PUBLIC NOTICE

The Boston Redevelopment Authority ("BRA"), pursuant to Article 80 of the Boston Zoning Code, hereby gives notice that a Project Notification Form for Large Project Review ("PNF") was filed by Boston Development Group (the "Proponent") on August 16, 2012 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 181 key hotel, 82 residential units, 19,000 sf of medical office space, and 14,200 sf of ground floor retail space. The site also includes approximately 228 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 a Scoping Determination by the BRA pursuant to Section 80B-5. The BRA in the Scoping Determination for such PNF may waive further review pursuant to Section 80B-5.3(d), if, after reviewing public comments, the BRA finds that such PNF adequately describes the Proposed Project's impacts.

The PNF 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 PNF, 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

Expanded Project Notification Form

375-399 Chestnut Hill Avenue



Submitted to:

Boston Redevelopment Authority
One City Hall Square
Boston, Massachusetts 02201

Prepared by:

Epsilon Associates, Inc.
3 Clock Tower Place, Suite 250
Maynard, Massachusetts 01754

Submitted by:

Boston Development Group
93 Union Street, Suite 315
Newton Centre, Massachusetts 02459

In Association with:

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

August 16, 2012

Epsilon
ASSOCIATES INC.

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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 236,500 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 ground floor retail/restaurant space along Chestnut Hill Avenue, which will improve pedestrian activity and the urban aesthetics of the Project Site. Locating residential units on the Cassidy Playground edge will engage and enliven the playground and the neighborhood. The Project will redevelop the site to better fit into the context of the area, bringing buildings to the street edge and providing a mix of uses that complement the surroundings.

This Expanded Project Notification Form (PNF) is being submitted to the Boston Redevelopment Authority (BRA) to initiate review of the Project under Article 80B, Large Project Review, of the Boston Zoning Code.

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 Sarah Theall Lemke
Permitting Consultants:	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
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 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 (see Figure 1-2).

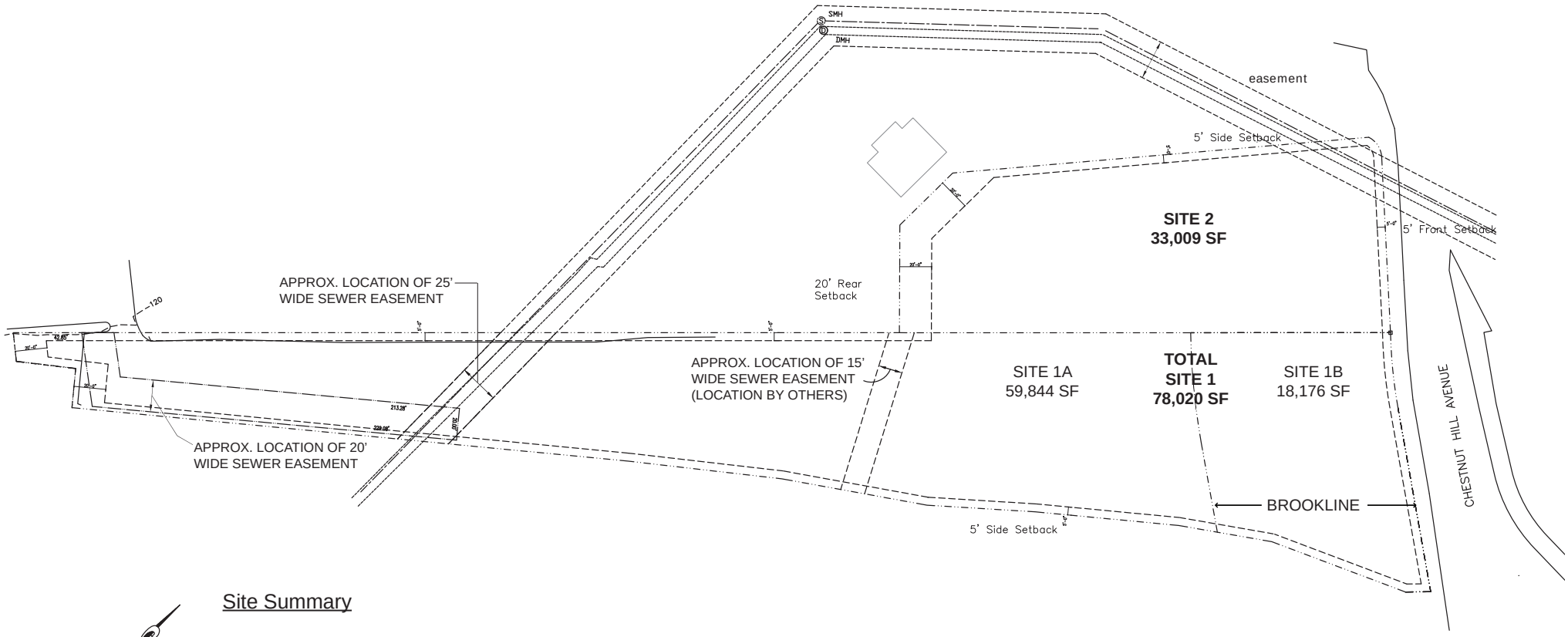
As previously mentioned, the Project Site is occupied by the former Circle Cinema, an Applebee's restaurant, and surface parking. Cassidy Playground is north of the Project Site; the MBTA's Green Line Reservoir Station is opposite the Project Site on the east side



375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 1-1
Aerial View of Existing Site



Site Summary

Boston - 92,893 SF
Brookline - 18,176 SF

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.

1.3.2 Proposed Development

1.3.2.1 Program

The proposed Project includes the construction of approximately 236,500 sf of new hotel, residential, medical office and retail space. The Site also includes approximately 228 parking spaces, some underground and some at grade. 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. The massing of the Project is shown in Figure 1-5.

The new building will be organized into a roughly Y-shaped footprint that 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, as mentioned above, 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. An underground parking garage supports approximately 141 cars in addition to mechanical and storage spaces. The balance of the parking is provided at grade. Figures 1-6 to 1-10 show floor plans. Sections are shown in Figure 1-11.

Throughout the design process, much 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 paving. In addition, the Project places the public elements of the program on the street edge, including ground floor retail and entrances to the hotel, medical office and residential components. The new streetwall will complement the urban context of Cleveland Circle, and promote the transit-oriented location by changing the current site layout, which features parking areas between the streets and existing buildings.

The Project is designed to respect and improve the abutting Cassidy Playground. The hotel portion of the building will be located adjacent to the MBTA Green Line tracks, allowing for the residential portion of the Project to face Cassidy Playground, putting more eyes on the park for safety, and creating a visual benefit to many of the residences. The Project may also provide outdoor seating for a ground floor restaurant space along the corner of Cassidy Playground to further enliven both the outdoor space and the pedestrian experience within Cleveland Circle.

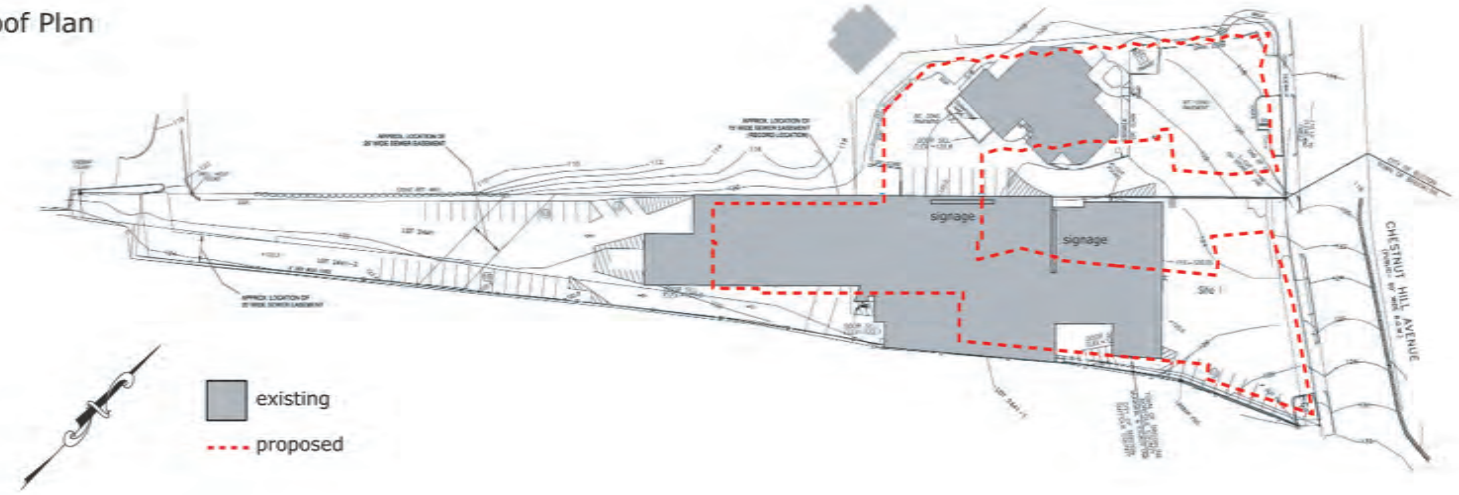


375-399 Chestnut Hill Avenue Boston/Brookline, MA

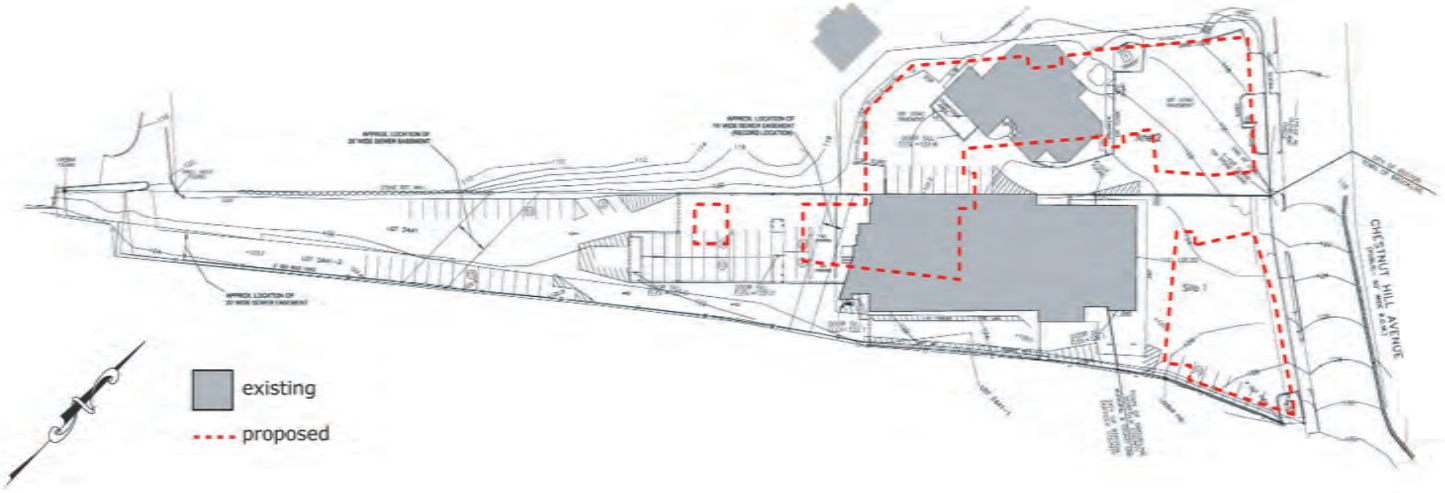
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Figure 1-3
Aerial View of Proposed Development

Existing and Proposed Roof Plan



Existing and Proposed Ground Floor Plan



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-4
Comparison of Existing and Proposed



375-399 Chestnut Hill Avenue Boston/Brookline, MA

Figure 1-5
Existing and Proposed View Comparison



Figure 1-6

Enlarged Ground Floor Plan



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-7

Underground Parking Plan



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Figure 1-8
Level 2



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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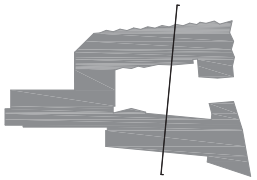
Figure 1-9
Levels 3 & 4



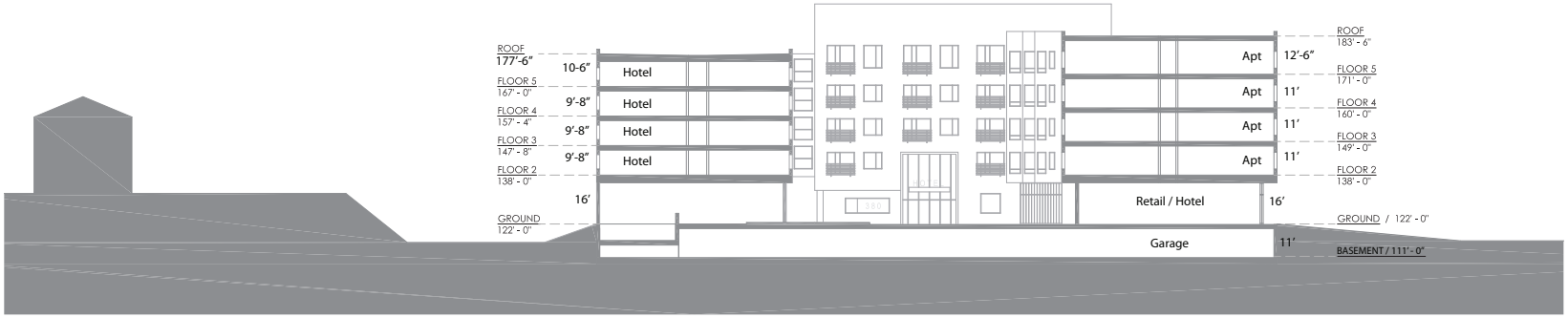
375-399 Chestnut Hill Avenue Boston/Brookline, MA

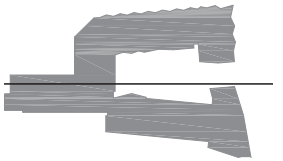
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Figure 1-10
Level 5

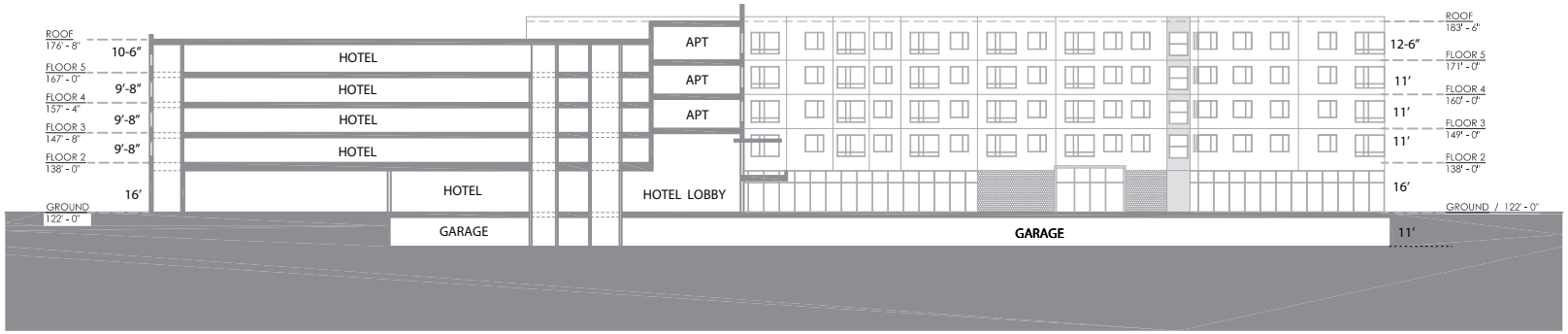


Cut Location





Cut Location



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 1-11

Cross and Longitudinal Sections

The vehicle drop-off area and loading will be located off of the street in a central courtyard. This courtyard will be landscaped to create a quiet oasis for hotel guests and residents. The courtyard will have the added benefit of improving local traffic flow by bringing hotel traffic quickly off the street and deep inside the Project's boundaries. This courtyard will be set behind the active street edge in order to not disturb the pedestrian environment.

The proposed program is shown in Table 1-1.

Table 1-1 Proposed Program

Use	Approximate Dimensions	
	Boston	Brookline
Hotel	141 rooms/ 92,500 sf	40 rooms/ 17,800 sf
Residential	82 units/ 93,000 sf	N/A
Medical Office	N/A	19,000 sf
Retail/Restaurant	6,700 sf	7,500 sf
Approximate Parking Spaces	207 spaces	21 spaces

1.3.2.2 Parking and Access

The Project will include approximately 228 total parking spaces on site including surface and below grade spaces. Of these, 60 are specifically dedicated to the hotel with 30 spaces to be shared between the hotel and medical office uses. In the underground garage, 78 spaces will be dedicated to the residents of the housing component, a ratio of one space per unit. The rest of the spaces will be for the medical office and retail uses.

Surface Parking

There will be approximately 87 surface spaces. Due to a prior arrangement with the Town of Brookline, 60 parking spaces will be located behind a gate on the western side of the site and must exit the parking lot via a private drive adjacent to the Waterworks Residential building towards Beacon Street.

Underground Parking

The underground parking garage will contain approximately 141 spaces. As mentioned above, 78 of the underground spaces will be for residents, while the remainder will be for the medical office and retail uses. The resident parking area will be separated from public spaces with an enclosure. 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 traffic signal and crosswalk at this location will facilitate access for both vehicular and pedestrian traffic. The entry drive will lead to a courtyard where all major Project uses (residential, hotel, retail and medical office) 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 receive a security card that will enable them to pass through a gateway and to an overflow surface parking lot.

