HILL/BRIGHTON MA 02467

September 12, 2012

Dear Mayor Menino

I am writing on behalf of the Watermark Resident Group to request the immediate BRA approval of a peer review traffic study for the proposed Cleveland Circle Cinema Redevelopment. At a Waterworks resident meeting with the developer on September 11, residents pointed out multiple omissions and issues in BDG's proposed traffic management plans. John Meunier of BDG was asked if BDG would pay for a Boston-facing independent traffic study in parallel to the study the BDG is funding on behalf of Brookline. Meunier responded that he is willing to provide funding and he is just waiting for the BRA to approve the study. WRG.1

Given the scope, density and extensive community impact of the proposed project, and the existing traffic conditions in our neighborhood, Boston abutters should have the benefit same level of independent, 3rd party review of the BDG traffic projections as the residents of Brookline are receiving.

Sincerely,

Lewis Shepard
2400 Beacon Street
Watermark Resident Group

CC via e-mail:

Mark Ciommo, City Councilor
Peter Meade, Director
Erico Lopez, Senior Project Manager
Michael Kineavy, Chief of Policy and Planning
Angela Holm, Mayor's Office of Neighborhood Services
Senator Will Brownsberger
Representative Kevin Honan
Representative Mike Moran

WATERMARK RESIDENT GROUP

Amy Burdick	Watermark 101
Aaron Kleiner	Watermark 103
Samuel Kleiner	Watermark 103
Marty Laughrey	Watermark 107
Tony Laughrey	Watermark 107
Chrisanthi Bethanis	Watermark 108
Panas Bethanis	Watermark 108
Diane Rosenbaum	Watermark 109
Neal Solomon	Watermark 110
Ilene Solomon	Watermark 110
Brian Clougherty	Watermark 111
Megan Moylan Clougherty	Watermark 111
Mildred Rein	Watermark 112
Faye Ruopp	Watermark 201
Charles Ruopp	Watermark 201
Beth Kemler	Watermark 203
James P. Lemonias	Watermark 204
Anna G. Lemonias	Watermark 204
Alicia Lawless	Watermark 206
Scott B. Guthery	Watermark 208
Mary Cronin	Watermark 208
Vesna Besarabic	Watermark 213
Howard Goldsweig	Watermark 213
Jerry Quinn	Watermark 215
Ellen R. Berezin	Watermark 301
Lewis A. Shepard	Watermark 301
Alex Poulos	Watermark 302
Betty Poulos	Watermark 302
Ken O. Bloch	Watermark 303
Lissa R. Kapust	Watermark 304
Jeanine Wong	Watermark 305
Manuela Alves	Watermark 306
Tony Andrade	Watermark 306
Louis Shuster	Watermark 307
Sheryl Gipstein	Watermark 312
Nanette Bisher	Watermark 315
Amy Bernstein	Watermark 315
Vitality Gassel	Watermark 401
Zina Gassel	Watermark 401
Mark Lewis	Watermark 403
Tim Lamoriello	Watermark 404
T Lamoriello	Watermark 404
Robert Capalbo	Watermark 407
Howard Glaser	Watermark 408
Karen L. Glaser	Watermark 408
Edna Pressler	Watermark 409
Leslee Winston	Watermark 410
David A. Kazis	Watermark 411
Jordan Fish	Watermark 412
Cynthia Taft	Watermark 501
Dick Egdahl	Watermark 501
Kurt Bloch	Watermark 502
Margot Bloch	Watermark 502
Chris Murphy	Watermark 503
Esther Silverstone	Watermark 504
Dr. Leslie Silverstone	Watermark 504
Kumme Cho	Watermark 505
Kookheen Char	Watermark 505
Sheryl D. Eisenberg	Watermark 506
Charlotte Knox	Watermark 507
Ken Stein	Watermark 507
Pamela Manolakis	Watermark 508
Arlene J. Wolk	Watermark 509
Lauri Mitchell	Watermark 510
Jeansue Lee	Watermark 512
Tim Connell	Watermark 604
Neil S. Hyman	Watermark 608
Albert L. Hyman, MD	Watermark 608
Elsa Ramin	Watermark 609
Gerald Ramin	Watermark 609

WRG.1 Independent traffic study

Please see response to comment CCES.4.

WATERMARK RESIDENT GROUP

2400 BEACON STREET CHESTNUT HILL/BRIGHTON MA 02467

September 5, 2012

To: Thomas M. Menino, Mayor of Boston
Mark Ciommo, Felix G. Arroyo, John R. Connolly, Stephen J. Murphy, Ayanna Pressley, Boston City Council
Representative Michael Moran
Representative Kevin Honan
Senator Will Brownsberger
Peter Meade, Director, BRA
Michael Kineavy, Director, Mayor's Office of Neighborhood Services

From: The Watermark Resident Group

We are condominium owners and residents at the Watermark, 2400 Beacon Street, directly adjacent to Cleveland Circle. We are, as a consequence, immediate abutters to the proposed mixed use development at 375-399 Chestnut Hill Avenue for which the Boston Development Group (BDG) filed a Project Notification Form on August 16, 2012.

We support a thoughtful and high quality development of this Chestnut Hill Avenue parcel. We are, however, concerned that certain aspects of BDG's current proposal will have a negative impact on the Cleveland Circle neighborhood and on our homes.

It is essential for any new development to respect the open space and recreational uses of Cassidy Playground and Park as well as the Waterworks Park. As abutters and community members, we will actively participate in the upcoming Article 80 Large Project review process. We will also ask to meet directly with our elected representatives and City of Boston agencies to discuss our specific concerns with the BDG proposal. WRG2.1

Our goal is to ensure that any Cleveland Circle development improves the viability of this historic Boston neighborhood without detracting from the quality of life of property owners and residents.

Our group appreciates your support for this goal.

Sincerely,

Watermark Resident Group

(70 Watermark owners and residents have signed this letter; names are attached)

CC: Erico Lopez, BRA, Angela Holm, Office of Neighborhood Services

WATERMARK RESIDENT GROUP MEMBERS

Signatures to the September 5 letter:

Amy Burdick	*Watermark 101*
Aaron Kleiner	*Watermark 103*
Samuel Kleiner	*Watermark 103*
Marty Laughrey	*Watermark 107*
Tony Laughrey	*Watermark 107*
Chrisanthi Bethanis	*Watermark 108*
Panas Bethanis	*Watermark 108*
Diane Rosenbaum	*Watermark 109*
Neal Solomon	*Watermark 110*
Ilene Solomon	*Watermark 110*
Brian Clougherty	*Watermark 111*
Megan Moylan Clougherty	*Watermark 111*
Mildred Rein	*Watermark 112*
Faye Ruopp	*Watermark 201*
Charles Ruopp	*Watermark 201*
Beth Kemler	*Watermark 203*
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Ellen R. Berezin	*Watermark 301*
Lewis A. Shepard	*Watermark 301*
Alex Poulos	*Watermark 302*
Betty Poulos	*Watermark 302*
Ken O. Bloch	*Watermark 303*
Lissa R. Kapust	*Watermark 304*
Jeanine Wong	*Watermark 305*
Manuela Alves	*Watermark 306*
Tony Andrade	*Watermark 306*
Louis Shuster	*Watermark 307*
Sheryl Gipstein	*Watermark 312*
Nanette Bisher	*Watermark 315*
Amy Bernstein	*Watermark 315*
Vitality Gassel	*Watermark 401*
Zina Gassel	*Watermark 401*
Mark Lewis	*Watermark 403*
Tim Lamoriello	*Watermark 404*
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Edna Pressler	*Watermark 409*
Leslee Winston	*Watermark 410*
David A. Kazis	*Watermark 411*
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Lauri Mitchell	*Watermark 510*
Jeansue Lee	*Watermark 512*
Tim Connell	*Watermark 604*
Neil S. Hyman	*Watermark 608*
Albert L. Hyman, MD	*Watermark 608*
Elsa Ramin	*Watermark 609*
Gerald Ramin	*Watermark 609*

WRG2.1 Respect surrounding open space and recreational uses

Please see response provided in Section 7.2.3 and Section 4.3.1.

Charlotte Knox & Kenneth Stein
2400 Beacon Street #507
Chestnut Hill, MA 02467

September 16, 2012

Mr. Erico Lopez
Boston Redevelopment Authority
One City Hall Square 9th Floor
Boston, MA 02201

Re: 375-399 Chestnut Hill Avenue (Cleveland Circle Cinema Redevelopment)

Dear Mr. Lopez,

We are owner / residents of Unit 507 in the Watermark condominium building, part of the Waterworks Project, direct abutters of the "Cinema" property. Our living room "patio type" doors directly overlook what we refer to in this letter as a critical "blind spot" the driveway that Boston Development Group proposed to use as a major exit roadway for its proposed project.

During the 2011 review of this project, we spoke out forcefully in opposition to the project plan that was submitted. Fortunately for all parties, that plan was withdrawn.

We are in favor of a development plan whose principal characteristic is "respect".

- Respect for the gateway nature of Cleveland Circle
- Respect for the opportunity to make positive impact on the future of Cleveland Circle
- Respect for the architectural characteristics of the nearby neighborhoods
- Respect for the people who must pass through Cleveland Circle by motor vehicle
- Respect for nearby businesses who rely on an already inadequate supply of street parking
- Respect for the 112 homeowners of the Waterworks Condominium complex, who have invested over $100 million in their Waterworks condominium homes.

Unfortunately, the current Project proposal is a failure in all these respects.

- The design, or architectural face presented is a not appropriate for this location, and an insult to the nearby neighborhoods. The artist renderings presented would be more appropriate for a strip mall on Route 9 in Framingham than a gateway location adjacent to Olmstead designed landscapes. CKKS.1
- The provision for 228 parking spaces for 181 hotel rooms, 82 apartments, 19,000 square feet of office space, and 14,000 square feet of retail and restaurant space is totally inadequate, and will damage the Cleveland Circle businesses who already recognize how difficult it is to find parking now. CKKS.2
- The traffic study presented in the PNF is totally inadequate, and full of many serious errors. BDG's traffic engineers seem to have concluded that since major parts of the Cleveland Circle intersection already have the worst congestion rating, that adding more traffic is OK, since the rating is already the worst, and cannot get a more negative rating. The engineers have proposed adding a series of left turn lanes thought the intersection. We feel this is at the least misleading, if not physically impossible. CKKS.3
- The interior courtyard is a major flaw in the project design. 100% of the customer, support, and service traffic entering into this limited area? Nowhere in the plan is there a mention of the effects of vehicle exhaust fumes on all of the people whose hotel rooms, apartments, medical offices restaurants, etc., that will be adjacent to this area. What will happen when a delivery truck, bus, etc, etc. blocks the entrance. Where will all these vehicles needing entrance to the project queue up? CKKS.4 CKKS.5 CKKS.6
- The Waterworks project took many years of dedicated community efforts, design work, and many millions of dollars of investments by the developers, and the unit buyers. All this work is endangered by a poorly planned, poorly designed, overly ambitious project, whose developers want to hold the Waterworks unit owners hostage to their plans. The town of Brookline is very concerned about their residents. In order to protect their adjacent neighborhood and property owners, they will require a significant portion of the project exiting traffic to use a narrow, dangerous driveway.

Waterworks Driveway Issues

Regardless of the existence of any "easement or licensing rights", is seems obvious that the Waterworks roadways and traffic plan were designed and built to accommodate an upscale residential community of 112 condominium units and their vehicles. The most sensitive part of the roadway plan is the narrow, one-way roadway that provides both access and exit to Whitehall and Watermark garages.

A. Segment 1 of the roadway starts at the northeast corner of Whitehall,(Point 1) and runs approx. 140 ft. to Point 2, between Whitehall and the "hatch" garden. It is narrow (no potential for passing a stopped vehicle), one way, and ends with a stop sign, and a partially visually blocked 90 degree left turn. Vehicles exiting from Whitehall garage make a blind exit onto the driveway at this point.

B. Segment 2 of the roadway runs from the stop sign at the Whitehall garage to the southeast corner of Watermark. It is approx. 400 ft in length, also one way, and except for two MWRA reserved parking spaces, offers no possibility for a vehicle u-turn. It is bordered on the right by a masonry wall along the MBTA right of way, and by curbed and landscaped areas of the Watermark building. The end of this segment is particularly hazardous, as it has a blind, greater than 90 degree turn. Vehicles exiting from Whitehall have to make that blind turn to continue the exit route. Vehicles exiting from the Watermark garage have to execute an almost 180 degree turn. Vehicles exiting from the Cinema property, being "casual" users from the hotel, would intersect at this hazardous point. Any attempt by a "casual" user trying to bypass a traffic blockage on the Watermark driveway (between points 3 and 4) has the potential of producing a dangerous crash.

C. Segment 3 of the driveway runs between the Watermark building and Cassidy Park. (points 3, 4 and 5) It is approx 400 feet in length, with the following characteristics:

1. Limited sight distance around "blind spot" (Point 4) (approx 60 ft), along with minimum stopping distance estimates for motor vehicles, creates safety hazards.

2. Existing lighting on roadway, especially near blind spot, increases risk of personal, vehicular, and motor vehicle accidents in hours of darkness. Adding additional lighting would be expensive and likely result in negative market value effects to adjacent unit owners.

3. Vehicular breakdowns on the driveway could cause significant problems for all parties. Breakdowns between the blind spot and Beacon Street are not visible from the entrance to the driveway. Possible outcomes of such an occurrence could be chain reaction crashes, and traffic backups filling the driveway. The length, narrow width, and curves of the driveway make u-turns impossible, and backups dangerous.

4. This segment of the roadway borders a busy City park. Directly abutting the driveway is a heavily used baseball field with bleachers, and two public tennis courts. During the summer there is a tennis camp for children, who are dropped off and picked up along the driveway. Considering the blind spot, limited lighting, and unfamiliarity of hotel guests with this roadway, the potential for serious accidents is very real.

5. Any blockage of Segment 3 could lead to serious traffic and safety issues throughout the Waterworks complex and the "Cinema" development. Once on this segment, there is no way out (except backing out).

Summary comments regarding the Roadway:

The 900 ft roadway has three blind turns,(Points 2, 3, and 4), is one-way the entire distance, is single vehicle width, with one exception, has no place for vehicle turn around. If this traffic roadway had been designed to accommodate commercial traffic from a redeveloped Cinema parcel, the driveway width would have provided passing space, blind spots would have been eliminated, lighting would have been appropriate, and barriers between Cassidy Park and the driveway would have been built. The use of this driveway as the principal exit for an 80 room hotel is inappropriate and dangerous. CKKS.7

The PNF we have seen has no provision for dealing with blockage of the Watermark Driveway. How will hotel guests exit the property if there is a spin out, crash, breakdown, or property maintenance that is causing the driveway to be blocked. Having strangers exit by going the wrong way out of a one way driveway (going from Point 3, to 2 to 1 is dangerous and unacceptable.

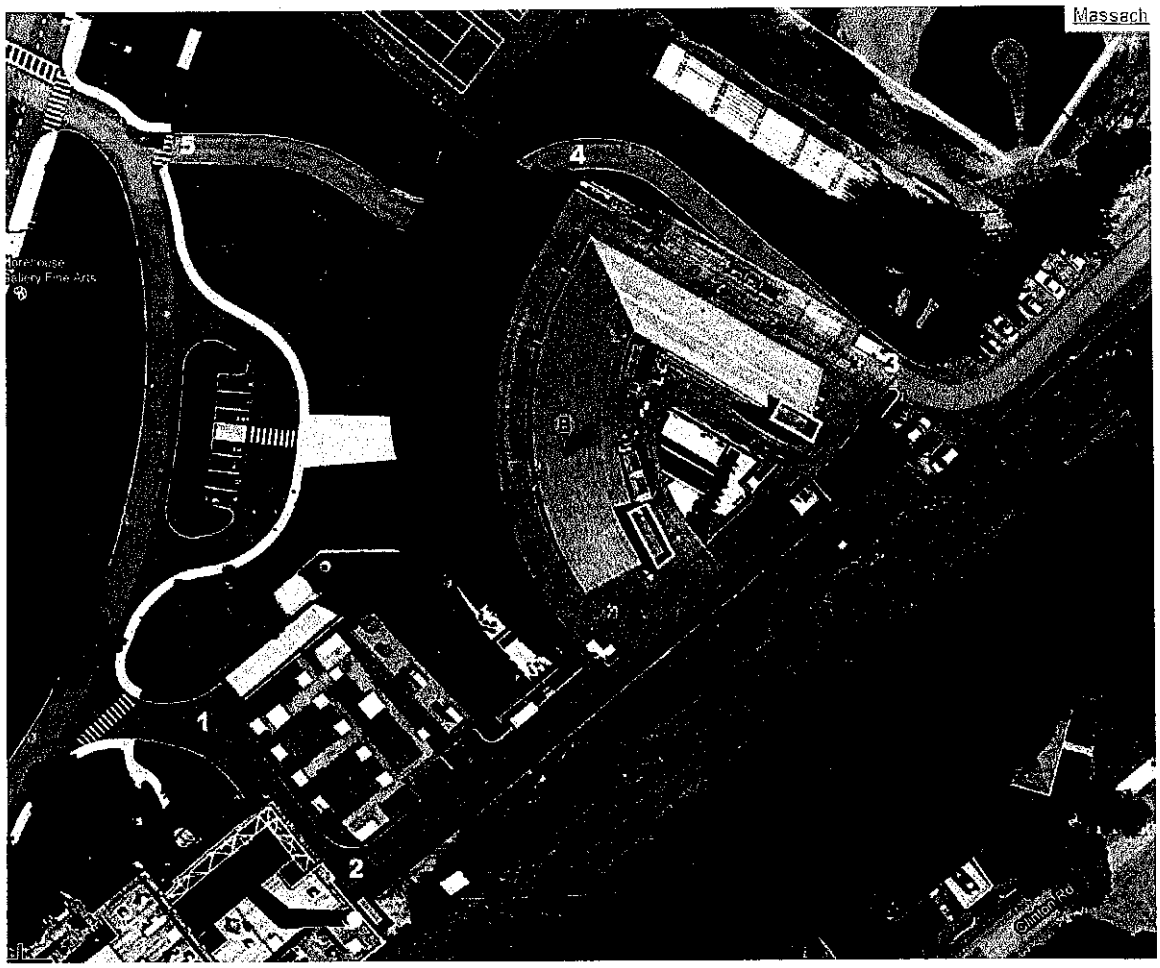
There also is no mention of other project traffic being allowed to use our driveway due to unforeseen occurrences on the Cinema project.

Bottom Line: It is our opinion that the current project plan is an insult to the City of Boston, the Cleveland Circle neighborhoods, and the Waterworks Community, and physically dangerous to Waterworks residents and users of Cassidy Park. We strongly urge that it be rejected.

Respectfully submitted

Charlotte Knox and Kenneth Stein

Watermark Whitehall Driveway Description



Vehicles entering the Watermark or Whitehall garages enter the driveway at Point1, between the Whitehall building and the "Hatch" Garden. The distance between Point 1 and Point 2 is 130 feet, with a width of 14 feet. There is a stop sign at Point 3. Point 2 is a blind spot for vehicles entering or exiting the Whitehall garage, and a blind, 90 degree left turn for vehicles going to the Watermark Garage.

The distance from Point 2 to Point 3 is 370 feet, with a typical width of 16 feet. A narrow width of 14 feet is at the Utility enclosure, near the entrance to the Watermark Garage. A portion of the driveway just prior to the utility enclosure is frequently used for parking delivery and service vehicles, which are not permitted to use the front entrance to Watermark. The entrance to the Watermark garage is a blind, 90 degree left turn.

Vehicles exiting from Whitehall travel from Point 2 to Point 3, where they make a blind 90 degree left turn.

Vehicles exiting from Watermark garage make a blind 90 degree left turn out of the garage (aided by a large mirror), and then immediately execute another 90 degree blind left turn to continue on the driveway exit pattern. This portion of the driveway, between Points 4, 4, and 5, is 14 feet in width. Vehicles travelling this portion of the driveway approach another blind point, approx. 186 feet from Point 3. To the rights of the roadway is Cassidy Park baseball field and bleachers, and the two tennis courts. People using these facilities frequently walk on the driveway, creating a safety hazard. Aside from a moderate earth berm (which also obscures drivers vision), there is no barrier between the recreation uses and the driveway. Past Point 4, the driveway continues another 220 feet. During morning hours, drivers' are often blinded by solar glare on these roadway segments. Drivers exiting Whitehall and Watermark garages have frequently encountered cars driving the wrong way from point 5 to point 3.

CKKS.1 Architecture

Please see response provided in Section 7.2.6.

CKKS.2 Parking

Please see response provided in Section 7.2.9.

CKKS.3 Traffic report

Please see response provided in Section 7.2.8.

CKKS.4 Courtyard

Please see response provided in Section 7.2.7.

CKKS.5 Courtyard air quality

Please see response to comment CCES.12.

CKKS.6 Blockage of entrance by others

The courtyard, which has been enlarged in the DPIR plan as compared to that presented in the Expanded PNF, has been evaluated using AutoTURN, an engineering software program that analyzes vehicle maneuvers. Through an iterative assessment of the site plan and vehicle maneuvers, an optimal design was developed for the Project Site and courtyard that provides adequate roadway width/clearance for automobiles and delivery vehicles as they access, egress, and circulate within the site. As vehicle enter the site, they will proceed into the courtyard and travel to the drop-off curb lane, short-term hotel parking spaces, the rear parking lot, the lower level parking garage, or the service areas. Ample maneuverability in and around the courtyard will exist to prevent traffic queues at the entrance driveway.

CKKS.7 Waterworks driveway

Please see response provided in Section 7.2.4.

Charlotte B. Knox
2400 Beacon Street, Unit 507
Chestnut Hill, MA 02467
Tel. 617 – 505 – 6660

Mr. Erico Lopez
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007.

Wednesday, September 12, 2012

Hi Mr. Lopez or Erico*,

Since I have not met you yet, I feel uncomfortable calling you by your first name. I guess I am not a full American.

Please, please protect our neighborhood. I care about the footprint of this ever growing super dense project.

I am worried about BDG's plans for the cinema property in Cleveland Circle. I fear BDG's plans will harm and not help our neighborhood.

My husband and I moved to the Waterworks in Chestnut Hill, Brighton 5+ years ago. I was concerned that moving to Boston would mean we would be living a in big city with out an ability to express ourselves. I have become interested and involved with our neighborhood and realized my concerns were unfounded. Our politicians do listen! We love living in Brighton. We care and want to continue to work with our community.

I have been thanking the neighborhood and our local politicans for our lovley new home. I am proud to be living at Waterworks. The community made a difference and turned a run down area into a thing of beauty.

I am writing you, because I have 5 serious concerns about the plans for our neighborhoodHere are my concerns:

1. Boston Development Group doesn't seem to be concerned about the Brighton /Alston community and the community's concerns. Brookline seems to be their only interest. CK.1
2. I feel BDG is concerned in placating Brookline's issues (Less than 20% of the cinema property & Applebee property is in Brookline) How can Brookline put demands on Boston? Why does Boston need to follow Brookline's demands? I don't understand.

3. There has been no mention as to BDG's development impact to Cleveland Circle and the immediate neighborhood. There will be the additional traffic and heavy duty density issues. This could seriously harm our Cleveland Circle. BDG plans keep getting denser every time they present their updated designs! If the traffic through Cleveland Circle is dense, how can BDG say the traffic from there project will not impact the traffic? The traffic added traffic will cause harm seriously dense or dangerously dense? CK.2

4. What about the Waterworks' access road? Brookline demanded that BDG use Waterworks/Watermark access road. The residents are going to be seriously impacted with additional traffic. There will be more cars traveling through our tiny narrow driveway than they are inhabitants in the entire Waterworks property! Now our property has 3 exit roads to accommodate our residential traffic. After the BDG development is completed our property will suffer serious gridlock problems and the driveway will be DANGEROUS. I fear cars and other vehicles will dash through our property all times of the day and night when leaving the hotel or returning to the hotel. More vehicles move through our driveway because of the heavy traffic issues in Cleveland Circle. In addition the residents in Waterworks/ Watermark will be negatively impacted by the poor air quality due to the additional traffic. **Please come and see our tiny access driveway that BDG plans on using.** The road is way too narrow and small for major usage. **BOTTOMLINE – the pedestrians, Cassidy Park users and in particular the children will be in serious danger of being maimed, hurt or killed, because of the blind spots on our driveway**. It feels oh so wrong. After multiple public meetings, I get the impression that the people at BDG smile and say that our traffic problem is not their concern. **PLEASE HELP** CK.3

5. Mr. Fish helped the community with a million dollar community improvement contribution. The community has given accolades to Mr. Fish for his gift to our neighborhood.BDG hasn't mentioned anything with regard to improving our neighborhood. They feel their hotel, housing project and offices is all they need to improve the neighborhood. Again this feels wrong. CK.4

Please help me and my neighbors. What would you suggest I do?

Charlotte Knox

Charlotte Knox
617 505 6660

****I emailed you copy of this letter.***

CK.1 Brookline demands

The Proponent has made an effort to address the concerns of the City of Boston, Town of Brookline and surrounding community members from both municipalities. These efforts have led to a variety of design changes and public benefits that will be a benefit to the entire surrounding community.

We note that the entire street frontage of the Circle Cinema parcel, totaling approximately 18,000 sf, is located in the Town of Brookline.

CK.2 Density and traffic

Please see response provided in Section 7.2.1.

CK.3 Waterworks driveway

Please see response provided in Section 7.2.4.

CK.4 Commitment to neighborhood

Please see Section 1.4 which describes the public benefits associated with the Project and Section 2.4 regarding transportation-related mitigation measures.

Lopez, Erico

From: bgpeace [bgpeace1968@gmail.com]
Sent: Monday, October 08, 2012 2:58 PM
To: Lopez, Erico
Cc: cleveland-circle-community@googlegroups.com
Subject: BDG proposal for Cleveland Circle Cinema project

Mr. Erico Lopez
Project Manager, Cinema Circle Project
Boston Redevelopment Authority

Dear Mr. Lopez:

For the following reasons (among others), long-term, quality of life and business value are not sustainable in the second design proposal presented to the community involved in the Cleveland Circle neighborhoods and their surrounding area:

1) The proposed, congested design challenges its designated location, spatially, logistically and administratively undermining the area's potential. BG.1

2) The appointed building materials are incompatible with the surrounding architecture and the natural environment of the region. BG.2

3) Complex, changing traffic patterns endanger the precious space and safety of drivers, pedestrians, residences and businesses. BG.3

4) The needs of a hotel, medical offices, small apartment residences, restauratants, and businesses are necessarily incompatible, particularly when carelessly designated. BG.4

5) The conflicts inherent in the proposal discourage cooperative urban life. Repeat, interested business will become random at best and at its worst will encourage the failure of the enterprise. BG.5

The ambitions of the architects can best be realized by finding a more suitable location for their project.

Please do not allow this proposal to be fulfilled in its present form.

Sincerely, Betsey Glaser

Condo resident/owner, 22 Orkney Road, 1986-present

BG.1 Design

Please see response provided in Section 7.2.1.

BG.2 Materials

Please see response provided in Section 7.2.6.

BG.3 Complex and changing traffic patterns

The Proponent will not change existing traffic patterns in the study area. The Project will reduce traffic conflicts and improve pedestrian safety along the Chestnut Hill Avenue corridor at the Project Site by reducing the number of existing curb cuts at the site from four to one and installing new sidewalks.

Through mitigation measures proposed by the Proponent in Section 2.4, the travel delays at the Beacon Street/Chestnut Hill Avenue intersection will be reduced.

BG.4 Incompatible uses

The development team has studied the area market trends to include uses (i.e., hotel, apartment, restaurant, retail, and medical office) that all have a demand. Each of these uses will be utilized by members of the existing community, providing more convenient access to these services than what currently exists.

BG.5 Design and uses

The Project is an example of multi-use transit oriented development. The Proponent has made efforts to create a pedestrian friendly Project that offers a variety of uses. Varieties of uses are typical characteristics of healthy urban fabrics and often are credited with providing additional local vibrancy within communities. The hotel will provide an influx of outside patrons into the local establishments, while the restaurant will offer a significant amenity to the surrounding neighborhood likely attracting repeat visitors. Residents and users of the medical office space will provide additional support for the local retail establishments further enhancing the surrounding street life and thus enhancing the overall quality of life for nearby residents.

Lopez, Erico

From: jkibrick@comcast.net
Sent: Monday, October 08, 2012 11:14 AM
To: Lopez, Erico
Cc: jkibrick@comcast.net
Subject: Cleveland Circle
Attachments: October 7 2012. BRA Letter

October 7, 2012

Mr Enrico Lopez
Project manager, Cleveland Circle Project
Boston Redevelopment Authority

Dear Mr. Lopez

I am writing to you and the BRA to help paint a clear picture of this areas needs and concerns.

There are a number of serious unenforced issues in this area and a project of this size and magnitude
will only exacerbate the problems in this area not fix them.

Three Major underestimated concerns that are not being clearly looked at are:

1 The Size and Scope of this project (Far to big for this area to handle on) JK.1

2 The Traffic and Public Safety issues have not been independently or correctly looked at. JK.2

3 Addressing area resident concerns. JK.3

Please see attachment for more detailed explanation.

As a resident of this community for over fifty years, I can speak from experience that the project under proposal is flawed and unacceptable on numerous other levels well.

I have put out reasonable requests to the powers at be to no avail.

I have written letters.

Addressed Brookline town meeting,

Attended a litany of design reviews, planning boards and meetings designed to address the issues of concern to people who can make decisions,
only to leave all of these sessions with a feeling of forgone conclusion that whatever anyone said in opposition, did not matter.

It feels like the powers in charge have little regard for residents concerns and I was under the impression that they should be advocates for us.

I am seeking a little consideration to this wonderful area.

If done correctly every-ones needs will be met.

I agree with the area residents who are opposed to this project.

I also agree that the area is ripe for a make over.

Please extend our voice in the decision making process and advocate for what is right.

Sincerely,
Concerned property owner in Brookline, Clinton Rd.
and Brighton, Kilsyth Terr.

John D. Kibrick

JK.1 Project size

Please see response provided in Section 7.2.1.

JK.2 Traffic and safety issues

Please see response provided in Section 7.2.8 and the response to comment CCES.4.

JK.3 Addressing area resident concerns

This DPIR continues the evolution of the Project in response to comments received from the community, City agencies, Town of Brookline, Boston Civic Design Commission, and others. The Proponent has a desire to create a quality development and that will be instrumental in the future Cleveland Circle. The Proponent plans to own all or part of, the development after its completion, and has a vested interest in a quality development and in improving the area surrounding the site.

Lopez, Erico

From: cleveland-circle-community@googlegroups.com on behalf of Susan Heideman [sheidema@smith.edu]
Sent: Monday, October 08, 2012 1:03 PM
To: cleveland-circle-community@googlegroups.com
Subject: {SPAM: 40} :Re: [Cleveland-Circle] BDG proposal for Cleveland Circle Cinema project

Mr. Erico Lopez
Project Manager
Boston Redevelopment Authority

Dear Mr. Lopez,

I am a resident of Brighton, and attended the 9/20/12 meeting at the Hamilton school. Like many of the meeting attendees who expressed their views, I am opposed to the project as currently planned. I live on Chestnut Hill Ave., halfway between Cleveland Circle and Brighton Center, and frequently ride the C and D Green Line T's, so I walk through Cleveland Circle on a regular basis. I also shop there, walk my dogs in and around the area on a regular basis, and frequently walk through the "Circle" to destinations in Brookline. As someone who spends a great deal of time in and around this geographical locus, I am eager to see it anchored by a successful development project that ensures a livelier street life, greater urban vitality, increased homesteading stability, and resounding civic health for this important "entrance" to Brighton. I greatly fear that the current plan will satisfy none of these goals.

Although I do not presume expertise in traffic engineering, I cannot ignore the fact that the traffic engineer at last month's meeting indicated that because this location already has a designation of "red" for its failed traffic flow, a "little more" traffic congestion would not be noticeable (to paraphrase her words). Whatever metrics the experts used in reaching this conclusion, that assertion seemed both disingenuous and crassly insensitive to those of us who spend so much time walking and driving through this location day and evening. While I have no statistical basis for my intuition that the hotel courtyard as currently planned will significantly worsen the traffic situation, I would urge the BRA to examine with great attention this aspect of the plan with a second set of engineers. It is certainly not "ok" that the traffic get even a little worse as a result of poor planning, and many of us feel that the traffic will indeed get a great deal worse without a different sort of circulation plan for drivers headed to or in the vicinity of this multi-faceted development. SH.1

Of even graver concern to me, however, are the two issues I shall address in the remainder of this message:
a) hotel siting
b) the uniformly small size of the residential units in the housing component of this project.

1. As to the hotel siting, it would seem vitally important both to the success of the hotel and to its salutary impact on Cleveland Circle that it face the Circle and thus become the Circle's public face. Resituating the hotel so that it faces Cleveland Circle would offer the following critical advantages: SH.2

a) better views and more natural light for the hotel rooms
b) better vehicular approach opportunities
c) a hotel restaurant that would be visible and attractive from CC, alerting pedestrians and drivers to an attractive restaurant possibility
e) a locus of day and evening activity that would add vitality and safety to CC with its very public facade and 24 hr. presence of lobby personnel
f) an attractive and visible "gateway" feature to a unique Boston/Brookline/Brighton crossroad
g) attractive, obvious, and accessible multi-directional pedestrian pathways for hotel guests, leading to CC, Cassidy Park, or the Reservoir area

All of these features would be of mutual benefit to hotel guests and local residents, creating a synergy desperately needed for a better CC.

2. As for the uniformly small size of the planned residential units in the housing component of this project, I urge the BRA to consider the desirability of VARYING the sizes of the units. Having lived for many years in the South End, I watched from my home on Dwight St. the incredibly positive effect the Tremont St. development of Atelier 505, with its variety of unit sizes ranging from studio apartments to three bedroom residences, had on the surrounding neighborhood. (I lived directly across the street from this development for 10 years before the project was built, and for six years after.) While the location of the project was obviously key to its success, its rapid occupancy was also clearly an effect of its ability (based on varied unit size) to attract many different kinds of prospective residents of all ages, from single adults who travel often and were interested in elegant, SH.3

easy-to-maintain small studio apartments, to professional couples, to empty-nesters who wanted enough bedrooms for visiting adult children, to families with as many as three to four children who wanted a spacious home.

Those of us committed to Brighton yearn for an influx of stake-holding long-term residents of all kinds, families, singles, and couples, to counter the transient student population that has come to dominate our community. This housing component of the project definitely needs redesigning to include many more apartments that are larger than those the current plan offers, but also some apartments that are smaller. In short, a range of sizes with the largest being three to four bedrooms would net the largest number and variety of people who want to live here long-term. Reducing the size of some units and increasing the size of others would also greatly increase the odds of BDG's project reaching 100% occupancy much sooner than would be the case if it restricts itself to designing exclusively for an empty-nester demographic that may not materialize. (I would also discourage against marketing to a single age group such as "empty-nester." Age diversity is vital in achieving a healthy urban heterogeneity.)

Just as it was the mix of unit sizes in Atelier 505 that helped make it so successful in the South End, I have experience here with the success such a mix can attract in my own Brighton condominium. Less than half a mile from Cleveland Circle and even lacking the immediate proximity to the Reservoir and Cassidy Park that a CC location would offer, 163-165 Chestnut Hill Ave. Condominium (known as Chestnut Hill Garden) has been a resounding success in its attractiveness to a variety of family sizes and ages. The condominium is comprised of two buildings separated by a driveway: an old factory that was renovated into 12 loft-townhouse condominium units, and a four-story new building of 24 units built on the other side of a driveway dividing the two buildings. These 36 units sold quickly when they reached the market in 2003-04, offering further evidence that long-term residents of all kinds are attracted to high quality residences of varying sizes. Between the varied loft sizes (depending on the internal configurations loft owners have fashioned), and the variety of apartment sizes that were designed in the new four story building, our 36 unit condo has attracted residents ranging from one-person to five-person households. In fact it is now clear that the one planning flaw in this development was the developer's failure to create more large apartments (three to four bedrooms) in the four story building. We have had a number of growing families in the four story building who have moved out of the condominium for lack of larger units.

Even without the parkside amenities of a Cleveland Circle location, my condo neighbors appreciate this section of Brighton for its convenience to Greater Boston by car or T, its walking proximity to the Reservoir, its convenient walkable location between Brighton Center and Cleveland Circle, and its lower real estate prices than downtown Boston. Like Atelier 505 we have single professionals who travel internationally for work and want only a small footprint, and families who want three or more bedrooms. My condo neighbors are cosmopolitan and diverse. Surely a mix of unit sizes in a prime Cleveland Circle housing development that much closer to the Reservoir and park would attract a similar population. What we don't want in Cleveland Circle is the current BDG plan for yet more uniformly small one-to-two bedroom apartments. We already have a glut of these in Brighton, and they do not attract long-term residents.

Finally, it's important to bear in mind that varied unit sizes alone will not ensure high occupancy rates. The housing units must be elegantly designed and sited, with attractive finishes and plenty of natural light. This means the location of this housing component MUST be rethought. SH.4

I urge the BRA to take these issues seriously. We already know what works and doesn't work in Brighton, and what Cleveland Circle needs. Please pay attention to these lessons and help us improve Brighton with a well thought-out CC development that could transform our neighborhood.

Thank you for your attention.

Sincerely,
Susan Heideman
165 Chestnut Hill Ave. #7
617-782-3175

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You received this message because you are subscribed to the Google Groups "Cleveland Circle Community" group.
To post to this group, send email to cleveland-circle-community@googlegroups.com.
To unsubscribe from this group, send email to cleveland-circle-community+unsubscribe@googlegroups.com.
For more options, visit this group at http://groups.google.com/group/cleveland-circle-community?hl=en.

SH.1 Independent traffic study

Please see response to comment CCES.4.

SH.2 Hotel location

Please see response provided in Section 7.2.3.

SH.3 Size of residential units

Please see response provided in Section 7.2.2.

SH.4 Location of housing component

Please see response provided in Section 7.2.3.



October 8, 2012

Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza – 9th Floor
Boston, MA 02201

Re: Cinema site redevelopment: Required use of exit roadway to benefit the Waterworks Museum

Dear Mr. Lopez:

As you know, Boston's Waterworks Museum, under a financial structure authorized by the Commonwealth, anticipates a critical revenue stream from future use of the Cinema exit roadway to begin when redevelopment of the Circle Cinema site is completed. To this end, an executed, formal Memorandum of Agreement, expanded upon below, has been entered into with the developer.

Unfortunately, we are observing some continuing efforts to prevent any reactivation of the exit roadway. Accordingly, we want the BRA to be very clear on two facts that have been challenged, but which are irrefutable: WM.1

1. The Waterworks Preservation Trust (WPT) has the legal right to assign usage rights to the roadway easement to the Cinema site developer for the financial benefit of the Waterworks Museum; and

2. From the Museum's inception, all parties involved have understood that the easement would be an important source of its ongoing revenue. The Museum currently operates with only three paid employees and several dozen unpaid volunteers. Without revenue from the easement, the Museum's missions—to maintain this historic building and to educate the public, including Boston public school children, about the importance of a clean public water supply—are likely to be seriously compromised.

As the BRA reviews and possibly modifies the developer's current plan, we ask that you include in your final approval the required use of the exit roadway. Notwithstanding the Museum's direct interests in such an outcome, we believe that you have already identified direct traffic flow benefits from future use of this exit roadway easement.

The Waterworks Museum takes no position, for or against, any non- easement-related features of the proposed redevelopment. The balance of this letter expands on our concerns regarding this roadway easement; the attachments provide further documentation in support of this request.

Mandated use of the exit roadway to relieve traffic congestion on Chestnut Hill Avenue at Cleveland Circle is a longstanding arrangement going back to the 1980's. The Cinema's right to conduct its business was conditional on the use of the easement. Although the roadway usage license had a fixed term, it was always extended to meet the foregoing condition. .

When the Commonwealth disposed of the Metropolitan Waterworks property, its Land Disposition Agreement (LDA) with the developer-purchaser required continued use of the exit roadway—and payment for same—by the current and any future owner of the Cinema site. The Cinema exit roadway was still in active use when unit owners were moving into their new Waterworks Park condominium homes; its ongoing future use is referenced in the recorded project and condominium documents.

On June 30, 2012 the Waterworks Park developer, EA Fish Inc., fulfilled its obligation to the Commonwealth when it delivered to the Waterworks Preservation Trust (WPT) for the benefit of the Waterworks Museum a formal assignment of its roadway rights to the WPT. (A copy of the EA Fish-WPT assignment as formally approved by the Commonwealth is attached hereto.)

As part of its due diligence and preparation for filing its PNF with the BRA, Boston Development Group (BDG) approached the Museum, first to help understand the exit roadway history and rights and then to negotiate the aforementioned formal Memorandum of Agreement with the Museum (WPT) authorizing future long-term use of the exit roadway, including financial terms for same. Under this agreement, BDG obligated itself to pursue only a plan that included some use of the exit roadway. (A copy of the agreement is attached hereto.) This agreement is expected to be expressed in contract form with detailed terms and conditions. BDG must also negotiate exit roadway maintenance and mitigation terms with the Waterworks Park Condominium Trust. We have and will continue to encourage both parties to be reasonable in their negotiation involving maintenance sharing, insurance and indemnification, and mitigation. As part of its due diligence and negotiation, BDG commissioned its own legal research into the history and current status of the exit roadway and its use rights.

In their recent comment letter to the BRA, the Waterworks Park Condominium Trustees, on behalf of the residents, expressed safety and overburdening concerns relating to future incremental use of the exit roadway to be generated from a redeveloped Cinema site.

The Waterworks residential community and the onsite Waterworks Museum have enjoyed a productive, mutually supportive relationship to date. The Museum shares the roadway-related concerns expressed to the BRA by the Waterworks Park Condominium Trust. Over the past year, the Museum has actively engaged with the condominium trustees in exploring how best to collaborate in achieving a mutually beneficial outcome from the Cinema site redevelopment. Specifically, this means that:

1. The Museum receives a future revenue stream from reactivation use of the roadway easement; and

2. Consistent with the above, the Museum will work proactively to help assure that any authorized future use of the exit roadway will be reasonably safe and that predictable additional vehicle usage from the Cinema site redevelopment will not overburden the roadway to the detriment of current Waterworks Park residents.

WM.2

This second provision is important to note, because it is the WPT on behalf of the Museum that is authorized by the Commonwealth to assign the exit roadway rights to the developer and, by implication, to condition such a final assignment upon a determination that the terms of usage are both reasonably safe and do not impose an excessive traffic burden on the existing resident users of that roadway.

For example, Waterworks residents have expressed safety concerns regarding the likely efforts by pedestrians to use this vehicle roadway which has no sidewalks (e.g., going to and from BC and the Reservoir T stop). We agree that any commingling of pedestrians with vehicles on this exit roadway could present a safety hazard that should be avoided—even while the BRA has expressed a desire for there to be pedestrian access to Beacon Street from/through any new project. We would hope that this positive objective could be achieved in coordination with the Boston Parks Department to permit, as a public benefit, extending a pedestrian sidewalk to Beacon Street along the perimeter of Cassidy Park.

Since our Opening in March of last year, the Waterworks Museum has rapidly begun to fulfill its mission and promise to join Boston's other notable cultural, historic and educational institutions. Unlike most other such institutions, the Commonwealth has mandated that our Museum be open to the public, admission free, in perpetuity. Among the forward-looking revenue-producing mechanisms which the Commonwealth put in place was the ability of the Museum to receive the license revenue stream from this exit roadway that was previously received by the Commonwealth, and then by the Waterworks developer.

We hope that, in guiding this important project to its point of approval, the BRA will recognize the fortunate confluence between what works best traffic-wise and what will help secure the longer term financial and operating stability of the Waterworks Museum.

Sincerely,

For the Metropolitan Waterworks Museum, Inc. Executive Committee

Roger Blood, Secretary

Cc: Kairos Shen, Director of Planning
Peter Meade, Director
John Meunier, COO, Boston Development Group
Steven Dreier, Chairman, Waterworks Park Condominium Trust

Attachments:

--Assignment of exit roadway easement rights to Waterworks Preservation Trust by EA Fish, Inc., 7.5.12

--Memorandum of Agreement between Waterworks Preservation Trust and Boston Development Group (BDG)on financial terms for use of exit roadway and commitment by BDG to seek approval only for a plan that includes exit roadway use and revenues

Cleveland Circle Development
Memorandum of Agreement

RE: Negotiation for Easement Payments with David Zussman, John Meunier, Jim Curtin representing Boston Development Group (BDG) and Roger Blood and Ed Berger representing Waterworks Preservation Trust (WPT) on July 11, 2012

Lease Term: 99 Years
Lease Commencement Date:
Rent Commencement Date:

It is agreed that annual payments will be made in the amounts of $36,150 at the lease commencement date, which is at the issuance of the certificate of occupancy for the hotel development of the proposed development, over a 99 year period.

The initial deposit of $72,300 shall be paid upon the developers obtaining financing and obtaining the necessary building permits and shall represent payments for the first two years of the lease. Commencing on the third year and annually thereafter, on or before the first day of the then lease year, BDG shall make annual payments to WPT in the amount of $36,150 for the remainder of the lease term.

These agreed upon financial terms underpin BDG's, or its affiliated assignee, commitment to file and diligently pursue a PNF that includes long-term required use of the Cinema exit roadway easement. These financial terms will be followed by a fully documented agreement between BDG and WPT.

The museum agrees to communicate by letter to all parties that received the letter sent by the WPT dated July 2, 2012 regarding these negotiations, that there has been a mutually satisfactory agreement reached and that all parties have acted honorably and in good faith in reaching this agreement and, in particular, that BDG has worked with WPT in an honorable fashion through all negotiations.

These were the terms explicitly and specifically agreed to by the participants. Mr. Blood and Mr. Berger will be recommending approval by the WPT Board on July 9, 2012 and will communicate approval to BDG by 5pm July 9, 2012.

Signed this 11th day of July, 2012

Roger Blood
Secretary, WPT

David Zussman
CEO and Chairman, BDG

TRANSFER OF EASEMENT AGREEMENT

This ~~Transfer~~ of Easement Agreement (this "Agreement") is made this 5th day of July ~~2011~~ 2012, by WATERWORKS PARK, LLC, a Massachusetts limited liability company with an address of 536 Granite Street, Braintree, Massachusetts 02184 (the "Transferor"), and the WATERWORKS PRESERVATION TRUST, LLC a Massachusetts not-for-profit corporation with an address of 2450 Beacon Street, Boston, Massachusetts 02467 (the "Transferee").

WHEREAS, the Transferor is as the former owner of that certain parcel of land with the improvements thereto situated at 2436 Beacon Street, Chestnut Hill, Massachusetts (the "Park Condominium Property") by virtue of that certain Deed with Conservation and Preservation Restrictions by and among the Commonwealth of Massachusetts, et al., as Grantor, and Transferor, as Grantee, dated August 5, 2005 and recorded with the Suffolk County Registry of Deeds (the "Registry") in Book 37860, Page 176, as amended by a First Amendment to Deed with Conservation and Preservation Restrictions dated as of August 22, 2006 and recorded with the Registry in Book 40589, Page 98; and

WHEREAS, the Park Condominium Property is subject to the terms and conditions of that certain Amended and Restated Land Disposition Agreement by and among the Commonwealth of Massachusetts acting by and through its Division of Capital Asset Management and Maintenance (the "Commonwealth"), the Massachusetts Water Resources Authority (the "MWRA") and the Transferor, dated as of August 5, 2005, and recorded with the Registry in Book 37860, Page 1, (the "Original LDA"), as amended by that certain First Amendment to Amended and Restated Land Disposition Agreement by and among the Commonwealth, the MWRA, and the Transferor, dated as of June 29, 2009 and recorded with the Registry in Book 45160, Page 161 (the "LDA Amendment") (the Original LDA, as amended by the LDA Amendment, the "LDA"); and

WHEREAS, as the prior owner of the Park Condominium Property, the Transferor entered into that certain Cross Easement and Use Agreement, dated as of September 18, 2006, and recorded with the Registry in Book 20589, Page 218 (the "Original Easement Agreement"), which agreement granted reciprocal easements for the benefit of four condominiums subsequently created by the Transferor on the Park Condominium Property known as the Waterford Condominium, the Watermark Condominium, the Whitehall Condominium, and the Waterworks Museum Condominium (collectively, the "Park Condominiums"); and

WHEREAS, the Transferor; Guy Corricelli, Dorren Bushasia and Caterine A. Hult, as Trustees of the Waterford Condominium Trust under a Declaration of Trust dated September 18,

2008 and recorded with the Registry in Book 40589, Page 172 (the "Waterford Trustees"); and Guy Corricelli, Dorren Bushasia and Caterine A. Hult, as Trustees of the Waterworks at Chestnut Hill Trust under a Declaration of Trust dated September 18, 2008 and recorded with the Registry in Book 40589, Page 108 (the "Park Board") entered into that certain First Amendment to Cross Easement and Use Agreement, dated as of December 13, 2006 (the "Easement Amendment");

WHEREAS, the Easement Amendment, *inter alia*, reserved to the Transferor, its successors and assigns, the perpetual, nonexclusive right and easement in gross to use the Roadway Easement Area (as defined in the Original Easement Agreement) for the purpose of pedestrian and motor vehicle passage, access, ingress to and from the NAI Parcels (as defined in the Easement Amendment), together with the right to grant similar rights to others; and

WHEREAS, Section 7(c) of the LDA Amendment requires the Transferor to assign its entire right, title and interest in and to the Easement Amendment to the Transferee (as the Preservation Entity under the LDA Amendment) upon the earlier to occur of (i) the sale by the Transferor of the 112th condominium unit in the Park Condominium Property or (ii) June 30, 2012, and Transferor seeks to perform this obligation in compliance with the LDA;

NOW THEREFORE, in consideration of the sum of one dollar ($1.00) and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. Transfer and Assignment. Transferor hereby grants, conveys, transfers and assigns to Transferee, as of the date hereof, all of Transferor's right, title and interest in and to the Easement Amendment, including but not limited to the perpetual, nonexclusive right and easement in gross to use the Roadway Easement Area for the purpose of pedestrian and motor vehicle passage, access, ingress to and from the NAI Parcels, together with the right to grant similar rights to others, as well as the right to receive any income from the grant of such rights. Transferor shall remain liable for and indemnify and hold Transferee harmless from the performance of all obligations and liabilities of Transferor accruing or arising under the Easement Amendment prior to the date of this Agreement.

3. Assumption. Transferee hereby accepts such transfer and assignment and agrees to assume and indemnify and hold Transferor harmless from all of the obligations and liabilities of Transferor accruing or arising under the Easement Amendment on or after the date of this Agreement.

4. Authority. Transferor is duly authorized to enter into this Agreement, and any and all consents required under Transferor's organizational documents or by law will have been obtained. Any and all necessary third party consents and approvals to this assignment have been obtained.

6. Successors. This Agreement shall be binding upon and shall inure to the benefit of Transferor and Transferee and their respective successors and assigns.

7. Counterparts. This Agreement may be executed in one or more counterparts each of which shall constitute an original but all of which, taken together, shall constitute one instrument.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, Transferor and Transferee have caused this Assignment to be duly executed and delivered under seal as of the day and year first above written.

TRANSFEROR:

WATERWORKS PARK, LLC
a Massachusetts limited liability company

By: _____
Name: James J Sullivan III
Title: as President of the Manager

TRANSFEREE:

WATERWORKS PRESERVATION TRUST, INC.,
a Massachusetts not-for-profit corporation

By: _____
Name: Dennis J DeWitt
By: Treasurer WPT

ACKNOWLEDGED AND AGREED TO:

THE COMMONWEALTH OF MASSACHUSETTS,
acting by and through its
Division of Capital Asset Management and Maintenance

By: _____
Name: Carole J. Cornelison
Title: Commissioner

COMMONWEALTH OF MASSACHUSETTS

Norfolk, ss.

On this 7th day of June, 2012 before me, the undersigned notary public, personally appeared provided to me through satisfactory evidence of identification which were to be the person whose name is signed on the preceding or attached document and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose as President for the Manager of Whitewater Park, LLC.

Joan E. Martin
(official signature and seal of notary)
My commission expires: 12/2/16

JOAN E. MARTIN
Notary Public
Commonwealth of Massachusetts
My Commission expires on December 2, 2016

COMMONWEALTH OF MASSACHUSETTS

Norfolk, ss.

On this 5th day of July, 2012, before me, the undersigned notary public, personally appeared provided to me through satisfactory evidence of identification which were to be the person whose name is signed on the preceding or attached document and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose as Treasurer for Winter Works Park LLC

(official signature and seal of notary)
My commission expires: 11/04/2016

Samir Lopci
Notary Public
Commonwealth of Massachusetts
My Commission Expires
November 4, 2016

WM.1 Usage rights of Waterworks driveway

Comment noted.

WM.2 Safety and use of Waterworks driveway

The Proponent will continue to work with the Waterworks Preservation Trust to ensure the Waterworks driveway is uses appropriately and is reasonably safe.

Lopez, Erico

From: Amy Burdick [amy@amyburdick.com]
Sent: Tuesday, October 09, 2012 10:48 AM
To: Lopez, Erico
Cc: Campisano, Heather; Meade, Peter; Ciommo, Mark
Subject: Opposed to Circle Cinema Development as Currently Designed

Erico Lopez
Boston Development Authority
One City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Lopez:

I am writing to you to express my strong opposition to the 375-399 Chestnut Hill Avenue Project that is proposed by the Boston Development Group.

To be clear, I am not opposed to development on the Circle Cinema site. In fact, this site urgently needs development. I am opposed, however, to the project proposed by BDG for many reasons including the following:

1. The BDG project is far too massive for the size of the site. AB.1
2. The design/architecture does not fit with the look-and-feel of the community. AB.2
3. The overcrowded, low-class nature of the project will depress the property values of the neighboring homeowners. AB.3
4. The microscopic size residential units will attract a transient population who will not contribute to the enhancement of the community. AB.4

I live at the Waterworks, where I have been a homeowner since it was a hole in the ground 6 years ago. I have been following this project closely for the past year, and have attended numerous community meetings about the project. What has been most remarkable to me is how little attention the developer has paid to the interests of the community.

I bought a condominium at the Waterworks in part because of its great location, but also because of the beautiful architecture, the lovely landscaping and the charm of the neighborhood. Clearly Cleveland Circle needs to be upgraded, and with the closing of the Circle Cinema, we have a once-in-a-lifetime opportunity to make Cleveland Circle into a thriving, cosmopolitan community that can become a locus for music, film, boutique shops, parks, sidewalk cafes and restaurants.

The BDG plan will destroy this opportunity. The massive project is totally out of character with the look-and-feel of the Cleveland Circle community. If I wanted to live next door to a sterile, massive glass and steel building, I would have chosen a condominium overlooking Rt. 128 at Winter Street in Waltham. What market research has BDG done with the residents of Cleveland Circle community? Clearly, none, or they would not be proposing a monstrosity of a building whose only purpose is to squeeze as much income from every inch of land on the site. The fact that BDG has turned a deaf ear to traffic and congestion concerns, and is proposing matchbox size apartments, and has allotted minimal space for landscaping, is a clear indication that the developer has no interest in improving the community.

Further, the use of the Waterworks driveway is a direct disregard to the interests of the 200+ Waterworks homeowners whose quality of life will be negatively impacted by DBG proposal.
What's more, property values will most certainly suffer as a result of the reduced quality of life brought on by this project.

Mr. Lopez, I urge you to **STOP THIS PROJECT FROM GOING FORWARD as currently planned.**

The Cleveland Circle neighborhood is very special. This is a unique opportunity to enhance the area and make it the envy of all of Boston. Please, Mr. Lopez, consider the interests of the residents of Cleveland Circle who have chosen Cleveland Circle as their home, not the developers who will leave as soon as it is built.

Thank you very much for your thoughtful consideration.

Sincerely,

Amy Burdick
2400 Beacon Street, #101
Chestnut Hill, MA 02467
(617) 505-5315
(617) 877-0549
amy@amyburdick.com

AB.1 Project size and density

Please see response provided in Section 7.2.1.

AB.2 Architecture

Please see response provided in Section 7.2.6.

AB.3 Impact to property values

BDG will be demolishing a vacant, functionally obsolete theatre building adjacent to a public park and in an urban area. The existing building has Asbestos Containing Materials that will be safely removed and disposed. In its place we will develop an approximately $80,000,000 project that will be utilized on a 24/7/365 basis. The Proponent believes that area property values will be enhanced and that this Project will be a stimulus for additional redevelopment in Cleveland Circle.

AB.4 Size of residential units

Please see response provided in Section 7.2.2.

Lopez, Erico

From: A C [ac9a@hotmail.com]
Sent: Tuesday, October 09, 2012 10:37 AM
To: Lopez, Erico
Subject: FW: [Cleveland-Circle] BDG Proposal for Cleveland Circle Cinema Site

Dear Mr Lopez,

We are neighbors of the Climos whose letter I've forwarded below.

We agree with their concerns as outlined, and feel that the current BDG proposal is unsuitable for the neighborhood. It is much too large and will very much negatively affect the adjacent residential neighborhood and Cleveland Circle. Traffic on Chestnut Hill Avenue is already excessive, adding this structure as proposed will only augment the traffic and drive people away from Cleveland Circle, not draw people there. A mixed space building with medical offices, small retail stores, and a hotel seems unlikely to appeal to many and will only detract from each (who has a high end hotel next to medical offices?). I think there should be one direct focus for the site (such as a nice, smaller high end or boutique hotel with a reasonably sized restaurant appropriate to the hotel) which can capitalize on the abutting green space and Reservoir to attract people to Cleveland Circle and energize the area. The current plan as proposed will not do so, and will only add to the congestion and disarray in Cleveland Circle and destroy the quiet, peaceful feel of our neighborhood. Please, we ask you to reject the current BDG plan. AGY.1 AGY.2 AGY.3

Sincerely,

Andrea & Geoff Young
Brookline, MA

From: aclimo@hotmail.com
To: erico.lopez.bra@cityofboston.gov
CC: cleveland-circle-community@googlegroups.com
Subject: [Cleveland-Circle] BDG Proposal for Cleveland Circle Cinema Site
Date: Mon, 8 Oct 2012 18:04:42 -0700

Mr. Erico Lopez
Project Manager
Boston Redevelopment Authority

Dear Mr. Lopez,

We, the undersigned, as residents of Clinton Road in Brookline, strongly object to the proposed BDG plan currently under review for Cleveland Circle.

Our homes directly face the existing cinema structure and are therefore directly impacted by its design. Many of our fellow community members, both in Brookline and Brighton, have already articulated concerns and objections to the site being over-developed with insufficient parking, contributing to (not relieving) an already strained traffic problem, jarring use of finish materials that entirely ignore the historical nature of this particular neighborhood and a design program with intentionally vague parameters that seems to be driven only by short-term profit and not long-term stability in the community.

But as homeowners with high risk of loss, we need to bring to your attention the concerns that are specific to those of us living on Clinton Road. With hotel guests and office workers looking down at us day and night, we will lose our privacy. With the trucks sounding their alarm as they back up to make their daily and early am deliveries, we will lose our sense of quiet and peace. With 24-hour security lights as well as lights from inside hotel rooms and offices, we will be forced to suffer light pollution EVERY NIGHT. With the structure maxed out to the property line we suffer the consequence of not having a buffer of much needed trees planted, to reduce the noise pollution from the train echoing against the building, trucks and cars entering and idling and music and voices that will inevitably travel down from any window that the hotel guests and office workers might open. With added stories we lose the residential scale for the neighborhood and sense of immediacy to the open green park space beyond. Based on the current design, we lose everything we came to this neighborhood for in the first place.

Given Boston's wealth of talented architects and well-loved architectural history, we know we can do better. BDG's plan is driven by profit at the expense of the community. The plan is too massive. It taxes an already burdened traffic problem. It ignores the scale and aesthetic that attracts so many home and business owners to invest here. It diminishes the quality of life for so many people already living here.

We urge you to please reject this plan.

Sincerely,
Amy Climo & Mark Gerber, 405 Clinton Road
Elisa Lefer & Len Barlow, 401 Clinton Road
John Kibrick, 381 Clinton Road

--
You received this message because you are subscribed to the Google Groups "Cleveland Circle Community" group.
To post to this group, send email to cleveland-circle-community@googlegroups.com.
To unsubscribe from this group, send email to cleveland-circle-community+unsubscribe@googlegroups.com.
For more options, visit this group at http://groups.google.com/group/cleveland-circle-community?hl=en.

AGY.1 Project size

Please see response provided in Section 7.2.1.

AGY.2 Traffic impacts

Please see response provided in Section 7.2.8.

AGY.3 Too many proposed uses

Please see responses to comments BG.4 and BG.5.

Lopez, Erico

From: a climo [aclimo@hotmail.com]
Sent: Tuesday, October 09, 2012 7:28 AM
To: Lopez, Erico
Subject: BDG Proposal for Cleveland Circle Cinema Site

Mr. Erico Lopez

Project Manager

Boston Redevelopment Authority

Dear Mr. Lopez,

We, the undersigned, as residents of Clinton Road in Brookline, strongly object to the proposed BDG plan currently under review for Cleveland Circle.

Our homes directly face the existing cinema structure and are therefore directly impacted by its design. Many of our fellow community members, both in Brookline and Brighton, have already articulated concerns and objections to the site being over-developed with insufficient parking, contributing to (not relieving) an already strained traffic problem, jarring use of finish materials that entirely ignore the historical nature of this particular neighborhood and a design program with intentionally vague parameters that seems to be driven only by short-term profit and not long-term stability in the community.

But as homeowners with high risk of loss, we need to bring to your attention the concerns that are specific to those of us living on Clinton Road. AC.1
With hotel guests and office workers looking down at us day and night, we will lose our privacy. With the trucks sounding their alarm as they back AC.2
up to make their daily and early am deliveries, we will lose our sense of quiet and peace. With 24-hour security lights as well as lights from inside hotel rooms and offices, we will be forced to suffer light pollution EVERY NIGHT. With the structure maxed out to the property line we suffer the consequence of not having a buffer of much needed trees planted, to reduce the noise pollution from the train echoing against the building, trucks and cars entering and idling and music and voices that will inevitably travel down from any window that the hotel guests and office workers might open. AC.3
With added stories we lose the residential scale for the neighborhood and sense of immediacy to the open green park space beyond. Based on the current design, we lose everything we came to this neighborhood for in the first place.

Given Boston's wealth of talented architects and well-loved architectural history, we know we can do better. BDG's plan is driven by profit at the expense of the community. The plan is too massive. It taxes an already burdened traffic problem. It ignores the scale and aesthetic that attracts so many home and business owners to invest here. It diminishes the quality of life for so many people already living here.

We urge you to please reject this plan.

Sincerely,

Amy Climo & Mark Gerber, 405 Clinton Road

Elisa Lefer & Len Barlow, 401 Clinton Road

John Kibrick, 381 Clinton Road

Alan & Jane Lucas, 404 Clinton Road

Amy Catherine Climo
Interior Architecture & Design
857-222-9900

AC.1 Privacy concerns

Because the Project Site has a much lower elevation than Clinton Road and because of the significant distances between the Project and the existing residential units, as well as the trees that line the southern side of the side of the MBTA right-of-way, impacts to privacy are expected to be similar to a typical suburban or urban location where commercial and residential areas adjoin.

AC.2 Noise

Trucks and cars will be using the central courtyard for access to the site as well as for loading, deliveries and trash removal. With this location, noise impacts will be substantially attenuated by the shielding from the building.

AC.3 Residential scale

The appearance of the Project on this side of the site, especially from Clinton Road, has been studied. The revised design improves this view by breaking up the mass of the building. The visual impact of the building is also minimized as the roofs of the homes on the upper part of Clinton Road are similar in height to roof of the proposed building due to the lower elevation of the Project Site. Please see Section 4.3.5 for additional information.

Lopez, Erico

From: Christine Corcoran Cox [cmccox@mindspring.com]
Sent: Tuesday, October 09, 2012 9:15 AM
To: Lopez, Erico
Cc: Ciommo, Mark
Subject: Comment Letter re. 375-399 Chestnut Hill Avenue Proposal (Cleveland Circle)

Dear Mr. Lopez,

As a resident of Brighton for nearly 20 years, I was excited to hear that there was a development proposal for the old Circle Cinema site. My husband and I live in Brighton, near the Reservoir area, because we enjoy its proximity to downtown yet feeling of more open space and less congestion. Therefore, we when saw BDG's proposal for developing the site we were disappointed, disheartened, and somewhat angry.

We would be very pleased for the site to include a well-designed hotel that faces Cleveland Circle and improves its commercial area. We would also be happy to see a good-quality restaurant attractive to all different kinds of people, not just college students, with an outdoor eating area facing Cassidy park, and some appealing retail establishments.

We also support a residential component to this development, as long as it is designed to be true neighborhood housing that can attract permanent residents and improve the stability of the Cleveland Circle neighborhood. CCC.1

However, overall the project is much too large for the site and provides woefully inadequate parking facilities and traffic management in an already busy area for vehicle traffic. If you have ever tried to get from Cleveland Circle to Brighton Center via Chestnut Hill Avenue (or gone in the reverse direction) at rush hour (or, frankly, at many other times of day), you understand residents' concerns about adding to the already heavy traffic without devising proper ways to manage it. CCC.2 CCC.3

If the BRA approves the project as is, it will be too dense and create severe negative effects on traffic and parking, and it will not be an improvement to Allston-Brighton.

I urge you to please take residents' concerns into account over the developer's interest in profit-making at any cost.

Thank you for your consideration of these comments.

Sincerely,
Christine Corcoran Cox
9 South Street, Brighton
Brighton resident since 1992 and Brighton property owner-occupant since 1996

CCC.1 Residential units

Please see response provided in Section 7.2.2.

CCC.2 Project size

Please see response provided in Section 7.2.1.

CCC.3 Traffic and parking

While the resulting traffic impacts from the Project are minimal and will not noticeably affect the existing transportation environment in the study area, the Proponent is committed to improving the operation of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. This intersection is a major crossroads location that operates under congested conditions during peak periods. Through signal phasing changes to better allocate green time, geometric changes to improve efficient movement of vehicles, and enhancements to crosswalks and pedestrian controls, delays for both vehicles and pedestrians will be reduced. The Proponent has been working with the MBTA to improve out-of-service trolley maneuvers from Beacon Street into the MBTA Yard at the Reservoir Station on Chestnut Hill Avenue.

Please see responses provided in Sections in 7.2.1 and 7.2.9, as well as the detailed transportation study in Chapter 2.0.

Lopez, Erico

From: John Doggett [john@jdoggett.net]
Sent: Monday, October 08, 2012 10:55 AM
To: Lopez, Erico
Subject: 375-399 Chestnut Hill Avenue Redevelopment

Mr. Erico Lopez, Snr. Project Manager
Boston Redevelopment
Authority
10/8/2012

Dear Mr. Lopez,

375-399 Chestnut Hill Avenue (Cleveland Circle Cinema Redevelopment)

I am a Brookline Town Meeting Member for Precinct 13 and a longtime resident of Penniman Road in Brookline (just 200 yards from the proposed redevelopment). I have attended most of the design presentation meetings in both Brookline and Boston and talked with many Brookline residents, particularly abuttors, and Boston neighbors.

I am in favor of the redevelopment of the Cinema and Applebees' sites, however I am not in favor of the current project as designed. My major concerns are:

- The proposal is too dense for the site JD.1
- The medical office, retail and restaurant parking spaces are inadequate for those functions JD.2
- The central Courtyard design: JD.3
  - Is a single point of failure
  - Is not designed to handle the varied types of traffic for the 5 different uses and 2 cab stands
  - Has too many constriction points for efficient traffic circulation
- The two restaurant design is an unnecessary duplication of function JD.4
- The fitness center and pool areas occupy the best location for a restaurant overlooking the park JD.5
- The independent restaurant dominates the project corner which should have a more public use JD.6
- The design is not "friendly" to Cleveland Circle in its access design JD.7
- There is a lack of mitigation for noise, light and privacy concerns of Clinton Road abuttors JD.8
- The overall architectural design lacks harmony with Cleveland Circle's architecture JD.9

Since much detail has been provided to you on these points, I do not propose to reiterate those details, but do support those with these concerns.

I suggest that the BRA considers the following changes to the current design, by asking BDG to:

- Evaluate seriously the BDG Upper Entry Alternative which appears to eliminate the courtyard as a single point of failure as well as reducing its traffic load JD.10
- Orientate the hotel so that it uses the Chestnut Hill Avenue corner, or at least provide public access at this corner JD.11
- Eliminate the medical office function which will significantly reduce traffic loads JD.12
- Combine the two restaurants into a single, full-service hotel restaurant JD.13
- Design and implement effective noise and light mitigation features for Clinton Road abuttors JD.14
- Design a signature look which is in harmony with Cleveland Circle architecture JD.15

Sincerely,

John Doggett
Brookline Town Meeting Member - Precinct 13

8 Penniman Road, Brookline MA 02445

JD.1 Density

Please see response provided in Section 7.2.1.

JD.2 Parking

Please see response provided in Section 7.2.9.

JD.3 Courtyard

Please see response provided in Section 7.2.7.

JD.4 Two restaurants unnecessary

The hotel restaurant will be designed primarily for the guests of the Hilton Garden Inn. The menu offerings and hours of operation are established by the Hilton Brand management teams to offer consistent food, beverage, and service throughout the national chain. While these hotel franchise standards serve the needs of the hotel guests, hotel restaurants have been generally unsuccessful in serving the local community. The second, independently operated restaurant will be designed to meet the needs of local diners.

JD.5 Pool and fitness area occupy area best suited for a restaurant

The pool and fitness area must be conveniently located between the hotel and residential units in the Project. The restaurant and hotel entry locations require enough separation from each other to allow space for drop-off.

JD.6 More public use at corner

Please see response provided in Section 7.2.3.

JD.7 Access design is not "friendly"

Please see response provided in Section 7.2.7.

JD.8 Mitigation for noise, light and privacy concerns of Clinton Road residents

Please see responses to comments AC.1 and AC.2.

JD.9 Architecture

Please see response provided in Section 7.2.6.

JD.10 Upper Entry Alternative

Please see Section 2.3.2.12.

JD.11 Hotel location

Please see response provided in Section 7.2.3.

JD.12 Medical office space

Please see response provided in Section 7.2.5.

JD.13 Combine restaurants

Please see response to comment JD.4.

JD.14 Noise and light mitigation for Clinton Road abutters

Please see response to comment JD.8.

JD.15 Design a signature look

Please see response provided in Section 7.2.6.

Lopez, Erico

From: reservoirview3@gmail.com
Sent: Tuesday, October 09, 2012 6:59 AM
To: Lopez, Erico
Subject: Circle Cinema / Applebee's re-Development

Mr. Lopez,

I live at Reservoir Towers on Commonwealth Ave. in Brighton, and attended the recent public meeting at The Hamilton School.

For the last three years since moving to Brighton, I walk frequently around the Reservoir for exercise on my way to work downtown via the D Riverside Green Line at Reservoir Station. I often repeat the walk on my way home. Since I pass through Cleveland Circle at least 10 times a week, I am well aware of the rush hour traffic issues on lower Chestnut Hill Ave. At the public meeting, I was taken aback by the personal hostility many in Brighton have toward this developer, especially those living at the Watermark building. Their claims that the exit roadway going by that building will become so crowded that a traffic light at that point on Beacon St. may become necessary seems preposterous. Presently on my rush hour walks I seldom see a car exiting at that point, never mind the queue suggested. The use of that easement should be required by the BRA to mitigate Chestnut Hill Ave. exiting traffic. JR.1

Many seem to be asserting that the project is too large, and that there is insufficient parking. While I agree that the design shown at the Hamilton School did not adequately break-up the mass, with better architecture I feel that this can be addressed. The Watermark building, mentioned as almost 200,000 sq. ft., is not much smaller than what has been proposed. The BRA should work with the developer on a better final façade design, perhaps taking some cues from that well done large building. Those that want more parking also seem to be those concerned with Chestnut Hill Ave. congestion. While landing on the right balance is challenging, the immediate transit rich area and opportunities for workable shared parking should be considered. Despite criticism of the underground parking, I for one am glad that parking will not generally be visible from public streets. The functionality of the courtyard for pedestrians and vehicles should be confirmed as a condition to your approving this project. JR.2 JR.3 JR.4

I urge that rather than requiring that the location of the hotel and residential uses be flipped that you cause the developer to have an inviting pedestrian friendly entrance for this mixed use project facing Cleveland Circle. I also ask you to require a pedestrian connection from the site directly to Beacon St. I observed prior to the gating off of the Cinema site a significant number of fellow T-commuters on foot, many from the Watermark building. Such a pathway would improve the safety of the exit roadway and is a reasonable public benefit that should be imposed. JR.5

Sincerely,

John Ryan

JR.1 Use of Waterworks driveway should be required

Comment noted.

JR.2 Façade design

Please see response provided in Section 7.2.6.

JR.3 Shared parking

Please see response provided in Section 7.2.9

Please also see Section 2.3.2.8. Figure 2-18 shows the Project's parking demand throughout the day.

JR.4 Courtyard

Please see response provided in Section 7.2.7.

JR.5 Pedestrian connection to Beacon Street

The Project includes a five-foot-wide sidewalk on the Project Site adjacent to Cassidy Playground that connects the hotel and residential lobbies to Chestnut Hill Avenue.

Please see response to comment BTD.8 regarding a sidewalk along the Waterworks driveway.

Lopez, Erico

From: Ludwik Gorzanski [ludwikgorzanski@gmail.com]
Sent: Tuesday, October 09, 2012 12:11 AM
To: Lopez, Erico
Cc: cleveland-circle-community@googlegroups.com
Subject: Cleveland Circle comment letter

Mr. Erico Lopez
Project Manager,
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201-1007

Re: Opposition to current plan for redevelopment of 375-399 Chestnut Hill Avenue

Dear Mr. Lopez:

I am a long-term resident in the Aberdeen neighborhood in Brighton who frequents Cleveland Circle practically every day.

I am deeply disappointed by the plan that has been submitted. It completely misses the mark. It makes me think that the developers and whoever may have been guiding their design and planning decisions simply don't understand this area and don't care.

Every new major development in Boston should aspire to improve the area where it is going to be built, but this project will worsen Cleveland Circle's problems, instead of helping to solve them. It is dismal attempt to maximize profits on the back of the neighborhood.

It is not the various uses themselves that I object to, but rather the way they have been crammed on the site.

The problems that I see are as follows:

- very long wall of a building along Cassidy Park (I can only imagine how Clinton Road people feel about the other "wall" that faces them); LG.1

- the hotel, which should be Cleveland Circle's centerpiece, will not be even seen from the Circle; LG.2

- sidewalk along Chestnut Hill Avenue will be split by a busy access road (why not put it farther up the street to where the cinema roadway is); LG.3

- housing is too close to the Cleveland Circle intersection (housing should be located farther away and benefit from views of the reservoir); LG.4

- housing units are small and many don't have views; LG.5

- the restaurant is too big and outdoor tables are too close to the street (there should be an actual patio overlooking the park, like Applebee's has); LG.6

- the courtyard will be a nightmare to use, causing many conflicts among so many different users. LG.7

Lastly, I am dismayed by the inadequate amount of parking for such a dense project. I can assure you that residents in my neighborhood cannot afford to subsidize this development with our on-street parking spaces. LG.8

In conclusion, I think that the project needs to be substantially scaled down and completely redesigned to remedy all the problems I have listed above.

Sincerely,

Ludwik Gorzanski
Orkney Road

LG.1 Massing along Cassidy Park

Please see response provided in Section 7.2.6 and Sections 4.2 and 4.3.

LG.2 Hotel location

Please see response provided in Section 7.2.3.

LG.3 Location of Chestnut Hill Avenue access

The sidewalk along Chestnut Hill Avenue at the Project Site will be enhanced by reducing the number of existing curb cuts at the site from four to one, and installing new sidewalks adjacent to the Project Site. The signalized Project Site driveway will have a pedestrian crosswalk with pedestrian signals to allow safe movement of pedestrians across the driveway.

LG.4 Housing location

Please see response provided in Section 7.2.3.

LG.5 Size of residential units

Please see response provided in Section 7.2.2.

LG.6 Restaurant too big and location of outdoor tables too close to street

Please see response provided in Section 7.2.3 and response to comment CCES.3.

LG.7 Courtyard

Please see responses provided in Sections 7.2.6 and 7.2.7.

LG.8 Parking

Please see response provided in Section 7.2.9.

Lopez, Erico

From: Roger Blood [bloods@rcn.com]
Sent: Monday, October 08, 2012 11:22 PM
To: Lopez, Erico
Cc: Shen, Kairos; Meade, Peter; Kara Brewton
Subject: Cinema-Applebee's site redevelopment: Comment letter from 15 Brookline Elected Town Meeting Members
Attachments: 120401BDGLetterFinal.doc; 121008TMM_BRAletterFinal.doc

Hello Erico,

Please see the attached letter from fifteen Brookline Town Meeting Members representing the residential neighborhoods situated closest to the subject redevelopment site--most of whom were also sponsors of last year's upzoning overlay article applicable to the Cinema site.

For context, we've also attached a prior comment letter that a comparable group of neighborhood Town Meeting members sent to BDG, the BRA and Brookline planning officials in April of this year, prior the filing of the PNF.

Best regards,

Roger Blood
617-734-3529

307 Reservoir Road
Brookline, MA 02467
October 8, 2012

Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza – 9th Floor
Boston MA 02201

Dear Mr. Lopez,

We the undersigned are all elected Town Meeting Members who reside in the Brookline neighborhood nearest to the Circle Cinema/Applebee's proposed development site. Most of us also served as sponsors of the up-zoning overlay warrant article applicable to this site that was adopted by the Brookline Town Meeting in May, 2011.

In April of this year, those of us who sponsored last year's zoning overlay article submitted a letter to the Boston Development Group (BDG), with copies to both the BRA and Brookline Planning officials (please see copy attached hereto). In this letter—which was composed prior to BDG submission of its Project Notification Form (PNF) to the BRA—we identified three priority site design concerns (two of which have significant traffic-related implications) as follows:

1. The hotel/orientation of the development;
2. Traffic flow into, around, and out of the redevelopment site; and
3. Positioning of new access/egress roadway from Chestnut Hill Avenue.

While BDG responded that it gave serious attention to each of the above three points, its PDF as submitted shows no tangible alteration of the plan so as to address any of these three priority concerns.

Without repeating the detail from the attached letter, we would just add the following brief points:

Regarding hotel/orientation of the development: Both the Boston Civic Design Committee (BCDC) and Brookline's Design Advisory Team (DAT) recently expressed—and expanded upon—our concerns and wishes for the hotel lobby and other activities within the development to be directly accessible from Cleveland Circle as stated in our April letter. BTM.1

Regarding traffic flow into, around and out of the redevelopment site concerns we have raised have now been expressed by both of the above-noted committees. Unlike some other large, mixed used projects with interior circular roadways, the Cinema-Applebee's site perimeter (parkland and T tracks) does not permit commercial vehicle access (e.g., loading docks, cab stands, etc.). The subject site's interior vehicle turnaround area must accommodate all vehicles entering, servicing and leaving the site, other than those exiting via the exit roadway (discussed below).

We are concerned that the current design appears to have significant congestion points: the taxi cab stands; the egress from the underground garage ramp; the lack of defined delivery area for the proposed restaurant; reversing of delivery vehicles for the retail space, as well as the fact that every vehicle entering the project must pass through the courtyard, including large delivery vehicles for the hotel, which will be required to reverse in order to exit. BTM.2

Regarding re-alignment of the new entry/egress roadway along the D-Line right-of-way, rather than bisecting the site's Chestnut Hill Avenue frontage/streetscape (as in the current design): This re-alignment could alleviate problems with the courtyard as a potentially congested bottleneck. Instead of routing all entering and exiting traffic around the courtyard, a roadway along the D-Line right-of-way, with a courtyard off to one side, would provide direct access for much of the project's traffic to the rear parking and the hotel delivery area and also provide more direct ingress and egress to the underground garage ramp. BTM.3

We have heard BDG's technical reasons for its preferred central entry design which is predicated on the assertion that it will increase transit times for traffic in the Cleveland Circle intersection. We are not qualified to judge the validity of the technical traffic arguments. However, the claimed negative impact of the re-alignment design needs to be compared with any negative impact of traffic backup/spill-over at the site/Chestnut Hill Avenue intersection.

Accordingly, we ask that both the upper entry re-alignment and the central entry design alternatives be subject to a new rigorous technical review, including by any independent traffic engineer, to assess the impact of both designs on both the Cleveland Circle intersection and on circulation through our neighborhood streets. BTM.4

We believe there is also a neighborhood consensus on the following two points which we recommend:

1. Traffic congestion: The Cleveland Circle intersection is already "F-rated" (basically dysfunctional). Therefore, the approved plan should seek to minimize adverse effects of added project-related traffic at this "choke point". A critical and historically used means of alleviating this problem is to require that the approved plan take advantage of the site's exit roadway to Beacon Street—while also assuring that use intensity of that exit roadway does not unfairly burden the existing Waterworks Park residential community; and BTM.5

2. New housing: We ask that your approved design and scale of the proposed (rental) housing component seek an occupancy profile that adds stability to the combined Aberdeen-Brighton-Waterworks-Brookline neighborhood. The current plan includes many rental units with less than 800 sq. ft. of living area and some other features that may attract more transient occupants, whereas we, and we are sure our Boston neighbors, would hope to see the project attracting long term, community-invested residents. BTM.6

We appreciate the BRA's consideration of these expressed neighborhood concerns.

Sincerely,

Precincts 13 and 14 Elected Town Meeting Members:

Carla Benka	Roger Blood	John Doggett	Linda Carlisle
Jonathan Fine	Gill Fishman	John Freeman	Werner Lohe
Michael Merrill	Chou Chou Merrill	Shaari Mittel	Paul Saner
Lee Selwyn	Barbara Senecal	John VanScoyoc	

Attachment

cc: Kairos Shen, BRA Director of Planning
Kara Brewton, Acting Director of Planning & Community Development, Town of Brookline

April 4, 2012

Mr. David Zussman, CEO and Chairman
Mr. John Meunier, COO and VP of Project Management and Development
Boston Development Group
93 Union Street #315
Newton, MA 02459

Re: Revised PNF for Circle Cinema/Applebee's site

Dear Messrs. Meunier and Zussman,

We the undersigned elected Town Meeting Members are neighborhood sponsors of the up-zoning overlay for the Circle Cinema site which was approved last May by the Brookline Town Meeting. Prior to that approval, Boston Development Group (BDG) submitted a Project Notification Form (PNF) with the Boston Redevelopment Authority (BRA), which was subsequently withdrawn. It is our understanding that BDG is now preparing to file a new PNF. We are pleased that the new proposal will include an integrated plan for the combined Cinema and Applebee's parcels.

We are taking this early opportunity to communicate to you our preferences on several important aspects of the project's orientation and design that we believe could improve upon what was previously submitted, and to ask that you meet with us prior to your filing a new PNF in order to share our respective visions for this major impact project. Of course, there will be many additional traffic mitigation, parking and design matters relating to Brookline's up-zoning overlay that will be considered after the PNF is submitted.

The hotel / Orientation of the development: Cleveland Circle is a key mixed-use center on the Beacon Street axis. The character of the Circle impacts its many residents as well as the adjacent Brookline neighborhood. It is therefore important to us that the proposed development leads to a much-needed positive transformation of Cleveland Circle. The type of quality hotel franchise that we all hope will sustain itself in a competitive environment we believe may be best achieved through the hotel's visibility and connectedness to the public realm and the retail amenities of Cleveland Circle.

We believe that an architecturally appealing mixed-use project fronting on the Circle can enhance and enliven the location. In this regard, we believe that Cleveland Circle can benefit by having the hotel lobby and other activities within the development directly accessible from Cleveland Circle for pedestrians, for those arriving and departing by public transportation and, if possible, by taxicab.

Traffic flow into, around, and out of the redeveloped site: One new roadway will connect this mixed-use development to an already-congested Chestnut Hill Avenue. All vehicles entering the site and those vehicles exiting the site via Chestnut Hill Avenue will be required to navigate an inner circular roadway/ courtyard. This will include private autos, taxicabs, all types of service trucks and vehicles, and buses—both transient and those seeking parking. Accordingly, we would hope to see an onsite roadway design and configuration that amply accommodates the simultaneous multiple vehicle circulation and service needs of this complex development.

Positioning of new access/egress roadway from Chestnut Hill Avenue: The prior plan had the new access/egress roadway bisecting the commercial ground-level frontage on Chestnut Hill Avenue. The new buildings were to be massed along the D-Line T tracks. We would prefer that the new plan place the access roadway into the site alongside the D-Line T tracks, just as the current Cinema roadway does, thereby affording a space buffer between Clinton Road and the massing of the new buildings, and providing continuity and greater pedestrian safety for the new urban streetscape along Chestnut Hill Avenue. We recognize that our preference for the new access/egress roadway to run along the T tracks will be subject to technical considerations.

We would appreciate your arranging a meeting with us through Selectman Goldstein as soon as possible.

Sincerely,

John VanScoyoc
Barbara Senecal
John Freeman
Michael Merrill
Jonathan Fine
Gill Fishman
Carla Benka
Roger Blood
Lee Selwyn
Pamela Lodish
Linda Carlisle
Chris Chanyasulkit
Paul Saner
Werner Lohe
Andrew Fischer
Chou Chou Merrill
Shaari Mittel

Cc: Selectman Ken Goldstein, Town of Brookline

Brookline Department of Planning & Community Development
Jeff Levine, Director
Kara Brewton, Economic Development Director

Boston Redevelopment Authority
Kairos Shen, Director of Planning
Erico Lopez, Project Manager

BTM.1 Hotel location

Please see response provided in Section 7.2.3.

BTM.2 Courtyard

Please see response provided in Section 7.2.9.

BTM.3 Location of Chestnut Hill Avenue access

Please see Section 2.3.2.12 for a discussion of Vehicle Access/Egress Driveways

BTM.4 Independent traffic study of Chestnut Hill Avenue access alternatives

Please see response to comment CCES.4. Chapter 2 provides a full transportation analysis.

BTM.5 Waterworks driveway

Please see response provided in Section 7.2.4.

BTM.6 Housing profile

Please see response provided in Section 7.2.2.

Leland C. Webster, Ph.D.
15 Orkney Rd.
Brighton, MA 02135
October 8, 2012

Mr. Erico Lopez
Project Manager, Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201-1007

Re: Proposal to redevelop 375-399 Chestnut Hill Avenue

Dear Mr. Lopez:

I write in strong opposition to the re-development project for 375-399 Chestnut Hill Avenue proposed by the Boston Development Group. While the current proposal has the benefit (relative to the 2011 proposal) of incorporating both the former Circle Cinema parcel and the Applebee's parcel into a single-site project, the developer has utterly failed to put forth a proposal that even comes close to maximizing the potential of this gem of a site. Indeed, BDG's proposal is so fundamentally flawed that the BRA must not approve it without significant adjustments.

I, like everyone else I know who is aware of the proposed redevelopment, wants to see this location get redeveloped. Not only is the former Circle Cinema parcel an eyesore, but the right project will positively transform this well-known Brighton intersection and create much needed construction jobs. Unfortunately, the project as proposed will be an absolute detriment to the neighborhood.

Why do I care? As a nearby long-term resident and homeowner, I visit or pass through Cleveland Circle, my neighborhood's "town center", on a daily basis. Cleveland Circle's unattractive appearance (relative to, say, Washington Square or Coolidge Corner just a short distance down Beacon Street) and dysfunctional traffic situation have a direct and negative impact on my quality of life. In addition, Cleveland Circle is very important in terms of how Brighton as a whole is perceived. The area also reflects on Boston College and affects our Brookline and Newton neighbors. People often refer to Cleveland Circle as being a gateway to Brighton and the city. New development in Cleveland Circle must not be permitted to further diminish either the quality of life for nearby residents or the general perception of our neighborhood, all for the sake of letting a developer make a killing on a poorly conceived project. I ask that the BRA do everything in its power to make sure that the Cinema/Applebee's is developed with the overarching objective of improving the functionality and attractiveness of this location.

Major problems with the proposed project:

- **Overwhelming density.** A 181-room hotel, an 82-unit apartment building, along with 19,000 square feet of office space and 14,000 square feet of retail and restaurant space is clearly too much to pack into the site to function well, at least as currently configured and at the currently proposed building height. LCW.1
- **Exacerbation of vehicular traffic problems.** With the project's high density, and only 228 parking spaces, along with a courtyard that is totally inadequate in size, traffic in Cleveland Circle's often failing intersection will further deteriorate, particularly during morning and evening rush hours, as cars trying to gain access to the site wait for space to open up. BDG's traffic study is not credible in its conclusion that traffic will not be significantly impacted. LCW.2
- **Exacerbation of parking problems in the area.** In addition to the traffic mess the project will create, the inadequate level of parking will put users of the site out into the adjoining neighborhoods in search of on-street parking. Nearby streets in Brighton are already a challenge for residents in terms of finding parking, and the lack of adequate parking on the site will only further exacerbate this daily hassle. Cruising for street parking will also further add to traffic congestion. LCW.3
- **Poor siting of programmatic uses.** The building that faces the intersection of Beacon Street and Chestnut Hill Avenue will have a major impact on the attractiveness and appeal of Cleveland Circle, not only in terms of architectural style, but also in terms of its function. A properly designed hotel at that location on the site could be a major landmark and present a lively and inviting face to Cleveland Circle, but the proposal currently calls for apartments there. A hotel would be much more compatible with the presence of a large restaurant, retail shops and a bustling intersection. In the current proposal, instead of a landmark structure that could transform Cleveland Circle, having a hotel hidden away on the back side of this development will result in a pedestrian building that will attract a mediocre quality hotel chain. Furthermore, moving the residential program to the part of the site that overlooks Cassidy Park would be much attractive to those apartment dwellers and therefore of higher value. I will add that the residential component should include more apartments of 2 bedrooms and above at the expense of many of the proposed 1-bedroom units, which will not attract long-term residents. LCW.4 LCW.5 LCW.6
- **Uninspired architectural design.** The four-story structure, which seeks to maximize the usable interior space by having a massive footprint, is visually unattractive. It looks like a chunk of the Pentagon dropped out of the sky and landed in the neighborhood. No amount of playing with textures of the façade can compensate for this massive wall of monolithic mediocrity. LCW.7

Given the magnitude of the above cited problems, BDG should go back to the drawing board and conceive of a project of a density that the area can support, with: LCW.8

- Parking sufficient to address 100% of its needs and improved design for traffic circulation on the site; LCW.9
- A truly minimal impact on the extant traffic problems;
- Improved siting of the programmatic uses (e.g., landmark hotel at the northeast corner of the site, overlooking Cleveland Circle; residential building overlooking Cassidy Park and the Chestnut Hill Reservoir); and LCW.10
- Attractive architectural designs. LCW.11

Finally, an independent traffic study is called for so that we can all have realistic data on which to base design and density decisions.

The community has consistently given BDG feedback over the last couple of years that it desires a quality project. BDG has resisted this feedback at every turn. Given the unusually large size of the site for our area and its prominent location, I ask for your help in demanding of BDG a high-quality project that is appropriate for this rarest of opportunities to positively transform Cleveland Circle.

Thank you for your consideration of my comments.

Sincerely,

Leland C. Webster

LCW.1 Density

Please see response provided in Section 7.2.1.

LCW.2 Traffic report and parking

Please see responses provided in Sections 7.2.7, 7.2.8, 7.2.9 and Chapter 2 for a full transportation analysis.

LCW.3 Parking

Please see response provided in Section 7.2.9.

LCW.4 Hotel location

Please see response provided in Section 7.2.3.

LCW.5 Location of residential units

Please see response provided in Section 7.2.3.

LCW.6 More units with two or more bedrooms

Please see response provided in Section 7.2.2.

LCW.7 Architecture

Please see response provided in Section 7.2.6 and Chapter 4.

LCW.8 Meet 100% of parking need and improve on-site circulation

Please see response provided in Sections 7.2.7 and 7.2.9.

LCW.9 Have a minimal impact on area traffic

While the resulting traffic impacts from the Project are minimal and will not noticeably affect the existing transportation environment in the study area, the Proponent is committed to improving the operation of the Beacon Street/Chestnut Hill Avenue (Cleveland Circle) intersection. This intersection is a major crossroads location and operates under congested conditions during peak periods. Through signal phasing changes to better allocate green time, geometric changes to improve efficient movement of vehicles, and enhancements to crosswalks and pedestrian controls, delays for both vehicles and pedestrians will be reduced. The Proponent

has been working with the MBTA to improve out-of-service trolley maneuvers from Beacon Street into the MBTA Yard at the Reservoir Station on Chestnut Hill Avenue.

Please see Section 2.4 for a discussion of mitigation measures. With proposed mitigation at Beacon Street/Chestnut Hill Avenue, the resulting operation at Cleveland Circle will be LOS D in both the a.m. and p.m. peak hours.

LCW.10 Improve location of uses

Please see response provided in Section 7.2.3.

LCW.11 Architecture

Please see response provided in Section 7.2.6 and Section 1.2.3.

LCW.12 Independent traffic study

Please see response to comment CCES.4.

Lopez, Erico

From: Lauren Mattison [lauren269@yahoo.com]
Sent: Monday, October 08, 2012 8:24 PM
To: Lopez, Erico
Subject: Comments on proposed Cleveland Circle development

Dear Mr. Lopez,

I am writing to share my concerns and suggestions for the proposed development at 375-399 Chestnut Hill Ave.

LM.1

I agree with the many other Brighton residents who have requested an independent traffic study. Independent evaluation is important to determine if the proposed building density, mix of uses, and traffic management and parking plans are appropriate for the site.

I would also like to emphasize the importance of designing this development to reduce vehicle trips and encourage use of alternate forms of transportation. As noted in the PNF, the new buildings should provide easy and welcoming pedestrian access from the neighborhood and the T, as well as easily accessible covered bike racks for visitors and secure bike storage for residents. While the PNF mentions that there are several Zipcar spaces within a half mile, I suggest that the developer bring Zipcar and Hubway directly to the site to provide cars and bikes for occasional use, as an alternative to car ownership for residents and car rental for hotel guests.

LM.2

LM.3

I look forward to the demolition of the abandoned movie theater and redevelopment of this site, and I hope that these points will be taken into account to ensure that the new development has a positive impact on the Cleveland Circle neighborhood and the surrounding communities.

Sincerely,
Lauren Mattison
2430 Beacon Street

LM.1 Independent traffic study

Please see response to comment CCES.4.

LM.2 Reduce vehicle trips and encourage alternate forms of transportation

The estimate of new automobile, transit, and walk trips is based on travel mode shares published by the Boston Transportation Department for the Project's specific neighborhood. See Table 2-10. The Proponent will encourage reduced dependence on automobile travel through the Travel Demand Management (TDM) strategies presented in Section 2.4.4.

LM.3 Bring Zipcar and Hubway to site

The Proponent will offer on-site space for a new Zipcar station. Currently, within ½ mile of the Project Site, there are six Zipcar locations. Another four locations are slightly further than ½ mile from the site. In total, these locations provide 17 Zipcar vehicles. The Proponent will promote the use of these near-by Zipcar locations in orientation packets to new tenants and residents. Please see Section 2.2.9 for a map of existing Zipcar locations and Section 2.4.4 for the Project's travel demand management measures.

No Hubway bicycle-sharing stations are located in the study area, but the Proponent will discuss with the City of Boston opportunities to support a new, nearby Hubway station. The Proponent will provide bicycle amenities for residents, guests, tenants, and visitors to encourage bicycle use. Shower facilities at the hotel will be made available for employees who bicycle to work. Please see Section 2.2.10 for a summary of existing bicycle conditions and Section 2.4.3 for a discussion of the Project's bicycle accommodations.

Lopez, Erico

From: Philip Tackel [ptboston@gis.net]
Sent: Monday, October 08, 2012 7:02 PM
To: Lopez, Erico
Subject: Cleveland Circle Theatre development

Dear Mr. Lopez

The current plans for the BDG Development are too aggressive and dense for this site. PT.1

The site should contain a hotel of sufficient standing to act as a signature building for Cleveland Circle that residents of the neighborhood and Brighton can be proud of. The building materials of the entire complex should compliment the neighborhood and the Aberdeen Historic District, rather than denigrate it. PT.2 PT.3

It is obvious the developer is trying to 'pack' too much development into such a small, unusual envelope of land. It's either greed or his desperate attempt to retrieve monies he's overpaid for the parcel(s).

I have lived in Aberdeen/Cleveland Circle for 35 years. I've commuted by "T" for 27 years to go downtown for work. I also use it from Reservoir in the morning to go outbound to medical providers in Newton. The trains are crowded in both directions at the Reservoir Station. Of course, Beacon Street is the terminus for the "C" line; however, when I enter the "C" train from either Englewood or Dean Road, sometimes there is standing room only (inbound) already!!

The traffic studies the developer submitted are flawed. Cleveland Circle at rush hour (heading north from Chestnut Hill Avenue in Brookline into Brighton at Cleveland Circle) is already a mess. Their consultants admit this intersection is a problem. Perhaps they should have invented a new color other than red to use to indicate just how worse the situation will become. PT.4

I am a professional Industrial Engineer by education and Operations and Systems Analyst consultant by profession. The only advantage this proposal, if built as submitted, has is to line the pockets of the investors. Having worked as an internal consultant for major institutions, it's never been so obvious that the Client (BDG) hired a consultant who set out to prove the results that would favor BDG's proposal.

We do not need more medical offices here. We need large, residential apartments with terraces facing the Reservoir. PT.5
Preferably condominiums that will draw stakeholders to the neighborhood. Not tiny apartments owned by individual condominium investors who could care less about the quality of life for the long term residents of Cleveland Circle and its environs. A hotel with much architectural interest and built of quality materials is also a necessity - not some afterthought PT.6
that is pushed way back into a courtyard. High end retail? These customers are going to come to this site using the Green Line? Or will they have to compete for parking spaces on Beacon Street with the customers of the fast food establishments? PT.7

I speak for 46 homeowners at 4-8-12 Kilsyth Terrace, Aberdeen, Brighton.

Philip Tackel, BSIE, MBA
President, Kilsyth Terrace Condominium Association.

PT.1 Density

Please see response provided in Section 7.2.1.

PT.2 Hotel flag

Please see response to comment EW.10.

PT.3 Architecture

Please see response provided in Section 7.2.6.

PT.4 Traffic report

Please see response provided in Section 7.2.8 and a detailed transportation analysis in Chapter 2.

PT.5 Medical office space

Please see responses provided in Sections 7.2.5 and 7.2.2.

PT.6 Location of residential units and materials

Please see responses provided in Sections 7.2.3 and 7.2.6.

PT.7 Parking

Please see response provided in Section 7.2.9 and Section 2.3.8.

Lopez, Erico

From: Carl Richardson [carl@carl-richardson.com]
Sent: Monday, October 08, 2012 5:23 PM
To: Lopez, Erico
Subject: Cleveland Circle Development

October 8, 2012

Mr. Errico Lopez
Project Manager
Boston Redevelopment Authority

Dear Mr. Lopez,

This is to express my general support for this development. By way of background, I have been a resident and taxpayer in Brighton since 1998. The majority of my time in Brighton has been as a resident of the Aberdeen neighborhood. As a movie fanatic, I frequented the Circle Cinema for years, and am personally aware of traffic issues along lower Chestnut Hill Avenue near Cleveland Circle.

I was saddened when the Cinema closed four years ago, since its shuttering has furthered the somewhat blighted feel of the Cleveland Circle area. I am aware of the City's recent challenges in moving forward with development on difficult sites like this, and am pleased that an experienced developer continues to risk substantial pre-development funds to improve Cleveland Circle. I do hope that the BRA makes certain that the façade facing the Circle be of high quality and inviting to pedestrians, as well as require a pathway through the site connecting to Beacon Street. CR.1 CR.2

I believe that the proposal's focus on traffic mitigation is spot on.
Cleveland Circle cannot bear all of the development's traffic exiting uncontrollably onto Chestnut Hill Ave. The BRA, as Brookline apparently has, should require as a condition to re-development both a new traffic light single curb cut as well as a reasonable amount of vehicles required to exit directly onto Beacon St. via the rear easement used by me and others for years while the Cinema was open. CR.3

Please approve a timely re-development of the Cinema site.

Sincerely,

Carl O. Richardson, III
110 Foster Terrace
Brighton, MA 02135

CR.1 Cleveland Circle façade

Please see response provided in Section 7.2.6 and in Section 1.3.2.3

CR.2 Pathway to Beacon Street

Please see response to comment BTD.8.

CR.3 New traffic light, single curb cut, and egress to Beacon Street

One access/egress driveway will be provided at Chestnut Hill Avenue and the existing rear, exit-only driveway to Beacon Street will continue to operate at the western end of the site and connect directly to the Waterworks driveway. The Chestnut Hill Avenue driveway will be signalized and operation will be part of the Beacon Street/Chestnut Hill Avenue existing traffic signal. Please see Section 7.2.4 for a discussion of volumes on the rear exit-only driveway when the Cinema was open.

Lopez, Erico

From: Beverly Ross [beverly.ross@verizon.net]
Sent: Monday, October 08, 2012 4:57 PM
To: Lopez, Erico
Subject: BDG Proposal for Cleveland Circle Cinema Project

Mr. Erico Lopez
Project Manager
Boston Redevelopment Authority

Dear Mr. Lopez:

I am opposed to the current plans for the development of the Cleveland Circle Cinema Project. The plan is too dense and architecturally unattractive. The building should complement the Waterworks' complex and the overall neighborhood. I am concerned about traffic safety issues on the public roadways and do not think any additional traffic should be funneled through the alleyway next to the Waterworks building. BR.1 BR.2 BR.3 BR.4

Beverly Ross
1990 Commonwealth Ave. Apt 6
Brighton, MA 02135
617 254-6507

BR.1 Density

Please see response provided in Section 7.2.1.

BR.2 Architecture

Please see response provided in Section 7.2.6.

BR.3 Traffic safety issues

Please see Section 2.2.4.

Please see response provided in Section 7.2.8.

BR.4 Waterworks driveway

Please see response provided in Section 7.2.4.

Lopez, Erico

From: Rich Hoss [richie_hoss@yahoo.com]
Sent: Monday, October 08, 2012 4:38 PM
To: Lopez, Erico
Subject: Cleveland Circle Cinema and the tranquility of Eva Webster

Dear Mr. Lopez,

I am a Brighton resident and property owner on Chestnut Hill Ave and I have attended a few of the meetings regarding the Circle Cinema/Applebees project. I have found them to be highly entertaining.

I usually don't get involved in community matters but I did want to express myself to you about this project. If there is one reason that I think you need to go back and redo this plan, it is to ensure the safety of the community by allowing Eva Webster to keep her sanity. I am seriously fearful over what that woman may be capable of. I am particularly worried that she may be exposed to people that - as she so eloquently put it at a recent BRA meeting - might be the kinds of people that go to Mary Ann's. I for one cannot idly stand by any more and just watch as Eva Webster may be forced to have the kinds of neighbors that bowl or clean their own houses or drive Hondas (without leather, no less!) or don't know what foie gras is.

So as you continue on the project, I hope you can keep this in mind. Eva's comfort and isolation from poor/middle class people (or the thought that they might even exist) should be of upmost importance. This is for the good of the community because that woman scares the crap out of me.

By the way, good one on changing the flag of the proposed hotel from the totally unacceptable Hampton Inn to the widely cheered Hilton Garden. I guess these people don't travel around much and don't realize that they are pretty much the same thing. Solid work.

Thank you and Best Regards,
Rich

Comments noted.

Lopez, Erico

From: barbarabrilliant [barbarabrilliant@gmail.com]
Sent: Monday, October 08, 2012 8:07 AM
To: Lopez, Erico
Subject: Chestnut Hill Avenue Project BDG

Dear Mr. Lopez, BB.1
As a resident of Waterworks in Cleveland Circle, it has always been my wish to both improve the circle while maintaining the integrity of the neighborhood for both the residents and merchants. The proposed development does neither and in fact, would be detrimental to both.
I know that you will do the right thing.
Barbara Brilliant

--
Barbara Brilliant
B'WAY FILMS, LLC

BB.1 Does not support project

Comment noted.

Lopez, Erico

From: jonascox@mindspring.com
Sent: Sunday, October 07, 2012 9:56 PM
To: Lopez, Erico
Cc: cleveland-circle-community@googlegroups.com; Eva Webster; jmeunier@bdg1.com
Subject: BDG proposal for Cleveland Circle Cinema project

October 7, 2012

Mr. Erico Lopez
Project Manager, Cinema Circle Project
Boston Redevelopment Authority

Hi Mr. Lopez,
The week I moved into 9 South St. #3 Brighton, I noticed what I took to be landscapers working on the front yard of a house across the street. Excitedly (actually, naively, in hindsight), I approached them and asked if they were planting trees and shrubs, etc. They replied, "We're paving the yard." It has served as illegal rental parking all these last 14 years, despite the "No Parking" sign that they disingenuously put up just next to the spaces.

Recently the owner, seeking a zoning variance, painted over the lines demarcating the spaces, put in a picnic table, and sent around a representative with a clipboard seeking support for the variance. The hearing has been held, I'm guessing, as the picnic table is gone and the parked cars are back.

Your project, as presently proposed, takes this kind of disregard for the neighborhood to a new level. It's too big, it doesn't account for the traffic impact, and the most compelling vista is afforded not to the neighborhood it's supposed to serve, but to the hotel guests in its interior courtyard. JC.1 JC.2

Please show some conscience and revise this project according to the overwhelming feedback you've gotten from the community.

Sincerely,
Jonas Cox

resident of 9 South St. #3 from 1998 to present

and of 374 Chestnut Hill Ave #24 from 1996 to 1998

JC.1 Project size

Please see response provided in Section 7.2.1.

JC.2 Traffic impacts

Please see response provided in Section 7.2.8.

Lopez, Erico

From: Cynthia Taft [ctaft@charlesgateart.com]
Sent: Sunday, October 07, 2012 8:29 PM
To: Lopez, Erico
Subject: Opposition to Cleveland Circle Cinema Project

Copy of letter to Peter Meade, BRA

From: Cynthia Taft [mailto:ctaft@charlesgateart.com]
Sent: Sunday, October 07, 2012 3:44 PM
To: 'peter.meade.bra@cityofboston.gov'
Cc: 'heather.campisano.bra@cityofboston.gov'; 'mark.ciommo@cityofboston.gov'
Subject: Opposition to Cleveland Circle Cinema Project

October 7, 2012

TO: Peter Meade, BRA

FROM: Cynthia Taft Egdahl
Watermark #501 at The Waterworks

CC: Mark Ciommo, Boston City Council
Heather Campisano, BRA

SUBJ: **Opposition to the Proposed Cleveland Circle Cinema Project**

I am writing to voice my strong opposition to the proposed Cleveland Circle Cinema Project. I believe it should be rejected by the BRA for the following reasons:

1. Safety and congestion Issues at Cleveland Circle are a city responsibility and have been poorly addressed by the proposal. This affects not only people living and working in the Cleveland Circle area but ALSO all other citizens who drive through our area. CT.1
2. Totally inadequate plan for parking in the area. The number of spaces for the new project itself are ridiculously low in relation to its uses and this compounds the problem that businesses and citizens in Cleveland Circle already face. CT.2
3. The Waterworks Driveway is too small to be used safely for the use proposed by this project. The danger to children and other users of Cassidy Park is a serious concern. CT.3
4. The project is too dense for the area and will have a major negative effect on the neighborhood in terms of traffic, on future development of Cleveland Circle, and on a broad range of neighborhoods bordering the project. CT.4

I am very disappointed in the process that led to this particular project, because I have been a supporter of this type of development and the kind of positive impact it COULD and SHOULD have on Cleveland Circle. I have also been very pleased in the past with most projects in Boston that the BRA has supported. This is a very flawed project and one that would, if approved, have a serious detrimental effect on our city.

Please reject this proposal or work with this developer or a new developer to come up with a project that we can all be proud of.

CT.1 Traffic issues and safety

Please see Section 2.2.4.

The Proponent will enhance the pedestrian environment and pedestrian safety along the Chestnut Hill Avenue corridor by reducing the number of existing curb cuts at the site from four to one, and installing new sidewalks adjacent to the Project Site.

Please see response provided in Section 7.2.8.

CT.2 Parking

Please see response provided in Section 7.2.9.

CT.3 Waterworks driveway

Please see response provided in Section 7.2.4.

CT.4 Density

Please see response provided in Section 7.2.1.

Lopez, Erico

From: Lauri Mitchell [lauri.mitchell@gmail.com]
Sent: Sunday, October 07, 2012 7:15 PM
To: Lopez, Erico
Subject: Cleveland Circle Development Project

Lauri Mitchell
2400 Beacon St. - Unit 510
Chestnut Hill, MA 02467

Dear Mr. Lopez,

I am a resident and property owner in the Watermark building, part of the Waterworks development. I am writing to express my serious concerns about the current plan to develop the cinema/Applebees property. My concerns are:

1. Traffic exiting using the Watermark access road will create serious safety hazards LME.1
2. Design for development grossly underestimates the need for parking and for traffic control LME.2
3. The design itself is not suitable for the neighborhood LME.3

I ask you to send the developers back to the drawing board. I am all in favor of a development that will benefit this important neighborhood. Clearly, the plan currently proposed is not that.

Respectfully yours,

Lauri Mitchell

LME.1 Waterworks driveway

Please see response provided in Section 7.2.4 and Section 2.2.4.

LME.2 Parking and traffic control

Please see responses provided in Sections 7.2.8 and 7.2.9.

LME.3 Architecture

Please see response provided in Section 7.2.6.

Lopez, Erico

From: bethkemler@aol.com
Sent: Sunday, October 07, 2012 6:06 PM
To: Lopez, Erico
Subject: Circle Cinema Development

Erico Lopez, Senior Project Manager
Boston Redevelopment Authority
Once City Hall Square
Boston, MA 02201

Re: Circle Cinema Development, 375-399 Chestnut Hill Avenue

Dear Mr. Lopez:

I am writing as a resident at the Waterworks Condominium complex, which is an immediate abutter of the proposed development site. There are two major areas of concern that I see with the Development project as it now stands.

The first is its size and density- it feels out of scale to the rest of Cleveland Circle. Cleveland Circle is already a complex intersection, filled with numerous walkers, many of whom are students walking around in groups, bicyclists, motorists coming from every which direction, and the intersection of three different MBTA trolley lines. Not only is it highly congested, it is also a dangerous intersection, with probably a higher than usual accident rate. It is inconceivable to me that the Project, in its current form with it's proposed hotel, apartments, doctor's offices and retail spots, wont have a significant and deleterious impact on everyone's safety and comfort level. BK.1

My second major concern has to do with the use of the Waterworks driveway as an egress for hotel guests. This proposed use raises significant safety issues for the Waterwork residents and for the users of Cassidy Playground. BK.2

As a resident of Waterworks, I welcome the development of a multi-use complex on the site of the current dilapidated cinema, but only one that enhances the site for all its neighbors and which doesn't add to the safety problems. Therefore, I URGE YOU TO NOT SUPPORT THIS PROJECT IN ITS CURRENT STATE.

Thank you for your attention,

Beth Kemler
203 Watermark

BK.1 Density and safety

Please see response provided in Section 7.2.1 and response to comment CT.1.

BK.2 Waterworks driveway

Please see response provided in Section 7.2.4.

2400 Beacon Street

Unit 304

Chestnut Hill, MA 02467

October 7, 2012

Dear Mr. Lopez,

I am one of the first residents who moved into the Waterworks in 2006. I care deeply about the Development and served on the Board of Trustees for several years. I know you have received a great deal of letters regarding the use of the Circle Cinema/Applebees properties, raising great concerns about the nature of the proposed project. I share those concerns. Such care was taken in the Development of Waterworks; precious parkland was respected in every aspect of where we live.

I want to address the issue of traffic as businesses in the new project will utilize our driveway to exit onto Beacon Street. In my professional capacity at Beth Israel Deaconess Medical Center, where I have worked for 35 years, I have developed a program called "DriveWise". This is a nationally recognized driving safety program. With this focus, I believe that with the proposed plan, the added traffic on our small driveway put drivers and pedestrians at great risk. Let me emphasize that what we have is a narrow, winding driveway with obscured views of what is ahead. Remember, this was built as a driveway, not a road. We have a large number of older drivers in the Waterworks who already have difficulty negotiating the treacherous turns of the driveway. Add to that the danger once a driver gets to Beacon Street and has to negotiate traffic for turns. A left turn is especially dangerous; again with the problem of obscured views of Beacon Street due to tightly packed cars and a road that has curves. Also, the backup to make that turn will be a real problem. During rush hour currently, this is already an issue. I can't imagine how the added burden of additional cars will be feasible. In terms of pedestrians, there are many children using the tennis courts, the park as well as Waterworks dog owners who are walking or running in that area. I don't like to sound like an alarmist, but I go on record, stating that this driveway represents a fatality waiting to happen. It could be one of the hotel guests not familiar with the difficult driveway, someone driving too fast on a slippery surface and loses control of their car. Or, it may be a child, chasing a ball, who neglects to notice a car. LRK.1

I know you have heard from many of my friends and neighbors. I hope you will deeply consider the questions raised about this project. Cleveland Circle has a major opportunity now. We can get it right, or continue the problems of the Circle that have plagued this area for decades.

Sincerely,

Lissa R. Kapust

LRK.1 Waterworks driveway

Please see response provided in Section 7.2.4.

Mr. Erico Lopez

Boston Redevelopment Authority

One City Hall Square

Boston Ma. 0221-1007

Sir,

I reside at 2400 Beacon St. in Chestnut Hill, abutting Cassidy Park and the newly proposed Cinema Project of BDG. While I would be delighted to see the blighted Circle Cinema demolished immediately and replaced by a new, well formulated project to take its place I strongly feel that the project as presented is unsuitable, ill conceived and inconsiderate to the neighborhood that is until now one of the very best in the city.

There are several issues that seem to be overlooked and not thought out.

The very thought of utilizing the driveway to our building for hotel guests or indeed for any additional use other that emergency access is ludicrous. I trust that you have driven on our driveway by now. If you have you cannot help but notice that it is no road by any stretch of the imagination, not capable of the kind of traffic that is proposed, is indeed quite narrow and contains several sharp and dangerous curves that someone inexperienced on the pavement can easily misnavigate resulting in an accident with the many children, families, and teams that enjoy Cassidy Park. NS.1

It seems the town of Brookline is dictating the rules on this project of which they really should only control about 20%. Why not stand up to them and demand that all traffic except for emergency vehicles exit on Chestnut Hill Ave.

Secondly the intersection at our driveway and Beacon St. is terribly dangerous as it is especially if you are trying to make a right hand turn onto Beacon. Additional use by additional cars will make it horrible. NS.2

Has there been an independent traffic study of this intersection? Has there been an independent traffic study of that intersection in the middle of a real winter when the snow is piled up so high that if you are taking a right hand turn your visibility is greatly affected and you go with a wing and a prayer? Has there been an independent traffic study of this intersection both before and after a BC home football game? Has there been an independent traffic study at all? NS.3

Sir I have the highest respect for the BRA. I know you all work very hard and make difficult decisions daily taking into account any number of different points of view. As an abutter and a neighbor I only hope you will do due diligence on this proposal and block BDG from using our small driveway.

Yours



Neal Solomon

NS.1 Waterworks driveway

Please see response provided in Section 7.2.4.

NS.2 Beacon Street/Waterworks driveway intersection

The Beacon Street/Waterworks Driveway exit is one of the study intersections assessed in the transportation study in Chapter 2. The intersection is currently unsignalized and traffic exiting the driveway is controlled by a stop sign. Analysis results show that that, on average, drivers exiting the driveway currently experience LOS C during the a.m. peak and p.m. peak hours. With the addition of new Project trips to the Waterworks driveway, level of service would remain at LOS C. LOS D or better is considered acceptable in urban areas.

Note that an evaluation of future conditions at the Beacon Street/Waterworks Driveway with Project traffic using the rear driveway showed that a traffic signal is not warranted at this location.

While the sight distance to the east (from the driveway) may be somewhat limited by parked vehicles along the southern curb, no crashes have been reported at this intersection within the past three years.

NS.3 Independent traffic study

Please see response to comment CCES.4.

Mr. Erico Lopez, Senior Project Manager

Boston Redevelopment Authority

One City Hall Square, 9th floor

Boston, Ma. 02201

Re. Circle Cinema Development, 375-399 Chestnut Hill Avenue

Dear Mr. Lopez

I live in the Waterworks project at 2400 Beacon Street, Chestnut Hill.

I am an abutter to the proposed project on Chestnut Hill Ave and I want you to know that **I strongly oppose** the project as it has been represented by BDG for a number of reasons.

I think its size and scope greatly diminishes the advantages we all have in living in one of Boston's most suburban, urban neighborhoods, where residents and visitors currently take advantage of Cassidy Park (one of Boston's best, that we should all be proud of) the M.D.C. swimming pool and hockey rink, the reservoir with walking trails, the municipal tennis courts to name a few. This project in scope will **greatly diminish** the beauty of our natural assets and the sense of neighborhood that we all enjoy.

The traffic plan as proposed by BDG is **beyond comprehension.** Do you really believe that the additional cars brought in by this large a project will have little or no effect on the current overburdened traffic and parking situation as BDG tells us it will. I don't by a long shot. NS2.1

The plan to route traffic from and to Chestnut Hill Avenue into a horseshoe that will accommodate cars for a hotel, office building, and restaurants as well as buses, taxis, delivery trucks, garbage trucks and more, all within the traffic safety codes that protect out physical well being is beyond absurd. NS2.2

The routing of hotel guests off the property by the use of the Watermark driveway is equally absurd. This is a **driveway** not a highway. It was not built nor ever before considered to be safe for the number of vehicles that would be using it every day under BDG's plan. NS2.3

With the present number of users who are familiar with the driveway, its width and its crazy turns it is close to being maxed out.

Add the numbers of vehicles in the proposal and you have a very dangerous situation, an accident waiting to happen with children and adults using the access to the playing fields, tennis courts and grandstands at the much used Cassidy Park. I would hate to feel responsible for an accident under these conditions and I am sure you would too.

This is only one of the many very important reasons why the project as currently proposed **should be denied** and a different project on a smaller scale that is more neighborhoods friendly, safer, more visually attractive should be encouraged.

We all understand that the blight of the Circle Cinema as it presently stands is an affront to our safety in the neighborhood and should be torn down. We hope when the BRA considers all the alternatives they will settle on a project that enhances the entire neighborhood and not just the big pockets of the BDG.

I thank you for your time.

Yours truly

Neal Solomon

2400 Beacon St.

Chestnut Hill 02467

NS2.1 Traffic report

Please see responses provided in Section 7.2.8, response to comment CCES.4 and Chapter 2.0.

NS2.2 Courtyard

Please see response provided in Section 7.2.7.

NS2.3 Waterworks driveway

Please see response provided in Section 7.2.4.

Aaron and Suzanne Kleiner
2400 Beacon Street, Unit# 103
Chestnut Hill, Ma 02467

October 5, 2012

Mr. Erico Lopez
Boston Redevelopment Authority
One City Hall Square 9th Floor
Boston, MA 02201

Re: 375-399 Chestnut Hill Avenue Redevelopment (Cleveland Circle Cinema Redevelopment)

Dear Mr. Lopez:

We are owners and residents of unit 103 in the Watermark condominium building, part of the Waterworks Project and direct abutters of the "Cinema" property. We are attaching a letter written to you by Ken Stein and Charlotte Knox our neighbors and friends. They carefully researched and clearly articulated the problems with the proposed development and we agree and stand by everything they have written. Let us add that while we do not oppose any development, we oppose the proposed development because it overburdens our driveway (please note we say "driveway" not "roadway") and it is far too large a project for the site generating far too much traffic for the Cleveland Circle area to bear.

ASK.1

As we said our driveway which the developer proposed to use as a means of egress from the development has been characterized as a roadway when, in fact, it is a narrow winding and potentially dangerous driveway. We are concerned about the safety of our residents as well as the safety of park goers and safety of the proposed development's guests who would use our driveway.

The traffic studies presented at the various public meetings we attended clearly indicated that the Cleveland Circle intersection is currently creating unacceptable traffic congestion. Beyond any doubt adding close to 300 units of hotel and residential development and tens of thousands of square feet of office, retail and restaurant space, will create an even more problematic situation in the future.

ASK.2

We are in favor of rational development that does not endanger us and our neighbors.
Thank you for your consideration in this matter.

Sincerely,

Aaron and Suzanne Kleiner

ASK.1 Waterworks driveway

Please see response provided in Section 7.2.4.

ASK.2 Density

Please see responses provided in Sections 7.2.1 and 7.2.8.

Posternak
POSTERNAK BLANKSTEIN & LUND LLP

October 5, 2012

Ann M. Sobolewski
617-973-6120
617-722-4921 FAX
asobolewski@pbl.com

By Regular Mail and Email: erico.lopez.bra@cityofboston.gov

Mr. Erico Lopez
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201-1007

Re: Cleveland Circle Development
375-399 Chestnut Hill Avenue
Public Comment

Dear Mr. Lopez:

This Firm represents Hamilton Cleveland Circle LLC (Hamilton Cleveland), the owner of commercial property at 398 Chestnut Hill Avenue, Brighton. Our client's property is directly across Chestnut Hill Avenue from the site of the new project proposed by Boston Development Group LLC ("BDG"), and adjacent to the MBTA Green Line Reservoir Station (the "Applebee's/Cinema Site").

Our client has reviewed the proposal for this project and asked us to provide you with comments in reaction to the contents of the proposal. In doing so, we acknowledge the able contributions already made by numerous members of the community.

Hamilton Cleveland's building is a three-story brick building located on the corner of the east-bound side of Beacon Street Chestnut Hill Avenue, directly across from the Applebee's parcel included in the proposed development. Professional offices, such as medical, dental, and engineering firms, comprise are the tenants of Hamilton Cleveland's building. On-site parking is provided, including spaces in the basement of the building. Hamilton Cleveland believes that a redevelopment of the Applebee's/Cinema site will be beneficial to the neighborhood as a whole, but, the proposed plan has numerous shortcomings which should be considered and addressed during the Article 80 Process.

Traffic and Delivery/Service Vehicles

First, we question the decision not to conduct new traffic counts but to rely on counts from 2010 and early 2011 and a growth factor taken from data at one location in 2008 and 2011. Second, the proposed driveway location will direct the flow of incoming and outgoing traffic, including delivery and supply vehicles, opposite the forked road connection (Chestnut Hill Avenue

HC.1

Southbound, and the unnamed way leading to parking areas and the Riverside T station). According to the Expanded Project Notification Form (EPNF), the new signalized traffic signal at the site driveway will operate at an overall level of service (LOS) F during the a.m. peak hour (Table 2-12) and an overall LOS E during the p.m. peak hour (Table 2-13). This is likely a deterioration from current conditions, however it is not possible to determine the existing traffic flows at the site driveway using the information in the EPNF. Moreover, we note that the EPNF does not contain an analysis of the vehicles using the unnamed way for access to the parking areas and Riverside station, focusing on that area as a pedestrian/trolley space. As such, the EPNF does not fully and adequately evaluate the effect of the project on existing a.m. and p.m. peak hour traffic. HC.2 HC.3

We note that the commentary at Section 2.4.2 describing the effects of signalization changes on the 2017 build conditions fails to mention the instances where the proposed signalization changes will, actually, result in a decrease in LOS. For example: comparing Table 2-12 with Table 2-16 the intersection at Commonwealth Avenue/Chestnut Hill Avenue – Commonwealth EB Left goes from a LOS B to a LOS C with mitigation; similarly the intersection at Chestnut Hill Avenue Boylston Street – Boylston EB U-turn/left goes from a LOS E to an F with mitigation. Nor does the proposed mitigation help the overall LOS at the site driveway/Chestnut Hill Avenue which remains at a LOS F during the a.m. peak hour and deteriorates to a LOS F during the p.m. peak hour (Tables 2-16; 2-17) with mitigation. HC.4

Moreover, many of the hotel-guest vehicles exiting the rear of the Applebee's/Cinema Site through the Waterworks driveway will likely re-enter Chestnut Hill Avenue to travel to Boston, but it is unclear from the data provided whether those returning vehicle counts have been included in the 2017 build projected traffic counts for Chestnut Hill Avenue northbound. HC.5

Another significant shortcoming in the proposal has already been pointed out by others. It appears that the methodology for the project's traffic study were flawed and that, as a result, the project rests upon a severe under estimate of the reasonably anticipated needs for deliveries and other service entries and exists from the project site. Again, the proximity of the sole entry and exit driveway on Chestnut Hill Avenue to the paved areas providing vehicle access to parking, coupled with significant undercounting of delivery and service vehicles for the residential uses, leads to the conclusion that the project's real negative impact will be significantly greater than that set forth in the EPNF. We also question whether the delivery/service vehicle turning radius analysis takes into consideration the queuing of other delivery/service vehicles in the interior courtyard. With the barrier prohibiting vehicles other than hotel vehicles from exiting to the rear of the Site, and the absence of dimensional information in the interior traffic-courtyard plans contained in the EPNF, it is not possible to determine whether the presence of queued delivery/service vehicles will have a negative impact on the traffic both within the courtyard and on Chestnut Hill avenue. HC.6 HC.7

Because the Town of Brookline amended its Zoning Bylaw in 2011 to condition the development of the Brookline portion of the Applebee's/Cinema Site on having only one driveway on

Chestnut Hill Avenue, the proponent could have designed a redevelopment that did not maximize the potential buildout and, instead, adopted a scale better suited to having only one driveway on that street. As proposed, the project is too large for only one entrance/exit and should be redesigned to better suit the site constraints. HC.9

Parking

The total parking spaces proposed for all uses is 228, with 78 reserved for apartments, leaving 150 spaces to be shared by 182 hotel rooms, a 6,600 s.f. restaurant, 7,468 s.f. of retail and 19,981 s.f. medical office. As set forth below, this is a wholly inadequate number of parking spaces for the proposed uses in this location. HC.10

Because the project includes land in Boston and Brookline, the parking requirements in the Brookline Zoning By-Law (Cleveland Circle Hotel Overlay District) as well as well as the parking requirements in the Cleveland Circle Neighborhood Shopping Subdistrict under the Boston Zoning Code should be considered in analyzing the parking provided in the project. Although the Article 80 process sets the ultimate parking requirements, the requirements in the code (Article 51, Table J) provide a useful comparison.[1]

For example, the Brookline Bylaw requires only 1 parking space per 1,000 g.s.f. of floor area for office uses while the Code sets a requirement of 2 parking spaces per 1,000 g.s.f. of floor area. The project locates 19,981 s.f. [(6,382 *3) + 835] of office[2] space entirely in Brookline, thereby reducing the number of "required" parking spaces in half. Hamilton Cleveland's building houses medical office tenants and, in reality, there is a greater demand for parking spaces by medical office tenants than 1 space per 1,000 g.s.f. Based on Hamilton Cleveland's past experience operating medical office space directly across the street from the Applebee's/Cinema Site and communications with their medical office tenants, the volume of office space proposed would likely be divided into approximately 15 office suites requiring dedicated parking of 2 spaces per suite for employees and 1.5 to 2 additional spaces for patients, totaling 50 to 60 spaces. This is closer to the 40 that would be required in the underlying zoning under the Code. Allocating one space 1.3 spaces per office is unrealistic given the nature of the use and the actual parking behavior of people frequenting that use in the immediate neighborhood. We also note that visits of 3 patients per hour for 15 offices could add another 600 - 700 in and out trips (whether they are drop-offs or parking events) on an already overburdened roadway and courtyard. These daytime trips are not taken into account in the traffic analysis. HC.11

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[1] Using the Brookline Zoning Ordinance to compute the parking required in that Town for the uses located in that town, sets the Brookline parking requirement at 46 spaces (6 retail; 20 office; 20 hotel) not the 21 proposed in Table 1-1. We also question whether or not the required Brookline parking must be located on the portion of the site located in Brookline.

[2] Table 1-1 identified 19,000 s.f. of office use in Brookline, but the square footage listed on the section plans, Figures 1-6 – 1-10, when added together do not equal 19,000. Brookline requires gross square footage. At a minimum, they did not include the office lobby space on the ground floor.

Under the Brookline Bylaw 1 parking space per 0.5 hotel rooms, or 20 spaces for the rooms located in Brookline, is required. Table J, on the other hand sets 0.7 spaces per hotel room, triggering a requirement of 98 spaces for the 141 rooms located in Boston. Thus, using the underlying zoning, 118 spaces would be required for the Hotel. The EPNF states that 60 spaces will be allocated to the Hotel, almost ½ of the amount that would typically be necessary for that use, although there is a reference to sharing 30 spaces with medical office uses. Further, if functions were to occur at the hotel, attendees would likely travel by car, resulting in 100-150 cars hitting the Circle at one time with no place to go and insufficient parking spaces to use.

The restaurant, 6,700 s.f., is located entirely in Boston and while the number of seats has not been established, Table J sets a 4 space per 1,000 g.s.f. parking calculation for that use. Using the underlying zoning, therefore, 27 spaces would be required for the restaurant, not the proposed sharing of 60 spaces with the retail and medical office uses. Moreover, Hamilton Cleveland's experience leasing restaurant space to tenants in the area, suggests that a 6,700 g.s.f. restaurant would likely contain 250-300 seats plus staff. That seat count would require 38-45 spaces under the underlying zoning. We also note that restaurant vehicles come in at the evening hours, the same time as hotel guests and the same time as apartment tenants. The existence of one entrance and the small number of parking spaces could overwhelm the Circle and surrounding area with cars at night.

The retail component, located in Brookline, requires 0.75 spaces per 1,000 g.s.f. or 6 spaces for 7,468 g.s.f. If the retail component were located in Boston, the underlying zoning requires 2 spaces per 1,000 g.s.f. and 15 spaces would be required. While it is likely that shoppers may not arrive by car, certainly employees of the retail establishments may require parking and, based on Hamilton Cleveland's past experience, the parking space allocation in the Code is more reflective of actual retail parking needs.

Finally, the underlying zoning would require 2 spaces per residential unit for a total of 164 spaces. The EPNF proposes one space per residential unit.

If the Applebee's/Cinema Site were developed using the underlying zoning,[3] 335 parking spaces would be required, over 100 more spaces than those proposed. At a minimum, the number of parking spaces should be increased or the density of the development should be decreased to so that there will be sufficient parking on-site to handle the demand and to prevent negative impacts on the neighborhood.

Conclusion

In summary, Hamilton Cleveland, understand the goal of rehabilitating the neighborhood and fully support a redevelopment of the Applebee's/Cinema Site, but the project's current design presents significant potential negative impacts on neighboring properties. A complete and

[3] 20 office; 118 hotel; 27 restaurant, 6 retail, 164 residential

accurate accounting of traffic and delivery/service vehicle trips should be performed to further quantify the project's negative impacts and it should be redesigned to accommodate the constraints imposed by having only one entrance. HC.12

Very truly yours,

Ann M. Sobolewski

cc: Robert Marks
Harold Brown

1405317v1/5112-1

HC.1 Traffic counts

Data collection and field observations were made for this study starting in December 2010 through October 2012. Note that the Massachusetts Environment Policy Act office, Massachusetts Department of Transportation, and the Boston Transportation Department sanction the use of traffic data that has been collected within three years prior to a proposed project's transportation evaluation.

The Project's traffic study follows standard guidelines established by the Boston Transportation Department and the Town of Brookline, and uses methodologies established by the Institute of Transportation Engineers for estimating new trips and evaluating existing and future intersection operations.

HC.2 Existing traffic at site driveway

Level of service analysis for the existing site driveways is shown in Tables 2-3 and 2-4.

HC.3 Vehicle trips to Riverside station parking

The unsignalized driveway at the MBTA Yard at Reservoir Station provides access/egress for both trolleys and employees, who can park in the Yard. The number of non-trolley vehicle turns into/out of the Yard is relatively minor (observed to be 12 vehicles during the a.m. peak hour and 16 during the p.m. peak hour).

HC.4 Signalization changes that decrease LOS

After meeting with BTD, the mitigation improvements for the Beacon Street/Chestnut Hill Avenue intersection have been revised in the DPIR. The mitigation measures as presented in Section 2.4 will improve the level of service will from LOS F to LOS D during each peak hour.

HC.5 Vehicle trips that exit Waterworks driveway then use Chestnut Hill Avenue northbound

The returning vehicles have been accounted for in the analysis. See Figures 2-14 and 2-15.

HC.6 Underestimate traffic

Delivery trip estimates were based on National Cooperative Highway Research Program (NCHRP) data for Boston and are considered reasonable for this type of mixed-use development.

Please see response provided in Section 7.2.8.

HC.7 Turning radii in courtyard

Please see response provided in Section 7.2.7.

HC.8 Size of Project with only one entrance/exit

Please see Section 2.3.2.12.

HC.9 Scale of project

Please see response provided in Section 7.2.1.

HC.10 Parking

Figure 2-18 graphically shows the Project's parking demand pattern compared to the Project's parking supply of 203 spaces. The graph shows projected occupied and empty spaces by time of day, revealing that an adequate number of spaces will be available to serve the Project's guests, tenants, and visitors and absorb realistic fluctuations in parking demand.

Also see Section 7.2.9 for a discussion of parking.

HC.11 Trip generation and traffic study

Please see response provided in Section 7.2.8. See also Table 2-11 for information about the trips generated by the office building. Please also see Chapter 2 for a full transportation analysis.

Lopez, Erico

From: John Spritzler [spritzler@comcast.net]
Sent: Friday, October 05, 2012 1:09 PM
To: Lopez, Erico
Subject: Cleveland Circle Project

Mr. Erico Lopez
Project Manager
Boston Redevelopment Authority

Dear Mr. Lopez,

As a resident of 114 Strathmore Rd. in the Cleveland Circle part of Brighton, and as a person who has attended many of the public meetings at which BDG presented plans for developing the Circle Cinema/Applebees properties, I object to the BDG proposed plan. It is too dense. It will make traffic unacceptable. It will impact the Waterworks Condominium too negatively by misusing the access driveway that goes close to their building. It fails to provide housing that will attract families with children. There is not enough parking for a restaurant to attract people who want to drive to it. The traffic report is not credible, as it is based on outlier data from exceptionally low-traffic days of data collection, and it does not realistically assess the traffic impact of the proposed project. This makes me distrustful of BDG in general. JS.1 JS.2 JS.3 JS.4 JS.5 JS.6

As I said to you at the recent meeting on September 20, the whole process is backwards. Currently the BRA has BDG develop a plan that the BDG investors will love, and then the BRA holds meetings at which the residents get to complain about it. Instead, the BRA should tell BDG to tell its very talented architects, who have heard what residents of the area want and care about now for at least two years, to come up with a plan that they know the residents will love, not a plan that they know the BDG investors will love; and then the BRA should hold meetings at which the residents can help tweek the plan so it can make a bit of money.

The BRA should be more concerned about what the residents of Boston want than about making money for investors at the expense of the residents. This requires a big change in how the BRA operates.

Sincerely,

John Spritzler
114 Strathmore Rd. #101
Brighton, MA 02135

JS.1 Density

Please see response provided in Section 7.2.1.

JS.2 Traffic

Please see response provided in Section 7.2.8.

JS.3 Waterworks driveway

Please see response provided in Section 7.2.4.

JS.4 Family-friendly housing

Please see response provided in Section 7.2.2.

JS.5 Parking

Please see response provided in Section 7.2.9.

JS.6 Traffic report

Please see response provided in Section 7.2.8.

Arlene J Wolk
2400 Beacon ST #509
Chestnut Hill, MA 02467

617-734-2340

Erico Lopez
Boston ReDevelopment Authority
One City Hall Square, 9th Floor
Boston , MA 02201

Re: Cleveland Circle Project

Dear Mr. Lopez:

I spoke to you by phone about the Hotel project at Cleveland Circle.
I moved to the Watermark Building after selling my home in Brookline..
It is a smoke free building . Clean and beautiful. Little did I know that
The developer wanted to use the driveway on our property. NEVER
NEVER. IT IS DANGEROUS AND CHILDREN PLAYING TENNIS ,baseball,
FRISBE, NAME IT. AW.1

IN THE SUMMER THERE ARE CHILDREN READING UNDER THE TREES
WITH COUNSELORS. I HAVE SEEN THEM CLIMBING OVER THE
BARRIER AND GOING ON TO THE ROAD.
THE CHILDREN ARE ADORABLE AND an accident will happen. With
cars using the driveway not being familiar with the area an ACCIDENT
WILL HAPPEN.
The project is horrible. The Town of Brookline where I lived for 45
years would never allow such a development. As someone stated , "It
looks like the Pentagon". It is all about money. I am sure that the City of
Boston will not allow such a project. The Waterworks has Landmark
and Historical Buildings. It faces one of the most beautiful areas in
Boston.
I hope you and the Mayor will take all of this into consideration .

Sincerely,
Arlene Wolk Arlene J Wolk

cc: Mayor Menino

AW.1 Waterworks driveway

Please see response provided in Section 7.2.4.

Lopez, Erico

From: Berezin, Ellen [ellen.berezin@philips.com]
Sent: Monday, October 01, 2012 12:04 AM
To: Lopez, Erico
Subject: BDG Plans for Cleveland Circle

Erico,

Many thanks for facilitating the meeting in Brighton to discuss the BDG proposal for Cleveland Circle. Clearly, there are MANY concerns about the project. I believe most of these concerns to be very legitimate, and I urge you to help those of us who live in Brighton to improve this incredible entry way to Boston.

I live at The Watermark. I will be greatly affected by this development. I moved here from Central Massachusetts because as a child growing up in Newton, I would drive by these old buildings and envision how they would look all fixed up. They are beautiful. Never did I imagine that I would be able to look at them every day. When the opportunity came to buy a unit and relocate back to this area, I was thrilled. I hoped that the renovation of these buildings was the start of beautifying Cleveland Circle. I live in a very special place – the reservoir, BC, the Waterworks buildings, the entrance to Boston, public transportation, Cassidy Park.

I want to improve Cleveland Circle. Coolidge Corner and Washington Square have blossomed. There's no reason Cleveland Circle can't follow. However, the BDG proposal will NOT make that happen.

My objections to the BDG proposal are as follows:

- Traffic in the area cannot support the density of the development as proposed. The BDG data about traffic is flawed. EB.1
- It is not appropriate to use the driveway of The Watermark for hotel traffic. The driveway is narrow with blind curves. Children and people walking pets frequently use it. In addition, during rush hour, we have great difficulty making a left onto Beacon Street to get to work. EB.2
- The immediate geographic area has no need for more medical offices. EB.3
- BDG has not worked with the community. At this point in time, I would say that most of the neighbors with whom I speak don't trust BDG.
- The orientation of the hotel will not help Cleveland Circle improve its appeal; the neighborhood specifically asked the BDG for a different orientation of the structures. EB.4
- The proposed buildings are unattractive and do not blend with the structures that already exist. EB.5
- The development is not well thought out. I have asked John about liability related to hotel guests exiting via the Watermark driveway and how enforcement of parking will be enforced, and he has not had answers. EB.6

Unfortunately, I could go on and on. And that truly is the problem. We don't need more inexpensive chain hotels and restaurants. We don't need more medical offices. We don't need more traffic. (BTW, when I attended your meeting in Brighton, I was late because it took me 4 light cycles to make a left from Beacon to Chestnut Hill Ave!) We need a developer who wants to make Cleveland Circle a better place for businesses and for residents.

Please help us. Most of us just want to do what is best for Cleveland Circle, our neighborhood, and there's no profit in it for us. We just care.

Thank you for your time and attention.

Sincerely,
Ellen Berezin
2400 Beacon Street

Unit 301
Chestnut Hill, MA
617-232-3009

ellen.berezin@philips.com

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EB.1 Density

Please see response provided in Section 7.2.1.

EB.2 Waterworks driveway

Please see response provided in Section 7.2.4.

EB.3 Medical office space

Please see response provided in Section 7.2.5.

EB.4 Hotel location

Please see response provided in Section 7.2.3.

EB.5 Architecture

Please see response provided in Section 7.2.6.

EB.6 Waterworks driveway

Please see response provided in Section 7.2.4.

is narrow. Brookline said OK to the developer if they use our driveway.. This is a safety issue. Please let me show you. I can meet you, There will be a dangerous situation.

other issues

- density (way over the top) IS.2
- traffic problems (already existing) how can you add a huge development + think traffic will be ok IS.3

I will be at the meeting

Sincerely, Ilene Solomon 2400 Beacon St #110
ilenesolomon@ilenesolomon.com Chestnut Hill, MA 02467

Dear Mr. Lopez,

I am writing to express my concern with the cinema project. I live at the Waterworks and am very upset with the proposal. I feel that the wool is being pulled over our eyes. They want to use our DRIVEWAY to bring guests from a 181 room hotel through. IS.1 This is dangerous. It is a narrow DRIVEWAY. Kids cross it to get to the field, and it

IS.1 Waterworks driveway

Please see response provided in Section 7.2.4.

IS.2 Density

Please see response provided in Section 7.2.1.

IS.3 Traffic

Please see response provided in Section 7.2.8.

Mr. Erico Lopez
Boston Redevelopment Authority
One City Hall Square 9th Floor
Boston, MA 02201-1007

September 18, 2012

Dear Mr. Lopez:

We are residents of Watermark Condominiums, and we have a serious concern about the BDG project. Apparently the proposed project anticipates using the narrow driveway that abuts the Watermark building as a hotel exit route. This is not a good idea for several reasons: NA.1

1. The driveway is very narrow and close to the Watermark building. It is a small driveway that is curved. This will be a danger to pedestrians who cross the driveway as well as to cars which exit the Watermark and Whitehall buildings onto the driveway.
2. This also puts the Watermark building itself at risk from drivers who are not familiar with the driveway, and will likely run into the building as they exit.
3. The extra traffic will put a burden on the driveway itself, as it was not built for heavy traffic.
4. Who will supervise the traffic on the driveway?
5. Who will maintain the driveway which was never meant to be a road for substantial traffic?

We very much appreciate your careful consideration of this important matter.

Yours truly,

Neil Hyman

Albert Hyman, MD

2400 Beacon Street PH608
Chestnut Hill, MA 02467

NA.1 Waterworks driveway

Please see response provided in Section 7.2.4.

2400 Beacon Street
Unit 403
Chestnut Hill, MA 02467
September 21, 2012

Erico Lopez
Boston Redevelopment Authority
One City Hall Square
9th Floor
Boston, MA 02210

Dear Mr. Lopez,

I am a Boston resident, and abutter of the Circle Cinema/Applebee parcel. I am in favor of development of this piece of property. If done properly, such a project would enhance the neighborhood very much and add value to our lives and our properties.

As currently conceived, I do not believe that the proposed project by the Boston Development Group (BDG) will achieve this.

I have major reservations regarding the traffic analysis used. I believe that the data collection using two very atypical days is flawed. As such, I believe it underestimates the impact of the proposed project on traffic in the area. In addition, it is also acknowledged that the demand traffic light for non-hotel traffic exiting the complex onto Chestnut Hill Road at the new intersection will create further problems, likely impacting and worsening traffic flow at Cleveland Circle. ML.1 ML.2

In addition, the egress for hotel traffic onto the drive next to the Waterworks complex will worsen an already unsafe situation. The drive, as it exists now, is narrower than that used by the exiting traffic from the Circle Cinema before the Waterworks complex was built, and not meant to handle significant traffic. At the time the cinema closed (shortly after certificates of occupancy were obtained for the Waterworks), there was minimal business, and thus minimal traffic. I drive multiple times daily on this narrow drive, and it is not unusual for me to unexpectedly encounter people, including children, from the ML.3

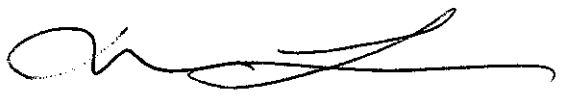
baseball fields and tennis courts of Cassidy Park. If you have not experienced this, I suggest you drive this route on a day the park is in heavy use for softball or tennis, or just before a Boston College event. There is a blind spot on this road as it veers to the left behind the Watermark building which you should be aware of. A hotel guest, unfamiliar with this barely adequate path, would be even less likely to attend to the potential risk to these people who wander onto the roadway. Furthermore, I do not agree with the person at the Sept 20 meeting at the Hamilton school who equated the risk of this drive to that of Beacon Street along another side of the path. Beacon Street is separated from the park by a sidewalk and parked cars. There is no such border for this narrow driveway.

BDG's new proposal, with an increased number of units and parking spots, will further jeopardize the enjoyment of Cleveland Circle and adjacent roadways. It will also compromise safety along the Waterworks drive for those Cassidy Park users who wander onto it.

I suggest that the existing project as proposed be rejected. I recommend that the developer be instructed to reduce the size of the project. In addition, the developer should be forced to pay for an independent traffic review conducted by a firm of BRA's choosing, to be conducted on days considered to be representative of current traffic conditions. ML.4

Thank you very much for your assistance in this matter.

Sincerely,



Mark Lewis

ML.1 Traffic report

Please see response provided in Section 7.2.8.

ML.2 Chestnut Hill Avenue/site driveway intersection

Data collection and field observations were made for this study starting in December 2010 through October 2012. Note that the Massachusetts Environment Policy Act office, Massachusetts Department of Transportation, and the Boston Transportation Department sanction the use of traffic data that has been collected within three years prior to a proposed project's transportation evaluation.

Through mitigation measures proposed by the Proponent in Section 2.4, level of service will be improved at the Beacon Street/Chestnut Hill Avenue intersection from LOS F to LOS D.

ML.3 Waterworks driveway

Please see response provided in Section 7.2.4.

ML.4 Independent traffic study

Please see response to comment CCES.4.

Lillian Levith

2400 Beacon Street, #309

Chestnut Hill, MA 02467

617-216-6911

September 23, 2012

Erico Lopez
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

Dear Mr. Lopez:

My 6 Problems with the cinema project:

1. The Boston Development Group project will cause serious density issues. I believe Boston Development Group's plan is harmful for Cleveland Circle. Cleveland Circle cannot handle the additional traffic. Boston Development Group's plan will cause more damage to our neighborhood than good. Between not having enough parking and causing Cleveland Circle to become a parking lot to cars trying to maneuver through Cleveland Circle, the store, restaurants and residents will not have enough parking for their customers and visitors. LL.1 LL.2

2. The Waterworks driveway should not be used. Brookline said the BDG (Boston Development Group) MUST use our access driveway, because they don't want the hotel traffic exiting on Chestnut Hill Ave. OUR DRIVEWAY WILL SERIOUSLY BECOME UNSAFE DAMAGED. Children and people using Cassidy Park could be hurt, because there are blind curves on our driveway near the tennis courts and playing field. Drivers unfamiliar with our driveway could drive too fast and not have time to stop in time. Boston Development Group doesn't seem to worry about this problem's impact. Who is going to pay for the maintenance, insurance a monitoring of OUR DRIVEWAY? **Our driveway was not built to safely handle heavy traffic.** LL.3

3. Why is Brookline the only community being heard? Brighton, Alston and Waterworks must be the first area to give their approval. It seems as if Brookline rules over this project and BDG has implied that Boston will go along with Brookline's plans. It is outrageous. Brookline has less than 20% of the property and Boston has the other 80% yet Brookline rules. LL.4

4. The hotel will create poor air quality in the neighborhood. The hotel has a small turn around court yard that will create serious air quality problems. The exhaust air can not escape. It will collect in the small turn around area. LL.5

5. Hotel and resident traffic problems. There are not enough spaces for hotel traffic, deliveries and residential traffic to temporarily park. Therefore traffic will gridlock Chestnut Hill Ave. I am afraid in the future Brookline will decide that all traffic must go through our property, because the development will make Chestnut Hill Ave too congested. The hotel will have backups on to Chestnut Hill Ave. I can see that Brookline will change their zoning laws and demand that ALL the traffic from the development will be forced to go through our DRIVEWAY LL.6

6. Parking Boston Development Group has not planned for enough parking on their property. At the moment there is limited parking in Cleveland Circle. This new development by the Boston Development Group will make parking close to impossible and harm the neighborhood stores and residents. LL.7

EMISSION AND AIR POLLUTION:
No discussion in the PNF of the emissions impact of courtyard design on pedestrians, residents, medical office users and hotel guests. Funneling large numbers of vehicles into an enclosed courtyard including busses, trucks and service vehicles will create high concentrations of vehicle emissions inside and around this courtyard. Many of these vehicles will keep on their engines and idle while standing, regardless of what signage is posted to the contrary unless BDG demonstrates some realistic enforcement mechanism beyond what is described in the PNF. LL.8

Recommendation: Require a more detailed study of emissions in the courtyard area with realistic projection of the number of vehicles that will be standing and idling.

IMPACT OF MBTA

Trains and MBTA services vehicles frequently enter and exit the Reservoir station immediately across from the proposed main entrance/exit. MBTA trains regularly block traffic on Chestnut Hill Ave

PNF does not provide any information about the number and frequency of MBTA vehicles using these tracks across from the proposed entrance

Recommendations:

- Additional traffic study to report on the number and frequency of trains and MBTA service vehicles on an hourly basis, with provisions for mitigating the impact of this blocking of the proposed new intersection. LL.9

- Recognize the need to address overall MBTA traffic issues in Cleveland Circle and on Chestnut Hill Ave. Broader study of MBTA –development traffic interaction should be added to project scoping LL.10

PARK AND OPEN SPACE IMPACT

PNF references the existing park trees but does not point out that the canopy of many of the mature trees adjacent to project would be touching or impinging on the hotel and apartment building given proposed minimal setbacks. Significant potential exists for damage to adjacent trees during project construction; unknown impact for long-term health of adjacent trees due to shadows from new multi-story apartment building.

Recommendations:

- Require a detailed tree survey documenting size, species, health and estimated age of each mature tree within 50 feet of the proposed development LL.11
- Require a detailed conservation plan to ensure that no healthy trees are killed or damaged during the construction phase
- Provide an expert assessment of the long term impact of building shadow, drainage, new pathways, and other issues for the survival of the Park trees

USE OF WATERWORKS DRIVEWAY FOR EXITING HOTEL TRAFFIC

Brookline zoning mandates that the developer provide a segregated hotel parking area with signage and physical barriers to prevent vehicles in that parking area from exiting via Chestnut Hill Ave

- If enforced, this provision would create a hazardous situation for both the hotel and the Waterworks
  - The Waterworks driveway is regularly closed to traffic -- in addition to condo maintenance and repairs, this driveway is often blocked by MBTA and MWRA service vehicles
  - How would hotel guests exit during these shut down periods if no access to Chestnut Hill Ave is possible from the hotel parking area? LL.12
- BDG proposed to creates a new intersection at the western end of the project site and the rear of the Waterworks Park (Watermark building) where two streams of traffic will meet and contend for right of way
  - No study of the impact of this proposed new intersection is provided LL.13
  - No provisions for the monitoring, safety, or signaling of this proposed new intersection are provided LL.14

I am all for developing a well planned thought out project that would make Cleveland Circle even better than it is today.

Thank you.

Lillian Levith

LL.1 Density

Please see response provided in Section 7.2.1.

LL.2 Parking

Please see response provided in Section 7.2.9.

LL.3 Waterworks driveway

Please see response provided in Section 7.2.4.

LL.4 Brookline

Please see response to comment CK.1.

LL.5 Courtyard air quality

Please see response to comment CCES.12.

LL.6 Traffic backups onto Chestnut Hill Avenue

The courtyard, which has been enlarged as compared to that presented in the Expanded PNF, has been evaluated using AutoTURN, an engineering software program that analyzes vehicle maneuvers. Through an iterative assessment of the site plan and vehicle maneuvers, an optimal design was developed for the Project Site and courtyard that provides adequate roadway width/clearance for automobiles and delivery vehicles as they access, egress, and circulate within the site. As vehicle enter the site, they will proceed into the courtyard and travel to the drop-off curb lane, short-term hotel parking spaces, the rear parking lot, the lower level parking garage, or the service areas. Ample maneuverability in and around the courtyard will exist to prevent traffic queues at the entrance driveway.

LL.7 Parking

Please see response provided in Section 7.2.9.

LL.8 Courtyard air quality

Please see response to comment LL.5.

LL.9 Impacts from MBTA trains and vehicles

The Proponent has met with MBTA officials several times during the permitting process to discuss MBTA trolley operations through Cleveland Circle. In fact, as a result of these meetings, the MBTA has already modified the entry procedure for out-of-service C Branch trolleys into the Yard and reduced travel time through the intersection. The mitigation proposed by the Proponent at the Beacon Street/Chestnut Hill Avenue intersection will improve level of service for automobile traffic, and will better accommodate Green Line trolley maneuvers. It is also the Proponent's understanding that a detector signal will be installed by the MBTA for out-of-service B Branch trolleys to allow faster processing from Commonwealth Avenue south along Chestnut Hill Avenue, thereby reducing traffic blockages on Chestnut Hill Avenue.

Please see both Section 2.2.5.2 and Section 2.4 for further discussion of Green Line operations and intersection level of service.

LL.10 MBTA traffic issues in area

Please see response to comment LL.9.

LL.11 Trees

Please see response to comment MC.5.

LL.12 Waterworks driveway use when blocked by service vehicles

Should the Waterworks exit-only driveway be blocked, exiting hotel vehicles would temporarily use the Chestnut Hill exit.

LL.13 Intersection of site exit and Waterworks driveway

The intersection of the rear Project driveway and Waterworks driveway does exist today. The Proponent will install a stop sign for exiting hotel traffic, allowing the Waterworks vehicles to have the right of way. This location will operate at LOS A during all time periods.

LL.14 Traffic controls at intersection site exit and Waterworks driveway

Please see response to comment LL.13.

October 8, 2012

Mr. Erico Lopez, Senior Project Director
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

Re: **375-399 Chestnut Hill Avenue -- concerns regarding road location**

Dear Mr. Lopez:

I am a member of the Cleveland Circle business community, and my office is located at 2001 Beacon Street (corner of Chestnut Hill Ave.), a professional building that is across the street from the proposed development.

My associates and I look forward to seeing major improvement and beautification in this area, and would welcome an attractive hotel facing Cleveland Circle and inviting retail establishments.

However, because of an already very difficult traffic situation in front of our building, I am concerned that the entire proposed mixed-use complex may be too dense for this location and needs to be somewhat scaled down. PD.1

At the very least I would like to see the access/egress roadway to the proposed complex moved farther away from our building, and closer to the MBTA tracks, possibly closer to the upper existing curb cut for the theatre. This would help prevent traffic back-ups in front of our building and in Cleveland Circle and would create a continuous pedestrian-friendly sidewalk and retail block along Chestnut Hill Avenue. PD.2

Thank you for your consideration.

Sincerely,

Name Paul DeVasto

Company Campbell, DeVasto & Assoc.

Address: Suite 314, 2001 Beacon St., Brighton, MA 02135

PD.1 Density

Please see response provided in Section 7.2.1.

PD.2 Access/egress driveway

The Proponent will enhance the pedestrian environment and pedestrian safety along the Chestnut Hill Avenue corridor by reducing the number of existing curb cuts at the site from four to one, and installing new sidewalks adjacent to the Project Site.

Through mitigation measures proposed by the Proponent in Section 2.4, the travel delays at the Beacon Street/Chestnut Hill Avenue intersection will be reduced

October 8, 2012

Mr. Erico Lopez, Senior Project Director
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

Re: **375-399 Chestnut Hill Avenue – concerns regarding road location**

Dear Mr. Lopez:

I am a member of the Cleveland Circle business community, and my office is located at 2001 Beacon Street (corner of Chestnut Hill Ave.), a professional building that is across the street from the proposed development.

My associates and I look forward to seeing major improvement and beautification in this area, and would welcome an attractive hotel facing Cleveland Circle and inviting retail establishments.

However, because of an already very difficult traffic situation in front of our building, I am concerned that the entire proposed mixed-use complex may be too dense for this location and needs to be somewhat scaled down. IS2.1

At the very least I would like to see the access/egress roadway to the proposed complex moved farther away from our building, and closer to the MBTA tracks, possibly closer to the upper existing curb cut for the theatre. This would help prevent traffic back-ups in front of our building and in Cleveland Circle and would create a continuous pedestrian-friendly sidewalk and retail block along Chestnut Hill Avenue. IS2.2

Thank you for your consideration.

Sincerely,

I Sussman

Name Ilene Sussman

Company UHL Family Alliance

Address: 2001 Beacon St Suite 208
Boston, MA

IS2.1 Density

Please see response provided in Section 7.2.1.

IS2.2 Access/egress driveway

Please see response to comment PD.2.

Lopez, Erico

From: Michael Lin [mlin@linboston.com]
Sent: Friday, October 05, 2012 10:26 AM
To: Lopez, Erico
Subject: 375-399 Chestnut Hill Avenue Proposed Construction

Dear Mr. Lopez,

I am a member of the Cleveland Circle business community and my office is located in the building at 2001 Beacon Street (corner of Chestnut Hill Ave), directly across from the existing Applebee's Restaurant and the proposed location for a new development. We look forward to seeing a major imporvement and beautification effort for the location of the old movie theater, and we welcome new hotel and housing options as well as retail and dining establishments.

I write this letter, however, to voice my concerns as a business member of the community for nearly 30 years and as a lifelong Chestnut Hill resident.

First, due to the size of the proposed lot(s) and the existing congestion in the Cleveland Circle area, I am concerned that the proposed mixed-use complex may be too ambitious for this location and could benefit everyone involved by being scaled down in scope. The addition of nearly 300 hotel/apartment units in addition to numerous retail establishments would aggravate an already difficult traffic situation directly in front of our building, considering the major intersection of Beacon St/Chestnut Hill Ave, existing businesses in the immediate area, and the MBTA tracks that run throughout. While I support the addition of housing options and more retail space, the size and scope of the project should consider the impact to an already vibrant, yet often congested area. MLIN.1

Second, we are seriously concerned about the proposed driveway entrance to the site. My company is a civil and structural engineering company that is well versed in traffic patterns and implications of increased average daily traffic. As previously mentioned, the entrance (garage and pedestrian) to our building is directly across from Applebee's, just north of the traffic light on Chestnut Hill Ave, and cornered in by the train tracks that serve the Cleveland Circle MBTA yard. Needless to say, traffic congestion can be an issue for this immediate area. I would like to see the driveway entrance for the proposed development be moved south along Chestnut Hill Ave, adjacent to the D Line underpass, in the location of the "upper" existing curb cut for the theater. This would help alleviate already troublesome traffic backups at the traffic light and in front of our building, which currently backs up on Chestnut Hill Ave on a regular basis to Dean Road to the south, and Strathmore Road to the north. MLIN.2

I welcome the opportunity to discuss further our concerns as a member of the community or to participate in the project professionally. I look forward to the redevelopment of the site of the movie theater I attended as a young child, but has been long overdue for an update.

Thank you in advance for your consideration.

Sincerely,
Michael Lin
Lin Associates, Inc.
2001 Beacon Street #310
Brighton, MA 02135
(617) 566-4216 x114

MLIN.1 Project size

Please see response provided in Section 7.2.1.

MLIN.2 Chestnut Hill Avenue entrance

Locating the Project's Chestnut Hill Avenue site driveway further south would create additional traffic issues compared to the proposed central location. At the central location, a traffic signal and stop line already exists on Chestnut Hill Avenue northbound at the MBTA Yard. This existing signal, which is part of the Beacon Street/Chestnut Hill Avenue signal system, controls the flow of traffic into Cleveland Circle and allows out-of-service MBTA trolleys to move into and out of the Yard. As planned, the Project Site driveway at Chestnut Hill Avenue will be signalized and tied into the existing signal operations at Beacon Street/Chestnut Hill Avenue.

If the Project driveway was moved south, the associated driveway signal control would require that the stop line on Chestnut Hill, which is currently just south of the MBTA Yard, be relocated further south near the Reservoir Station drop-off driveway. Such a plan would cause longer traffic queues to block the adjacent intersection of Chestnut Hill Avenue/Clinton Road more frequently. Maneuvers out of the Reservoir driveways would also be blocked more frequently. Additional clearance (yellow) time would need to be allotted to northbound Chestnut Hill Avenue, causing longer delays at the Beacon Street/Chestnut Hill Avenue intersection.

Please also see Section 2.3.2.12.

Lopez, Erico

From: estherles [estherles@comcast.net]
Sent: Sunday, October 07, 2012 2:15 PM
To: Lopez, Erico
Subject: {SPAM: 40} :Fw: concern about the BDG development

----- Original Message -----
From: estherles
To: erico.lopez.bra@cityofboston.gov
Sent: Sunday, September 16, 2012 12:38 PM
Subject: concern about the BDG development

DR. LESLIE & ESTHER SILVERSTONE
2400 BEACON STREET, # 504
CHESTNUT STREET, MA 02467

Mr. Erico Lopez
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201

Dear Sir,

We are writing to you as very concerned Watermark condo owners, with regards to the project development proposed by the BDG.

LES.1

Our main concern is the proposed use of the Watermark easement, which is very winding and narrow, by the hotel occupants who would be transient and not familiar with the easement and who may very well speed and be of grave danger to kids who often run for a ball from Cassidy Park or the tennis courts.

We are very concerned about an accident waiting to happen. Please consider that possibility and reject that suggestion.

If the easement were to be used by the resident population rather than the hotel occupants, they may be more responsible and will get to know the narrow winding easement.

With much concern and with the hope you will consider the Watermark abutters' concerns,

Sincerely,

Leslie Silverstone M.D.
Esther Silverstone

LES.1 Waterworks driveway

Please see response provided in Section 7.2.4.

Lopez, Erico

From: n isler [naomi1935@yahoo.com]
Sent: Tuesday, October 09, 2012 4:06 PM
To: Lopez, Erico
Cc: Ciommo, Mark
Subject: comment letter re: 375-399 Chestnut Hill Avenue Proposal

October 8, 2012

To the Boston Redevelopment Authority
Cc. Councilor Mark Ciommo

RE: Development proposal for 375-399 Chestnut Hill Avenue (Cleveland Circle)

As a resident of Allston-Brighton, I look forward to seeing an attractive development in Cleveland Circle that will positively transform this gateway location, and improve the quality of life for residents and visitors alike. However, it seems to me that there are too many problems, all well documented, with the proposal as it stands now.

Cleveland Circle needs a visible, well-designed hotel that will serve as the area's focal point and landmark, accompanied by inviting retail establishments, including a neighborhood-friendly restaurant for people of all ages and backgrounds, with an outdoor eating area overlooking the park.

I also support a residential component being a part of this development, as long as it is designed to be true neighborhood housing that can attract permanent residents and improve stability of the Cleveland Circle neighborhood.
However, the current residential component seems ill designed. There are good suggestions available for improving it. NI.1

Additionally, I ask that the BRA pay very close attention to the impact this project will have on the traffic and parking situation in Cleveland Circle and vicinity. If the project is too dense and creates severe negative impacts on traffic and parking, it will not be an improvement to Allston-Brighton. NI.2

Thank you for your consideration of these comments.

Name:_____Naomi B. Isler
110 Evans Road Brighton 02135_____

NI.1 Housing variety and design

Please see responses provided in Sections 7.2.2 and 7.2.6.

NI.2 Traffic and parking impacts

Please see responses provided in Sections 7.2.8 and 7.2.9.

Lopez, Erico

From: Sharon A Cayley [scayley@MIT.EDU]
Sent: Tuesday, October 09, 2012 5:23 PM
To: Lopez, Erico
Subject: Cleveland Circle Development Proposal

Re: 375-399 Chestnut Hill Avenue

Dear Erico:

I write as a private citizen to urge you and other civic officials to proceed cautiously with the current BDG proposal for this development. As presented in public meetings, the multiple-use concept employing a 180 room hotel, w/ pool & athletic amenities, 80+ units of housing comparable to luxury dorm rooms, medical offices, multiple small-businesses, and two restaurants, is far too large for this site. It also appears to disregard or seriously underestimate the parking and traffic volume (restaurant visitors and medical offices both require substantial parking). SAC.1 SAC.2 SAC.3

In addition, rather than taking advantage of its location, on a rise, overlooking Cassidy Park and the Chestnut Hill Reservoir, the current BDG proposal appears oddly out of context with the other buildings in the area. I submit both the historic High and Low Service Waterworks buildings and the newer Watermark residences as examples of far more attractive and imaginative developments. SAC.4

Let me be clear, I do support development of this project including hotel and residences. However, it must be done with the overall impact to Cleveland Circle, Brighton, and surrounding neighborhoods as primary considerations.

This is such a great opportunity to vastly improve the area. I am depending on you and our city officials to exercise caution and expertise in reviewing all aspects of the proposal.

Sincerely,

Sharon Cayley
137 Chiswick Rd.
Brighton, MA 02135-5317

SAC.1 Project size

Please see response provided in Section 7.2.1.

SAC.2 Parking

Please see response provided in Section 7.2.9.

SAC.3 Underestimate traffic volume

Please see response provided in Section 7.2.8.

SAC.4 Architecture context

Please see response provided in Section 7.2.6.

Lopez, Erico

From: missjanetkenney@gmail.com
Sent: Wednesday, October 10, 2012 12:18 AM
To: Lopez, Erico; Ciommo, Mark
Subject: 375-399 chestnut hill

Dear Mr Lopez,

I'm so glad the deadline was extended, as I did have some thoughts to share and have been in for surgery.

Like most people who attend these meetings (and not all of us live at the Waterworks building - this project has much broader reach and impact than on any one building), I am frustrated. We attend meetings every six months or so and we say the same things and you and your group ignore us, then ask us back in six months to be ignored again. Let me try to see if putting it in writing (again) helps. MJK.1

1. It's TOO big. We bring up that fact over and over, and every time I've had a chance to see renderings, the buildings are ridiculously large for the site and for the historic "deco" sense around it. Though the most recent renderings are not ugly, they sure don't fit into area. The architects should take walks around the neighborhood - off of Beacon and into Strathmore, Kilsyth, etc. These are the little streets and beautiful old buildings that ARE what Cleveland Circle "looks like." MJK.2

Come see the gardens and miniature yards; come see where people have lights, not to "party" but to light an old branch as it drapes. You don't have to "save" the Cleveland Circle represented by the MBTA building and the Mary Ann's/Dunkin Donuts slabs; surely, those don't fit into any nice neighborhood. But if you think you can cover eye sores with a building that makes no attempt to be "in" the neighborhood, but, rather, "on top of it" you are quite mistaken.
You've got the Titanic sitting on a pond. Each beautiful separately, they're ridiculous together.

Start where you are; that's a key in life and architecture, yes? Yes.

There are other issues. I'm sensitive to the look and feel of the neighborhood (guess that's obvious.). But there are people in the and I'll let them work on their expertise, but I have another major concern. I don't even drive, but even I can see, as I dodge cars and wait for the lights that don't work and try to escape the famous Boston drivers who can't drive, I cannot understand why you think we could possibly add more traffic and not more traffic problems. Extra left lane cut offs? Though the traffic section of the meeting drew large spontaneous bursts of laughter, this is NOT funny. Please release the current traffic team and start over. We will not still for another polka-dot chart that makes no sense. You must not insult our intelligence in that way. MJK.3

Here's the change of thought required: MJK.4
Developer's financial aspirations must be scaled back to what the site can actually accommodate. I know that's anathema, but a great failure makes no money for anyone. We endure years of construction, disruption, dirt and,surely, a terrifying surge in the rat population, and these mysterious donors suffer an enormous loss. They can probably absorb that, and we'll be the ones whose comfort, potential improvement to our beloved neighborhood, safety and long-term quality of life will be impacted. The developers will be long gone, building a new Big Dig somewhere, insurance having covered everything.

I hope you will receive many letters, and I hope the repetition will prove my points are part of a consensus that is finally heard:

It's too big.

Thank you for your attention, and I look forward, with cautious optimism, to a next meeting.

Sincerely,

Janet Kenney
52 Strathmore Rd. #44
Brighton, MA 02135

Sent from my Verizon Wireless BlackBerry

MJK.1 Project size

Please see response provided in Section 7.2.1.

MJK.2 Architecture

Please see response provided in Section 7.2.6.

MJK.3 Traffic

Comment noted.

MJK.4 Project size

Please see response provided in Section 7.2.1.

Gabor J Kalman

October 9, 2012

Mr. Enrico Lopez,
Senior Project Manager
Boston Redevelopment Authority

Dear Mr. Lopez:

I own a property in Brookline, at 357 Clinton Road, where I have been a longtime resident. I am also a faculty member at Boston College. By this letter I wish to express my strong opposition to the current Chestnut Hill Avenue/ Cleveland Circle development project proposed by the Boston Development Group.

The sorry state of the Cleveland Circle area has been a concern to me as well as to many residents of the neighborhood for long time. In recent years, with the remarkable successful development of the Waterworks condo project and the revitalization of the Reservoir area the character of the area has changed in a very positive direction. The closing of the Cleveland Circle Theater and the subsequent purchase of the combined lot of the movie theater and the adjacent Applebee restaurant by the BDG has opened the way for this trend to continue and to transform Cleveland Circle into an attractive and civilized environment. Indeed, a unique opportunity has been created to bring about a change that would make Cleveland Circle into an urban location that it, in a way, is predestined to be: a focus of activities along Beacon Street, a sequel to Coolidge Corner and Washington Square, both intelligently developed and pleasant commercial and cultural centers of the neighborhood, and a gateway to the magnificent complex of the Reservoir, the Waterworks site and Boston College campus with its manifold attractions.

It is unfortunate that the current BDG plan is very far from addressing this goal or even from having made it an issue of importance in its preparation. In addition, this plan, if carried out, would diminish, rather than improve the quality of life of the residents in the neighborhood. Other members of the neighborhood who have recorded their opposition to the plan have already pointed out its main flaws: thus it will be sufficient for me to reiterate what has been stated by many of them, especially by John Doggett (Town Meting Member of my Precinct), by Jennifer Doggett (whose detailed suggestions for a better design I fully endorse) and by Leland Webster. While the re-development of the site is something to look forward to, the points an improved plan should address are

357 Clinton Road, Brookline MA 02445 gkalman@rcn.com 617 566 1898

Gabor J Kalman

- Lower density GJK.1
- Improved traffic pattern GJK.2
- Adequate parking facilities GJK.3
- Siting, unit sizes and facilities for the residential unit that would ensure high quality GJK.4
- Siting and architectural distinction of the hotel, to make it a focal point of Cleveland Circle GJK.5

It is this last point that I would like to emphasize once more. It is the location of the hotel, the quality of its architectural design and its visual impact that would define the character of the Cleveland Circle area, with its adjacent distinctive residential neighborhood, for a long time to come. I urge you to make this a focal point in your considerations.

Sincerely

GABOR J. KALMAN

357 Clinton Road, Brookline MA 02445 gkalman@rcn.com 617 566 1898

GJK.1 Density

Please see response provided in Section 7.2.1.

GJK.2 Traffic pattern

The courtyard, which has been enlarged as compared to that presented in the Expanded PNF, has been evaluated using AutoTURN, an engineering software program that analyzes vehicle maneuvers. Through an iterative assessment of the site plan and vehicle maneuvers, an optimal design was developed for the Project Site and courtyard that provides adequate roadway width/clearance for automobiles and delivery vehicles as they access, egress, and circulate within the site. As vehicles enter the site, they will proceed into the courtyard and travel to the drop-off curb lane, short-term hotel parking spaces, the rear parking lot, the lower level parking garage, or the service areas. Ample maneuverability in and around the courtyard will exist to prevent traffic queues at the entrance driveway.

GJK.3 Parking

Please see response provided in Section 7.2.9.

GJK.4 Residential location and size of units

Please see responses provided in Sections 7.2.2 and 7.2.3.

GJK.5 Hotel architecture

Please see response provided in Section 7.2.6.

Lopez, Erico

From: cleveland-circle-community@googlegroups.com on behalf of Genae Johnson [Gjohnson.home@comcast.net]
Sent: Wednesday, October 10, 2012 7:21 AM
To: cleveland-circle-community@googlegroups.com
Subject: {SPAM: 40} :[Cleveland-Circle] Fwd: Comments on 375-399 Chestnut Hill AvenueRedevelopment

On Oct 9, 2012, at 11:44 PM, Genae Johnson wrote:

Mr. Erico Lopez, Snr. Project Manager
Boston Redevelopment Authority

Re: 375-399 Chestnut Hill Avenue (Cleveland Circle Cinema and Applebee's Redevelopment)

Dear Mr. Lopez:

I am writing a letter to express my dismay regarding the proposed development of the Cleveland Circle Cinema and Applebee's site. I am against it as it stands primarily for the following reasons:

1) Medical offices should never be considered or allowed for this site. Medical visits are booked every 15 minutes... That means that cars will be coming and going with such frequency that they will be creating major traffic problems in an already congested area. One need only try to visit the medical offices up the street on Boylston where the staff have to park in a location a mile away and brought in by shuttle. Still this medical office building has instituted free valet parking for patients as the lot is always full! And the valet parking often has 3-4 cars waiting to be moved... The current site at Cleveland Circle has no capacity to deal with issues like these as there is far too little space for parking. Also, the frequency that cars will be coming and going will certainly back up traffic on Chestnut Hill Avenue and make it dangerous for pedestrians. GJ.1

2) The hotel idea is a good one with regard to frequency of cars entering and leaving. However there are several things wrong with the current design:
a) the hotel entrance should be an understated elegance and should be directly on Chestnut Hill Avenue. The opportunity to beautify Cleveland Circle is now. If this project does the right thing, others in the area may be encouraged to follow suit. As has been noted by many residents.. Bringing the buildings and storefronts to the sidewalk is what strengthens a "corner" or in this case "circle". One just needs to look at Brighton Center, Coolidge Corner and Washington Square to identify that the placements of the buildings up to the sidewalks,as well, I may add, having wonderful small retail storefronts and cafes is what gives a nice feel to an area. Parking should be on back and not visible from the street if possible. GJ.2
B). The hotel should be classy enough to attract families and business people

3). The housing should not be primarily one bedroom units as that may attract more transient residents and, at some future date be sold by the developer as dormitories. This area needs residents who will be wanting to live here on a more permanent basis, (for many reasons which others have articulated), contributing to the fabric of the area. Therefore, more 3 bedroom units should be built, replacing one bedroom and studio units. GJ.3

4). How many times has it been suggested that a restaurant on the site should face Cassidy Park! This provides again, public access to a nice view and encourages residents to eat where they live and create a village feel. I GJ.4

can't understand why anyone designing a restaurant for the public would not see the opportunity such a placement offers!
5) The entire project seems way to dense for the space. I let the facts of the situation speak to this. Perhaps by deleting the medical offices... The density would decrease to a reasonable level.. Others could speak more to this. GJ.5

It seems to me, after attending many of the earlier meetings surrounding this project and following recent blog sites, that most residents are in favor of development of the site.(and I also welcome it); but only if it is done in a thoughtful manner--- the current proposed design is not thoughtful at all and has not been responsive to what seem like obvious good suggestions many residents have made.

This is the opportunity to make things right in Cleveland Circle. Your decisions will either cause Cleveland Circle to become an area that residents want to become pedestrians in, again (such as Coolidge Corner for example) or.. Turn it into a more transient area with so much traffic that people avoid it (causing businesses in the area to decline). And people will avoid it... Already people do so by going down alternative routes...

Please do the right thing... This decision will be remembered by many!

Thank you.

Genae Johnson
158 Willard Road resident, Brookline for over 13 years.

--
You received this message because you are subscribed to the Google Groups "Cleveland Circle Community" group.
To post to this group, send email to cleveland-circle-community@googlegroups.com.
To unsubscribe from this group, send email to cleveland-circle-community+unsubscribe@googlegroups.com.
For more options, visit this group at http://groups.google.com/group/cleveland-circle-community?hl=en.

GJ.1 Medical office space

Please see response provided in Section 7.2.5.

GJ.2 Hotel entrance location

Please see response provided in Section 7.2.3.

GJ.3 Size of residential units

Please see response provided in Section 7.2.2.

GJ.4 Restaurant location

Please see response provided in Section 7.2.3.

GJ.5 Density

Please see response provided in Section 7.2.1.

Lopez, Erico

From: Choumenkovitch, Nicolas [nmchoumenkovitch@wellington.com]
Sent: Wednesday, October 10, 2012 2:55 PM
To: Lopez, Erico
Subject: Comments on 375-399 Chestnut Hill AvenueRedevelopment

Mr. Erico Lopez, Snr. Project Manager
Boston Redevelopment Authority

Dear Mr Lopez,

As a long-term resident of 375 Clinton Road with 2 young children, I am writing to object to the BDG Circle Cinema-Applebee's development project as it is presented.

The construction is much to massive for the site and the overall proposal–which includes an agglomeration of ill designed housing units, a low budget hotel and doctor offices- is not appropriate for the area. The housing units should provide more family type apartments rather than the more transient dormitory like structure. Similarly, the hotel should aspire to a minimum standard making sure it does not cater to unsavory tenants. NC.1 NC.2 NC.3

As it has already been highlighted in many e-mails and blogs, the traffic impact suggested by the developer coupled with their assessment of the flow inside the courtyard are incredulous at best. This development will have a significant impact on traffic on Chestnut Hill Avenue, Beacon Street and adjacent streets. The overflow of cars will cause more congestion and tax an already over burden and under maintained road infrastructure. This congestion will concomitantly put at risk the safety of pedestrians. NC.4

Like many of our neighbors, we welcome the development of this area. But also, we ask that the development take into consideration the needs of its surrounding residents and that it incorporates many of the good suggestions already put forth.

So for pedestrian safety, traffic impact and quality of life in the area, we urge you please to reject the proposed design.

Sincerely

The Choumenkovitch family

NC.1 Project size

Please see response provided in Section 7.2.1.

NC.2 Family-oriented housing

Please see response provided in Section 7.2.2.

NC.3 Quality hotel

Please see response to comment EW.10.

NC.4 Traffic report and courtyard

Please see responses provided in Sections 7.2.7 and 7.2.8.

Lopez, Erico

From: Krzysztof Kempa [kris.kempa@bc.edu]
Sent: Wednesday, October 10, 2012 3:23 PM
To: Lopez, Erico
Cc: cleveland-circle-community@googlegroups.com
Subject: 375-399 Chestnut Hill Avenue Redevelopment

Dear Mr. Lopez:

I am writing this to express my strong disapproval of the proposed development of the Cleveland Circle Cinema and Applebee's site. I have been a resident of the Waterworks since 2007. The Cleveland Circle is already a chaotic and esthetically inferior place, as compared to, for example the Washington Square a few miles away. In my opinion, the proposed, poorly designed development will make it even worse.