All service vehicle access and egress will be via the Chestnut Hill Avenue curb cut with ample onsite maneuverability to access dedicated loading areas.

1.3.2.3 Public Benefits

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

- Replacing a vacant building set back from the street with a new development that creates a distinct urban edge fronting Chestnut Hill Avenue.
- Locating retail space close to Chestnut Hill Avenue, encouraging pedestrian activity.
- Providing an 'urban oasis' courtyard set off Chestnut Hill Avenue for access to all program uses, taxi stands, and off-street loading.
- Creating approximately 100 construction jobs and approximately 120 full-time jobs.
- The Project is anticipated to create the following tax benefits for the City of Boston, on an annual basis: (a) approximately $1,100,000 in property tax revenue, (b) approximately $450,000 and $480,000 in state and local hotel occupancy taxes, respectively, and (c) $220,000 toward the convention center financing fee.
- The plan provides for a pedestrian walkway through the property to allow a potential link from Beacon Street to the MBTA's Reservoir Station. This benefit will be contingent upon approvals required from the City of Boston to construct a pathway from the Site through Cassidy Park to Beacon Street.
- The Project will include 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 Park. 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.

Chestnut Hill Avenue

- Consolidating four existing curb cuts on the existing site into one signalized curb cut.
- Introducing new mature deciduous street trees along Chestnut Hill Avenue.
- 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 ameliorate the pedestrian experience on and near the site.

Interface with Cassidy Playground

- Improving the interface with Cassidy Park on the north side of the site, with new plantings over a gently sloped lawn and replacing deteriorated walkways with new concrete sidewalks.
- Introducing public programs such as a restaurant with outdoor seating, and hotel functions such as a pool terrace and hotel outdoor dining terrace that will enliven the edge along the playground.
- Removing invasive plants, removing dead trees and replacing with native species along narrow portions of the Site.
- 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, decorative wood fence along the length of the development.

1.4 City of Boston Zoning

The majority 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, and approximately 228 parking spaces, including approximately 141 spaces in the parking garage and approximately 87 surface spaces. Retail, restaurant and certain office uses are allowed in the NS Subdistrict. Hotel use is forbidden and residential uses are conditional, so zoning relief will be required to allow those uses. The Project may seek zoning relief for "general office use" (which is conditional) to allow such use in the event that the office component of the Project is not limited to agency or professional offices, which are allowed.

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. The Proponent anticipates that the hotel component of the building on the Project Site will have a building height of approximately 56 feet, while the residential component will have a building height of approximately 64.5 feet. The current development plans call for approximately 192,200 square feet of gross floor area on the Boston portion of the Project Site, resulting in an FAR of 2.07. Based on the foregoing, the Project 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 2.13.

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

1.5 Legal Information

1.5.1 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.

1.5.2 History of Tax Arrears on Property

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

1.5.3 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.

1.6 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

1.7 Public Participation

The Proponent has worked diligently over the past year and a half to answer the issues and concerns raised by the community in regard to the Project.

The following section summarizes a number of key issues raised and recommendations made by elected officials, the Boston Redevelopment Authority, and the Impact Advisory Group (IAG), and in comment letters on the project previously proposed on the Site. These issues have been studied by the Proponent and its development team, and the Proponent has made an effort to address major concerns regarding the Project.

The Proponent looks forward to working with the community as the Project moves forward.

Community Recommendations Received and ProponentResponses

1. Re-orient the main body of hotel building (including lobby) from 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.

   Response: If the hotel were relocated as advised, the hotel's public areas and service areas would 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 (See Figure 1-12, Prototype Hotel Lobby Floor).

2. Design a visually significant "landmark" structure facing Cleveland Circle to emphasize and enhance Cleveland Circle's gateway location.

   Response: The exterior design includes 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 Design Advisory Team (DAT). (See Figures 1-13 and 1-14).

3. Ensure a high quality hotel brand, with all essential hotel amenities, including meeting/conference rooms—but no function rooms for larger social events.

   Recommendation Implemented: Hotel brand has been upgraded to a Hilton Garden Inn.

4. Situate residential units on the portion of the development Site overlooking Cassidy Park and the Reservoir, away from the traffic and commercial activity of Cleveland Circle and Chestnut Hill Avenue.

   Response: The Developer's plan maximizes 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 tracks on the south side of the Site, 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.

5. Ensure that residential units are spacious and upscale in character, "condo-quality", with unit-dedicated parking and amenities designed for long-term occupancy.

   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 residential component was sized so that shared parking between uses would not be necessary, and

allow for 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 the hotel pool and fitness center, and park and water views. Units will be sized for sale in the $500,000 to $750,000 price range.

6. Create the maximum amount of pedestrian-friendly street-edge retail on the building facades facing Chestnut Hill Avenue and Cleveland Circle. Restaurant space should be oriented toward the Park and have an outdoor seating area.

   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 bisects the Chestnut Hill elevation, for reasons that are detailed below in Response #9. (See Figure 1-15.)

7. Provide ample/sufficient dedicated parking for each use.

   Recommendation Implemented: The parking that is provided meets or exceeds BTD standards for each use, and in total without any shared parking spaces among the uses. The Proponent changed the Project scope to add an approximately 141-space underground parking facility. (See Table 2-14 in Chapter 2, Transportation.)

8. Create a 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 all Site uses concurrently, as well as all anticipated vehicle sizes and types, including delivery vans/trucks, moving trucks, tourist busses, and emergency vehicles.

   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. (See Figures 1-16 and 1-17 for two such examples.)

9. Provide a 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 a landscaping buffer to screen the

view of the access road from homes on Clinton Road. Create a permanent traffic circulation pattern on the Site that prevents any cut-through traffic, or service vehicles, from exiting via the Waterworks easement road.

Response: The Project 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 Avenue intersection. (See Figures 1-18 to 1-20.)

Privacy screening and or fencing will be installed to mitigate traffic views (see Figure 1-21).

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.

10. Utilize the existing crescent roadway/parking area in Cleveland Circle (adjacent to Cassidy Park) 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.

    Response: This area is public property and is not controlled by the Proponent.

11. Provide an ample sidewalk setback from Chestnut Hill Avenue that can comfortably accommodate street trees.

    Recommendation Implemented: The sidewalk width averages 15 feet along the property frontage, which is sufficient to include trees.

1.8 Schedule

The Proponent anticipates that construction on the Project will commence in March 2013 and will finish approximately around September 2014.

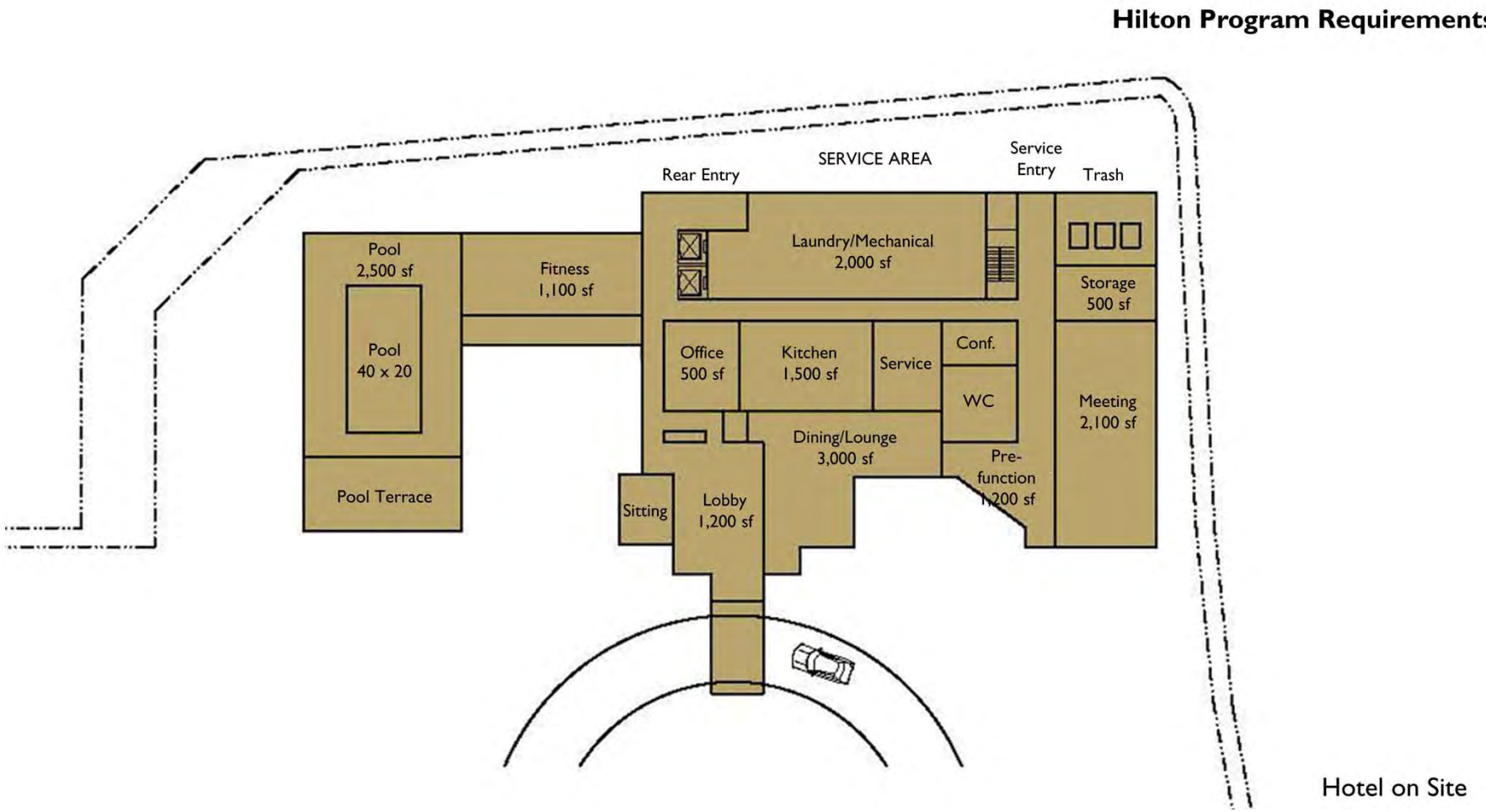


Figure 1-12

Prototypical Hotel Ground Floor



375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 1-13

View from Cleveland Circle

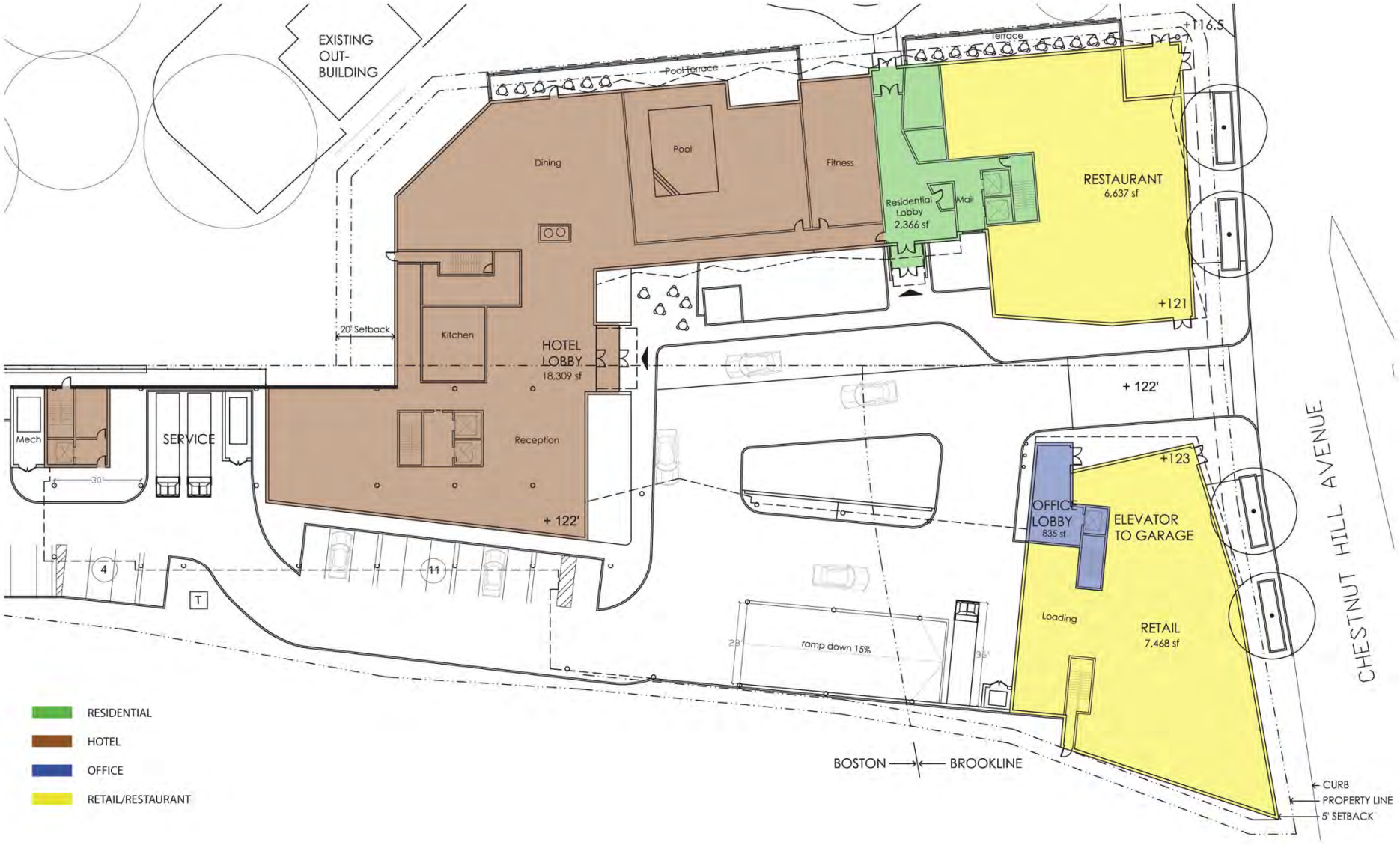


375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 1-14

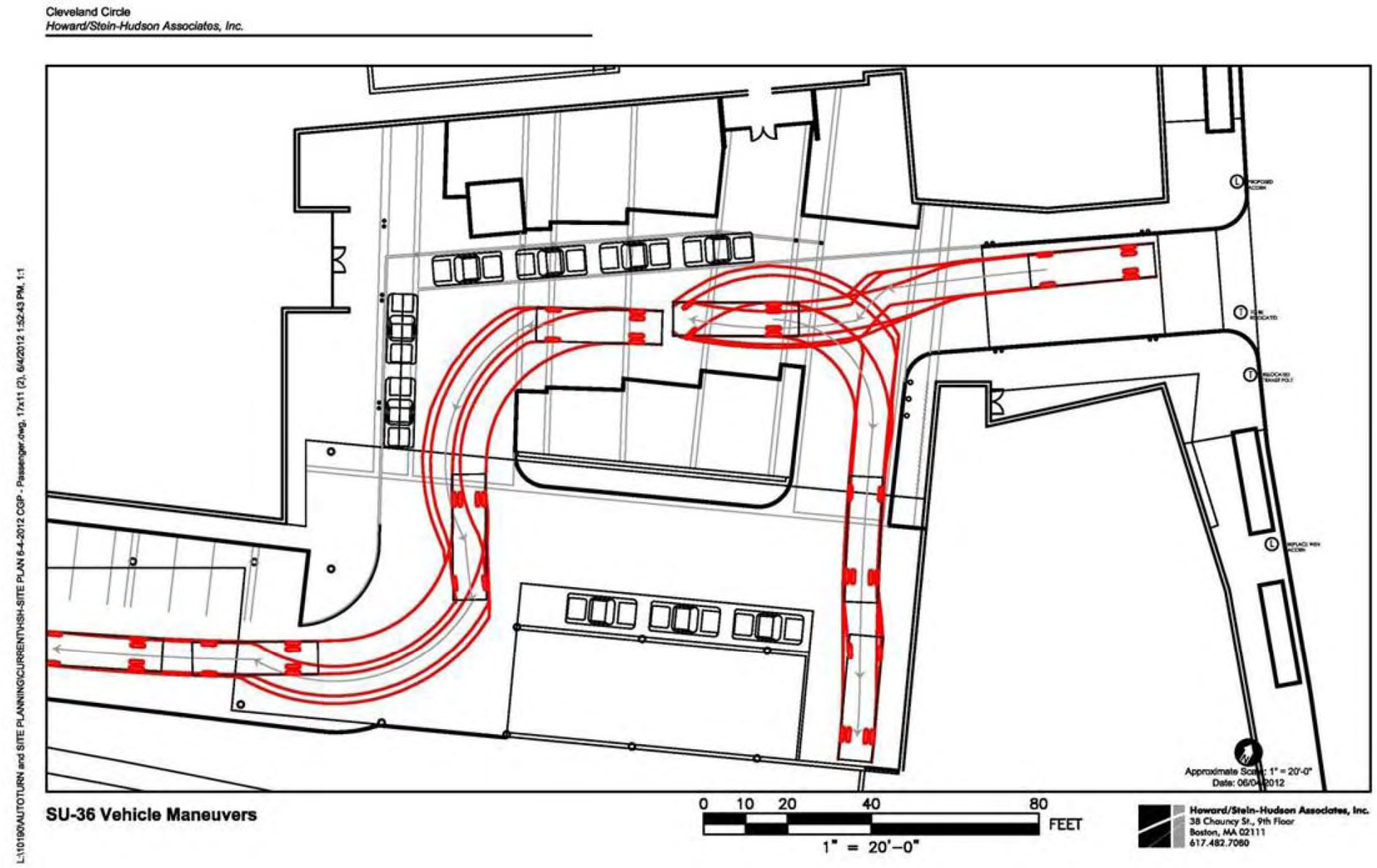
View of Corner Entry



375-399 Chestnut Hill Avenue Boston/Brookline, MA

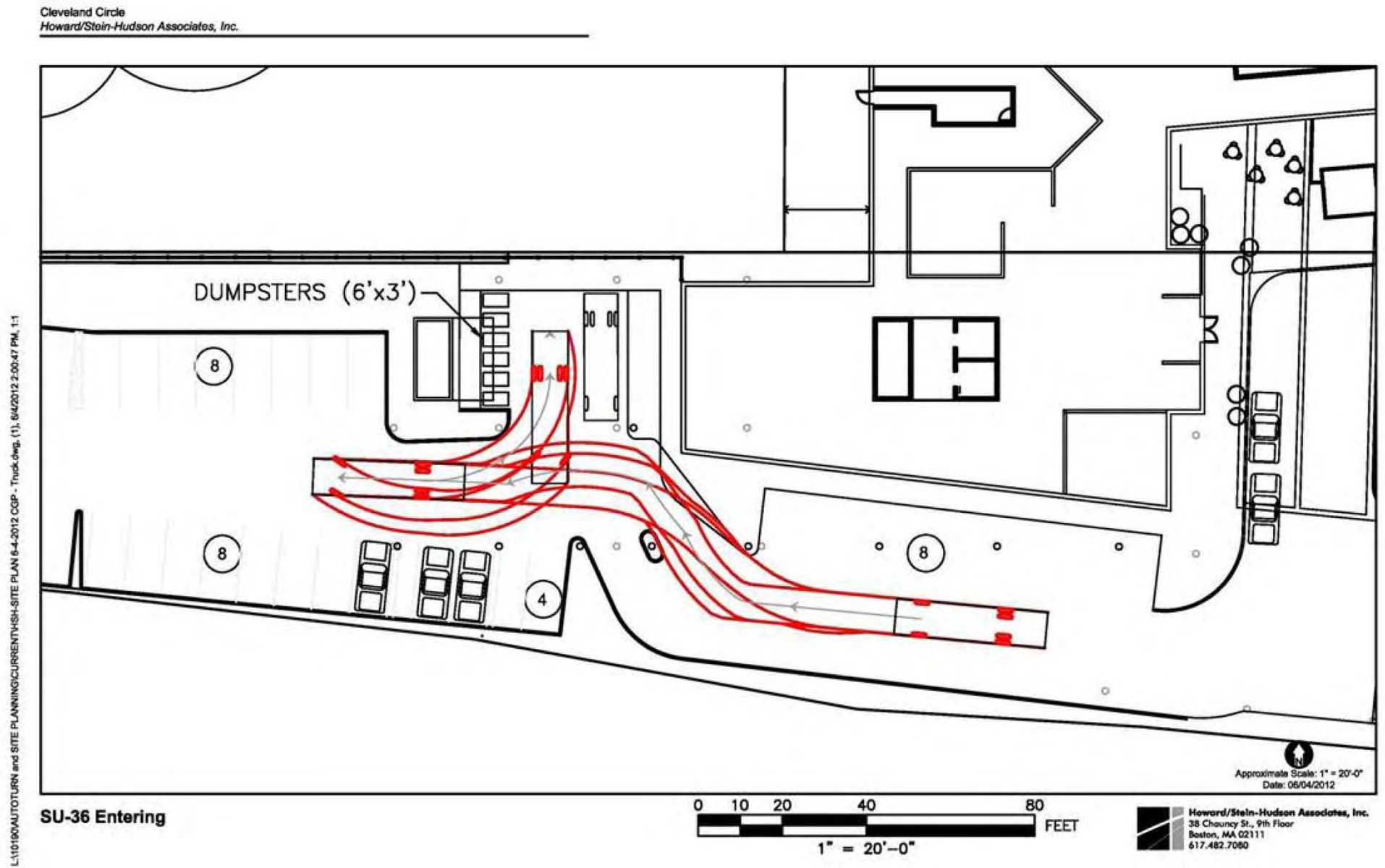
Figure 1-15

Enlarged Ground Floor Plan



375-399 Chestnut Hill Avenue Boston/Brookline, MA

Figure 1-16
Truck Movements



375-399 Chestnut Hill Avenue Boston/Brookline, MA

Figure 1-17
Truck Movements

Planning Criteria	Driveway Location	
	Upper Location	Central Location
Will **stop lines** at Cleveland Circle change?	Yes Stop line is moved 135 feet.	Yes Stop line is moved 10-15 feet.
Will the **vehicle queue length** increase on Chestnut Hill Avenue?	Yes Stop line is moved 135 feet Bus stop and residences may be impacted.	No Stop line is moved 10-15 feet.
Will **traffic clearance times**increase at Cleveland Circle?	Yes	No
Will a **pedestrian crosswalk** be feasible?	No Existing roadway grade plus MBTA over pass	Yes
Will **wayfinding** be centralized?	No	Yes

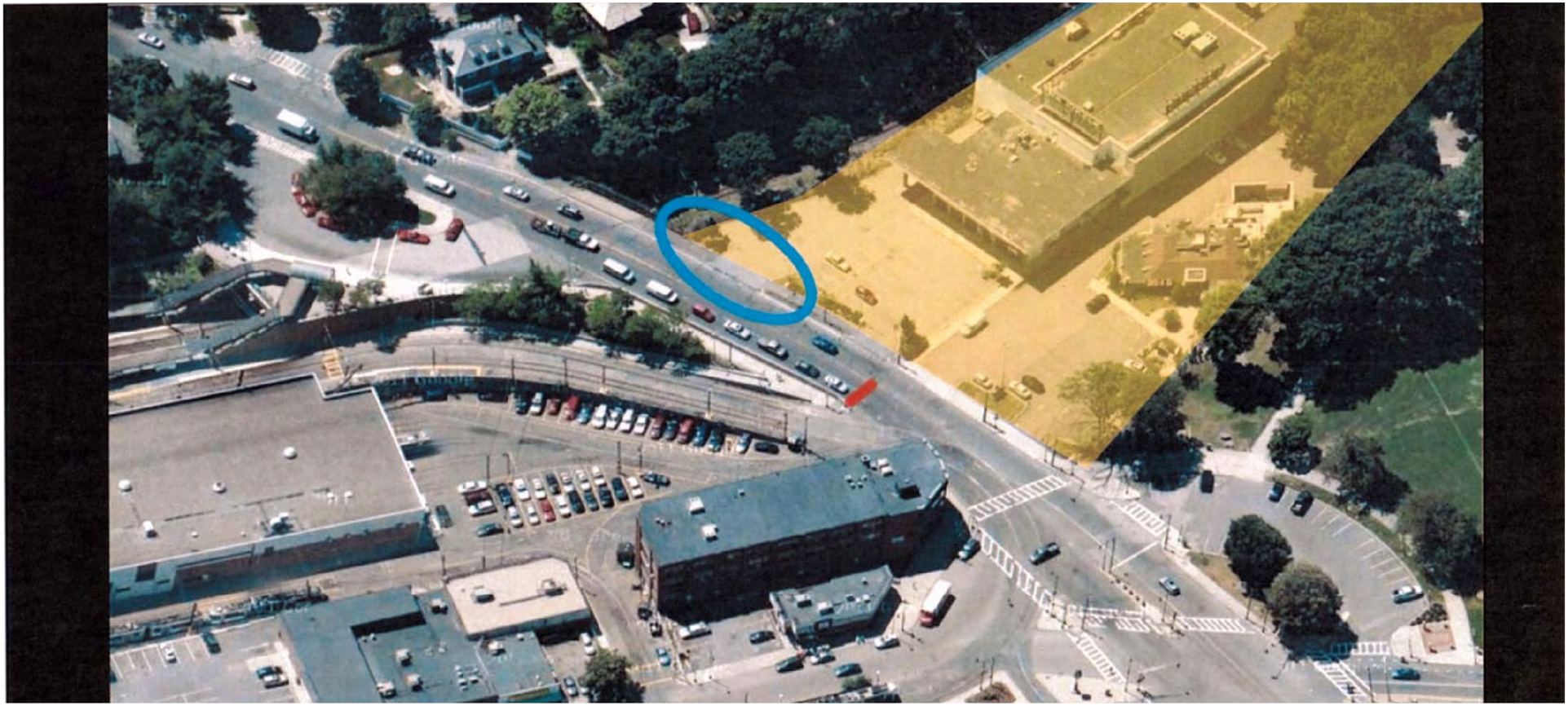


Figure 1-19

Stop Line Location

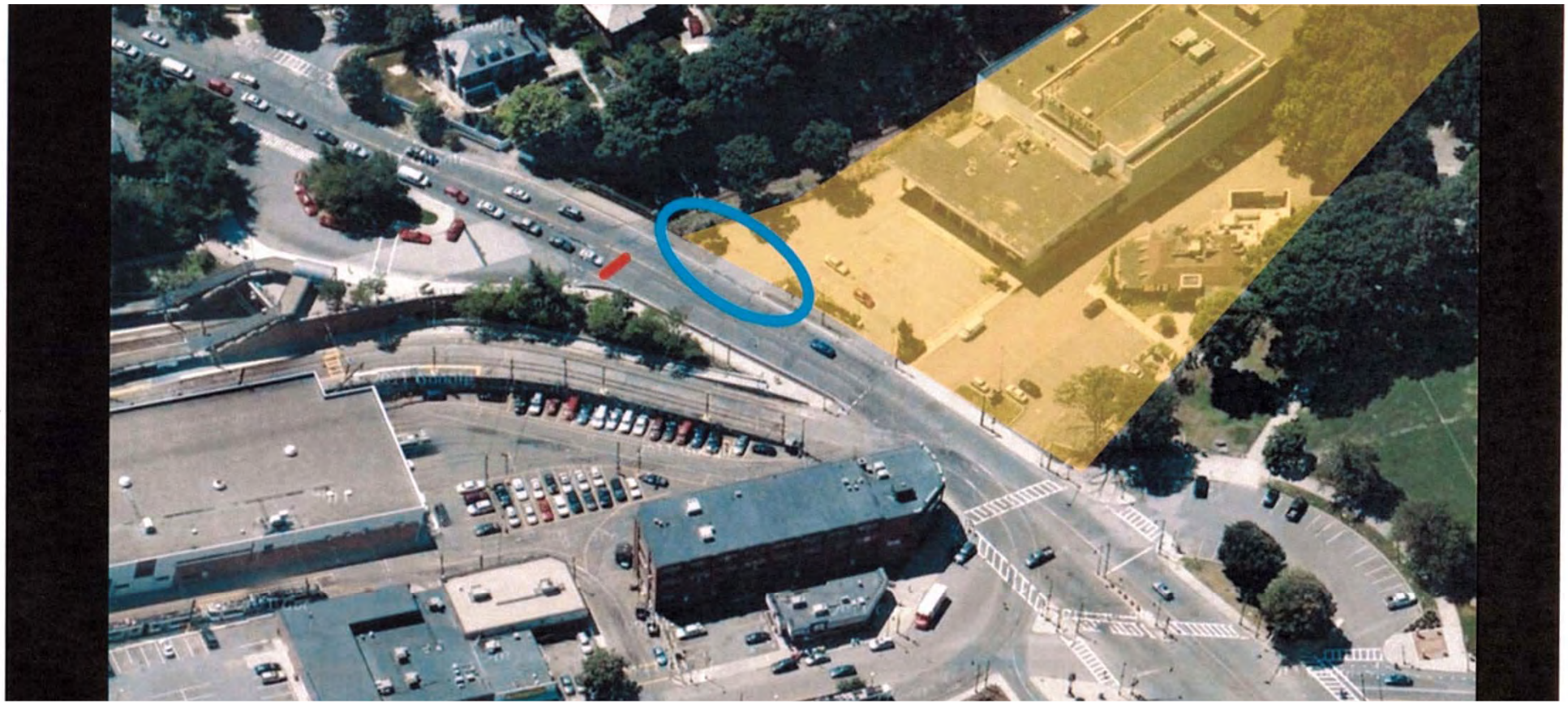
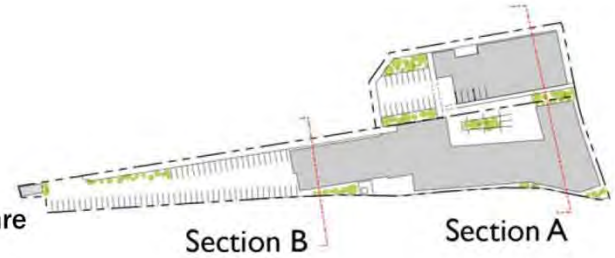


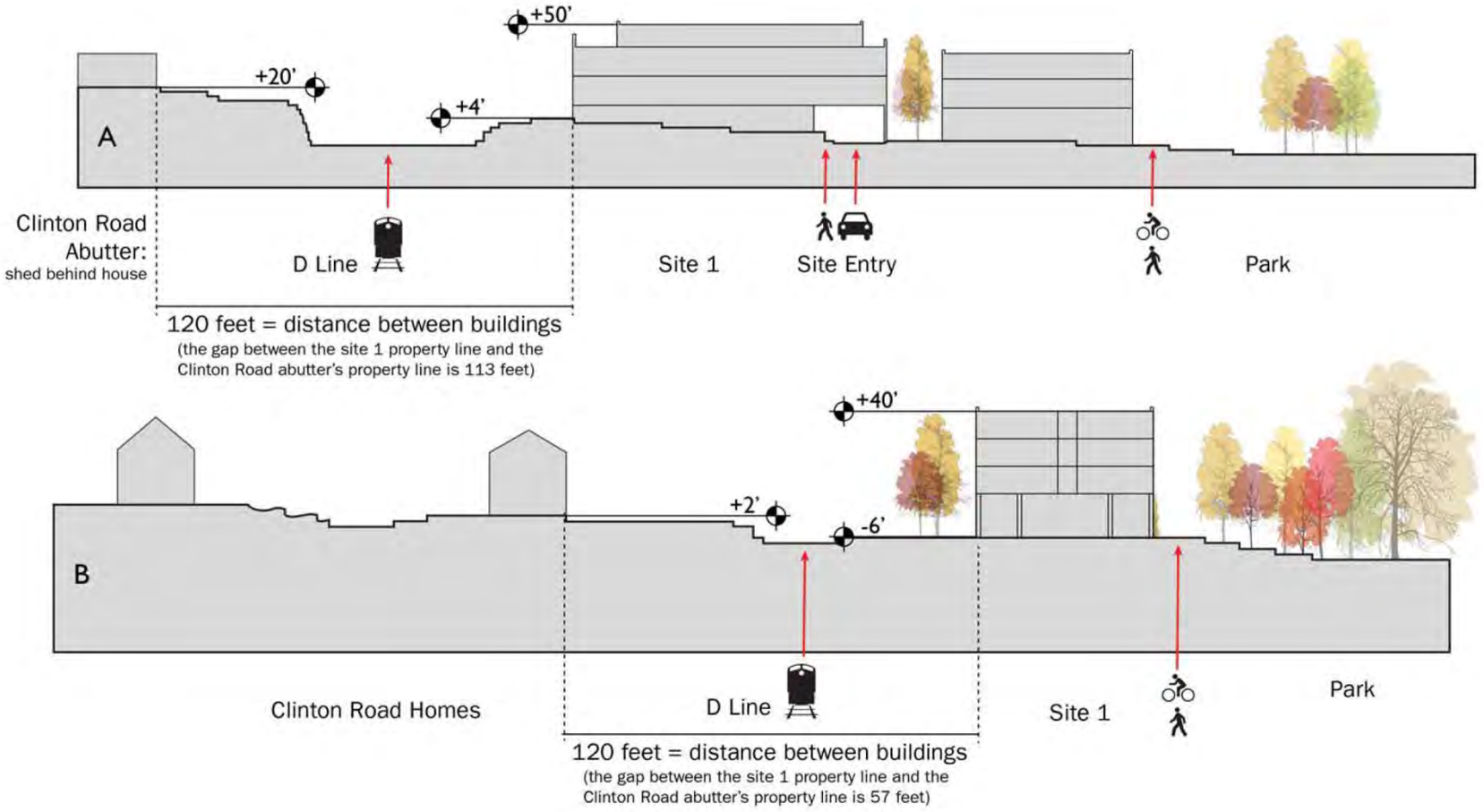
Figure 1-20

Stop Line Location

Site Sections

The top level of program is set back where possible to minimize the perceived height of the building along the street and where neighbors are closest.





Section 2.0

Transportation

2.0 TRANSPORTATION

2.1 Introduction

In accordance with the City of Boston's Transportation Access Plan Guidelines (2001), 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. Although the Boston Transportation Department (BTD) has not yet issued a formal Transportation Access Plan Scope, this report adheres to the general format requested by BTD.

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. As such, the Project is subject to review in both the City of Boston and the Town of Brookline. In addition to the Expanded PNF, a separate transportation report has been prepared and distributed to the Brookline Transportation Department. The transportation studies have been developed in cooperation with the BTD, the BRA, the Town of Brookline, and the community.