Specifically,

- The proposal is too dense for the site. KK.1
- The medical office should not be included, since it adds most to the traffic. KK.2
- The retail and restaurant parking spaces are inadequate. KK.3
- The two restaurant design is an unnecessary duplication of function. KK.4
- The design is not "friendly" to Cleveland Circle in its access design. KK.5
- The overall architectural design lacks harmony with Cleveland Circle's architecture. KK.6

Sincerely,

K. Kempa

Professor Krzysztof (Kris) Kempa
tel. 617-552-3592

fax. 617-552-8478
kempa@bc.edu
Physics Department
Boston College
Chestnut Hill MA 02467

KK.1 Density

Please see response provided in Section 7.2.1.

KK.2 Medical office space

Please see response provided in Section 7.2.5.

KK.3 Parking

Please see response provided in Section 7.2.9.

KK.4 Two restaurants

Please see response to comment JD.4.

KK.5 Access design is not "friendly"

Please see response included in Section 7.2.7.

KK.6 Architecture

Please see response provided in Section 7.2.6.

ABERDEEN - BRIGHTON RESIDENTS ASSOCIATION, INC.

E-mail: Aberdeen.Residents@comcast.net

October 9, 2012

Mr. Erico Lopez
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201

Re.: 375-399 Chestnut Hill Avenue (Cleveland Circle)

Dear Mr. Lopez:

Our organization has been in existence for 13 years, but some of our members have been active in the Aberdeen/Cleveland Circle area for much longer, in some cases for decades. At this time, we represent nearly 300 households, mostly homeowners, but also some long-terms renters. The current Board has been elected in our last Annual Meeting on February 8, 2012.

Cleveland Circle is our neighborhood's "town center", and its future is very important to us. A special Board Meeting was held to discuss the development proposal that has been submitted by Boston Development Group for the former Circle Cinema and Applebee's parcels.

We have identified 5 top issues that matter most to our organization:

- Housing has to be designed to be suitable for long-term occupancy by permanent neighborhood residents (building should be oriented toward the Reservoir, be compatible with the Waterworks, and contain spacious units); ABRA.1
- Hotel building must be an attractive, prominent centerpiece of Cleveland Circle; ABRA.2
- Medical office space component is not critically important to the project and should be eliminated altogether; ABRA.3
- Size/density of the development should be scaled down; ABRA.4
- Project design and planning must focus on lessening traffic impacts. ABRA.5

All those matters are important, but proper orientation and desirable character of housing and hotel is at the top of our agenda.

Our support for the project is contingent on BDG fulfilling those objectives. **We do not support the project in its current form.**

Sincerely,

ABRA Board - Cleveland Circle Committee:

Rollin Crittendon	Nancy Daly	Eleanor Druckman	John Ellis
Malcolm Johnson	Dan O'Donnell	Beverly Ross	Ruth Scheer
Eva Webster	Leland Webster		

(signatures available upon request)

ABRA.1 Residential location and unit design

Please see responses provided in Sections 7.2.2 and 7.2.3.

ABRA.2 Hotel architecture

Please see response provided in Section 7.2.6.

ABRA.3 Medical office space

Please see response provided in Section 7.2.5.

ABRA.4 Project size

Please see response provided in Section 7.2.1.

ABRA.5 Lessen traffic impacts

Please see response provided in Section 7.2.8.

BRIGHTON ALLSTON IMPROVEMENT ASSOCIATION

76 UNDINE STREET, BRIGHTON MA 02135

October 12, 2012

Mr. Erico Lopez, Senior Project Manager
Boston Redevelopment Authority
1 City Hall Square
Boston, MA 02201

Re: 375-399 Chestnut Hill Avenue Proposal

Dear Mr. Lopez:

Please be advised that representatives of Boston Development Group presented their proposal to develop 375-399 Chestnut Hill Avenue at multiple public meetings of the Brighton Allston Improvement Association, most recently on September 6th, and October 4th, 2012. In addition Boston Development Group met with our subcommittee at their offices in Newton.

As of the final presentation at our organization this month, we still have concerns including the following:

- Density: The BAIA continues to be concerned about the scale and density of the project, and in the absence of studies to prove otherwise, would like to see a reduction in scale. BAIA.1
- Traffic: BAIA would like to see an independent traffic study that supports BDGS data that the traffic and parking impacts will not result in worsening the current conditions in Cleveland Circle. BAIA.2
- Add Zip Car and Hubway programs at the location to provide alternative forms of transportation for hotel guests and reduce need for car ownership by residents. BAIA.3

- MBTA improvements: BAIA would like confirmation that the MBTA will work to improve T crossings at this location, improving the traffic for the Cleveland Circle Community. BAIA.4

To date, BDG has been receptive to BAIA community concerns and has incorporated several changes requested by the BAIA, most recently altering the exterior design to better compliment our community's vision for Cleveland Circle, increasing the building setback from Cassidy Park (along with commitment to work with the park on future conservation and improvements), and working with the MBTA to facilitate train crossing improvements in the Chestnut Hill Avenue/Beacon Street intersection.

We are pleased by the developer's long term commitment and planned investment in our community, but believe that density and traffic issues require further adjustments before granting approval to this plan.

Sincerely,

Anabela Gomes

President,

Brighton Allston Improvement Association

BAIA.1 Project size

Please see response provided in Section 7.2.1.

BAIA.2 Independent traffic study

Please see response to comment CCES.4.

BAIA.3 Add Zipcar and Hubway

The Proponent will offer on-site space for a new Zipcar station. Currently, within ½ mile of the Project Site, there are six Zipcar locations. Another four locations are slightly further than ½ mile from the site. In total, these locations provide 17 Zipcar vehicles. The Proponent will promote the use of these near-by Zipcar locations in orientation packets to new tenants and residents. Please see Section 2.2.9 for a map of existing Zipcar locations and Section 2.4.4 for the Project's travel demand management measures.

No Hubway bicycle-sharing stations are located in the study area, but the Proponent will discuss with the City of Boston opportunities to support a new, nearby Hubway station. The Proponent will provide bicycle amenities for residents, guests, tenants, and visitors to encourage bicycle use. Shower facilities at the hotel will be made available for employees who bicycle to work. Please see Section 2.2.10 for a summary of existing bicycle conditions and Section 2.4.3 for a discussion of the Project's bicycle accommodations.

BAIA.4 MBTA operations

The Proponent has met with MBTA officials several times during the permitting process to discuss MBTA trolley operations through Cleveland Circle. In fact, as a result of these meetings, the MBTA has already modified the entry procedure for out-of-service C Branch trolleys into the Yard and reduced travel time through the intersection. The mitigation proposed by the Proponent at the Beacon Street/Chestnut Hill Avenue intersection will improve level of service for automobile traffic, and will better accommodate Green Line trolley maneuvers. It is also the Proponent's understanding that a detector signal will be installed by the MBTA for out-of-service B Branch trolleys to allow faster processing from Commonwealth Avenue south along Chestnut Hill Avenue, thereby reducing traffic blockages on Chestnut Hill Avenue.

Please see both Section 2.2.5.2 and Section 2.4 for further discussion of Green Line operations and mitigation.

Lopez, Erico

From: mrein35942@cs.com
Sent: Friday, September 21, 2012 9:41 AM
To: Lopez, Erico
Subject: CINEMA PROJECT

Having been at the meeting yesterday, I can sum up the feeling of everyone there, having listened to all the comments; The community is not opposed to development of the site. However, THE COMMUNITY IS OPPOSED TO THIS PROJECT for the following reasons:

1- Cleveland Circle already has severe congestion traffic problems. To add such a HUGE population resulting from such a HUGE project- obviously will create a horrific traffic problem. MR.1

2- Cleveland Circle is now shoddy and rundown. What is needed is a project that will IMPROVE Cleveland Circle. This project will only make Cleveland Circle worse than it is- because it is UGLY and has NO CHARM. MR.2

Ti sum up- this is an OVERSIZE TOO BIG project that is UGLY - THIS IS THE CONSENSUS OF THE COMMUNITY.

On another note- the developer has everything to gain from this big ugly intrusive project- while many interested parties and the community as a whole- has everything to LOSE. It is the role of local government to represent THE NEEDS OF THE COMMUNITY and not to seek an expansion of the tax base at the expense of the community. WE HOPE YOU WILL FULFILL THIS ROLE and expect you to do so.

Mildred Rein
Watermark

MR.1 Density

Please see response provided in Section 7.2.1.

MR.2 Architecture

Please see response provided in Section 7.2.6.

Lopez, Erico

From: Hilary Forbes [haforbes@hotmail.com]
Sent: Sunday, September 16, 2012 8:18 PM
To: Lopez, Erico; Ciommo, Mark; Mayor; Meade, Peter; Holm, Angela; Kineavy, Michael
Subject: Cleveland Circle Development

Follow Up Flag: FollowUp
Flag Status: Completed

Dear City Development Representative,

I am writing about the proposed development in the Cleveland Circle area. As a resident of the area I have a direct interest in this project. While I appreciate the idea of investing in the Cleveland Circle area, I have some concerns about the current proposal. My concerns are focused on two particular issues; traffic congestion and appropriate parking.

The Cleveland Circle intersection brings together a number of major streets and is always confusing for people not from the area. On top of that you have the MBTA traffic of trains competing with the automobile traffic. The possibility of increasing this traffic with a hotel, retail and residential space that will significantly increase traffic is problematic. I have not heard through the proposal about a reasonable way to manage this issue. The proposal shared is not robust enough to appropriately deal with the increased traffic. HF.1

The Cleveland Circle area, especially with its proximity to Boston College and student housing, has real problems with parking, particularly for those living in the area. The increased traffic would be an negative impact on currently stressed parking and the proposal does not sufficiently address this issue. Currently, there is not sufficient parking in our present neighborhood for residents and visitors. The proposal is not adequate for the new offices and residents, let along providing any relief for our currently stressed situation. HF.2

I would appreciate it if your committee would require more evaluation of these issues and ask the developers to go back to the drawing board and provide better solutions to address these issues. They just have not done that in the current plan.

Thank you for your time.

Hilary Forbes
4 Chiswick Road, #32
Brighton, MA 02135

HF.1 Traffic management

Please see response provided in Section 7.2.8 and Chapter 2.0 for a full transportation analysis.

HF.2 Parking

Please see response provided in Section 7.2.9.

Lopez, Erico

From: Keith Ligon [keith_ligon@me.com]
Sent: Saturday, October 20, 2012 11:43 AM
To: Lopez, Erico; Mayor
Subject: Please help our neighborhood!

Dear BRA and Mayor Menino,

As a neighbor of the Chestnut Hill Ave - Cleveland Circle Cinema redevelopment project I would like to strongly urge the government parties involved to take a more proactive approach to the redevelopment of the Cleveland Circle area. Why should you take a more active role? This area is a unique one which serves and brings together different types of people from all segments of the community. The outdoor pool is a really draw for kids from all over the city of Boston. The skating is great in the winter. The students and families in Allston/Brighton, Brookline, and Newton all come together in this region to use facilities and the commercial area. Its a gathering place for BC games for all types. The multiple T lines make it all accessible to anyone within the entire Boston Metro Area. KLL.1

I think that this is a rare opportunity for the BRA to improve all aspects of the Cleveland Circle area while also supporting the developer of this project in creative ways. This entire area is currently unsafe for drivers and pedestrians and a universally accepted example of poor urban planning due to the lack of coordination amongst the multiple stakeholders involved (MBTA, Boston, Brookline etc.). This area is potentially quite beautiful and functional and could be a model of urban redevelopment across the nation. This fact was even suggested by a recent consultants evaluation and proposal commissioned a couple of years ago that was sponsored by the city and the MBTA. Your own research therefore suggests that we need to take this rare opportunity to make this an example of how to redesign an area of the city with great potential that has been neglected for 100 years.

Currently the plans seem to just be focused on the developer trying to design a property at the applebees area in isolation. I have heard of NO significant plans of what the City of Boston, Brookline, or T administration will do on their part to redesign the area or coordinate improvements on their side with the developer. Again, it seems that there is not much effort or thought going into the coordination of this project with other parties. Please do not lose this opportunity to help the community, developer and MBTA to come to a better design. it won't be easy I'm sure but could pay off greatly in the long run.

Sincerely,

Keith L. Ligon
68 Taylor Crossway
Brookline, MA
keith_ligon@me.com

KLL.1 Government's role in redevelopment of Cleveland Circle area

Comments noted.

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

The Waterworks Park project has succeeded because a wide variety of businesses, community organizations, and governmental bodies worked together to combine a commercially viable condominium development with the restoration and preservation of historic Boston landmarks and the creation of green space adjacent to Cleveland Circle. With its mix of market rate and affordable housing, the Waterworks has added over $100 million to the tax base of the City of Boston.

Waterworks residents joined with our Brighton-Allston neighbors in spring 2011 to voice support for an integrated, well-planned re-development of the Circle Cinema and Applebee's sites. However, we do not believe that such development should be planned in a way that will create serious traffic, safety and congestion problems on the internal Waterworks Park roads.

The Waterworks Park roads were designed and constructed to serve a residential community of 112 condominium units. The specific Park road being considered as a major exit for the re-developed Circle Cinema site is a one-way, single-lane road with two blind, sharp curves. This road was built extremely close to the Watermark, which houses 81 of the condominiums ---at one spot the road is **only 29 inches** away from the Watermark building.

The Cassidy Playground tennis courts and baseball bleachers are only a few feet away on the other side of this narrow Park road. There is no sidewalk for pedestrians, forcing them to walk on the road at many points where they are not visible to drivers.

As a Waterworks Park resident, I request that:

- BRA officials consider the very negative and disproportionate impact that routing Cinema development traffic onto Waterworks Park roads would have on the 112 families who are project abutters. Vehicles exiting 24 hours a day, 7 days a week driven by hotel guests who are unfamiliar with the blind curves of this narrow road would create a severe safety hazard. During rush hours, vehicles backed up on the road waiting to enter the Beacon Street intersection would be sending exhaust fumes directly into Watermark residences. WM.1

- To avoid these negative impacts, BRA officials should ask the Circle Cinema site developer to prepare a traffic management plan that does NOT rely on the Waterworks Park roads. Use of the Waterworks Park as an exit route is not a valid strategy for mitigating the impact of traffic from a new development. According to the developer's own traffic study, most of the traffic using a Waterworks Park exit would immediately go back into Cleveland Circle. In fact, with respect to Route 9 destined traffic, use of a Waterworks exit would **increase** congestion in Cleveland Circle by forcing hotel vehicles to pass through two already congested intersections rather than making a direct right hand turn on Chestnut Hill Ave. WM.2

As described in the attached memo, eliminating the use of the Waterworks Park roads by vehicles from a Cinema re-development project would have positive benefits for all stakeholders, including the community, the BRA and the developer.

Sincerely,

Amy Bandick

Unit: 101

WM.1 Waterworks driveway

Please see response provided in Section 7.2.4.

WM.2 Traffic management plan that does not rely on Waterworks driveway

The use of the rear egress for the Project is consistent with the Waterworks site disposition plan. The Project's use of this exit way will activate the State's plan to financially support the Waterworks Museum, which owns the easement rights over this driveway.

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

The Waterworks Park project has succeeded because a wide variety of businesses, community organizations, and governmental bodies worked together to combine a commercially viable condominium development with the restoration and preservation of historic Boston landmarks and the creation of green space adjacent to Cleveland Circle that is accessible to all. With its mix of market rate and affordable housing, the Waterworks has added over $100 million to the tax base of the City of Boston.

Waterworks residents joined with our Brighton-Allston neighbors in spring 2011 to voice support for an integrated, well-planned re-development of the Circle Cinema and Applebee's sites. However, we do not believe that such development should be planned in a way that will create serious traffic, safety and congestion problems on the internal Waterworks Park roads.

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Sincerely,

#102

#102

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Suzanne Kleiner A. Klein

Unit: 103 Watermark

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Russell Sternlicht

Unit:
106

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Mary F. Murphy

Unit: 106

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Marty Laughrey, email signed Sunday, November 13, 2011 @ 3:52 p.,m.

Unit: 107

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

UNIT 108

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Diane Rosenbaum
Unit 109

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

110

Unit:

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Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Brian Conghlin #111

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Mildred Rem

Unit: WM 112

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

UNIT #114

[Signatory List Below Individually Signed Letters to Be Hand Delivered]

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Anne Alice Bonistalli
Unit 113

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

The Waterworks Park project has succeeded because a wide variety of businesses, community organizations, and governmental bodies worked together to combine a commercially viable condominium development with the restoration and preservation of historic Boston landmarks and the creation of green space adjacent to Cleveland Circle that is accessible to all. With its mix of market rate and affordable housing, the Waterworks has added over $100 million to the tax base of the City of Boston.

Waterworks residents joined with our Brighton-Allston neighbors in spring 2011 to voice support for an integrated, well-planned re-development of the Circle Cinema and Applebee's sites. However, we do not believe that such development should be planned in a way that will create serious traffic, safety and congestion problems on the internal Waterworks Park roads.

The Waterworks Park roads were designed and constructed to serve a residential community of 112 condominium units. The specific Park road being considered as a major exit for the re-developed Circle Cinema site is a one-way, single-lane road with two blind, sharp curves. This road was built extremely close to the Watermark, which houses 81 of the condominiums --- at one spot the road is **only 29 inches** away from the Watermark building.

The Cassidy Playground tennis courts and baseball bleachers are only a few feet away on the other side of this narrow Park road. There is no sidewalk for pedestrians, forcing them to walk on the road at many points where they are not visible to drivers.

As a Waterworks Park ~~resident~~ owner, I request that:

- BRA officials consider the very negative and disproportionate impact that routing Cinema development traffic onto Waterworks Park roads would have on the 112 families who are project abutters. Vehicles exiting 24 hours

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Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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As a Waterworks Park resident, I request that:

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- To avoid these negative impacts, BRA officials should ask the Circle Cinema site developer to prepare a traffic management plan that does NOT rely on the Waterworks Park roads. Use of the Waterworks Park as an exit route is not a valid strategy for mitigating the impact of traffic from a new development. According to the developer's own traffic study, most of the traffic using a Waterworks Park exit would immediately go back into Cleveland Circle. In fact, with respect to Route 9 destined traffic, use of a Waterworks exit would **increase** congestion in Cleveland Circle by forcing hotel vehicles to pass through two already congested intersections rather than making a direct right hand turn on Chestnut Hill Ave.

As described in the attached memo, eliminating the use of the Waterworks Park roads by vehicles from a Cinema re-development project would have positive benefits for all stakeholders, including the community, the BRA and the developer.

Sincerely,

Ruth Kessler
Unit #203 Watermark

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

James P. Lemoine
Anne B. Lemoine

Watermark unit #204

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Unit: 206

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Susan Butterick unit 207

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Unit: 208

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Unit: 210

210

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Sarah Kurtz
unit 214

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Jerry Quinn

Unit: 215

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Ellen R. Berezin

Unit: 301 Watermark

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

(Alex Pollis)

Unit 302
Watermark Building

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely, Fran O Blum

Unit 303

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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As described in the attached memo, eliminating the use of the Waterworks Park roads by vehicles from a Cinema re-development project would have positive benefits for all stakeholders, including the community, the BRA and the developer.

Sincerely,

Lisa R Klapman (Clissa Kapust)
Unit 304
Watermark Building

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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#306

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Louis Shuster
LOUIS SHUSTER

Unit: 307

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Sheryl Gyte

Unit: 3/2

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Unit: 315

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Unit: 401

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Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Mark S. Lewis, MD

Unit:
403

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Tim Lamm

2400 BEACON STREET
UNIT 404
CHESTNUT HILL, MA 02467

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Unit: 407

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Karen L. Glaser

Unit: Unit 408

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Edna Pressler

Unit:

WM 409

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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David A. Kazis + Lewis E. Kazis + Beatrix S. Thomas

Unit 411 . Watermark

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

The Waterworks Park project has succeeded because a wide variety of businesses, community organizations, and governmental bodies worked together to combine a commercially viable condominium development with the restoration and preservation of historic Boston landmarks and the creation of green space adjacent to Cleveland Circle that is accessible to all. With its mix of market rate and affordable housing, the Waterworks has added over $100 million to the tax base of the City of Boston.

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Sincerely,

LAUREN J CHIARAMONTE
2400 BEACON ST #412
CHESTNUT HILL MA 02467

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Cynthia Tait

Unit: 501

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely, Kurt J Block
Margo Block

Unit 502

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Esther Silverstone #504
Dr Leslie Silverstone #504

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Kumme Cho

505

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Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Sheryl D. Eisenberg

506

SHERYL D. EISENBERG

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Charlotte Knox

Unit:

507

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Pamela A Manolakis #508

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Unit 509

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Laura Mitchell
Watermark - Unit 510

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Jeansue Lee
Unit 512

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Unit: 514 514

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Richard E. Fudge

Unit: 601

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Kathleen M. Hughes

Unit: 607

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Tim Connell

Tim Connell

604

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Neil S Hymen Albert L Hymes MD

Unit: 608

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Unit 609

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Carolyn Lock
James E. Lock

Unit: Whitehall unit 101

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Assistant
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

RE: Waterworks Park and Traffic Planning for Circle Cinema Redevelopment

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Sincerely,

Barbara Baratz

Unit: 102

Mr. Kairos Shen, Director of Planning and Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely,

Edward G Schwartz 11/17/11

Unit: 202 Whitehall

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Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

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Sincerely, William J. Boyce

Unit: White Hall 203

7.6

Letters in Support of the Project

7.6 Letters in Support of the Project

The following letters were written in support of the Project.

Reservoir Wine & Spirits
1922 Beacon Street
Brighton, MA 02135
617-566-5588

September 27, 2012

Mr. Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

I am writing to express my support for the redevelopment at the Circle Cinema and Applebee's site in Cleveland Circle. In the past when the cinema was operational, it brought people into the area. Since the theater has closed there have been less customers in the area, which has negatively affected the local businesses.

The proposed redevelopment plan for a hotel and an apartment building at this site will be a plus for the Clevelend Circle area. A new restaurant, with its own niche that will appeal to the local demographics would be a plus!

I understand the neighbors and local businesses have a lot of concerns as expressed at the September 20, 2012 public meeting. Parking and traffic are already a problem in Cleveland Circle.

I believe that we should leave the final decision regarding any proposed development in Cleveland Circle to the Boston Redevelopment Authority, Brookline Redevelopment Authority, the Boston Transportation Department, the and theMassachusetts Highway Department. I am confident that these departments will work out all the details, including the size of the development and the impact on the parking and traffic in the area.

Sincerely,

George Haivanis

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

FRANCIS E FARRELL

Printed Name

Francis E Farrell

Signature

Address:

1031 BEACON ST APTS
BROOKLINE MA
02446

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

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Sincerely,

ALFREDO LOPEZ

Printed Name

10/3/2012 Lopez

Signature

Address:

38 SHIRLEY ST

BOSTON, MA 02119

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

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Sincerely,

DERRICK NELSON

Printed Name

Signature

Address:

10 TANGLEWOOD ROAD

DORCHESTER MA.

02124

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

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Sincerely,

Boris OUBAZO

Printed Name

Signature

Address:

933. Dorchester AVE 1K2
Dorchester MA
02125

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Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

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Sincerely,

MARCIA WILLIAMS-WHITE
Printed Name

Signature

Address:

120 THORNTON ST.

ROXBURY, MA. 02119

October, 3, 2012

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Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

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Sincerely,

Jason Perkins

Printed Name

Signature

Address:

580 Harvard st.
Mattapan MA.
02126

October, 3, 2012

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Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

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Sincerely,

BRIAN DONOGHUE
Printed Name

Brian Donoghue
Signature

Address:

6 HARRIET STREET

BRIGHTON, MA 02135

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Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Daniel VanHeest
Printed Name

Signature

Address:

19 Newton st
Brighton ma 02135

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Dan Marano
Printed Name

Signature

Address:
12 Falkland st
Brighton MA 02135

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Brian Magel

Printed Name

Brian Magel

Signature

Address:

54 Falkland St
Brighton Ma 02135

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Joseph D. Pruter
Printed Name

Signature

Address:

15 Becker St.
Roslindale, MA 02131

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Michael Kerin

Printed Name

Signature

Address:

56 St Brenden RD

Dor, MA 02124.

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

CHARLES COFIELD

Printed Name

Charles S. Cofield

Signature

Address:

11 TUCKERTON RD
MATTAPAN MA
02126

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

MARK ERLICH

Printed Name

Signature

Address:

48 Peter Parley Rd.
Jamaica Plain, MA 02130

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Elmer Boyd

Printed Name

Elmer Boyd

Signature

Address:

69 Sumner St. Dorchester MA. 02125.

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Aaron Krakow
Printed Name

Signature

Address:

46 Hallbrook St
J.P. MA 02130

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Richard SCARAMOZZA
Printed Name

Signature

Address:

135 Addison St
East Boston MASS

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

G. Steven Tewksbury

Printed Name

Signature

Address:

101 Wellsmore Rd.
Roslindale, MA
02131

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

James ONeill
Printed Name

James ONeill
Signature

Address:

41 Matchett ST
Brighton Ma
02135

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Martin Hardman

Printed Name

Signature

Address:

22 Rockwood St

Hyde Park 02136

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

LUIS O. DUARTE

Printed Name

Signature

Address:

147 LAURIE AV.
W. ROXBURY
MA 02132

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Jan Ostrowski

Printed Name

Signature

Address:

38 Saint Andrew Rd.
Boston, Ma.
02128

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Kendy Amazan
Printed Name

Kendy
Signature

Address:

10 Brookvale St #3
Dorchester MA 02124

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

SAMUEL BARBOSA

Printed Name

Signature

Address:

33 LONGFELLOW ST #2
DORCHESTER, MA 02122

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Jerome Whitley

Printed Name

Jerome S. Whitley

Signature

Address:

19 Perrin St
Roxbury mass
02119

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

John Fitzgerald
Printed Name

Signature

Address:

180 Boston St. Apt 2
Dorchester MA 02125

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Kevin McLaughlin
Printed Name

Signature

Address:

7 Everett Sq
Allston MA
02134

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

JOHN R. CUSHOC

Printed Name

Signature

Address:

35 WINDOM ST.

ALLSTON, MA

02134

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Nicholas Jett
Printed Name

Nicholas Jett
Signature

Address:

10 Winship St #1
Brighton MA
02135

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

KEVIN GARRITY
Printed Name

Signature

Address:

7 SAVILLE ST.
WEST ROXBURY MA
02132

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Marise Germain
Printed Name

Marise Germain
Signature

Address:

30 Rosewood St
Natick MA 02126

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Richard Gibson

Printed Name

Signature

Address:

574 Walkhill Street

Mattapan Mass 02126

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

BOB MURPHY

Printed Name

Signature

Address:

32 NEWBURG ST

ROSL MA 02131

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Brian Curley
Printed Name

Brian Curley
Signature

Address:

11 Francesca st
Boston Ma 02132

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Rafael Wallace
Printed Name

Rafael Wallace
Signature

Address:

4A Edson Terr.
Hyde Park, Mass
02136

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Carmine DiAmelio
Printed Name

Carmine DiAmelio
Signature

Address:

20 Swan Ave
East Boston
MASS 02128

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

John Jay

Printed Name

Signature

Address:

76 Taylor St
Dorchester Ma
02122

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Derrick Hobson

Printed Name

Derrick Hobson

Signature

Address:

8 Woodville Park

Boston, Ma. 02119

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Garnet Jones

Printed Name

Signature

Address:

353 Columbia Rd

Boston MA

02125

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

William D. Watson

Printed Name

William D. Wat

Signature

Address:

520 East 8th St.
S. Boston, MA. 02127

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Hector Cusado

Printed Name

Hect. Cusado

Signature

Address:

12 Inwood str.

Dorchester MA

02125

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Alex M Delgado Ruiz
Printed Name

Alex M Delgado Ruiz
Signature

Address:
131 Devon St 02121
Dorchester MA

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Pablo J. Lopez

Printed Name

Signature

Address:

258 Warren St #4
Dorchester MA 02119

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Eric J. Gonzalez

Printed Name

Signature

Address:

70 Stanley st.
Dorchester MA.
02125

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Ramon Alicea
Printed Name

Ramon Alicea
Signature

Address:

19 Norton Street
Hyde Park, MA 02136
Boston.

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Moses Destouche
Printed Name

M Destouche
Signature

Address:

8 Franklin Hill Ave
Dorchester
MA 02124

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Brendan Peschardt

Printed Name

Signature

Address:

300 K St

South Boston, MA 02127

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Ravi Mahabir

Printed Name

Signature

Address:

42 Corna street

Dorchester MA 02124

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Cedric Mitchell

Printed Name

C. Mitchell

Signature

Address:

11 Abbot St apt #8
Dorchester, Ma 02124

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

It is my pleasure to write a letter in support of the proposed Cleveland Circle development project which will put a Hotel, office and retail space and residential apartments on this site.

This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Rick Politti

Printed Name

Signature

Address:

35 ANCONIA RD
West Roxbury
MA 02132

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

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Sincerely,

Graling PRIMAS

Printed Name

Signature

Address:

31 Mather ST
Dorchester MA
02122

October,2,2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

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This site has progressively deteriorated since the cinema closed and is not only an eyesore, but is attracting an unwanted element to this area which, I believe, is affecting housing values as well as local businesses.

I fully support the efforts of the Boston Development Group and support a program designed to clean up the Circle Cinema site. A development at this site will benefit our business, neighbors and the community at large.

Sincerely,

Joe Ace

Printed Name

Joe Ace

Signature

Address:

10 Winpon ST

Allston, MA

October, 3, 2012

Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

The Cleveland Circle Cinema has become a nuisance to the area. The vacant building is quickly deteriorating and the site has become a haven for unlawful activity. Redevelopment of this site will correct this problem.

The proposed mixed use project will provide needed services for the area, particularly the hotel facility. This new development will generate significant real estate, and hotel taxes for the community.

This project will be a welcome addition to the Brighton community.

Sincerely,

Victor Carrara

Printed Name

Victor Carrara

Signature

Address:

41 Clifford St.
Hyde Park, MA 02136

September 27, 2012

Mr. Enrico Lopez
Boston Redevelopment Authority
One City Hall Place
Boston, MA 02201

Dear Mr. Lopez:

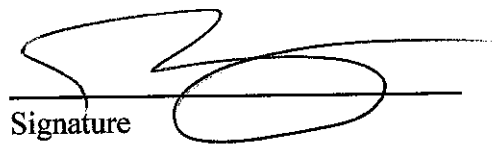
I am writing to express my support for the redevelopment at the Circle Cinema and Applebee's site in Cleveland Circle. In the past when the cinema was operational, it brought people into the area. Since the theater has closed there have been less customers in the area, which has negatively affected the local businesses.

The proposed redevelopment plan for a hotel and an apartment building at this site will be a plus for the Clevelend Circle area. A new restaurant, with its own niche that will appeal to the local demographics would be a plus!

I understand the neighbors and local businesses have a lot of concerns as expressed at the September 20, 2012 public meeting. Parking and traffic are already a problem in Cleveland Circle.

I believe that we should leave the final decision regarding any proposed development in Cleveland Circle to the Boston Redevelopment Authority, the Brookline Redevelopment Authority, the Boston Transportation Department, and the Massachusetts Highway Department. I am confident that these departments will work out all the details, including the size of the development and the impact on the parking and traffic in the area.

Sincerely,



Signature

JOHN C. ROGANIS

Print Name

ROGGIES / ROGGIES PIZZA / ROGES REALTY TRUST / CHILL /

Business Name

356 Chestnut Hill Ave

Address Brighton, MA 02135

cell 617-594-9095

CITY
REALTY GROUP

Date: 10/1/12

Mr. Enrico Lopez

Boston Redevelopment Authority

One City Hall Place

Boston, MA 02201

Dear Mr. Lopez,

I am writing to express my support for the redevelopment at the Circle Cinema and Applebee's site in Cleveland Circle. In the past when the cinema was operational, it brought people into the area. Since the theater has closed there have been less customers in the area, which has negatively affected the local businesses.

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Sincerely,

Signature

Print name: Stephen Wnalen

Business Name: City Realty Group

Address: 370 Chestnut Hill Ave.
Brighton, MA 02135

Lopez, Erico

From: attypeng@gmail.com
Sent: Friday, September 14, 2012 2:12 PM
To: Lopez, Erico
Subject: Hilton proposal at Cleveland Circle

Hi Erico,
I own a building in the Cleveland Circle area and have been following the Hilton proposal. I and my fellow owners are very much in favor of this proposal. It will help revitalize the area and put the now-wasted cinema land to a good use. In addition, from my observations of the area, I strongly feel that there should be no more problems with logistics issues (traffic/parking) after completion than there are now.

Thank you,
Elliot Peng

October 8, 2012

Mr. Erico Lopez, Senior Project Director
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

Re: **375-399 Chestnut Hill Avenue – concerns regarding road location**

Dear Mr. Lopez:

I am a member of the Cleveland Circle business community, and my office is located at 2001 Beacon Street (corner of Chestnut Hill Ave.), a professional building that is across the street from the proposed development.

My associates and I look forward to seeing major improvement and beautification in this area, and would welcome an attractive hotel facing Cleveland Circle and inviting retail establishments.

However, because of an already very difficult traffic situation in front of our building, I am concerned that the entire proposed mixed-use complex may be too dense for this location and needs to be somewhat scaled down.

At the very least I would like to see the access/egress roadway to the proposed complex moved farther away from our building, and closer to the MBTA tracks, possibly closer to the upper existing curb cut for the theatre. This would help prevent traffic back-ups in front of our building and in Cleveland Circle and would create a continuous pedestrian-friendly sidewalk and retail block along Chestnut Hill Avenue.

Thank you for your consideration.

Sincerely,

Name Lloyd Mahler, D.M.D.
Company Lloyd Mahler, D.M.D.
Address: 2001 Beacon St. #301
Brighton, MA 02135

Lopez, Erico

From: Tom Puglia [tpuglia@nercc.org]
Sent: Thursday, September 27, 2012 3:48 PM
To: Lopez, Erico
Subject: 375-399 Chestnut Hill Avenue

Erico Lopez
Senior Project Manager
Boston Redevelopment Authority

Mr. Lopez,

The Boston Development Group , has been working with the community to resolve any issues they have and will continue to do so

The Boston Development Group committed to use union labor and hire local craftspeople

The more opportunities for work and apprenticeship for residents , minorities and women the better

The Boston Development Groups commitment to hire local people shows us that they are a good neighbor

And are being responsible to the community where they hope to derive a profit.

We as a local feel this project is the highest and best use for this parcel of land

On behalf of the residents I represent, we urge the Boston Redevelopment Authority to approve this project

Tom Puglia
Business Representative
Boston District Council of Carpenters

Appendix A

Survey

LEGEND

- ELECTRIC CO. MANHOLE
- MBTA MANHOLE
- TELEPHONE MANHOLE
- UGE — UNDERGROUND ELECTRIC
- LIGHT POLE
- MBTA TROLLEY POLE
- TRAFFIC SUGNAL
- PEDESTRIAN CROSSWALK SIGNAL
- ELECTRIC HANDHOLE
- DRAIN MANHOLE
- CATCH BASIN
- DRAIN LINE
- SEWER MANHOLE
- S — SEWER LINE
- GAS GATE
- GAS METER
- GAS LINE
- WATER GATE
- WATER DEPT. MANHOLE
- WATER METER
- W — WATER LINE
- GRANITE CURB
- PAVEMENT PAINT STRIPING
- PAINTED HANDICAP SYMBOL
- SINN
- FIRE VALVE
- MANHOLE

CHESTNUT HILL AVENUE

BEACON STREET

CASSIDY PLAYGROUND

CLEVELAND CIRCLE

BLOCK 93A
LOT 2440
N/F LANDS OF
CITY OF BOSTON

#381
1 STORY BRICK
RESTAURANT

#375-399
2 STORY STEEL
AND MASONRY
CINEMA

STORY BRICK FIELD HOUSE

N/F
MASSACHUSETTS BAY
TRANSPORTATION AUTHORITY

TOWN OF BROOKLINE
BLOCK 238
LOT 1

CITY OF BOSTON
TOWN OF BROOKLINE

MUNICIPAL & COUNTY LINE

L=15.51'
R=14.68'
Δ=60°-32'-24"

0 30 60 90 FEET
GRAPHIC SCALE

SCALE: 1" = 30'

NO.	DATE	DESCRIPTION	BY
1	8/15/12	CROSS AREA	BMS

FILE: 2455ClevelandCircle.dwg

PREPARED FOR:
BOSTON DEVELOPMENT GROUP
93 UNION STREET, SUITE 315
NEWTON CENTRE, MA 02459

EXISTING CONDITIONS
CLEVELAND CIRCLE AREA
BROOKLINE & BOSTON, MA

DATE: MARCH 29, 2012

PREPARED BY:
BRUCE SALUK & ASSOC., INC.
CIVIL ENGINEERS & LAND SURVEYORS
576 BOSTON POST ROAD EAST
MARLBOROUGH, MA 01752
TEL: 508-485-1662 FAX: 508-481-9929
MARLBOROUGH, MA 01752

Appendix B

Transportation

Appendix B – Transportation

- Traffic Count Data
- Crash Data
- Synchro Reports
- Trip Generation
- AutoTURN – Vehicle Maneuvers

Traffic Count Data

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

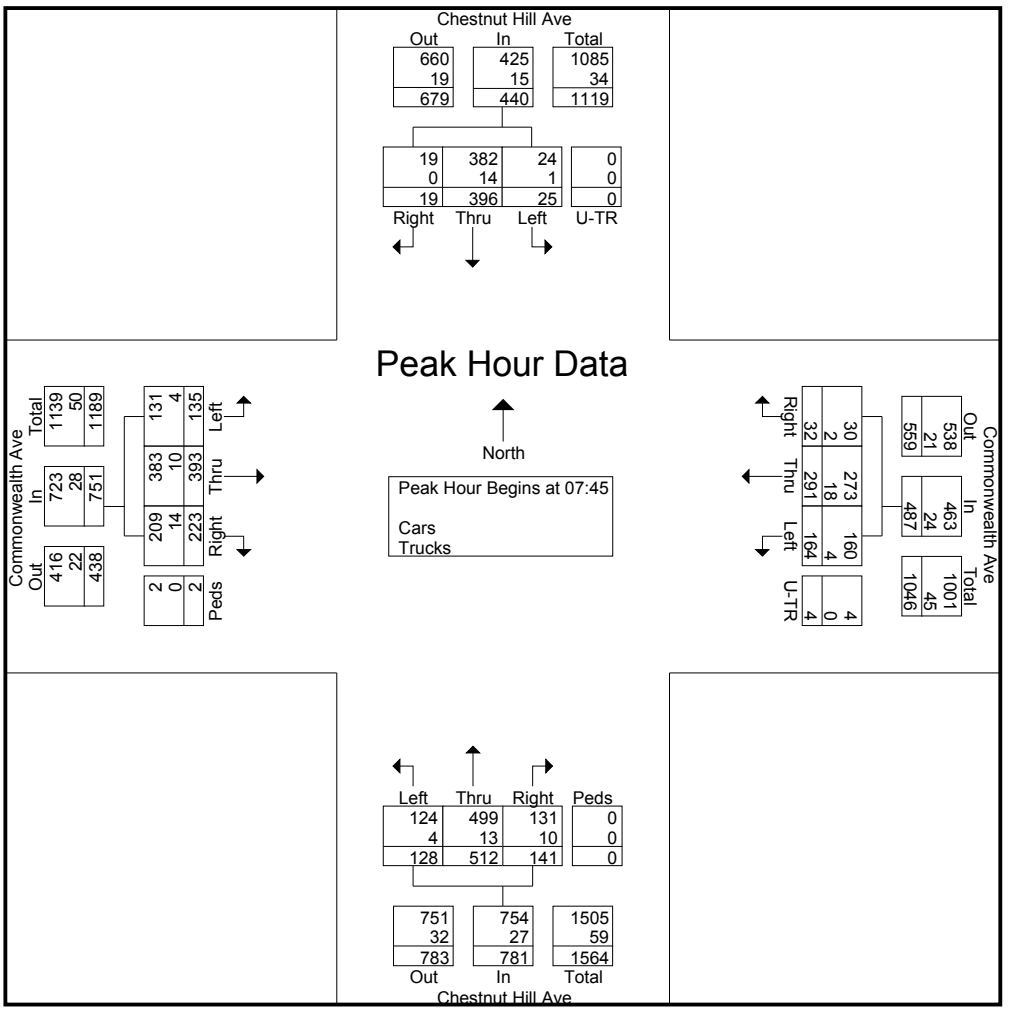
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	7	60	7	0	44	50	7	2	16	93	40	0	21	40	33	0	420
07:15	4	93	0	0	47	60	5	0	13	108	48	0	10	52	45	0	485
07:30	3	102	5	0	40	67	5	2	33	108	47	0	22	63	60	0	557
07:45	2	112	5	0	41	67	10	1	23	150	37	0	24	87	65	0	624
Total	16	367	17	0	172	244	27	5	85	459	172	0	77	242	203	0	2086
08:00	5	100	5	0	38	74	5	1	32	115	29	0	39	107	57	1	608
08:15	6	87	4	0	41	64	6	0	28	117	38	0	38	95	52	0	576
08:30	12	97	5	0	44	86	11	2	45	130	37	0	34	104	49	1	657
08:45	8	82	5	0	23	70	3	0	34	105	35	0	32	113	55	0	565
Total	31	366	19	0	146	294	25	3	139	467	139	0	143	419	213	2	2406
Grand Total	47	733	36	0	318	538	52	8	224	926	311	0	220	661	416	2	4492
Apprch %	5.8	89.8	4.4	0	34.7	58.7	5.7	0.9	15.3	63.4	21.3	0	16.9	50.9	32	0.2	
Total %	1	16.3	0.8	0	7.1	12	1.2	0.2	5	20.6	6.9	0	4.9	14.7	9.3	0	
Cars	43	699	34	0	310	505	48	7	215	901	283	0	216	641	393	2	4297
% Cars	91.5	95.4	94.4	0	97.5	93.9	92.3	87.5	96	97.3	91	0	98.2	97	94.5	100	95.7
Trucks	4	34	2	0	8	33	4	1	9	25	28	0	4	20	23	0	195
% Trucks	8.5	4.6	5.6	0	2.5	6.1	7.7	12.5	4	2.7	9	0	1.8	3	5.5	0	4.3

	Chestnut Hill Ave From North					Commonwealth Ave From East					Chestnut Hill Ave From South					Commonwealth Ave From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	2	**112**	**5**	0	**119**	41	67	10	1	119	23	**150**	37	0	210	24	87	**65**	0	176	624
08:00	5	100	5	0	110	38	74	5	1	118	32	115	29	0	176	**39**	**107**	57	**1**	**204**	608
08:15	6	87	4	0	97	41	64	6	0	111	28	117	**38**	0	183	38	95	52	0	185	576
08:30	**12**	97	5	0	114	**44**	**86**	**11**	**2**	**143**	**45**	130	37	0	**212**	34	104	49	1	188	**657**
Total Volume	25	396	19	0	440	164	291	32	4	491	128	512	141	0	781	135	393	223	2	753	2465
% App. Total	5.7	90	4.3	0		33.4	59.3	6.5	0.8		16.4	65.6	18.1	0		17.9	52.2	29.6	0.3		
PHF	.521	.884	.950	.000	.924	.932	.846	.727	.500	.858	.711	.853	.928	.000	.921	.865	.918	.858	.500	.923	.938
Cars	24	382	19	0	425	160	273	30	4	467	124	499	131	0	754	131	383	209	2	725	2371
% Cars	96.0	96.5	100	0	96.6	97.6	93.8	93.8	100	95.1	96.9	97.5	92.9	0	96.5	97.0	97.5	93.7	100	96.3	96.2
Trucks	1	14	0	0	15	4	18	2	0	24	4	13	10	0	27	4	10	14	0	28	94
% Trucks	4.0	3.5	0	0	3.4	2.4	6.2	6.3	0	4.9	3.1	2.5	7.1	0	3.5	3.0	2.5	6.3	0	3.7	3.8

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2



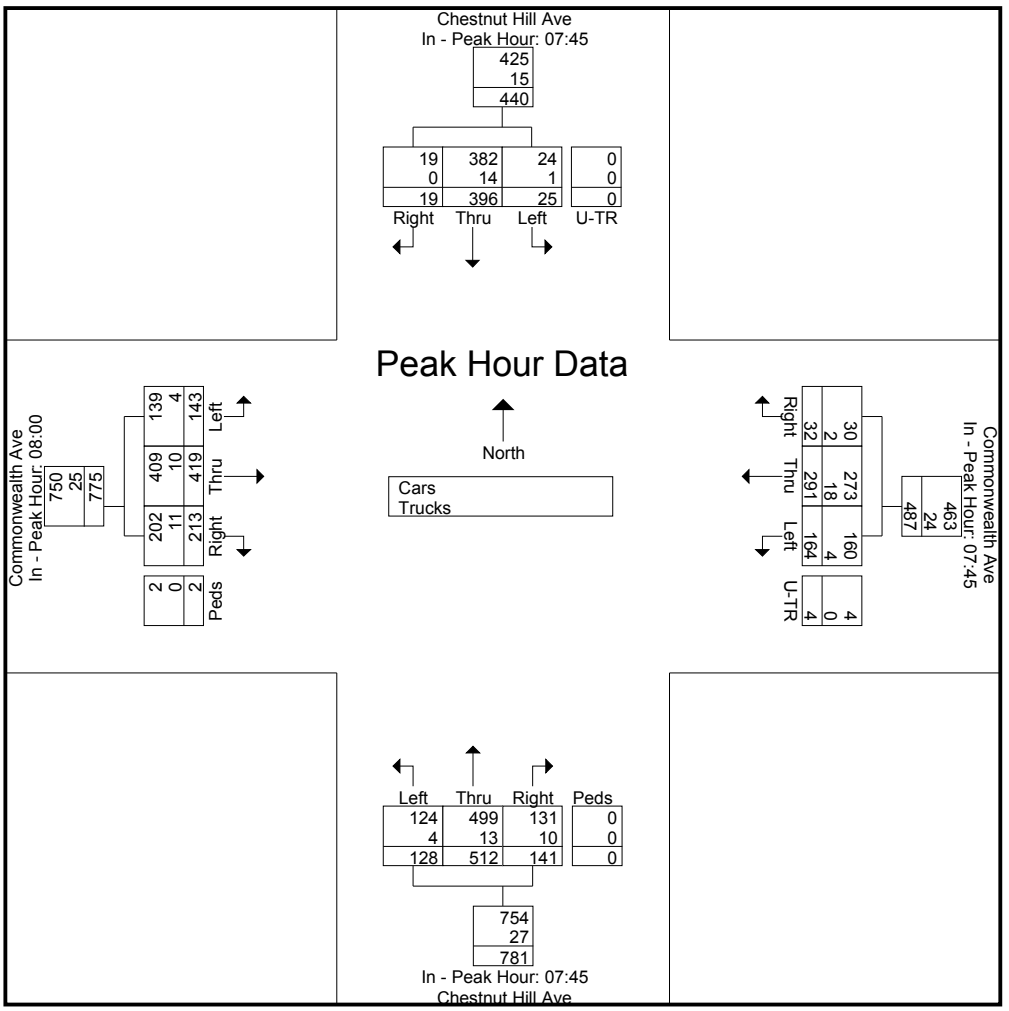
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45					07:45					07:45					08:00				
+0 mins.	2	**112**	**5**	0	**119**	41	67	10	1	119	23	**150**	37	0	210	**39**	107	**57**	**1**	**204**
+15 mins.	5	100	5	0	110	38	74	5	1	118	32	115	29	0	176	38	95	52	0	185
+30 mins.	6	87	4	0	97	41	64	6	0	111	28	117	**38**	0	183	34	104	49	1	188
+45 mins.	**12**	97	5	0	114	**44**	**86**	**11**	**2**	**143**	**45**	130	37	0	**212**	32	**113**	55	0	200
Total Volume	25	396	19	0	440	164	291	32	4	491	128	512	141	0	781	143	419	213	2	777
% App. Total	5.7	90	4.3	0		33.4	59.3	6.5	0.8		16.4	65.6	18.1	0		18.4	53.9	27.4	0.3	
PHF	.521	.884	.950	.000	.924	.932	.846	.727	.500	.858	.711	.853	.928	.000	.921	.917	.927	.934	.500	.952
Cars	24	382	19	0	425	160	273	30	4	467	124	499	131	0	754	139	409	202	2	752
% Cars	96	96.5	100	0	96.6	97.6	93.8	93.8	100	95.1	96.9	97.5	92.9	0	96.5	97.2	97.6	94.8	100	96.8
Trucks	1	14	0	0	15	4	18	2	0	24	4	13	10	0	27	4	10	11	0	25
% Trucks	4	3.5	0	0	3.4	2.4	6.2	6.2	0	4.9	3.1	2.5	7.1	0	3.5	2.8	2.4	5.2	0	3.2

Accurate Counts
978-664-2565

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E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

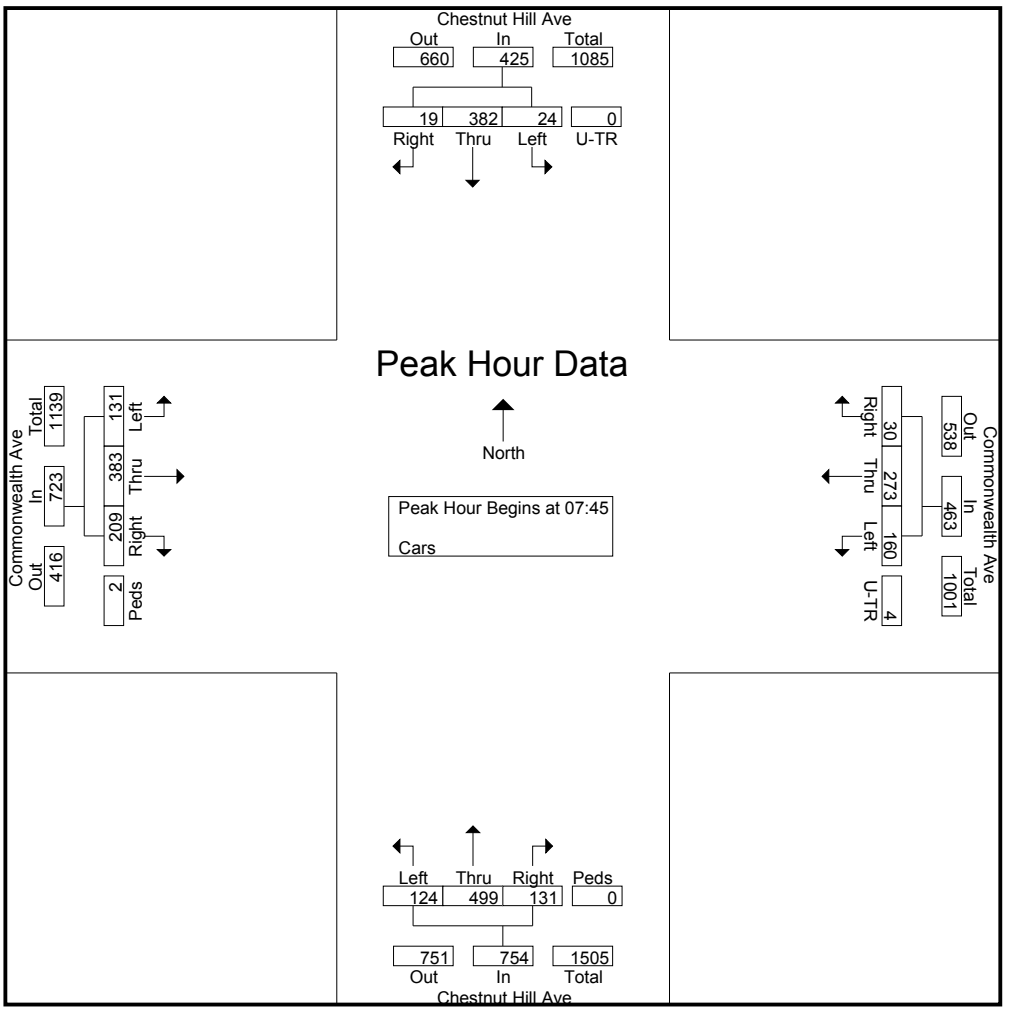
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	6	57	5	0	44	47	6	1	16	87	36	0	21	37	31	0	394
07:15	4	88	0	0	44	56	5	0	12	105	44	0	10	51	42	0	461
07:30	3	95	5	0	40	65	4	2	32	107	42	0	22	59	58	0	534
07:45	2	109	5	0	41	62	9	1	22	148	34	0	24	85	60	0	602
Total	15	349	15	0	169	230	24	4	82	447	156	0	77	232	191	0	1991
08:00	5	96	5	0	38	71	5	1	30	109	26	0	38	104	53	1	582
08:15	6	83	4	0	39	59	5	0	27	115	35	0	38	93	50	0	554
08:30	11	94	5	0	42	81	11	2	45	127	36	0	31	101	46	1	633
08:45	6	77	5	0	22	64	3	0	31	103	30	0	32	111	53	0	537
Total	28	350	19	0	141	275	24	3	133	454	127	0	139	409	202	2	2306
Grand Total	43	699	34	0	310	505	48	7	215	901	283	0	216	641	393	2	4297
Apprch %	5.5	90.1	4.4	0	35.6	58	5.5	0.8	15.4	64.4	20.2	0	17.3	51.2	31.4	0.2	
Total %	1	16.3	0.8	0	7.2	11.8	1.1	0.2	5	21	6.6	0	5	14.9	9.1	0	

	Chestnut Hill Ave From North					Commonwealth Ave From East					Chestnut Hill Ave From South					Commonwealth Ave From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	2	**109**	**5**	0	**116**	41	62	9	1	113	22	**148**	34	0	204	24	85	**60**	0	169	602
08:00	5	96	5	0	106	38	71	5	1	115	30	109	26	0	165	**38**	**104**	53	**1**	**196**	582
08:15	6	83	4	0	93	39	59	5	0	103	27	115	35	0	177	38	93	50	0	181	554
08:30	**11**	94	5	0	110	**42**	**81**	**11**	**2**	**136**	**45**	127	**36**	0	**208**	31	101	46	1	179	**633**
Total Volume	24	382	19	0	425	160	273	30	4	467	124	499	131	0	754	131	383	209	2	725	2371
% App. Total	5.6	89.9	4.5	0		34.3	58.5	6.4	0.9		16.4	66.2	17.4	0		18.1	52.8	28.8	0.3		
PHF	.545	.876	.950	.000	.916	.952	.843	.682	.500	.858	.689	.843	.910	.000	.906	.862	.921	.871	.500	.925	.936

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2

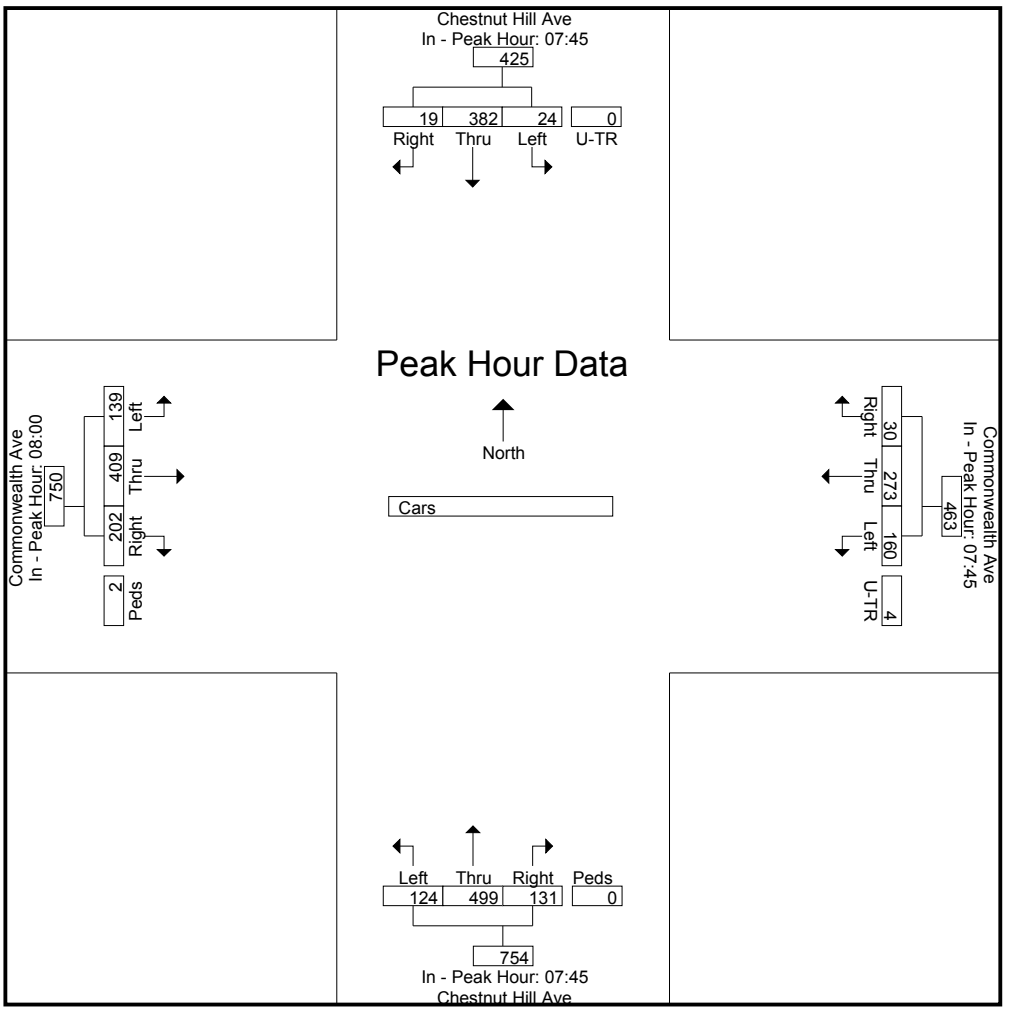


Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45					07:45					07:45					08:00				
+0 mins.	2	**109**	**5**	0	**116**	41	62	9	1	113	22	**148**	34	0	204	**38**	104	**53**	**1**	**196**
+15 mins.	5	96	5	0	106	38	71	5	1	115	30	109	26	0	165	38	93	50	0	181
+30 mins.	6	83	4	0	93	39	59	5	0	103	27	115	35	0	177	31	101	46	1	179
+45 mins.	**11**	94	5	0	110	**42**	**81**	**11**	**2**	**136**	**45**	127	**36**	0	**208**	32	**111**	53	0	196
Total Volume	24	382	19	0	425	160	273	30	4	467	124	499	131	0	754	139	409	202	2	752
% App. Total	5.6	89.9	4.5	0		34.3	58.5	6.4	0.9		16.4	66.2	17.4	0		18.5	54.4	26.9	0.3	
PHF	.545	.876	.950	.000	.916	.952	.843	.682	.500	.858	.689	.843	.910	.000	.906	.914	.921	.953	.500	.959

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Page No : 3



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978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

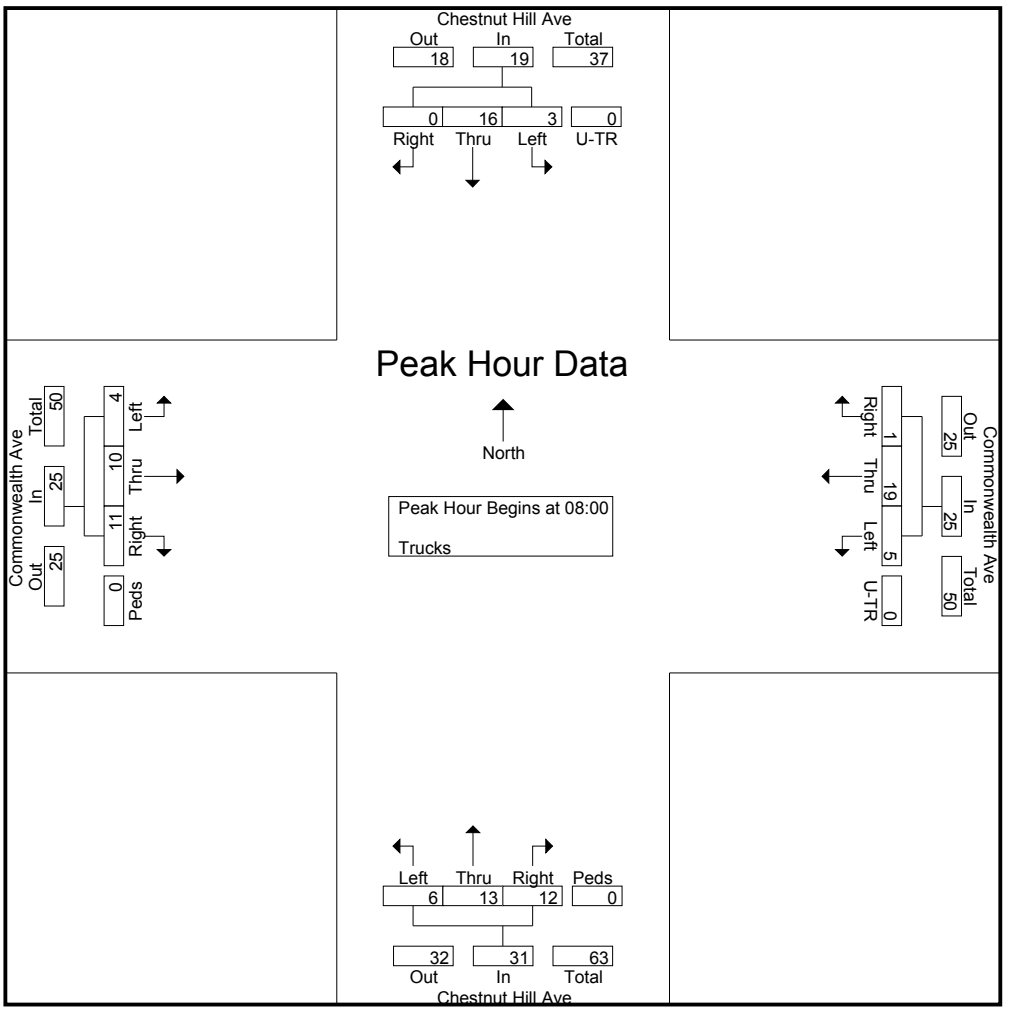
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	1	3	2	0	0	3	1	1	0	6	4	0	0	3	2	0	26
07:15	0	5	0	0	3	4	0	0	1	3	4	0	0	1	3	0	24
07:30	0	7	0	0	0	2	1	0	1	1	5	0	0	4	2	0	23
07:45	0	3	0	0	0	5	1	0	1	2	3	0	0	2	5	0	22
Total	1	18	2	0	3	14	3	1	3	12	16	0	0	10	12	0	95
08:00	0	4	0	0	0	3	0	0	2	6	3	0	1	3	4	0	26
08:15	0	4	0	0	2	5	1	0	1	2	3	0	0	2	2	0	22
08:30	1	3	0	0	2	5	0	0	0	3	1	0	3	3	3	0	24
08:45	2	5	0	0	1	6	0	0	3	2	5	0	0	2	2	0	28
Total	3	16	0	0	5	19	1	0	6	13	12	0	4	10	11	0	100
Grand Total	4	34	2	0	8	33	4	1	9	25	28	0	4	20	23	0	195
Apprch %	10	85	5	0	17.4	71.7	8.7	2.2	14.5	40.3	45.2	0	8.5	42.6	48.9	0	
Total %	2.1	17.4	1	0	4.1	16.9	2.1	0.5	4.6	12.8	14.4	0	2.1	10.3	11.8	0	

	Chestnut Hill Ave From North					Commonwealth Ave From East					Chestnut Hill Ave From South					Commonwealth Ave From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	4	0	0	4	0	3	0	0	3	2	**6**	3	0	**11**	1	**3**	**4**	0	8	26
08:15	0	4	0	0	4	**2**	5	**1**	0	**8**	1	2	3	0	6	0	2	2	0	4	22
08:30	1	3	0	0	4	2	5	0	0	7	0	3	1	0	4	**3**	3	3	0	**9**	24
08:45	**2**	**5**	0	0	**7**	1	**6**	0	0	7	**3**	2	**5**	0	10	0	2	2	0	4	**28**
Total Volume	3	16	0	0	19	5	19	1	0	25	6	13	12	0	31	4	10	11	0	25	100
% App. Total	15.8	84.2	0	0		20	76	4	0		19.4	41.9	38.7	0		16	40	44	0		
PHF	.375	.800	.000	.000	.679	.625	.792	.250	.000	.781	.500	.542	.600	.000	.705	.333	.833	.688	.000	.694	.893

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2

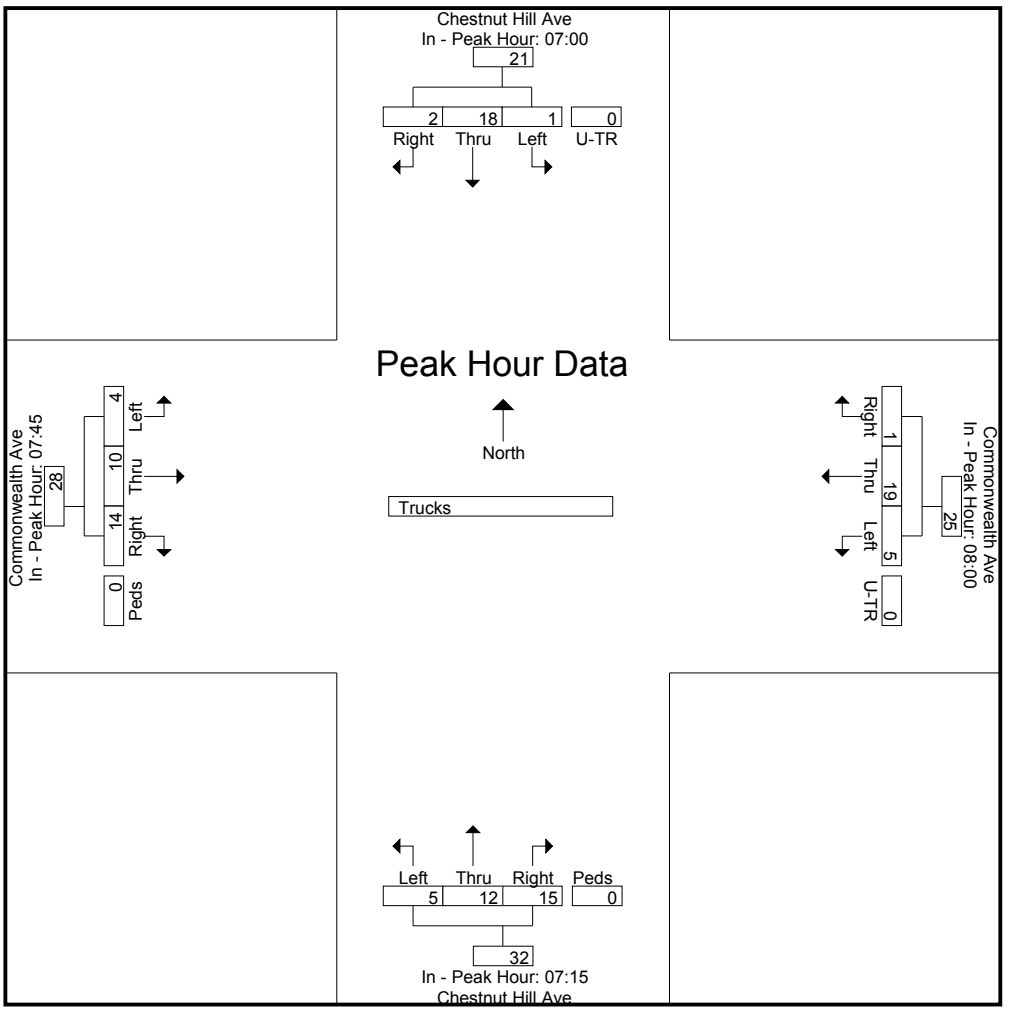


Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00					08:00					07:15					07:45				
+0 mins.	**1**	3	**2**	0	6	0	3	0	0	3	1	3	4	0	8	0	2	**5**	0	7
+15 mins.	0	5	0	0	5	**2**	5	**1**	0	**8**	1	1	**5**	0	7	1	**3**	4	0	8
+30 mins.	0	**7**	0	0	**7**	2	5	0	0	7	1	2	3	0	6	0	2	2	0	4
+45 mins.	0	3	0	0	3	1	**6**	0	0	7	**2**	**6**	3	0	**11**	**3**	3	3	0	**9**
Total Volume	1	18	2	0	21	5	19	1	0	25	5	12	15	0	32	4	10	14	0	28
% App. Total	4.8	85.7	9.5	0		20	76	4	0		15.6	37.5	46.9	0		14.3	35.7	50	0	
PHF	.250	.643	.250	.000	.750	.625	.792	.250	.000	.781	.625	.500	.750	.000	.727	.333	.833	.700	.000	.778

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

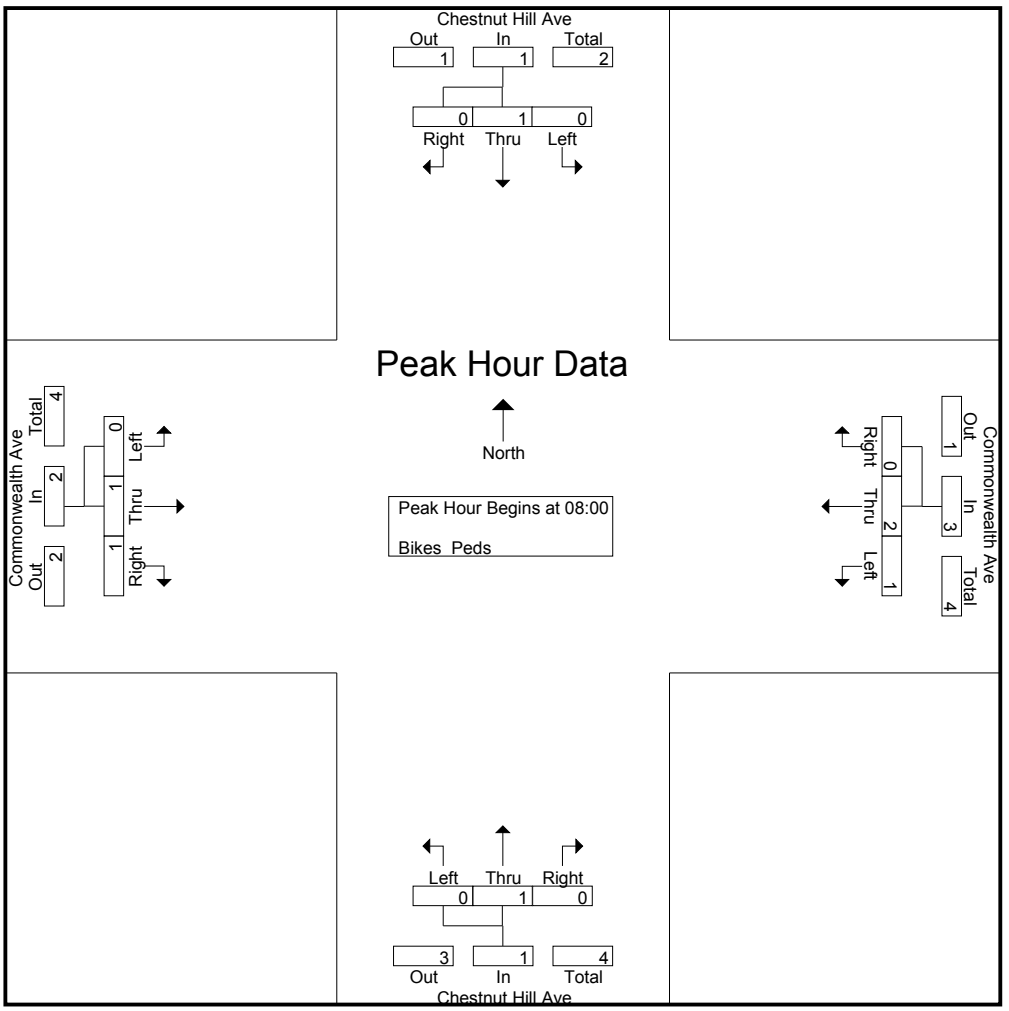
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	9	0	0	0	20	0	0	0	1	0	0	0	1	31	0	31
07:15	0	0	0	8	0	0	0	38	0	0	0	9	0	1	0	1	56	1	57
07:30	0	0	0	17	2	0	0	40	0	0	0	14	0	0	1	0	71	3	74
07:45	0	0	0	13	0	0	1	70	0	0	0	3	0	0	0	3	89	1	90
Total	0	0	0	47	2	0	1	168	0	0	0	27	0	1	1	5	247	5	252
08:00	0	0	0	17	0	0	0	48	0	1	0	11	0	0	0	6	82	1	83
08:15	0	0	0	20	0	0	0	50	0	0	0	10	0	0	1	6	86	1	87
08:30	0	1	0	21	0	1	0	45	0	0	0	7	0	0	0	1	74	2	76
08:45	0	0	0	20	1	1	0	41	0	0	0	9	0	1	0	6	76	3	79
Total	0	1	0	78	1	2	0	184	0	1	0	37	0	1	1	19	318	7	325
Grand Total	0	1	0	125	3	2	1	352	0	1	0	64	0	2	2	24	565	12	577
Apprch %	0	100	0		50	33.3	16.7		0	100	0		0	50	50				
Total %	0	8.3	0		25	16.7	8.3		0	8.3	0		0	16.7	16.7		97.9	2.1	

	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
08:30	0	**1**	0	**1**	0	**1**	0	1	0	0	0	0	0	0	0	0	2
08:45	0	0	0	0	**1**	1	0	**2**	0	0	0	0	0	**1**	0	1	**3**
Total Volume	0	1	0	1	1	2	0	3	0	1	0	1	0	1	1	2	7
% App. Total	0	100	0		33.3	66.7	0		0	100	0		0	50	50		
PHF	.000	.250	.000	.250	.250	.500	.000	.375	.000	.250	.000	.250	.000	.250	.250	.500	.583

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2

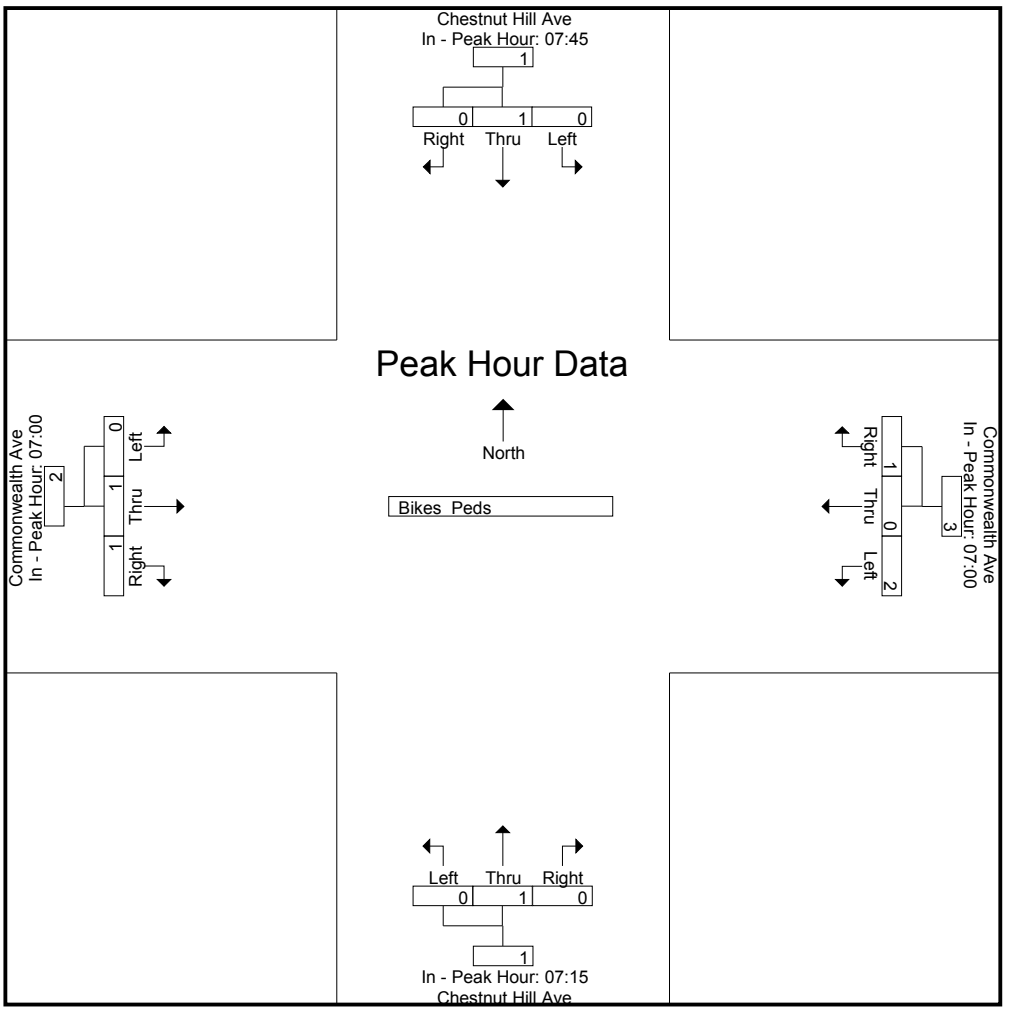


Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45				07:00				07:15				07:00			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
+30 mins.	0	0	0	0	**2**	0	0	**2**	0	0	0	0	0	0	**1**	1
+45 mins.	0	**1**	0	**1**	0	0	**1**	1	0	**1**	0	**1**	0	0	0	0
Total Volume	0	1	0	1	2	0	1	3	0	1	0	1	0	1	1	2
% App. Total	0	100	0		66.7	0	33.3		0	100	0		0	50	50	
PHF	.000	.250	.000	.250	.250	.000	.250	.375	.000	.250	.000	.250	.000	.250	.250	.500

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

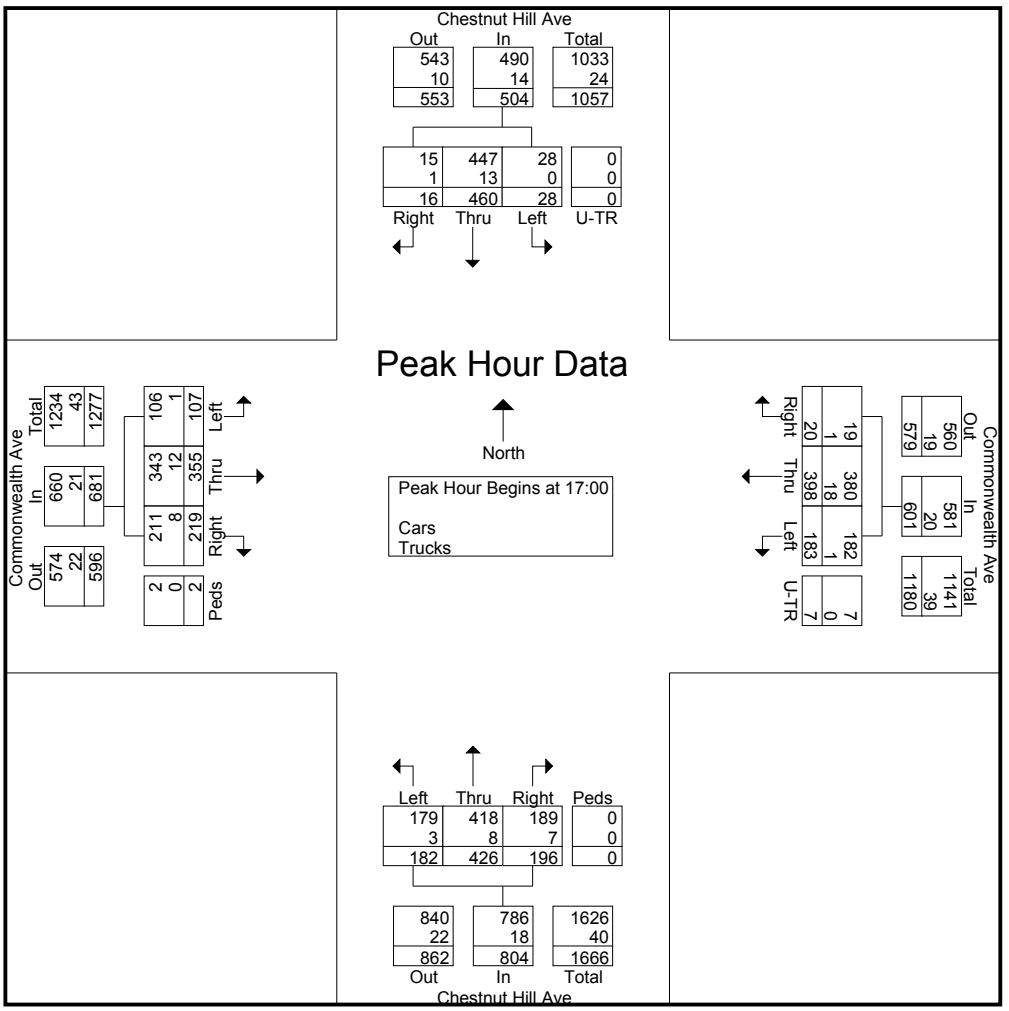
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	11	117	8	0	38	63	5	1	38	95	29	0	17	52	38	8	520
16:15	10	96	6	0	45	81	3	0	40	85	28	0	27	81	49	0	551
16:30	10	94	4	0	53	74	8	3	45	92	49	0	15	70	56	0	573
16:45	10	105	4	0	44	78	2	0	32	92	43	0	23	76	48	1	558
Total	41	412	22	0	180	296	18	4	155	364	149	0	82	279	191	9	2202
17:00	7	92	3	0	47	97	7	1	40	99	40	0	22	91	53	1	600
17:15	5	125	4	0	42	104	5	1	56	113	44	0	34	88	55	0	676
17:30	4	123	8	0	39	94	5	2	52	128	46	0	23	77	60	0	661
17:45	12	120	1	0	55	103	3	3	34	86	66	0	28	99	51	1	662
Total	28	460	16	0	183	398	20	7	182	426	196	0	107	355	219	2	2599
Grand Total	69	872	38	0	363	694	38	11	337	790	345	0	189	634	410	11	4801
Apprch %	7	89.1	3.9	0	32.8	62.7	3.4	1	22.9	53.7	23.4	0	15.2	51	33	0.9	
Total %	1.4	18.2	0.8	0	7.6	14.5	0.8	0.2	7	16.5	7.2	0	3.9	13.2	8.5	0.2	
Cars	68	848	37	0	361	655	36	11	331	770	329	0	187	613	386	11	4643
% Cars	98.6	97.2	97.4	0	99.4	94.4	94.7	100	98.2	97.5	95.4	0	98.9	96.7	94.1	100	96.7
Trucks	1	24	1	0	2	39	2	0	6	20	16	0	2	21	24	0	158
% Trucks	1.4	2.8	2.6	0	0.6	5.6	5.3	0	1.8	2.5	4.6	0	1.1	3.3	5.9	0	3.3

	Chestnut Hill Ave From North					Commonwealth Ave From East					Chestnut Hill Ave From South					Commonwealth Ave From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	7	92	3	0	102	47	97	**7**	1	152	40	99	40	0	179	22	91	53	**1**	167	600
17:15	5	**125**	4	0	134	42	**104**	5	1	152	**56**	113	44	0	213	**34**	88	55	0	177	**676**
17:30	4	123	**8**	0	**135**	39	94	5	2	140	52	**128**	46	0	**226**	23	77	**60**	0	160	661
17:45	**12**	120	1	0	133	**55**	103	3	**3**	**164**	34	86	**66**	0	186	28	**99**	51	1	**179**	662
Total Volume	28	460	16	0	504	183	398	20	7	608	182	426	196	0	804	107	355	219	2	683	2599
% App. Total	5.6	91.3	3.2	0		30.1	65.5	3.3	1.2		22.6	53	24.4	0		15.7	52	32.1	0.3		
PHF	.583	.920	.500	.000	.933	.832	.957	.714	.583	.927	.813	.832	.742	.000	.889	.787	.896	.913	.500	.954	.961
Cars	28	447	15	0	490	182	380	19	7	588	179	418	189	0	786	106	343	211	2	662	2526
% Cars	100	97.2	93.8	0	97.2	99.5	95.5	95.0	100	96.7	98.4	98.1	96.4	0	97.8	99.1	96.6	96.3	100	96.9	97.2
Trucks	0	13	1	0	14	1	18	1	0	20	3	8	7	0	18	1	12	8	0	21	73
% Trucks	0	2.8	6.3	0	2.8	0.5	4.5	5.0	0	3.3	1.6	1.9	3.6	0	2.2	0.9	3.4	3.7	0	3.1	2.8

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2



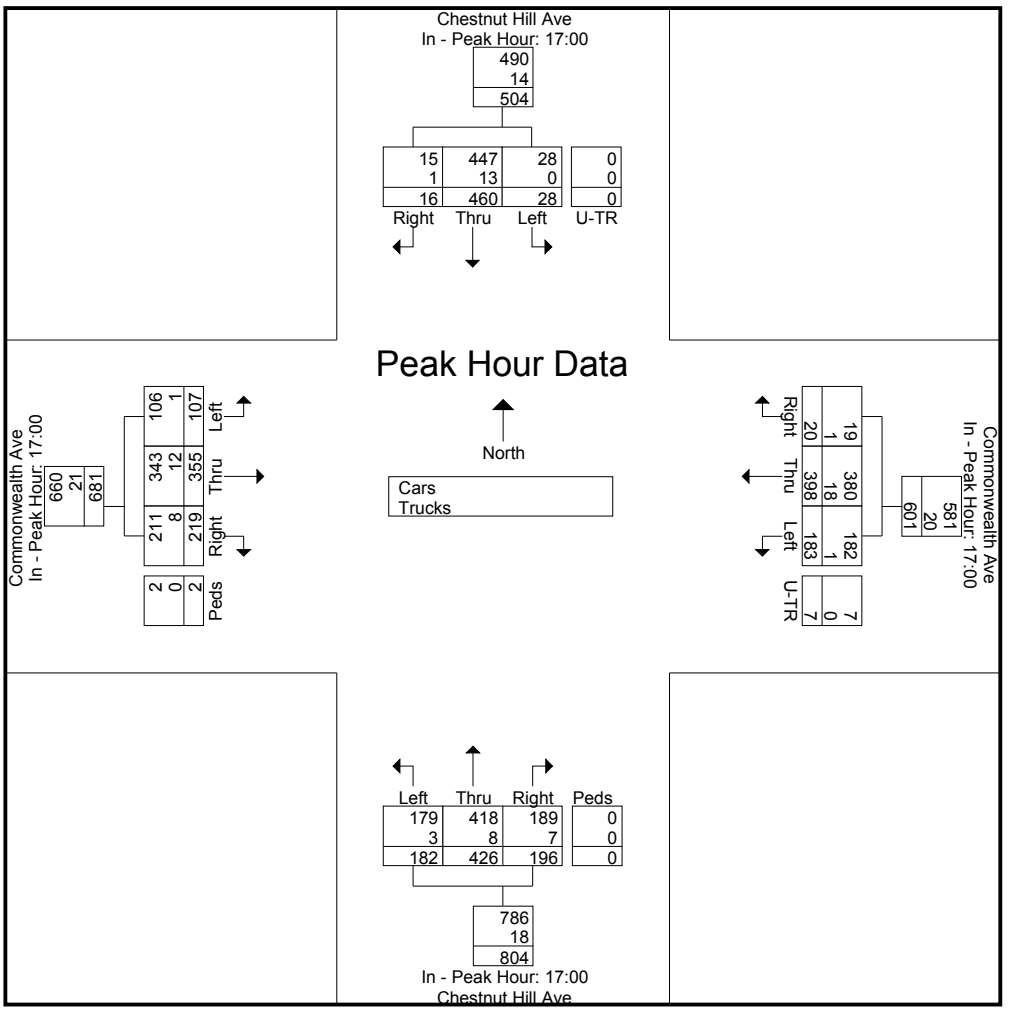
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	17:00					17:00					17:00					17:00				
+0 mins.	7	92	3	0	102	47	97	**7**	1	152	40	99	40	0	179	22	91	53	**1**	167
+15 mins.	5	**125**	4	0	134	42	**104**	5	1	152	**56**	113	44	0	213	**34**	88	55	0	177
+30 mins.	4	123	**8**	0	**135**	39	94	5	2	140	52	**128**	46	0	**226**	23	77	**60**	0	160
+45 mins.	**12**	120	1	0	133	**55**	103	3	**3**	**164**	34	86	**66**	0	186	28	**99**	51	1	**179**
Total Volume	28	460	16	0	504	183	398	20	7	608	182	426	196	0	804	107	355	219	2	683
% App. Total	5.6	91.3	3.2	0		30.1	65.5	3.3	1.2		22.6	53	24.4	0		15.7	52	32.1	0.3	
PHF	.583	.920	.500	.000	.933	.832	.957	.714	.583	.927	.813	.832	.742	.000	.889	.787	.896	.913	.500	.954
Cars	28	447	15	0	490	182	380	19	7	588	179	418	189	0	786	106	343	211	2	662
% Cars	100	97.2	93.8	0	97.2	99.5	95.5	95	100	96.7	98.4	98.1	96.4	0	97.8	99.1	96.6	96.3	100	96.9
Trucks	0	13	1	0	14	1	18	1	0	20	3	8	7	0	18	1	12	8	0	21
% Trucks	0	2.8	6.2	0	2.8	0.5	4.5	5	0	3.3	1.6	1.9	3.6	0	2.2	0.9	3.4	3.7	0	3.1

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

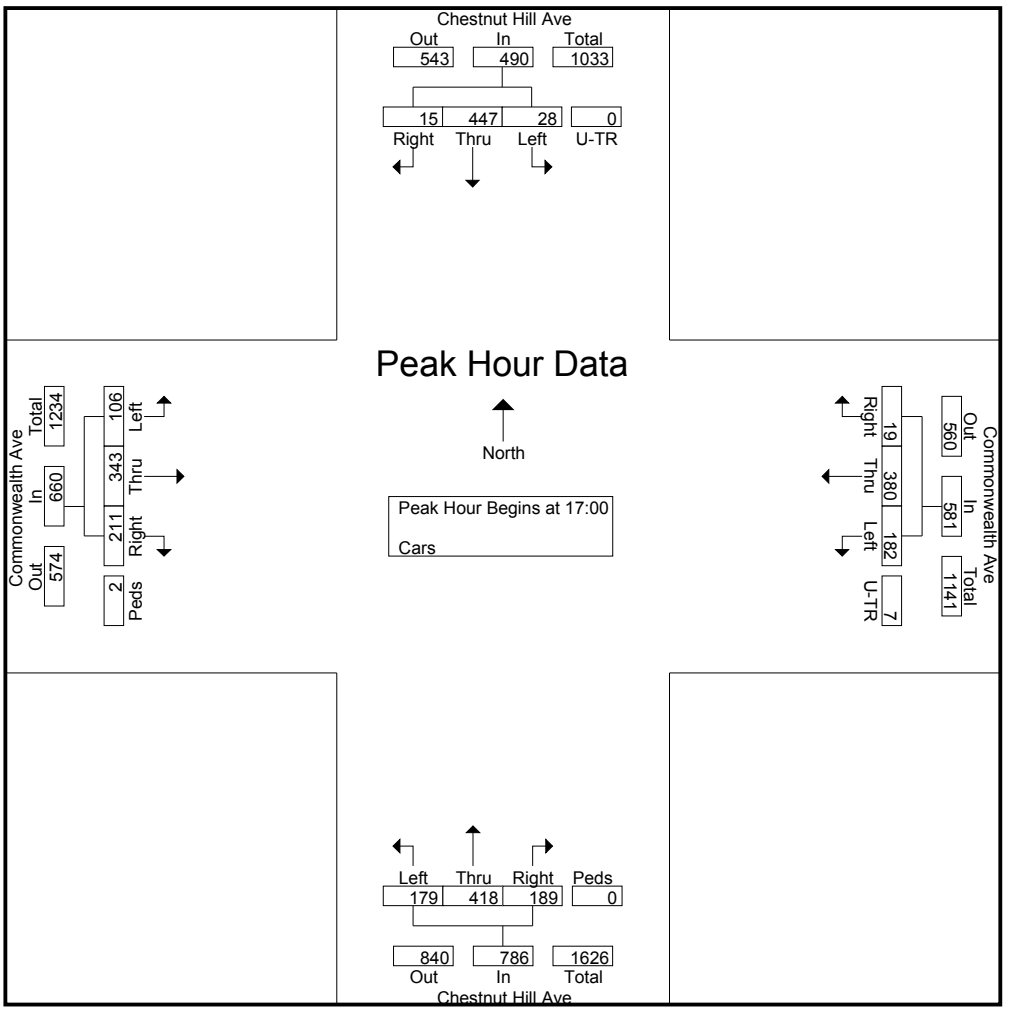
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	11	114	8	0	38	60	4	1	37	94	27	0	17	51	36	8	506
16:15	9	92	6	0	45	73	3	0	40	80	26	0	26	80	44	0	524
16:30	10	92	4	0	52	67	8	3	45	88	46	0	15	65	52	0	547
16:45	10	103	4	0	44	75	2	0	30	90	41	0	23	74	43	1	540
Total	40	401	22	0	179	275	17	4	152	352	140	0	81	270	175	9	2117
17:00	7	90	2	0	47	92	7	1	38	98	38	0	22	88	50	1	581
17:15	5	122	4	0	42	101	5	1	56	109	42	0	34	85	54	0	660
17:30	4	120	8	0	38	88	5	2	52	127	45	0	23	75	58	0	645
17:45	12	115	1	0	55	99	2	3	33	84	64	0	27	95	49	1	640
Total	28	447	15	0	182	380	19	7	179	418	189	0	106	343	211	2	2526
Grand Total	68	848	37	0	361	655	36	11	331	770	329	0	187	613	386	11	4643
Apprch %	7.1	89	3.9	0	34	61.6	3.4	1	23.1	53.8	23	0	15.6	51.2	32.2	0.9	
Total %	1.5	18.3	0.8	0	7.8	14.1	0.8	0.2	7.1	16.6	7.1	0	4	13.2	8.3	0.2	

	Chestnut Hill Ave From North					Commonwealth Ave From East					Chestnut Hill Ave From South					Commonwealth Ave From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	7	90	2	0	99	47	92	**7**	1	147	38	98	38	0	174	22	88	50	**1**	161	581
17:15	5	**122**	4	0	131	42	**101**	5	1	149	**56**	109	42	0	207	**34**	85	54	0	**173**	**660**
17:30	4	120	**8**	0	**132**	38	88	5	2	133	52	**127**	45	0	**224**	23	75	**58**	0	156	645
17:45	**12**	115	1	0	128	**55**	99	2	**3**	**159**	33	84	**64**	0	181	27	**95**	49	1	172	640
Total Volume	28	447	15	0	490	182	380	19	7	588	179	418	189	0	786	106	343	211	2	662	2526
% App. Total	5.7	91.2	3.1	0		31	64.6	3.2	1.2		22.8	53.2	24	0		16	51.8	31.9	0.3		
PHF	.583	.916	.469	.000	.928	.827	.941	.679	.583	.925	.799	.823	.738	.000	.877	.779	.903	.909	.500	.957	.957

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2

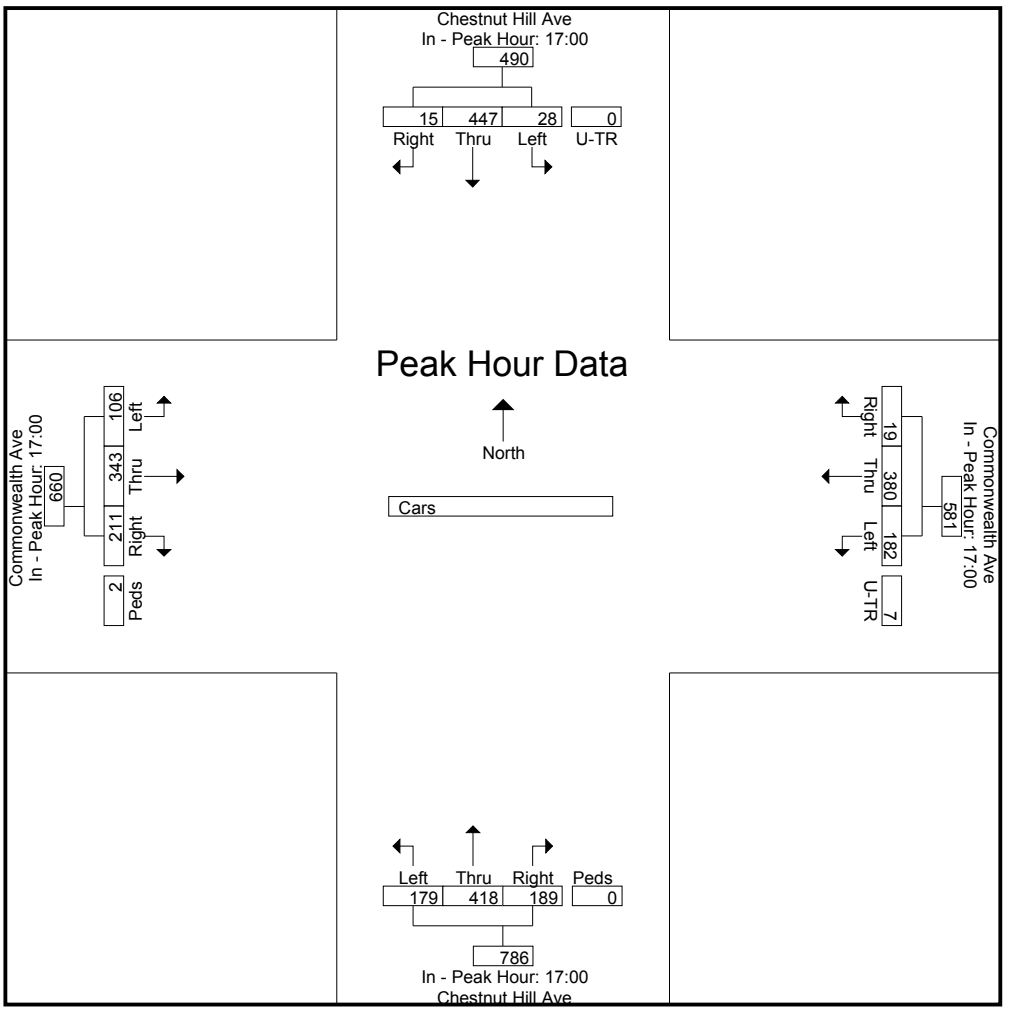


Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	17:00					17:00					17:00					17:00				
+0 mins.	7	90	2	0	99	47	92	**7**	1	147	38	98	38	0	174	22	88	50	**1**	161
+15 mins.	5	**122**	4	0	131	42	**101**	5	1	149	**56**	109	42	0	207	**34**	85	54	0	**173**
+30 mins.	4	120	**8**	0	**132**	38	88	5	2	133	52	**127**	45	0	**224**	23	75	**58**	0	156
+45 mins.	**12**	115	1	0	128	**55**	99	2	**3**	**159**	33	84	**64**	0	181	27	**95**	49	1	172
Total Volume	28	447	15	0	490	182	380	19	7	588	179	418	189	0	786	106	343	211	2	662
% App. Total	5.7	91.2	3.1	0		31	64.6	3.2	1.2		22.8	53.2	24	0		16	51.8	31.9	0.3	
PHF	.583	.916	.469	.000	.928	.827	.941	.679	.583	.925	.799	.823	.738	.000	.877	.779	.903	.909	.500	.957

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

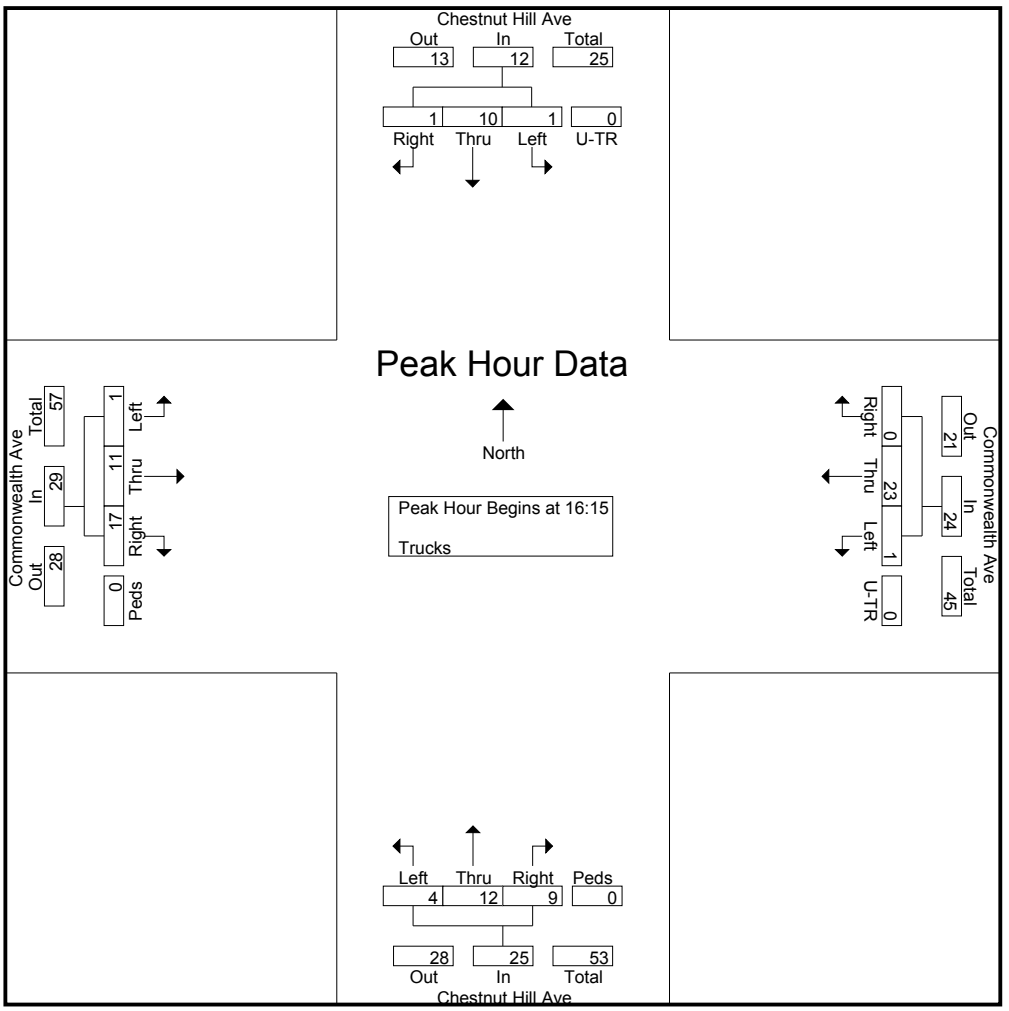
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	3	0	0	0	3	1	0	1	1	2	0	0	1	2	0	14
16:15	1	4	0	0	0	8	0	0	0	5	2	0	1	1	5	0	27
16:30	0	2	0	0	1	7	0	0	0	4	3	0	0	5	4	0	26
16:45	0	2	0	0	0	3	0	0	2	2	2	0	0	2	5	0	18
Total	1	11	0	0	1	21	1	0	3	12	9	0	1	9	16	0	85
17:00	0	2	1	0	0	5	0	0	2	1	2	0	0	3	3	0	19
17:15	0	3	0	0	0	3	0	0	0	4	2	0	0	3	1	0	16
17:30	0	3	0	0	1	6	0	0	0	1	1	0	0	2	2	0	16
17:45	0	5	0	0	0	4	1	0	1	2	2	0	1	4	2	0	22
Total	0	13	1	0	1	18	1	0	3	8	7	0	1	12	8	0	73
Grand Total	1	24	1	0	2	39	2	0	6	20	16	0	2	21	24	0	158
Apprch %	3.8	92.3	3.8	0	4.7	90.7	4.7	0	14.3	47.6	38.1	0	4.3	44.7	51.1	0	
Total %	0.6	15.2	0.6	0	1.3	24.7	1.3	0	3.8	12.7	10.1	0	1.3	13.3	15.2	0	

	Chestnut Hill Ave From North					Commonwealth Ave From East					Chestnut Hill Ave From South					Commonwealth Ave From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	**1**	**4**	0	0	**5**	0	**8**	0	0	**8**	0	**5**	2	0	**7**	**1**	1	**5**	0	7	**27**
16:30	0	2	0	0	2	**1**	7	0	0	8	0	4	**3**	0	7	0	**5**	4	0	**9**	26
16:45	0	2	0	0	2	0	3	0	0	3	**2**	2	2	0	6	0	2	5	0	7	18
17:00	0	2	**1**	0	3	0	5	0	0	5	2	1	2	0	5	0	3	3	0	6	19
Total Volume	1	10	1	0	12	1	23	0	0	24	4	12	9	0	25	1	11	17	0	29	90
% App. Total	8.3	83.3	8.3	0		4.2	95.8	0	0		16	48	36	0		3.4	37.9	58.6	0		
PHF	.250	.625	.250	.000	.600	.250	.719	.000	.000	.750	.500	.600	.750	.000	.893	.250	.550	.850	.000	.806	.833

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2



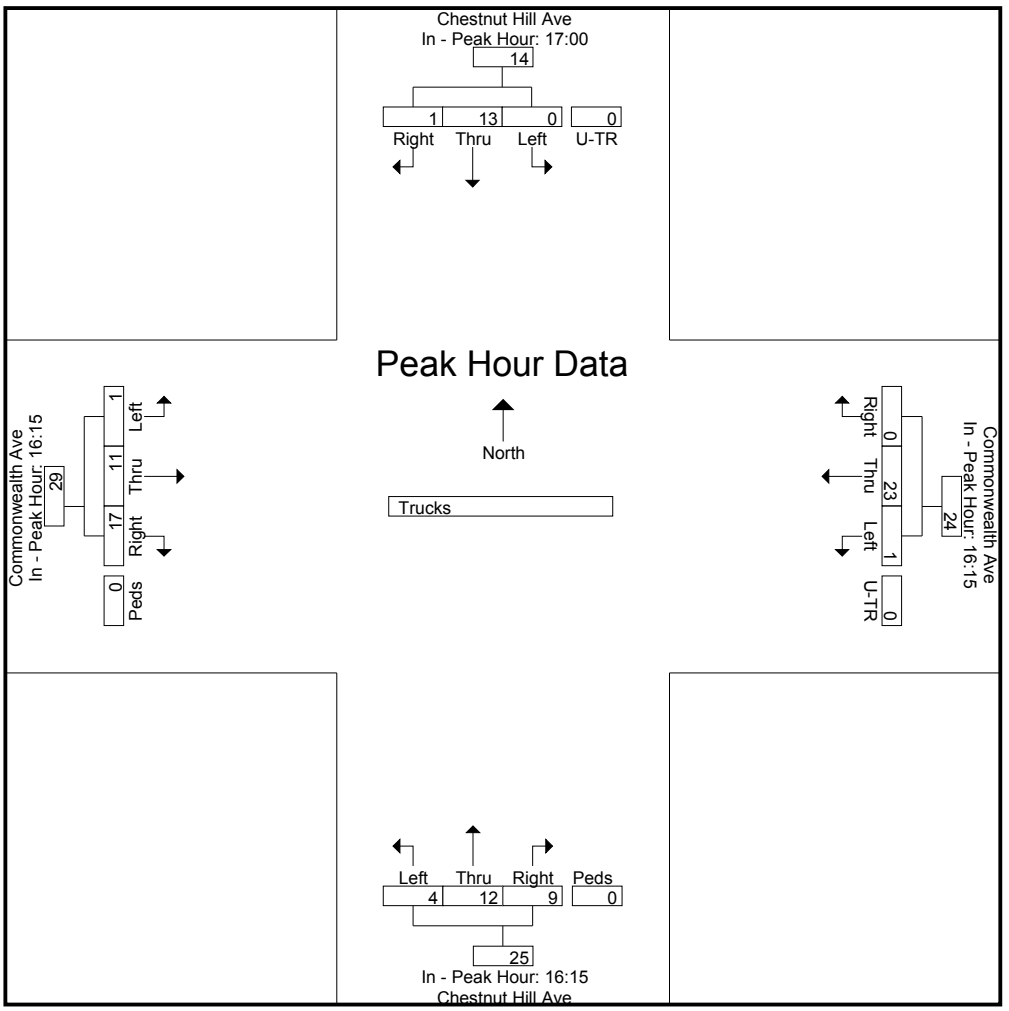
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	17:00					16:15					16:15					16:15				
+0 mins.	0	2	**1**	0	3	0	**8**	0	0	**8**	0	**5**	2	0	**7**	**1**	1	**5**	0	7
+15 mins.	0	3	0	0	3	**1**	7	0	0	8	0	4	**3**	0	7	0	**5**	4	0	**9**
+30 mins.	0	3	0	0	3	0	3	0	0	3	**2**	2	2	0	6	0	2	5	0	7
+45 mins.	0	**5**	0	0	**5**	0	5	0	0	5	2	1	2	0	5	0	3	3	0	6
Total Volume	0	13	1	0	14	1	23	0	0	24	4	12	9	0	25	1	11	17	0	29
% App. Total	0	92.9	7.1	0		4.2	95.8	0	0		16	48	36	0		3.4	37.9	58.6	0	
PHF	.000	.650	.250	.000	.700	.250	.719	.000	.000	.750	.500	.600	.750	.000	.893	.250	.550	.850	.000	.806

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

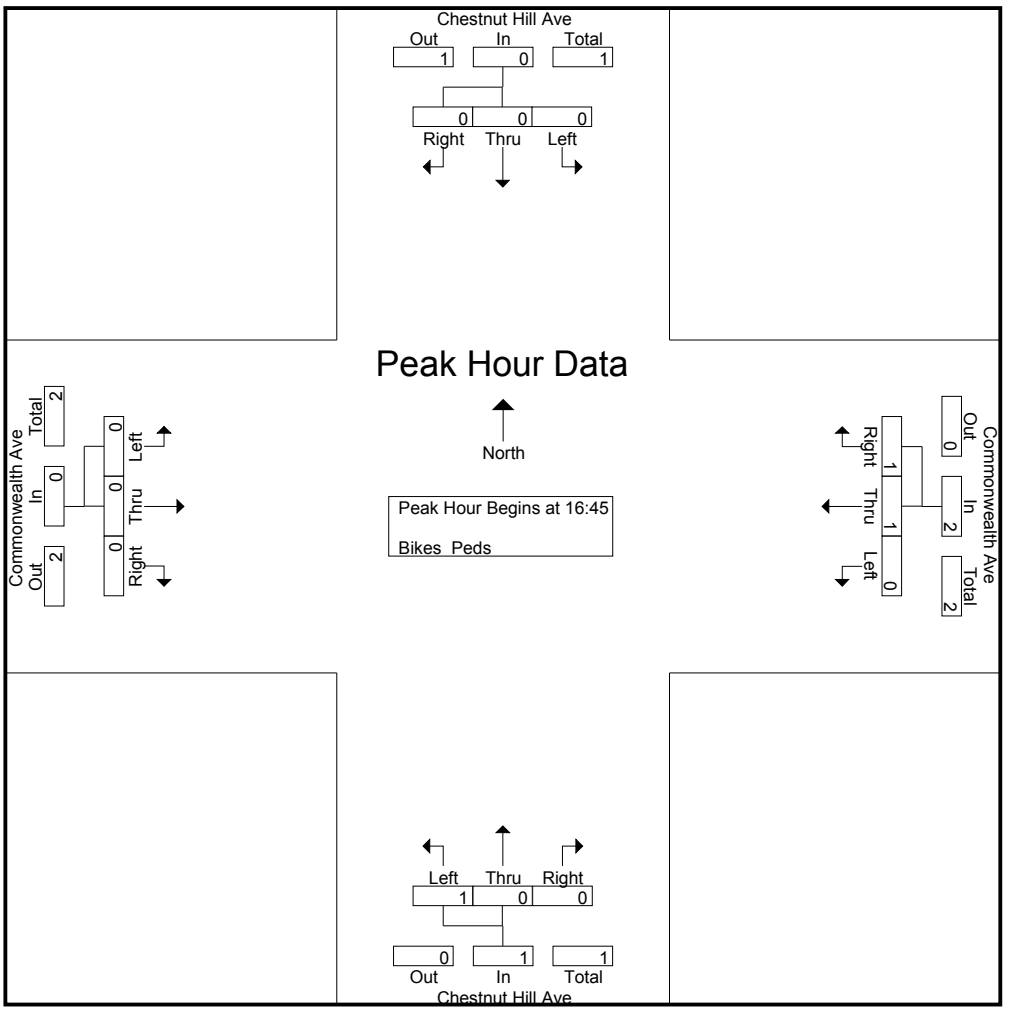
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	6	0	0	0	14	0	0	0	4	0	0	0	0	24	0	24
16:15	0	0	0	12	0	0	0	50	0	0	0	10	0	0	0	0	72	0	72
16:30	0	1	0	16	0	0	0	43	0	0	0	5	0	0	0	0	64	1	65
16:45	0	0	0	9	0	0	1	26	0	0	0	9	0	0	0	0	44	1	45
Total	0	1	0	43	0	0	1	133	0	0	0	28	0	0	0	0	204	2	206
17:00	0	0	0	12	0	0	0	61	0	0	0	9	0	0	0	1	83	0	83
17:15	0	0	0	15	0	0	0	75	0	0	0	7	0	0	0	3	100	0	100
17:30	0	0	0	9	0	1	0	62	1	0	0	4	0	0	0	0	75	2	77
17:45	0	0	0	9	0	0	0	45	0	0	0	8	0	0	0	0	62	0	62
Total	0	0	0	45	0	1	0	243	1	0	0	28	0	0	0	4	320	2	322
Grand Total	0	1	0	88	0	1	1	376	1	0	0	56	0	0	0	4	524	4	528
Apprch %	0	100	0		0	50	50		100	0	0		0	0	0				
Total %	0	25	0		0	25	25		25	0	0		0	0	0		99.2	0.8	

	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	**1**	0	1	**1**	0	0	**1**	0	0	0	0	**2**
Total Volume	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0	3
% App. Total	0	0	0		0	50	50		100	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.250	.500	.250	.000	.000	.250	.000	.000	.000	.000	.375

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 2



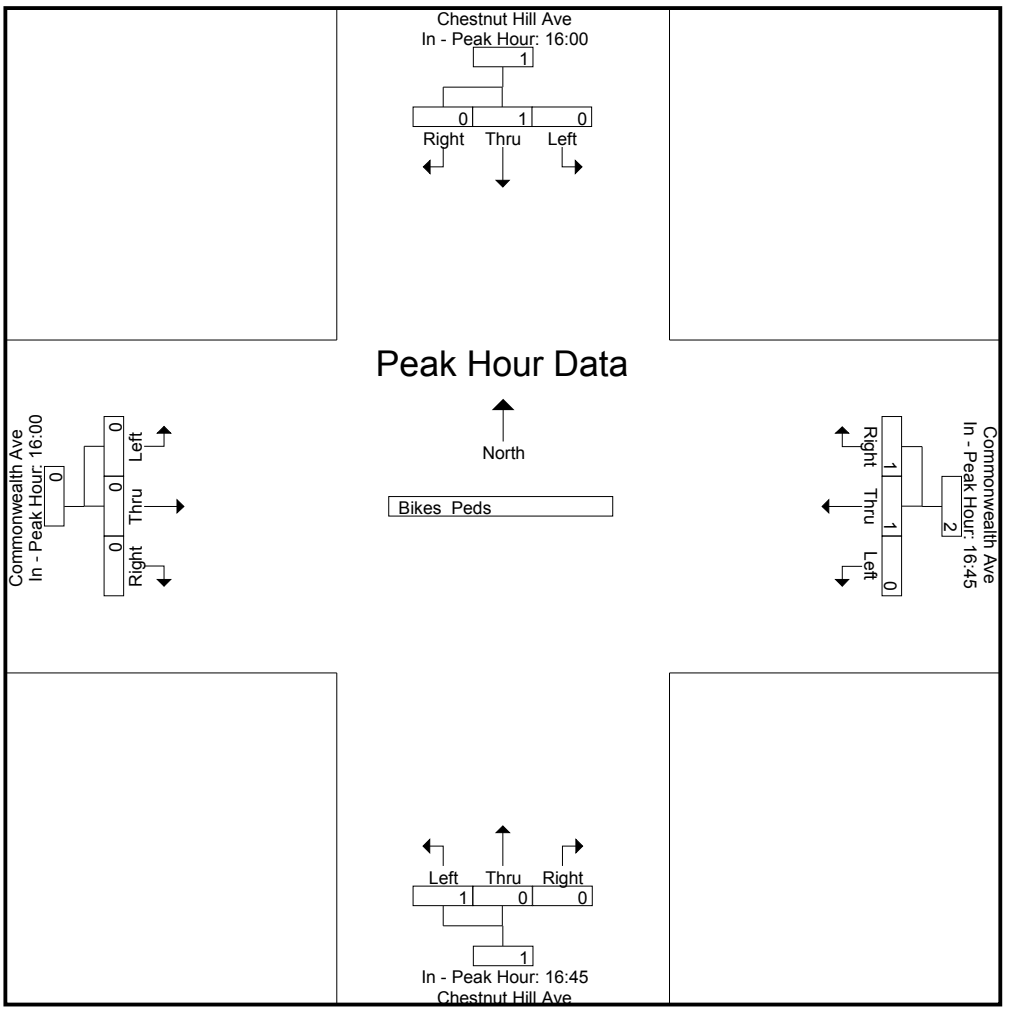
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	16:00				16:45				16:45				16:00			
+0 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	**1**	0	1	**1**	0	0	**1**	0	0	0	0
Total Volume	0	1	0	1	0	1	1	2	1	0	0	1	0	0	0	0
% App. Total	0	100	0		0	50	50		100	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.250	.250	.500	.250	.000	.000	.250	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Commonwealth Avenue
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900003
Site Code : 01900003
Start Date : 1/19/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars - Trucks

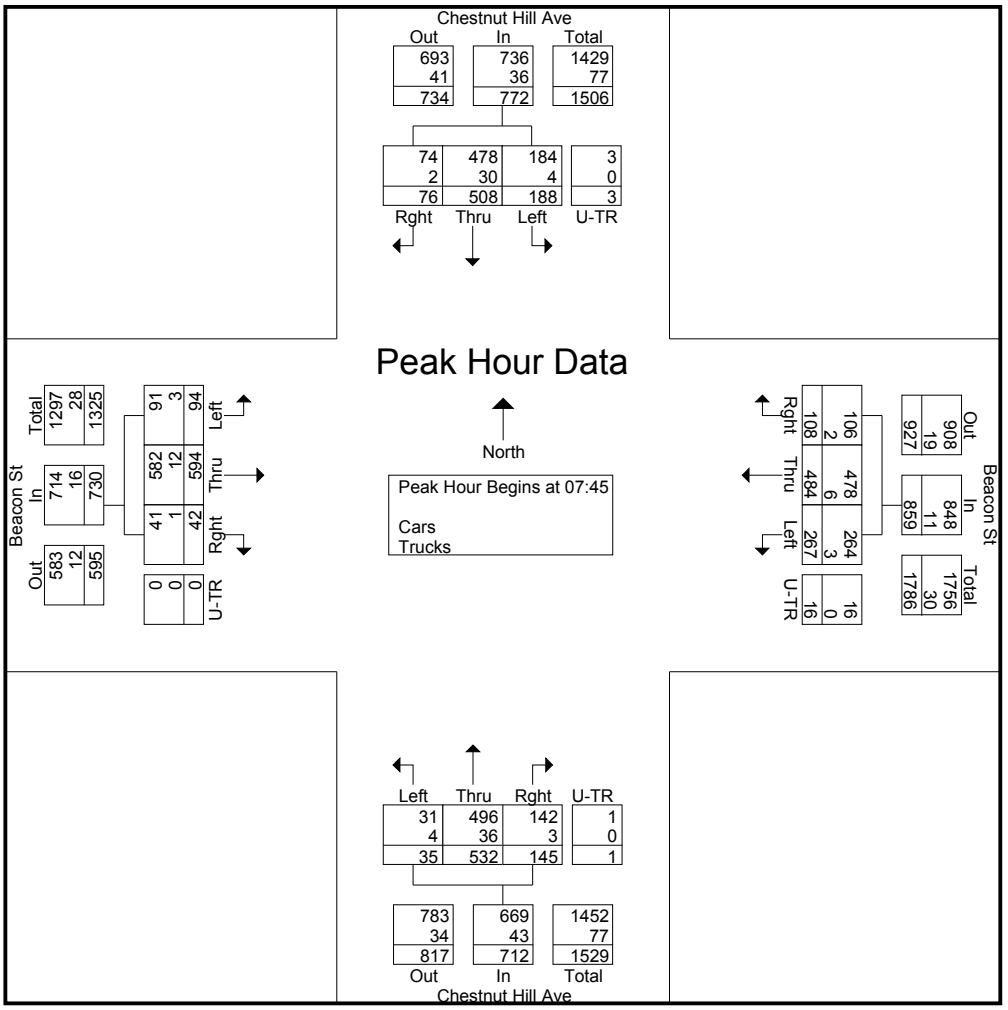
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	19	98	16	1	55	49	22	1	7	127	39	0	16	64	8	0	522
07:15	30	148	24	2	64	84	30	1	9	154	33	0	19	94	13	0	705
07:30	46	155	20	3	72	90	19	6	6	147	46	0	12	131	15	0	768
07:45	53	132	19	1	59	121	24	6	4	126	32	0	22	147	11	0	757
Total	148	533	79	7	250	344	95	14	26	554	150	0	69	436	47	0	2752
08:00	41	128	23	1	64	105	31	2	8	125	34	0	27	140	9	0	738
08:15	47	141	19	1	72	138	28	4	10	153	48	0	16	139	9	0	825
08:30	47	107	15	0	72	120	25	4	13	128	31	1	29	168	13	0	773
08:45	47	111	25	0	46	113	30	3	13	130	56	0	18	89	9	0	690
Total	182	487	82	2	254	476	114	13	44	536	169	1	90	536	40	0	3026
Grand Total	330	1020	161	9	504	820	209	27	70	1090	319	1	159	972	87	0	5778
Apprch %	21.7	67.1	10.6	0.6	32.3	52.6	13.4	1.7	4.7	73.6	21.6	0.1	13.1	79.8	7.1	0	
Total %	5.7	17.7	2.8	0.2	8.7	14.2	3.6	0.5	1.2	18.9	5.5	0	2.8	16.8	1.5	0	
Cars	324	960	157	9	491	810	203	27	66	1017	307	1	154	956	83	0	5565
% Cars	98.2	94.1	97.5	100	97.4	98.8	97.1	100	94.3	93.3	96.2	100	96.9	98.4	95.4	0	96.3
Trucks	6	60	4	0	13	10	6	0	4	73	12	0	5	16	4	0	213
% Trucks	1.8	5.9	2.5	0	2.6	1.2	2.9	0	5.7	6.7	3.8	0	3.1	1.6	4.6	0	3.7

	Chestnut Hill Ave From North					Beacon St From East					Chestnut Hill Ave From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	**53**	132	19	**1**	205	59	121	24	**6**	210	4	126	32	0	162	22	147	11	0	180	757
08:00	41	128	**23**	1	193	64	105	**31**	2	202	8	125	34	0	167	27	140	9	0	176	738
08:15	47	**141**	19	1	**208**	**72**	**138**	28	4	**242**	10	**153**	**48**	0	**211**	16	139	9	0	164	**825**
08:30	47	107	15	0	169	72	120	25	4	221	**13**	128	31	**1**	173	**29**	**168**	**13**	0	**210**	773
Total Volume	188	508	76	3	775	267	484	108	16	875	35	532	145	1	713	94	594	42	0	730	3093
% App. Total	24.3	65.5	9.8	0.4		30.5	55.3	12.3	1.8		4.9	74.6	20.3	0.1		12.9	81.4	5.8	0		
PHF	.887	.901	.826	.750	.931	.927	.877	.871	.667	.904	.673	.869	.755	.250	.845	.810	.884	.808	.000	.869	.937
Cars	184	478	74	3	739	264	478	106	16	864	31	496	142	1	670	91	582	41	0	714	2987
% Cars	97.9	94.1	97.4	100	95.4	98.9	98.8	98.1	100	98.7	88.6	93.2	97.9	100	94.0	96.8	98.0	97.6	0	97.8	96.6
Trucks	4	30	2	0	36	3	6	2	0	11	4	36	3	0	43	3	12	1	0	16	106
% Trucks	2.1	5.9	2.6	0	4.6	1.1	1.2	1.9	0	1.3	11.4	6.8	2.1	0	6.0	3.2	2.0	2.4	0	2.2	3.4

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 2



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

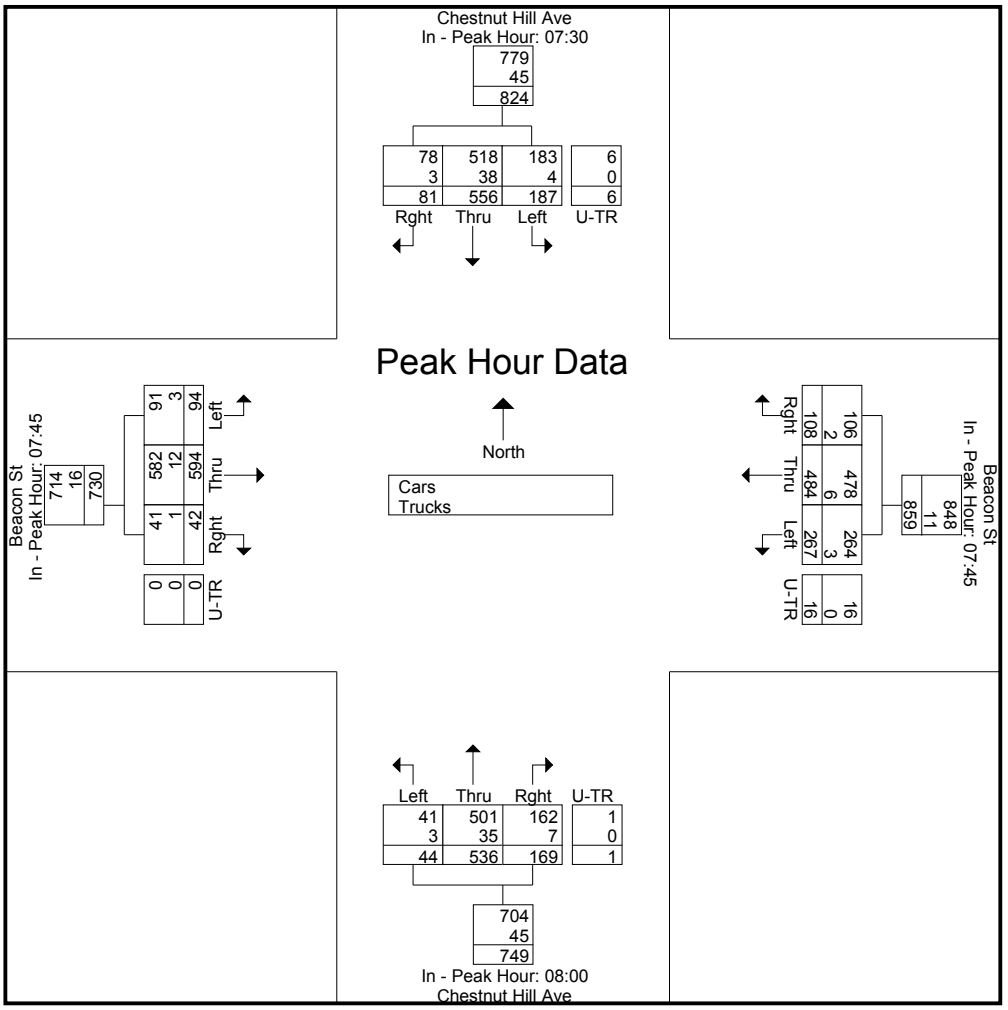
Peak Hour for Each Approach Begins at:

	07:30					07:45					08:00					07:45				
+0 mins.	46	**155**	20	**3**	**224**	59	121	24	**6**	210	8	125	34	0	167	22	147	11	0	180
+15 mins.	**53**	132	19	1	205	64	105	**31**	2	202	10	**153**	48	0	**211**	27	140	9	0	176
+30 mins.	41	128	**23**	1	193	**72**	**138**	28	4	**242**	**13**	128	31	**1**	173	16	139	9	0	164
+45 mins.	47	141	19	1	208	72	120	25	4	221	13	130	**56**	0	199	**29**	**168**	**13**	0	**210**
Total Volume	187	556	81	6	830	267	484	108	16	875	44	536	169	1	750	94	594	42	0	730
% App. Total	22.5	67	9.8	0.7		30.5	55.3	12.3	1.8		5.9	71.5	22.5	0.1		12.9	81.4	5.8	0	
PHF	.882	.897	.880	.500	.926	.927	.877	.871	.667	.904	.846	.876	.754	.250	.889	.810	.884	.808	.000	.869
Cars	183	518	78	6	785	264	478	106	16	864	41	501	162	1	705	91	582	41	0	714
% Cars	97.9	93.2	96.3	100	94.6	98.9	98.8	98.1	100	98.7	93.2	93.5	95.9	100	94	96.8	98	97.6	0	97.8
Trucks	4	38	3	0	45	3	6	2	0	11	3	35	7	0	45	3	12	1	0	16
% Trucks	2.1	6.8	3.7	0	5.4	1.1	1.2	1.9	0	1.3	6.8	6.5	4.1	0	6	3.2	2	2.4	0	2.2

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

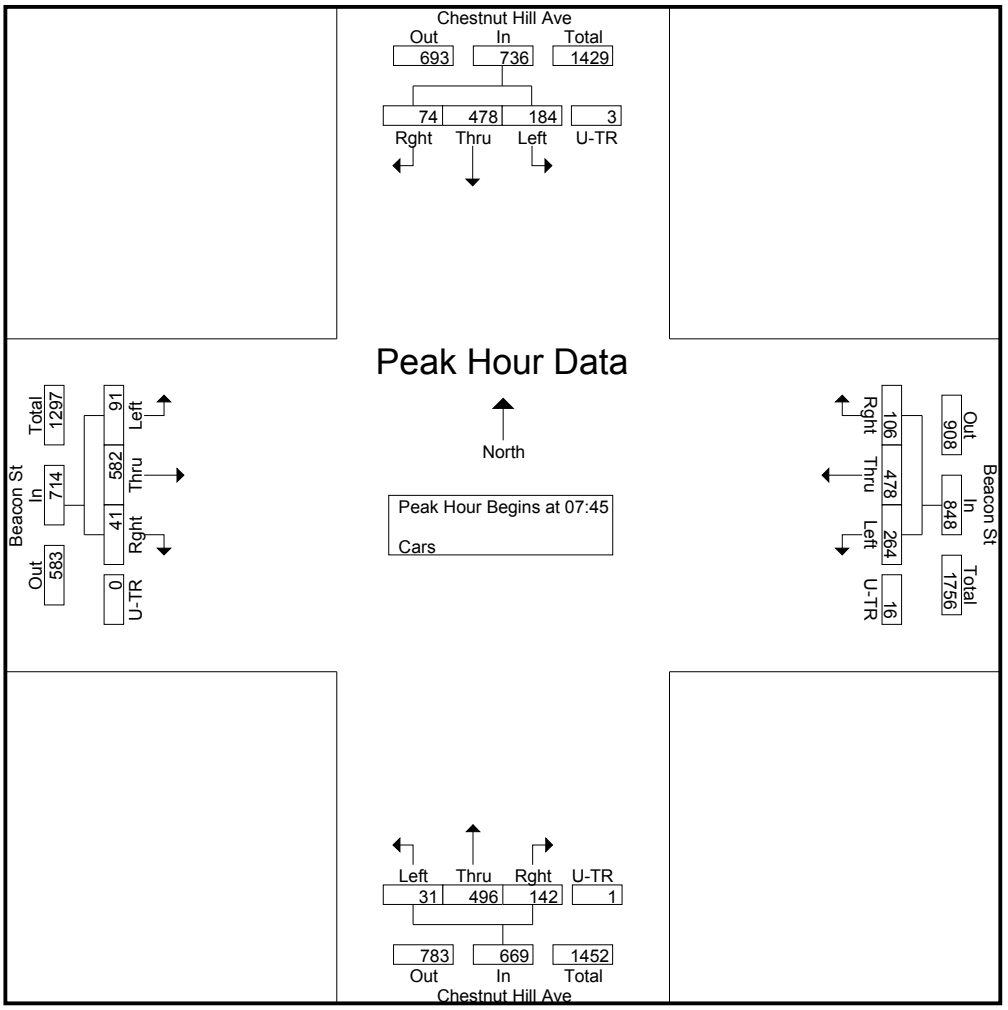
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	18	92	16	1	52	49	22	1	7	116	38	0	16	64	8	0	500
07:15	30	144	23	2	63	83	28	1	9	140	29	0	18	93	12	0	675
07:30	46	142	19	3	69	88	18	6	6	142	46	0	12	128	14	0	739
07:45	51	122	18	1	58	121	24	6	3	118	32	0	20	140	11	0	725
Total	145	500	76	7	242	341	92	14	25	516	145	0	66	425	45	0	2639
08:00	40	120	22	1	63	103	30	2	7	115	34	0	27	140	8	0	712
08:15	46	134	19	1	72	135	28	4	8	138	47	0	16	134	9	0	791
08:30	47	102	15	0	71	119	24	4	13	125	29	1	28	168	13	0	759
08:45	46	104	25	0	43	112	29	3	13	123	52	0	17	89	8	0	664
Total	179	460	81	2	249	469	111	13	41	501	162	1	88	531	38	0	2926
Grand Total	324	960	157	9	491	810	203	27	66	1017	307	1	154	956	83	0	5565
Apprch %	22.3	66.2	10.8	0.6	32.1	52.9	13.3	1.8	4.7	73.1	22.1	0.1	12.9	80.1	7	0	
Total %	5.8	17.3	2.8	0.2	8.8	14.6	3.6	0.5	1.2	18.3	5.5	0	2.8	17.2	1.5	0	

	Chestnut Hill Ave From North					Beacon St From East					Chestnut Hill Ave From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	**51**	122	18	**1**	192	58	121	24	**6**	209	3	118	32	0	153	20	140	11	0	171	725
08:00	40	120	**22**	1	183	63	103	**30**	2	198	7	115	34	0	156	27	140	8	0	175	712
08:15	46	**134**	19	1	**200**	**72**	**135**	28	4	**239**	8	**138**	**47**	0	**193**	16	134	9	0	159	**791**
08:30	47	102	15	0	164	71	119	24	4	218	**13**	125	29	**1**	168	**28**	**168**	**13**	0	**209**	759
Total Volume	184	478	74	3	739	264	478	106	16	864	31	496	142	1	670	91	582	41	0	714	2987
% App. Total	24.9	64.7	10	0.4		30.6	55.3	12.3	1.9		4.6	74	21.2	0.1		12.7	81.5	5.7	0		
PHF	.902	.892	.841	.750	.924	.917	.885	.883	.667	.904	.596	.899	.755	.250	.868	.813	.866	.788	.000	.854	.944

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 2



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

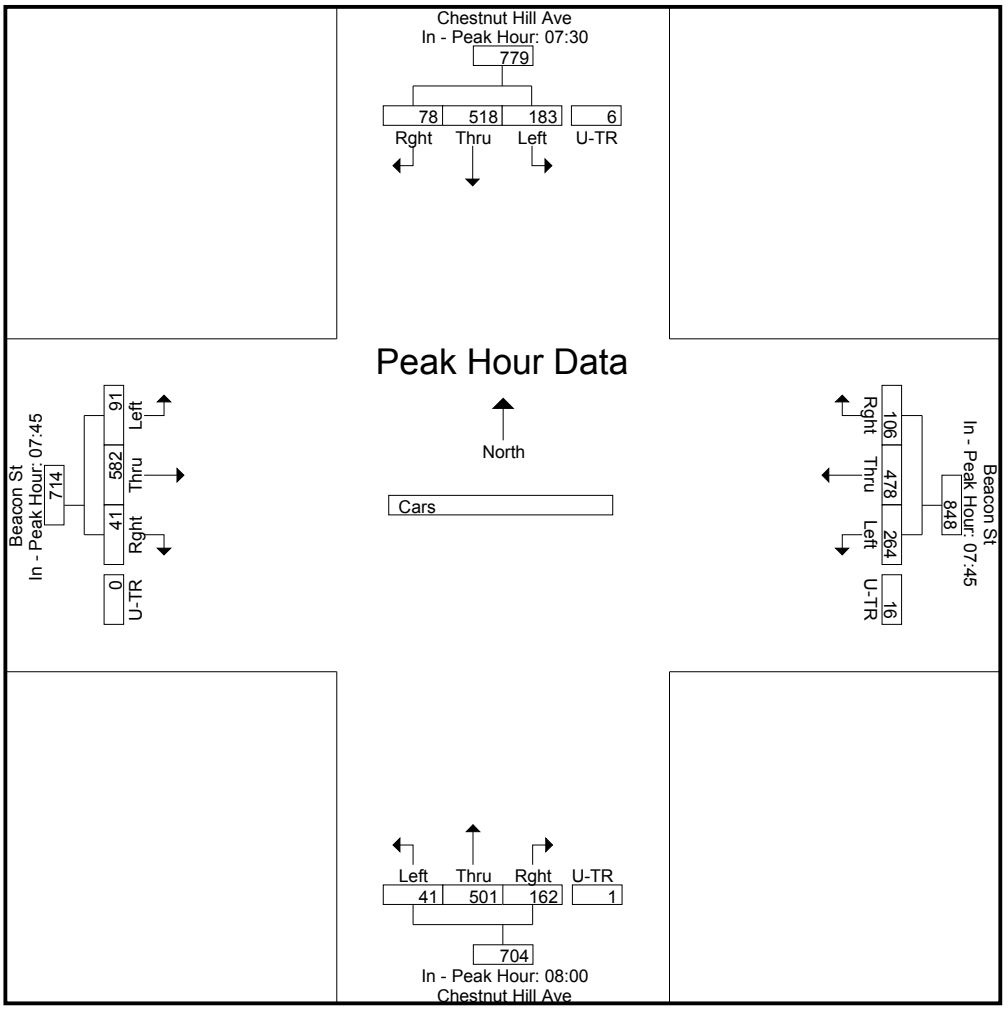
Peak Hour for Each Approach Begins at:

	07:30					07:45					08:00					07:45				
+0 mins.	46	**142**	19	**3**	**210**	58	121	24	**6**	209	7	115	34	0	156	20	140	11	0	171
+15 mins.	**51**	122	18	1	192	63	103	**30**	2	198	8	**138**	47	0	**193**	27	140	8	0	175
+30 mins.	40	120	**22**	1	183	**72**	**135**	28	4	**239**	**13**	125	29	**1**	168	16	134	9	0	159
+45 mins.	46	134	19	1	200	71	119	24	4	218	13	123	**52**	0	188	**28**	**168**	**13**	0	**209**
Total Volume	183	518	78	6	785	264	478	106	16	864	41	501	162	1	705	91	582	41	0	714
% App. Total	23.3	66	9.9	0.8		30.6	55.3	12.3	1.9		5.8	71.1	23	0.1		12.7	81.5	5.7	0	
PHF	.897	.912	.886	.500	.935	.917	.885	.883	.667	.904	.788	.908	.779	.250	.913	.813	.866	.788	.000	.854

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

Groups Printed- Trucks

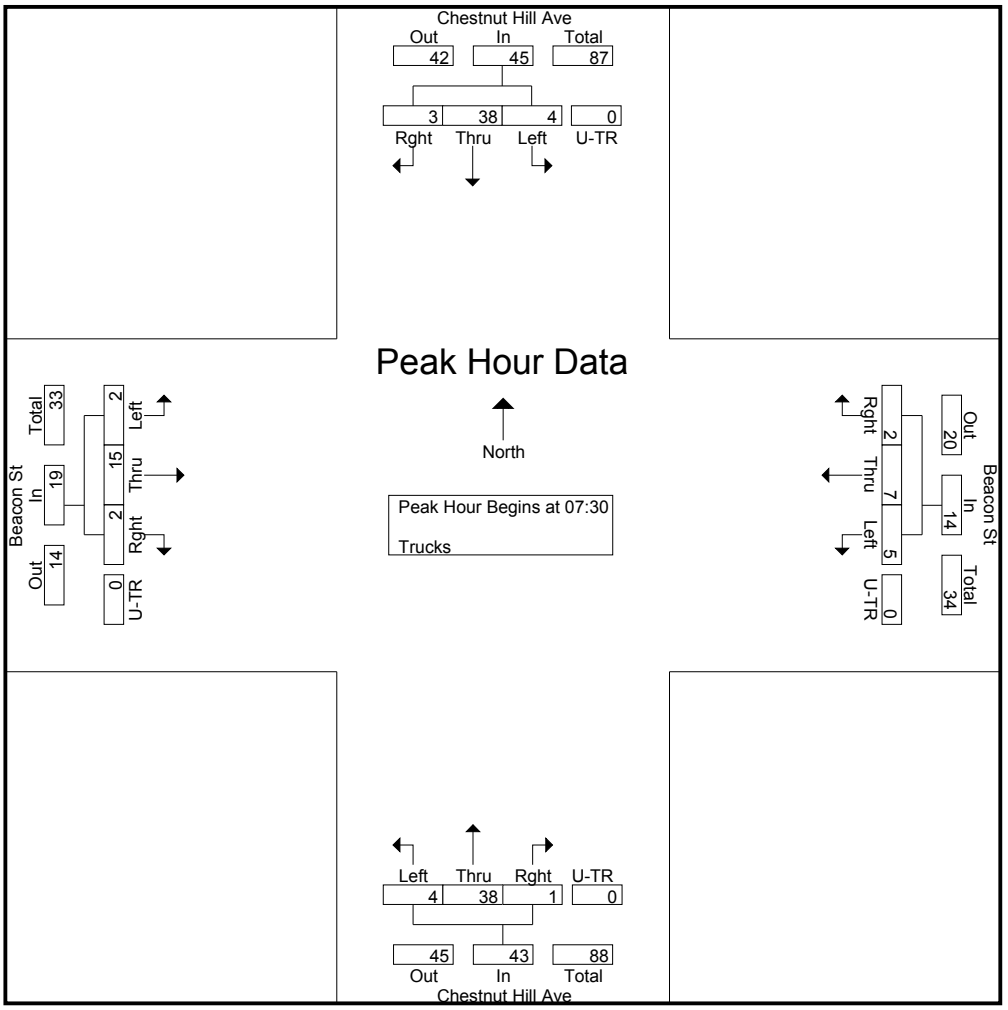
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	1	6	0	0	3	0	0	0	0	11	1	0	0	0	0	0	22
07:15	0	4	1	0	1	1	2	0	0	14	4	0	1	1	1	0	30
07:30	0	13	1	0	3	2	1	0	0	5	0	0	0	3	1	0	29
07:45	2	10	1	0	1	0	0	0	1	8	0	0	2	7	0	0	32
Total	3	33	3	0	8	3	3	0	1	38	5	0	3	11	2	0	113
08:00	1	8	1	0	1	2	1	0	1	10	0	0	0	0	1	0	26
08:15	1	7	0	0	0	3	0	0	2	15	1	0	0	5	0	0	34
08:30	0	5	0	0	1	1	1	0	0	3	2	0	1	0	0	0	14
08:45	1	7	0	0	3	1	1	0	0	7	4	0	1	0	1	0	26
Total	3	27	1	0	5	7	3	0	3	35	7	0	2	5	2	0	100
Grand Total	6	60	4	0	13	10	6	0	4	73	12	0	5	16	4	0	213
Apprch %	8.6	85.7	5.7	0	44.8	34.5	20.7	0	4.5	82	13.5	0	20	64	16	0	
Total %	2.8	28.2	1.9	0	6.1	4.7	2.8	0	1.9	34.3	5.6	0	2.3	7.5	1.9	0	

	Chestnut Hill Ave From North					Beacon St From East					Chestnut Hill Ave From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	0	**13**	**1**	0	**14**	**3**	2	**1**	0	**6**	0	5	0	0	5	0	3	**1**	0	4	29
07:45	**2**	10	1	0	13	1	0	0	0	1	1	8	0	0	9	**2**	**7**	0	0	**9**	32
08:00	1	8	1	0	10	1	2	1	0	4	1	10	0	0	11	0	0	1	0	1	26
08:15	1	7	0	0	8	0	**3**	0	0	3	**2**	**15**	**1**	0	**18**	0	5	0	0	5	**34**
Total Volume	4	38	3	0	45	5	7	2	0	14	4	38	1	0	43	2	15	2	0	19	121
% App. Total	8.9	84.4	6.7	0		35.7	50	14.3	0		9.3	88.4	2.3	0		10.5	78.9	10.5	0		
PHF	.500	.731	.750	.000	.804	.417	.583	.500	.000	.583	.500	.633	.250	.000	.597	.250	.536	.500	.000	.528	.890

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 2



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

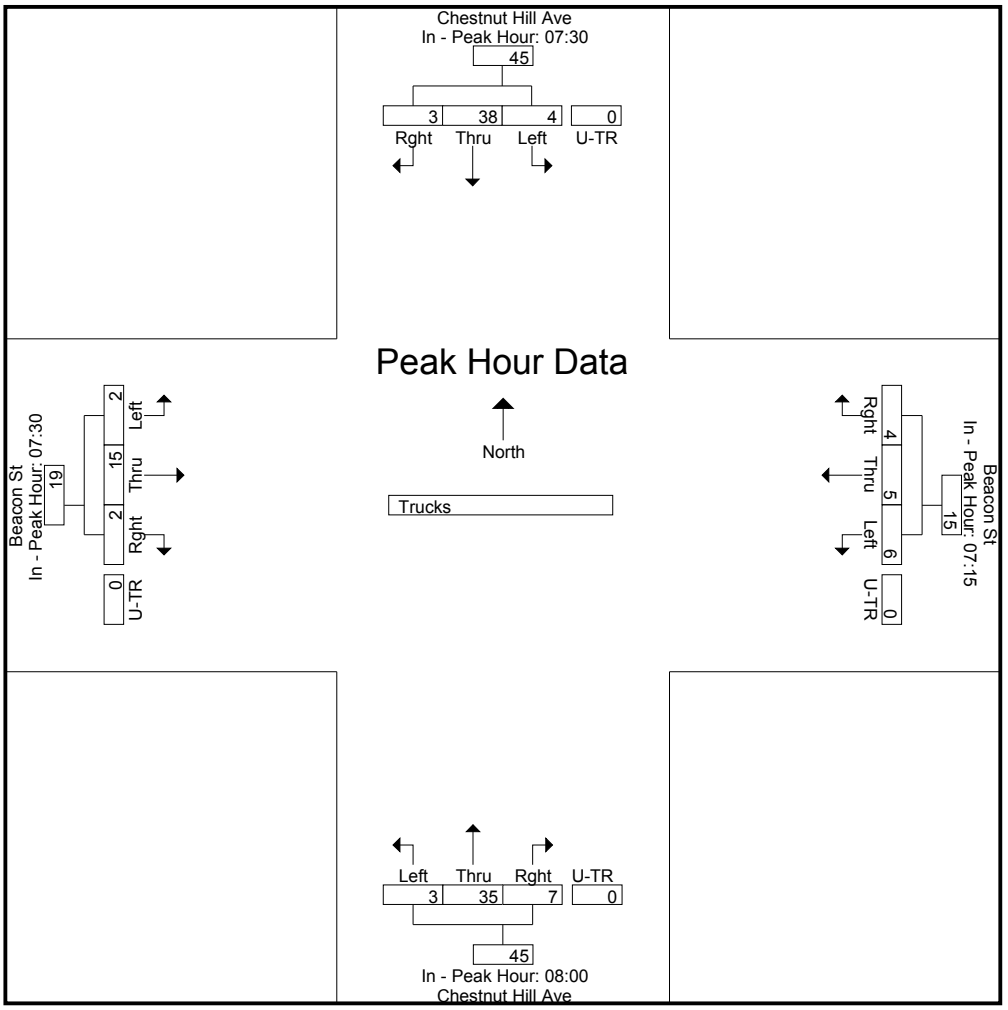
Peak Hour for Each Approach Begins at:

	07:30					07:15					08:00					07:30				
+0 mins.	0	**13**	**1**	0	**14**	1	1	**2**	0	4	1	10	0	0	11	0	3	**1**	0	4
+15 mins.	**2**	10	1	0	13	**3**	**2**	1	0	**6**	**2**	**15**	1	0	**18**	**2**	**7**	0	0	**9**
+30 mins.	1	8	1	0	10	1	0	0	0	1	0	3	2	0	5	0	0	1	0	1
+45 mins.	1	7	0	0	8	1	2	1	0	4	0	7	**4**	0	11	0	5	0	0	5
Total Volume	4	38	3	0	45	6	5	4	0	15	3	35	7	0	45	2	15	2	0	19
% App. Total	8.9	84.4	6.7	0		40	33.3	26.7	0		6.7	77.8	15.6	0		10.5	78.9	10.5	0	
PHF	.500	.731	.750	.000	.804	.500	.625	.500	.000	.625	.375	.583	.438	.000	.625	.250	.536	.500	.000	.528

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

Groups Printed- Bikes Peds

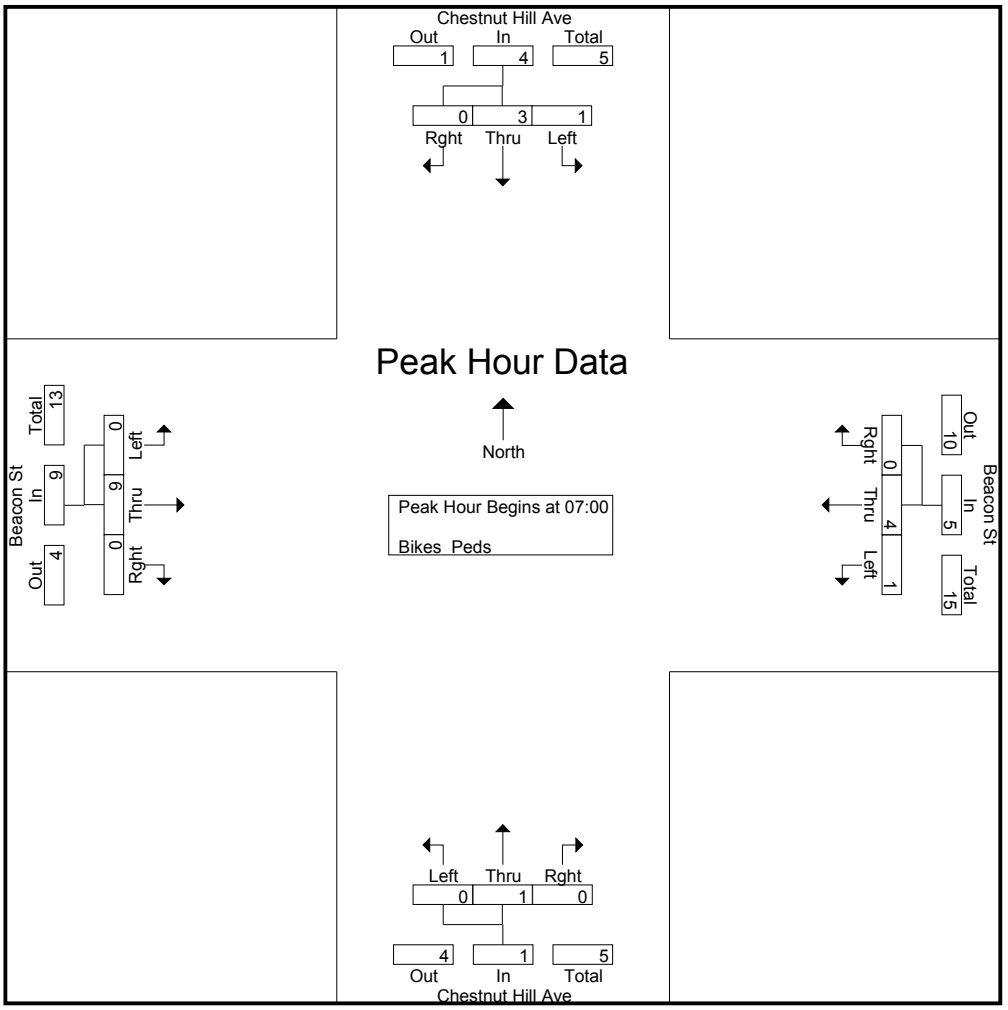
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	4	0	1	0	31	0	0	0	3	0	2	0	3	41	3	44
07:15	0	1	0	2	0	0	0	41	0	1	0	6	0	4	0	6	55	6	61
07:30	1	2	0	9	0	0	0	57	0	0	0	2	0	3	0	8	76	6	82
07:45	0	0	0	2	1	3	0	40	0	0	0	4	0	0	0	5	51	4	55
Total	1	3	0	17	1	4	0	169	0	1	0	15	0	9	0	22	223	19	242
08:00	0	1	0	7	0	0	0	57	0	0	0	0	0	0	0	0	64	1	65
08:15	0	1	0	4	0	0	0	54	0	0	0	3	0	1	0	0	61	2	63
08:30	1	0	0	4	0	2	2	47	0	0	0	3	0	1	0	2	56	6	62
08:45	0	1	0	3	0	0	0	48	0	0	0	1	0	1	1	4	56	3	59
Total	1	3	0	18	0	2	2	206	0	0	0	7	0	3	1	6	237	12	249
Grand Total	2	6	0	35	1	6	2	375	0	1	0	22	0	12	1	28	460	31	491
Apprch %	25	75	0		11.1	66.7	22.2		0	100	0		0	92.3	7.7				
Total %	6.5	19.4	0		3.2	19.4	6.5		0	3.2	0		0	38.7	3.2		93.7	6.3	

	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
07:15	0	1	0	1	0	0	0	0	0	**1**	0	**1**	0	**4**	0	**4**	**6**
07:30	**1**	**2**	0	**3**	0	0	0	0	0	0	0	0	0	3	0	3	6
07:45	0	0	0	0	**1**	**3**	0	**4**	0	0	0	0	0	0	0	0	4
Total Volume	1	3	0	4	1	4	0	5	0	1	0	1	0	9	0	9	19
% App. Total	25	75	0		20	80	0		0	100	0		0	100	0		
PHF	.250	.375	.000	.333	.250	.333	.000	.313	.000	.250	.000	.250	.000	.563	.000	.563	.792

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010



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

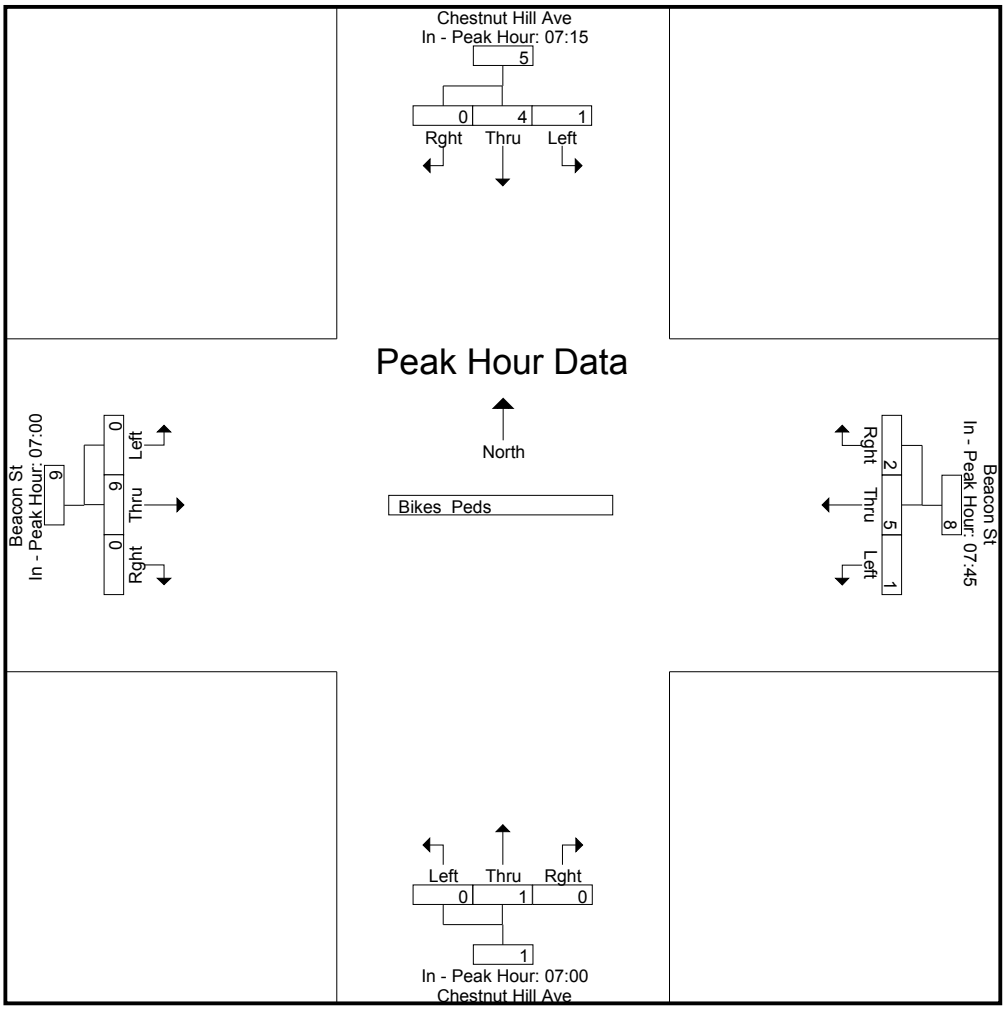
Peak Hour for Each Approach Begins at:

	07:15				07:45				07:00				07:00			
+0 mins.	0	1	0	1	**1**	**3**	0	**4**	0	0	0	0	0	2	0	2
+15 mins.	**1**	**2**	0	**3**	0	0	0	0	0	**1**	0	**1**	0	**4**	0	**4**
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
+45 mins.	0	1	0	1	0	2	**2**	4	0	0	0	0	0	0	0	0
Total Volume	1	4	0	5	1	5	2	8	0	1	0	1	0	9	0	9
% App. Total	20	80	0		12.5	62.5	25		0	100	0		0	100	0	
PHF	.250	.500	.000	.417	.250	.417	.250	.500	.000	.250	.000	.250	.000	.563	.000	.563

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars - Trucks

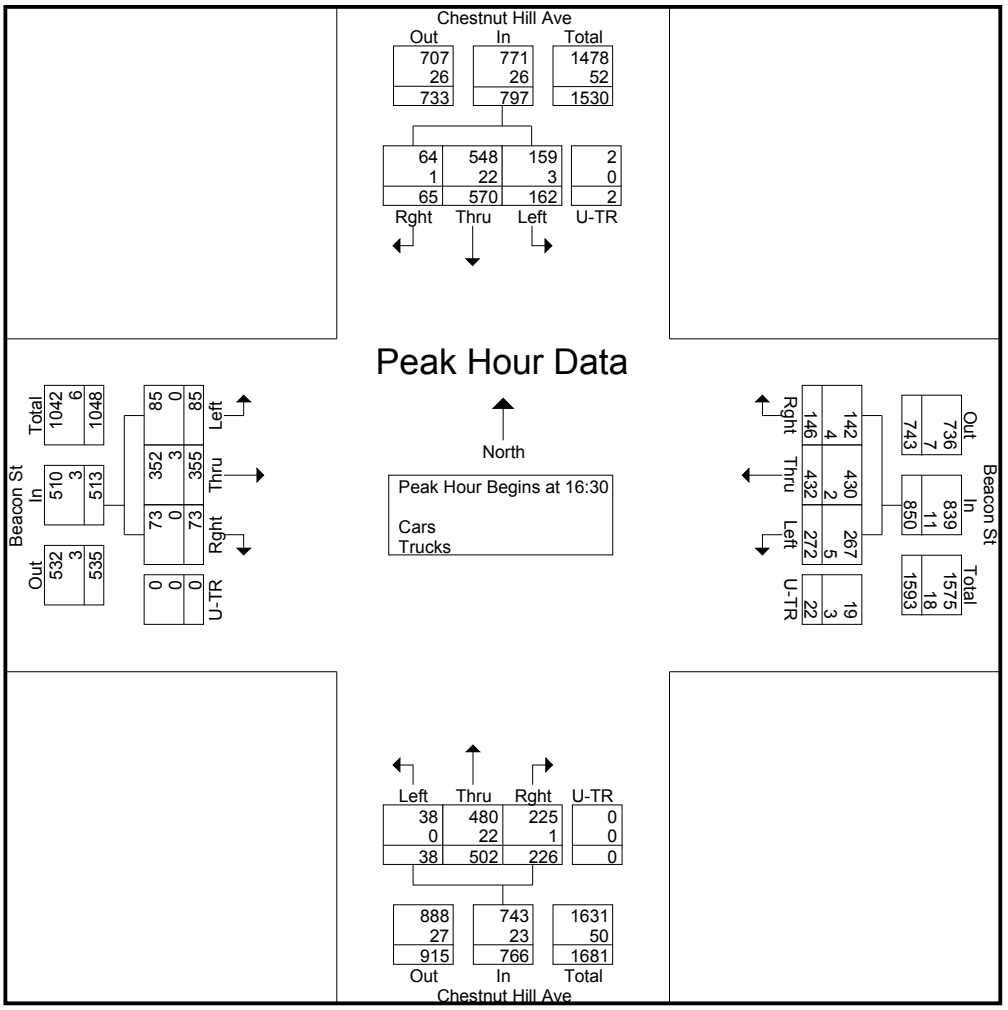
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	36	137	16	0	60	109	42	7	21	111	44	0	20	81	25	0	709
16:15	35	117	18	0	57	116	32	6	18	89	59	0	40	79	16	0	682
16:30	38	142	16	1	53	101	32	11	11	141	61	0	17	91	18	0	733
16:45	37	151	17	0	82	112	38	4	7	121	53	0	19	73	12	0	726
Total	146	547	67	1	252	438	144	28	57	462	217	0	96	324	71	0	2850
17:00	47	131	20	1	56	98	32	5	8	115	60	0	20	92	31	0	716
17:15	40	146	12	0	81	121	44	2	12	125	52	0	29	99	12	0	775
17:30	40	138	24	0	64	131	29	2	11	116	54	0	17	88	14	0	728
17:45	40	128	22	1	62	120	25	4	14	102	53	0	32	92	18	0	713
Total	167	543	78	2	263	470	130	13	45	458	219	0	98	371	75	0	2932
Grand Total	313	1090	145	3	515	908	274	41	102	920	436	0	194	695	146	0	5782
Apprch %	20.2	70.3	9.3	0.2	29.6	52.2	15.8	2.4	7	63.1	29.9	0	18.7	67.1	14.1	0	
Total %	5.4	18.9	2.5	0.1	8.9	15.7	4.7	0.7	1.8	15.9	7.5	0	3.4	12	2.5	0	
Cars	307	1048	143	3	506	899	267	38	101	883	435	0	193	690	146	0	5659
% Cars	98.1	96.1	98.6	100	98.3	99	97.4	92.7	99	96	99.8	0	99.5	99.3	100	0	97.9
Trucks	6	42	2	0	9	9	7	3	1	37	1	0	1	5	0	0	123
% Trucks	1.9	3.9	1.4	0	1.7	1	2.6	7.3	1	4	0.2	0	0.5	0.7	0	0	2.1

	Chestnut Hill Ave From North					Beacon St From East					Chestnut Hill Ave From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	38	142	16	**1**	197	53	101	32	**11**	197	11	**141**	**61**	0	**213**	17	91	18	0	126	733
16:45	37	**151**	17	0	**205**	**82**	112	38	4	236	7	121	53	0	181	19	73	12	0	104	726
17:00	**47**	131	**20**	1	199	56	98	32	5	191	8	115	60	0	183	20	92	**31**	0	**143**	716
17:15	40	146	12	0	198	81	**121**	**44**	2	**248**	**12**	125	52	0	189	**29**	**99**	12	0	140	**775**
Total Volume	162	570	65	2	799	272	432	146	22	872	38	502	226	0	766	85	355	73	0	513	2950
% App. Total	20.3	71.3	8.1	0.3		31.2	49.5	16.7	2.5		5	65.5	29.5	0		16.6	69.2	14.2	0		
PHF	.862	.944	.813	.500	.974	.829	.893	.830	.500	.879	.792	.890	.926	.000	.899	.733	.896	.589	.000	.897	.952
Cars	159	548	64	2	773	267	430	142	19	858	38	480	225	0	743	85	352	73	0	510	2884
% Cars	98.1	96.1	98.5	100	96.7	98.2	99.5	97.3	86.4	98.4	100	95.6	99.6	0	97.0	100	99.2	100	0	99.4	97.8
Trucks	3	22	1	0	26	5	2	4	3	14	0	22	1	0	23	0	3	0	0	3	66
% Trucks	1.9	3.9	1.5	0	3.3	1.8	0.5	2.7	13.6	1.6	0	4.4	0.4	0	3.0	0	0.8	0	0	0.6	2.2

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

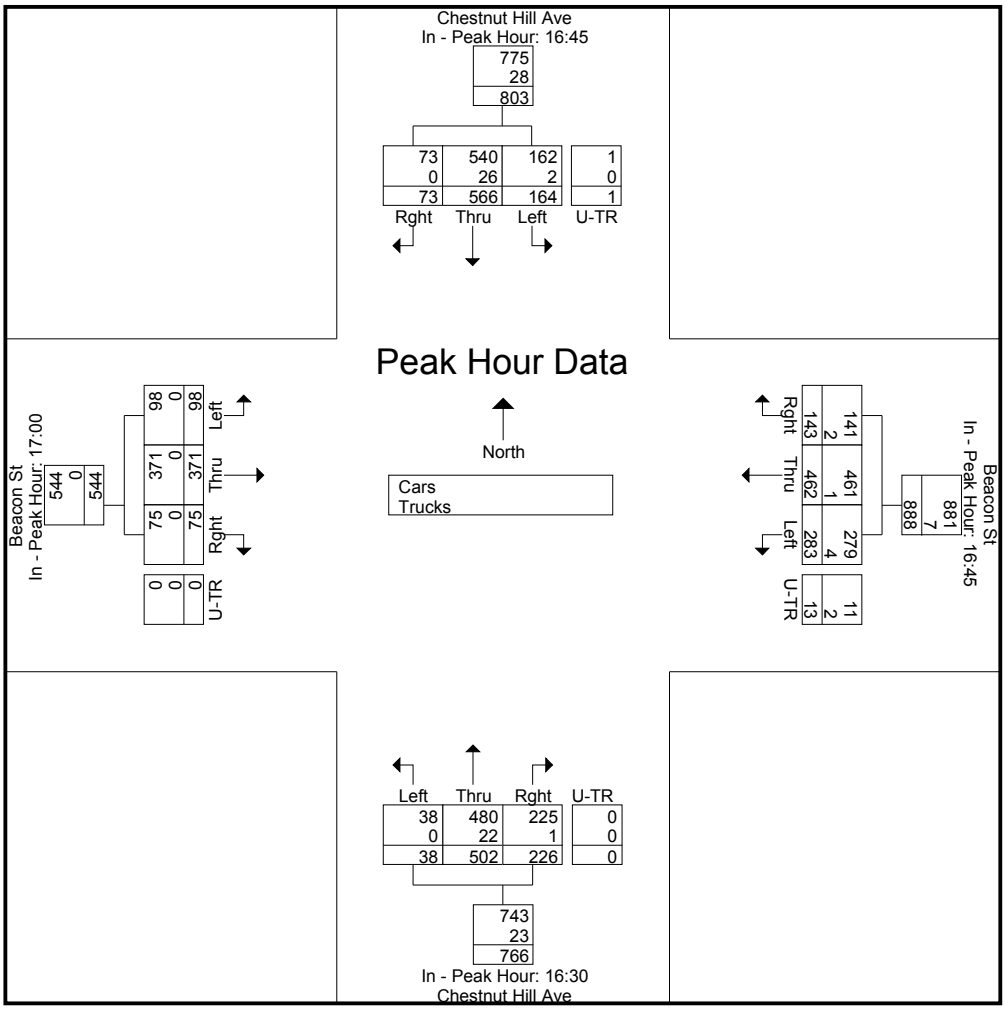
Peak Hour for Each Approach Begins at:

	16:45					16:45					16:30					17:00				
+0 mins.	37	**151**	17	0	**205**	**82**	112	38	4	236	11	**141**	**61**	0	**213**	20	92	**31**	0	**143**
+15 mins.	**47**	131	20	**1**	199	56	98	32	**5**	191	7	121	53	0	181	29	**99**	12	0	140
+30 mins.	40	146	12	0	198	81	121	**44**	2	**248**	8	115	60	0	183	17	88	14	0	119
+45 mins.	40	138	**24**	0	202	64	**131**	29	2	226	**12**	125	52	0	189	**32**	92	18	0	142
Total Volume	164	566	73	1	804	283	462	143	13	901	38	502	226	0	766	98	371	75	0	544
% App. Total	20.4	70.4	9.1	0.1		31.4	51.3	15.9	1.4		5	65.5	29.5	0		18	68.2	13.8	0	
PHF	.872	.937	.760	.250	.980	.863	.882	.813	.650	.908	.792	.890	.926	.000	.899	.766	.937	.605	.000	.951
Cars	162	540	73	1	776	279	461	141	11	892	38	480	225	0	743	98	371	75	0	544
% Cars	98.8	95.4	100	100	96.5	98.6	99.8	98.6	84.6	99	100	95.6	99.6	0	97	100	100	100	0	100
Trucks	2	26	0	0	28	4	1	2	2	9	0	22	1	0	23	0	0	0	0	0
% Trucks	1.2	4.6	0	0	3.5	1.4	0.2	1.4	15.4	1	0	4.4	0.4	0	3	0	0	0	0	0

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

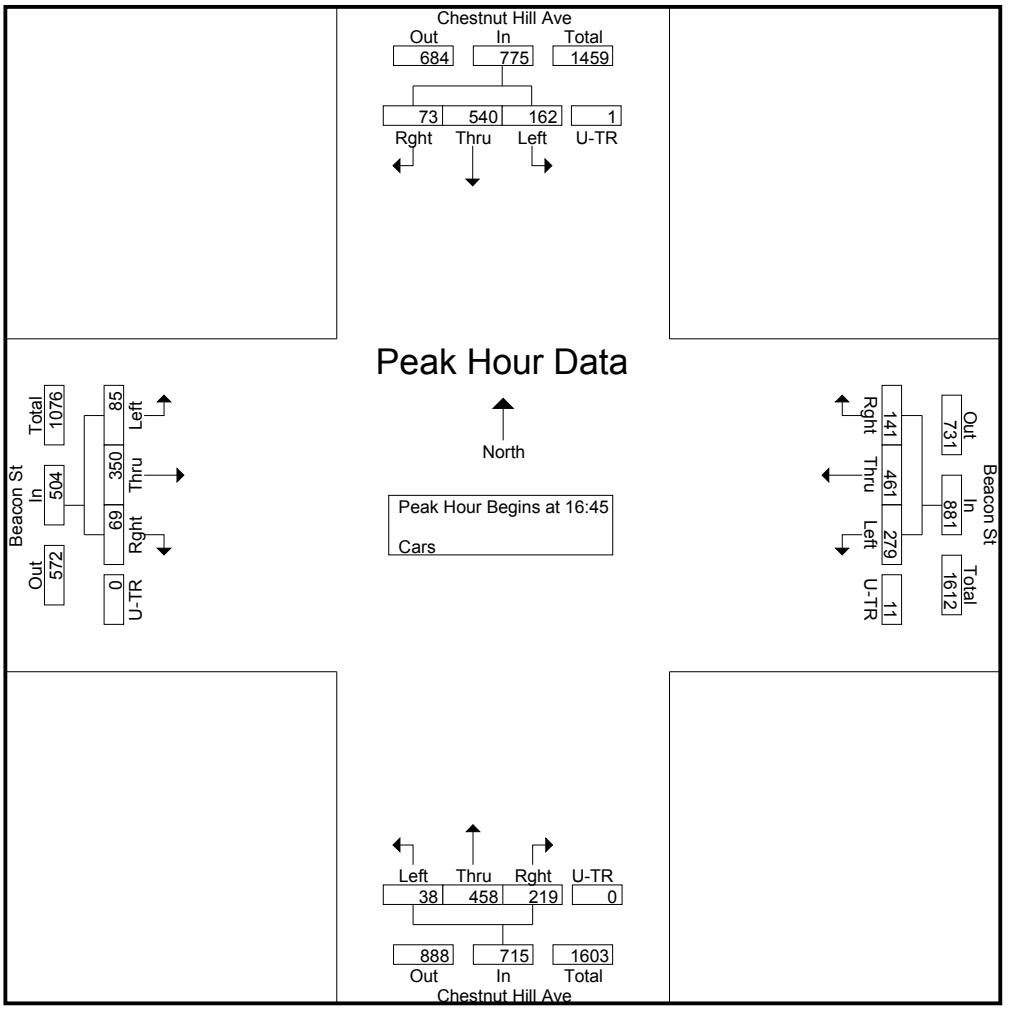
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	36	135	16	0	58	105	40	7	20	108	44	0	19	81	25	0	694
16:15	33	112	17	0	56	113	31	6	18	83	59	0	40	77	16	0	661
16:30	37	139	15	1	51	100	30	10	11	135	60	0	17	90	18	0	714
16:45	37	145	17	0	80	111	37	3	7	115	53	0	19	71	12	0	707
Total	143	531	65	1	245	429	138	26	56	441	216	0	95	319	71	0	2776
17:00	46	123	20	1	56	98	31	4	8	110	60	0	20	92	31	0	700
17:15	39	141	12	0	80	121	44	2	12	120	52	0	29	99	12	0	763
17:30	40	131	24	0	63	131	29	2	11	113	54	0	17	88	14	0	717
17:45	39	122	22	1	62	120	25	4	14	99	53	0	32	92	18	0	703
Total	164	517	78	2	261	470	129	12	45	442	219	0	98	371	75	0	2883
Grand Total	307	1048	143	3	506	899	267	38	101	883	435	0	193	690	146	0	5659
Apprch %	20.5	69.8	9.5	0.2	29.6	52.6	15.6	2.2	7.1	62.2	30.7	0	18.8	67.1	14.2	0	
Total %	5.4	18.5	2.5	0.1	8.9	15.9	4.7	0.7	1.8	15.6	7.7	0	3.4	12.2	2.6	0	

	Chestnut Hill Ave From North					Beacon St From East					Chestnut Hill Ave From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	37	**145**	17	0	**199**	**80**	111	37	3	231	7	115	53	0	175	19	71	12	0	102	707
17:00	**46**	123	20	**1**	190	56	98	31	**4**	189	8	110	**60**	0	178	20	92	**31**	0	**143**	700
17:15	39	141	12	0	192	80	121	**44**	2	**247**	**12**	**120**	52	0	**184**	**29**	**99**	12	0	140	**763**
17:30	40	131	**24**	0	195	63	**131**	29	2	225	11	113	54	0	178	17	88	14	0	119	717
Total Volume	162	540	73	1	776	279	461	141	11	892	38	458	219	0	715	85	350	69	0	504	2887
% App. Total	20.9	69.6	9.4	0.1		31.3	51.7	15.8	1.2		5.3	64.1	30.6	0		16.9	69.4	13.7	0		
PHF	.880	.931	.760	.250	.975	.872	.880	.801	.688	.903	.792	.954	.913	.000	.971	.733	.884	.556	.000	.881	.946

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

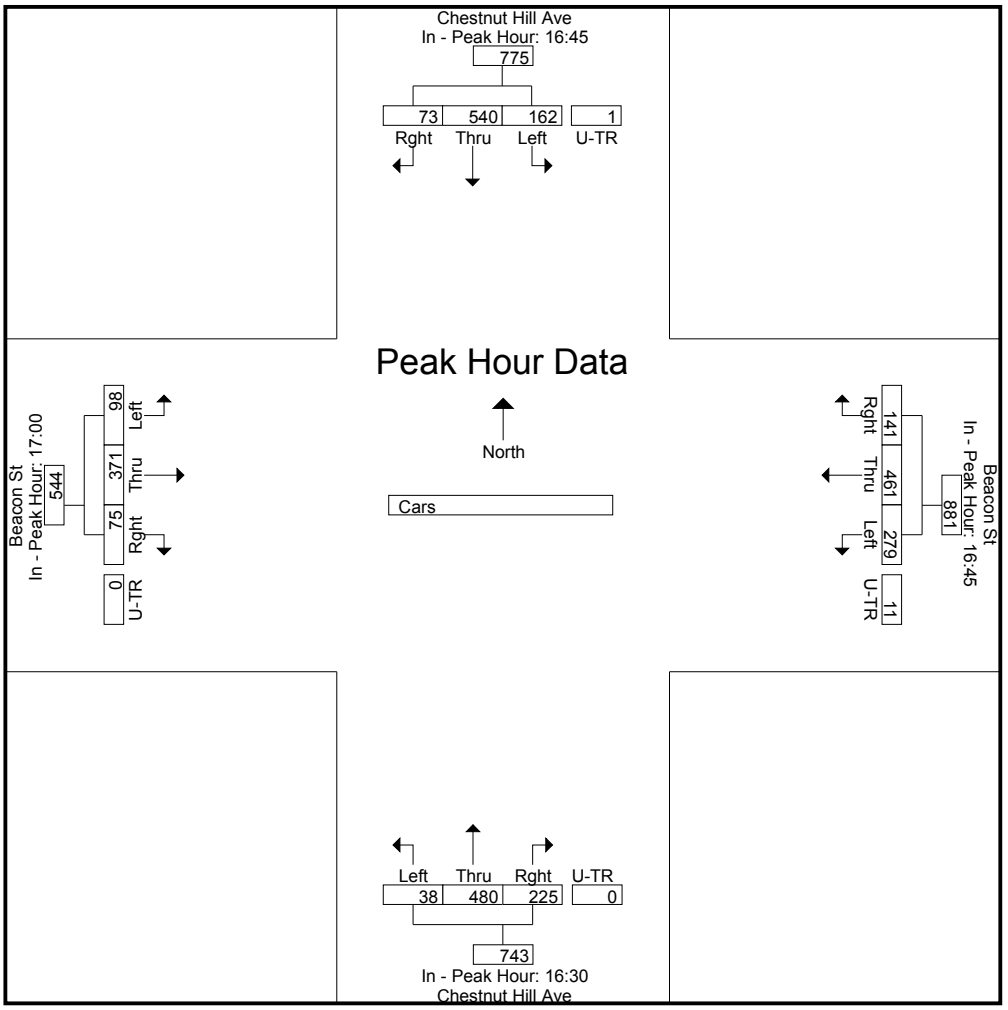
Peak Hour for Each Approach Begins at:

	16:45					16:45					16:30					17:00				
+0 mins.	37	**145**	17	0	**199**	**80**	111	37	3	231	11	**135**	**60**	0	**206**	20	92	**31**	0	**143**
+15 mins.	**46**	123	20	**1**	190	56	98	31	**4**	189	7	115	53	0	175	29	**99**	12	0	140
+30 mins.	39	141	12	0	192	80	121	**44**	2	**247**	8	110	60	0	178	17	88	14	0	119
+45 mins.	40	131	**24**	0	195	63	**131**	29	2	225	**12**	120	52	0	184	**32**	92	18	0	142
Total Volume	162	540	73	1	776	279	461	141	11	892	38	480	225	0	743	98	371	75	0	544
% App. Total	20.9	69.6	9.4	0.1		31.3	51.7	15.8	1.2		5.1	64.6	30.3	0		18	68.2	13.8	0	
PHF	.880	.931	.760	.250	.975	.872	.880	.801	.688	.903	.792	.889	.938	.000	.902	.766	.937	.605	.000	.951

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

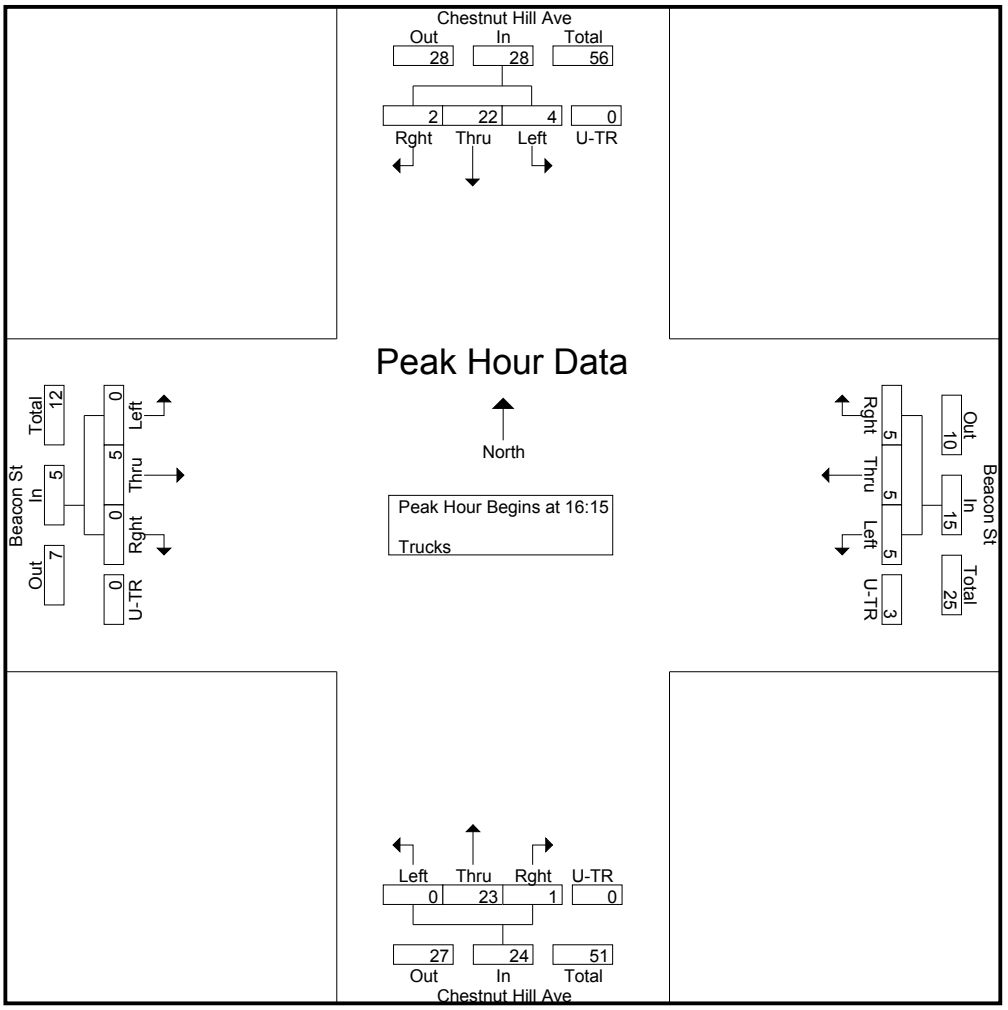
Groups Printed- Trucks

	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	0	2	0	0	2	4	2	0	1	3	0	0	1	0	0	0	15
16:15	2	5	1	0	1	3	1	0	0	6	0	0	0	2	0	0	21
16:30	1	3	1	0	2	1	2	1	0	6	1	0	0	1	0	0	19
16:45	0	6	0	0	2	1	1	1	0	6	0	0	0	2	0	0	19
Total	3	16	2	0	7	9	6	2	1	21	1	0	1	5	0	0	74
17:00	1	8	0	0	0	0	1	1	0	5	0	0	0	0	0	0	16
17:15	1	5	0	0	1	0	0	0	0	5	0	0	0	0	0	0	12
17:30	0	7	0	0	1	0	0	0	0	3	0	0	0	0	0	0	11
17:45	1	6	0	0	0	0	0	0	0	3	0	0	0	0	0	0	10
Total	3	26	0	0	2	0	1	1	0	16	0	0	0	0	0	0	49
Grand Total	6	42	2	0	9	9	7	3	1	37	1	0	1	5	0	0	123
Apprch %	12	84	4	0	32.1	32.1	25	10.7	2.6	94.9	2.6	0	16.7	83.3	0	0	
Total %	4.9	34.1	1.6	0	7.3	7.3	5.7	2.4	0.8	30.1	0.8	0	0.8	4.1	0	0	

	Chestnut Hill Ave From North					Beacon St From East					Chestnut Hill Ave From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	**2**	5	**1**	0	8	1	**3**	1	0	5	0	**6**	0	0	6	0	**2**	0	0	**2**	**21**
16:30	1	3	1	0	5	**2**	1	**2**	**1**	**6**	0	6	**1**	0	**7**	0	1	0	0	1	19
16:45	0	6	0	0	6	2	1	1	1	5	0	6	0	0	6	0	2	0	0	2	19
17:00	1	**8**	0	0	**9**	0	0	1	1	2	0	5	0	0	5	0	0	0	0	0	16
Total Volume	4	22	2	0	28	5	5	5	3	18	0	23	1	0	24	0	5	0	0	5	75
% App. Total	14.3	78.6	7.1	0		27.8	27.8	27.8	16.7		0	95.8	4.2	0		0	100	0	0		
PHF	.500	.688	.500	.000	.778	.625	.417	.625	.750	.750	.000	.958	.250	.000	.857	.000	.625	.000	.000	.625	.893

N/S Street : Chestnut Hill Avenue
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City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

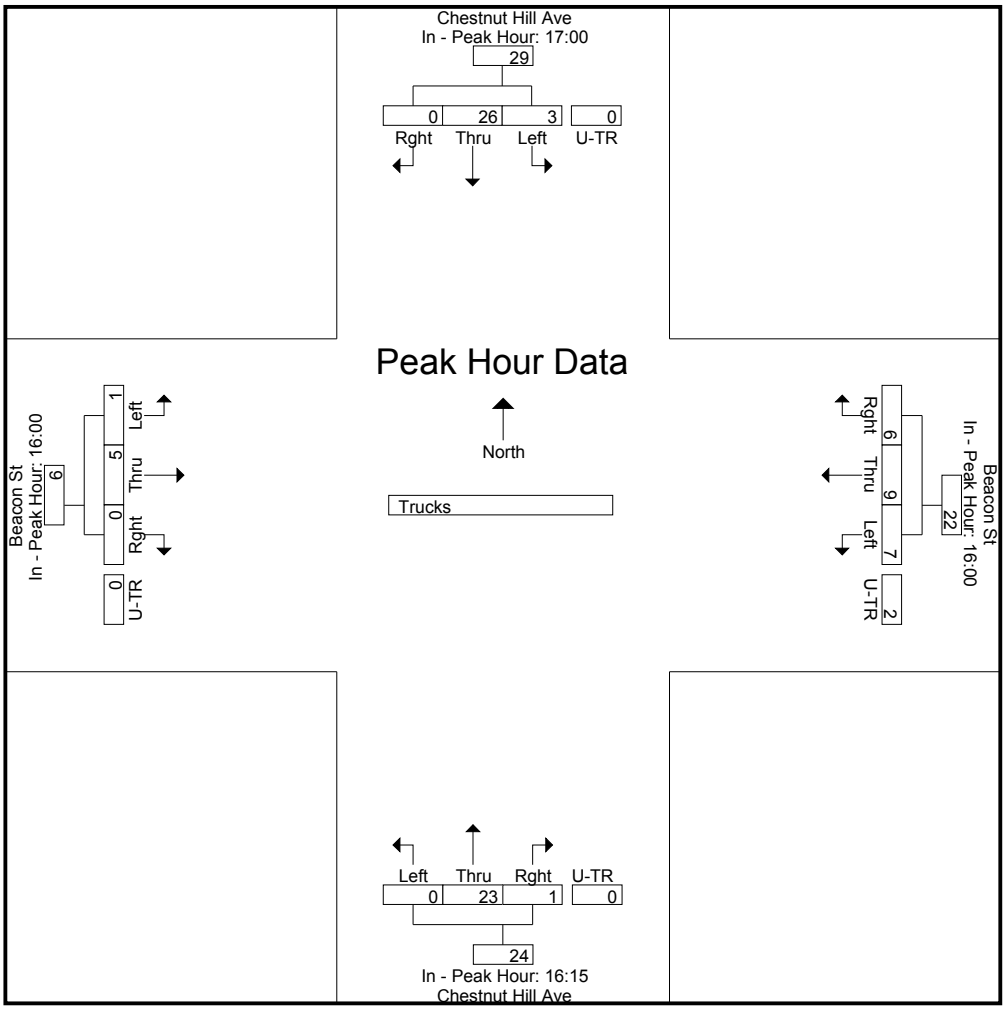
Peak Hour for Each Approach Begins at:

	17:00					16:00					16:15					16:00				
+0 mins.	**1**	**8**	0	0	**9**	**2**	**4**	**2**	0	**8**	0	**6**	0	0	6	**1**	0	0	0	1
+15 mins.	1	5	0	0	6	1	3	1	0	5	0	6	**1**	0	**7**	0	**2**	0	0	**2**
+30 mins.	0	7	0	0	7	2	1	2	**1**	6	0	6	0	0	6	0	1	0	0	1
+45 mins.	1	6	0	0	7	2	1	1	1	5	0	5	0	0	5	0	2	0	0	2
Total Volume	3	26	0	0	29	7	9	6	2	24	0	23	1	0	24	1	5	0	0	6
% App. Total	10.3	89.7	0	0		29.2	37.5	25	8.3		0	95.8	4.2	0		16.7	83.3	0	0	
PHF	.750	.813	.000	.000	.806	.875	.563	.750	.500	.750	.000	.958	.250	.000	.857	.250	.625	.000	.000	.750

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 1

Groups Printed- Bikes Peds

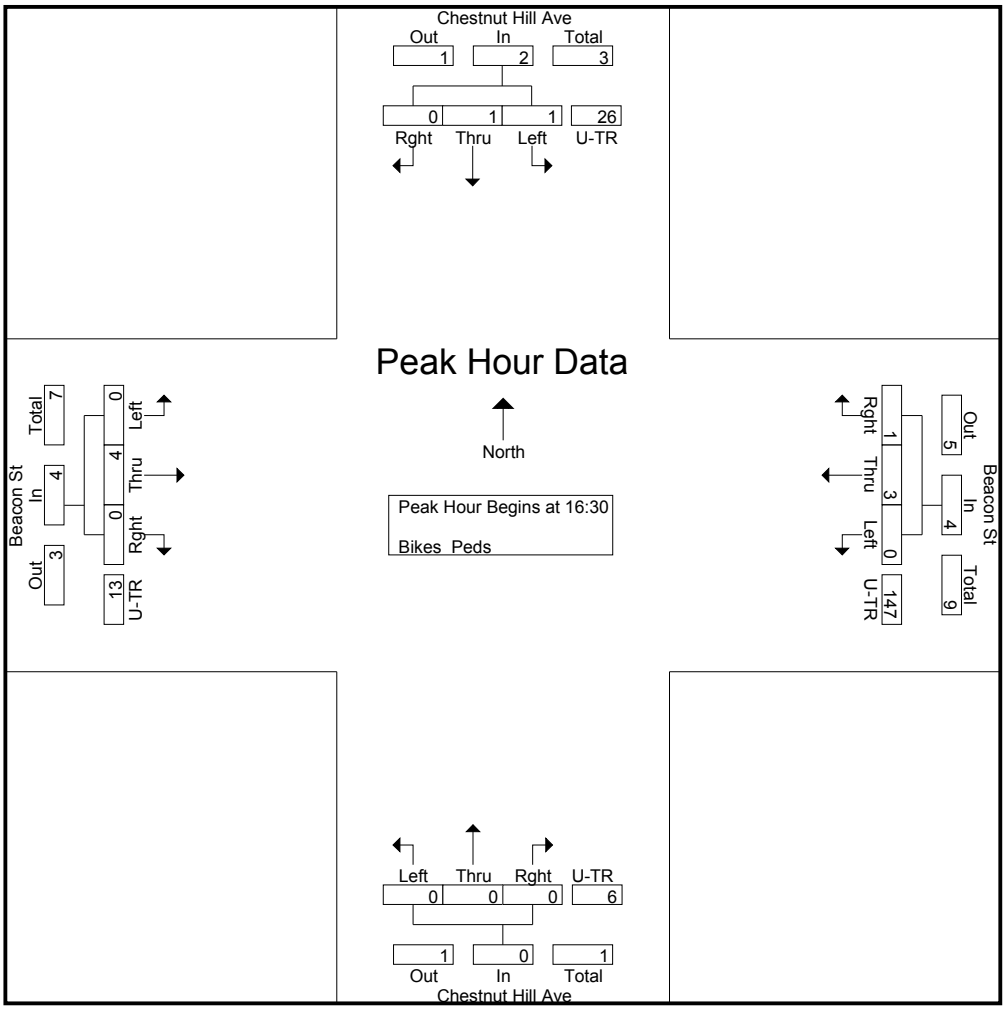
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
16:00	0	0	0	9	0	0	0	17	0	0	0	1	0	0	0	1	28
16:15	0	0	0	6	0	0	1	26	0	0	0	0	0	1	0	0	34
16:30	0	0	0	2	0	0	1	52	0	0	0	2	0	1	0	0	58
16:45	1	0	0	15	0	1	0	33	0	0	0	4	0	1	0	0	55
Total	1	0	0	32	0	1	2	128	0	0	0	7	0	3	0	1	175
17:00	0	1	0	2	0	0	0	25	0	0	0	0	0	0	0	8	36
17:15	0	0	0	7	0	2	0	37	0	0	0	0	0	2	0	5	53
17:30	0	0	0	12	0	0	0	27	0	0	0	1	0	0	0	0	40
17:45	0	0	0	7	0	2	0	43	0	1	0	2	0	0	0	0	55
Total	0	1	0	28	0	4	0	132	0	1	0	3	0	2	0	13	184
Grand Total	1	1	0	60	0	5	2	260	0	1	0	10	0	5	0	14	359
Apprch %	1.6	1.6	0	96.8	0	1.9	0.7	97.4	0	9.1	0	90.9	0	26.3	0	73.7	
Total %	0.3	0.3	0	16.7	0	1.4	0.6	72.4	0	0.3	0	2.8	0	1.4	0	3.9	

	Chestnut Hill Ave From North					Beacon St From East					Chestnut Hill Ave From South					Beacon St From West					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	0	0	2	2	0	0	**1**	**52**	**53**	0	0	0	2	2	0	1	0	0	1	**58**
16:45	**1**	0	0	**15**	**16**	0	1	0	33	34	0	0	0	**4**	**4**	0	1	0	0	1	55
17:00	0	**1**	0	2	3	0	0	0	25	25	0	0	0	0	0	0	0	0	**8**	**8**	36
17:15	0	0	0	7	7	0	**2**	0	37	39	0	0	0	0	0	0	**2**	0	5	7	53
Total Volume	1	1	0	26	28	0	3	1	147	151	0	0	0	6	6	0	4	0	13	17	202
% App. Total	3.6	3.6	0	92.9		0	2	0.7	97.4		0	0	0	100		0	23.5	0	76.5		
PHF	.250	.250	.000	.433	.438	.000	.375	.250	.707	.712	.000	.000	.000	.375	.375	.000	.500	.000	.406	.531	.871

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

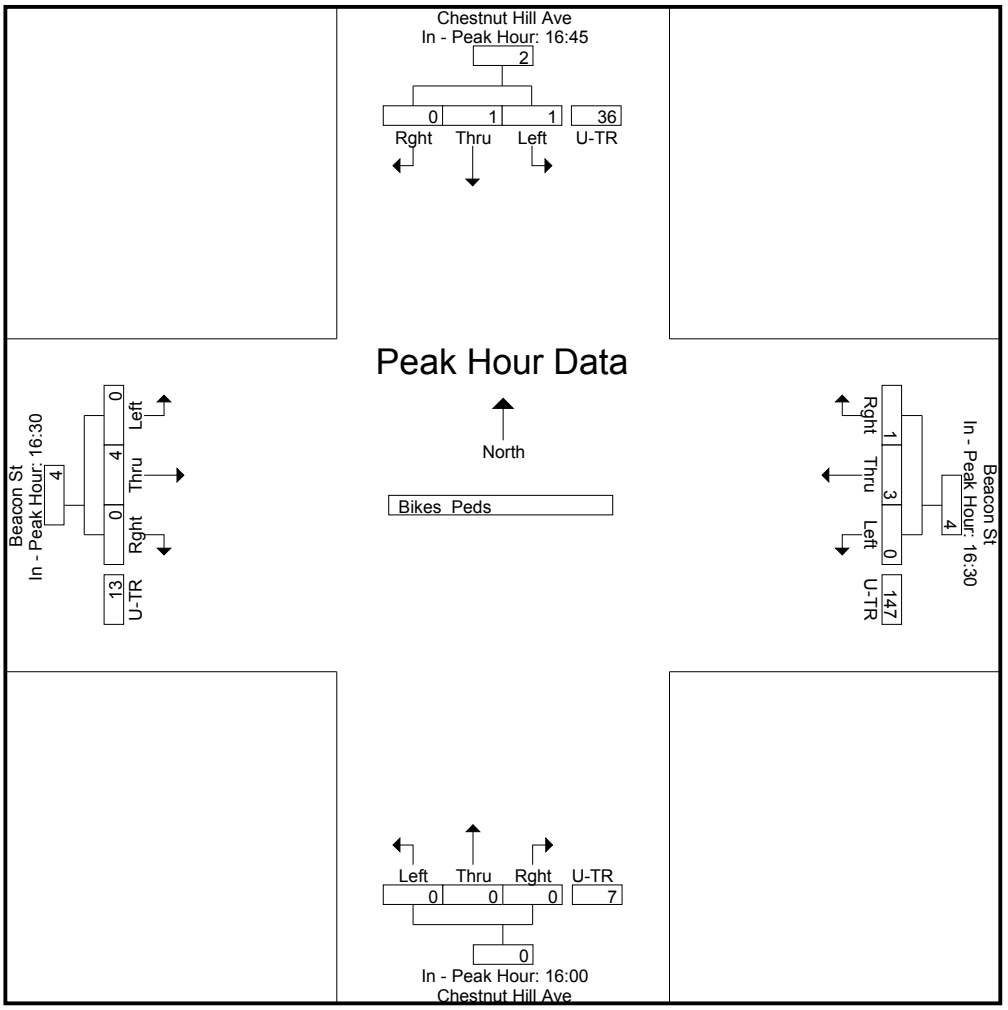
Peak Hour for Each Approach Begins at:

	16:45					16:30					16:00					16:30				
+0 mins.	**1**	0	0	**15**	**16**	0	0	**1**	**52**	**53**	0	0	0	1	1	0	1	0	0	1
+15 mins.	0	**1**	0	2	3	0	1	0	33	34	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	0	0	7	7	0	0	0	25	25	0	0	0	2	2	0	0	0	**8**	**8**
+45 mins.	0	0	0	12	12	0	**2**	0	37	39	0	0	0	**4**	**4**	0	**2**	0	5	7
Total Volume	1	1	0	36	38	0	3	1	147	151	0	0	0	7	7	0	4	0	13	17
% App. Total	2.6	2.6	0	94.7		0	2	0.7	97.4		0	0	0	100		0	23.5	0	76.5	
PHF	.250	.250	.000	.600	.594	.000	.375	.250	.707	.712	.000	.000	.000	.438	.438	.000	.500	.000	.406	.531

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900001
Site Code : 20101901
Start Date : 12/9/2010
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Driveway #2
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900002
Site Code : 20101902
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

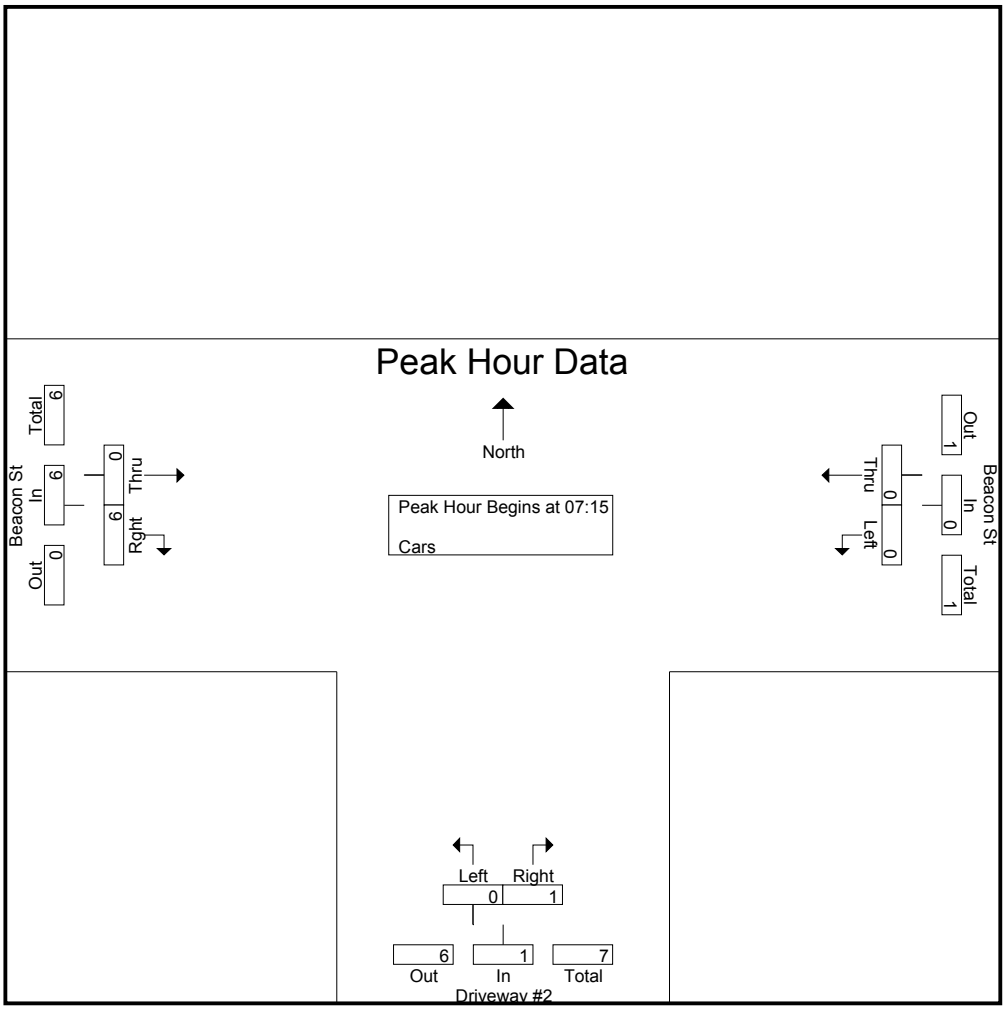
	Beacon St From East		Driveway #2 From South		Beacon St From West		
Start Time	Left	Thru	Left	Right	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	2	2
07:30	0	0	0	0	0	1	1
07:45	0	0	0	0	0	3	3
Total	0	0	0	0	0	6	6
08:00	0	0	0	1	0	0	1
08:15	0	0	0	0	0	0	0
08:30	0	0	0	0	0	1	1
08:45	0	0	0	0	0	1	1
Total	0	0	0	1	0	2	3
Grand Total	0	0	0	1	0	8	9
Apprch %	0	0	0	100	0	100	
Total %	0	0	0	11.1	0	88.9	

	Beacon St From East			Driveway #2 From South			Beacon St From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15										
07:15	0	0	0	0	0	0	0	2	2	2
07:30	0	0	0	0	0	0	0	1	1	1
07:45	0	0	0	0	0	0	0	**3**	**3**	**3**
08:00	0	0	0	0	**1**	**1**	0	0	0	1
Total Volume	0	0	0	0	1	1	0	6	6	7
% App. Total	0	0		0	100		0	100		
PHF	.000	.000	.000	.000	.250	.250	.000	.500	.500	.583

Accurate Counts
978-664-2565

N/S Street : Driveway #2
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900002
Site Code : 20101902
Start Date : 12/9/2010
Page No : 2



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

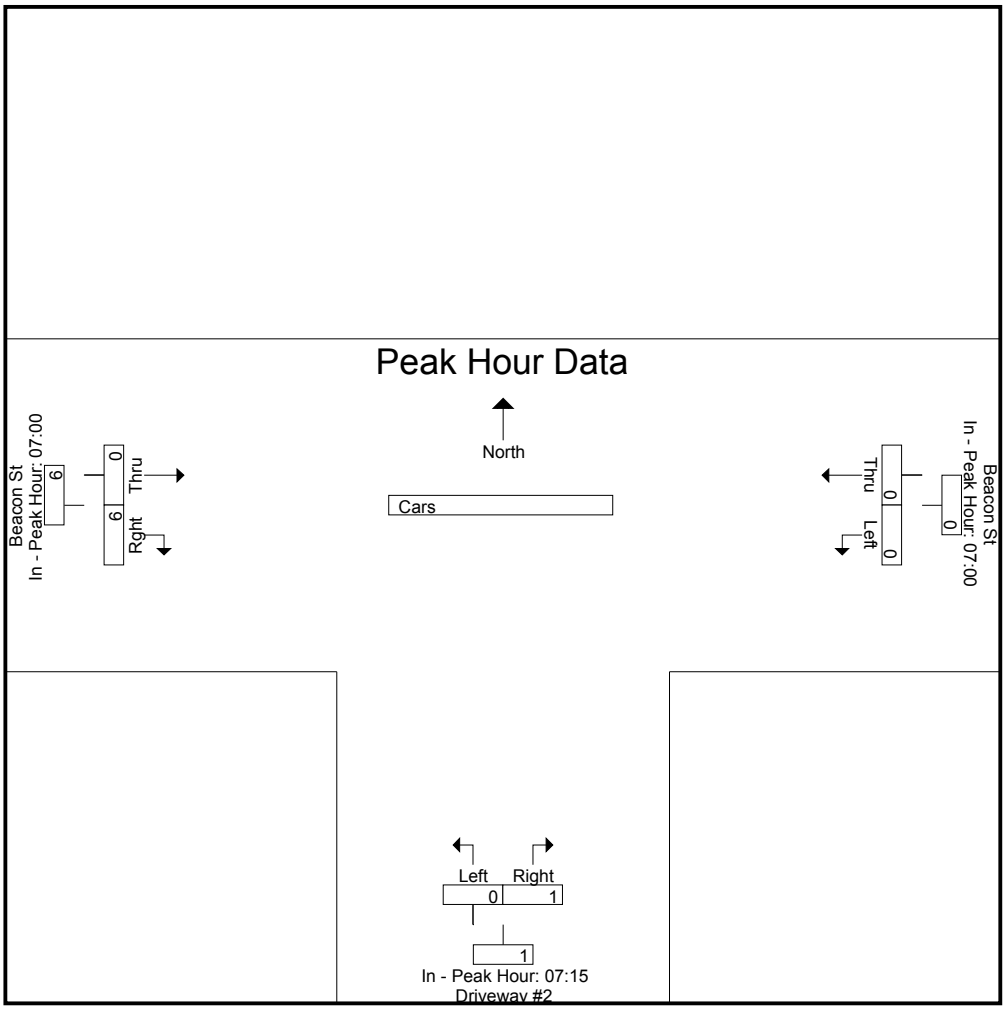
Peak Hour for Each Approach Begins at:

	07:00			07:15			07:00		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	2	2
+30 mins.	0	0	0	0	0	0	0	1	1
+45 mins.	0	0	0	0	**1**	**1**	0	**3**	**3**
Total Volume	0	0	0	0	1	1	0	6	6
% App. Total	0	0		0	100		0	100	
PHF	.000	.000	.000	.000	.250	.250	.000	.500	.500

Accurate Counts
978-664-2565

N/S Street : Driveway #2
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900002
Site Code : 20101902
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Driveway #2
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900002
Site Code : 20101902
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

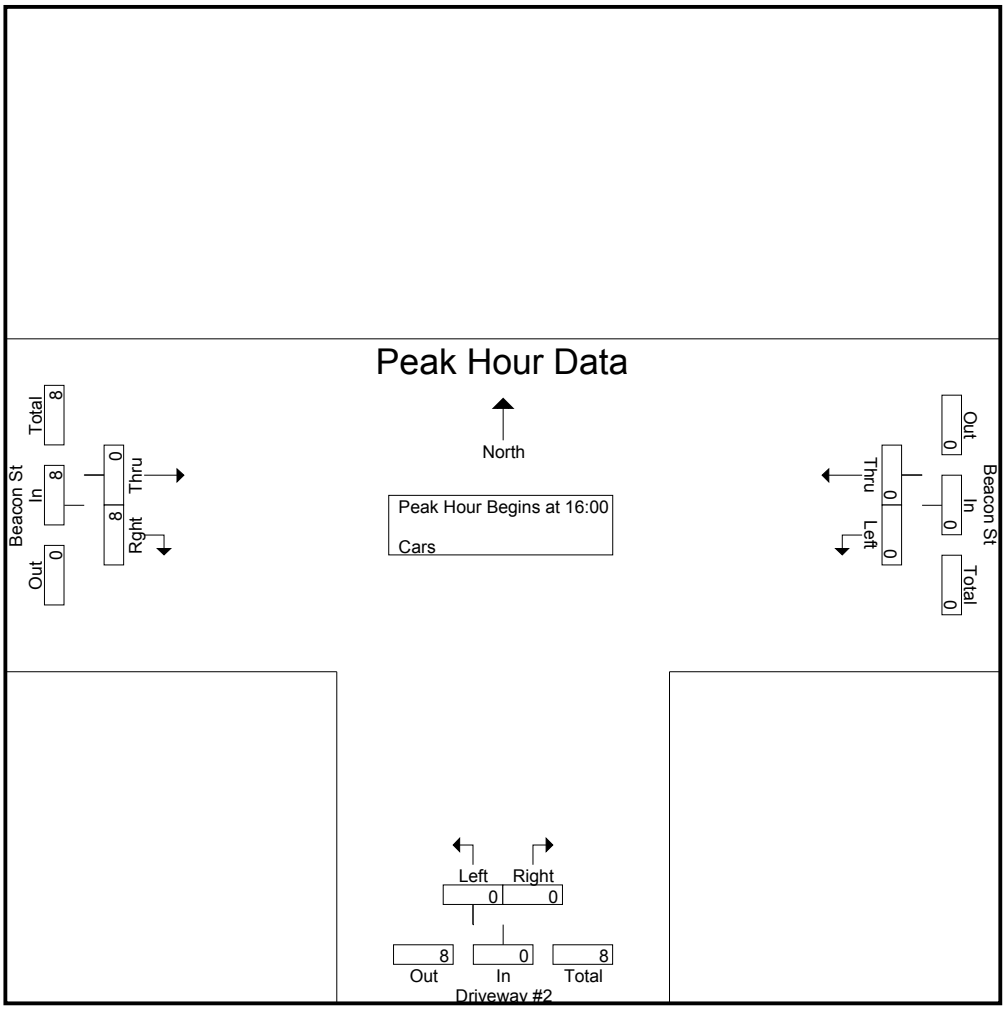
	Beacon St From East		Driveway #2 From South		Beacon St From West		
Start Time	Left	Thru	Left	Right	Thru	Rght	Int. Total
16:00	0	0	0	0	0	5	5
16:15	0	0	0	0	0	1	1
16:30	0	0	0	0	0	2	2
16:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	8	8
17:00	0	0	0	0	0	0	0
17:15	0	0	0	0	0	1	1
17:30	0	0	0	1	0	1	2
17:45	0	0	0	0	0	0	0
Total	0	0	0	1	0	2	3
Grand Total	0	0	0	1	0	10	11
Apprch %	0	0	0	100	0	100	
Total %	0	0	0	9.1	0	90.9	

	Beacon St From East			Driveway #2 From South			Beacon St From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	0	0	0	0	0	0	0	**5**	**5**	**5**
16:15	0	0	0	0	0	0	0	1	1	1
16:30	0	0	0	0	0	0	0	2	2	2
16:45	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	8	8	8
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.400	.400	.400

Accurate Counts
978-664-2565

N/S Street : Driveway #2
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900002
Site Code : 20101902
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

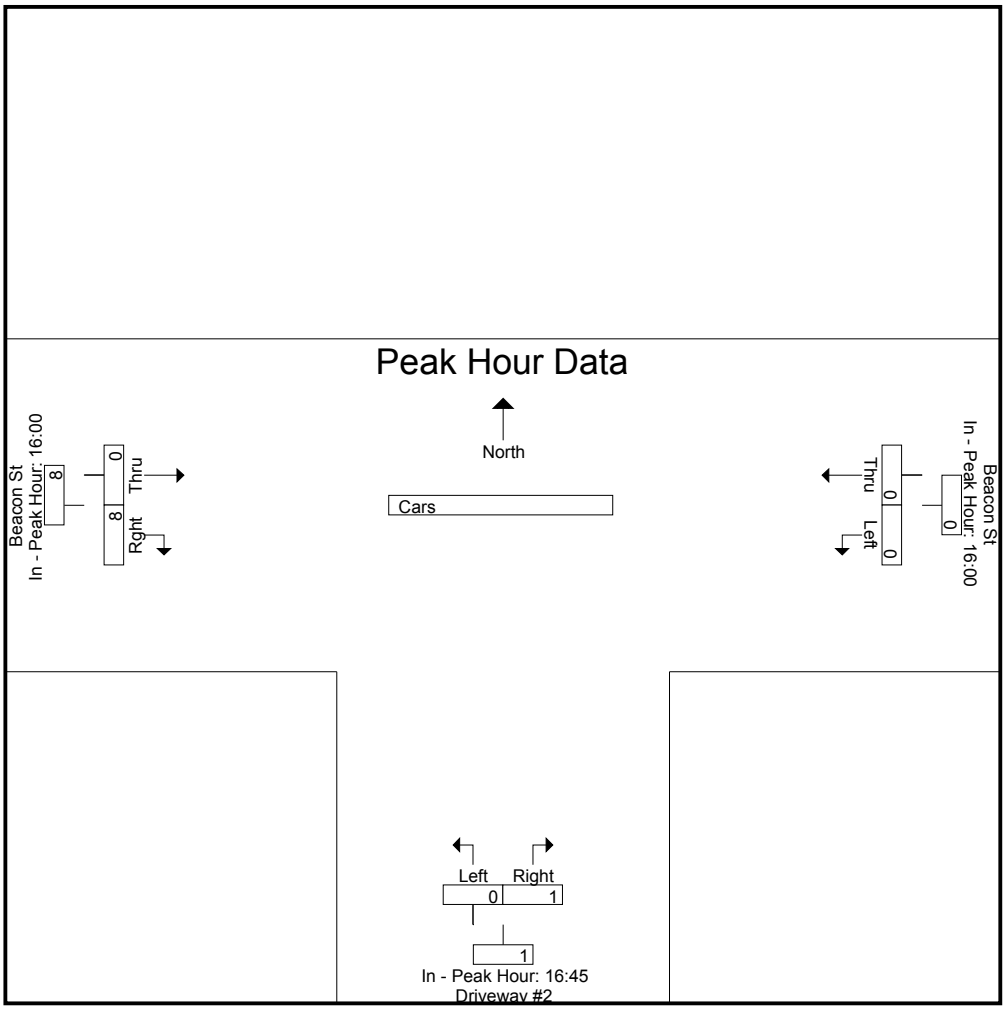
Peak Hour for Each Approach Begins at:

	16:00			16:45			16:00		
+0 mins.	0	0	0	0	0	0	0	**5**	**5**
+15 mins.	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	2	2
+45 mins.	0	0	0	0	**1**	**1**	0	0	0
Total Volume	0	0	0	0	1	1	0	8	8
% App. Total	0	0		0	100		0	100	
PHF	.000	.000	.000	.000	.250	.250	.000	.400	.400

Accurate Counts
978-664-2565

N/S Street : Driveway #2
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900002
Site Code : 20101902
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars - Trucks

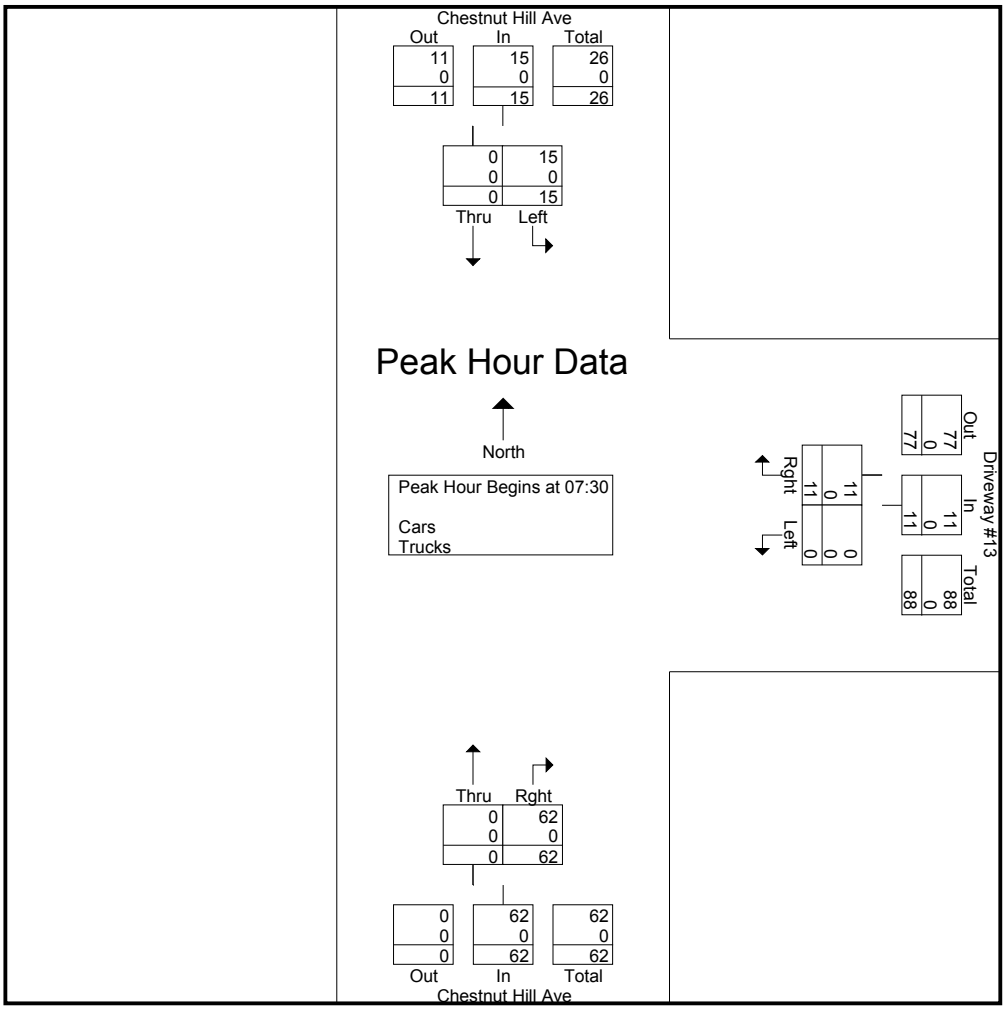
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	2	0	0	0	0	10	12
07:15	1	0	0	3	0	14	18
07:30	2	0	0	1	0	20	23
07:45	2	0	0	3	0	16	21
Total	7	0	0	7	0	60	74
08:00	4	0	0	4	0	14	22
08:15	7	0	0	3	0	12	22
08:30	2	0	0	1	0	16	19
08:45	2	0	0	2	0	16	20
Total	15	0	0	10	0	58	83
Grand Total	22	0	0	17	0	118	157
Apprch %	100	0	0	100	0	100	
Total %	14	0	0	10.8	0	75.2	
Cars	22	0	0	17	0	118	157
% Cars	100	0	0	100	0	100	100
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0

	Chestnut Hill Ave From North			Driveway #13 From East			Chestnut Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	2	0	2	0	1	1	0	**20**	**20**	**23**
07:45	2	0	2	0	3	3	0	16	16	21
08:00	4	0	4	0	**4**	**4**	0	14	14	22
08:15	**7**	0	**7**	0	3	3	0	12	12	22
Total Volume	15	0	15	0	11	11	0	62	62	88
% App. Total	100	0		0	100		0	100		
PHF	.536	.000	.536	.000	.688	.688	.000	.775	.775	.957
Cars	15	0	15	0	11	11	0	62	62	88
% Cars	100	0	100	0	100	100	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 2



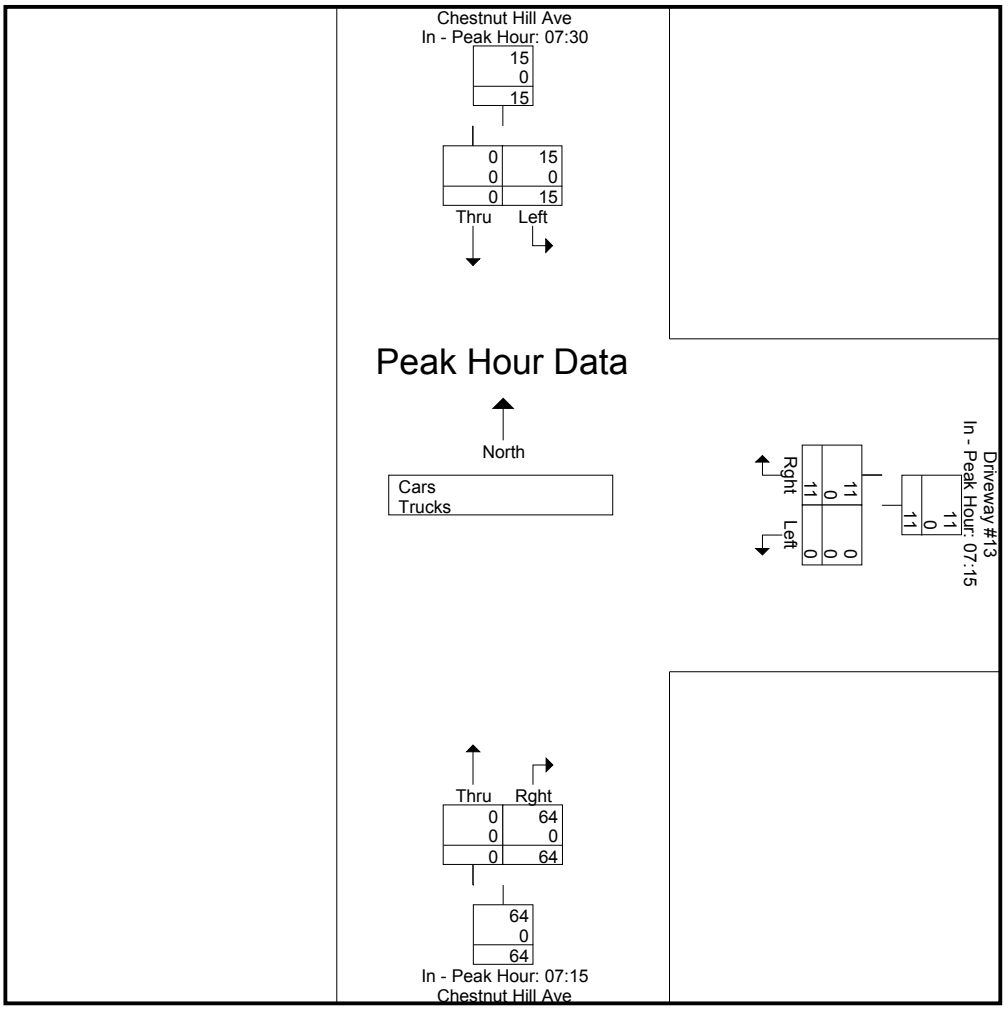
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30			07:15			07:15		
+0 mins.	2	0	2	0	3	3	0	14	14
+15 mins.	2	0	2	0	1	1	0	**20**	**20**
+30 mins.	4	0	4	0	3	3	0	16	16
+45 mins.	**7**	0	**7**	0	**4**	**4**	0	14	14
Total Volume	15	0	15	0	11	11	0	64	64
% App. Total	100	0		0	100		0	100	
PHF	.536	.000	.536	.000	.688	.688	.000	.800	.800
Cars	15	0	15	0	11	11	0	64	64
% Cars	100	0	100	0	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

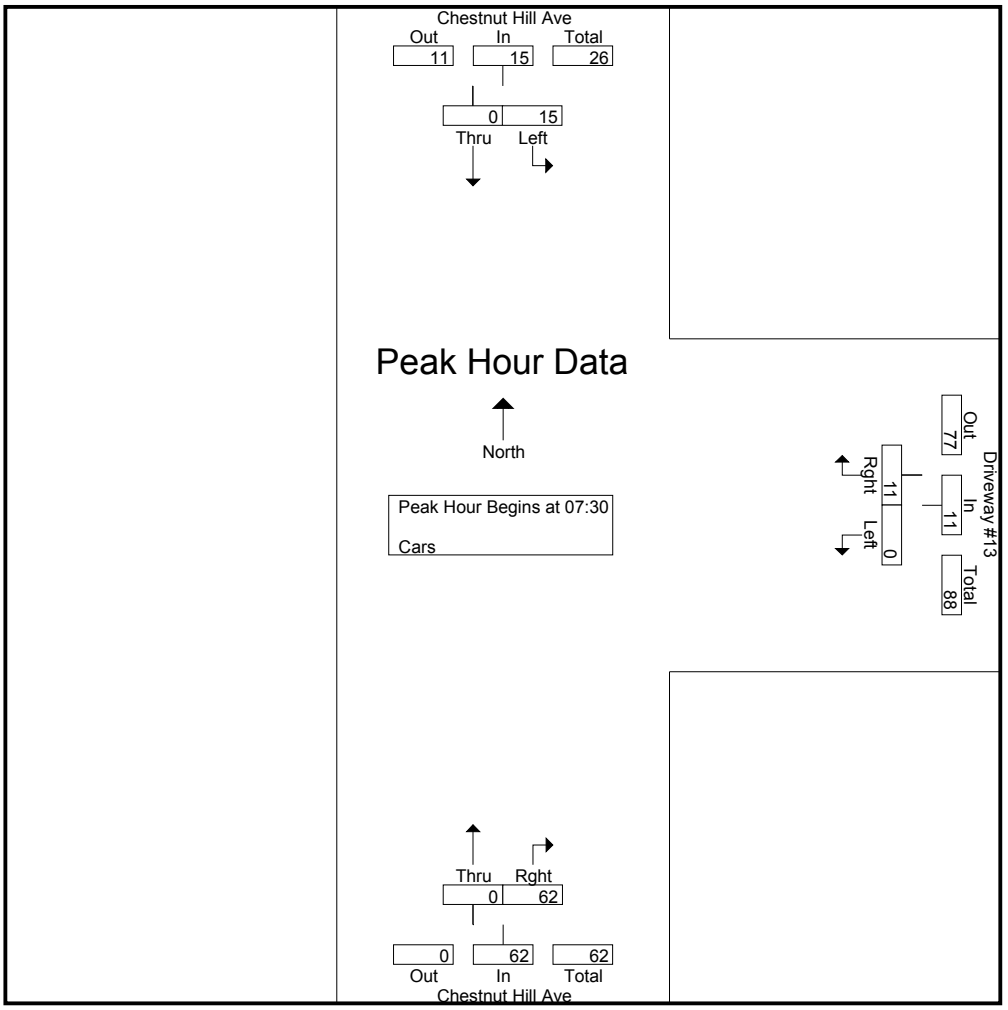
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	2	0	0	0	0	10	12
07:15	1	0	0	3	0	14	18
07:30	2	0	0	1	0	20	23
07:45	2	0	0	3	0	16	21
Total	7	0	0	7	0	60	74
08:00	4	0	0	4	0	14	22
08:15	7	0	0	3	0	12	22
08:30	2	0	0	1	0	16	19
08:45	2	0	0	2	0	16	20
Total	15	0	0	10	0	58	83
Grand Total	22	0	0	17	0	118	157
Apprch %	100	0	0	100	0	100	
Total %	14	0	0	10.8	0	75.2	

	Chestnut Hill Ave From North			Driveway #13 From East			Chestnut Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	2	0	2	0	1	1	0	**20**	**20**	**23**
07:45	2	0	2	0	3	3	0	16	16	21
08:00	4	0	4	0	**4**	**4**	0	14	14	22
08:15	**7**	0	**7**	0	3	3	0	12	12	22
Total Volume	15	0	15	0	11	11	0	62	62	88
% App. Total	100	0		0	100		0	100		
PHF	.536	.000	.536	.000	.688	.688	.000	.775	.775	.957

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 2



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

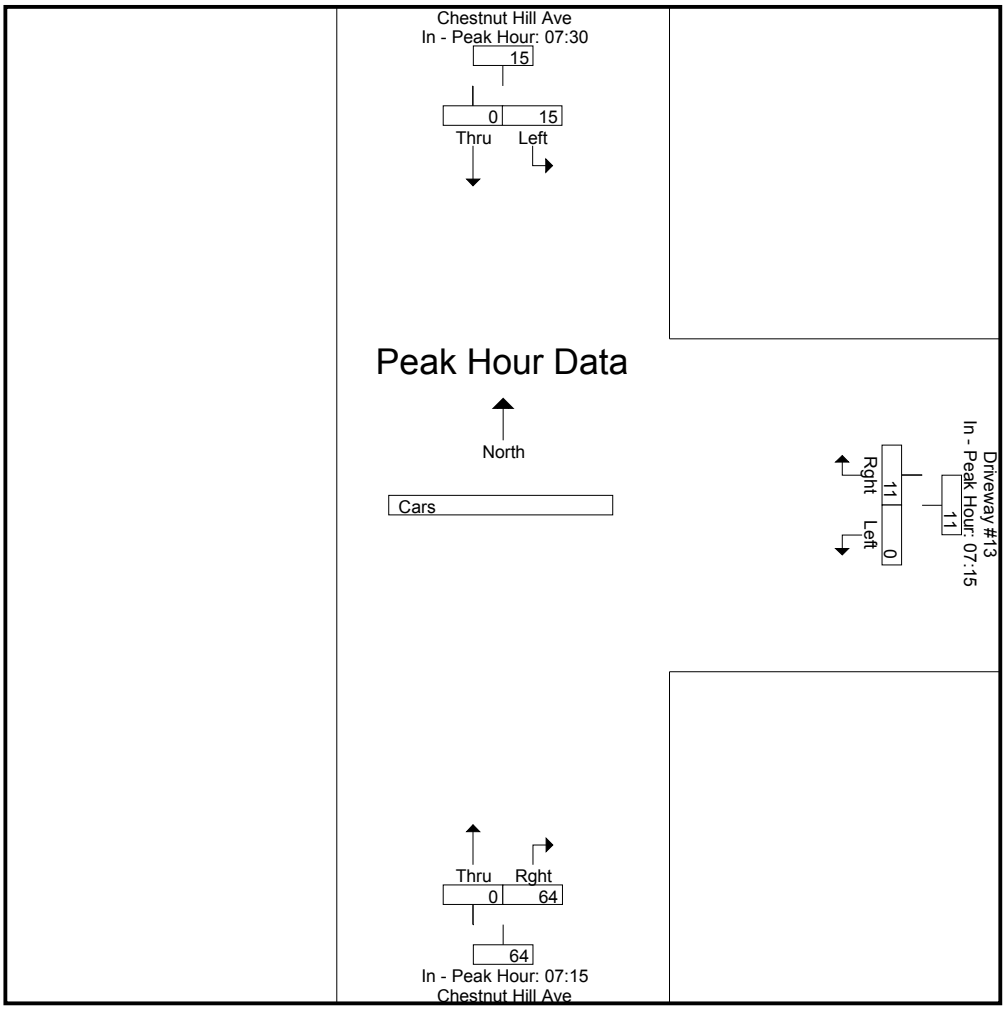
Peak Hour for Each Approach Begins at:

	07:30			07:15			07:15		
+0 mins.	2	0	2	0	3	3	0	14	14
+15 mins.	2	0	2	0	1	1	0	**20**	**20**
+30 mins.	4	0	4	0	3	3	0	16	16
+45 mins.	**7**	0	**7**	0	**4**	**4**	0	14	14
Total Volume	15	0	15	0	11	11	0	64	64
% App. Total	100	0		0	100		0	100	
PHF	.536	.000	.536	.000	.688	.688	.000	.800	.800

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 1

Groups Printed- Trucks

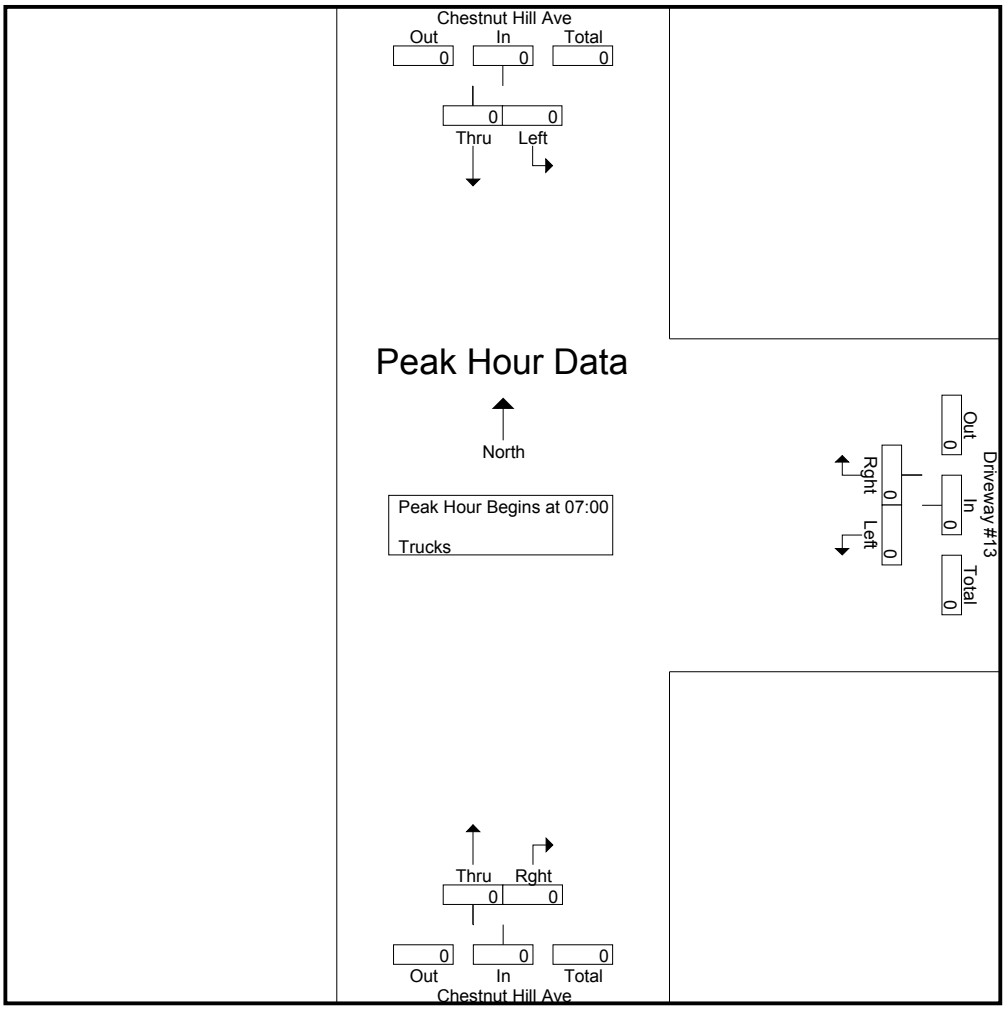
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	
Total %							

	Chestnut Hill Ave From North			Driveway #13 From East			Chestnut Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00										
07:00	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010



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

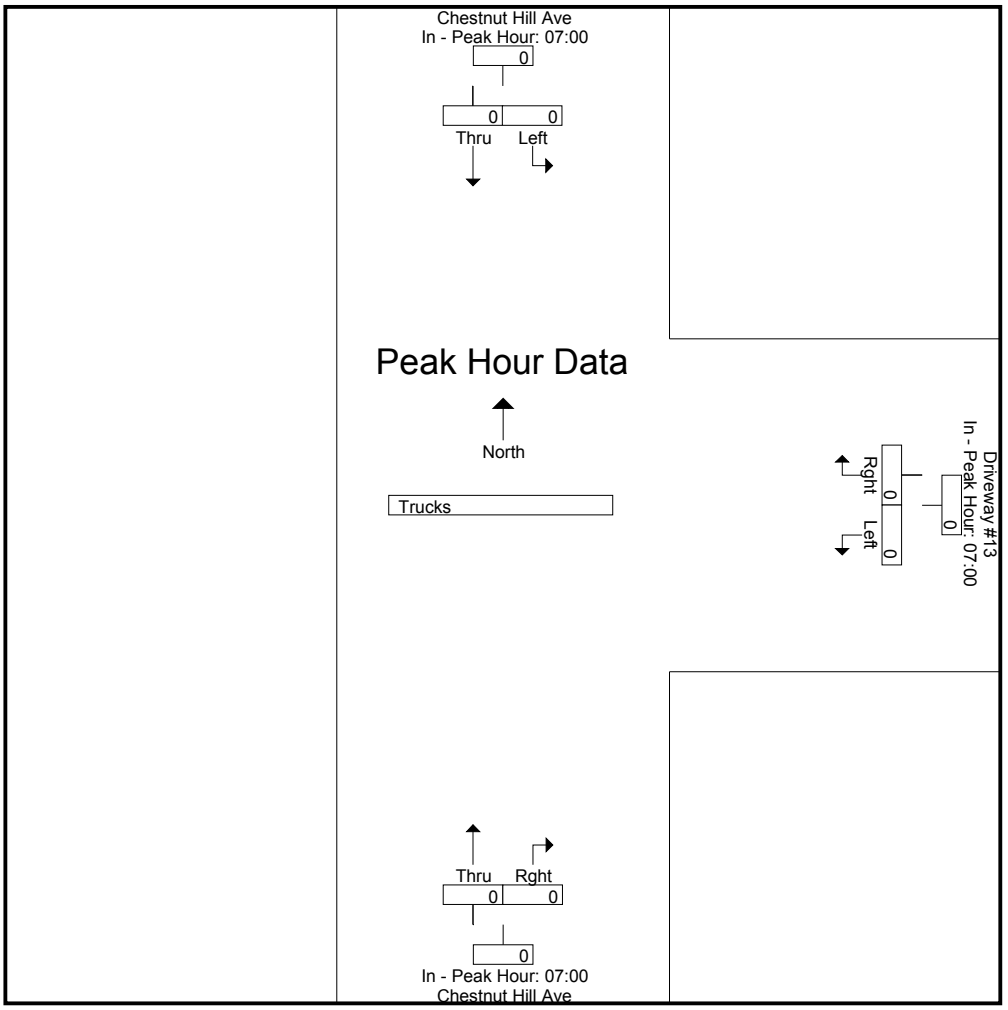
Peak Hour for Each Approach Begins at:

	07:00			07:00			07:00		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars - Trucks

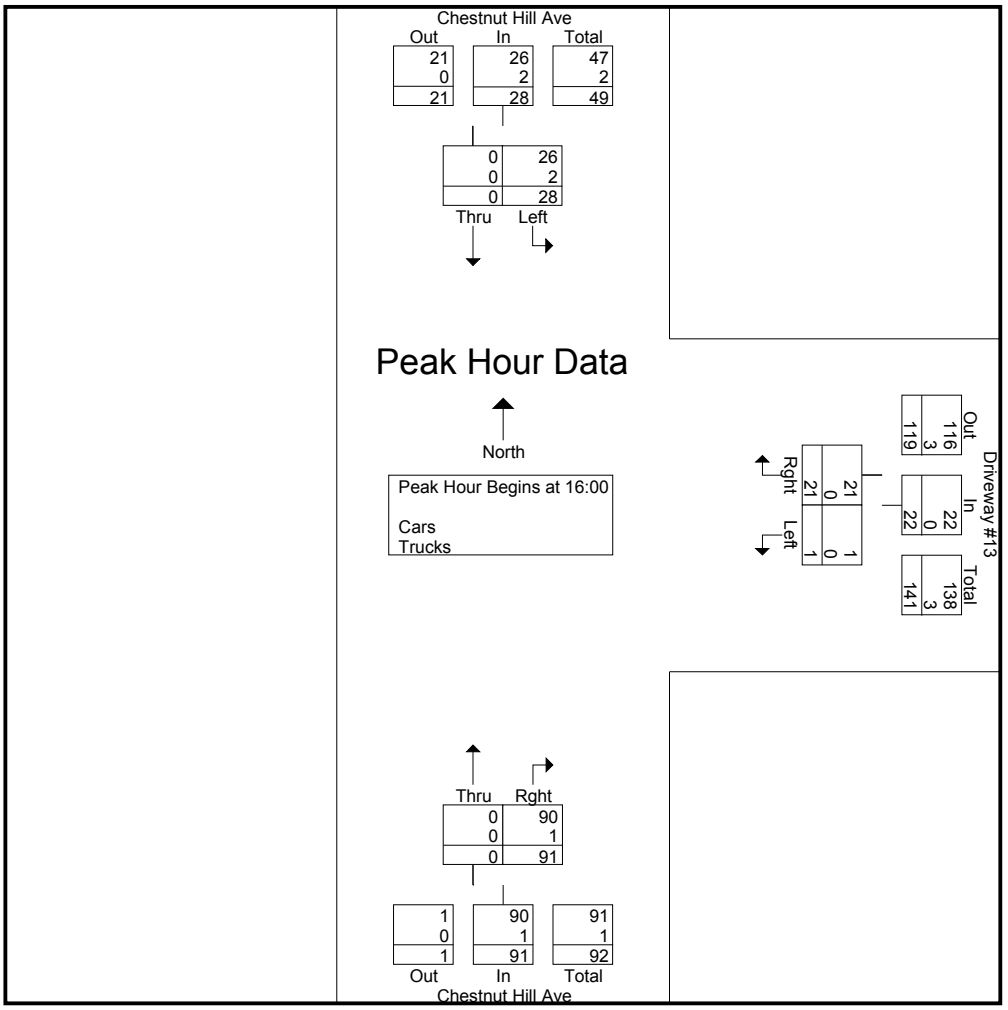
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	7	0	0	4	0	22	33
16:15	5	0	0	5	0	26	36
16:30	12	0	1	7	0	22	42
16:45	4	0	0	5	0	21	30
Total	28	0	1	21	0	91	141
17:00	2	0	0	6	0	21	29
17:15	8	0	0	8	0	22	38
17:30	5	0	0	6	0	14	25
17:45	7	0	0	13	0	26	46
Total	22	0	0	33	0	83	138
Grand Total	50	0	1	54	0	174	279
Apprch %	100	0	1.8	98.2	0	100	
Total %	17.9	0	0.4	19.4	0	62.4	
Cars	48	0	1	53	0	173	275
% Cars	96	0	100	98.1	0	99.4	98.6
Trucks	2	0	0	1	0	1	4
% Trucks	4	0	0	1.9	0	0.6	1.4

	Chestnut Hill Ave From North			Driveway #13 From East			Chestnut Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	7	0	7	0	4	4	0	22	22	33
16:15	5	0	5	0	5	5	0	**26**	**26**	36
16:30	**12**	0	**12**	**1**	**7**	**8**	0	22	22	**42**
16:45	4	0	4	0	5	5	0	21	21	30
Total Volume	28	0	28	1	21	22	0	91	91	141
% App. Total	100	0		4.5	95.5		0	100		
PHF	.583	.000	.583	.250	.750	.688	.000	.875	.875	.839
Cars	26	0	26	1	21	22	0	90	90	138
% Cars	92.9	0	92.9	100	100	100	0	98.9	98.9	97.9
Trucks	2	0	2	0	0	0	0	1	1	3
% Trucks	7.1	0	7.1	0	0	0	0	1.1	1.1	2.1

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 2



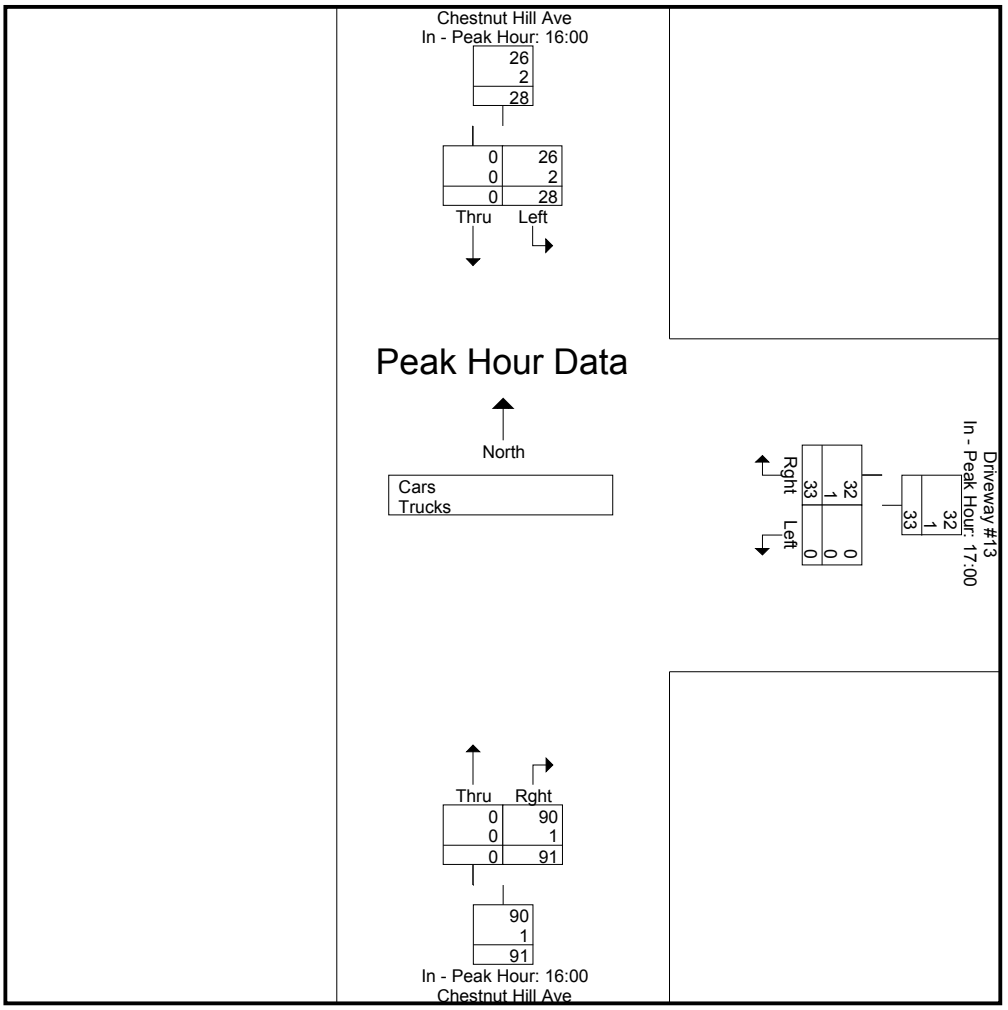
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	16:00			17:00			16:00		
+0 mins.	7	0	7	0	6	6	0	22	22
+15 mins.	5	0	5	0	8	8	0	**26**	**26**
+30 mins.	**12**	0	**12**	0	6	6	0	22	22
+45 mins.	4	0	4	0	**13**	**13**	0	21	21
Total Volume	28	0	28	0	33	33	0	91	91
% App. Total	100	0		0	100		0	100	
PHF	.583	.000	.583	.000	.635	.635	.000	.875	.875
Cars	26	0	26	0	32	32	0	90	90
% Cars	92.9	0	92.9	0	97	97	0	98.9	98.9
Trucks	2	0	2	0	1	1	0	1	1
% Trucks	7.1	0	7.1	0	3	3	0	1.1	1.1

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

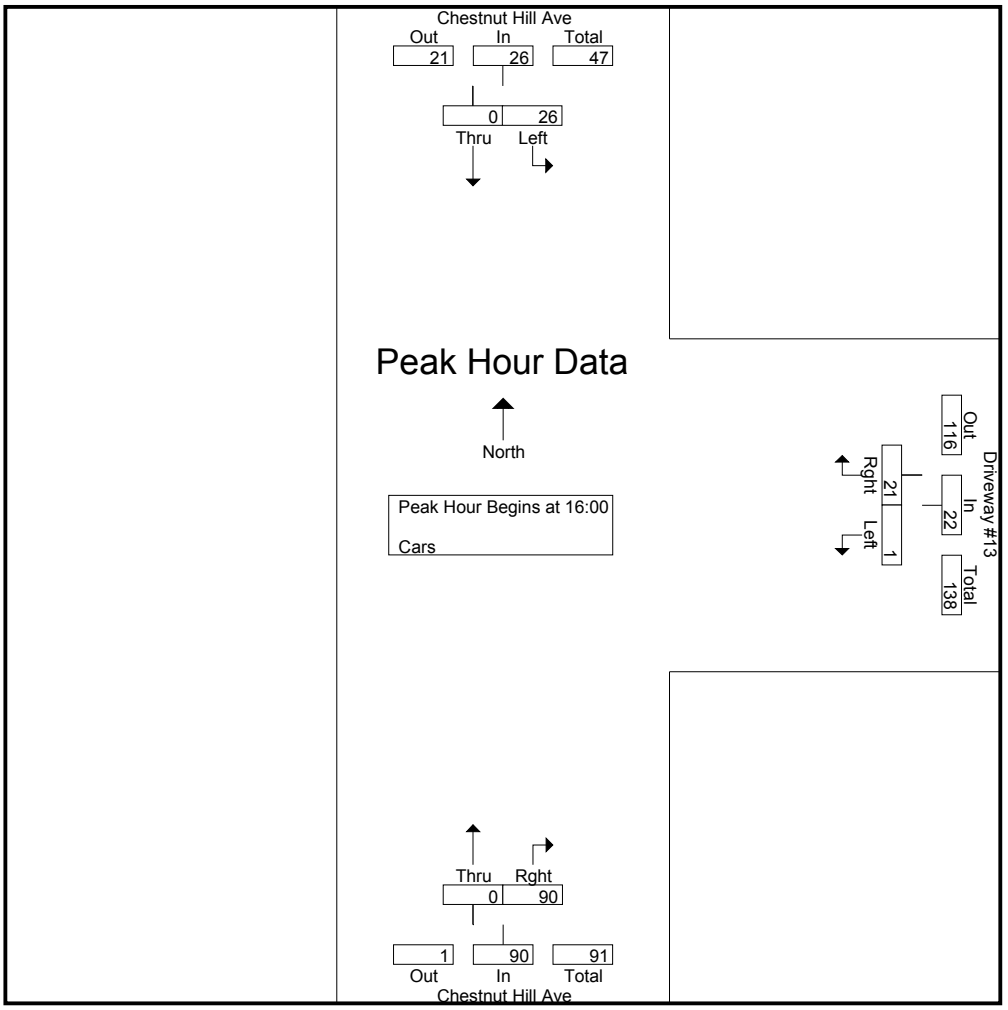
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	6	0	0	4	0	22	32
16:15	5	0	0	5	0	26	36
16:30	11	0	1	7	0	22	41
16:45	4	0	0	5	0	20	29
Total	26	0	1	21	0	90	138
17:00	2	0	0	5	0	21	28
17:15	8	0	0	8	0	22	38
17:30	5	0	0	6	0	14	25
17:45	7	0	0	13	0	26	46
Total	22	0	0	32	0	83	137
Grand Total	48	0	1	53	0	173	275
Apprch %	100	0	1.9	98.1	0	100	
Total %	17.5	0	0.4	19.3	0	62.9	

	Chestnut Hill Ave From North			Driveway #13 From East			Chestnut Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	6	0	6	0	4	4	0	22	22	32
16:15	5	0	5	0	5	5	0	**26**	**26**	36
16:30	**11**	0	**11**	**1**	**7**	**8**	0	22	22	**41**
16:45	4	0	4	0	5	5	0	20	20	29
Total Volume	26	0	26	1	21	22	0	90	90	138
% App. Total	100	0		4.5	95.5		0	100		
PHF	.591	.000	.591	.250	.750	.688	.000	.865	.865	.841

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

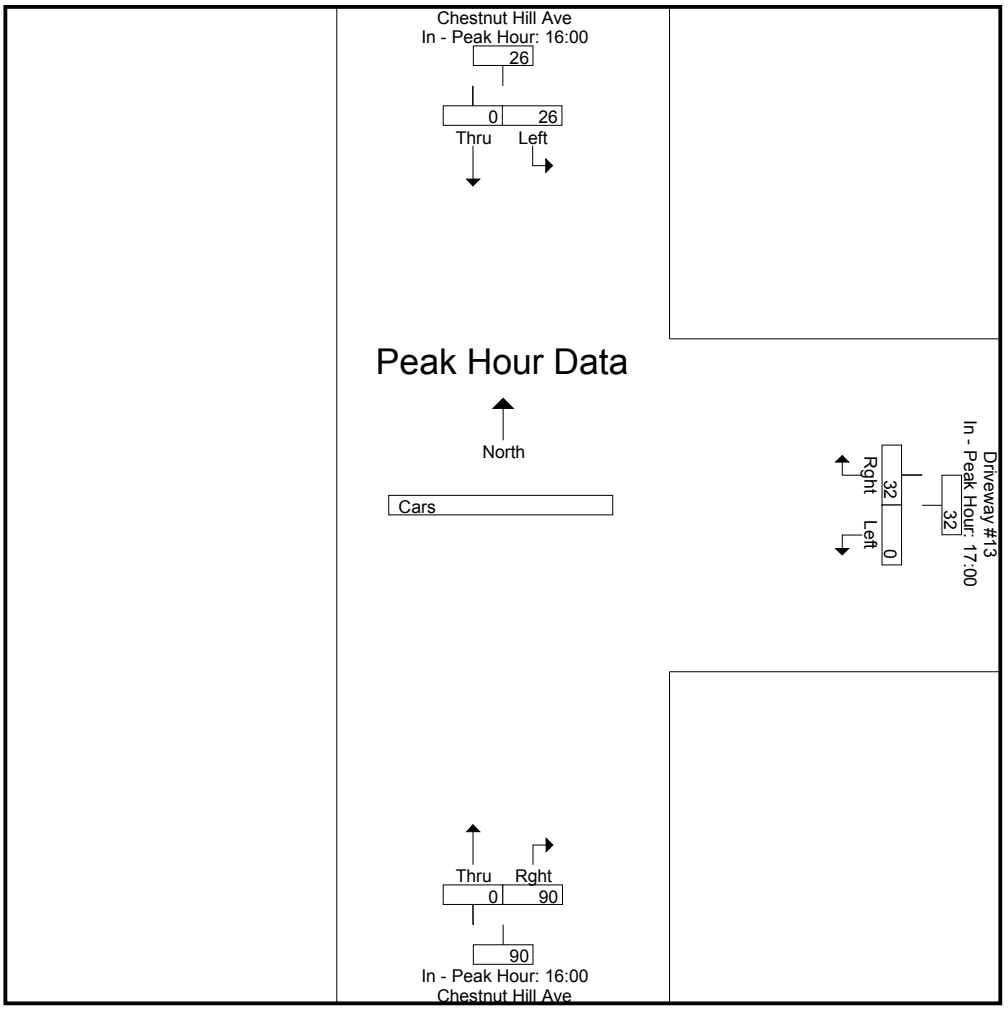
Peak Hour for Each Approach Begins at:

	16:00			17:00			16:00		
+0 mins.	6	0	6	0	5	5	0	22	22
+15 mins.	5	0	5	0	8	8	0	**26**	**26**
+30 mins.	**11**	0	**11**	0	6	6	0	22	22
+45 mins.	4	0	4	0	**13**	**13**	0	20	20
Total Volume	26	0	26	0	32	32	0	90	90
% App. Total	100	0		0	100		0	100	
PHF	.591	.000	.591	.000	.615	.615	.000	.865	.865

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 1

Groups Printed- Trucks

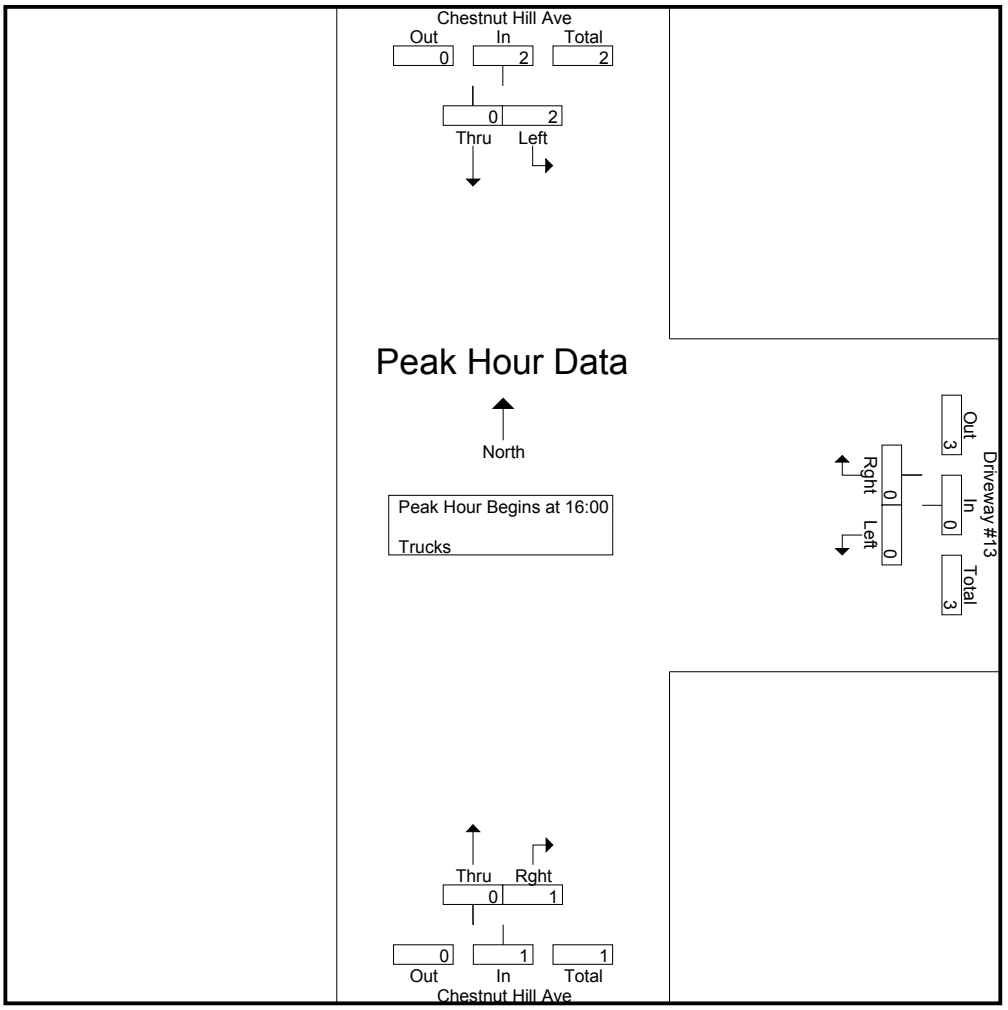
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	1	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0
16:30	1	0	0	0	0	0	1
16:45	0	0	0	0	0	1	1
Total	2	0	0	0	0	1	3
17:00	0	0	0	1	0	0	1
17:15	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1
Grand Total	2	0	0	1	0	1	4
Apprch %	100	0	0	100	0	100	
Total %	50	0	0	25	0	25	

	Chestnut Hill Ave From North			Driveway #13 From East			Chestnut Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	**1**	0	**1**	0	0	0	0	0	0	**1**
16:15	0	0	0	0	0	0	0	0	0	0
16:30	1	0	1	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	**1**	**1**	1
Total Volume	2	0	2	0	0	0	0	1	1	3
% App. Total	100	0		0	0		0	100		
PHF	.500	.000	.500	.000	.000	.000	.000	.250	.250	.750

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

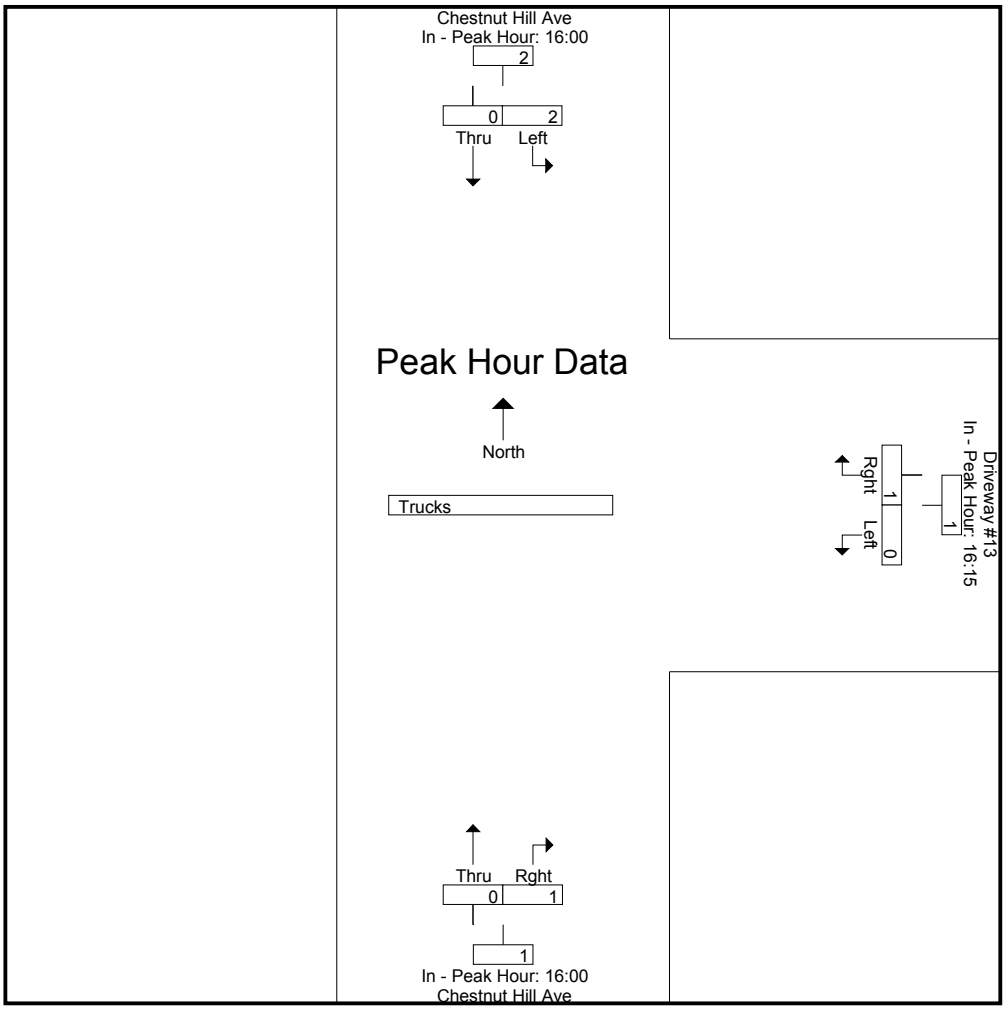
Peak Hour for Each Approach Begins at:

	16:00			16:15			16:00		
+0 mins.	**1**	0	**1**	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	1	0	1	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	**1**	0	**1**	**1**
Total Volume	2	0	2	0	1	1	0	1	1
% App. Total	100	0		0	100		0	100	
PHF	.500	.000	.500	.000	.250	.250	.000	.250	.250

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900003
Site Code : 20101903
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveway #4
City/State : Boston, MA
Weather : Clear

File Name : 01900004
Site Code : 20101904
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

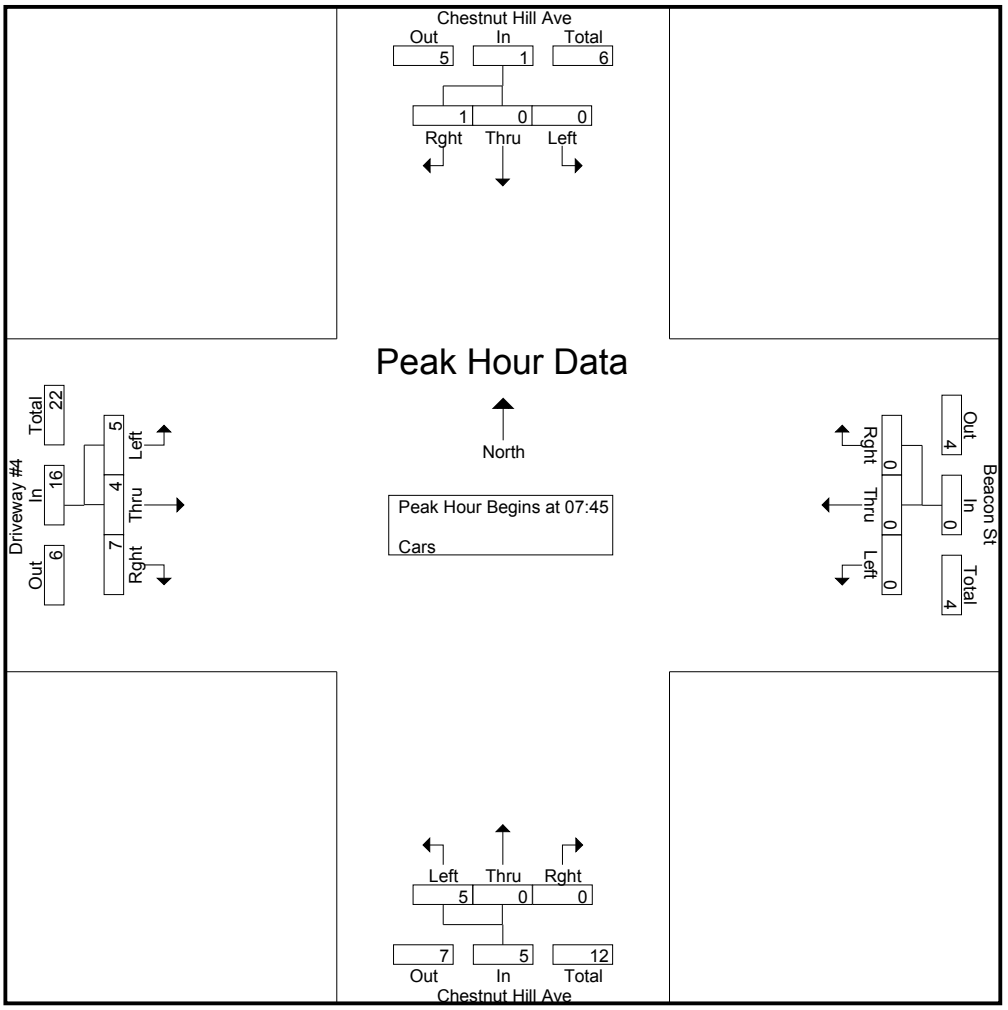
	Chestnut Hill Ave From North			Beacon St From East			Chestnut Hill Ave From South			Driveway #4 From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	1	0	0	1	2	1	5
07:45	0	0	0	0	0	0	1	0	0	1	0	3	5
Total	0	0	0	0	0	0	2	0	0	2	2	5	11
08:00	0	0	0	0	0	0	1	0	0	1	2	2	6
08:15	0	0	0	0	0	0	1	0	0	1	2	1	5
08:30	0	0	1	0	0	0	2	0	0	2	0	1	6
08:45	0	0	0	0	0	0	1	0	0	1	0	1	3
Total	0	0	1	0	0	0	5	0	0	5	4	5	20
Grand Total	0	0	1	0	0	0	7	0	0	7	6	10	31
Apprch %	0	0	100	0	0	0	100	0	0	30.4	26.1	43.5	
Total %	0	0	3.2	0	0	0	22.6	0	0	22.6	19.4	32.3	

	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Driveway #4 From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	0	0	0	0	0	0	0	1	0	0	1	1	0	**3**	4	5
08:00	0	0	0	0	0	0	0	0	1	0	0	1	1	**2**	2	**5**	**6**
08:15	0	0	0	0	0	0	0	0	1	0	0	1	1	2	1	4	5
08:30	0	0	**1**	**1**	0	0	0	0	**2**	0	0	**2**	**2**	0	1	3	6
Total Volume	0	0	1	1	0	0	0	0	5	0	0	5	5	4	7	16	22
% App. Total	0	0	100		0	0	0		100	0	0		31.2	25	43.8		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.625	.000	.000	.625	.625	.500	.583	.800	.917

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveway #4
City/State : Boston, MA
Weather : Clear

File Name : 01900004
Site Code : 20101904
Start Date : 12/9/2010
Page No : 2



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

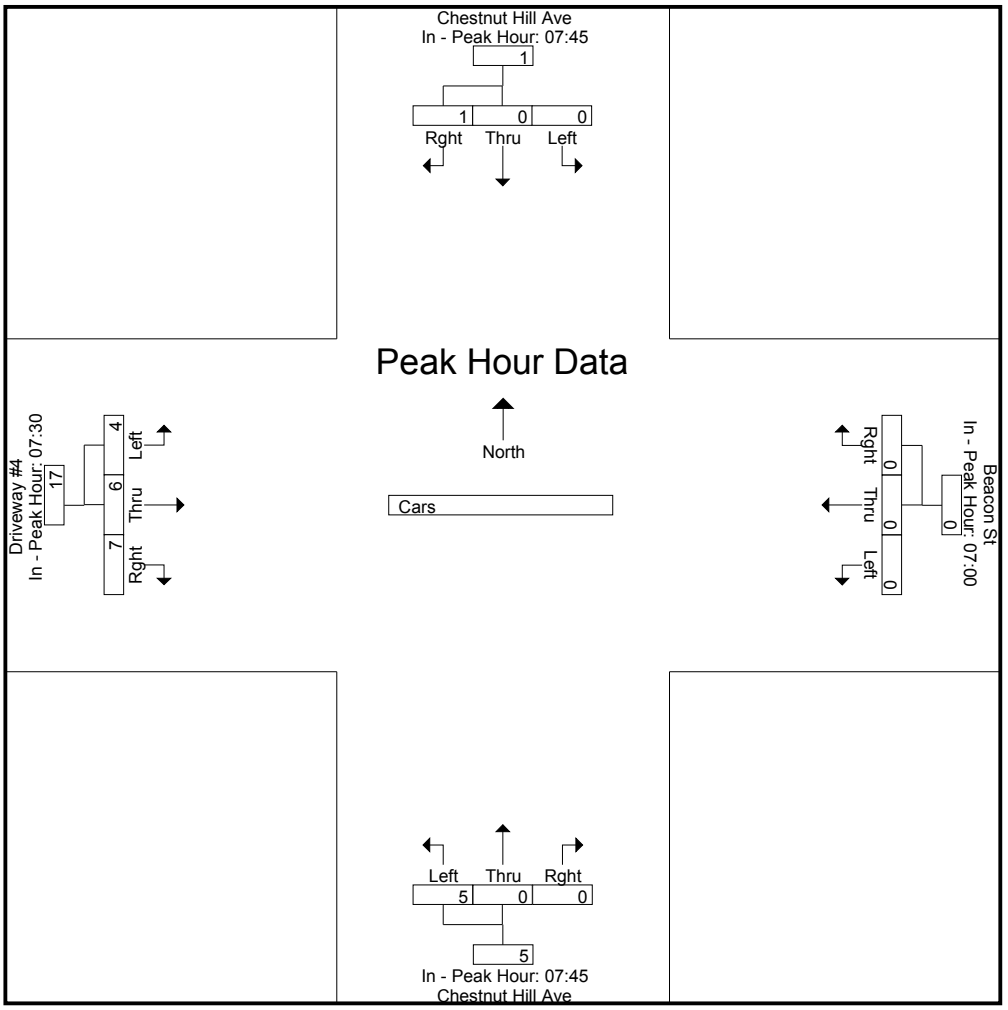
Peak Hour for Each Approach Begins at:

	07:45				07:00				07:45				07:30			
+0 mins.	0	0	0	0	0	0	0	0	1	0	0	1	**1**	**2**	1	4
+15 mins.	0	0	0	0	0	0	0	0	1	0	0	1	1	0	**3**	4
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	1	2	2	**5**
+45 mins.	0	0	**1**	**1**	0	0	0	0	**2**	0	0	**2**	1	2	1	4
Total Volume	0	0	1	1	0	0	0	0	5	0	0	5	4	6	7	17
% App. Total	0	0	100		0	0	0		100	0	0		23.5	35.3	41.2	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.625	.000	.000	.625	1.000	.750	.583	.850

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveway #4
City/State : Boston, MA
Weather : Clear

File Name : 01900004
Site Code : 20101904
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveway #4
City/State : Boston, MA
Weather : Clear

File Name : 01900004
Site Code : 20101904
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

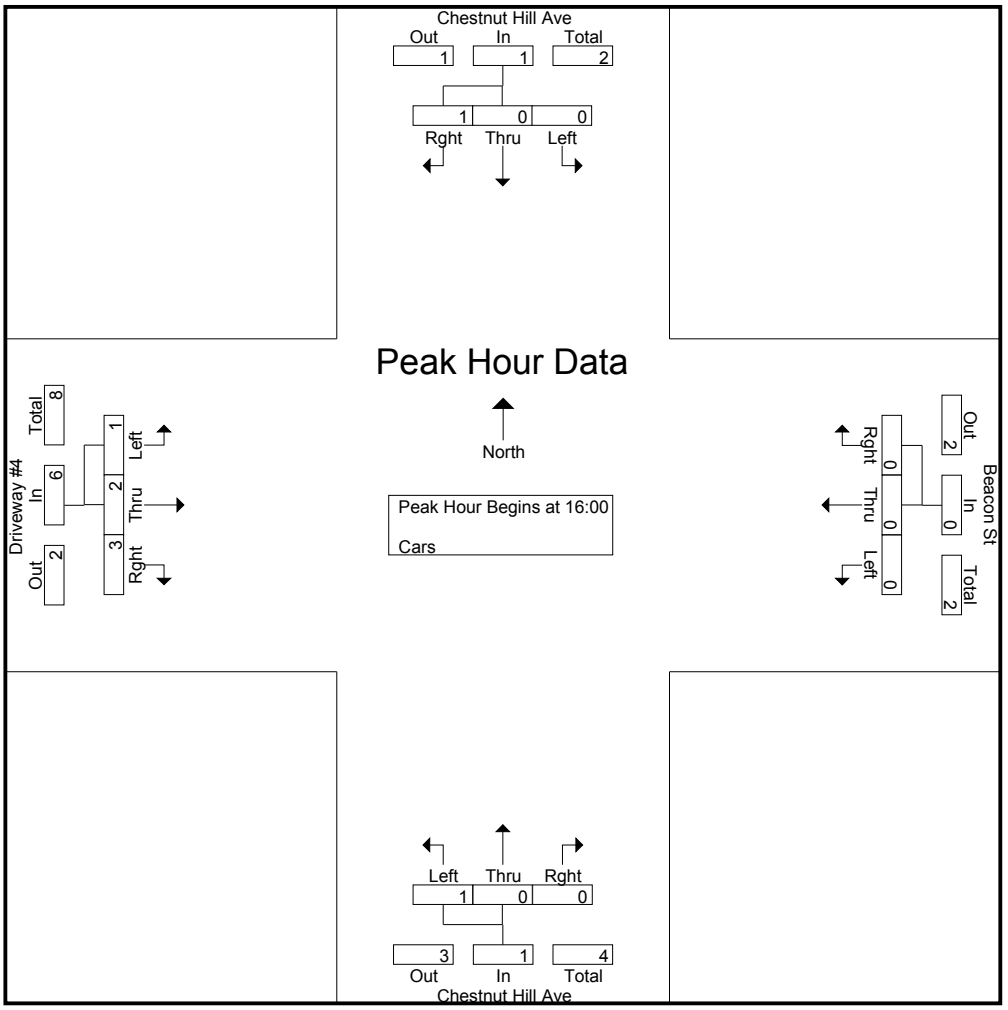
	Chestnut Hill Ave From North			Beacon St From East			Chestnut Hill Ave From South			Driveway #4 From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	0	0	0	0	0	0	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	1	2	3
16:30	0	0	0	0	0	0	1	0	0	1	1	0	3
16:45	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	1	0	0	1	2	3	8
17:00	0	0	0	0	0	0	0	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	2	2
17:30	0	0	0	0	0	0	1	0	0	1	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	1	0	0	1	1	3	6
Grand Total	0	0	1	0	0	0	2	0	0	2	3	6	14
Apprch %	0	0	100	0	0	0	100	0	0	18.2	27.3	54.5	
Total %	0	0	7.1	0	0	0	14.3	0	0	14.3	21.4	42.9	

	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Driveway #4 From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**2**	**3**	**3**
16:30	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**	1	0	2	3
16:45	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	1	0	0	0	0	1	0	0	1	1	2	3	6	8
% App. Total	0	0	100		0	0	0		100	0	0		16.7	33.3	50		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.250	.000	.000	.250	.250	.500	.375	.500	.667

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveway #4
City/State : Boston, MA
Weather : Clear

File Name : 01900004
Site Code : 20101904
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

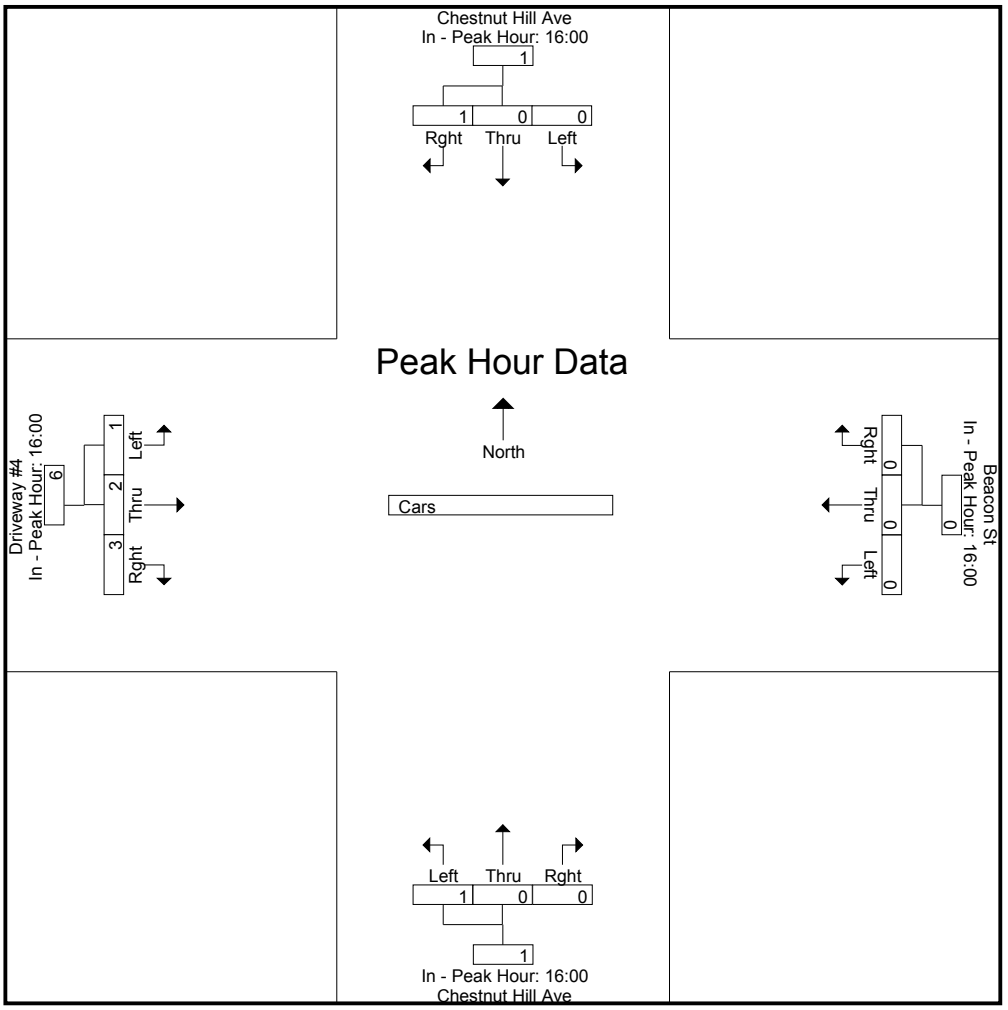
Peak Hour for Each Approach Begins at:

	16:00				16:00				16:00				16:00			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**2**	**3**
+30 mins.	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**	1	0	2
+45 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	1	0	0	1	1	2	3	6
% App. Total	0	0	100		0	0	0		100	0	0		16.7	33.3	50	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.250	.000	.000	.250	.250	.500	.375	.500

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveway #4
City/State : Boston, MA
Weather : Clear

File Name : 01900004
Site Code : 20101904
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

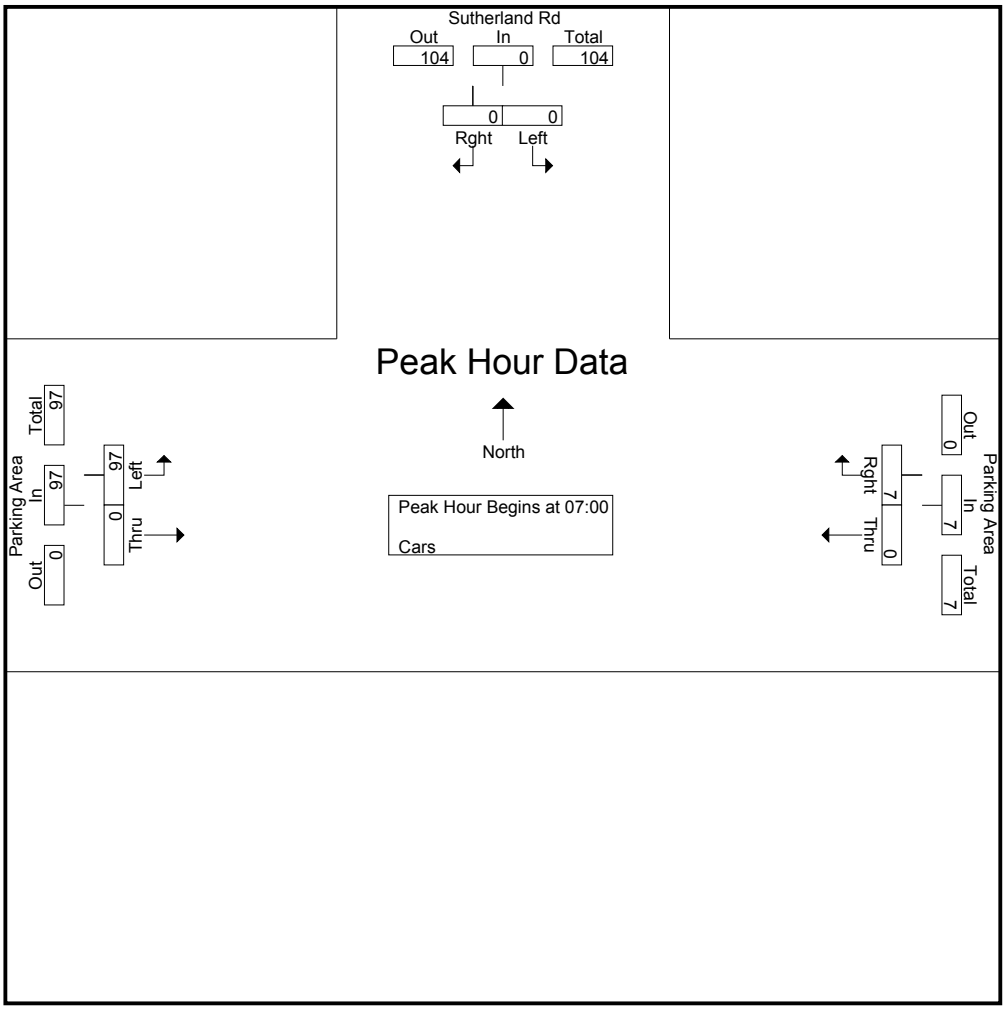
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
07:00	0	0	0	2	21	0	23
07:15	0	0	0	3	24	0	27
07:30	0	0	0	0	23	0	23
07:45	0	0	0	2	29	0	31
Total	0	0	0	7	97	0	104
08:00	0	0	0	1	22	0	23
08:15	0	0	0	1	24	0	25
08:30	0	0	0	1	24	0	25
08:45	0	0	0	0	26	0	26
Total	0	0	0	3	96	0	99
Grand Total	0	0	0	10	193	0	203
Apprch %	0	0	0	100	100	0	
Total %	0	0	0	4.9	95.1	0	

	Sutherland Rd From North			Parking Area From East			Parking Area From West			
Start Time	Left	Rght	App. Total	Thru	Rght	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00										
07:00	0	0	0	0	2	2	21	0	21	23
07:15	0	0	0	0	**3**	**3**	24	0	24	27
07:30	0	0	0	0	0	0	23	0	23	23
07:45	0	0	0	0	2	2	**29**	0	**29**	**31**
Total Volume	0	0	0	0	7	7	97	0	97	104
% App. Total	0	0		0	100		100	0		
PHF	.000	.000	.000	.000	.583	.583	.836	.000	.836	.839

Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 2



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

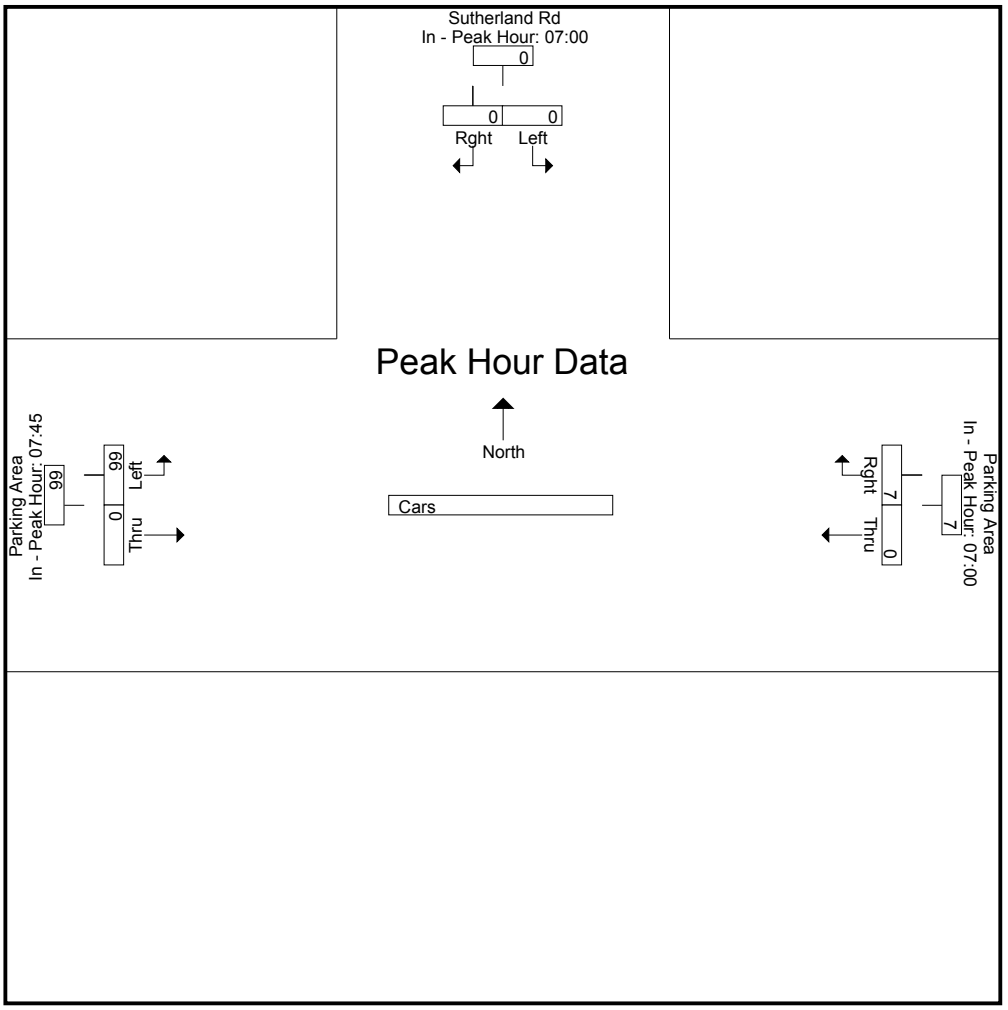
Peak Hour for Each Approach Begins at:

	07:00			07:00			07:45		
+0 mins.	0	0	0	0	2	2	**29**	0	**29**
+15 mins.	0	0	0	0	**3**	**3**	22	0	22
+30 mins.	0	0	0	0	0	0	24	0	24
+45 mins.	0	0	0	0	2	2	24	0	24
Total Volume	0	0	0	0	7	7	99	0	99
% App. Total	0	0		0	100		100	0	
PHF	.000	.000	.000	.000	.583	.583	.853	.000	.853

Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars - Trucks

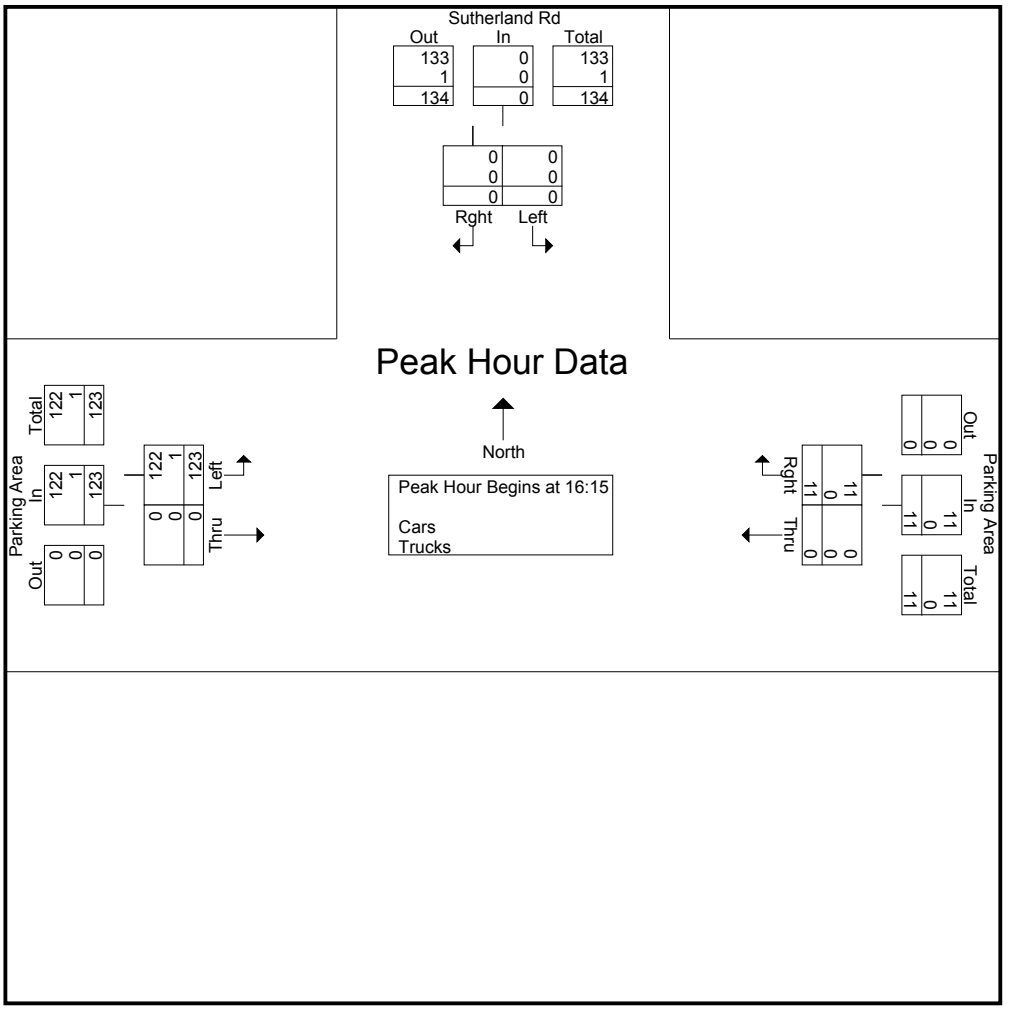
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	0	0	3	25	0	28
16:15	0	0	0	4	27	0	31
16:30	0	0	0	1	34	0	35
16:45	0	0	0	3	36	0	39
Total	0	0	0	11	122	0	133
17:00	0	0	0	3	26	0	29
17:15	0	0	0	3	26	0	29
17:30	0	0	0	1	33	0	34
17:45	0	0	0	3	31	0	34
Total	0	0	0	10	116	0	126
Grand Total	0	0	0	21	238	0	259
Apprch %	0	0	0	100	100	0	
Total %	0	0	0	8.1	91.9	0	
Cars	0	0	0	21	237	0	258
% Cars	0	0	0	100	99.6	0	99.6
Trucks	0	0	0	0	1	0	1
% Trucks	0	0	0	0	0.4	0	0.4

	Sutherland Rd From North			Parking Area From East			Parking Area From West			
Start Time	Left	Rght	App. Total	Thru	Rght	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:15										
16:15	0	0	0	0	**4**	**4**	27	0	27	31
16:30	0	0	0	0	1	1	34	0	34	35
16:45	0	0	0	0	3	3	**36**	0	**36**	**39**
17:00	0	0	0	0	3	3	26	0	26	29
Total Volume	0	0	0	0	11	11	123	0	123	134
% App. Total	0	0		0	100		100	0		
PHF	.000	.000	.000	.000	.688	.688	.854	.000	.854	.859
Cars	0	0	0	0	11	11	122	0	122	133
% Cars	0	0	0	0	100	100	99.2	0	99.2	99.3
Trucks	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	0.8	0	0.8	0.7

Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

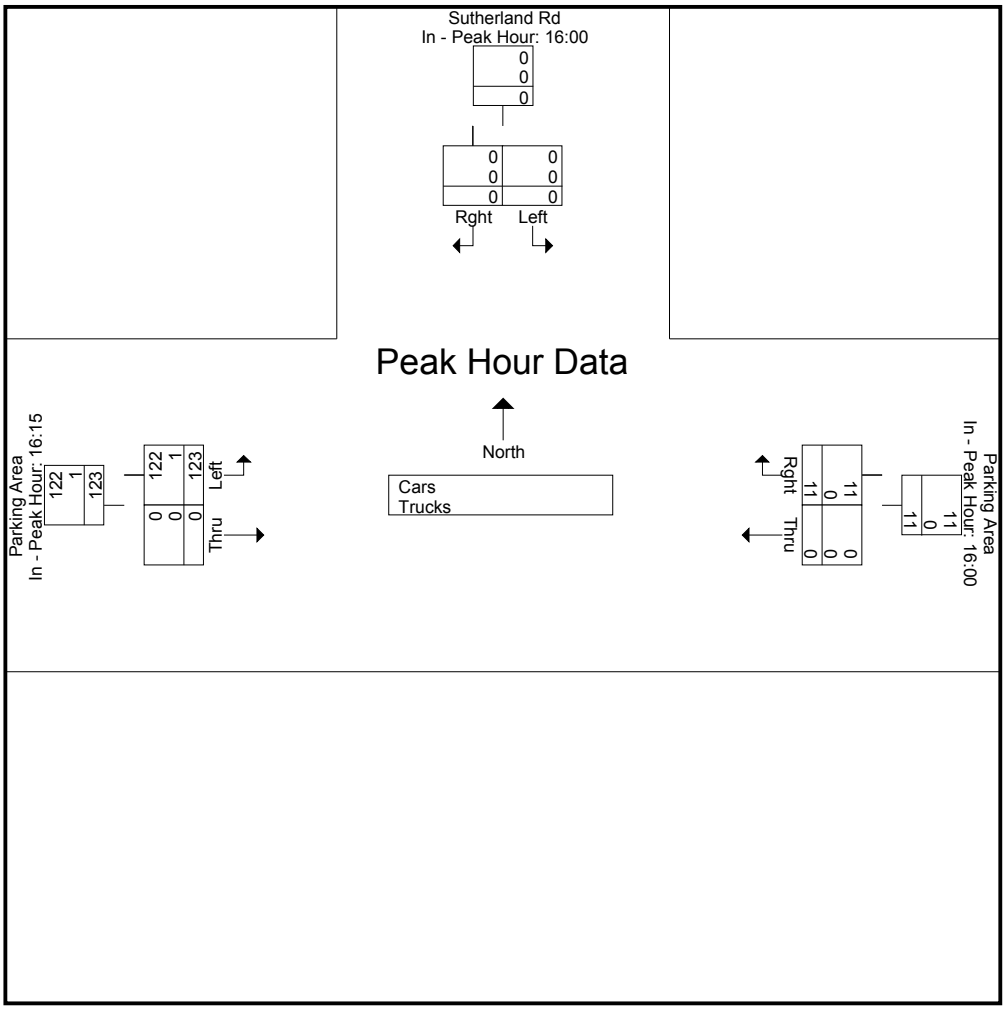
Peak Hour for Each Approach Begins at:

	16:00			16:00			16:15		
+0 mins.	0	0	0	0	3	3	27	0	27
+15 mins.	0	0	0	0	**4**	**4**	34	0	34
+30 mins.	0	0	0	0	1	1	**36**	0	**36**
+45 mins.	0	0	0	0	3	3	26	0	26
Total Volume	0	0	0	0	11	11	123	0	123
% App. Total	0	0		0	100		100	0	
PHF	.000	.000	.000	.000	.688	.688	.854	.000	.854
Cars	0	0	0	0	11	11	122	0	122
% Cars	0	0	0	0	100	100	99.2	0	99.2
Trucks	0	0	0	0	0	0	1	0	1
% Trucks	0	0	0	0	0	0	0.8	0	0.8

Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

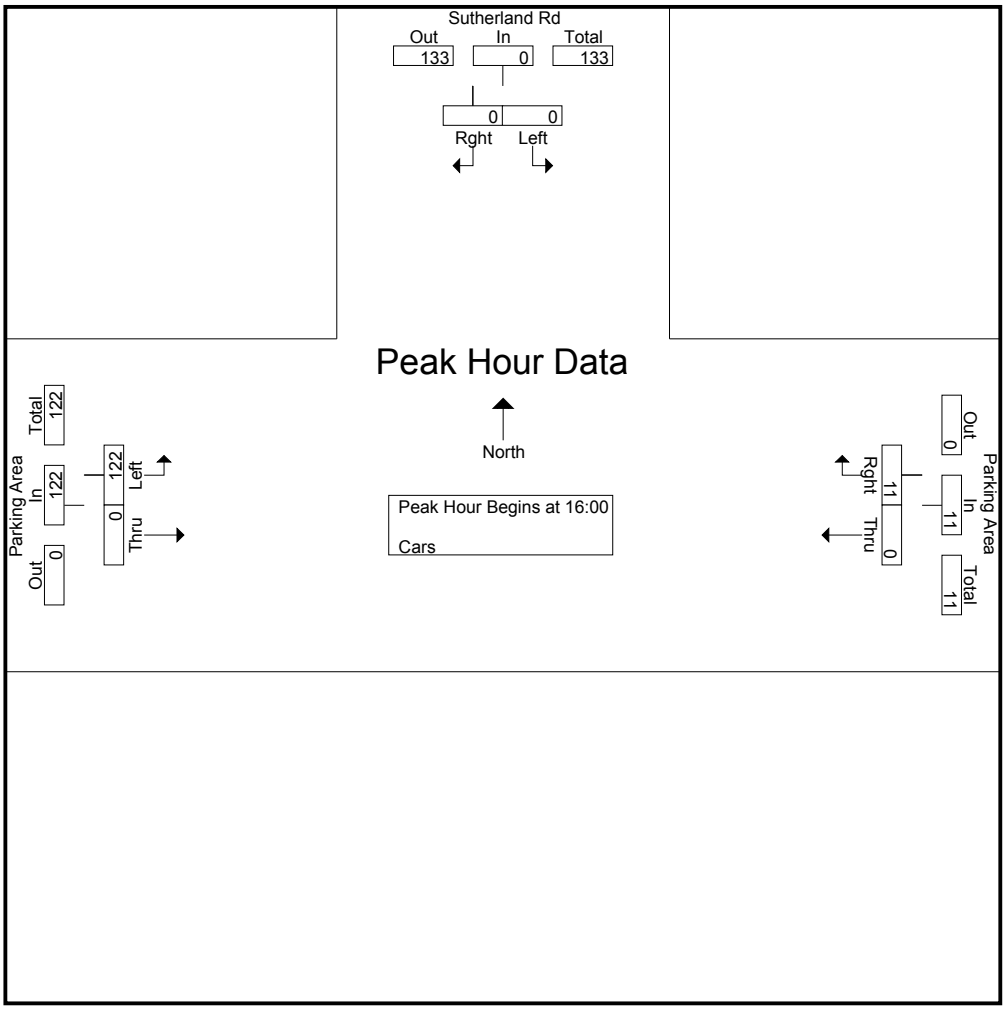
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	0	0	3	25	0	28
16:15	0	0	0	4	27	0	31
16:30	0	0	0	1	34	0	35
16:45	0	0	0	3	36	0	39
Total	0	0	0	11	122	0	133
17:00	0	0	0	3	25	0	28
17:15	0	0	0	3	26	0	29
17:30	0	0	0	1	33	0	34
17:45	0	0	0	3	31	0	34
Total	0	0	0	10	115	0	125
Grand Total	0	0	0	21	237	0	258
Apprch %	0	0	0	100	100	0	
Total %	0	0	0	8.1	91.9	0	

	Sutherland Rd From North			Parking Area From East			Parking Area From West			
Start Time	Left	Rght	App. Total	Thru	Rght	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	0	0	0	0	3	3	25	0	25	28
16:15	0	0	0	0	**4**	**4**	27	0	27	31
16:30	0	0	0	0	1	1	34	0	34	35
16:45	0	0	0	0	3	3	**36**	0	**36**	**39**
Total Volume	0	0	0	0	11	11	122	0	122	133
% App. Total	0	0		0	100		100	0		
PHF	.000	.000	.000	.000	.688	.688	.847	.000	.847	.853

Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 2



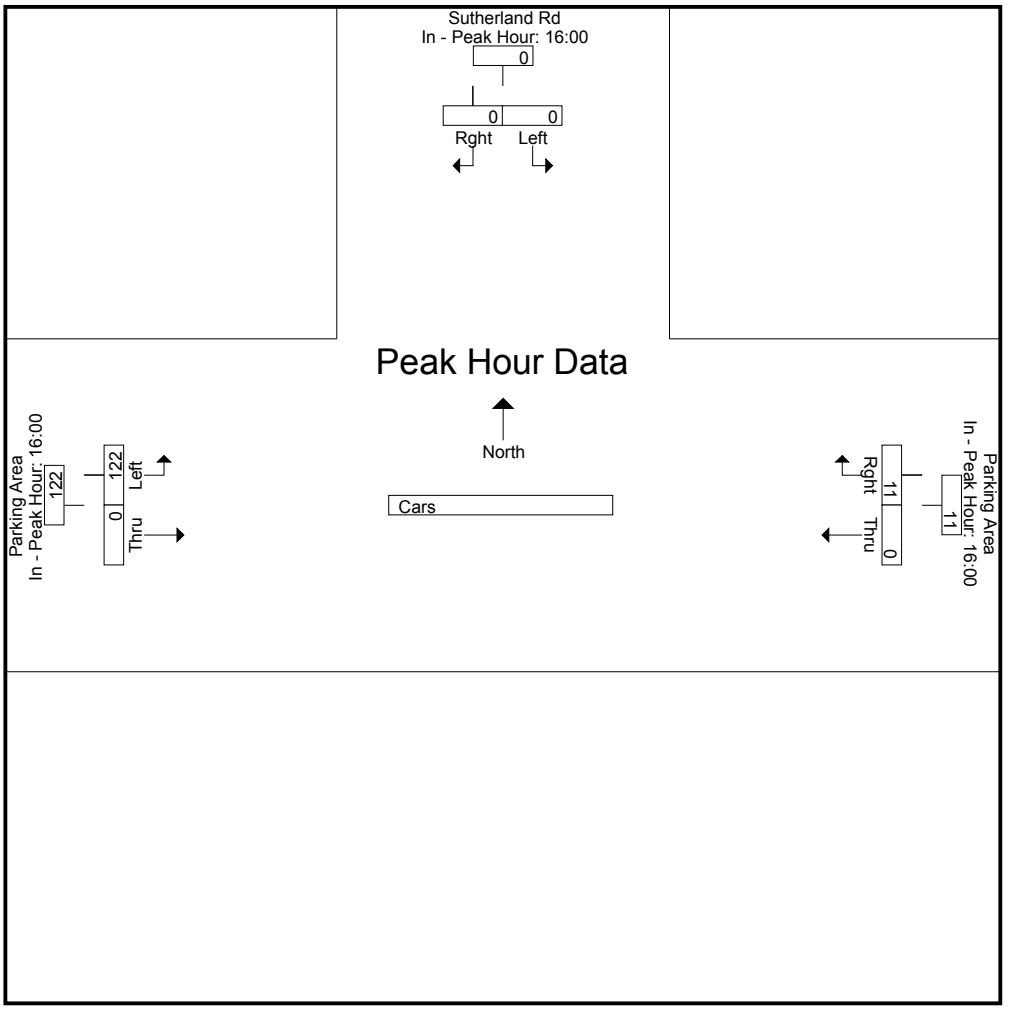
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	16:00			16:00			16:00		
+0 mins.	0	0	0	0	3	3	25	0	25
+15 mins.	0	0	0	0	**4**	**4**	27	0	27
+30 mins.	0	0	0	0	1	1	34	0	34
+45 mins.	0	0	0	0	3	3	**36**	0	**36**
Total Volume	0	0	0	0	11	11	122	0	122
% App. Total	0	0		0	100		100	0	
PHF	.000	.000	.000	.000	.688	.688	.847	.000	.847

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 1

Groups Printed- Trucks

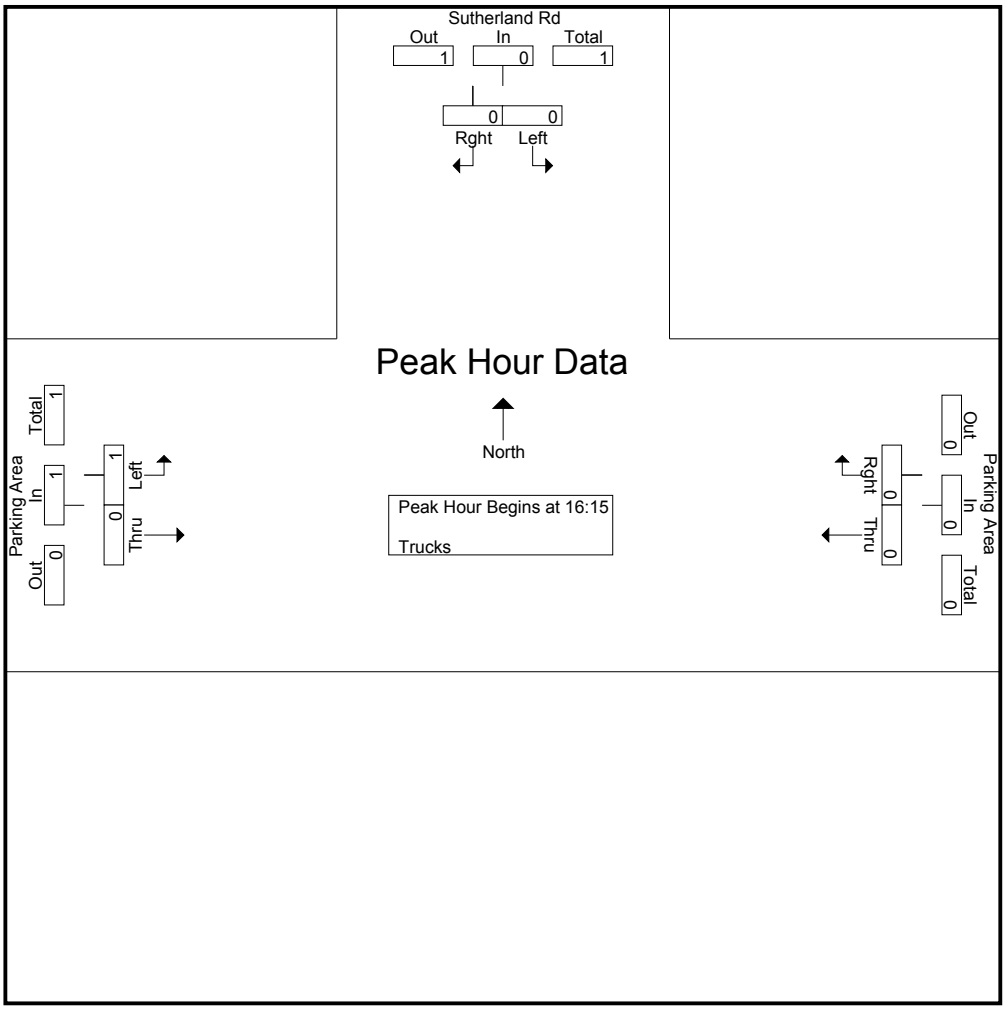
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
17:00	0	0	0	0	1	0	1
17:15	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1
Grand Total	0	0	0	0	1	0	1
Apprch %	0	0	0	0	100	0	
Total %	0	0	0	0	100	0	

	Sutherland Rd From North			Parking Area From East			Parking Area From West			
Start Time	Left	Rght	App. Total	Thru	Rght	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:15										
16:15	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	**1**	0	**1**	**1**
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

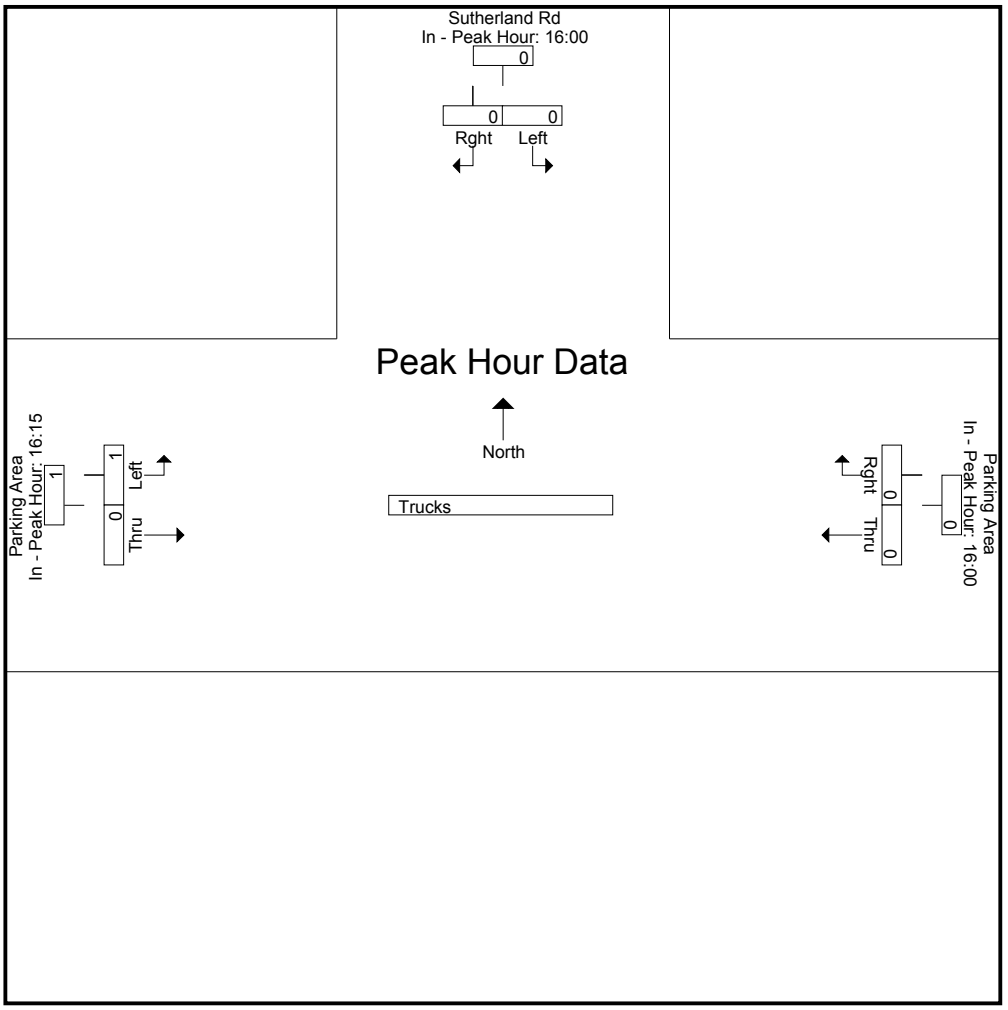
Peak Hour for Each Approach Begins at:

	16:00			16:00			16:15		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	0	**1**
Total Volume	0	0	0	0	0	0	1	0	1
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250

Accurate Counts
978-664-2565

N/S Street : Sutherland Rd
E/W Street: Parking Area
City/State : Boston, MA
Weather : Clear

File Name : 01900005
Site Code : 20101905
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Driveway #12
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900006
Site Code : 20101906
Start Date : 12/9/2010
Page No : 1

Groups Printed- Cars

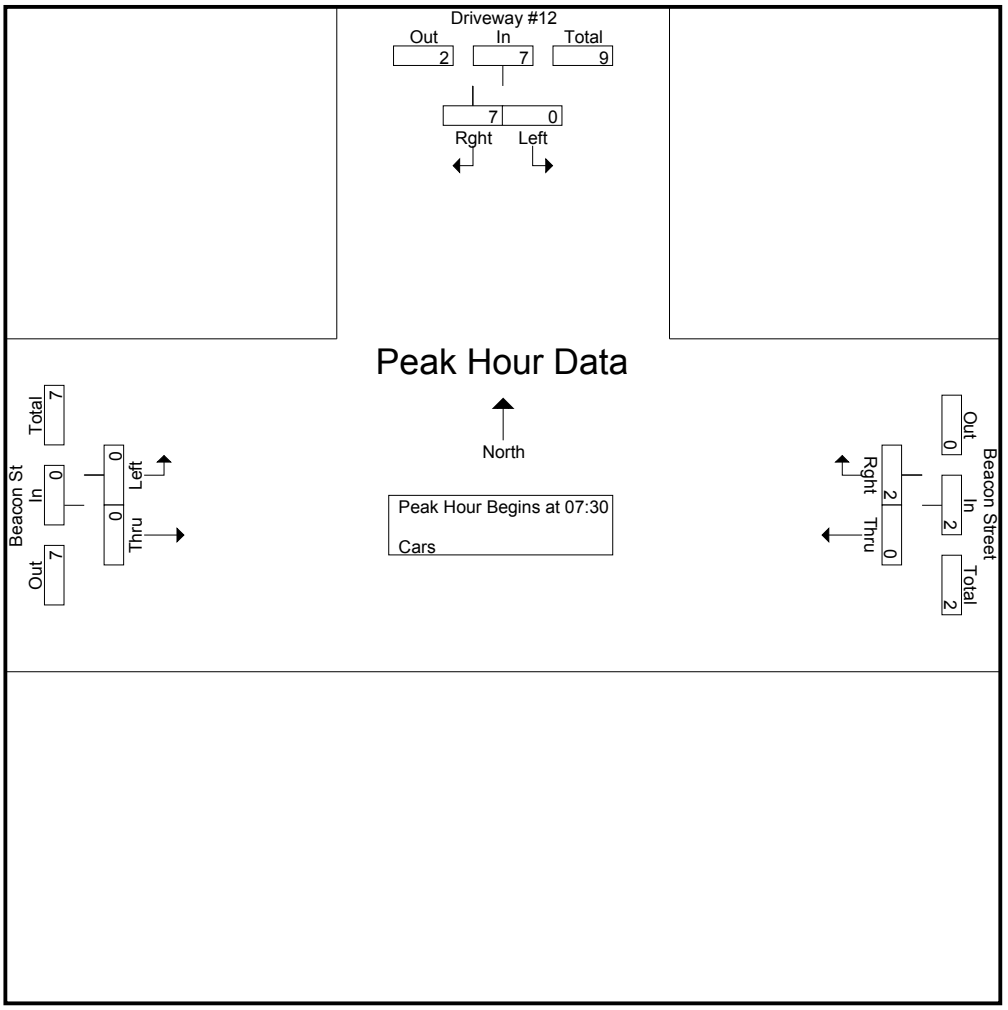
	Driveway #12 From North		Beacon Street From East		Beacon St From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
07:00	0	2	0	0	0	0	2
07:15	0	0	0	0	0	0	0
07:30	0	2	0	0	0	0	2
07:45	0	2	0	2	0	0	4
Total	0	6	0	2	0	0	8
08:00	0	2	0	0	0	0	2
08:15	0	1	0	0	0	0	1
08:30	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0
Total	0	3	0	0	0	0	3
Grand Total	0	9	0	2	0	0	11
Apprch %	0	100	0	100	0	0	
Total %	0	81.8	0	18.2	0	0	

	Driveway #12 From North			Beacon Street From East			Beacon St From West			
Start Time	Left	Rght	App. Total	Thru	Rght	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	0	**2**	**2**	0	0	0	0	0	0	2
07:45	0	2	2	0	**2**	**2**	0	0	0	**4**
08:00	0	2	2	0	0	0	0	0	0	2
08:15	0	1	1	0	0	0	0	0	0	1
Total Volume	0	7	7	0	2	2	0	0	0	9
% App. Total	0	100		0	100		0	0		
PHF	.000	.875	.875	.000	.250	.250	.000	.000	.000	.563

Accurate Counts
978-664-2565

N/S Street : Driveway #12
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900006
Site Code : 20101906
Start Date : 12/9/2010
Page No : 2



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

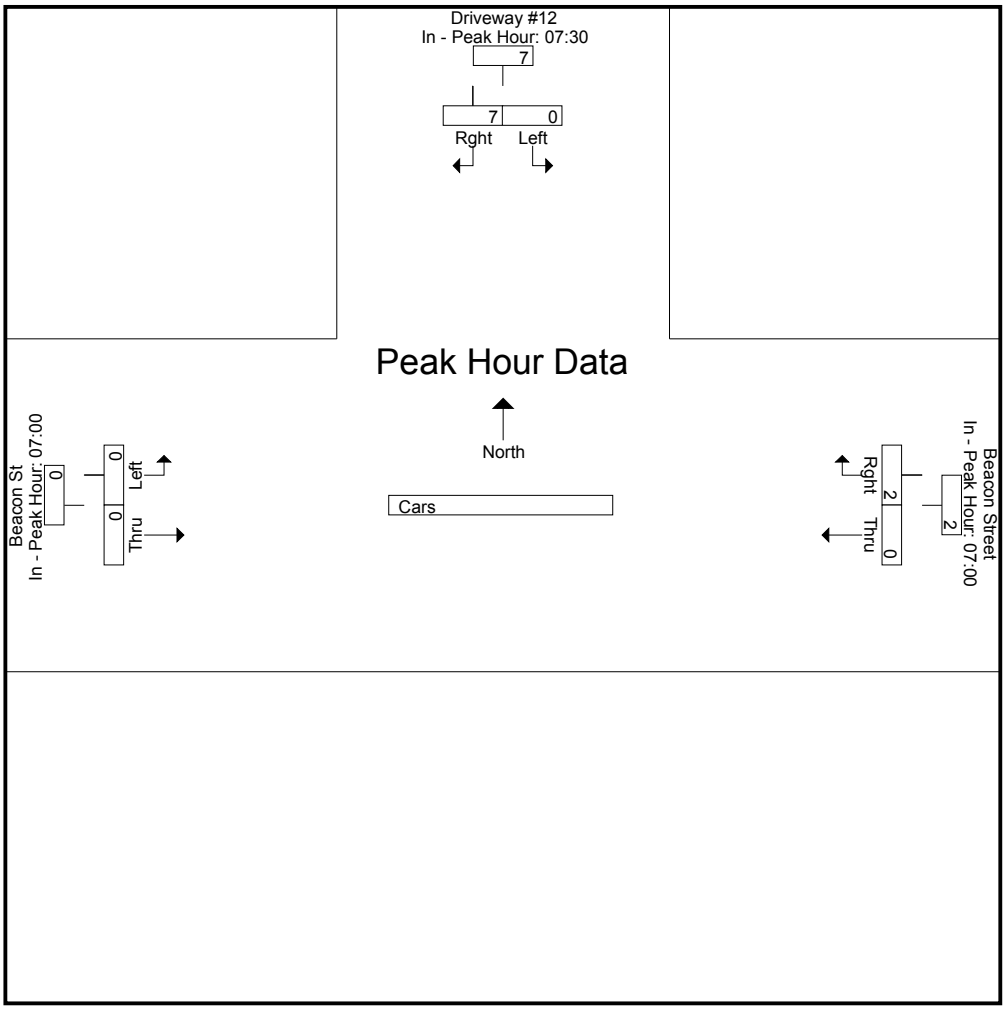
Peak Hour for Each Approach Begins at:

	07:30			07:00			07:00		
+0 mins.	0	**2**	**2**	0	0	0	0	0	0
+15 mins.	0	2	2	0	0	0	0	0	0
+30 mins.	0	2	2	0	0	0	0	0	0
+45 mins.	0	1	1	0	**2**	**2**	0	0	0
Total Volume	0	7	7	0	2	2	0	0	0
% App. Total	0	100		0	100		0	0	
PHF	.000	.875	.875	.000	.250	.250	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Driveway #12
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900006
Site Code : 20101906
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Driveway #12
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900006
Site Code : 20101906
Start Date : 12/9/2010
Page No : 1

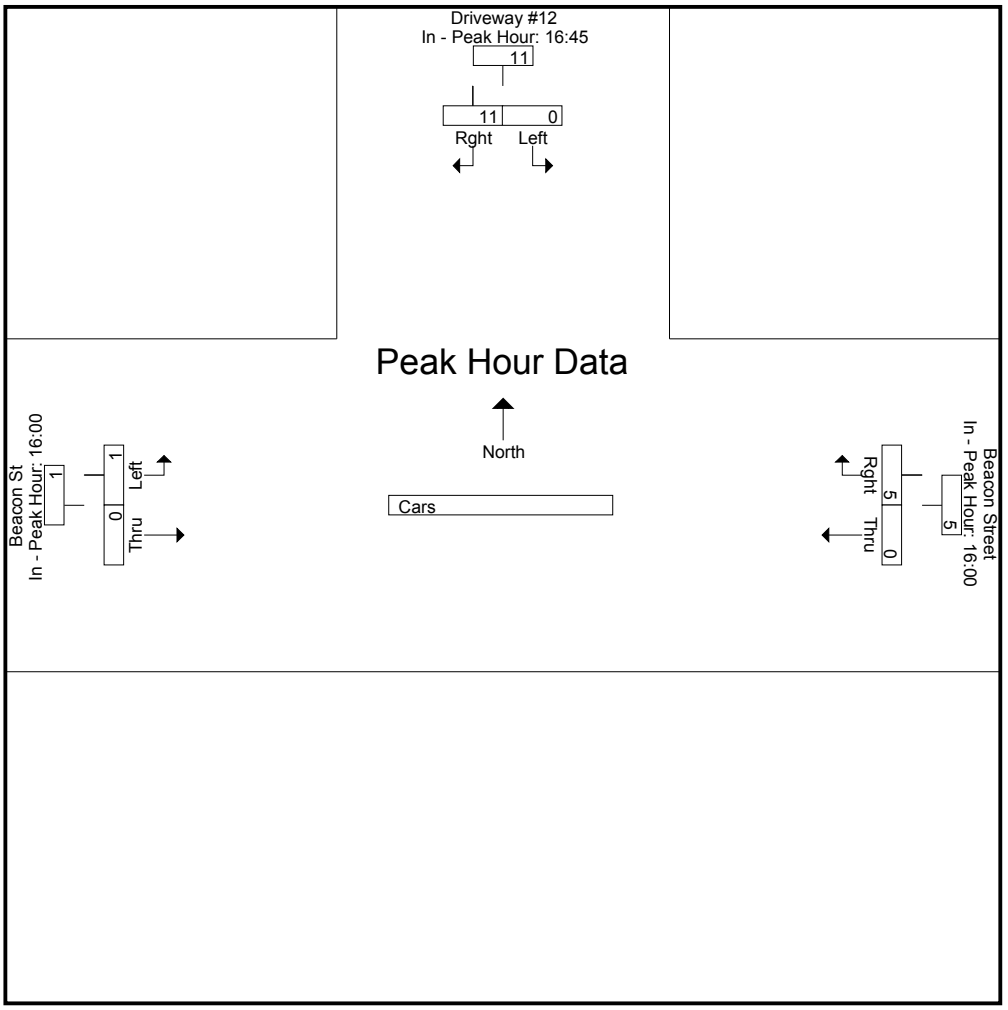
Groups Printed- Cars

	Driveway #12 From North		Beacon Street From East		Beacon St From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	1	0	1	1	0	3
16:15	0	0	0	1	0	0	1
16:30	0	1	0	1	0	0	2
16:45	0	2	0	2	0	0	4
Total	0	4	0	5	1	0	10
17:00	0	2	0	1	0	0	3
17:15	0	1	0	0	0	0	1
17:30	0	6	0	0	0	0	6
17:45	0	0	0	1	0	0	1
Total	0	9	0	2	0	0	11
Grand Total	0	13	0	7	1	0	21
Apprch %	0	100	0	100	100	0	
Total %	0	61.9	0	33.3	4.8	0	

	Driveway #12 From North			Beacon Street From East			Beacon St From West			
Start Time	Left	Rght	App. Total	Thru	Rght	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Each Approach Begins at:										
	16:45			16:00			16:00			
+0 mins.	0	2	2	0	1	1	**1**	0	**1**	
+15 mins.	0	2	2	0	1	1	0	0	0	
+30 mins.	0	1	1	0	1	1	0	0	0	
+45 mins.	0	**6**	**6**	0	**2**	**2**	0	0	0	
Total Volume	0	11	11	0	5	5	1	0	1	
% App. Total	0	100		0	100		100	0		
PHF	.000	.458	.458	.000	.625	.625	.250	.000	.250	

N/S Street : Driveway #12
E/W Street: Beacon Street
City/State : Boston, MA
Weather : Clear

File Name : 01900006
Site Code : 20101906
Start Date : 12/9/2010
Page No : 2



Accurate Counts

978-664-2565

Location : Chestnut Hill Avenue
Location : South of Beacon Street
City/State: Boston, MA
Counter : 10110

20101901
Site Code: 20101901

Start	08-Dec-10	SB		Hour Totals		NB		Hour Totals		Combined Totals	
Time	Wed	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		33	157			20	132				
12:15		29	158			15	145				
12:30		25	159			17	134				
12:45		22	163	109	637	17	140	69	551	178	1188
01:00		17	153			15	117				
01:15		12	155			16	135				
01:30		21	134			10	135				
01:45		12	150	62	592	8	140	49	527	111	1119
02:00		13	159			8	162				
02:15		7	178			5	175				
02:30		5	218			3	157				
02:45		7	217	32	772	7	166	23	660	55	1432
03:00		3	219			8	188				
03:15		7	230			3	173				
03:30		3	221			3	191				
03:45		3	215	16	885	9	209	23	761	39	1646
04:00		5	263			7	195				
04:15		4	236			5	195				
04:30		6	223			17	171				
04:45		7	238	22	960	16	195	45	756	67	1716
05:00		12	212			19	202				
05:15		13	252			29	262				
05:30		32	222			31	186				
05:45		29	217	86	903	76	175	155	825	241	1728
06:00		41	229			61	182				
06:15		62	203			84	172				
06:30		109	156			110	182				
06:45		113	131	325	719	172	131	427	667	752	1386
07:00		168	172			171	159				
07:15		215	152			203	187				
07:30		185	127			252	110				
07:45		189	138	757	589	233	117	859	573	1616	1162
08:00		238	114			161	114				
08:15		163	120			243	95				
08:30		173	110			205	115				
08:45		140	124	714	468	203	71	812	395	1526	863
09:00		159	122			179	94				
09:15		170	166			139	113				
09:30		168	179			134	78				
09:45		167	98	664	565	152	98	604	383	1268	948
10:00		155	114			130	85				
10:15		117	83			155	86				
10:30		139	75			156	70				
10:45		154	69	565	341	164	56	605	297	1170	638
11:00		146	78			135	52				
11:15		165	50			137	56				
11:30		168	48			107	45				
11:45		150	49	629	225	133	27	512	180	1141	405
Total		3981	7656			4183	6575			8164	14231
Percent		34.2%	65.8%			38.9%	61.1%			36.5%	63.5%

Accurate Counts

978-664-2565

Location : Chestnut Hill Avenue
Location : South of Beacon Street
City/State: Boston, MA
Counter : 10110

20101901
Site Code: 20101901

Start	09-Dec-10	SB		Hour Totals		NB		Hour Totals		Combined Totals	
Time	Thu	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		46	159			20	162				
12:15		36	168			26	140				
12:30		23	155			11	147				
12:45		28	173	133	655	10	175	67	624	200	1279
01:00		23	155			21	152				
01:15		11	183			13	132				
01:30		11	136			14	156				
01:45		12	183	57	657	6	146	54	586	111	1243
02:00		8	181			8	169				
02:15		15	196			6	167				
02:30		10	191			3	152				
02:45		7	213	40	781	9	174	26	662	66	1443
03:00		7	197			6	185				
03:15		4	235			1	212				
03:30		2	263			5	177				
03:45		8	211	21	906	10	202	22	776	43	1682
04:00		12	213			3	204				
04:15		11	230			8	171				
04:30		9	241			12	194				
04:45		12	228	44	912	16	194	39	763	83	1675
05:00		12	216			22	230				
05:15		20	224			19	227				
05:30		28	226			33	203				
05:45		29	239	89	905	76	166	150	826	239	1731
06:00		47	241			57	182				
06:15		66	185			93	191				
06:30		91	201			121	151				
06:45		155	171	359	798	144	145	415	669	774	1467
07:00		161	189			165	148				
07:15		226	159			190	146				
07:30		195	154			253	144				
07:45		173	118	755	620	218	121	826	559	1581	1179
08:00		223	140			162	128				
08:15		188	118			193	115				
08:30		187	124			192	116				
08:45		168	104	766	486	203	101	750	460	1516	946
09:00		173	132			149	104				
09:15		170	111			156	108				
09:30		176	109			151	112				
09:45		143	92	662	444	171	92	627	416	1289	860
10:00		131	100			174	97				
10:15		174	85			135	78				
10:30		155	80			156	84				
10:45		149	71	609	336	124	83	589	342	1198	678
11:00		155	83			126	57				
11:15		122	65			175	51				
11:30		159	55			143	53				
11:45		159	54	595	257	136	46	580	207	1175	464
Total		4130	7757			4145	6890			8275	14647
Percent		34.7%	65.3%			37.6%	62.4%			36.1%	63.9%
Grand Total		8111	15413			8328	13465			16439	28878
Percent		34.5%	65.5%			38.2%	61.8%			36.3%	63.7%

ADT ADT 22,658 AADT 22,658

Accurate Counts

978-664-2565

Location : Chestnut Hill Avenue
Location : South of Beacon Street
City/State: Boston, MA
Counter : 10110

20101901
Site Code: 20101901

Start	06-Dec-10		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
12:00 AM	*	*	*	*	109	69	133	67	*	*	*	*	*	*	121	68
01:00	*	*	*	*	62	49	57	54	*	*	*	*	*	*	60	52
02:00	*	*	*	*	32	23	40	26	*	*	*	*	*	*	36	24
03:00	*	*	*	*	16	23	21	22	*	*	*	*	*	*	18	22
04:00	*	*	*	*	22	45	44	39	*	*	*	*	*	*	33	42
05:00	*	*	*	*	86	155	89	150	*	*	*	*	*	*	88	152
06:00	*	*	*	*	325	427	359	415	*	*	*	*	*	*	342	421
07:00	*	*	*	*	**757**	**859**	755	**826**	*	*	*	*	*	*	**756**	**842**
08:00	*	*	*	*	714	812	**766**	750	*	*	*	*	*	*	740	781
09:00	*	*	*	*	664	604	662	627	*	*	*	*	*	*	663	616
10:00	*	*	*	*	565	605	609	589	*	*	*	*	*	*	587	597
11:00	*	*	*	*	629	512	595	580	*	*	*	*	*	*	612	546
12:00 PM	*	*	*	*	637	551	655	624	*	*	*	*	*	*	646	588
01:00	*	*	*	*	592	527	657	586	*	*	*	*	*	*	624	556
02:00	*	*	*	*	772	660	781	662	*	*	*	*	*	*	776	661
03:00	*	*	*	*	885	761	906	776	*	*	*	*	*	*	896	768
04:00	*	*	*	*	**960**	756	**912**	763	*	*	*	*	*	*	**936**	760
05:00	*	*	*	*	903	**825**	905	**826**	*	*	*	*	*	*	904	**826**
06:00	*	*	*	*	719	667	798	669	*	*	*	*	*	*	758	668
07:00	*	*	*	*	589	573	620	559	*	*	*	*	*	*	604	566
08:00	*	*	*	*	468	395	486	460	*	*	*	*	*	*	477	428
09:00	*	*	*	*	565	383	444	416	*	*	*	*	*	*	504	400
10:00	*	*	*	*	341	297	336	342	*	*	*	*	*	*	338	320
11:00	*	*	*	*	225	180	257	207	*	*	*	*	*	*	241	194
Lane	0	0	0	0	11637	10758	11887	11035	0	0	0	0	0	0	11760	10898
Day	0		0		22395		22922		0		0		0		22658	
AM Peak					07:00	07:00	08:00	07:00							07:00	07:00
Vol.					757	859	766	826							756	842
PM Peak					16:00	17:00	16:00	17:00							16:00	17:00
Vol.					960	825	912	826							936	826

Comb. Total	0	0	22395	22922	0	0	0	22658

ADT ADT 22,658 AADT 22,658

Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

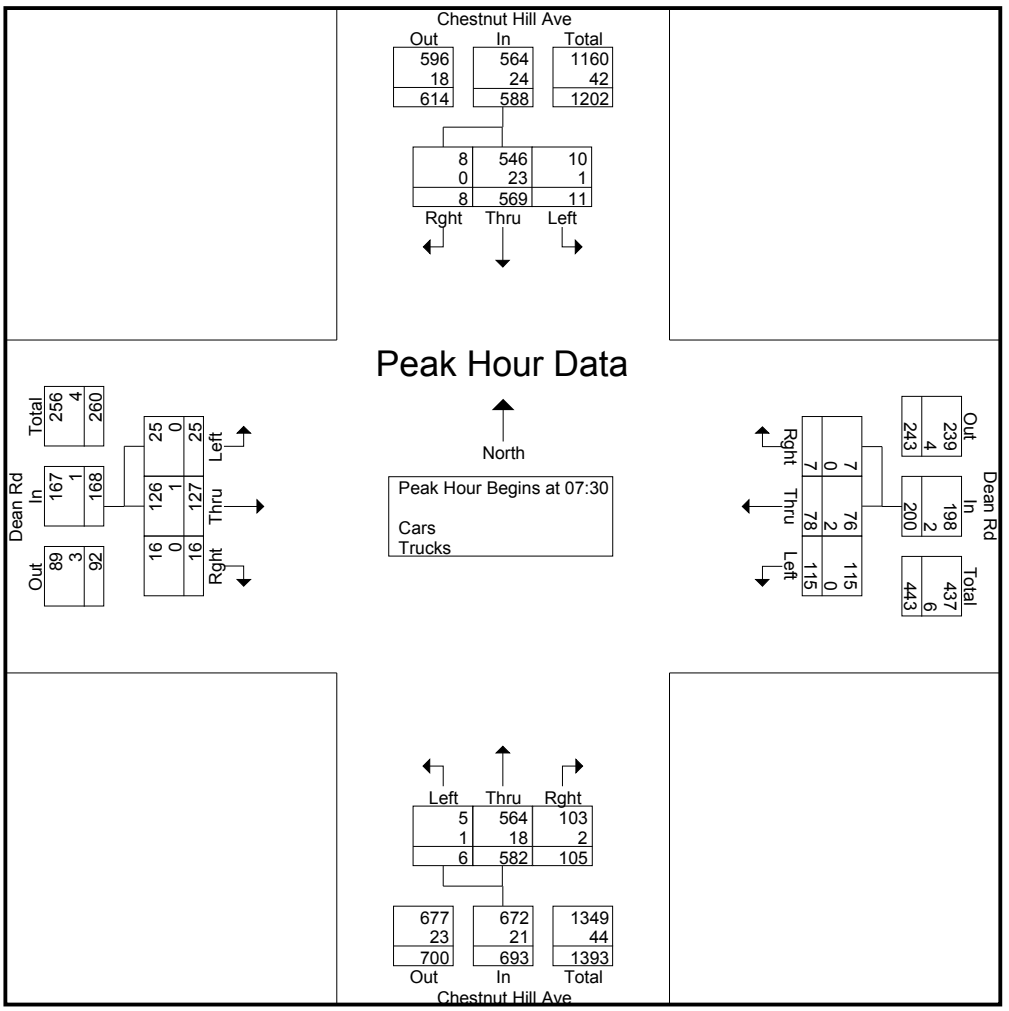
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	1	117	3	17	6	1	3	134	16	4	3	3	308
07:15	2	162	14	20	8	2	2	128	19	4	10	2	373
07:30	1	128	4	30	24	2	0	164	26	7	23	5	414
07:45	5	151	2	27	20	1	3	151	27	7	34	5	433
Total	9	558	23	94	58	6	8	577	88	22	70	15	1528
08:00	4	146	1	26	12	3	2	125	26	9	47	5	406
08:15	1	144	1	32	22	1	1	142	26	2	23	1	396
08:30	1	120	1	27	14	3	2	138	31	6	15	2	360
08:45	2	139	3	20	8	0	2	147	34	7	21	2	385
Total	8	549	6	105	56	7	7	552	117	24	106	10	1547
Grand Total	17	1107	29	199	114	13	15	1129	205	46	176	25	3075
Apprch %	1.5	96	2.5	61	35	4	1.1	83.7	15.2	18.6	71.3	10.1	
Total %	0.6	36	0.9	6.5	3.7	0.4	0.5	36.7	6.7	1.5	5.7	0.8	
Cars	16	1068	29	199	112	13	12	1096	202	45	174	25	2991
% Cars	94.1	96.5	100	100	98.2	100	80	97.1	98.5	97.8	98.9	100	97.3
Trucks	1	39	0	0	2	0	3	33	3	1	2	0	84
% Trucks	5.9	3.5	0	0	1.8	0	20	2.9	1.5	2.2	1.1	0	2.7

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	1	128	**4**	133	30	**24**	2	**56**	0	**164**	26	**190**	7	23	**5**	35	414
07:45	**5**	**151**	2	**158**	27	20	1	48	**3**	151	**27**	181	7	34	5	46	**433**
08:00	4	146	1	151	26	12	**3**	41	2	125	26	153	**9**	**47**	5	**61**	406
08:15	1	144	1	146	**32**	22	1	55	1	142	26	169	2	23	1	26	396
Total Volume	11	569	8	588	115	78	7	200	6	582	105	693	25	127	16	168	1649
% App. Total	1.9	96.8	1.4		57.5	39	3.5		0.9	84	15.2		14.9	75.6	9.5		
PHF	.550	.942	.500	.930	.898	.813	.583	.893	.500	.887	.972	.912	.694	.676	.800	.689	.952
Cars	10	546	8	564	115	76	7	198	5	564	103	672	25	126	16	167	1601
% Cars	90.9	96.0	100	95.9	100	97.4	100	99.0	83.3	96.9	98.1	97.0	100	99.2	100	99.4	97.1
Trucks	1	23	0	24	0	2	0	2	1	18	2	21	0	1	0	1	48
% Trucks	9.1	4.0	0	4.1	0	2.6	0	1.0	16.7	3.1	1.9	3.0	0	0.8	0	0.6	2.9

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 2



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

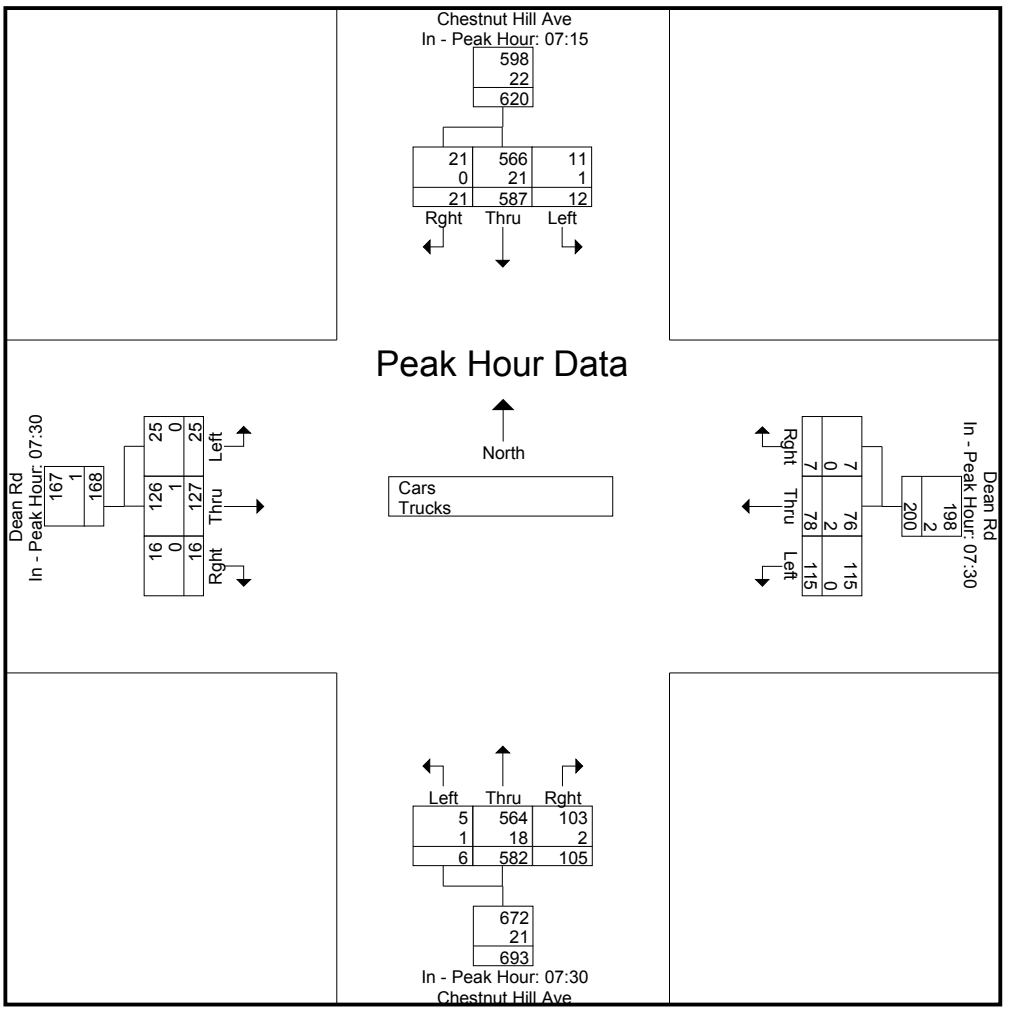
Peak Hour for Each Approach Begins at:

	07:15				07:30				07:30				07:30			
+0 mins.	2	**162**	**14**	**178**	30	**24**	2	**56**	0	**164**	26	**190**	7	23	**5**	35
+15 mins.	1	128	4	133	27	20	1	48	**3**	151	**27**	181	7	34	5	46
+30 mins.	**5**	151	2	158	26	12	**3**	41	2	125	26	153	**9**	**47**	5	**61**
+45 mins.	4	146	1	151	**32**	22	1	55	1	142	26	169	2	23	1	26
Total Volume	12	587	21	620	115	78	7	200	6	582	105	693	25	127	16	168
% App. Total	1.9	94.7	3.4		57.5	39	3.5		0.9	84	15.2		14.9	75.6	9.5	
PHF	.600	.906	.375	.871	.898	.813	.583	.893	.500	.887	.972	.912	.694	.676	.800	.689
Cars	11	566	21	598	115	76	7	198	5	564	103	672	25	126	16	167
% Cars	91.7	96.4	100	96.5	100	97.4	100	99	83.3	96.9	98.1	97	100	99.2	100	99.4
Trucks	1	21	0	22	0	2	0	2	1	18	2	21	0	1	0	1
% Trucks	8.3	3.6	0	3.5	0	2.6	0	1	16.7	3.1	1.9	3	0	0.8	0	0.6

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

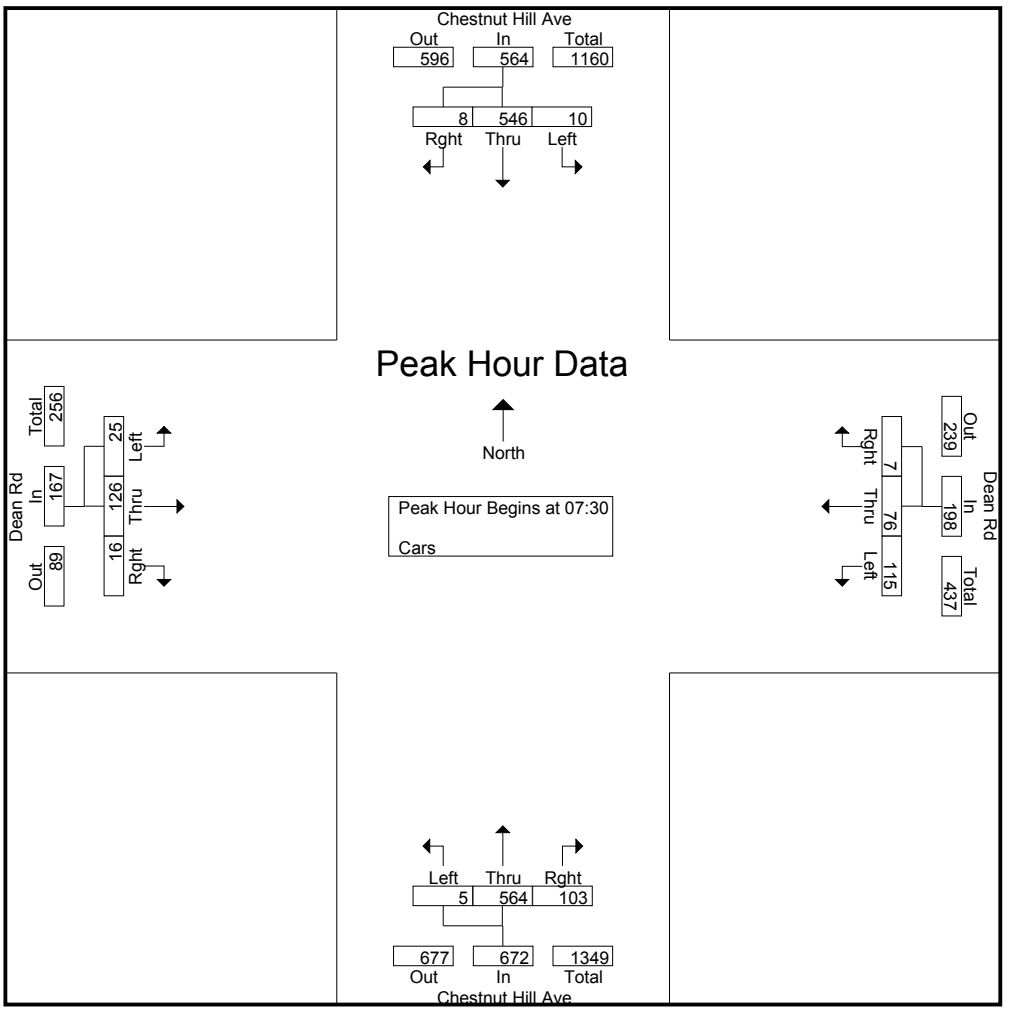
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	1	115	3	17	6	1	3	129	16	4	3	3	301
07:15	2	157	14	20	8	2	0	124	19	4	10	2	362
07:30	1	122	4	30	23	2	0	159	25	7	22	5	400
07:45	4	147	2	27	19	1	2	149	27	7	34	5	424
Total	8	541	23	94	56	6	5	561	87	22	69	15	1487
08:00	4	140	1	26	12	3	2	116	25	9	47	5	390
08:15	1	137	1	32	22	1	1	140	26	2	23	1	387
08:30	1	115	1	27	14	3	2	135	31	6	15	2	352
08:45	2	135	3	20	8	0	2	144	33	6	20	2	375
Total	8	527	6	105	56	7	7	535	115	23	105	10	1504
Grand Total	16	1068	29	199	112	13	12	1096	202	45	174	25	2991
Apprch %	1.4	96	2.6	61.4	34.6	4	0.9	83.7	15.4	18.4	71.3	10.2	
Total %	0.5	35.7	1	6.7	3.7	0.4	0.4	36.6	6.8	1.5	5.8	0.8	

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	1	122	**4**	127	30	**23**	2	**55**	0	**159**	25	**184**	7	22	**5**	34	400
07:45	**4**	**147**	2	**153**	27	19	1	47	**2**	149	**27**	178	7	34	5	46	**424**
08:00	4	140	1	145	26	12	**3**	41	2	116	25	143	**9**	**47**	5	**61**	390
08:15	1	137	1	139	**32**	22	1	55	1	140	26	167	2	23	1	26	387
Total Volume	10	546	8	564	115	76	7	198	5	564	103	672	25	126	16	167	1601
% App. Total	1.8	96.8	1.4		58.1	38.4	3.5		0.7	83.9	15.3		15	75.4	9.6		
PHF	.625	.929	.500	.922	.898	.826	.583	.900	.625	.887	.954	.913	.694	.670	.800	.684	.944

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 2



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

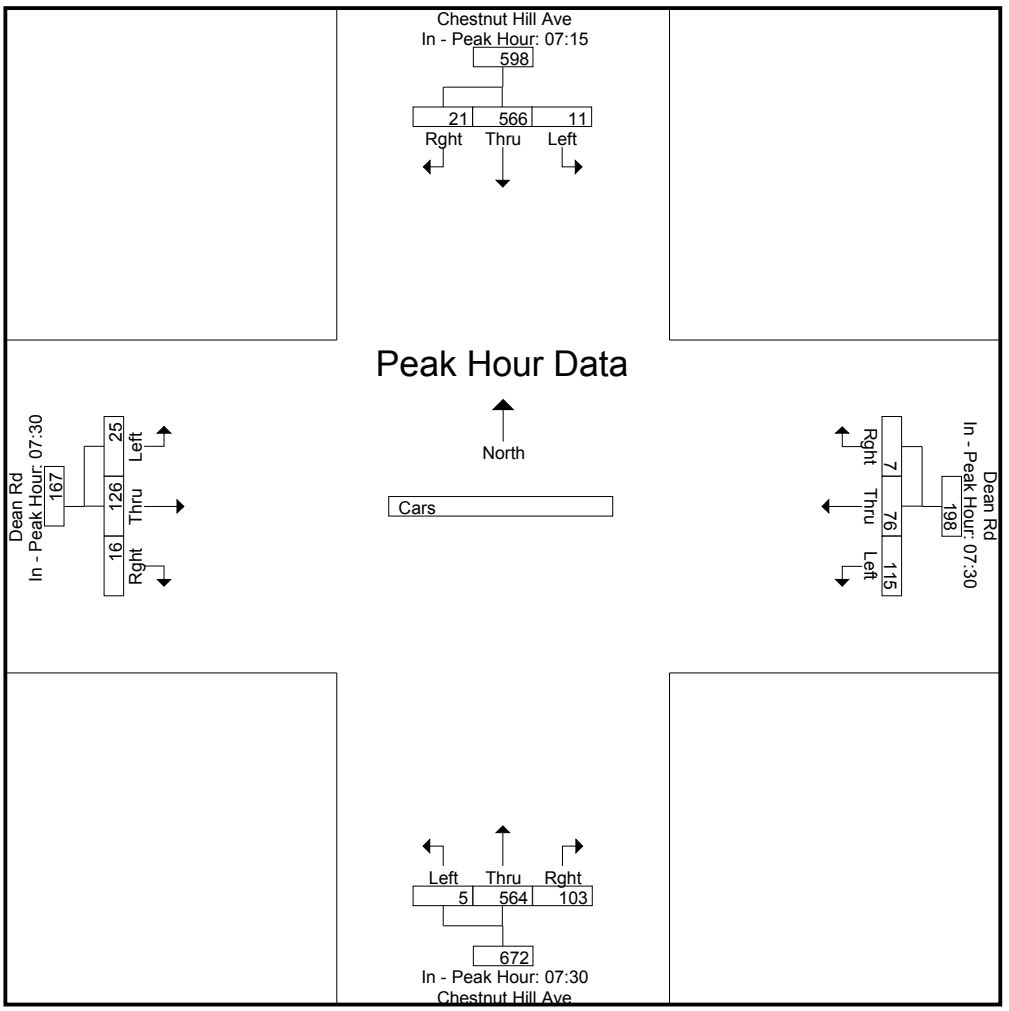
Peak Hour for Each Approach Begins at:

	07:15				07:30				07:30				07:30			
+0 mins.	2	**157**	**14**	**173**	30	**23**	2	**55**	0	**159**	25	**184**	7	22	**5**	34
+15 mins.	1	122	4	127	27	19	1	47	**2**	149	**27**	178	7	34	5	46
+30 mins.	**4**	147	2	153	26	12	**3**	41	2	116	25	143	**9**	**47**	5	**61**
+45 mins.	4	140	1	145	**32**	22	1	55	1	140	26	167	2	23	1	26
Total Volume	11	566	21	598	115	76	7	198	5	564	103	672	25	126	16	167
% App. Total	1.8	94.6	3.5		58.1	38.4	3.5		0.7	83.9	15.3		15	75.4	9.6	
PHF	.688	.901	.375	.864	.898	.826	.583	.900	.625	.887	.954	.913	.694	.670	.800	.684

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

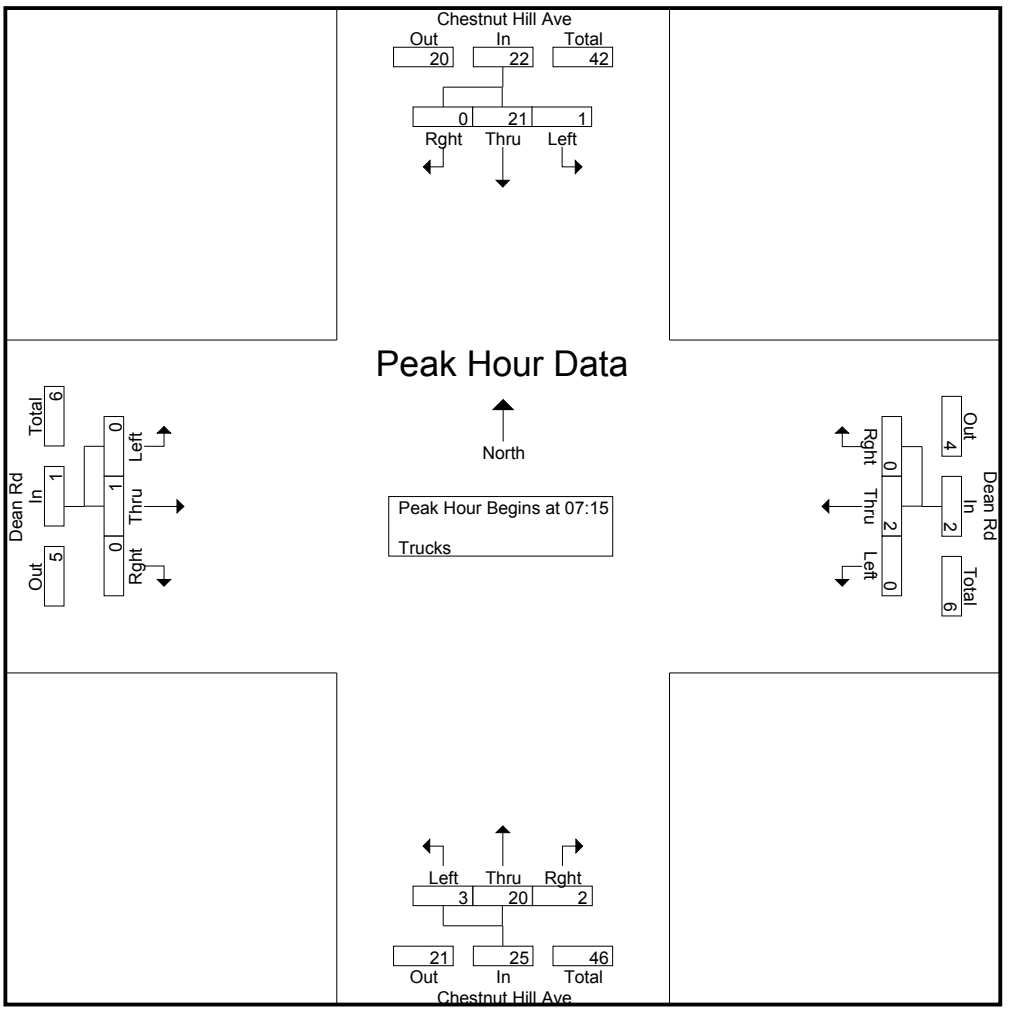
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	0	2	0	0	0	0	0	5	0	0	0	0	7
07:15	0	5	0	0	0	0	2	4	0	0	0	0	11
07:30	0	6	0	0	1	0	0	5	1	0	1	0	14
07:45	1	4	0	0	1	0	1	2	0	0	0	0	9
Total	1	17	0	0	2	0	3	16	1	0	1	0	41
08:00	0	6	0	0	0	0	0	9	1	0	0	0	16
08:15	0	7	0	0	0	0	0	2	0	0	0	0	9
08:30	0	5	0	0	0	0	0	3	0	0	0	0	8
08:45	0	4	0	0	0	0	0	3	1	1	1	0	10
Total	0	22	0	0	0	0	0	17	2	1	1	0	43
Grand Total	1	39	0	0	2	0	3	33	3	1	2	0	84
Apprch %	2.5	97.5	0	0	100	0	7.7	84.6	7.7	33.3	66.7	0	
Total %	1.2	46.4	0	0	2.4	0	3.6	39.3	3.6	1.2	2.4	0	