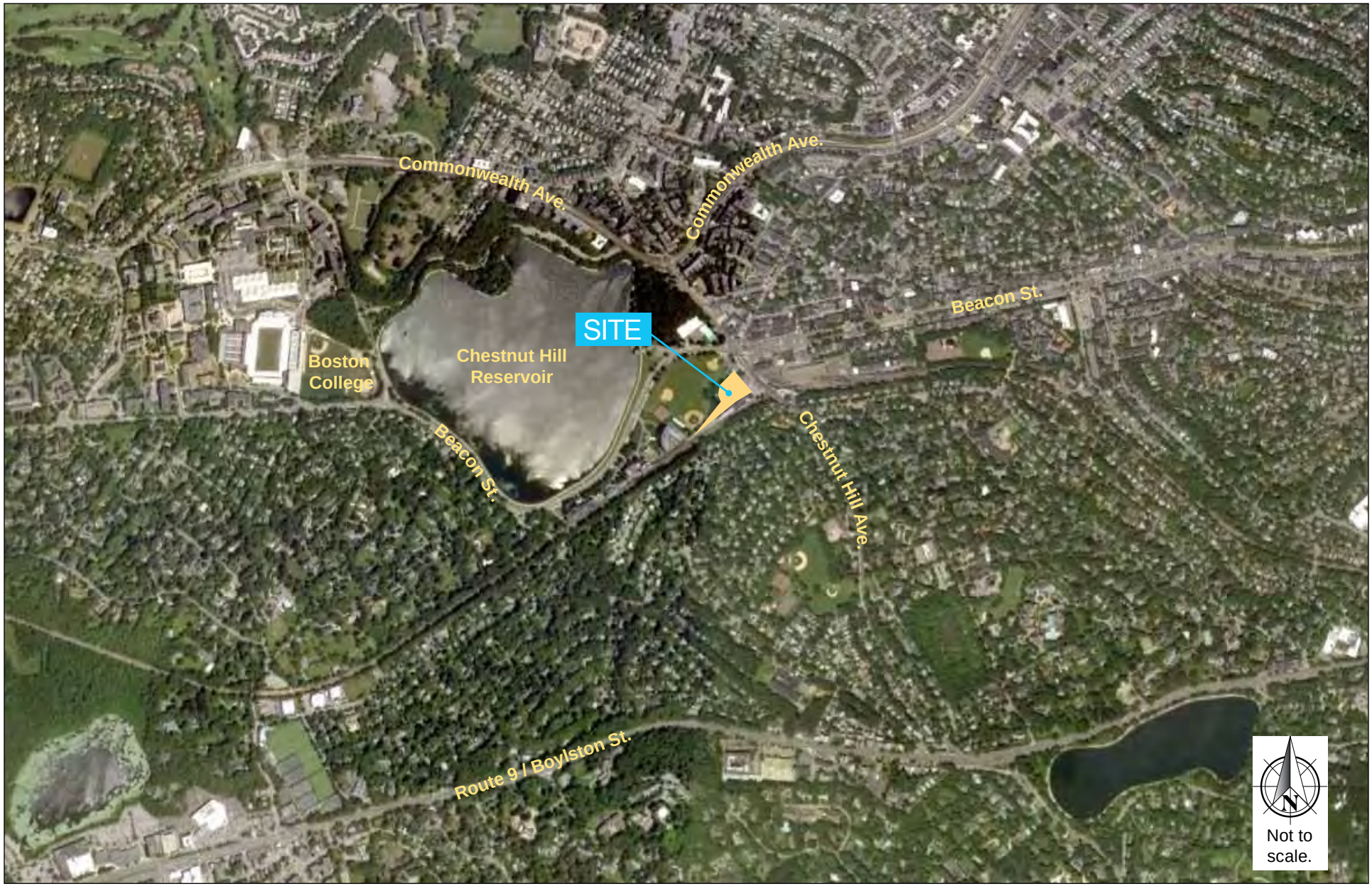
2.1.1 Project Description

The Proponent proposes to redevelop the 2.56-acre 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 236,500 square feet (sf) of hotel, residential, medical office, and retail space.

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

Table 2-1 Project Program

Land Use	Quantity*	% of Project
Hotel	181 rooms	47.4%
Residential	78-82 units	38.7%
Medical Office	19,000 sf	8.0%
Retail	7,500 sf	3.2%
Restaurant	6,700 sf	2.7%
*On-going architectural design development may cause quantities to differ slightly when used for traffic analysis. Although quantities may differ slightly, they will not cause a material change to the Transportation Study.		



Source: Google Maps

375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

Howard/Stein-Hudson Associates, Inc.
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Figure 2-1
Locus Map

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.

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 and Transportation Demand Management are presented in Section 2.4 and Section 2.5. Short-term traffic impacts associated with construction activities are included in Section 2.6.

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/Project Driveway (signalized in future)

These intersections are mapped in Figure 2-2.

2.2 Existing Transportation Conditions

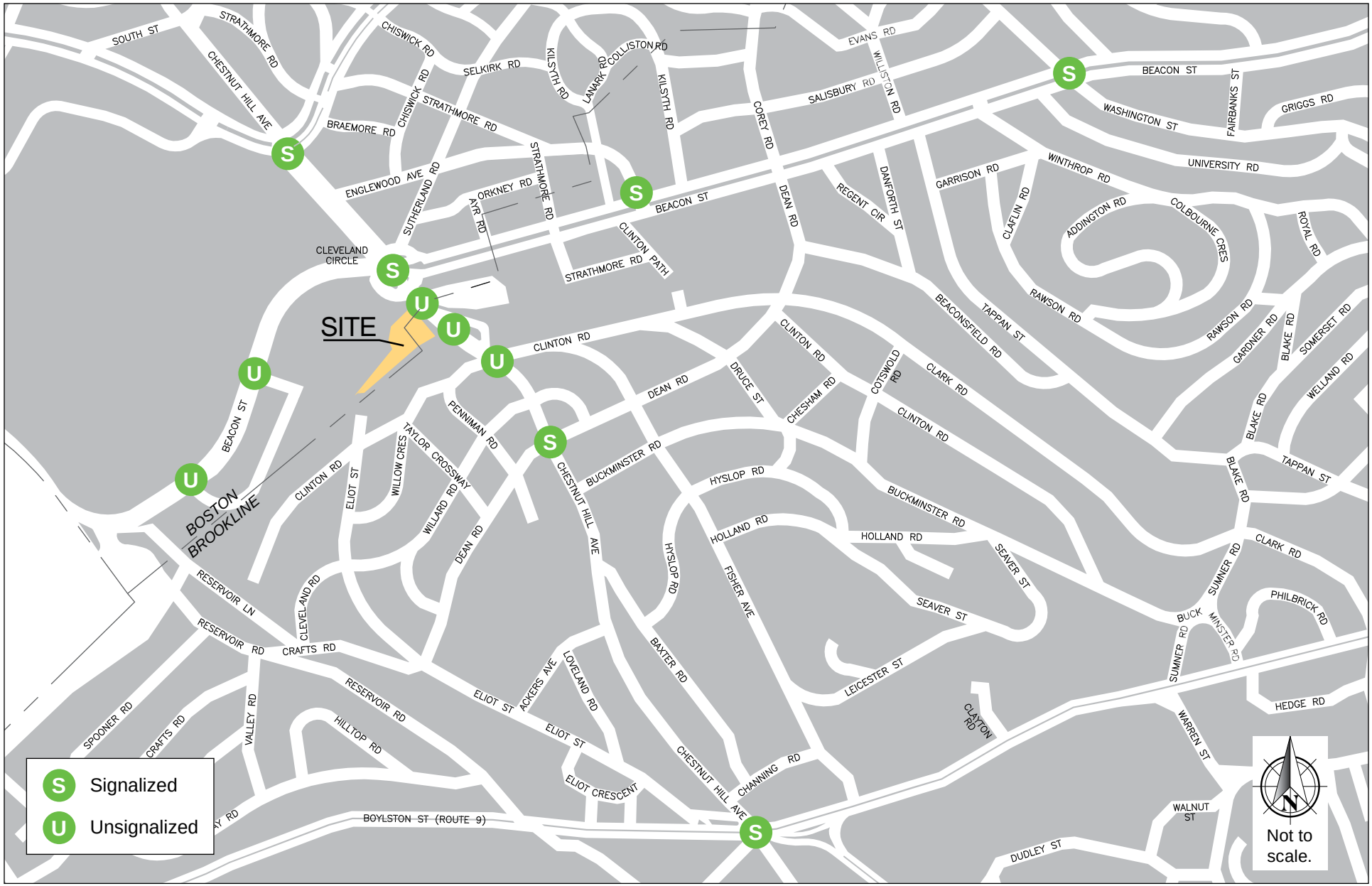
2.2.1 Existing Roadway Conditions

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 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.



375-399 Chestnut Hill Avenue Boston/Brookline, Massachusetts

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Figure 2-2
Study Area Intersections

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 to many of the 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-turning lane (however, since the left-turning movement is not protected, vehicles typically form two left-turning 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 routes 86 and 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.

2.2.3 Existing Traffic Conditions

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. 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 is a time lag between the data collection, in both 2010 and 2011, and the submission of this document in 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.

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. Complete traffic count data are provided in Appendix A.

2.2.4 Existing Traffic Operations

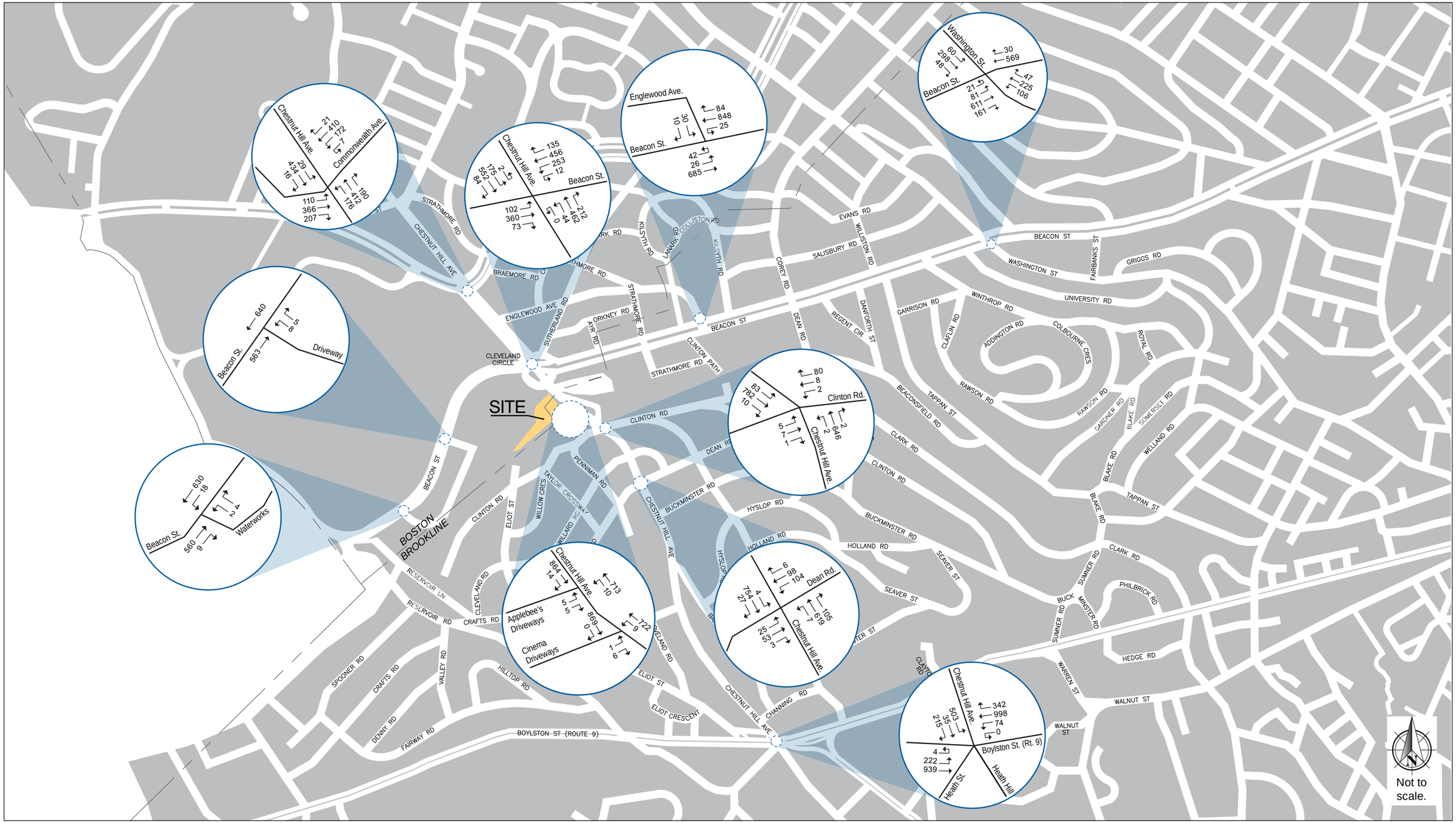
Traffic operations are determined through an analysis of intersection Level of Service (LOS). LOS and delay at the intersections were analyzed using the Synchro software developed by Trafficware. Synchro 6 was used to evaluate the effects that closely spaced intersections may have on one another. Synchro is based on the traffic operational analysis methodology



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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

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

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 level of service, 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 A.

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
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 (Continued)

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

* = 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.

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

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

= 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.

In the a.m. peak hour, two signalized intersections have an overall operation below LOS D:

- 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, 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, 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.

2.2.5 Existing Parking

The Project Site currently contains 122 parking spaces. Of these, 82 are on the cinema site and are 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.

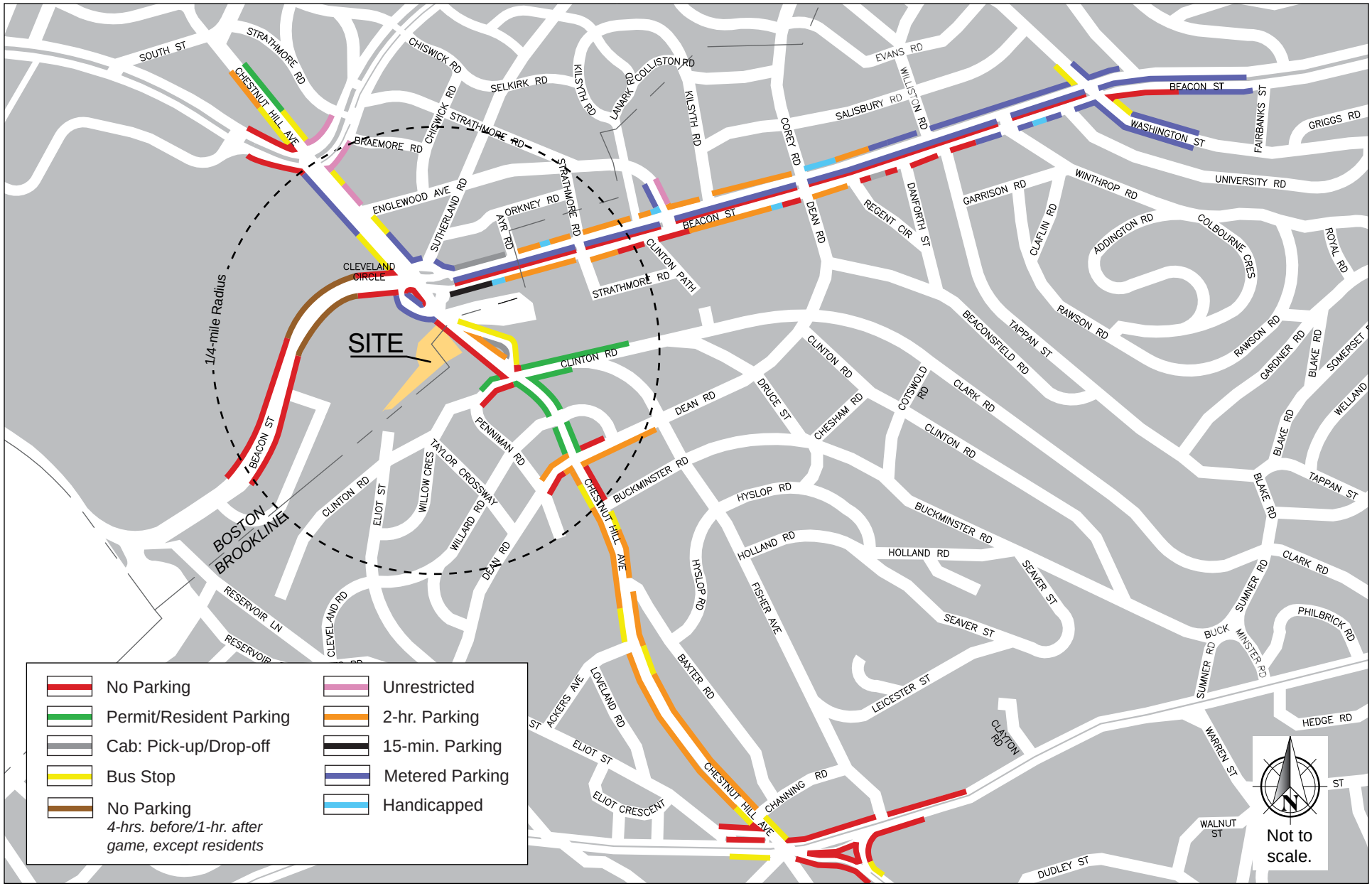
2.2.6 Existing Site Access and Circulation

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 the western end of the site were required to exit via the Waterworks driveway to Beacon Street.

2.2.7 Existing Public Transportation

The Project Site is well-served by MBTA trolley services, with three nearby Green Line stations at the Chestnut Hill Avenue stop on the Boston College (B) Branch, the Cleveland Circle stop on the Cleveland Circle (C) Branch, and the Reservoir Stop on the Riverside (D) Branch.

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 Riverside (D) Branch and Forest Hills Station in Jamaica Plain.