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	5	0	5	0	0	0	0	**2**	4	0	6	0	0	0	0	11
07:30	0	**6**	0	**6**	0	**1**	0	**1**	0	5	**1**	6	0	**1**	0	**1**	14
07:45	**1**	4	0	5	0	1	0	1	1	2	0	3	0	0	0	0	9
08:00	0	6	0	6	0	0	0	0	0	**9**	1	**10**	0	0	0	0	**16**
Total Volume	1	21	0	22	0	2	0	2	3	20	2	25	0	1	0	1	50
% App. Total	4.5	95.5	0		0	100	0		12	80	8		0	100	0		
PHF	.250	.875	.000	.917	.000	.500	.000	.500	.375	.556	.500	.625	.000	.250	.000	.250	.781

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 2



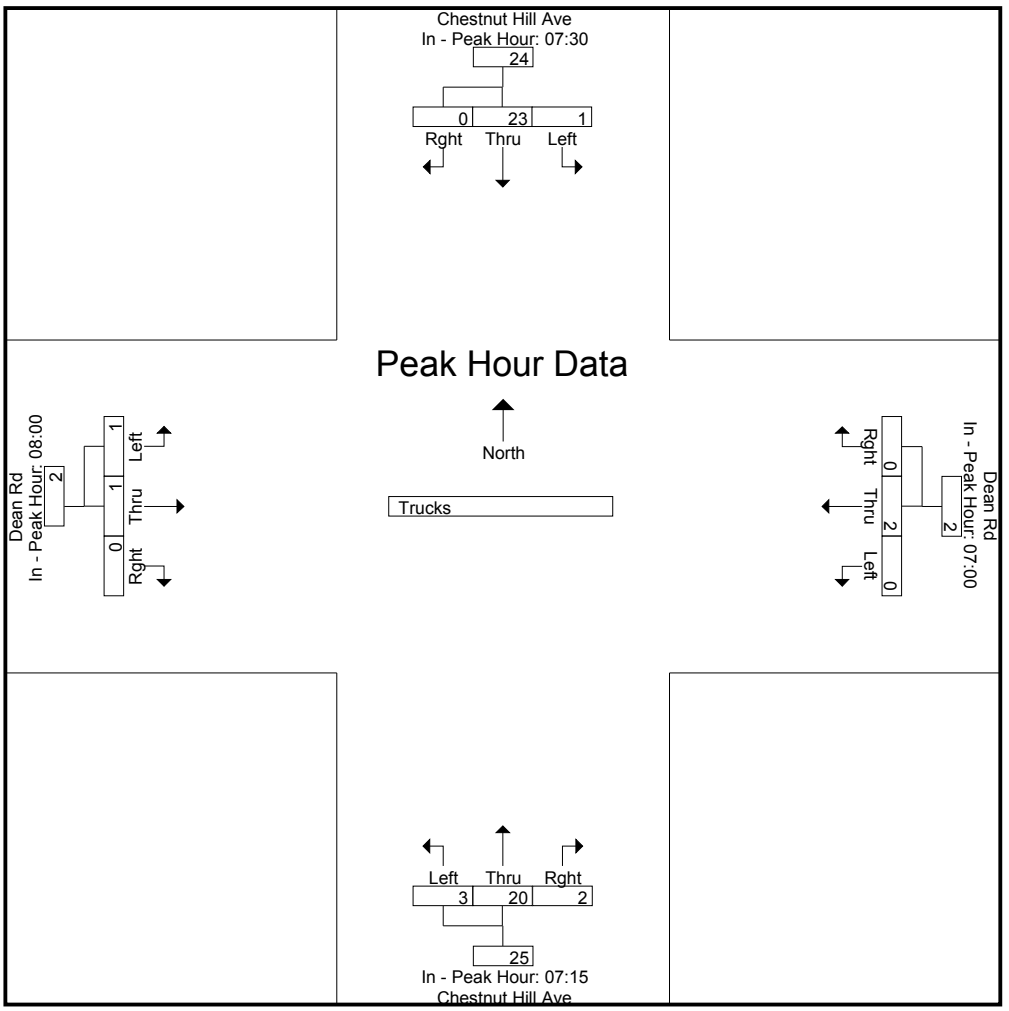
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30				07:00				07:15				08:00			
+0 mins.	0	6	0	6	0	0	0	0	**2**	4	0	6	0	0	0	0
+15 mins.	**1**	4	0	5	0	0	0	0	0	5	**1**	6	0	0	0	0
+30 mins.	0	6	0	6	0	**1**	0	**1**	1	2	0	3	0	0	0	0
+45 mins.	0	**7**	0	**7**	0	1	0	1	0	**9**	1	**10**	**1**	**1**	0	**2**
Total Volume	1	23	0	24	0	2	0	2	3	20	2	25	1	1	0	2
% App. Total	4.2	95.8	0		0	100	0		12	80	8		50	50	0	
PHF	.250	.821	.000	.857	.000	.500	.000	.500	.375	.556	.500	.625	.250	.250	.000	.250

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

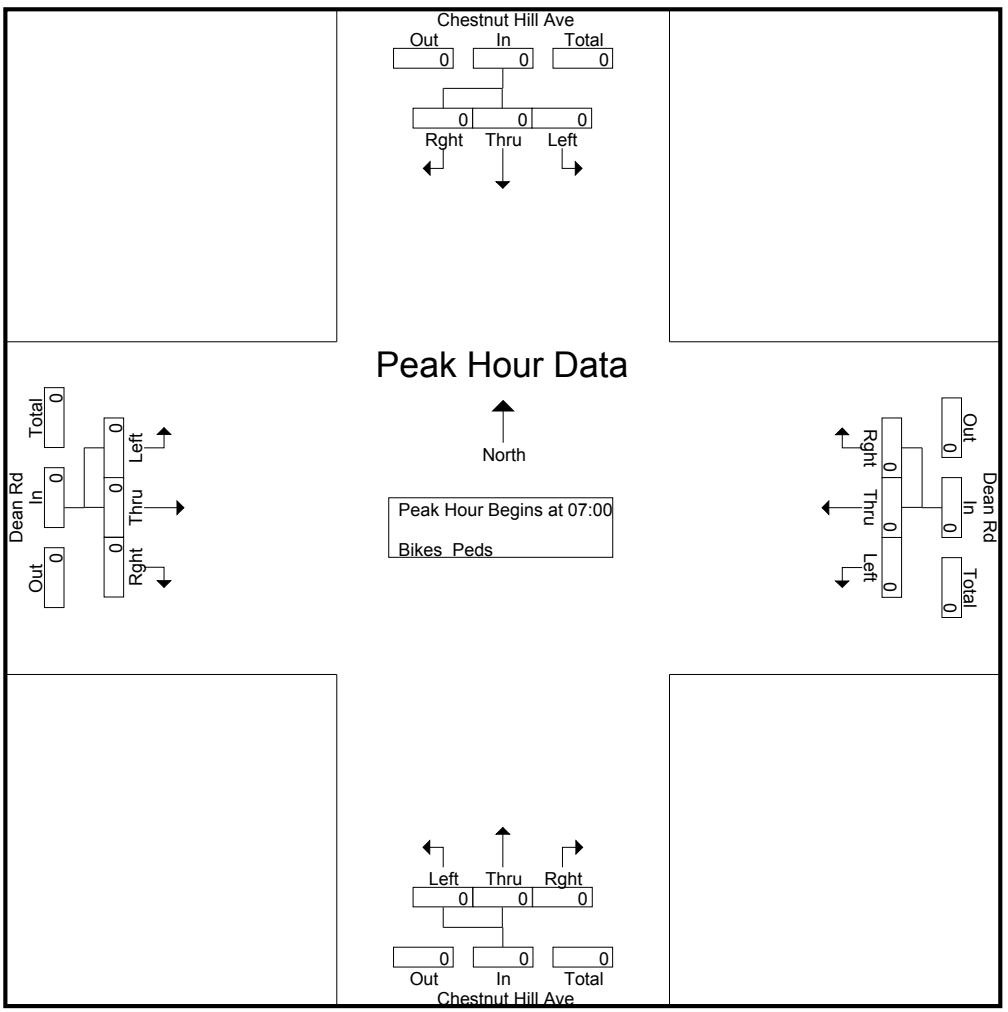
N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	3	0	3
07:15	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5	0	5
07:30	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	5	0	5
07:45	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	3	0	3
Total	0	0	0	5	0	0	0	6	0	0	0	2	0	0	0	3	16	0	16
08:00	0	0	0	7	0	0	0	2	0	0	0	5	0	0	0	1	15	0	15
08:15	0	0	0	5	0	0	0	0	0	0	0	3	0	0	0	1	9	0	9
08:30	0	0	0	5	0	0	0	5	0	0	0	2	0	0	0	0	12	0	12
08:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	3	0	3
Total	0	0	0	19	0	0	0	7	0	0	0	10	0	0	0	3	39	0	39
Grand Total	0	0	0	24	0	0	0	13	0	0	0	12	0	0	0	6	55	0	55
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total				App. Total				App. Total				App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

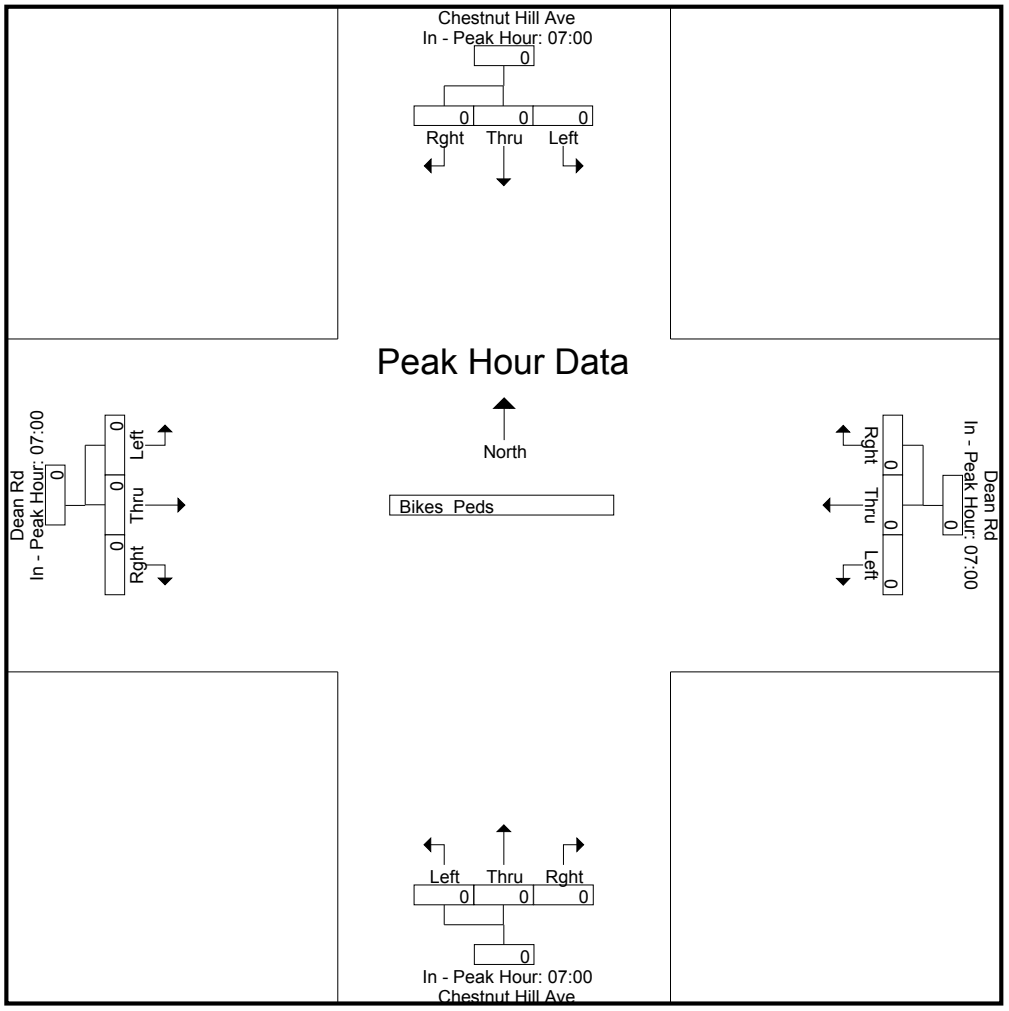


Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 2

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00				07:00				07:00				07:00				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+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	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

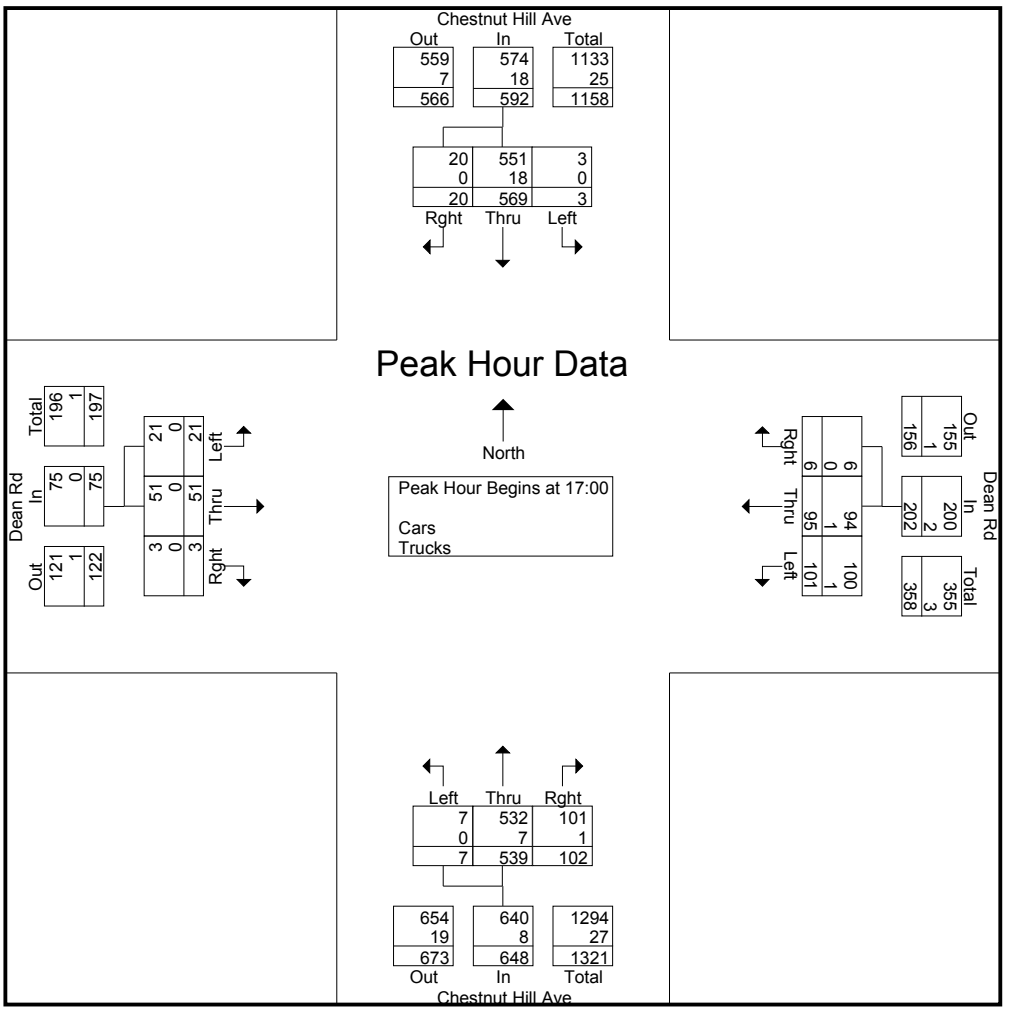
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	153	3	25	16	4	1	112	28	4	8	1	355
16:15	0	149	4	15	19	1	1	132	18	4	7	2	352
16:30	2	153	3	31	18	0	1	132	31	9	14	4	398
16:45	0	144	3	29	12	3	0	122	17	4	22	4	360
Total	2	599	13	100	65	8	3	498	94	21	51	11	1465
17:00	1	143	5	33	24	1	0	130	24	4	15	0	380
17:15	0	136	2	17	20	3	2	129	24	4	14	2	353
17:30	1	147	7	26	20	1	2	158	32	6	9	0	409
17:45	1	143	6	25	31	1	3	122	22	7	13	1	375
Total	3	569	20	101	95	6	7	539	102	21	51	3	1517
Grand Total	5	1168	33	201	160	14	10	1037	196	42	102	14	2982
Apprch %	0.4	96.8	2.7	53.6	42.7	3.7	0.8	83.4	15.8	26.6	64.6	8.9	
Total %	0.2	39.2	1.1	6.7	5.4	0.5	0.3	34.8	6.6	1.4	3.4	0.5	
Cars	4	1132	32	200	159	14	10	1018	195	40	101	14	2919
% Cars	80	96.9	97	99.5	99.4	100	100	98.2	99.5	95.2	99	100	97.9
Trucks	1	36	1	1	1	0	0	19	1	2	1	0	63
% Trucks	20	3.1	3	0.5	0.6	0	0	1.8	0.5	4.8	1	0	2.1

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**1**	143	5	149	**33**	24	1	**58**	0	130	24	154	4	**15**	0	19	380
17:15	0	136	2	138	17	20	**3**	40	2	129	24	155	4	14	**2**	20	353
17:30	1	**147**	**7**	**155**	26	20	1	47	2	**158**	**32**	**192**	6	9	0	15	**409**
17:45	1	143	6	150	25	**31**	1	57	**3**	122	22	147	**7**	13	1	**21**	375
Total Volume	3	569	20	592	101	95	6	202	7	539	102	648	21	51	3	75	1517
% App. Total	0.5	96.1	3.4		50	47	3		1.1	83.2	15.7		28	68	4		
PHF	.750	.968	.714	.955	.765	.766	.500	.871	.583	.853	.797	.844	.750	.850	.375	.893	.927
Cars	3	551	20	574	100	94	6	200	7	532	101	640	21	51	3	75	1489
% Cars	100	96.8	100	97.0	99.0	98.9	100	99.0	100	98.7	99.0	98.8	100	100	100	100	98.2
Trucks	0	18	0	18	1	1	0	2	0	7	1	8	0	0	0	0	28
% Trucks	0	3.2	0	3.0	1.0	1.1	0	1.0	0	1.3	1.0	1.2	0	0	0	0	1.8

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

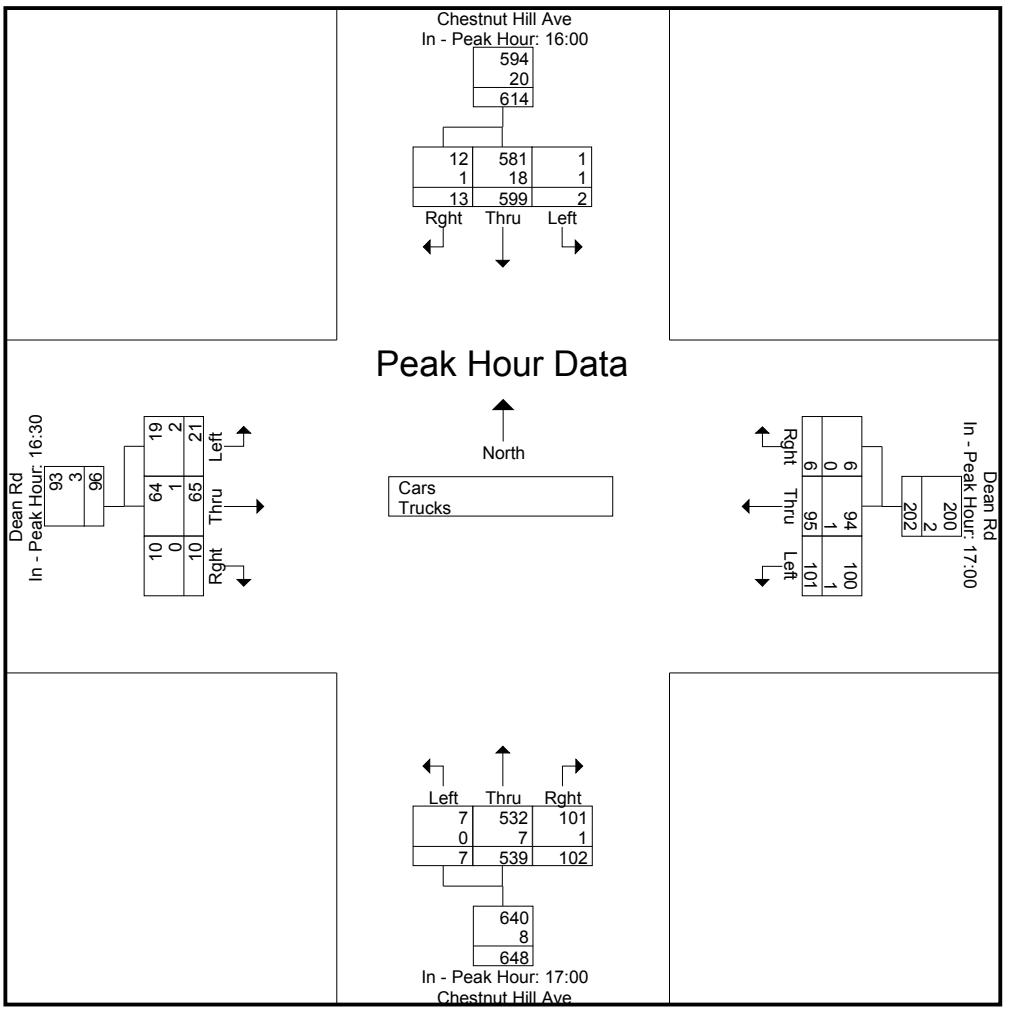
Peak Hour for Each Approach Begins at:

	16:00				17:00				17:00				16:30			
+0 mins.	0	**153**	3	156	**33**	24	1	**58**	0	130	24	154	**9**	14	**4**	27
+15 mins.	0	149	**4**	153	17	20	**3**	40	2	129	24	155	4	**22**	4	**30**
+30 mins.	**2**	153	3	**158**	26	20	1	47	2	**158**	**32**	**192**	4	15	0	19
+45 mins.	0	144	3	147	25	**31**	1	57	**3**	122	22	147	4	14	2	20
Total Volume	2	599	13	614	101	95	6	202	7	539	102	648	21	65	10	96
% App. Total	0.3	97.6	2.1		50	47	3		1.1	83.2	15.7		21.9	67.7	10.4	
PHF	.250	.979	.813	.972	.765	.766	.500	.871	.583	.853	.797	.844	.583	.739	.625	.800
Cars	1	581	12	594	100	94	6	200	7	532	101	640	19	64	10	93
% Cars	50	97	92.3	96.7	99	98.9	100	99	100	98.7	99	98.8	90.5	98.5	100	96.9
Trucks	1	18	1	20	1	1	0	2	0	7	1	8	2	1	0	3
% Trucks	50	3	7.7	3.3	1	1.1	0	1	0	1.3	1	1.2	9.5	1.5	0	3.1

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

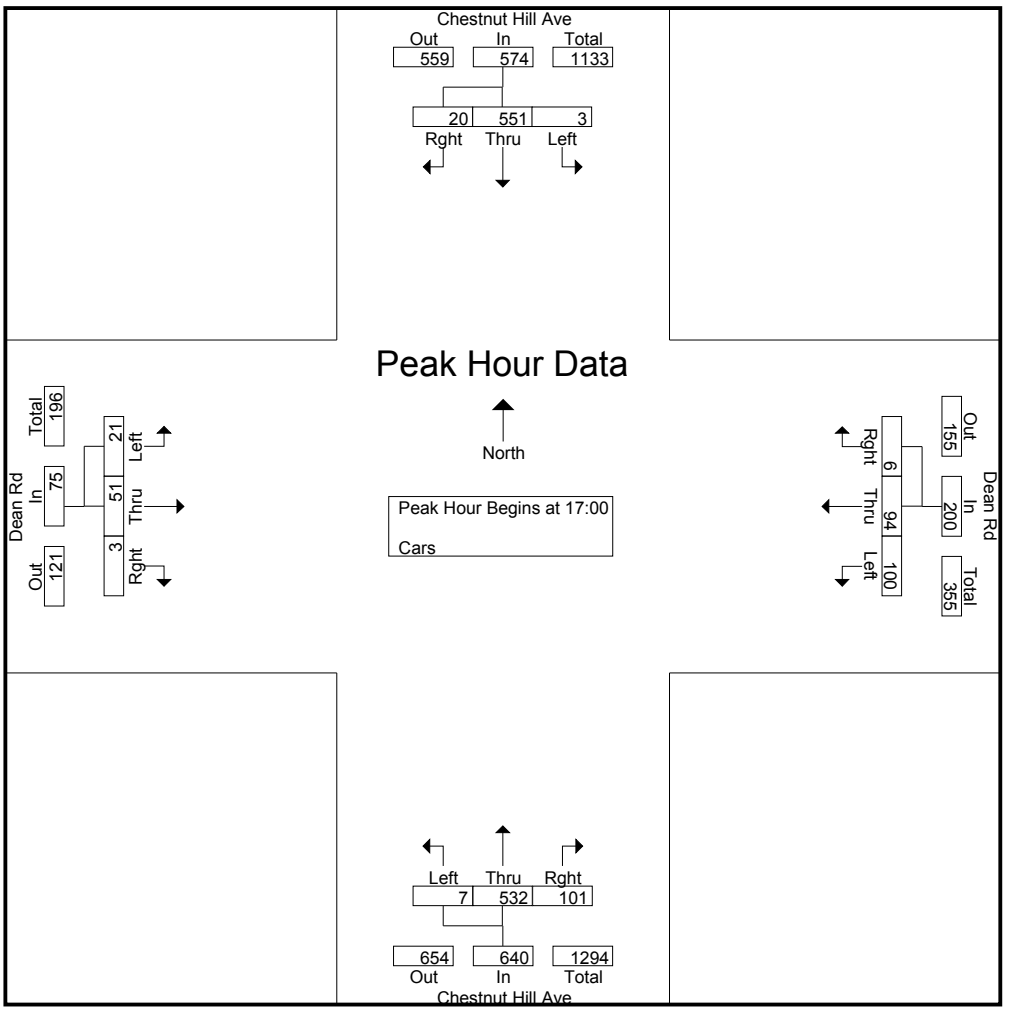
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	150	3	25	16	4	1	111	28	4	8	1	351
16:15	0	141	3	15	19	1	1	129	18	4	7	2	340
16:30	1	148	3	31	18	0	1	126	31	8	14	4	385
16:45	0	142	3	29	12	3	0	120	17	3	21	4	354
Total	1	581	12	100	65	8	3	486	94	19	50	11	1430
17:00	1	140	5	32	24	1	0	127	23	4	15	0	372
17:15	0	132	2	17	19	3	2	129	24	4	14	2	348
17:30	1	141	7	26	20	1	2	156	32	6	9	0	401
17:45	1	138	6	25	31	1	3	120	22	7	13	1	368
Total	3	551	20	100	94	6	7	532	101	21	51	3	1489
Grand Total	4	1132	32	200	159	14	10	1018	195	40	101	14	2919
Apprch %	0.3	96.9	2.7	53.6	42.6	3.8	0.8	83.2	15.9	25.8	65.2	9	
Total %	0.1	38.8	1.1	6.9	5.4	0.5	0.3	34.9	6.7	1.4	3.5	0.5	

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**1**	140	5	146	**32**	24	1	**57**	0	127	23	150	4	**15**	0	19	372
17:15	0	132	2	134	17	19	**3**	39	2	129	24	155	4	14	**2**	20	348
17:30	1	**141**	**7**	**149**	26	20	1	47	2	**156**	**32**	**190**	6	9	0	15	**401**
17:45	1	138	6	145	25	**31**	1	57	**3**	120	22	145	**7**	13	1	**21**	368
Total Volume	3	551	20	574	100	94	6	200	7	532	101	640	21	51	3	75	1489
% App. Total	0.5	96	3.5		50	47	3		1.1	83.1	15.8		28	68	4		
PHF	.750	.977	.714	.963	.781	.758	.500	.877	.583	.853	.789	.842	.750	.850	.375	.893	.928

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 2



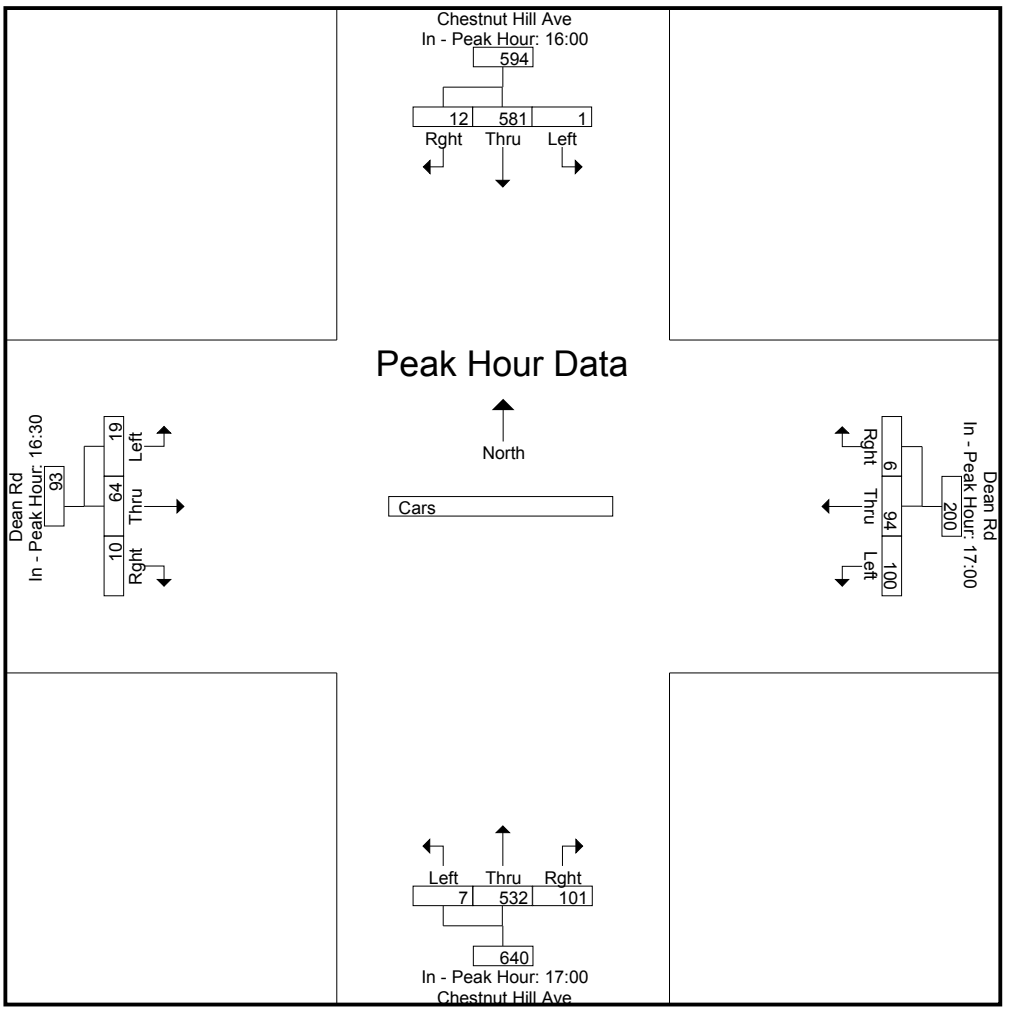
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	16:00				17:00				17:00				16:30			
+0 mins.	0	**150**	**3**	**153**	**32**	24	1	**57**	0	127	23	150	**8**	14	**4**	26
+15 mins.	0	141	3	144	17	19	**3**	39	2	129	24	155	3	**21**	4	**28**
+30 mins.	**1**	148	3	152	26	20	1	47	2	**156**	**32**	**190**	4	15	0	19
+45 mins.	0	142	3	145	25	**31**	1	57	**3**	120	22	145	4	14	2	20
Total Volume	1	581	12	594	100	94	6	200	7	532	101	640	19	64	10	93
% App. Total	0.2	97.8	2		50	47	3		1.1	83.1	15.8		20.4	68.8	10.8	
PHF	.250	.968	1.000	.971	.781	.758	.500	.877	.583	.853	.789	.842	.594	.762	.625	.830

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

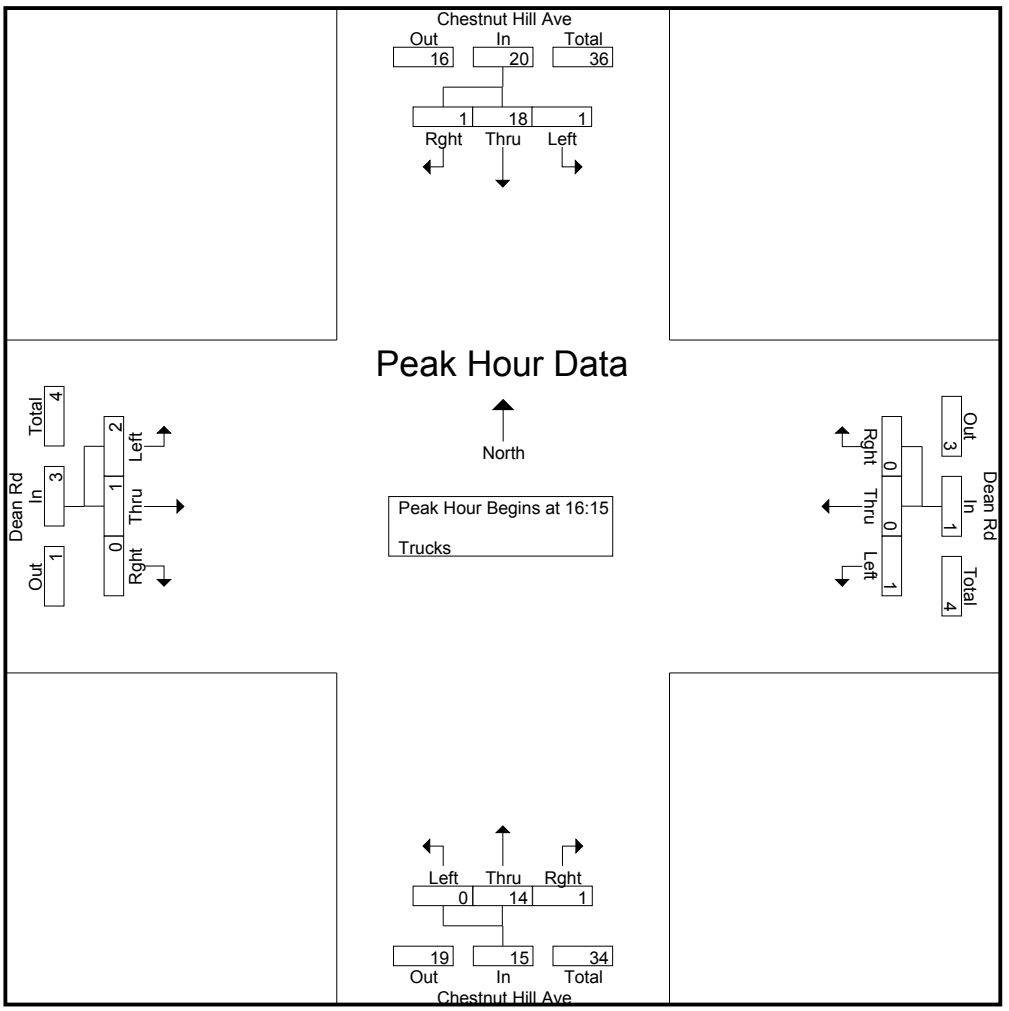
Groups Printed- Trucks

	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	3	0	0	0	0	0	1	0	0	0	0	4
16:15	0	8	1	0	0	0	0	3	0	0	0	0	12
16:30	1	5	0	0	0	0	0	6	0	1	0	0	13
16:45	0	2	0	0	0	0	0	2	0	1	1	0	6
Total	1	18	1	0	0	0	0	12	0	2	1	0	35
17:00	0	3	0	1	0	0	0	3	1	0	0	0	8
17:15	0	4	0	0	1	0	0	0	0	0	0	0	5
17:30	0	6	0	0	0	0	0	2	0	0	0	0	8
17:45	0	5	0	0	0	0	0	2	0	0	0	0	7
Total	0	18	0	1	1	0	0	7	1	0	0	0	28
Grand Total	1	36	1	1	1	0	0	19	1	2	1	0	63
Apprch %	2.6	94.7	2.6	50	50	0	0	95	5	66.7	33.3	0	
Total %	1.6	57.1	1.6	1.6	1.6	0	0	30.2	1.6	3.2	1.6	0	

	Chestnut Hill Ave From North				Dean Rd From East				Chestnut Hill Ave From South				Dean Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	0	**8**	**1**	**9**	0	0	0	0	0	3	0	3	0	0	0	0	12
16:30	**1**	5	0	6	0	0	0	0	0	**6**	0	**6**	**1**	0	0	1	**13**
16:45	0	2	0	2	0	0	0	0	0	2	0	2	1	**1**	0	**2**	6
17:00	0	3	0	3	**1**	0	0	**1**	0	3	**1**	4	0	0	0	0	8
Total Volume	1	18	1	20	1	0	0	1	0	14	1	15	2	1	0	3	39
% App. Total	5	90	5		100	0	0		0	93.3	6.7		66.7	33.3	0		
PHF	.250	.563	.250	.556	.250	.000	.000	.250	.000	.583	.250	.625	.500	.250	.000	.375	.750

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

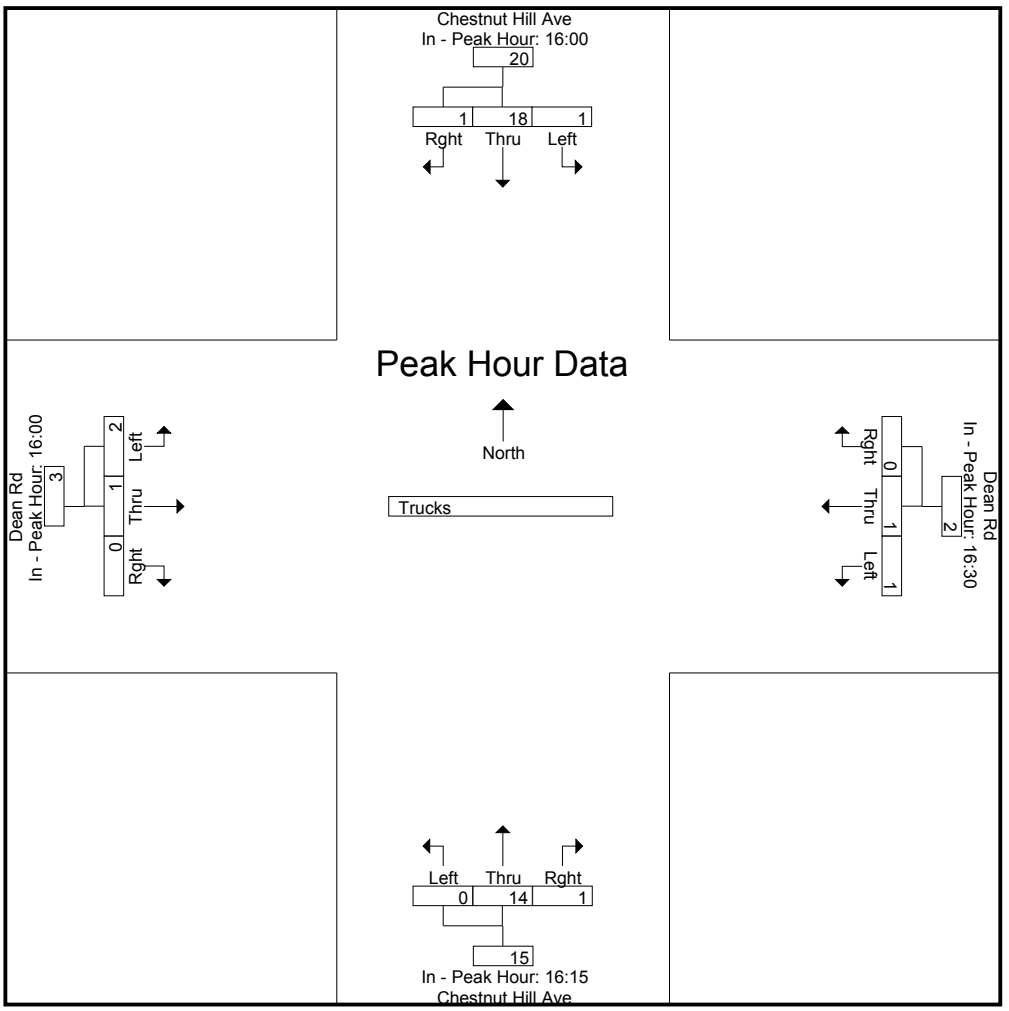
Peak Hour for Each Approach Begins at:

	16:00				16:30				16:15				16:00			
+0 mins.	0	3	0	3	0	0	0	0	0	3	0	3	0	0	0	0
+15 mins.	0	**8**	**1**	**9**	0	0	0	0	0	**6**	0	**6**	0	0	0	0
+30 mins.	**1**	5	0	6	**1**	0	0	**1**	0	2	0	2	**1**	0	0	1
+45 mins.	0	2	0	2	0	**1**	0	1	0	3	**1**	4	1	**1**	0	**2**
Total Volume	1	18	1	20	1	1	0	2	0	14	1	15	2	1	0	3
% App. Total	5	90	5		50	50	0		0	93.3	6.7		66.7	33.3	0	
PHF	.250	.563	.250	.556	.250	.250	.000	.500	.000	.583	.250	.625	.500	.250	.000	.375

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

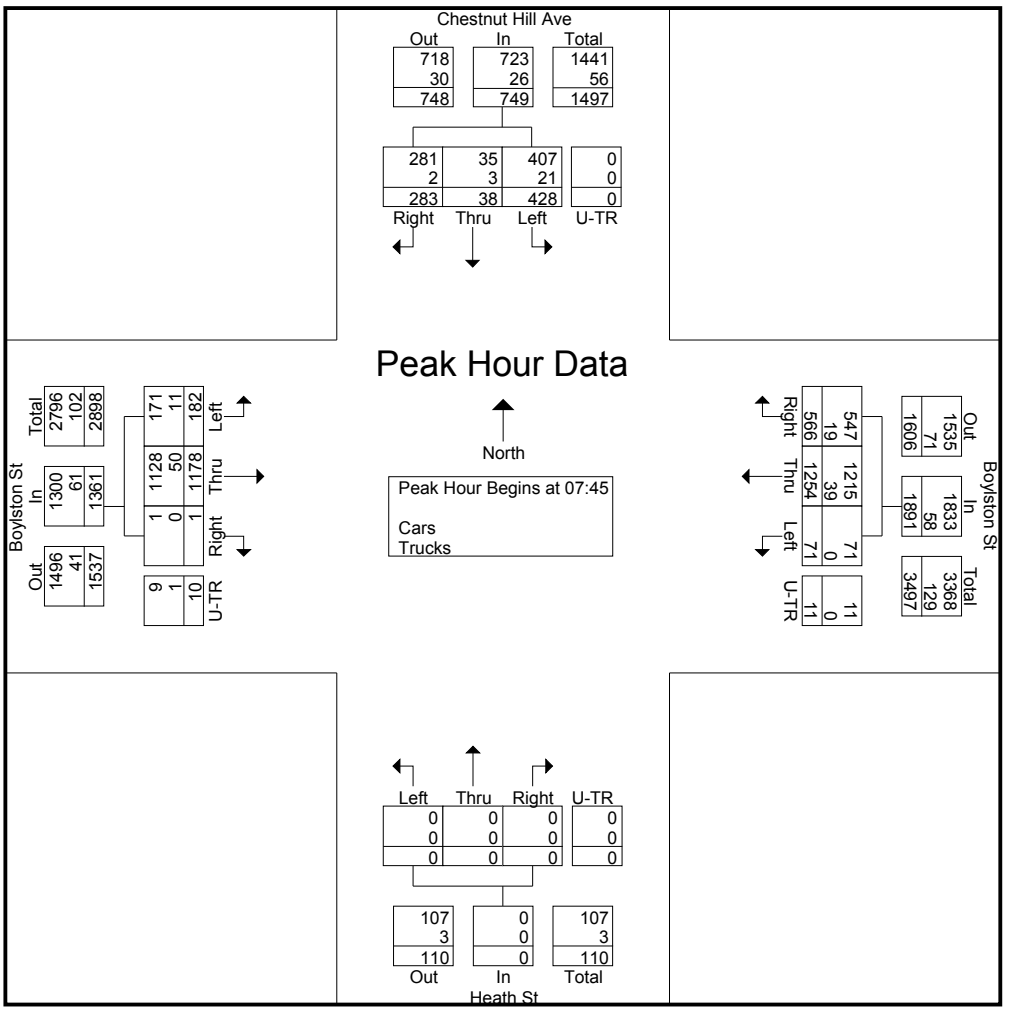
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00	80	7	66	0	5	197	106	0	0	0	0	0	42	304	0	1	808
07:15	99	5	75	0	15	266	116	2	0	0	0	0	42	331	1	1	953
07:30	98	3	83	0	19	288	131	2	0	0	0	0	43	284	0	2	953
07:45	115	15	73	0	17	326	143	3	0	0	0	0	47	309	0	5	1053
Total	392	30	297	0	56	1077	496	7	0	0	0	0	174	1228	1	9	3767
08:00	112	9	81	0	13	313	138	4	0	0	0	0	36	258	1	1	966
08:15	103	10	68	0	26	321	142	2	0	0	0	0	49	312	0	2	1035
08:30	98	4	61	0	15	294	143	2	0	0	0	0	50	299	0	2	968
08:45	91	14	62	0	17	262	136	0	0	0	0	0	58	266	0	2	908
Total	404	37	272	0	71	1190	559	8	0	0	0	0	193	1135	1	7	3877
Grand Total	796	67	569	0	127	2267	1055	15	0	0	0	0	367	2363	2	16	7644
Apprch %	55.6	4.7	39.7	0	3.7	65.4	30.5	0.4	0	0	0	0	13.4	86	0.1	0.6	
Total %	10.4	0.9	7.4	0	1.7	29.7	13.8	0.2	0	0	0	0	4.8	30.9	0	0.2	
Cars	759	63	564	0	126	2200	1013	15	0	0	0	0	342	2274	2	15	7373
% Cars	95.4	94	99.1	0	99.2	97	96	100	0	0	0	0	93.2	96.2	100	93.8	96.5
Trucks	37	4	5	0	1	67	42	0	0	0	0	0	25	89	0	1	271
% Trucks	4.6	6	0.9	0	0.8	3	4	0	0	0	0	0	6.8	3.8	0	6.2	3.5

	Chestnut Hill Ave From North					Boylston St From East					Heath St From South					Boylston St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	**115**	**15**	73	0	**203**	17	**326**	**143**	3	489	0	0	0	0	0	47	309	0	**5**	361	**1053**
08:00	112	9	**81**	0	202	13	313	138	**4**	468	0	0	0	0	0	36	258	**1**	1	296	966
08:15	103	10	68	0	181	**26**	321	142	2	**491**	0	0	0	0	0	49	**312**	0	2	**363**	1035
08:30	98	4	61	0	163	15	294	143	2	454	0	0	0	0	0	**50**	299	0	2	351	968
Total Volume	428	38	283	0	749	71	1254	566	11	1902	0	0	0	0	0	182	1178	1	10	1371	4022
% App. Total	57.1	5.1	37.8	0		3.7	65.9	29.8	0.6		0	0	0	0		13.3	85.9	0.1	0.7		
PHF	.930	.633	.873	.000	.922	.683	.962	.990	.688	.968	.000	.000	.000	.000	.000	.910	.944	.250	.500	.944	.955
Cars	407	35	281	0	723	71	1215	547	11	1844	0	0	0	0	0	171	1128	1	9	1309	3876
% Cars	95.1	92.1	99.3	0	96.5	100	96.9	96.6	100	97.0	0	0	0	0	0	94.0	95.8	100	90.0	95.5	96.4
Trucks	21	3	2	0	26	0	39	19	0	58	0	0	0	0	0	11	50	0	1	62	146
% Trucks	4.9	7.9	0.7	0	3.5	0	3.1	3.4	0	3.0	0	0	0	0	0	6.0	4.2	0	10.0	4.5	3.6

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 2



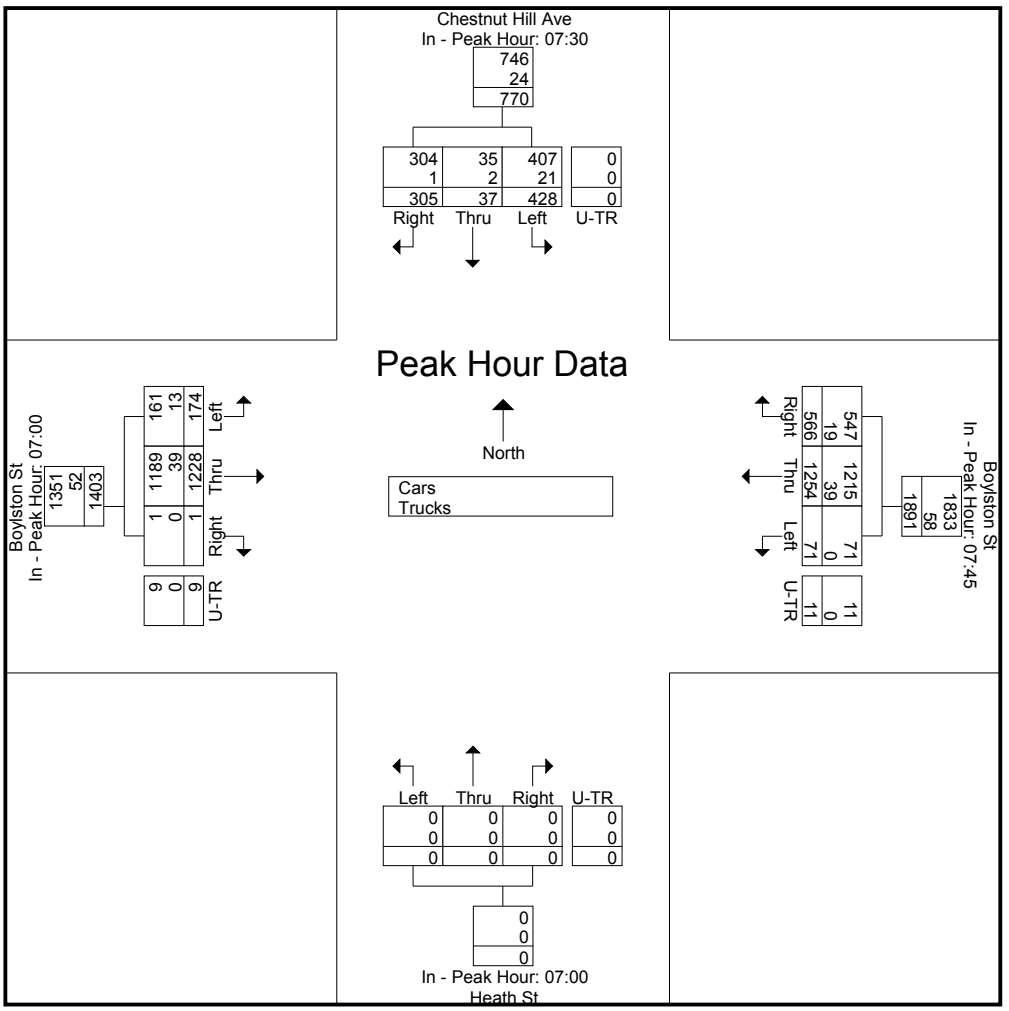
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30					07:45					07:00					07:00				
+0 mins.	98	3	**83**	0	184	17	**326**	**143**	3	489	0	0	0	0	0	42	304	0	1	347
+15 mins.	**115**	**15**	73	0	**203**	13	313	138	**4**	468	0	0	0	0	0	42	**331**	**1**	1	**375**
+30 mins.	112	9	81	0	202	**26**	321	142	2	**491**	0	0	0	0	0	43	284	0	2	329
+45 mins.	103	10	68	0	181	15	294	143	2	454	0	0	0	0	0	**47**	309	0	**5**	361
Total Volume	428	37	305	0	770	71	1254	566	11	1902	0	0	0	0	0	174	1228	1	9	1412
% App. Total	55.6	4.8	39.6	0		3.7	65.9	29.8	0.6		0	0	0	0		12.3	87	0.1	0.6	
PHF	.930	.617	.919	.000	.948	.683	.962	.990	.688	.968	.000	.000	.000	.000	.000	.926	.927	.250	.450	.941
Cars	407	35	304	0	746	71	1215	547	11	1844	0	0	0	0	0	161	1189	1	9	1360
% Cars	95.1	94.6	99.7	0	96.9	100	96.9	96.6	100	97	0	0	0	0	0	92.5	96.8	100	100	96.3
Trucks	21	2	1	0	24	0	39	19	0	58	0	0	0	0	0	13	39	0	0	52
% Trucks	4.9	5.4	0.3	0	3.1	0	3.1	3.4	0	3	0	0	0	0	0	7.5	3.2	0	0	3.7

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

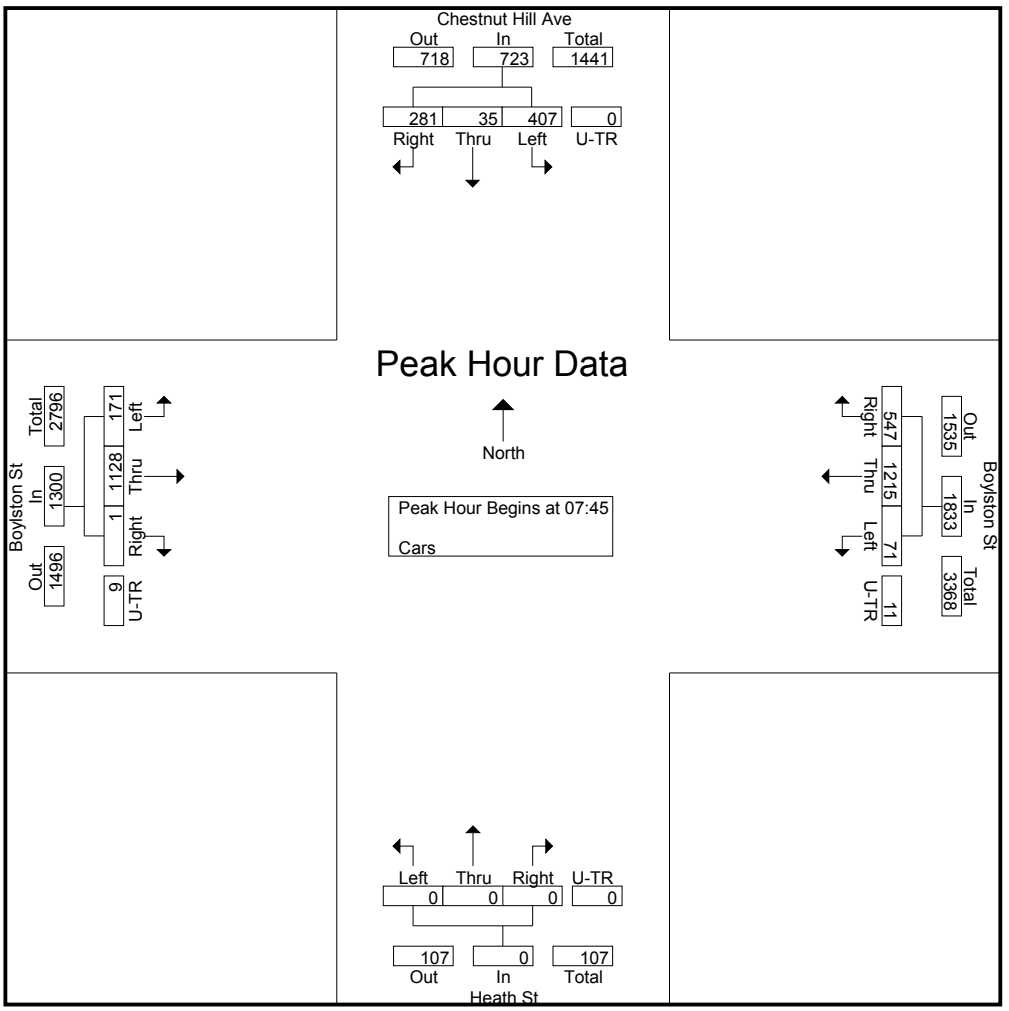
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00	78	6	66	0	5	190	97	0	0	0	0	0	40	292	0	1	775
07:15	96	5	73	0	14	260	110	2	0	0	0	0	39	325	1	1	926
07:30	93	3	83	0	19	281	129	2	0	0	0	0	39	272	0	2	923
07:45	112	15	73	0	17	318	138	3	0	0	0	0	43	300	0	5	1024
Total	379	29	295	0	55	1049	474	7	0	0	0	0	161	1189	1	9	3648
08:00	107	9	80	0	13	305	130	4	0	0	0	0	35	247	1	1	932
08:15	95	8	68	0	26	310	138	2	0	0	0	0	46	299	0	2	994
08:30	93	3	60	0	15	282	141	2	0	0	0	0	47	282	0	1	926
08:45	85	14	61	0	17	254	130	0	0	0	0	0	53	257	0	2	873
Total	380	34	269	0	71	1151	539	8	0	0	0	0	181	1085	1	6	3725
Grand Total	759	63	564	0	126	2200	1013	15	0	0	0	0	342	2274	2	15	7373
Apprch %	54.8	4.5	40.7	0	3.8	65.6	30.2	0.4	0	0	0	0	13	86.4	0.1	0.6	
Total %	10.3	0.9	7.6	0	1.7	29.8	13.7	0.2	0	0	0	0	4.6	30.8	0	0.2	

	Chestnut Hill Ave From North					Boylston St From East					Heath St From South					Boylston St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	**112**	**15**	73	0	**200**	17	**318**	138	3	**476**	0	0	0	0	0	43	**300**	0	**5**	**348**	**1024**
08:00	107	9	**80**	0	196	13	305	130	**4**	452	0	0	0	0	0	35	247	**1**	1	284	932
08:15	95	8	68	0	171	**26**	310	138	2	476	0	0	0	0	0	46	299	0	2	347	994
08:30	93	3	60	0	156	15	282	**141**	2	440	0	0	0	0	0	**47**	282	0	1	330	926
Total Volume	407	35	281	0	723	71	1215	547	11	1844	0	0	0	0	0	171	1128	1	9	1309	3876
% App. Total	56.3	4.8	38.9	0		3.9	65.9	29.7	0.6		0	0	0	0		13.1	86.2	0.1	0.7		
PHF	.908	.583	.878	.000	.904	.683	.955	.970	.688	.968	.000	.000	.000	.000	.000	.910	.940	.250	.450	.940	.946

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 2



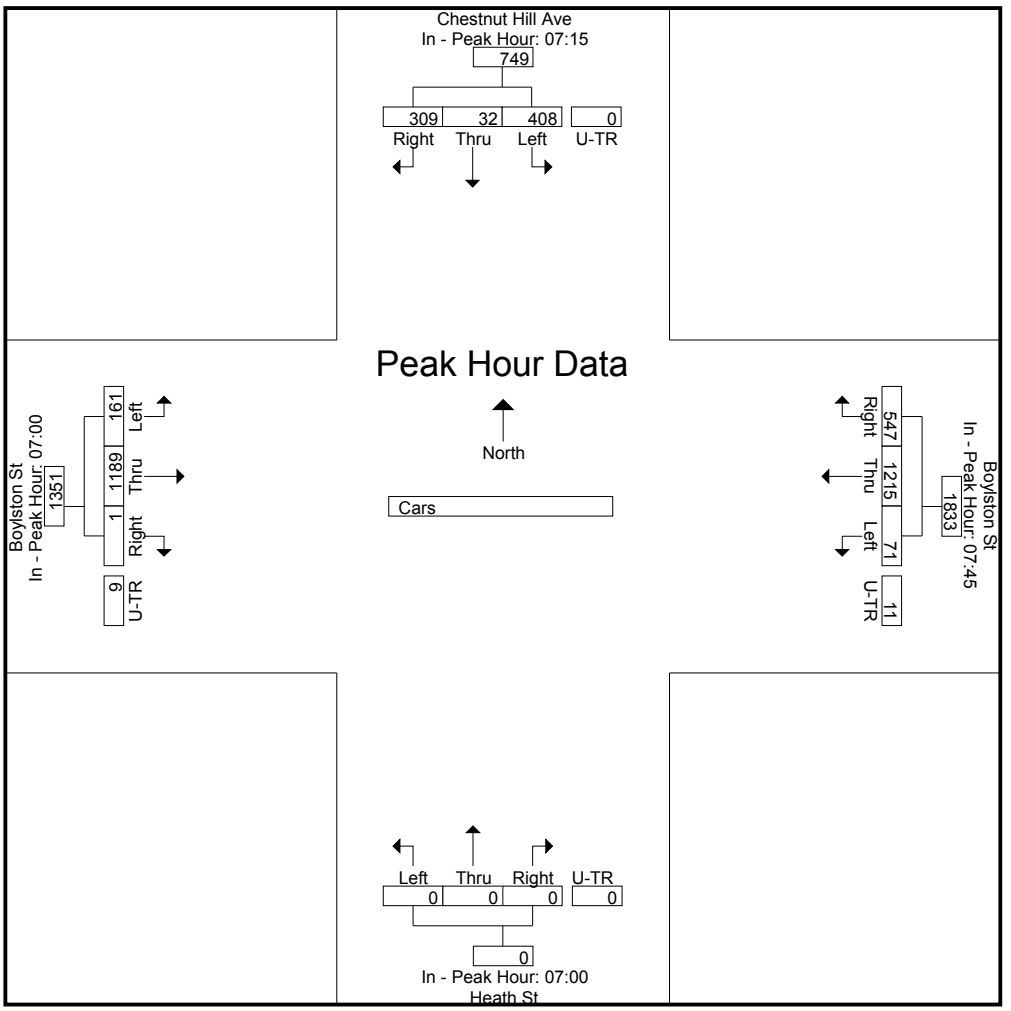
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15					07:45					07:00					07:00				
+0 mins.	96	5	73	0	174	17	**318**	138	3	**476**	0	0	0	0	0	40	292	0	1	333
+15 mins.	93	3	**83**	0	179	13	305	130	**4**	452	0	0	0	0	0	39	**325**	**1**	1	**366**
+30 mins.	**112**	**15**	73	0	**200**	**26**	310	138	2	476	0	0	0	0	0	39	272	0	2	313
+45 mins.	107	9	80	0	196	15	282	**141**	2	440	0	0	0	0	0	**43**	300	0	**5**	348
Total Volume	408	32	309	0	749	71	1215	547	11	1844	0	0	0	0	0	161	1189	1	9	1360
% App. Total	54.5	4.3	41.3	0		3.9	65.9	29.7	0.6		0	0	0	0		11.8	87.4	0.1	0.7	
PHF	.911	.533	.931	.000	.936	.683	.955	.970	.688	.968	.000	.000	.000	.000	.000	.936	.915	.250	.450	.929

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

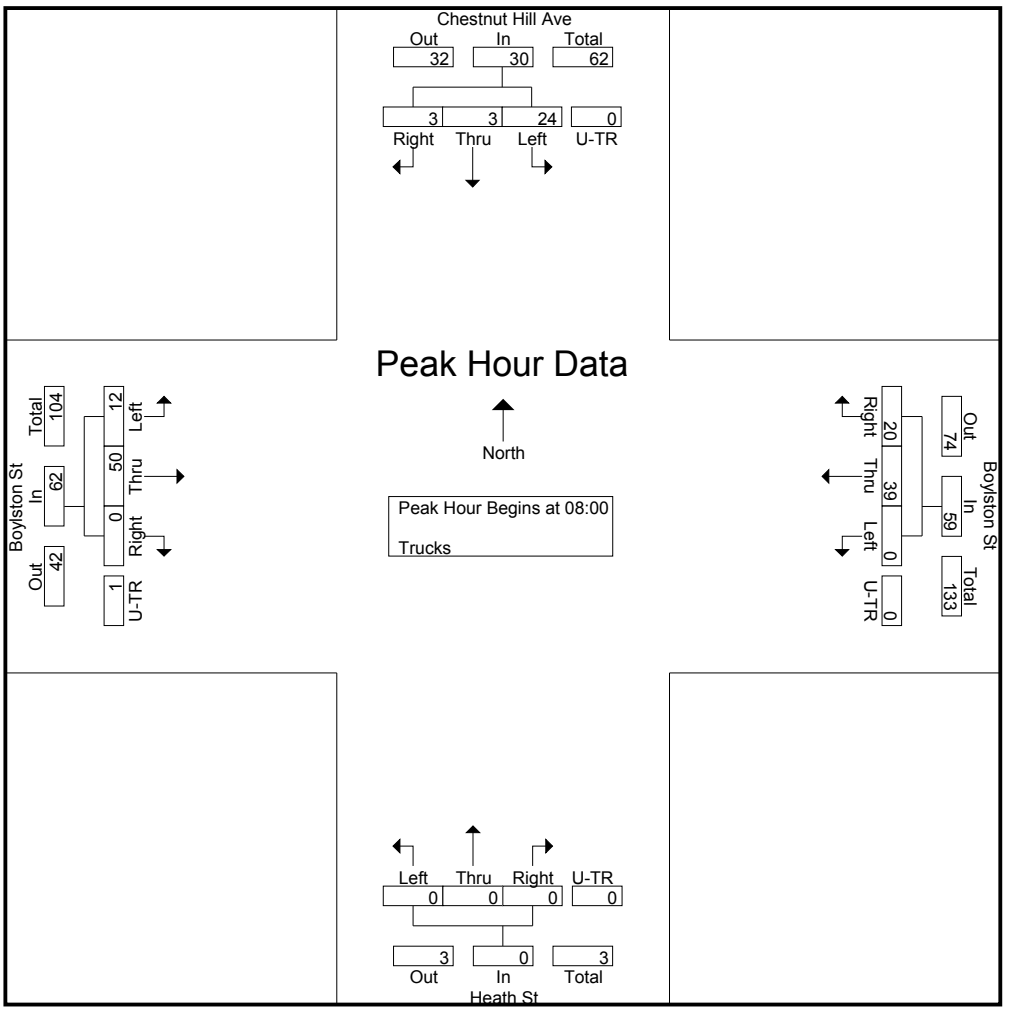
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00	2	1	0	0	0	7	9	0	0	0	0	0	2	12	0	0	33
07:15	3	0	2	0	1	6	6	0	0	0	0	0	3	6	0	0	27
07:30	5	0	0	0	0	7	2	0	0	0	0	0	4	12	0	0	30
07:45	3	0	0	0	0	8	5	0	0	0	0	0	4	9	0	0	29
Total	13	1	2	0	1	28	22	0	0	0	0	0	13	39	0	0	119
08:00	5	0	1	0	0	8	8	0	0	0	0	0	1	11	0	0	34
08:15	8	2	0	0	0	11	4	0	0	0	0	0	3	13	0	0	41
08:30	5	1	1	0	0	12	2	0	0	0	0	0	3	17	0	1	42
08:45	6	0	1	0	0	8	6	0	0	0	0	0	5	9	0	0	35
Total	24	3	3	0	0	39	20	0	0	0	0	0	12	50	0	1	152
Grand Total	37	4	5	0	1	67	42	0	0	0	0	0	25	89	0	1	271
Apprch %	80.4	8.7	10.9	0	0.9	60.9	38.2	0	0	0	0	0	21.7	77.4	0	0.9	
Total %	13.7	1.5	1.8	0	0.4	24.7	15.5	0	0	0	0	0	9.2	32.8	0	0.4	

	Chestnut Hill Ave From North					Boylston St From East					Heath St From South					Boylston St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	5	0	**1**	0	6	0	8	**8**	0	**16**	0	0	0	0	0	1	11	0	0	12	34
08:15	**8**	**2**	0	0	**10**	0	11	4	0	15	0	0	0	0	0	3	13	0	0	16	41
08:30	5	1	1	0	7	0	**12**	2	0	14	0	0	0	0	0	3	**17**	0	**1**	**21**	**42**
08:45	6	0	1	0	7	0	8	6	0	14	0	0	0	0	0	**5**	9	0	0	14	35
Total Volume	24	3	3	0	30	0	39	20	0	59	0	0	0	0	0	12	50	0	1	63	152
% App. Total	80	10	10	0		0	66.1	33.9	0		0	0	0	0		19	79.4	0	1.6		
PHF	.750	.375	.750	.000	.750	.000	.813	.625	.000	.922	.000	.000	.000	.000	.000	.600	.735	.000	.250	.750	.905

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 2



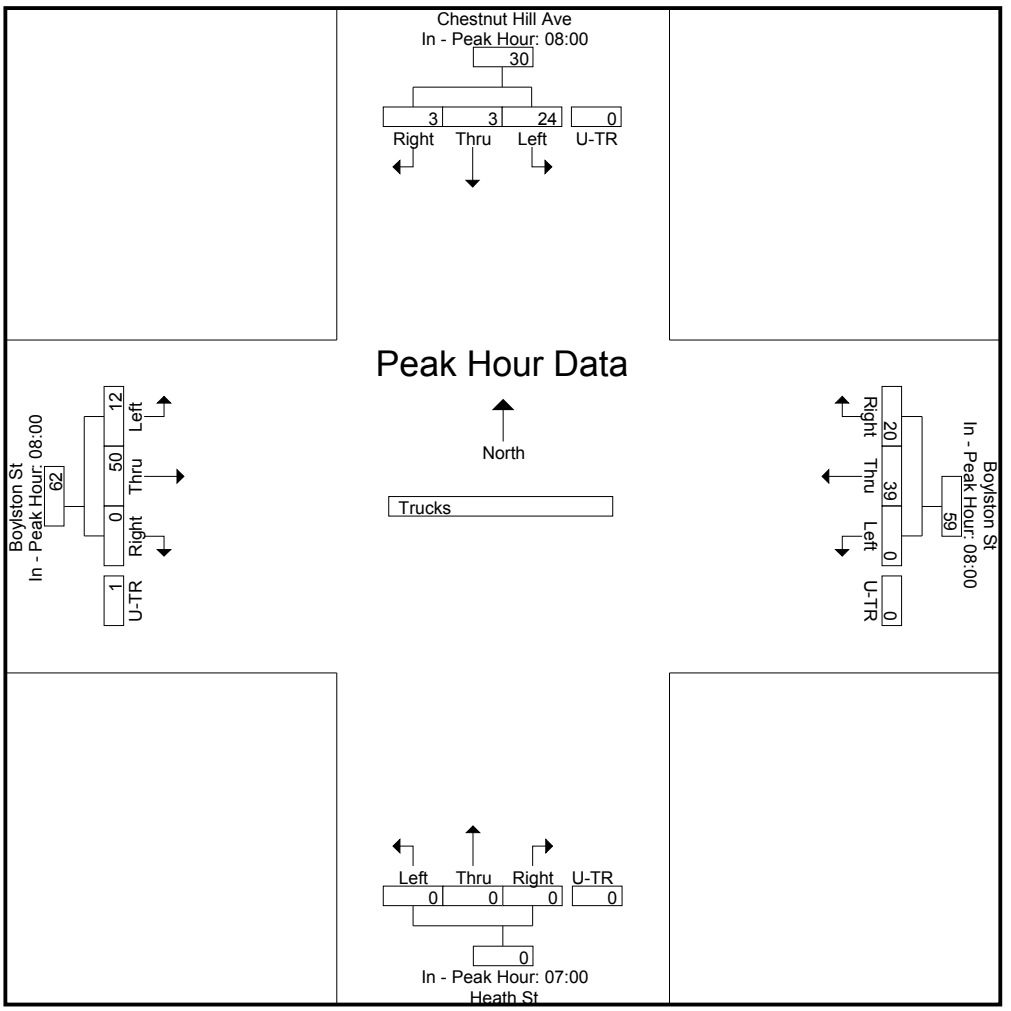
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00					08:00					07:00					08:00				
+0 mins.	5	0	**1**	0	6	0	8	**8**	0	**16**	0	0	0	0	0	1	11	0	0	12
+15 mins.	**8**	**2**	0	0	**10**	0	11	4	0	15	0	0	0	0	0	3	13	0	0	16
+30 mins.	5	1	1	0	7	0	**12**	2	0	14	0	0	0	0	0	3	**17**	0	**1**	**21**
+45 mins.	6	0	1	0	7	0	8	6	0	14	0	0	0	0	0	**5**	9	0	0	14
Total Volume	24	3	3	0	30	0	39	20	0	59	0	0	0	0	0	12	50	0	1	63
% App. Total	80	10	10	0		0	66.1	33.9	0		0	0	0	0		19	79.4	0	1.6	
PHF	.750	.375	.750	.000	.750	.000	.813	.625	.000	.922	.000	.000	.000	.000	.000	.600	.735	.000	.250	.750

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

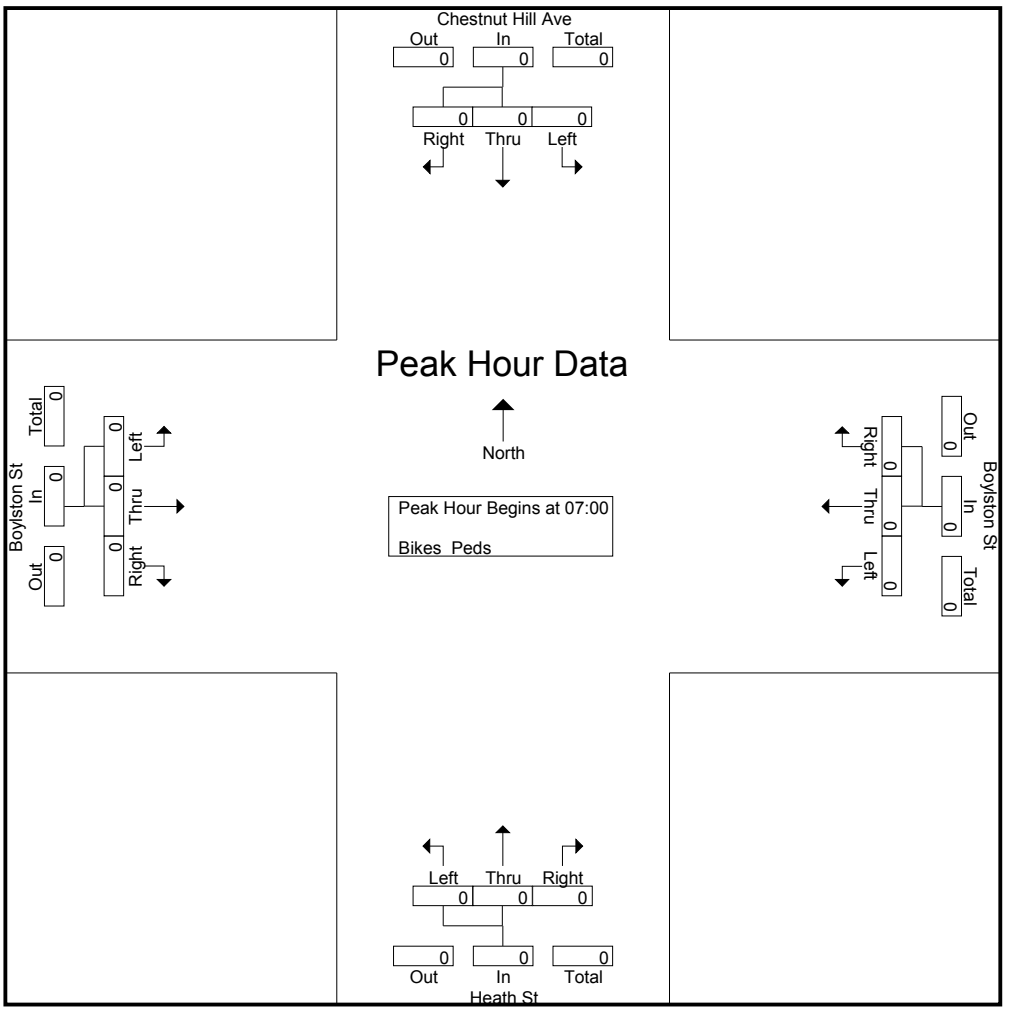
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2
07:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	3	0	3
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	6	0	6
08:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	5	0	5
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
08:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	5	0	5
Total	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	9	12	0	12
Grand Total	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	13	18	0	18
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 2



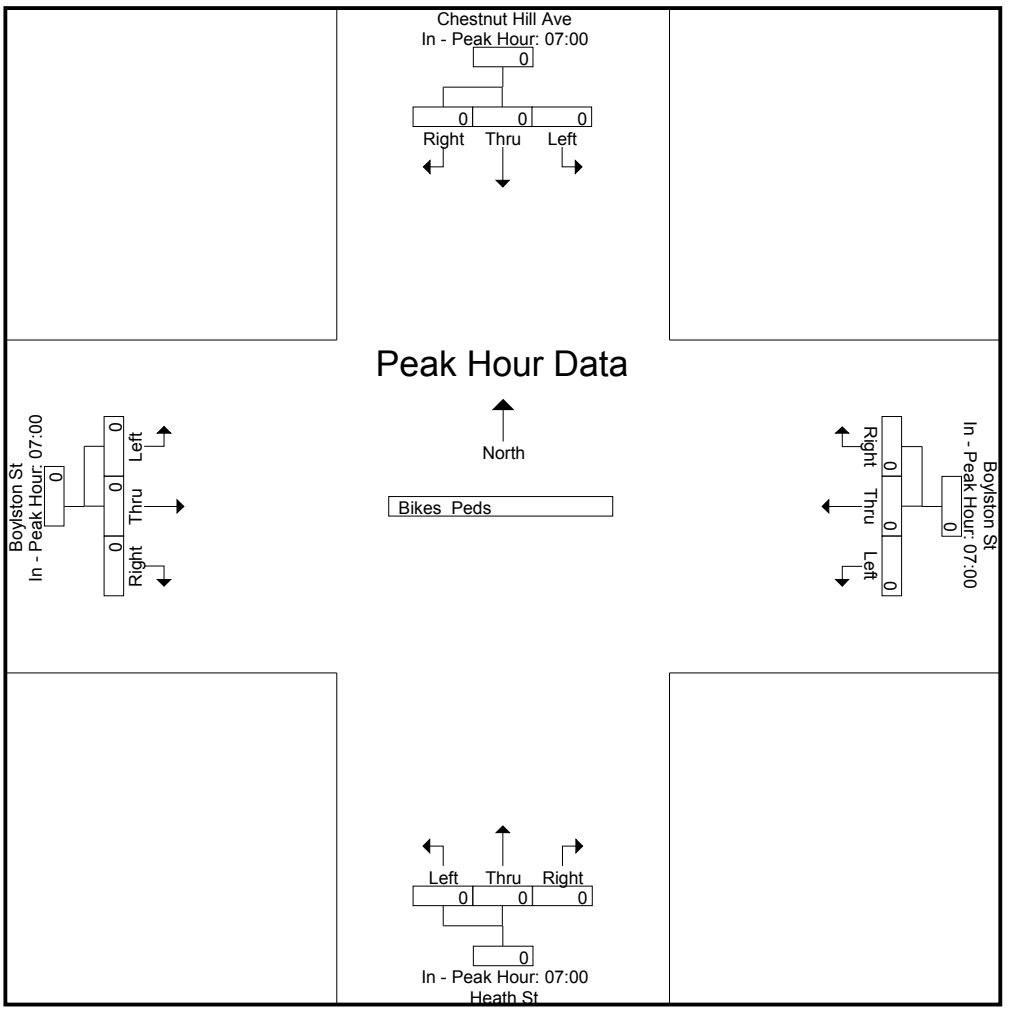
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00				07:00				07:00				07:00			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+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	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

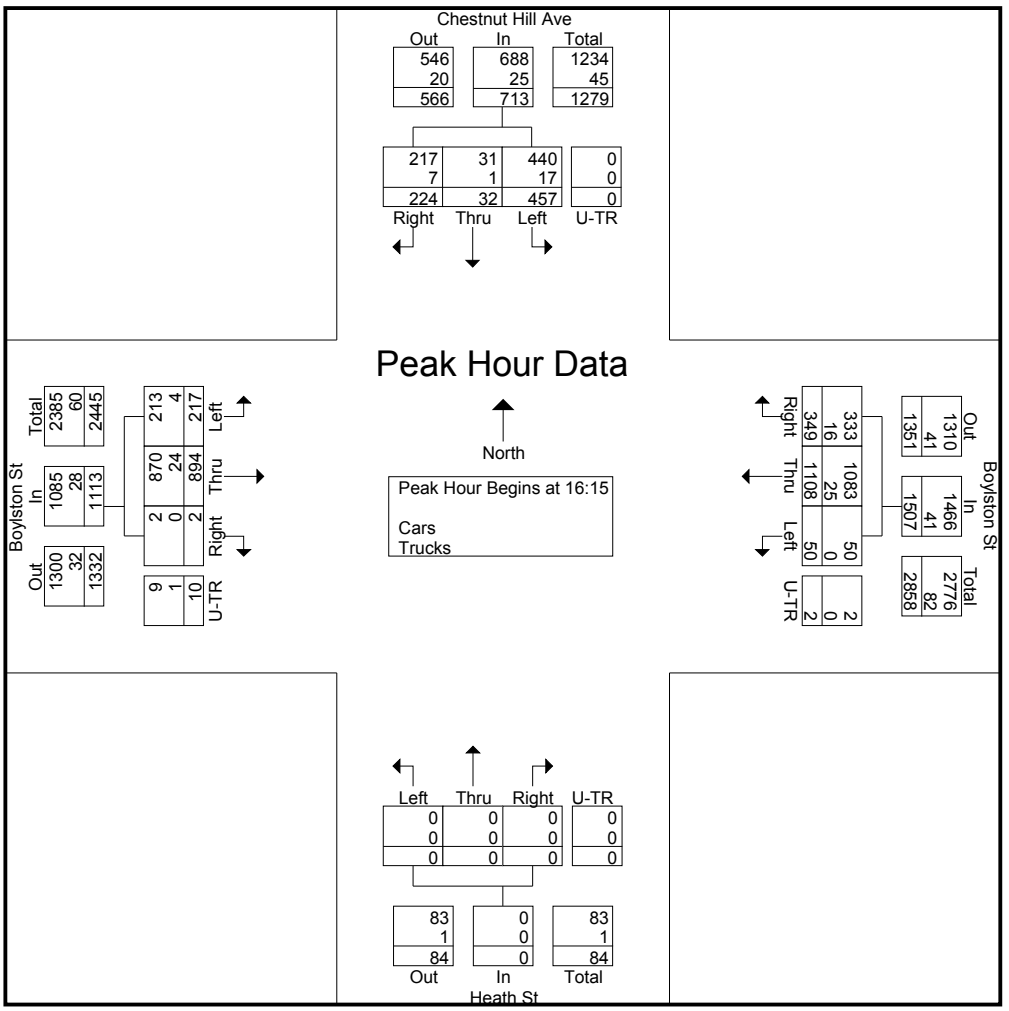
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
16:00	119	7	52	0	12	284	72	0	0	0	0	0	39	238	0	4	827
16:15	122	8	58	0	15	263	92	0	0	0	0	0	46	219	0	4	827
16:30	112	6	54	0	9	317	95	0	0	0	0	0	58	258	2	4	915
16:45	125	6	57	0	11	250	85	2	0	0	0	0	69	169	0	1	775
Total	478	27	221	0	47	1114	344	2	0	0	0	0	212	884	2	13	3344
17:00	98	12	55	0	15	278	77	0	0	0	0	0	44	248	0	1	828
17:15	152	9	40	0	13	220	81	0	0	0	0	0	60	187	0	0	762
17:30	112	4	55	0	20	255	82	0	0	0	0	0	72	258	0	3	861
17:45	126	9	59	0	24	216	92	0	0	0	0	0	40	219	0	0	785
Total	488	34	209	0	72	969	332	0	0	0	0	0	216	912	0	4	3236
Grand Total	966	61	430	0	119	2083	676	2	0	0	0	0	428	1796	2	17	6580
Apprch %	66.3	4.2	29.5	0	4.1	72.3	23.5	0.1	0	0	0	0	19.1	80.1	0.1	0.8	
Total %	14.7	0.9	6.5	0	1.8	31.7	10.3	0	0	0	0	0	6.5	27.3	0	0.3	
Cars	930	59	419	0	119	2035	654	2	0	0	0	0	420	1759	2	16	6415
% Cars	96.3	96.7	97.4	0	100	97.7	96.7	100	0	0	0	0	98.1	97.9	100	94.1	97.5
Trucks	36	2	11	0	0	48	22	0	0	0	0	0	8	37	0	1	165
% Trucks	3.7	3.3	2.6	0	0	2.3	3.3	0	0	0	0	0	1.9	2.1	0	5.9	2.5

	Chestnut Hill Ave From North					Boylston St From East					Heath St From South					Boylston St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	122	8	**58**	0	**188**	**15**	263	92	0	370	0	0	0	0	0	46	219	0	**4**	269	827
16:30	112	6	54	0	172	9	**317**	**95**	0	**421**	0	0	0	0	0	58	**258**	**2**	4	**322**	**915**
16:45	**125**	6	57	0	188	11	250	85	**2**	348	0	0	0	0	0	**69**	169	0	1	239	775
17:00	98	**12**	55	0	165	15	278	77	0	370	0	0	0	0	0	44	248	0	1	293	828
Total Volume	457	32	224	0	713	50	1108	349	2	1509	0	0	0	0	0	217	894	2	10	1123	3345
% App. Total	64.1	4.5	31.4	0		3.3	73.4	23.1	0.1		0	0	0	0		19.3	79.6	0.2	0.9		
PHF	.914	.667	.966	.000	.948	.833	.874	.918	.250	.896	.000	.000	.000	.000	.000	.786	.866	.250	.625	.872	.914
Cars	440	31	217	0	688	50	1083	333	2	1468	0	0	0	0	0	213	870	2	9	1094	3250
% Cars	96.3	96.9	96.9	0	96.5	100	97.7	95.4	100	97.3	0	0	0	0	0	98.2	97.3	100	90.0	97.4	97.2
Trucks	17	1	7	0	25	0	25	16	0	41	0	0	0	0	0	4	24	0	1	29	95
% Trucks	3.7	3.1	3.1	0	3.5	0	2.3	4.6	0	2.7	0	0	0	0	0	1.8	2.7	0	10.0	2.6	2.8

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 2



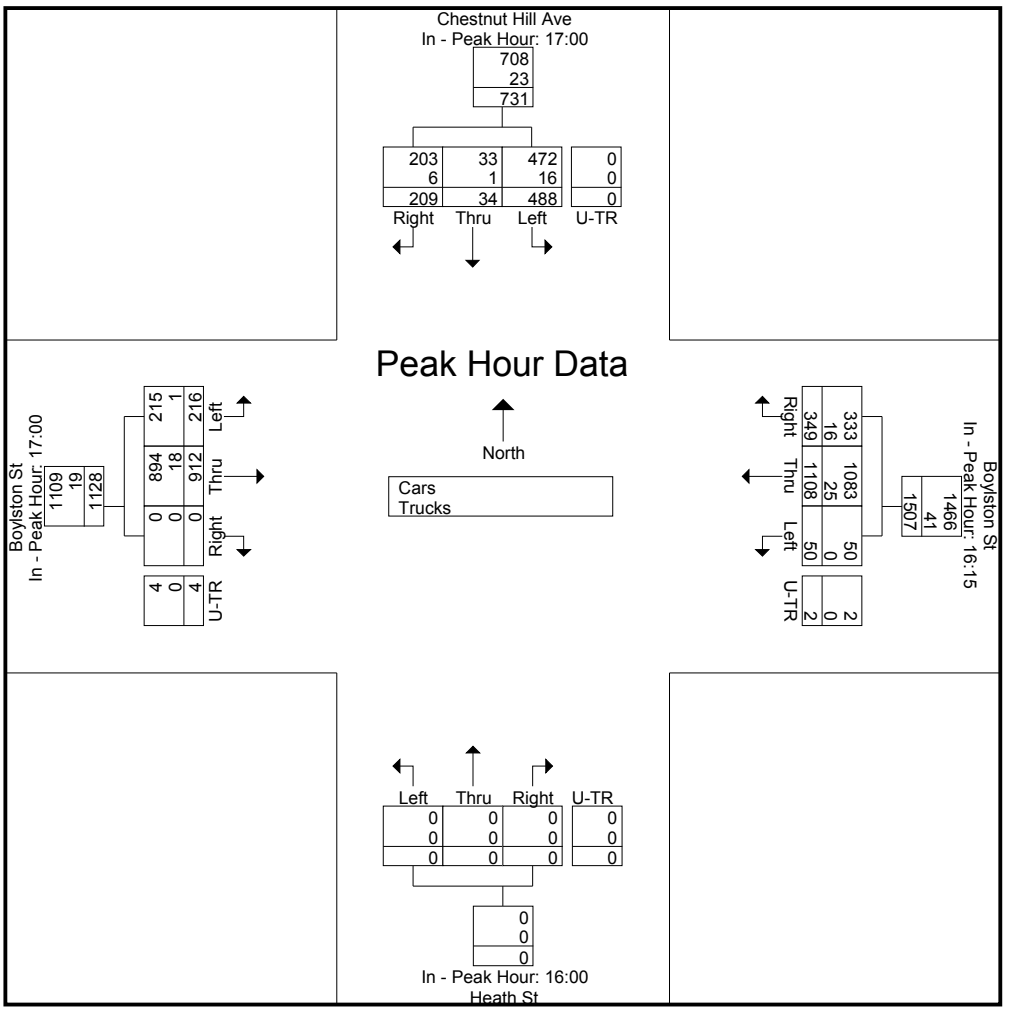
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	17:00					16:15					16:00					17:00				
+0 mins.	98	**12**	55	0	165	**15**	263	92	0	370	0	0	0	0	0	44	248	0	1	293
+15 mins.	**152**	9	40	0	**201**	9	**317**	**95**	0	**421**	0	0	0	0	0	60	187	0	0	247
+30 mins.	112	4	55	0	171	11	250	85	**2**	348	0	0	0	0	0	**72**	**258**	0	**3**	**333**
+45 mins.	126	9	**59**	0	194	15	278	77	0	370	0	0	0	0	0	40	219	0	0	259
Total Volume	488	34	209	0	731	50	1108	349	2	1509	0	0	0	0	0	216	912	0	4	1132
% App. Total	66.8	4.7	28.6	0		3.3	73.4	23.1	0.1		0	0	0	0		19.1	80.6	0	0.4	
PHF	.803	.708	.886	.000	.909	.833	.874	.918	.250	.896	.000	.000	.000	.000	.000	.750	.884	.000	.333	.850
Cars	472	33	203	0	708	50	1083	333	2	1468	0	0	0	0	0	215	894	0	4	1113
% Cars	96.7	97.1	97.1	0	96.9	100	97.7	95.4	100	97.3	0	0	0	0	0	99.5	98	0	100	98.3
Trucks	16	1	6	0	23	0	25	16	0	41	0	0	0	0	0	1	18	0	0	19
% Trucks	3.3	2.9	2.9	0	3.1	0	2.3	4.6	0	2.7	0	0	0	0	0	0.5	2	0	0	1.7

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

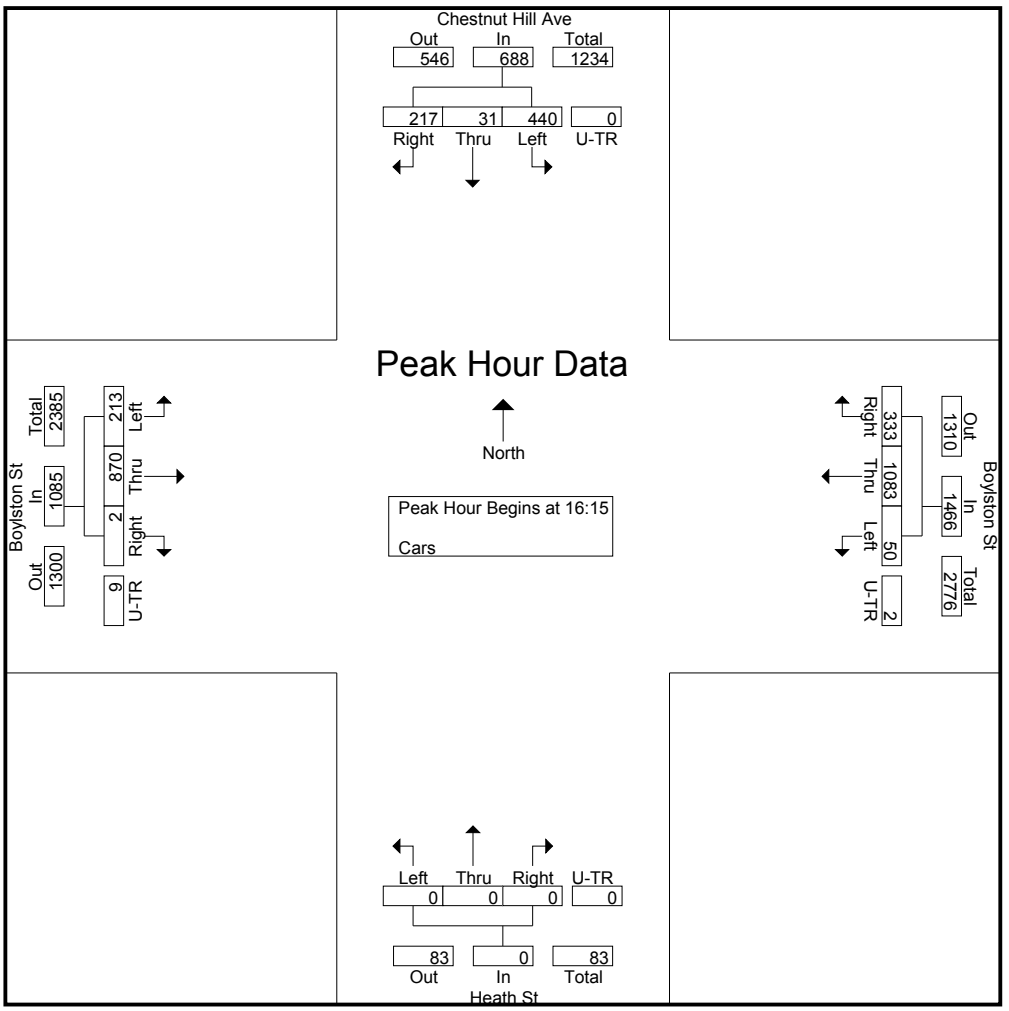
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
16:00	115	7	51	0	12	274	70	0	0	0	0	0	35	235	0	4	803
16:15	113	8	57	0	15	253	86	0	0	0	0	0	46	213	0	3	794
16:30	110	5	53	0	9	313	90	0	0	0	0	0	55	251	2	4	892
16:45	120	6	55	0	11	245	82	2	0	0	0	0	69	166	0	1	757
Total	458	26	216	0	47	1085	328	2	0	0	0	0	205	865	2	12	3246
17:00	97	12	52	0	15	272	75	0	0	0	0	0	43	240	0	1	807
17:15	146	9	40	0	13	213	80	0	0	0	0	0	60	183	0	0	744
17:30	107	4	53	0	20	252	80	0	0	0	0	0	72	254	0	3	845
17:45	122	8	58	0	24	213	91	0	0	0	0	0	40	217	0	0	773
Total	472	33	203	0	72	950	326	0	0	0	0	0	215	894	0	4	3169
Grand Total	930	59	419	0	119	2035	654	2	0	0	0	0	420	1759	2	16	6415
Apprch %	66.1	4.2	29.8	0	4.2	72.4	23.3	0.1	0	0	0	0	19.1	80.1	0.1	0.7	
Total %	14.5	0.9	6.5	0	1.9	31.7	10.2	0	0	0	0	0	6.5	27.4	0	0.2	

	Chestnut Hill Ave From North					Boylston St From East					Heath St From South					Boylston St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	113	8	**57**	0	178	**15**	253	86	0	354	0	0	0	0	0	46	213	0	3	262	794
16:30	110	5	53	0	168	9	**313**	**90**	0	**412**	0	0	0	0	0	55	**251**	**2**	**4**	**312**	**892**
16:45	**120**	6	55	0	**181**	11	245	82	**2**	340	0	0	0	0	0	**69**	166	0	1	236	757
17:00	97	**12**	52	0	161	15	272	75	0	362	0	0	0	0	0	43	240	0	1	284	807
Total Volume	440	31	217	0	688	50	1083	333	2	1468	0	0	0	0	0	213	870	2	9	1094	3250
% App. Total	64	4.5	31.5	0		3.4	73.8	22.7	0.1		0	0	0	0		19.5	79.5	0.2	0.8		
PHF	.917	.646	.952	.000	.950	.833	.865	.925	.250	.891	.000	.000	.000	.000	.000	.772	.867	.250	.563	.877	.911

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 2

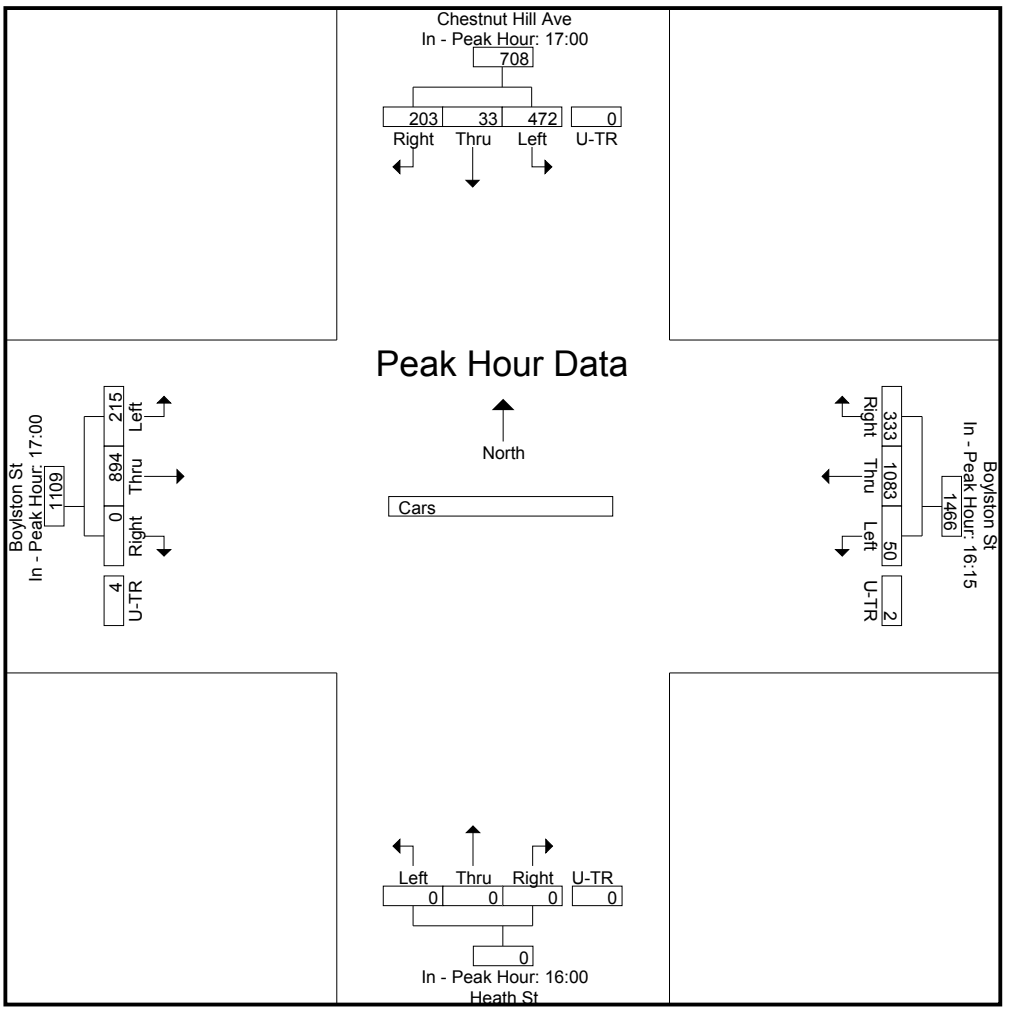


Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	17:00					16:15					16:00					17:00				
+0 mins.	97	**12**	52	0	161	**15**	253	86	0	354	0	0	0	0	0	43	240	0	1	284
+15 mins.	**146**	9	40	0	**195**	9	**313**	**90**	0	**412**	0	0	0	0	0	60	183	0	0	243
+30 mins.	107	4	53	0	164	11	245	82	**2**	340	0	0	0	0	0	**72**	**254**	0	**3**	**329**
+45 mins.	122	8	**58**	0	188	15	272	75	0	362	0	0	0	0	0	40	217	0	0	257
Total Volume	472	33	203	0	708	50	1083	333	2	1468	0	0	0	0	0	215	894	0	4	1113
% App. Total	66.7	4.7	28.7	0		3.4	73.8	22.7	0.1		0	0	0	0		19.3	80.3	0	0.4	
PHF	.808	.688	.875	.000	.908	.833	.865	.925	.250	.891	.000	.000	.000	.000	.000	.747	.880	.000	.333	.846

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

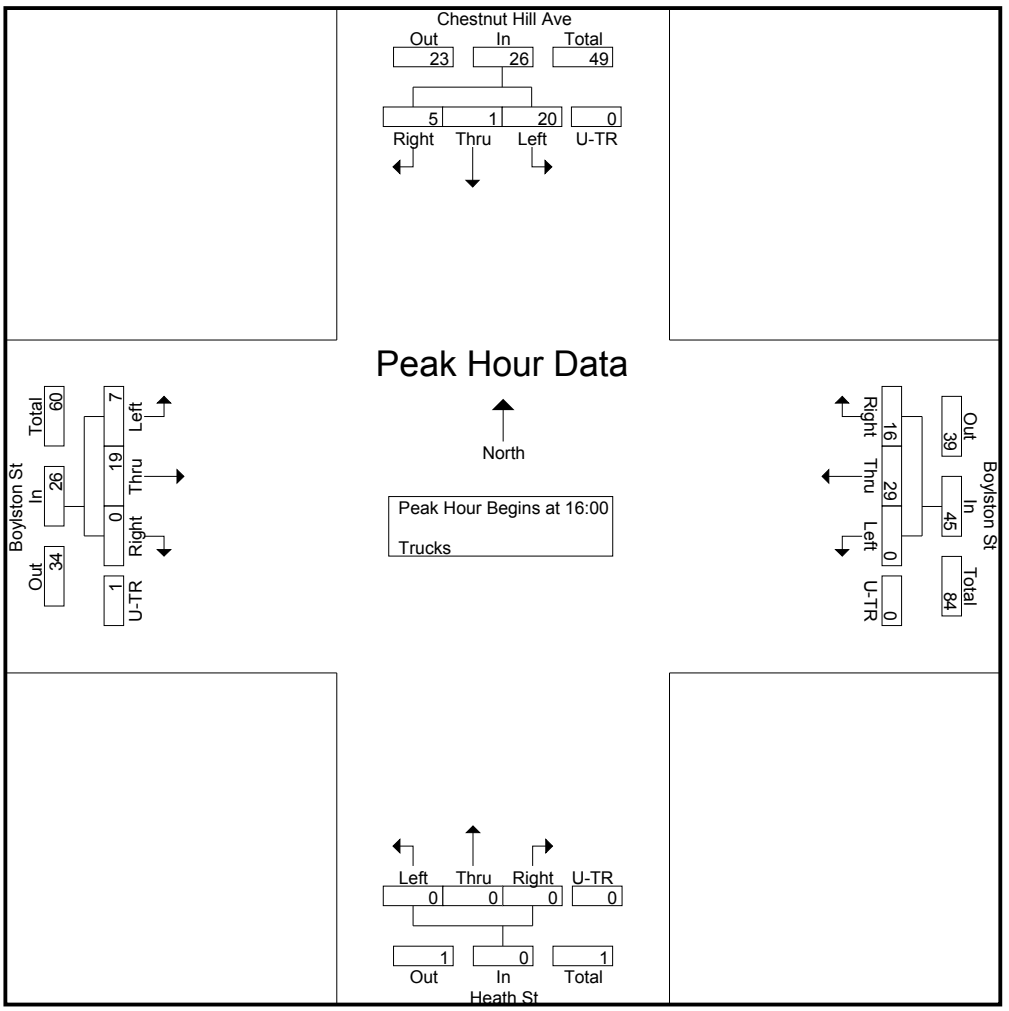
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
16:00	4	0	1	0	0	10	2	0	0	0	0	0	4	3	0	0	24
16:15	9	0	1	0	0	10	6	0	0	0	0	0	0	6	0	1	33
16:30	2	1	1	0	0	4	5	0	0	0	0	0	3	7	0	0	23
16:45	5	0	2	0	0	5	3	0	0	0	0	0	0	3	0	0	18
Total	20	1	5	0	0	29	16	0	0	0	0	0	7	19	0	1	98
17:00	1	0	3	0	0	6	2	0	0	0	0	0	1	8	0	0	21
17:15	6	0	0	0	0	7	1	0	0	0	0	0	0	4	0	0	18
17:30	5	0	2	0	0	3	2	0	0	0	0	0	0	4	0	0	16
17:45	4	1	1	0	0	3	1	0	0	0	0	0	0	2	0	0	12
Total	16	1	6	0	0	19	6	0	0	0	0	0	1	18	0	0	67
Grand Total	36	2	11	0	0	48	22	0	0	0	0	0	8	37	0	1	165
Apprch %	73.5	4.1	22.4	0	0	68.6	31.4	0	0	0	0	0	17.4	80.4	0	2.2	
Total %	21.8	1.2	6.7	0	0	29.1	13.3	0	0	0	0	0	4.8	22.4	0	0.6	

	Chestnut Hill Ave From North					Boylston St From East					Heath St From South					Boylston St From West					
Start Time	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Left	Thru	Right	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	4	0	1	0	5	0	**10**	2	0	12	0	0	0	0	0	**4**	3	0	0	7	24
16:15	**9**	0	1	0	**10**	0	10	**6**	0	**16**	0	0	0	0	0	0	6	0	**1**	7	**33**
16:30	2	**1**	1	0	4	0	4	5	0	9	0	0	0	0	0	3	**7**	0	0	**10**	23
16:45	5	0	**2**	0	7	0	5	3	0	8	0	0	0	0	0	0	3	0	0	3	18
Total Volume	20	1	5	0	26	0	29	16	0	45	0	0	0	0	0	7	19	0	1	27	98
% App. Total	76.9	3.8	19.2	0		0	64.4	35.6	0		0	0	0	0		25.9	70.4	0	3.7		
PHF	.556	.250	.625	.000	.650	.000	.725	.667	.000	.703	.000	.000	.000	.000	.000	.438	.679	.000	.250	.675	.742

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011



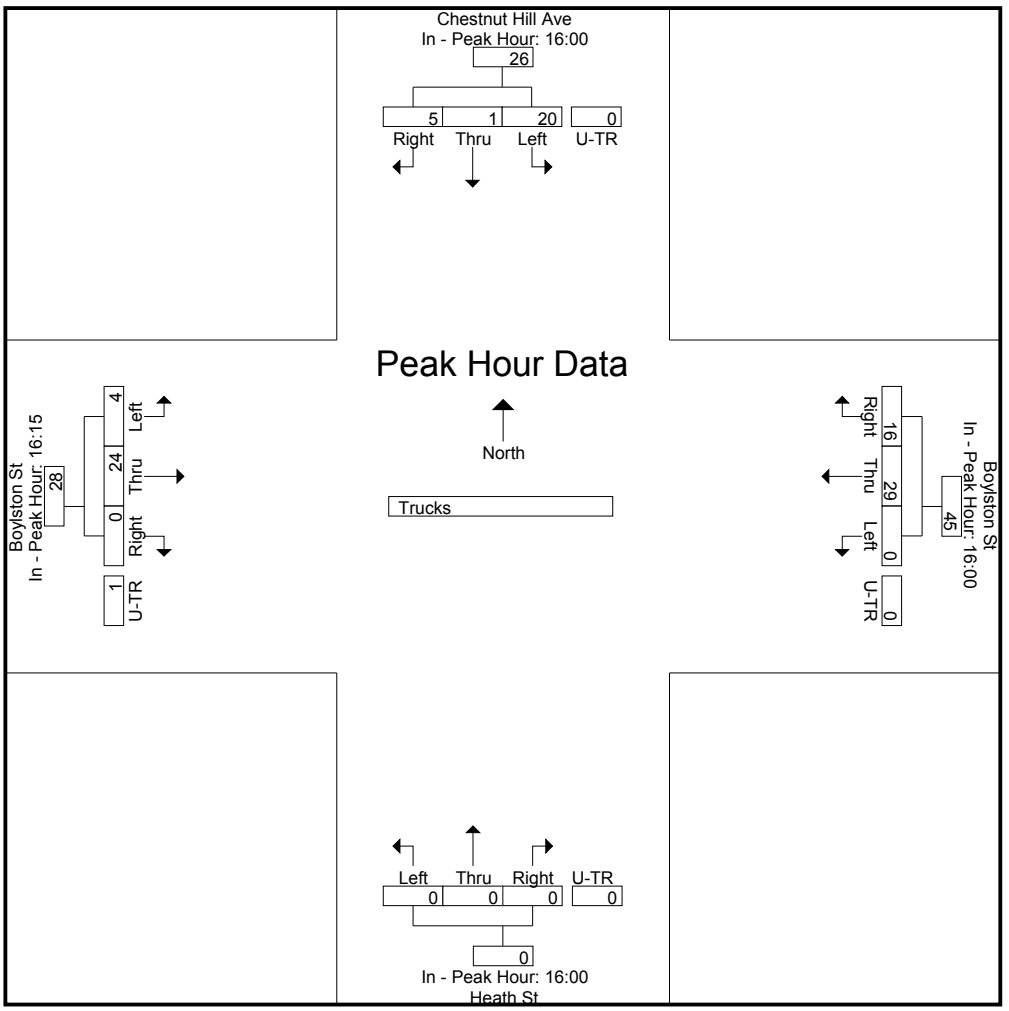
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	16:00					16:00					16:00					16:15				
+0 mins.	4	0	1	0	5	0	**10**	2	0	12	0	0	0	0	0	0	6	0	**1**	7
+15 mins.	**9**	0	1	0	**10**	0	10	**6**	0	**16**	0	0	0	0	0	**3**	7	0	0	**10**
+30 mins.	2	**1**	1	0	4	0	4	5	0	9	0	0	0	0	0	0	3	0	0	3
+45 mins.	5	0	**2**	0	7	0	5	3	0	8	0	0	0	0	0	1	**8**	0	0	9
Total Volume	20	1	5	0	26	0	29	16	0	45	0	0	0	0	0	4	24	0	1	29
% App. Total	76.9	3.8	19.2	0		0	64.4	35.6	0		0	0	0	0		13.8	82.8	0	3.4	
PHF	.556	.250	.625	.000	.650	.000	.725	.667	.000	.703	.000	.000	.000	.000	.000	.333	.750	.000	.250	.725

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

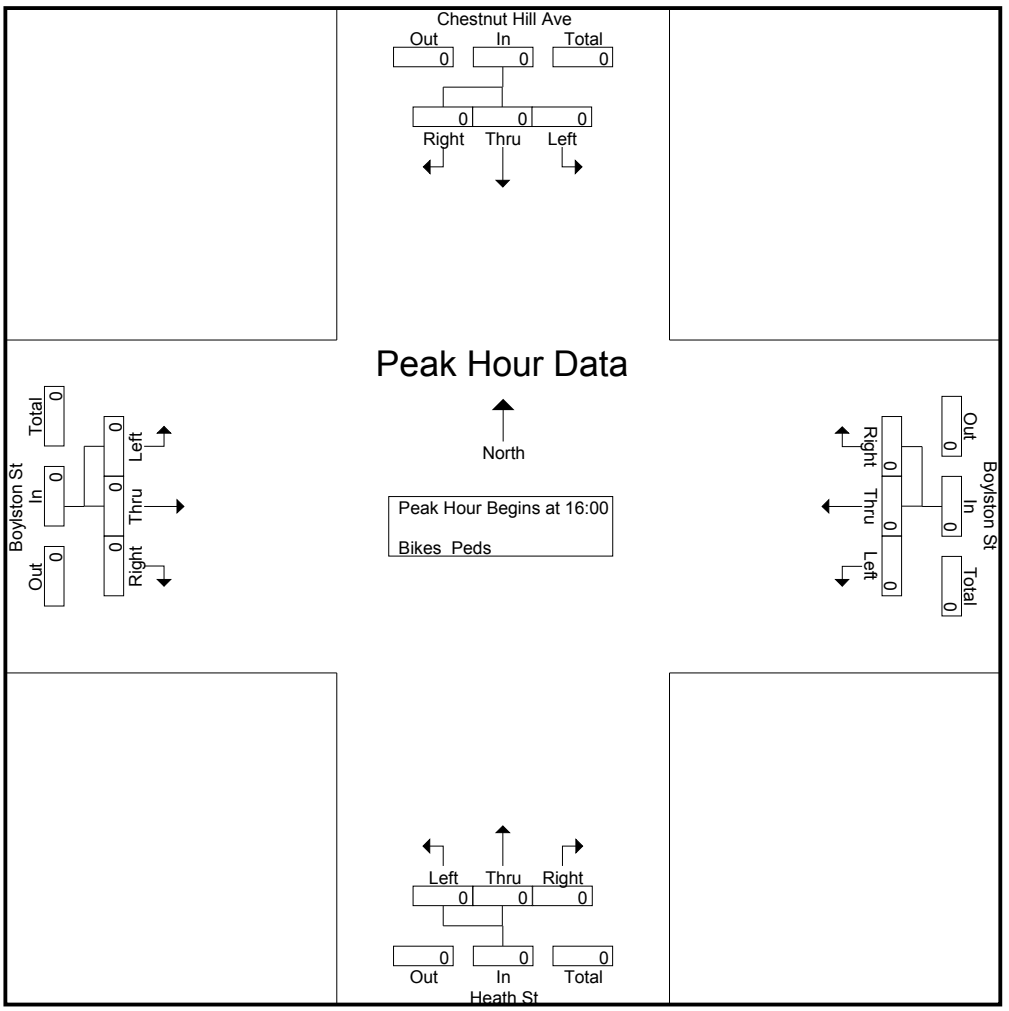
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 2



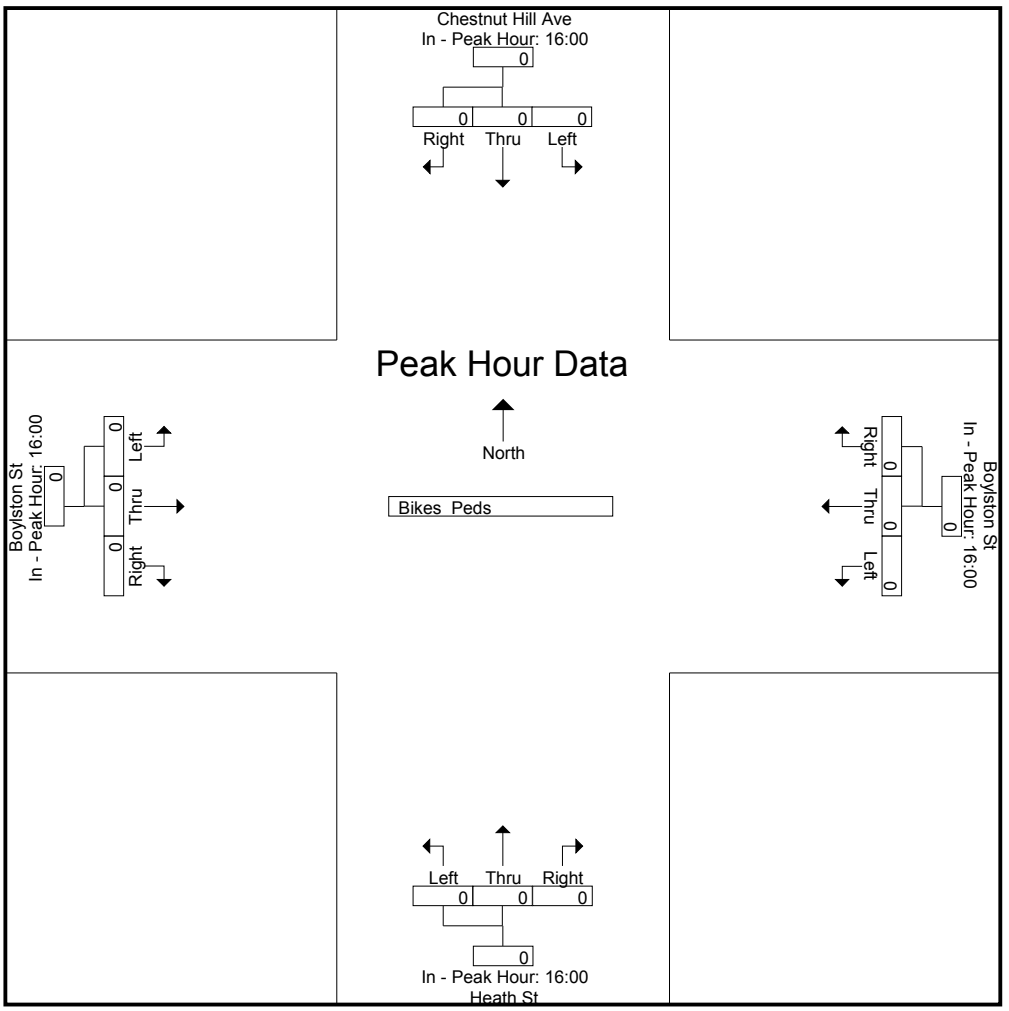
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	16:00				16:00				16:00				16:00			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+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	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Ave/Heath St
E/W Street: Boylston Street (Route 9)
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900007
Site Code : 01900007
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

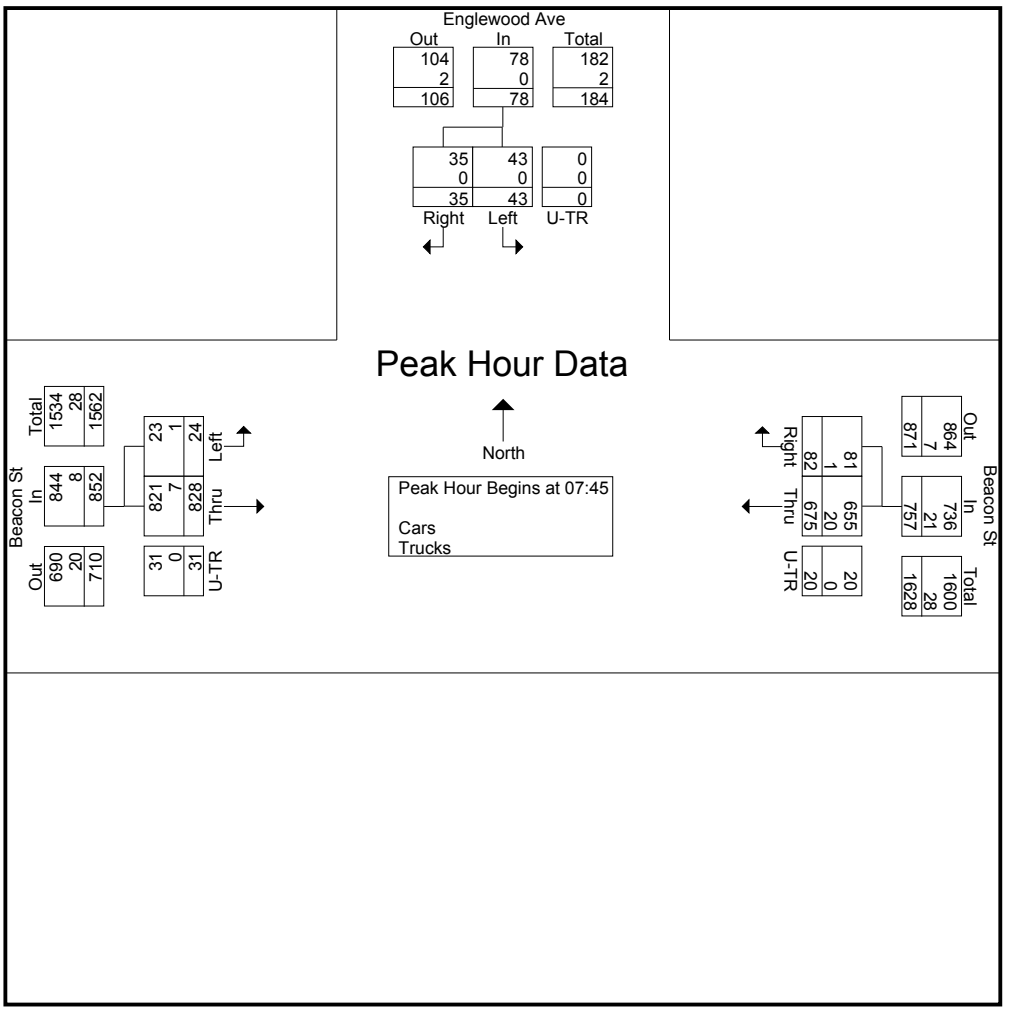
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
07:00	4	3	0	80	10	2	2	118	9	228
07:15	1	7	0	109	5	2	1	152	12	289
07:30	10	10	0	155	6	4	4	191	11	391
07:45	10	11	0	152	21	4	6	218	5	427
Total	25	31	0	496	42	12	13	679	37	1335
08:00	14	10	0	167	22	5	4	218	12	452
08:15	9	3	0	186	19	5	7	211	8	448
08:30	10	11	0	170	20	6	7	181	6	411
08:45	6	4	0	153	23	9	4	207	9	415
Total	39	28	0	676	84	25	22	817	35	1726
Grand Total	64	59	0	1172	126	37	35	1496	72	3061
Apprch %	52	48	0	87.8	9.4	2.8	2.2	93.3	4.5	
Total %	2.1	1.9	0	38.3	4.1	1.2	1.1	48.9	2.4	
Cars	63	59	0	1142	125	35	34	1475	72	3005
% Cars	98.4	100	0	97.4	99.2	94.6	97.1	98.6	100	98.2
Trucks	1	0	0	30	1	2	1	21	0	56
% Trucks	1.6	0	0	2.6	0.8	5.4	2.9	1.4	0	1.8

	Englewood Ave From North				Beacon St From East				Beacon St From West				
Start Time	Left	Right	U-TR	App. Total	Thru	Right	U-TR	App. Total	Left	Thru	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45													
07:45	10	**11**	0	21	152	21	4	177	6	**218**	5	229	427
08:00	**14**	10	0	**24**	167	**22**	5	194	4	218	**12**	**234**	**452**
08:15	9	3	0	12	**186**	19	5	**210**	**7**	211	8	226	448
08:30	10	11	0	21	170	20	**6**	196	7	181	6	194	411
Total Volume	43	35	0	78	675	82	20	777	24	828	31	883	1738
% App. Total	55.1	44.9	0		86.9	10.6	2.6		2.7	93.8	3.5		
PHF	.768	.795	.000	.813	.907	.932	.833	.925	.857	.950	.646	.943	.961
Cars	43	35	0	78	655	81	20	756	23	821	31	875	1709
% Cars	100	100	0	100	97.0	98.8	100	97.3	95.8	99.2	100	99.1	98.3
Trucks	0	0	0	0	20	1	0	21	1	7	0	8	29
% Trucks	0	0	0	0	3.0	1.2	0	2.7	4.2	0.8	0	0.9	1.7

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 2



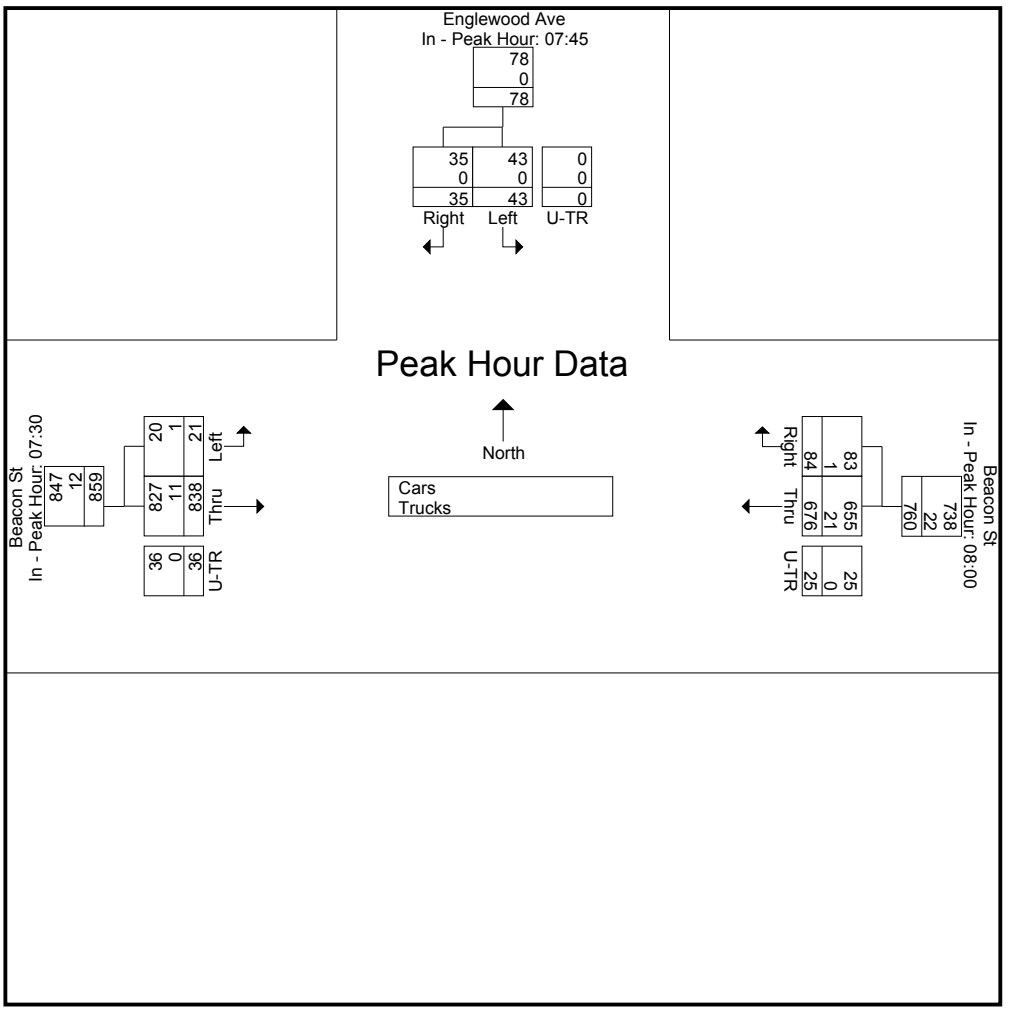
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45				08:00				07:30			
+0 mins.	10	**11**	0	21	167	22	5	194	4	191	11	206
+15 mins.	**14**	10	0	**24**	**186**	19	5	**210**	6	**218**	5	229
+30 mins.	9	3	0	12	170	20	6	196	4	218	**12**	**234**
+45 mins.	10	11	0	21	153	**23**	**9**	185	**7**	211	8	226
Total Volume	43	35	0	78	676	84	25	785	21	838	36	895
% App. Total	55.1	44.9	0		86.1	10.7	3.2		2.3	93.6	4	
PHF	.768	.795	.000	.813	.909	.913	.694	.935	.750	.961	.750	.956
Cars	43	35	0	78	655	83	25	763	20	827	36	883
% Cars	100	100	0	100	96.9	98.8	100	97.2	95.2	98.7	100	98.7
Trucks	0	0	0	0	21	1	0	22	1	11	0	12
% Trucks	0	0	0	0	3.1	1.2	0	2.8	4.8	1.3	0	1.3

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

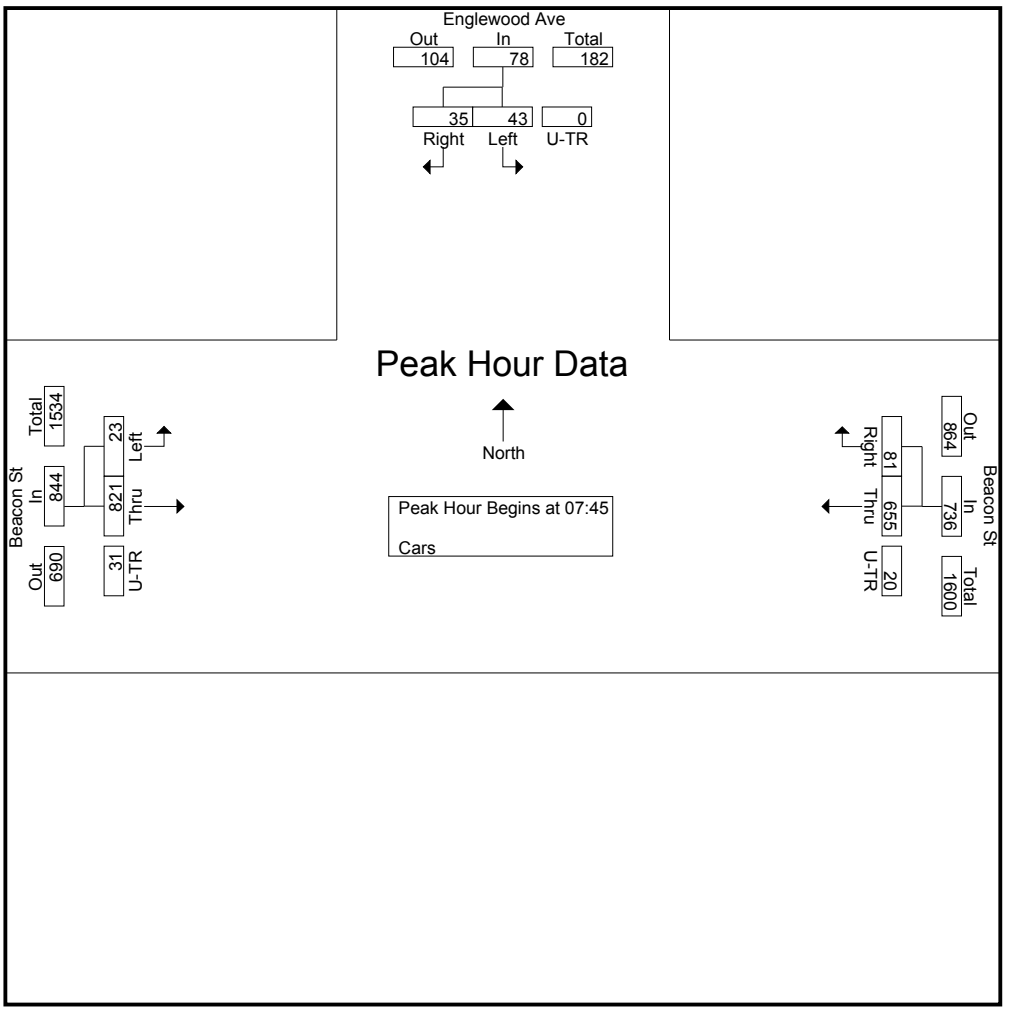
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
07:00	3	3	0	79	10	1	2	113	9	220
07:15	1	7	0	107	5	1	1	150	12	284
07:30	10	10	0	150	6	4	4	185	11	380
07:45	10	11	0	151	21	4	6	217	5	425
Total	24	31	0	487	42	10	13	665	37	1309
08:00	14	10	0	159	22	5	4	215	12	441
08:15	9	3	0	180	18	5	6	210	8	439
08:30	10	11	0	165	20	6	7	179	6	404
08:45	6	4	0	151	23	9	4	206	9	412
Total	39	28	0	655	83	25	21	810	35	1696
Grand Total	63	59	0	1142	125	35	34	1475	72	3005
Apprch %	51.6	48.4	0	87.7	9.6	2.7	2.2	93.3	4.6	
Total %	2.1	2	0	38	4.2	1.2	1.1	49.1	2.4	

	Englewood Ave From North				Beacon St From East				Beacon St From West				
Start Time	Left	Right	U-TR	App. Total	Thru	Right	U-TR	App. Total	Left	Thru	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45													
07:45	10	**11**	0	21	151	21	4	176	6	**217**	5	228	425
08:00	**14**	10	0	**24**	159	**22**	5	186	4	215	**12**	**231**	**441**
08:15	9	3	0	12	**180**	18	5	**203**	6	210	8	224	439
08:30	10	11	0	21	165	20	**6**	191	**7**	179	6	192	404
Total Volume	43	35	0	78	655	81	20	756	23	821	31	875	1709
% App. Total	55.1	44.9	0		86.6	10.7	2.6		2.6	93.8	3.5		
PHF	.768	.795	.000	.813	.910	.920	.833	.931	.821	.946	.646	.947	.969

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 2



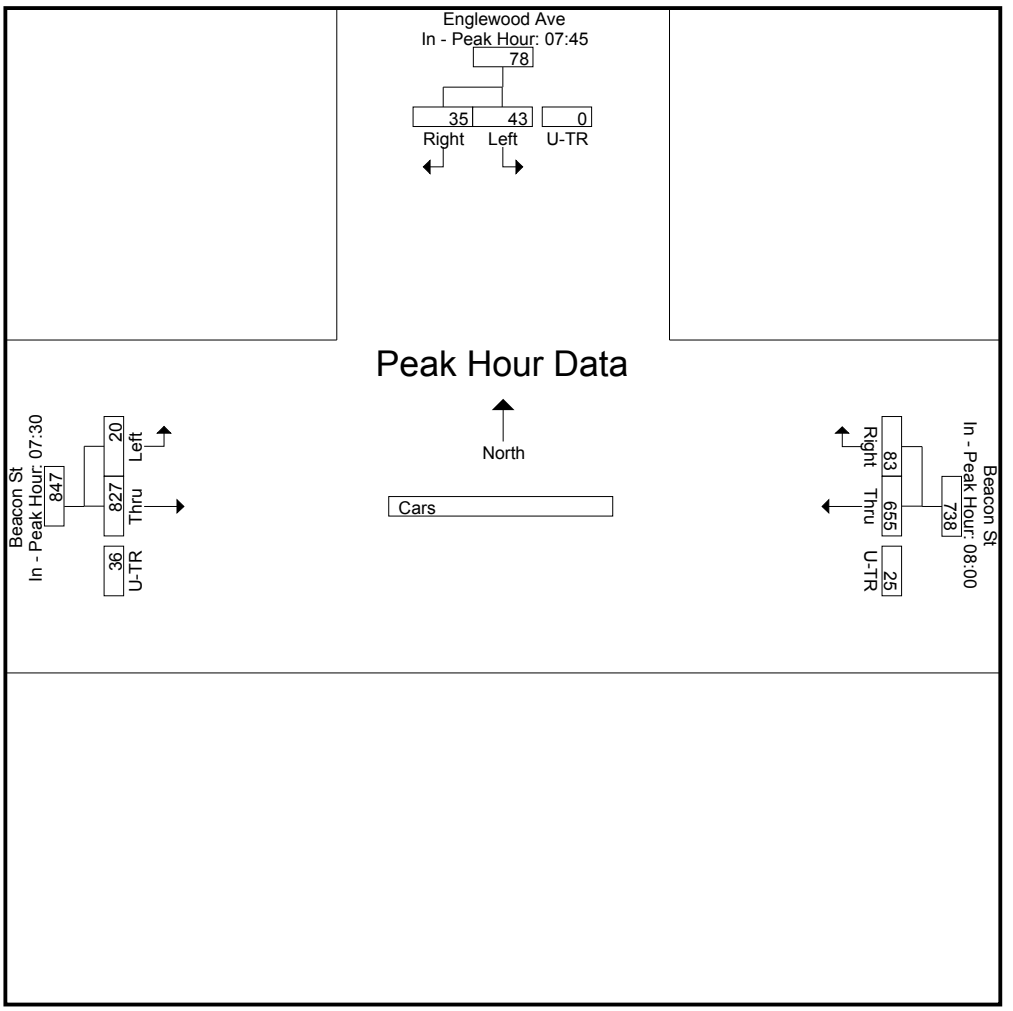
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45				08:00				07:30			
+0 mins.	10	**11**	0	21	159	22	5	186	4	185	11	200
+15 mins.	**14**	10	0	**24**	**180**	18	5	**203**	**6**	**217**	5	228
+30 mins.	9	3	0	12	165	20	6	191	4	215	**12**	**231**
+45 mins.	10	11	0	21	151	**23**	**9**	183	6	210	8	224
Total Volume	43	35	0	78	655	83	25	763	20	827	36	883
% App. Total	55.1	44.9	0		85.8	10.9	3.3		2.3	93.7	4.1	
PHF	.768	.795	.000	.813	.910	.902	.694	.940	.833	.953	.750	.956

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

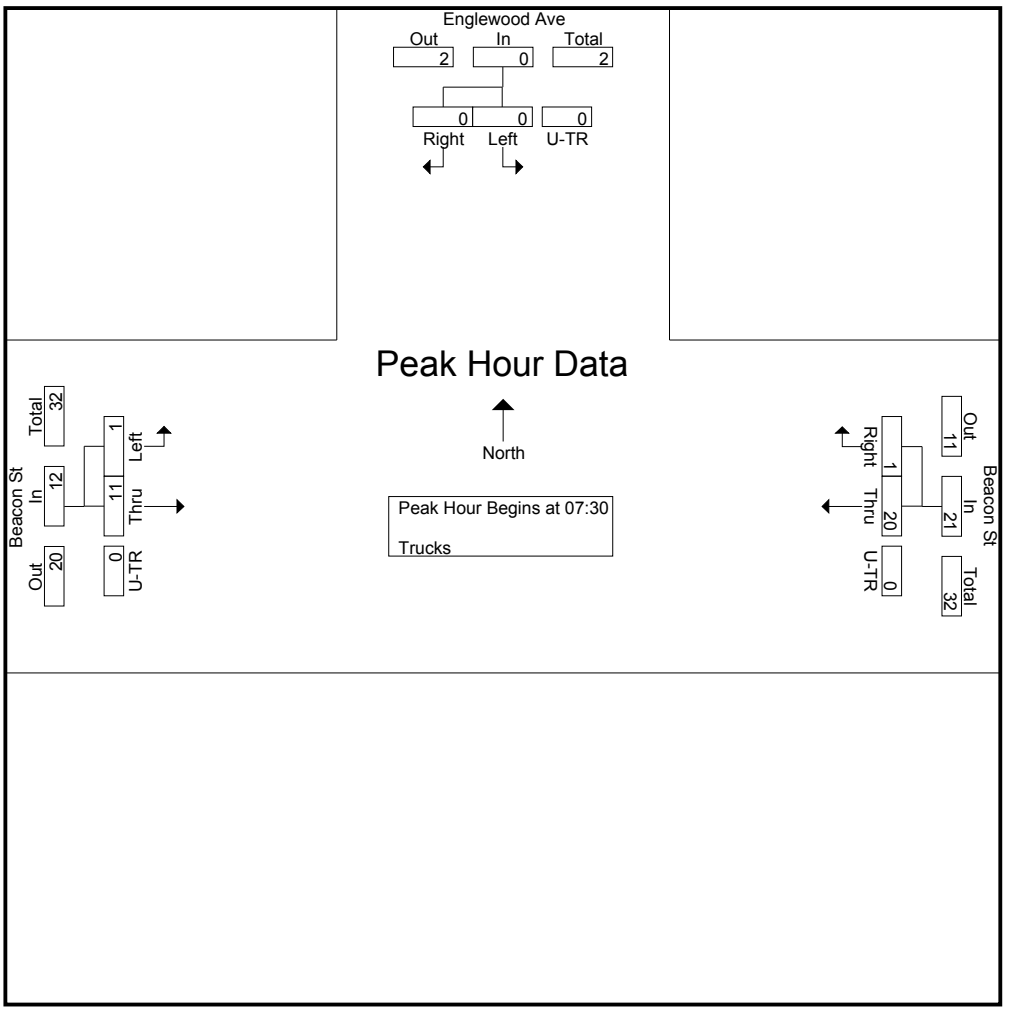
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
07:00	1	0	0	1	0	1	0	5	0	8
07:15	0	0	0	2	0	1	0	2	0	5
07:30	0	0	0	5	0	0	0	6	0	11
07:45	0	0	0	1	0	0	0	1	0	2
Total	1	0	0	9	0	2	0	14	0	26
08:00	0	0	0	8	0	0	0	3	0	11
08:15	0	0	0	6	1	0	1	1	0	9
08:30	0	0	0	5	0	0	0	2	0	7
08:45	0	0	0	2	0	0	0	1	0	3
Total	0	0	0	21	1	0	1	7	0	30
Grand Total	1	0	0	30	1	2	1	21	0	56
Apprch %	100	0	0	90.9	3	6.1	4.5	95.5	0	
Total %	1.8	0	0	53.6	1.8	3.6	1.8	37.5	0	

	Englewood Ave From North				Beacon St From East				Beacon St From West				
Start Time	Left	Right	U-TR	App. Total	Thru	Right	U-TR	App. Total	Left	Thru	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30													
07:30	0	0	0	0	5	0	0	5	0	**6**	0	**6**	**11**
07:45	0	0	0	0	1	0	0	1	0	1	0	1	2
08:00	0	0	0	0	**8**	0	0	**8**	0	3	0	3	11
08:15	0	0	0	0	6	**1**	0	7	**1**	1	0	2	9
Total Volume	0	0	0	0	20	1	0	21	1	11	0	12	33
% App. Total	0	0	0		95.2	4.8	0		8.3	91.7	0		
PHF	.000	.000	.000	.000	.625	.250	.000	.656	.250	.458	.000	.500	.750

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 2



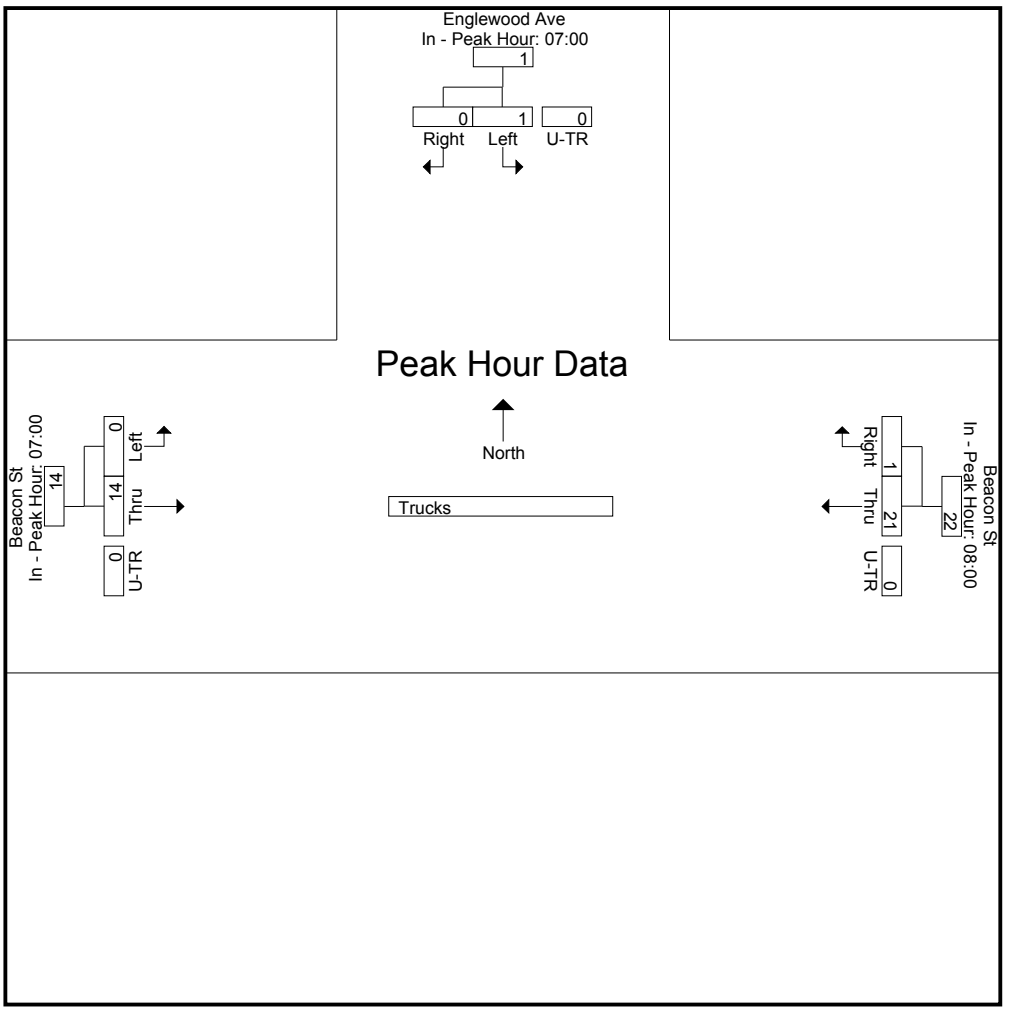
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00				08:00				07:00			
+0 mins.	**1**	0	0	**1**	**8**	0	0	**8**	0	5	0	5
+15 mins.	0	0	0	0	6	**1**	0	7	0	2	0	2
+30 mins.	0	0	0	0	5	0	0	5	0	**6**	0	**6**
+45 mins.	0	0	0	0	2	0	0	2	0	1	0	1
Total Volume	1	0	0	1	21	1	0	22	0	14	0	14
% App. Total	100	0	0		95.5	4.5	0		0	100	0	
PHF	.250	.000	.000	.250	.656	.250	.000	.688	.000	.583	.000	.583

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

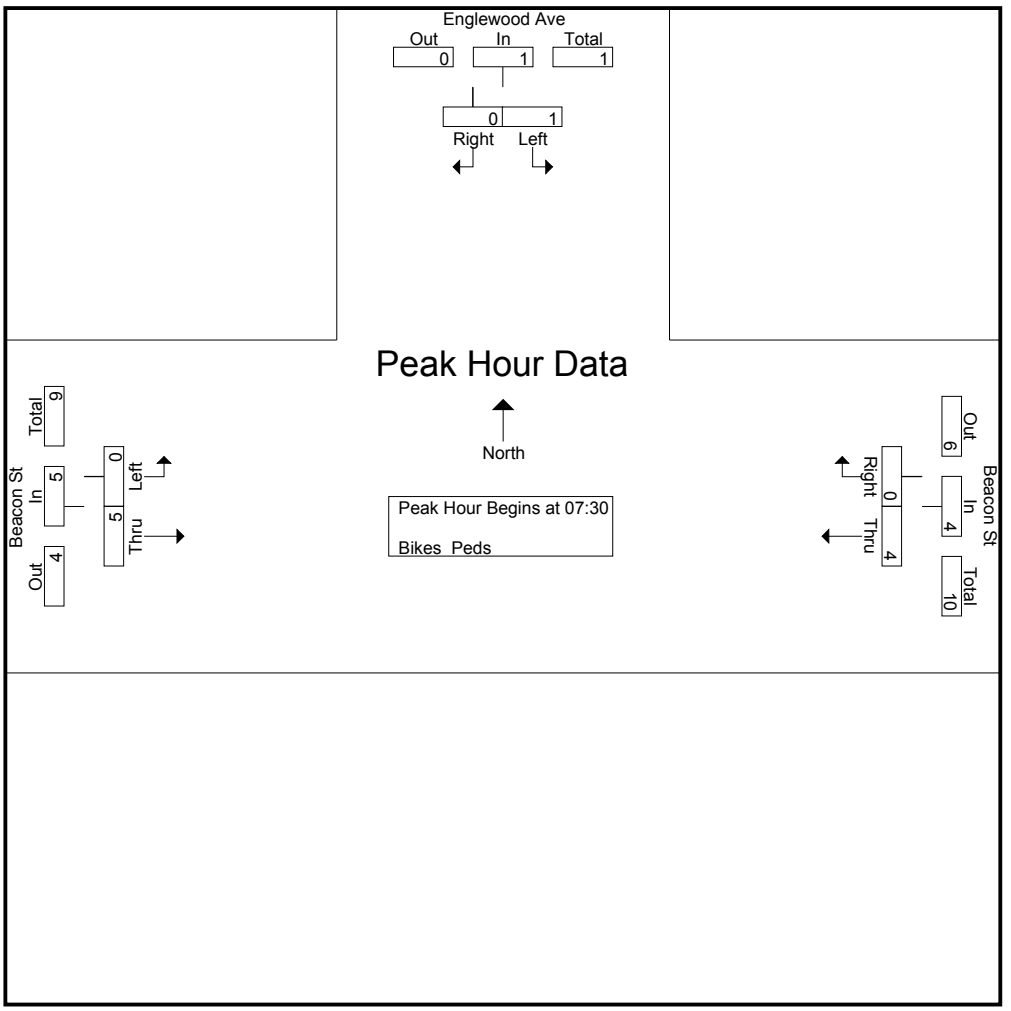
	Englewood Ave From North			Beacon St From East			Beacon St From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	26	0	0	4	0	0	15	45	0	45
07:15	0	0	22	0	0	1	0	0	26	49	0	49
07:30	0	0	15	1	0	3	0	3	24	42	4	46
07:45	1	0	11	1	0	2	0	0	51	64	2	66
Total	1	0	74	2	0	10	0	3	116	200	6	206
08:00	0	0	14	2	0	4	0	0	45	63	2	65
08:15	0	0	13	0	0	0	0	2	31	44	2	46
08:30	0	0	20	0	0	2	0	3	33	55	3	58
08:45	0	0	9	1	0	2	0	1	27	38	2	40
Total	0	0	56	3	0	8	0	6	136	200	9	209
Grand Total	1	0	130	5	0	18	0	9	252	400	15	415
Apprch %	100	0		100	0		0	100				
Total %	6.7	0		33.3	0		0	60		96.4	3.6	

	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	0	0	0	1	0	1	0	**3**	**3**	**4**
07:45	**1**	0	**1**	1	0	1	0	0	0	2
08:00	0	0	0	**2**	0	**2**	0	0	0	2
08:15	0	0	0	0	0	0	0	2	2	2
Total Volume	1	0	1	4	0	4	0	5	5	10
% App. Total	100	0		100	0		0	100		
PHF	.250	.000	.250	.500	.000	.500	.000	.417	.417	.625

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 2



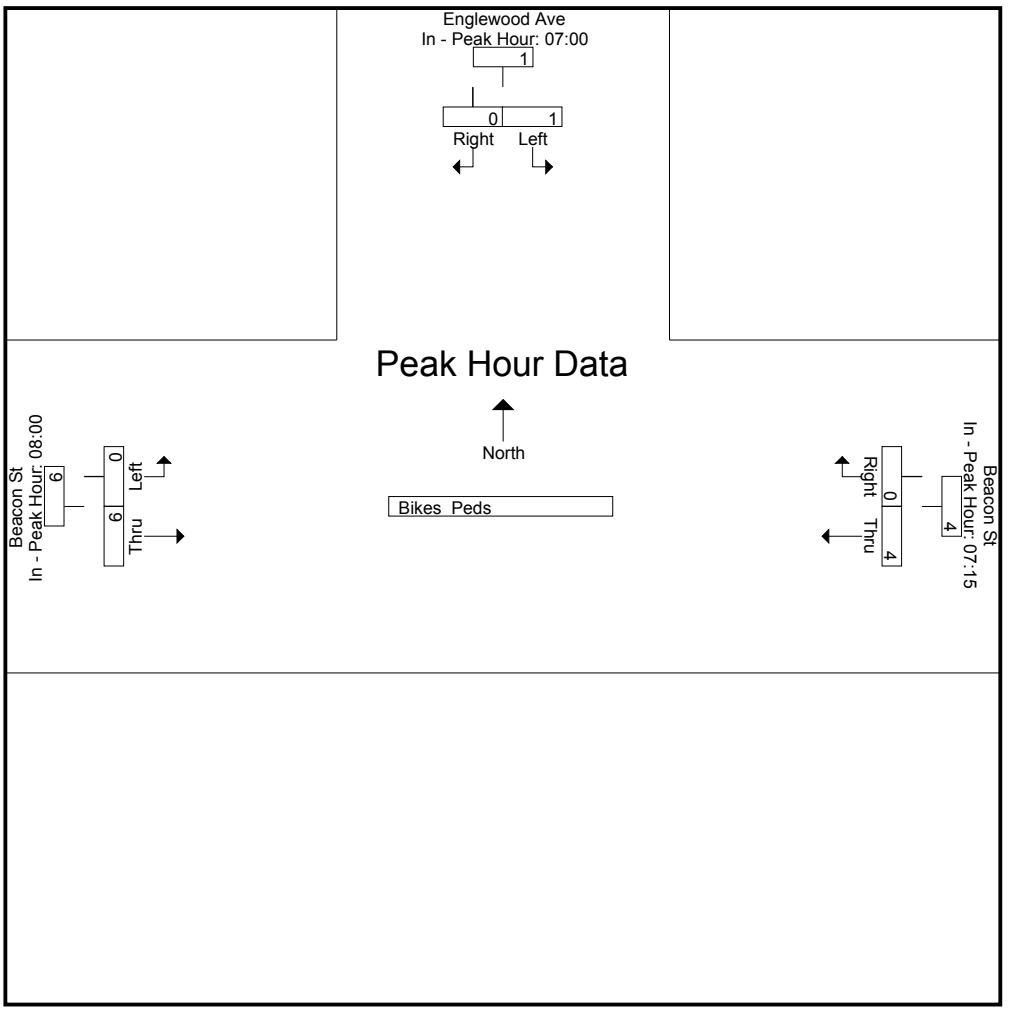
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00			07:15			08:00		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	1	0	1	0	2	2
+30 mins.	0	0	0	1	0	1	0	**3**	**3**
+45 mins.	**1**	0	**1**	**2**	0	**2**	0	1	1
Total Volume	1	0	1	4	0	4	0	6	6
% App. Total	100	0		100	0		0	100	
PHF	.250	.000	.250	.500	.000	.500	.000	.500	.500

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

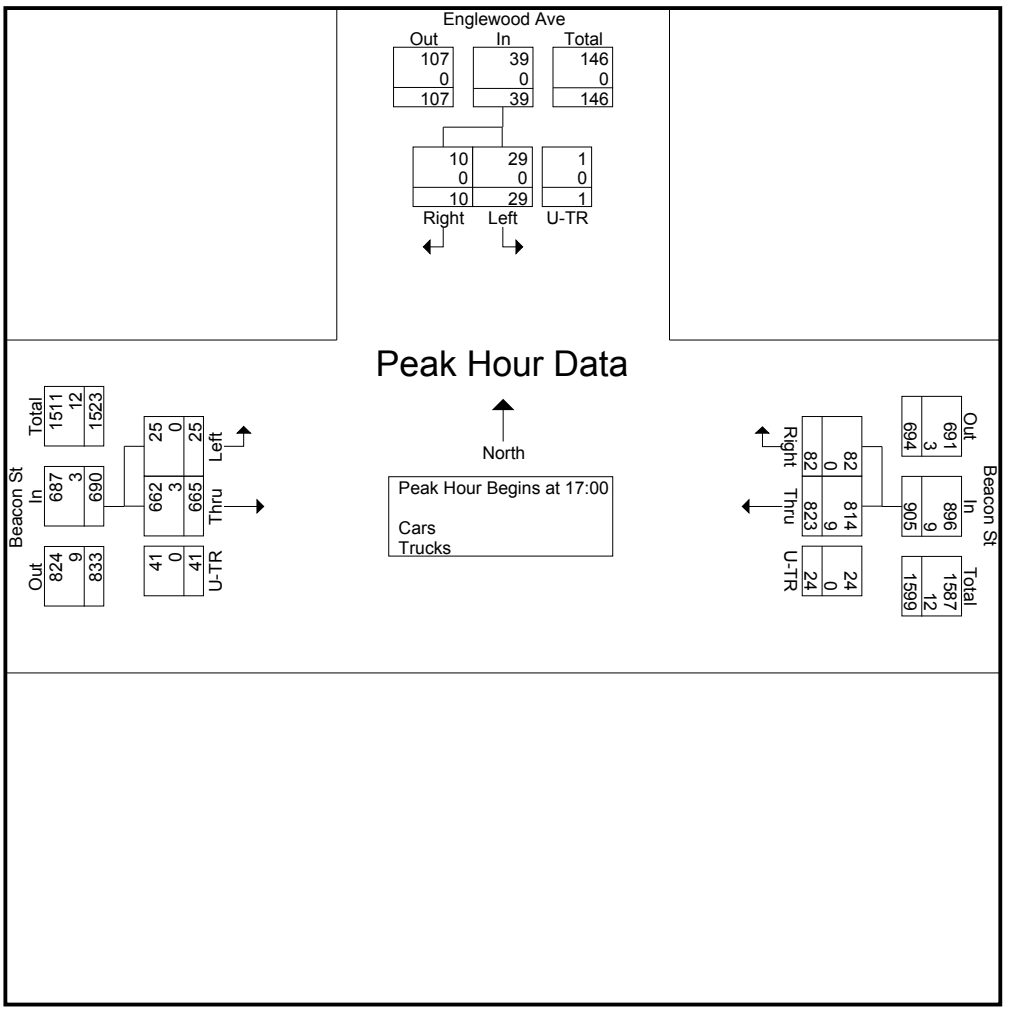
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
16:00	13	3	0	182	15	3	4	143	9	372
16:15	9	5	0	187	14	2	6	137	4	364
16:30	5	2	0	182	16	9	5	142	6	367
16:45	6	6	0	179	14	3	3	140	7	358
Total	33	16	0	730	59	17	18	562	26	1461
17:00	7	2	0	198	14	7	5	155	9	397
17:15	8	2	0	218	27	6	8	196	10	475
17:30	8	5	1	214	20	3	9	160	9	429
17:45	6	1	0	193	21	8	3	154	13	399
Total	29	10	1	823	82	24	25	665	41	1700
Grand Total	62	26	1	1553	141	41	43	1227	67	3161
Apprch %	69.7	29.2	1.1	89.5	8.1	2.4	3.2	91.8	5	
Total %	2	0.8	0	49.1	4.5	1.3	1.4	38.8	2.1	
Cars	62	26	1	1533	140	41	43	1212	67	3125
% Cars	100	100	100	98.7	99.3	100	100	98.8	100	98.9
Trucks	0	0	0	20	1	0	0	15	0	36
% Trucks	0	0	0	1.3	0.7	0	0	1.2	0	1.1

	Englewood Ave From North				Beacon St From East				Beacon St From West				
Start Time	Left	Right	U-TR	App. Total	Thru	Right	U-TR	App. Total	Left	Thru	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 17:00													
17:00	7	2	0	9	198	14	7	219	5	155	9	169	397
17:15	**8**	2	0	10	**218**	**27**	6	**251**	8	**196**	10	**214**	**475**
17:30	8	**5**	**1**	**14**	214	20	3	237	**9**	160	9	178	429
17:45	6	1	0	7	193	21	**8**	222	3	154	**13**	170	399
Total Volume	29	10	1	40	823	82	24	929	25	665	41	731	1700
% App. Total	72.5	25	2.5		88.6	8.8	2.6		3.4	91	5.6		
PHF	.906	.500	.250	.714	.944	.759	.750	.925	.694	.848	.788	.854	.895
Cars	29	10	1	40	814	82	24	920	25	662	41	728	1688
% Cars	100	100	100	100	98.9	100	100	99.0	100	99.5	100	99.6	99.3
Trucks	0	0	0	0	9	0	0	9	0	3	0	3	12
% Trucks	0	0	0	0	1.1	0	0	1.0	0	0.5	0	0.4	0.7

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 2



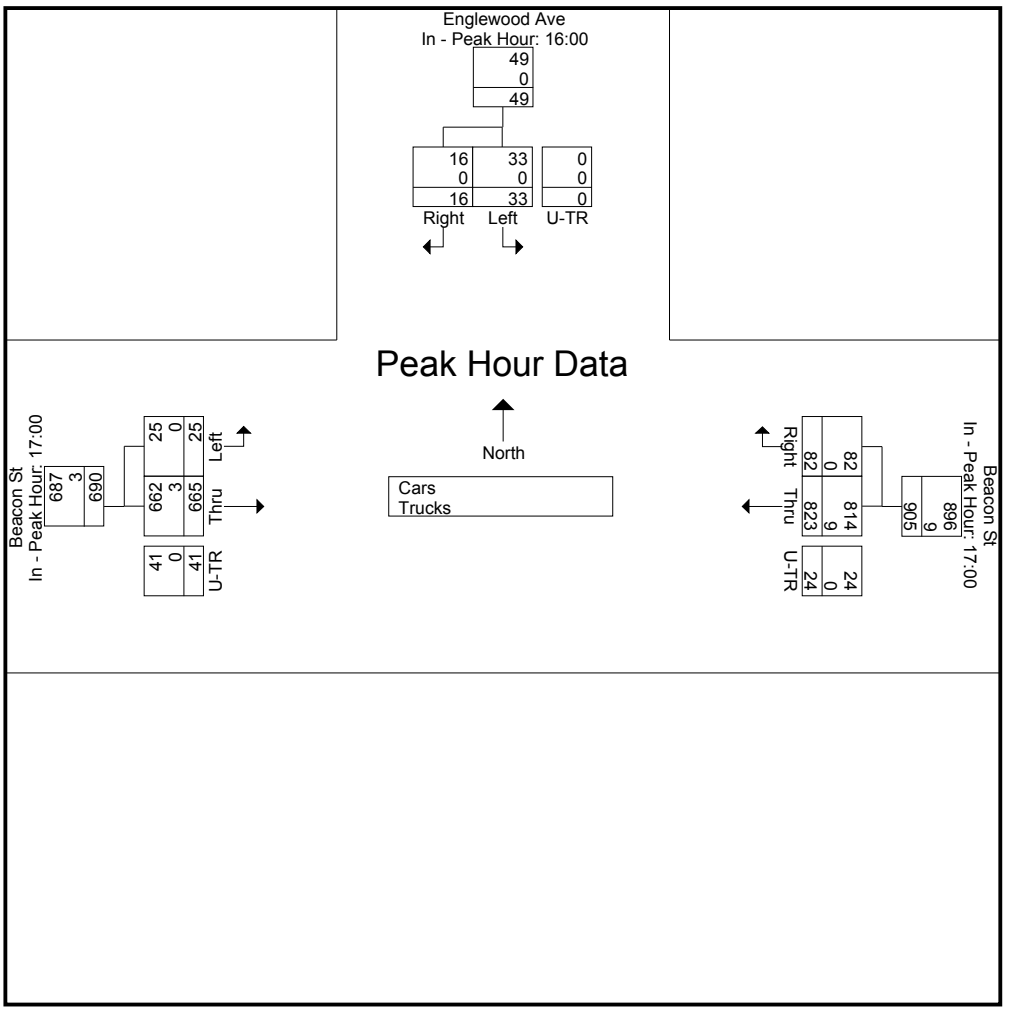
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	16:00				17:00				17:00			
+0 mins.	**13**	3	0	**16**	198	14	7	219	5	155	9	169
+15 mins.	9	5	0	14	**218**	**27**	6	**251**	8	**196**	10	**214**
+30 mins.	5	2	0	7	214	20	3	237	**9**	160	9	178
+45 mins.	6	**6**	0	12	193	21	**8**	222	3	154	**13**	170
Total Volume	33	16	0	49	823	82	24	929	25	665	41	731
% App. Total	67.3	32.7	0		88.6	8.8	2.6		3.4	91	5.6	
PHF	.635	.667	.000	.766	.944	.759	.750	.925	.694	.848	.788	.854
Cars	33	16	0	49	814	82	24	920	25	662	41	728
% Cars	100	100	0	100	98.9	100	100	99	100	99.5	100	99.6
Trucks	0	0	0	0	9	0	0	9	0	3	0	3
% Trucks	0	0	0	0	1.1	0	0	1	0	0.5	0	0.4

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

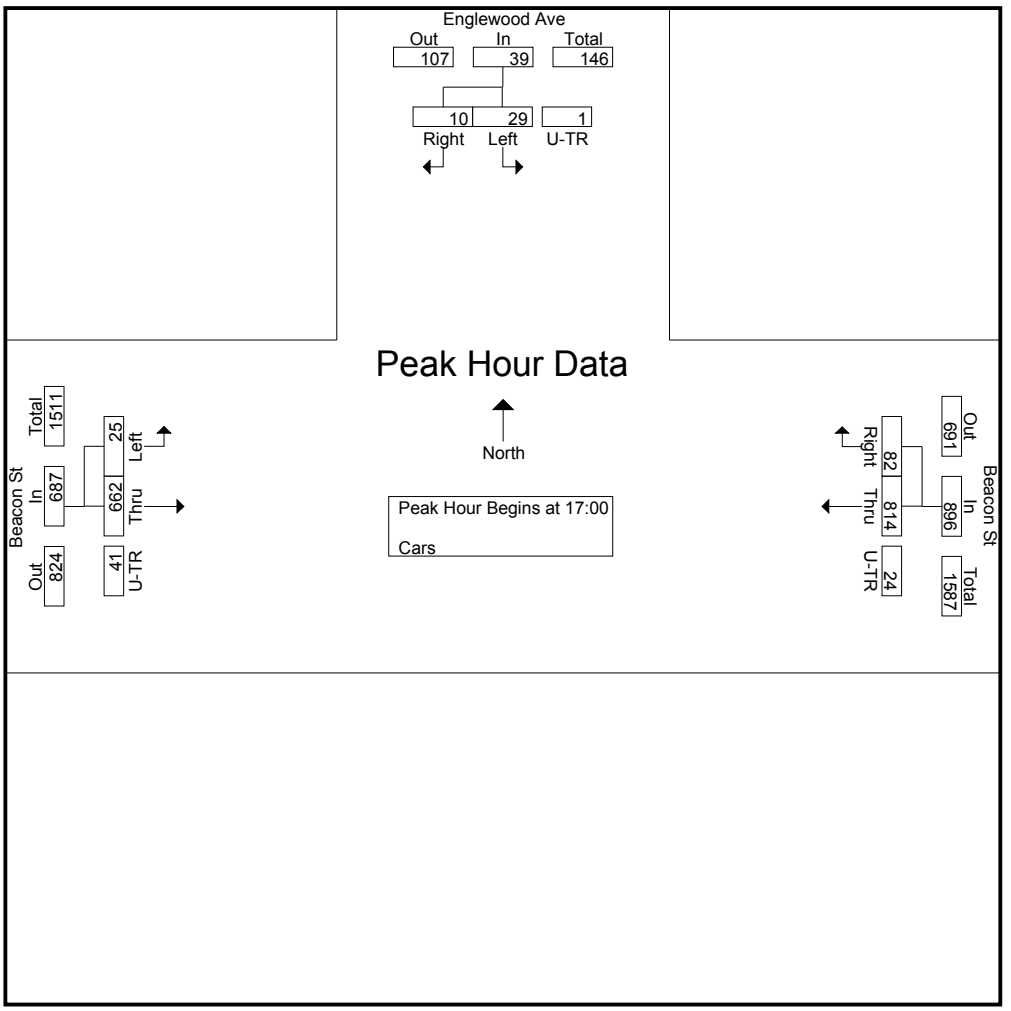
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
16:00	13	3	0	176	15	3	4	139	9	362
16:15	9	5	0	184	14	2	6	134	4	358
16:30	5	2	0	181	15	9	5	140	6	363
16:45	6	6	0	178	14	3	3	137	7	354
Total	33	16	0	719	58	17	18	550	26	1437
17:00	7	2	0	195	14	7	5	155	9	394
17:15	8	2	0	216	27	6	8	194	10	471
17:30	8	5	1	212	20	3	9	159	9	426
17:45	6	1	0	191	21	8	3	154	13	397
Total	29	10	1	814	82	24	25	662	41	1688
Grand Total	62	26	1	1533	140	41	43	1212	67	3125
Apprch %	69.7	29.2	1.1	89.4	8.2	2.4	3.3	91.7	5.1	
Total %	2	0.8	0	49.1	4.5	1.3	1.4	38.8	2.1	

	Englewood Ave From North				Beacon St From East				Beacon St From West				
Start Time	Left	Right	U-TR	App. Total	Thru	Right	U-TR	App. Total	Left	Thru	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 17:00													
17:00	7	2	0	9	195	14	7	216	5	155	9	169	394
17:15	**8**	2	0	10	**216**	**27**	6	**249**	8	**194**	10	**212**	**471**
17:30	8	**5**	**1**	**14**	212	20	3	235	**9**	159	9	177	426
17:45	6	1	0	7	191	21	**8**	220	3	154	**13**	170	397
Total Volume	29	10	1	40	814	82	24	920	25	662	41	728	1688
% App. Total	72.5	25	2.5		88.5	8.9	2.6		3.4	90.9	5.6		
PHF	.906	.500	.250	.714	.942	.759	.750	.924	.694	.853	.788	.858	.896

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 2



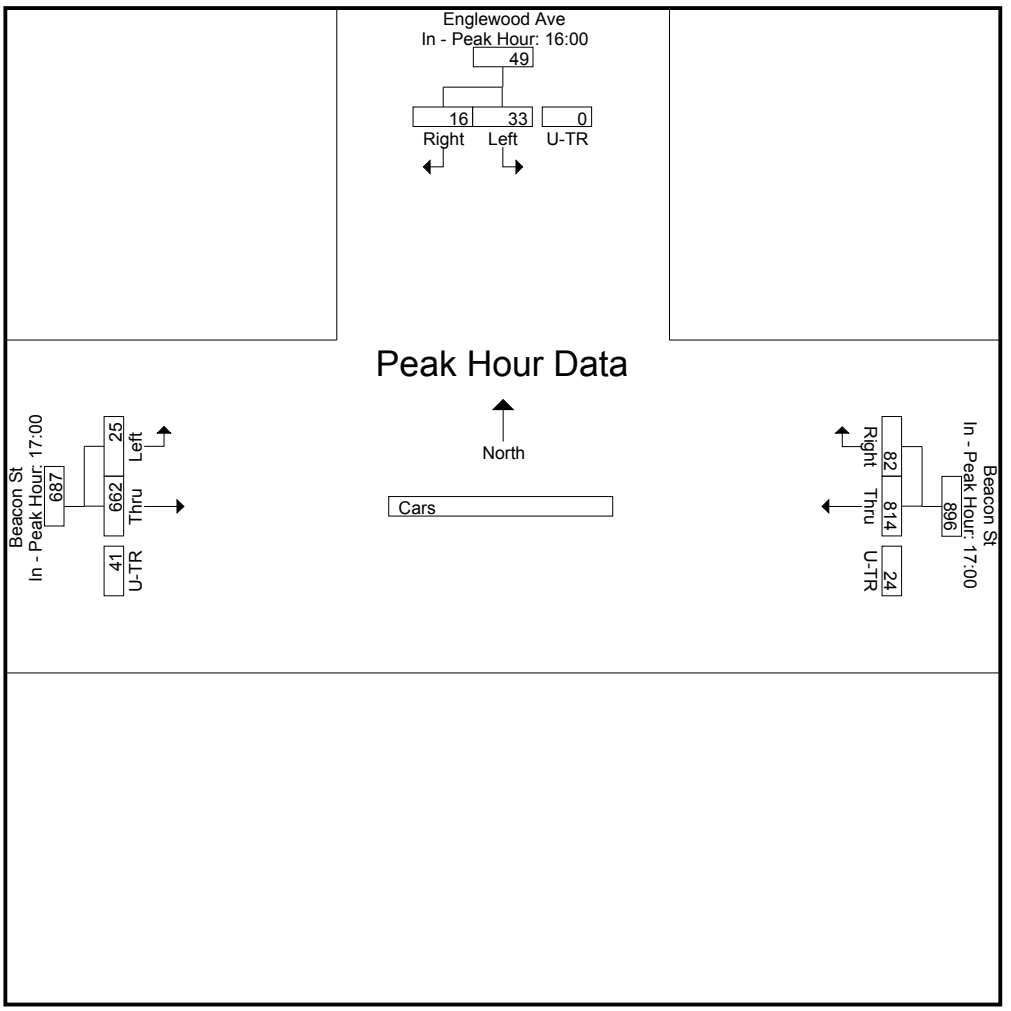
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	16:00				17:00				17:00			
+0 mins.	**13**	3	0	**16**	195	14	7	216	5	155	9	169
+15 mins.	9	5	0	14	**216**	**27**	6	**249**	8	**194**	10	**212**
+30 mins.	5	2	0	7	212	20	3	235	**9**	159	9	177
+45 mins.	6	**6**	0	12	191	21	**8**	220	3	154	**13**	170
Total Volume	33	16	0	49	814	82	24	920	25	662	41	728
% App. Total	67.3	32.7	0		88.5	8.9	2.6		3.4	90.9	5.6	
PHF	.635	.667	.000	.766	.942	.759	.750	.924	.694	.853	.788	.858

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

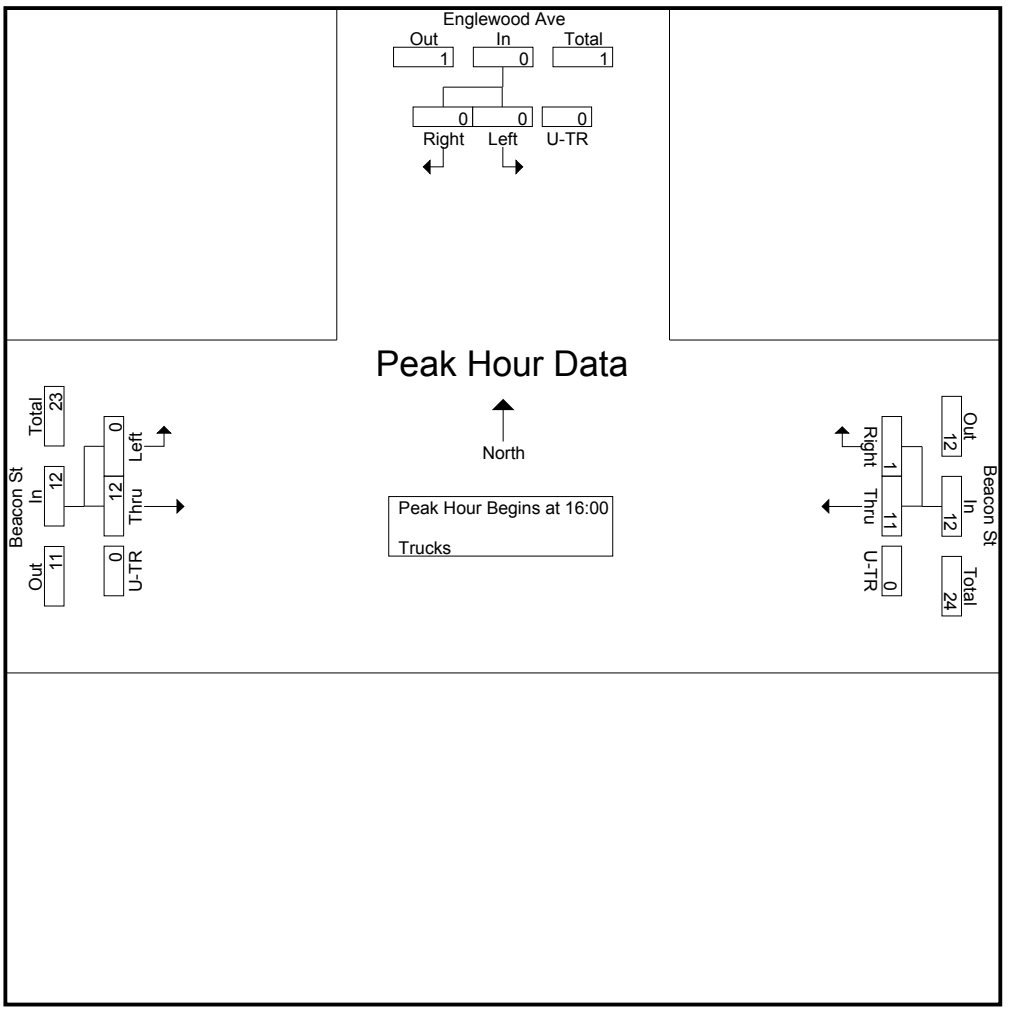
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
16:00	0	0	0	6	0	0	0	4	0	10
16:15	0	0	0	3	0	0	0	3	0	6
16:30	0	0	0	1	1	0	0	2	0	4
16:45	0	0	0	1	0	0	0	3	0	4
Total	0	0	0	11	1	0	0	12	0	24
17:00	0	0	0	3	0	0	0	0	0	3
17:15	0	0	0	2	0	0	0	2	0	4
17:30	0	0	0	2	0	0	0	1	0	3
17:45	0	0	0	2	0	0	0	0	0	2
Total	0	0	0	9	0	0	0	3	0	12
Grand Total	0	0	0	20	1	0	0	15	0	36
Apprch %	0	0	0	95.2	4.8	0	0	100	0	
Total %	0	0	0	55.6	2.8	0	0	41.7	0	

	Englewood Ave From North				Beacon St From East				Beacon St From West				
Start Time	Left	Right	U-TR	App. Total	Thru	Right	U-TR	App. Total	Left	Thru	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 16:00													
16:00	0	0	0	0	**6**	0	0	**6**	0	**4**	0	**4**	**10**
16:15	0	0	0	0	3	0	0	3	0	3	0	3	6
16:30	0	0	0	0	1	**1**	0	2	0	2	0	2	4
16:45	0	0	0	0	1	0	0	1	0	3	0	3	4
Total Volume	0	0	0	0	11	1	0	12	0	12	0	12	24
% App. Total	0	0	0		91.7	8.3	0		0	100	0		
PHF	.000	.000	.000	.000	.458	.250	.000	.500	.000	.750	.000	.750	.600