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

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. – 2:00 a.m. and weekends from 8:00 a.m. – 2:00 a.m.

All 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	Boston College-Government Center	6
Green Line-C	Cleveland Circle-North Station	7
Green Line-D	Riverside-Government Center	6
	Local Bus Routes	
51	Cleveland Circle–Forest Hills Station via Hancock Village	25
65	Brighton Center-Kenmore Station via Washington Street	8-15
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.

2.2.8 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 seven locations with a combined total of 11 vehicles available within ¼ mile of the Project Site. Three additional locations, with six vehicles are located about ½ mile east on Beacon Street, near Washington Square.



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Figure 2-6
Public Transportation in the Study Area



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Figure 2-7
Car Sharing Locations

Table 2-6 Car Sharing Locations

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

2.2.9 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; 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.

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



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



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

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.

The Town of Brookline has identified two nearby residential developments to be included in future background 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.

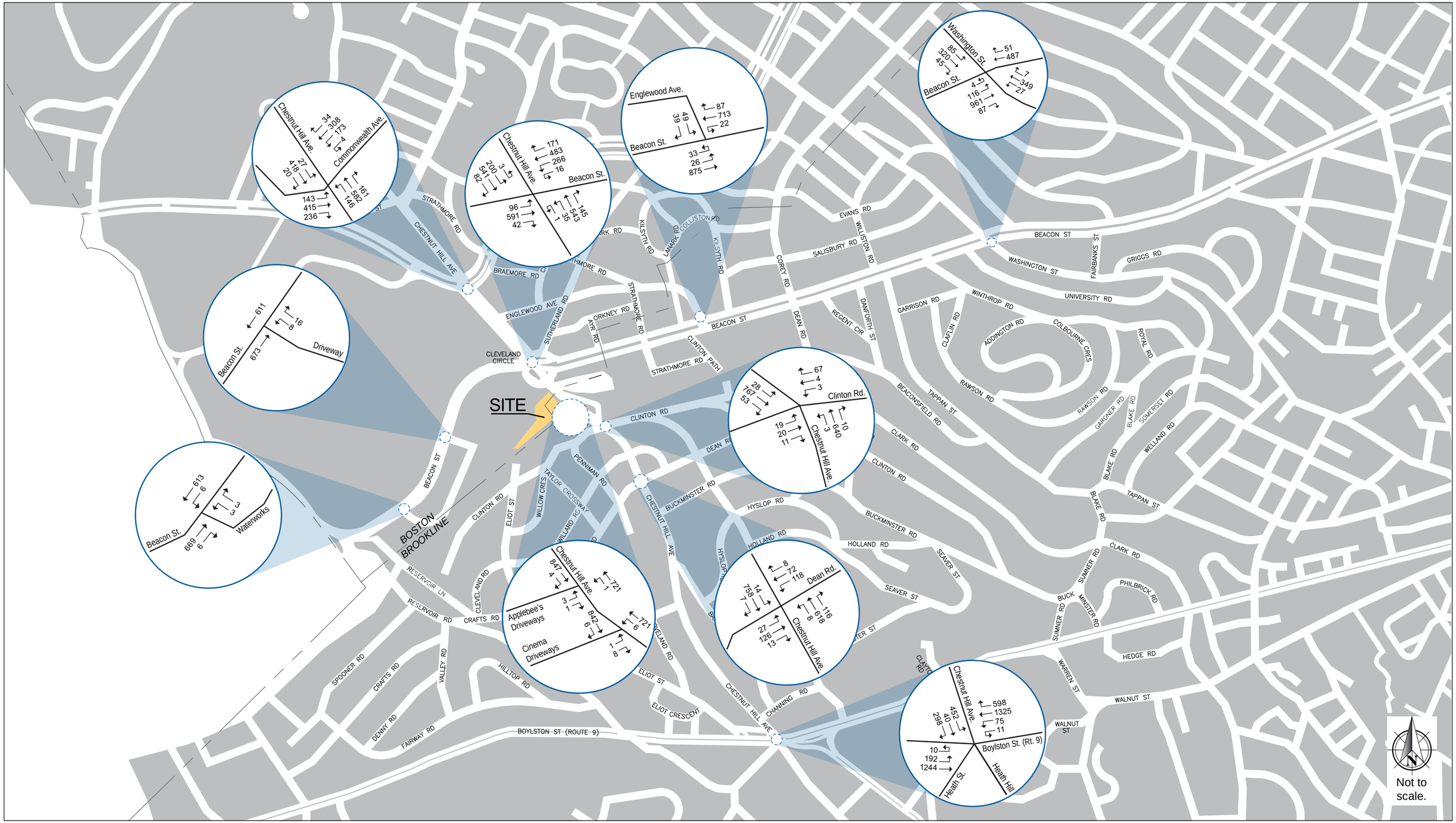
Because each of these development are residential in nature and will generate only a minor number of peak hour trips, the new vehicle trips associated with these developments are assumed to be integrated into the background growth rate.

2.3.1.2 No-Build Conditions Traffic Operations

The 2017 No-Build analysis uses the methodology described under Existing Conditions. No-Build traffic volumes are shown in Figures 2-10 and 2-11, for the a.m. and p.m. peak hours, respectively.

The resulting intersection operations are shown in Tables 2-7 and 2-8. The tables show level of service, 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 A.


Chestnut Hill Ave.
Commonwealth Ave.
Beacon St.
Englewood Ave.
Washington St.
Driveway
Clinton Rd.
Waterworks
Applebee's Driveways
Cinema Driveways
Dean Rd.
Health St.
Health Hill
Boylston St. (Rt. 9)
SITE
CLEVELAND CIRCLE
BOSTON
BROOKLINE
BEACON ST
WASHINGTON ST
UNIVERSITY RD
GRIGGS RD
FAIRBANKS ST
EVANS RD
SALISBURY RD
WILLISTON RD
COREY RD
KILSYTH RD
LAWRENCE RD
COLLISTON RD
GARRISON RD
WINTHROP RD
CLAFLIN RD
ADDINGTON RD
COLBOURNE CRES
ROYAL RD
RAWSON RD
GARDINER RD
BLAKE RD
SOMERSET RD
WELLAND RD
TAPPAN ST
BEACONSFIELD RD
CLARK RD
CLINTON RD
HYSLOP RD
BUCKMINSTER RD
HOLLAND RD
SEAVER ST
SUMNER RD
BUCK MINSTER RD
PHILBRICK RD
HEDGE RD
WARREN ST
WALNUT ST
CHANNING RD
CHESTNUT HILL AVE
ELIOT ST
ELIOT CRESCENT
HILLTOP RD
VALLEY RD
SPOONER RD
CRAFTS RD
DENNY RD
FAIRWAY RD
BOYLSTON ST (ROUTE 9)
RESERVOIR RD
RESERVOIR LN
CLEVELAND RD
CRAFTS RD
BEACON ST
CLINTON RD
ELIOT ST
WILLOW CRES
TAYLOR CROSSWAY
PENNIMAN RD
WILLARD RD
CHESTNUT HILL AVE
BUCKMINSTER RD
HYSLOP RD
DEAN RD
CLINTON RD
CLARK RD
TAPPAN ST
BLAKE RD
WELLAND RD
SOMERSET RD
GARDINER RD
RAWSON RD
TAPPAN ST
BEACONSFIELD RD
CLARK RD
CLINTON RD
BLAKE RD
SUMNER RD
BUCK MINSTER RD
PHILBRICK RD
HEDGE RD
WARREN ST
WALNUT ST
WALNUT ST
CHANNING RD
CHESTNUT HILL AVE
ELIOT ST
ELIOT CRESCENT
HILLTOP RD
VALLEY RD
SPOONER RD
CRAFTS RD
DENNY RD
FAIRWAY RD
BOYLSTON ST (ROUTE 9)
RESERVOIR RD
RESERVOIR LN
CLEVELAND RD
CRAFTS RD
BEACON ST
CLINTON RD
ELIOT ST
WILLOW CRES
TAYLOR CROSSWAY
PENNIMAN RD
WILLARD RD
CHESTNUT HILL AVE
BUCKMINSTER RD
HYSLOP RD
DEAN RD
CLINTON RD
CLARK RD
TAPPAN ST
BLAKE RD
WELLAND RD
SOMERSET RD
GARDINER RD
RAWSON RD
TAPPAN ST
BEACONSFIELD RD
CLARK RD
CLINTON RD
BLAKE RD
SUMNER RD
BUCK MINSTER RD
PHILBRICK RD
HEDGE RD
WARREN



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Figure 2-11
No-Build Conditions (2017) Turning Movement Counts, p.m. Peak Hour

Table 2-7 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**	**70.4**		
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	27.4	0.66	124
Commonwealth WB thru | thru/right	C	25.4	0.31	141
Chestnut NB left	D	53.0	0.59	m137
Chestnut NB thru | thru/right	F	>80.0	>1.00	m#682
Chestnut SB left/thru | thru	F	>80.0	>1.00	#352
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	#490
Beacon WB U-turn/left	E	58.6	0.81	#205
Beacon WB thru | thru	D	51.1	0.91	#319
Beacon WB right/hard right	C	28.5	0.33	180
Chestnut NB left/thru | thru	F	>80.0	>1.00	#446
Chestnut NB right	A	0.1	0.12	m0
Chestnut SB left/thru | thru/right	F	>80.0	>1.00	m#525
Chestnut Hill Avenue/Dean Road	**D**	**42.0**		
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	#493
Chestnut NB right	A	2.9	0.14	29
Chestnut SB left/thru/right	E	72.4	>1.00	#842
Chestnut Hill Avenue/Boylston Street	**D**	**45.0**		
Boylston EB U-turn/left	E	70.7	0.76	#321
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	#708
Chestnut SB thru	D	41.3	0.14	58
Chestnut SB right	A	9.5	0.50	98

Table 2-7 No-Build (2017) Level of Service Summary, a.m. Peak Hour (Continued)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Edgewood Avenue	**A**	**9.9**		
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	18.7	0.10	m6
Beacon WB thru | thru/right	A	5.3	0.40	m84
Englewood SB left/right	C	26.0	0.36	67
Beacon Street/Washington Street	C	27.5		
Beacon EB U-turn/left	D	45.3	0.49	109
Beacon EB thru | thru/right	B	11.4	0.63	127
Beacon WB thru | thru/right	C	34.8	0.75	223
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	2.9	0.09	8
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	21.7	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	0.41	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 worsening in LOS from Existing Conditions that bring operations to LOS E or LOS F.

Table 2-8 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**	**67.0**		
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	48.2	0.87	#171
Commonwealth WB thru | thru/right	C	22.1	0.31	160
Chestnut NB left	E	57.2	0.76	164
Chestnut NB thru | thru/right	F	>80.0	>1.00	#808
Chestnut SB left/thru | thru	F	>80.0	>1.00	#371
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	#196
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#521
Beacon WB U-turn/left	F	>80.0	>1.00	#239
Beacon WB thru | thru	F	>80.0	>1.00	#464
Beacon WB right/hard right	D	38.3	0.41	177
Chestnut NB left/thru | thru	C	27.9	0.78	337
Chestnut NB right	A	0.2	0.15	0
Chestnut SB left/thru | thru/right	D	42.9	0.90	#395
Chestnut Hill Avenue/Dean Road	**C**	**24.4**		
Dean EB left/thru/right	C	21.1	0.20	83
Dean WB left/thru/right	C	29.4	0.59	188
Chestnut NB left/thru	C	21.4	0.75	#543
Chestnut NB right	A	3.4	0.15	26
Chestnut SB left/thru/right	C	29.3	0.88	#735
Chestnut Hill Avenue/Boylston Street	**E**	**63.2**		
Boylston EB U-turn/left	F	>80.0	0.98	#351
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	#856
Chestnut SB thru	D	40.7	0.11	56
Chestnut SB right	A	6.5	0.39	64

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

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	0.37	68
Beacon EB thru | thru	A	9.0	0.33	187
Beacon WB U-turn	C	22.9	0.12	m14
Beacon WB thru | thru/right	A	5.5	0.44	m114
Englewood SB left/right	C	26.0	0.20	53
Beacon Street/Washington Street	C	23.5		
Beacon EB U-turn/left	D	52.6	0.45	120
Beacon EB thru | thru/right	A	9.0	0.49	83
Beacon WB thru | thru/right	C	24.0	0.51	237
Washington NB left	E	55.5	0.76	#140
Washington NB thru/right	C	26.3	0.55	200
Washington SB left	C	24.8	0.32	58
Washington SB thru/right	C	33.8	0.75	265
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	294
Chestnut NB left/thru/right	A	0.2	0.01	0
Chestnut SB left/thru/right	A	4.4	0.15	13
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

= 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 LOS from Existing Conditions that bring operations to LOS E or LOS F.

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

One individual move deteriorates from LOS D to LOS E during the a.m. peak hour, due to minor increases in background traffic:

- Chestnut Hill Avenue/Boylston Street, the westbound through move on Boylston Street

Two individual moves, as listed below, deteriorate from LOS D to LOS E during the p.m. peak hour, due to minor increases in background traffic:

- Commonwealth Avenue/Chestnut Hill Avenue, the northbound left on Chestnut Hill Avenue

- Beacon Street/Washington Street, the northbound left on Washington Street

2.3.2 Build Conditions

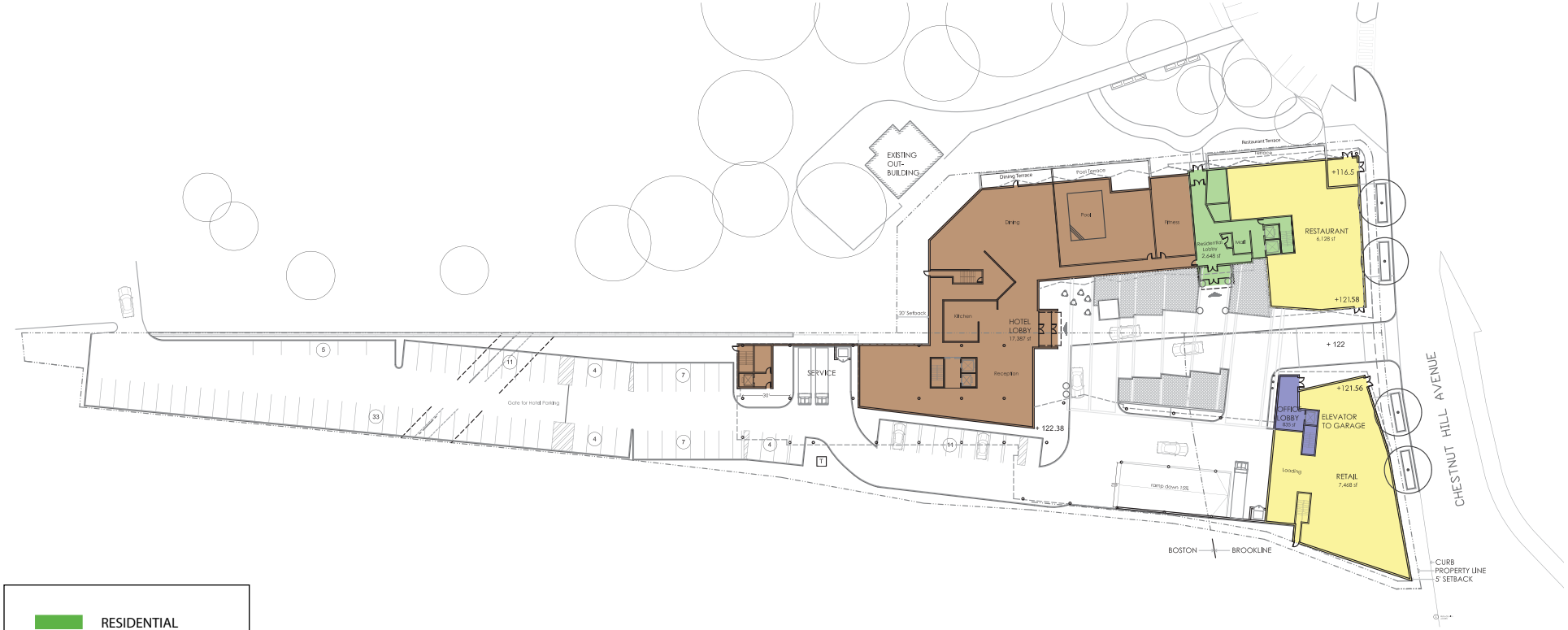
As summarized in Table 2-1, the Project will include approximately 181 hotel rooms, 78-82 residential units, 19,000 sf of medical office, 7,500 sf of retail, and 6,700 sf of restaurant. A total of approximately 228 parking spaces will be provided, with 141 underground spaces and 87 at-grade spaces. Of the 228 proposed parking spaces, 106 are net new spaces.

2.3.2.1 Site Access and Circulation

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.

The entry plaza located interior to the site will allow pick-up and drop-off activity, including taxi activity, to occur away from the public street.

Egress from the site will be available to both Chestnut Hill Avenue and Beacon Street (via Waterworks driveway), depending on where the driver has parked. The exit-only driveway to Beacon Street will be located at the western end of the site and connect directly to the Waterworks driveway. Parking management controls will be located in the Project's rear parking lot and force drivers, who are parked west of the gate, to exit via the Waterworks driveway. Approximately 60 parking spaces will be located west of the control gate. The



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Figure 2-12
Site Plan

egress to Beacon Street will be used mostly by hotel guests who have parked in the western end of the site. Parkers in the other areas will exit via the main site driveway to Chestnut Hill Avenue.

All delivery vehicles will enter and exit via the Chestnut Hill Avenue driveway.

2.3.2.2 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 Land Use Code 312 - Business Hotel. Business hotels are places of lodging aimed toward the business traveler. These hotels provide sleeping accommodations and other limited facilities, such as a breakfast buffet bar and afternoon beverage bar. Note that Land Use Code 310 for Hotel was also reviewed for this analysis. Because Land Use Code 312 yields a higher number of trips, it was chosen to be most conservative (highest impact). Calculation of the number of vehicle trips uses ITE's average rate per room for daily trips and ITE's fitted curve rate per room for the peak hours.

ITE Land Use Code 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 Land Use Code 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 fitted curve rate per 1,000 sf was used to calculate trips.

ITE Land Use Code 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 Land Use Code 814 for Specialty Retail was also reviewed for this analysis. Because Land Use Code 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 Land Use Code 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.

2.3.2.3 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.

The detailed trip generation sheets in Appendix A show the estimated pass-by trips for each time period.

2.3.2.4 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 2-9 for existing and future Project land uses.

2.3.2.5 Existing Site Trip Generation

The only active use on the site is the existing Applebee's restaurant, as the Cleveland Circle Cinema closed in 2008 and no longer generates trips.

While it is standard practice for future year analysis to subtract trips generated by existing uses prior to adding in new Project trips, 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).

Table 2-9 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

2.3.2.6 Project Trip Generation

Based on the land uses shown in Table 2-1, ITE trip generation rates, mode split data, and local vehicle occupancy rates, the new Project trips were estimated and are summarized in Table 2-10 for each time period and travel mode. While 78 units of residential apartments was utilized to estimate Project trips, there is a minimal delta of 1 trip in the am peak and no trips in the pm peak between using 78 units and using 82 units of apartments.

2.3.2.7 Trip Distribution

A vehicular trip distribution 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 2-11 and shown on the local roadway network in Figure 2-13.

Table 2-10 Project Trips by Land Use and Travel Mode

Land Use	Direction	Vehicle Trips	Transit Trips	Walk/Bicycle Trips
Daily				
Hotel	In	481	78	466
	Out	481	78	466
Residential	In	176	62	72
	Out	176	62	72
Medical Office	In	214	30	51
	Out	214	30	51
Retail/Restaurant	In	221	31	184
	Out	221	31	184
Total	**In**	**1,091**	**201**	**772**
	Out	**1,091**	**201**	**772**
a.m. peak hour				
Hotel	In	29	5	44
	Out	20	7	20
Residential	In	7	3	4
	Out	16	10	7
Medical Office	In	24	4	9
	Out	6	2	2
Retail/Restaurant	In	3	0	4
	Out	2	0	2
Total	**In**	**62**	**13**	**61**
	Out	**45**	**20**	**31**
p.m. peak hour				
Hotel	In	35	12	34
	Out	38	5	42
Residential	In	19	12	8
	Out	12	5	8
Medical Office	In	12	4	3
	Out	33	6	12
Retail/Restaurant	In	17	3	15
	Out	16	2	21
Total	**In**	**83**	**33**	**60**
	Out	**89**	**19**	**83**



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Figure 2-13
Vehicle Trip Entering/Exiting Distribution

Table 2-11 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.

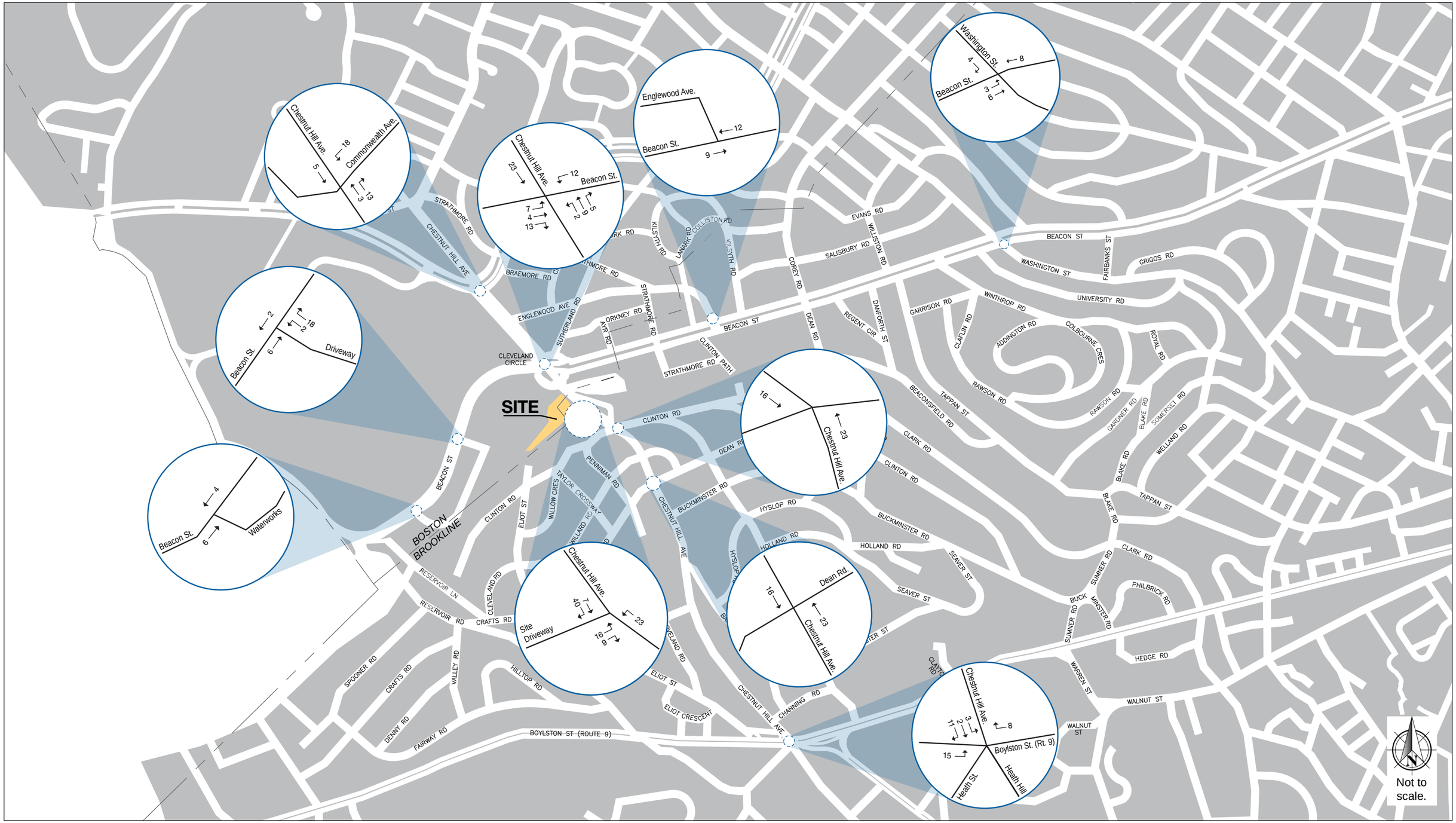
2.3.2.8 Build Conditions Traffic Operations

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 level of service analysis for Build Conditions is shown in Tables 2-12 and 2-13. The tables show level of service, average delay, volume to capacity ratio, and 95th percentile queue length (feet) for the overall intersection and each approach.

It should be noted that the site driveway intersection is analyzed separately from the intersection of Beacon Street and Chestnut Hill Avenue (Cleveland Circle) because the future site driveway will be added to the intersection clustered with the intersection of Beacon Street and Chestnut Hill Avenue, just south of Cleveland Circle. This adjacent intersection is currently clustered with Cleveland Circle to provide service to MBTA Trolleys entering/existing the MBTA Reservoir Station/storage facility. In the future, this intersection will continue to provide protected service to the MBTA trolleys.

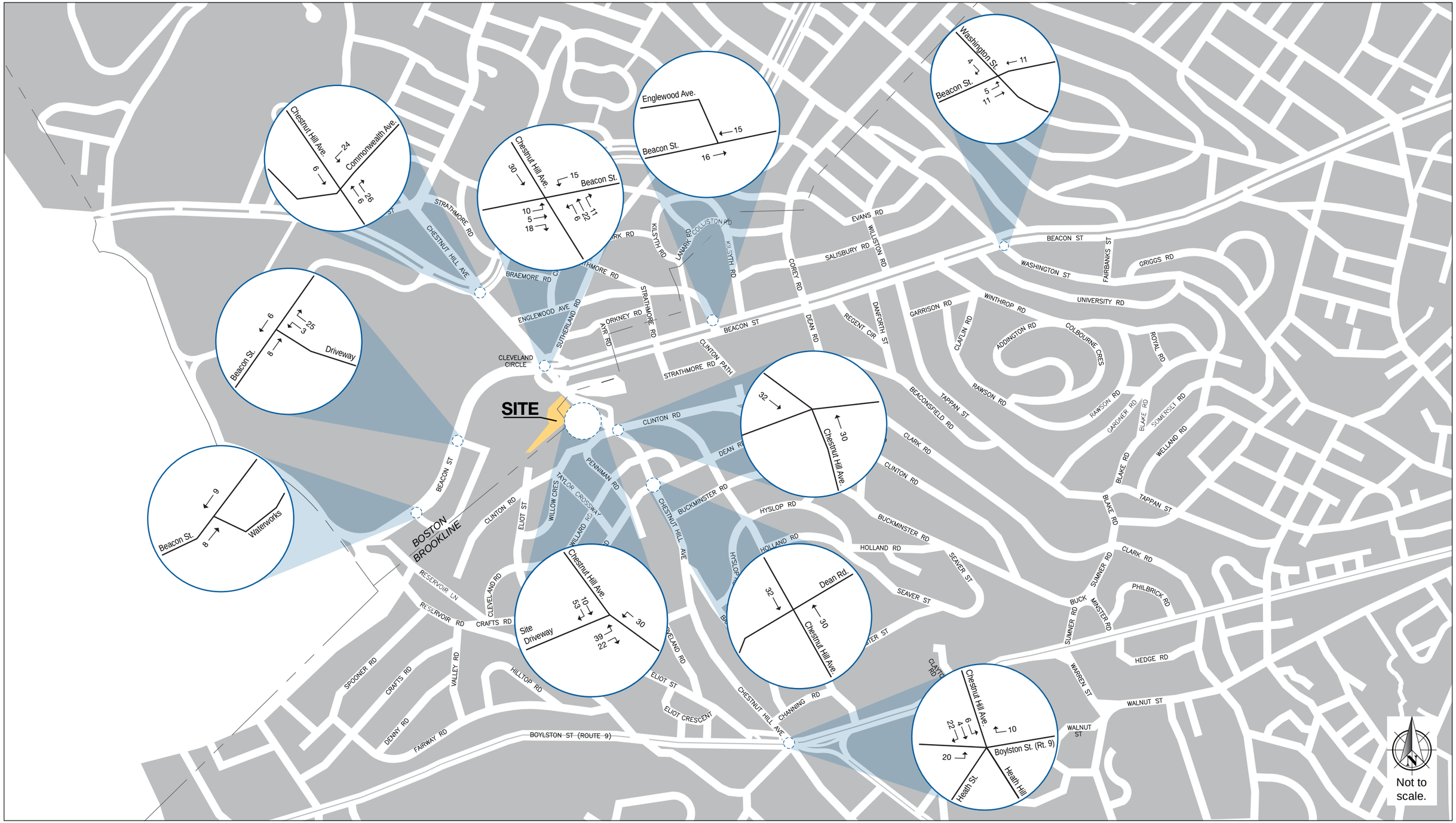
Complete Synchro reports are provided in Appendix A.



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



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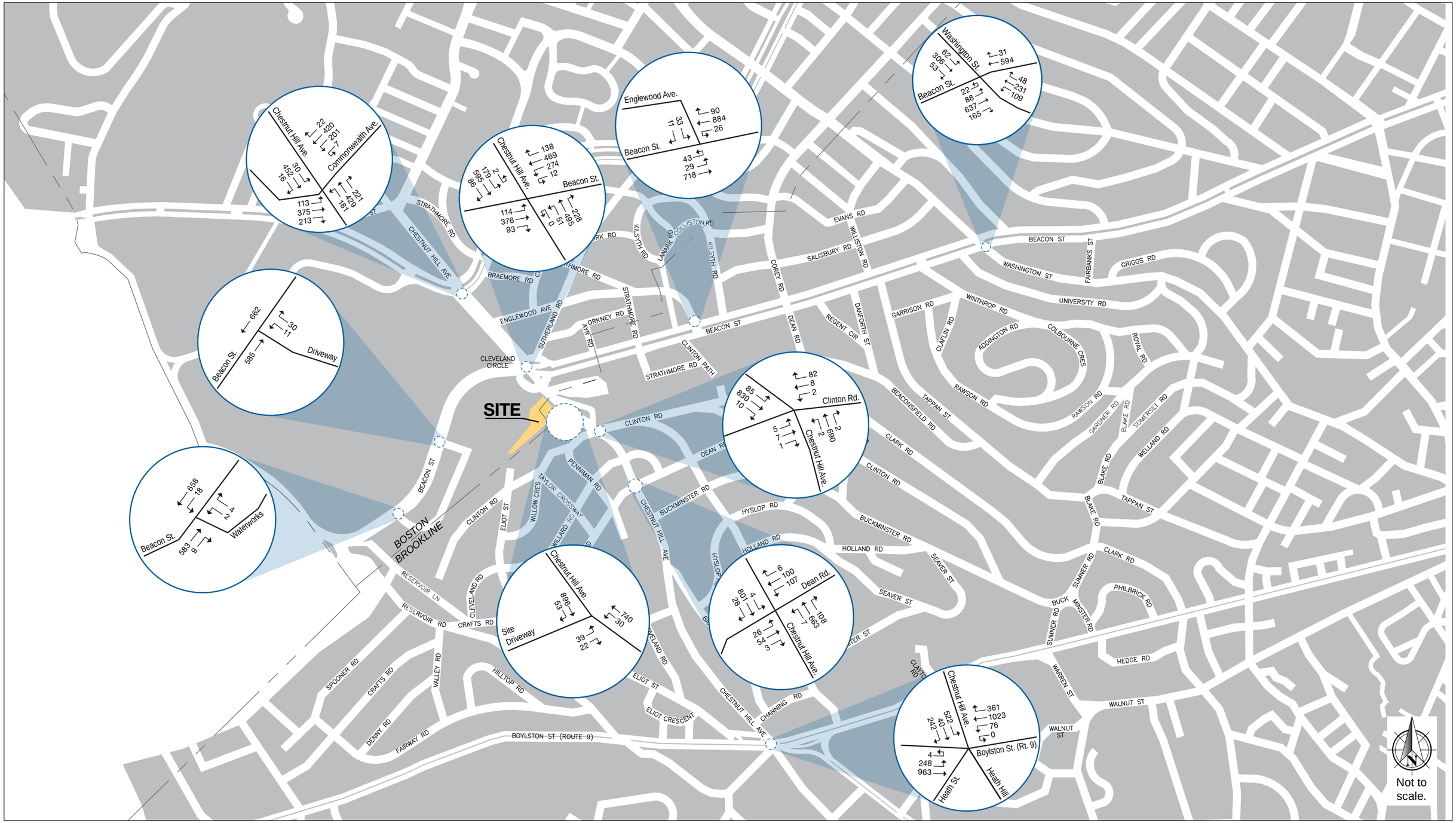
Figure 2-15
Project-generated Vehicle Trips, p.m. Peak Hour



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Figure 2-16
Build Conditions (2017) Turning Movement Counts, a.m. Peak Hour



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Figure 2-17
Build Conditions (2017) Turning Movement Counts, p.m. Peak Hour

Table 2-12 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**	**73.6**		
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	31.7	0.72	#151
Commonwealth WB thru | thru/right	C	25.4	0.31	141
Chestnut NB left	D	52.3	0.59	m123
Chestnut NB thru | thru/right	F	>80.0	>1.00	m#620
Chestnut SB left/thru | thru	F	>80.0	>1.00	#357
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	#245
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#508
Beacon WB U-turn/left	E	72.5	0.83	#216
Beacon WB thru | thru	E	58.1	0.87	#303
Beacon WB right/hard right	C	26.5	0.31	175
Chestnut NB left/thru | thru	F	>80.0	>1.00	m#395
Chestnut NB right	A	0.1	0.12	m0
Chestnut SB left/thru | thru/right	F	>80.0	>1.00	m#454
Chestnut Hill Avenue/Dean Road	**D**	**54.1**		
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	20.3	0.72	#555
Chestnut NB right	A	3.1	0.14	31
Chestnut SB left/thru/right	F	>80.0	>1.00	#885
Chestnut Hill Avenue/Boylston Street	**D**	**45.5**		
Boylston EB U-turn/left	E	75.4	0.81	#355
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	4.0	0.46	m135
Chestnut SB left	F	>80.0	>1.00	#714
Chestnut SB thru	D	41.4	0.15	61
Chestnut SB right	B	10.5	0.51	111
Beacon Street/Edgewood Avenue	**A**	**10.1**		
Beacon EB U-turn/left	D	37.6	0.34	77
Beacon EB thru | thru	A	9.6	0.39	237
Beacon WB U-turn	B	19.4	0.10	m7
Beacon WB thru | thru/right	A	5.9	0.41	m98
Englewood SB left/right	C	26.0	0.36	67

Table 2-12 Build Conditions (2017) Level of Service Summary, a.m. Peak Hour (Continued)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Washington Street	C	27.9		
Beacon EB U-turn/left	D	44.5	0.50	110
Beacon EB thru | thru/right	B	11.6	0.64	129
Beacon WB thru | thru/right	D	36.2	0.77	#233
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
Chestnut Hill Avenue/Site Driveway	**F**	**>80.0**		
Site EB left/right	C	23.4	0.06	33
Chestnut NB left/thru | thru	F	>80.0	0.97	#467
Chestnut SB thru | thru/right	F	>80.0	0.43	m97
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	149
Clinton WB left/thru/right	F	>50.0	>1.00	96
Chestnut NB left/thru/right	A	0.5	0.01	1
Chestnut SB left/thru/right	A	3.2	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	21.0	0.28	28
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 LOS from No-Build conditions that bring operations into LOS E or LOS F.