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 2



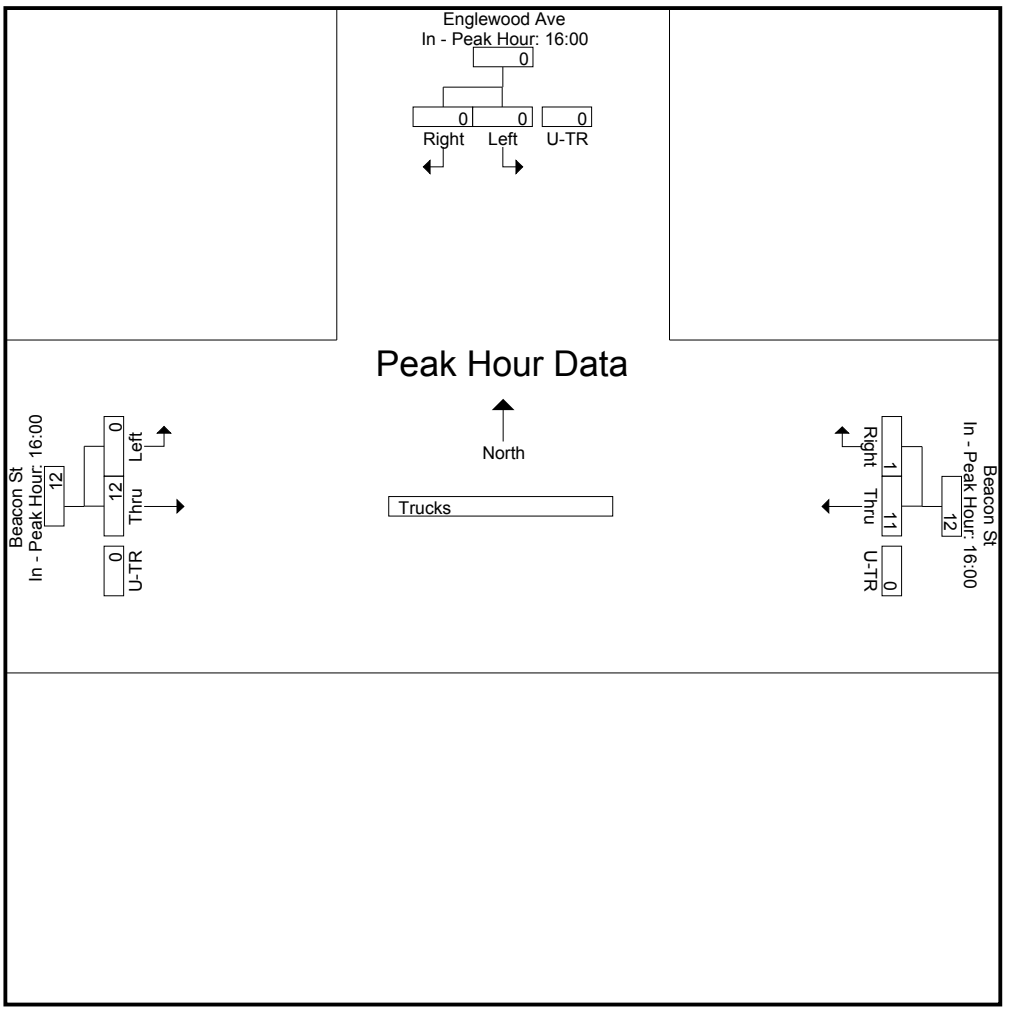
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	16:00				16:00				16:00			
+0 mins.	0	0	0	0	**6**	0	0	**6**	0	**4**	0	**4**
+15 mins.	0	0	0	0	3	0	0	3	0	3	0	3
+30 mins.	0	0	0	0	1	**1**	0	2	0	2	0	2
+45 mins.	0	0	0	0	1	0	0	1	0	3	0	3
Total Volume	0	0	0	0	11	1	0	12	0	12	0	12
% App. Total	0	0	0		91.7	8.3	0		0	100	0	
PHF	.000	.000	.000	.000	.458	.250	.000	.500	.000	.750	.000	.750

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

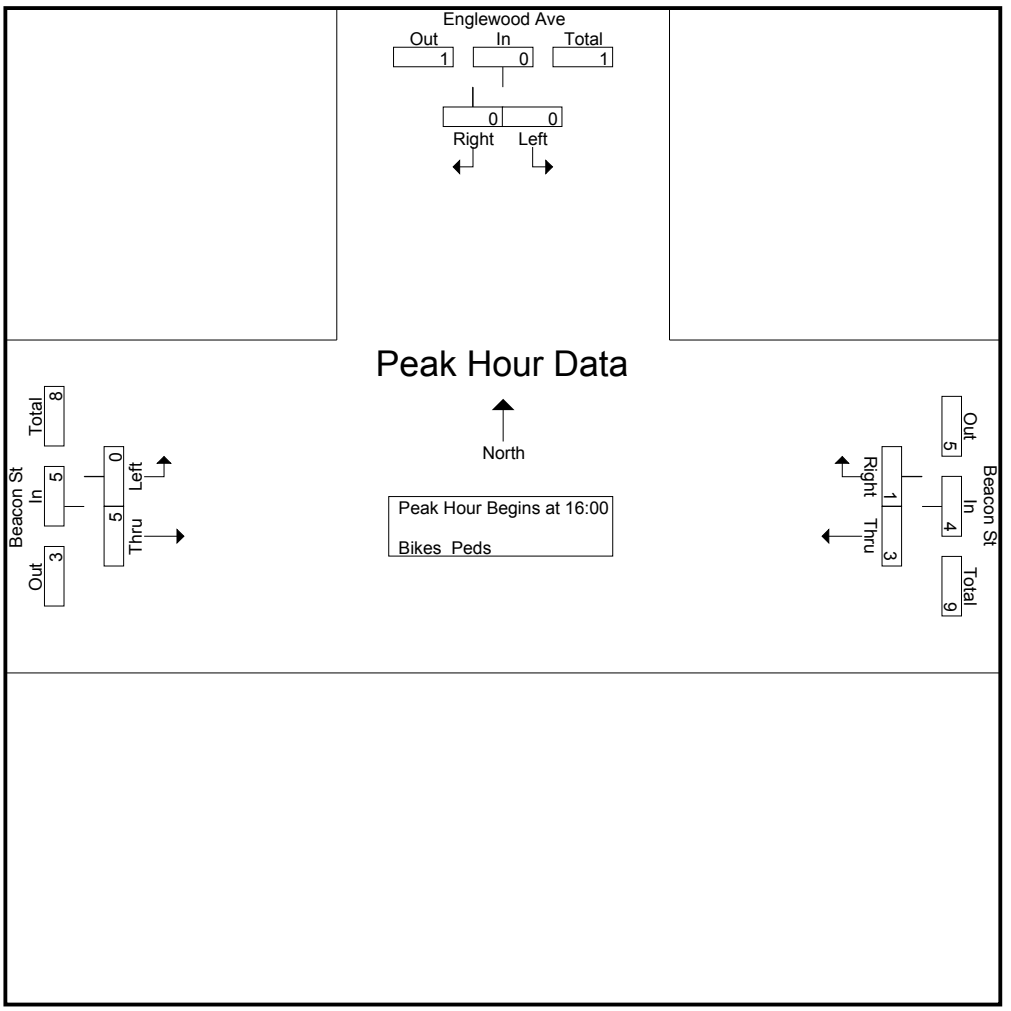
	Englewood Ave From North			Beacon St From East			Beacon St From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	11	0	0	1	0	2	19	31	2	33
16:15	0	0	8	1	1	1	0	1	10	19	3	22
16:30	0	0	8	1	0	2	0	2	15	25	3	28
16:45	0	0	17	1	0	1	0	0	23	41	1	42
Total	0	0	44	3	1	5	0	5	67	116	9	125
17:00	0	0	10	1	0	2	0	0	10	22	1	23
17:15	0	0	6	1	0	1	0	0	12	19	1	20
17:30	0	0	8	0	0	2	0	0	17	27	0	27
17:45	0	0	19	0	0	0	0	0	25	44	0	44
Total	0	0	43	2	0	5	0	0	64	112	2	114
Grand Total	0	0	87	5	1	10	0	5	131	228	11	239
Apprch %	0	0		83.3	16.7		0	100				
Total %	0	0		45.5	9.1		0	45.5		95.4	4.6	

	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	0	0	0	0	0	0	0	**2**	**2**	2
16:15	0	0	0	**1**	**1**	**2**	0	1	1	**3**
16:30	0	0	0	1	0	1	0	2	2	3
16:45	0	0	0	1	0	1	0	0	0	1
Total Volume	0	0	0	3	1	4	0	5	5	9
% App. Total	0	0		75	25		0	100		
PHF	.000	.000	.000	.750	.250	.500	.000	.625	.625	.750

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011



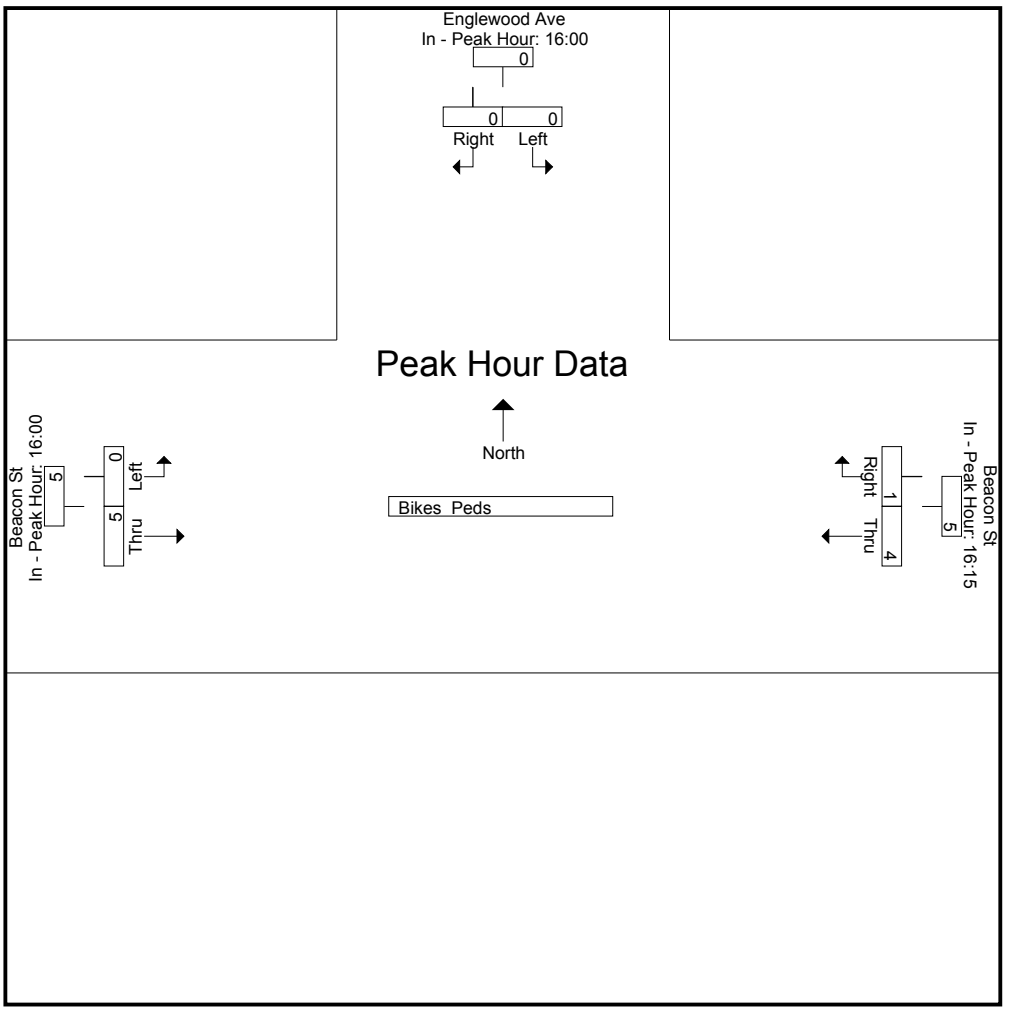
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	16:00			16:15			16:00		
+0 mins.	0	0	0	**1**	**1**	**2**	0	**2**	**2**
+15 mins.	0	0	0	1	0	1	0	1	1
+30 mins.	0	0	0	1	0	1	0	2	2
+45 mins.	0	0	0	1	0	1	0	0	0
Total Volume	0	0	0	4	1	5	0	5	5
% App. Total	0	0		80	20		0	100	
PHF	.000	.000	.000	1.000	.250	.625	.000	.625	.625

Accurate Counts
978-664-2565

N/S Street : Englewood Avenue
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900004
Site Code : 01900004
Start Date : 1/19/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 1

Groups Printed- Cars - Trucks

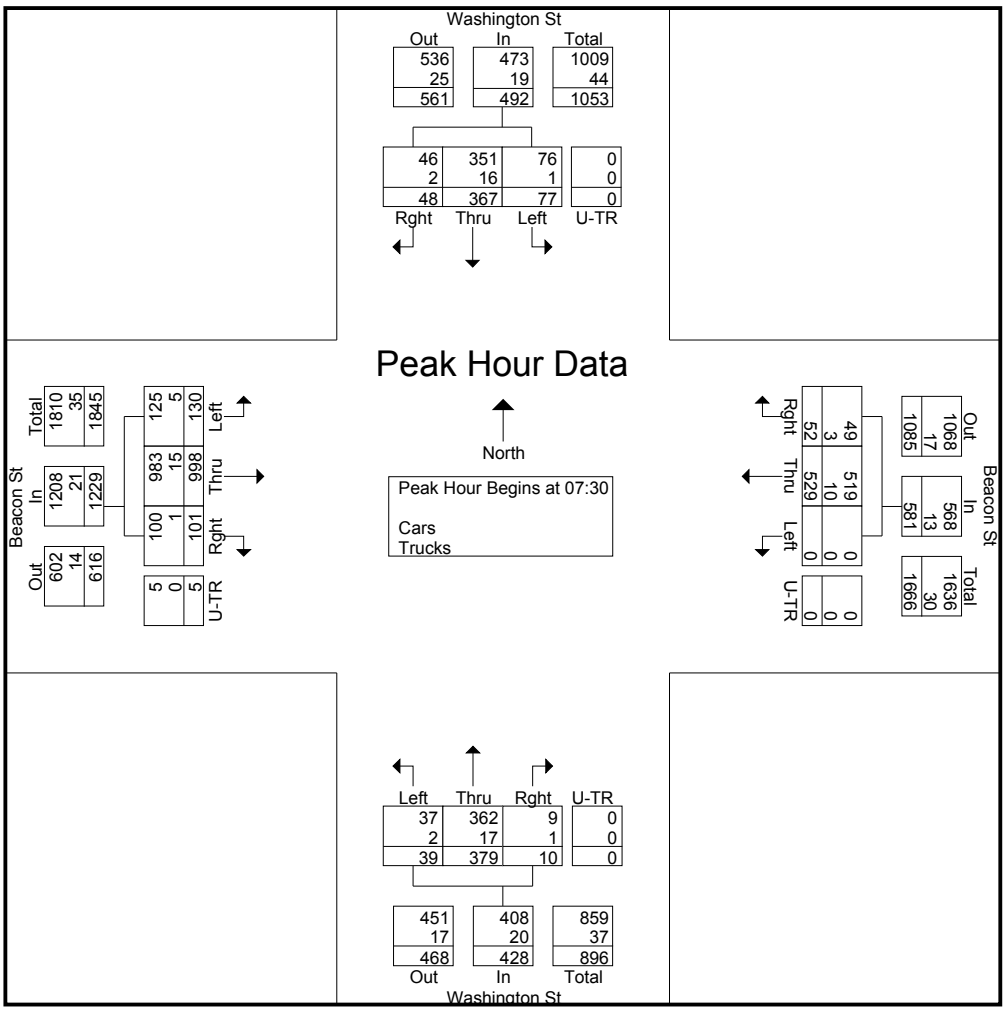
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	16	58	5	0	0	103	10	0	11	79	4	1	28	116	31	2	464
07:15	19	76	4	0	0	122	20	0	15	79	2	0	32	183	19	0	571
07:30	17	105	14	0	0	148	9	0	16	104	4	0	40	254	31	2	744
07:45	17	65	10	0	0	169	21	0	8	97	3	0	37	267	25	1	720
Total	69	304	33	0	0	542	60	0	50	359	13	1	137	820	106	5	2499
08:00	27	120	12	0	0	102	12	0	8	107	0	0	25	259	21	0	693
08:15	16	77	12	0	0	110	10	0	7	71	3	0	28	218	24	2	578
08:30	24	53	10	0	0	99	8	0	3	68	1	0	24	202	16	1	509
08:45	13	67	7	0	0	108	13	0	7	55	1	0	25	228	23	1	548
Total	80	317	41	0	0	419	43	0	25	301	5	0	102	907	84	4	2328
Grand Total	149	621	74	0	0	961	103	0	75	660	18	1	239	1727	190	9	4827
Apprch %	17.7	73.6	8.8	0	0	90.3	9.7	0	9.9	87.5	2.4	0.1	11	79.8	8.8	0.4	
Total %	3.1	12.9	1.5	0	0	19.9	2.1	0	1.6	13.7	0.4	0	5	35.8	3.9	0.2	
Cars	147	599	72	0	0	937	99	0	71	631	16	1	230	1702	189	9	4703
% Cars	98.7	96.5	97.3	0	0	97.5	96.1	0	94.7	95.6	88.9	100	96.2	98.6	99.5	100	97.4
Trucks	2	22	2	0	0	24	4	0	4	29	2	0	9	25	1	0	124
% Trucks	1.3	3.5	2.7	0	0	2.5	3.9	0	5.3	4.4	11.1	0	3.8	1.4	0.5	0	2.6

	Washington St From North					Beacon St From East					Washington St From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	17	105	**14**	0	136	0	148	9	0	157	**16**	104	**4**	0	**124**	**40**	254	**31**	**2**	327	**744**
07:45	17	65	10	0	92	0	**169**	**21**	0	**190**	8	97	3	0	108	37	**267**	25	1	**330**	720
08:00	**27**	**120**	12	0	**159**	0	102	12	0	114	8	**107**	0	0	115	25	259	21	0	305	693
08:15	16	77	12	0	105	0	110	10	0	120	7	71	3	0	81	28	218	24	2	272	578
Total Volume	77	367	48	0	492	0	529	52	0	581	39	379	10	0	428	130	998	101	5	1234	2735
% App. Total																					
PHF	.713	.765	.857	.000	.774	.000	.783	.619	.000	.764	.609	.886	.625	.000	.863	.813	.934	.815	.625	.935	.919
Cars	76	351	46	0	473	0	519	49	0	568	37	362	9	0	408	125	983	100	5	1213	2662
% Cars	98.7	95.6	95.8	0	96.1	0	98.1	94.2	0	97.8	94.9	95.5	90.0	0	95.3	96.2	98.5	99.0	100	98.3	97.3
Trucks	1	16	2	0	19	0	10	3	0	13	2	17	1	0	20	5	15	1	0	21	73
% Trucks	1.3	4.4	4.2	0	3.9	0	1.9	5.8	0	2.2	5.1	4.5	10.0	0	4.7	3.8	1.5	1.0	0	1.7	2.7

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011



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

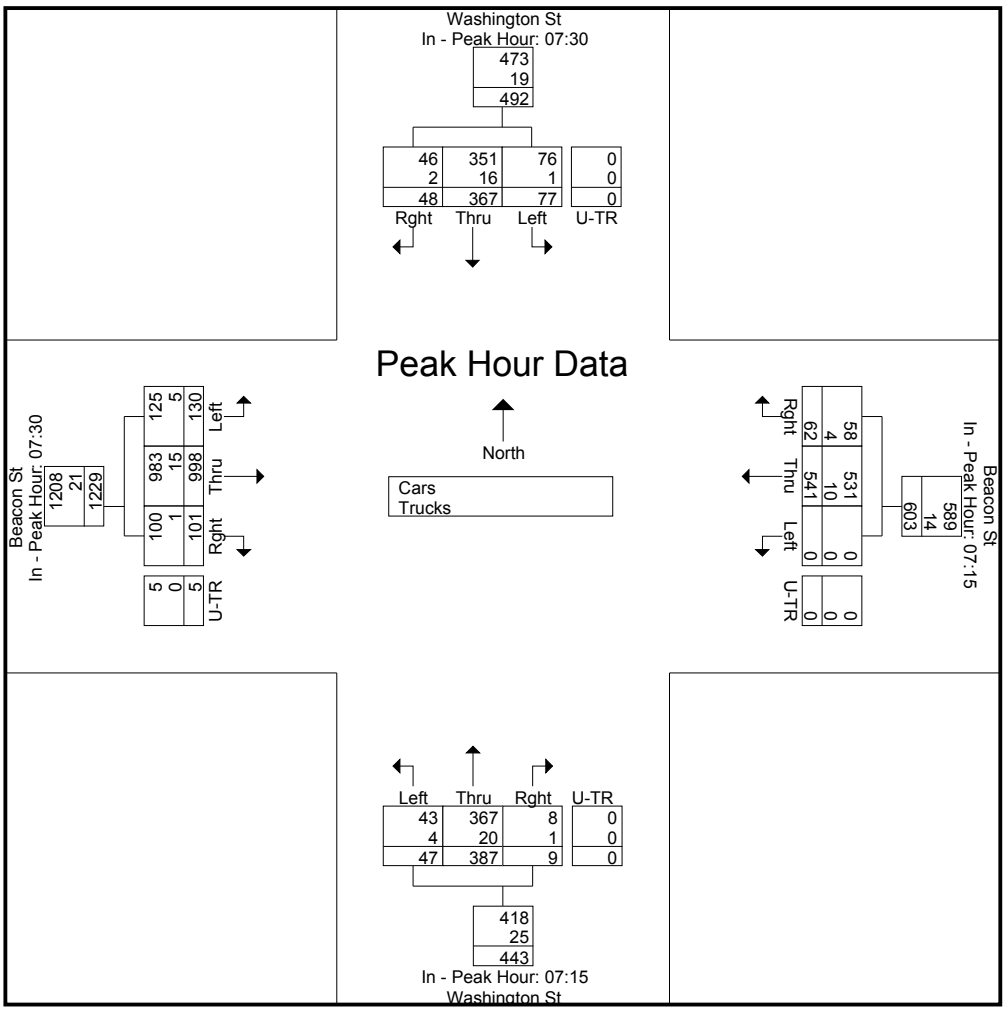
Peak Hour for Each Approach Begins at:

	07:30					07:15					07:15					07:30				
+0 mins.	17	105	**14**	0	136	0	122	20	0	142	15	79	2	0	96	**40**	254	**31**	**2**	327
+15 mins.	17	65	10	0	92	0	148	9	0	157	**16**	104	**4**	0	**124**	37	**267**	25	1	**330**
+30 mins.	**27**	**120**	12	0	**159**	0	**169**	**21**	0	**190**	8	97	3	0	108	25	259	21	0	305
+45 mins.	16	77	12	0	105	0	102	12	0	114	8	**107**	0	0	115	28	218	24	2	272
Total Volume	77	367	48	0	492	0	541	62	0	603	47	387	9	0	443	130	998	101	5	1234
% App. Total																				
PHF	.713	.765	.857	.000	.774	.000	.800	.738	.000	.793	.734	.904	.563	.000	.893	.813	.934	.815	.625	.935
Cars	76	351	46	0	473	0	531	58	0	589	43	367	8	0	418	125	983	100	5	1213
% Cars	98.7	95.6	95.8	0	96.1	0	98.2	93.5	0	97.7	91.5	94.8	88.9	0	94.4	96.2	98.5	99	100	98.3
Trucks	1	16	2	0	19	0	10	4	0	14	4	20	1	0	25	5	15	1	0	21
% Trucks	1.3	4.4	4.2	0	3.9	0	1.8	6.5	0	2.3	8.5	5.2	11.1	0	5.6	3.8	1.5	1	0	1.7

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 1

Groups Printed- Cars

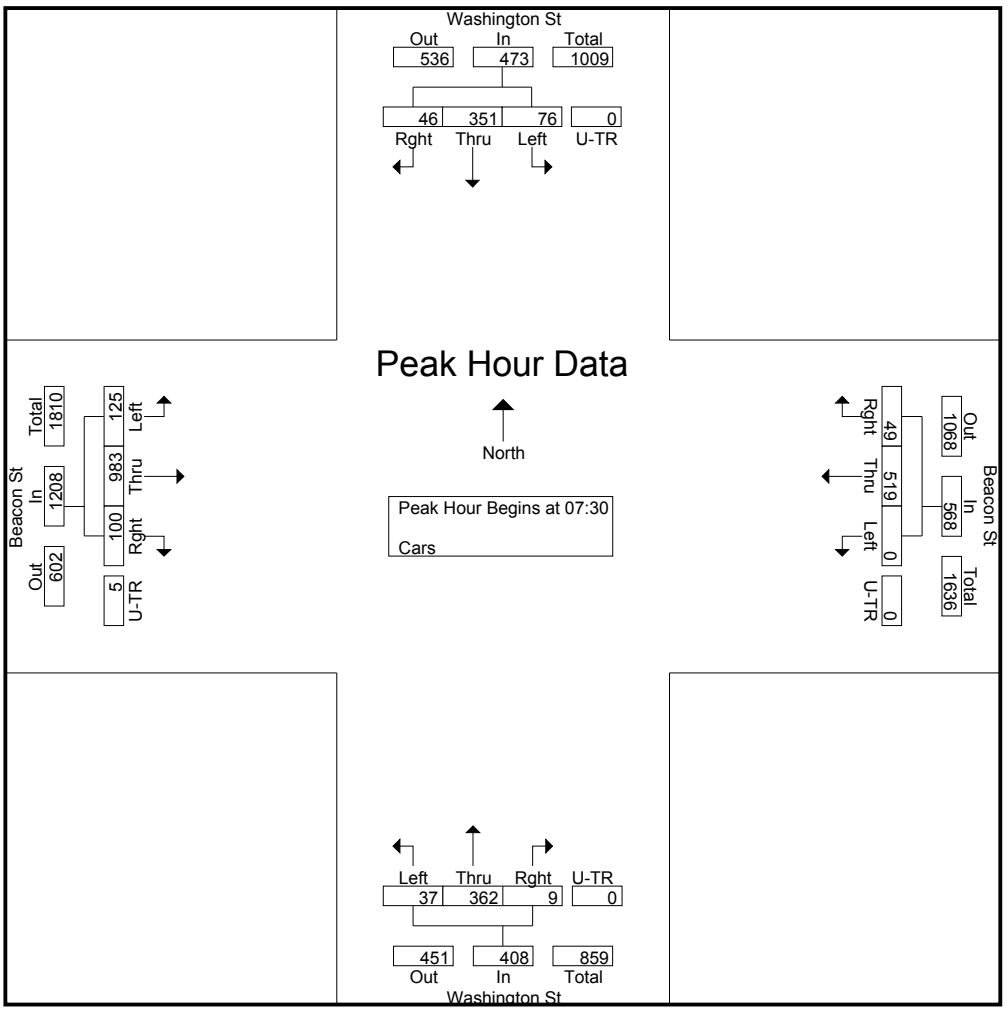
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	16	55	5	0	0	98	10	0	11	74	4	1	26	114	31	2	447
07:15	18	74	4	0	0	118	19	0	13	74	1	0	32	179	19	0	551
07:30	17	102	14	0	0	146	8	0	16	95	4	0	39	246	31	2	720
07:45	16	56	10	0	0	168	19	0	6	93	3	0	34	265	24	1	695
Total	67	287	33	0	0	530	56	0	46	336	12	1	131	804	105	5	2413
08:00	27	119	12	0	0	99	12	0	8	105	0	0	24	256	21	0	683
08:15	16	74	10	0	0	106	10	0	7	69	2	0	28	216	24	2	564
08:30	24	52	10	0	0	96	8	0	3	67	1	0	23	200	16	1	501
08:45	13	67	7	0	0	106	13	0	7	54	1	0	24	226	23	1	542
Total	80	312	39	0	0	407	43	0	25	295	4	0	99	898	84	4	2290
Grand Total	147	599	72	0	0	937	99	0	71	631	16	1	230	1702	189	9	4703
Apprch %	18	73.2	8.8	0	0	90.4	9.6	0	9.9	87.8	2.2	0.1	10.8	79.9	8.9	0.4	
Total %	3.1	12.7	1.5	0	0	19.9	2.1	0	1.5	13.4	0.3	0	4.9	36.2	4	0.2	

	Washington St From North					Beacon St From East					Washington St From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	17	102	**14**	0	133	0	146	8	0	154	**16**	95	**4**	0	**115**	**39**	246	**31**	**2**	318	**720**
07:45	16	56	10	0	82	0	**168**	**19**	0	**187**	6	93	3	0	102	34	**265**	24	1	**324**	695
08:00	**27**	**119**	12	0	**158**	0	99	12	0	111	8	**105**	0	0	113	24	256	21	0	301	683
08:15	16	74	10	0	100	0	106	10	0	116	7	69	2	0	78	28	216	24	2	270	564
Total Volume	76	351	46	0	473	0	519	49	0	568	37	362	9	0	408	125	983	100	5	1213	2662
% App. Total																					
PHF	.704	.737	.821	.000	.748	.000	.772	.645	.000	.759	.578	.862	.563	.000	.887	.801	.927	.806	.625	.936	.924

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011



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

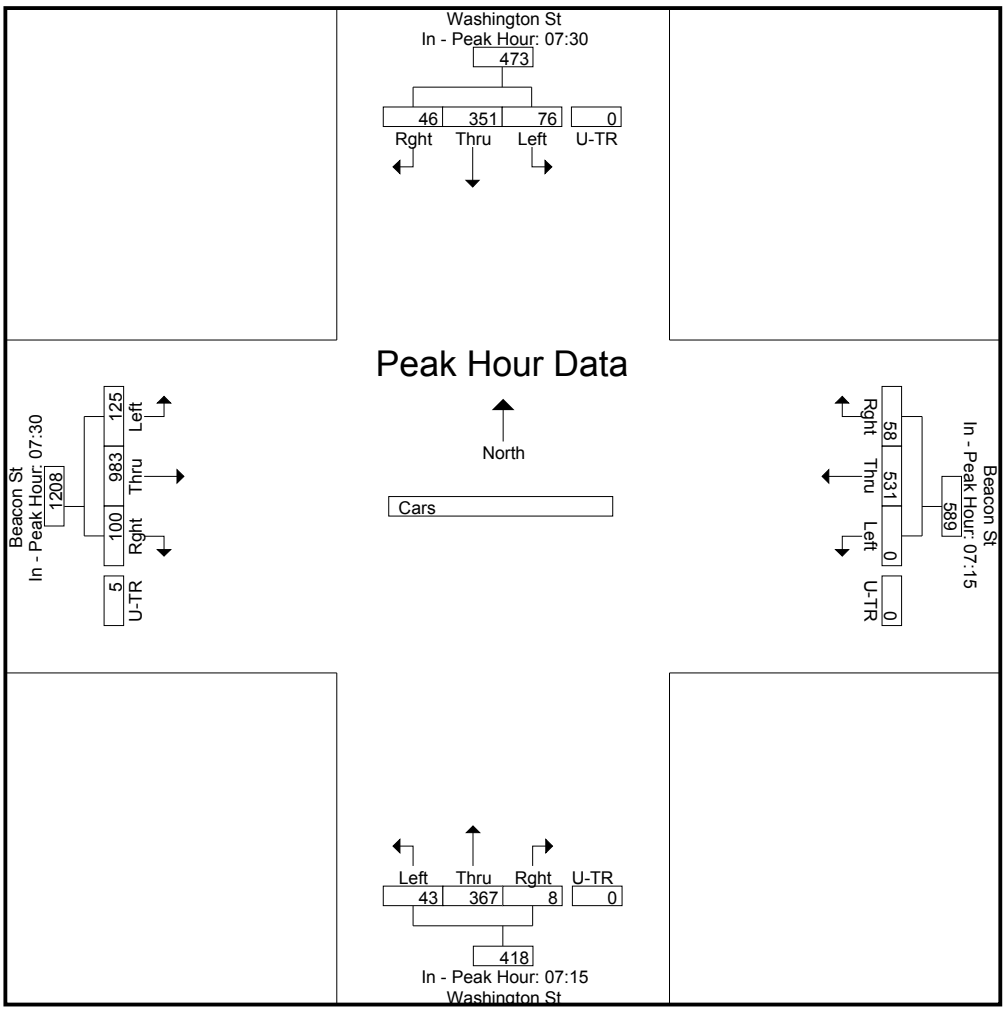
Peak Hour for Each Approach Begins at:

	07:30					07:15					07:15					07:30				
+0 mins.	17	102	**14**	0	133	0	118	**19**	0	137	13	74	1	0	88	**39**	246	**31**	**2**	318
+15 mins.	16	56	10	0	82	0	146	8	0	154	**16**	95	**4**	0	**115**	34	**265**	24	1	**324**
+30 mins.	**27**	**119**	12	0	**158**	0	**168**	19	0	**187**	6	93	3	0	102	24	256	21	0	301
+45 mins.	16	74	10	0	100	0	99	12	0	111	8	**105**	0	0	113	28	216	24	2	270
Total Volume	76	351	46	0	473	0	531	58	0	589	43	367	8	0	418	125	983	100	5	1213
% App. Total																				
PHF	.704	.737	.821	.000	.748	.000	.790	.763	.000	.787	.672	.874	.500	.000	.909	.801	.927	.806	.625	.936

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 1

Groups Printed- Trucks

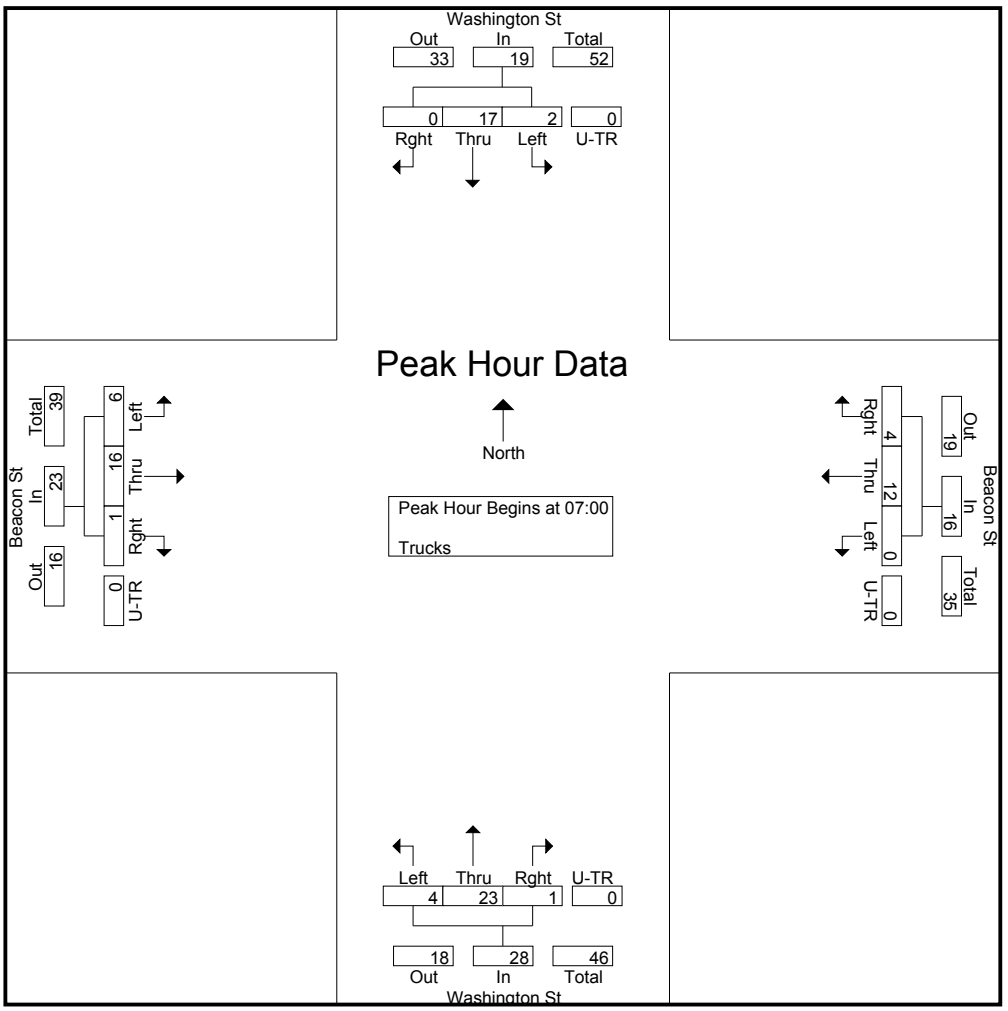
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	0	3	0	0	0	5	0	0	0	5	0	0	2	2	0	0	17
07:15	1	2	0	0	0	4	1	0	2	5	1	0	0	4	0	0	20
07:30	0	3	0	0	0	2	1	0	0	9	0	0	1	8	0	0	24
07:45	1	9	0	0	0	1	2	0	2	4	0	0	3	2	1	0	25
Total	2	17	0	0	0	12	4	0	4	23	1	0	6	16	1	0	86
08:00	0	1	0	0	0	3	0	0	0	2	0	0	1	3	0	0	10
08:15	0	3	2	0	0	4	0	0	0	2	1	0	0	2	0	0	14
08:30	0	1	0	0	0	3	0	0	0	1	0	0	1	2	0	0	8
08:45	0	0	0	0	0	2	0	0	0	1	0	0	1	2	0	0	6
Total	0	5	2	0	0	12	0	0	0	6	1	0	3	9	0	0	38
Grand Total	2	22	2	0	0	24	4	0	4	29	2	0	9	25	1	0	124
Apprch %	7.7	84.6	7.7	0	0	85.7	14.3	0	11.4	82.9	5.7	0	25.7	71.4	2.9	0	
Total %	1.6	17.7	1.6	0	0	19.4	3.2	0	3.2	23.4	1.6	0	7.3	20.2	0.8	0	

	Washington St From North					Beacon St From East					Washington St From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	0	3	0	0	3	0	**5**	0	0	**5**	0	5	0	0	5	2	2	0	0	4	17
07:15	**1**	2	0	0	3	0	4	1	0	5	**2**	5	**1**	0	8	0	4	0	0	4	20
07:30	0	3	0	0	3	0	2	1	0	3	0	**9**	0	0	**9**	1	**8**	0	0	**9**	24
07:45	1	**9**	0	0	**10**	0	1	**2**	0	3	2	4	0	0	6	**3**	2	**1**	0	6	**25**
Total Volume	2	17	0	0	19	0	12	4	0	16	4	23	1	0	28	6	16	1	0	23	86
% App. Total																					
PHF	.500	.472	.000	.000	.475	.000	.600	.500	.000	.800	.500	.639	.250	.000	.778	.500	.500	.250	.000	.639	.860

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 2



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

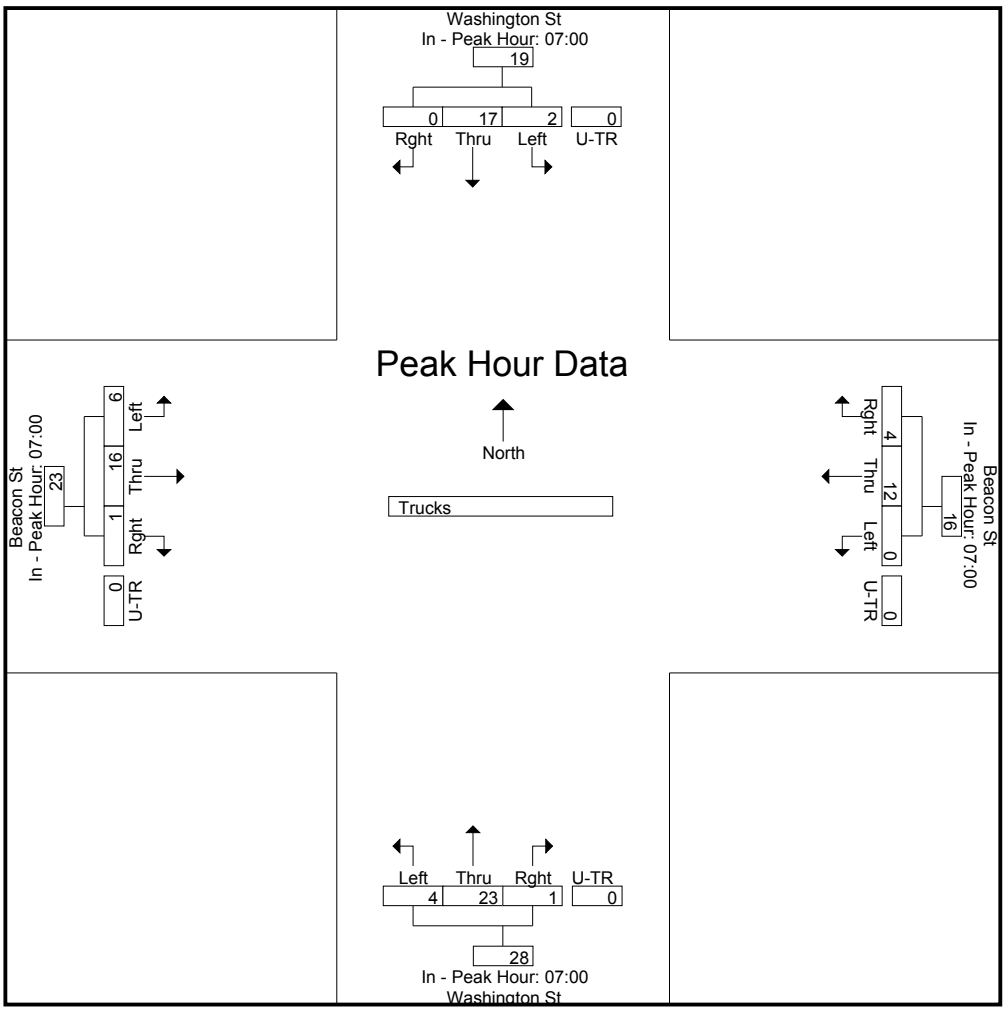
Peak Hour for Each Approach Begins at:

	07:00					07:00					07:00					07:00				
+0 mins.	0	3	0	0	3	0	**5**	0	0	**5**	0	5	0	0	5	2	2	0	0	4
+15 mins.	**1**	2	0	0	3	0	4	1	0	5	**2**	5	**1**	0	8	0	4	0	0	4
+30 mins.	0	3	0	0	3	0	2	1	0	3	0	**9**	0	0	**9**	1	**8**	0	0	**9**
+45 mins.	1	**9**	0	0	**10**	0	1	**2**	0	3	2	4	0	0	6	**3**	2	**1**	0	6
Total Volume	2	17	0	0	19	0	12	4	0	16	4	23	1	0	28	6	16	1	0	23
% App. Total																				
PHF	.500	.472	.000	.000	.475	.000	.600	.500	.000	.800	.500	.639	.250	.000	.778	.500	.500	.250	.000	.639

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900f15
Site Code : 01900015
Start Date : 2/17/2011

Groups Printed- Bikes Peds

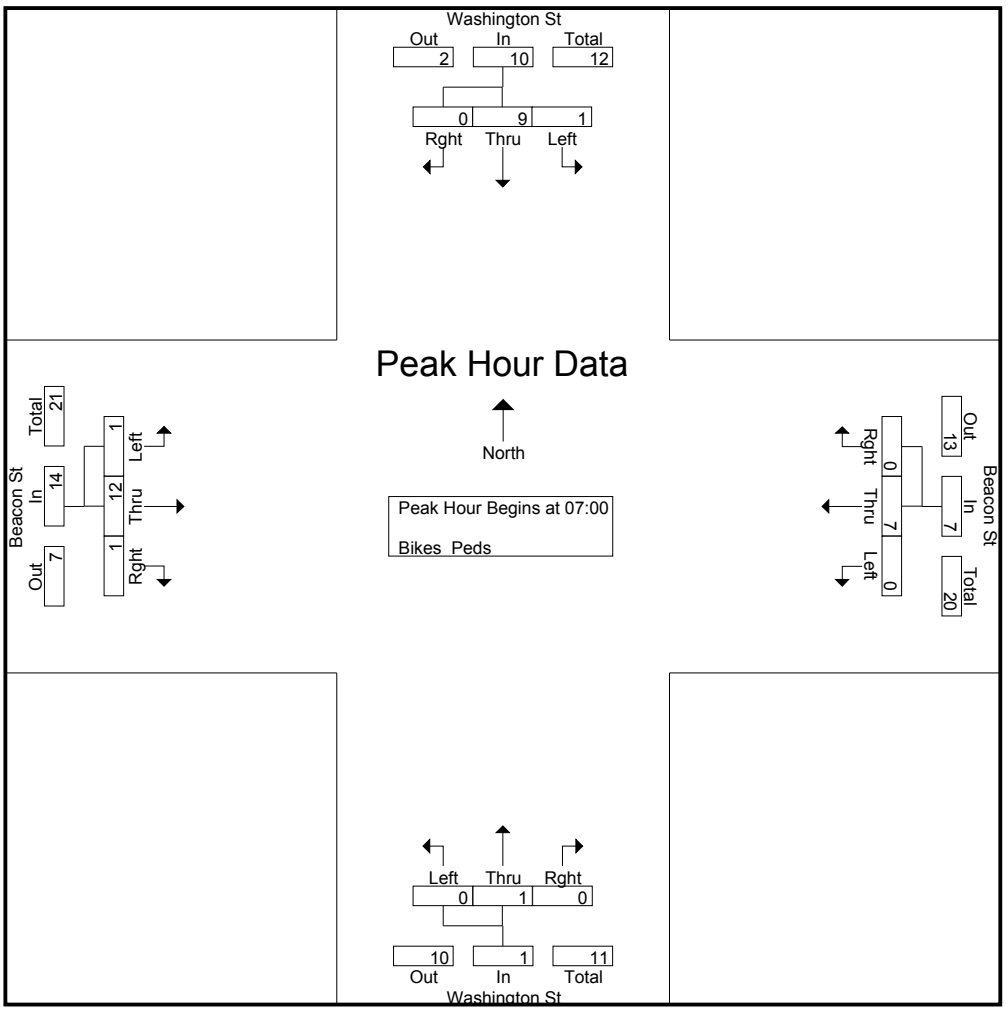
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	5	0	2	0	10	0	1	0	3	0	1	0	4	22	4	26
07:15	0	2	0	10	0	2	0	21	0	0	0	10	1	5	1	9	50	11	61
07:30	0	2	0	12	0	3	0	16	0	0	0	8	0	3	0	12	48	8	56
07:45	1	5	0	20	0	0	0	19	0	0	0	5	0	3	0	18	62	9	71
Total	1	9	0	47	0	7	0	66	0	1	0	26	1	12	1	43	182	32	214
08:00	0	0	0	2	0	0	0	13	0	0	0	5	0	0	0	5	25	0	25
08:15	0	1	2	4	0	0	0	6	0	0	0	1	0	0	0	1	12	3	15
08:30	1	0	0	4	0	0	0	8	0	0	0	1	0	2	0	2	15	3	18
08:45	0	0	2	5	0	1	0	6	0	0	0	2	0	1	0	1	14	4	18
Total	1	1	4	15	0	1	0	33	0	0	0	9	0	3	0	9	66	10	76
Grand Total	2	10	4	62	0	8	0	99	0	1	0	35	1	15	1	52	248	42	290
Apprch %	12.5	62.5	25		0	100	0		0	100	0		5.9	88.2	5.9				
Total %	4.8	23.8	9.5		0	19	0		0	2.4	0		2.4	35.7	2.4		85.5	14.5	

	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	0	0	0	0	2	0	2	0	**1**	0	**1**	0	1	0	1	4
07:15	0	2	0	2	0	2	0	2	0	0	0	0	**1**	**5**	**1**	**7**	**11**
07:30	0	2	0	2	0	**3**	0	**3**	0	0	0	0	0	3	0	3	8
07:45	**1**	**5**	0	**6**	0	0	0	0	0	0	0	0	0	3	0	3	9
Total Volume	1	9	0	10	0	7	0	7	0	1	0	1	1	12	1	14	32
% App. Total	10	90	0		0	100	0		0	100	0		7.1	85.7	7.1		
PHF	.250	.450	.000	.417	.000	.583	.000	.583	.000	.250	.000	.250	.250	.600	.250	.500	.727

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900f15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 2



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

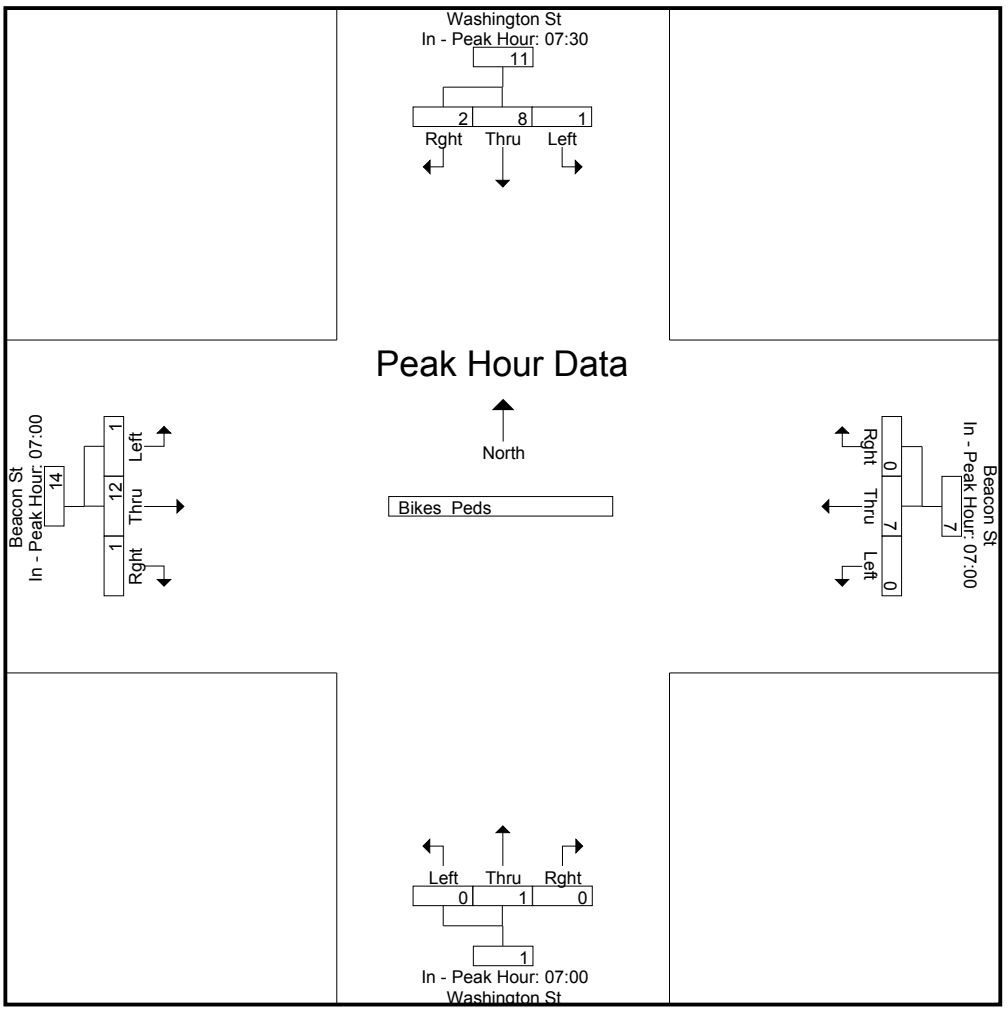
Peak Hour for Each Approach Begins at:

	07:30				07:00				07:00				07:00			
+0 mins.	0	2	0	2	0	2	0	2	0	**1**	0	**1**	0	1	0	1
+15 mins.	**1**	**5**	0	**6**	0	2	0	2	0	0	0	0	**1**	**5**	**1**	**7**
+30 mins.	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	3	0	3
+45 mins.	0	1	**2**	3	0	0	0	0	0	0	0	0	0	3	0	3
Total Volume	1	8	2	11	0	7	0	7	0	1	0	1	1	12	1	14
% App. Total	9.1	72.7	18.2		0	100	0		0	100	0		7.1	85.7	7.1	
PHF	.250	.400	.250	.458	.000	.583	.000	.583	.000	.250	.000	.250	.250	.600	.250	.500

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900f15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 1

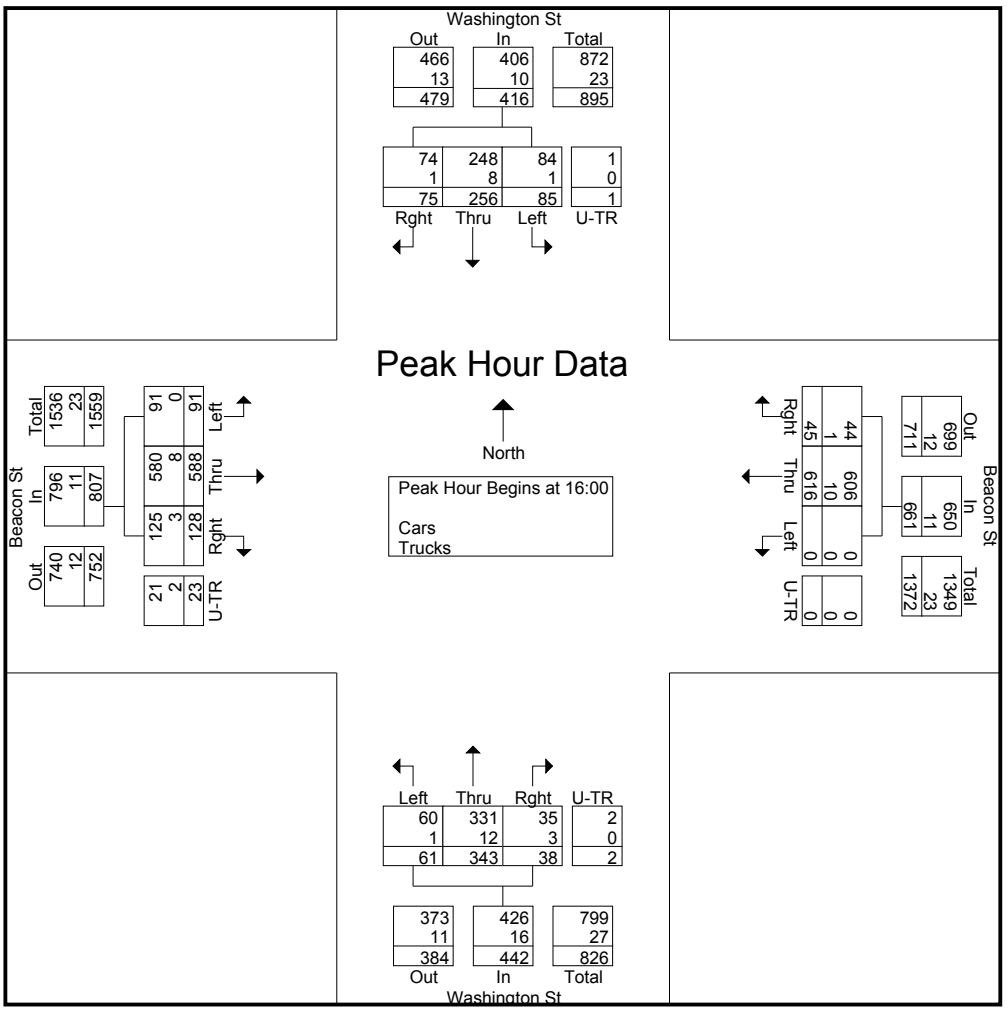
Groups Printed- Cars - Trucks

	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	29	55	13	0	0	134	15	0	17	67	9	0	29	133	30	10	541
16:15	18	81	33	0	0	151	18	0	10	92	8	1	22	153	30	3	620
16:30	20	55	16	0	0	155	6	0	20	109	11	0	14	159	27	2	594
16:45	18	65	13	1	0	176	6	0	14	75	10	1	26	143	41	8	597
Total	85	256	75	1	0	616	45	0	61	343	38	2	91	588	128	23	2352
17:00	12	56	8	0	0	126	13	0	24	67	13	3	23	138	37	10	530
17:15	15	64	7	0	0	145	10	0	31	63	15	0	17	149	28	7	551
17:30	19	94	18	0	0	159	3	0	27	51	11	0	20	174	59	4	639
17:45	15	87	15	0	0	145	4	0	25	46	8	0	22	156	39	0	562
Total	61	301	48	0	0	575	30	0	107	227	47	3	82	617	163	21	2282
Grand Total	146	557	123	1	0	1191	75	0	168	570	85	5	173	1205	291	44	4634
Apprch %	17.7	67.4	14.9	0.1	0	94.1	5.9	0	20.3	68.8	10.3	0.6	10.1	70.3	17	2.6	
Total %	3.2	12	2.7	0	0	25.7	1.6	0	3.6	12.3	1.8	0.1	3.7	26	6.3	0.9	
Cars	144	542	122	1	0	1176	73	0	166	554	81	5	169	1188	288	41	4550
% Cars	98.6	97.3	99.2	100	0	98.7	97.3	0	98.8	97.2	95.3	100	97.7	98.6	99	93.2	98.2
Trucks	2	15	1	0	0	15	2	0	2	16	4	0	4	17	3	3	84
% Trucks	1.4	2.7	0.8	0	0	1.3	2.7	0	1.2	2.8	4.7	0	2.3	1.4	1	6.8	1.8

	Washington St From North					Beacon St From East					Washington St From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	**29**	55	13	0	97	0	134	15	0	149	17	67	9	0	93	**29**	133	30	**10**	202	541
16:15	18	**81**	**33**	0	**132**	0	151	**18**	0	169	10	92	8	**1**	111	22	153	30	3	208	**620**
16:30	20	55	16	0	91	0	155	6	0	161	**20**	**109**	**11**	0	**140**	14	**159**	27	2	202	594
16:45	18	65	13	**1**	97	0	**176**	6	0	**182**	14	75	10	1	100	26	143	**41**	8	**218**	597
Total Volume	85	256	75	1	417	0	616	45	0	661	61	343	38	2	444	91	588	128	23	830	2352
% App. Total																					
PHF	.733	.790	.568	.250	.790	.000	.875	.625	.000	.908	.763	.787	.864	.500	.793	.784	.925	.780	.575	.952	.948
Cars	84	248	74	1	407	0	606	44	0	650	60	331	35	2	428	91	580	125	21	817	2302
% Cars	98.8	96.9	98.7	100	97.6	0	98.4	97.8	0	98.3	98.4	96.5	92.1	100	96.4	100	98.6	97.7	91.3	98.4	97.9
Trucks	1	8	1	0	10	0	10	1	0	11	1	12	3	0	16	0	8	3	2	13	50
% Trucks	1.2	3.1	1.3	0	2.4	0	1.6	2.2	0	1.7	1.6	3.5	7.9	0	3.6	0	1.4	2.3	8.7	1.6	2.1

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

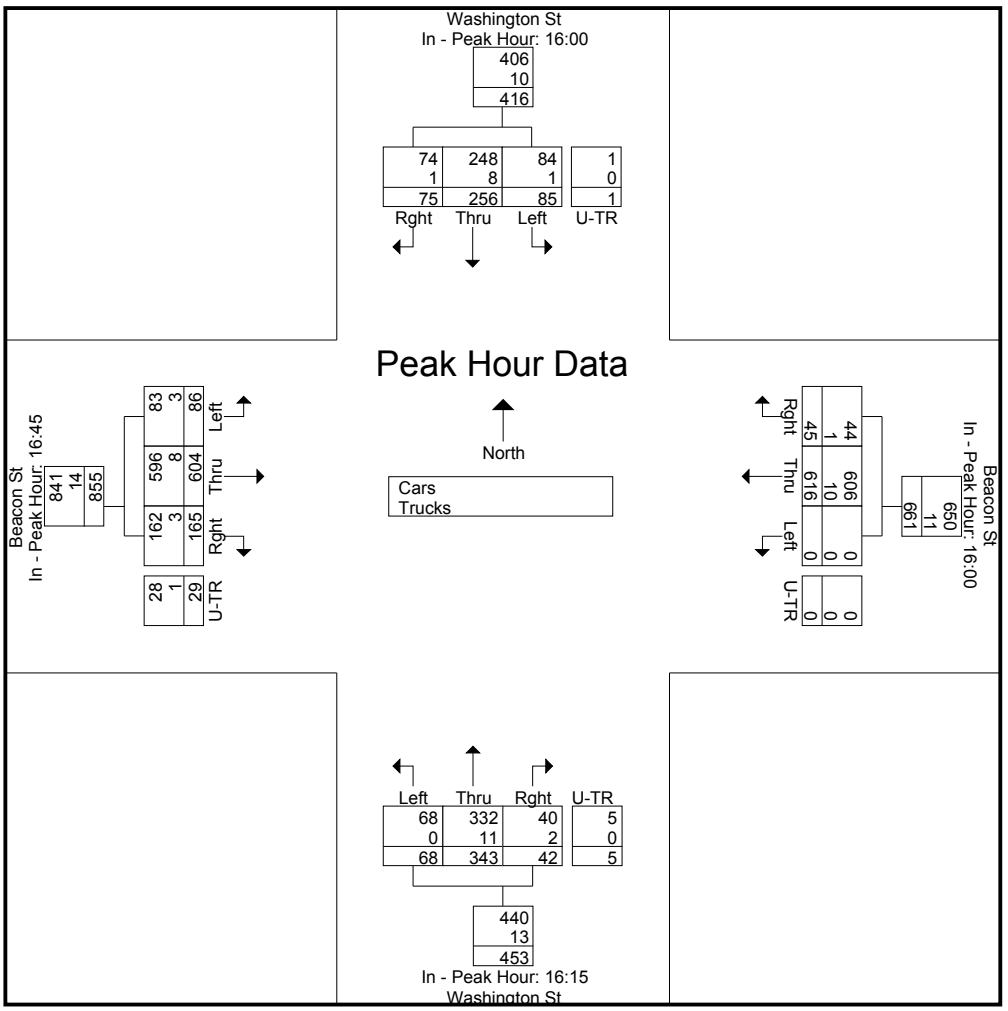
Peak Hour for Each Approach Begins at:

	16:00					16:00					16:15					16:45				
+0 mins.	**29**	55	13	0	97	0	134	15	0	149	10	92	8	1	111	**26**	143	41	8	218
+15 mins.	18	**81**	**33**	0	**132**	0	151	**18**	0	169	20	**109**	11	0	**140**	23	138	37	**10**	208
+30 mins.	20	55	16	0	91	0	155	6	0	161	14	75	10	1	100	17	149	28	7	201
+45 mins.	18	65	13	**1**	97	0	**176**	6	0	**182**	**24**	67	**13**	**3**	107	20	**174**	**59**	4	**257**
Total Volume	85	256	75	1	417	0	616	45	0	661	68	343	42	5	458	86	604	165	29	884
% App. Total																				
PHF	.733	.790	.568	.250	.790	.000	.875	.625	.000	.908	.708	.787	.808	.417	.818	.827	.868	.699	.725	.860
Cars	84	248	74	1	407	0	606	44	0	650	68	332	40	5	445	83	596	162	28	869
% Cars	98.8	96.9	98.7	100	97.6	0	98.4	97.8	0	98.3	100	96.8	95.2	100	97.2	96.5	98.7	98.2	96.6	98.3
Trucks	1	8	1	0	10	0	10	1	0	11	0	11	2	0	13	3	8	3	1	15
% Trucks	1.2	3.1	1.3	0	2.4	0	1.6	2.2	0	1.7	0	3.2	4.8	0	2.8	3.5	1.3	1.8	3.4	1.7

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 1

Groups Printed- Cars

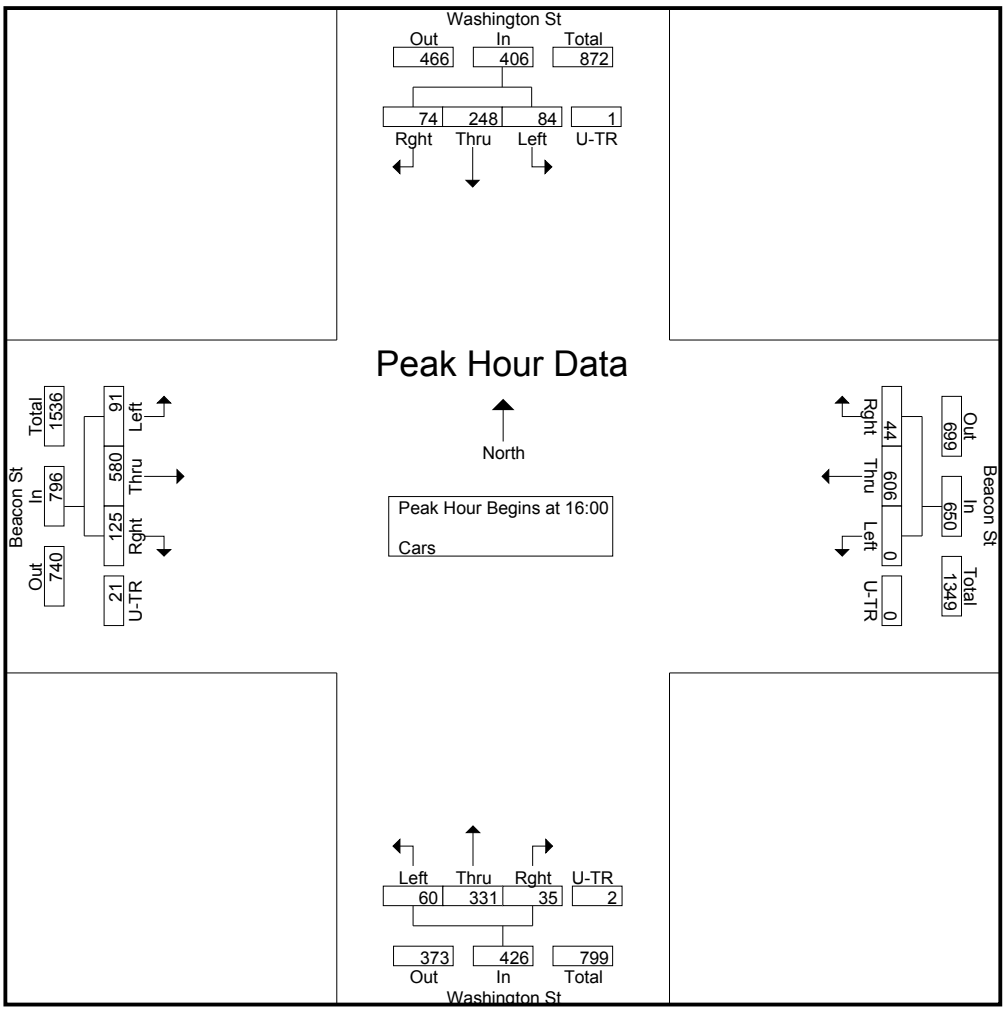
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	28	53	13	0	0	128	15	0	16	64	8	0	29	130	30	9	523
16:15	18	81	32	0	0	150	18	0	10	88	6	1	22	151	30	3	610
16:30	20	53	16	0	0	153	6	0	20	106	11	0	14	157	27	1	584
16:45	18	61	13	1	0	175	5	0	14	73	10	1	26	142	38	8	585
Total	84	248	74	1	0	606	44	0	60	331	35	2	91	580	125	21	2302
17:00	12	54	8	0	0	123	12	0	24	65	13	3	22	136	37	9	518
17:15	15	63	7	0	0	145	10	0	30	63	14	0	17	148	28	7	547
17:30	18	91	18	0	0	159	3	0	27	50	11	0	18	170	59	4	628
17:45	15	86	15	0	0	143	4	0	25	45	8	0	21	154	39	0	555
Total	60	294	48	0	0	570	29	0	106	223	46	3	78	608	163	20	2248
Grand Total	144	542	122	1	0	1176	73	0	166	554	81	5	169	1188	288	41	4550
Apprch %	17.8	67	15.1	0.1	0	94.2	5.8	0	20.6	68.7	10	0.6	10	70.5	17.1	2.4	
Total %	3.2	11.9	2.7	0	0	25.8	1.6	0	3.6	12.2	1.8	0.1	3.7	26.1	6.3	0.9	

	Washington St From North					Beacon St From East					Washington St From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	**28**	53	13	0	94	0	128	15	0	143	16	64	8	0	88	**29**	130	30	**9**	198	523
16:15	18	**81**	**32**	0	**131**	0	150	**18**	0	168	10	88	6	**1**	105	22	151	30	3	206	**610**
16:30	20	53	16	0	89	0	153	6	0	159	**20**	**106**	**11**	0	**137**	14	**157**	27	1	199	584
16:45	18	61	13	**1**	93	0	**175**	5	0	**180**	14	73	10	1	98	26	142	**38**	8	**214**	585
Total Volume	84	248	74	1	407	0	606	44	0	650	60	331	35	2	428	91	580	125	21	817	2302
% App. Total																					
PHF	.750	.765	.578	.250	.777	.000	.866	.611	.000	.903	.750	.781	.795	.500	.781	.784	.924	.822	.583	.954	.943

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

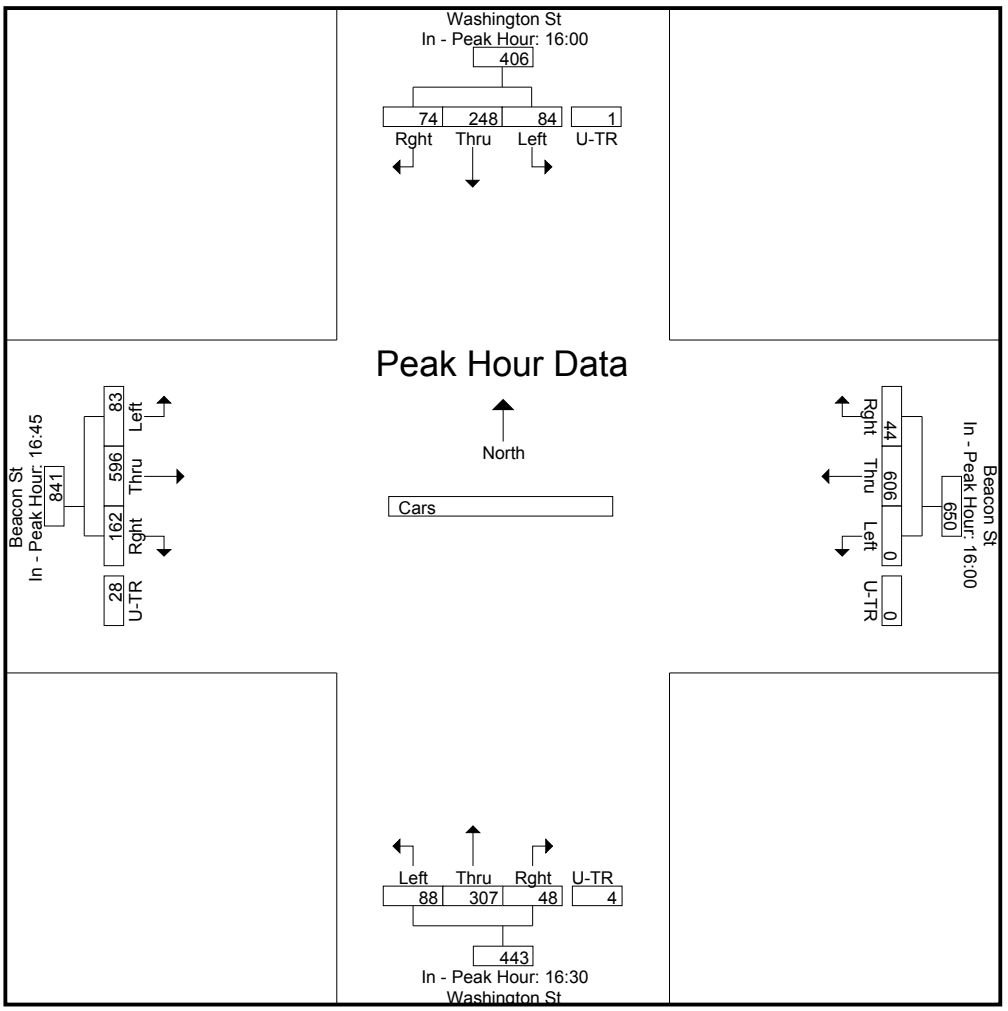
Peak Hour for Each Approach Begins at:

	16:00					16:00					16:30					16:45				
+0 mins.	**28**	53	13	0	94	0	128	15	0	143	20	**106**	11	0	**137**	**26**	142	38	8	214
+15 mins.	18	**81**	**32**	0	**131**	0	150	**18**	0	168	14	73	10	1	98	22	136	37	**9**	204
+30 mins.	20	53	16	0	89	0	153	6	0	159	24	65	13	**3**	105	17	148	28	7	200
+45 mins.	18	61	13	**1**	93	0	**175**	5	0	**180**	**30**	63	**14**	0	107	18	**170**	**59**	4	**251**
Total Volume	84	248	74	1	407	0	606	44	0	650	88	307	48	4	447	83	596	162	28	869
% App. Total																				
PHF	.750	.765	.578	.250	.777	.000	.866	.611	.000	.903	.733	.724	.857	.333	.816	.798	.876	.686	.778	.866

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 1

Groups Printed- Trucks

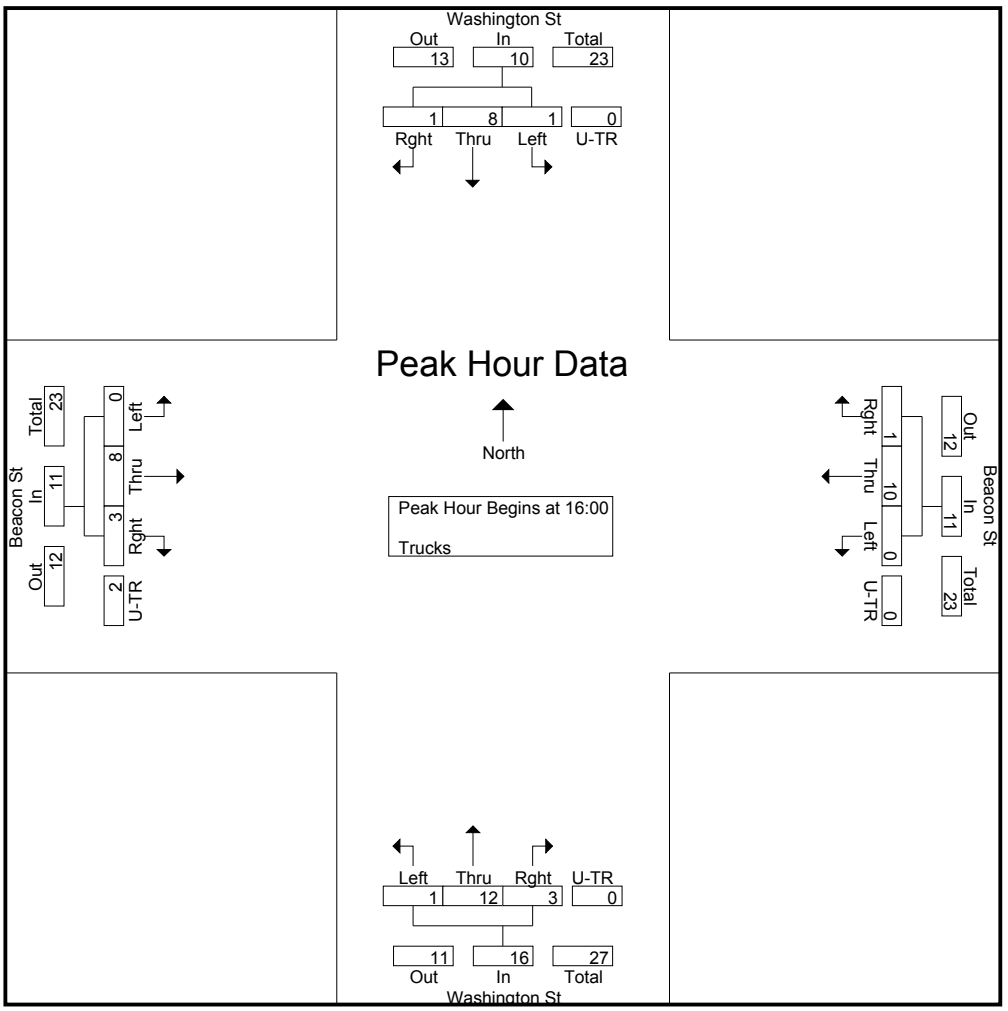
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	1	2	0	0	0	6	0	0	1	3	1	0	0	3	0	1	18
16:15	0	0	1	0	0	1	0	0	0	4	2	0	0	2	0	0	10
16:30	0	2	0	0	0	2	0	0	0	3	0	0	0	2	0	1	10
16:45	0	4	0	0	0	1	1	0	0	2	0	0	0	1	3	0	12
Total	1	8	1	0	0	10	1	0	1	12	3	0	0	8	3	2	50
17:00	0	2	0	0	0	3	1	0	0	2	0	0	1	2	0	1	12
17:15	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0	4
17:30	1	3	0	0	0	0	0	0	0	1	0	0	2	4	0	0	11
17:45	0	1	0	0	0	2	0	0	0	1	0	0	1	2	0	0	7
Total	1	7	0	0	0	5	1	0	1	4	1	0	4	9	0	1	34
Grand Total	2	15	1	0	0	15	2	0	2	16	4	0	4	17	3	3	84
Apprch %	11.1	83.3	5.6	0	0	88.2	11.8	0	9.1	72.7	18.2	0	14.8	63	11.1	11.1	
Total %	2.4	17.9	1.2	0	0	17.9	2.4	0	2.4	19	4.8	0	4.8	20.2	3.6	3.6	

	Washington St From North					Beacon St From East					Washington St From South					Beacon St From West					
Start Time	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Left	Thru	Rght	U-TR	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	**1**	2	0	0	3	0	**6**	0	0	**6**	**1**	3	1	0	5	0	**3**	0	**1**	**4**	**18**
16:15	0	0	**1**	0	1	0	1	0	0	1	0	**4**	**2**	0	**6**	0	2	0	0	2	10
16:30	0	2	0	0	2	0	2	0	0	2	0	3	0	0	3	0	2	0	1	3	10
16:45	0	**4**	0	0	**4**	0	1	**1**	0	2	0	2	0	0	2	0	1	**3**	0	4	12
Total Volume	1	8	1	0	10	0	10	1	0	11	1	12	3	0	16	0	8	3	2	13	50
% App. Total																					
PHF	.250	.500	.250	.000	.625	.000	.417	.250	.000	.458	.250	.750	.375	.000	.667	.000	.667	.250	.500	.813	.694

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

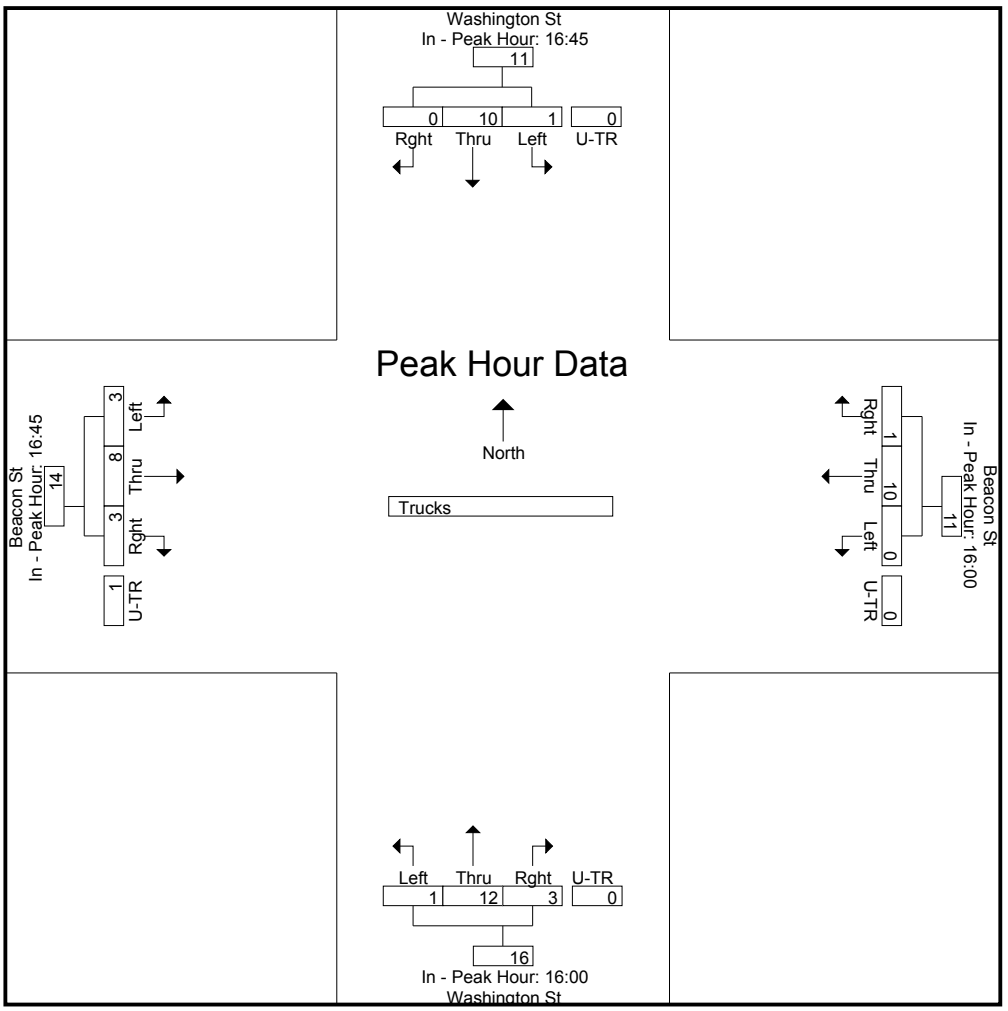
Peak Hour for Each Approach Begins at:

	16:45					16:00					16:00					16:45				
+0 mins.	0	**4**	0	0	**4**	0	**6**	0	0	**6**	**1**	3	1	0	5	0	1	**3**	0	4
+15 mins.	0	2	0	0	2	0	1	0	0	1	0	**4**	**2**	0	**6**	1	2	0	**1**	4
+30 mins.	0	1	0	0	1	0	2	0	0	2	0	3	0	0	3	0	1	0	0	1
+45 mins.	**1**	3	0	0	4	0	1	**1**	0	2	0	2	0	0	2	**2**	**4**	0	0	**6**
Total Volume	1	10	0	0	11	0	10	1	0	11	1	12	3	0	16	3	8	3	1	15
% App. Total																				
PHF	.250	.625	.000	.000	.688	.000	.417	.250	.000	.458	.250	.750	.375	.000	.667	.375	.500	.250	.250	.625

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900F15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900f15
Site Code : 01900015
Start Date : 2/17/2011

Groups Printed- Bikes Peds

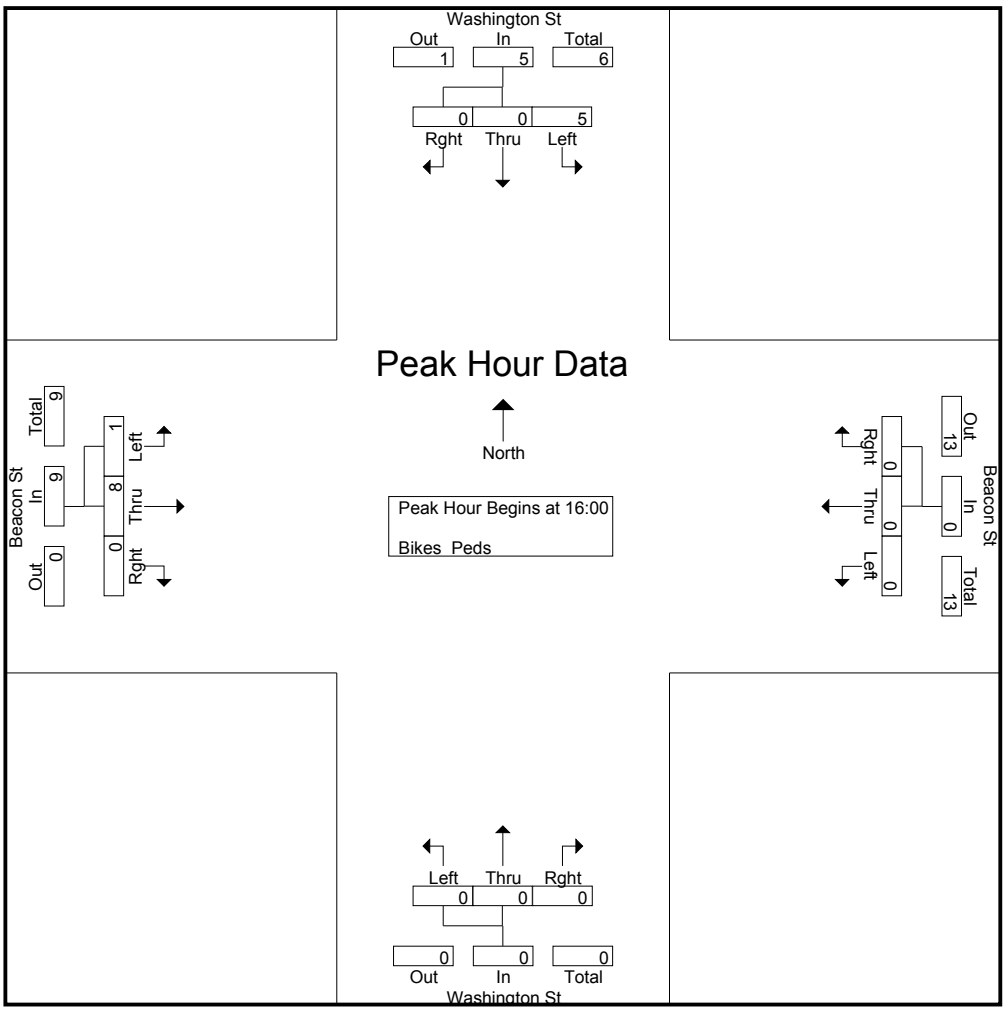
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	3	0	0	0	0	0	0	0	20	0	2	0	0	23	2	25
16:15	4	0	0	5	0	0	0	0	0	0	0	13	1	0	0	0	18	5	23
16:30	0	0	0	14	0	0	0	0	0	0	0	13	0	0	0	2	29	0	29
16:45	1	0	0	1	0	0	0	0	0	0	0	23	0	6	0	1	25	7	32
Total	5	0	0	23	0	0	0	0	0	0	0	69	1	8	0	3	95	14	109
17:00	0	0	0	12	0	0	0	0	0	0	0	22	0	1	0	1	35	1	36
17:15	0	0	0	1	0	0	0	0	0	0	0	17	0	0	0	1	19	0	19
17:30	0	0	0	2	0	0	0	4	1	2	0	22	0	0	0	0	28	3	31
17:45	1	0	0	2	0	0	0	0	0	0	0	16	0	0	0	2	20	1	21
Total	1	0	0	17	0	0	0	4	1	2	0	77	0	1	0	4	102	5	107
Grand Total	6	0	0	40	0	0	0	4	1	2	0	146	1	9	0	7	197	19	216
Apprch %	100	0	0		0	0	0		33.3	66.7	0		10	90	0				
Total %	31.6	0	0		0	0	0		5.3	10.5	0		5.3	47.4	0		91.2	8.8	

	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
16:15	**4**	0	0	**4**	0	0	0	0	0	0	0	0	**1**	0	0	1	5
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	0	1	0	0	0	0	0	0	0	0	0	**6**	0	**6**	**7**
Total Volume	5	0	0	5	0	0	0	0	0	0	0	0	1	8	0	9	14
% App. Total	100	0	0		0	0	0		0	0	0		11.1	88.9	0		
PHF	.313	.000	.000	.313	.000	.000	.000	.000	.000	.000	.000	.000	.250	.333	.000	.375	.500

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900f15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

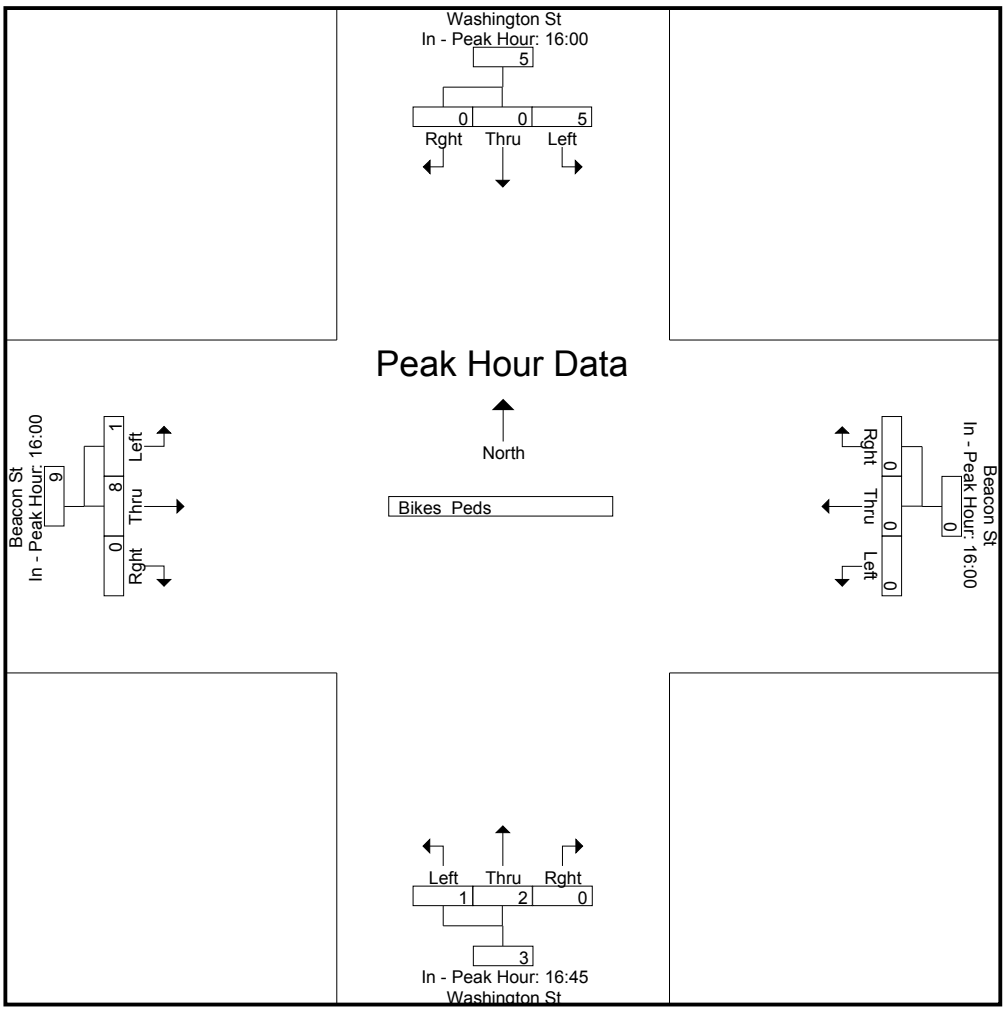
Peak Hour for Each Approach Begins at:

	16:00				16:00				16:45				16:00			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
+15 mins.	**4**	0	0	**4**	0	0	0	0	0	0	0	0	**1**	0	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	0	1	0	0	0	0	**1**	**2**	0	**3**	0	**6**	0	**6**
Total Volume	5	0	0	5	0	0	0	0	1	2	0	3	1	8	0	9
% App. Total	100	0	0		0	0	0		33.3	66.7	0		11.1	88.9	0	
PHF	.313	.000	.000	.313	.000	.000	.000	.000	.250	.250	.000	.250	.250	.333	.000	.375

Accurate Counts
978-664-2565

N/S Street : Washington Street
E/W Street: Beacon Street
City/State : Brookline, MA
Weather : Clear

File Name : 01900f15
Site Code : 01900015
Start Date : 2/17/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

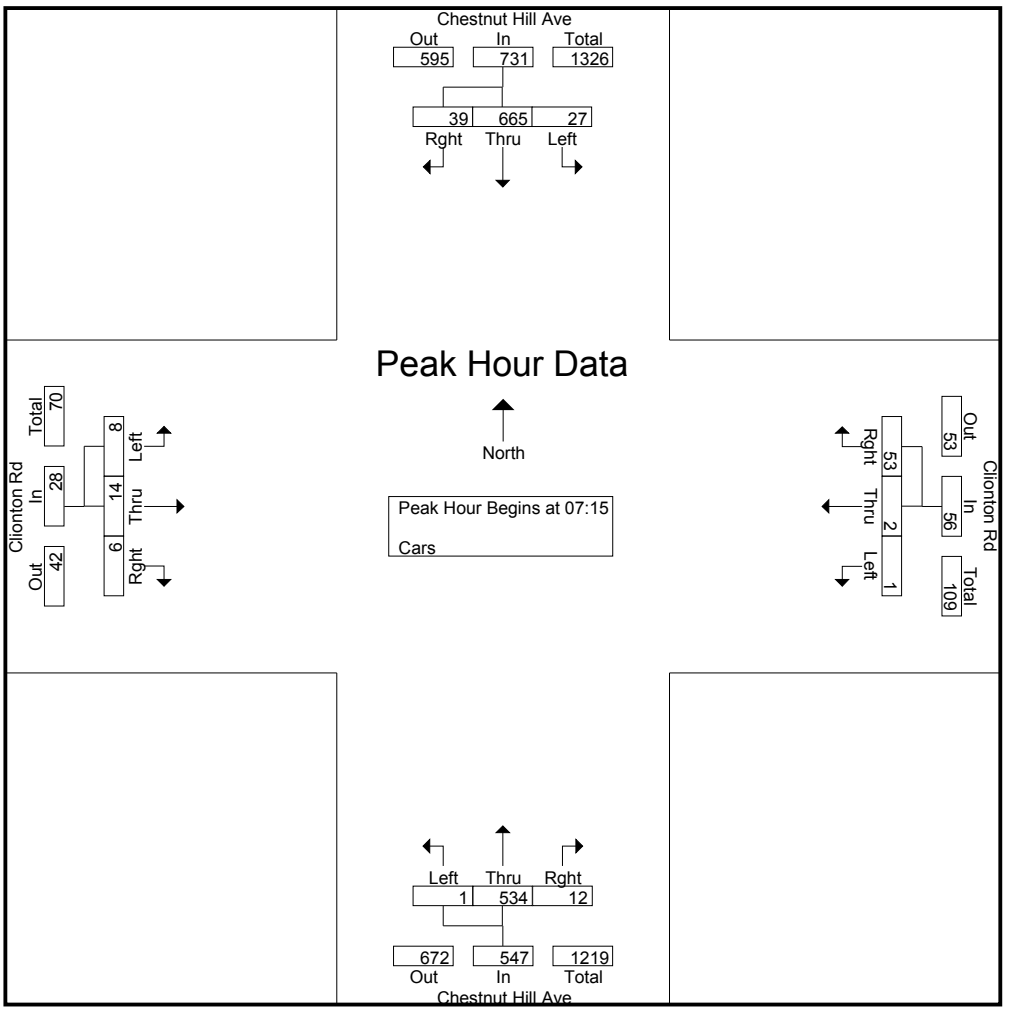
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	5	121	0	3	0	8	0	134	3	1	1	0	276
07:15	5	172	0	0	1	15	0	126	4	0	4	2	329
07:30	6	170	13	0	0	9	0	135	1	0	2	1	337
07:45	5	153	15	1	1	16	0	121	5	4	1	1	323
Total	21	616	28	4	2	48	0	516	13	5	8	4	1265
08:00	11	170	11	0	0	13	1	152	2	4	7	2	373
08:15	3	132	9	2	0	17	2	93	1	5	7	6	277
08:30	4	160	9	0	2	8	0	179	1	4	4	2	373
08:45	4	129	8	0	1	14	0	141	1	7	7	0	312
Total	22	591	37	2	3	52	3	565	5	20	25	10	1335
Grand Total	43	1207	65	6	5	100	3	1081	18	25	33	14	2600
Apprch %	3.3	91.8	4.9	5.4	4.5	90.1	0.3	98.1	1.6	34.7	45.8	19.4	
Total %	1.7	46.4	2.5	0.2	0.2	3.8	0.1	41.6	0.7	1	1.3	0.5	

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	5	**172**	0	177	0	**1**	15	16	0	126	4	130	0	4	**2**	6	329
07:30	6	170	13	189	0	0	9	9	0	135	1	136	0	2	1	3	337
07:45	5	153	**15**	173	**1**	1	**16**	**18**	0	121	**5**	126	**4**	1	1	6	323
08:00	**11**	170	11	**192**	0	0	13	13	**1**	**152**	2	**155**	4	**7**	2	**13**	**373**
Total Volume	27	665	39	731	1	2	53	56	1	534	12	547	8	14	6	28	1362
% App. Total	3.7	91	5.3		1.8	3.6	94.6		0.2	97.6	2.2		28.6	50	21.4		
PHF	.614	.967	.650	.952	.250	.500	.828	.778	.250	.878	.600	.882	.500	.500	.750	.538	.913

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 2



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

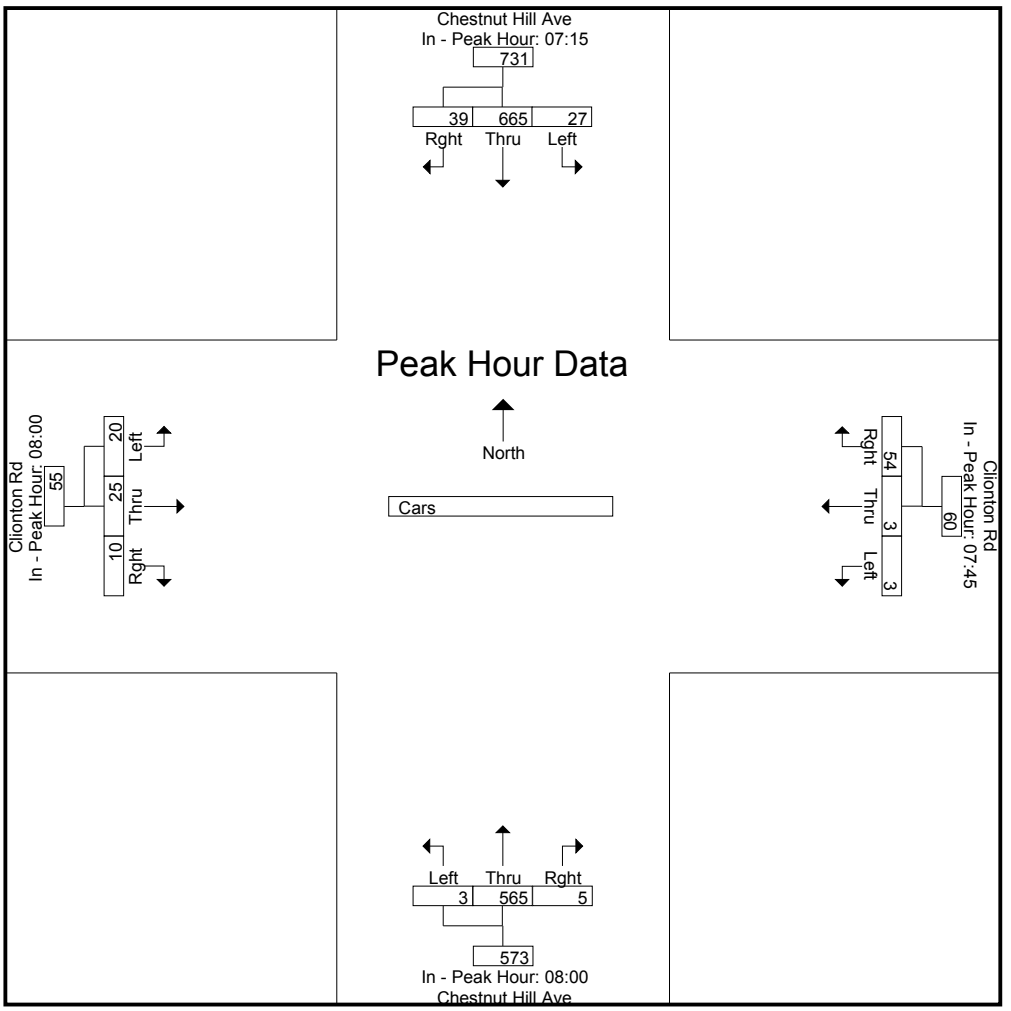
Peak Hour for Each Approach Begins at:

	07:15				07:45				08:00				08:00			
+0 mins.	5	**172**	0	177	1	1	16	18	1	152	**2**	155	4	**7**	2	13
+15 mins.	6	170	13	189	0	0	13	13	**2**	93	1	96	5	7	**6**	**18**
+30 mins.	5	153	**15**	173	**2**	0	**17**	**19**	0	**179**	1	**180**	4	4	2	10
+45 mins.	**11**	170	11	**192**	0	**2**	8	10	0	141	1	142	**7**	7	0	14
Total Volume	27	665	39	731	3	3	54	60	3	565	5	573	20	25	10	55
% App. Total	3.7	91	5.3		5	5	90		0.5	98.6	0.9		36.4	45.5	18.2	
PHF	.614	.967	.650	.952	.375	.375	.794	.789	.375	.789	.625	.796	.714	.893	.417	.764

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 1

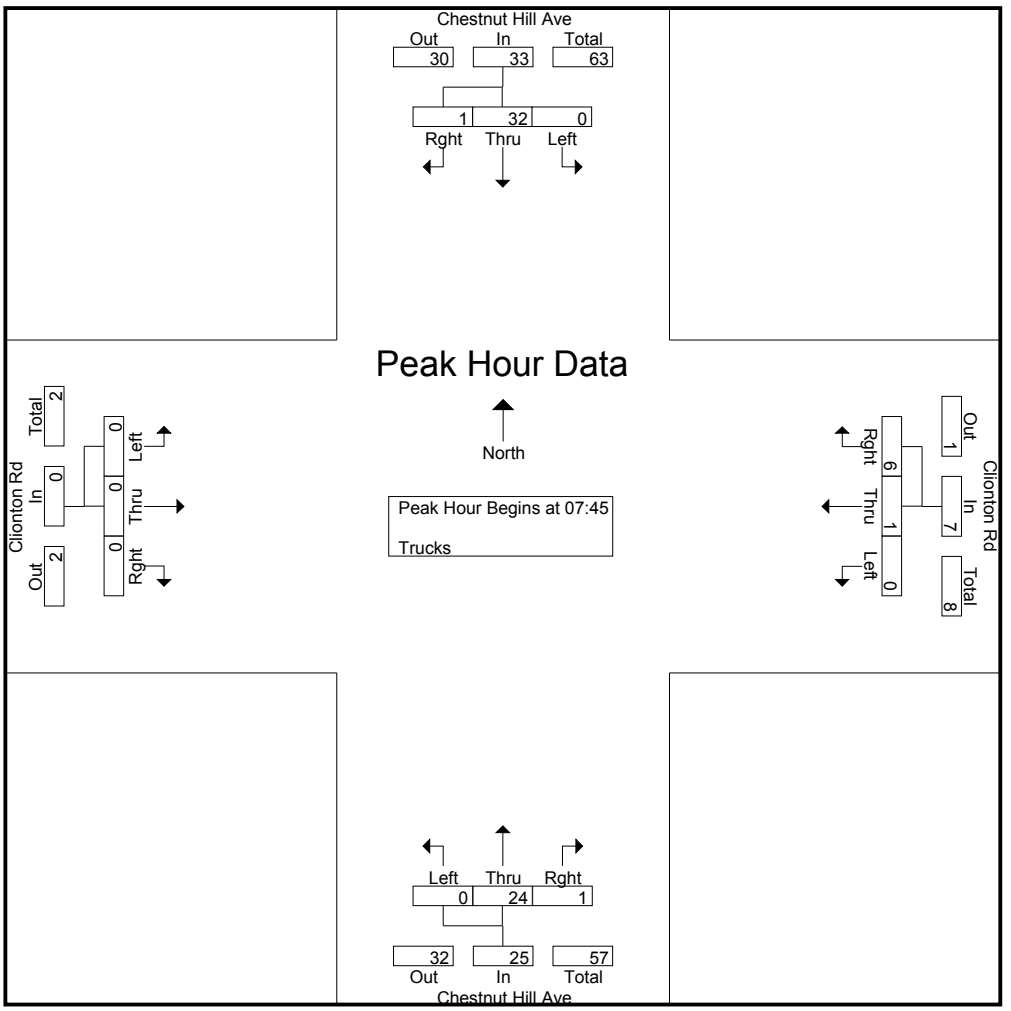
Groups Printed- Trucks

	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	0	2	0	0	0	0	0	4	0	0	0	0	6
07:15	0	5	0	0	0	0	0	4	0	0	1	0	10
07:30	0	4	0	0	0	1	0	3	0	0	0	0	8
07:45	0	11	1	0	0	4	0	5	0	0	0	0	21
Total	0	22	1	0	0	5	0	16	0	0	1	0	45
08:00	0	7	0	0	0	1	0	4	0	0	0	0	12
08:15	0	9	0	0	1	0	0	12	0	0	0	0	22
08:30	0	5	0	0	0	1	0	3	1	0	0	0	10
08:45	0	7	0	0	0	3	0	4	0	1	0	1	16
Total	0	28	0	0	1	5	0	23	1	1	0	1	60
Grand Total	0	50	1	0	1	10	0	39	1	1	1	1	105
Apprch %	0	98	2	0	9.1	90.9	0	97.5	2.5	33.3	33.3	33.3	
Total %	0	47.6	1	0	1	9.5	0	37.1	1	1	1	1	

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	**11**	**1**	**12**	0	0	**4**	**4**	0	5	0	5	0	0	0	0	21
08:00	0	7	0	7	0	0	1	1	0	4	0	4	0	0	0	0	12
08:15	0	9	0	9	0	**1**	0	1	0	**12**	0	**12**	0	0	0	0	**22**
08:30	0	5	0	5	0	0	1	1	0	3	**1**	4	0	0	0	0	10
Total Volume	0	32	1	33	0	1	6	7	0	24	1	25	0	0	0	0	65
% App. Total	0	97	3		0	14.3	85.7		0	96	4		0	0	0		
PHF	.000	.727	.250	.688	.000	.250	.375	.438	.000	.500	.250	.521	.000	.000	.000	.000	.739

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 2



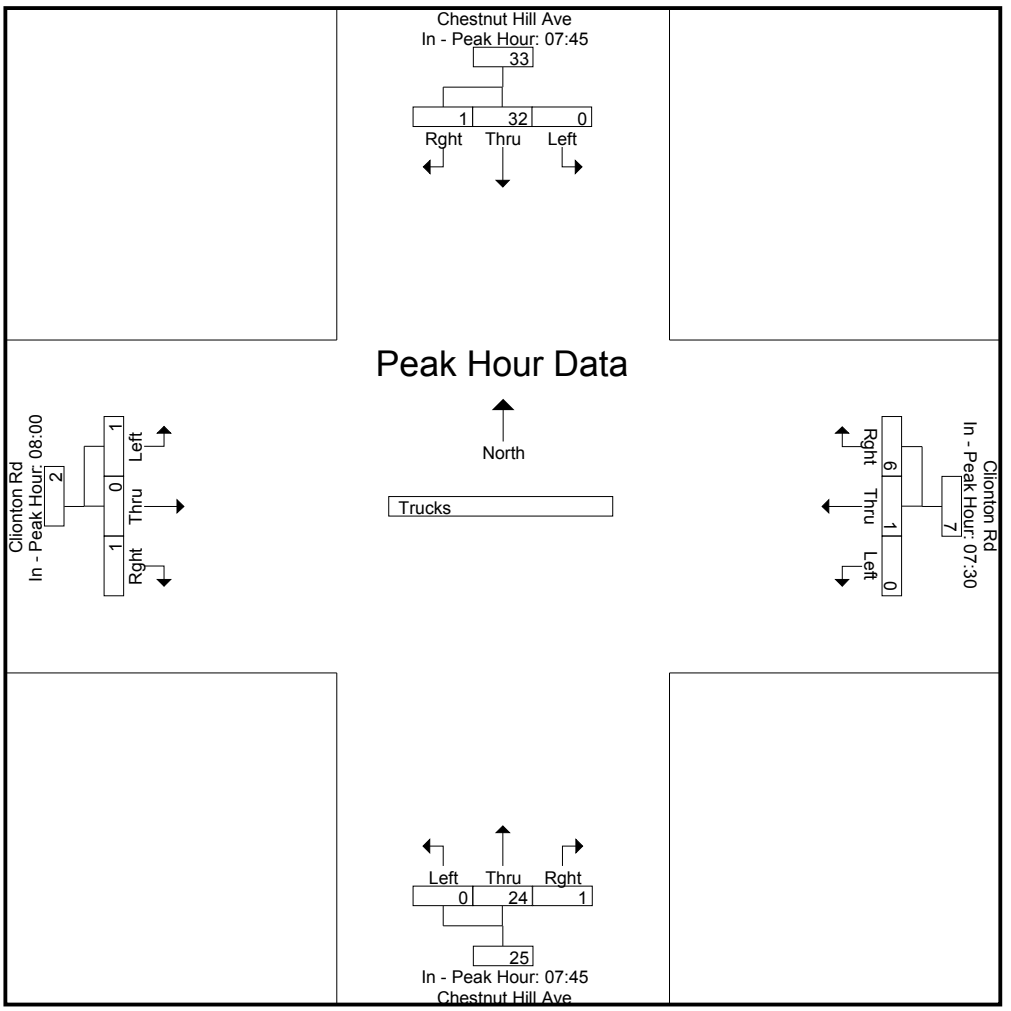
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45				07:30				07:45				08:00			
+0 mins.	0	**11**	**1**	**12**	0	0	1	1	0	5	0	5	0	0	0	0
+15 mins.	0	7	0	7	0	0	**4**	**4**	0	4	0	4	0	0	0	0
+30 mins.	0	9	0	9	0	0	1	1	0	**12**	0	**12**	0	0	0	0
+45 mins.	0	5	0	5	0	**1**	0	1	0	3	**1**	4	**1**	0	**1**	**2**
Total Volume	0	32	1	33	0	1	6	7	0	24	1	25	1	0	1	2
% App. Total	0	97	3		0	14.3	85.7		0	96	4		50	0	50	
PHF	.000	.727	.250	.688	.000	.250	.375	.438	.000	.500	.250	.521	.250	.000	.250	.250

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

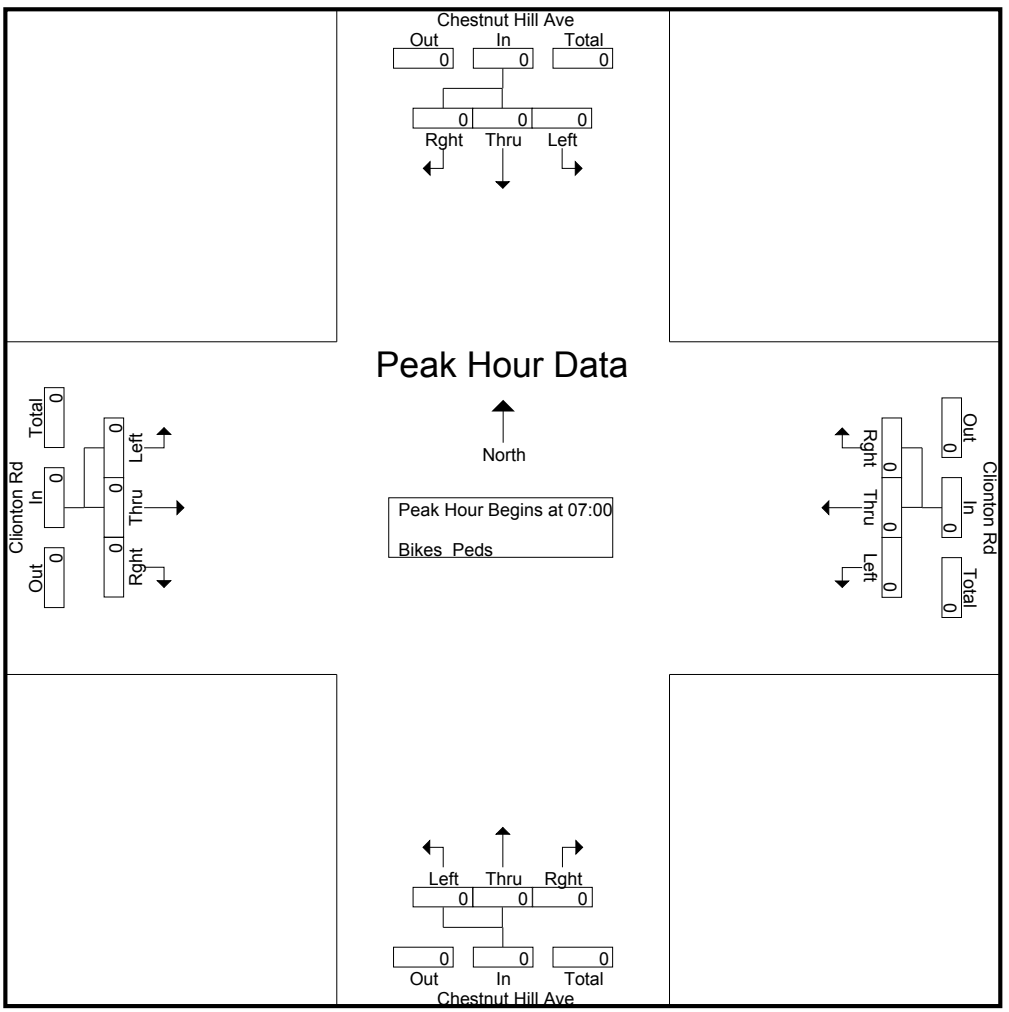
N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
07:15	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	3	0	3
07:30	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	5	0	5
07:45	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	2	8	0	8
Total	0	0	0	2	0	0	0	13	0	0	0	0	0	0	0	3	18	0	18
08:00	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	8	0	8
08:15	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	3
08:30	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5	0	5
08:45	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	8	0	8
Total	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	24	0	24
Grand Total	0	0	0	2	0	0	0	37	0	0	0	0	0	0	0	3	42	0	42
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total				App. Total				App. Total				App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

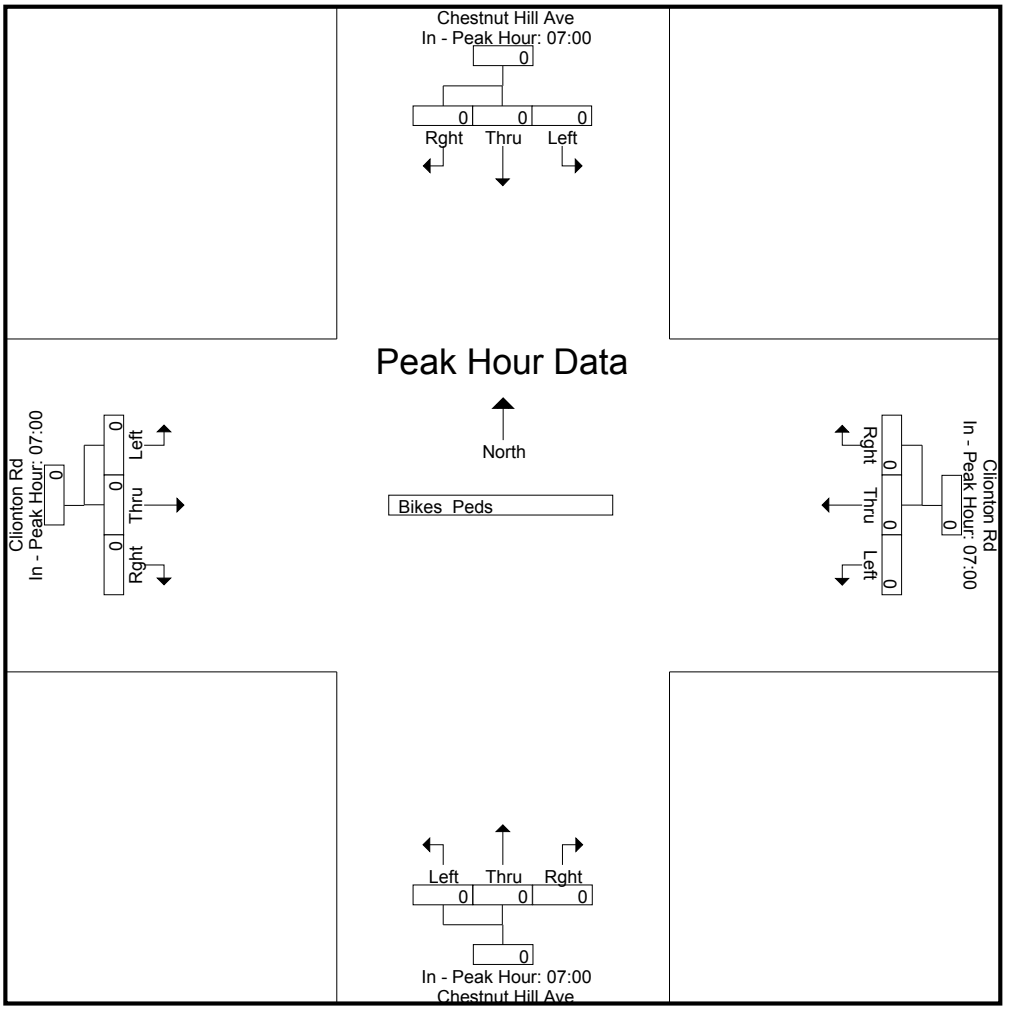


Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 2

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00				07:00				07:00				07:00				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+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	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

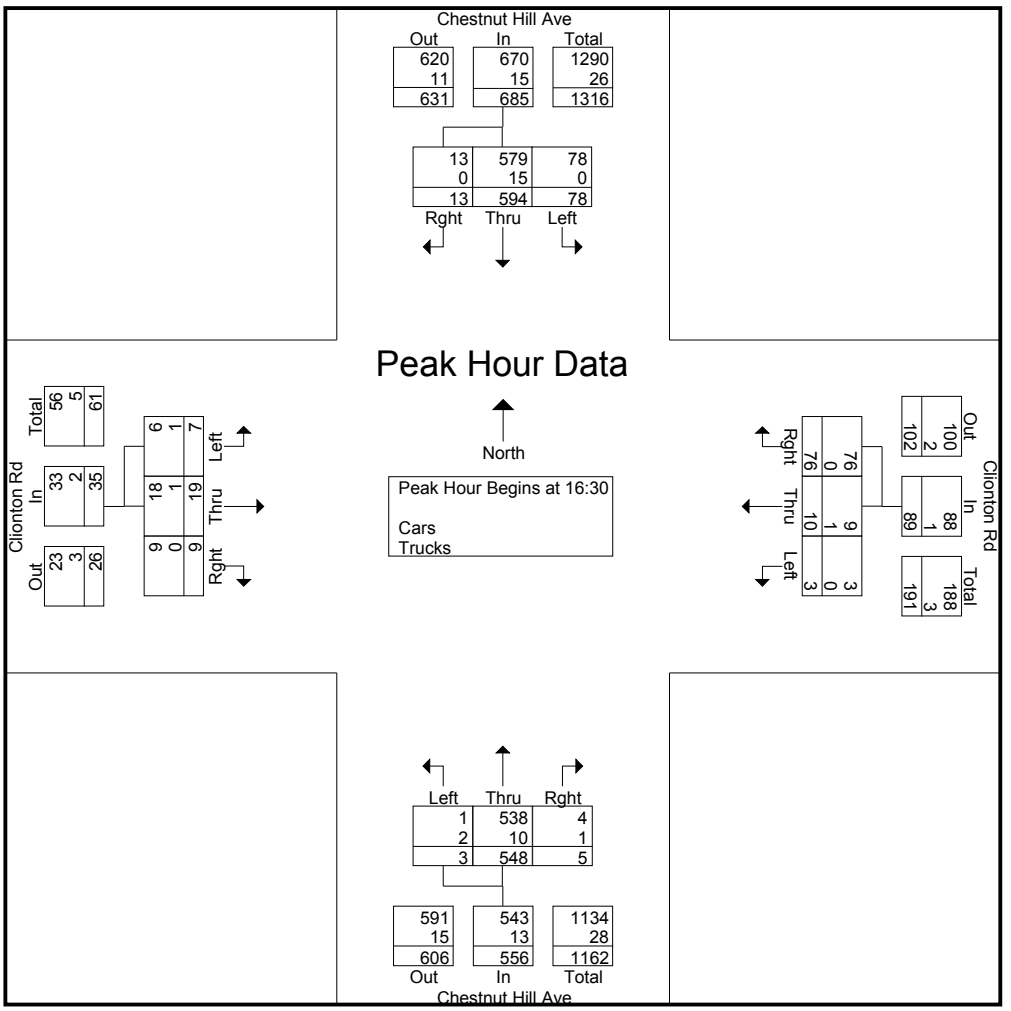
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	16	151	5	1	0	28	0	112	0	4	7	1	325
16:15	13	141	4	0	5	10	0	120	0	3	5	1	302
16:30	26	150	7	1	4	18	1	152	2	2	6	5	374
16:45	20	150	3	1	3	18	1	134	1	1	6	3	341
Total	75	592	19	3	12	74	2	518	3	10	24	10	1342
17:00	15	147	2	1	2	22	1	125	1	3	5	0	324
17:15	17	147	1	0	1	18	0	137	1	1	2	1	326
17:30	18	148	3	0	3	15	0	152	0	0	0	0	339
17:45	14	160	2	1	2	12	1	128	0	0	0	0	320
Total	64	602	8	2	8	67	2	542	2	4	7	1	1309
Grand Total	139	1194	27	5	20	141	4	1060	5	14	31	11	2651
Apprch %	10.2	87.8	2	3	12	84.9	0.4	99.2	0.5	25	55.4	19.6	
Total %	5.2	45	1	0.2	0.8	5.3	0.2	40	0.2	0.5	1.2	0.4	
Cars	138	1165	26	5	18	140	2	1041	4	13	30	11	2593
% Cars	99.3	97.6	96.3	100	90	99.3	50	98.2	80	92.9	96.8	100	97.8
Trucks	1	29	1	0	2	1	2	19	1	1	1	0	58
% Trucks	0.7	2.4	3.7	0	10	0.7	50	1.8	20	7.1	3.2	0	2.2

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	**26**	**150**	**7**	**183**	**1**	**4**	18	23	**1**	**152**	**2**	**155**	2	**6**	**5**	**13**	**374**
16:45	20	150	3	173	1	3	18	22	1	134	1	136	1	6	3	10	341
17:00	15	147	2	164	1	2	**22**	**25**	1	125	1	127	**3**	5	0	8	324
17:15	17	147	1	165	0	1	18	19	0	137	1	138	1	2	1	4	326
Total Volume	78	594	13	685	3	10	76	89	3	548	5	556	7	19	9	35	1365
% App. Total	11.4	86.7	1.9		3.4	11.2	85.4		0.5	98.6	0.9		20	54.3	25.7		
PHF	.750	.990	.464	.936	.750	.625	.864	.890	.750	.901	.625	.897	.583	.792	.450	.673	.912
Cars	78	579	13	670	3	9	76	88	1	538	4	543	6	18	9	33	1334
% Cars	100	97.5	100	97.8	100	90.0	100	98.9	33.3	98.2	80.0	97.7	85.7	94.7	100	94.3	97.7
Trucks	0	15	0	15	0	1	0	1	2	10	1	13	1	1	0	2	31
% Trucks	0	2.5	0	2.2	0	10.0	0	1.1	66.7	1.8	20.0	2.3	14.3	5.3	0	5.7	2.3

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

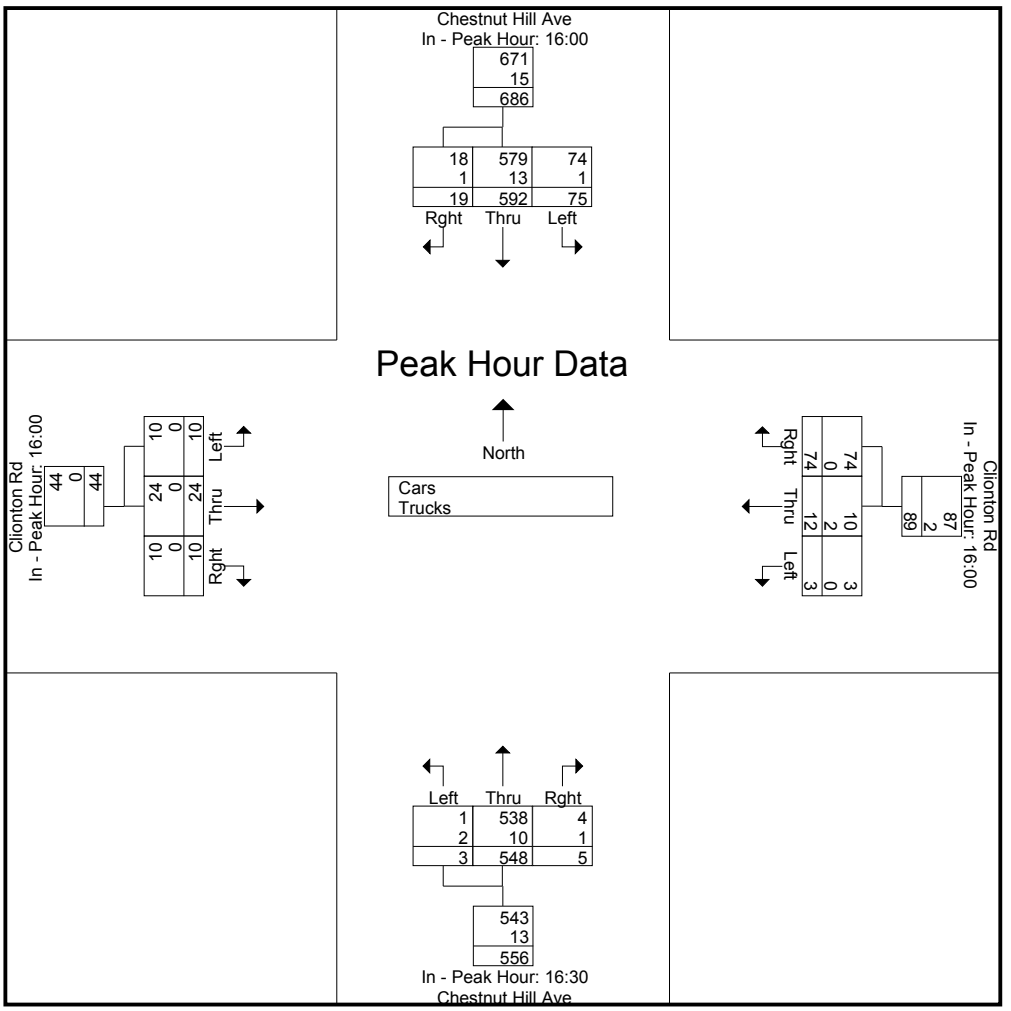
Peak Hour for Each Approach Begins at:

	16:00				16:00				16:30				16:00			
+0 mins.	16	**151**	5	172	**1**	0	**28**	**29**	**1**	**152**	**2**	**155**	**4**	**7**	1	12
+15 mins.	13	141	4	158	0	**5**	10	15	1	134	1	136	3	5	1	9
+30 mins.	**26**	150	**7**	**183**	1	4	18	23	1	125	1	127	2	6	**5**	**13**
+45 mins.	20	150	3	173	1	3	18	22	0	137	1	138	1	6	3	10
Total Volume	75	592	19	686	3	12	74	89	3	548	5	556	10	24	10	44
% App. Total	10.9	86.3	2.8		3.4	13.5	83.1		0.5	98.6	0.9		22.7	54.5	22.7	
PHF	.721	.980	.679	.937	.750	.600	.661	.767	.750	.901	.625	.897	.625	.857	.500	.846
Cars	74	579	18	671	3	10	74	87	1	538	4	543	10	24	10	44
% Cars	98.7	97.8	94.7	97.8	100	83.3	100	97.8	33.3	98.2	80	97.7	100	100	100	100
Trucks	1	13	1	15	0	2	0	2	2	10	1	13	0	0	0	0
% Trucks	1.3	2.2	5.3	2.2	0	16.7	0	2.2	66.7	1.8	20	2.3	0	0	0	0

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars

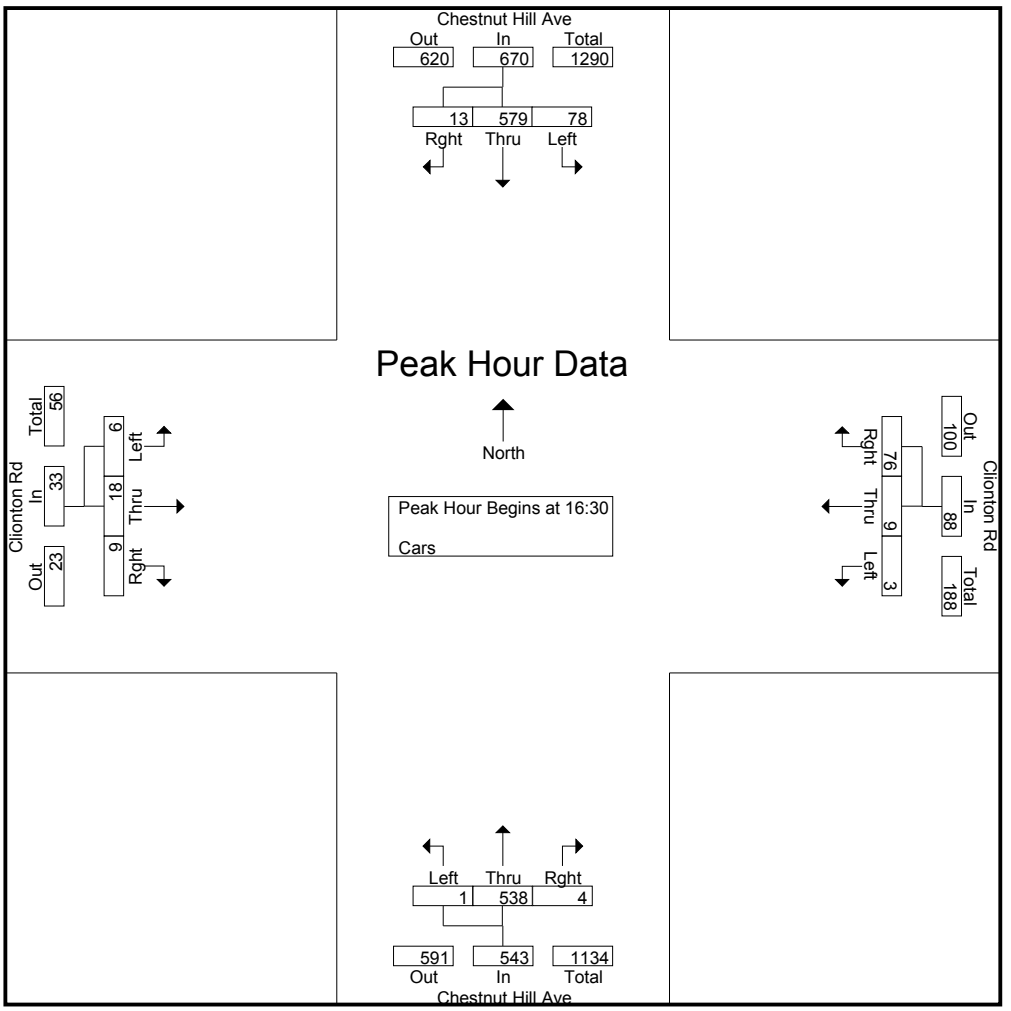
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	15	149	4	1	0	28	0	112	0	4	7	1	321
16:15	13	136	4	0	4	10	0	116	0	3	5	1	292
16:30	26	146	7	1	3	18	0	147	2	2	6	5	363
16:45	20	148	3	1	3	18	1	131	0	1	6	3	335
Total	74	579	18	3	10	74	1	506	2	10	24	10	1311
17:00	15	142	2	1	2	22	0	123	1	3	4	0	315
17:15	17	143	1	0	1	18	0	137	1	0	2	1	321
17:30	18	144	3	0	3	15	0	149	0	0	0	0	332
17:45	14	157	2	1	2	11	1	126	0	0	0	0	314
Total	64	586	8	2	8	66	1	535	2	3	6	1	1282
Grand Total	138	1165	26	5	18	140	2	1041	4	13	30	11	2593
Apprch %	10.4	87.7	2	3.1	11	85.9	0.2	99.4	0.4	24.1	55.6	20.4	
Total %	5.3	44.9	1	0.2	0.7	5.4	0.1	40.1	0.2	0.5	1.2	0.4	

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	**26**	146	**7**	**179**	**1**	**3**	18	22	0	**147**	**2**	**149**	2	**6**	**5**	**13**	**363**
16:45	20	**148**	3	171	1	3	18	22	**1**	131	0	132	1	6	3	10	335
17:00	15	142	2	159	1	2	**22**	**25**	0	123	1	124	**3**	4	0	7	315
17:15	17	143	1	161	0	1	18	19	0	137	1	138	0	2	1	3	321
Total Volume	78	579	13	670	3	9	76	88	1	538	4	543	6	18	9	33	1334
% App. Total	11.6	86.4	1.9		3.4	10.2	86.4		0.2	99.1	0.7		18.2	54.5	27.3		
PHF	.750	.978	.464	.936	.750	.750	.864	.880	.250	.915	.500	.911	.500	.750	.450	.635	.919

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

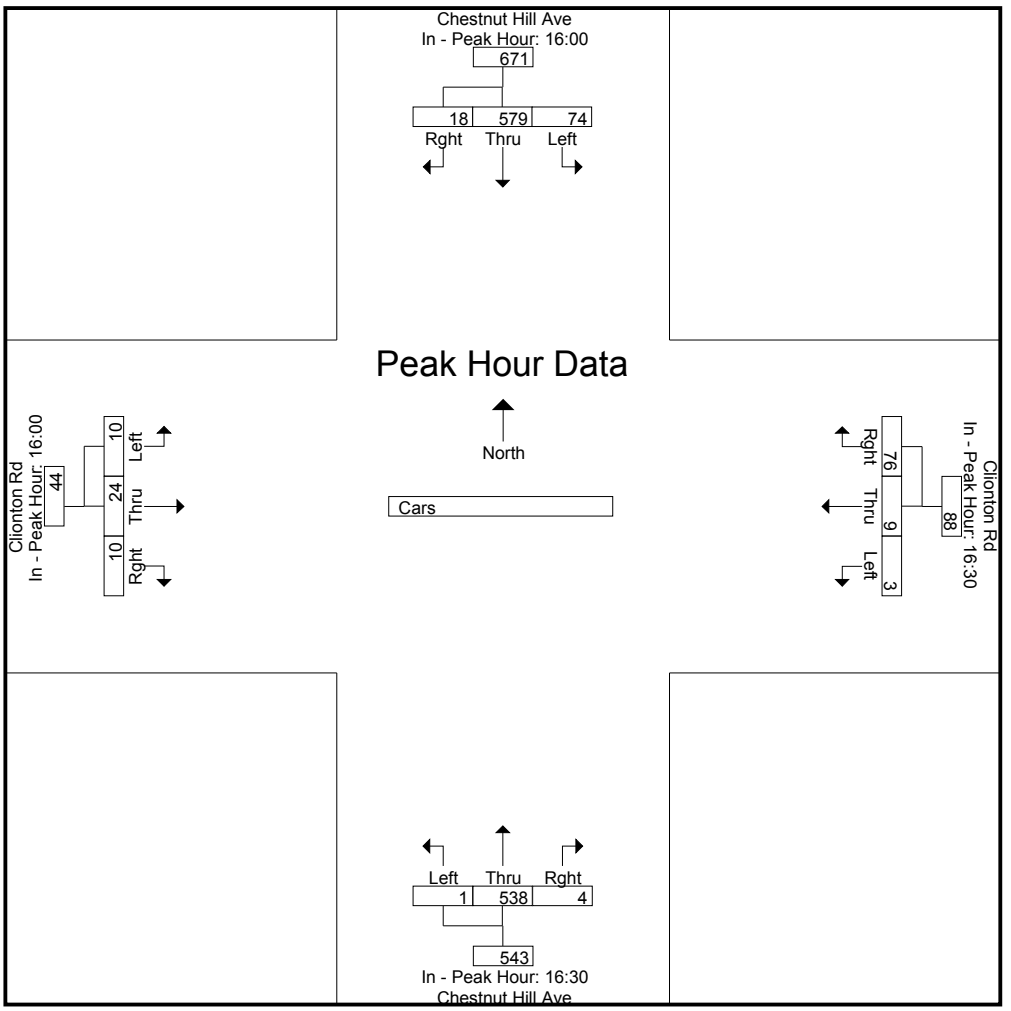
Peak Hour for Each Approach Begins at:

	16:00				16:30				16:30				16:00			
+0 mins.	15	**149**	4	168	**1**	**3**	18	22	0	**147**	**2**	**149**	**4**	**7**	1	12
+15 mins.	13	136	4	153	1	3	18	22	**1**	131	0	132	3	5	1	9
+30 mins.	**26**	146	**7**	**179**	1	2	**22**	**25**	0	123	1	124	2	6	**5**	**13**
+45 mins.	20	148	3	171	0	1	18	19	0	137	1	138	1	6	3	10
Total Volume	74	579	18	671	3	9	76	88	1	538	4	543	10	24	10	44
% App. Total	11	86.3	2.7		3.4	10.2	86.4		0.2	99.1	0.7		22.7	54.5	22.7	
PHF	.712	.971	.643	.937	.750	.750	.864	.880	.250	.915	.500	.911	.625	.857	.500	.846

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 1

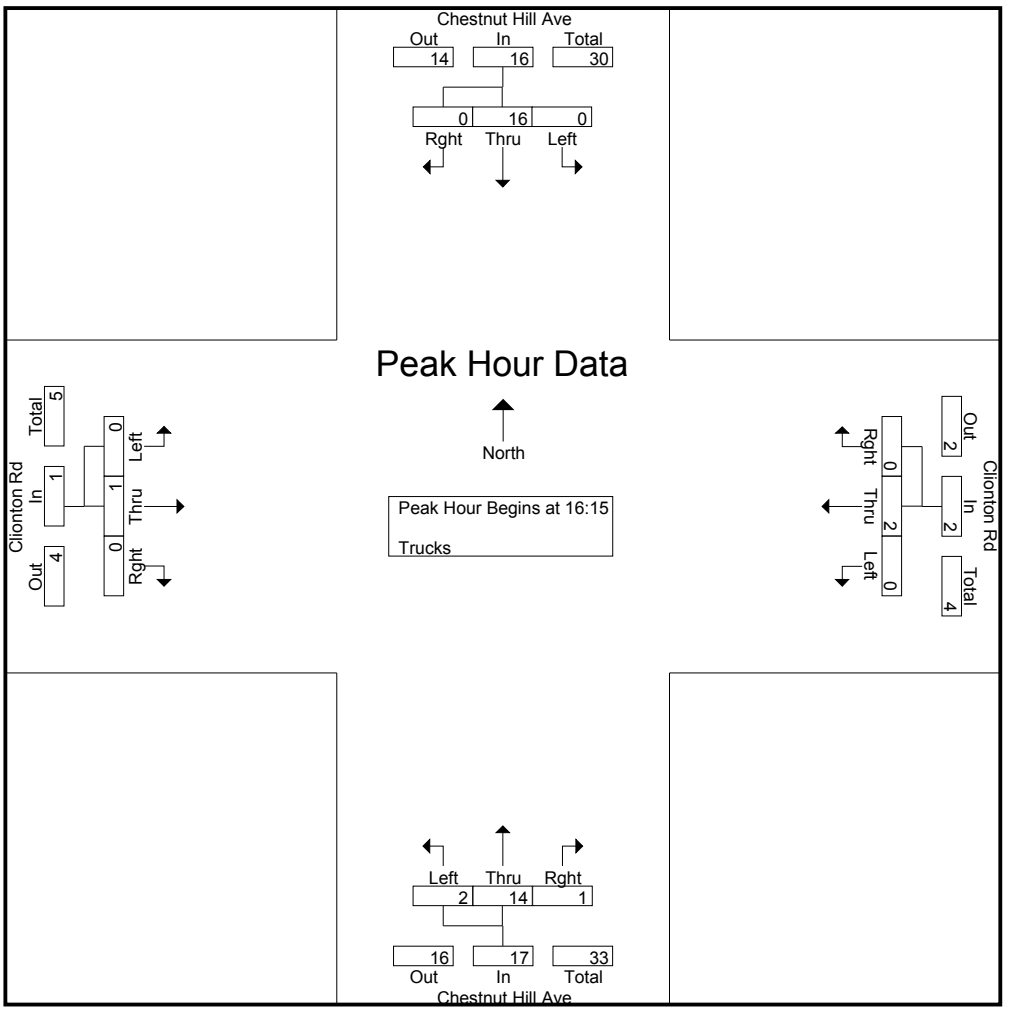
Groups Printed- Trucks

	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	1	2	1	0	0	0	0	0	0	0	0	0	4
16:15	0	5	0	0	1	0	0	4	0	0	0	0	10
16:30	0	4	0	0	1	0	1	5	0	0	0	0	11
16:45	0	2	0	0	0	0	0	3	1	0	0	0	6
Total	1	13	1	0	2	0	1	12	1	0	0	0	31
17:00	0	5	0	0	0	0	1	2	0	0	1	0	9
17:15	0	4	0	0	0	0	0	0	0	1	0	0	5
17:30	0	4	0	0	0	0	0	3	0	0	0	0	7
17:45	0	3	0	0	0	1	0	2	0	0	0	0	6
Total	0	16	0	0	0	1	1	7	0	1	1	0	27
Grand Total	1	29	1	0	2	1	2	19	1	1	1	0	58
Apprch %	3.2	93.5	3.2	0	66.7	33.3	9.1	86.4	4.5	50	50	0	
Total %	1.7	50	1.7	0	3.4	1.7	3.4	32.8	1.7	1.7	1.7	0	

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	0	**5**	0	**5**	0	**1**	0	**1**	0	4	0	4	0	0	0	0	10
16:30	0	4	0	4	0	1	0	1	**1**	**5**	0	**6**	0	0	0	0	**11**
16:45	0	2	0	2	0	0	0	0	0	3	**1**	4	0	0	0	0	6
17:00	0	5	0	5	0	0	0	0	1	2	0	3	0	**1**	0	**1**	9
Total Volume	0	16	0	16	0	2	0	2	2	14	1	17	0	1	0	1	36
% App. Total	0	100	0		0	100	0		11.8	82.4	5.9		0	100	0		
PHF	.000	.800	.000	.800	.000	.500	.000	.500	.500	.700	.250	.708	.000	.250	.000	.250	.818

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

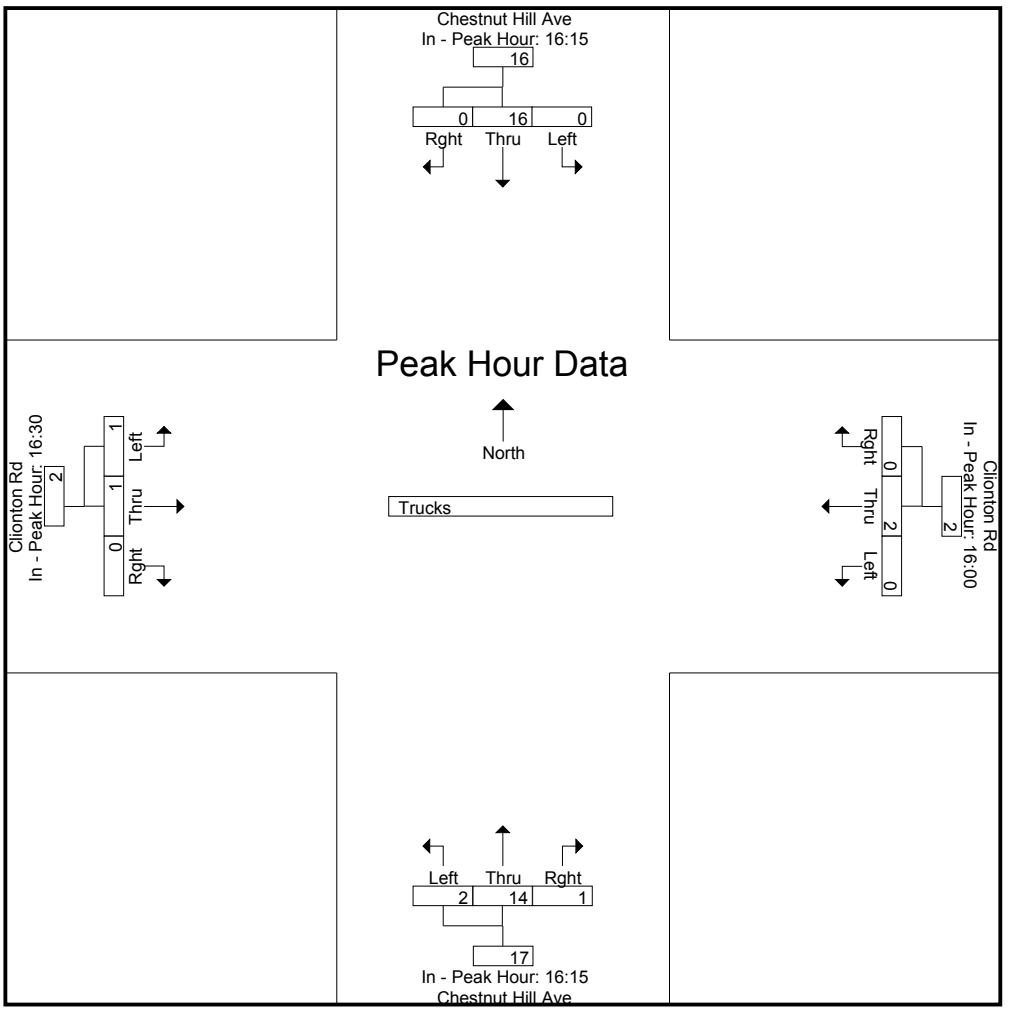
Peak Hour for Each Approach Begins at:

	16:15				16:00				16:15				16:30			
+0 mins.	0	**5**	0	**5**	0	0	0	0	0	4	0	4	0	0	0	0
+15 mins.	0	4	0	4	0	**1**	0	**1**	**1**	**5**	0	**6**	0	0	0	0
+30 mins.	0	2	0	2	0	1	0	1	0	3	**1**	4	0	**1**	0	**1**
+45 mins.	0	5	0	5	0	0	0	0	1	2	0	3	**1**	0	0	1
Total Volume	0	16	0	16	0	2	0	2	2	14	1	17	1	1	0	2
% App. Total	0	100	0		0	100	0		11.8	82.4	5.9		50	50	0	
PHF	.000	.800	.000	.800	.000	.500	.000	.500	.500	.700	.250	.708	.250	.250	.000	.500

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

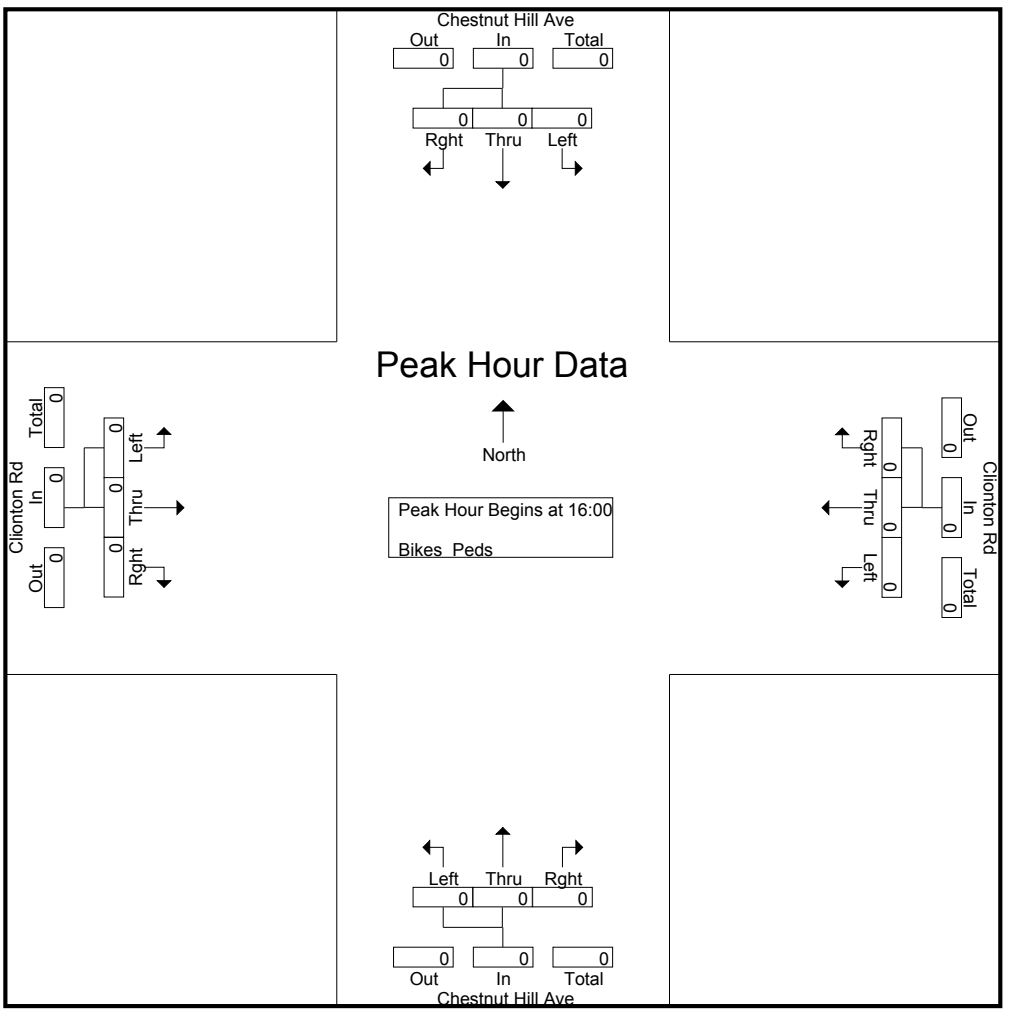
N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	10	0	0	0	2	0	0	0	1	0	0	0	0	13	0	13
16:15	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3	0	3
16:30	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	2
16:45	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	3
Total	0	0	0	12	0	0	0	8	0	0	0	1	0	0	0	0	21	0	21
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	12	0	0	0	8	0	0	0	1	0	0	0	0	21	0	21
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total				App. Total				App. Total				App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

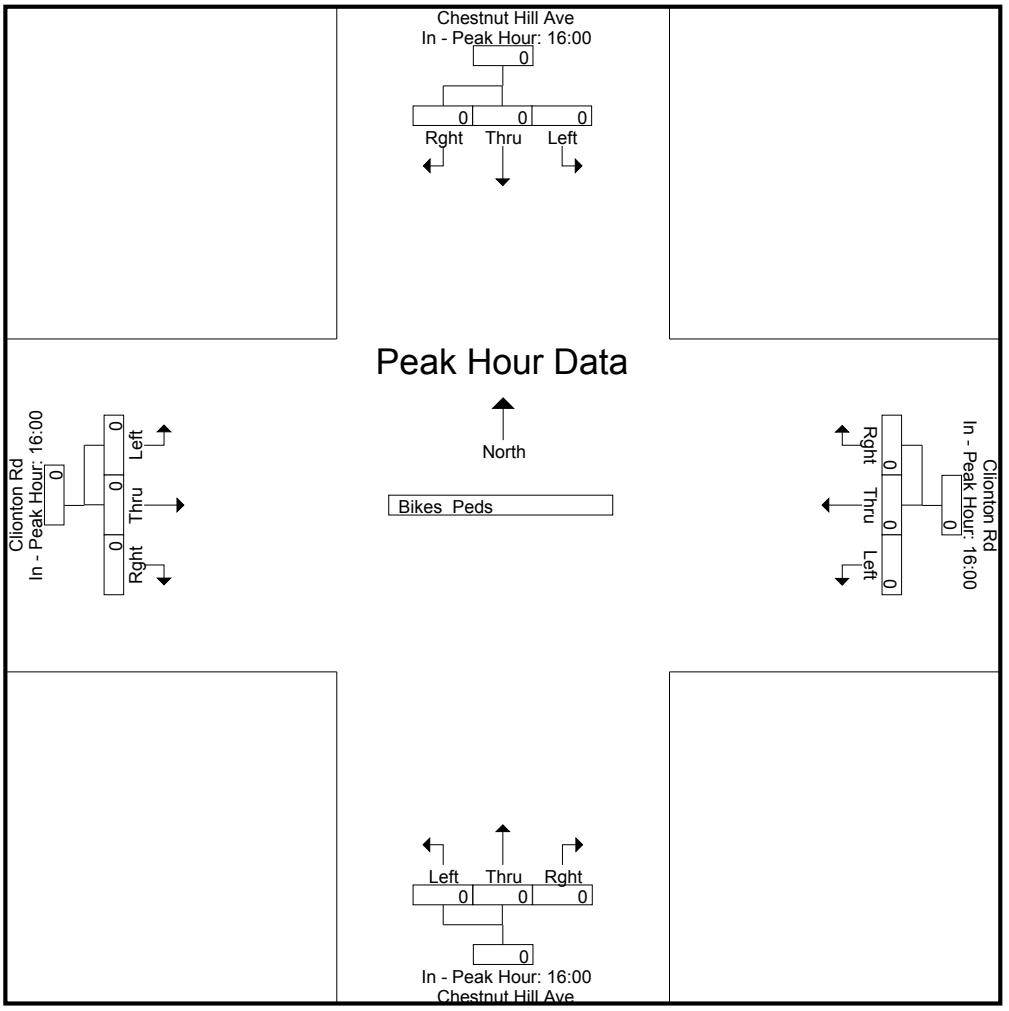


Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900002
Site Code : 01900002
Start Date : 1/19/2011
Page No : 2

	Chestnut Hill Ave From North				Clionton Rd From East				Chestnut Hill Ave From South				Clionton Rd From West				
Start Time	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	16:00				16:00				16:00				16:00				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+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	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

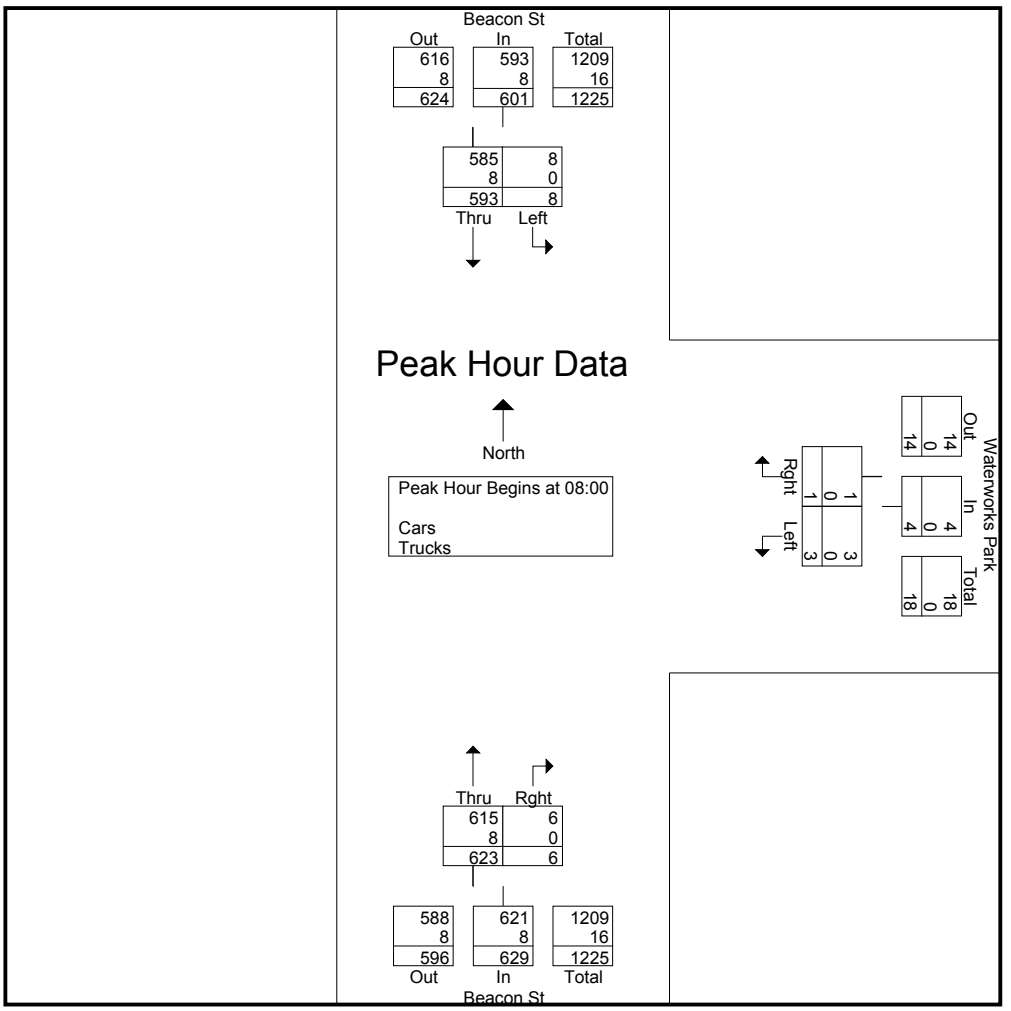
Groups Printed- Cars - Trucks

	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	89	0	0	97	1	187
07:15	0	104	0	2	117	1	224
07:30	1	126	0	1	140	1	269
07:45	1	137	0	2	163	0	303
Total	2	456	0	5	517	3	983
08:00	2	135	0	1	163	4	305
08:15	2	147	2	0	161	1	313
08:30	1	162	1	0	147	1	312
08:45	3	149	0	0	152	0	304
Total	8	593	3	1	623	6	1234
Grand Total	10	1049	3	6	1140	9	2217
Apprch %	0.9	99.1	33.3	66.7	99.2	0.8	
Total %	0.5	47.3	0.1	0.3	51.4	0.4	
Cars	10	1038	3	6	1128	9	2194
% Cars	100	99	100	100	98.9	100	99
Trucks	0	11	0	0	12	0	23
% Trucks	0	1	0	0	1.1	0	1

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00										
08:00	2	135	137	0	**1**	1	**163**	**4**	**167**	305
08:15	2	147	149	**2**	0	**2**	161	1	162	**313**
08:30	1	**162**	**163**	1	0	1	147	1	148	312
08:45	**3**	149	152	0	0	0	152	0	152	304
Total Volume	8	593	601	3	1	4	623	6	629	1234
% App. Total	1.3	98.7		75	25		99	1		
PHF	.667	.915	.922	.375	.250	.500	.956	.375	.942	.986
Cars	8	585	593	3	1	4	615	6	621	1218
% Cars	100	98.7	98.7	100	100	100	98.7	100	98.7	98.7
Trucks	0	8	8	0	0	0	8	0	8	16
% Trucks	0	1.3	1.3	0	0	0	1.3	0	1.3	1.3

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



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

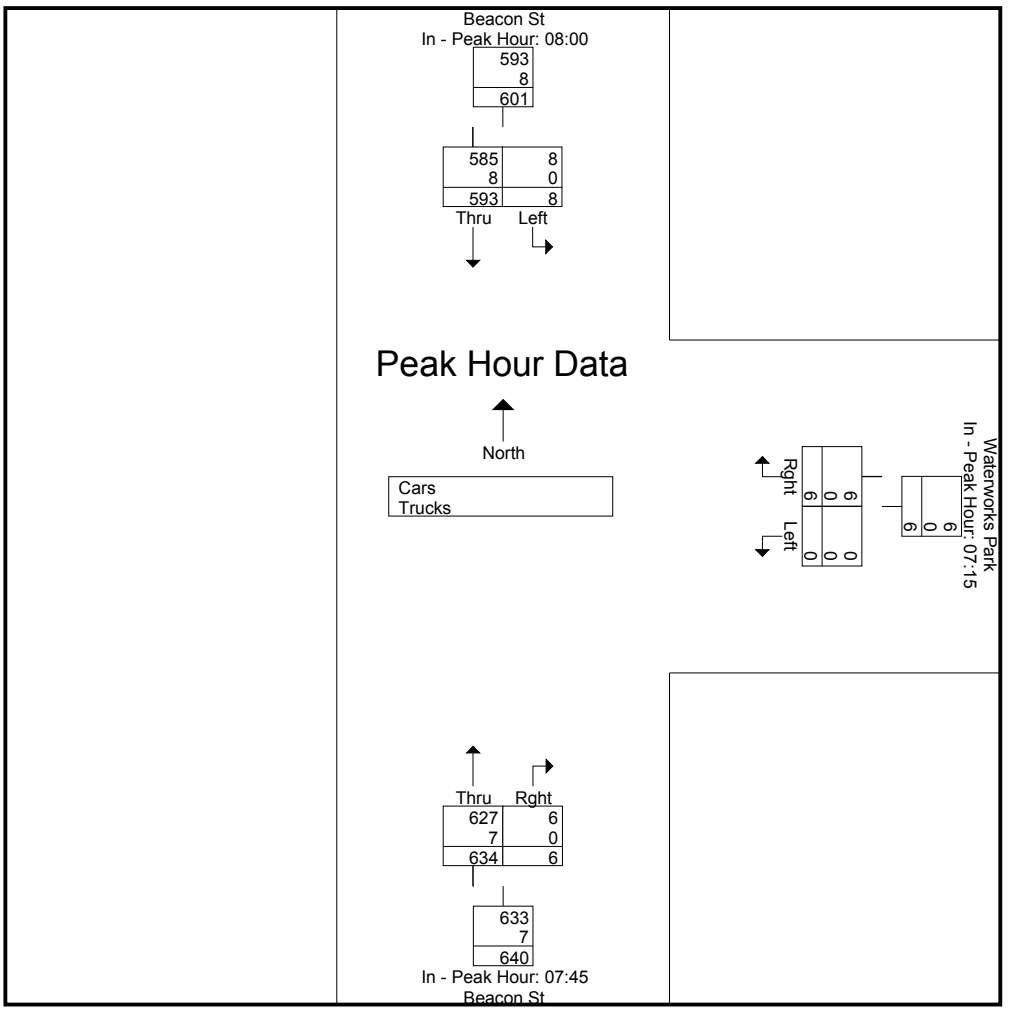
Peak Hour for Each Approach Begins at:

	08:00			07:15			07:45		
+0 mins.	2	135	137	0	**2**	**2**	**163**	0	163
+15 mins.	2	147	149	0	1	1	163	**4**	**167**
+30 mins.	1	**162**	**163**	0	2	2	161	1	162
+45 mins.	**3**	149	152	0	1	1	147	1	148
Total Volume	8	593	601	0	6	6	634	6	640
% App. Total	1.3	98.7		0	100		99.1	0.9	
PHF	.667	.915	.922	.000	.750	.750	.972	.375	.958
Cars	8	585	593	0	6	6	627	6	633
% Cars	100	98.7	98.7	0	100	100	98.9	100	98.9
Trucks	0	8	8	0	0	0	7	0	7
% Trucks	0	1.3	1.3	0	0	0	1.1	0	1.1

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

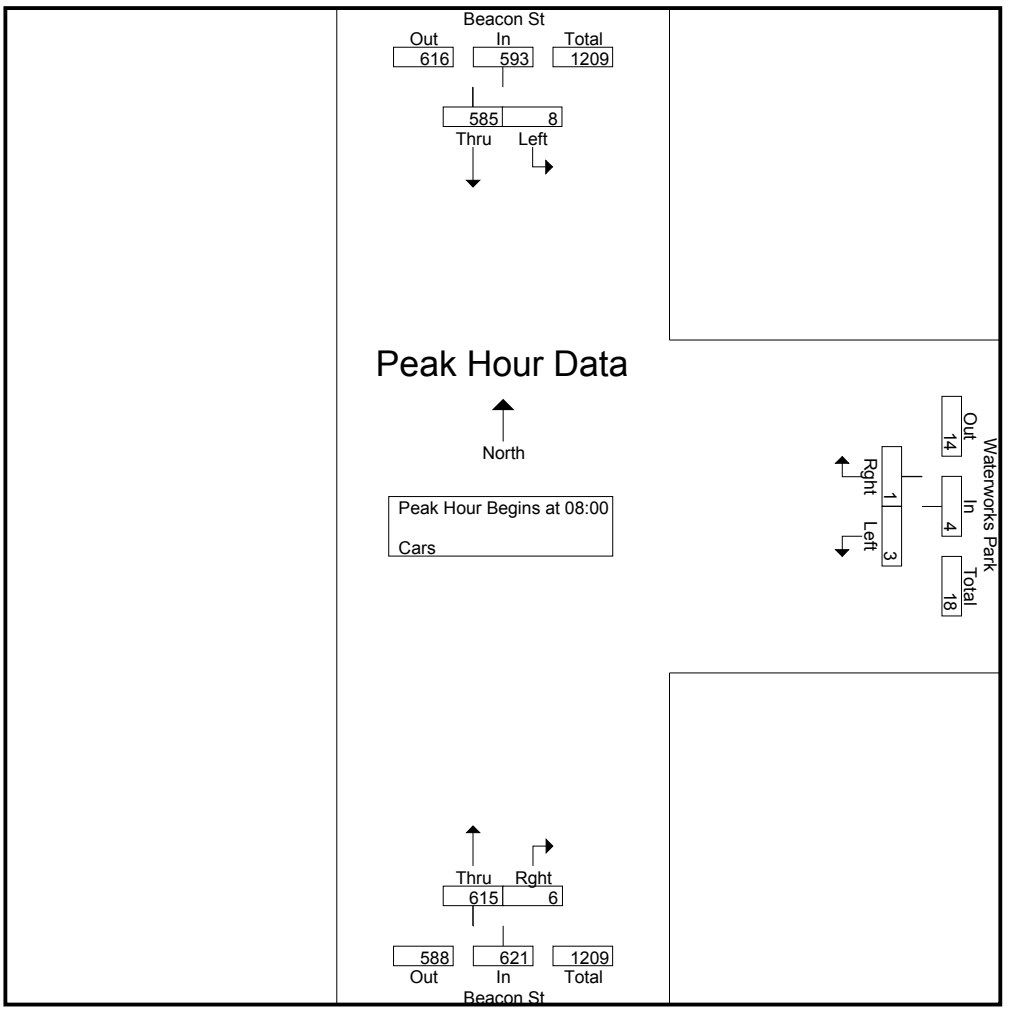
Groups Printed- Cars

	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	87	0	0	97	1	185
07:15	0	104	0	2	116	1	223
07:30	1	126	0	1	137	1	266
07:45	1	136	0	2	163	0	302
Total	2	453	0	5	513	3	976
08:00	2	133	0	1	162	4	302
08:15	2	146	2	0	160	1	311
08:30	1	157	1	0	142	1	302
08:45	3	149	0	0	151	0	303
Total	8	585	3	1	615	6	1218
Grand Total	10	1038	3	6	1128	9	2194
Apprch %	1	99	33.3	66.7	99.2	0.8	
Total %	0.5	47.3	0.1	0.3	51.4	0.4	

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00										
08:00	2	133	135	0	**1**	1	**162**	**4**	**166**	302
08:15	2	146	148	**2**	0	**2**	160	1	161	**311**
08:30	1	**157**	**158**	1	0	1	142	1	143	302
08:45	**3**	149	152	0	0	0	151	0	151	303
Total Volume	8	585	593	3	1	4	615	6	621	1218
% App. Total	1.3	98.7		75	25		99	1		
PHF	.667	.932	.938	.375	.250	.500	.949	.375	.935	.979

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



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

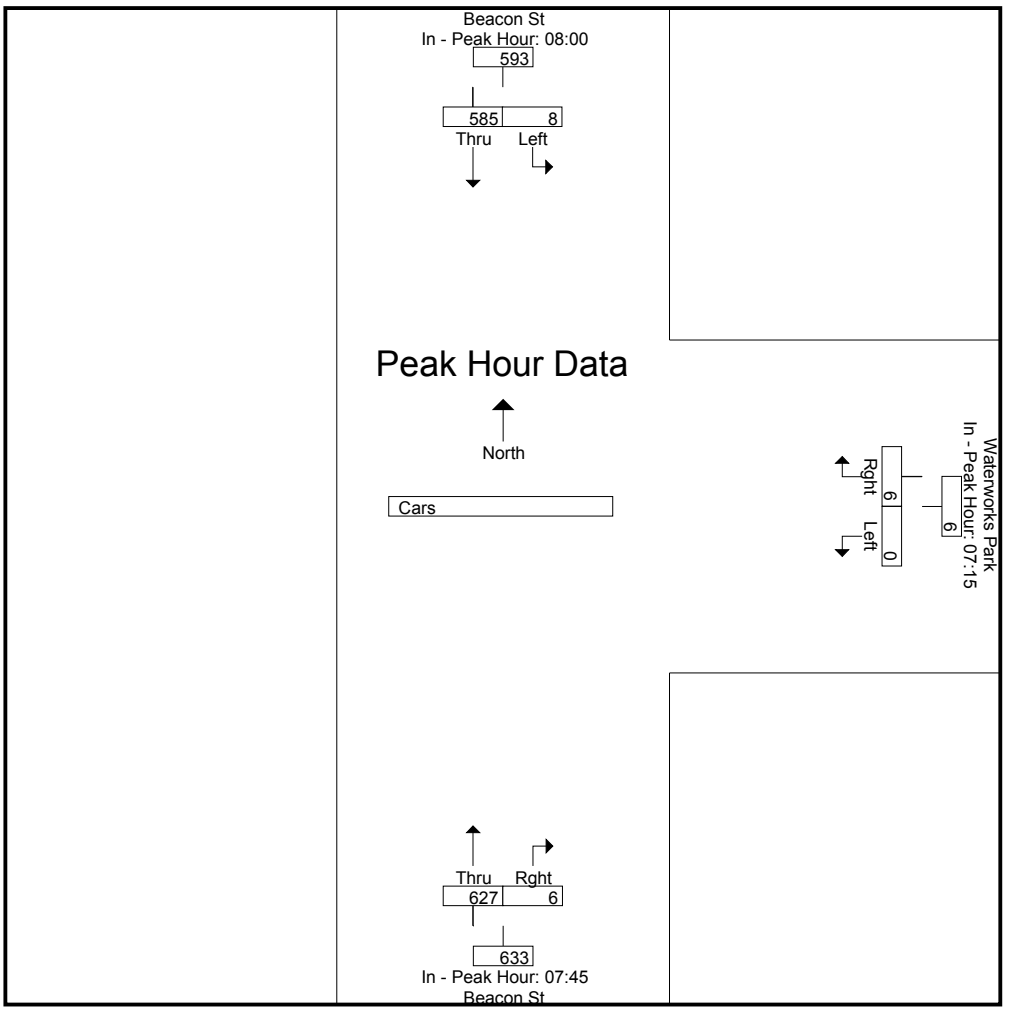
Peak Hour for Each Approach Begins at:

	08:00			07:15			07:45		
+0 mins.	2	133	135	0	**2**	**2**	**163**	0	163
+15 mins.	2	146	148	0	1	1	162	**4**	**166**
+30 mins.	1	**157**	**158**	0	2	2	160	1	161
+45 mins.	**3**	149	152	0	1	1	142	1	143
Total Volume	8	585	593	0	6	6	627	6	633
% App. Total	1.3	98.7		0	100		99.1	0.9	
PHF	.667	.932	.938	.000	.750	.750	.962	.375	.953

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

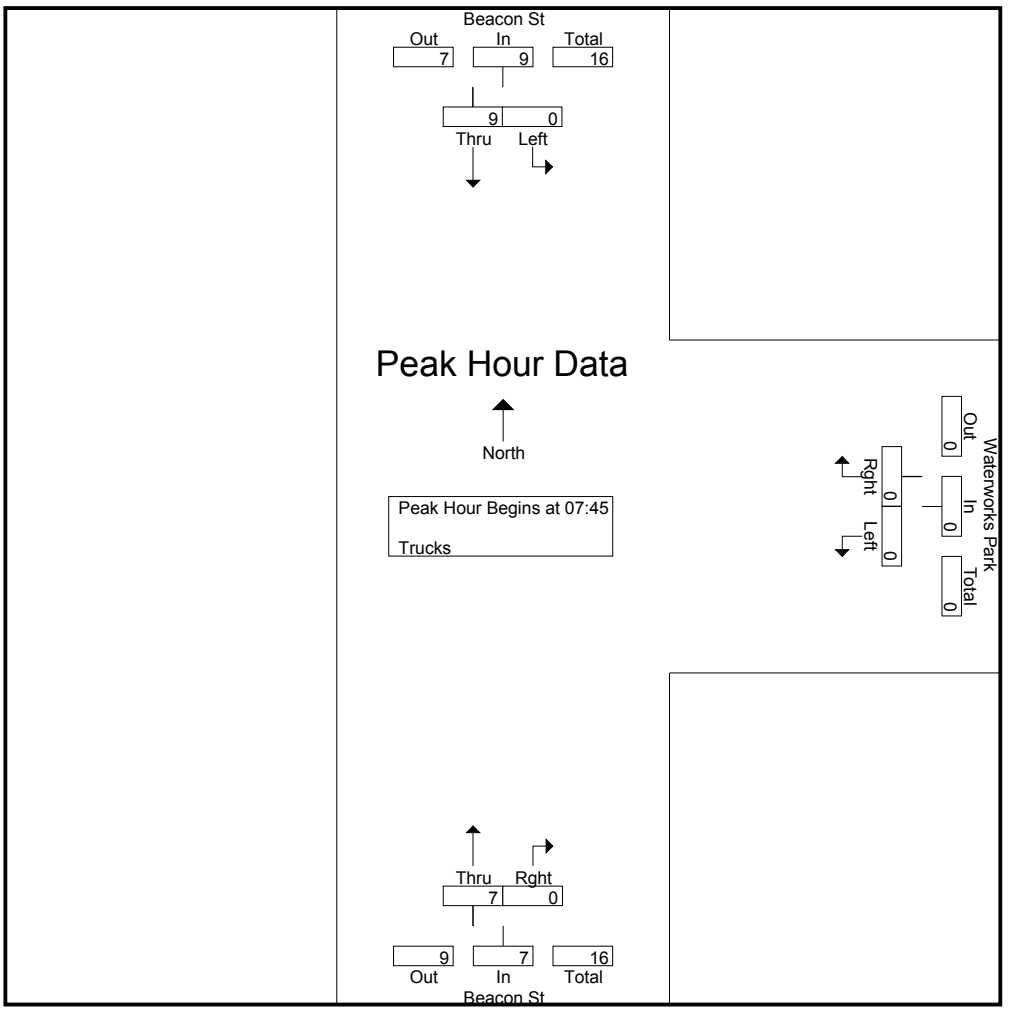
	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	2	0	0	0	0	2
07:15	0	0	0	0	1	0	1
07:30	0	0	0	0	3	0	3
07:45	0	1	0	0	0	0	1
Total	0	3	0	0	4	0	7
08:00	0	2	0	0	1	0	3
08:15	0	1	0	0	1	0	2
08:30	0	5	0	0	5	0	10
08:45	0	0	0	0	1	0	1
Total	0	8	0	0	8	0	16
Grand Total	0	11	0	0	12	0	23
Apprch %	0	100	0	0	100	0	
Total %	0	47.8	0	0	52.2	0	

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45										
07:45	0	1	1	0	0	0	0	0	0	1
08:00	0	2	2	0	0	0	1	0	1	3
08:15	0	1	1	0	0	0	1	0	1	2
08:30	0	**5**	**5**	0	0	0	**5**	0	**5**	**10**
Total Volume	0	9	9	0	0	0	7	0	7	16
% App. Total	0	100		0	0		100	0		
PHF	.000	.450	.450	.000	.000	.000	.350	.000	.350	.400

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



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

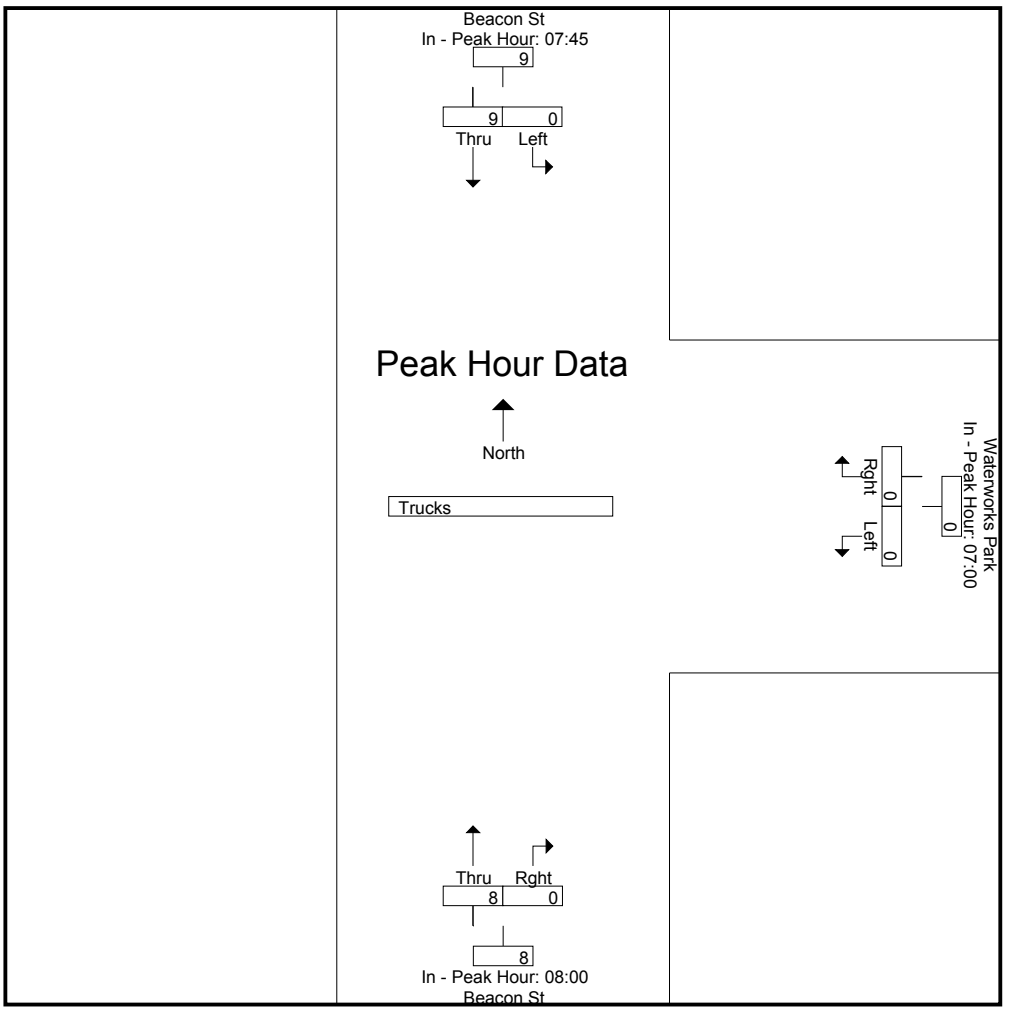
Peak Hour for Each Approach Begins at:

	07:45			07:00			08:00		
+0 mins.	0	1	1	0	0	0	1	0	1
+15 mins.	0	2	2	0	0	0	1	0	1
+30 mins.	0	1	1	0	0	0	**5**	0	**5**
+45 mins.	0	**5**	**5**	0	0	0	1	0	1
Total Volume	0	9	9	0	0	0	8	0	8
% App. Total	0	100		0	0		100	0	
PHF	.000	.450	.450	.000	.000	.000	.400	.000	.400