Table 2-13 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**	**76.5**		
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	E	71.2	0.98	#222
Commonwealth WB thru | thru/right	C	22.1	0.31	160
Chestnut NB left	E	58.2	0.77	#164
Chestnut NB thru | thru/right	F	>80.0	>1.00	#873
Chestnut SB left/thru | thru	F	>80.0	>1.00	#377
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	#212
Beacon EB left/thru | thru/right	F	>80.0	>1.00	#568
Beacon WB U-turn/left	F	>80.0	>1.00	#259
Beacon WB thru | thru	F	>80.0	>1.00	#472
Beacon WB right/hard right	D	38.3	0.41	177
Chestnut NB left/thru | thru	E	68.6	0.86	#377
Chestnut NB right	A	0.1	0.16	m0
Chestnut SB left/thru | thru/right	D	48.8	0.94	#442
Chestnut Hill Avenue/Dean Road	**C**	**31.7**		
Dean EB left/thru/right	C	21.1	0.20	83
Dean WB left/thru/right	C	29.4	0.59	188
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	45.9	0.98	#814
Chestnut Hill Avenue/Boylston Street	**E**	**65.8**		
Boylston EB U-turn/left	F	>80.0	>1.00	#399
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	#868
Chestnut SB thru	D	40.9	0.12	60
Chestnut SB right	A	6.5	0.41	67

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

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	68
Beacon EB thru | thru	A	8.9	0.33	190
Beacon WB U-turn	C	21.7	0.12	m16
Beacon WB thru | thru/right	A	5.9	0.45	125
Englewood SB left/right	C	26.0	0.20	53
Beacon Street/Washington Street	**C**	**24.1**		
Beacon EB U-turn/left	D	52.4	0.46	124
Beacon EB thru | thru/right	A	9.2	0.50	86
Beacon WB thru | thru/right	C	26.0	0.57	242
Washington NB left	E	57.2	0.77	#142
Washington NB thru/right	C	26.0	0.55	200
Washington SB left	C	24.6	0.32	58
Washington SB thru/right	C	33.8	0.76	268
Chestnut Hill Avenue/Site Driveway	**E**	**77.9**		
Site EB left/right	D	45.1	0.25	#130
Chestnut NB left/thru | thru	D	47.4	0.74	395
Chestnut SB thru | thru/right	F	>80.0	0.41	m162
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	97
Clinton WB left/thru/right	F	>50.0	0.63	92
Chestnut NB left/thru/right	A	0.3	0.01	1
Chestnut SB left/thru/right	A	5.0	0.16	14
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	17.7	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	18.8	0.20	18
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, all locations continue to operate at the same overall level of service as under No-Build Conditions.

Two individual moves deteriorate into LOS E or LOS F during the a.m. peak hour:

- Beacon Street/Chestnut Hill Avenue (Cleveland Circle), the westbound Beacon Street through move deteriorates from LOS D to LOS E.
- Chestnut Hill Avenue/Dean Road, the southbound Chestnut Hill approach deteriorates from LOS E to LOS F.

Two 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.
- Beacon Street/Chestnut Hill Avenue (Cleveland Circle) the northbound Chestnut Hill Avenue left/thru lanes deteriorate from LOS D to LOS E.

At the new signalized location of Chestnut Hill Avenue/Site Driveway, the Site Driveway approach will operate at LOS C during the a.m. peak hour and LOS D during the p.m. peak. 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 impact of the new Project trips is minimal to the study intersections, the Proponent has developed several signal operation improvements in the study area, as presented in Section 2.4. The Proponent will review these recommendations with the BTD and the Town of Brookline's Transportation Department.

2.3.2.9 Proposed Parking

On-site parking will include approximately 228 spaces (106 net new spaces), with 87 at-grade spaces and 141 underground spaces and will meet the parking demands generated by the Project.

Table 2-14 presents the recommended parking ratios, as obtained from BTD, and the associated estimate of spaces. The Project's planned parking supply 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 2-14 Project Parking Ratios and Parking Supply

Land Use	BTD Parking Ratio	Parking Supply based on BTD Ratio	Project Parking Supply
Hotel 181 rooms	0.5 spaces/room	90 spaces	
Residential 78-82 units	0.75-1.25 spaces/unit	78-82 spaces	
Medical Office 19,000 sf	1.0 spaces/1,000 sf	19 spaces	
Retail/Restaurant 14,200 sf	0.75 spaces/1,000 sf	11 spaces	
Total		198-202 spaces	228 Spaces

2.3.2.10 Future Public Transportation

As summarized in Table 2-10, the number of net new daily transit trips associated with the Project Site will increase by 364 trips. During the a.m. peak, the Project Site will generate 31 new trips. There will be an increase of 46 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.

2.3.2.11 Pedestrian and Bicycles

As summarized in Table 2-10, the number of net new daily walk/bicycle trips will increase by 1,480 trips. During the a.m. and p.m. peak hours, the increase will be 89 trips and 135 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.

2.3.2.12 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 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.

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

Delivery trip estimates were based on National Cooperative Highway Research Program (NCHRP) data for Boston[1]. 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 as well as rare delivery of possessions for residential relocation.

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.

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

Table 2-15 Delivery Activity by Land Use

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

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

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.

Note that trash trips are not included in the number of daily deliveries. Trash trips generally occur between 5:00 a.m. and 7:00 a.m. and do not coincide with the regular delivery activity at the loading docks.

2.4 Transportation Mitigation

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.

2.4.1 Recommendations

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 Proponent will provide bicycle amenities for the Project's residents, guests, tenants, and visitors to encourage bicycle use as discussed under travel demand measures in the next section.

While the traffic impacts associated with the new Project trips are minimal, the Proponent has developed several signal operation recommendations that could improve general traffic operations in the study area. The Proponent will review these recommendations, listed below, with the BTD and the Town of Brookline's Transportation Department.

Commonwealth Avenue/Chestnut Hill Avenue

- Modification to split times

Beacon Street/Chestnut Hill Avenue (Cleveland Circle)

- Incorporate the new Project Site driveway into the Cleveland Circle signal operation.

- On the eastbound Beacon Street approach, there is currently one left/through travel lane and one through/right travel lane. Although there is not a marked lane, left-turning vehicles today often create an informal left turn lane, while vehicles traveling through/right have enough width to proceed in two travel lanes. The study

team recommends that a 200-foot exclusive left turn storage bay be designated on this approach. This lane use change will require some roadway geometry modifications including removal of the existing median in the eastbound approach.

- On the westbound Beacon Street approach, there are currently four approach lanes used as one U-turn/left lane, two through lanes, and one right turn lane. The through lane adjacent to the U-turn/left turn lane operates as a shared left-turn/ through lane. Due to recent geometric changes to Beacon Street west of Cleveland Circle, there is only one receiving lane for westbound through vehicles. Due to this geometric issue and the high volumes of left turns at the approach, the study team recommends converting the through/left lane to an exclusive left turn lane.

- On the northbound Chestnut Hill Avenue approach, there are currently two wide approach lanes used as one left/through lane, one through land 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.

- The Project Site driveway will be signalized and tied into the existing signal operations at this intersection. It is proposed that the crosswalk located north of the existing Applebee's driveway be replaced with a new ADA compliant crosswalk at the site driveway. At the eastern side of Chestnut Hill Avenue, this crosswalk will tie into existing sidewalk at the entrance walkway to the MBTA's Reservoir Station.

- The exclusive pedestrian phase and 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

- Modifications to signal phase time

Chestnut Hill Avenue/Boylston Street

- Modifications to signal phase times

Beacon Street/Englewood Street

- Modification to signal phase times in a.m. peak hour.

Beacon Street/Washington Street

- Modification to signal phase times in p.m. peak hour.

2.4.2 Traffic Operations

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 described below:

- At Commonwealth Avenue/Chestnut Hill Avenue, 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 moves would improve from LOS F to LOS D. During the p.m. peak hour, the westbound Commonwealth Avenue left turn would improve from LOS E to LOS D and the northbound Chestnut Hill Avenue left turn would improve from LOS F to LOS E.

- At Beacon Street/Chestnut Hill Avenue (Cleveland Circle), while the overall intersection would continue to operate at LOS F during each peak hour, several individual approaches would improve. During the a.m. peak hour, the eastbound and westbound Beacon Street through lanes would improve from LOS F to LOS E. The westbound Beacon Street right lane would improve from LOS C to LOS B. The southbound Chestnut Hill Avenue approach would improve from LOS F to LOS D. During the p.m. peak hour, the eastbound left lane and westbound through and left approaches would improve from LOS F to LOS E, while the westbound right turn lane would improve from LOS D to LOS B.

- 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 D in the a.m. peak hour and to LOS C during the p.m. peak hour.

- At Chestnut Hill Avenue/Boylston Street, the overall operations would remain at LOS D and LOS E during the a.m. and p.m. peak hours, respectively, but 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/Washington Street, overall operations would remain at LOS C during each peak hour, but the northbound Washington Street left lane would improve from LOS E to LOS D during the p.m. peak hour.

These recommendations will be reviewed with staff at BTD and the Town of Brookline's Transportation Department.

Table 2-16 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**	**39.6**		
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	42.1	0.75	#186
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	55.0	0.98	#840
Chestnut SB left/thru | thru	D	38.0	0.85dl	245
Chestnut SB right	B	14.8	0.03	22
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**F**	**>80.0**		
Beacon EB left	E	76.8	0.62	173
Beacon EB thru | thru/right	F	>80.0	>1.00	#556
Beacon WB U-turn/left | left	E	78.0	0.78	#224
Beacon WB thru	E	63.7	0.87	#699
Beacon WB right/hard right	B	19.2	0.31	141
Chestnut NB left	C	26.6	0.53	m23
Chestnut NB thru | thru	F	>80.0	0.92	m240
Chestnut NB right	A	0.1	0.12	m0
Chestnut SB left	F	>80.0	<1.00	#497
Chestnut SB thru | thru/right	D	46.8	0.66	394
Chestnut Hill Avenue/Dean Road	**C**	**35.9**		
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	17.8	0.69	#485
Chestnut NB right	A	2.6	0.14	28
Chestnut SB left/thru/right	D	54.8	>1.00	#833
Chestnut Hill Avenue/Boylston Street	**D**	**47.8**		
Boylston EB U-turn/left	F	>80.0	0.88	#377
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	76.0	0.94	#654
Chestnut SB thru	D	37.5	0.13	58
Chestnut SB right	B	10.3	0.48	114

Table 2-16 Build Conditions (2017) with Mitigation, Level of Service Summary, a.m. Peak Hour (Continued)

Intersection	LOS	Delay (seconds)	V/C Ratio	95% Queue Length (ft)
Signalized Intersections				
Beacon Street/Edgewood Avenue	**A**	**9.8**		
Beacon EB U-turn/left	D	37.5	0.34	77
Beacon EB thru | thru	A	9.6	0.39	237
Beacon WB U-turn	B	17.4	0.10	m6
Beacon WB thru | thru/right	A	5.3	0.41	m86
Englewood SB left/right	C	26.0	0.36	67
Beacon Street/Washington Street	C	28.0		
Beacon EB U-turn/left	D	45.8	0.50	113
Beacon EB thru | thru/right	B	11.7	0.64	133
Beacon WB thru | thru/right	D	36.2	0.77	#233
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
Chestnut Hill Avenue/Site Driveway	**F**	**>80.0**		
Site EB left/right	C	33.4	0.10	40
Chestnut NB left/thru | thru	F	>80.0	>1.00	#592
Chestnut SB thru | thru/right	A	4.8	0.45	m75
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	>1.00	150
Clinton WB left/thru/right	F	>50.0	0.67	96
Chestnut NB left/thru/right	A	0.4	0.01	1
Chestnut SB left/thru/right	A	3.1	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	21.0	0.28	28
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 change in LOS from Year 2017 Build Conditions, without Mitigation, that bring operations into LOS E or LOS F.
Black shading indicates an improvement from Year 2017 Build Conditions, without Mitigation.

Table 2-17 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**	**51.1**		
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	44.1	0.84	#174
Commonwealth WB thru | thru/right	C	27.1	0.36	178
Chestnut NB left	D	46.3	0.70	152
Chestnut NB thru | thru/right	F	>80.0	>1.00	#813
Chestnut SB left/thru | thru	E	63.2	0.93	#326
Chestnut SB right	B	18.8	0.06	15
Beacon Street/Chestnut Hill Avenue (Cleveland Circle)	**F**	**>80.0**		
Beacon EB left	E	61.8	0.58	160
Beacon EB thru | thru/right	F	>80.0	0.97	#396
Beacon WB U-turn/left | left	E	60.7	0.69	179
Beacon WB thru	E	63.9	0.90	#657
Beacon WB right/hard right	B	18.4	0.33	105
Chestnut NB left	C	24.2	0.72	m19
Chestnut NB thru | thru	F	>80.0	0.89	m108
Chestnut NB right	A	0.1	0.16	m0
Chestnut SB left	F	>80.0	>1.00	#400
Chestnut SB thru | thru/right	D	45.7	0.73	374
Chestnut Hill Avenue/Dean Road	**C**	**26.4**		
Dean EB left/thru/right	C	22.0	0.21	84
Dean WB left/thru/right	C	31.3	0.62	191
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	33.3	0.92	#781
Chestnut Hill Avenue/Boylston Street	**D**	**54.8**		
Boylston EB U-turn/left	F	>80.0	>1.00	#399
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	76.3	0.99	#684
Chestnut SB thru	C	29.8	0.09	51
Chestnut SB right	A	4.4	0.33	57

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

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	68
Beacon EB thru | thru	A	8.9	0.33	190
Beacon WB U-turn	B	19.8	0.12	m17
Beacon WB thru | thru/right	A	6.0	0.45	114
Englewood SB left/right	C	26.0	0.20	53
Beacon Street/Washington Street	**C**	**24.7**		
Beacon EB U-turn/left	D	50.7	0.42	125
Beacon EB thru | thru/right	B	10.1	0.50	104
Beacon WB thru | thru/right	C	28.5	0.59	#292
Washington NB left	D	52.8	0.75	#135
Washington NB thru/right	C	26.0	0.55	196
Washington SB left	C	24.2	0.31	57
Washington SB thru/right	C	33.7	0.76	262
Chestnut Hill Avenue/Site Driveway	**F**	**>80.0**		
Site EB left/right	D	35.9	0.23	77
Chestnut NB left/thru | thru	F	>80.0	>1.00	#589
Chestnut SB thru | thru/right	A	5.9	0.46	m98
Unsignalized Intersections				
Chestnut Hill Avenue/Clinton Road				
Clinton EB left/thru/right	F	>50.0	0.83	84
Clinton WB left/thru/right	E	43.7	0.59	82
Chestnut NB left/thru/right	A	0.3	0.01	1
Chestnut SB left/thru/right	A	4.9	0.16	14
Beacon Street/Waterworks Driveway				
Waterworks WB left/right	C	17.7	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	18.8	0.20	18
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 Year 2017 Build Conditions, without Mitigation, that bring operations into LOS E or LOS F.
Black shading indicates an improvement from Year 2017 Build Conditions, without Mitigation.

2.5 Transportation Demand Management

The Proponent is committed to implementing a TDM program, through the commitments listed below, that supports the City's efforts to reduce dependency on the automobile 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.

- Bicycle Amenities: Secure bicycle storage will be made available to residents and tenants to encourage bicycling as an alternative mode of transportation. In accordance with BTD guidelines, the Proponent will provide one secure storage space per residential unit, for a total of 78-82 spaces. The Proponent will also provide 16 outdoor bicycle spaces (one per five units). Bicycle racks, signs, and parking areas will conform to BTD standards and be sited in safe, secure locations. The Proponent will provide bicycle racks in secure, sheltered areas for residents and tenants' employees. Additional bicycle parking will be provided near the main Project entrance.

- 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 Web site.

- Car-Sharing Service: The Proponent will promote the use of the seven nearby Zipcar 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 Transportation Access Plan Agreement (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.

2.6 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.

Section 3.0

Environmental Review Component

3.0 ENVIRONMENTAL REVIEW COMPONENT

3.1 Wind

The Project has a similar height to the existing buildings on the Site and to those in the surrounding area, with a maximum height of approximately 65 feet. Building orientation and massing is proposed to be similar to the existing conditions. Therefore, the wind conditions are anticipated to be similar to that of the existing site.

3.2 Shadow

3.2.1 Introduction and Methodology

A shadow impact analysis was conducted to investigate shadow impacts from the Project during three time periods (9:00 a.m., 12:00 noon, and 3:00 p.m.) during the summer solstice (June 21), autumnal equinox (September 21), vernal equinox (March 21), and the winter solstice (December 21). In addition, shadow studies were conducted for the 6:00 p.m. time period during the summer solstice and autumnal equinox.