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

Groups Printed- Bikes Peds

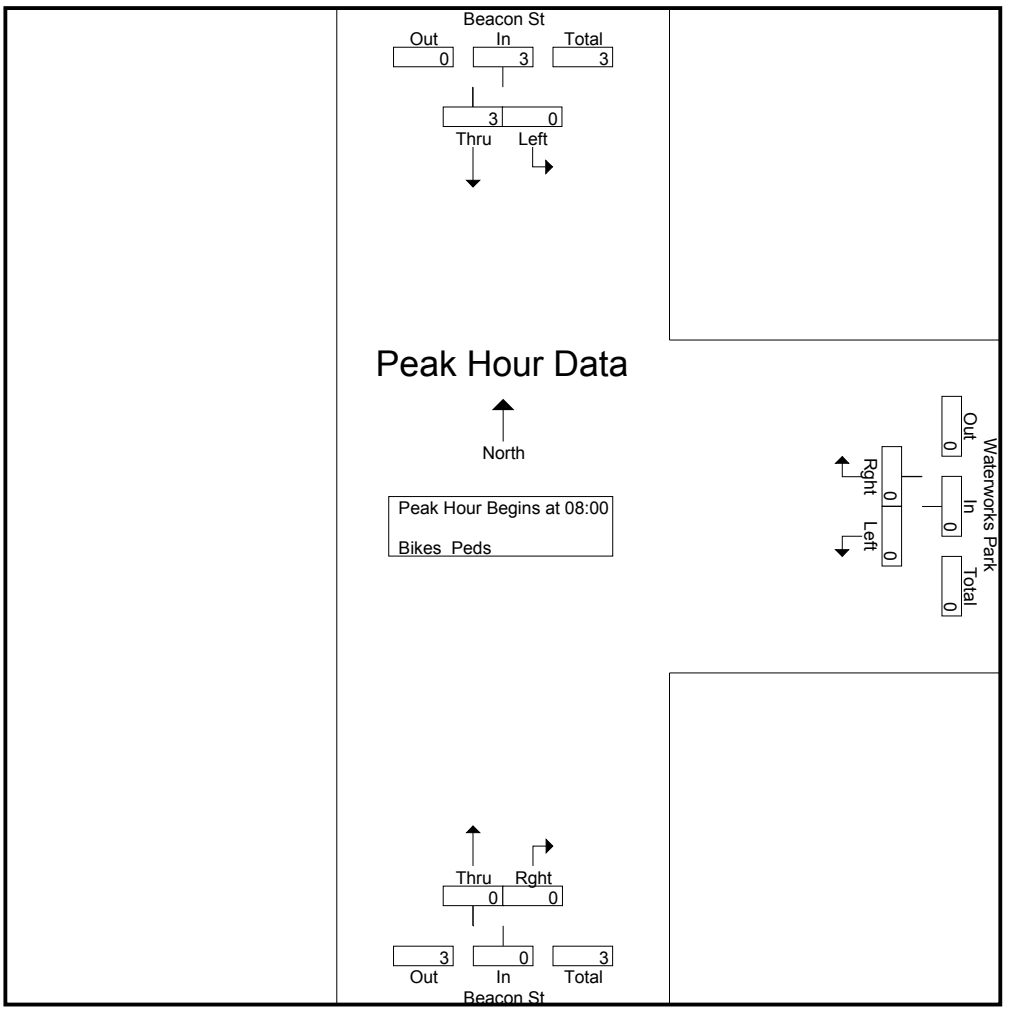
	Beacon St From North			Waterworks Park From East			Beacon St From South					
Start Time	Left	Thru	Peds	Left	Rght	Peds	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	1	0	0	0	1	0	1
07:15	0	0	0	0	0	1	0	0	0	1	0	1
07:30	0	1	0	0	0	2	0	0	0	2	1	3
07:45	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	1	0	0	0	5	0	0	0	5	1	6
08:00	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	1	0	0	0	1	0	0	0	1	1	2
08:30	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	2	0	0	0	1	0	0	0	1	2	3
Total	0	3	0	0	0	2	0	0	0	2	3	5
Grand Total	0	4	0	0	0	7	0	0	0	7	4	11
Apprch %	0	100		0	0		0	0				
Total %	0	100		0	0		0	0		63.6	36.4	

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00										
08:00	0	0	0	0	0	0	0	0	0	0
08:15	0	1	1	0	0	0	0	0	0	1
08:30	0	0	0	0	0	0	0	0	0	0
08:45	0	**2**	**2**	0	0	0	0	0	0	**2**
Total Volume	0	3	3	0	0	0	0	0	0	3
% App. Total	0	100		0	0		0	0		
PHF	.000	.375	.375	.000	.000	.000	.000	.000	.000	.375

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



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

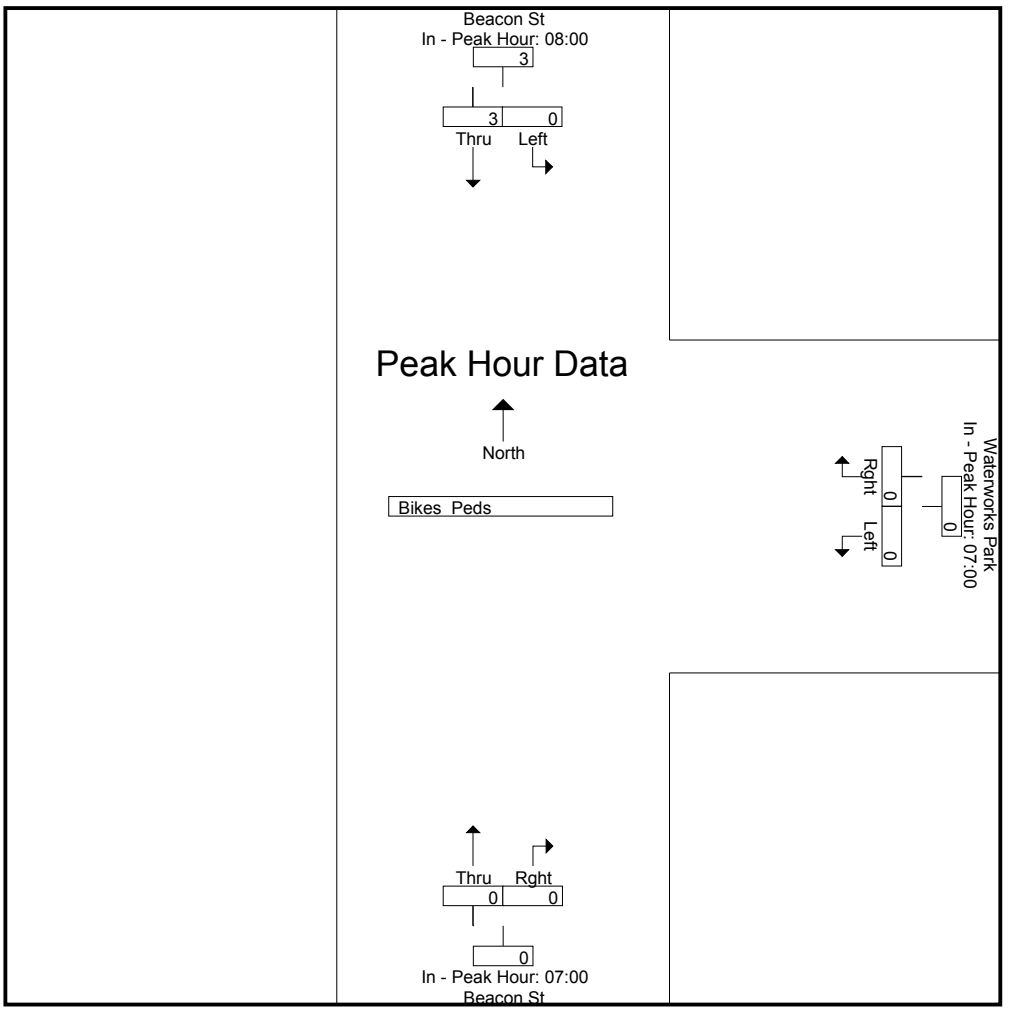
Peak Hour for Each Approach Begins at:

	08:00			07:00			07:00		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	**2**	**2**	0	0	0	0	0	0
Total Volume	0	3	3	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.375	.375	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

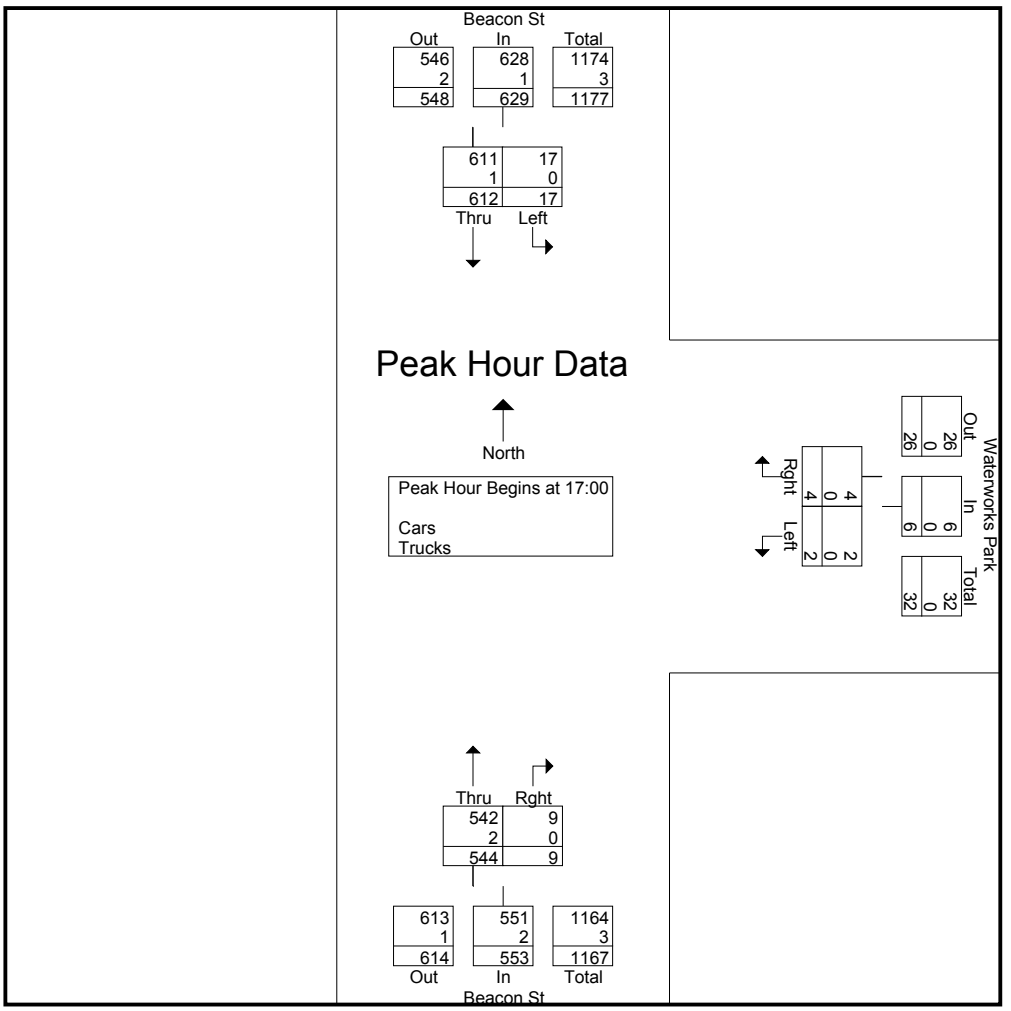
Groups Printed- Cars - Trucks

	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	3	139	0	0	114	1	257
16:15	3	142	0	1	102	4	252
16:30	4	129	0	1	123	2	259
16:45	3	144	0	0	116	1	264
Total	13	554	0	2	455	8	1032
17:00	4	136	0	3	144	3	290
17:15	3	175	1	0	127	4	310
17:30	7	156	1	1	125	0	290
17:45	3	145	0	0	148	2	298
Total	17	612	2	4	544	9	1188
Grand Total	30	1166	2	6	999	17	2220
Apprch %	2.5	97.5	25	75	98.3	1.7	
Total %	1.4	52.5	0.1	0.3	45	0.8	
Cars	30	1163	2	6	993	17	2211
% Cars	100	99.7	100	100	99.4	100	99.6
Trucks	0	3	0	0	6	0	9
% Trucks	0	0.3	0	0	0.6	0	0.4

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 17:00										
17:00	4	136	140	0	**3**	**3**	144	3	147	290
17:15	3	**175**	**178**	**1**	0	1	127	**4**	131	**310**
17:30	**7**	156	163	1	1	2	125	0	125	290
17:45	3	145	148	0	0	0	**148**	2	**150**	298
Total Volume	17	612	629	2	4	6	544	9	553	1188
% App. Total	2.7	97.3		33.3	66.7		98.4	1.6		
PHF	.607	.874	.883	.500	.333	.500	.919	.563	.922	.958
Cars	17	611	628	2	4	6	542	9	551	1185
% Cars	100	99.8	99.8	100	100	100	99.6	100	99.6	99.7
Trucks	0	1	1	0	0	0	2	0	2	3
% Trucks	0	0.2	0.2	0	0	0	0.4	0	0.4	0.3

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

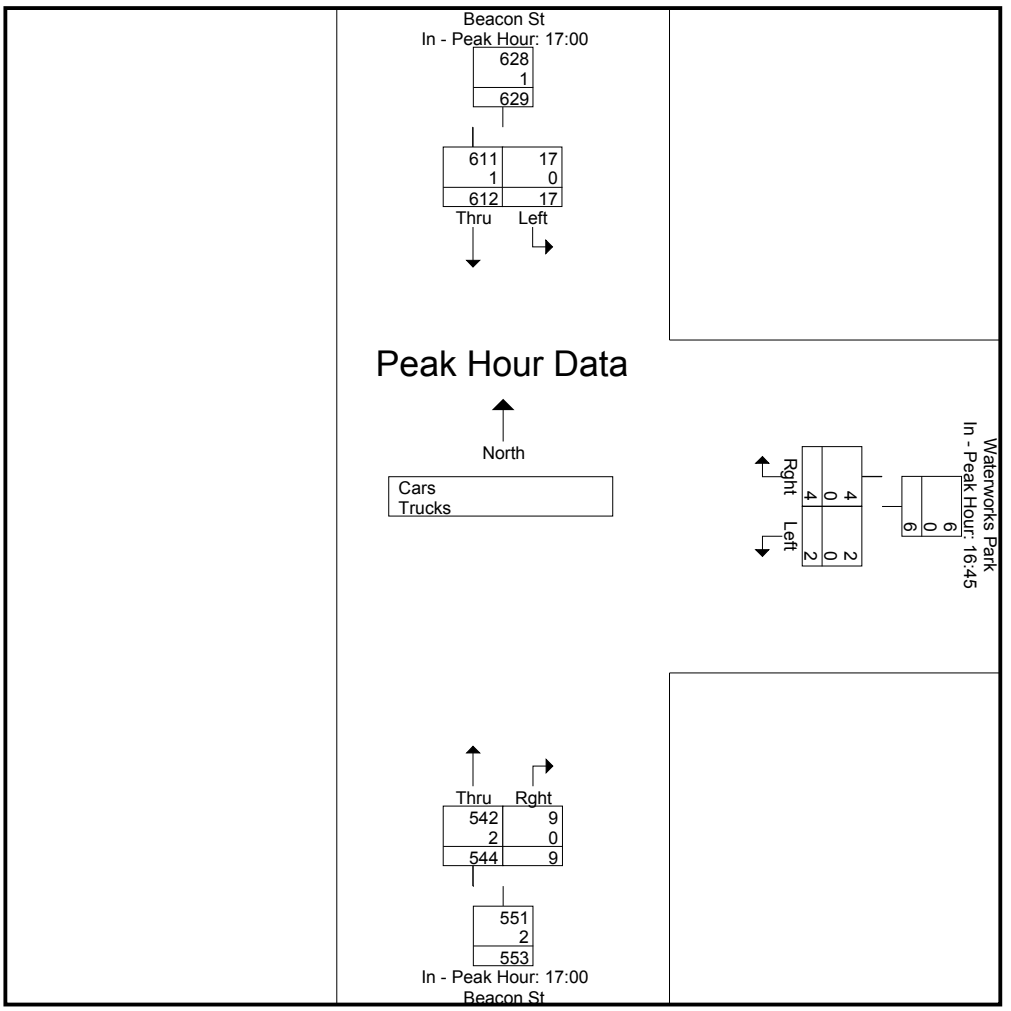
Peak Hour for Each Approach Begins at:

	17:00			16:45			17:00		
+0 mins.	4	136	140	0	0	0	144	3	147
+15 mins.	3	**175**	**178**	0	**3**	**3**	127	**4**	131
+30 mins.	**7**	156	163	**1**	0	1	125	0	125
+45 mins.	3	145	148	1	1	2	**148**	2	**150**
Total Volume	17	612	629	2	4	6	544	9	553
% App. Total	2.7	97.3		33.3	66.7		98.4	1.6	
PHF	.607	.874	.883	.500	.333	.500	.919	.563	.922
Cars	17	611	628	2	4	6	542	9	551
% Cars	100	99.8	99.8	100	100	100	99.6	100	99.6
Trucks	0	1	1	0	0	0	2	0	2
% Trucks	0	0.2	0.2	0	0	0	0.4	0	0.4

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

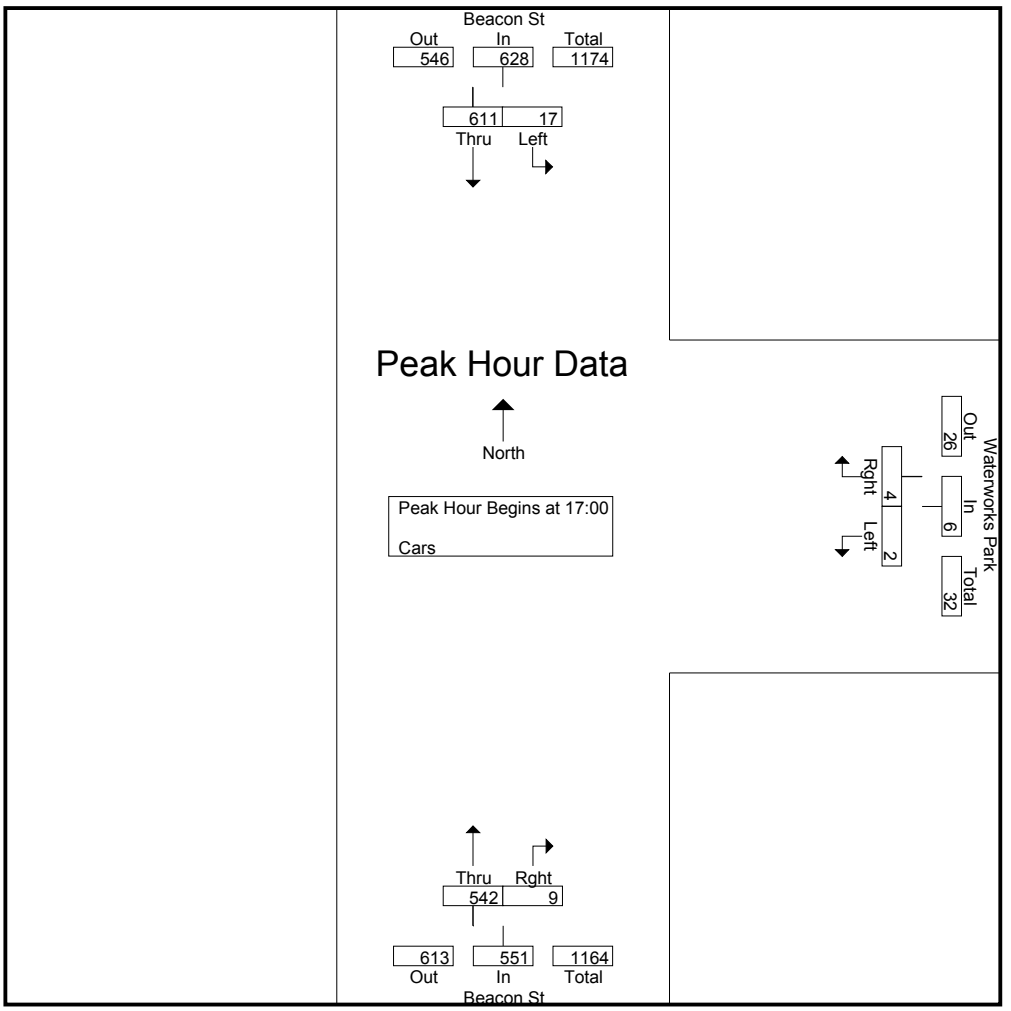
Groups Printed- Cars

	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	3	138	0	0	113	1	255
16:15	3	142	0	1	100	4	250
16:30	4	129	0	1	122	2	258
16:45	3	143	0	0	116	1	263
Total	13	552	0	2	451	8	1026
17:00	4	136	0	3	143	3	289
17:15	3	175	1	0	127	4	310
17:30	7	156	1	1	124	0	289
17:45	3	144	0	0	148	2	297
Total	17	611	2	4	542	9	1185
Grand Total	30	1163	2	6	993	17	2211
Apprch %	2.5	97.5	25	75	98.3	1.7	
Total %	1.4	52.6	0.1	0.3	44.9	0.8	

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 17:00										
17:00	4	136	140	0	**3**	**3**	143	3	146	289
17:15	3	**175**	**178**	**1**	0	1	127	**4**	131	**310**
17:30	**7**	156	163	1	1	2	124	0	124	289
17:45	3	144	147	0	0	0	**148**	2	**150**	297
Total Volume	17	611	628	2	4	6	542	9	551	1185
% App. Total	2.7	97.3		33.3	66.7		98.4	1.6		
PHF	.607	.873	.882	.500	.333	.500	.916	.563	.918	.956

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

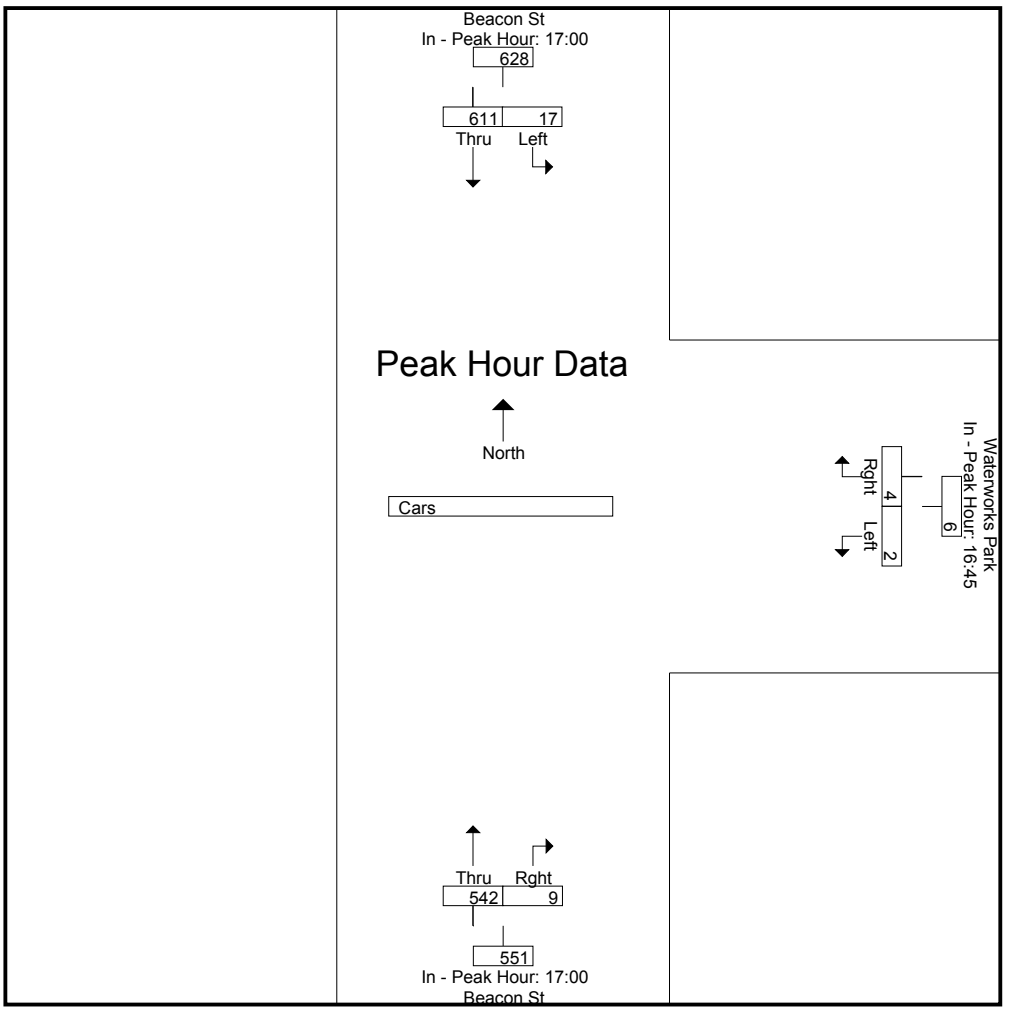
Peak Hour for Each Approach Begins at:

	17:00			16:45			17:00		
+0 mins.	4	136	140	0	0	0	143	3	146
+15 mins.	3	**175**	**178**	0	**3**	**3**	127	**4**	131
+30 mins.	**7**	156	163	**1**	0	1	124	0	124
+45 mins.	3	144	147	1	1	2	**148**	2	**150**
Total Volume	17	611	628	2	4	6	542	9	551
% App. Total	2.7	97.3		33.3	66.7		98.4	1.6	
PHF	.607	.873	.882	.500	.333	.500	.916	.563	.918

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

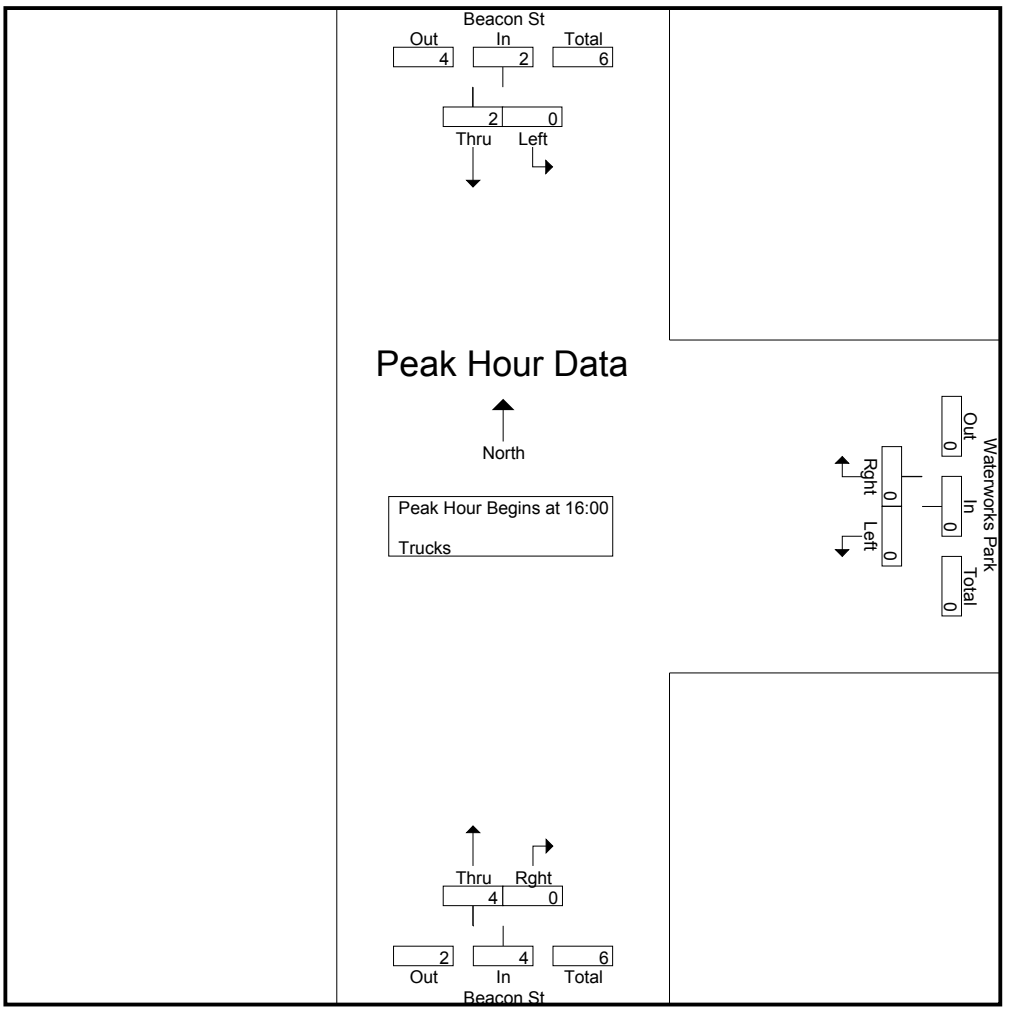
Groups Printed- Trucks

	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	0	1	0	0	1	0	2
16:15	0	0	0	0	2	0	2
16:30	0	0	0	0	1	0	1
16:45	0	1	0	0	0	0	1
Total	0	2	0	0	4	0	6
17:00	0	0	0	0	1	0	1
17:15	0	0	0	0	0	0	0
17:30	0	0	0	0	1	0	1
17:45	0	1	0	0	0	0	1
Total	0	1	0	0	2	0	3
Grand Total	0	3	0	0	6	0	9
Apprch %	0	100	0	0	100	0	
Total %	0	33.3	0	0	66.7	0	

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	0	**1**	**1**	0	0	0	1	0	1	**2**
16:15	0	0	0	0	0	0	**2**	0	**2**	2
16:30	0	0	0	0	0	0	1	0	1	1
16:45	0	1	1	0	0	0	0	0	0	1
Total Volume	0	2	2	0	0	0	4	0	4	6
% App. Total	0	100		0	0		100	0		
PHF	.000	.500	.500	.000	.000	.000	.500	.000	.500	.750

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

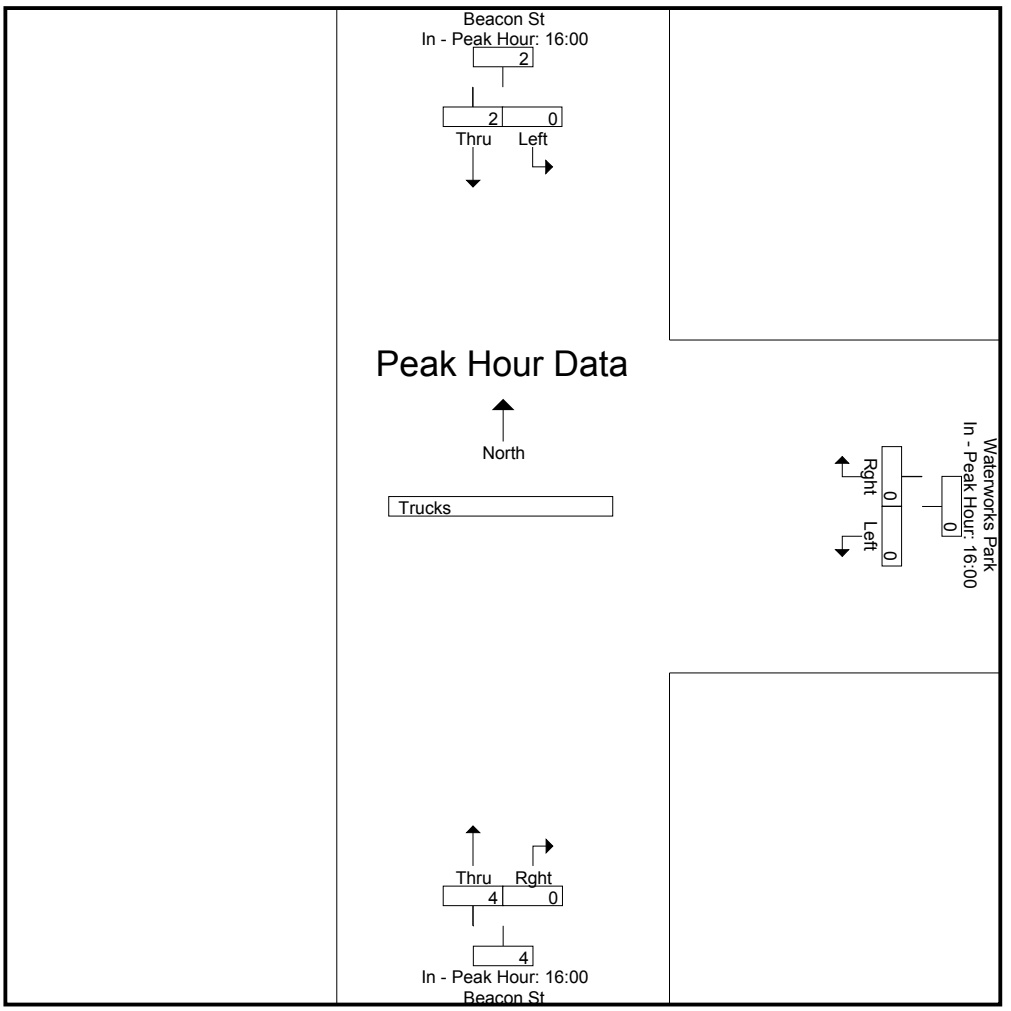
Peak Hour for Each Approach Begins at:

	16:00			16:00			16:00		
+0 mins.	0	**1**	**1**	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	**2**	0	**2**
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	1	1	0	0	0	0	0	0
Total Volume	0	2	2	0	0	0	4	0	4
% App. Total	0	100		0	0		100	0	
PHF	.000	.500	.500	.000	.000	.000	.500	.000	.500

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 1

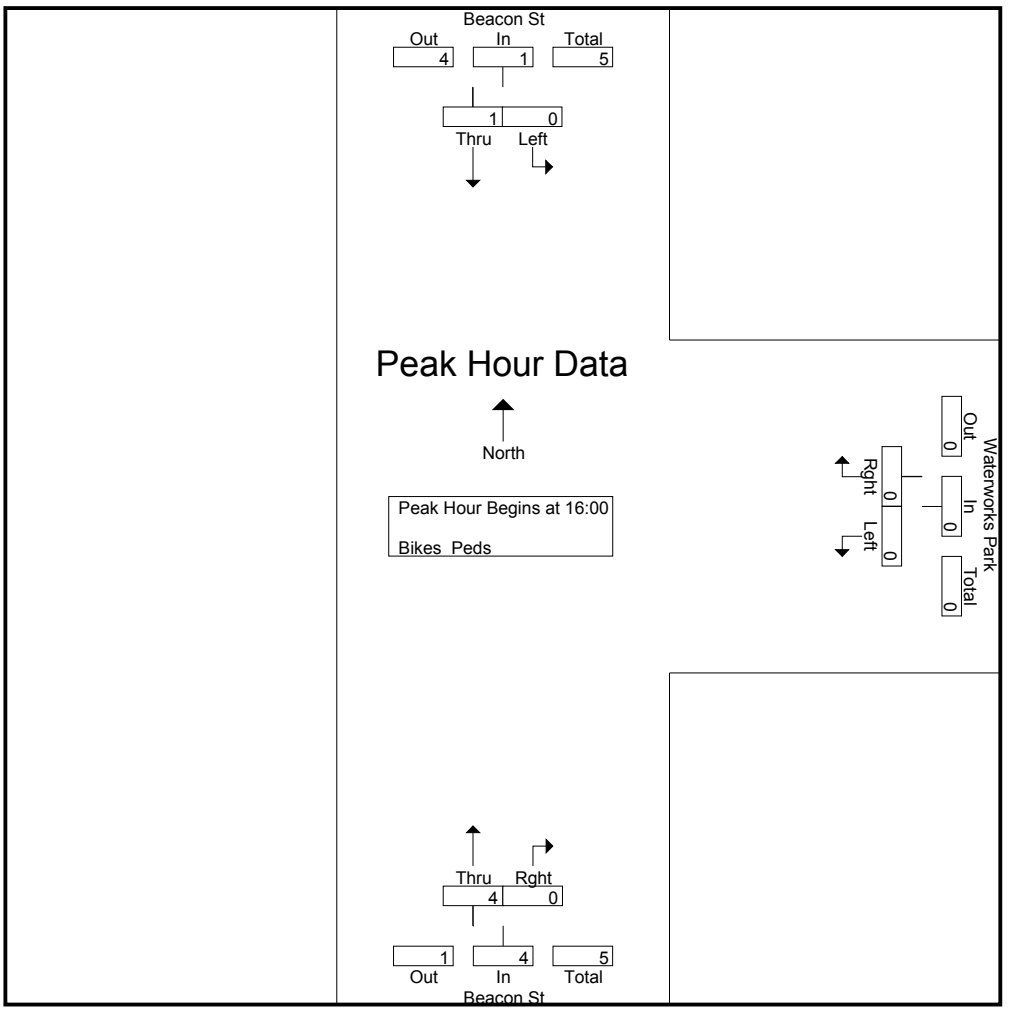
Groups Printed- Bikes Peds

	Beacon St From North			Waterworks Park From East			Beacon St From South					
Start Time	Left	Thru	Peds	Left	Rght	Peds	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	0	0	2	2	0	0	2	2	4
16:15	0	1	0	0	0	10	1	0	0	10	2	12
16:30	0	0	0	0	0	1	1	0	0	1	1	2
16:45	0	0	0	0	0	2	0	0	0	2	0	2
Total	0	1	0	0	0	15	4	0	0	15	5	20
17:00	0	1	0	0	0	1	0	0	0	1	1	2
17:15	0	0	0	0	0	2	1	0	0	2	1	3
17:30	0	0	0	0	0	1	0	0	0	1	0	1
17:45	0	1	0	0	0	2	0	0	0	2	1	3
Total	0	2	0	0	0	6	1	0	0	6	3	9
Grand Total	0	3	0	0	0	21	5	0	0	21	8	29
Apprch %	0	100		0	0		100	0				
Total %	0	37.5		0	0		62.5	0		72.4	27.6	

	Beacon St From North			Waterworks Park From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	0	0	0	0	0	0	**2**	0	**2**	**2**
16:15	0	**1**	**1**	0	0	0	1	0	1	2
16:30	0	0	0	0	0	0	1	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	4	0	4	5
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.500	.000	.500	.625

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

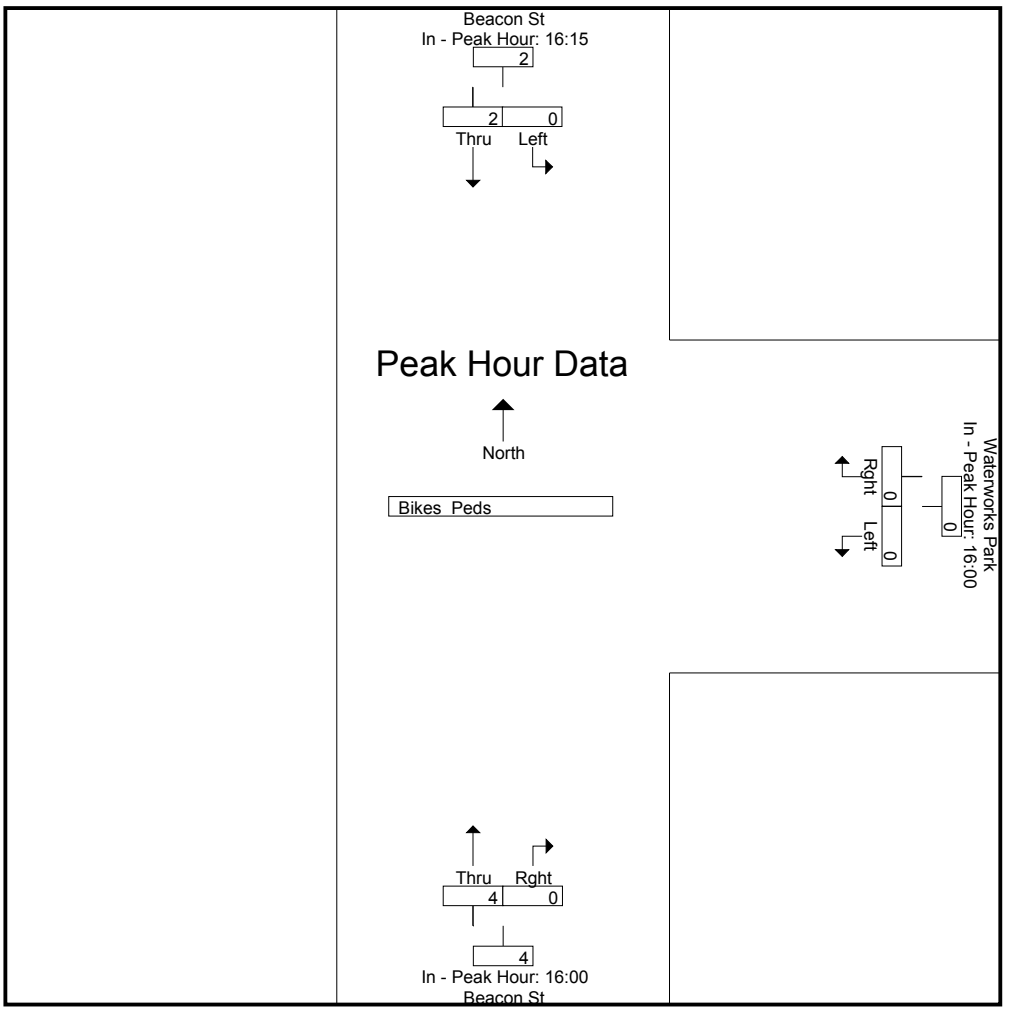
Peak Hour for Each Approach Begins at:

	16:15			16:00			16:00		
+0 mins.	0	**1**	**1**	0	0	0	**2**	0	**2**
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	1	1	0	0	0	0	0	0
Total Volume	0	2	2	0	0	0	4	0	4
% App. Total	0	100		0	0		100	0	
PHF	.000	.500	.500	.000	.000	.000	.500	.000	.500

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Park Driveway
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900001
Site Code : 01900001
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

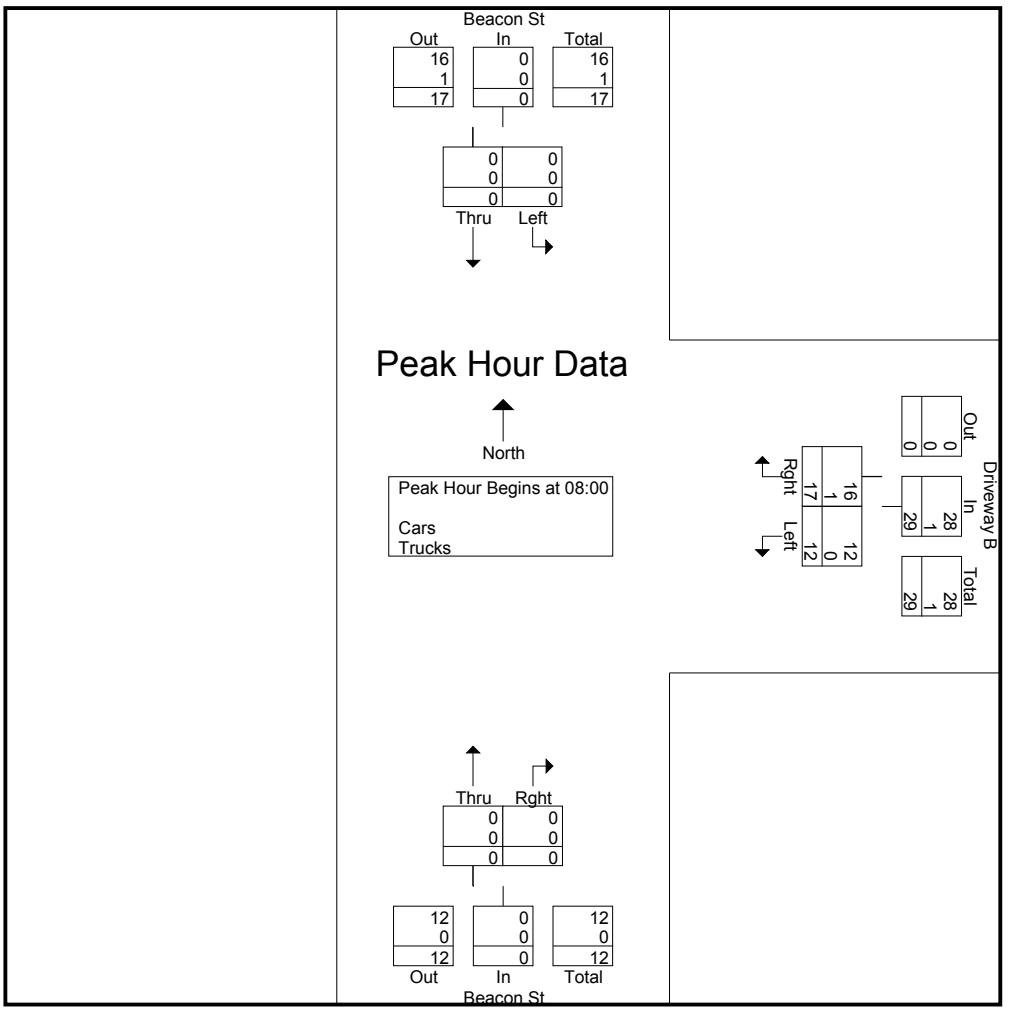
	Beacon St From North		Driveway B From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	0	2	1	0	0	3
07:15	0	0	1	5	0	0	6
07:30	0	0	4	5	0	0	9
07:45	0	0	0	2	0	0	2
Total	0	0	7	13	0	0	20
08:00	0	0	2	4	0	0	6
08:15	0	0	4	2	0	0	6
08:30	0	0	2	8	0	0	10
08:45	0	0	4	3	0	0	7
Total	0	0	12	17	0	0	29
Grand Total	0	0	19	30	0	0	49
Apprch %	0	0	38.8	61.2	0	0	
Total %	0	0	38.8	61.2	0	0	
Cars	0	0	19	29	0	0	48
% Cars	0	0	100	96.7	0	0	98
Trucks	0	0	0	1	0	0	1
% Trucks	0	0	0	3.3	0	0	2

	Beacon St From North			Driveway B From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00										
08:00	0	0	0	2	4	6	0	0	0	6
08:15	0	0	0	**4**	2	6	0	0	0	6
08:30	0	0	0	2	**8**	**10**	0	0	0	**10**
08:45	0	0	0	4	3	7	0	0	0	7
Total Volume	0	0	0	12	17	29	0	0	0	29
% App. Total	0	0		41.4	58.6		0	0		
PHF	.000	.000	.000	.750	.531	.725	.000	.000	.000	.725
Cars	0	0	0	12	16	28	0	0	0	28
% Cars	0	0	0	100	94.1	96.6	0	0	0	96.6
Trucks	0	0	0	0	1	1	0	0	0	1
% Trucks	0	0	0	0	5.9	3.4	0	0	0	3.4

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 2



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

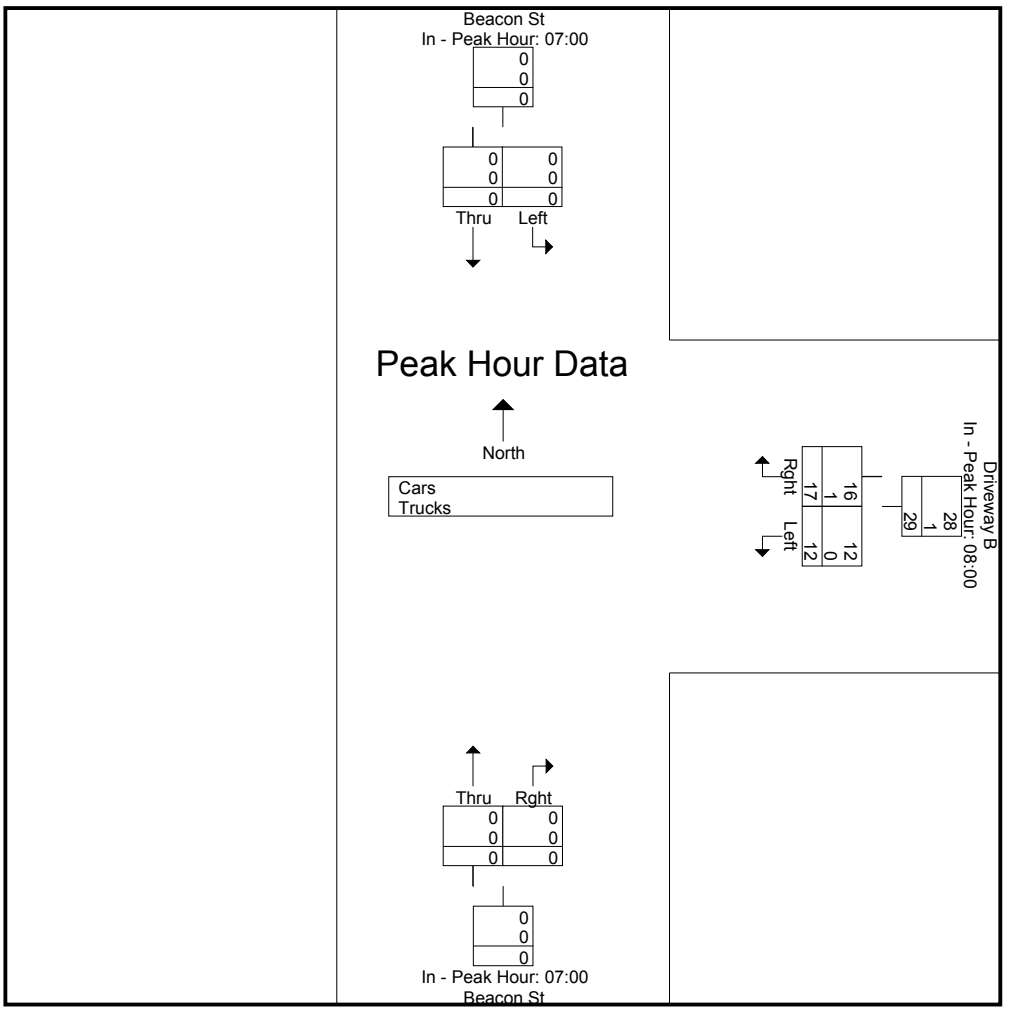
Peak Hour for Each Approach Begins at:

	07:00			08:00			07:00		
+0 mins.	0	0	0	2	4	6	0	0	0
+15 mins.	0	0	0	**4**	2	6	0	0	0
+30 mins.	0	0	0	2	**8**	**10**	0	0	0
+45 mins.	0	0	0	4	3	7	0	0	0
Total Volume	0	0	0	12	17	29	0	0	0
% App. Total	0	0		41.4	58.6		0	0	
PHF	.000	.000	.000	.750	.531	.725	.000	.000	.000
Cars	0	0	0	12	16	28	0	0	0
% Cars	0	0	0	100	94.1	96.6	0	0	0
Trucks	0	0	0	0	1	1	0	0	0
% Trucks	0	0	0	0	5.9	3.4	0	0	0

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 1

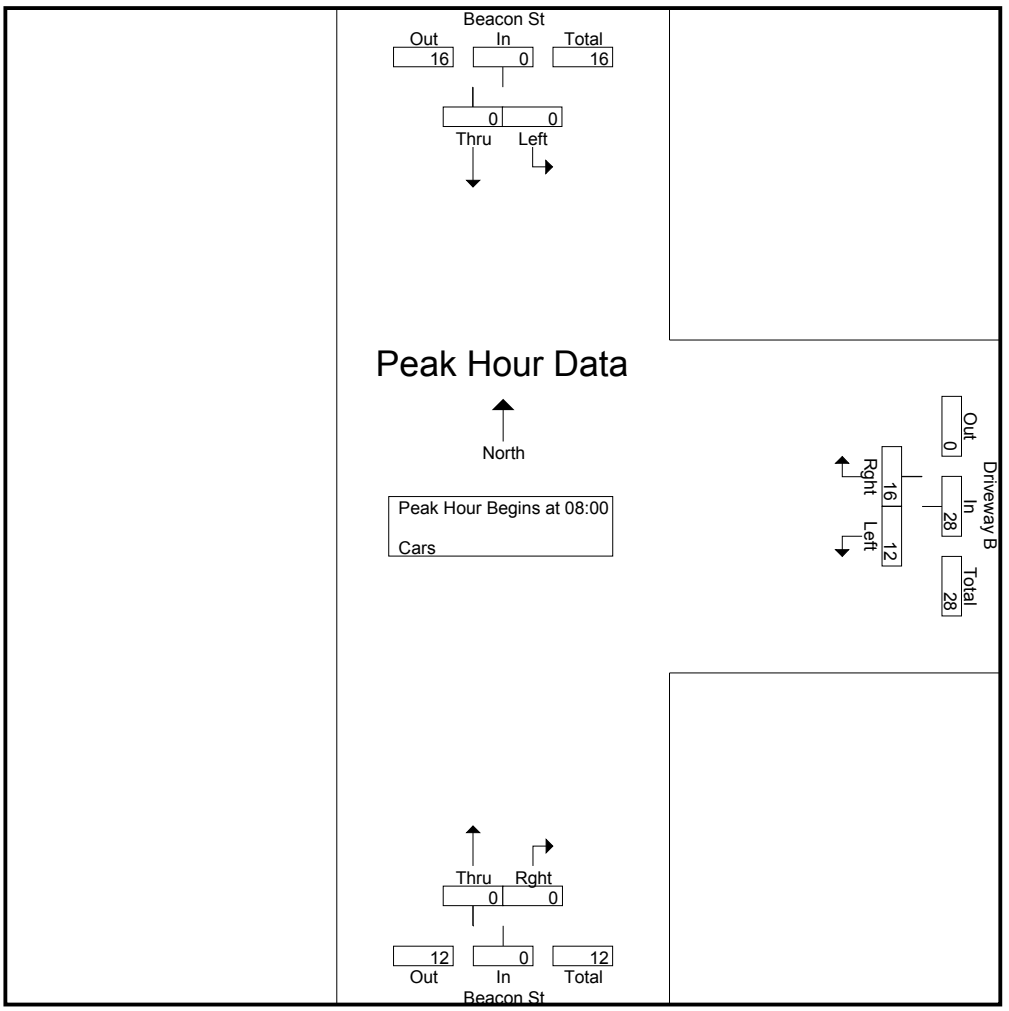
Groups Printed- Cars

	Beacon St From North		Driveway B From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	0	2	1	0	0	3
07:15	0	0	1	5	0	0	6
07:30	0	0	4	5	0	0	9
07:45	0	0	0	2	0	0	2
Total	0	0	7	13	0	0	20
08:00	0	0	2	4	0	0	6
08:15	0	0	4	1	0	0	5
08:30	0	0	2	8	0	0	10
08:45	0	0	4	3	0	0	7
Total	0	0	12	16	0	0	28
Grand Total	0	0	19	29	0	0	48
Apprch %	0	0	39.6	60.4	0	0	
Total %	0	0	39.6	60.4	0	0	

	Beacon St From North			Driveway B From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00										
08:00	0	0	0	2	4	6	0	0	0	6
08:15	0	0	0	**4**	1	5	0	0	0	5
08:30	0	0	0	2	**8**	**10**	0	0	0	**10**
08:45	0	0	0	4	3	7	0	0	0	7
Total Volume	0	0	0	12	16	28	0	0	0	28
% App. Total	0	0		42.9	57.1		0	0		
PHF	.000	.000	.000	.750	.500	.700	.000	.000	.000	.700

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 2



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

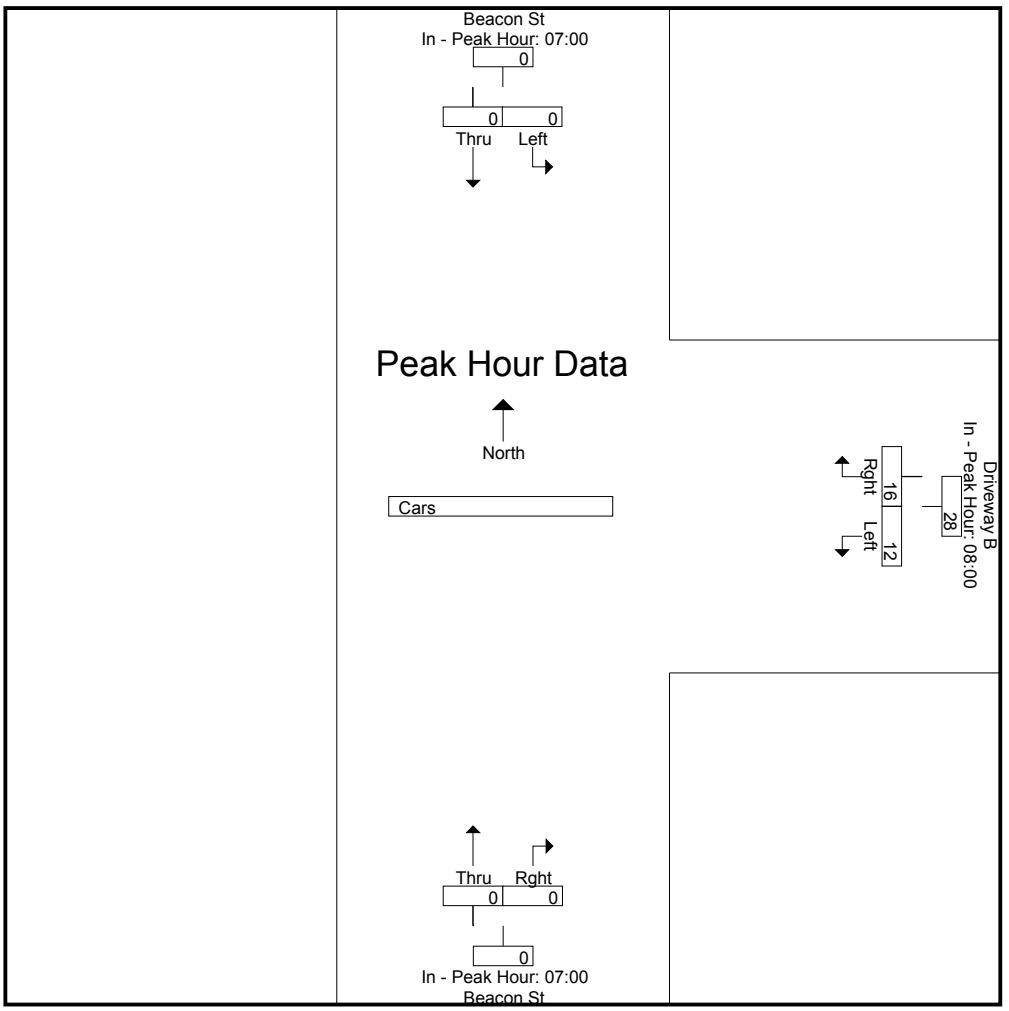
Peak Hour for Each Approach Begins at:

	07:00			08:00			07:00		
+0 mins.	0	0	0	2	4	6	0	0	0
+15 mins.	0	0	0	**4**	1	5	0	0	0
+30 mins.	0	0	0	2	**8**	**10**	0	0	0
+45 mins.	0	0	0	4	3	7	0	0	0
Total Volume	0	0	0	12	16	28	0	0	0
% App. Total	0	0		42.9	57.1		0	0	
PHF	.000	.000	.000	.750	.500	.700	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

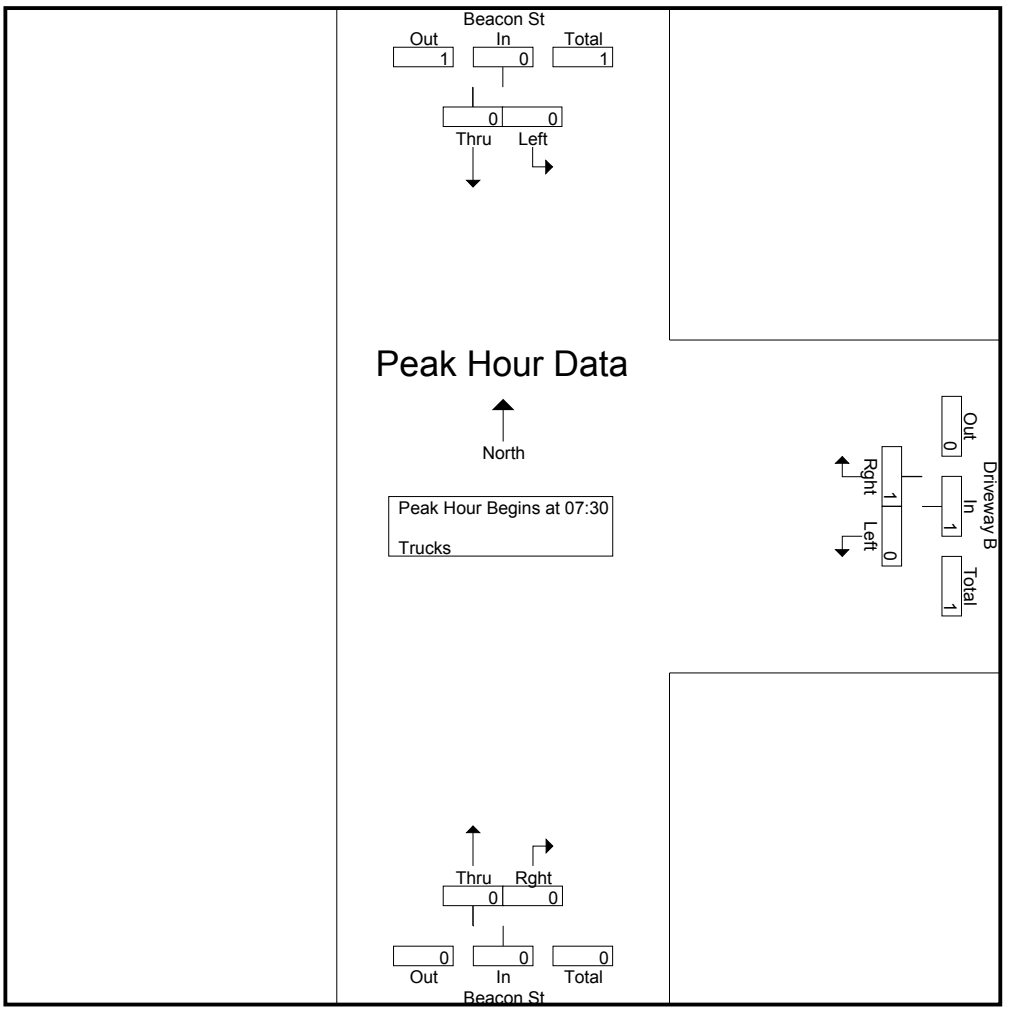
	Beacon St From North		Driveway B From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0
08:15	0	0	0	1	0	0	1
08:30	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1
Grand Total	0	0	0	1	0	0	1
Apprch %	0	0	0	100	0	0	
Total %	0	0	0	100	0	0	

	Beacon St From North			Driveway B From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	**1**	**1**	0	0	0	**1**
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011



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

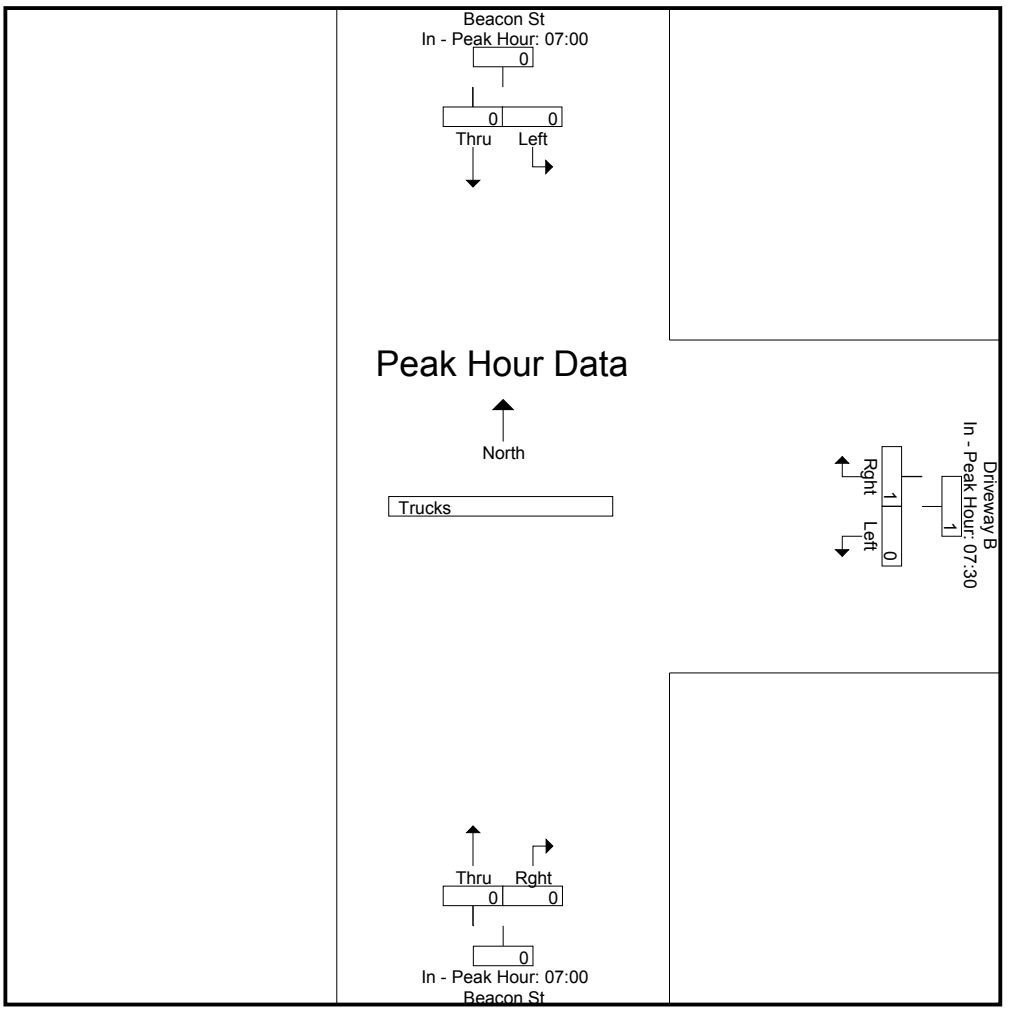
Peak Hour for Each Approach Begins at:

	07:00			07:30			07:00		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	**1**	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0
% App. Total	0	0		0	100		0	0	
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 1

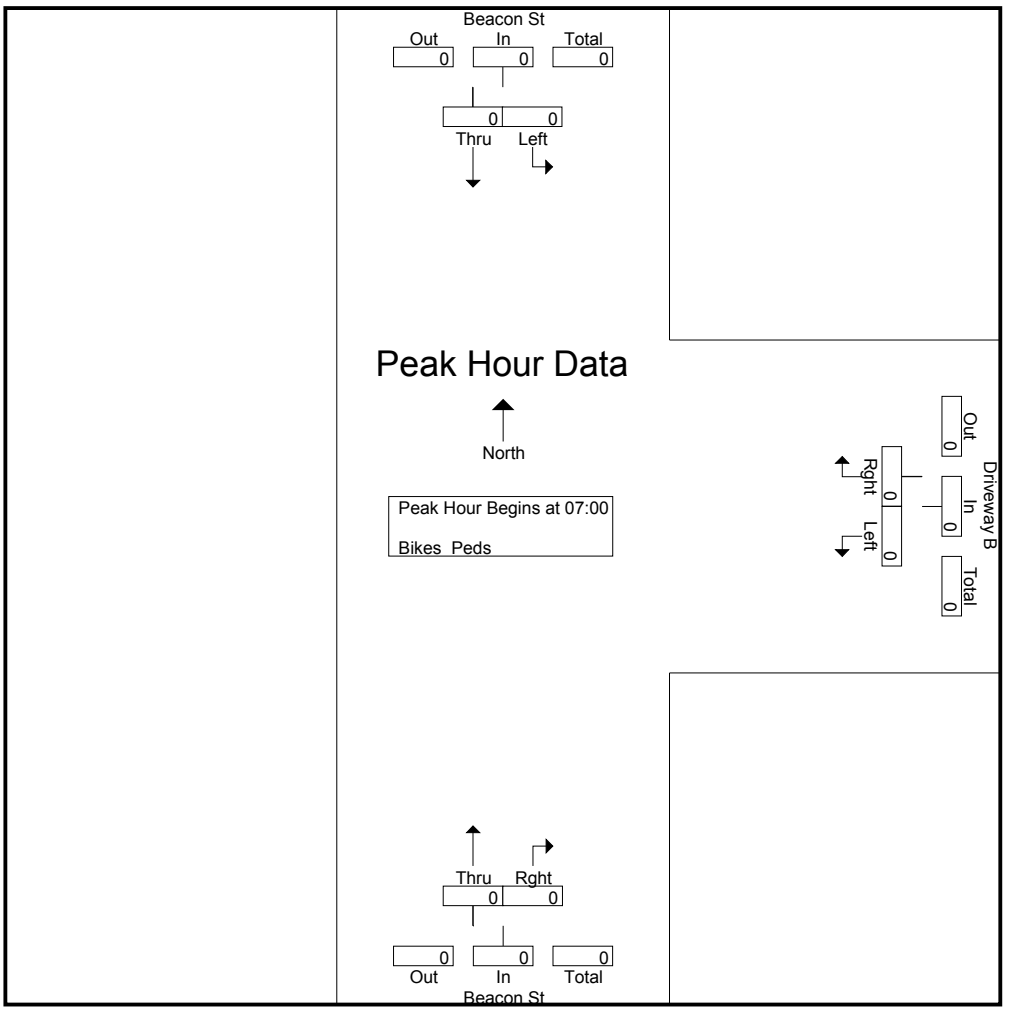
Groups Printed- Bikes Peds

	Beacon St From North			Driveway B From East			Beacon St From South					
Start Time	Left	Thru	Peds	Left	Rght	Peds	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	1	0	0	0	1	0	1
07:15	0	0	0	0	0	1	0	0	0	1	0	1
07:30	0	0	0	0	0	2	0	0	0	2	0	2
07:45	0	0	0	0	0	2	0	0	0	2	0	2
Total	0	0	0	0	0	6	0	0	0	6	0	6
08:00	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	1	0	0	0	1	0	1
08:30	0	0	0	0	0	1	0	0	0	1	0	1
08:45	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	2	0	2
Grand Total	0	0	0	0	0	8	0	0	0	8	0	8
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	Beacon St From North			Driveway B From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00										
07:00	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 2



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

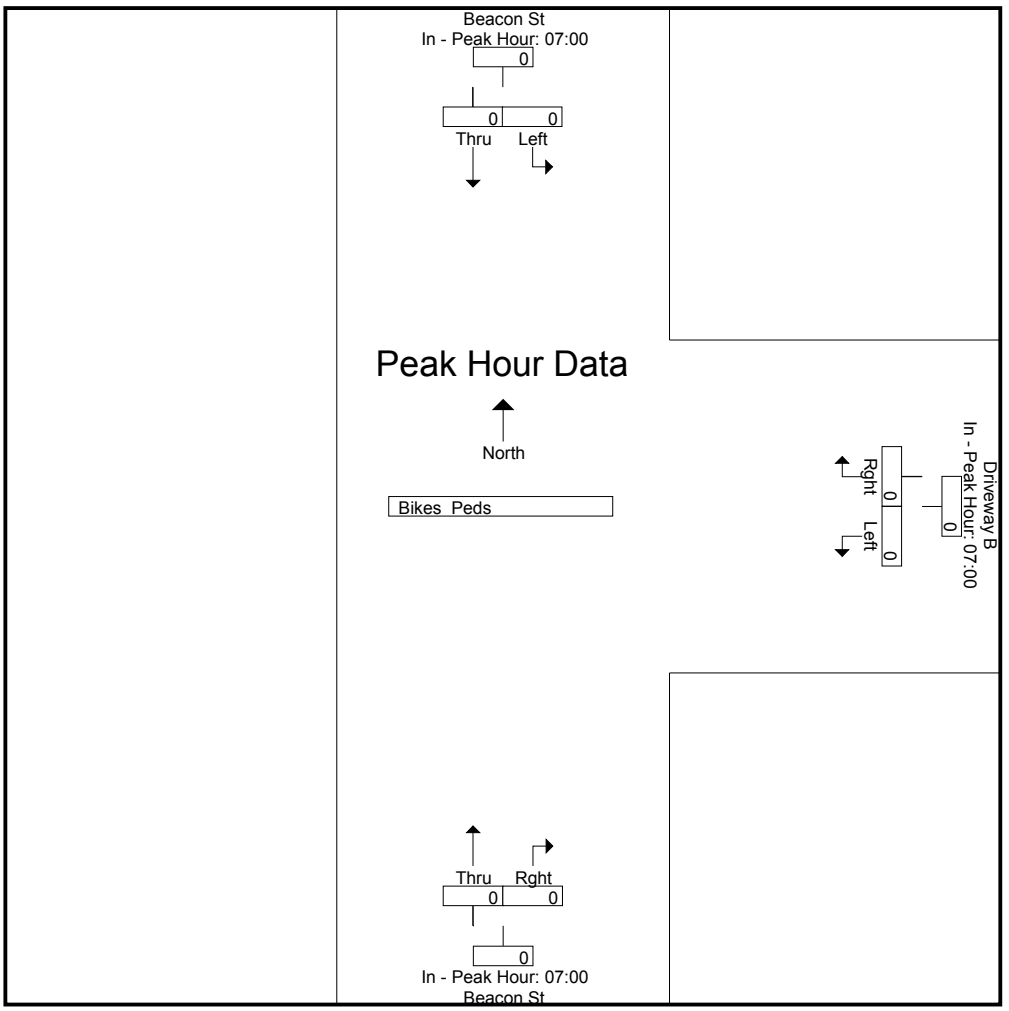
Peak Hour for Each Approach Begins at:

	07:00			07:00			07:00		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 1

Groups Printed- Cars - Trucks

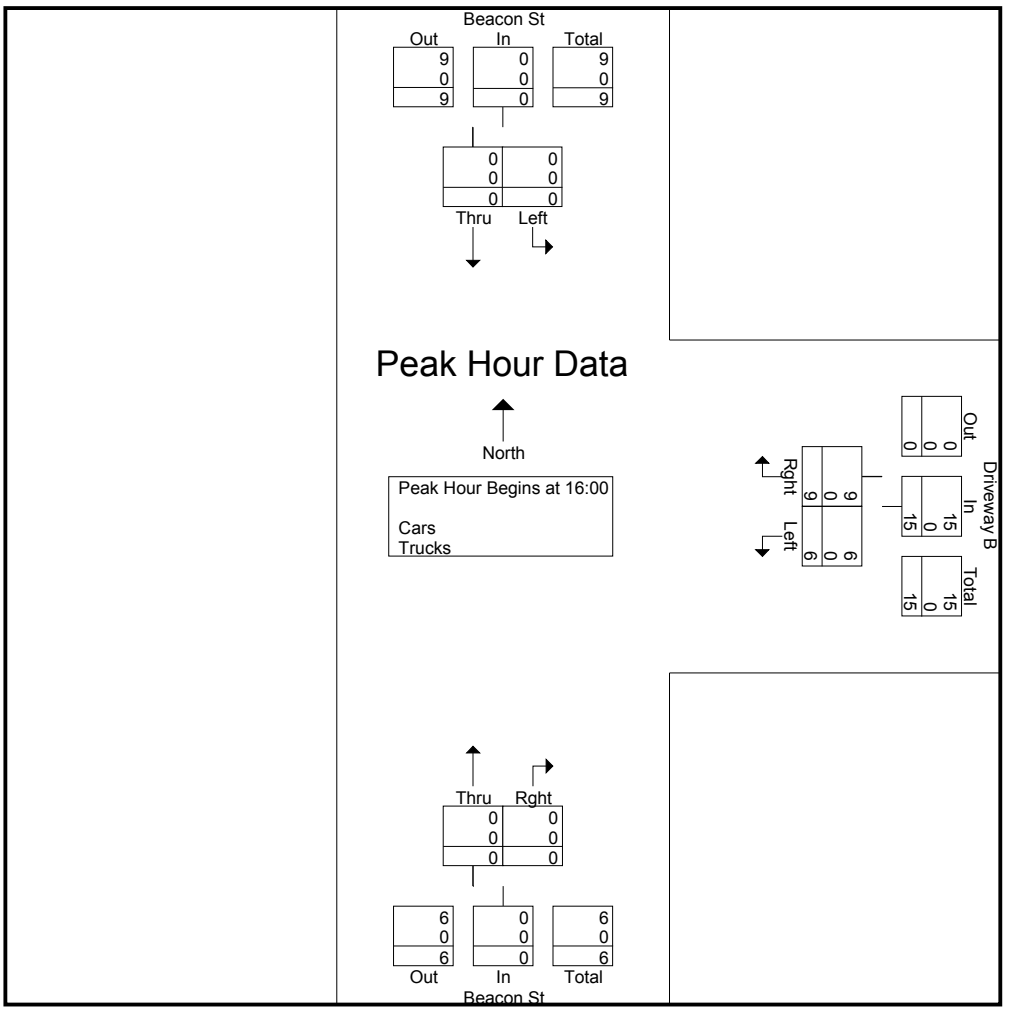
	Beacon St From North		Driveway B From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	0	0	2	2	0	0	4
16:15	0	0	1	2	0	0	3
16:30	0	0	1	1	0	0	2
16:45	0	0	2	4	0	0	6
Total	0	0	6	9	0	0	15
17:00	1	0	2	1	0	0	4
17:15	0	0	0	1	0	0	1
17:30	0	0	3	1	0	0	4
17:45	0	0	3	2	0	1	6
Total	1	0	8	5	0	1	15
Grand Total	1	0	14	14	0	1	30
Apprch %	100	0	50	50	0	100	
Total %	3.3	0	46.7	46.7	0	3.3	
Cars	1	0	14	14	0	1	30
% Cars	100	0	100	100	0	100	100
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0

	Beacon St From North			Driveway B From East			Beacon St From South			
Start Time	Left	Thru	App. Total	Left	Rght	App. Total	Thru	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	0	0	0	**2**	2	4	0	0	0	4
16:15	0	0	0	1	2	3	0	0	0	3
16:30	0	0	0	1	1	2	0	0	0	2
16:45	0	0	0	2	**4**	**6**	0	0	0	**6**
Total Volume	0	0	0	6	9	15	0	0	0	15
% App. Total	0	0		40	60		0	0		
PHF	.000	.000	.000	.750	.563	.625	.000	.000	.000	.625
Cars	0	0	0	6	9	15	0	0	0	15
% Cars	0	0	0	100	100	100	0	0	0	100
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

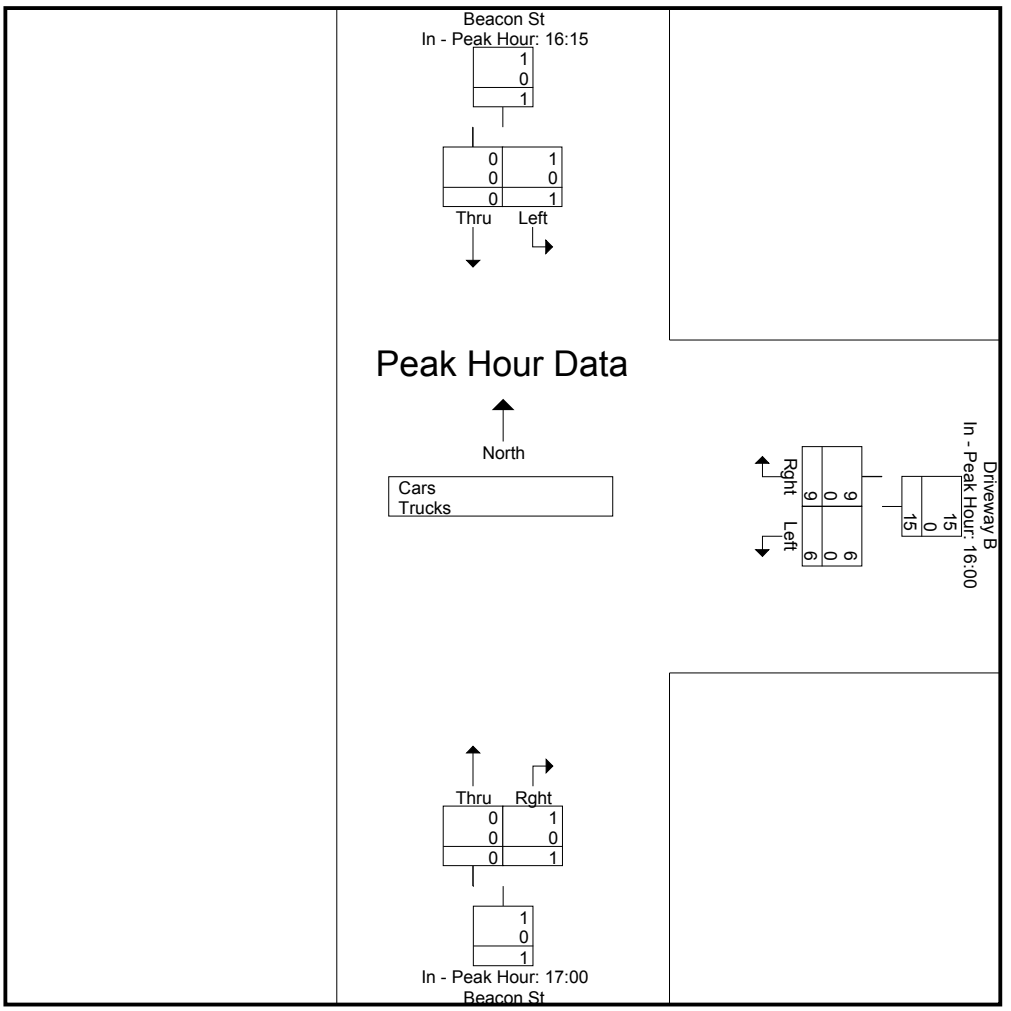
Peak Hour for Each Approach Begins at:

	16:15			16:00			17:00		
+0 mins.	0	0	0	**2**	2	4	0	0	0
+15 mins.	0	0	0	1	2	3	0	0	0
+30 mins.	0	0	0	1	1	2	0	0	0
+45 mins.	**1**	0	**1**	2	**4**	**6**	0	**1**	**1**
Total Volume	1	0	1	6	9	15	0	1	1
% App. Total	100	0		40	60		0	100	
PHF	.250	.000	.250	.750	.563	.625	.000	.250	.250
Cars	1	0	1	6	9	15	0	1	1
% Cars	100	0	100	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

Accurate Counts
978-664-2565

N/S Street : Beacon Street
E/W Street: Waterworks Driveway B
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900010
Site Code : 01900010
Start Date : 1/19/2011
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 1

Groups Printed- Driveway 5

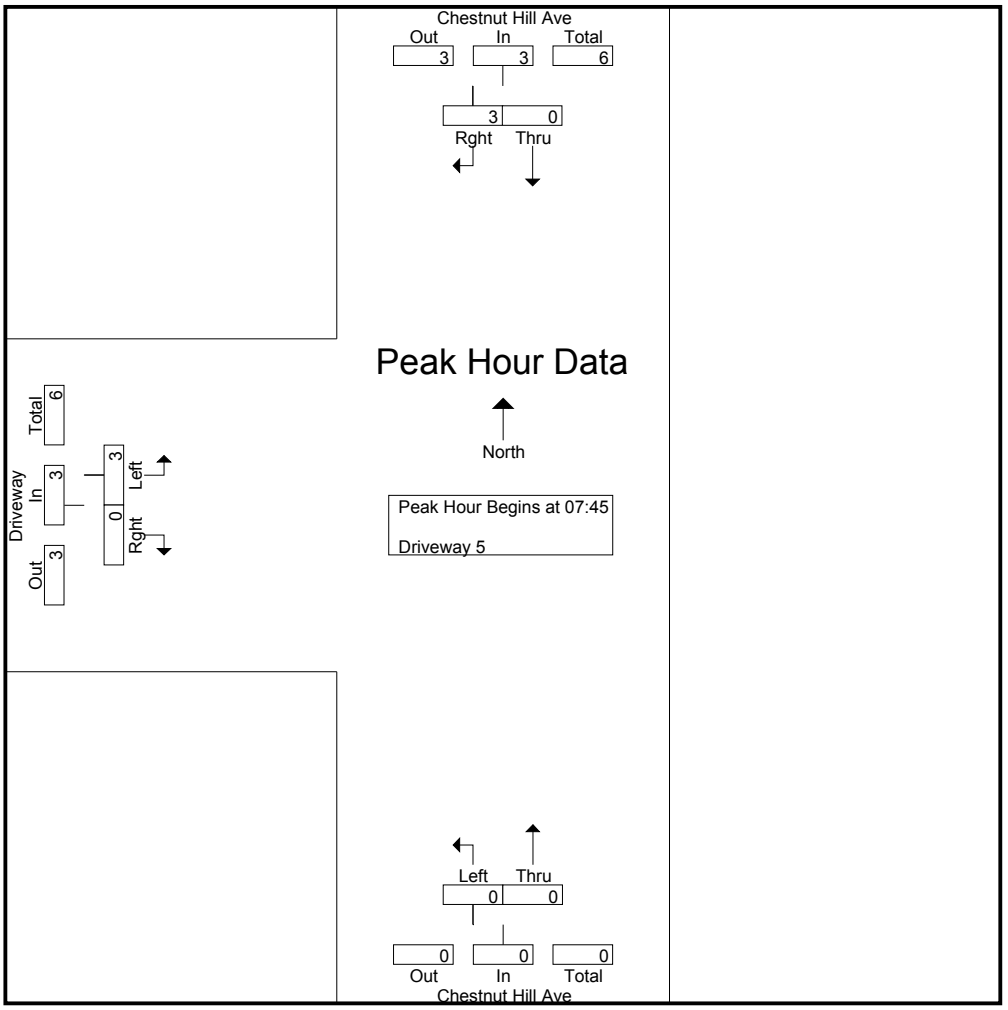
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	1	0	0	0	1	2
07:30	0	1	0	0	0	0	1
07:45	0	0	0	0	1	0	1
Total	0	2	0	0	1	1	4
08:00	0	0	0	0	1	0	1
08:15	0	2	0	0	0	0	2
08:30	0	1	0	0	1	0	2
08:45	0	0	0	0	0	0	0
Total	0	3	0	0	2	0	5
Grand Total	0	5	0	0	3	1	9
Apprch %	0	100	0	0	75	25	
Total %	0	55.6	0	0	33.3	11.1	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45										
07:45	0	0	0	0	0	0	**1**	0	**1**	1
08:00	0	0	0	0	0	0	1	0	1	1
08:15	0	**2**	**2**	0	0	0	0	0	0	**2**
08:30	0	1	1	0	0	0	1	0	1	2
Total Volume	0	3	3	0	0	0	3	0	3	6
% App. Total	0	100		0	0		100	0		
PHF	.000	.375	.375	.000	.000	.000	.750	.000	.750	.750

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010



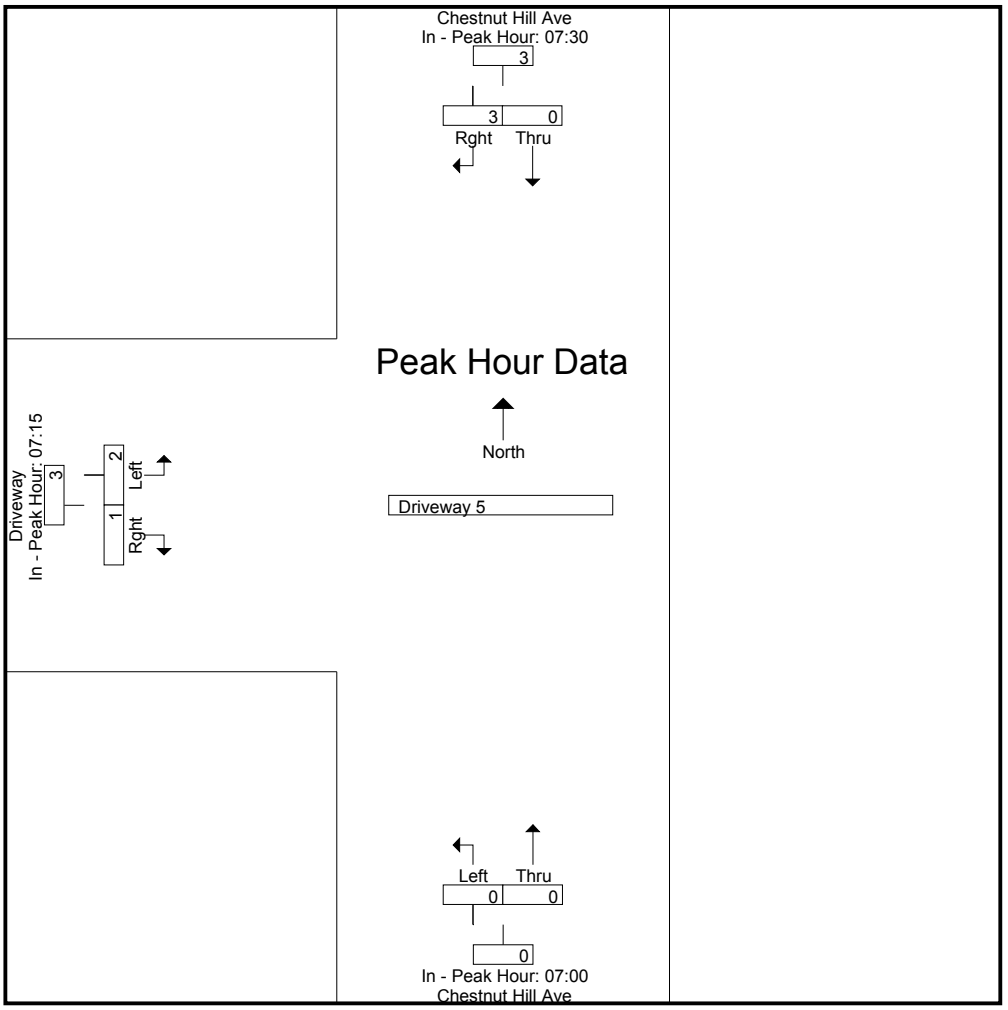
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30			07:00			07:15		
+0 mins.	0	1	1	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	**1**	0	1
+45 mins.	0	**2**	**2**	0	0	0	1	0	1
Total Volume	0	3	3	0	0	0	2	1	3
% App. Total	0	100		0	0		66.7	33.3	
PHF	.000	.375	.375	.000	.000	.000	.500	.250	.750

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 1

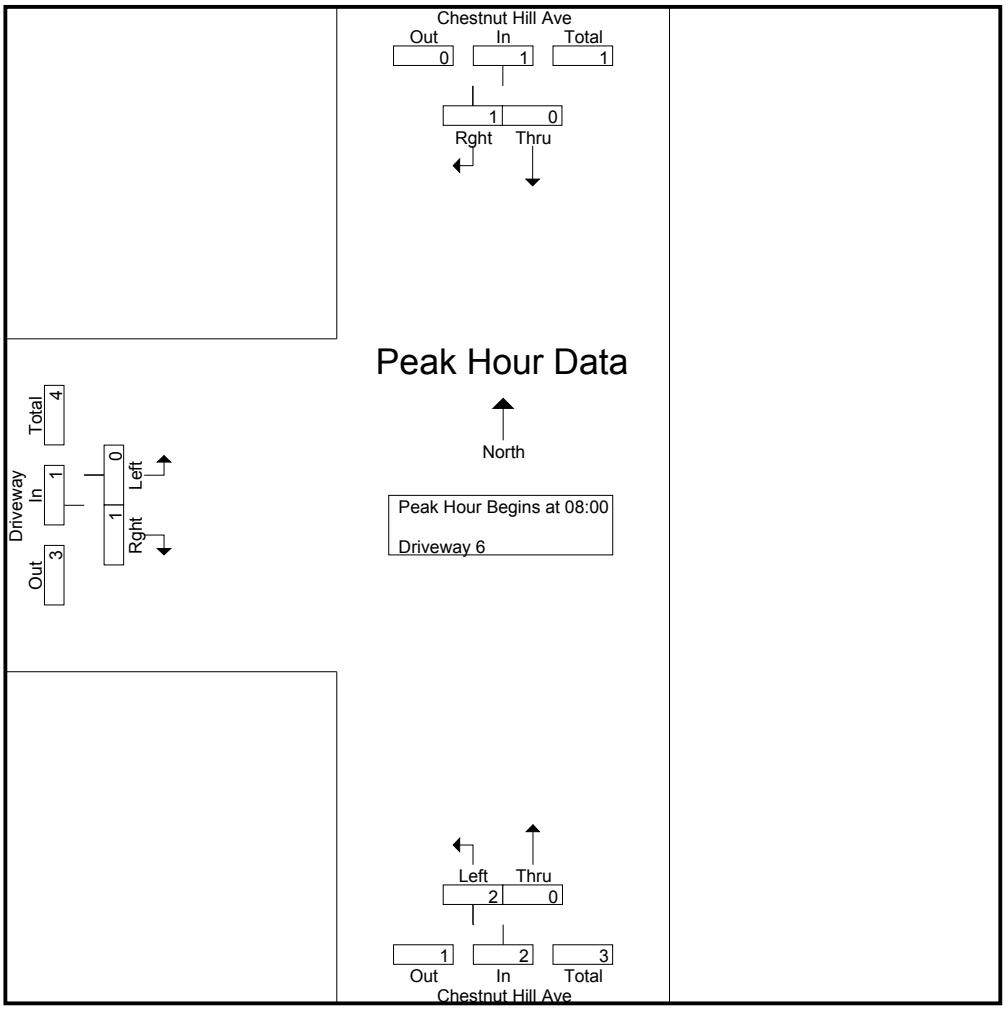
Groups Printed- Driveway 6

	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	0	0	0	0	1	1
07:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1
08:00	0	1	0	0	0	0	1
08:15	0	0	0	0	0	0	0
08:30	0	0	1	0	0	1	2
08:45	0	0	1	0	0	0	1
Total	0	1	2	0	0	1	4
Grand Total	0	1	2	0	0	2	5
Apprch %	0	100	100	0	0	100	
Total %	0	20	40	0	0	40	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00										
08:00	0	**1**	**1**	0	0	0	0	0	0	1
08:15	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	**1**	0	**1**	0	**1**	**1**	**2**
08:45	0	0	0	1	0	1	0	0	0	1
Total Volume	0	1	1	2	0	2	0	1	1	4
% App. Total	0	100		100	0		0	100		
PHF	.000	.250	.250	.500	.000	.500	.000	.250	.250	.500

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010



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

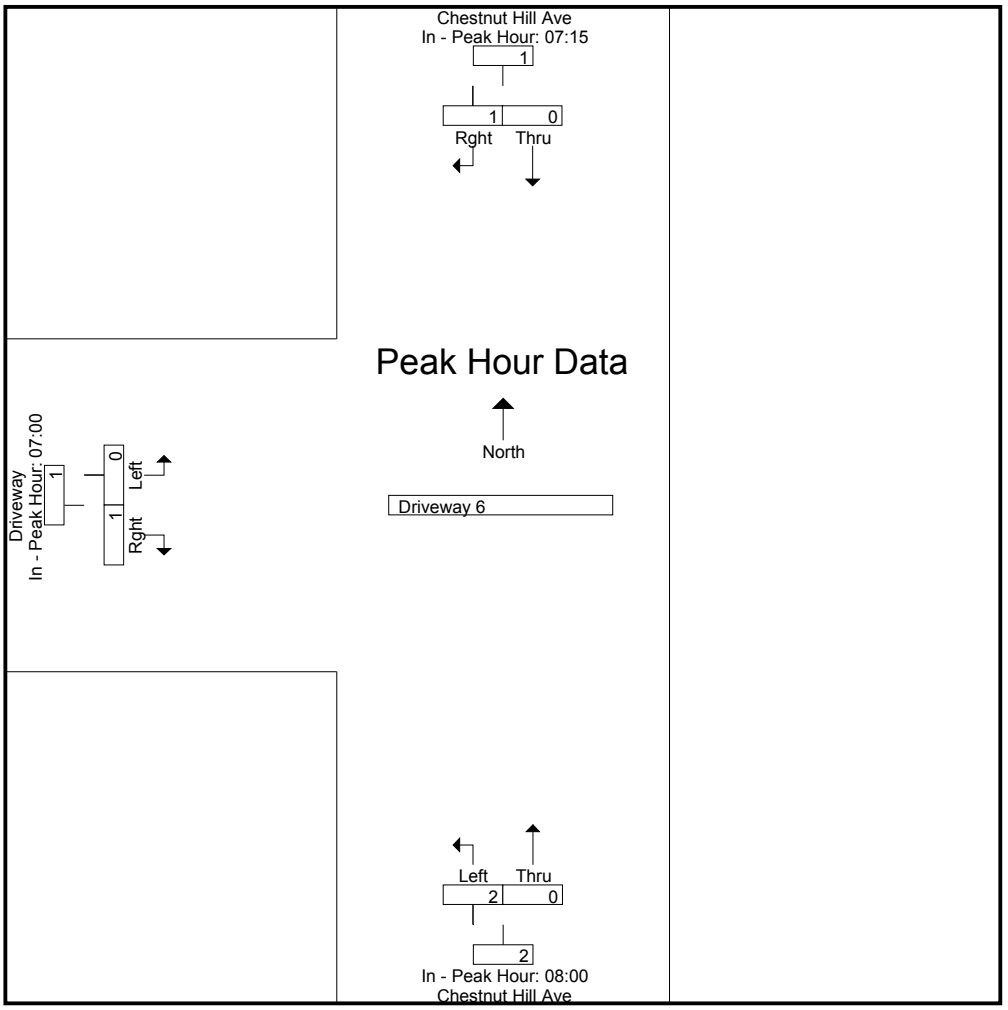
Peak Hour for Each Approach Begins at:

	07:15			08:00			07:00		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	**1**	0	**1**	0	**1**	**1**
+45 mins.	0	**1**	**1**	1	0	1	0	0	0
Total Volume	0	1	1	2	0	2	0	1	1
% App. Total	0	100		100	0		0	100	
PHF	.000	.250	.250	.500	.000	.500	.000	.250	.250

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 1

Groups Printed- Driveway 5

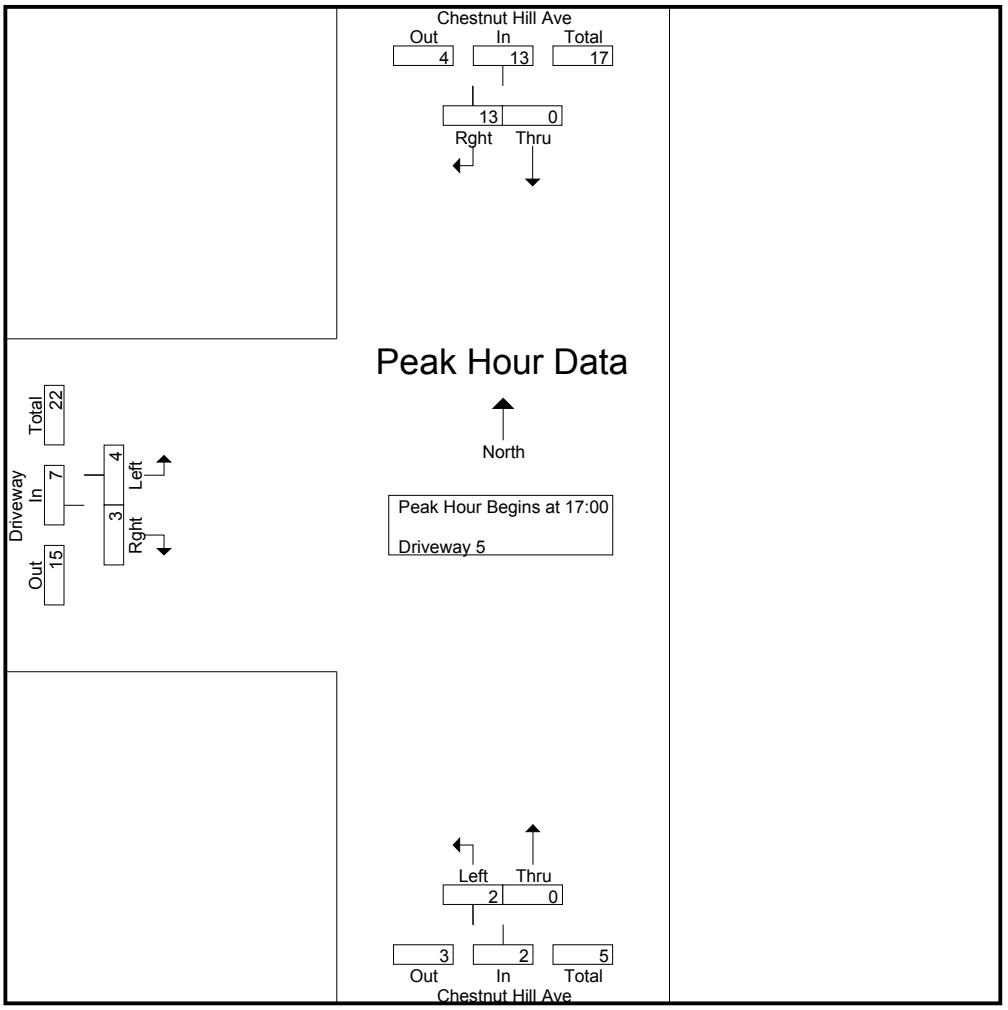
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	0	0	0	0	0	0
16:15	0	3	0	0	0	0	3
16:30	0	0	0	0	0	1	1
16:45	0	1	0	0	2	0	3
Total	0	4	0	0	2	1	7
17:00	0	5	2	0	1	0	8
17:15	0	2	0	0	1	1	4
17:30	0	3	0	0	2	1	6
17:45	0	3	0	0	0	1	4
Total	0	13	2	0	4	3	22
Grand Total	0	17	2	0	6	4	29
Apprch %	0	100	100	0	60	40	
Total %	0	58.6	6.9	0	20.7	13.8	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 17:00										
17:00	0	**5**	**5**	**2**	0	**2**	1	0	1	**8**
17:15	0	2	2	0	0	0	1	**1**	2	4
17:30	0	3	3	0	0	0	**2**	1	**3**	6
17:45	0	3	3	0	0	0	0	1	1	4
Total Volume	0	13	13	2	0	2	4	3	7	22
% App. Total	0	100		100	0		57.1	42.9		
PHF	.000	.650	.650	.250	.000	.250	.500	.750	.583	.688

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 2



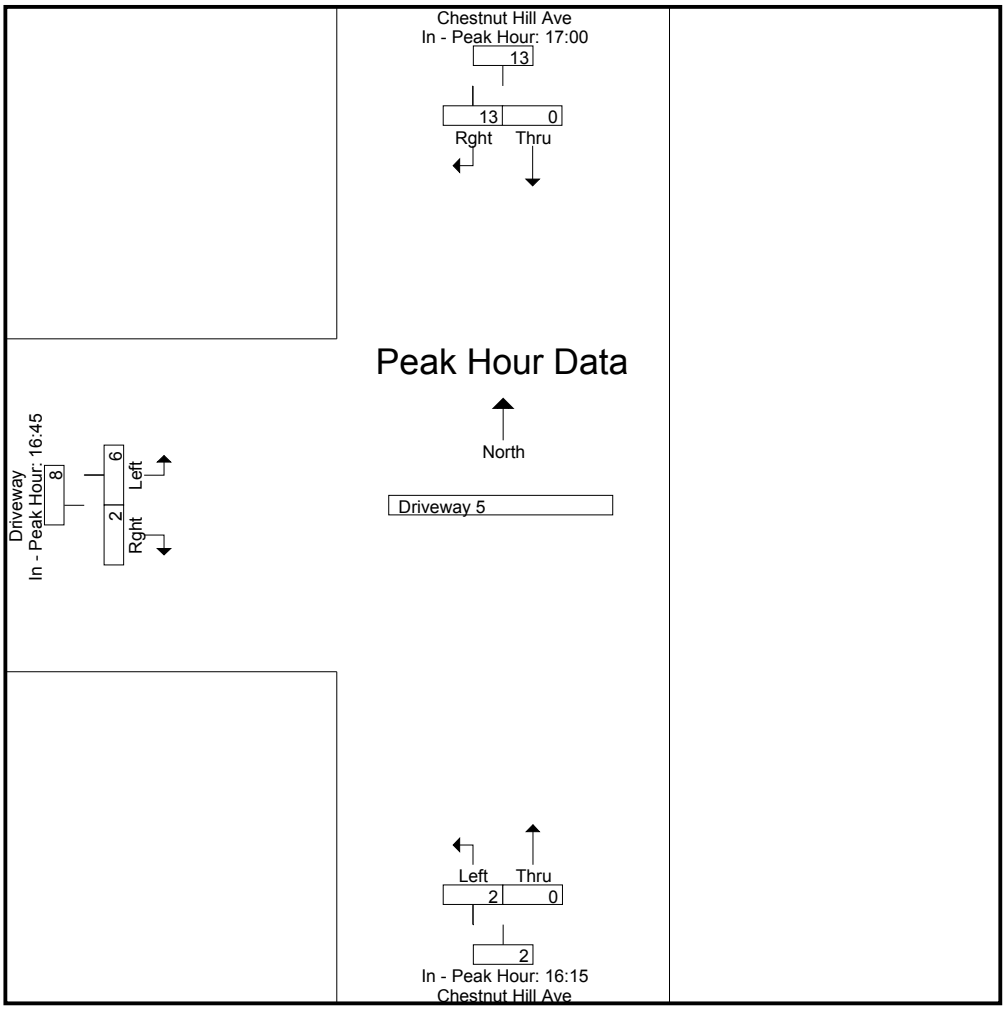
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	17:00			16:15			16:45		
+0 mins.	0	**5**	**5**	0	0	0	**2**	0	2
+15 mins.	0	2	2	0	0	0	1	0	1
+30 mins.	0	3	3	0	0	0	1	**1**	2
+45 mins.	0	3	3	**2**	0	**2**	2	1	**3**
Total Volume	0	13	13	2	0	2	6	2	8
% App. Total	0	100		100	0		75	25	
PHF	.000	.650	.650	.250	.000	.250	.750	.500	.667

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 1

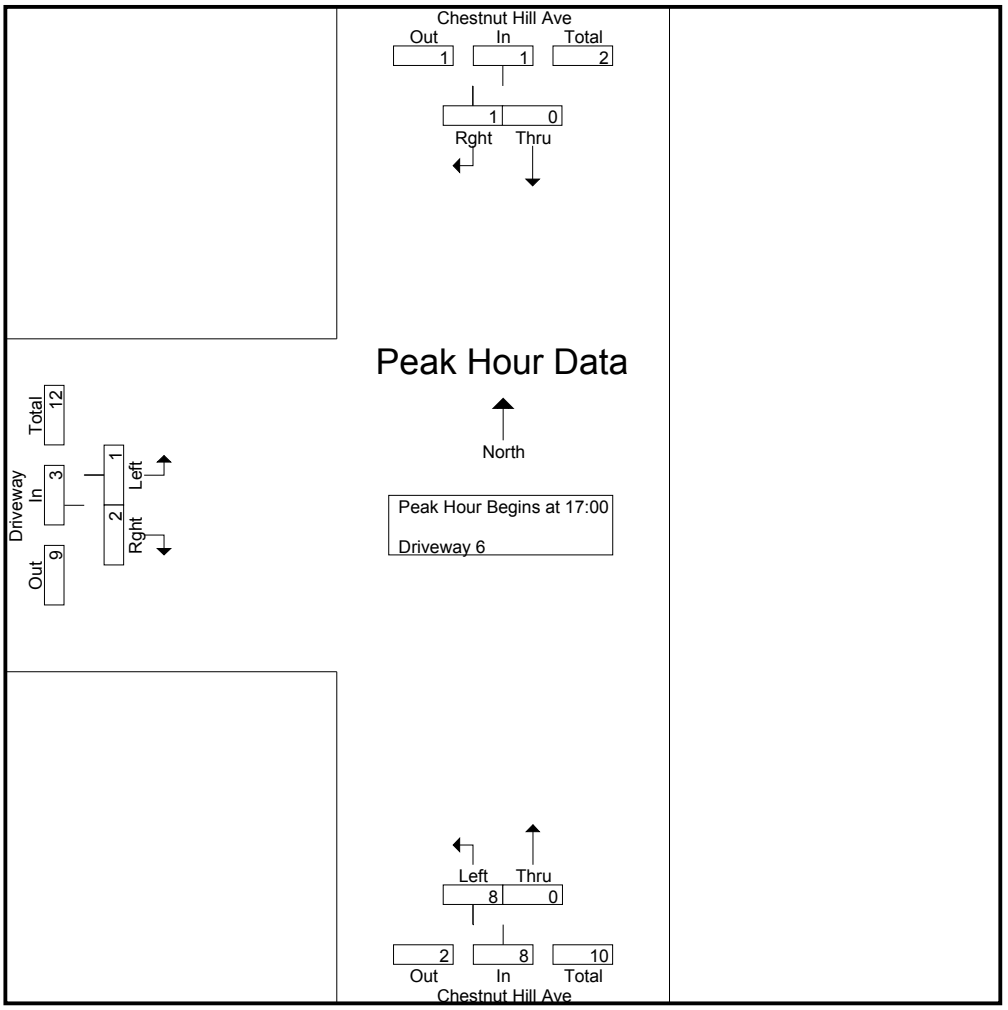
Groups Printed- Driveway 6

	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	0	0	0	1	3	4
16:15	0	0	1	0	0	1	2
16:30	0	0	1	0	1	0	2
16:45	0	1	0	0	1	1	3
Total	0	1	2	0	3	5	11
17:00	0	0	1	0	0	1	2
17:15	0	0	1	0	0	0	1
17:30	0	1	3	0	1	0	5
17:45	0	0	3	0	0	1	4
Total	0	1	8	0	1	2	12
Grand Total	0	2	10	0	4	7	23
Apprch %	0	100	100	0	36.4	63.6	
Total %	0	8.7	43.5	0	17.4	30.4	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 17:00										
17:00	0	0	0	1	0	1	0	**1**	**1**	2
17:15	0	0	0	1	0	1	0	0	0	1
17:30	0	**1**	**1**	**3**	0	**3**	**1**	0	1	**5**
17:45	0	0	0	3	0	3	0	1	1	4
Total Volume	0	1	1	8	0	8	1	2	3	12
% App. Total	0	100		100	0		33.3	66.7		
PHF	.000	.250	.250	.667	.000	.667	.250	.500	.750	.600

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

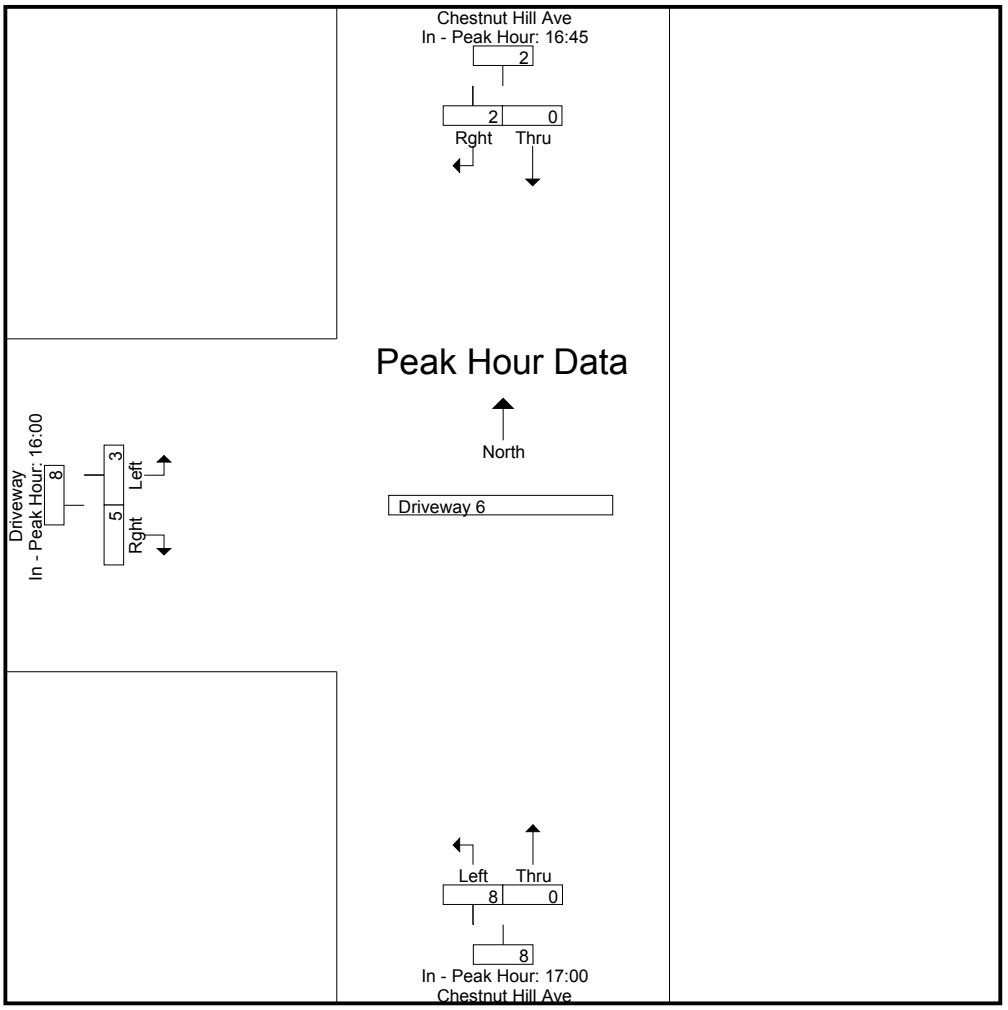
Peak Hour for Each Approach Begins at:

	16:45			17:00			16:00		
+0 mins.	0	**1**	**1**	1	0	1	**1**	**3**	**4**
+15 mins.	0	0	0	1	0	1	0	1	1
+30 mins.	0	0	0	**3**	0	**3**	1	0	1
+45 mins.	0	1	1	3	0	3	1	1	2
Total Volume	0	2	2	8	0	8	3	5	8
% App. Total	0	100		100	0		37.5	62.5	
PHF	.000	.500	.500	.667	.000	.667	.750	.417	.500

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #5 & #6
City/State : Boston, MA
Weather : Clear

File Name : 01900007
Site Code : 20101907
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 1

Groups Printed- Driveway 7

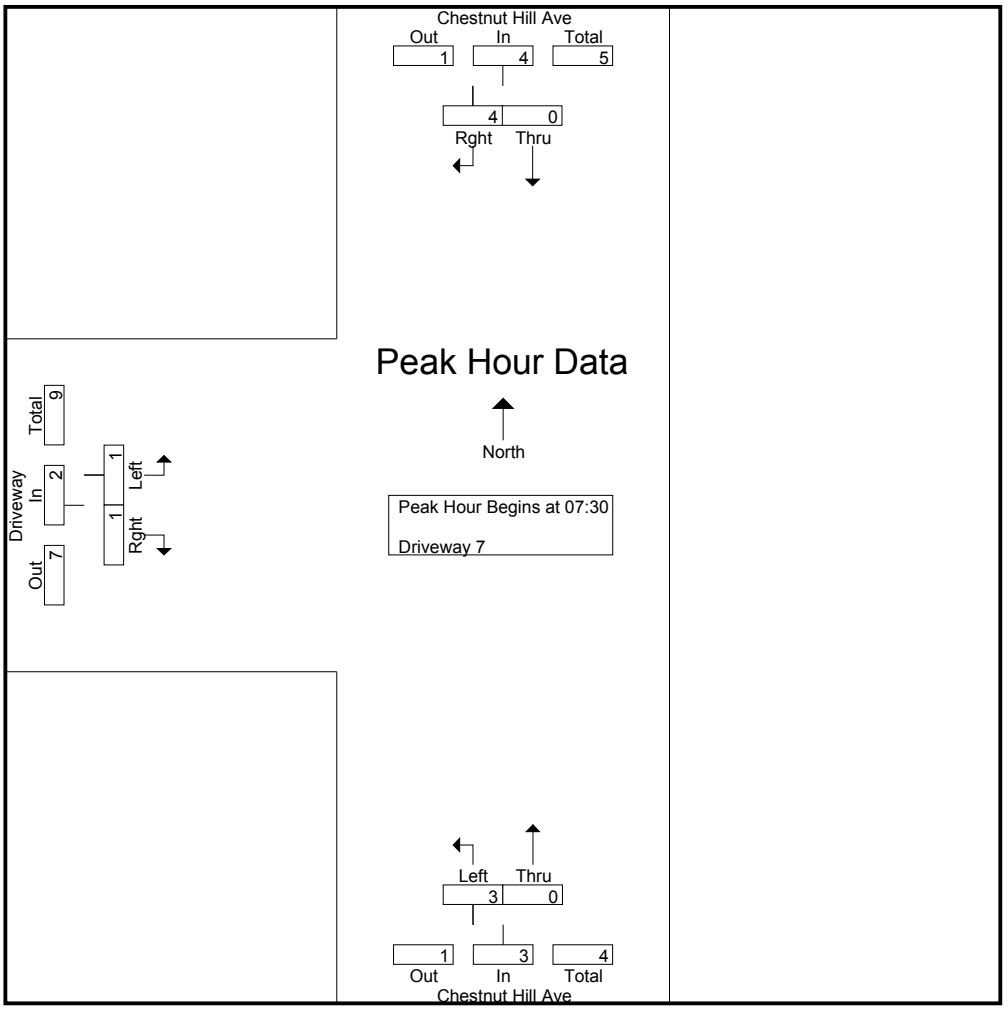
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	1	0	1
07:30	0	1	0	0	0	0	1
07:45	0	1	0	0	0	0	1
Total	0	2	0	0	1	0	3
08:00	0	1	0	0	1	0	2
08:15	0	1	3	0	0	1	5
08:30	0	0	0	0	0	0	0
08:45	0	0	0	0	1	0	1
Total	0	2	3	0	2	1	8
Grand Total	0	4	3	0	3	1	11
Apprch %	0	100	100	0	75	25	
Total %	0	36.4	27.3	0	27.3	9.1	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	0	**1**	**1**	0	0	0	0	0	0	1
07:45	0	1	1	0	0	0	0	0	0	1
08:00	0	1	1	0	0	0	**1**	0	**1**	2
08:15	0	1	1	**3**	0	**3**	0	**1**	1	**5**
Total Volume	0	4	4	3	0	3	1	1	2	9
% App. Total	0	100		100	0		50	50		
PHF	.000	1.00	1.00	.250	.000	.250	.250	.250	.500	.450

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010



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

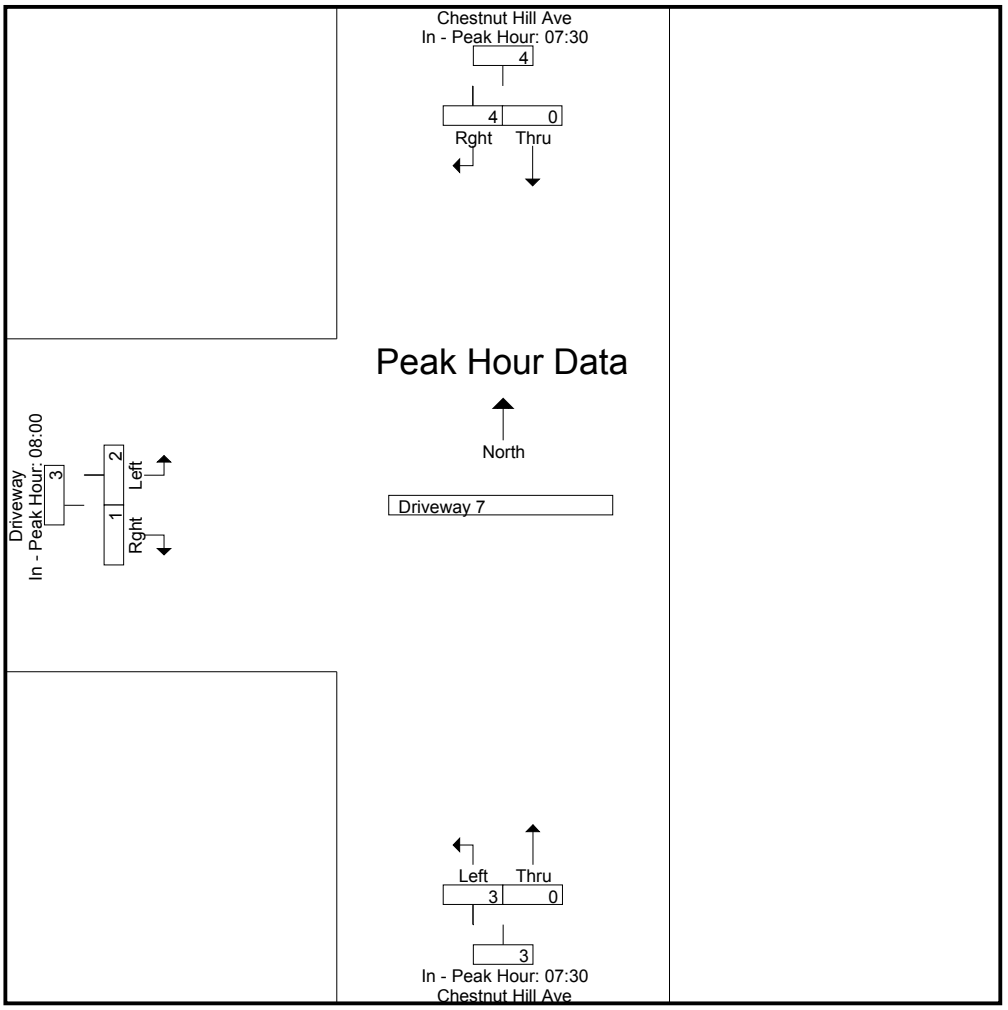
Peak Hour for Each Approach Begins at:

	07:30			07:30			08:00		
+0 mins.	0	**1**	**1**	0	0	0	**1**	0	**1**
+15 mins.	0	1	1	0	0	0	0	**1**	1
+30 mins.	0	1	1	0	0	0	0	0	0
+45 mins.	0	1	1	**3**	0	**3**	1	0	1
Total Volume	0	4	4	3	0	3	2	1	3
% App. Total	0	100		100	0		66.7	33.3	
PHF	.000	1.000	1.000	.250	.000	.250	.500	.250	.750

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 1

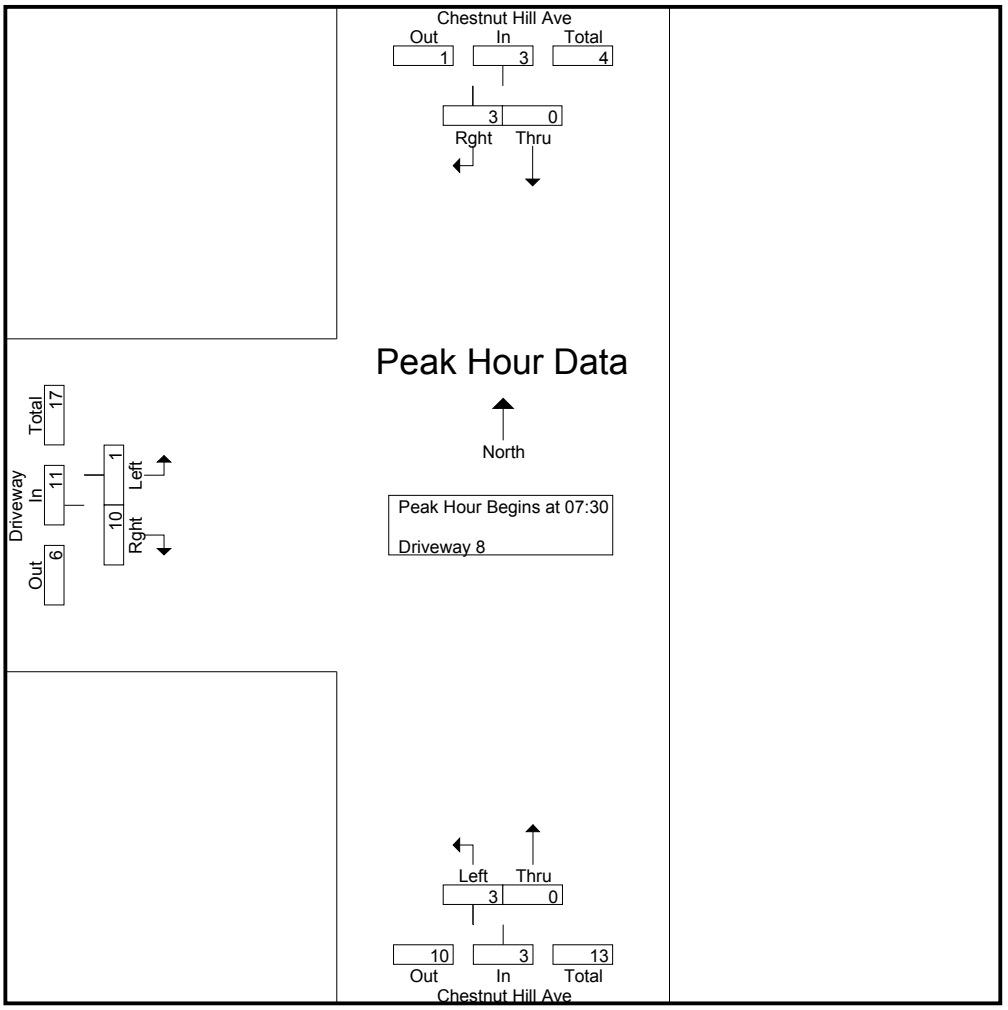
Groups Printed- Driveway 8

	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	1	0	0	1	2
07:30	0	0	1	0	1	3	5
07:45	0	0	1	0	0	1	2
Total	0	0	3	0	1	5	9
08:00	0	2	0	0	0	5	7
08:15	0	1	1	0	0	1	3
08:30	0	0	1	0	0	0	1
08:45	0	0	1	0	0	0	1
Total	0	3	3	0	0	6	12
Grand Total	0	3	6	0	1	11	21
Apprch %	0	100	100	0	8.3	91.7	
Total %	0	14.3	28.6	0	4.8	52.4	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	0	0	0	**1**	0	**1**	**1**	3	4	5
07:45	0	0	0	1	0	1	0	1	1	2
08:00	0	**2**	**2**	0	0	0	0	**5**	**5**	**7**
08:15	0	1	1	1	0	1	0	1	1	3
Total Volume	0	3	3	3	0	3	1	10	11	17
% App. Total	0	100		100	0		9.1	90.9		
PHF	.000	.375	.375	.750	.000	.750	.250	.500	.550	.607

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010



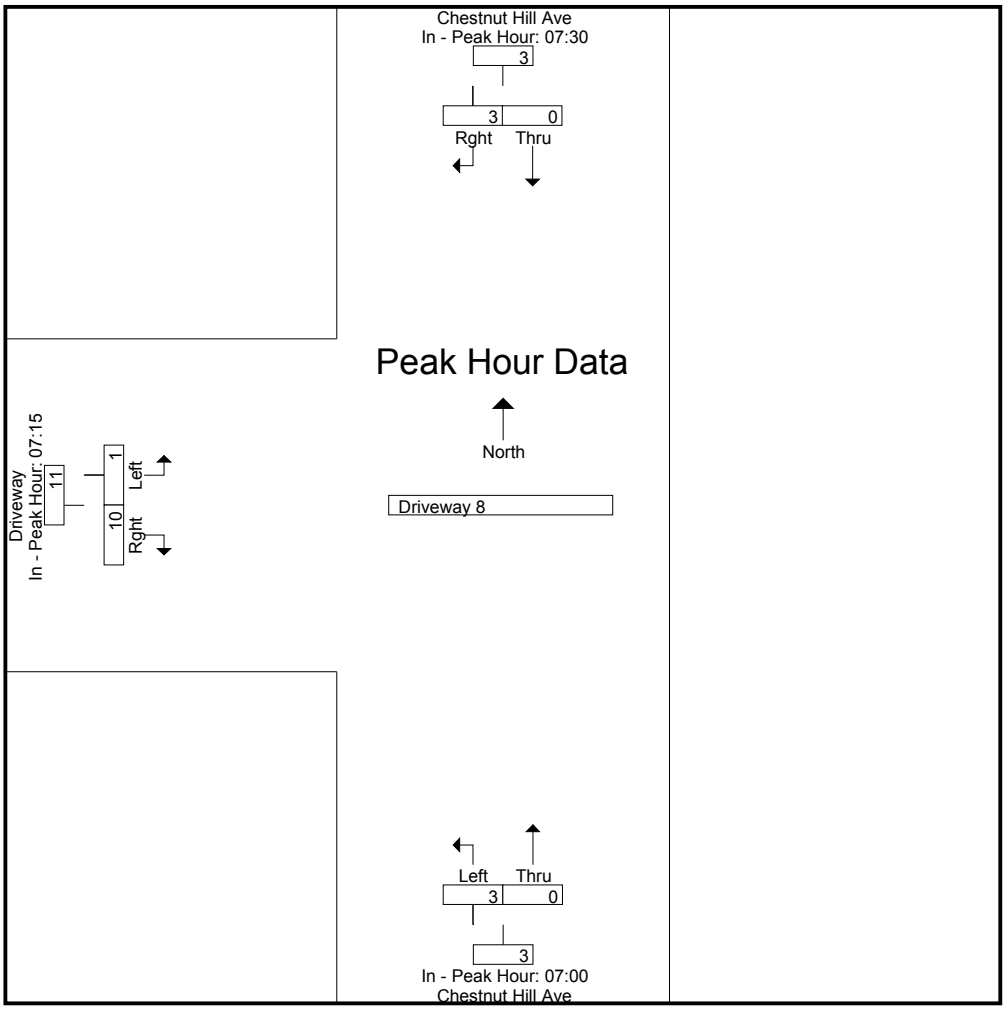
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30			07:00			07:15		
+0 mins.	0	0	0	0	0	0	0	1	1
+15 mins.	0	0	0	**1**	0	**1**	**1**	3	4
+30 mins.	0	**2**	**2**	1	0	1	0	1	1
+45 mins.	0	1	1	1	0	1	0	**5**	**5**
Total Volume	0	3	3	3	0	3	1	10	11
% App. Total	0	100		100	0		9.1	90.9	
PHF	.000	.375	.375	.750	.000	.750	.250	.500	.550

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 1

Groups Printed- Driveway 7

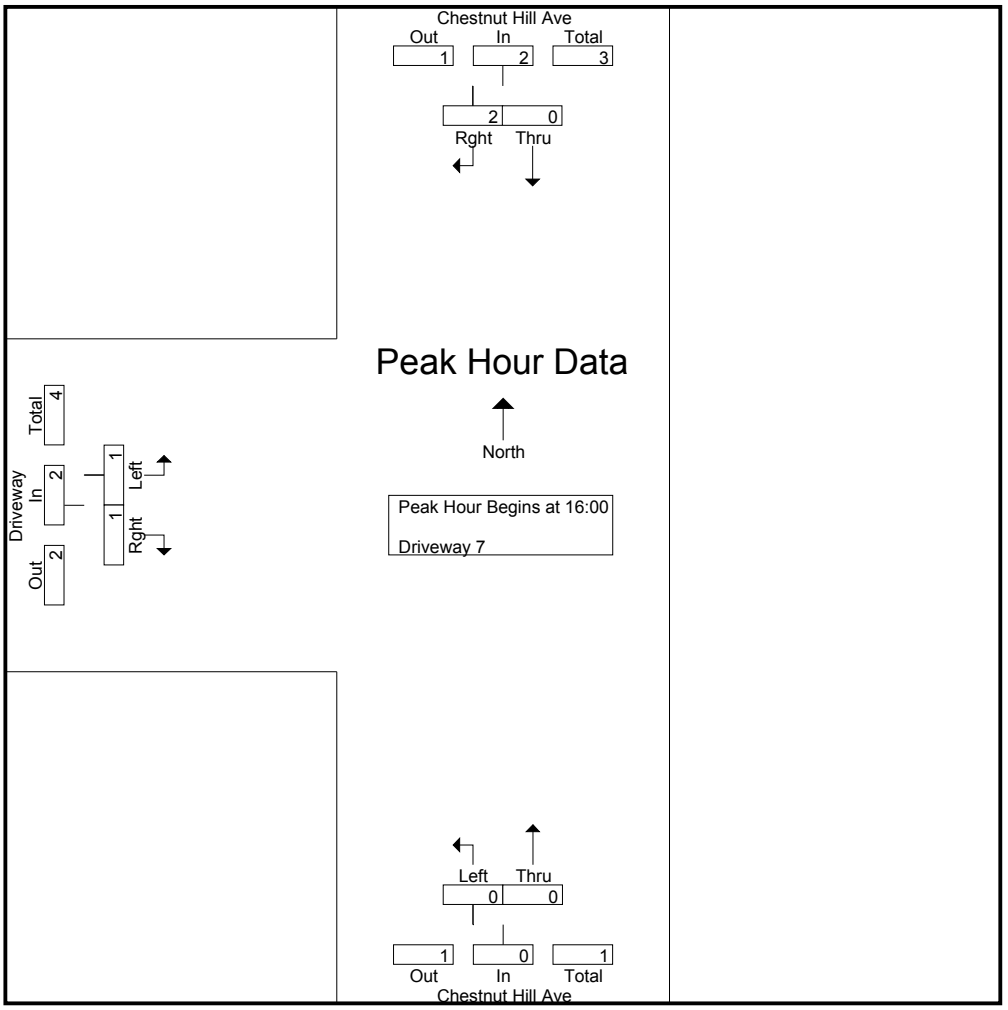
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	2	0	0	0	1	3
16:15	0	0	0	0	0	0	0
16:30	0	0	0	0	1	0	1
16:45	0	0	0	0	0	0	0
Total	0	2	0	0	1	1	4
17:00	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0
17:30	0	0	1	0	0	0	1
17:45	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	1
Grand Total	0	2	1	0	1	1	5
Apprch %	0	100	100	0	50	50	
Total %	0	40	20	0	20	20	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:00										
16:00	0	**2**	**2**	0	0	0	0	**1**	**1**	**3**
16:15	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	**1**	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	2	0	0	0	1	1	2	4
% App. Total	0	100		0	0		50	50		
PHF	.000	.250	.250	.000	.000	.000	.250	.250	.500	.333

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

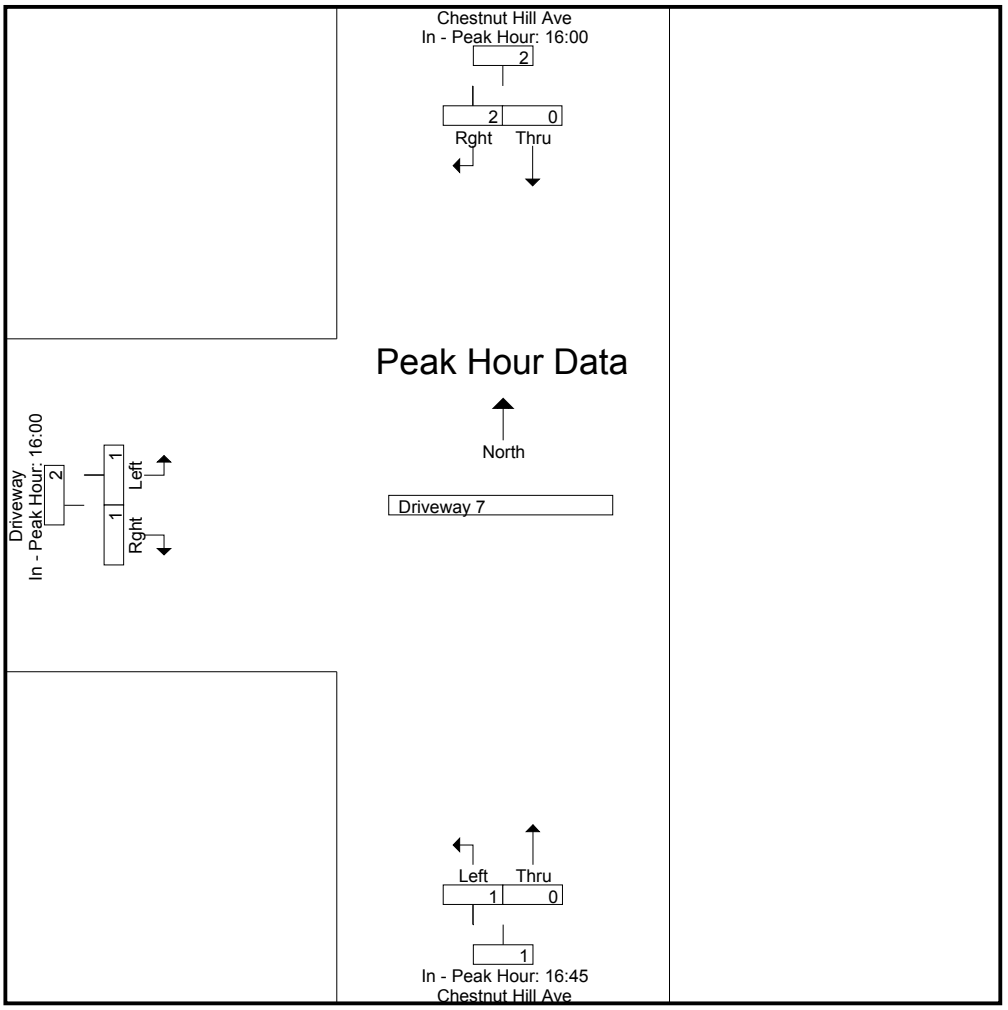
Peak Hour for Each Approach Begins at:

	16:00			16:45			16:00		
+0 mins.	0	**2**	**2**	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	**1**	0	1
+45 mins.	0	0	0	**1**	0	**1**	0	0	0
Total Volume	0	2	2	1	0	1	1	1	2
% App. Total	0	100		100	0		50	50	
PHF	.000	.250	.250	.250	.000	.250	.250	.250	.500

Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 1

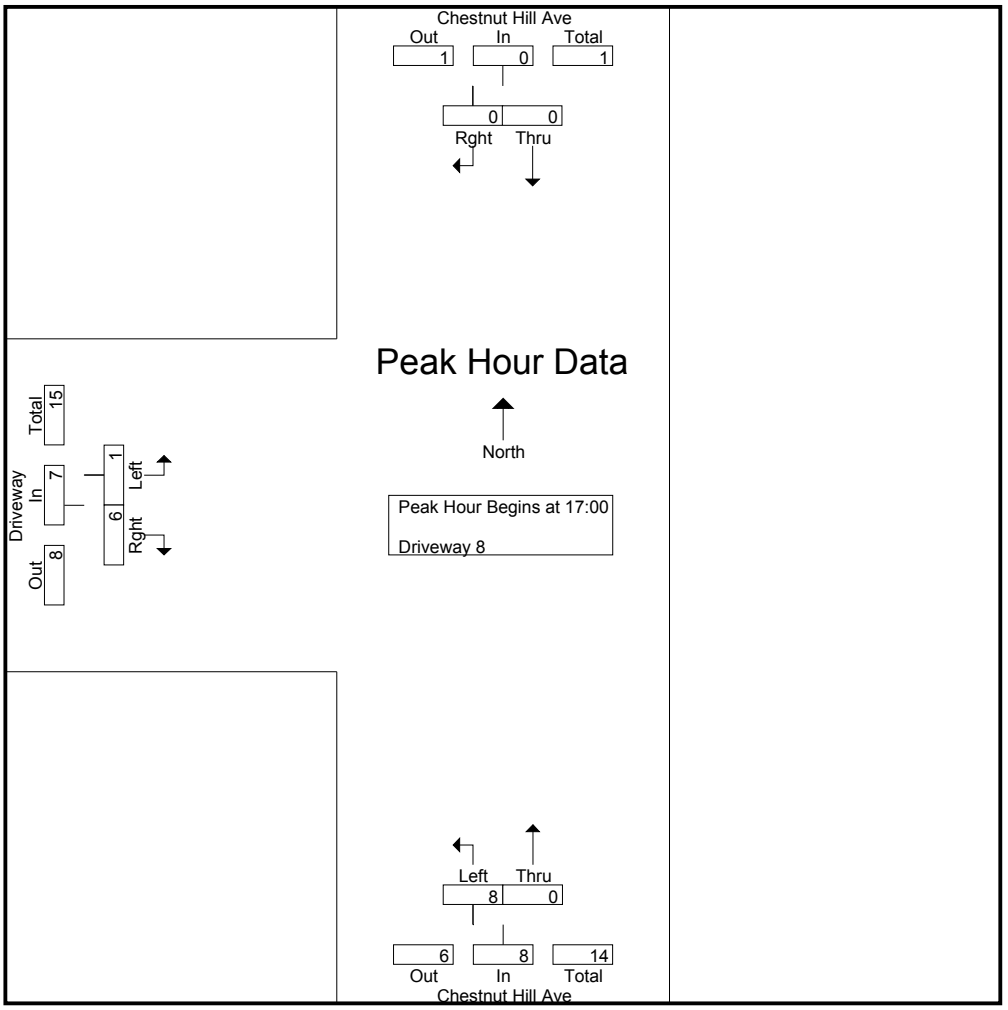
Groups Printed- Driveway 8

	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	1	0	0	0	1	2
16:15	0	0	3	0	0	0	3
16:30	0	0	2	0	1	1	4
16:45	0	0	0	0	1	1	2
Total	0	1	5	0	2	3	11
17:00	0	0	0	0	0	2	2
17:15	0	0	1	0	0	2	3
17:30	0	0	3	0	0	0	3
17:45	0	0	4	0	1	2	7
Total	0	0	8	0	1	6	15
Grand Total	0	1	13	0	3	9	26
Apprch %	0	100	100	0	25	75	
Total %	0	3.8	50	0	11.5	34.6	

	Chestnut Hill Ave From North			Chestnut Hill Ave From South			Driveway From West			
Start Time	Thru	Rght	App. Total	Left	Thru	App. Total	Left	Rght	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 17:00										
17:00	0	0	0	0	0	0	0	**2**	2	2
17:15	0	0	0	1	0	1	0	2	2	3
17:30	0	0	0	3	0	3	0	0	0	3
17:45	0	0	0	**4**	0	**4**	**1**	2	**3**	**7**
Total Volume	0	0	0	8	0	8	1	6	7	15
% App. Total	0	0		100	0		14.3	85.7		
PHF	.000	.000	.000	.500	.000	.500	.250	.750	.583	.536

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 2



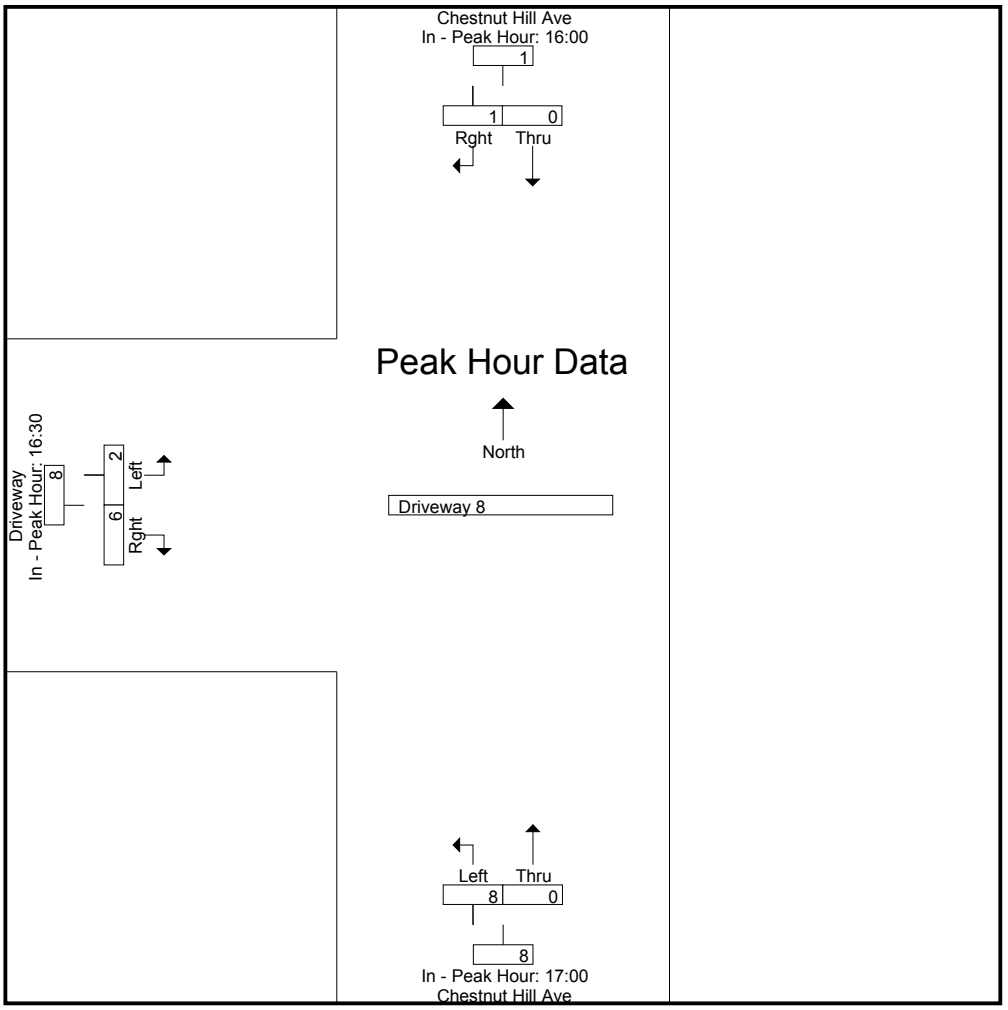
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	16:00			17:00			16:30		
+0 mins.	0	**1**	**1**	0	0	0	**1**	1	**2**
+15 mins.	0	0	0	1	0	1	1	1	2
+30 mins.	0	0	0	3	0	3	0	**2**	2
+45 mins.	0	0	0	**4**	0	**4**	0	2	2
Total Volume	0	1	1	8	0	8	2	6	8
% App. Total	0	100		100	0		25	75	
PHF	.000	.250	.250	.500	.000	.500	.500	.750	1.000

N/S Street : Chestnut Hill Avenue
E/W Street: Driveways #7 & #8
City/State : Boston, MA
Weather : Clear

File Name : 01900008
Site Code : 20101908
Start Date : 12/9/2010
Page No : 3



Eastbound - travel toward Chestnut Hill Ave.

Westbound - travel toward rear-exit driveway to Beacon St.

Accurate Counts
978-664-2565

Location : Circle Cinema Egress
Location : Driveway
City/State: Boston, MA
Counter : 2567

31770001
Site Code: 31770001

Start Time	13-Oct-03 EB	13-Oct-03 WB	Tue EB	Tue WB	Wed EB	Wed WB	Thu EB	Thu WB	Fri EB	Fri WB	Sat EB	Sat WB	Sun EB	Sun WB	Week Average EB	Week Average WB
12:00 AM	*	*	*	*	*	*	0	3	0	8	14	47	*	*	5	19
01:00	*	*	*	*	*	*	0	0	2	0	2	9	*	*	1	3
02:00	*	*	*	*	*	*	0	0	0	2	0	0	*	*	0	1
03:00	*	*	*	*	*	*	0	1	0	3	0	1	*	*	0	2
04:00	*	*	*	*	*	*	0	0	2	5	0	0	*	*	1	2
05:00	*	*	*	*	*	*	0	0	0	0	0	0	*	*	0	0
06:00	*	*	*	*	*	*	0	1	0	0	0	2	*	*	0	1
07:00	*	*	*	*	*	*	1	5	1	4	1	2	*	*	1	4
08:00	*	*	*	*	*	*	5	5	1	3	3	5	*	*	3	4
09:00	*	*	*	*	*	*	1	5	2	4	0	1	*	*	1	3
10:00	*	*	*	*	*	*	3	6	1	2	1	8	*	*	2	5
11:00	*	*	*	*	*	*	2	4	2	7	1	9	*	*	2	7
12:00 PM	*	*	*	*	*	*	4	5	2	2	4	2	*	*	3	3
01:00	*	*	*	*	*	*	3	4	1	5	2	7	*	*	2	5
02:00	*	*	*	*	*	*	1	3	3	7	3	9	*	*	2	6
03:00	*	*	*	*	*	*	4	16	2	9	3	31	*	*	3	19
04:00	*	*	*	*	*	*	1	7	2	6	5	16	*	*	3	10
05:00	*	*	*	*	*	*	9	9	9	7	1	6	*	*	6	7
06:00	*	*	*	*	*	*	20	15	3	23	9	52	*	*	11	30
07:00	*	*	*	*	*	*	5	11	2	25	5	25	*	*	4	20
08:00	*	*	*	*	*	*	9	11	2	19	5	29	*	*	5	20
09:00	*	*	*	*	*	*	0	5	14	38	7	50	*	*	7	31
10:00	*	*	*	*	*	*	2	5	8	11	4	23	*	*	5	13
11:00	*	*	*	*	*	*	0	1	2	15	0	21	*	*	1	12
Lane	0	0	0	0	0	0	70	122	61	205	70	355	0	0	68	227
Day	0		0		0		192		266		425		0		295	
AM Peak							08:00	10:00	01:00	00:00	00:00	00:00			00:00	00:00
Volume							5	6	2	8	14	47			5	19
PM Peak							18:00	15:00	21:00	21:00	18:00	18:00			18:00	21:00
Volume							20	16	14	38	9	52			11	31

Comb. Total	0	0	0	192	266	425	0	295

ADT Not Calculated

Crash Data

MassHighway Crash History

Scenario	Boylston/ Chestnut Hill	Dean/ Chestnut Hill	Clinton/ Chestnut Hill	Beacon/ Chestnut Hill	Commonwealth/ Chestnut Hill	Beacon/ Englewood	Beacon/ Washington
Year							
2008	9	3		19	9		9
2009	4	5	2	4	2	1	9
2010	1			5	5		1
Total	14	8	2	28	16	1	19
Manner of Collision							
Single Vehicle	2	1		1		1	3
Angle	3	3		10	3		3
Rear-end	8	1	2	5	6		2
Head-on		2		1	1		
Sideswipe	1			7	4		8
Unknown/Other		1		4	2		3
Total	**14**	**8**	**2**	**28**	**16**	**1**	**19**
Crash Severity							
Property Damage Only	6	3		15	8		11
Personal injury (non-fatal injury)	7	4	1	9	5		6
Fatality							
Hit and run							
Unknown	1	1	1	4	3	1	2
Total	**14**	**8**	**2**	**28**	**16**	**1**	**19**
Light Conditions							
Day	8	4	2	20	8		12
Dusk/dawn	2	1		2	1		
Dark (road lit)	4	3		4	7	1	6
Dark (road unlit)							
Unknown				2			1
Total	**14**	**8**	**2**	**28**	**16**	**1**	**19**
Road Conditions							
Dry	12	4	2	21	15	1	16
Wet	1	2		5	1		2
Snow		1		1			1
Ice		1					
Unknown/Other	1			1			
Total	**14**	**8**	**2**	**28**	**16**	**1**	**19**
Hour of Day							
6:00-9:00 a.m.	2			3	2		4
9:00 a.m.-3:00 p.m.	6	4	2	12	5		5
3:00-6:00 p.m.		3		5	1		4
6:00 p.m.-6:00 a.m.	6	1		8	8	1	6
Total	**14**	**8**	**2**	**28**	**16**	**1**	**19**
Day of Week							
Monday	2	3		3	2		4
Tuesday	3	1		6	2		3
Wednesday	2		1	6	2		5
Thursday	3	2	1	3	4		1
Friday				4	1		3
Saturday	4	2		4	3	1	3
Sunday				2	2		
Total	14	8	2	28	16	1	19
Most Harmful Event							
Collision with Cyclist							
Collision with Pedestrian	2	1			1		1

Note: No reported crashes at Beacon Street/Waterworks Driveways or section of Chestnut Hill Avenue abutting the Project site.

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston COUNT DATE : Jan-11

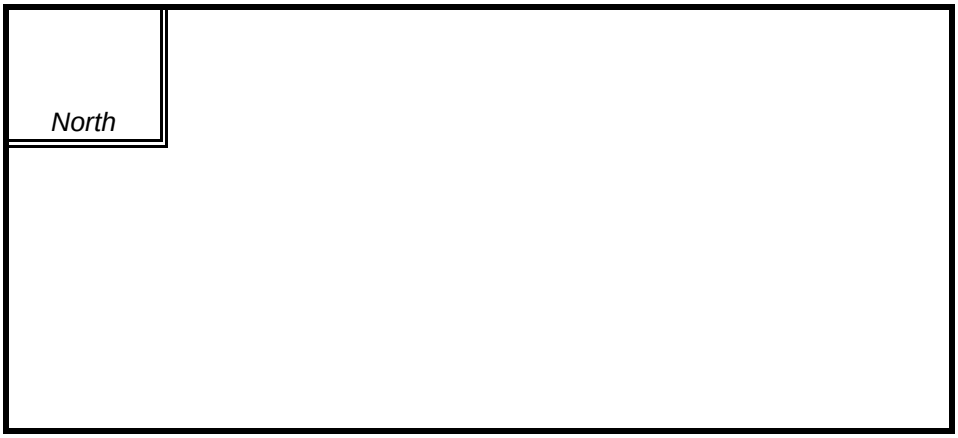
DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Commonwealth Avenue

MINOR STREET(S) : Chestnut Hill Avenue

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (AM/**PM**) :	681	608	804	504		**2,597**

" K " FACTOR : **0.090** APPROACH ADT : **28,856** **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 16 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : **5.33**

CRASH RATE CALCULATION : **0.51** RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Cleveland Circle Cinema

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Boston COUNT DATE : Dec-10

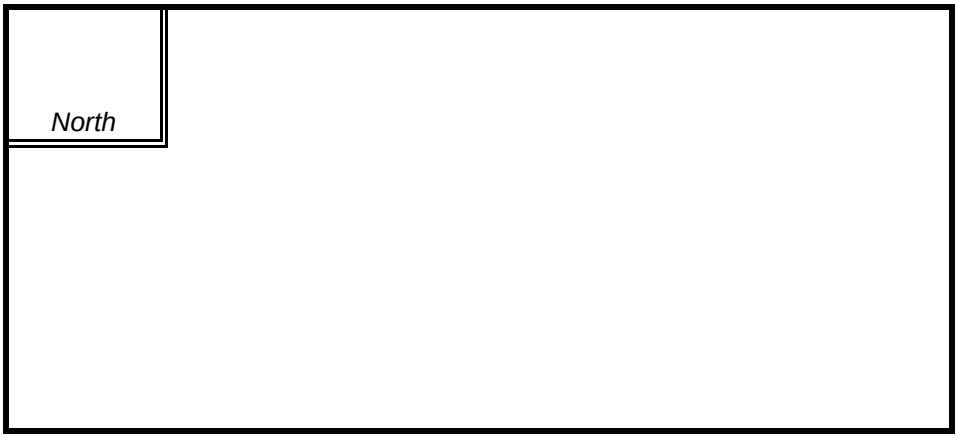
DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Beacon Street

MINOR STREET(S) : Chestnut Hill Avenue

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (**AM**/PM) :	730	875	713	775		**3,093**

" K " FACTOR : **0.090** APPROACH ADT : **34,367** **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 28 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : **9.33**

CRASH RATE CALCULATION : **0.74** RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Cleveland Circle Cinema

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Brookline COUNT DATE : Jan-11

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Chestnut Hill Avenue

MINOR STREET(S) : Dean Road

INTERSECTION DIAGRAM (Label Approaches)

North

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (**AM**/PM) :	156	188	674	577		**1,595**

" K " FACTOR : **0.090** APPROACH ADT : **17,722** **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 8 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : **2.67**

CRASH RATE CALCULATION : **0.41** RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Cleveland Circle Cinema

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Brookline COUNT DATE : Jan-11

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Boylston Street

MINOR STREET(S) : Chestnut Hill Avenue

INTERSECTION DIAGRAM (Label Approaches)

North

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (**AM**/PM) :	1,371	1,902		749		**4,022**

" K " FACTOR : **0.090** APPROACH ADT : **44,689** **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 14 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : **4.67**

CRASH RATE CALCULATION : **0.29** RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Cleveland Circle Cinema

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Brookline COUNT DATE : Jan-11

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Beacon Street

MINOR STREET(S) : Englewood Avenue

INTERSECTION DIAGRAM (Label Approaches)

North

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (**AM**/PM) :	883	777		78		**1,738**

" K " FACTOR : **0.090** APPROACH ADT : **19,311** **ADT** = TOTAL VOL/"K" FACT.

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

CRASH RATE CALCULATION : **0.05** RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Cleveland Circle Cinema

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Brookline COUNT DATE : Feb-11

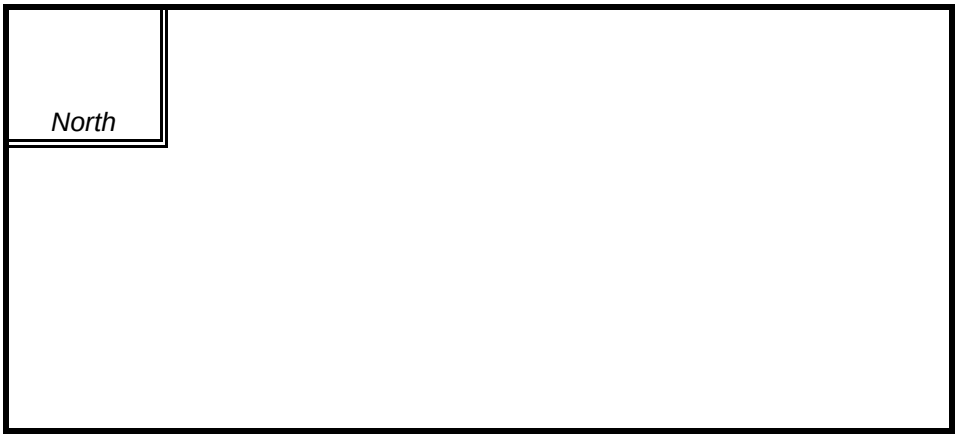
DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : x

~ INTERSECTION DATA ~

MAJOR STREET : Beacon Street

MINOR STREET(S) : Washington Street

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (**AM**/PM) :	1,150	531	376	443		**2,500**

" K " FACTOR : **0.090** APPROACH ADT : **27,778** **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 19 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : **6.33**

CRASH RATE CALCULATION : **0.62** RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Cleveland Circle Cinema

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Brookline COUNT DATE : Jan-11

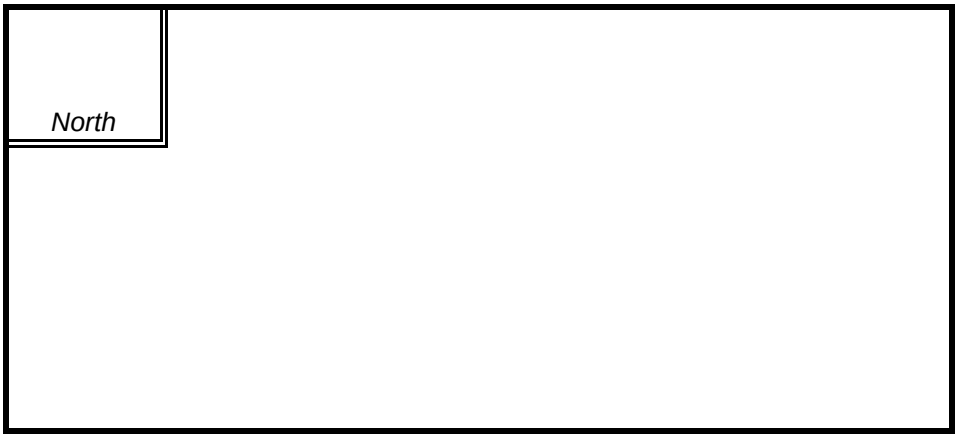
DISTRICT : 4 UNSIGNALIZED : x SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Chestnut Hill Avenue

MINOR STREET(S) : Clinton Road

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	EB	WB	NB	SB		
VOLUMES (**AM**/PM) :	47	67	582	715		**1,411**

" K " FACTOR : **0.090** APPROACH ADT : **15,678** **ADT** = TOTAL VOL/"K" FACT.

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

CRASH RATE CALCULATION : **0.12** RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Cleveland Circle Cinema

Synchro Reports

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.943				0.983			0.970			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1752	3269	0	0	1771	3348	0	1752	1775	0	0	3454
Flt Permitted	0.308				0.182			0.287				0.517
Satd. Flow (perm)	568	3269	0	0	339	3348	0	529	1775	0	0	1795
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		93				10			13			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	139	405	230	4	169	300	33	143	569	157	26	408
Peak Hour Factor	0.87	0.92	0.86	0.50	0.93	0.85	0.73	0.71	0.85	0.93	0.52	0.88
Heavy Vehicles (%)	3%	3%	6%	0%	2%	6%	6%	3%	3%	7%	4%	4%
Adj. Flow (vph)	160	440	267	8	182	353	45	201	669	169	50	464
Lane Group Flow (vph)	160	707	0	0	190	398	0	201	838	0	0	514
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	15.0	26.0	0.0	15.0	15.0	26.0	0.0	19.0	54.0	0.0	35.0	35.0
Total Split (%)	12.5%	21.7%	0.0%	12.5%	12.5%	21.7%	0.0%	15.8%	45.0%	0.0%	29.2%	29.2%
Maximum Green (s)	9.0	21.0		9.0	9.0	21.0		12.0			28.0	28.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	58.0	47.0			58.0	47.0		46.0	50.0			31.0
Actuated g/C Ratio	0.48	0.39			0.48	0.39		0.38	0.42			0.26
v/c Ratio	0.42	0.53			0.64	0.30		0.56	1.12			1.11
Control Delay	19.1	25.7			26.6	25.3		52.2	109.0			116.2
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0

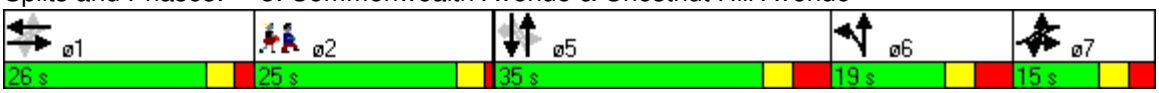


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1615	
Flt Permitted		
Satd. Flow (perm)	1615	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	9	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	20	
Peak Hour Factor	0.95	
Heavy Vehicles (%)	0%	
Adj. Flow (vph)	21	
Lane Group Flow (vph)	21	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	35.0	25.0
Total Split (%)	29.2%	21%
Maximum Green (s)	28.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	31.0	
Actuated g/C Ratio	0.26	
v/c Ratio	0.05	
Control Delay	23.8	
Queue Delay	0.0	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	19.1	25.7			26.6	25.3		52.2	109.0			116.2
LOS	B	C			C	C		D	F			F
Approach Delay		24.5				25.7			98.0			112.5
Approach LOS		C				C			F			F
90th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	74	413			94	216		148	636			366
Fuel Used(gal)	3	13			3	6		4	26			15
CO Emissions (g/hr)	176	889			197	386		248	1804			1063
NOx Emissions (g/hr)	34	173			38	75		48	351			207
VOC Emissions (g/hr)	41	206			46	89		58	418			246
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	64	189			77	107		144	~765			~239
Queue Length 95th (ft)	100	248			122	137		m136	m#682			#339
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	383	1337			295	1317		356	747			464
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.42	0.53			0.64	0.30		0.56	1.12			1.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 65.5		Intersection LOS: E	
Intersection Capacity Utilization 93.0%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

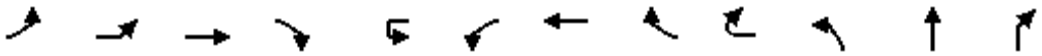
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





Lane Group	SBR	ø2
Total Delay	23.8	
LOS	C	
Approach Delay		
Approach LOS		
90th %ile Green (s)	28.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	28.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	28.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	28.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	28.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	11	
Fuel Used(gal)	0	
CO Emissions (g/hr)	20	
NOx Emissions (g/hr)	4	
VOC Emissions (g/hr)	5	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	7	
Queue Length 95th (ft)	28	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	424	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.05	

Intersection Summary



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		25		200		150		150		0		0
Storage Lanes		1		1		1		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0		0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.91	0.91	0.91	0.95	0.95	0.91	0.91	1.00	0.95	0.95	0.95	0.95
Frt			0.989					0.850			0.995	
Flt Protected	0.950		0.999			0.950	0.989				0.996	
Satd. Flow (prot)	1557	0	3203	0	0	1615	3491	1794	0	0	3228	0
Flt Permitted	0.174		0.843			0.129	0.524				0.698	
Satd. Flow (perm)	285	0	2703	0	0	219	1850	1794	0	0	2262	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.04	1.09	1.00	1.00	0.96	0.85	1.00	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				1583				159	
Travel Time (s)			30.4				36.0				3.6	
Volume (vph)	94	17	576	41	16	259	469	168	21	36	530	17
Peak Hour Factor	0.81	0.81	0.88	0.81	0.67	0.93	0.88	0.87	0.87	0.67	0.87	0.76
Heavy Vehicles (%)	2%	2%	3%	5%	0%	2%	1%	2%	2%	11%	7%	1%
Adj. Flow (vph)	116	21	655	51	24	278	533	193	24	54	609	22
Lane Group Flow (vph)	116	0	727	0	0	151	684	217	0	0	685	0
Turn Type	Perm	Perm			custom	D.P+P		Prot		Perm		
Protected Phases			1			8	1 8	1 8			4 9	
Permitted Phases	1	1			8	1				4 9		
Detector Phases	1	1	1		8	8	1 8	1 8		4 9	4 9	
Minimum Initial (s)	21.0	21.0	21.0		6.0	6.0						
Minimum Split (s)	25.0	25.0	25.0		10.0	10.0						
Total Split (s)	35.0	35.0	35.0	0.0	14.0	14.0	49.0	49.0	0.0	37.0	37.0	0.0
Total Split (%)	29.2%	29.2%	29.2%	0.0%	11.7%	11.7%	40.8%	40.8%	0.0%	30.8%	30.8%	0.0%
Maximum Green (s)	31.0	31.0	31.0		10.0	10.0						
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0						
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0						
Lead/Lag					Lag	Lag						
Lead-Lag Optimize?					Yes	Yes						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0						
Recall Mode	C-Max	C-Max	C-Max		None	None						
Walk Time (s)	7.0	7.0	7.0									
Flash Dont Walk (s)	11.0	11.0	11.0									
Pedestrian Calls (#/hr)	0	0	0									
Act Effct Green (s)	31.0		31.0			41.0	41.0	45.0			33.0	
Actuated g/C Ratio	0.26		0.26			0.34	0.34	0.38			0.28	
v/c Ratio	1.57		1.04			0.79	0.89	0.32			1.10	
Control Delay	342.9		88.8			55.9	48.1	28.4			77.5	



Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	10							
Grade (%)				-3%								
Storage Length (ft)			0		0							
Storage Lanes			0		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	15	15		9							
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95							
Frt	0.850			0.984								
Flt Protected				0.988								
Satd. Flow (prot)	1599	0	0	3378	0							
Flt Permitted				0.531								
Satd. Flow (perm)	1599	0	0	1816	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	170											
Headway Factor	1.00	0.98	1.07	0.98	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	141	3	195	529	80							
Peak Hour Factor	0.76	0.75	0.89	0.90	0.83							
Heavy Vehicles (%)	1%	0%	2%	7%	4%							
Adj. Flow (vph)	186	4	219	588	96							
Lane Group Flow (vph)	186	0	0	907	0							
Turn Type	Free	custom	D.P+P									
Protected Phases			3	3 4 9		2	4	5	6	7	9	10
Permitted Phases	Free	3	4 9									
Detector Phases		3	3	3 4 9								
Minimum Initial (s)		7.0	7.0			16.0	13.0	6.0	4.0	4.0	5.0	7.0
Minimum Split (s)		11.0	11.0			23.0	18.0	10.0	23.0	20.0	9.0	11.0
Total Split (s)	0.0	11.0	11.0	48.0	0.0	23.0	28.0	12.0	23.0	23.0	9.0	62.0
Total Split (%)	0.0%	9.2%	9.2%	40.0%	0.0%	19%	23%	10%	19%	19%	8%	52%
Maximum Green (s)		7.0	7.0			16.0	23.0	8.0	19.0	19.0	5.0	58.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			4.0	2.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead	Lead				Lag	Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes				Yes	Yes	Yes		Yes	
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode		Max	Max			Ped	Max	C-Max	None	None	Max	Max
Walk Time (s)						7.0			7.0			
Flash Dont Walk (s)						9.0			11.0			
Pedestrian Calls (#/hr)						0			0			
Act Effct Green (s)	120.0			40.0								
Actuated g/C Ratio	1.00			0.33								
v/c Ratio	0.12			1.30								
Control Delay	0.1			173.0								

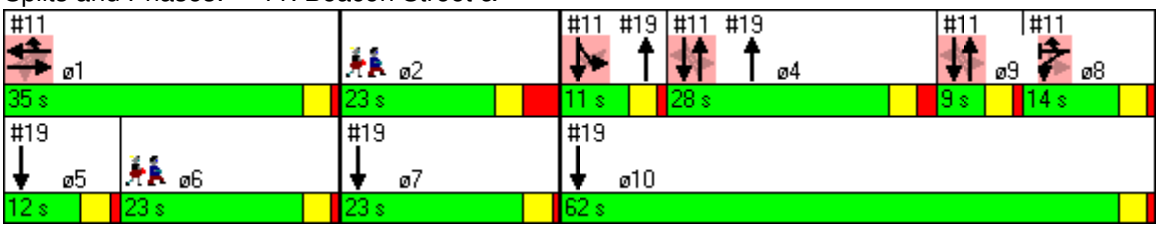
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			88.9	
Total Delay	342.9		88.8			55.9	48.1	28.4			166.4	
LOS	F		F			E	D	C			F	
Approach Delay			123.8				45.2				130.9	
Approach LOS			F				D				F	
90th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
90th %ile Term Code	Coord	Coord	Coord		Max	Max						
70th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
70th %ile Term Code	Coord	Coord	Coord		Max	Max						
50th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
50th %ile Term Code	Coord	Coord	Coord		Max	Max						
30th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
30th %ile Term Code	Coord	Coord	Coord		Max	Max						
10th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
10th %ile Term Code	Coord	Coord	Coord		Max	Max						
Stops (vph)	63		556			87	535	132			505	
Fuel Used(gal)	8		21			4	16	4			13	
CO Emissions (g/hr)	552		1480			256	1149	290			888	
NOx Emissions (g/hr)	107		288			50	224	56			173	
VOC Emissions (g/hr)	128		343			59	266	67			206	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~140		~334			87	224	118			~326	
Queue Length 95th (ft)	#241		#447			#197	#300	176			#428	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	74		698			191	769	673			622	
Starvation Cap Reductn	0		0			0	0	0			98	
Spillback Cap Reductn	0		0			0	0	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.57		1.04			0.79	0.89	0.32			1.31	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 1:EBWB and 5:, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.57
Intersection Signal Delay: 115.1 Intersection LOS: F
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15

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

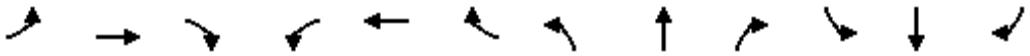
Splits and Phases: 11: Beacon Street &





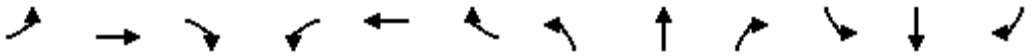
Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.1			173.0								
LOS	A			F								
Approach Delay				173.0								
Approach LOS				F								
90th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
70th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
70th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
50th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
50th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
30th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
30th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
10th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
10th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
Stops (vph)	0			781								
Fuel Used(gal)	0			40								
CO Emissions (g/hr)	12			2768								
NOx Emissions (g/hr)	2			539								
VOC Emissions (g/hr)	3			641								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			~488								
Queue Length 95th (ft)	m0			m#515								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1599			696								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.12			1.30								

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00				0.98			
Frt		0.989			0.993				0.850		0.998	
Flt Protected		0.992			0.973			0.999			0.999	
Satd. Flow (prot)	0	1864	0	0	1827	0	0	1840	1599	0	1820	0
Flt Permitted		0.932			0.571			0.984			0.831	
Satd. Flow (perm)	0	1751	0	0	1072	0	0	1812	1564	0	1514	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		5							127		1	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	26	123	13	115	70	8	8	604	113	14	743	7
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.67	0.63	0.65	0.88	0.77	0.67	0.67	0.92	0.89	0.55	0.93	0.63
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	13%	3%	1%	9%	4%	0%
Adj. Flow (vph)	39	195	20	131	91	12	12	657	127	25	799	11
Lane Group Flow (vph)	0	254	0	0	234	0	0	669	127	0	835	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	46.0	46.0	46.0	46.0	46.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	0.0%	51.1%	51.1%	51.1%	51.1%	51.1%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		25.1			25.1			42.2	42.2		42.2	
Actuated g/C Ratio		0.32			0.32			0.54	0.54		0.54	
v/c Ratio		0.45			0.68			0.68	0.14		1.02	
Control Delay		24.7			36.4			18.8	2.8		57.1	

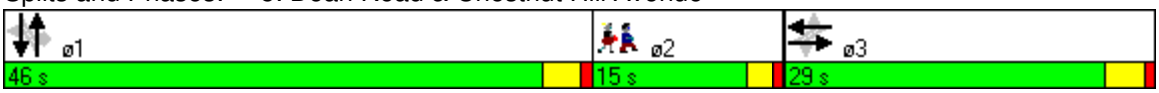
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		24.7			36.4			18.8	2.8		57.1	
LOS		C			D			B	A		E	
Approach Delay		24.7			36.4			16.3			57.1	
Approach LOS		C			D			B			E	
90th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		122			154			425	12		587	
Fuel Used(gal)		2			4			7	1		16	
CO Emissions (g/hr)		169			261			524	45		1123	
NOx Emissions (g/hr)		33			51			102	9		218	
VOC Emissions (g/hr)		39			60			121	10		260	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		89			92			199	0		349	
Queue Length 95th (ft)		125			#177			461	28		#807	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		568			345			981	905		820	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.45			0.68			0.68	0.14		1.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	10	12	13	12	12	12	13
Storage Length (ft)		280		0		160		0	0		0	0
Storage Lanes		1		0		1		1	0		0	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50				50
Trailing Detector (ft)	0	0	0		0	0	0	0				0
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt								0.850				
Flt Protected		0.950				0.950						0.950
Satd. Flow (prot)	0	1641	3472	0	0	1685	3505	1620	0	0	0	1776
Flt Permitted		0.950				0.950						0.950
Satd. Flow (perm)	0	1641	3472	0	0	1685	3505	1620	0	0	0	1776
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)								589				
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96
Link Speed (mph)			30				30			30		
Link Distance (ft)			1399				494			1410		
Travel Time (s)			31.8				11.2			32.0		
Volume (vph)	10	187	1213	1	11	73	1292	583	0	0	0	441
Peak Hour Factor	0.50	0.91	0.94	0.25	0.69	0.68	0.96	0.99	0.92	0.92	0.92	0.93
Heavy Vehicles (%)	10%	6%	4%	0%	0%	0%	3%	3%	2%	2%	2%	5%
Adj. Flow (vph)	20	205	1290	4	16	107	1346	589	0	0	0	474
Lane Group Flow (vph)	0	225	1294	0	0	123	1346	589	0	0	0	474
Turn Type	Prot	Prot			Prot	Prot		custom				Split
Protected Phases	4	4	1 4 5		2	2	1 2 5	1 2 3				3
Permitted Phases												
Detector Phases	4	4	1 4		2	2	1 2	1 2 3				3
Minimum Initial (s)	6.0	6.0			5.0	5.0						6.0
Minimum Split (s)	21.0	21.0			15.0	15.0						29.0
Total Split (s)	30.0	30.0	85.0	0.0	15.0	15.0	70.0	90.0	0.0	0.0	0.0	40.0
Total Split (%)	21.4%	21.4%	60.7%	0.0%	10.7%	10.7%	50.0%	64.3%	0.0%	0.0%	0.0%	28.6%
Maximum Green (s)	25.0	25.0			10.0	10.0						35.0
Yellow Time (s)	4.0	4.0			4.0	4.0						4.0
All-Red Time (s)	1.0	1.0			1.0	1.0						1.0
Lead/Lag	Lag	Lag			Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes			Yes	Yes						Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Recall Mode	None	None			Max	Max						None
Walk Time (s)												13.0
Flash Dont Walk (s)												5.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		26.0	81.0			11.0	66.0	102.2				36.0
Actuated g/C Ratio		0.19	0.58			0.08	0.47	0.73				0.26
v/c Ratio		0.74	0.64			0.93	0.81	0.44				1.04
Control Delay		69.2	21.7			111.7	38.4	2.9				102.1
Queue Delay		0.0	0.5			0.0	13.7	0.6				0.0

Lane Group	SBT	SBR	ø1	ø5
Lane Configurations				
Ideal Flow (vphpl)	1900	1900		
Lane Width (ft)	11	16		
Storage Length (ft)		0		
Storage Lanes		1		
Total Lost Time (s)	4.0	4.0		
Leading Detector (ft)	50	50		
Trailing Detector (ft)	0	0		
Turning Speed (mph)		9		
Lane Util. Factor	1.00	1.00		
Frt		0.850		
Flt Protected				
Satd. Flow (prot)	1701	1812		
Flt Permitted				
Satd. Flow (perm)	1701	1812		
Right Turn on Red		Yes		
Satd. Flow (RTOR)		306		
Headway Factor	1.04	0.85		
Link Speed (mph)	30			
Link Distance (ft)	187			
Travel Time (s)	4.3			
Volume (vph)	39	291		
Peak Hour Factor	0.63	0.87		
Heavy Vehicles (%)	8%	1%		
Adj. Flow (vph)	62	334		
Lane Group Flow (vph)	62	334		
Turn Type		Prot		
Protected Phases	3	3	1	5
Permitted Phases				
Detector Phases	3	3		
Minimum Initial (s)	6.0	6.0	5.0	4.0
Minimum Split (s)	29.0	29.0	21.0	19.0
Total Split (s)	40.0	40.0	35.0	20.0
Total Split (%)	28.6%	28.6%	25%	14%
Maximum Green (s)	35.0	35.0	30.0	17.0
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None
Walk Time (s)	13.0	13.0		6.0
Flash Dont Walk (s)	5.0	5.0		10.0
Pedestrian Calls (#/hr)	0	0		10
Act Effct Green (s)	36.0	36.0		
Actuated g/C Ratio	0.26	0.26		
v/c Ratio	0.14	0.48		
Control Delay	41.3	8.7		
Queue Delay	0.0	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Total Delay		69.2	22.2			111.7	52.1	3.5				102.1
LOS		E	C			F	D	A				F
Approach Delay			29.2				41.7					
Approach LOS			C				D					
90th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
90th %ile Term Code	Max	Max			MaxR	MaxR						Max
70th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
70th %ile Term Code	Max	Max			MaxR	MaxR						Max
50th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
50th %ile Term Code	Max	Max			MaxR	MaxR						Max
30th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
30th %ile Term Code	Max	Max			MaxR	MaxR						Max
10th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
10th %ile Term Code	Max	Max			MaxR	MaxR						Max
Stops (vph)		180	787			72	1190	94				383
Fuel Used(gal)		6	23			3	22	3				12
CO Emissions (g/hr)		414	1605			184	1513	217				834
NOx Emissions (g/hr)		81	312			36	294	42				162
VOC Emissions (g/hr)		96	372			43	351	50				193
Dilemma Vehicles (#)		0	0			0	0	0				0
Queue Length 50th (ft)		196	400			116	618	13				~464
Queue Length 95th (ft)		#307	473			m#134	m663	m121				#683
Internal Link Dist (ft)			1319				414			1330		
Turn Bay Length (ft)		280				160						
Base Capacity (vph)		305	2009			132	1652	1342				457
Starvation Cap Reductn		0	0			0	315	392				0
Spillback Cap Reductn		0	303			0	0	0				0
Storage Cap Reductn		0	0			0	0	0				0
Reduced v/c Ratio		0.74	0.76			0.93	1.01	0.62				1.04

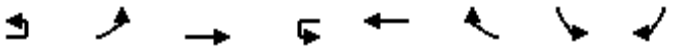
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 41.4		Intersection LOS: D	
Intersection Capacity Utilization 81.1%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue



Lane Group	SBT	SBR	ø1	ø5
Total Delay	41.3	8.7		
LOS	D	A		
Approach Delay	61.9			
Approach LOS	E			
90th %ile Green (s)	35.0	35.0	31.0	16.0
90th %ile Term Code	Max	Max	Coord	Ped
70th %ile Green (s)	35.0	35.0	50.0	0.0
70th %ile Term Code	Max	Max	Coord	Skip
50th %ile Green (s)	35.0	35.0	50.0	0.0
50th %ile Term Code	Max	Max	Coord	Skip
30th %ile Green (s)	35.0	35.0	50.0	0.0
30th %ile Term Code	Max	Max	Coord	Skip
10th %ile Green (s)	35.0	35.0	50.0	0.0
10th %ile Term Code	Max	Max	Coord	Skip
Stops (vph)	30	38		
Fuel Used(gal)	1	1		
CO Emissions (g/hr)	38	80		
NOx Emissions (g/hr)	7	16		
VOC Emissions (g/hr)	9	19		
Dilemma Vehicles (#)	0	0		
Queue Length 50th (ft)	44	19		
Queue Length 95th (ft)	58	87		
Internal Link Dist (ft)	107			
Turn Bay Length (ft)				
Base Capacity (vph)	437	693		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.14	0.48		

Intersection Summary



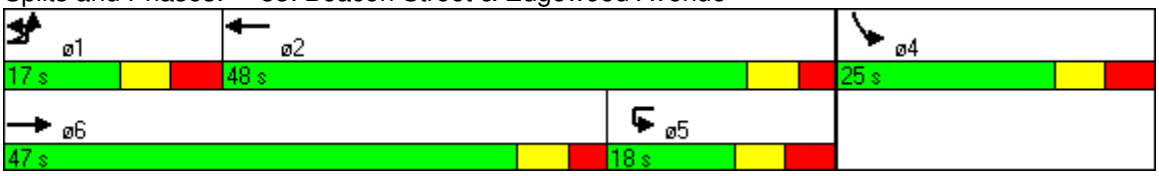
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.984		0.940	
Flt Protected		0.950		0.950			0.973	
Satd. Flow (prot)	0	1660	3336	1745	3341	0	1969	0
Flt Permitted		0.950		0.950			0.973	
Satd. Flow (perm)	0	1660	3336	1745	3341	0	1969	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					20		41	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			1583		2753		793	
Travel Time (s)			36.0		62.6		18.0	
Volume (vph)	32	25	853	21	695	84	44	36
Peak Hour Factor	0.65	0.86	0.95	0.83	0.91	0.93	0.77	0.80
Heavy Vehicles (%)	0%	4%	1%	0%	3%	1%	0%	0%
Adj. Flow (vph)	49	29	898	25	764	90	57	45
Lane Group Flow (vph)	0	78	898	25	854	0	102	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	17.0	17.0	47.0	18.0	48.0	0.0	25.0	0.0
Total Split (%)	18.9%	18.9%	52.2%	20.0%	53.3%	0.0%	27.8%	0.0%
Maximum Green (s)	9.0	9.0	40.0	10.0	41.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		12.9	63.9	13.8	59.2		12.7	
Actuated g/C Ratio		0.14	0.71	0.15	0.66		0.14	
v/c Ratio		0.33	0.38	0.09	0.39		0.33	
Control Delay		37.6	9.5	18.2	4.8		24.8	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

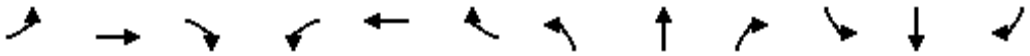


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.6	9.5	18.2	4.8		24.8	
LOS		D	A	B	A		C	
Approach Delay			11.8		5.2		24.8	
Approach LOS			B		A		C	
90th %ile Green (s)	12.7	12.7	43.1	13.1	43.5		10.8	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.2	10.2	40.4	18.0	48.2		8.6	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
50th %ile Green (s)	8.6	8.6	67.0	0.0	50.4		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.0	7.0	67.0	0.0	52.0		8.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		50	364	8	123		45	
Fuel Used(gal)		1	14	1	18		1	
CO Emissions (g/hr)		99	992	40	1269		80	
NOx Emissions (g/hr)		19	193	8	247		16	
VOC Emissions (g/hr)		23	230	9	294		19	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		41	62	10	40		32	
Queue Length 95th (ft)		75	223	m6	m73		60	
Internal Link Dist (ft)			1503		2673		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		258	2369	314	2205		491	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.30	0.38	0.08	0.39		0.21	

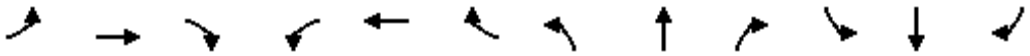
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 9.5		Intersection LOS: A	
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue





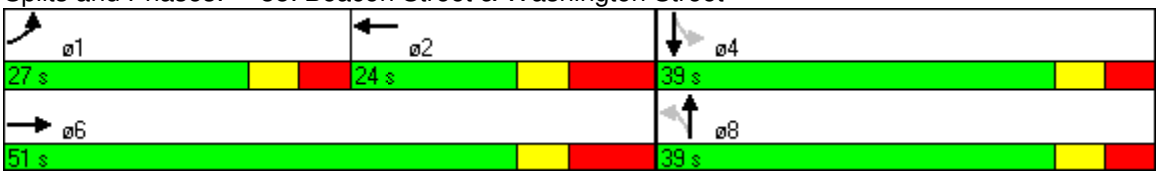
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.984			0.996			0.986	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1736	3410	0	0	3191	0	1560	1594	0	1668	1740	0
Flt Permitted	0.950						0.223			0.311		
Satd. Flow (perm)	1736	3410	0	0	3191	0	366	1594	0	546	1740	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2			7	
Headway Factor	1.00	1.04	1.00	1.00	1.12	1.00	1.09	1.19	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2753			775			812			1068	
Travel Time (s)		62.6			17.6			18.5			24.3	
Volume (vph)	117	937	85	0	475	50	26	340	7	83	312	44
Peak Hour Factor	0.77	0.89	0.86	0.92	0.71	0.61	0.81	0.80	0.58	0.78	0.66	0.92
Heavy Vehicles (%)	4%	1%	1%	2%	2%	4%	8%	3%	14%	1%	4%	5%
Parking (#/hr)			0		0			0				
Adj. Flow (vph)	152	1053	99	0	669	82	32	425	12	106	473	48
Lane Group Flow (vph)	152	1152	0	0	751	0	32	437	0	106	521	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	27.0	51.0	0.0	0.0	24.0	0.0	39.0	39.0	0.0	39.0	39.0	0.0
Total Split (%)	30.0%	56.7%	0.0%	0.0%	26.7%	0.0%	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%
Maximum Green (s)	19.0	40.0			13.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	16.2	49.6			29.4		32.4	32.4		32.4	32.4	
Actuated g/C Ratio	0.18	0.55			0.33		0.36	0.36		0.36	0.36	
v/c Ratio	0.49	0.61			0.72		0.24	0.76		0.54	0.83	
Control Delay	45.0	11.1			33.6		24.5	34.4		33.6	37.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	45.0	11.1			33.6		24.5	34.4		33.6	37.8	
LOS	D	B			C		C	C		C	D	
Approach Delay		15.0			33.6			33.8			37.1	
Approach LOS		B			C			C			D	
90th %ile Green (s)	16.8	40.0			15.2		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	13.1	40.0			18.9		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	12.6	40.0			19.4		31.0	31.0		31.0	31.0	
50th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Max	Max	
30th %ile Green (s)	10.5	43.6			25.1		27.4	27.4		27.4	27.4	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	7.9	49.5			33.6		21.5	21.5		21.5	21.5	
10th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
Stops (vph)	96	414			425		20	295		66	307	
Fuel Used(gal)	4	27			9		0	6		2	7	
CO Emissions (g/hr)	288	1854			637		28	438		113	518	
NOx Emissions (g/hr)	56	361			124		6	85		22	101	
VOC Emissions (g/hr)	67	430			148		7	101		26	120	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	74	171			206		12	204		45	249	
Queue Length 95th (ft)	105	124			216		32	264		81	235	
Internal Link Dist (ft)		2673			695			732			988	
Turn Bay Length (ft)	150											
Base Capacity (vph)	444	1880			1044		142	621		212	681	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.34	0.61			0.72		0.23	0.70		0.50	0.77	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 26.6		Intersection LOS: C	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

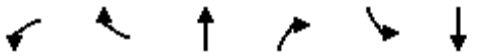
Splits and Phases: 38: Beacon Street & Washington Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	20	11	3	4	65	27	750	52	3	625	10
Peak Hour Factor	0.85	0.68	0.46	0.38	0.50	0.75	0.52	0.91	0.70	0.38	0.78	0.50
Hourly flow rate (vph)	22	29	24	8	8	87	52	824	74	8	801	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								653			660	
pX, platoon unblocked	0.70	0.70		0.70	0.70	0.70	0.70					
vC, conflicting volume	1883	1802	861	1831	1829	811	821			898		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2258	2143	861	2183	2181	731	745			898		
tC, single (s)	7.1	6.5	6.2	7.1	6.8	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.2	3.4	2.2			2.2		
p0 queue free %	0	6	93	0	68	70	92			99		
cM capacity (veh/h)	10	31	358	4	25	287	612			764		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	76	103	950	829
Volume Left	22	8	52	8
Volume Right	24	87	74	20
cSH	24	36	612	764
Volume to Capacity	3.20	2.87	0.08	0.01
Queue Length 95th (ft)	Err	291	7	1
Control Delay (s)	Err	1078.3	2.6	0.3
Lane LOS	F	F	A	A
Approach Delay (s)	Err	1078.3	2.6	0.3
Approach LOS	F	F		

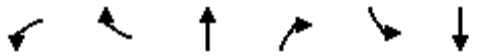
Intersection Summary			
Average Delay	444.4		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	3	653	6	6	598
Peak Hour Factor	0.38	0.38	0.97	0.38	0.75	0.90
Hourly flow rate (vph)	8	8	673	16	8	664
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1362	681			689	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1362	681			689	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			99	
cM capacity (veh/h)	163	454			915	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	689	672
Volume Left	8	0	8
Volume Right	8	16	0
cSH	240	1700	915
Volume to Capacity	0.07	0.41	0.01
Queue Length 95th (ft)	5	0	1
Control Delay (s)	21.0	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	21.0	0.0	0.2
Approach LOS	C		

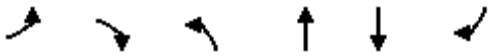
Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		46.3%	ICU Level of Service
Analysis Period (min)		15	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	8	16	656	0	0	596
Peak Hour Factor	0.50	0.50	0.92	0.38	0.92	0.92
Hourly flow rate (vph)	16	32	713	0	0	648
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1361	713			713	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1361	713			713	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	90	92			100	
cM capacity (veh/h)	165	425			887	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	713	648
Volume Left	16	0	0
Volume Right	32	0	0
cSH	279	1700	1700
Volume to Capacity	0.17	0.42	0.38
Queue Length 95th (ft)	15	0	0
Control Delay (s)	20.6	0.0	0.0
Lane LOS	C		
Approach Delay (s)	20.6	0.0	0.0
Approach LOS	C		

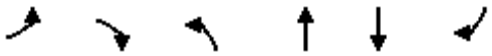
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	703	826	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1	1	764	898	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1238	75	
pX, platoon unblocked						
vC, conflicting volume	1284	451	902			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1284	451	902			
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	100	100			
cM capacity (veh/h)	156	556	749			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	256	509	599	304
Volume Left	3	1	0	0	0
Volume Right	1	0	0	0	4
cSH	191	749	1700	1700	1700
Volume to Capacity	0.02	0.00	0.30	0.35	0.18
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	24.3	0.1	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	24.3	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	8	6	703	821	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	9	7	764	892	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1169	144	
pX, platoon unblocked						
vC, conflicting volume	1291	449	899			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1291	449	899			
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	98	99			
cM capacity (veh/h)	154	557	751			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	10	261	509	595	304
Volume Left	1	7	0	0	0
Volume Right	9	0	0	0	7
cSH	431	751	1700	1700	1700
Volume to Capacity	0.02	0.01	0.30	0.35	0.18
Queue Length 95th (ft)	2	1	0	0	0
Control Delay (s)	13.5	0.3	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	13.5	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.946				0.990			0.949			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1787	3304	0	0	1788	3404	0	1770	1756	0	0	3497
Flt Permitted	0.311				0.162			0.281				0.517
Satd. Flow (perm)	585	3304	0	0	305	3404	0	523	1756	0	0	1817
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		83				6			25			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	110	366	207	7	172	410	21	176	412	190	29	434
Peak Hour Factor	0.79	0.90	0.91	0.58	0.83	0.96	0.71	0.81	0.83	0.74	0.58	0.92
Heavy Vehicles (%)	1%	3%	4%	0%	1%	5%	5%	2%	2%	4%	0%	3%
Adj. Flow (vph)	139	407	227	12	207	427	30	217	496	257	50	472
Lane Group Flow (vph)	139	634	0	0	219	457	0	217	753	0	0	522
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	13.0	32.0	0.0	13.0	13.0	32.0	0.0	15.0	50.0	0.0	35.0	35.0
Total Split (%)	10.8%	26.7%	0.0%	10.8%	10.8%	26.7%	0.0%	12.5%	41.7%	0.0%	29.2%	29.2%
Maximum Green (s)	7.0	27.0		7.0	7.0	27.0		8.0			28.0	28.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	62.0	53.0			62.0	53.0		42.0	46.0			31.0
Actuated g/C Ratio	0.52	0.44			0.52	0.44		0.35	0.38			0.26
v/c Ratio	0.35	0.42			0.81	0.30		0.73	1.09			1.11
Control Delay	16.0	20.7			39.9	22.0		53.7	97.1			117.6
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0

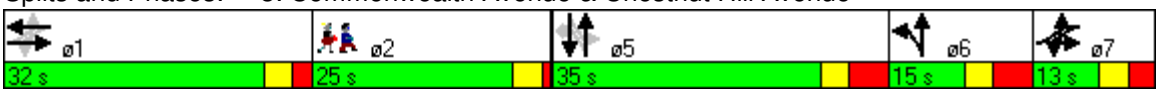


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1524	
Flt Permitted		
Satd. Flow (perm)	1524	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	14	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	16	
Peak Hour Factor	0.50	
Heavy Vehicles (%)	6%	
Adj. Flow (vph)	32	
Lane Group Flow (vph)	32	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	35.0	25.0
Total Split (%)	29.2%	21%
Maximum Green (s)	28.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	31.0	
Actuated g/C Ratio	0.26	
v/c Ratio	0.08	
Control Delay	23.0	
Queue Delay	0.0	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	16.0	20.7			39.9	22.0		53.7	97.1			117.6
LOS	B	C			D	C		D	F			F
Approach Delay		19.8				27.8			87.4			112.2
Approach LOS		B				C			F			F
90th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	53	330			88	264		143	500			390
Fuel Used(gal)	2	11			3	7		4	20			16
CO Emissions (g/hr)	132	746			234	473		294	1383			1144
NOx Emissions (g/hr)	26	145			45	92		57	269			223
VOC Emissions (g/hr)	31	173			54	110		68	321			265
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	50	150			83	115		117	~648			~243
Queue Length 95th (ft)	73	199			#137	155		160	#774			#356
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	392	1506			269	1507		297	689			469
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.35	0.42			0.81	0.30		0.73	1.09			1.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 60.9		Intersection LOS: E	
Intersection Capacity Utilization 86.1%		ICU Level of Service E	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

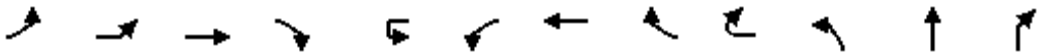
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





Lane Group	SBR	ø2
Total Delay	23.0	
LOS	C	
Approach Delay		
Approach LOS		
90th %ile Green (s)	28.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	28.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	28.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	28.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	28.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	9	
Fuel Used(gal)	0	
CO Emissions (g/hr)	16	
NOx Emissions (g/hr)	3	
VOC Emissions (g/hr)	4	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	11	
Queue Length 95th (ft)	16	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	404	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.08	

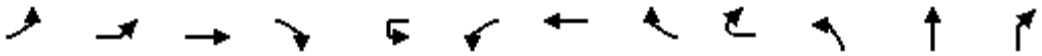
Intersection Summary



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		25		200		150		150		0		0
Storage Lanes		1		1		1		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0		0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.91	0.91	0.91	0.95	0.95	0.91	0.91	1.00	0.95	0.95	0.95	0.95
Frt			0.968					0.850			0.992	
Flt Protected	0.950		0.994			0.950	0.988				0.995	
Satd. Flow (prot)	1588	0	3216	0	0	1615	3522	1812	0	0	3331	0
Flt Permitted	0.143		0.543			0.156	0.529				0.771	
Satd. Flow (perm)	239	0	1757	0	0	265	1886	1812	0	0	2581	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.04	1.09	1.00	1.00	0.96	0.85	1.00	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				1583				159	
Travel Time (s)			30.4				36.0				3.6	
Volume (vph)	102	20	360	73	12	253	456	135	33	44	462	27
Peak Hour Factor	0.77	0.77	0.94	0.60	0.75	0.82	0.90	0.73	0.73	0.80	0.92	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	8%	1%	0%	1%	1%	0%	4%	0%
Adj. Flow (vph)	132	26	383	122	16	309	507	185	45	55	502	30
Lane Group Flow (vph)	88	0	575	0	0	163	669	230	0	0	587	0
Turn Type	Perm	Perm			custom	D.P+P		Prot		Perm		
Protected Phases			1			8	1 8	1 8			4 9	
Permitted Phases	1	1			8	1				4 9		
Detector Phases	1	1	1		8	8	1 8	1 8		4 9	4 9	
Minimum Initial (s)	21.0	21.0	21.0		6.0	6.0						
Minimum Split (s)	25.0	25.0	25.0		10.0	10.0						
Total Split (s)	32.0	32.0	32.0	0.0	12.0	12.0	44.0	44.0	0.0	43.0	43.0	0.0
Total Split (%)	24.6%	24.6%	24.6%	0.0%	9.2%	9.2%	33.8%	33.8%	0.0%	33.1%	33.1%	0.0%
Maximum Green (s)	28.0	28.0	28.0		8.0	8.0						
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0						
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0						
Lead/Lag					Lag	Lag						
Lead-Lag Optimize?					Yes	Yes						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0						
Recall Mode	C-Max	C-Max	C-Max		None	None						
Walk Time (s)	7.0	7.0	7.0									
Flash Dont Walk (s)	11.0	11.0	11.0									
Pedestrian Calls (#/hr)	0	0	0									
Act Effct Green (s)	28.0		28.0			36.0	36.0	40.0			39.0	
Actuated g/C Ratio	0.22		0.22			0.28	0.28	0.31			0.30	
v/c Ratio	1.73		1.52			1.04	1.07	0.41			0.76	
Control Delay	427.5		283.2			122.8	98.9	38.4			21.7	

11: Beacon Street & Chestnut Hill Ave

Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	10							
Grade (%)				-3%								
Storage Length (ft)			0		0							
Storage Lanes			0		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	9	15		9							
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95							
Frt	0.850			0.983								
Flt Protected				0.989								
Satd. Flow (prot)	1615	0	0	3433	0							
Flt Permitted				0.586								
Satd. Flow (perm)	1615	0	0	2034	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	230											
Headway Factor	1.00	0.98	1.07	0.98	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	212	2	175	552	84							
Peak Hour Factor	0.91	0.50	0.89	0.92	0.81							
Heavy Vehicles (%)	0%	0%	2%	5%	0%							
Adj. Flow (vph)	233	4	197	600	104							
Lane Group Flow (vph)	233	0	0	905	0							
Turn Type	Free	custom	D.P+P									
Protected Phases			3	3 4 9		2	4	5	6	7	9	10
Permitted Phases	Free	3	4 9									
Detector Phases		3	3	3 4 9								
Minimum Initial (s)		7.0	7.0			16.0	13.0	6.0	4.0	4.0	5.0	7.0
Minimum Split (s)		11.0	11.0			23.0	18.0	10.0	23.0	20.0	9.0	11.0
Total Split (s)	0.0	20.0	20.0	63.0	0.0	23.0	34.0	9.0	23.0	23.0	9.0	75.0
Total Split (%)	0.0%	15.4%	15.4%	48.5%	0.0%	18%	26%	7%	18%	18%	7%	58%
Maximum Green (s)		16.0	16.0			16.0	29.0	5.0	19.0	19.0	5.0	71.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			4.0	2.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead	Lead				Lag	Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes				Yes	Yes	Yes		Yes	
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode		Max	Max			Ped	Max	C-Max	None	None	Max	Max
Walk Time (s)						7.0			7.0			
Flash Dont Walk (s)						9.0			11.0			
Pedestrian Calls (#/hr)						0			0			
Act Effct Green (s)	130.0			55.0								
Actuated g/C Ratio	1.00			0.42								
v/c Ratio	0.14			0.88								
Control Delay	0.2			40.3								

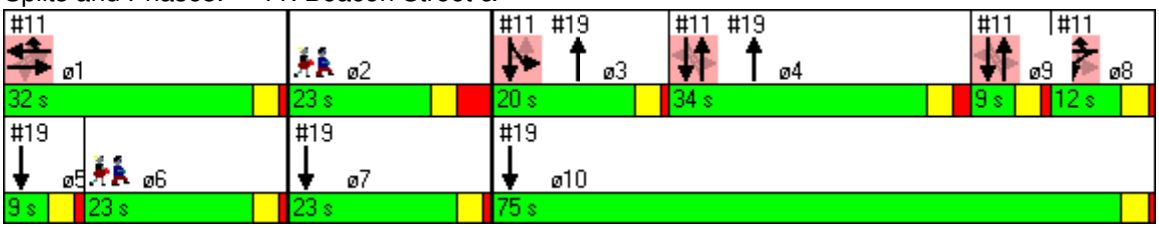


Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			4.3	
Total Delay	427.5		283.2			122.8	98.9	38.4			26.0	
LOS	F		F			F	F	D			C	
Approach Delay			302.4				89.5				18.7	
Approach LOS			F				F				B	
90th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
90th %ile Term Code	Coord	Coord	Coord		Max	Max						
70th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
70th %ile Term Code	Coord	Coord	Coord		Max	Max						
50th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
50th %ile Term Code	Coord	Coord	Coord		Max	Max						
30th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
30th %ile Term Code	Coord	Coord	Coord		Max	Max						
10th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
10th %ile Term Code	Coord	Coord	Coord		Max	Max						
Stops (vph)	43		354			90	538	130			500	
Fuel Used(gal)	7		35			5	22	4			6	
CO Emissions (g/hr)	480		2454			382	1545	287			404	
NOx Emissions (g/hr)	93		477			74	301	56			79	
VOC Emissions (g/hr)	111		569			89	358	67			94	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~119		~370			~123	~291	154			251	
Queue Length 95th (ft)	#201		#496			#225	#442	180			326	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	51		378			156	623	558			774	
Starvation Cap Reductn	0		0			0	0	0			121	
Spillback Cap Reductn	0		0			0	0	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.73		1.52			1.04	1.07	0.41			0.90	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 1:EBWB and 5:, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.73
Intersection Signal Delay: 100.7 Intersection LOS: F
Intersection Capacity Utilization 86.3% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

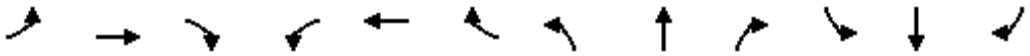
Splits and Phases: 11: Beacon Street &





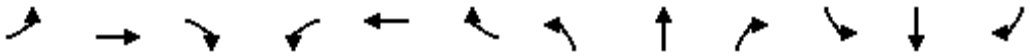
Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.2			40.3								
LOS	A			D								
Approach Delay				40.3								
Approach LOS				D								
90th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
70th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
70th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
50th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
50th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
30th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
30th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
10th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
10th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
Stops (vph)	0			673								
Fuel Used(gal)	0			17								
CO Emissions (g/hr)	19			1211								
NOx Emissions (g/hr)	4			236								
VOC Emissions (g/hr)	4			281								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			292								
Queue Length 95th (ft)	0			#369								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1615			1033								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.14			0.88								

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.994				0.850		0.994	
Flt Protected		0.984			0.976			0.999				
Satd. Flow (prot)	0	1851	0	0	1826	0	0	1880	1599	0	1836	0
Flt Permitted		0.867			0.795			0.986			0.991	
Satd. Flow (perm)	0	1631	0	0	1487	0	0	1855	1599	0	1820	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		5							119		4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	25	53	3	104	98	6	7	619	105	4	754	27
Peak Hour Factor	0.75	0.85	0.38	0.77	0.77	0.50	0.58	0.85	0.80	0.75	0.97	0.71
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	3%	0%
Adj. Flow (vph)	33	62	8	135	127	12	12	728	131	5	777	38
Lane Group Flow (vph)	0	103	0	0	274	0	0	740	131	0	820	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	46.0	46.0	46.0	46.0	46.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	0.0%	51.1%	51.1%	51.1%	51.1%	51.1%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		25.1			25.1			42.2	42.2		42.2	
Actuated g/C Ratio		0.32			0.32			0.54	0.54		0.54	
v/c Ratio		0.19			0.57			0.74	0.14		0.83	
Control Delay		20.8			28.8			20.7	3.3		25.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		20.8			28.8			20.7	3.3		25.5	

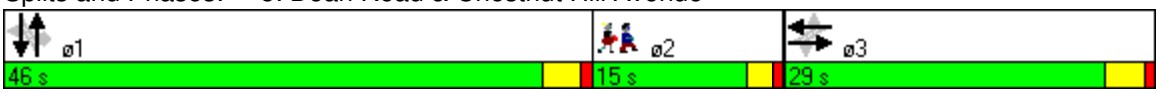
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C			C	A		C	
Approach Delay		20.8			28.8			18.1			25.5	
Approach LOS		C			C			B			C	
90th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		54			169			441	14		566	
Fuel Used(gal)		1			4			8	1		11	
CO Emissions (g/hr)		77			260			555	44		785	
NOx Emissions (g/hr)		15			51			108	9		153	
VOC Emissions (g/hr)		18			60			129	10		182	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		32			103			232	2		278	
Queue Length 95th (ft)		79			183			#483	25		#696	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		529			479			1004	920		987	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.19			0.57			0.74	0.14		0.83	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 97.4%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



Lane Group	ø2
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	10	12	13	12	12	12	13	11
Storage Length (ft)		280		0	160		0	0		0	0	
Storage Lanes		1		0	1		1	0		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50				50	50
Trailing Detector (ft)	0	0	0		0	0	0				0	0
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt							0.850					
Flt Protected		0.950			0.950						0.950	
Satd. Flow (prot)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Flt Permitted		0.950			0.950						0.950	
Satd. Flow (perm)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)							380					
Headway Factor	1.00	1.04	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96	1.04
Link Speed (mph)			30			30			30			30
Link Distance (ft)			1399			494			1410			187
Travel Time (s)			31.8			11.2			32.0			4.3
Volume (vph)	4	222	939	0	74	998	342	0	0	0	503	35
Peak Hour Factor	0.33	0.75	0.88	0.92	0.75	0.87	0.90	0.92	0.92	0.92	0.80	0.71
Heavy Vehicles (%)	0%	0%	2%	2%	0%	2%	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	12	296	1067	0	99	1147	380	0	0	0	629	49
Lane Group Flow (vph)	0	308	1067	0	99	1147	380	0	0	0	629	49
Turn Type	Prot	Prot			Prot		custom				Split	
Protected Phases	4	4	1 4 5		2	1 2 5	1 2 3				3	3
Permitted Phases												
Detector Phases	4	4	1 4		2	1 2	1 2 3				3	3
Minimum Initial (s)	6.0	6.0			5.0						6.0	6.0
Minimum Split (s)	21.0	21.0			15.0						29.0	29.0
Total Split (s)	30.0	30.0	85.0	0.0	15.0	70.0	90.0	0.0	0.0	0.0	40.0	40.0
Total Split (%)	21.4%	21.4%	60.7%	0.0%	10.7%	50.0%	64.3%	0.0%	0.0%	0.0%	28.6%	28.6%
Maximum Green (s)	25.0	25.0			10.0						35.0	35.0
Yellow Time (s)	4.0	4.0			4.0						4.0	4.0
All-Red Time (s)	1.0	1.0			1.0						1.0	1.0
Lead/Lag	Lag	Lag			Lag						Lead	Lead
Lead-Lag Optimize?	Yes	Yes			Yes						Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0						3.0	3.0
Recall Mode	None	None			Max						None	None
Walk Time (s)											13.0	13.0
Flash Dont Walk (s)											5.0	5.0
Pedestrian Calls (#/hr)											0	0
Act Effct Green (s)		26.0	81.0		11.0	66.0	102.2				36.0	36.0
Actuated g/C Ratio		0.19	0.58		0.08	0.47	0.73				0.26	0.26
v/c Ratio		0.95	0.52		0.75	0.69	0.29				1.35	0.11
Control Delay		95.0	18.9		93.1	33.9	4.3				211.2	40.7
Queue Delay		0.0	0.0		0.0	1.1	0.4				0.0	0.0



Lane Group	SBR	ø1	ø5
Lane Configurations			
Ideal Flow (vphpl)	1900		
Lane Width (ft)	16		
Storage Length (ft)	0		
Storage Lanes	1		
Total Lost Time (s)	4.0		
Leading Detector (ft)	50		
Trailing Detector (ft)	0		
Turning Speed (mph)	9		
Lane Util. Factor	1.00		
Frt	0.850		
Flt Protected			
Satd. Flow (prot)	1777		
Flt Permitted			
Satd. Flow (perm)	1777		
Right Turn on Red	Yes		
Satd. Flow (RTOR)	242		
Headway Factor	0.85		
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Volume (vph)	215		
Peak Hour Factor	0.89		
Heavy Vehicles (%)	3%		
Adj. Flow (vph)	242		
Lane Group Flow (vph)	242		
Turn Type	Prot		
Protected Phases	3	1	5
Permitted Phases			
Detector Phases	3		
Minimum Initial (s)	6.0	5.0	4.0
Minimum Split (s)	29.0	21.0	19.0
Total Split (s)	40.0	35.0	20.0
Total Split (%)	28.6%	25%	14%
Maximum Green (s)	35.0	30.0	17.0
Yellow Time (s)	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	0.0
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	None
Walk Time (s)	13.0		6.0
Flash Dont Walk (s)	5.0		10.0
Pedestrian Calls (#/hr)	0		10
Act Effct Green (s)	36.0		
Actuated g/C Ratio	0.26		
v/c Ratio	0.38		
Control Delay	6.5		
Queue Delay	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay		95.0	19.0		93.1	34.9	4.6				211.2	40.7
LOS		F	B		F	C	A				F	D
Approach Delay			36.0			31.4						148.3
Approach LOS			D			C						F
90th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
90th %ile Term Code	Max	Max			MaxR						Max	Max
70th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
70th %ile Term Code	Max	Max			MaxR						Max	Max
50th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
50th %ile Term Code	Max	Max			MaxR						Max	Max
30th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
30th %ile Term Code	Max	Max			MaxR						Max	Max
10th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
10th %ile Term Code	Max	Max			MaxR						Max	Max
Stops (vph)		200	544		67	824	66				392	25
Fuel Used(gal)		8	17		2	15	2				25	0
CO Emissions (g/hr)		555	1179		144	1068	138				1714	33
NOx Emissions (g/hr)		108	229		28	208	27				334	7
VOC Emissions (g/hr)		129	273		33	247	32				397	8
Dilemma Vehicles (#)		0	0		0	0	0				0	0
Queue Length 50th (ft)		281	295		91	466	56				~749	34
Queue Length 95th (ft)		#338	342		m#133	522	122				#826	54
Internal Link Dist (ft)			1319			414			1330			107
Turn Bay Length (ft)		280			160							
Base Capacity (vph)		324	2048		132	1668	1297				466	458
Starvation Cap Reductn		0	0		0	277	456				0	0
Spillback Cap Reductn		0	55		0	0	0				0	0
Storage Cap Reductn		0	0		0	0	0				0	0
Reduced v/c Ratio		0.95	0.54		0.75	0.82	0.45				1.35	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.35			
Intersection Signal Delay: 60.4		Intersection LOS: E	
Intersection Capacity Utilization 78.0%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

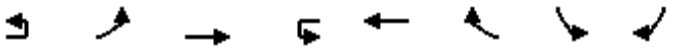
Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





Lane Group	SBR	ø1	ø5
Total Delay	6.5		
LOS	A		
Approach Delay			
Approach LOS			
90th %ile Green (s)	35.0	31.0	16.0
90th %ile Term Code	Max	Coord	Ped
70th %ile Green (s)	35.0	50.0	0.0
70th %ile Term Code	Max	Coord	Skip
50th %ile Green (s)	35.0	50.0	0.0
50th %ile Term Code	Max	Coord	Skip
30th %ile Green (s)	35.0	50.0	0.0
30th %ile Term Code	Max	Coord	Skip
10th %ile Green (s)	35.0	50.0	0.0
10th %ile Term Code	Max	Coord	Skip
Stops (vph)	20		
Fuel Used(gal)	1		
CO Emissions (g/hr)	50		
NOx Emissions (g/hr)	10		
VOC Emissions (g/hr)	11		
Dilemma Vehicles (#)	0		
Queue Length 50th (ft)	0		
Queue Length 95th (ft)	64		
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)	637		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.38		

Intersection Summary



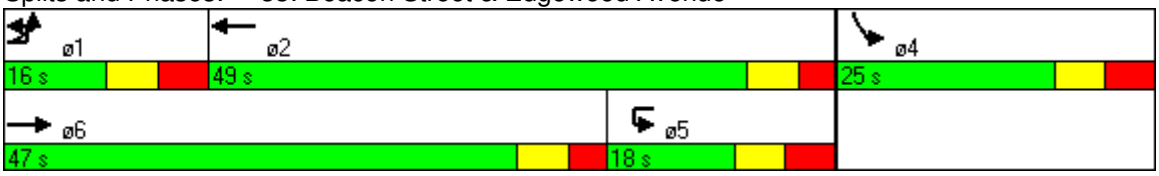
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.984		0.949	
Flt Protected		0.950		0.950			0.970	
Satd. Flow (prot)	0	1685	3369	1745	3404	0	1982	0
Flt Permitted		0.950		0.950			0.970	
Satd. Flow (perm)	0	1685	3369	1745	3404	0	1982	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					21		20	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			1583		2789		793	
Travel Time (s)			36.0		63.4		18.0	
Volume (vph)	42	26	685	25	848	84	30	10
Peak Hour Factor	0.79	0.69	0.85	0.75	0.94	0.76	0.91	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	53	38	806	33	902	111	33	20
Lane Group Flow (vph)	0	91	806	33	1013	0	53	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	16.0	16.0	47.0	18.0	49.0	0.0	25.0	0.0
Total Split (%)	17.8%	17.8%	52.2%	20.0%	54.4%	0.0%	27.8%	0.0%
Maximum Green (s)	8.0	8.0	40.0	10.0	42.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		13.5	67.2	15.1	62.4		12.1	
Actuated g/C Ratio		0.15	0.75	0.17	0.69		0.13	
v/c Ratio		0.36	0.32	0.11	0.43		0.19	
Control Delay		37.5	9.1	20.2	5.7		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	



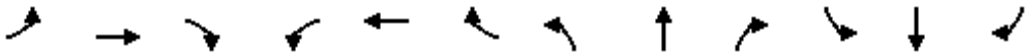
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.5	9.1	20.2	5.7		26.0	
LOS		D	A	C	A		C	
Approach Delay			12.0		6.2		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	13.8	13.8	42.2	16.4	44.8		8.4	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.1	11.1	38.0	21.0	47.9		8.0	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Min	
50th %ile Green (s)	9.3	9.3	67.0	0.0	49.7		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.5	7.5	83.0	0.0	67.5		0.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Skip	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		58	259	14	218		26	
Fuel Used(gal)		2	11	1	23		1	
CO Emissions (g/hr)		117	780	51	1577		42	
NOx Emissions (g/hr)		23	152	10	307		8	
VOC Emissions (g/hr)		27	181	12	365		10	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		47	54	12	94		17	
Queue Length 95th (ft)		65	183	m16	119		50	
Internal Link Dist (ft)			1503		2709		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		263	2532	339	2366		478	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.35	0.32	0.10	0.43		0.11	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.989			0.972			0.976	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1719	3332	0	0	3412	0	1668	1750	0	1652	1763	0
Flt Permitted	0.950						0.292			0.426		
Satd. Flow (perm)	1719	3332	0	0	3412	0	513	1750	0	741	1763	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								15			12	
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2789			1295			1022			860	
Travel Time (s)		63.4			29.4			23.2			19.5	
Volume (vph)	102	611	161	0	569	30	106	225	47	60	298	48
Peak Hour Factor	0.89	0.89	0.69	0.25	0.90	0.58	0.86	0.85	0.78	0.80	0.80	0.67
Heavy Vehicles (%)	5%	1%	0%	2%	1%	3%	1%	2%	2%	2%	2%	0%
Adj. Flow (vph)	115	687	233	0	632	52	123	265	60	75	372	72
Lane Group Flow (vph)	115	920	0	0	684	0	123	325	0	75	444	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	19.0	52.0	0.0	0.0	33.0	0.0	38.0	38.0	0.0	38.0	38.0	0.0
Total Split (%)	21.1%	57.8%	0.0%	0.0%	36.7%	0.0%	42.2%	42.2%	0.0%	42.2%	42.2%	0.0%
Maximum Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	13.6	52.1			37.3		29.9	29.9		29.9	29.9	
Actuated g/C Ratio	0.15	0.58			0.41		0.33	0.33		0.33	0.33	
v/c Ratio	0.44	0.48			0.48		0.72	0.55		0.30	0.75	
Control Delay	53.0	8.5			23.2		50.7	26.6		24.7	34.1	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	53.0	8.5			23.2		50.7	26.6		24.7	34.1	
LOS	D	A			C		D	C		C	C	
Approach Delay		13.5			23.2			33.2			32.8	
Approach LOS		B			C			C			C	
90th %ile Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
90th %ile Term Code	Max	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
70th %ile Term Code	Max	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	10.7	44.4			25.7		26.6	26.6		26.6	26.6	
50th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
30th %ile Green (s)	9.4	48.2			30.8		22.8	22.8		22.8	22.8	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	0.0	51.0			51.0		20.0	20.0		20.0	20.0	
10th %ile Term Code	Skip	Coord			Coord		Min	Min		Min	Min	
Stops (vph)	93	257			440		90	203		42	289	
Fuel Used(gal)	4	20			11		2	5		1	6	
CO Emissions (g/hr)	268	1366			791		170	333		65	442	
NOx Emissions (g/hr)	52	266			154		33	65		13	86	
VOC Emissions (g/hr)	62	317			183		39	77		15	102	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	68	130			160		60	141		31	214	
Queue Length 95th (ft)	115	79			231		#129	194		56	256	
Internal Link Dist (ft)		2709			1215			942			780	
Turn Bay Length (ft)	150											
Base Capacity (vph)	287	1930			1414		194	670		280	673	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.40	0.48			0.48		0.63	0.49		0.27	0.66	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 23.0		Intersection LOS: C	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 38: Beacon Street & Washington Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	7	1	2	8	80	83	782	10	2	646	2
Peak Hour Factor	0.33	0.35	0.25	0.50	0.67	0.76	0.89	0.94	0.67	0.50	0.89	0.50
Hourly flow rate (vph)	15	20	4	4	12	105	93	832	15	4	726	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								650			660	
pX, platoon unblocked	0.66	0.66		0.66	0.66	0.66	0.66					
vC, conflicting volume	1873	1764	839	1776	1769	728	730			847		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2313	2149	839	2167	2157	591	594			847		
tC, single (s)	7.3	6.6	6.2	7.1	6.5	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.3	3.5	4.0	3.3	2.2			2.7		
p0 queue free %	0	21	99	44	56	69	86			99		
cM capacity (veh/h)	6	25	368	7	27	338	660			619		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	121	940	734
Volume Left	15	4	93	4
Volume Right	4	105	15	4
cSH	12	92	660	619
Volume to Capacity	3.28	1.31	0.14	0.01
Queue Length 95th (ft)	Err	220	12	0
Control Delay (s)	Err	281.3	4.0	0.2
Lane LOS	F	F	A	A
Approach Delay (s)	Err	281.3	4.0	0.2
Approach LOS	F	F		

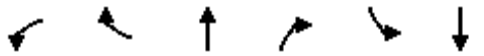
Intersection Summary			
Average Delay	234.1		
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	4	560	9	18	630
Peak Hour Factor	0.50	0.33	0.92	0.56	0.61	0.87
Hourly flow rate (vph)	4	12	609	16	30	724
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1400	617			625	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1400	617			625	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	98			97	
cM capacity (veh/h)	152	494			966	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	625	754
Volume Left	4	0	30
Volume Right	12	16	0
cSH	316	1700	966
Volume to Capacity	0.05	0.37	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	17.0	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	17.0	0.0	0.8
Approach LOS	C		

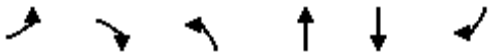
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	8	5	563	0	0	640
Peak Hour Factor	0.67	0.63	0.92	0.25	0.25	0.92
Hourly flow rate (vph)	12	8	612	0	0	696
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1308	612			612	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1308	612			612	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	98			100	
cM capacity (veh/h)	178	497			977	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	612	696
Volume Left	12	0	0
Volume Right	8	0	0
cSH	239	1700	1700
Volume to Capacity	0.08	0.36	0.41
Queue Length 95th (ft)	7	0	0
Control Delay (s)	21.4	0.0	0.0
Lane LOS	C		
Approach Delay (s)	21.4	0.0	0.0
Approach LOS	C		

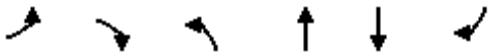
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	5	10	713	864	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	11	775	939	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1180	130	
pX, platoon unblocked						
vC, conflicting volume	1356	477	954			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1356	477	954			
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	99	98			
cM capacity (veh/h)	138	534	716			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	269	517	626	328
Volume Left	5	11	0	0	0
Volume Right	5	0	0	0	15
cSH	220	716	1700	1700	1700
Volume to Capacity	0.05	0.02	0.30	0.37	0.19
Queue Length 95th (ft)	4	1	0	0	0
Control Delay (s)	22.2	0.6	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	22.2	0.2		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	6	9	722	869	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	7	10	785	945	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1073	237	
pX, platoon unblocked						
vC, conflicting volume	1357	472	945			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1357	472	945			
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	99	99			
cM capacity (veh/h)	138	538	722			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	271	523	630	315
Volume Left	1	10	0	0	0
Volume Right	7	0	0	0	0
cSH	381	722	1700	1700	1700
Volume to Capacity	0.02	0.01	0.31	0.37	0.19
Queue Length 95th (ft)	2	1	0	0	0
Control Delay (s)	14.6	0.5	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.6	0.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.943				0.983			0.969			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1752	3269	0	0	1771	3348	0	1752	1773	0	0	3454
Flt Permitted	0.295				0.182			0.276				0.513
Satd. Flow (perm)	544	3269	0	0	339	3348	0	509	1773	0	0	1781
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		93				10			13			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	143	415	236	4	175	308	34	146	584	167	27	419
Peak Hour Factor	0.87	0.92	0.86	0.50	0.93	0.85	0.73	0.71	0.85	0.93	0.52	0.88
Heavy Vehicles (%)	3%	3%	6%	0%	2%	6%	6%	3%	3%	7%	4%	4%
Adj. Flow (vph)	164	451	274	8	188	362	47	206	687	180	52	476
Lane Group Flow (vph)	164	725	0	0	196	409	0	206	867	0	0	528
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	15.0	26.0	0.0	15.0	15.0	26.0	0.0	19.0	54.0	0.0	35.0	35.0
Total Split (%)	12.5%	21.7%	0.0%	12.5%	12.5%	21.7%	0.0%	15.8%	45.0%	0.0%	29.2%	29.2%
Maximum Green (s)	9.0	21.0		9.0	9.0	21.0		12.0			28.0	28.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	58.0	47.0			58.0	47.0		46.0	50.0			31.0
Actuated g/C Ratio	0.48	0.39			0.48	0.39		0.38	0.42			0.26
v/c Ratio	0.44	0.54			0.66	0.31		0.59	1.16			1.15
Control Delay	19.5	26.0			27.8	25.4		52.9	123.2			129.8
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0

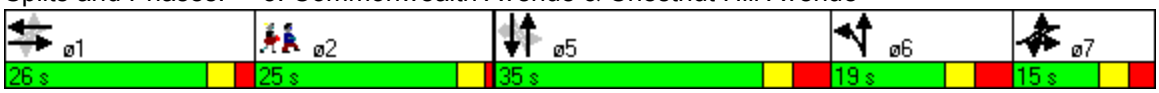


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1615	
Flt Permitted		
Satd. Flow (perm)	1615	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	9	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	20	
Peak Hour Factor	0.95	
Heavy Vehicles (%)	0%	
Adj. Flow (vph)	21	
Lane Group Flow (vph)	21	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	35.0	25.0
Total Split (%)	29.2%	21%
Maximum Green (s)	28.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	31.0	
Actuated g/C Ratio	0.26	
v/c Ratio	0.05	
Control Delay	23.8	
Queue Delay	0.0	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	19.5	26.0			27.8	25.4		52.9	123.2			129.8
LOS	B	C			C	C		D	F			F
Approach Delay		24.8				26.2			109.7			125.7
Approach LOS		C				C			F			F
90th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	75	427			99	224		153	645			372
Fuel Used(gal)	3	13			3	6		4	29			17
CO Emissions (g/hr)	181	918			207	397		256	2012			1177
NOx Emissions (g/hr)	35	179			40	77		50	392			229
VOC Emissions (g/hr)	42	213			48	92		59	466			273
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	65	196			80	111		148	~814			~252
Queue Length 95th (ft)	102	256			125	141		m135	m#683			#353
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	374	1337			295	1317		350	746			460
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.44	0.54			0.66	0.31		0.59	1.16			1.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 72.1		Intersection LOS: E	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			
~	Volume exceeds capacity, queue is theoretically infinite.		
	Queue shown is maximum after two cycles.		
#	95th percentile volume exceeds capacity, queue may be longer.		
	Queue shown is maximum after two cycles.		
m	Volume for 95th percentile queue is metered by upstream signal.		

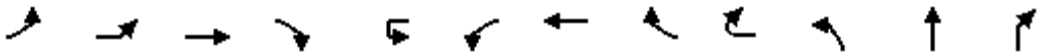
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





Lane Group	SBR	ø2
Total Delay	23.8	
LOS	C	
Approach Delay		
Approach LOS		
90th %ile Green (s)	28.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	28.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	28.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	28.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	28.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	11	
Fuel Used(gal)	0	
CO Emissions (g/hr)	20	
NOx Emissions (g/hr)	4	
VOC Emissions (g/hr)	5	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	7	
Queue Length 95th (ft)	28	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	424	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.05	

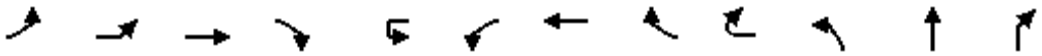
Intersection Summary



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		25		200		150		150		0		0
Storage Lanes		1		1		1		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0		0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.91	0.91	0.91	0.95	0.95	0.91	0.91	1.00	0.95	0.95	0.95	0.95
Frt			0.989					0.850			0.995	
Flt Protected	0.950		0.998			0.950	0.989				0.996	
Satd. Flow (prot)	1557	0	3200	0	0	1615	3491	1794	0	0	3228	0
Flt Permitted	0.160		0.785			0.129	0.526				0.682	
Satd. Flow (perm)	262	0	2517	0	0	219	1857	1794	0	0	2211	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.04	1.09	1.00	1.00	0.96	0.85	1.00	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				1583				159	
Travel Time (s)			30.4				36.0				3.6	
Volume (vph)	96	17	591	43	16	268	483	171	22	37	549	17
Peak Hour Factor	0.81	0.81	0.88	0.81	0.67	0.93	0.88	0.87	0.87	0.67	0.87	0.76
Heavy Vehicles (%)	2%	2%	3%	5%	0%	2%	1%	2%	2%	11%	7%	1%
Adj. Flow (vph)	119	21	672	53	24	288	549	197	25	55	631	22
Lane Group Flow (vph)	112	0	753	0	0	156	705	222	0	0	708	0
Turn Type	Perm	Perm			custom	D.P+P		Prot		Perm		
Protected Phases			1			8	1 8	1 8			4 9	
Permitted Phases	1	1			8	1				4 9		
Detector Phases	1	1	1		8	8	1 8	1 8		4 9	4 9	
Minimum Initial (s)	21.0	21.0	21.0		6.0	6.0						
Minimum Split (s)	25.0	25.0	25.0		10.0	10.0						
Total Split (s)	35.0	35.0	35.0	0.0	14.0	14.0	49.0	49.0	0.0	37.0	37.0	0.0
Total Split (%)	29.2%	29.2%	29.2%	0.0%	11.7%	11.7%	40.8%	40.8%	0.0%	30.8%	30.8%	0.0%
Maximum Green (s)	31.0	31.0	31.0		10.0	10.0						
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0						
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0						
Lead/Lag					Lag	Lag						
Lead-Lag Optimize?					Yes	Yes						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0						
Recall Mode	C-Max	C-Max	C-Max		None	None						
Walk Time (s)	7.0	7.0	7.0									
Flash Dont Walk (s)	11.0	11.0	11.0									
Pedestrian Calls (#/hr)	0	0	0									
Act Effct Green (s)	31.0		31.0			41.0	41.0	45.0			33.0	
Actuated g/C Ratio	0.26		0.26			0.34	0.34	0.38			0.28	
v/c Ratio	1.65		1.16			0.82	0.91	0.33			1.16	
Control Delay	378.6		128.0			59.4	51.3	28.5			102.3	



Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	10							
Grade (%)				-3%								
Storage Length (ft)			0		0							
Storage Lanes			0		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	15	15		9							
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95							
Frt	0.850			0.984								
Flt Protected				0.988								
Satd. Flow (prot)	1599	0	0	3378	0							
Flt Permitted				0.523								
Satd. Flow (perm)	1599	0	0	1788	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	169											
Headway Factor	1.00	0.98	1.07	0.98	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	145	3	200	544	82							
Peak Hour Factor	0.76	0.75	0.89	0.90	0.83							
Heavy Vehicles (%)	1%	0%	2%	7%	4%							
Adj. Flow (vph)	191	4	225	604	99							
Lane Group Flow (vph)	191	0	0	932	0							
Turn Type	Free	custom	D.P+P									
Protected Phases			3	3 4 9		2	4	5	6	7	9	10
Permitted Phases	Free	3	4 9									
Detector Phases		3	3	3 4 9								
Minimum Initial (s)		7.0	7.0			16.0	13.0	6.0	4.0	4.0	5.0	7.0
Minimum Split (s)		11.0	11.0			23.0	18.0	10.0	23.0	20.0	9.0	11.0
Total Split (s)	0.0	11.0	11.0	48.0	0.0	23.0	28.0	12.0	23.0	23.0	9.0	62.0
Total Split (%)	0.0%	9.2%	9.2%	40.0%	0.0%	19%	23%	10%	19%	19%	8%	52%
Maximum Green (s)		7.0	7.0			16.0	23.0	8.0	19.0	19.0	5.0	58.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			4.0	2.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead	Lead				Lag	Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes				Yes	Yes	Yes		Yes	
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode		Max	Max			Ped	Max	C-Max	None	None	Max	Max
Walk Time (s)						7.0			7.0			
Flash Dont Walk (s)						9.0			11.0			
Pedestrian Calls (#/hr)						0			0			
Act Effct Green (s)	120.0			40.0								
Actuated g/C Ratio	1.00			0.33								
v/c Ratio	0.12			1.35								
Control Delay	0.1			193.6								



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			95.0	
Total Delay	378.6		128.0			59.4	51.3	28.5			197.3	
LOS	F		F			E	D	C			F	
Approach Delay			160.5				47.8				155.4	
Approach LOS			F				D				F	
90th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
90th %ile Term Code	Coord	Coord	Coord		Max	Max						
70th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
70th %ile Term Code	Coord	Coord	Coord		Max	Max						
50th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
50th %ile Term Code	Coord	Coord	Coord		Max	Max						
30th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
30th %ile Term Code	Coord	Coord	Coord		Max	Max						
10th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
10th %ile Term Code	Coord	Coord	Coord		Max	Max						
Stops (vph)	59		551			91	553	134			508	
Fuel Used(gal)	8		27			4	17	4			16	
CO Emissions (g/hr)	579		1888			273	1214	297			1127	
NOx Emissions (g/hr)	113		367			53	236	58			219	
VOC Emissions (g/hr)	134		438			63	281	69			261	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~138		~379			91	232	121			~353	
Queue Length 95th (ft)	#237		#491			#208	#320	180			#456	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	68		650			191	771	673			608	
Starvation Cap Reductn	0		0			0	0	0			95	
Spillback Cap Reductn	0		0			0	0	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.65		1.16			0.82	0.91	0.33			1.38	

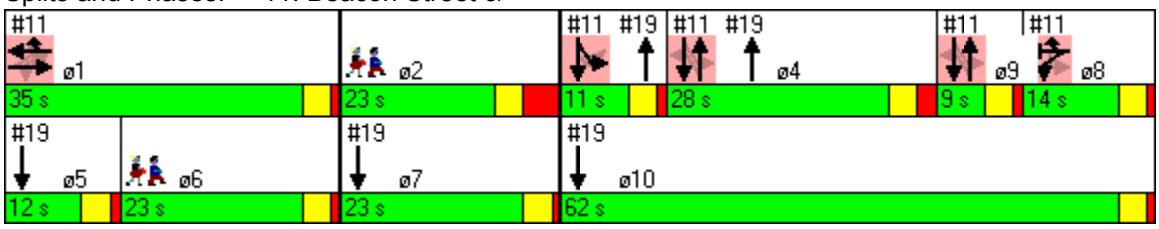
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 20 (17%), Referenced to phase 1:EBWB and 5:, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.65			
Intersection Signal Delay: 135.1		Intersection LOS: F	
Intersection Capacity Utilization 88.7%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

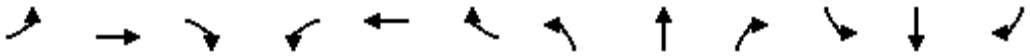
Splits and Phases: 11: Beacon Street &





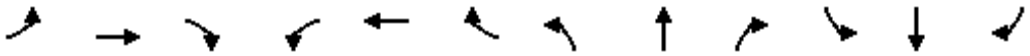
Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.1			193.6								
LOS	A			F								
Approach Delay				193.6								
Approach LOS				F								
90th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
70th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
70th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
50th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
50th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
30th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
30th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
10th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
10th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
Stops (vph)	0			763								
Fuel Used(gal)	0			44								
CO Emissions (g/hr)	13			3072								
NOx Emissions (g/hr)	2			598								
VOC Emissions (g/hr)	3			712								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			~514								
Queue Length 95th (ft)	m0			m#527								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1599			689								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.12			1.35								

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00				0.98			
Frt		0.990			0.993				0.850		0.998	
Flt Protected		0.992			0.973			0.999			0.998	
Satd. Flow (prot)	0	1866	0	0	1827	0	0	1840	1599	0	1818	0
Flt Permitted		0.930			0.563			0.984			0.787	
Satd. Flow (perm)	0	1749	0	0	1057	0	0	1812	1564	0	1433	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		5							131		1	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	27	126	13	118	72	8	8	620	118	15	762	7
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.67	0.63	0.65	0.88	0.77	0.67	0.67	0.92	0.89	0.55	0.93	0.63
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	13%	3%	1%	9%	4%	0%
Adj. Flow (vph)	40	200	20	134	94	12	12	674	133	27	819	11
Lane Group Flow (vph)	0	260	0	0	240	0	0	686	133	0	857	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	46.0	46.0	46.0	46.0	46.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	0.0%	51.1%	51.1%	51.1%	51.1%	51.1%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		25.1			25.1			42.2	42.2		42.2	
Actuated g/C Ratio		0.32			0.32			0.54	0.54		0.54	
v/c Ratio		0.46			0.71			0.70	0.15		1.10	
Control Delay		24.9			38.1			19.4	2.9		85.8	

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		24.9			38.1			19.4	2.9		85.8	
LOS		C			D			B	A		F	
Approach Delay		24.9			38.1			16.7			85.8	
Approach LOS		C			D			B			F	
90th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		126			158			438	13		603	
Fuel Used(gal)		2			4			8	1		21	
CO Emissions (g/hr)		175			272			544	48		1471	
NOx Emissions (g/hr)		34			53			106	9		286	
VOC Emissions (g/hr)		40			63			126	11		341	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		91			95			207	0		~451	
Queue Length 95th (ft)		128			#194			#497	29		#860	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		567			340			981	906		776	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.46			0.71			0.70	0.15		1.10	

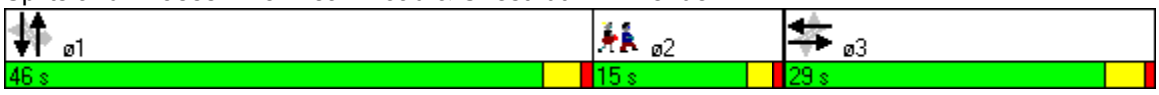
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 47.3		Intersection LOS: D	
Intersection Capacity Utilization 97.2%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			

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

Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary
Queue shown is maximum after two cycles.

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



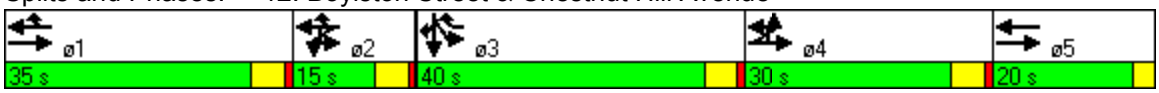
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	10	12	13	12	12	12	13
Storage Length (ft)		280		0		160		0	0		0	0
Storage Lanes		1		0		1		1	0		0	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50				50
Trailing Detector (ft)	0	0	0		0	0	0	0				0
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt								0.850				
Flt Protected		0.950				0.950						0.950
Satd. Flow (prot)	0	1641	3471	0	0	1685	3505	1620	0	0	0	1776
Flt Permitted		0.950				0.950						0.950
Satd. Flow (perm)	0	1641	3471	0	0	1685	3505	1620	0	0	0	1776
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)								588				
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96
Link Speed (mph)			30				30			30		
Link Distance (ft)			1399				494			1410		
Travel Time (s)			31.8				11.2			32.0		
Volume (vph)	10	193	1244	0	11	75	1325	598	0	0	0	453
Peak Hour Factor	0.50	0.91	0.94	0.25	0.69	0.68	0.96	0.99	0.92	0.92	0.92	0.93
Heavy Vehicles (%)	10%	6%	4%	0%	0%	0%	3%	3%	2%	2%	2%	5%
Adj. Flow (vph)	20	212	1323	0	16	110	1380	604	0	0	0	487
Lane Group Flow (vph)	0	232	1323	0	0	126	1380	604	0	0	0	487
Turn Type	Prot	Prot			Prot	Prot		custom				Split
Protected Phases	4	4	1 4 5		2	2	1 2 5	1 2 3				3
Permitted Phases												
Detector Phases	4	4	1 4		2	2	1 2	1 2 3				3
Minimum Initial (s)	6.0	6.0			5.0	5.0						6.0
Minimum Split (s)	21.0	21.0			15.0	15.0						29.0
Total Split (s)	30.0	30.0	85.0	0.0	15.0	15.0	70.0	90.0	0.0	0.0	0.0	40.0
Total Split (%)	21.4%	21.4%	60.7%	0.0%	10.7%	10.7%	50.0%	64.3%	0.0%	0.0%	0.0%	28.6%
Maximum Green (s)	25.0	25.0			10.0	10.0						35.0
Yellow Time (s)	4.0	4.0			4.0	4.0						4.0
All-Red Time (s)	1.0	1.0			1.0	1.0						1.0
Lead/Lag	Lag	Lag			Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes			Yes	Yes						Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Recall Mode	None	None			Max	Max						None
Walk Time (s)												13.0
Flash Dont Walk (s)												5.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		26.0	81.0			11.0	66.0	102.2				36.0
Actuated g/C Ratio		0.19	0.58			0.08	0.47	0.73				0.26
v/c Ratio		0.76	0.66			0.95	0.84	0.45				1.07
Control Delay		71.0	22.1			114.7	39.0	3.1				109.6
Queue Delay		0.0	0.6			0.0	21.1	0.7				0.0

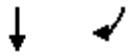
Lane Group	SBT	SBR	ø1	ø5
Lane Configurations				
Ideal Flow (vphpl)	1900	1900		
Lane Width (ft)	11	16		
Storage Length (ft)		0		
Storage Lanes		1		
Total Lost Time (s)	4.0	4.0		
Leading Detector (ft)	50	50		
Trailing Detector (ft)	0	0		
Turning Speed (mph)		9		
Lane Util. Factor	1.00	1.00		
Frt		0.850		
Flt Protected				
Satd. Flow (prot)	1701	1812		
Flt Permitted				
Satd. Flow (perm)	1701	1812		
Right Turn on Red		Yes		
Satd. Flow (RTOR)		304		
Headway Factor	1.04	0.85		
Link Speed (mph)	30			
Link Distance (ft)	187			
Travel Time (s)	4.3			
Volume (vph)	40	299		
Peak Hour Factor	0.63	0.87		
Heavy Vehicles (%)	8%	1%		
Adj. Flow (vph)	63	344		
Lane Group Flow (vph)	63	344		
Turn Type		Prot		
Protected Phases	3	3	1	5
Permitted Phases				
Detector Phases	3	3		
Minimum Initial (s)	6.0	6.0	5.0	4.0
Minimum Split (s)	29.0	29.0	21.0	19.0
Total Split (s)	40.0	40.0	35.0	20.0
Total Split (%)	28.6%	28.6%	25%	14%
Maximum Green (s)	35.0	35.0	30.0	17.0
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None
Walk Time (s)	13.0	13.0		6.0
Flash Dont Walk (s)	5.0	5.0		10.0
Pedestrian Calls (#/hr)	0	0		10
Act Effct Green (s)	36.0	36.0		
Actuated g/C Ratio	0.26	0.26		
v/c Ratio	0.14	0.50		
Control Delay	41.3	9.6		
Queue Delay	0.0	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Total Delay		71.0	22.7			114.7	60.1	3.7				109.6
LOS		E	C			F	E	A				F
Approach Delay			29.9				47.2					
Approach LOS			C				D					
90th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
90th %ile Term Code	Max	Max			MaxR	MaxR						Max
70th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
70th %ile Term Code	Max	Max			MaxR	MaxR						Max
50th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
50th %ile Term Code	Max	Max			MaxR	MaxR						Max
30th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
30th %ile Term Code	Max	Max			MaxR	MaxR						Max
10th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
10th %ile Term Code	Max	Max			MaxR	MaxR						Max
Stops (vph)		186	819			74	1230	105				390
Fuel Used(gal)		6	24			3	22	3				13
CO Emissions (g/hr)		432	1656			192	1568	228				904
NOx Emissions (g/hr)		84	322			37	305	44				176
VOC Emissions (g/hr)		100	384			45	363	53				209
Dilemma Vehicles (#)		0	0			0	0	0				0
Queue Length 50th (ft)		203	414			119	639	14				~489
Queue Length 95th (ft)		#322	490			m#136	m667	m115				#710
Internal Link Dist (ft)			1319				414			1330		
Turn Bay Length (ft)		280				160						
Base Capacity (vph)		305	2008			132	1652	1341				457
Starvation Cap Reductn		0	0			0	315	390				0
Spillback Cap Reductn		0	317			0	0	0				0
Storage Cap Reductn		0	0			0	0	0				0
Reduced v/c Ratio		0.76	0.78			0.95	1.03	0.64				1.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 45.1		Intersection LOS: D	
Intersection Capacity Utilization 83.0%		ICU Level of Service E	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





Lane Group	SBT	SBR	ø1	ø5
Total Delay	41.3	9.6		
LOS	D	A		
Approach Delay	66.3			
Approach LOS	E			
90th %ile Green (s)	35.0	35.0	31.0	16.0
90th %ile Term Code	Max	Max	Coord	Ped
70th %ile Green (s)	35.0	35.0	50.0	0.0
70th %ile Term Code	Max	Max	Coord	Skip
50th %ile Green (s)	35.0	35.0	50.0	0.0
50th %ile Term Code	Max	Max	Coord	Skip
30th %ile Green (s)	35.0	35.0	50.0	0.0
30th %ile Term Code	Max	Max	Coord	Skip
10th %ile Green (s)	35.0	35.0	50.0	0.0
10th %ile Term Code	Max	Max	Coord	Skip
Stops (vph)	30	44		
Fuel Used(gal)	1	1		
CO Emissions (g/hr)	39	88		
NOx Emissions (g/hr)	8	17		
VOC Emissions (g/hr)	9	21		
Dilemma Vehicles (#)	0	0		
Queue Length 50th (ft)	45	28		
Queue Length 95th (ft)	58	100		
Internal Link Dist (ft)	107			
Turn Bay Length (ft)				
Base Capacity (vph)	437	692		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.14	0.50		

Intersection Summary



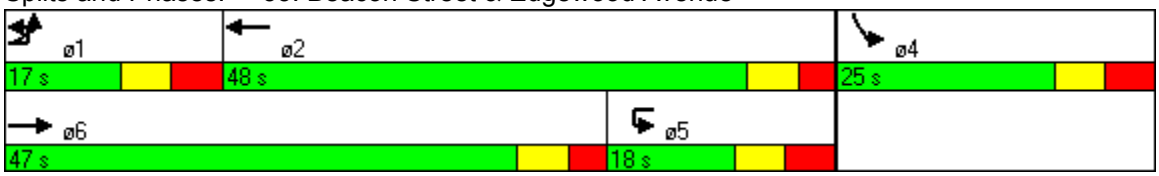
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.984		0.941	
Flt Protected		0.950		0.950			0.972	
Satd. Flow (prot)	0	1660	3336	1745	3341	0	1970	0
Flt Permitted		0.950		0.950			0.972	
Satd. Flow (perm)	0	1660	3336	1745	3341	0	1970	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					20		40	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			1583		2753		793	
Travel Time (s)			36.0		62.6		18.0	
Volume (vph)	33	26	875	22	713	87	49	39
Peak Hour Factor	0.65	0.86	0.95	0.83	0.91	0.93	0.77	0.80
Heavy Vehicles (%)	0%	4%	1%	0%	3%	1%	0%	0%
Adj. Flow (vph)	51	30	921	27	784	94	64	49
Lane Group Flow (vph)	0	81	921	27	878	0	113	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	17.0	17.0	47.0	18.0	48.0	0.0	25.0	0.0
Total Split (%)	18.9%	18.9%	52.2%	20.0%	53.3%	0.0%	27.8%	0.0%
Maximum Green (s)	9.0	9.0	40.0	10.0	41.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		13.0	63.9	13.6	58.8		12.9	
Actuated g/C Ratio		0.14	0.71	0.15	0.65		0.14	
v/c Ratio		0.34	0.39	0.10	0.40		0.36	
Control Delay		37.6	9.7	18.8	5.4		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

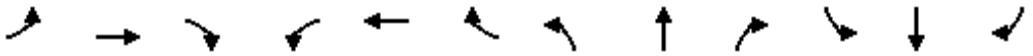


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.6	9.7	18.8	5.4		26.0	
LOS		D	A	B	A		C	
Approach Delay			11.9		5.8		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	13.0	13.0	42.2	13.3	42.5		11.5	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.4	10.4	41.3	16.5	47.4		9.2	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
50th %ile Green (s)	8.7	8.7	67.0	0.0	50.3		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.1	7.1	67.0	0.0	51.9		8.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		50	376	8	135		51	
Fuel Used(gal)		1	15	1	19		1	
CO Emissions (g/hr)		102	1021	42	1316		90	
NOx Emissions (g/hr)		20	199	8	256		18	
VOC Emissions (g/hr)		24	237	10	305		21	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		42	65	10	42		38	
Queue Length 95th (ft)		77	236	m7	m88		67	
Internal Link Dist (ft)			1503		2673		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		260	2369	309	2191		490	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.31	0.39	0.09	0.40		0.23	

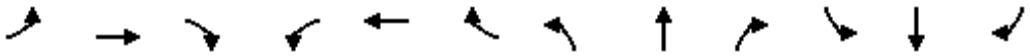
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 10.0		Intersection LOS: A	
Intersection Capacity Utilization 45.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.984			0.996			0.986	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1736	3410	0	0	3191	0	1560	1594	0	1668	1740	0
Flt Permitted	0.950						0.210			0.299		
Satd. Flow (perm)	1736	3410	0	0	3191	0	345	1594	0	525	1740	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2			7	
Headway Factor	1.00	1.04	1.00	1.00	1.12	1.00	1.09	1.19	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2753			775			812			1068	
Travel Time (s)		62.6			17.6			18.5			24.3	
Volume (vph)	121	965	87	0	488	51	27	349	7	85	320	45
Peak Hour Factor	0.77	0.89	0.86	0.92	0.71	0.61	0.81	0.80	0.58	0.78	0.66	0.92
Heavy Vehicles (%)	4%	1%	1%	2%	2%	4%	8%	3%	14%	1%	4%	5%
Parking (#/hr)			0		0			0				
Adj. Flow (vph)	157	1084	101	0	687	84	33	436	12	109	485	49
Lane Group Flow (vph)	157	1185	0	0	771	0	33	448	0	109	534	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	27.0	51.0	0.0	0.0	24.0	0.0	39.0	39.0	0.0	39.0	39.0	0.0
Total Split (%)	30.0%	56.7%	0.0%	0.0%	26.7%	0.0%	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%
Maximum Green (s)	19.0	40.0			13.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	16.5	49.4			28.9		32.6	32.6		32.6	32.6	
Actuated g/C Ratio	0.18	0.55			0.32		0.36	0.36		0.36	0.36	
v/c Ratio	0.49	0.63			0.75		0.26	0.77		0.57	0.84	
Control Delay	44.9	11.5			35.1		25.6	35.2		35.9	39.1	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	44.9	11.5			35.1		25.6	35.2		35.9	39.1	
LOS	D	B			D		C	D		D	D	
Approach Delay		15.4			35.1			34.5			38.5	
Approach LOS		B			D			C			D	
90th %ile Green (s)	17.4	40.0			14.6		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	13.3	40.0			18.7		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	12.9	40.0			19.1		31.0	31.0		31.0	31.0	
50th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Max	Max	
30th %ile Green (s)	10.7	43.3			24.6		27.7	27.7		27.7	27.7	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	8.1	48.7			32.6		22.3	22.3		22.3	22.3	
10th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
Stops (vph)	101	437			436		20	306		70	314	
Fuel Used(gal)	4	27			10		0	6		2	8	
CO Emissions (g/hr)	298	1919			666		29	454		120	537	
NOx Emissions (g/hr)	58	373			130		6	88		23	104	
VOC Emissions (g/hr)	69	445			154		7	105		28	124	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	77	178			215		12	211		47	259	
Queue Length 95th (ft)	108	128			225		33	272		86	242	
Internal Link Dist (ft)		2673			695			732			988	
Turn Bay Length (ft)	150											
Base Capacity (vph)	444	1872			1025		134	621		204	681	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.35	0.63			0.75		0.25	0.72		0.53	0.78	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 27.5		Intersection LOS: C	
Intersection Capacity Utilization 75.7%		ICU Level of Service D	
Analysis Period (min) 15			

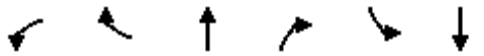
Splits and Phases: 38: Beacon Street & Washington Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	20	11	3	4	70	29	772	53	3	645	10
Peak Hour Factor	0.85	0.68	0.46	0.38	0.50	0.75	0.52	0.91	0.70	0.38	0.78	0.50
Hourly flow rate (vph)	22	29	24	8	8	93	56	848	76	8	827	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								653			660	
pX, platoon unblocked	0.69	0.69		0.69	0.69	0.69	0.69					
vC, conflicting volume	1948	1860	886	1889	1888	837	847			924		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2377	2251	886	2292	2291	763	778			924		
tC, single (s)	7.1	6.5	6.2	7.1	6.8	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.2	3.4	2.2			2.2		
p0 queue free %	0	0	93	0	61	65	90			99		
cM capacity (veh/h)	7	26	346	0	21	269	583			748		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	76	109	980	855
Volume Left	22	8	56	8
Volume Right	24	93	76	20
cSH	17	0	583	748
Volume to Capacity	4.37	Err	0.10	0.01
Queue Length 95th (ft)	Err	Err	8	1
Control Delay (s)	Err	Err	3.0	0.3
Lane LOS	F	F	A	A
Approach Delay (s)	Err	Err	3.0	0.3
Approach LOS	F	F		

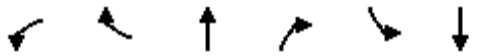
Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	3	670	6	6	613
Peak Hour Factor	0.38	0.38	0.97	0.38	0.75	0.90
Hourly flow rate (vph)	8	8	691	16	8	681
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1396	699			707	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1396	699			707	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			99	
cM capacity (veh/h)	156	444			901	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	707	689
Volume Left	8	0	8
Volume Right	8	16	0
cSH	231	1700	901
Volume to Capacity	0.07	0.42	0.01
Queue Length 95th (ft)	5	0	1
Control Delay (s)	21.8	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	21.8	0.0	0.2
Approach LOS	C		

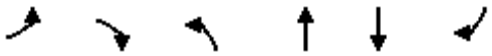
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	8	16	674	0	0	613
Peak Hour Factor	0.50	0.50	0.97	0.38	0.92	0.90
Hourly flow rate (vph)	16	32	695	0	0	681
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1376	695			695	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1376	695			695	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	90	93			100	
cM capacity (veh/h)	162	436			901	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	695	681
Volume Left	16	0	0
Volume Right	32	0	0
cSH	278	1700	1700
Volume to Capacity	0.17	0.41	0.40
Queue Length 95th (ft)	15	0	0
Control Delay (s)	20.6	0.0	0.0
Lane LOS	C		
Approach Delay (s)	20.6	0.0	0.0
Approach LOS	C		

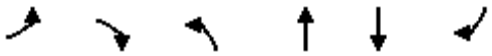
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	726	852	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1	1	789	926	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1238	75	
pX, platoon unblocked						
vC, conflicting volume	1325	465	930			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1325	465	930			
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	100	100			
cM capacity (veh/h)	147	544	731			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	264	526	617	313
Volume Left	3	1	0	0	0
Volume Right	1	0	0	0	4
cSH	180	731	1700	1700	1700
Volume to Capacity	0.02	0.00	0.31	0.36	0.18
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	25.5	0.1	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	25.5	0.0		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	8	6	725	853	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	9	7	788	927	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1169	144	
pX, platoon unblocked						
vC, conflicting volume	1338	467	934			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1338	467	934			
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	98	99			
cM capacity (veh/h)	143	543	729			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	10	269	525	618	316
Volume Left	1	7	0	0	0
Volume Right	9	0	0	0	7
cSH	414	729	1700	1700	1700
Volume to Capacity	0.02	0.01	0.31	0.36	0.19
Queue Length 95th (ft)	2	1	0	0	0
Control Delay (s)	13.9	0.3	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	13.9	0.1		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.946				0.990			0.948			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1787	3304	0	0	1788	3404	0	1770	1754	0	0	3497
Flt Permitted	0.301				0.150			0.267				0.513
Satd. Flow (perm)	566	3304	0	0	282	3404	0	497	1754	0	0	1803
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		84				5			26			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	113	375	213	7	184	420	21	181	425	200	30	448
Peak Hour Factor	0.79	0.90	0.91	0.58	0.83	0.96	0.71	0.81	0.83	0.74	0.58	0.92
Heavy Vehicles (%)	1%	3%	4%	0%	1%	5%	5%	2%	2%	4%	0%	3%
Adj. Flow (vph)	143	417	234	12	222	438	30	223	512	270	52	487
Lane Group Flow (vph)	143	651	0	0	234	468	0	223	782	0	0	539
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	13.0	32.0	0.0	13.0	13.0	32.0	0.0	15.0	50.0	0.0	35.0	35.0
Total Split (%)	10.8%	26.7%	0.0%	10.8%	10.8%	26.7%	0.0%	12.5%	41.7%	0.0%	29.2%	29.2%
Maximum Green (s)	7.0	27.0		7.0	7.0	27.0		8.0			28.0	28.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	62.0	53.0			62.0	53.0		42.0	46.0			31.0
Actuated g/C Ratio	0.52	0.44			0.52	0.44		0.35	0.38			0.26
v/c Ratio	0.37	0.43			0.90	0.31		0.77	1.14			1.16
Control Delay	16.2	20.9			54.3	22.1		57.6	112.5			132.7
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0



Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1524	
Flt Permitted		
Satd. Flow (perm)	1524	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	14	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	16	
Peak Hour Factor	0.50	
Heavy Vehicles (%)	6%	
Adj. Flow (vph)	32	
Lane Group Flow (vph)	32	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	35.0	25.0
Total Split (%)	29.2%	21%
Maximum Green (s)	28.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	31.0	
Actuated g/C Ratio	0.26	
v/c Ratio	0.08	
Control Delay	23.0	
Queue Delay	0.0	

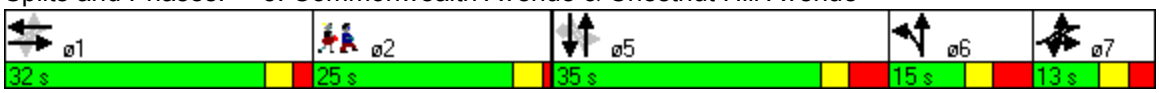
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	16.2	20.9			54.3	22.1		57.6	112.5			132.7
LOS	B	C			D	C		E	F			F
Approach Delay		20.1				32.8			100.3			126.5
Approach LOS		C				C			F			F
90th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	55	342			91	273		148	510			397
Fuel Used(gal)	2	11			4	7		4	22			18
CO Emissions (g/hr)	136	769			287	487		313	1569			1281
NOx Emissions (g/hr)	26	150			56	95		61	305			249
VOC Emissions (g/hr)	32	178			67	113		73	364			297
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	52	155			90	119		121	~695			~259
Queue Length 95th (ft)	74	205			#187	160		164	#820			#373
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	384	1506			259	1506		291	688			466
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.37	0.43			0.90	0.31		0.77	1.14			1.16

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 69.0		Intersection LOS: E	
Intersection Capacity Utilization 88.9%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

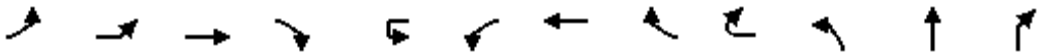
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





Lane Group	SBR	ø2
Total Delay	23.0	
LOS	C	
Approach Delay		
Approach LOS		
90th %ile Green (s)	28.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	28.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	28.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	28.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	28.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	9	
Fuel Used(gal)	0	
CO Emissions (g/hr)	16	
NOx Emissions (g/hr)	3	
VOC Emissions (g/hr)	4	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	11	
Queue Length 95th (ft)	16	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	404	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.08	

Intersection Summary



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		25		200		150		150		0		0
Storage Lanes		1		1		1		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0		0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.91	0.91	0.91	0.95	0.95	0.91	0.91	1.00	0.95	0.95	0.95	0.95
Frt			0.967					0.850			0.992	
Flt Protected	0.950		0.994			0.950	0.988				0.995	
Satd. Flow (prot)	1588	0	3213	0	0	1616	3522	1812	0	0	3331	0
Flt Permitted	0.143		0.525			0.143	0.531				0.757	
Satd. Flow (perm)	239	0	1697	0	0	243	1893	1812	0	0	2534	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.04	1.09	1.00	1.00	0.96	0.85	1.00	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				1583				159	
Travel Time (s)			30.4				36.0				3.6	
Volume (vph)	104	20	370	78	12	261	469	138	34	47	478	28
Peak Hour Factor	0.77	0.77	0.94	0.60	0.75	0.82	0.90	0.73	0.92	0.80	0.92	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	8%	1%	0%	1%	1%	0%	4%	0%
Adj. Flow (vph)	135	26	394	130	16	318	521	189	37	59	520	31
Lane Group Flow (vph)	87	0	598	0	0	167	688	226	0	0	610	0
Turn Type	Perm	Perm			custom	D.P+P		Prot		Perm		
Protected Phases			1			8	1 8	1 8			4 9	
Permitted Phases	1	1			8	1				4 9		
Detector Phases	1	1	1		8	8	1 8	1 8		4 9	4 9	
Minimum Initial (s)	21.0	21.0	21.0		6.0	6.0						
Minimum Split (s)	25.0	25.0	25.0		10.0	10.0						
Total Split (s)	32.0	32.0	32.0	0.0	12.0	12.0	44.0	44.0	0.0	43.0	43.0	0.0
Total Split (%)	24.6%	24.6%	24.6%	0.0%	9.2%	9.2%	33.8%	33.8%	0.0%	33.1%	33.1%	0.0%
Maximum Green (s)	28.0	28.0	28.0		8.0	8.0						
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0						
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0						
Lead/Lag					Lag	Lag						
Lead-Lag Optimize?					Yes	Yes						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0						
Recall Mode	C-Max	C-Max	C-Max		None	None						
Walk Time (s)	7.0	7.0	7.0									
Flash Dont Walk (s)	11.0	11.0	11.0									
Pedestrian Calls (#/hr)	0	0	0									
Act Effct Green (s)	28.0		28.0			36.0	36.0	40.0			39.0	
Actuated g/C Ratio	0.22		0.22			0.28	0.28	0.31			0.30	
v/c Ratio	1.71		1.63			1.10	1.10	0.41			0.80	
Control Delay	419.7		330.8			138.8	108.1	38.3			24.0	



Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	10							
Grade (%)				-3%								
Storage Length (ft)			0		0							
Storage Lanes			0		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	9	15		9							
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95							
Frt	0.850			0.983								
Flt Protected				0.989								
Satd. Flow (prot)	1615	0	0	3433	0							
Flt Permitted				0.577								
Satd. Flow (perm)	1615	0	0	2003	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	226											
Headway Factor	1.00	0.98	1.07	0.98	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	217	2	179	574	86							
Peak Hour Factor	0.91	0.50	0.89	0.92	0.81							
Heavy Vehicles (%)	0%	0%	2%	5%	0%							
Adj. Flow (vph)	238	4	201	624	106							
Lane Group Flow (vph)	238	0	0	935	0							
Turn Type	Free	custom	D.P+P									
Protected Phases			3	3 4 9		2	4	5	6	7	9	10
Permitted Phases	Free	3	4 9									
Detector Phases		3	3	3 4 9								
Minimum Initial (s)		7.0	7.0			16.0	13.0	6.0	4.0	4.0	5.0	7.0
Minimum Split (s)		11.0	11.0			23.0	18.0	10.0	23.0	20.0	9.0	11.0
Total Split (s)	0.0	20.0	20.0	63.0	0.0	23.0	34.0	9.0	23.0	23.0	9.0	75.0
Total Split (%)	0.0%	15.4%	15.4%	48.5%	0.0%	18%	26%	7%	18%	18%	7%	58%
Maximum Green (s)		16.0	16.0			16.0	29.0	5.0	19.0	19.0	5.0	71.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			4.0	2.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead	Lead				Lag	Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes				Yes	Yes	Yes		Yes	
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode		Max	Max			Ped	Max	C-Max	None	None	Max	Max
Walk Time (s)						7.0			7.0			
Flash Dont Walk (s)						9.0			11.0			
Pedestrian Calls (#/hr)						0			0			
Act Effct Green (s)	130.0			55.0								
Actuated g/C Ratio	1.00			0.42								
v/c Ratio	0.15			0.91								
Control Delay	0.2			44.5								

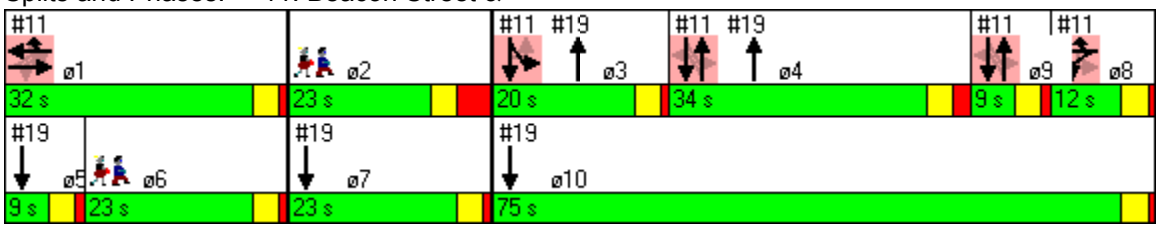
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			6.5	
Total Delay	419.7		330.8			138.8	108.1	38.3			30.5	
LOS	F		F			F	F	D			C	
Approach Delay			342.1				98.3				22.0	
Approach LOS			F				F				C	
90th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
90th %ile Term Code	Coord	Coord	Coord		Max	Max						
70th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
70th %ile Term Code	Coord	Coord	Coord		Max	Max						
50th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
50th %ile Term Code	Coord	Coord	Coord		Max	Max						
30th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
30th %ile Term Code	Coord	Coord	Coord		Max	Max						
10th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
10th %ile Term Code	Coord	Coord	Coord		Max	Max						
Stops (vph)	43		355			88	550	133			524	
Fuel Used(gal)	7		41			6	24	4			6	
CO Emissions (g/hr)	466		2882			420	1668	294			440	
NOx Emissions (g/hr)	91		561			82	324	57			86	
VOC Emissions (g/hr)	108		668			97	386	68			102	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~117		~399			~124	~310	151			265	
Queue Length 95th (ft)	#198		#525			#241	#465	177			345	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	51		366			152	624	558			760	
Starvation Cap Reductn	0		0			0	0	0			109	
Spillback Cap Reductn	0		0			0	0	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.71		1.63			1.10	1.10	0.41			0.94	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 20 (15%), Referenced to phase 1:EBWB and 5:, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.71			
Intersection Signal Delay: 112.9		Intersection LOS: F	
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 11: Beacon Street &



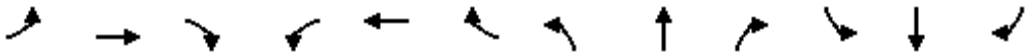


Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.2			44.5								
LOS	A			D								
Approach Delay				44.5								
Approach LOS				D								
90th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
70th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
70th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
50th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
50th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
30th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
30th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
10th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
10th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	Skip	Hold	MaxR	MaxR
Stops (vph)	0			700								
Fuel Used(gal)	0			19								
CO Emissions (g/hr)	19			1303								
NOx Emissions (g/hr)	4			253								
VOC Emissions (g/hr)	4			302								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			305								
Queue Length 95th (ft)	0			#410								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1615			1023								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.15			0.91								

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.992				0.850		0.994	
Flt Protected		0.984			0.976			0.999				
Satd. Flow (prot)	0	1851	0	0	1822	0	0	1880	1599	0	1836	0
Flt Permitted		0.857			0.793			0.986			0.956	
Satd. Flow (perm)	0	1612	0	0	1481	0	0	1855	1599	0	1756	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		4							120		4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	26	54	3	107	100	8	7	635	108	4	771	28
Peak Hour Factor	0.75	0.85	0.38	0.77	0.77	0.50	0.58	0.85	0.80	0.75	0.97	0.71
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	3%	0%
Adj. Flow (vph)	35	64	8	139	130	16	12	747	135	5	795	39
Lane Group Flow (vph)	0	107	0	0	285	0	0	759	135	0	839	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	46.0	46.0	46.0	46.0	46.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	0.0%	51.1%	51.1%	51.1%	51.1%	51.1%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		25.1			25.1			42.2	42.2		42.2	
Actuated g/C Ratio		0.32			0.32			0.54	0.54		0.54	
v/c Ratio		0.20			0.60			0.76	0.15		0.88	
Control Delay		21.2			29.7			21.5	3.4		29.8	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		21.2			29.7			21.5	3.4		29.8	

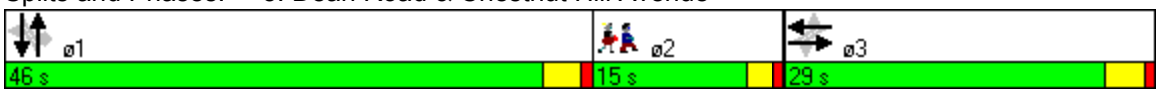
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C			C	A		C	
Approach Delay		21.2			29.7			18.8			29.8	
Approach LOS		C			C			B			C	
90th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		57			175			453	14		595	
Fuel Used(gal)		1			4			8	1		12	
CO Emissions (g/hr)		81			271			577	45		859	
NOx Emissions (g/hr)		16			53			112	9		167	
VOC Emissions (g/hr)		19			63			134	10		199	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		34			108			241	3		299	
Queue Length 95th (ft)		83			191			#545	26		#740	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		522			477			1004	920		952	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.20			0.60			0.76	0.15		0.88	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 24.7		Intersection LOS: C	
Intersection Capacity Utilization 98.3%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



Lane Group	ø2
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	10	12	13	12	12	12	13	11
Storage Length (ft)		280		0	160		0	0		0	0	
Storage Lanes		1		0	1		1	0		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50				50	50
Trailing Detector (ft)	0	0	0		0	0	0				0	0
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt							0.850					
Flt Protected		0.950			0.950						0.950	
Satd. Flow (prot)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Flt Permitted		0.950			0.950						0.950	
Satd. Flow (perm)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)							390					
Headway Factor	1.00	1.04	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96	1.04
Link Speed (mph)			30			30			30			30
Link Distance (ft)			1399			494			1410			187
Travel Time (s)			31.8			11.2			32.0			4.3
Volume (vph)	4	237	963	0	76	1023	351	0	0	0	519	36
Peak Hour Factor	0.33	0.75	0.88	0.92	0.75	0.87	0.90	0.92	0.92	0.92	0.80	0.71
Heavy Vehicles (%)	0%	0%	2%	2%	0%	2%	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	12	316	1094	0	101	1176	390	0	0	0	649	51
Lane Group Flow (vph)	0	328	1094	0	101	1176	390	0	0	0	649	51
Turn Type	Prot	Prot			Prot		custom				Split	
Protected Phases	4	4	1 4 5		2	1 2 5	1 2 3				3	3
Permitted Phases												
Detector Phases	4	4	1 4		2	1 2	1 2 3				3	3
Minimum Initial (s)	6.0	6.0			5.0						6.0	6.0
Minimum Split (s)	21.0	21.0			15.0						29.0	29.0
Total Split (s)	30.0	30.0	85.0	0.0	15.0	70.0	90.0	0.0	0.0	0.0	40.0	40.0
Total Split (%)	21.4%	21.4%	60.7%	0.0%	10.7%	50.0%	64.3%	0.0%	0.0%	0.0%	28.6%	28.6%
Maximum Green (s)	25.0	25.0			10.0						35.0	35.0
Yellow Time (s)	4.0	4.0			4.0						4.0	4.0
All-Red Time (s)	1.0	1.0			1.0						1.0	1.0
Lead/Lag	Lag	Lag			Lag						Lead	Lead
Lead-Lag Optimize?	Yes	Yes			Yes						Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0						3.0	3.0
Recall Mode	None	None			Max						None	None
Walk Time (s)											13.0	13.0
Flash Dont Walk (s)											5.0	5.0
Pedestrian Calls (#/hr)											0	0
Act Effct Green (s)		26.0	81.0		11.0	66.0	102.2				36.0	36.0
Actuated g/C Ratio		0.19	0.58		0.08	0.47	0.73				0.26	0.26
v/c Ratio		1.01	0.53		0.77	0.71	0.30				1.39	0.11
Control Delay		108.9	19.2		94.0	33.8	4.1				228.5	40.7
Queue Delay		0.0	0.0		0.0	1.3	0.4				0.0	0.0

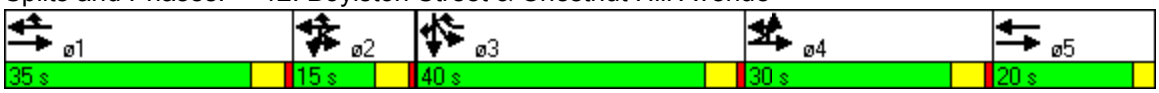


Lane Group	SBR	ø1	ø5
Lane Configurations			
Ideal Flow (vphpl)	1900		
Lane Width (ft)	16		
Storage Length (ft)	0		
Storage Lanes	1		
Total Lost Time (s)	4.0		
Leading Detector (ft)	50		
Trailing Detector (ft)	0		
Turning Speed (mph)	9		
Lane Util. Factor	1.00		
Frt	0.850		
Flt Protected			
Satd. Flow (prot)	1777		
Flt Permitted			
Satd. Flow (perm)	1777		
Right Turn on Red	Yes		
Satd. Flow (RTOR)	248		
Headway Factor	0.85		
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Volume (vph)	221		
Peak Hour Factor	0.89		
Heavy Vehicles (%)	3%		
Adj. Flow (vph)	248		
Lane Group Flow (vph)	248		
Turn Type	Prot		
Protected Phases	3	1	5
Permitted Phases			
Detector Phases	3		
Minimum Initial (s)	6.0	5.0	4.0
Minimum Split (s)	29.0	21.0	19.0
Total Split (s)	40.0	35.0	20.0
Total Split (%)	28.6%	25%	14%
Maximum Green (s)	35.0	30.0	17.0
Yellow Time (s)	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	0.0
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	None
Walk Time (s)	13.0		6.0
Flash Dont Walk (s)	5.0		10.0
Pedestrian Calls (#/hr)	0		10
Act Effct Green (s)	36.0		
Actuated g/C Ratio	0.26		
v/c Ratio	0.39		
Control Delay	6.5		
Queue Delay	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay		108.9	19.2		94.0	35.1	4.4				228.5	40.7
LOS		F	B		F	D	A				F	D
Approach Delay			39.9			31.5						160.3
Approach LOS			D			C						F
90th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
90th %ile Term Code	Max	Max			MaxR						Max	Max
70th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
70th %ile Term Code	Max	Max			MaxR						Max	Max
50th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
50th %ile Term Code	Max	Max			MaxR						Max	Max
30th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
30th %ile Term Code	Max	Max			MaxR						Max	Max
10th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
10th %ile Term Code	Max	Max			MaxR						Max	Max
Stops (vph)		210	565		69	852	70				396	28
Fuel Used(gal)		9	17		2	16	2				27	1
CO Emissions (g/hr)		638	1216		149	1097	142				1893	35
NOx Emissions (g/hr)		124	237		29	213	28				368	7
VOC Emissions (g/hr)		148	282		34	254	33				439	8
Dilemma Vehicles (#)		0	0		0	0	0				0	0
Queue Length 50th (ft)		~308	306		93	482	59				~786	36
Queue Length 95th (ft)		#372	354		m#134	538	127				#864	56
Internal Link Dist (ft)			1319			414			1330			107
Turn Bay Length (ft)		280			160							
Base Capacity (vph)		324	2048		132	1668	1299				466	458
Starvation Cap Reductn		0	0		0	277	455				0	0
Spillback Cap Reductn		0	92		0	0	0				0	0
Storage Cap Reductn		0	0		0	0	0				0	0
Reduced v/c Ratio		1.01	0.56		0.77	0.85	0.46				1.39	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.39			
Intersection Signal Delay: 64.7		Intersection LOS: E	
Intersection Capacity Utilization 80.4%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





Lane Group	SBR	ø1	ø5
Total Delay	6.5		
LOS	A		
Approach Delay			
Approach LOS			
90th %ile Green (s)	35.0	31.0	16.0
90th %ile Term Code	Max	Coord	Ped
70th %ile Green (s)	35.0	50.0	0.0
70th %ile Term Code	Max	Coord	Skip
50th %ile Green (s)	35.0	50.0	0.0
50th %ile Term Code	Max	Coord	Skip
30th %ile Green (s)	35.0	50.0	0.0
30th %ile Term Code	Max	Coord	Skip
10th %ile Green (s)	35.0	50.0	0.0
10th %ile Term Code	Max	Coord	Skip
Stops (vph)	20		
Fuel Used(gal)	1		
CO Emissions (g/hr)	51		
NOx Emissions (g/hr)	10		
VOC Emissions (g/hr)	12		
Dilemma Vehicles (#)	0		
Queue Length 50th (ft)	0		
Queue Length 95th (ft)	64		
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)	641		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.39		

Intersection Summary



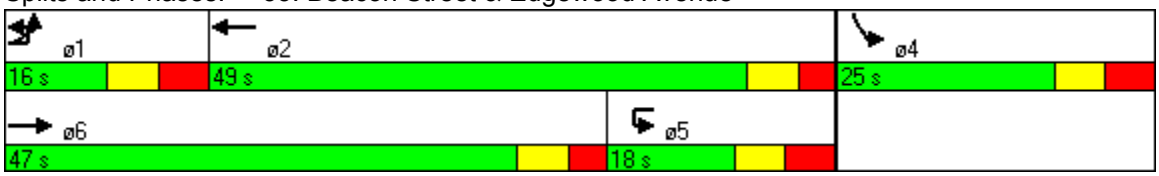
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.983		0.945	
Flt Protected		0.950		0.950			0.971	
Satd. Flow (prot)	0	1685	3369	1745	3400	0	1976	0
Flt Permitted		0.950		0.950			0.971	
Satd. Flow (perm)	0	1685	3369	1745	3400	0	1976	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					22		24	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			1583		2789		793	
Travel Time (s)			36.0		63.4		18.0	
Volume (vph)	43	28	702	26	869	90	32	12
Peak Hour Factor	0.79	0.69	0.85	0.75	0.94	0.76	0.91	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	54	41	826	35	924	118	35	24
Lane Group Flow (vph)	0	95	826	35	1042	0	59	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	16.0	16.0	47.0	18.0	49.0	0.0	25.0	0.0
Total Split (%)	17.8%	17.8%	52.2%	20.0%	54.4%	0.0%	27.8%	0.0%
Maximum Green (s)	8.0	8.0	40.0	10.0	42.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		13.7	67.5	14.8	62.1		12.1	
Actuated g/C Ratio		0.15	0.75	0.16	0.69		0.13	
v/c Ratio		0.37	0.33	0.12	0.44		0.21	
Control Delay		37.5	9.0	21.7	5.8		25.2	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

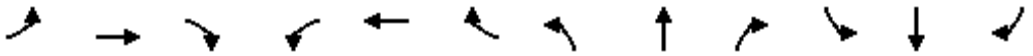


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.5	9.0	21.7	5.8		25.2	
LOS		D	A	C	A		C	
Approach Delay			11.9		6.3		25.2	
Approach LOS			B		A		C	
90th %ile Green (s)	14.2	14.2	42.7	15.7	44.2		8.6	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.3	11.3	38.6	20.4	47.7		8.0	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Min	
50th %ile Green (s)	9.5	9.5	67.0	0.0	49.5		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.7	7.7	83.0	0.0	67.3		0.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Skip	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		61	264	15	230		27	
Fuel Used(gal)		2	11	1	23		1	
CO Emissions (g/hr)		123	798	53	1624		45	
NOx Emissions (g/hr)		24	155	10	316		9	
VOC Emissions (g/hr)		28	185	12	376		10	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		49	55	14	96		18	
Queue Length 95th (ft)		67	187	m16	123		53	
Internal Link Dist (ft)			1503		2709		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		266	2536	334	2355		479	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.36	0.33	0.10	0.44		0.12	

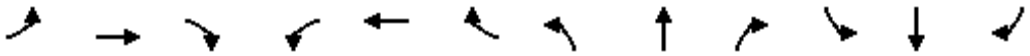
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 48.6%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.989			0.972			0.975	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1719	3332	0	0	3412	0	1668	1750	0	1652	1761	0
Flt Permitted	0.950						0.278			0.415		
Satd. Flow (perm)	1719	3332	0	0	3412	0	488	1750	0	722	1761	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								15			13	
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2789			1295			1022			860	
Travel Time (s)		63.4			29.4			23.2			19.5	
Volume (vph)	106	629	165	0	588	31	109	231	48	62	306	50
Peak Hour Factor	0.89	0.89	0.69	0.25	0.90	0.58	0.86	0.85	0.78	0.80	0.80	0.67
Heavy Vehicles (%)	5%	1%	0%	2%	1%	3%	1%	2%	2%	2%	2%	0%
Adj. Flow (vph)	119	707	239	0	653	53	127	272	62	78	382	75
Lane Group Flow (vph)	119	946	0	0	706	0	127	334	0	78	457	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	19.0	52.0	0.0	0.0	33.0	0.0	38.0	38.0	0.0	38.0	38.0	0.0
Total Split (%)	21.1%	57.8%	0.0%	0.0%	36.7%	0.0%	42.2%	42.2%	0.0%	42.2%	42.2%	0.0%
Maximum Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	13.7	51.4			36.5		30.6	30.6		30.6	30.6	
Actuated g/C Ratio	0.15	0.57			0.41		0.34	0.34		0.34	0.34	
v/c Ratio	0.45	0.50			0.51		0.77	0.55		0.32	0.75	
Control Delay	52.4	9.1			24.2		56.2	26.2		24.7	33.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	52.4	9.1			24.2		56.2	26.2		24.7	33.7	
LOS	D	A			C		E	C		C	C	
Approach Delay		13.9			24.2			34.4			32.4	
Approach LOS		B			C			C			C	
90th %ile Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
90th %ile Term Code	Max	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
70th %ile Term Code	Max	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	11.0	41.4			22.4		29.6	29.6		29.6	29.6	
50th %ile Term Code	Gap	Coord			Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	9.6	47.6			30.0		23.4	23.4		23.4	23.4	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	0.0	51.0			51.0		20.0	20.0		20.0	20.0	
10th %ile Term Code	Skip	Coord			Coord		Min	Min		Min	Min	
Stops (vph)	95	270			466		91	209		44	297	
Fuel Used(gal)	4	20			12		3	5		1	6	
CO Emissions (g/hr)	277	1414			829		183	341		68	452	
NOx Emissions (g/hr)	54	275			161		36	66		13	88	
VOC Emissions (g/hr)	64	328			192		42	79		16	105	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	67	136			177		60	137		31	209	
Queue Length 95th (ft)	120	84			240		#141	200		58	266	
Internal Link Dist (ft)		2709			1215			942			780	
Turn Bay Length (ft)	150											
Base Capacity (vph)	287	1903			1383		184	670		273	673	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.41	0.50			0.51		0.69	0.50		0.29	0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 72.3%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

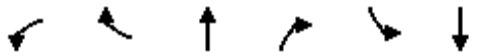
Splits and Phases: 38: Beacon Street & Washington Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	7	1	2	8	85	89	808	10	2	664	2
Peak Hour Factor	0.33	0.35	0.25	0.50	0.67	0.76	0.89	0.94	0.67	0.50	0.89	0.50
Hourly flow rate (vph)	15	20	4	4	12	112	100	860	15	4	746	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								650			660	
pX, platoon unblocked	0.65	0.65		0.65	0.65	0.65	0.65					
vC, conflicting volume	1941	1825	867	1837	1831	748	750			874		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2448	2270	867	2289	2279	612	615			874		
tC, single (s)	7.3	6.6	6.2	7.1	6.5	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.3	3.5	4.0	3.3	2.2			2.7		
p0 queue free %	0	1	99	0	46	65	84			99		
cM capacity (veh/h)	4	20	355	1	22	321	633			603		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	128	974	754
Volume Left	15	4	100	4
Volume Right	4	112	15	4
cSH	8	29	633	603
Volume to Capacity	4.94	4.43	0.16	0.01
Queue Length 95th (ft)	Err	Err	14	1
Control Delay (s)	Err	Err	4.6	0.2
Lane LOS	F	F	A	A
Approach Delay (s)	Err	Err	4.6	0.2
Approach LOS	F	F		

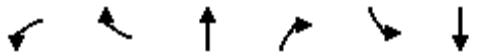
Intersection Summary			
Average Delay	883.1		
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	4	575	9	18	646
Peak Hour Factor	0.50	0.33	0.92	0.56	0.61	0.87
Hourly flow rate (vph)	4	12	625	16	30	743
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1435	633			641	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1435	633			641	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			97	
cM capacity (veh/h)	144	483			953	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	641	772
Volume Left	4	0	30
Volume Right	12	16	0
cSH	305	1700	953
Volume to Capacity	0.05	0.38	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	17.4	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	17.4	0.0	0.8
Approach LOS	C		

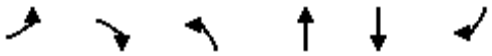
Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		58.5%	ICU Level of Service B
Analysis Period (min)		15	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	8	5	578	0	0	656
Peak Hour Factor	0.67	0.63	0.92	0.25	0.25	0.87
Hourly flow rate (vph)	12	8	628	0	0	754
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1382	628			628	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1382	628			628	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	98			100	
cM capacity (veh/h)	160	486			963	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	628	754
Volume Left	12	0	0
Volume Right	8	0	0
cSH	219	1700	1700
Volume to Capacity	0.09	0.37	0.44
Queue Length 95th (ft)	7	0	0
Control Delay (s)	23.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	23.1	0.0	0.0
Approach LOS	C		

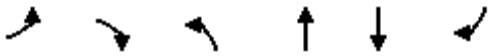
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	5	10	735	900	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	11	799	978	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1180	130	
pX, platoon unblocked						
vC, conflicting volume	1407	497	993			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1407	497	993			
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	99	98			
cM capacity (veh/h)	128	519	692			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	277	533	652	341
Volume Left	5	11	0	0	0
Volume Right	5	0	0	0	15
cSH	205	692	1700	1700	1700
Volume to Capacity	0.05	0.02	0.31	0.38	0.20
Queue Length 95th (ft)	4	1	0	0	0
Control Delay (s)	23.5	0.6	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	23.5	0.2		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	6	9	744	905	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	7	10	809	984	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1073	237	
pX, platoon unblocked						
vC, conflicting volume	1408	492	984			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1408	492	984			
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	99	99			
cM capacity (veh/h)	128	523	698			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	279	539	656	328
Volume Left	1	10	0	0	0
Volume Right	7	0	0	0	0
cSH	363	698	1700	1700	1700
Volume to Capacity	0.02	0.01	0.32	0.39	0.19
Queue Length 95th (ft)	2	1	0	0	0
Control Delay (s)	15.1	0.5	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	15.1	0.2		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.943				0.983			0.967			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1752	3269	0	0	1771	3348	0	1752	1769	0	0	3454
Flt Permitted	0.295				0.182			0.271				0.513
Satd. Flow (perm)	544	3269	0	0	339	3348	0	500	1769	0	0	1781
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		93				10			14			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	143	415	236	4	193	308	34	146	587	180	27	424
Peak Hour Factor	0.87	0.92	0.86	0.50	0.93	0.85	0.73	0.71	0.85	0.93	0.52	0.88
Heavy Vehicles (%)	3%	3%	6%	0%	2%	6%	6%	3%	3%	7%	4%	4%
Adj. Flow (vph)	164	451	274	8	208	362	47	206	691	194	52	482
Lane Group Flow (vph)	164	725	0	0	216	409	0	206	885	0	0	534
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	15.0	26.0	0.0	15.0	15.0	26.0	0.0	19.0	54.0	0.0	35.0	35.0
Total Split (%)	12.5%	21.7%	0.0%	12.5%	12.5%	21.7%	0.0%	15.8%	45.0%	0.0%	29.2%	29.2%
Maximum Green (s)	9.0	21.0		9.0	9.0	21.0		12.0			28.0	28.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	58.0	47.0			58.0	47.0		46.0	50.0			31.0
Actuated g/C Ratio	0.48	0.39			0.48	0.39		0.38	0.42			0.26
v/c Ratio	0.44	0.54			0.73	0.31		0.59	1.19			1.16
Control Delay	19.5	26.0			32.5	25.4		51.6	130.7			134.4
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0

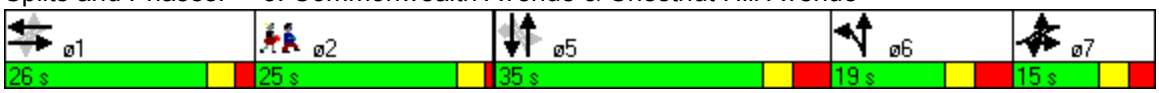


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1615	
Flt Permitted		
Satd. Flow (perm)	1615	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	9	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	20	
Peak Hour Factor	0.95	
Heavy Vehicles (%)	0%	
Adj. Flow (vph)	21	
Lane Group Flow (vph)	21	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	35.0	25.0
Total Split (%)	29.2%	21%
Maximum Green (s)	28.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	31.0	
Actuated g/C Ratio	0.26	
v/c Ratio	0.05	
Control Delay	23.8	
Queue Delay	0.0	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	19.5	26.0			32.5	25.4		51.6	130.7			134.4
LOS	B	C			C	C		D	F			F
Approach Delay		24.8				27.9			115.8			130.2
Approach LOS		C				C			F			F
90th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	9.0	46.0		9.0	9.0	46.0		12.0			28.0	28.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	75	427			105	224		133	536			373
Fuel Used(gal)	3	13			3	6		4	30			17
CO Emissions (g/hr)	181	918			239	397		245	2092			1219
NOx Emissions (g/hr)	35	179			47	77		48	407			237
VOC Emissions (g/hr)	42	213			56	92		57	485			282
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	65	196			89	111		133	~792			~257
Queue Length 95th (ft)	102	256			#156	141		m117	m#615			#358
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	374	1337			295	1317		348	745			460
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.44	0.54			0.73	0.31		0.59	1.19			1.16

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 75.3		Intersection LOS: E	
Intersection Capacity Utilization 97.6%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

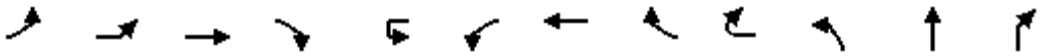
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





Lane Group	SBR	ø2
Total Delay	23.8	
LOS	C	
Approach Delay		
Approach LOS		
90th %ile Green (s)	28.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	28.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	28.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	28.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	28.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	11	
Fuel Used(gal)	0	
CO Emissions (g/hr)	20	
NOx Emissions (g/hr)	4	
VOC Emissions (g/hr)	5	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	7	
Queue Length 95th (ft)	28	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	424	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.05	

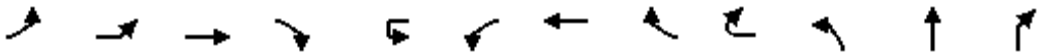
Intersection Summary



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		25		200		150		150		0		0
Storage Lanes		1		1		1		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0		0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.91	0.91	0.91	0.95	0.95	0.91	0.91	1.00	0.95	0.95	0.95	0.95
Frt			0.987					0.850			0.995	
Flt Protected	0.950		0.998			0.950	0.989				0.996	
Satd. Flow (prot)	1557	0	3193	0	0	1615	3491	1794	0	0	3228	0
Flt Permitted	0.156		0.755			0.129	0.530				0.651	
Satd. Flow (perm)	256	0	2415	0	0	219	1871	1794	0	0	2110	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.04	1.09	1.00	1.00	0.96	0.85	1.00	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				1583				159	
Travel Time (s)			30.4				36.0				3.6	
Volume (vph)	104	17	595	57	16	280	483	171	22	40	557	17
Peak Hour Factor	0.81	0.81	0.88	0.81	0.67	0.93	0.88	0.87	0.87	0.67	0.87	0.76
Heavy Vehicles (%)	2%	2%	3%	5%	0%	2%	1%	2%	2%	11%	7%	1%
Adj. Flow (vph)	128	21	676	70	24	301	549	197	25	60	640	22
Lane Group Flow (vph)	116	0	779	0	0	163	711	222	0	0	722	0
Turn Type	Perm	Perm			custom	D.P+P		Prot		Perm		
Protected Phases			1			8	1 8	1 8			4 9	
Permitted Phases	1	1			8	1				4 9		
Detector Phases	1	1	1		8	8	1 8	1 8		4 9	4 9	
Minimum Initial (s)	21.0	21.0	21.0		6.0	6.0						
Minimum Split (s)	25.0	25.0	25.0		10.0	10.0						
Total Split (s)	35.0	35.0	35.0	0.0	14.0	14.0	49.0	49.0	0.0	37.0	37.0	0.0
Total Split (%)	29.2%	29.2%	29.2%	0.0%	11.7%	11.7%	40.8%	40.8%	0.0%	30.8%	30.8%	0.0%
Maximum Green (s)	31.0	31.0	31.0		10.0	10.0						
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0						
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0						
Lead/Lag					Lag	Lag						
Lead-Lag Optimize?					Yes	Yes						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0						
Recall Mode	C-Max	C-Max	C-Max		None	None						
Walk Time (s)	7.0	7.0	7.0									
Flash Dont Walk (s)	11.0	11.0	11.0									
Pedestrian Calls (#/hr)	0	0	0									
Act Effct Green (s)	33.7		33.7			43.7	43.7	47.7			33.0	
Actuated g/C Ratio	0.28		0.28			0.36	0.36	0.40			0.28	
v/c Ratio	1.61		1.15			0.83	0.87	0.31			1.24	
Control Delay	361.0		123.5			59.3	44.2	26.6			135.2	



Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	10							
Grade (%)				-3%								
Storage Length (ft)			0		0							
Storage Lanes			0		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	15	15		9							
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95							
Frt	0.850			0.984								
Flt Protected				0.988								
Satd. Flow (prot)	1599	0	0	3377	0							
Flt Permitted				0.520								
Satd. Flow (perm)	1599	0	0	1777	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	171											
Headway Factor	1.00	0.98	1.07	0.98	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	150	3	200	567	82							
Peak Hour Factor	0.76	0.75	0.89	0.90	0.83							
Heavy Vehicles (%)	1%	0%	2%	7%	4%							
Adj. Flow (vph)	197	4	225	630	99							
Lane Group Flow (vph)	197	0	0	958	0							
Turn Type	Free	custom	D.P+P									
Protected Phases			3	3 4 9		2	4	5	6	7	9	10
Permitted Phases	Free	3	4 9									
Detector Phases		3	3	3 4 9								
Minimum Initial (s)		7.0	7.0			16.0	13.0	6.0	4.0	4.0	5.0	7.0
Minimum Split (s)		11.0	11.0			23.0	18.0	10.0	23.0	20.0	9.0	11.0
Total Split (s)	0.0	11.0	11.0	48.0	0.0	23.0	28.0	12.0	23.0	23.0	9.0	62.0
Total Split (%)	0.0%	9.2%	9.2%	40.0%	0.0%	19%	23%	10%	19%	19%	8%	52%
Maximum Green (s)		7.0	7.0			19.0	23.0	8.0	19.0	19.0	5.0	58.0
Yellow Time (s)		3.0	3.0			3.5	3.0	3.0	3.5	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			0.5	2.0	1.0	0.5	1.0	1.0	1.0
Lead/Lag		Lead	Lead				Lag	Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes				Yes	Yes	Yes		Yes	
Vehicle Extension (s)		2.0	2.0			3.0	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode		Max	Max			None	Max	C-Max	None	None	Max	Max
Walk Time (s)						5.0			5.0			
Flash Dont Walk (s)						11.0			11.0			
Pedestrian Calls (#/hr)						0			0			
Act Effct Green (s)	120.0			40.0								
Actuated g/C Ratio	1.00			0.33								
v/c Ratio	0.12			1.40								
Control Delay	0.1			207.5								



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		131.3			16.0	15.0	0.0			103.1	
Total Delay	361.0		254.9			75.3	59.2	26.6			238.2	
LOS	F		F			E	E	C			F	
Approach Delay			268.6				55.0				187.2	
Approach LOS			F				E				F	
90th %ile Green (s)	32.4	32.4	32.4		10.0	10.0						
90th %ile Term Code	Coord	Coord	Coord		Max	Max						
70th %ile Green (s)	33.9	33.9	33.9		10.0	10.0						
70th %ile Term Code	Coord	Coord	Coord		Max	Max						
50th %ile Green (s)	34.0	34.0	34.0		10.0	10.0						
50th %ile Term Code	Coord	Coord	Coord		Max	Max						
30th %ile Green (s)	34.0	34.0	34.0		10.0	10.0						
30th %ile Term Code	Coord	Coord	Coord		Max	Max						
10th %ile Green (s)	34.0	34.0	34.0		10.0	10.0						
10th %ile Term Code	Coord	Coord	Coord		Max	Max						
Stops (vph)	62		569			90	544	130			494	
Fuel Used(gal)	8		27			4	17	4			20	
CO Emissions (g/hr)	575		1905			282	1156	290			1425	
NOx Emissions (g/hr)	112		371			55	225	56			277	
VOC Emissions (g/hr)	133		442			65	268	67			330	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~141		~386			91	225	116			~377	
Queue Length 95th (ft)	#245		#513			#218	#306	176			m#405	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	72		677			196	816	713			580	
Starvation Cap Reductn	0		0			0	0	0			91	
Spillback Cap Reductn	0		139			25	107	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.61		1.45			0.95	1.00	0.31			1.48	

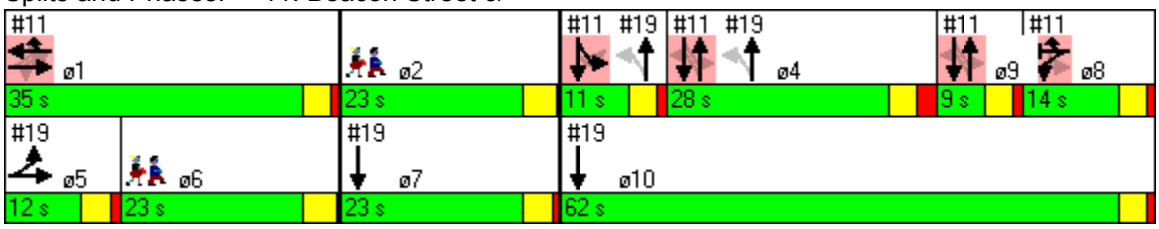
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.61			
Intersection Signal Delay: 173.6		Intersection LOS: F	
Intersection Capacity Utilization 89.6%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 11: Beacon Street &





Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.1			207.5								
LOS	A			F								
Approach Delay				207.5								
Approach LOS				F								
90th %ile Green (s)		7.0	7.0			17.6	23.0	32.4	0.0	17.6	5.0	58.0
90th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	Gap	MaxR	MaxR
70th %ile Green (s)		7.0	7.0			16.1	23.0	33.9	0.0	16.1	5.0	58.0
70th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	Gap	MaxR	MaxR
50th %ile Green (s)		7.0	7.0			16.0	23.0	34.0	0.0	16.0	5.0	58.0
50th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	Hold	MaxR	MaxR
30th %ile Green (s)		7.0	7.0			16.0	23.0	34.0	0.0	16.0	5.0	58.0
30th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	Hold	MaxR	MaxR
10th %ile Green (s)		7.0	7.0			16.0	23.0	34.0	0.0	16.0	5.0	58.0
10th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	Hold	MaxR	MaxR
Stops (vph)	0			523								
Fuel Used(gal)	0			46								
CO Emissions (g/hr)	13			3225								
NOx Emissions (g/hr)	3			627								
VOC Emissions (g/hr)	3			747								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			~442								
Queue Length 95th (ft)	m0			m#461								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1599			686								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.12			1.40								

Intersection Summary

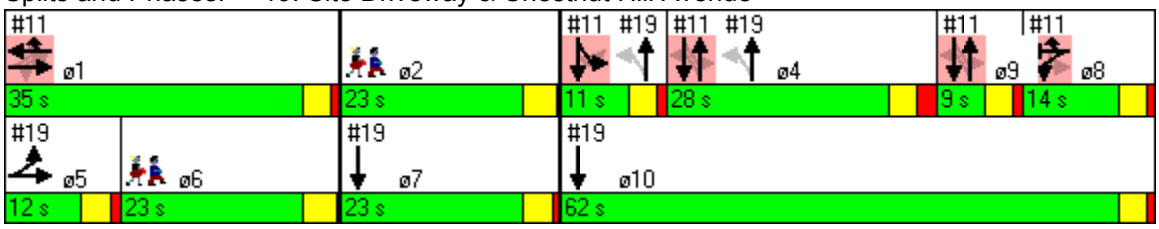
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	16	12	16	12	11	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50					50	50			50	
Trailing Detector (ft)	0	0					0	0			0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt		0.948									0.993	
Flt Protected		0.970						0.998				
Satd. Flow (prot)	0	1713	0	0	0	0	0	3259	0	0	3450	0
Flt Permitted		0.970						0.895				
Satd. Flow (perm)	0	1713	0	0	0	0	0	2923	0	0	3450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10									9	
Headway Factor	1.00	1.00	1.00	0.85	1.00	0.85	1.00	1.04	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		178			473			650			159	
Travel Time (s)		4.0			10.8			14.8			3.6	
Volume (vph)	15	0	9	0	0	0	23	725	0	0	860	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	4%	2%
Adj. Flow (vph)	16	0	10	0	0	0	25	806	0	0	935	45
Lane Group Flow (vph)	0	26	0	0	0	0	0	831	0	0	980	0
Turn Type	custom						Perm					
Protected Phases	5	5						3 4			7 10	
Permitted Phases	5						3 4					
Detector Phases	5	5					3 4	3 4			7 10	
Minimum Initial (s)	6.0	6.0										
Minimum Split (s)	10.0	10.0										
Total Split (s)	12.0	12.0	0.0	0.0	0.0	0.0	39.0	39.0	0.0	0.0	85.0	0.0
Total Split (%)	10.0%	10.0%	0.0%	0.0%	0.0%	0.0%	32.5%	32.5%	0.0%	0.0%	70.8%	0.0%
Maximum Green (s)	8.0	8.0										
Yellow Time (s)	3.0	3.0										
All-Red Time (s)	1.0	1.0										
Lead/Lag	Lead	Lead										
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0										
Recall Mode	C-Max	C-Max										
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		33.7						35.0			78.3	
Actuated g/C Ratio		0.28						0.29			0.65	
v/c Ratio		0.05						0.97			0.43	
Control Delay		23.2						67.6			6.8	
Queue Delay		0.0						110.3			192.5	
Total Delay		23.2						177.9			199.2	
LOS		C						F			F	

Lane Group	ø1	ø2	ø3	ø4	ø6	ø7	ø8	ø9	ø10
Lane Configurations									
Ideal Flow (vphpl)									
Lane Width (ft)									
Total Lost Time (s)									
Leading Detector (ft)									
Trailing Detector (ft)									
Turning Speed (mph)									
Lane Util. Factor									
Frt									
Flt Protected									
Satd. Flow (prot)									
Flt Permitted									
Satd. Flow (perm)									
Right Turn on Red									
Satd. Flow (RTOR)									
Headway Factor									
Link Speed (mph)									
Link Distance (ft)									
Travel Time (s)									
Volume (vph)									
Peak Hour Factor									
Heavy Vehicles (%)									
Adj. Flow (vph)									
Lane Group Flow (vph)									
Turn Type									
Protected Phases	1	2	3	4	6	7	8	9	10
Permitted Phases									
Detector Phases									
Minimum Initial (s)	21.0	16.0	7.0	13.0	4.0	4.0	6.0	5.0	7.0
Minimum Split (s)	25.0	23.0	11.0	18.0	23.0	20.0	10.0	9.0	11.0
Total Split (s)	35.0	23.0	11.0	28.0	23.0	23.0	14.0	9.0	62.0
Total Split (%)	29%	19%	9%	23%	19%	19%	12%	8%	52%
Maximum Green (s)	31.0	19.0	7.0	23.0	19.0	19.0	10.0	5.0	58.0
Yellow Time (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	0.5	1.0	2.0	0.5	1.0	1.0	1.0	1.0
Lead/Lag			Lead	Lag	Lag		Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0
Recall Mode	C-Max	None	Max	Max	None	None	None	Max	Max
Walk Time (s)	7.0	5.0			5.0				
Flash Dont Walk (s)	11.0	11.0			11.0				
Pedestrian Calls (#/hr)	0	0			0				
Act Effct Green (s)									
Actuated g/C Ratio									
v/c Ratio									
Control Delay									
Queue Delay									
Total Delay									
LOS									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		23.2						177.9			199.2	
Approach LOS		C						F			F	
90th %ile Green (s)	32.4	32.4										
90th %ile Term Code	Coord	Coord										
70th %ile Green (s)	33.9	33.9										
70th %ile Term Code	Coord	Coord										
50th %ile Green (s)	34.0	34.0										
50th %ile Term Code	Coord	Coord										
30th %ile Green (s)	34.0	34.0										
30th %ile Term Code	Coord	Coord										
10th %ile Green (s)	34.0	34.0										
10th %ile Term Code	Coord	Coord										
Stops (vph)		13						671			252	
Fuel Used(gal)		0						18			4	
CO Emissions (g/hr)		15						1244			262	
NOx Emissions (g/hr)		3						242			51	
VOC Emissions (g/hr)		4						288			61	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		9						335			107	
Queue Length 95th (ft)		32						#471			m98	
Internal Link Dist (ft)		98			393			570			79	
Turn Bay Length (ft)												
Base Capacity (vph)		488						853			2217	
Starvation Cap Reductn		0						0			1528	
Spillback Cap Reductn		1						195			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.05						1.26			1.42	

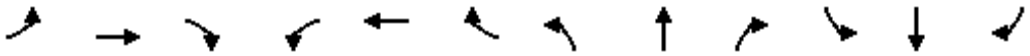
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.61			
Intersection Signal Delay: 187.1		Intersection LOS: F	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 19: Site Driveway & Chestnut Hill Avenue



Lane Group	ø1	ø2	ø3	ø4	ø6	ø7	ø8	ø9	ø10
Approach Delay									
Approach LOS									
90th %ile Green (s)	32.4	17.6	7.0	23.0	0.0	17.6	10.0	5.0	58.0
90th %ile Term Code	Coord	Hold	MaxR	MaxR	Skip	Gap	Max	MaxR	MaxR
70th %ile Green (s)	33.9	16.1	7.0	23.0	0.0	16.1	10.0	5.0	58.0
70th %ile Term Code	Coord	Hold	MaxR	MaxR	Skip	Gap	Max	MaxR	MaxR
50th %ile Green (s)	34.0	16.0	7.0	23.0	0.0	16.0	10.0	5.0	58.0
50th %ile Term Code	Coord	Hold	MaxR	MaxR	Skip	Hold	Max	MaxR	MaxR
30th %ile Green (s)	34.0	16.0	7.0	23.0	0.0	16.0	10.0	5.0	58.0
30th %ile Term Code	Coord	Hold	MaxR	MaxR	Skip	Hold	Max	MaxR	MaxR
10th %ile Green (s)	34.0	16.0	7.0	23.0	0.0	16.0	10.0	5.0	58.0
10th %ile Term Code	Coord	Hold	MaxR	MaxR	Skip	Hold	Max	MaxR	MaxR
Stops (vph)									
Fuel Used(gal)									
CO Emissions (g/hr)									
NOx Emissions (g/hr)									
VOC Emissions (g/hr)									
Dilemma Vehicles (#)									
Queue Length 50th (ft)									
Queue Length 95th (ft)									
Internal Link Dist (ft)									
Turn Bay Length (ft)									
Base Capacity (vph)									
Starvation Cap Reductn									
Spillback Cap Reductn									
Storage Cap Reductn									
Reduced v/c Ratio									

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00				0.98			
Frt		0.990			0.993				0.850		0.998	
Flt Protected		0.992			0.973			0.999			0.998	
Satd. Flow (prot)	0	1866	0	0	1827	0	0	1840	1599	0	1818	0
Flt Permitted		0.930			0.563			0.984			0.746	
Satd. Flow (perm)	0	1749	0	0	1057	0	0	1812	1564	0	1359	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		5							126		1	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	27	126	13	118	72	8	8	643	118	15	779	7
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.67	0.63	0.65	0.88	0.77	0.67	0.67	0.92	0.89	0.55	0.93	0.63
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	13%	3%	1%	9%	4%	0%
Adj. Flow (vph)	40	200	20	134	94	12	12	699	133	27	838	11
Lane Group Flow (vph)	0	260	0	0	240	0	0	711	133	0	876	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	46.0	46.0	46.0	46.0	46.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	0.0%	51.1%	51.1%	51.1%	51.1%	51.1%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		25.1			25.1			42.2	42.2		42.2	
Actuated g/C Ratio		0.32			0.32			0.54	0.54		0.54	
v/c Ratio		0.46			0.71			0.72	0.15		1.19	
Control Delay		24.9			38.1			20.4	3.1		120.3	

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		24.9			38.1			20.4	3.1		120.3	
LOS		C			D			C	A		F	
Approach Delay		24.9			38.1			17.7			120.3	
Approach LOS		C			D			B			F	
90th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		126			158			456	14		618	
Fuel Used(gal)		2			4			8	1		27	
CO Emissions (g/hr)		175			272			573	48		1898	
NOx Emissions (g/hr)		34			53			112	9		369	
VOC Emissions (g/hr)		40			63			133	11		440	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		91			95			219	1		~492	
Queue Length 95th (ft)		128			#194			#557	31		#906	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		567			340			981	904		736	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.46			0.71			0.72	0.15		1.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 61.2		Intersection LOS: E	
Intersection Capacity Utilization 98.1%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			

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

Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary
Queue shown is maximum after two cycles.

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	10	12	13	12	12	12	13
Storage Length (ft)		280		0		160		0	0		0	0
Storage Lanes		1		0		1		1	0		0	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50				50
Trailing Detector (ft)	0	0	0		0	0	0	0				0
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt								0.850				
Flt Protected		0.950				0.950						0.950
Satd. Flow (prot)	0	1641	3471	0	0	1685	3505	1620	0	0	0	1776
Flt Permitted		0.950				0.950						0.950
Satd. Flow (perm)	0	1641	3471	0	0	1685	3505	1620	0	0	0	1776
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)								571				
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96
Link Speed (mph)			30				30			30		
Link Distance (ft)			1399				494			1410		
Travel Time (s)			31.8				11.2			32.0		
Volume (vph)	10	208	1244	0	11	75	1325	606	0	0	0	456
Peak Hour Factor	0.50	0.91	0.94	0.25	0.69	0.68	0.96	0.99	0.92	0.92	0.92	0.93
Heavy Vehicles (%)	10%	6%	4%	0%	0%	0%	3%	3%	2%	2%	2%	5%
Adj. Flow (vph)	20	229	1323	0	16	110	1380	612	0	0	0	490
Lane Group Flow (vph)	0	249	1323	0	0	126	1380	612	0	0	0	490
Turn Type	Prot	Prot			Prot	Prot		custom				Split
Protected Phases	4	4	1 4 5		2	2	1 2 5	1 2 3				3
Permitted Phases												
Detector Phases	4	4	1 4		2	2	1 2	1 2 3				3
Minimum Initial (s)	6.0	6.0			5.0	5.0						6.0
Minimum Split (s)	21.0	21.0			15.0	15.0						29.0
Total Split (s)	30.0	30.0	85.0	0.0	15.0	15.0	70.0	90.0	0.0	0.0	0.0	40.0
Total Split (%)	21.4%	21.4%	60.7%	0.0%	10.7%	10.7%	50.0%	64.3%	0.0%	0.0%	0.0%	28.6%
Maximum Green (s)	25.0	25.0			10.0	10.0						35.0
Yellow Time (s)	4.0	4.0			4.0	4.0						4.0
All-Red Time (s)	1.0	1.0			1.0	1.0						1.0
Lead/Lag	Lag	Lag			Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes			Yes	Yes						Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Recall Mode	None	None			Max	Max						None
Walk Time (s)												13.0
Flash Dont Walk (s)												5.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		26.0	81.0			11.0	66.0	102.2				36.0
Actuated g/C Ratio		0.19	0.58			0.08	0.47	0.73				0.26
v/c Ratio		0.82	0.66			0.95	0.84	0.46				1.07
Control Delay		76.1	22.1			114.7	39.0	3.4				111.5
Queue Delay		0.0	0.6			0.0	21.1	0.7				0.0

Lane Group	SBT	SBR	ø1	ø5
Lane Configurations				
Ideal Flow (vphpl)	1900	1900		
Lane Width (ft)	11	16		
Storage Length (ft)		0		
Storage Lanes		1		
Total Lost Time (s)	4.0	4.0		
Leading Detector (ft)	50	50		
Trailing Detector (ft)	0	0		
Turning Speed (mph)		9		
Lane Util. Factor	1.00	1.00		
Frt		0.850		
Flt Protected				
Satd. Flow (prot)	1701	1812		
Flt Permitted				
Satd. Flow (perm)	1701	1812		
Right Turn on Red		Yes		
Satd. Flow (RTOR)		304		
Headway Factor	1.04	0.85		
Link Speed (mph)	30			
Link Distance (ft)	187			
Travel Time (s)	4.3			
Volume (vph)	42	311		
Peak Hour Factor	0.63	0.87		
Heavy Vehicles (%)	8%	1%		
Adj. Flow (vph)	67	357		
Lane Group Flow (vph)	67	357		
Turn Type		Prot		
Protected Phases	3	3	1	5
Permitted Phases				
Detector Phases	3	3		
Minimum Initial (s)	6.0	6.0	5.0	4.0
Minimum Split (s)	29.0	29.0	21.0	19.0
Total Split (s)	40.0	40.0	35.0	20.0
Total Split (%)	28.6%	28.6%	25%	14%
Maximum Green (s)	35.0	35.0	30.0	17.0
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None
Walk Time (s)	13.0	13.0		6.0
Flash Dont Walk (s)	5.0	5.0		10.0
Pedestrian Calls (#/hr)	0	0		10
Act Effct Green (s)	36.0	36.0		
Actuated g/C Ratio	0.26	0.26		
v/c Ratio	0.15	0.52		
Control Delay	41.4	10.7		
Queue Delay	0.0	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Total Delay		76.1	22.7			114.7	60.1	4.1				111.5
LOS		E	C			F	E	A				F
Approach Delay			31.2				47.2					
Approach LOS			C				D					
90th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
90th %ile Term Code	Max	Max			MaxR	MaxR						Max
70th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
70th %ile Term Code	Max	Max			MaxR	MaxR						Max
50th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
50th %ile Term Code	Max	Max			MaxR	MaxR						Max
30th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
30th %ile Term Code	Max	Max			MaxR	MaxR						Max
10th %ile Green (s)	25.0	25.0			10.0	10.0						35.0
10th %ile Term Code	Max	Max			MaxR	MaxR						Max
Stops (vph)		200	819			74	1230	120				392
Fuel Used(gal)		7	24			3	22	3				13
CO Emissions (g/hr)		480	1656			192	1568	239				921
NOx Emissions (g/hr)		93	322			37	305	46				179
VOC Emissions (g/hr)		111	384			45	363	55				214
Dilemma Vehicles (#)		0	0			0	0	0				0
Queue Length 50th (ft)		220	414			119	639	18				~494
Queue Length 95th (ft)		#360	490			m#136	m667	m137				#717
Internal Link Dist (ft)			1319				414			1330		
Turn Bay Length (ft)		280				160						
Base Capacity (vph)		305	2008			132	1652	1337				457
Starvation Cap Reductn		0	0			0	315	385				0
Spillback Cap Reductn		0	318			0	0	0				0
Storage Cap Reductn		0	0			0	0	0				0
Reduced v/c Ratio		0.82	0.78			0.95	1.03	0.64				1.07

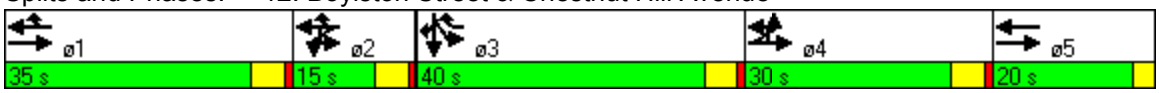
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 45.6		Intersection LOS: D	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			

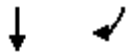
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

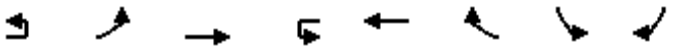
Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





Lane Group	SBT	SBR	ø1	ø5
Total Delay	41.4	10.7		
LOS	D	B		
Approach Delay	67.0			
Approach LOS	E			
90th %ile Green (s)	35.0	35.0	31.0	16.0
90th %ile Term Code	Max	Max	Coord	Ped
70th %ile Green (s)	35.0	35.0	50.0	0.0
70th %ile Term Code	Max	Max	Coord	Skip
50th %ile Green (s)	35.0	35.0	50.0	0.0
50th %ile Term Code	Max	Max	Coord	Skip
30th %ile Green (s)	35.0	35.0	50.0	0.0
30th %ile Term Code	Max	Max	Coord	Skip
10th %ile Green (s)	35.0	35.0	50.0	0.0
10th %ile Term Code	Max	Max	Coord	Skip
Stops (vph)	33	51		
Fuel Used(gal)	1	1		
CO Emissions (g/hr)	42	99		
NOx Emissions (g/hr)	8	19		
VOC Emissions (g/hr)	10	23		
Dilemma Vehicles (#)	0	0		
Queue Length 50th (ft)	47	37		
Queue Length 95th (ft)	61	114		
Internal Link Dist (ft)	107			
Turn Bay Length (ft)				
Base Capacity (vph)	437	692		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.15	0.52		

Intersection Summary



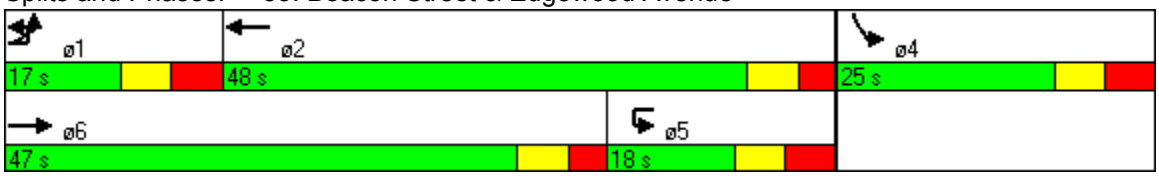
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.984		0.943	
Flt Protected		0.950		0.950			0.972	
Satd. Flow (prot)	0	1660	3336	1745	3341	0	1974	0
Flt Permitted		0.950		0.950			0.972	
Satd. Flow (perm)	0	1660	3336	1745	3341	0	1974	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					20		39	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			1583		2753		793	
Travel Time (s)			36.0		62.6		18.0	
Volume (vph)	33	26	884	22	725	88	53	41
Peak Hour Factor	0.65	0.86	0.95	0.83	0.91	0.93	0.77	0.80
Heavy Vehicles (%)	0%	4%	1%	0%	3%	1%	0%	0%
Adj. Flow (vph)	51	30	931	27	797	95	69	51
Lane Group Flow (vph)	0	81	931	27	892	0	120	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	17.0	17.0	47.0	18.0	48.0	0.0	25.0	0.0
Total Split (%)	18.9%	18.9%	52.2%	20.0%	53.3%	0.0%	27.8%	0.0%
Maximum Green (s)	9.0	9.0	40.0	10.0	41.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		13.0	63.9	13.4	58.6		13.1	
Actuated g/C Ratio		0.14	0.71	0.15	0.65		0.15	
v/c Ratio		0.34	0.39	0.10	0.41		0.37	
Control Delay		37.6	9.8	19.6	6.4		26.8	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

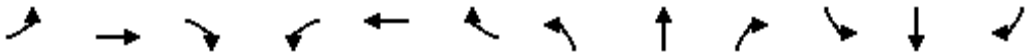


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.6	9.8	19.6	6.4		26.8	
LOS		D	A	B	A		C	
Approach Delay			12.0		6.8		26.8	
Approach LOS			B		A		C	
90th %ile Green (s)	13.0	13.0	42.1	12.9	42.0		12.0	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.4	10.4	41.2	16.2	47.0		9.6	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
50th %ile Green (s)	8.7	8.7	67.0	0.0	50.3		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.1	7.1	67.0	0.0	51.9		8.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		50	383	8	152		57	
Fuel Used(gal)		1	15	1	19		1	
CO Emissions (g/hr)		102	1033	42	1354		99	
NOx Emissions (g/hr)		20	201	8	263		19	
VOC Emissions (g/hr)		24	239	10	314		23	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		42	66	11	43		42	
Queue Length 95th (ft)		77	240	m7	m107		72	
Internal Link Dist (ft)			1503		2673		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		260	2367	307	2184		491	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.31	0.39	0.09	0.41		0.24	

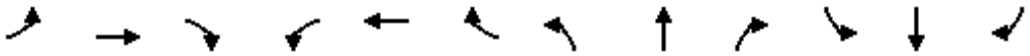
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 46.1%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.984			0.996			0.985	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1736	3410	0	0	3191	0	1560	1594	0	1668	1738	0
Flt Permitted	0.950						0.206			0.299		
Satd. Flow (perm)	1736	3410	0	0	3191	0	338	1594	0	525	1738	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2			7	
Headway Factor	1.00	1.04	1.00	1.00	1.12	1.00	1.09	1.19	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2753			775			812			1068	
Travel Time (s)		62.6			17.6			18.5			24.3	
Volume (vph)	129	971	87	0	496	51	27	349	7	85	320	49
Peak Hour Factor	0.77	0.89	0.86	0.92	0.71	0.61	0.81	0.80	0.58	0.78	0.66	0.92
Heavy Vehicles (%)	4%	1%	1%	2%	2%	4%	8%	3%	14%	1%	4%	5%
Parking (#/hr)			0		0			0				
Adj. Flow (vph)	168	1091	101	0	699	84	33	436	12	109	485	53
Lane Group Flow (vph)	168	1192	0	0	783	0	33	448	0	109	538	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	27.0	51.0	0.0	0.0	24.0	0.0	39.0	39.0	0.0	39.0	39.0	0.0
Total Split (%)	30.0%	56.7%	0.0%	0.0%	26.7%	0.0%	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%
Maximum Green (s)	19.0	40.0			13.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	17.1	49.3			28.2		32.7	32.7		32.7	32.7	
Actuated g/C Ratio	0.19	0.55			0.31		0.36	0.36		0.36	0.36	
v/c Ratio	0.51	0.64			0.78		0.27	0.77		0.57	0.84	
Control Delay	44.0	11.6			37.1		25.9	34.9		35.7	39.3	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	44.0	11.6			37.1		25.9	34.9		35.7	39.3	
LOS	D	B			D		C	C		D	D	
Approach Delay		15.6			37.1			34.2			38.7	
Approach LOS		B			D			C			D	
90th %ile Green (s)	18.4	40.0			13.6		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	14.0	40.0			18.0		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	13.4	40.0			18.6		31.0	31.0		31.0	31.0	
50th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Max	Max	
30th %ile Green (s)	11.2	42.9			23.7		28.1	28.1		28.1	28.1	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	8.4	48.4			32.0		22.6	22.6		22.6	22.6	
10th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
Stops (vph)	106	444			442		20	304		70	317	
Fuel Used(gal)	5	28			10		0	6		2	8	
CO Emissions (g/hr)	315	1934			692		30	452		120	544	
NOx Emissions (g/hr)	61	376			135		6	88		23	106	
VOC Emissions (g/hr)	73	448			160		7	105		28	126	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	80	180			221		12	211		47	262	
Queue Length 95th (ft)	113	131			#250		33	272		86	245	
Internal Link Dist (ft)		2673			695			732			988	
Turn Bay Length (ft)	150											
Base Capacity (vph)	444	1867			999		131	621		204	680	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.38	0.64			0.78		0.25	0.72		0.53	0.79	

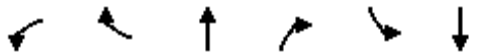
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 38: Beacon Street & Washington Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	20	11	3	4	70	29	789	53	3	668	10
Peak Hour Factor	0.85	0.68	0.46	0.38	0.50	0.75	0.52	0.91	0.70	0.38	0.78	0.50
Hourly flow rate (vph)	22	29	24	8	8	93	56	867	76	8	856	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								650			660	
pX, platoon unblocked	0.81	0.81	0.71	0.81	0.81	0.67	0.67			0.71		
vC, conflicting volume	1996	1909	905	1937	1936	866	876			943		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1695	1587	866	1623	1622	800	815			920		
tC, single (s)	7.1	6.5	6.2	7.1	6.8	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.2	3.4	2.2			2.2		
p0 queue free %	28	62	91	80	88	62	90			99		
cM capacity (veh/h)	31	78	253	40	65	249	548			534		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	76	109	999	884
Volume Left	22	8	56	8
Volume Right	24	93	76	20
cSH	64	157	548	534
Volume to Capacity	1.19	0.70	0.10	0.01
Queue Length 95th (ft)	153	102	8	1
Control Delay (s)	283.4	68.6	3.3	0.5
Lane LOS	F	F	A	A
Approach Delay (s)	283.4	68.6	3.3	0.5
Approach LOS	F	F		

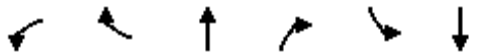
Intersection Summary			
Average Delay	15.8		
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	3	676	6	6	619
Peak Hour Factor	0.38	0.38	0.97	0.38	0.75	0.90
Hourly flow rate (vph)	8	8	697	16	8	688
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1409	705			713	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1409	705			713	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			99	
cM capacity (veh/h)	153	440			896	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	713	696
Volume Left	8	0	8
Volume Right	8	16	0
cSH	227	1700	896
Volume to Capacity	0.07	0.42	0.01
Queue Length 95th (ft)	6	0	1
Control Delay (s)	22.0	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	22.0	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	36	680	0	0	615
Peak Hour Factor	0.50	0.50	0.97	0.38	0.92	0.90
Hourly flow rate (vph)	20	72	701	0	0	683
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1384	701			701	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1384	701			701	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	87	83			100	
cM capacity (veh/h)	160	432			896	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	92	701	683
Volume Left	20	0	0
Volume Right	72	0	0
cSH	315	1700	1700
Volume to Capacity	0.29	0.41	0.40
Queue Length 95th (ft)	30	0	0
Control Delay (s)	21.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	21.1	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.946				0.990			0.944			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1787	3304	0	0	1788	3404	0	1770	1746	0	0	3497
Flt Permitted	0.300				0.150			0.262				0.513
Satd. Flow (perm)	564	3304	0	0	282	3404	0	488	1746	0	0	1803
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		84				6			29			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	113	375	213	7	209	420	22	181	431	226	30	454
Peak Hour Factor	0.79	0.90	0.91	0.58	0.83	0.96	0.71	0.81	0.83	0.74	0.58	0.92
Heavy Vehicles (%)	1%	3%	4%	0%	1%	5%	5%	2%	2%	4%	0%	3%
Adj. Flow (vph)	143	417	234	12	252	438	31	223	519	305	52	493
Lane Group Flow (vph)	143	651	0	0	264	469	0	223	824	0	0	545
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	13.0	32.0	0.0	13.0	13.0	32.0	0.0	15.0	50.0	0.0	35.0	35.0
Total Split (%)	10.8%	26.7%	0.0%	10.8%	10.8%	26.7%	0.0%	12.5%	41.7%	0.0%	29.2%	29.2%
Maximum Green (s)	7.0	27.0		7.0	7.0	27.0		8.0			28.0	28.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	62.0	53.0			62.0	53.0		42.0	46.0			31.0
Actuated g/C Ratio	0.52	0.44			0.52	0.44		0.35	0.38			0.26
v/c Ratio	0.37	0.43			1.02	0.31		0.77	1.20			1.17
Control Delay	16.3	20.9			81.5	22.1		58.6	136.4			137.3
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0

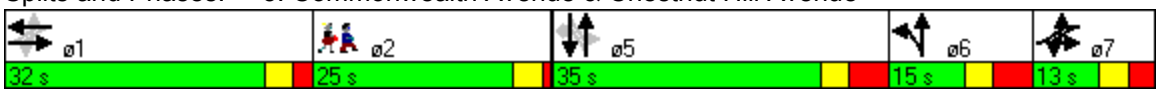


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1524	
Flt Permitted		
Satd. Flow (perm)	1524	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	14	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	16	
Peak Hour Factor	0.50	
Heavy Vehicles (%)	6%	
Adj. Flow (vph)	32	
Lane Group Flow (vph)	32	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	35.0	25.0
Total Split (%)	29.2%	21%
Maximum Green (s)	28.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	31.0	
Actuated g/C Ratio	0.26	
v/c Ratio	0.08	
Control Delay	23.0	
Queue Delay	0.0	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	16.3	20.9			81.5	22.1		58.6	136.4			137.3
LOS	B	C			F	C		E	F			F
Approach Delay		20.1				43.5			119.8			130.9
Approach LOS		C				D			F			F
90th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	7.0	52.0		7.0	7.0	52.0		8.0			28.0	28.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	55	342			101	272		149	521			400
Fuel Used(gal)	2	11			6	7		5	27			19
CO Emissions (g/hr)	136	769			408	486		316	1865			1328
NOx Emissions (g/hr)	26	150			79	95		62	363			258
VOC Emissions (g/hr)	32	178			94	113		73	432			308
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	52	155			~113	119		121	~763			~264
Queue Length 95th (ft)	74	205			#238	160		#165	#886			#379
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	383	1506			259	1507		288	687			466
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.37	0.43			1.02	0.31		0.77	1.20			1.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 79.0		Intersection LOS: E	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

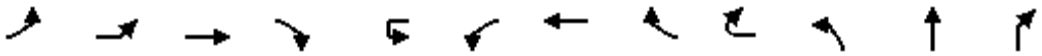
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





Lane Group	SBR	ø2
Total Delay	23.0	
LOS	C	
Approach Delay		
Approach LOS		
90th %ile Green (s)	28.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	28.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	28.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	28.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	28.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	9	
Fuel Used(gal)	0	
CO Emissions (g/hr)	16	
NOx Emissions (g/hr)	3	
VOC Emissions (g/hr)	4	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	11	
Queue Length 95th (ft)	16	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	404	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.08	

Intersection Summary



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		25		200		150		150		0		0
Storage Lanes		1		1		1		1		0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0		0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.91	0.91	0.91	0.95	0.95	0.91	0.91	1.00	0.95	0.95	0.95	0.95
Frt			0.963					0.850			0.993	
Flt Protected	0.950		0.994			0.950	0.988				0.995	
Satd. Flow (prot)	1588	0	3200	0	0	1616	3521	1812	0	0	3335	0
Flt Permitted	0.143		0.515			0.143	0.537				0.717	
Satd. Flow (perm)	239	0	1658	0	0	243	1914	1812	0	0	2403	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.04	1.09	1.00	1.00	0.96	0.85	1.00	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				1583				173	
Travel Time (s)			30.4				36.0				3.9	
Volume (vph)	116	21	377	96	12	276	469	138	34	53	498	28
Peak Hour Factor	0.77	0.77	0.94	0.60	0.75	0.82	0.90	0.73	0.92	0.80	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	8%	1%	0%	1%	1%	0%	4%	0%
Adj. Flow (vph)	151	27	401	160	16	337	521	189	37	66	541	30
Lane Group Flow (vph)	95	0	644	0	0	177	697	226	0	0	637	0
Turn Type	Perm	Perm			custom	D.P+P		Prot		Perm		
Protected Phases			1			8	1 8	1 8			4 9	
Permitted Phases	1	1			8	1				4 9		
Detector Phases	1	1	1		8	8	1 8	1 8		4 9	4 9	
Minimum Initial (s)	21.0	21.0	21.0		6.0	6.0						
Minimum Split (s)	25.0	25.0	25.0		10.0	10.0						
Total Split (s)	32.0	32.0	32.0	0.0	12.0	12.0	44.0	44.0	0.0	43.0	43.0	0.0
Total Split (%)	24.6%	24.6%	24.6%	0.0%	9.2%	9.2%	33.8%	33.8%	0.0%	33.1%	33.1%	0.0%
Maximum Green (s)	28.0	28.0	28.0		8.0	8.0						
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0						
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0						
Lead/Lag					Lag	Lag						
Lead-Lag Optimize?					Yes	Yes						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0						
Recall Mode	C-Max	C-Max	C-Max		None	None						
Walk Time (s)	7.0	7.0	7.0									
Flash Dont Walk (s)	11.0	11.0	11.0									
Pedestrian Calls (#/hr)	0	0	0									
Act Effct Green (s)	28.0		28.0			36.0	36.0	40.0			39.0	
Actuated g/C Ratio	0.22		0.22			0.28	0.28	0.31			0.30	
v/c Ratio	1.86		1.80			1.16	1.11	0.41			0.88	
Control Delay	483.1		403.2			159.5	109.9	38.3			29.4	



Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	10							
Grade (%)				-3%								
Storage Length (ft)			0		0							
Storage Lanes			0		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	9	15		9							
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95							
Frt	0.850			0.984								
Flt Protected				0.990								
Satd. Flow (prot)	1615	0	0	3438	0							
Flt Permitted				0.568								
Satd. Flow (perm)	1615	0	0	1973	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	228											
Headway Factor	1.00	0.98	1.07	0.98	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	228	2	179	605	86							
Peak Hour Factor	0.91	0.50	0.89	0.92	0.81							
Heavy Vehicles (%)	0%	0%	2%	5%	0%							
Adj. Flow (vph)	251	4	201	658	106							
Lane Group Flow (vph)	251	0	0	969	0							
Turn Type	Free	custom	D.P+P									
Protected Phases			3	3 4 9		2	4	5	6	7	9	10
Permitted Phases	Free	3	4 9									
Detector Phases		3	3	3 4 9								
Minimum Initial (s)		7.0	7.0			16.0	13.0	5.0	4.0	4.0	5.0	7.0
Minimum Split (s)		11.0	11.0			23.0	18.0	9.0	23.0	20.0	9.0	11.0
Total Split (s)	0.0	20.0	20.0	63.0	0.0	23.0	34.0	9.0	23.0	23.0	9.0	75.0
Total Split (%)	0.0%	15.4%	15.4%	48.5%	0.0%	18%	26%	7%	18%	18%	7%	58%
Maximum Green (s)		16.0	16.0			19.0	29.0	5.0	19.0	19.0	5.0	71.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			1.0	2.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead	Lead				Lag	Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes				Yes	Yes	Yes		Yes	
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode		Max	Max			None	Max	C-Max	None	Max	Max	Max
Walk Time (s)						7.0			7.0			
Flash Dont Walk (s)						9.0			11.0			
Pedestrian Calls (#/hr)						20			20			
Act Effct Green (s)	130.0			55.0								
Actuated g/C Ratio	1.00			0.42								
v/c Ratio	0.16			0.95								
Control Delay	0.1			50.8								

Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		309.9			122.4	110.2	0.0			57.2	
Total Delay	483.1		713.1			281.9	220.1	38.3			86.6	
LOS	F		F			F	F	D			F	
Approach Delay			683.5				192.7				62.2	
Approach LOS			F				F				E	
90th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
90th %ile Term Code	Coord	Coord	Coord		Max	Max						
70th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
70th %ile Term Code	Coord	Coord	Coord		Max	Max						
50th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
50th %ile Term Code	Coord	Coord	Coord		Max	Max						
30th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
30th %ile Term Code	Coord	Coord	Coord		Max	Max						
10th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
10th %ile Term Code	Coord	Coord	Coord		Max	Max						
Stops (vph)	46		361			93	558	133			544	
Fuel Used(gal)	8		52			7	24	4			7	
CO Emissions (g/hr)	573		3612			487	1703	294			507	
NOx Emissions (g/hr)	111		703			95	331	57			99	
VOC Emissions (g/hr)	133		837			113	395	68			117	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~132		~447			~142	~317	151			285	
Queue Length 95th (ft)	#216		#576			#260	#473	177			#388	
Internal Link Dist (ft)			1256				1503				93	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	51		357			152	629	558			721	
Starvation Cap Reductn	0		0			0	0	0			153	
Spillback Cap Reductn	0		101			30	117	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.86		2.52			1.45	1.36	0.41			1.12	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.86
Intersection Signal Delay: 222.3 Intersection LOS: F
Intersection Capacity Utilization 89.3% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 11: Beacon Street &

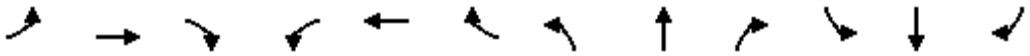


Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.1			50.8								
LOS	A			D								
Approach Delay				50.8								
Approach LOS				D								
90th %ile Green (s)		16.0	16.0			19.0	29.0	5.0	19.0	19.0	5.0	71.0
90th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Hold	MaxR	MaxR	MaxR
70th %ile Green (s)		16.0	16.0			19.0	29.0	5.0	19.0	19.0	5.0	71.0
70th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Hold	MaxR	MaxR	MaxR
50th %ile Green (s)		16.0	16.0			19.0	29.0	28.0	0.0	19.0	5.0	71.0
50th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	MaxR	MaxR	MaxR
30th %ile Green (s)		16.0	16.0			19.0	29.0	28.0	0.0	19.0	5.0	71.0
30th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	MaxR	MaxR	MaxR
10th %ile Green (s)		16.0	16.0			19.0	29.0	28.0	0.0	19.0	5.0	71.0
10th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	MaxR	MaxR	MaxR
Stops (vph)	0			723								
Fuel Used(gal)	0			20								
CO Emissions (g/hr)	22			1428								
NOx Emissions (g/hr)	4			278								
VOC Emissions (g/hr)	5			331								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			320								
Queue Length 95th (ft)	m0			#455								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1615			1015								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.16			0.95								

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	16	12	16	12	11	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50					50	50			50	
Trailing Detector (ft)	0	0					0	0			0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt		0.949									0.992	
Flt Protected		0.970						0.998				
Satd. Flow (prot)	0	1715	0	0	0	0	0	3414	0	0	3511	0
Flt Permitted		0.970						0.863				
Satd. Flow (perm)	0	1715	0	0	0	0	0	2953	0	0	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17									12	
Headway Factor	1.00	1.00	1.00	0.85	1.00	0.85	1.00	1.04	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		233			450			635			173	
Travel Time (s)		5.3			10.2			14.4			3.9	
Volume (vph)	37	0	22	0	0	0	30	747	0	0	908	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	0	24	0	0	0	33	812	0	0	987	59
Lane Group Flow (vph)	0	64	0	0	0	0	0	845	0	0	1046	0
Turn Type	custom						custom					
Protected Phases	5	5						3 4			7 10	
Permitted Phases	5	5					3	4				
Detector Phases	5	5					3	3 4			7 10	
Minimum Initial (s)	5.0	5.0					7.0					
Minimum Split (s)	9.0	9.0					11.0					
Total Split (s)	9.0	9.0	0.0	0.0	0.0	0.0	20.0	54.0	0.0	0.0	98.0	0.0
Total Split (%)	6.9%	6.9%	0.0%	0.0%	0.0%	0.0%	15.4%	41.5%	0.0%	0.0%	75.4%	0.0%
Maximum Green (s)	5.0	5.0					16.0					
Yellow Time (s)	3.0	3.0					3.0					
All-Red Time (s)	1.0	1.0					1.0					
Lead/Lag	Lead	Lead					Lead					
Lead-Lag Optimize?	Yes	Yes					Yes					
Vehicle Extension (s)	2.0	2.0					2.0					
Recall Mode	C-Max	C-Max					Max					
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		18.8						50.0			94.0	
Actuated g/C Ratio		0.14						0.38			0.72	
v/c Ratio		0.24						0.74			0.41	
Control Delay		44.3						39.4			8.7	
Queue Delay		0.0						9.9			102.5	
Total Delay		44.3						49.2			111.2	
LOS		D						D			F	
Approach Delay		44.3						49.2			111.2	

Lane Group	ø1	ø2	ø4	ø6	ø7	ø8	ø9	ø10
Lane Configurations								
Ideal Flow (vphpl)								
Lane Width (ft)								
Total Lost Time (s)								
Leading Detector (ft)								
Trailing Detector (ft)								
Turning Speed (mph)								
Lane Util. Factor								
Frt								
Flt Protected								
Satd. Flow (prot)								
Flt Permitted								
Satd. Flow (perm)								
Right Turn on Red								
Satd. Flow (RTOR)								
Headway Factor								
Link Speed (mph)								
Link Distance (ft)								
Travel Time (s)								
Volume (vph)								
Peak Hour Factor								
Adj. Flow (vph)								
Lane Group Flow (vph)								
Turn Type								
Protected Phases	1	2	4	6	7	8	9	10
Permitted Phases								
Detector Phases								
Minimum Initial (s)	21.0	16.0	13.0	4.0	4.0	6.0	5.0	7.0
Minimum Split (s)	25.0	23.0	18.0	23.0	20.0	10.0	9.0	11.0
Total Split (s)	32.0	23.0	34.0	23.0	23.0	12.0	9.0	75.0
Total Split (%)	25%	18%	26%	18%	18%	9%	7%	58%
Maximum Green (s)	28.0	19.0	29.0	19.0	19.0	8.0	5.0	71.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag	Lag		Lag	Lead	
Lead-Lag Optimize?			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Max	None	Max	None	Max	None	Max	Max
Walk Time (s)	7.0	7.0		7.0				
Flash Dont Walk (s)	11.0	9.0		11.0				
Pedestrian Calls (#/hr)	0	20		20				
Act Effct Green (s)								
Actuated g/C Ratio								
v/c Ratio								
Control Delay								
Queue Delay								
Total Delay								
LOS								
Approach Delay								

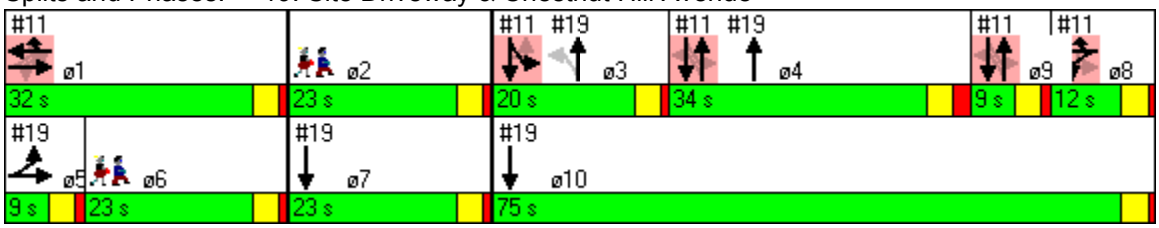


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D						D			F	
90th %ile Green (s)	5.0	5.0					16.0					
90th %ile Term Code	Coord	Coord					MaxR					
70th %ile Green (s)	5.0	5.0					16.0					
70th %ile Term Code	Coord	Coord					MaxR					
50th %ile Green (s)	28.0	28.0					16.0					
50th %ile Term Code	Coord	Coord					MaxR					
30th %ile Green (s)	28.0	28.0					16.0					
30th %ile Term Code	Coord	Coord					MaxR					
10th %ile Green (s)	28.0	28.0					16.0					
10th %ile Term Code	Coord	Coord					MaxR					
Stops (vph)		34						656			377	
Fuel Used(gal)		1						14			5	
CO Emissions (g/hr)		58						958			356	
NOx Emissions (g/hr)		11						186			69	
VOC Emissions (g/hr)		13						222			82	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		32						320			175	
Queue Length 95th (ft)		#124						401			m163	
Internal Link Dist (ft)		153			370			555			93	
Turn Bay Length (ft)												
Base Capacity (vph)		263						1136			2542	
Starvation Cap Reductn		0						0			1685	
Spillback Cap Reductn		1						266			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.24						0.97			1.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.86			
Intersection Signal Delay: 82.2		Intersection LOS: F	
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 19: Site Driveway & Chestnut Hill Avenue

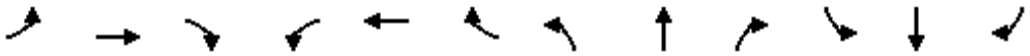


Lane Group	ø1	ø2	ø4	ø6	ø7	ø8	ø9	ø10
Approach LOS								
90th %ile Green (s)	28.0	19.0	29.0	19.0	19.0	8.0	5.0	71.0
90th %ile Term Code	Coord	Hold	MaxR	Hold	MaxR	Max	MaxR	MaxR
70th %ile Green (s)	28.0	19.0	29.0	19.0	19.0	8.0	5.0	71.0
70th %ile Term Code	Coord	Hold	MaxR	Hold	MaxR	Max	MaxR	MaxR
50th %ile Green (s)	28.0	19.0	29.0	0.0	19.0	8.0	5.0	71.0
50th %ile Term Code	Coord	Hold	MaxR	Skip	MaxR	Max	MaxR	MaxR
30th %ile Green (s)	28.0	19.0	29.0	0.0	19.0	8.0	5.0	71.0
30th %ile Term Code	Coord	Hold	MaxR	Skip	MaxR	Max	MaxR	MaxR
10th %ile Green (s)	28.0	19.0	29.0	0.0	19.0	8.0	5.0	71.0
10th %ile Term Code	Coord	Hold	MaxR	Skip	MaxR	Max	MaxR	MaxR
Stops (vph)								
Fuel Used(gal)								
CO Emissions (g/hr)								
NOx Emissions (g/hr)								
VOC Emissions (g/hr)								
Dilemma Vehicles (#)								
Queue Length 50th (ft)								
Queue Length 95th (ft)								
Internal Link Dist (ft)								
Turn Bay Length (ft)								
Base Capacity (vph)								
Starvation Cap Reductn								
Spillback Cap Reductn								
Storage Cap Reductn								
Reduced v/c Ratio								

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.992				0.850		0.994	
Flt Protected		0.984			0.976			0.999				
Satd. Flow (prot)	0	1851	0	0	1822	0	0	1880	1599	0	1836	0
Flt Permitted		0.857			0.793			0.986			0.892	
Satd. Flow (perm)	0	1612	0	0	1481	0	0	1855	1599	0	1638	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		4							115		4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	26	54	3	107	100	8	7	663	108	4	803	28
Peak Hour Factor	0.75	0.85	0.38	0.77	0.77	0.50	0.58	0.85	0.80	0.75	0.97	0.71
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	3%	0%
Adj. Flow (vph)	35	64	8	139	130	16	12	780	135	5	828	39
Lane Group Flow (vph)	0	107	0	0	285	0	0	792	135	0	872	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	46.0	46.0	46.0	46.0	46.0	0.0
Total Split (%)	32.2%	32.2%	0.0%	32.2%	32.2%	0.0%	51.1%	51.1%	51.1%	51.1%	51.1%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		25.1			25.1			42.2	42.2		42.2	
Actuated g/C Ratio		0.32			0.32			0.54	0.54		0.54	
v/c Ratio		0.20			0.60			0.79	0.15		0.98	
Control Delay		21.2			29.7			23.1	3.6		46.4	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		21.2			29.7			23.1	3.6		46.4	

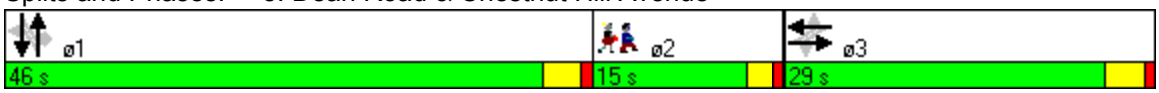
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C			C	A		D	
Approach Delay		21.2			29.7			20.2			46.4	
Approach LOS		C			C			C			D	
90th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	25.0	25.0		25.0	25.0		42.0	42.0	42.0	42.0	42.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		57			175			477	16		637	
Fuel Used(gal)		1			4			9	1		16	
CO Emissions (g/hr)		81			271			618	46		1098	
NOx Emissions (g/hr)		16			53			120	9		214	
VOC Emissions (g/hr)		19			63			143	11		254	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		34			108			259	4		348	
Queue Length 95th (ft)		83			191			#585	28		#817	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		522			477			1004	918		889	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.20			0.60			0.79	0.15		0.98	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 31.9		Intersection LOS: C	
Intersection Capacity Utilization 100.0%		ICU Level of Service G	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



Lane Group	ø2
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	10	12	13	12	12	12	13	11
Storage Length (ft)		280		0	160		0	0		0	0	
Storage Lanes		1		0	1		1	0		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50				50	50
Trailing Detector (ft)	0	0	0		0	0	0				0	0
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt							0.850					
Flt Protected		0.950			0.950						0.950	
Satd. Flow (prot)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Flt Permitted		0.950			0.950						0.950	
Satd. Flow (perm)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)							401					
Headway Factor	1.00	1.04	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96	1.04
Link Speed (mph)			30			30			30			30
Link Distance (ft)			1399			494			1410			187
Travel Time (s)			31.8			11.2			32.0			4.3
Volume (vph)	4	257	963	0	76	1023	361	0	0	0	525	40
Peak Hour Factor	0.33	0.75	0.88	0.92	0.75	0.87	0.90	0.92	0.92	0.92	0.80	0.71
Heavy Vehicles (%)	0%	0%	2%	2%	0%	2%	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	12	343	1094	0	101	1176	401	0	0	0	656	56
Lane Group Flow (vph)	0	355	1094	0	101	1176	401	0	0	0	656	56
Turn Type	Prot	Prot			Prot		custom				Split	
Protected Phases	4	4	1 4 5		2	1 2 5	1 2 3				3	3
Permitted Phases												
Detector Phases	4	4	1 4		2	1 2	1 2 3				3	3
Minimum Initial (s)	6.0	6.0			5.0						6.0	6.0
Minimum Split (s)	21.0	21.0			15.0						29.0	29.0
Total Split (s)	30.0	30.0	85.0	0.0	15.0	70.0	90.0	0.0	0.0	0.0	40.0	40.0
Total Split (%)	21.4%	21.4%	60.7%	0.0%	10.7%	50.0%	64.3%	0.0%	0.0%	0.0%	28.6%	28.6%
Maximum Green (s)	25.0	25.0			10.0						35.0	35.0
Yellow Time (s)	4.0	4.0			4.0						4.0	4.0
All-Red Time (s)	1.0	1.0			1.0						1.0	1.0
Lead/Lag	Lag	Lag			Lag						Lead	Lead
Lead-Lag Optimize?	Yes	Yes			Yes						Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0						3.0	3.0
Recall Mode	None	None			Max						None	None
Walk Time (s)											13.0	13.0
Flash Dont Walk (s)											5.0	5.0
Pedestrian Calls (#/hr)											0	0
Act Effct Green (s)		26.0	81.0		11.0	66.0	102.2				36.0	36.0
Actuated g/C Ratio		0.19	0.58		0.08	0.47	0.73				0.26	0.26
v/c Ratio		1.10	0.53		0.77	0.71	0.31				1.41	0.12
Control Delay		130.0	19.2		94.0	33.8	4.1				234.6	40.9
Queue Delay		0.0	0.0		0.0	1.3	0.4				0.0	0.0

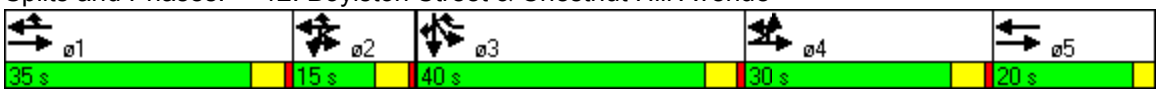


Lane Group	SBR	ø1	ø5
Lane Configurations			
Ideal Flow (vphpl)	1900		
Lane Width (ft)	16		
Storage Length (ft)	0		
Storage Lanes	1		
Total Lost Time (s)	4.0		
Leading Detector (ft)	50		
Trailing Detector (ft)	0		
Turning Speed (mph)	9		
Lane Util. Factor	1.00		
Frt	0.850		
Flt Protected			
Satd. Flow (prot)	1777		
Flt Permitted			
Satd. Flow (perm)	1777		
Right Turn on Red	Yes		
Satd. Flow (RTOR)	273		
Headway Factor	0.85		
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Volume (vph)	243		
Peak Hour Factor	0.89		
Heavy Vehicles (%)	3%		
Adj. Flow (vph)	273		
Lane Group Flow (vph)	273		
Turn Type	Prot		
Protected Phases	3	1	5
Permitted Phases			
Detector Phases	3		
Minimum Initial (s)	6.0	5.0	4.0
Minimum Split (s)	29.0	21.0	19.0
Total Split (s)	40.0	35.0	20.0
Total Split (%)	28.6%	25%	14%
Maximum Green (s)	35.0	30.0	17.0
Yellow Time (s)	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	0.0
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	None
Walk Time (s)	13.0		6.0
Flash Dont Walk (s)	5.0		10.0
Pedestrian Calls (#/hr)	0		10
Act Effct Green (s)	36.0		
Actuated g/C Ratio	0.26		
v/c Ratio	0.41		
Control Delay	6.4		
Queue Delay	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay		130.0	19.2		94.0	35.1	4.5				234.6	40.9
LOS		F	B		F	D	A				F	D
Approach Delay			46.4			31.3						160.3
Approach LOS			D			C						F
90th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
90th %ile Term Code	Max	Max			MaxR						Max	Max
70th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
70th %ile Term Code	Max	Max			MaxR						Max	Max
50th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
50th %ile Term Code	Max	Max			MaxR						Max	Max
30th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
30th %ile Term Code	Max	Max			MaxR						Max	Max
10th %ile Green (s)	25.0	25.0			10.0						35.0	35.0
10th %ile Term Code	Max	Max			MaxR						Max	Max
Stops (vph)		221	565		69	852	73				397	29
Fuel Used(gal)		11	17		2	16	2				28	1
CO Emissions (g/hr)		767	1216		149	1097	147				1959	39
NOx Emissions (g/hr)		149	237		29	213	29				381	8
VOC Emissions (g/hr)		178	282		34	254	34				454	9
Dilemma Vehicles (#)		0	0		0	0	0				0	0
Queue Length 50th (ft)		~365	306		93	482	61				~800	39
Queue Length 95th (ft)		#419	354		m#134	538	130				#875	60
Internal Link Dist (ft)			1319			414			1330			107
Turn Bay Length (ft)		280			160							
Base Capacity (vph)		324	2048		132	1668	1302				466	458
Starvation Cap Reductn		0	0		0	277	447				0	0
Spillback Cap Reductn		0	93		0	0	0				0	0
Storage Cap Reductn		0	0		0	0	0				0	0
Reduced v/c Ratio		1.10	0.56		0.77	0.85	0.47				1.41	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.41			
Intersection Signal Delay: 67.5		Intersection LOS: E	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





Lane Group	SBR	ø1	ø5
Total Delay	6.4		
LOS	A		
Approach Delay			
Approach LOS			
90th %ile Green (s)	35.0	31.0	16.0
90th %ile Term Code	Max	Coord	Ped
70th %ile Green (s)	35.0	50.0	0.0
70th %ile Term Code	Max	Coord	Skip
50th %ile Green (s)	35.0	50.0	0.0
50th %ile Term Code	Max	Coord	Skip
30th %ile Green (s)	35.0	50.0	0.0
30th %ile Term Code	Max	Coord	Skip
10th %ile Green (s)	35.0	50.0	0.0
10th %ile Term Code	Max	Coord	Skip
Stops (vph)	22		
Fuel Used(gal)	1		
CO Emissions (g/hr)	56		
NOx Emissions (g/hr)	11		
VOC Emissions (g/hr)	13		
Dilemma Vehicles (#)	0		
Queue Length 50th (ft)	0		
Queue Length 95th (ft)	67		
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)	660		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.41		

Intersection Summary



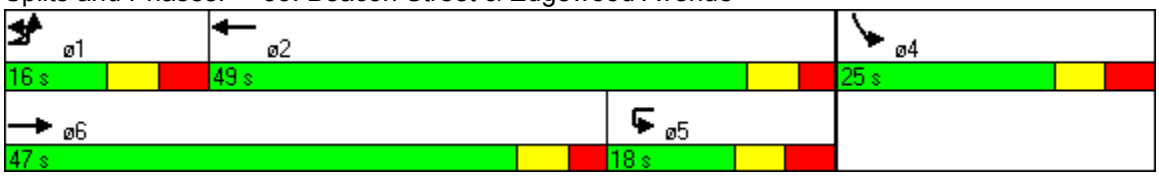
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.983		0.944	
Flt Protected		0.950		0.950			0.971	
Satd. Flow (prot)	0	1685	3369	1745	3400	0	1974	0
Flt Permitted		0.950		0.950			0.971	
Satd. Flow (perm)	0	1685	3369	1745	3400	0	1974	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					23		26	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			1583		2789		793	
Travel Time (s)			36.0		63.4		18.0	
Volume (vph)	43	30	718	26	884	94	34	13
Peak Hour Factor	0.79	0.69	0.85	0.75	0.94	0.76	0.91	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	54	43	845	35	940	124	37	26
Lane Group Flow (vph)	0	97	845	35	1064	0	63	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	16.0	16.0	47.0	18.0	49.0	0.0	25.0	0.0
Total Split (%)	17.8%	17.8%	52.2%	20.0%	54.4%	0.0%	27.8%	0.0%
Maximum Green (s)	8.0	8.0	40.0	10.0	42.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		13.9	63.7	14.6	58.8		12.2	
Actuated g/C Ratio		0.15	0.71	0.16	0.65		0.14	
v/c Ratio		0.37	0.35	0.12	0.48		0.22	
Control Delay		37.4	9.5	21.6	6.7		25.1	
Queue Delay		0.0	0.0	0.0	0.0		0.0	



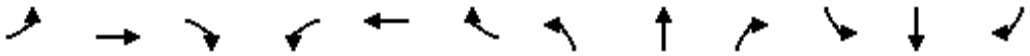
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.4	9.5	21.6	6.7		25.1	
LOS		D	A	C	A		C	
Approach Delay			12.3		7.2		25.1	
Approach LOS			B		A		C	
90th %ile Green (s)	14.4	14.4	43.1	15.1	43.8		8.8	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.5	11.5	39.2	19.8	47.5		8.0	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Min	
50th %ile Green (s)	9.6	9.6	67.0	0.0	49.4		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.8	7.8	67.0	0.0	51.2		8.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		62	302	15	249		28	
Fuel Used(gal)		2	12	1	24		1	
CO Emissions (g/hr)		124	833	53	1676		48	
NOx Emissions (g/hr)		24	162	10	326		9	
VOC Emissions (g/hr)		29	193	12	389		11	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		50	57	14	98		19	
Queue Length 95th (ft)		68	190	m16	126		55	
Internal Link Dist (ft)			1503		2709		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		268	2389	329	2229		481	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.36	0.35	0.11	0.48		0.13	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.0		Intersection LOS: B	
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.989			0.972			0.974	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1719	3336	0	0	3412	0	1668	1750	0	1652	1760	0
Flt Permitted	0.950						0.272			0.415		
Satd. Flow (perm)	1719	3336	0	0	3412	0	478	1750	0	722	1760	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								15			14	
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2789			1295			1022			860	
Travel Time (s)		63.4			29.4			23.2			19.5	
Volume (vph)	111	640	165	0	599	31	109	231	48	62	306	54
Peak Hour Factor	0.89	0.89	0.69	0.25	0.90	0.58	0.86	0.85	0.78	0.80	0.80	0.67
Heavy Vehicles (%)	5%	1%	0%	2%	1%	3%	1%	2%	2%	2%	2%	0%
Adj. Flow (vph)	125	719	239	0	666	53	127	272	62	78	382	81
Lane Group Flow (vph)	125	958	0	0	719	0	127	334	0	78	463	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	19.0	52.0	0.0	0.0	33.0	0.0	38.0	38.0	0.0	38.0	38.0	0.0
Total Split (%)	21.1%	57.8%	0.0%	0.0%	36.7%	0.0%	42.2%	42.2%	0.0%	42.2%	42.2%	0.0%
Maximum Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	13.9	51.3			33.3		30.7	30.7		30.7	30.7	
Actuated g/C Ratio	0.15	0.57			0.37		0.34	0.34		0.34	0.34	
v/c Ratio	0.47	0.50			0.57		0.78	0.55		0.32	0.76	
Control Delay	53.8	9.1			26.0		58.0	26.0		24.6	33.9	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	53.8	9.1			26.0		58.0	26.0		24.6	33.9	
LOS	D	A			C		E	C		C	C	
Approach Delay		14.3			26.0			34.8			32.5	
Approach LOS		B			C			C			C	
90th %ile Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
90th %ile Term Code	Max	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
70th %ile Term Code	Max	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	11.0	41.0			22.0		30.0	30.0		30.0	30.0	
50th %ile Term Code	Max	Coord			Coord		Max	Max		Hold	Hold	
30th %ile Green (s)	9.6	47.3			29.7		23.7	23.7		23.7	23.7	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	7.1	51.0			35.9		20.0	20.0		20.0	20.0	
10th %ile Term Code	Gap	Coord			Coord		Min	Min		Min	Min	
Stops (vph)	102	264			496		90	208		44	301	
Fuel Used(gal)	4	20			12		3	5		1	7	
CO Emissions (g/hr)	293	1430			869		185	340		68	459	
NOx Emissions (g/hr)	57	278			169		36	66		13	89	
VOC Emissions (g/hr)	68	331			201		43	79		16	106	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	69	138			183		60	136		30	211	
Queue Length 95th (ft)	124	86			245		#143	200		58	270	
Internal Link Dist (ft)		2709			1215			942			780	
Turn Bay Length (ft)	150											
Base Capacity (vph)	287	1900			1263		181	670		273	674	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.44	0.50			0.57		0.70	0.50		0.29	0.69	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 24.2		Intersection LOS: C	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

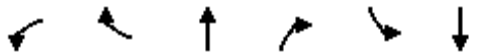
Splits and Phases: 38: Beacon Street & Washington Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	7	1	2	8	85	89	840	10	2	694	2
Peak Hour Factor	0.33	0.35	0.25	0.50	0.67	0.76	0.89	0.94	0.67	0.50	0.89	0.50
Hourly flow rate (vph)	15	20	4	4	12	112	100	894	15	4	780	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								635			660	
pX, platoon unblocked	0.78	0.78	0.68	0.78	0.78	0.62	0.62			0.68		
vC, conflicting volume	2009	1893	901	1905	1898	782	784			909		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1691	1542	856	1558	1549	647	650			866		
tC, single (s)	7.3	6.6	6.2	7.1	6.5	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.3	3.5	4.0	3.3	2.2			2.7		
p0 queue free %	35	71	98	92	84	62	83			99		
cM capacity (veh/h)	23	69	247	48	73	292	584			416		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	128	1009	788
Volume Left	15	4	100	4
Volume Right	4	112	15	4
cSH	41	203	584	416
Volume to Capacity	0.95	0.63	0.17	0.01
Queue Length 95th (ft)	93	92	15	1
Control Delay (s)	275.8	48.9	5.3	0.3
Lane LOS	F	E	A	A
Approach Delay (s)	275.8	48.9	5.3	0.3
Approach LOS	F	E		

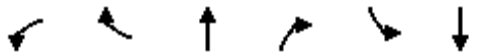
Intersection Summary			
Average Delay	11.6		
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	4	584	9	18	658
Peak Hour Factor	0.50	0.33	0.92	0.56	0.61	0.87
Hourly flow rate (vph)	4	12	635	16	30	756
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1458	643			651	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1458	643			651	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			97	
cM capacity (veh/h)	140	477			945	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	651	786
Volume Left	4	0	30
Volume Right	12	16	0
cSH	298	1700	945
Volume to Capacity	0.05	0.38	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	17.8	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	17.8	0.0	0.8
Approach LOS	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	11	32	586	0	0	662
Peak Hour Factor	0.67	0.63	0.92	0.25	0.25	0.92
Hourly flow rate (vph)	16	51	637	0	0	720
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1357	637			637	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1357	637			637	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	89			100	
cM capacity (veh/h)	166	481			956	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	67	637	720
Volume Left	16	0	0
Volume Right	51	0	0
cSH	329	1700	1700
Volume to Capacity	0.20	0.37	0.42
Queue Length 95th (ft)	19	0	0
Control Delay (s)	18.7	0.0	0.0
Lane LOS	C		
Approach Delay (s)	18.7	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.943				0.983			0.967			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1752	3269	0	0	1771	3348	0	1752	1769	0	0	3454
Flt Permitted	0.267				0.267			0.362				0.539
Satd. Flow (perm)	493	3269	0	0	498	3348	0	668	1769	0	0	1871
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		87				10			17			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	143	415	236	4	193	308	34	146	587	180	27	424
Peak Hour Factor	0.87	0.92	0.86	0.50	0.93	0.85	0.73	0.71	0.85	0.93	0.52	0.88
Heavy Vehicles (%)	3%	3%	6%	0%	2%	6%	6%	3%	3%	7%	4%	4%
Adj. Flow (vph)	164	451	274	8	208	362	47	206	691	194	52	482
Lane Group Flow (vph)	164	725	0	0	216	409	0	206	885	0	0	534
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	12.0	19.0	0.0	12.0	12.0	19.0	0.0	13.0	64.0	0.0	51.0	51.0
Total Split (%)	10.0%	15.8%	0.0%	10.0%	10.0%	15.8%	0.0%	10.8%	53.3%	0.0%	42.5%	42.5%
Maximum Green (s)	6.0	14.0		6.0	6.0	14.0		6.0			44.0	44.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	48.0	40.0			48.0	40.0		56.0	60.0			47.0
Actuated g/C Ratio	0.40	0.33			0.40	0.33		0.47	0.50			0.39
v/c Ratio	0.58	0.63			0.76	0.36		0.52	0.99			0.85dl
Control Delay	31.3	32.4			43.1	30.7		28.4	57.9			38.1
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0

Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1615	
Flt Permitted		
Satd. Flow (perm)	1615	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	11	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	20	
Peak Hour Factor	0.95	
Heavy Vehicles (%)	0%	
Adj. Flow (vph)	21	
Lane Group Flow (vph)	21	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	51.0	25.0
Total Split (%)	42.5%	21%
Maximum Green (s)	44.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	47.0	
Actuated g/C Ratio	0.39	
v/c Ratio	0.03	
Control Delay	14.8	
Queue Delay	0.0	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	31.3	32.4			43.1	30.7		28.4	57.9			38.1
LOS	C	C			D	C		C	E			D
Approach Delay		32.2				35.0			52.3			37.2
Approach LOS		C				C			D			D
90th %ile Green (s)	6.0	39.0		6.0	6.0	39.0		6.0			44.0	44.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	6.0	39.0		6.0	6.0	39.0		6.0			44.0	44.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	6.0	39.0		6.0	6.0	39.0		6.0			44.0	44.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	6.0	39.0		6.0	6.0	39.0		6.0			44.0	44.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	6.0	39.0		6.0	6.0	39.0		6.0			44.0	44.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	94	477			133	246		84	649			378
Fuel Used(gal)	3	14			4	6		3	19			9
CO Emissions (g/hr)	212	995			280	432		178	1340			603
NOx Emissions (g/hr)	41	194			54	84		35	261			117
VOC Emissions (g/hr)	49	231			65	100		41	311			140
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	78	219			106	122		87	651			183
Queue Length 95th (ft)	122	286			#190	156		103	#855			245
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	281	1148			284	1123		393	893			733
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.58	0.63			0.76	0.36		0.52	0.99			0.73

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 40.6		Intersection LOS: D	
Intersection Capacity Utilization 97.6%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			

Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





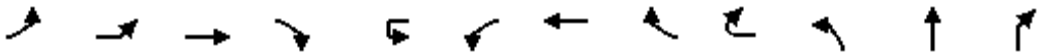
Lane Group	SBR	ø2
Total Delay	14.8	
LOS	B	
Approach Delay		
Approach LOS		
90th %ile Green (s)	44.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	44.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	44.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	44.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	44.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	9	
Fuel Used(gal)	0	
CO Emissions (g/hr)	17	
NOx Emissions (g/hr)	3	
VOC Emissions (g/hr)	4	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	5	
Queue Length 95th (ft)	22	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	639	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.03	

Intersection Summary

Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	10	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		200		200		583		150		50		0
Storage Lanes		1		1		1		1		1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95
Frt				0.850				0.850			0.995	
Flt Protected			0.991			0.950				0.950		
Satd. Flow (prot)	0	0	3479	1538	0	1772	3455	1478	0	1572	3251	0
Flt Permitted			0.732			0.333				0.162		
Satd. Flow (perm)	0	0	2570	1538	0	621	3455	1478	0	268	3251	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.04	1.09	1.00	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				586				159	
Travel Time (s)			30.4				13.3				3.6	
Volume (vph)	104	17	595	57	16	280	483	171	22	40	557	17
Peak Hour Factor	0.81	0.81	0.88	0.81	0.67	0.93	0.88	0.87	0.87	0.67	0.87	0.76
Heavy Vehicles (%)	2%	2%	3%	5%	0%	2%	1%	2%	2%	11%	7%	1%
Adj. Flow (vph)	128	21	676	70	24	301	549	197	25	60	640	22
Lane Group Flow (vph)	0	0	825	70	0	325	549	222	0	60	662	0
Turn Type	Perm	Perm		custom	custom	custom		custom		custom		
Protected Phases			2 3 4		1	1 1 2 3 4				5	5 6	
Permitted Phases	2 3 4	2 3 4		2	2	2		1 2 3		6		
Detector Phases	2 3 4	2 3 4	2 3 4	2	1	1 1 2 3 4		1 2 3		5	5 6	
Minimum Initial (s)				10.0	6.0	6.0				6.0		
Minimum Split (s)				15.0	11.0	11.0				11.0		
Total Split (s)	48.0	48.0	48.0	16.0	23.0	23.0	71.0	45.0	0.0	11.0	49.0	0.0
Total Split (%)	36.9%	36.9%	36.9%	12.3%	17.7%	17.7%	54.6%	34.6%	0.0%	8.5%	37.7%	0.0%
Maximum Green (s)				11.0	18.0	18.0				6.0		
Yellow Time (s)				3.0	3.0	3.0				3.0		
All-Red Time (s)				2.0	2.0	2.0				2.0		
Lead/Lag				Lag	Lead	Lead				Lag		
Lead-Lag Optimize?				Yes	Yes	Yes				Yes		
Vehicle Extension (s)				3.0	2.0	2.0				3.0		
Recall Mode				C-Max	None	None				None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)			44.0	12.0		31.0	67.0	41.0		41.0	45.0	
Actuated g/C Ratio			0.34	0.09		0.24	0.52	0.32		0.32	0.35	
v/c Ratio			0.95	0.49		1.03	0.31	0.48		0.39	0.59	
Control Delay			62.5	68.6		101.2	18.8	40.0		23.5	11.0	



Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø3	ø4	ø6	ø8	ø9	ø10	ø11
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	11	11	10							
Grade (%)				-3%								
Storage Length (ft)			150		0							
Storage Lanes			1		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	15	15		9							
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95							
Frt	0.850			0.980								
Flt Protected			0.950									
Satd. Flow (prot)	1599	0	1737	3256	0							
Flt Permitted			0.337									
Satd. Flow (perm)	1599	0	616	3256	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	172											
Headway Factor	1.00	0.98	1.02	1.02	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	150	3	200	567	82							
Peak Hour Factor	0.76	0.75	0.89	0.90	0.83							
Heavy Vehicles (%)	1%	0%	2%	7%	4%							
Adj. Flow (vph)	197	4	225	630	99							
Lane Group Flow (vph)	197	0	229	729	0							
Turn Type	Free	custom	custom									
Protected Phases			7	6 7		3	4	6	8	9	10	11
Permitted Phases	Free	7	6									
Detector Phases		7	7	6 7								
Minimum Initial (s)		6.0	6.0			1.0	8.0	8.0	8.0	4.0	8.0	4.0
Minimum Split (s)		10.0	10.0			6.0	24.0	32.0	12.0	21.0	16.0	8.0
Total Split (s)	0.0	10.0	10.0	48.0	0.0	6.0	26.0	38.0	24.0	21.0	38.0	10.0
Total Split (%)	0.0%	7.7%	7.7%	36.9%	0.0%	5%	20%	29%	18%	16%	29%	8%
Maximum Green (s)		6.0	6.0			2.0	21.0	33.0	20.0	15.0	30.0	6.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.0	3.0	4.0	3.0	3.0
All-Red Time (s)		1.0	1.0			1.0	2.0	2.0	1.0	2.0	5.0	1.0
Lead/Lag							Lead		Lag	Lead		
Lead-Lag Optimize?							Yes		Yes	Yes		
Vehicle Extension (s)		2.0	2.0			2.0	3.0	2.0	2.0	3.0	3.0	3.0
Recall Mode		None	None			None	None	None	C-Max	None	None	None
Walk Time (s)							7.0	7.0		7.0		
Flash Dont Walk (s)							12.0	20.0		8.0		
Pedestrian Calls (#/hr)							20	20		10		
Act Effct Green (s)	130.0		40.0	44.0								
Actuated g/C Ratio	1.00		0.31	0.34								
v/c Ratio	0.12		0.95	0.66								
Control Delay	0.0		91.7	40.2								



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay			0.0	0.2		59.6	0.0	0.0		0.0	14.3	
Total Delay			62.5	68.8		160.8	18.8	40.0		23.5	25.2	
LOS			E	E		F	B	D		C	C	
Approach Delay			63.0				65.2				19.7	
Approach LOS			E				E				B	
90th %ile Green (s)				11.0	18.0	18.0				6.0		
90th %ile Term Code				Coord	Max	Max				Max		
70th %ile Green (s)				11.0	18.0	18.0				6.0		
70th %ile Term Code				Coord	Max	Max				Max		
50th %ile Green (s)				11.0	18.0	18.0				6.0		
50th %ile Term Code				Coord	Max	Max				Max		
30th %ile Green (s)				11.0	18.0	18.0				6.0		
30th %ile Term Code				Coord	Max	Max				Max		
10th %ile Green (s)				11.0	18.0	18.0				6.0		
10th %ile Term Code				Coord	Max	Max				Max		
Stops (vph)			640	55		235	267	153		10	90	
Fuel Used(gal)			20	2		11	9	5		0	2	
CO Emissions (g/hr)			1405	118		773	649	336		21	174	
NOx Emissions (g/hr)			273	23		150	126	65		4	34	
VOC Emissions (g/hr)			326	27		179	150	78		5	40	
Dilemma Vehicles (#)			0	0		0	0	0		0	0	
Queue Length 50th (ft)			355	57		~255	136	151		8	52	
Queue Length 95th (ft)			#470	97		#429	170	221		m8	m47	
Internal Link Dist (ft)			1256				506				79	
Turn Bay Length (ft)				200		583		150		50		
Base Capacity (vph)			870	142		316	1781	466		155	1125	
Starvation Cap Reductn			0	0		0	0	0		1	450	
Spillback Cap Reductn			0	2		42	0	0		0	0	
Storage Cap Reductn			0	0		0	0	0		0	0	
Reduced v/c Ratio			0.95	0.50		1.19	0.31	0.48		0.39	0.98	

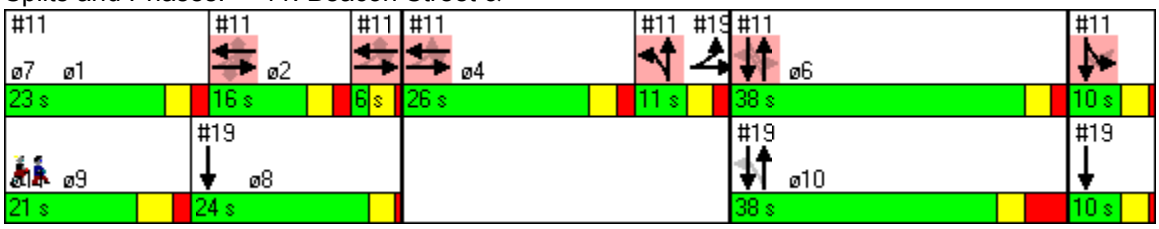
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBWB and 8:, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 50.7		Intersection LOS: D	
Intersection Capacity Utilization 76.9%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 11: Beacon Street &



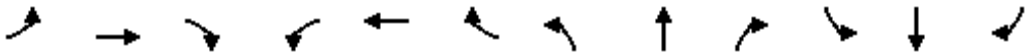


Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø3	ø4	ø6	ø8	ø9	ø10	ø11
Queue Delay	0.0		0.0	0.0								
Total Delay	0.0		91.7	40.2								
LOS	A		F	D								
Approach Delay				52.5								
Approach LOS				D								
90th %ile Green (s)		6.0	6.0			2.0	21.0	33.0	20.0	15.0	30.0	6.0
90th %ile Term Code		Max	Max			Max	Max	Max	Coord	Ped	Max	Max
70th %ile Green (s)		6.0	6.0			2.0	21.0	33.0	41.0	0.0	30.0	6.0
70th %ile Term Code		Max	Max			Max	Max	Max	Coord	Skip	Max	Max
50th %ile Green (s)		6.0	6.0			2.0	21.0	33.0	41.0	0.0	30.0	6.0
50th %ile Term Code		Max	Max			Max	Max	Max	Coord	Skip	Max	Max
30th %ile Green (s)		6.0	6.0			2.0	21.0	33.0	41.0	0.0	30.0	6.0
30th %ile Term Code		Max	Max			Max	Max	Max	Coord	Skip	Max	Max
10th %ile Green (s)		6.0	6.0			2.0	21.0	33.0	41.0	0.0	30.0	6.0
10th %ile Term Code		Max	Max			Max	Max	Hold	Coord	Skip	Max	Max
Stops (vph)	0		153	541								
Fuel Used(gal)	0		6	14								
CO Emissions (g/hr)	13		445	966								
NOx Emissions (g/hr)	3		87	188								
VOC Emissions (g/hr)	3		103	224								
Dilemma Vehicles (#)	0		0	0								
Queue Length 50th (ft)	0		147	274								
Queue Length 95th (ft)	m0		#242	345								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)			150									
Base Capacity (vph)	1599		241	1102								
Starvation Cap Reductn	0		0	0								
Spillback Cap Reductn	0		0	0								
Storage Cap Reductn	0		0	0								
Reduced v/c Ratio	0.12		0.95	0.66								

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	16	12	16	12	11	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50					50	50			50	
Trailing Detector (ft)	0	0					0	0			0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt		0.948									0.993	
Flt Protected		0.970						0.998				
Satd. Flow (prot)	0	1713	0	0	0	0	0	3259	0	0	3450	0
Flt Permitted		0.970						0.886				
Satd. Flow (perm)	0	1713	0	0	0	0	0	2894	0	0	3450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10									5	
Headway Factor	1.00	1.00	1.00	0.85	1.00	0.85	1.00	1.04	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		178			473			650			159	
Travel Time (s)		4.0			10.8			14.8			3.6	
Volume (vph)	15	0	9	0	0	0	23	725	0	0	860	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	4%	2%
Adj. Flow (vph)	16	0	10	0	0	0	25	806	0	0	935	45
Lane Group Flow (vph)	0	26	0	0	0	0	0	831	0	0	980	0
Turn Type	Split						Perm					
Protected Phases	5	5						10			8 10 11	
Permitted Phases							10					
Detector Phases	5	5					10	10			8 10 11	
Minimum Initial (s)	6.0	6.0					8.0	8.0				
Minimum Split (s)	11.0	11.0					16.0	16.0				
Total Split (s)	11.0	11.0	0.0	0.0	0.0	0.0	38.0	38.0	0.0	0.0	72.0	0.0
Total Split (%)	8.5%	8.5%	0.0%	0.0%	0.0%	0.0%	29.2%	29.2%	0.0%	0.0%	55.4%	0.0%
Maximum Green (s)	6.0	6.0					30.0	30.0				
Yellow Time (s)	3.0	3.0					3.0	3.0				
All-Red Time (s)	2.0	2.0					5.0	5.0				
Lead/Lag	Lag	Lag										
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	3.0	3.0					3.0	3.0				
Recall Mode	None	None					None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.0						34.0			84.0	
Actuated g/C Ratio		0.05						0.26			0.65	
v/c Ratio		0.25						1.10			0.44	
Control Delay		48.2						107.4			1.5	
Queue Delay		0.0						0.0			0.5	
Total Delay		48.2						107.4			2.0	
LOS		D						F			A	

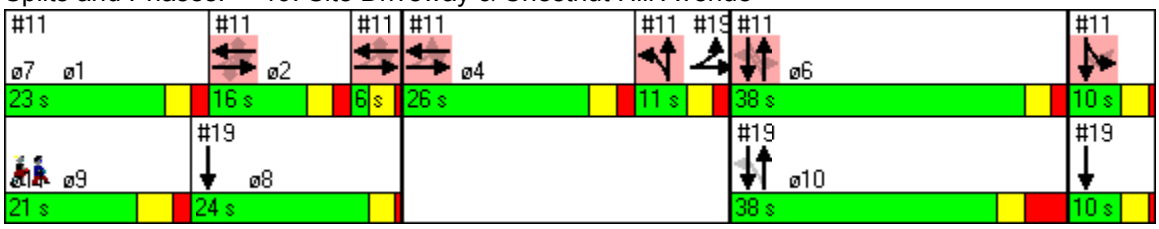
Lane Group	ø1	ø2	ø3	ø4	ø6	ø7	ø8	ø9	ø11
Lane Configurations									
Ideal Flow (vphpl)									
Lane Width (ft)									
Total Lost Time (s)									
Leading Detector (ft)									
Trailing Detector (ft)									
Turning Speed (mph)									
Lane Util. Factor									
Frt									
Flt Protected									
Satd. Flow (prot)									
Flt Permitted									
Satd. Flow (perm)									
Right Turn on Red									
Satd. Flow (RTOR)									
Headway Factor									
Link Speed (mph)									
Link Distance (ft)									
Travel Time (s)									
Volume (vph)									
Peak Hour Factor									
Heavy Vehicles (%)									
Adj. Flow (vph)									
Lane Group Flow (vph)									
Turn Type									
Protected Phases	1	2	3	4	6	7	8	9	11
Permitted Phases									
Detector Phases									
Minimum Initial (s)	6.0	10.0	1.0	8.0	8.0	6.0	8.0	4.0	4.0
Minimum Split (s)	11.0	15.0	6.0	24.0	32.0	10.0	12.0	21.0	8.0
Total Split (s)	23.0	16.0	6.0	26.0	38.0	10.0	24.0	21.0	10.0
Total Split (%)	18%	12%	5%	20%	29%	8%	18%	16%	8%
Maximum Green (s)	18.0	11.0	2.0	21.0	33.0	6.0	20.0	15.0	6.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag		Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	2.0	3.0	2.0	3.0	2.0	2.0	2.0	3.0	3.0
Recall Mode	None	C-Max	None	None	None	None	C-Max	None	None
Walk Time (s)				7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	20.0			8.0	
Pedestrian Calls (#/hr)				20	20			10	
Act Effct Green (s)									
Actuated g/C Ratio									
v/c Ratio									
Control Delay									
Queue Delay									
Total Delay									
LOS									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		48.2						107.4			2.0	
Approach LOS		D						F			A	
90th %ile Green (s)	6.0	6.0					30.0	30.0				
90th %ile Term Code	Max	Max					Max	Max				
70th %ile Green (s)	6.0	6.0					30.0	30.0				
70th %ile Term Code	Max	Max					Max	Max				
50th %ile Green (s)	6.0	6.0					30.0	30.0				
50th %ile Term Code	Max	Max					Max	Max				
30th %ile Green (s)	6.0	6.0					30.0	30.0				
30th %ile Term Code	Max	Max					Max	Max				
10th %ile Green (s)	6.0	6.0					30.0	30.0				
10th %ile Term Code	Max	Max					Max	Max				
Stops (vph)		18						649			79	
Fuel Used(gal)		0						24			2	
CO Emissions (g/hr)		26						1659			127	
NOx Emissions (g/hr)		5						323			25	
VOC Emissions (g/hr)		6						384			30	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		13						~416			0	
Queue Length 95th (ft)		44						#547			m134	
Internal Link Dist (ft)		98			393			570			79	
Turn Bay Length (ft)												
Base Capacity (vph)		102						757			2231	
Starvation Cap Reductn		0						0			751	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.25						1.10			0.66	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBWB and 8:, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 50.3		Intersection LOS: D	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 19: Site Driveway & Chestnut Hill Avenue

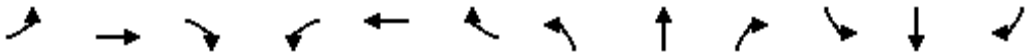


Lane Group	ø1	ø2	ø3	ø4	ø6	ø7	ø8	ø9	ø11
Approach Delay									
Approach LOS									
90th %ile Green (s)	18.0	11.0	2.0	21.0	33.0	6.0	20.0	15.0	6.0
90th %ile Term Code	Max	Coord	Max	Max	Max	Max	Coord	Ped	Max
70th %ile Green (s)	18.0	11.0	2.0	21.0	33.0	6.0	41.0	0.0	6.0
70th %ile Term Code	Max	Coord	Max	Max	Max	Max	Coord	Skip	Max
50th %ile Green (s)	18.0	11.0	2.0	21.0	33.0	6.0	41.0	0.0	6.0
50th %ile Term Code	Max	Coord	Max	Max	Max	Max	Coord	Skip	Max
30th %ile Green (s)	18.0	11.0	2.0	21.0	33.0	6.0	41.0	0.0	6.0
30th %ile Term Code	Max	Coord	Max	Max	Max	Max	Coord	Skip	Max
10th %ile Green (s)	18.0	11.0	2.0	21.0	33.0	6.0	41.0	0.0	6.0
10th %ile Term Code	Max	Coord	Max	Max	Hold	Max	Coord	Skip	Max
Stops (vph)									
Fuel Used(gal)									
CO Emissions (g/hr)									
NOx Emissions (g/hr)									
VOC Emissions (g/hr)									
Dilemma Vehicles (#)									
Queue Length 50th (ft)									
Queue Length 95th (ft)									
Internal Link Dist (ft)									
Turn Bay Length (ft)									
Base Capacity (vph)									
Starvation Cap Reductn									
Spillback Cap Reductn									
Storage Cap Reductn									
Reduced v/c Ratio									

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00				0.98			
Frt		0.990			0.993				0.850		0.998	
Flt Protected		0.992			0.973			0.999			0.998	
Satd. Flow (prot)	0	1866	0	0	1827	0	0	1840	1599	0	1818	0
Flt Permitted		0.927			0.541			0.984			0.807	
Satd. Flow (perm)	0	1744	0	0	1016	0	0	1812	1565	0	1470	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		4							132		1	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	27	126	13	118	72	8	8	643	118	15	779	7
Confl. Bikes (#/hr)						1			2			
Peak Hour Factor	0.67	0.63	0.65	0.88	0.77	0.67	0.67	0.92	0.89	0.55	0.93	0.63
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	13%	3%	1%	9%	4%	0%
Adj. Flow (vph)	40	200	20	134	94	12	12	699	133	27	838	11
Lane Group Flow (vph)	0	260	0	0	240	0	0	711	133	0	876	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	48.0	48.0	48.0	48.0	48.0	0.0
Total Split (%)	30.0%	30.0%	0.0%	30.0%	30.0%	0.0%	53.3%	53.3%	53.3%	53.3%	53.3%	0.0%
Maximum Green (s)	23.0	23.0		23.0	23.0		44.0	44.0	44.0	44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.1			23.1			44.2	44.2		44.2	
Actuated g/C Ratio		0.30			0.30			0.57	0.57		0.57	
v/c Ratio		0.50			0.79			0.69	0.14		1.05	
Control Delay		27.4			48.1			17.9	2.6		65.3	

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		27.4			48.1			17.9	2.6		65.3	
LOS		C			D			B	A		E	
Approach Delay		27.4			48.1			15.5			65.3	
Approach LOS		C			D			B			E	
90th %ile Green (s)	23.0	23.0		23.0	23.0		44.0	44.0	44.0	44.0	44.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	23.0	23.0		23.0	23.0		44.0	44.0	44.0	44.0	44.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	23.0	23.0		23.0	23.0		44.0	44.0	44.0	44.0	44.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	23.0	23.0		23.0	23.0		44.0	44.0	44.0	44.0	44.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	23.0	23.0		23.0	23.0		44.0	44.0	44.0	44.0	44.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		132			159			441	12		613	
Fuel Used(gal)		3			4			8	1		18	
CO Emissions (g/hr)		183			301			544	47		1269	
NOx Emissions (g/hr)		36			59			106	9		247	
VOC Emissions (g/hr)		42			70			126	11		294	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		96			100			203	0		~393	
Queue Length 95th (ft)		133			#214			#489	28		#853	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		520			302			1028	945		834	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.50			0.79			0.69	0.14		1.05	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 40.1		Intersection LOS: D	
Intersection Capacity Utilization 98.1%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			

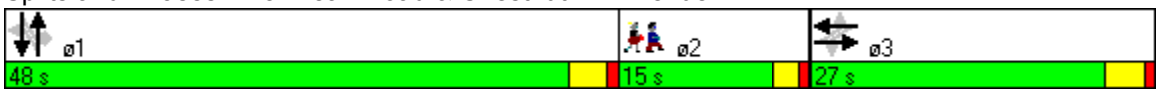
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.

Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Queue shown is maximum after two cycles.

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



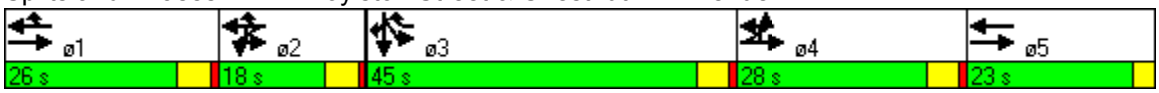
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	10	12	13	12	12	12	13
Storage Length (ft)		280		0		160		0	0		0	0
Storage Lanes		1		0		1		1	0		0	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50	50				50
Trailing Detector (ft)	0	0	0		0	0	0	0				0
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt								0.850				
Flt Protected		0.950				0.950						0.950
Satd. Flow (prot)	0	1641	3471	0	0	1685	3505	1620	0	0	0	1776
Flt Permitted		0.950				0.950						0.950
Satd. Flow (perm)	0	1641	3471	0	0	1685	3505	1620	0	0	0	1776
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)								607				
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96
Link Speed (mph)			30				30			30		
Link Distance (ft)			1399				494			1410		
Travel Time (s)			31.8				11.2			32.0		
Volume (vph)	10	208	1244	0	11	75	1325	606	0	0	0	456
Peak Hour Factor	0.50	0.91	0.94	0.25	0.69	0.68	0.96	0.99	0.92	0.92	0.92	0.93
Heavy Vehicles (%)	10%	6%	4%	0%	0%	0%	3%	3%	2%	2%	2%	5%
Adj. Flow (vph)	20	229	1323	0	16	110	1380	612	0	0	0	490
Lane Group Flow (vph)	0	249	1323	0	0	126	1380	612	0	0	0	490
Turn Type	Prot	Prot			Prot	Prot		custom				Split
Protected Phases	4	4	1 4 5		2	2	1 2 5	1 2 3				3
Permitted Phases												
Detector Phases	4	4	1 4		2	2	1 2	1 2 3				3
Minimum Initial (s)	6.0	6.0			5.0	5.0						6.0
Minimum Split (s)	21.0	21.0			15.0	15.0						29.0
Total Split (s)	28.0	28.0	77.0	0.0	18.0	18.0	67.0	89.0	0.0	0.0	0.0	45.0
Total Split (%)	20.0%	20.0%	55.0%	0.0%	12.9%	12.9%	47.9%	63.6%	0.0%	0.0%	0.0%	32.1%
Maximum Green (s)	23.0	23.0			13.0	13.0						40.0
Yellow Time (s)	4.0	4.0			4.0	4.0						4.0
All-Red Time (s)	1.0	1.0			1.0	1.0						1.0
Lead/Lag	Lag	Lag			Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes			Yes	Yes						Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Recall Mode	None	None			Max	Max						None
Walk Time (s)												13.0
Flash Dont Walk (s)												5.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		24.0	73.0			14.0	63.0	104.2				41.0
Actuated g/C Ratio		0.17	0.52			0.10	0.45	0.74				0.29
v/c Ratio		0.88	0.73			0.75	0.88	0.45				0.94
Control Delay		87.4	28.9			78.2	40.6	2.8				76.1
Queue Delay		0.0	1.3			0.0	34.2	0.6				0.0

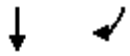
Lane Group	SBT	SBR	ø1	ø5
Lane Configurations				
Ideal Flow (vphpl)	1900	1900		
Lane Width (ft)	11	16		
Storage Length (ft)		0		
Storage Lanes		1		
Total Lost Time (s)	4.0	4.0		
Leading Detector (ft)	50	50		
Trailing Detector (ft)	0	0		
Turning Speed (mph)		9		
Lane Util. Factor	1.00	1.00		
Frt		0.850		
Flt Protected				
Satd. Flow (prot)	1701	1812		
Flt Permitted				
Satd. Flow (perm)	1701	1812		
Right Turn on Red		Yes		
Satd. Flow (RTOR)		293		
Headway Factor	1.04	0.85		
Link Speed (mph)	30			
Link Distance (ft)	187			
Travel Time (s)	4.3			
Volume (vph)	42	311		
Peak Hour Factor	0.63	0.87		
Heavy Vehicles (%)	8%	1%		
Adj. Flow (vph)	67	357		
Lane Group Flow (vph)	67	357		
Turn Type		Prot		
Protected Phases	3	3	1	5
Permitted Phases				
Detector Phases	3	3		
Minimum Initial (s)	6.0	6.0	5.0	4.0
Minimum Split (s)	29.0	29.0	21.0	19.0
Total Split (s)	45.0	45.0	26.0	23.0
Total Split (%)	32.1%	32.1%	19%	16%
Maximum Green (s)	40.0	40.0	21.0	20.0
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None
Walk Time (s)	13.0	13.0		6.0
Flash Dont Walk (s)	5.0	5.0		10.0
Pedestrian Calls (#/hr)	0	0		10
Act Effct Green (s)	41.0	41.0		
Actuated g/C Ratio	0.29	0.29		
v/c Ratio	0.13	0.48		
Control Delay	37.5	10.4		
Queue Delay	0.0	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Total Delay		87.4	30.2			78.2	74.8	3.4				76.1
LOS		F	C			E	E	A				E
Approach Delay			39.3				54.4					
Approach LOS			D				D					
90th %ile Green (s)	23.0	23.0			13.0	13.0						40.0
90th %ile Term Code	Max	Max			MaxR	MaxR						Max
70th %ile Green (s)	23.0	23.0			13.0	13.0						40.0
70th %ile Term Code	Max	Max			MaxR	MaxR						Max
50th %ile Green (s)	23.0	23.0			13.0	13.0						40.0
50th %ile Term Code	Max	Max			MaxR	MaxR						Max
30th %ile Green (s)	23.0	23.0			13.0	13.0						40.0
30th %ile Term Code	Max	Max			MaxR	MaxR						Max
10th %ile Green (s)	23.2	23.2			13.0	13.0						39.8
10th %ile Term Code	Max	Max			MaxR	MaxR						Gap
Stops (vph)		195	934			80	1241	96				406
Fuel Used(gal)		7	26			2	23	3				10
CO Emissions (g/hr)		513	1821			150	1602	224				697
NOx Emissions (g/hr)		100	354			29	312	44				136
VOC Emissions (g/hr)		119	422			35	371	52				162
Dilemma Vehicles (#)		0	0			0	0	0				0
Queue Length 50th (ft)		224	476			117	651	14				437
Queue Length 95th (ft)		#382	564			m128	m680	m99				#658
Internal Link Dist (ft)			1319				414			1330		
Turn Bay Length (ft)		280				160						
Base Capacity (vph)		282	1811			169	1577	1361				520
Starvation Cap Reductn		0	0			0	286	394				0
Spillback Cap Reductn		0	275			0	0	0				0
Storage Cap Reductn		0	0			0	0	0				0
Reduced v/c Ratio		0.88	0.86			0.75	1.07	0.63				0.94

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 47.9		Intersection LOS: D	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





Lane Group	SBT	SBR	ø1	ø5
Total Delay	37.5	10.4		
LOS	D	B		
Approach Delay	47.6			
Approach LOS	D			
90th %ile Green (s)	40.0	40.0	25.0	16.0
90th %ile Term Code	Max	Max	Coord	Ped
70th %ile Green (s)	40.0	40.0	44.0	0.0
70th %ile Term Code	Max	Max	Coord	Skip
50th %ile Green (s)	40.0	40.0	44.0	0.0
50th %ile Term Code	Max	Max	Coord	Skip
30th %ile Green (s)	40.0	40.0	44.0	0.0
30th %ile Term Code	Max	Max	Coord	Skip
10th %ile Green (s)	39.8	39.8	44.0	0.0
10th %ile Term Code	Gap	Gap	Coord	Skip
Stops (vph)	31	56		
Fuel Used(gal)	1	1		
CO Emissions (g/hr)	39	100		
NOx Emissions (g/hr)	8	19		
VOC Emissions (g/hr)	9	23		
Dilemma Vehicles (#)	0	0		
Queue Length 50th (ft)	45	43		
Queue Length 95th (ft)	58	117		
Internal Link Dist (ft)	107			
Turn Bay Length (ft)				
Base Capacity (vph)	498	738		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	0.13	0.48		

Intersection Summary



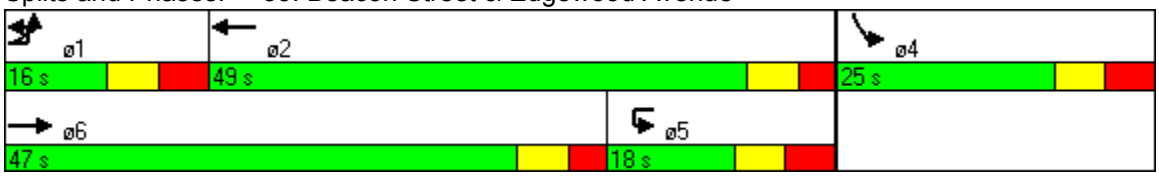
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.984		0.943	
Flt Protected		0.950		0.950			0.972	
Satd. Flow (prot)	0	1660	3336	1745	3341	0	1974	0
Flt Permitted		0.950		0.950			0.972	
Satd. Flow (perm)	0	1660	3336	1745	3341	0	1974	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					20		39	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			997		2753		793	
Travel Time (s)			22.7		62.6		18.0	
Volume (vph)	33	26	884	22	725	88	53	41
Peak Hour Factor	0.65	0.86	0.95	0.83	0.91	0.93	0.77	0.80
Heavy Vehicles (%)	0%	4%	1%	0%	3%	1%	0%	0%
Adj. Flow (vph)	51	30	931	27	797	95	69	51
Lane Group Flow (vph)	0	81	931	27	892	0	120	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	16.0	16.0	47.0	18.0	49.0	0.0	25.0	0.0
Total Split (%)	17.8%	17.8%	52.2%	20.0%	54.4%	0.0%	27.8%	0.0%
Maximum Green (s)	8.0	8.0	40.0	10.0	42.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		13.1	63.9	13.4	58.6		13.1	
Actuated g/C Ratio		0.15	0.71	0.15	0.65		0.15	
v/c Ratio		0.34	0.39	0.10	0.41		0.37	
Control Delay		37.6	9.8	17.3	5.7		26.8	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

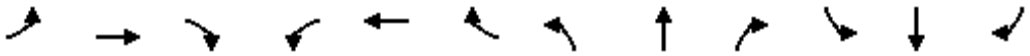


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.6	9.8	17.3	5.7		26.8	
LOS		D	A	B	A		C	
Approach Delay			12.0		6.0		26.8	
Approach LOS			B		A		C	
90th %ile Green (s)	13.0	13.0	42.1	12.9	42.0		12.0	
90th %ile Term Code	Max	Max	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.5	10.5	41.2	16.2	46.9		9.6	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
50th %ile Green (s)	8.8	8.8	67.0	0.0	50.2		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.1	7.1	67.0	0.0	51.9		8.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		50	383	8	136		57	
Fuel Used(gal)		1	15	1	19		1	
CO Emissions (g/hr)		102	1033	42	1340		99	
NOx Emissions (g/hr)		20	201	8	261		19	
VOC Emissions (g/hr)		24	239	10	310		23	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		42	66	10	41		42	
Queue Length 95th (ft)		77	240	m6	m94		72	
Internal Link Dist (ft)			917		2673		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		252	2367	307	2182		491	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.32	0.39	0.09	0.41		0.24	

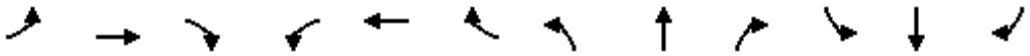
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 46.1%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.984			0.996			0.985	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1736	3410	0	0	3191	0	1560	1594	0	1668	1738	0
Flt Permitted	0.950						0.206			0.299		
Satd. Flow (perm)	1736	3410	0	0	3191	0	338	1594	0	525	1738	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2			7	
Headway Factor	1.00	1.04	1.00	1.00	1.12	1.00	1.09	1.19	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2753			775			812			1068	
Travel Time (s)		62.6			17.6			18.5			24.3	
Volume (vph)	129	971	87	0	496	51	27	349	7	85	320	49
Peak Hour Factor	0.77	0.89	0.86	0.92	0.71	0.61	0.81	0.80	0.58	0.78	0.66	0.92
Heavy Vehicles (%)	4%	1%	1%	2%	2%	4%	8%	3%	14%	1%	4%	5%
Parking (#/hr)			0		0			0				
Adj. Flow (vph)	168	1091	101	0	699	84	33	436	12	109	485	53
Lane Group Flow (vph)	168	1192	0	0	783	0	33	448	0	109	538	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	27.0	51.0	0.0	0.0	24.0	0.0	39.0	39.0	0.0	39.0	39.0	0.0
Total Split (%)	30.0%	56.7%	0.0%	0.0%	26.7%	0.0%	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%
Maximum Green (s)	19.0	40.0			13.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	17.1	49.3			28.2		32.7	32.7		32.7	32.7	
Actuated g/C Ratio	0.19	0.55			0.31		0.36	0.36		0.36	0.36	
v/c Ratio	0.51	0.64			0.78		0.27	0.77		0.57	0.84	
Control Delay	45.3	11.8			37.1		25.9	34.9		35.7	39.3	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	45.3	11.8			37.1		25.9	34.9		35.7	39.3	
LOS	D	B			D		C	C		D	D	
Approach Delay		15.9			37.1			34.2			38.7	
Approach LOS		B			D			C			D	
90th %ile Green (s)	18.4	40.0			13.6		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	14.0	40.0			18.0		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	13.4	40.0			18.6		31.0	31.0		31.0	31.0	
50th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Max	Max	
30th %ile Green (s)	11.2	42.9			23.7		28.1	28.1		28.1	28.1	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	8.4	48.4			32.0		22.6	22.6		22.6	22.6	
10th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
Stops (vph)	109	450			442		20	304		70	317	
Fuel Used(gal)	5	28			10		0	6		2	8	
CO Emissions (g/hr)	319	1939			692		30	452		120	544	
NOx Emissions (g/hr)	62	377			135		6	88		23	106	
VOC Emissions (g/hr)	74	449			160		7	105		28	126	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	83	183			221		12	211		47	262	
Queue Length 95th (ft)	116	135			#250		33	272		86	245	
Internal Link Dist (ft)		2673			695			732			988	
Turn Bay Length (ft)	150											
Base Capacity (vph)	444	1867			999		131	621		204	680	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.38	0.64			0.78		0.25	0.72		0.53	0.79	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 11 (12%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 28.2 Intersection LOS: C
Intersection Capacity Utilization 76.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

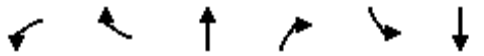
Splits and Phases: 38: Beacon Street & Washington Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	20	11	3	4	70	29	789	53	3	668	10
Peak Hour Factor	0.85	0.68	0.46	0.38	0.50	0.75	0.52	0.91	0.70	0.38	0.78	0.50
Hourly flow rate (vph)	22	29	24	8	8	93	56	867	76	8	856	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								650			660	
pX, platoon unblocked	0.76	0.76	0.84	0.76	0.76	0.68	0.68			0.84		
vC, conflicting volume	1996	1909	905	1937	1936	866	876			943		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1996	1882	887	1919	1918	804	819			932		
tC, single (s)	7.1	6.5	6.2	7.1	6.8	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.2	3.4	2.2			2.2		
p0 queue free %	0	40	92	54	80	63	90			99		
cM capacity (veh/h)	17	49	291	17	40	253	559			625		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	76	109	999	884
Volume Left	22	8	56	8
Volume Right	24	93	76	20
cSH	38	106	559	625
Volume to Capacity	2.00	1.03	0.10	0.01
Queue Length 95th (ft)	205	165	8	1
Control Delay (s)	696.9	170.1	3.3	0.4
Lane LOS	F	F	A	A
Approach Delay (s)	696.9	170.1	3.3	0.4
Approach LOS	F	F		

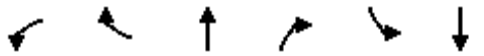
Intersection Summary				
Average Delay	36.2			
Intersection Capacity Utilization	81.8%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	3	676	6	6	619
Peak Hour Factor	0.38	0.38	0.97	0.38	0.75	0.90
Hourly flow rate (vph)	8	8	697	16	8	688
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1409	705			713	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1409	705			713	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			99	
cM capacity (veh/h)	153	440			896	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	713	696
Volume Left	8	0	8
Volume Right	8	16	0
cSH	227	1700	896
Volume to Capacity	0.07	0.42	0.01
Queue Length 95th (ft)	6	0	1
Control Delay (s)	22.0	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	22.0	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		47.4%	ICU Level of Service A
Analysis Period (min)		15	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	36	680	0	0	615
Peak Hour Factor	0.50	0.50	0.97	0.38	0.92	0.90
Hourly flow rate (vph)	20	72	701	0	0	683
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1384	701			701	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1384	701			701	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	87	83			100	
cM capacity (veh/h)	160	432			896	

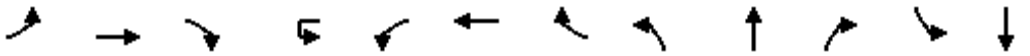
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	92	701	683
Volume Left	20	0	0
Volume Right	72	0	0
cSH	315	1700	1700
Volume to Capacity	0.29	0.41	0.40
Queue Length 95th (ft)	30	0	0
Control Delay (s)	21.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	21.1	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	12	12	12	12	12
Storage Length (ft)	100		0		100		0	0		100	75	
Storage Lanes	1		0		1		0	1		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50		50	50		50	50
Trailing Detector (ft)	0	0		0	0	0		0	0		0	0
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt		0.946				0.990			0.944			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1787	3304	0	0	1788	3404	0	1770	1746	0	0	3497
Flt Permitted	0.213				0.190			0.312				0.527
Satd. Flow (perm)	401	3304	0	0	358	3404	0	581	1746	0	0	1852
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		78				5			31			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30				30			30			30
Link Distance (ft)		1441				1004			1091			864
Travel Time (s)		32.8				22.8			24.8			19.6
Volume (vph)	113	375	213	7	209	420	22	181	431	226	30	454
Peak Hour Factor	0.79	0.90	0.91	0.58	0.83	0.96	0.71	0.81	0.83	0.74	0.58	0.92
Heavy Vehicles (%)	1%	3%	4%	0%	1%	5%	5%	2%	2%	4%	0%	3%
Adj. Flow (vph)	143	417	234	12	252	438	31	223	519	305	52	493
Lane Group Flow (vph)	143	651	0	0	264	469	0	223	824	0	0	545
Turn Type	pm+pt			pm+pt	pm+pt			D.P+P			Perm	
Protected Phases	7	1		7	7	1		6	5 6			5
Permitted Phases	1			1	1			5			5	
Detector Phases	7	1		7	7	1		6	5 6		5	5
Minimum Initial (s)	6.0	10.0		6.0	6.0	10.0		6.0			10.0	10.0
Minimum Split (s)	12.0	15.0		12.0	12.0	15.0		13.0			21.0	21.0
Total Split (s)	15.0	25.0	0.0	15.0	15.0	25.0	0.0	13.0	55.0	0.0	42.0	42.0
Total Split (%)	12.5%	20.8%	0.0%	12.5%	12.5%	20.8%	0.0%	10.8%	45.8%	0.0%	35.0%	35.0%
Maximum Green (s)	9.0	20.0		9.0	9.0	20.0		6.0			35.0	35.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
All-Red Time (s)	3.0	2.0		3.0	3.0	2.0		4.0			4.0	4.0
Lead/Lag		Lead				Lead		Lag			Lead	Lead
Lead-Lag Optimize?		Yes				Yes		Yes			Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	2.0
Recall Mode	None	C-Max		None	None	C-Max		None			None	None
Walk Time (s)											7.0	7.0
Flash Dont Walk (s)											7.0	7.0
Pedestrian Calls (#/hr)											20	20
Act Effct Green (s)	57.0	46.0			57.0	46.0		47.0	51.0			38.0
Actuated g/C Ratio	0.48	0.38			0.48	0.38		0.39	0.42			0.32
v/c Ratio	0.45	0.50			0.88	0.36		0.70	1.08			0.93
Control Delay	20.7	26.0			49.0	27.1		46.5	90.5			63.8
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0



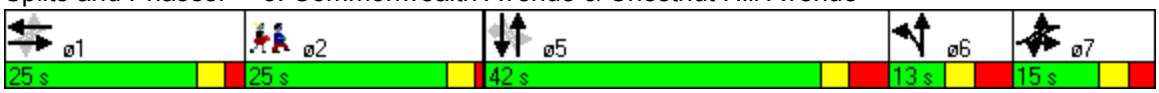
Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1524	
Flt Permitted		
Satd. Flow (perm)	1524	
Right Turn on Red	Yes	
Satd. Flow (RTOR)	15	
Headway Factor	1.00	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Volume (vph)	16	
Peak Hour Factor	0.50	
Heavy Vehicles (%)	6%	
Adj. Flow (vph)	32	
Lane Group Flow (vph)	32	
Turn Type	Perm	
Protected Phases		2
Permitted Phases	5	
Detector Phases	5	
Minimum Initial (s)	10.0	4.0
Minimum Split (s)	21.0	25.0
Total Split (s)	42.0	25.0
Total Split (%)	35.0%	21%
Maximum Green (s)	35.0	21.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	4.0	1.0
Lead/Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	2.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	7.0	14.0
Pedestrian Calls (#/hr)	20	0
Act Effct Green (s)	38.0	
Actuated g/C Ratio	0.32	
v/c Ratio	0.06	
Control Delay	18.8	
Queue Delay	0.0	



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	20.7	26.0			49.0	27.1		46.5	90.5			63.8
LOS	C	C			D	C		D	F			E
Approach Delay		25.1				35.0			81.2			61.3
Approach LOS		C				D			F			E
90th %ile Green (s)	9.0	45.0		9.0	9.0	45.0		6.0			35.0	35.0
90th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
70th %ile Green (s)	9.0	45.0		9.0	9.0	45.0		6.0			35.0	35.0
70th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
50th %ile Green (s)	9.0	45.0		9.0	9.0	45.0		6.0			35.0	35.0
50th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
30th %ile Green (s)	9.0	45.0		9.0	9.0	45.0		6.0			35.0	35.0
30th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
10th %ile Green (s)	9.0	45.0		9.0	9.0	45.0		6.0			35.0	35.0
10th %ile Term Code	Max	Coord		Max	Max	Coord		Max			Max	Max
Stops (vph)	60	384			119	303		131	542			427
Fuel Used(gal)	2	12			5	8		4	21			12
CO Emissions (g/hr)	145	828			315	530		278	1445			832
NOx Emissions (g/hr)	28	161			61	103		54	281			162
VOC Emissions (g/hr)	34	192			73	123		64	335			193
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	57	175			114	133		112	~703			214
Queue Length 95th (ft)	82	231			#190	178		152	#826			#327
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	318	1315			301	1308		317	760			586
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.45	0.50			0.88	0.36		0.70	1.08			0.93

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 52.7		Intersection LOS: D	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





Lane Group	SBR	ø2
Total Delay	18.8	
LOS	B	
Approach Delay		
Approach LOS		
90th %ile Green (s)	35.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	35.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	35.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	35.0	0.0
30th %ile Term Code	Max	Skip
10th %ile Green (s)	35.0	0.0
10th %ile Term Code	Max	Skip
Stops (vph)	7	
Fuel Used(gal)	0	
CO Emissions (g/hr)	15	
NOx Emissions (g/hr)	3	
VOC Emissions (g/hr)	3	
Dilemma Vehicles (#)	0	
Queue Length 50th (ft)	9	
Queue Length 95th (ft)	15	
Internal Link Dist (ft)		
Turn Bay Length (ft)	50	
Base Capacity (vph)	493	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.06	

Intersection Summary

Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	11	10	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		200		200		583		150		50		0
Storage Lanes		1		1		1		1		1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15	15		9	9	15		9	9	15		9
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95
Frt				0.850				0.850			0.992	
Flt Protected			0.985			0.950				0.950		
Satd. Flow (prot)	0	0	3556	1615	0	1782	3490	1546	0	1745	3335	0
Flt Permitted			0.673			0.286				0.125		
Satd. Flow (perm)	0	0	2430	1615	0	536	3490	1546	0	230	3335	0
Right Turn on Red				No					No			
Satd. Flow (RTOR)												
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.09	1.04	1.04	1.00
Link Speed (mph)			30				30				30	
Link Distance (ft)			1336				583				173	
Travel Time (s)			30.4				13.3				3.9	
Volume (vph)	116	21	377	96	12	276	469	138	34	53	498	28
Peak Hour Factor	0.77	0.77	0.94	0.60	0.75	0.82	0.90	0.73	0.92	0.80	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	8%	1%	0%	1%	1%	0%	4%	0%
Adj. Flow (vph)	151	27	401	160	16	337	521	189	37	66	541	30
Lane Group Flow (vph)	0	0	579	160	0	353	521	226	0	66	571	0
Turn Type	Perm	Perm		custom	custom	custom		custom		custom		
Protected Phases			2 3 4		1	1 1 2 3 4				5	5 6	
Permitted Phases	2 3 4	2 3 4		2	2	2		1 2 3		6		
Detector Phases	2 3 4	2 3 4	2 3 4	2	1	1 1 2 3 4		1 2 3		5	5 6	
Minimum Initial (s)				10.0	6.0	6.0				6.0		
Minimum Split (s)				15.0	11.0	11.0				11.0		
Total Split (s)	50.0	50.0	50.0	18.0	23.0	23.0	73.0	47.0	0.0	12.0	48.0	0.0
Total Split (%)	38.5%	38.5%	38.5%	13.8%	17.7%	17.7%	56.2%	36.2%	0.0%	9.2%	36.9%	0.0%
Maximum Green (s)				13.0	18.0	18.0				7.0		
Yellow Time (s)				3.0	3.0	3.0				3.0		
All-Red Time (s)				2.0	2.0	2.0				2.0		
Lead/Lag				Lag	Lead	Lead				Lag		
Lead-Lag Optimize?				Yes	Yes	Yes				Yes		
Vehicle Extension (s)				3.0	2.0	2.0				3.0		
Recall Mode				C-Max	None	None				None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)			46.0	18.9		37.9	69.0	47.9		40.0	44.0	
Actuated g/C Ratio			0.35	0.15		0.29	0.53	0.37		0.31	0.34	
v/c Ratio			0.67	0.68		1.04	0.28	0.40		0.40	0.51	
Control Delay			40.3	69.3		99.6	17.3	34.3		34.7	10.3	



Lane Group	NBR2	SBU	SBL	SBT	SBR	ø3	ø4	ø6	ø8	ø9	ø10	ø11
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	11	11	10							
Grade (%)				-3%								
Storage Length (ft)			150		0							
Storage Lanes			1		0							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0							
Leading Detector (ft)	50	50	50	50								
Trailing Detector (ft)	0	0	0	0								
Turning Speed (mph)	9	9	15		9							
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95							
Frt	0.850			0.979								
Flt Protected			0.950									
Satd. Flow (prot)	1615	0	1737	3324	0							
Flt Permitted			0.420									
Satd. Flow (perm)	1615	0	768	3324	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	251											
Headway Factor	1.00	0.98	1.02	1.02	1.07							
Link Speed (mph)				30								
Link Distance (ft)				1091								
Travel Time (s)				24.8								
Volume (vph)	228	2	179	605	86							
Peak Hour Factor	0.91	0.50	0.89	0.92	0.81							
Heavy Vehicles (%)	0%	0%	2%	5%	0%							
Adj. Flow (vph)	251	4	201	658	106							
Lane Group Flow (vph)	251	0	205	764	0							
Turn Type	Free	custom	custom									
Protected Phases		7	7	6 7		3	4	6	8	9	10	11
Permitted Phases	Free	6	6									
Detector Phases		7	7	6 7								
Minimum Initial (s)		6.0	6.0			1.0	8.0	8.0	8.0	4.0	8.0	4.0
Minimum Split (s)		10.0	10.0			6.0	24.0	32.0	12.0	21.0	16.0	8.0
Total Split (s)	0.0	9.0	9.0	45.0	0.0	6.0	26.0	36.0	26.0	21.0	36.0	9.0
Total Split (%)	0.0%	6.9%	6.9%	34.6%	0.0%	5%	20%	28%	20%	16%	28%	7%
Maximum Green (s)		5.0	5.0			2.0	21.0	31.0	22.0	15.0	28.0	5.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.0	3.0	4.0	3.0	3.0
All-Red Time (s)		1.0	1.0			1.0	2.0	2.0	1.0	2.0	5.0	1.0
Lead/Lag							Lead		Lag	Lead		
Lead-Lag Optimize?							Yes		Yes	Yes		
Vehicle Extension (s)		2.0	2.0			2.0	3.0	2.0	2.0	3.0	3.0	3.0
Recall Mode		None	None			None	None	None	C-Max	None	None	None
Walk Time (s)							7.0	7.0		7.0		
Flash Dont Walk (s)							12.0	20.0		8.0		
Pedestrian Calls (#/hr)							20	20		10		
Act Effct Green (s)	130.0		37.0	41.0								
Actuated g/C Ratio	1.00		0.28	0.32								
v/c Ratio	0.16		0.80	0.73								
Control Delay	0.0		65.8	44.4								

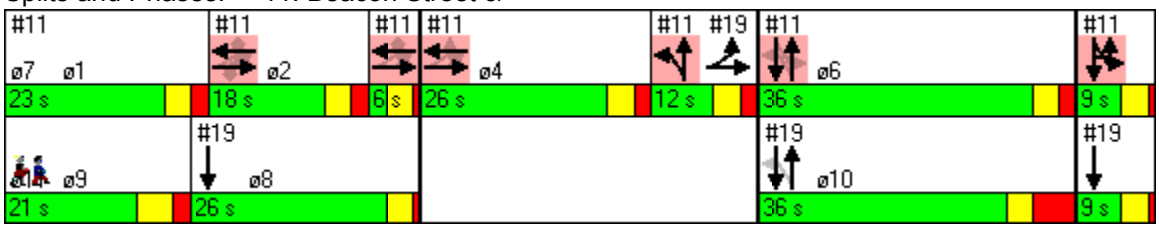
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay			0.0	0.0		57.6	0.0	0.0		1.1	12.0	
Total Delay			40.3	69.3		157.2	17.3	34.3		35.8	22.3	
LOS			D	E		F	B	C		D	C	
Approach Delay			46.6				65.7				17.0	
Approach LOS			D				E				B	
90th %ile Green (s)				13.0	18.0	18.0				7.0		
90th %ile Term Code				Coord	Max	Max				Max		
70th %ile Green (s)				13.0	18.0	18.0				7.0		
70th %ile Term Code				Coord	Max	Max				Max		
50th %ile Green (s)				16.9	18.0	18.0				7.0		
50th %ile Term Code				Coord	Max	Max				Max		
30th %ile Green (s)				20.8	18.0	18.0				7.0		
30th %ile Term Code				Coord	Max	Max				Max		
10th %ile Green (s)				26.0	18.0	18.0				7.0		
10th %ile Term Code				Coord	Max	Max				Max		
Stops (vph)			429	80		207	249	128		19	72	
Fuel Used(gal)			12	3		11	9	4		1	2	
CO Emissions (g/hr)			835	195		736	617	282		39	155	
NOx Emissions (g/hr)			162	38		143	120	55		7	30	
VOC Emissions (g/hr)			194	45		171	143	65		9	36	
Dilemma Vehicles (#)			0	0		0	0	0		0	0	
Queue Length 50th (ft)			216	131		~259	123	142		13	39	
Queue Length 95th (ft)			285	137		#409	160	176		m7	m33	
Internal Link Dist (ft)			1256				503				93	
Turn Bay Length (ft)				200		583		150		50		
Base Capacity (vph)			952	235		338	1985	570		164	1129	
Starvation Cap Reductn			0	0		0	0	0		23	533	
Spillback Cap Reductn			0	0		42	0	0		0	0	
Storage Cap Reductn			0	0		0	0	0		0	0	
Reduced v/c Ratio			0.61	0.68		1.19	0.26	0.40		0.47	0.96	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBWB and 8:, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 45.8 Intersection LOS: D
Intersection Capacity Utilization 68.4% ICU Level of Service C
Analysis Period (min) 15

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

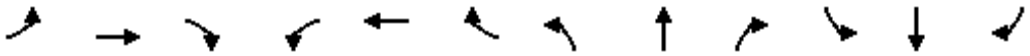
Splits and Phases: 11: Beacon Street &





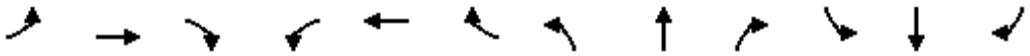
Lane Group	NBR2	SBU	SBL	SBT	SBR	ø3	ø4	ø6	ø8	ø9	ø10	ø11
Queue Delay	0.0		0.0	0.0								
Total Delay	0.0		65.8	44.4								
LOS	A		E	D								
Approach Delay				49.0								
Approach LOS				D								
90th %ile Green (s)		5.0	5.0			2.0	21.0	31.0	22.0	15.0	28.0	5.0
90th %ile Term Code		Max	Max			Max	Max	Max	Coord	Ped	Max	Max
70th %ile Green (s)		5.0	5.0			2.0	21.0	31.0	43.0	0.0	28.0	5.0
70th %ile Term Code		Max	Max			Max	Max	Max	Coord	Skip	Max	Max
50th %ile Green (s)		5.0	5.0			2.0	17.1	31.0	46.9	0.0	28.0	5.0
50th %ile Term Code		Max	Max			Max	Gap	Max	Coord	Skip	Max	Max
30th %ile Green (s)		5.0	5.0			2.0	13.2	31.0	50.8	0.0	28.0	5.0
30th %ile Term Code		Max	Max			Max	Gap	Max	Coord	Skip	Max	Max
10th %ile Green (s)		5.0	5.0			2.0	8.0	31.0	56.0	0.0	28.0	5.0
10th %ile Term Code		Max	Max			Max	Min	Max	Coord	Skip	Max	Max
Stops (vph)	0		143	601								
Fuel Used(gal)	0		5	15								
CO Emissions (g/hr)	22		332	1080								
NOx Emissions (g/hr)	4		65	210								
VOC Emissions (g/hr)	5		77	250								
Dilemma Vehicles (#)	0		0	0								
Queue Length 50th (ft)	0		134	301								
Queue Length 95th (ft)	m0		#241	376								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)			150									
Base Capacity (vph)	1615		256	1048								
Starvation Cap Reductn	0		0	0								
Spillback Cap Reductn	0		0	0								
Storage Cap Reductn	0		0	0								
Reduced v/c Ratio	0.16		0.80	0.73								

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	16	12	16	12	11	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50					50	50			50	
Trailing Detector (ft)	0	0					0	0			0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt		0.949									0.992	
Flt Protected		0.970						0.998				
Satd. Flow (prot)	0	1749	0	0	0	0	0	3414	0	0	3511	0
Flt Permitted		0.970						0.850				
Satd. Flow (perm)	0	1749	0	0	0	0	0	2908	0	0	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18									6	
Headway Factor	1.00	1.00	1.00	0.85	1.00	0.85	1.00	1.04	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		233			450			635			173	
Travel Time (s)		5.3			10.2			14.4			3.9	
Volume (vph)	37	0	22	0	0	0	30	747	0	0	908	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	40	0	24	0	0	0	33	812	0	0	987	59
Lane Group Flow (vph)	0	64	0	0	0	0	0	845	0	0	1046	0
Turn Type	Split						Perm					
Protected Phases	5	5						10			8 10 11	
Permitted Phases							10					
Detector Phases	5	5					10	10			8 10 11	
Minimum Initial (s)	6.0	6.0					8.0	8.0				
Minimum Split (s)	11.0	11.0					16.0	16.0				
Total Split (s)	12.0	12.0	0.0	0.0	0.0	0.0	36.0	36.0	0.0	0.0	71.0	0.0
Total Split (%)	9.2%	9.2%	0.0%	0.0%	0.0%	0.0%	27.7%	27.7%	0.0%	0.0%	54.6%	0.0%
Maximum Green (s)	7.0	7.0					28.0	28.0				
Yellow Time (s)	3.0	3.0					3.0	3.0				
All-Red Time (s)	2.0	2.0					5.0	5.0				
Lead/Lag	Lag	Lag										
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	3.0	3.0					3.0	3.0				
Recall Mode	None	None					None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		8.0						32.0			87.9	
Actuated g/C Ratio		0.06						0.25			0.68	
v/c Ratio		0.51						1.18			0.44	
Control Delay		58.6						138.0			1.4	
Queue Delay		0.0						0.0			0.7	
Total Delay		58.6						138.0			2.0	
LOS		E						F			A	

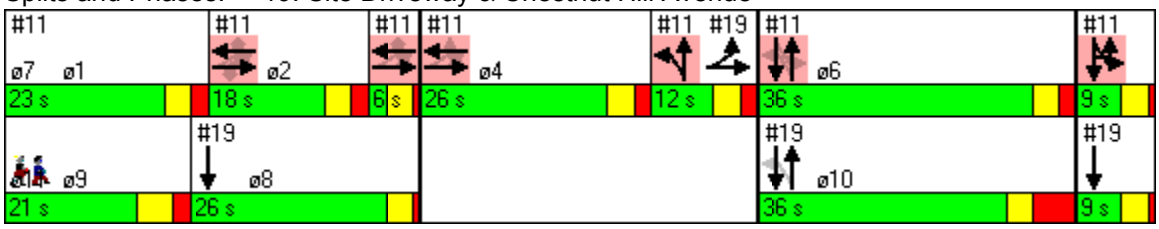
Lane Group	ø1	ø2	ø3	ø4	ø6	ø7	ø8	ø9	ø11
Lane Configurations									
Ideal Flow (vphpl)									
Lane Width (ft)									
Total Lost Time (s)									
Leading Detector (ft)									
Trailing Detector (ft)									
Turning Speed (mph)									
Lane Util. Factor									
Frt									
Flt Protected									
Satd. Flow (prot)									
Flt Permitted									
Satd. Flow (perm)									
Right Turn on Red									
Satd. Flow (RTOR)									
Headway Factor									
Link Speed (mph)									
Link Distance (ft)									
Travel Time (s)									
Volume (vph)									
Peak Hour Factor									
Heavy Vehicles (%)									
Adj. Flow (vph)									
Lane Group Flow (vph)									
Turn Type									
Protected Phases	1	2	3	4	6	7	8	9	11
Permitted Phases									
Detector Phases									
Minimum Initial (s)	6.0	10.0	1.0	8.0	8.0	6.0	8.0	4.0	4.0
Minimum Split (s)	11.0	15.0	6.0	24.0	32.0	10.0	12.0	21.0	8.0
Total Split (s)	23.0	18.0	6.0	26.0	36.0	9.0	26.0	21.0	9.0
Total Split (%)	18%	14%	5%	20%	28%	7%	20%	16%	7%
Maximum Green (s)	18.0	13.0	2.0	21.0	31.0	5.0	22.0	15.0	5.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag		Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	2.0	3.0	2.0	3.0	2.0	2.0	2.0	3.0	3.0
Recall Mode	None	C-Max	None	None	None	None	C-Max	None	None
Walk Time (s)				7.0	7.0			7.0	
Flash Dont Walk (s)				12.0	20.0			8.0	
Pedestrian Calls (#/hr)				20	20			10	
Act Effct Green (s)									
Actuated g/C Ratio									
v/c Ratio									
Control Delay									
Queue Delay									
Total Delay									
LOS									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		58.6						138.0			2.0	
Approach LOS		E						F			A	
90th %ile Green (s)	7.0	7.0					28.0	28.0				
90th %ile Term Code	Max	Max					Max	Max				
70th %ile Green (s)	7.0	7.0					28.0	28.0				
70th %ile Term Code	Max	Max					Max	Max				
50th %ile Green (s)	7.0	7.0					28.0	28.0				
50th %ile Term Code	Max	Max					Max	Max				
30th %ile Green (s)	7.0	7.0					28.0	28.0				
30th %ile Term Code	Max	Max					Max	Max				
10th %ile Green (s)	7.0	7.0					28.0	28.0				
10th %ile Term Code	Max	Max					Max	Max				
Stops (vph)		42						649			96	
Fuel Used(gal)		1						29			2	
CO Emissions (g/hr)		73						2046			147	
NOx Emissions (g/hr)		14						398			29	
VOC Emissions (g/hr)		17						474			34	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		38						~448			0	
Queue Length 95th (ft)		87						#579			m137	
Internal Link Dist (ft)		153			370			555			93	
Turn Bay Length (ft)												
Base Capacity (vph)		125						716			2377	
Starvation Cap Reductn		0						0			879	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.51						1.18			0.70	

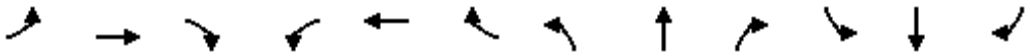
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBWB and 8:, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 62.7		Intersection LOS: E	
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 19: Site Driveway & Chestnut Hill Avenue



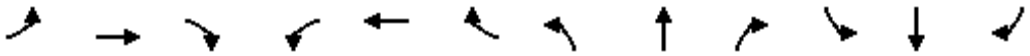
Lane Group	ø1	ø2	ø3	ø4	ø6	ø7	ø8	ø9	ø11
Approach Delay									
Approach LOS									
90th %ile Green (s)	18.0	13.0	2.0	21.0	31.0	5.0	22.0	15.0	5.0
90th %ile Term Code	Max	Coord	Max	Max	Max	Max	Coord	Ped	Max
70th %ile Green (s)	18.0	13.0	2.0	21.0	31.0	5.0	43.0	0.0	5.0
70th %ile Term Code	Max	Coord	Max	Max	Max	Max	Coord	Skip	Max
50th %ile Green (s)	18.0	16.9	2.0	17.1	31.0	5.0	46.9	0.0	5.0
50th %ile Term Code	Max	Coord	Max	Gap	Max	Max	Coord	Skip	Max
30th %ile Green (s)	18.0	20.8	2.0	13.2	31.0	5.0	50.8	0.0	5.0
30th %ile Term Code	Max	Coord	Max	Gap	Max	Max	Coord	Skip	Max
10th %ile Green (s)	18.0	26.0	2.0	8.0	31.0	5.0	56.0	0.0	5.0
10th %ile Term Code	Max	Coord	Max	Min	Max	Max	Coord	Skip	Max
Stops (vph)									
Fuel Used(gal)									
CO Emissions (g/hr)									
NOx Emissions (g/hr)									
VOC Emissions (g/hr)									
Dilemma Vehicles (#)									
Queue Length 50th (ft)									
Queue Length 95th (ft)									
Internal Link Dist (ft)									
Turn Bay Length (ft)									
Base Capacity (vph)									
Starvation Cap Reductn									
Spillback Cap Reductn									
Storage Cap Reductn									
Reduced v/c Ratio									

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.992				0.850		0.994	
Flt Protected		0.984			0.976			0.999				
Satd. Flow (prot)	0	1851	0	0	1822	0	0	1880	1599	0	1836	0
Flt Permitted		0.853			0.791			0.986			0.931	
Satd. Flow (perm)	0	1604	0	0	1477	0	0	1855	1599	0	1710	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		4							118		4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		741			963			587			660	
Travel Time (s)		16.8			21.9			13.3			15.0	
Volume (vph)	26	54	3	107	100	8	7	663	108	4	803	28
Peak Hour Factor	0.75	0.85	0.38	0.77	0.77	0.50	0.58	0.85	0.80	0.75	0.97	0.71
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	3%	0%
Adj. Flow (vph)	35	64	8	139	130	16	12	780	135	5	828	39
Lane Group Flow (vph)	0	107	0	0	285	0	0	792	135	0	872	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3			1		1	1		
Detector Phases	3	3		3	3		1	1	1	1	1	
Minimum Initial (s)	13.0	13.0		13.0	13.0		42.0	42.0	42.0	42.0	42.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		46.0	46.0	46.0	46.0	46.0	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	47.0	47.0	47.0	47.0	47.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	52.2%	52.2%	52.2%	52.2%	52.2%	0.0%
Maximum Green (s)	24.0	24.0		24.0	24.0		43.0	43.0	43.0	43.0	43.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag							Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		24.1			24.1			43.2	43.2		43.2	
Actuated g/C Ratio		0.31			0.31			0.55	0.55		0.55	
v/c Ratio		0.21			0.62			0.77	0.14		0.92	
Control Delay		22.0			31.6			21.5	3.3		33.6	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		22.0			31.6			21.5	3.3		33.6	

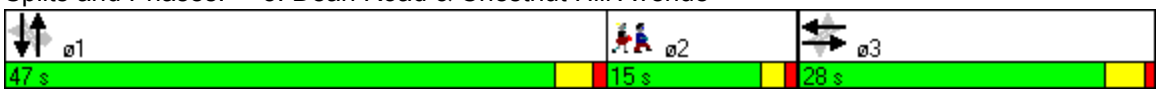
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	17%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	5.0
Pedestrian Calls (#/hr)	7
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C			C	A		C	
Approach Delay		22.0			31.6			18.9			33.6	
Approach LOS		C			C			B			C	
90th %ile Green (s)	24.0	24.0		24.0	24.0		43.0	43.0	43.0	43.0	43.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
70th %ile Green (s)	24.0	24.0		24.0	24.0		43.0	43.0	43.0	43.0	43.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
50th %ile Green (s)	24.0	24.0		24.0	24.0		43.0	43.0	43.0	43.0	43.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
30th %ile Green (s)	24.0	24.0		24.0	24.0		43.0	43.0	43.0	43.0	43.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
10th %ile Green (s)	24.0	24.0		24.0	24.0		43.0	43.0	43.0	43.0	43.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		MaxR	MaxR	MaxR	MaxR	MaxR	
Stops (vph)		58			175			469	14		628	
Fuel Used(gal)		1			4			9	1		13	
CO Emissions (g/hr)		83			277			601	45		942	
NOx Emissions (g/hr)		16			54			117	9		183	
VOC Emissions (g/hr)		19			64			139	10		218	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		34			110			250	3		320	
Queue Length 95th (ft)		84			195			#572	26		#784	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		499			457			1028	939		949	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.21			0.62			0.77	0.14		0.92	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 100.0%		ICU Level of Service G	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 75			
30th %ile Actuated Cycle: 75			
10th %ile Actuated Cycle: 75			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 5: Dean Road & Chestnut Hill Avenue



Lane Group	ø2
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	10	12	13	12	12	12	13	11
Storage Length (ft)		280		0	160		0	0		0	0	
Storage Lanes		1		0	1		1	0		0	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50				50	50
Trailing Detector (ft)	0	0	0		0	0	0				0	0
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt							0.850					
Flt Protected		0.950			0.950						0.950	
Satd. Flow (prot)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Flt Permitted		0.950			0.950						0.950	
Satd. Flow (perm)	0	1745	3539	0	1685	3539	1636	0	0	0	1811	1783
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)							401					
Headway Factor	1.00	1.04	1.00	1.00	1.09	1.00	0.96	1.00	1.00	1.00	0.96	1.04
Link Speed (mph)			30			30			30			30
Link Distance (ft)			1399			494			1410			187
Travel Time (s)			31.8			11.2			32.0			4.3
Volume (vph)	4	257	963	0	76	1023	361	0	0	0	525	40
Peak Hour Factor	0.33	0.75	0.88	0.92	0.75	0.87	0.90	0.92	0.92	0.92	0.80	0.71
Heavy Vehicles (%)	0%	0%	2%	2%	0%	2%	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	12	343	1094	0	101	1176	401	0	0	0	656	56
Lane Group Flow (vph)	0	355	1094	0	101	1176	401	0	0	0	656	56
Turn Type	Prot	Prot			Prot		custom				Split	
Protected Phases	4	4	1 4 5		2	1 2 5	1 2 3				3	3
Permitted Phases												
Detector Phases	4	4	1 4		2	1 2	1 2 3				3	3
Minimum Initial (s)	6.0	6.0			5.0						6.0	6.0
Minimum Split (s)	21.0	21.0			15.0						29.0	29.0
Total Split (s)	30.0	30.0	68.0	0.0	17.0	55.0	92.0	0.0	0.0	0.0	55.0	55.0
Total Split (%)	21.4%	21.4%	48.6%	0.0%	12.1%	39.3%	65.7%	0.0%	0.0%	0.0%	39.3%	39.3%
Maximum Green (s)	25.0	25.0			12.0						50.0	50.0
Yellow Time (s)	4.0	4.0			4.0						4.0	4.0
All-Red Time (s)	1.0	1.0			1.0						1.0	1.0
Lead/Lag	Lag	Lag			Lag						Lead	Lead
Lead-Lag Optimize?	Yes	Yes			Yes						Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0						3.0	3.0
Recall Mode	None	None			Max						None	None
Walk Time (s)											13.0	13.0
Flash Dont Walk (s)											5.0	5.0
Pedestrian Calls (#/hr)											0	0
Act Effct Green (s)		26.0	64.0		13.0	51.0	102.4				51.0	51.0
Actuated g/C Ratio		0.19	0.46		0.09	0.36	0.73				0.36	0.36
v/c Ratio		1.10	0.68		0.65	0.91	0.31				0.99	0.09
Control Delay		130.0	32.5		77.1	52.3	4.3				77.8	29.8
Queue Delay		0.0	0.0		0.0	20.5	0.4				0.0	0.0

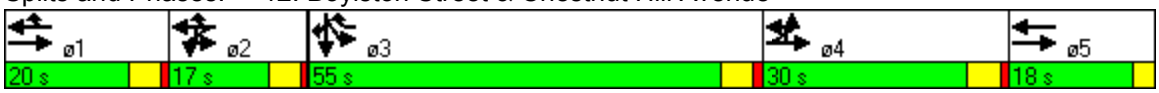


Lane Group	SBR	ø1	ø5
Lane Configurations			
Ideal Flow (vphpl)	1900		
Lane Width (ft)	16		
Storage Length (ft)	0		
Storage Lanes	1		
Total Lost Time (s)	4.0		
Leading Detector (ft)	50		
Trailing Detector (ft)	0		
Turning Speed (mph)	9		
Lane Util. Factor	1.00		
Frt	0.850		
Flt Protected			
Satd. Flow (prot)	1777		
Flt Permitted			
Satd. Flow (perm)	1777		
Right Turn on Red	Yes		
Satd. Flow (RTOR)	273		
Headway Factor	0.85		
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Volume (vph)	243		
Peak Hour Factor	0.89		
Heavy Vehicles (%)	3%		
Adj. Flow (vph)	273		
Lane Group Flow (vph)	273		
Turn Type	Prot		
Protected Phases	3	1	5
Permitted Phases			
Detector Phases	3		
Minimum Initial (s)	6.0	5.0	4.0
Minimum Split (s)	29.0	21.0	19.0
Total Split (s)	55.0	20.0	18.0
Total Split (%)	39.3%	14%	13%
Maximum Green (s)	50.0	15.0	15.0
Yellow Time (s)	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	0.0
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	None
Walk Time (s)	13.0		6.0
Flash Dont Walk (s)	5.0		10.0
Pedestrian Calls (#/hr)	0		10
Act Effct Green (s)	51.0		
Actuated g/C Ratio	0.36		
v/c Ratio	0.33		
Control Delay	4.4		
Queue Delay	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay		130.0	32.5		77.1	72.8	4.7				77.8	29.8
LOS		F	C		E	E	A				E	C
Approach Delay			56.4			56.8						54.7
Approach LOS			E			E						D
90th %ile Green (s)	25.0	25.0			12.0						50.0	50.0
90th %ile Term Code	Max	Max			MaxR						Max	Max
70th %ile Green (s)	25.0	25.0			12.0						50.0	50.0
70th %ile Term Code	Max	Max			MaxR						Max	Max
50th %ile Green (s)	25.0	25.0			12.0						50.0	50.0
50th %ile Term Code	Max	Max			MaxR						Max	Max
30th %ile Green (s)	25.0	25.0			12.0						50.0	50.0
30th %ile Term Code	Max	Max			MaxR						Max	Max
10th %ile Green (s)	25.0	25.0			12.0						50.0	50.0
10th %ile Term Code	Max	Max			MaxR						Max	Max
Stops (vph)		221	737		73	949	71				463	26
Fuel Used(gal)		11	21		2	20	2				12	0
CO Emissions (g/hr)		767	1464		132	1403	147				814	31
NOx Emissions (g/hr)		149	285		26	273	29				158	6
VOC Emissions (g/hr)		178	339		31	325	34				189	7
Dilemma Vehicles (#)		0	0		0	0	0				0	0
Queue Length 50th (ft)		~365	405		92	553	61				593	33
Queue Length 95th (ft)		#419	468		m127	616	130				#692	51
Internal Link Dist (ft)			1319			414			1330			107
Turn Bay Length (ft)		280			160							
Base Capacity (vph)		324	1618		156	1289	1304				660	650
Starvation Cap Reductn		0	0		0	152	452				0	0
Spillback Cap Reductn		0	21		0	0	0				0	0
Storage Cap Reductn		0	0		0	0	0				0	0
Reduced v/c Ratio		1.10	0.69		0.65	1.03	0.47				0.99	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 56.2		Intersection LOS: E	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





Lane Group	SBR	ø1	ø5
Total Delay	4.4		
LOS	A		
Approach Delay			
Approach LOS			
90th %ile Green (s)	50.0	15.0	15.0
90th %ile Term Code	Max	Coord	Ped
70th %ile Green (s)	50.0	33.0	0.0
70th %ile Term Code	Max	Coord	Skip
50th %ile Green (s)	50.0	33.0	0.0
50th %ile Term Code	Max	Coord	Skip
30th %ile Green (s)	50.0	33.0	0.0
30th %ile Term Code	Max	Coord	Skip
10th %ile Green (s)	50.0	33.0	0.0
10th %ile Term Code	Max	Coord	Skip
Stops (vph)	19		
Fuel Used(gal)	1		
CO Emissions (g/hr)	47		
NOx Emissions (g/hr)	9		
VOC Emissions (g/hr)	11		
Dilemma Vehicles (#)	0		
Queue Length 50th (ft)	0		
Queue Length 95th (ft)	57		
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)	821		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.33		

Intersection Summary



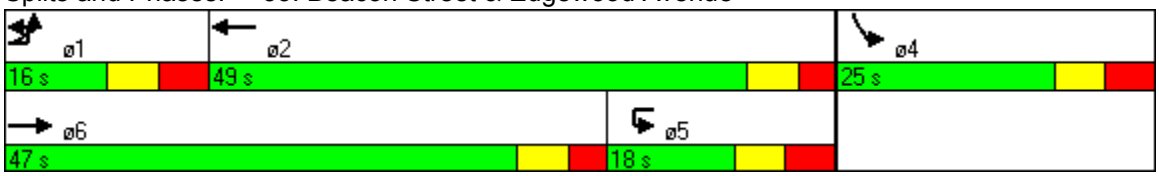
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	
Trailing Detector (ft)	0	0	0	0	0		0	
Turning Speed (mph)	9	15		9		9	15	9
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00
Frt					0.983		0.944	
Flt Protected		0.950		0.950			0.971	
Satd. Flow (prot)	0	1685	3369	1745	3400	0	1974	0
Flt Permitted		0.950		0.950			0.971	
Satd. Flow (perm)	0	1685	3369	1745	3400	0	1974	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					23		26	
Headway Factor	1.00	1.09	1.09	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)			30		30		30	
Link Distance (ft)			1000		2789		793	
Travel Time (s)			22.7		63.4		18.0	
Volume (vph)	43	30	718	26	884	94	34	13
Peak Hour Factor	0.79	0.69	0.85	0.75	0.94	0.76	0.91	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	54	43	845	35	940	124	37	26
Lane Group Flow (vph)	0	97	845	35	1064	0	63	0
Turn Type	Prot	Prot		Prot				
Protected Phases	1	1	6	5	2		4	
Permitted Phases								
Detector Phases	1	1	6	5	2		4	
Minimum Initial (s)	6.0	6.0	10.0	6.0	10.0		8.0	
Minimum Split (s)	16.0	16.0	23.0	18.0	23.0		20.0	
Total Split (s)	16.0	16.0	47.0	18.0	49.0	0.0	25.0	0.0
Total Split (%)	17.8%	17.8%	52.2%	20.0%	54.4%	0.0%	27.8%	0.0%
Maximum Green (s)	8.0	8.0	40.0	10.0	42.0		17.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	
All-Red Time (s)	4.0	4.0	3.0	4.0	3.0		4.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0		2.0	
Recall Mode	None	None	C-Min	None	C-Min		None	
Walk Time (s)				7.0			7.0	
Flash Dont Walk (s)				3.0			5.0	
Pedestrian Calls (#/hr)				0			0	
Act Effct Green (s)		13.9	63.7	14.6	58.8		12.2	
Actuated g/C Ratio		0.15	0.71	0.16	0.65		0.14	
v/c Ratio		0.37	0.35	0.12	0.48		0.22	
Control Delay		37.4	9.5	19.8	7.0		25.1	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

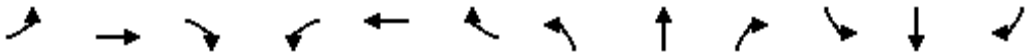


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.4	9.5	19.8	7.0		25.1	
LOS		D	A	B	A		C	
Approach Delay			12.3		7.4		25.1	
Approach LOS			B		A		C	
90th %ile Green (s)	14.4	14.4	43.1	15.1	43.8		8.8	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.5	11.5	39.2	19.8	47.5		8.0	
70th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Min	
50th %ile Green (s)	9.6	9.6	67.0	0.0	49.4		8.0	
50th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
30th %ile Green (s)	7.8	7.8	67.0	0.0	51.2		8.0	
30th %ile Term Code	Gap	Gap	Coord	Skip	Coord		Min	
10th %ile Green (s)	0.0	0.0	83.0	0.0	83.0		0.0	
10th %ile Term Code	Skip	Skip	Coord	Skip	Coord		Skip	
Stops (vph)		62	302	16	240		28	
Fuel Used(gal)		2	12	1	24		1	
CO Emissions (g/hr)		124	833	53	1676		48	
NOx Emissions (g/hr)		24	162	10	326		9	
VOC Emissions (g/hr)		29	193	12	389		11	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		50	57	13	88		19	
Queue Length 95th (ft)		68	190	m16	114		55	
Internal Link Dist (ft)			920		2709		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		268	2389	329	2229		481	
Starvation Cap Reductn		0	0	0	0		0	
Spillback Cap Reductn		0	0	0	0		0	
Storage Cap Reductn		0	0	0	0		0	
Reduced v/c Ratio		0.36	0.35	0.11	0.48		0.13	

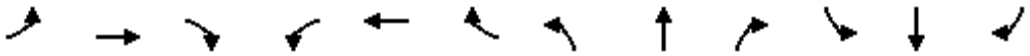
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 33: Beacon Street & Edgewood Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.989			0.972			0.974	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1719	3336	0	0	3412	0	1668	1750	0	1652	1760	0
Flt Permitted	0.950						0.283			0.423		
Satd. Flow (perm)	1719	3336	0	0	3412	0	497	1750	0	735	1760	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								15			14	
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2789			1295			1022			860	
Travel Time (s)		63.4			29.4			23.2			19.5	
Volume (vph)	111	640	165	0	599	31	109	231	48	62	306	54
Peak Hour Factor	0.89	0.89	0.69	0.25	0.90	0.58	0.86	0.85	0.78	0.80	0.80	0.67
Heavy Vehicles (%)	5%	1%	0%	2%	1%	3%	1%	2%	2%	2%	2%	0%
Adj. Flow (vph)	125	719	239	0	666	53	127	272	62	78	382	81
Lane Group Flow (vph)	125	958	0	0	719	0	127	334	0	78	463	0
Turn Type	Prot						Perm			Perm		
Protected Phases	1	6			2			8			4	
Permitted Phases							8			4		
Detector Phases	1	6			2		8	8		4	4	
Minimum Initial (s)	6.0	10.0			10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	15.0	40.0			21.0		28.0	28.0		33.0	33.0	
Total Split (s)	26.0	51.0	0.0	0.0	25.0	0.0	39.0	39.0	0.0	39.0	39.0	0.0
Total Split (%)	28.9%	56.7%	0.0%	0.0%	27.8%	0.0%	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%
Maximum Green (s)	18.0	40.0			14.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	4.0	7.0			7.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min			C-Min		None	None		None	None	
Walk Time (s)		18.0								20.0	20.0	
Flash Dont Walk (s)		7.0								5.0	5.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)	15.7	51.3			31.6		30.7	30.7		30.7	30.7	
Actuated g/C Ratio	0.17	0.57			0.35		0.34	0.34		0.34	0.34	
v/c Ratio	0.42	0.50			0.60		0.75	0.55		0.31	0.76	
Control Delay	51.3	10.2			28.9		53.2	25.9		24.2	33.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	51.3	10.2			28.9		53.2	25.9		24.2	33.8	
LOS	D	B			C		D	C		C	C	
Approach Delay		14.9			28.9			33.4			32.4	
Approach LOS		B			C			C			C	
90th %ile Green (s)	16.7	40.0			15.3		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	13.4	40.0			18.6		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	11.5	42.9			23.4		28.1	28.1		28.1	28.1	
50th %ile Term Code	Gap	Coord			Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	9.8	47.4			29.6		23.6	23.6		23.6	23.6	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	7.1	51.0			35.9		20.0	20.0		20.0	20.0	
10th %ile Term Code	Gap	Coord			Coord		Min	Min		Min	Min	
Stops (vph)	107	297			498		93	207		44	299	
Fuel Used(gal)	4	21			13		3	5		1	7	
CO Emissions (g/hr)	291	1455			896		179	339		67	457	
NOx Emissions (g/hr)	57	283			174		35	66		13	89	
VOC Emissions (g/hr)	67	337			208		42	79		16	106	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	73	155			178		62	141		32	219	
Queue Length 95th (ft)	125	105			#298		#136	196		57	265	
Internal Link Dist (ft)		2709			1215			942			780	
Turn Bay Length (ft)	150											
Base Capacity (vph)	420	1900			1196		193	690		286	693	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.30	0.50			0.60		0.66	0.48		0.27	0.67	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 24.9		Intersection LOS: C	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

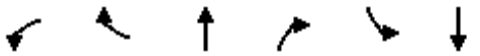
Splits and Phases: 38: Beacon Street & Washington Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	7	1	2	8	85	89	840	10	2	694	2
Peak Hour Factor	0.33	0.35	0.25	0.50	0.67	0.76	0.89	0.94	0.67	0.50	0.89	0.50
Hourly flow rate (vph)	15	20	4	4	12	112	100	894	15	4	780	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								635			660	
pX, platoon unblocked	0.81	0.81	0.64	0.81	0.81	0.63	0.63			0.64		
vC, conflicting volume	2009	1893	901	1905	1898	782	784			909		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1572	1429	844	1444	1436	652	655			856		
tC, single (s)	7.3	6.6	6.2	7.1	6.5	6.2	4.1			4.6		
tC, 2 stage (s)												
tF (s)	3.7	4.1	3.3	3.5	4.0	3.3	2.2			2.7		
p0 queue free %	51	76	98	94	87	62	83			99		
cM capacity (veh/h)	31	85	233	63	90	294	590			390		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	128	1009	788
Volume Left	15	4	100	4
Volume Right	4	112	15	4
cSH	53	222	590	390
Volume to Capacity	0.75	0.58	0.17	0.01
Queue Length 95th (ft)	77	80	15	1
Control Delay (s)	178.4	41.3	5.3	0.3
Lane LOS	F	E	A	A
Approach Delay (s)	178.4	41.3	5.3	0.3
Approach LOS	F	E		

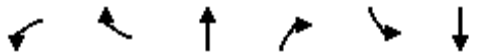
Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	4	584	9	18	658
Peak Hour Factor	0.50	0.33	0.92	0.56	0.61	0.87
Hourly flow rate (vph)	4	12	635	16	30	756
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1458	643			651	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1458	643			651	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			97	
cM capacity (veh/h)	140	477			945	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	651	786
Volume Left	4	0	30
Volume Right	12	16	0
cSH	298	1700	945
Volume to Capacity	0.05	0.38	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	17.8	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	17.8	0.0	0.8
Approach LOS	C		

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		59.1%	ICU Level of Service B
Analysis Period (min)		15	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	11	32	586	0	0	662
Peak Hour Factor	0.67	0.63	0.92	0.25	0.25	0.92
Hourly flow rate (vph)	16	51	637	0	0	720
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1357	637			637	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1357	637			637	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	89			100	
cM capacity (veh/h)	166	481			956	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	67	637	720
Volume Left	16	0	0
Volume Right	51	0	0
cSH	329	1700	1700
Volume to Capacity	0.20	0.37	0.42
Queue Length 95th (ft)	19	0	0
Control Delay (s)	18.7	0.0	0.0
Lane LOS	C		
Approach Delay (s)	18.7	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Trip Generation

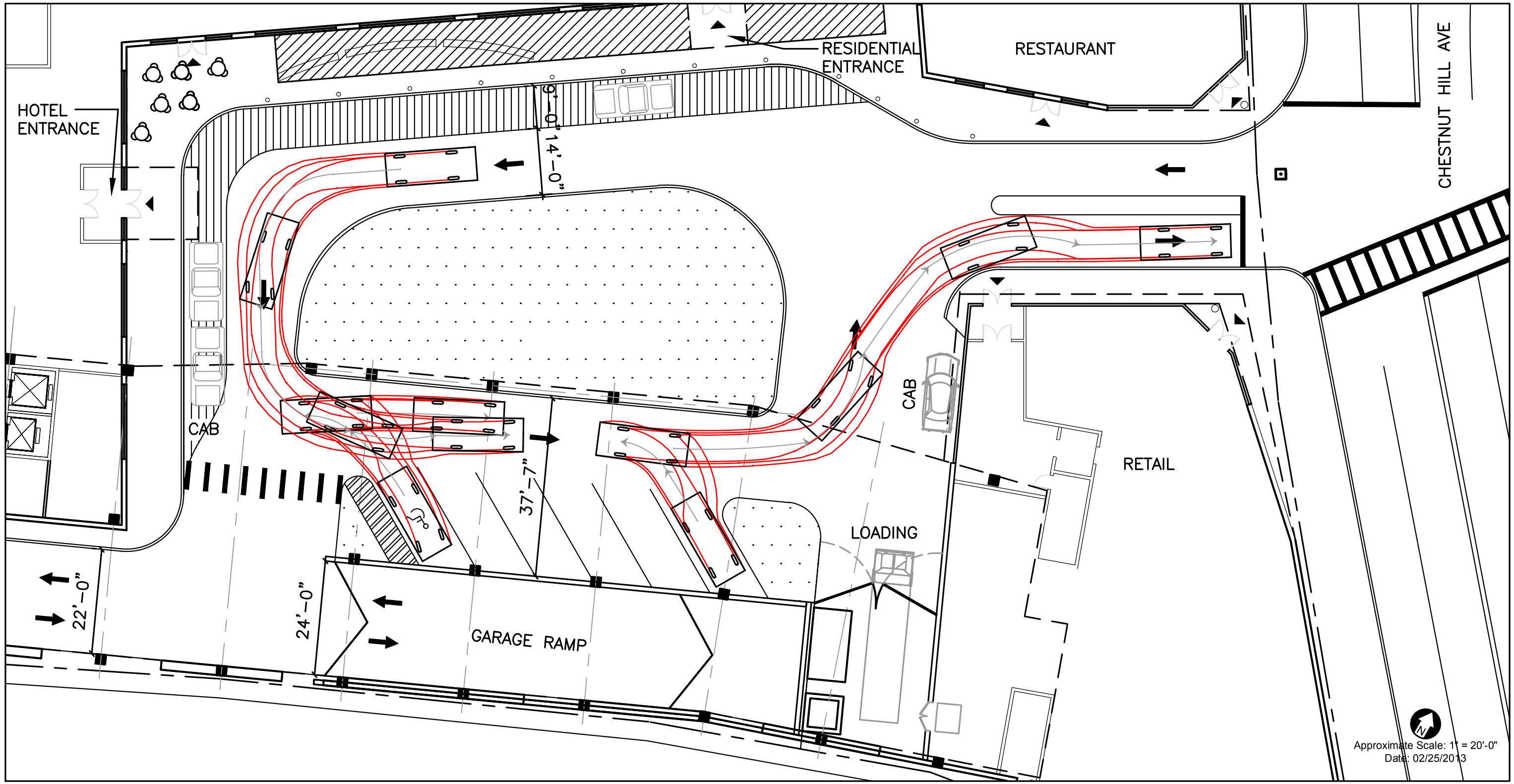
Detailed Trip Generation Estimation - Cleveland Circle Redevelopment
Howard/Stein-Hudson Associates
January 31, 2013

Component	Size	Category	Trip Rates (Trips/ksf or unit)	Unadjusted Vehicle Trips	National vehicle occupancy rate[1]	Converted to Person trips	Capture Rate	Person Trips less Capture Rate	Transit Share[2]	Transit Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Vehicle Share[2]	Vehicle Person Trips	Local vehicle occupancy rate[3]	Total Adjusted Vehicle Trips
Daily Trip Generation																
Hotel [4]	196	Total	8.17	1601	2.1	**3,363**	0%	3363	5%	**168**	30%	**1,009**	65%	2186	2.1	**1,041**
	units	In	4.09	801	2.1	**1,681**	0%	1681	5%	**84**	30%	**504**	65%	1093	2.1	**520**
		Out	4.09	801	2.1	**1,681**	0%	1681	5%	**84**	30%	**504**	65%	1093	2.1	**520**
Restaurant [8]	6.40	Total	89.95	576	1.8	**1,036**	25%	777	5%	**39**	30%	**233**	65%	505	1.8	**281**
	KSF	In	44.98	288	1.8	**518**	25%	389	5%	**19**	30%	**117**	65%	253	1.8	**140**
		Out	44.98	288	1.8	**518**	25%	389	5%	**19**	30%	**117**	65%	253	1.8	**140**
Apartment [7]	74.0	Total	7.73	572	1.1	**629**	0%	629	19%	**120**	22%	**138**	59%	371	1.1	**337**
	Units	In	3.86	286	1.1	**315**	0%	315	19%	**60**	22%	**69**	59%	186	1.1	**169**
		Out	3.86	286	1.1	**315**	0%	315	19%	**60**	22%	**69**	59%	186	1.1	**169**
Retail [5]	6.90	Total	42.94	296	1.8	**533**	25%	400	5%	**20**	30%	**120**	65%	260	1.8	**144**
	KSF	In	21.47	148	1.8	**267**	25%	200	5%	**10**	30%	**60**	65%	130	1.8	**72**
		Out	21.47	148	1.8	**267**	25%	200	5%	**10**	30%	**60**	65%	130	1.8	**72**
Medical Office [6]	18.1	Total	29.01	525	1.2	**630**	0%	630	9%	**57**	15%	**95**	76%	479	1.2	**399**
	KSF	In	14.51	263	1.2	**315**	0%	315	9%	**28**	15%	**47**	76%	239	1.2	**200**
		Out	14.51	263	1.2	**315**	0%	315	9%	**28**	15%	**47**	76%	239	1.2	**200**
Daily Total		Total		**3,570**		**6,192**		5,799		**403**		**1,595**				**2,203**
		In		**1,785**		**3,096**		2,900		**202**		**797**				**1,101**
		Out		**1,785**		**3,096**		2,900		**202**		**797**				**1,101**
AM Peak-hour Trip Generation																
Hotel [4]	196	Total	0.48	94	2.1	**198**	0%	198		**14**		**71**		**113**	2.1	**54**
	units	In	0.29	57	2.1	**121**	0%	121	5%	**6**	40%	**48**	55%	**66**	2.1	**32**
		Out	0.19	37	2.1	**77**	0%	77	10%	**8**	29%	**22**	61%	**47**	2.1	**22**
Restaurant [8]	6.40	Total	0.81	5	1.8	**9**	25%	7		**0**		**2**		**4**	1.8	**2**
	KSF	In	0.66	3	1.8	**6**	25%	4	5%	**0**	40%	**2**	55%	**2**	1.8	**1**
		Out	0.15	2	1.8	**4**	25%	3	10%	**0**	29%	**1**	61%	**2**	1.8	**1**
Apartment [7]	74	Total	0.57	42	1.1	**47**	0%	47		**13**		**11**		**23**	1.1	**21**
	Units	In	0.17	12	1.1	**14**	0%	14	19%	**3**	30%	**4**	51%	**7**	1.1	**6**
		Out	0.41	30	1.1	**33**	0%	33	30%	**10**	20%	**7**	50%	**17**	1.1	**15**
Retail [5]	6.9	Total	1.00	7	1.8	**12**	25%	9		**1**		**3**		**5**	1.8	**3**
	KSF	In	0.61	4	1.8	**8**	25%	6	5%	**0**	40%	**2**	55%	**3**	1.8	**2**
		Out	0.39	3	1.8	**5**	25%	4	10%	**0**	29%	**1**	61%	**2**	1.8	**1**
Medical Office [6]	18.1	Total	2.30	42	1.2	**50**	0%	50		**6**		**10**		**34**	1.2	**29**
	KSF	In	1.82	33	1.2	**39**	0%	39	10%	**4**	21%	**8**	69%	**27**	1.2	**23**
		Out	0.48	9	1.2	**10**	0%	10	17%	**2**	14%	**1**	69%	**7**	1.2	**6**
AM Peak Total		Total		**190**		**316**		311		**33**		**97**				**109**
		In		**110**		**187**		184		**13**		**65**				**64**
		Out		**80**		**129**		127		**20**		**32**				**46**
PM Peak-hour Trip Generation																
Hotel [4]	196	Total	0.59	116	2.1	**243**	0%	243		**19**		**83**		**141**	2.1	**67**
	units	In	0.31	61	2.1	**129**	0%	129	10%	**13**	29%	**37**	61%	**79**	2.1	**37**
		Out	0.28	54	2.1	**114**	0%	114	5%	**6**	40%	**46**	55%	**63**	2.1	**30**
Restaurant [8]	6.4	Total	7.49	48	1.8	**86**	25%	65		**5**		**22**		**37**	1.8	**21**
	KSF	In	5.02	23	1.8	**42**	25%	32	10%	**3**	29%	**9**	61%	**19**	1.8	**11**
		Out	2.47	24	1.8	**44**	25%	33	5%	**2**	40%	**13**	55%	**18**	1.8	**10**
Apartment [7]	74	Total	0.80	59	1.1	**65**	0%	65		**17**		**16**		**33**	1.1	**30**
	Units	In	0.49	36	1.1	**40**	0%	40	30%	**12**	20%	**8**	50%	**20**	1.1	**18**
		Out	0.31	23	1.1	**25**	0%	25	19%	**5**	30%	**8**	51%	**13**	1.1	**12**
Retail [5]	6.9	Total	3.73	26	1.8	**46**	25%	35		**3**		**12**		**20**	1.8	**11**
	KSF	In	1.83	13	1.8	**23**	25%	17	10%	**2**	29%	**5**	61%	**10**	1.8	**6**
		Out	1.90	13	1.8	**24**	25%	18	5%	**1**	40%	**7**	55%	**10**	1.8	**5**
Medical Office [6]	18.1	Total	3.46	63	1.2	**75**	0%	75		**9**		**14**		**52**	1.2	**43**
	KSF	In	0.94	17	1.2	**20**	0%	20	17%	**3**	14%	**3**	69%	**14**	1.2	**12**
		Out	2.53	46	1.2	**55**	0%	55	10%	**5**	21%	**12**	69%	**38**	1.2	**32**
PM Peak Total		Total		**311**		**516**		483		**52**		**147**				**172**
		In		**150**		**254**		238		**33**		**62**				**84**
		Out		**161**		**262**		245		**19**		**85**				**89**

Notes:

1. National vehicle occupancy rates based on the 2001 National Household Travel Survey
2. Mode shares based on BTD data for Area 10
3. Local vehicle occupancy rates based on 2000 Census and 2001 National Household Travel Survey data
4. ITE Trip Generation, 8th Edition, LUC 310 (Hotel). Average rate for daily and p.m. peak and fitted curve for a.m. peak.
5. ITE Trip Generation, 8th Edition, LUC 820 (Shopping Center). Fitted curve.
6. ITE Trip Generation, 8th Edition, LUC 720 (Medical Dental Office Building). Fitted curve for daily and p.m. peak and average for a.m. peak
7. ITE Trip Generation, 8th Edition, LUC 220 (Residential Apartment). Fitted curve.
8. ITE Trip Generation, 8th Edition, LUC 831 (Quality Restaurant). Average rate.

AutoTURN – Vehicle Maneuvers

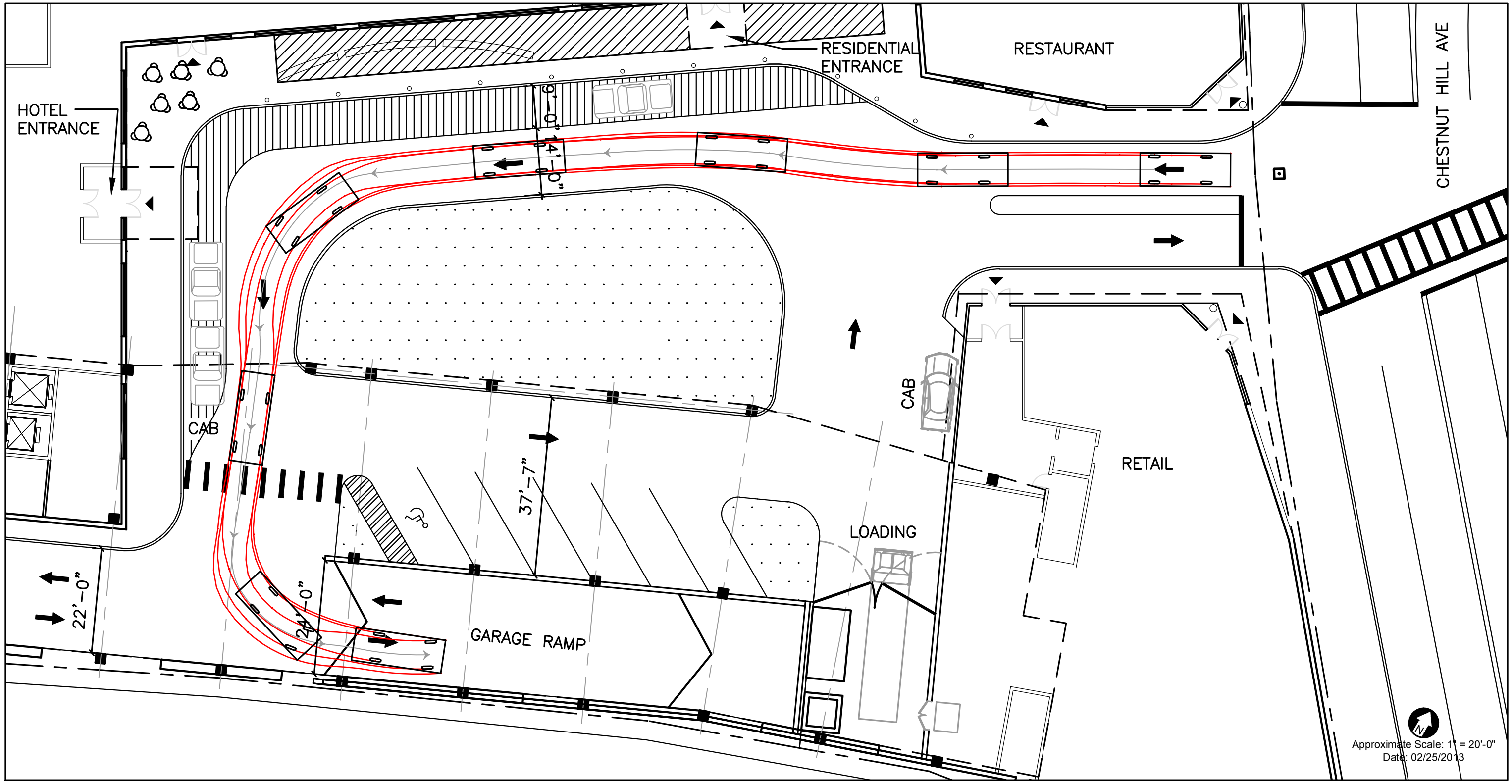


Passenger Vehicle Maneuvers Parking Spots

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

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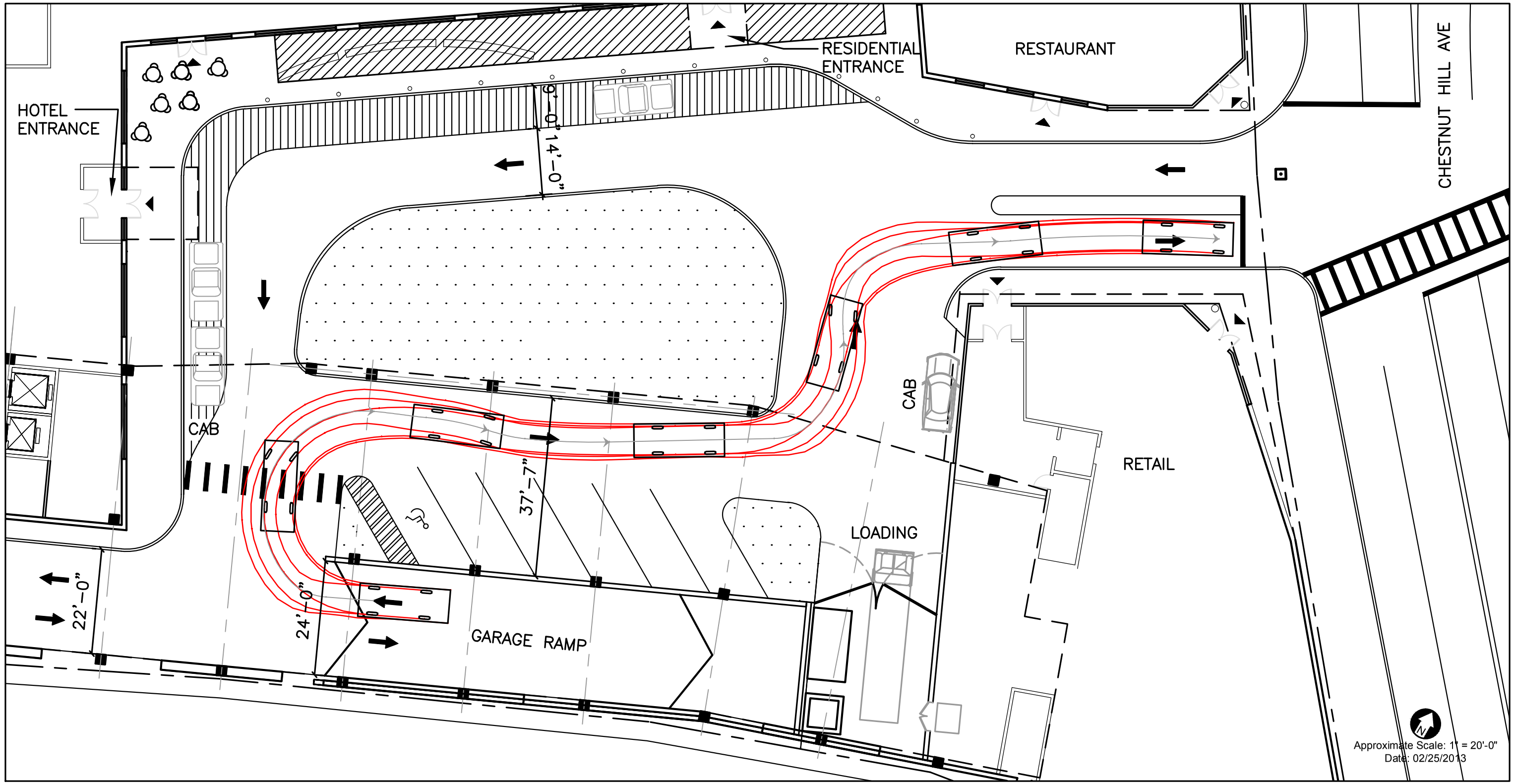
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Passenger Vehicle Maneuvers Garage Entering

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38 Chauncy St., 9th Floor
Boston, MA 02111
617.482.7080

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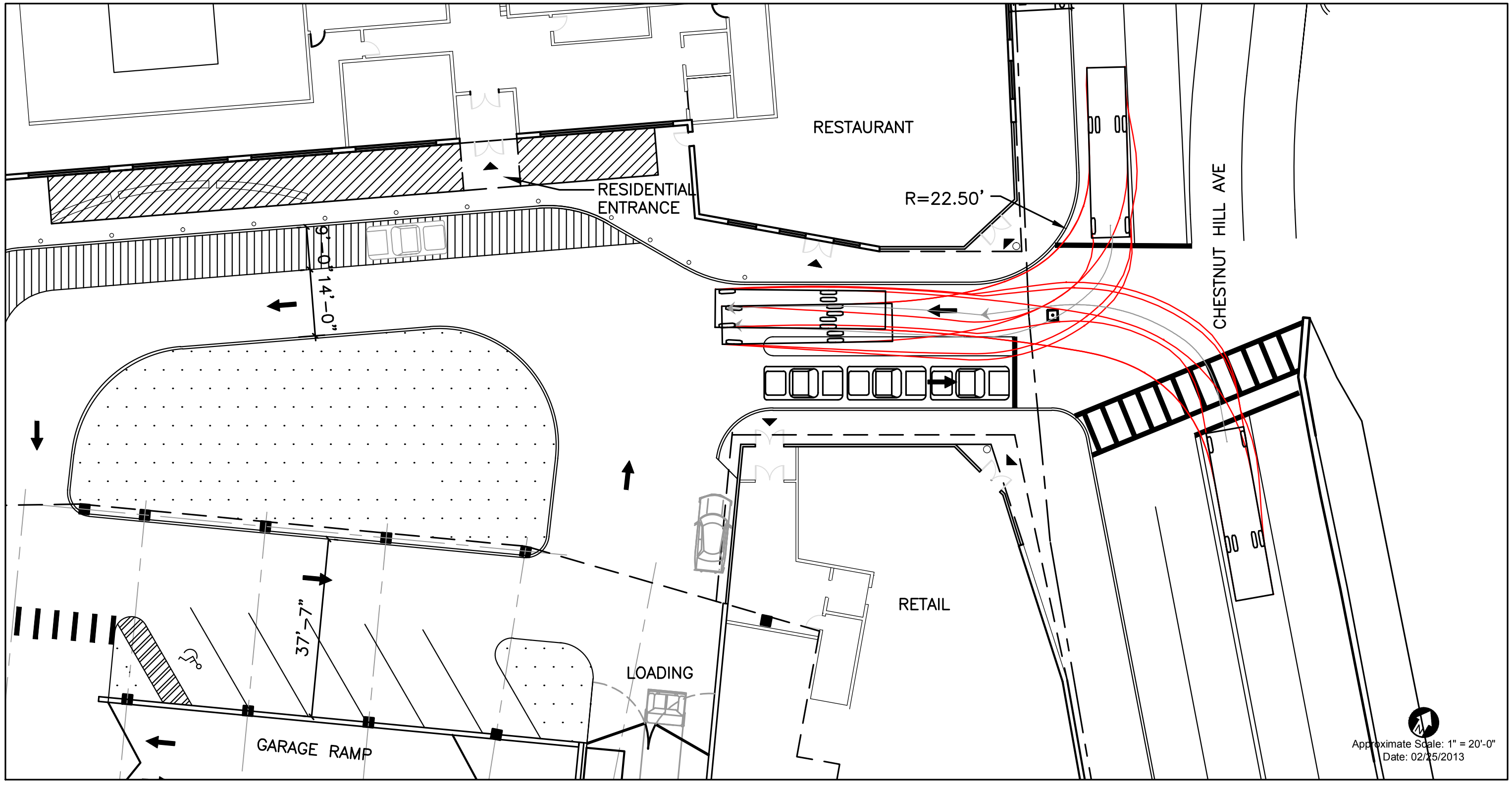


Passenger Vehicle Maneuvers Garage Exiting

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Boston, MA 02111
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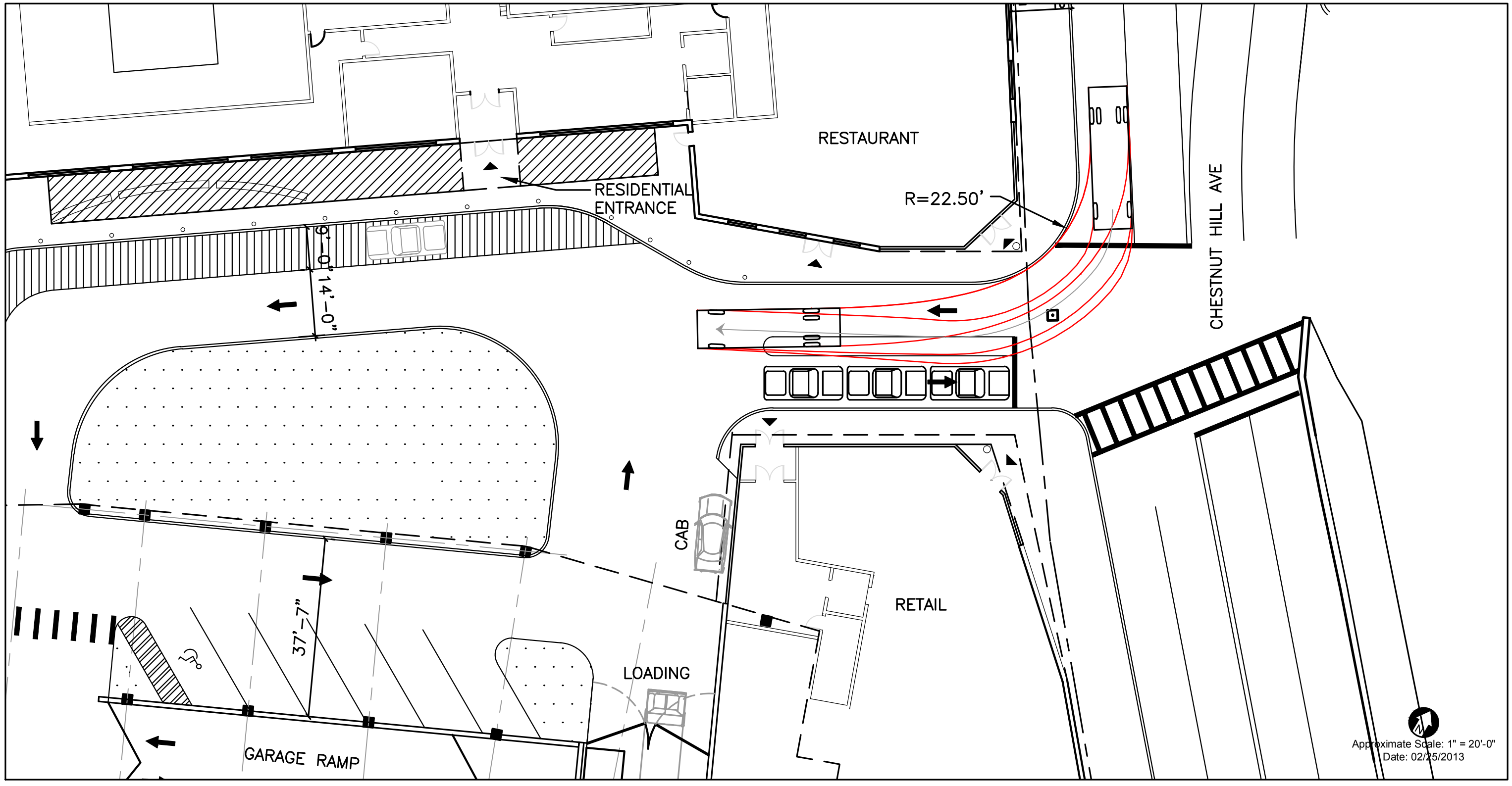


SU-36 Entering with Traffic

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38 Chauncy St., 9th Floor
Boston, MA 02111
617.482.7080

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Cleveland Circle
Howard/Stein-Hudson Associates, Inc.

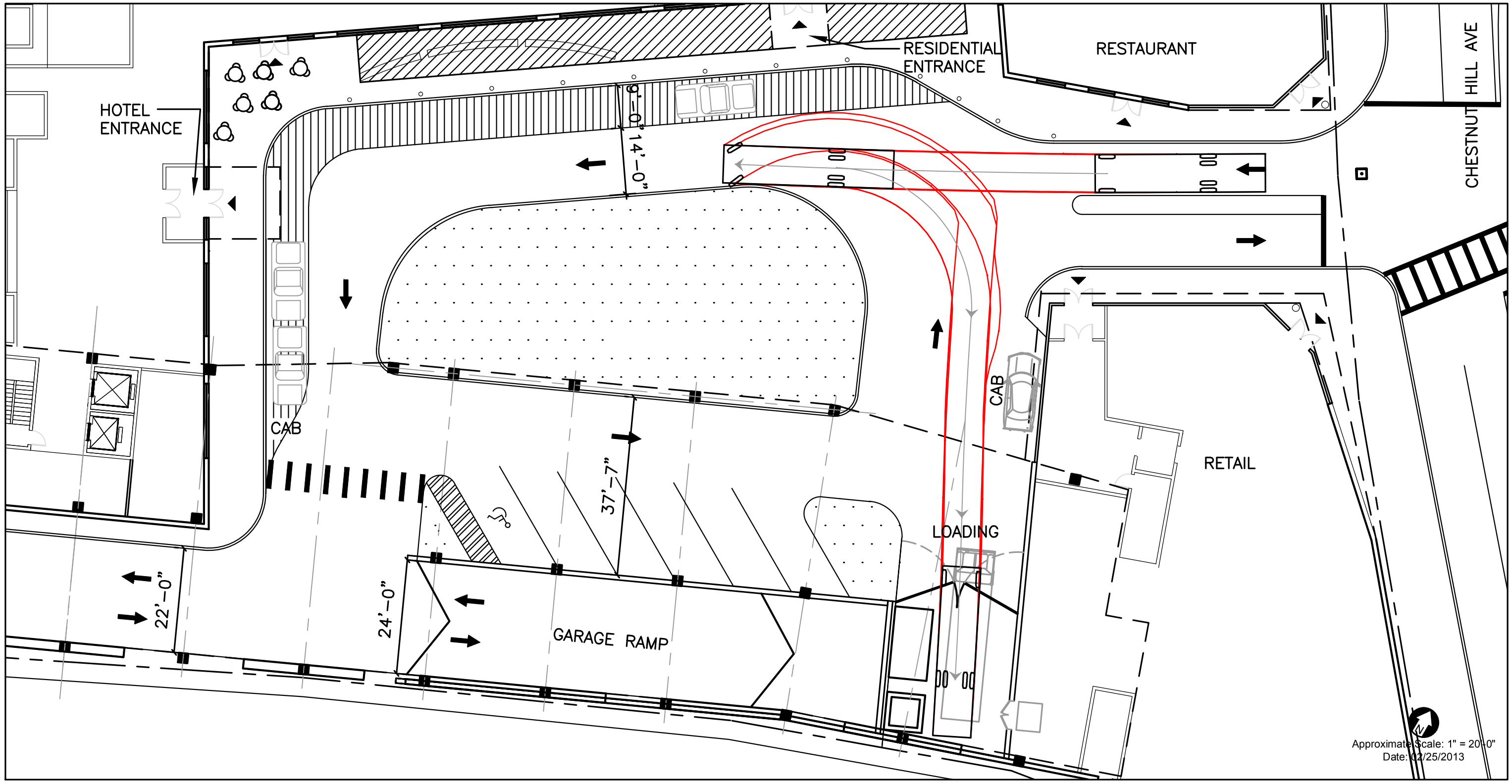


SU-30 Entering with Traffic

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

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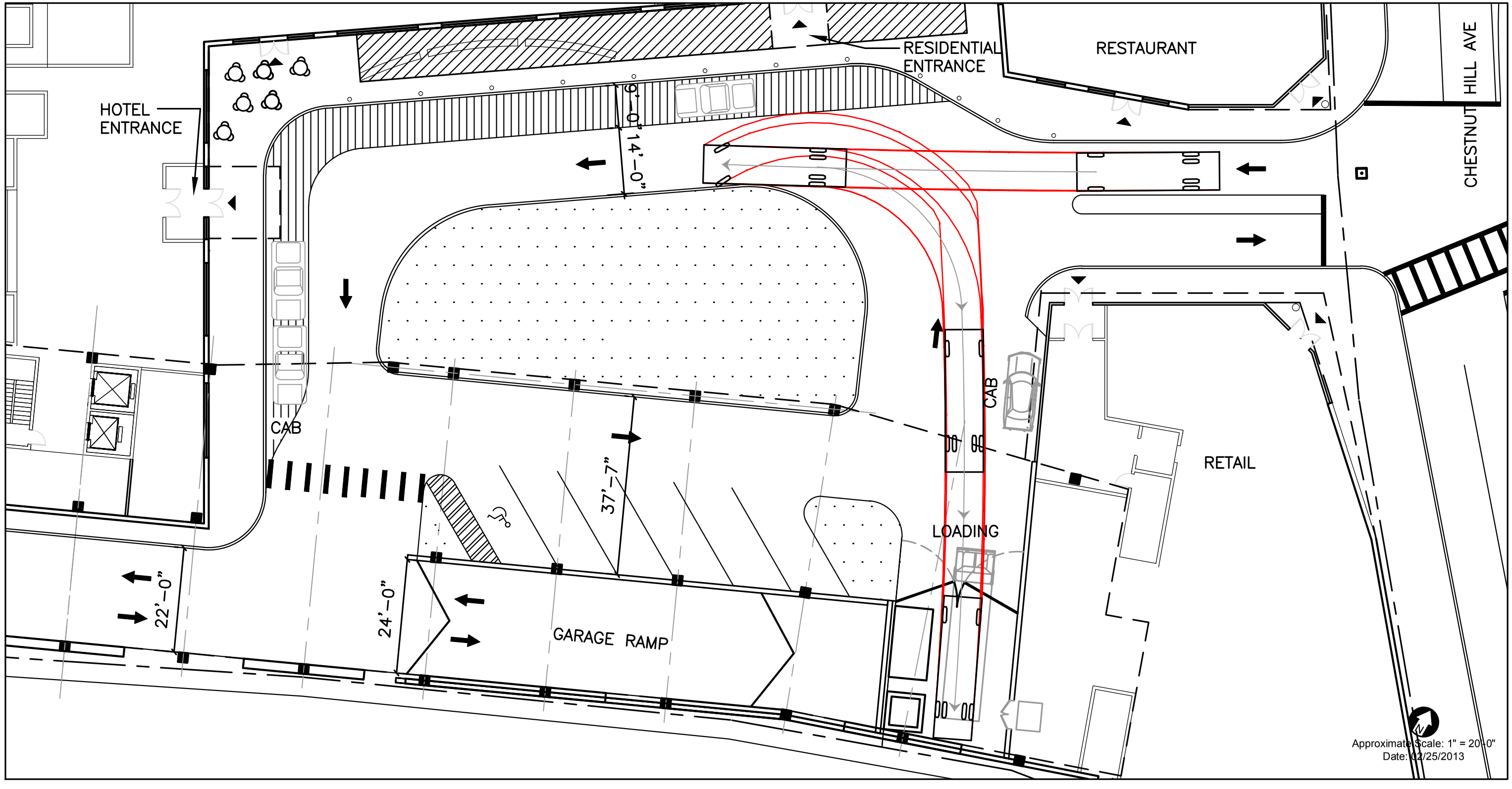
Cleveland Circle
Howard/Stein-Hudson Associates, Inc.



SU-36 Vehicle Maneuvers

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

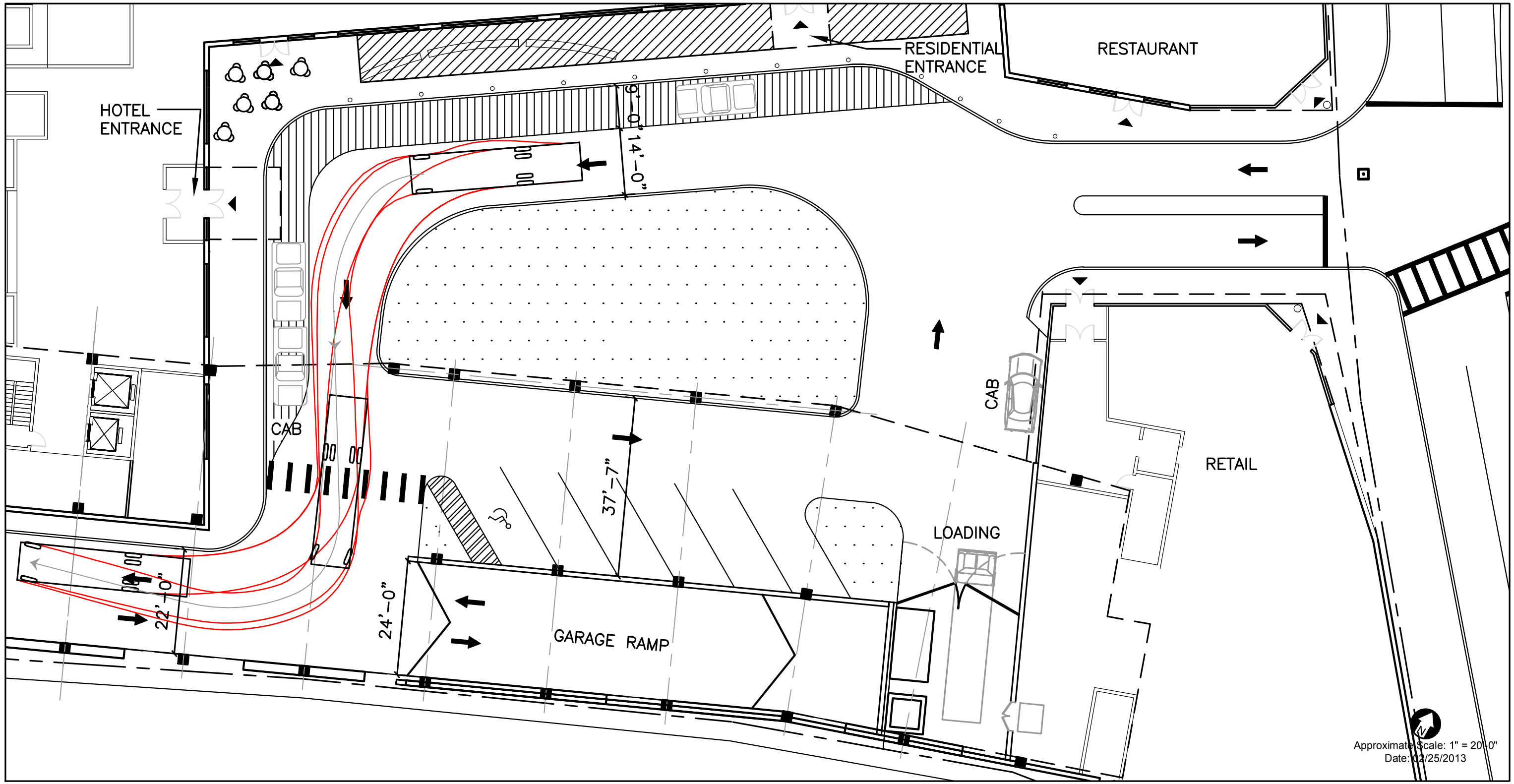
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SU-30 Vehicle Maneuvers

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617.482.7080

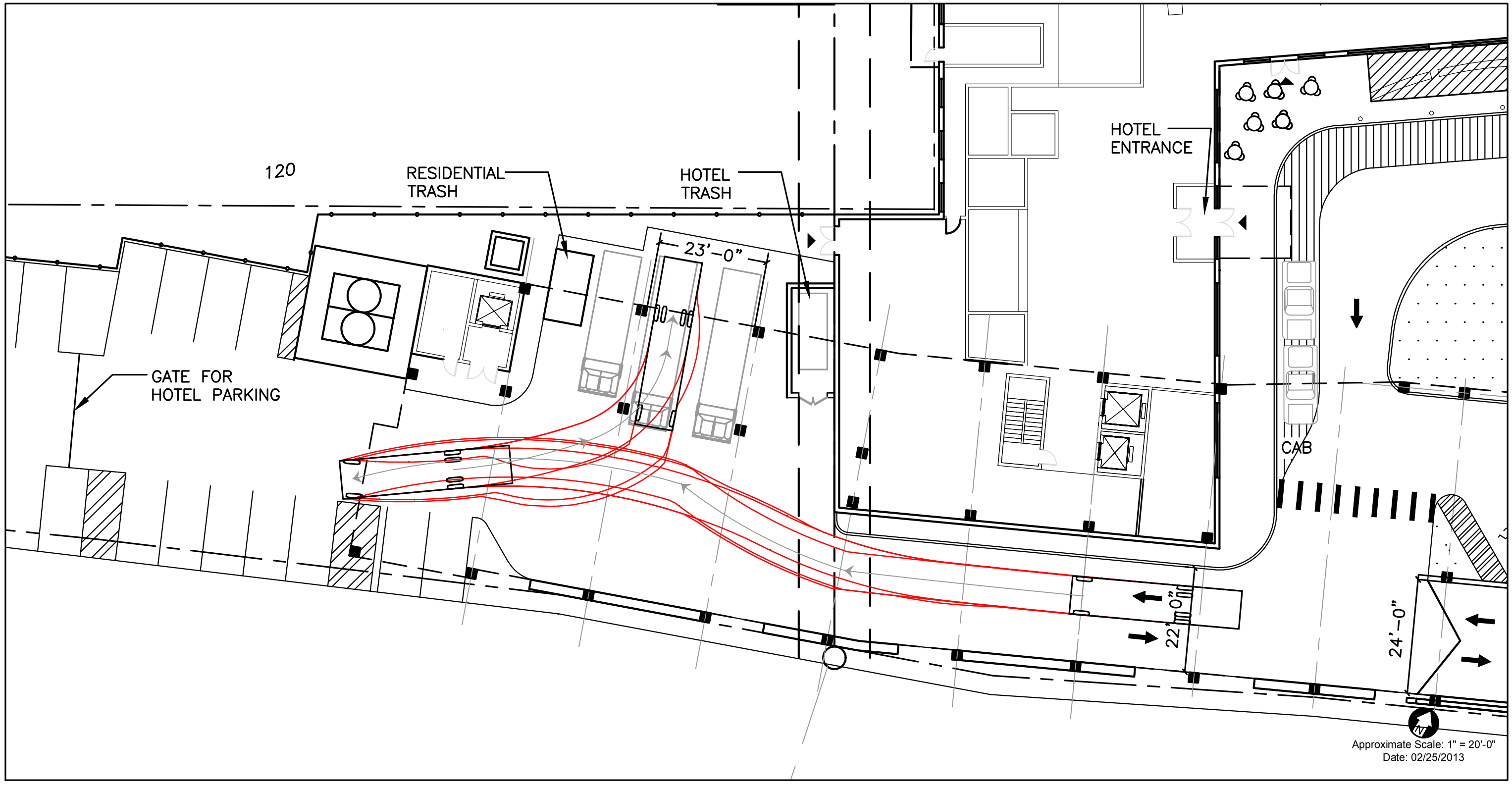
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SU-36 Vehicle Maneuvers

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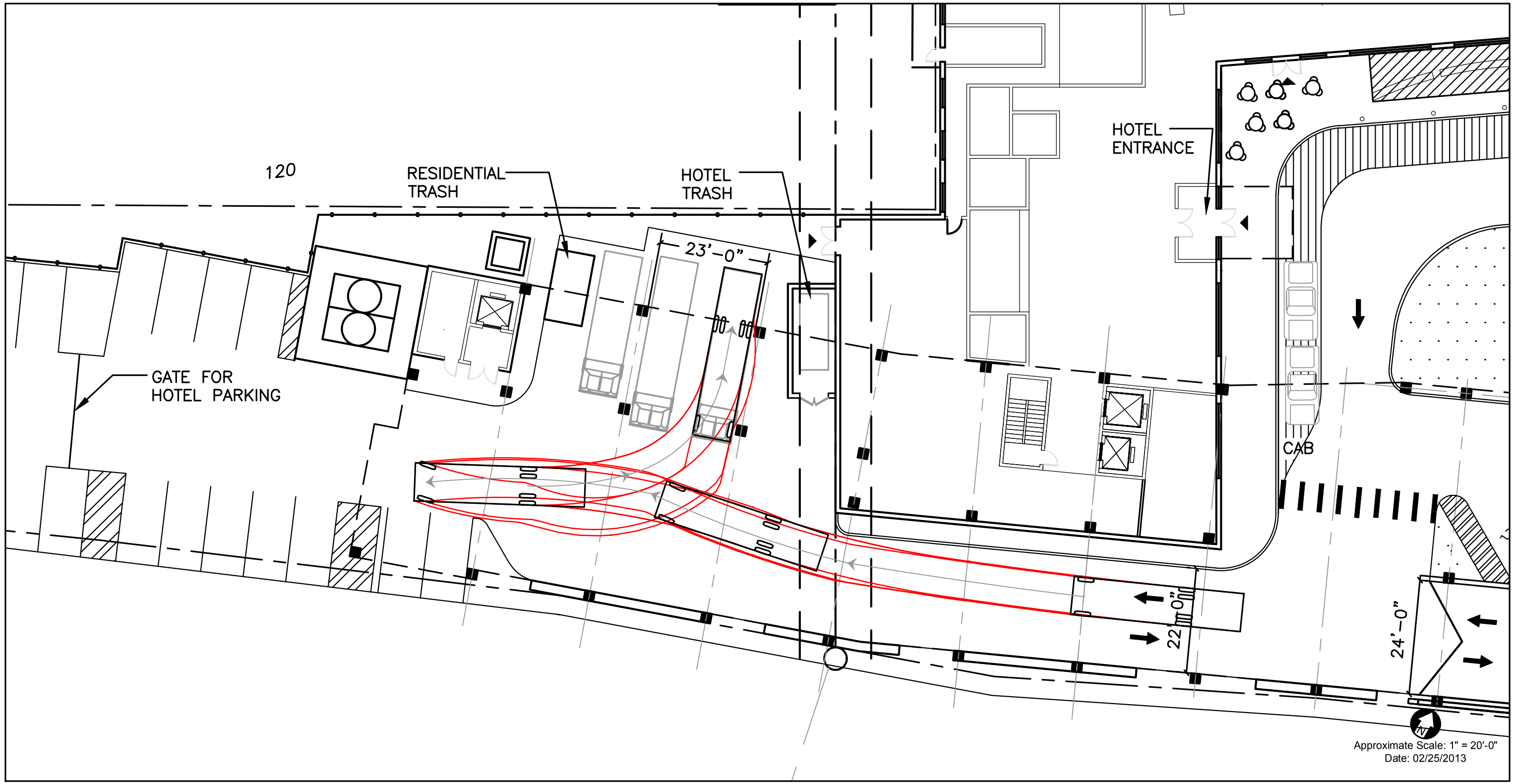
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617.482.7080

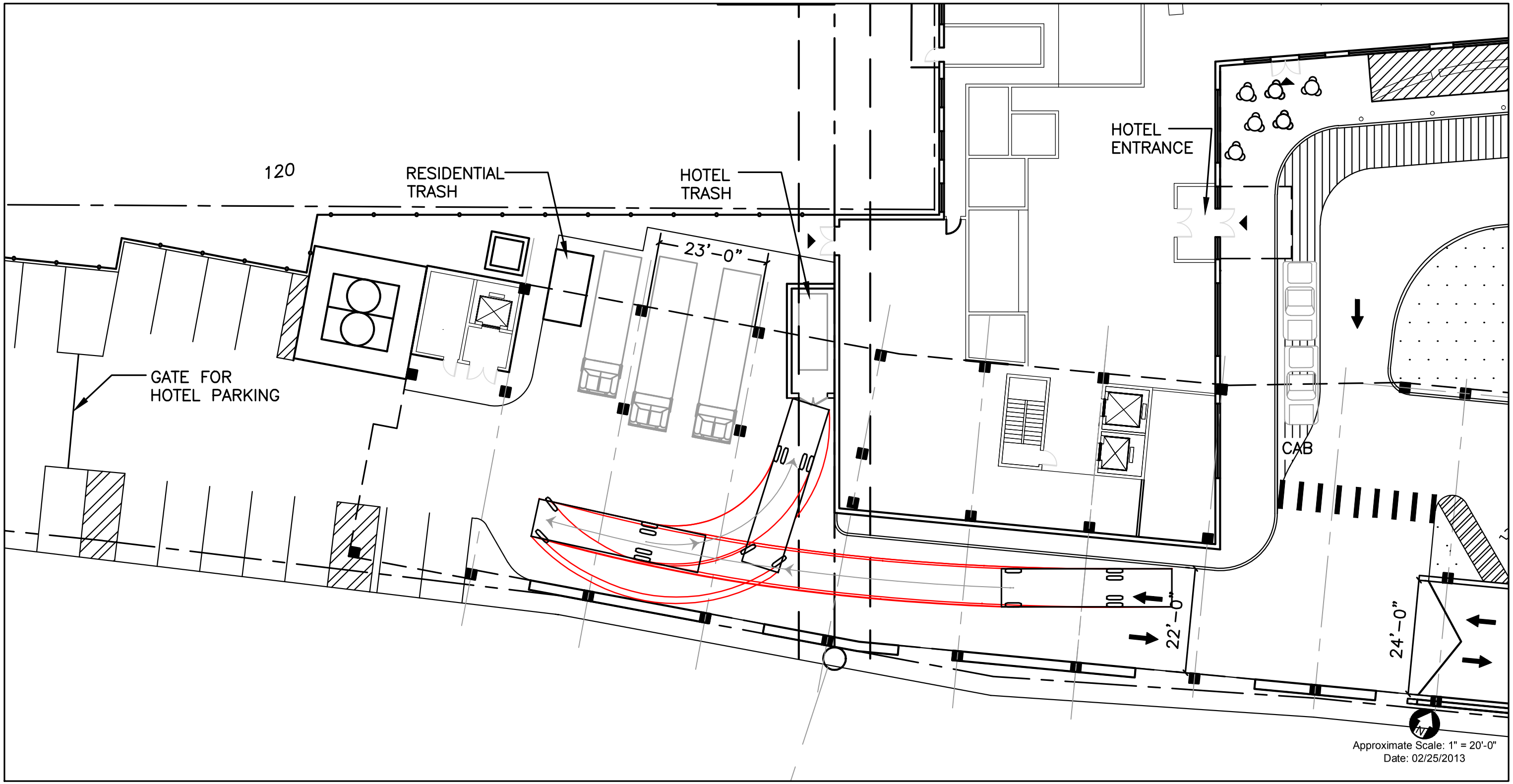
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SU-36 Entering

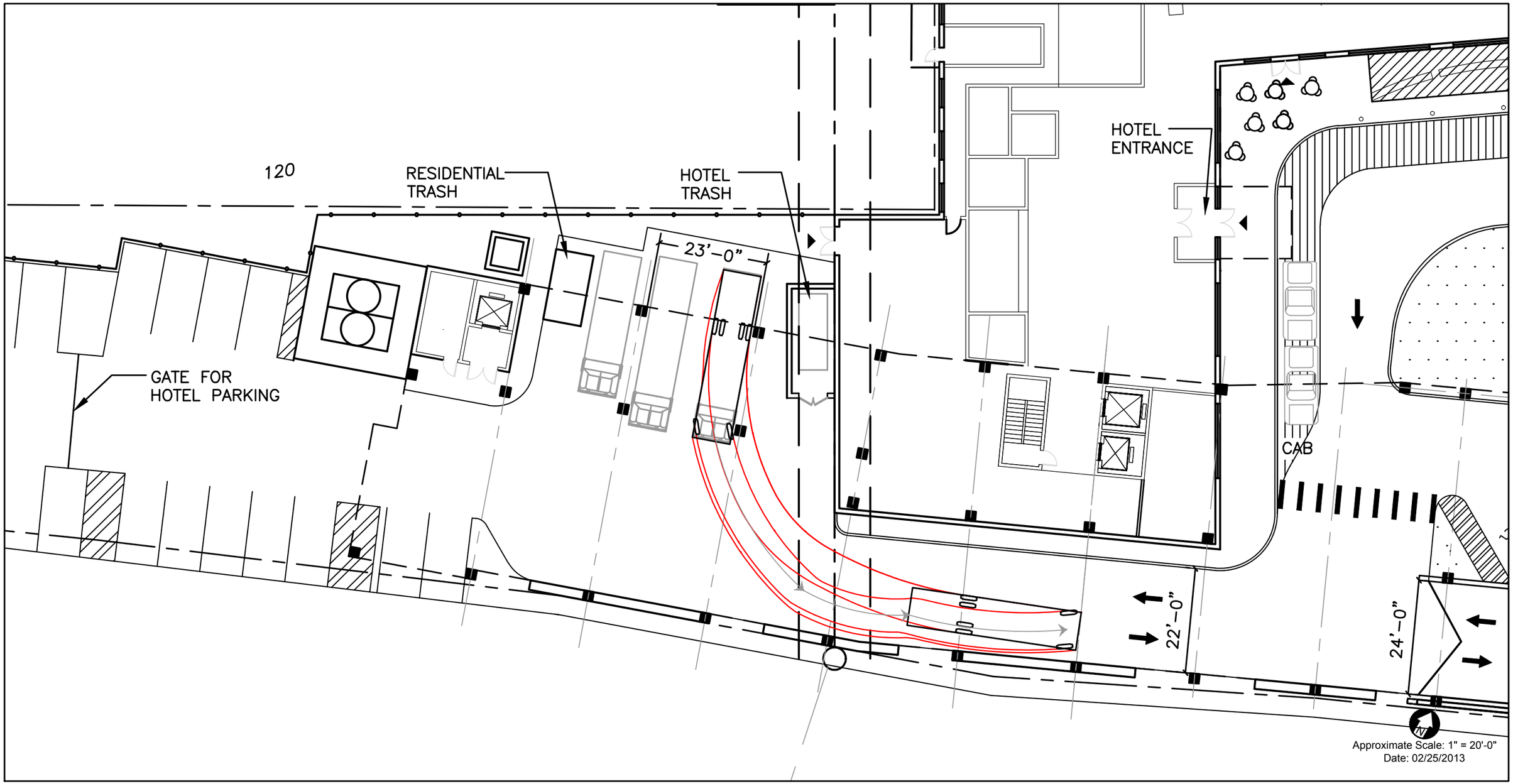
Howard/Stein-Hudson Associates, Inc.
38 Chauncy St., 9th Floor
Boston, MA 02111
617.482.7080



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SU-36 Entering

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617.482.7080



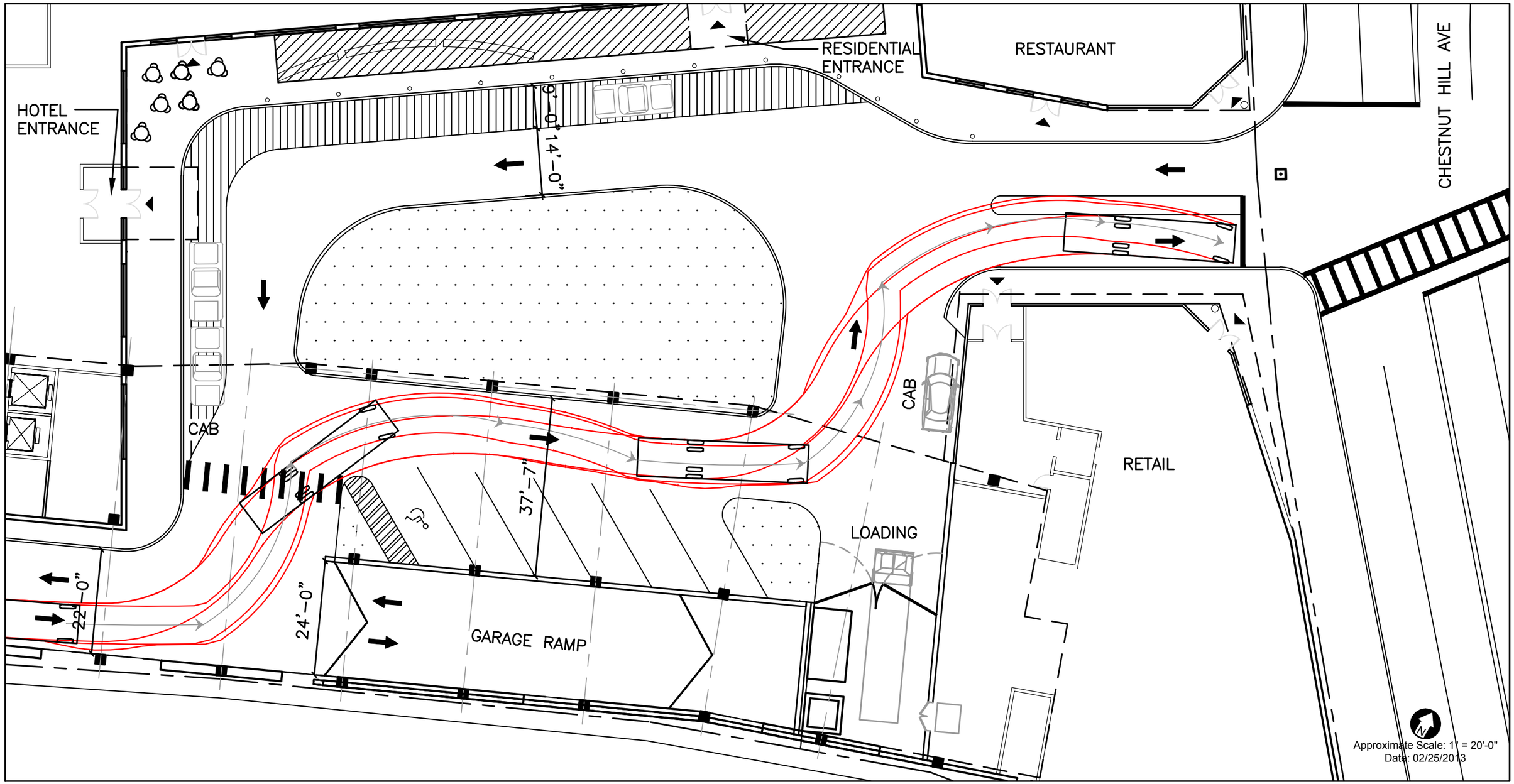
Approximate Scale: 1" = 20'-0"
Date: 02/25/2013

SU-36 Exiting

Howard/Stein-Hudson Associates, Inc.
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Boston, MA 02111
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Appendix C

Wind

Cleveland Circle

Boston, MA

Pedestrian Wind Assessment

RWDI # 1301140
March 8, 2013

SUBMITTED TO

John Meunier
Boston Development Group
93 Union Street., Suite 315
Newton, MA 02459
jm@bdg1.com

SUBMITTED BY

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1. Introduction

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Boston Development Group. to assess the potential wind conditions for the proposed Cleveland Circle development in Boston, MA. The objective of this assessment was to provide a qualitative evaluation of wind comfort conditions on and around the development and recommend mitigation measures, if necessary.

This qualitative assessment is based on the following:

- a review of regional long-term meteorological data;
- our previous wind-tunnel tests on buildings in Boston;
- design drawings dated December 13, 2012;
- our engineering judgment and expert knowledge of wind flows around buildings[1,2]; and
- Use of software developed by RWDI (*Windestimator*[3]) for estimating the potential wind comfort conditions around generalized building forms.

This qualitative approach provides a screening-level estimation of potential wind conditions. To quantify these conditions or refine any conceptual mitigation measures, physical model tests would typically be required. Note that other wind issues, such as those relating to door pressures, air quality, snowdrifts, etc. are not considered in the scope of this assessment.

1. H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", *Journal of Wind Engineering and Industrial Aerodynamics*, vol.104-106, pp.397-407.
2. C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", *10th International Conference on Wind Engineering*, Copenhagen, Denmark.
3. H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004), "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions", *ASCE Structure Congress 2004,* Nashville, Tennessee.

2. Building and Site Information

The current development site is located on the west side of Chestnut Hill Avenue, between Cassidy Playground and the Green Line of the subways system. To the west of the site is the Chestnut Hill Reservoir, as shown in the aerial photo below.

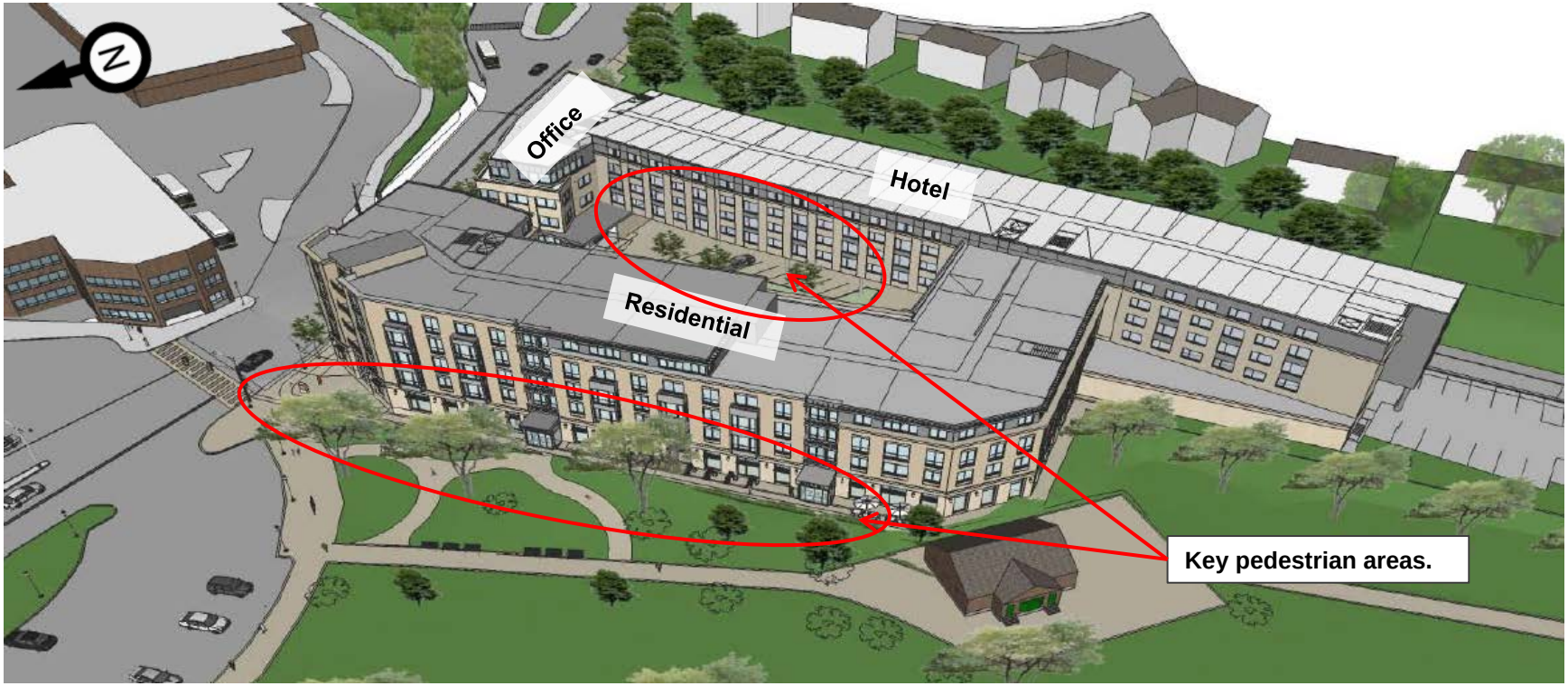
The existing surroundings consist of a dense mix of low-rise buildings and trees. The existing on-site buildings consist of a movie theatre and a restaurant, both low-rise buildings



Aerial Photograph of Existing Site and Surroundings
(Courtesy of Google earth™)

2. Building and Site Information (con't)

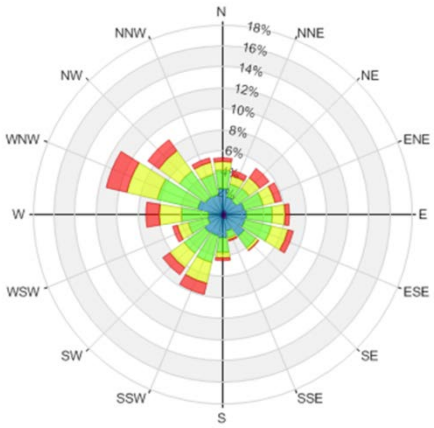
As shown in the image below, the proposed development is a five-story mixed-use building. The residential areas are located in the north wing, and the hotel is in the south wing. Key pedestrian areas include the interior courtyard and the entrances along the northwest facade



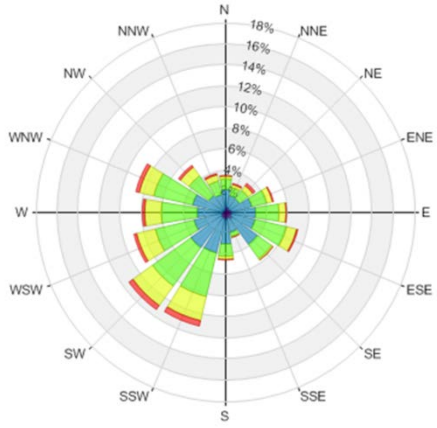
3. Local Weather Data

Wind roses on this page summarize the annual and seasonal wind climates in the Boston area, based on the long-term data from the Boston Logan International Airport between 1982 and 2011. The prevailing winds are from the west-northwest year-round, especially in the spring and winter seasons. Easterly winds are also frequent. In the summer and fall, the prevailing winds are from the southwest direction, but of lower speeds in general.

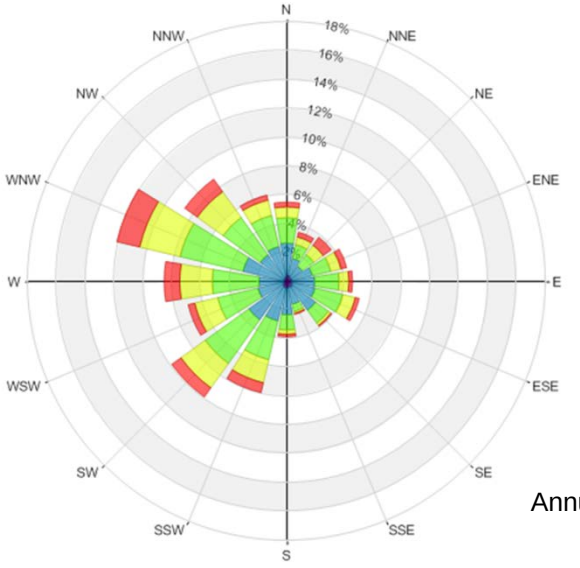
On an annual basis, the most common wind directions are those that originate between the southwest and northwest. Winds from the east are also relatively common. In the case of strong winds, west-northwest and northeast are the dominant directions. Based on the local wind directionality and the orientation of the buildings and streets in the area, winds from the west-northwest and northeast are considered most important, although winds from all other directions have also been taken into account in the analysis.



Spring (Mar. – May)

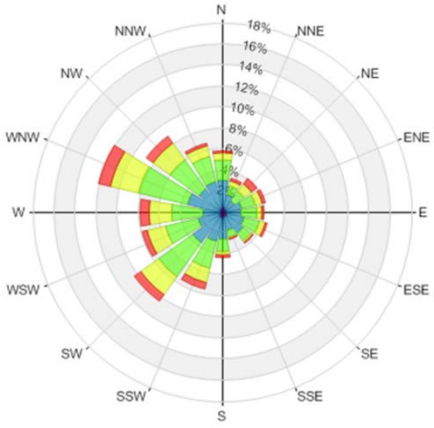


Summer (Jun. – Aug.)

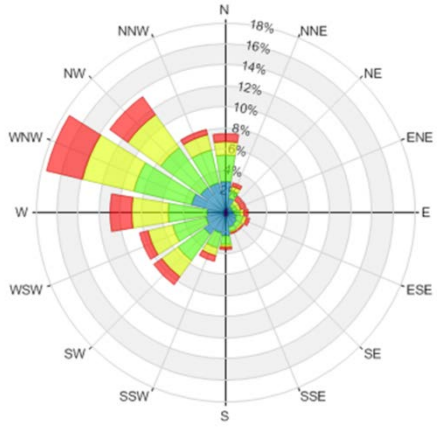


Annual





Fall (Sep. – Nov.)



Winter (Dec. – Feb.)

Annual and Seasonal Wind Directionality

4. Wind Comfort Criteria

The Boston Redevelopment Agency (BRA) has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BRA wind design guidance criterion states that an effective gust velocity (hourly mean wind speed plus 1.5 times the root-mean-square wind speed) of 31 mph should not be exceeded more than 1% of the time.

The second set of criteria used by the BRA to determine the acceptability of specific locations is based on the work of Melbourne[4]. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the 1-hour mean wind speed exceeded 1% of the time (i.e., the 99-percentile mean wind speed). They are as follows:

Dangerous	> 27 mph
Uncomfortable for Walking	> 19 mph and ≤ 27 mph
Comfortable for Walking	> 15 mph and ≤ 19 mph
Comfortable for Standing	> 12 mph and ≤15 mph
Comfortable for Sitting	< 12 mph
* Applicable to the hourly mean wind speed exceeded 1% of the time.	

4. Melbourne, W.H. (1978), "Criteria for Environmental Wind Conditions", Journal of Industrial Aerodynamics, vol. 3, pp. 241-249.

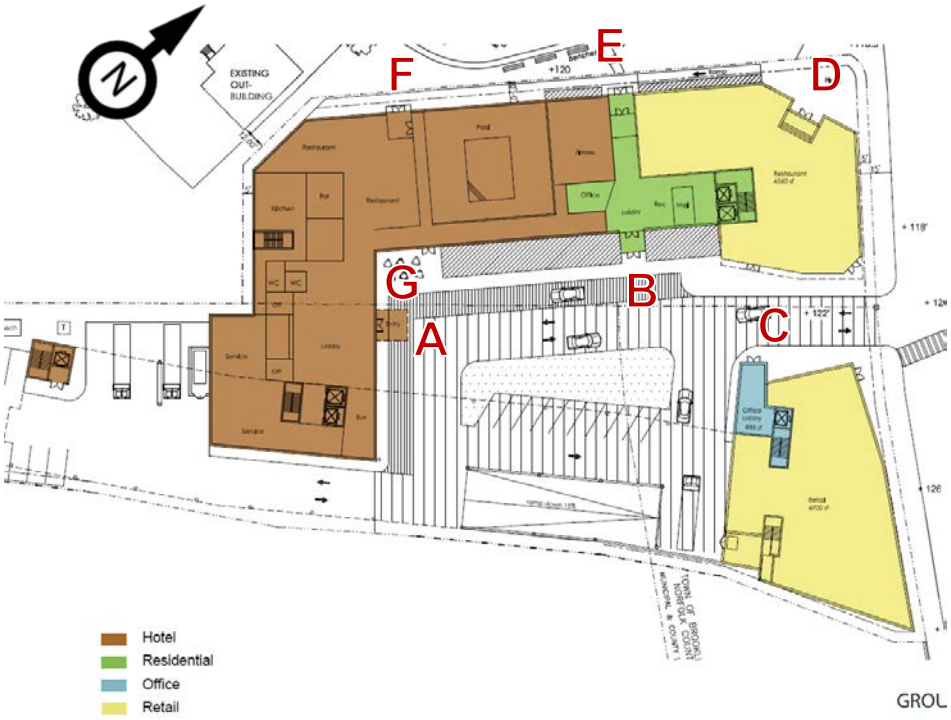
5. PEDESTRIAN WIND CONDITIONS

5.1 Background

Predicting wind speeds and occurrence frequencies are complicated. It involves building geometry, orientation, position and height of surrounding buildings, upstream terrain and the local wind climate. Over the years, RWDI has conducted more than 2,000 wind-tunnel model studies on pedestrian wind conditions around buildings, yielding a broad knowledge base. This knowledge has been incorporated into RWDI's proprietary software that allows, in many situations, for a qualitative, screening-level numerical estimation of pedestrian wind conditions without wind tunnel testing.

The following sections discuss the potential wind effects of the proposed development. Conceptual wind mitigation measures are also described if lower wind activity is desired.

5.2 General Discussion



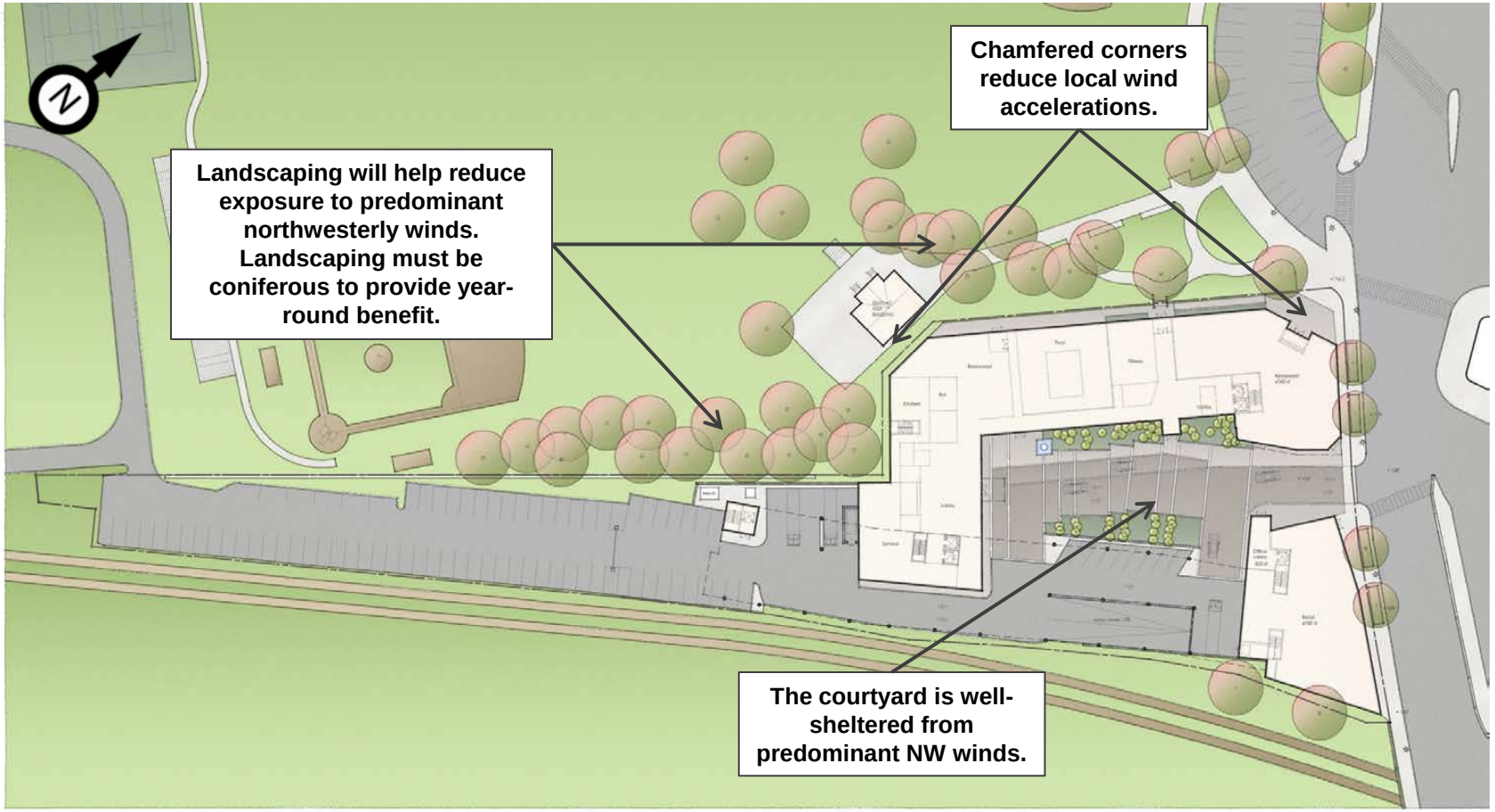
The hotel and residential lobby entrances within the courtyard (Locations A and B) are well-sheltered from all winds, as is the hotel seating area within the courtyard (Location G). Wind activity at these locations is expected to be suitable for the intended usage (ie: sitting and standing conditions are considered appropriate for entrances).

At the office entrance (Location C), winds are expected to be higher: comfortable for walking or possibly uncomfortable conditions during the spring or winter. If necessary, measures can be taken to improve these conditions. Wind control measures for this area are discussed on page 9.

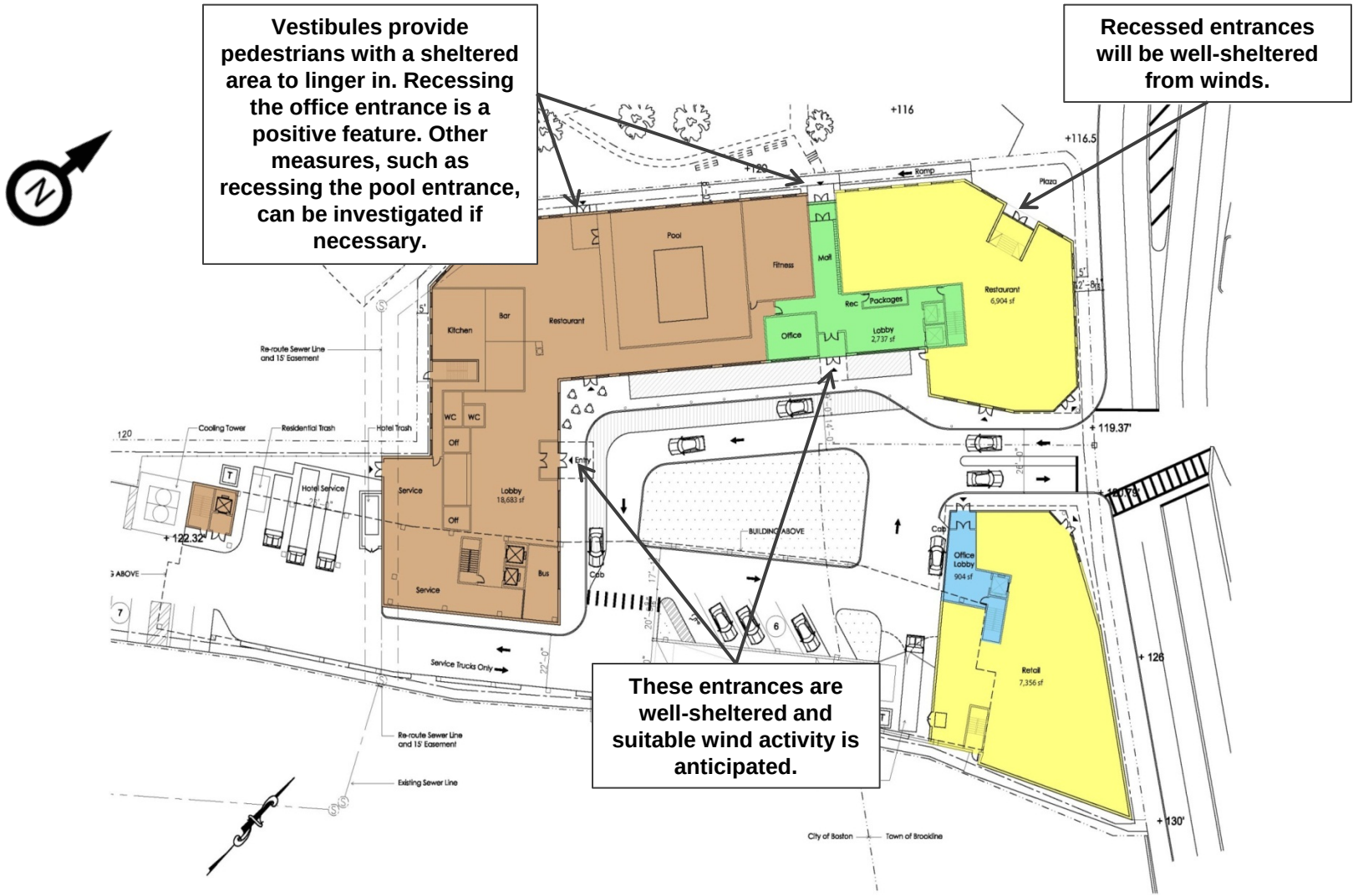
Wind activity at the corner restaurant entrance (Location D) are expected to be favorable due to the chamfered corner and recessed entrance.

Winds along the north façade, including the residential lobby and hotel restaurant entrances (Locations E and F), are expected to be comfortable for sitting or standing during the summer and fall. Conditions are anticipated to be comfortable for walking during the winter and spring. Wind control measures can be studied to make these conditions more comfortable during these seasons. Examples are discussed on page 9.

5.4 Positive Design Features

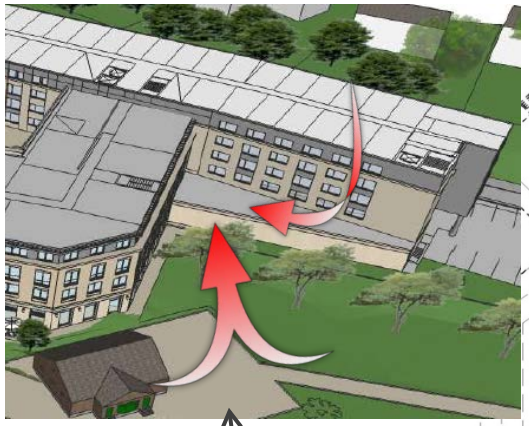


5.4 Entrances

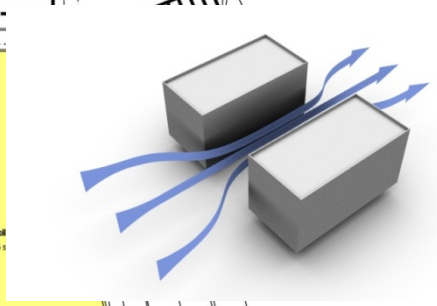


5.5 Potential Wind Accelerations

If required, to reduce exposure to NW winds around seating areas along the north façade, wind mitigation could be investigated in these general areas.







Higher wind speeds are anticipated in these areas. Due to the fact that this area is a loading dock, higher wind activity is likely to be acceptable.

Winds can accelerate by channeling between buildings. This passageway is well-sheltered from predominant NW winds, but exposed to winds from the NE. Winds may be slightly higher than ideal for entrances. Mitigation concepts can be studied if required.

5.6 Effect on Surrounding Areas

5.6.1 – Cassidy Playground

Due to the location of the building in relation to Cassidy Playground and the prevailing winds, it is not expected that this development will have a negative impact on the current wind environment at Cassidy Playground.



5.6.2 – Chestnut Hill Avenue

While there may be localized wind speed increases near the building corners along Chestnut Hill Avenue, it is expected that the proposed building will provide sheltering from the wind for many of the adjacent areas along this street.

6. SUMMARY

Wind activity around the proposed Cleveland Circle is expected to be appropriate for pedestrian activity overall. The low-rise nature of the development, and the low-rise surroundings are both conducive to favorable wind conditions.



In general, wind activity is not expected to be dangerous, and effective gust criterion exceedances are not anticipated.

During the winter and spring, winds may be comfortable for walking around the perimeter of the building. This is higher than ideal along the north façade, which is a key pedestrian area. Recessing entrances and providing wind control measures around key areas may be desired.

During the summer and fall, winds will generally be comfortable for sitting or standing and suitable for the intended use.

7. APPLICABILITY OF RESULTS

In the event of any significant changes to the design, construction or operation of the building or addition of surroundings in the future, RWDI could provide an assessment of their impact on the design considered in this report. It is the responsibility of others to contact RWDI to initiate this process.

Appendix D

LEED Checklist

LEED 2009 for New Construction and Major Renovations

Project Checklist

375-399 Cleveland Circle, Boston, MA 02135

Sustainable Sites — Possible Points: 26

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
	1		Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
	1		Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
	1		Credit 5.1	Site Development—Protect or Restore Habitat	1
	1		Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
	1		Credit 6.2	Stormwater Design—Quality Control	1
	1		Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
		1	Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

Y			Prereq 1	Water Use Reduction—20% Reduction	
2		2	Credit 1	Water Efficient Landscaping	2 to 4
		2	Credit 2	Innovative Wastewater Technologies	2
2	2		Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
5		14	Credit 1	Optimize Energy Performance	1 to 19
		7	Credit 2	On-Site Renewable Energy	1 to 7
	2		Credit 3	Enhanced Commissioning	2
	2		Credit 4	Enhanced Refrigerant Management	2
	3		Credit 5	Measurement and Verification	3
2			Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
	2		Credit 4	Recycled Content	1 to 2
	2		Credit 5	Regional Materials	1 to 2
	1		Credit 6	Rapidly Renewable Materials	1
	1		Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
	1		Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
	1		Credit 7.1	Thermal Comfort—Design	1
		1	Credit 7.2	Thermal Comfort—Verification	1
	1		Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

1			Credit 1.1	Innovation in Design: Exemplary Performance SS4.1	1
1			Credit 1.2	Innovation in Design: Energy Star Appliances	1
	1		Credit 1.3	Innovation in Design: Specific Title	1
	1		Credit 1.4	Innovation in Design: Specific Title	1
	1		Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

1			Credit 1.1	Regional Priority: SS6.1	1
1			Credit 1.2	Regional Priority: SS7.2	1
		1	Credit 1.3	Regional Priority:	1
		1	Credit 1.4	Regional Priority:	1

Total — Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110