The shadow analysis presents the existing shadow and new shadow that would be created by the proposed Project, illustrating the incremental impact of the Project. The analysis focuses on nearby open spaces, sidewalks and bus stops adjacent to and in the vicinity of the Project site. It should be noted that the model used for the analysis does not include trees, which can block new shadow from the proposed buildings during much of the year during certain time periods. Shadows have been determined using the applicable Altitude and Azimuth data for Boston. Figures showing the net new shadow from the Project are provided in Figures 3.2-1 to 3.2-14 at the end of this section.

New shadow will generally be limited to the Project Site and Chestnut Hill Avenue and its sidewalks. During 13 of 14 time periods studied, new shadow will not impact Reservoir Station's bus waiting areas. New shadow that cast onto portions of Cassidy Playground will generally be limited to the area immediately north of the Project Site during the morning and noon time periods. During the summer and fall, these shadows will be further limited by shade from existing tree canopies.

3.2.2 Vernal Equinox (March 21)

At 9:00 a.m. during the vernal equinox, new shadow from the Project will be cast to the northwest and is limited to a portion of the southeast edge of Cassidy Playground (Figure 3.2-1).

At 12:00 p.m., new shadow will be cast to the north onto small portions of Cassidy Playground and Chestnut Hill Avenue and its southern sidewalk. Most of this new shadow will be cast along a portion of the playground filled with deciduous trees which will likely provide similar shadows at this time of year (Figure 3.2-2).

At 3:00 p.m., new shadow will be cast to the northeast across a portion of Chestnut Hill Avenue and its sidewalks but will not affect any nearby bus stops (Figure 3.2-3).

3.2.3 Summer Solstice (June 21)

At 9:00 a.m. during the summer solstice, new shadow from the Project will be cast to the northwest and is limited to only a small portion of the southeast edge of Cassidy Playground. Again, most of this new shadow will be cast along a portion of the playground filled with deciduous trees which will likely provide similar shadows throughout this time of the year (Figure 3.2-4).

At 12:00 p.m., new shadow will be cast to the north onto small portions of Cassidy Playground and Chestnut Hill Avenue and its southern sidewalk. No new shadows will affect any nearby bus stops (Figure 3.2-5).

At 3:00 p.m., new shadow will be cast to the northeast onto a small portion of Chestnut Hill Avenue and its sidewalks. No new shadows will affect any nearby bus stops or Cassidy Playground (Figure 3.2-6).

At 6:00 p.m., new shadow will be cast to the east across Chestnut Hill Avenue and its sidewalks (Figure 3.2-7). No new shadows will be cast upon nearby bus stops or Cassidy Playground.

3.2.4 Autumnal Equinox (September 21)

At 9:00 a.m. during the autumnal equinox, new shadow from the Project will be cast to the northwest and is limited to only a small portion of the southeast edge of Cassidy Playground (Figure 3.2-8).

At 12:00 p.m., new shadow will be cast to the north onto small portions of Cassidy Playground and Chestnut Hill Avenue and its southern sidewalk. Most of this new shadow will be cast along a portion of the park filled with deciduous trees which will likely provide similar shadows throughout these periods of the year (Figure 3.2-9).

At 3:00 p.m., new shadow will be cast to the northeast across a portion of Chestnut Hill Avenue and its sidewalks but will not affect any nearby bus stops (Figure 3.2-10).

At 6:00 p.m. (Autumnal Equinox only), much of the area is under existing shadow. New shadow will be cast to the east across Chestnut Hill Avenue and its sidewalks. New shadow will also be cast onto a small portion of the waiting area at Reservoir Station (Figure 3.2-11).

3.2.5 Winter Solstice (December 21)

The winter solstice creates the least favorable conditions for sunlight in New England. The sun angle during the winter is lower than in any other season, causing the shadows in urban areas to elongate and be cast onto large portions of the surrounding area.

At 9:00 a.m., new shadow will be cast to the northwest and will affect a portion of the northeastern edge of Cassidy Playground as well as along portions of Chestnut Hill Avenue and its sidewalks. No new shadows will affect any nearby bus stops (Figure 3.2-12).

At 12:00 p.m., new shadow is cast to the north. New shadow is cast onto a small portion of Cassidy Playground as well as along portions of Chestnut Hill Avenue and its sidewalks. No new shadows will affect any nearby bus stops (Figure 3.2-13).

At 3:00 p.m., new shadow is cast to the northeast along portions of Chestnut Hill Avenue and its sidewalks. No new shadows are expected to affect nearby bus stops or Cassidy Playground (Figure 3.2-14).

3.2.6 Conclusions

The shadow impact analysis looked at net new shadow created by the Project during fourteen time periods. New shadow will generally be limited to the immediately surrounding streets and sidewalks. In some cases, new shadow will be cast onto small portions of Cassidy Playground but are expected to be somewhat limited given the shadows provided by the existing tree canopies within the playground. During one of the fourteen periods studied, new shadow will be cast upon the Reservoir Station bus stop. No other new shadows are expected to affect any other bus stops in the surrounding area.



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Figure 3.2-1

Shadow Analysis, Mar 21 - 9 AM



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Figure 3.2-2

Shadow Analysis, Mar 21 - 12 PM



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Figure 3.2-3

Shadow Analysis, Mar 21 - 3 PM



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Figure 3.2-4

Shadow Analysis, June 21 - 9 AM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 3.2-5

Shadow Analysis, June 21 - 12 PM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 3.2-6

Shadow Analysis, June 21 - 3 PM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 3.2-7

Shadow Analysis, June 21 - 6 PM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 3.2-8

Shadow Analysis, Sept 21 - 9 AM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 3.2-9

Shadow Analysis, Sept 21 - 12 PM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 3.2-10

Shadow Analysis, Sept 21 - 3 PM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 3.2-11

Shadow Analysis, Sept 21 - 6 PM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

ADD Inc

Figure 3.2-12

Shadow Analysis, Dec 21 - 9 AM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 3.2-13

Shadow Analysis, Dec 21 - 12 PM



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 3.2-14

Shadow Analysis, Dec 21 - 3 PM

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 and the sidewalks in the immediate vicinity of a project site. The daylight analysis for the Project considers the existing and proposed conditions, as well as typical daylight obstruction values of the surrounding area.

Because the Project Site currently consists of low-rise buildings and parking lots, the proposed Project will increase daylight obstruction; however, the resulting conditions will be typical of the Cleveland Circle area and other urban areas.

3.3.2 Methodology

The daylight analysis was performed using the Boston Redevelopment Authority Daylight Analysis (BRADA) computer program[1]. 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 Conditions; Proposed Conditions; and the context of the area.

One viewpoint along Chestnut Hill Avenue was chosen to evaluate daylight obstruction for the proposed and existing conditions. Due to the openness of Cassidy Playground to the north, the grove of trees between the playground and the Project Site, and the setback from the playground, the daylight obstruction was not studied as it is anticipated to be low. Two area context points were considered in order to provide a basis of comparison to existing conditions in the surrounding area. The viewpoint and area context viewpoints were taken in the following locations and are shown on Figure 3.3-1.

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

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



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 3.3-1

Viewpoint and Area Context Locations

- **Viewpoint 1** – View from Chestnut Hill Avenue facing southwest toward the Project Site.

- **Area Context Viewpoint AC1 –** View from Chestnut Hill Avenue facing northeast toward the building at 2001 Beacon Street.

- **Area Context Viewpoint AC2** – View from Chestnut Hill Avenue facing northeast toward the building at 370-374 Chestnut Hill Avenue.

3.3.3 Results

The results for each viewpoint under each alternative condition are described in Table 3.3-1. Figure 3.3-2 illustrates the BRADA results for each analysis.

Table 3.3-1 Daylight Obstruction Values

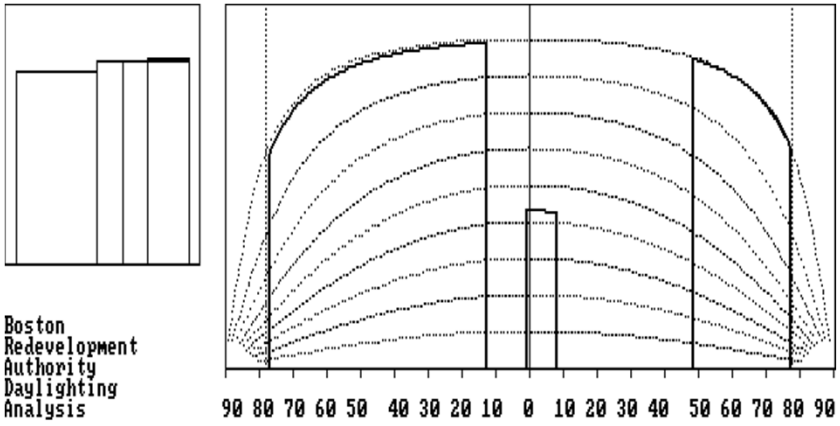
Viewpoint Locations		Existing Conditions	Proposed Conditions
Viewpoint 1	Chestnut Hill Avenue facing southwest toward the Project site	4.1%	53.8%
Area Context Points			
AC1	Chestnut Hill Avenue facing northeast toward the building at 2001 Beacon Street	45.0%	N/A
AC2	Chestnut Hill Avenue facing northeast toward the building at 370-374 Chestnut Hill Avenue	54.8%	N/A

Chestnut Hill Avenue – Viewpoint 1

Chestnut Hill Avenue runs along the northeast edge of the Project Site. Viewpoint 1 was taken from the center of Chestnut Hill Avenue, looking directly southwest at the Project Site. The Site is currently occupied by a closed movie theater alongside an Applebee's restaurant and has an existing daylight obstruction value of 4.1% due to the significant distance these buildings are from the street edge. The development of the Project will increase daylight obstruction value to 53.8%. While this is an increase over existing conditions, the daylight obstruction value for the Project is consistent with other buildings in the Project vicinity, including the Area Context buildings.

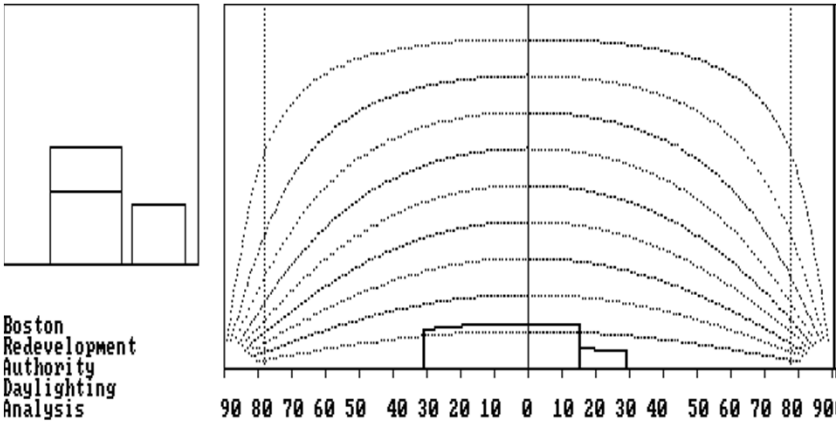
Area Context Views

The Project area is primarily characterized by mixed use buildings, with commercial uses at street level and residential or commercial uses above. The buildings in the Project vicinity are predominantly low-rise, ranging between one and six stories. To provide a larger



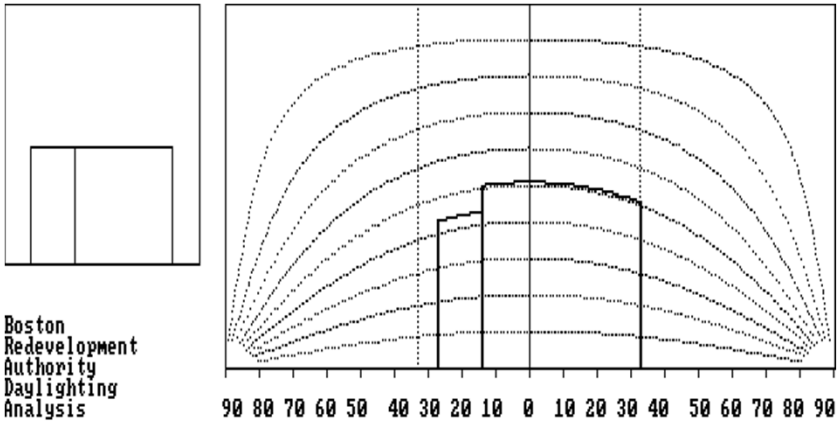
Obstruction of daylight by the building is 53.8 %

Viewpoint 1 (Proposed Conditions) – Chestnut Hill Avenue facing southwest



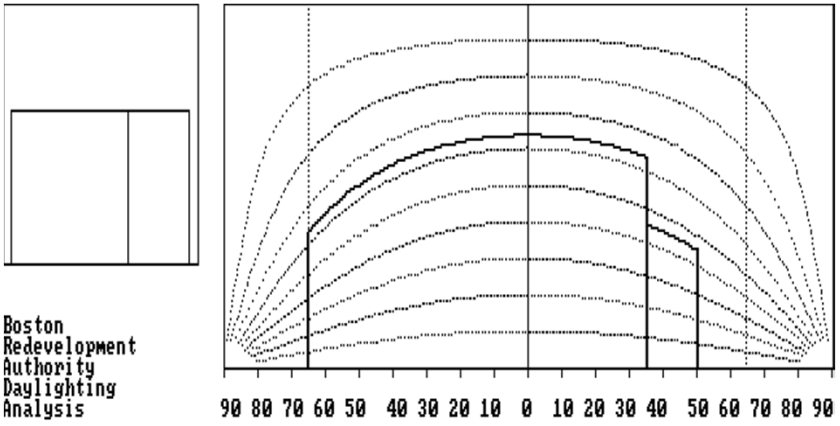
Obstruction of daylight by the building is 4.1 %

Viewpoint 1 (Existing Conditions) – Chestnut Hill Avenue facing southwest



Obstruction of daylight by the building is 45.0 %

Area Context 1 – Chestnut Hill Avenue facing northeast (370-374 Chestnut Hill Avenue)



Obstruction of daylight by the building is 54.8 %

Area Context 2 – Chestnut Hill Avenue facing northeast (370 Reservoir Place))

context for comparison of daylight conditions, obstruction values were calculated for the two Area Context Viewpoints described above and shown on Figure 3.3-1. The daylight obstruction values ranged from 45.0% for AC1 to 54.8% for AC2. Daylight obstruction values for the Project are consistent with the Area Context values.

3.3.4 Conclusions

The daylight analysis conducted for the Project describes existing and proposed daylight obstruction conditions at the Project Site and in the surrounding area. 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 values within the surrounding area and typical of densely built urban areas. The increased daylight obstruction value is mainly due to placing the buildings along the street edge, which is the preferred development style at this location.

3.4 Solar Glare

Non-reflective glass will be included in the Project design to avoid adverse impacts from spot glare. Due to the height of the buildings and their orientation, solar glare impacts are not anticipated.

3.5 Air Quality

3.5.1 Introduction

An air quality analysis was conducted to determine the impact of pollutant emissions from mobile source emissions generated by the Project. A microscale analysis is typically performed to evaluate the potential air quality impacts of carbon monoxide (CO) due to traffic flow around the Project area.

The impacts were added to monitored background values and compared to the Federal National Ambient Air Quality Standards (NAAQS). The standards were developed by the Environmental Protection Agency (EPA) to protect the human health against adverse health effects with a margin of safety.

The modeling methodology was developed in accordance with the latest MassDEP modeling policies and federal modeling guidelines.[2] The air quality analysis results show that CO concentrations at all receptors studied are well under NAAQS thresholds.

Modeling assumptions and backup data for results presented in this section are provided in the Appendix B.

[2] 40 CFR 51 Appendix W, Guideline on Air Quality Models, 70 FR 68228, Nov. 9, 2005

It is expected that the majority of stationary sources (boilers, engines, etc) would be subject to the Massachusetts Department of Environmental Protection's (MassDEP) Environmental Results Program (ERP). Thus, any air quality impacts would be mitigated by this program and air impact analyses would be done at the time of permitting. However, the BRA requires an air quality analysis of traffic impacts if intersections meet certain criteria.

3.5.2 Microscale Analysis

A microscale analysis is used to determine the effect on air quality of the increase in traffic generated by the Project. The Proponent is required to analyze local effects of the potential increase in traffic on ambient air quality near specific intersections. This microscale analysis is required for the Project at intersections where 1) Project traffic would impact intersections or roadway links currently operating at Level of Service (LOS) D, E, or F or would cause LOS to decline to D, E, or F; 2) Project traffic would increase traffic volumes on nearby roadways by 10% or more (unless the increase in traffic volume is less than 100 vehicles per hour); or, 3) the Project will generate 3,000 or more new average daily trips on roadways providing access to a single location.[3] The microscale analysis involves modeling of carbon monoxide (CO) emissions from vehicles idling at and traveling through signalized intersections. Predicted ambient concentrations of CO for the Build and No Build cases are compared with federal and state ambient air quality standards for CO.

The microscale analysis typically examines breathing-level (1.8 meter) CO impacts due to traffic queues in the immediate vicinity of a project. CO is used in microscale studies to indicate roadway pollutant levels since it is the most abundant pollutant emitted by motor vehicles and can result in so-called "hot spot" (high concentration) locations around congested intersections. NAAQS have been established by the EPA for CO to protect the public health (known as primary standards). These standards do not allow ambient CO concentrations to exceed 35 parts per million (ppm) for a one-hour averaging period and 9 ppm for an eight-hour averaging period, more than once per year at any location. The widespread use of CO catalysts on late-model vehicles has reduced the occurrences of CO hotspots. Air quality modeling techniques (computer simulation programs) are typically used to predict CO levels for both existing and future conditions to evaluate compliance of the roadways with the standards. The analysis followed the procedure outlined in U.S. EPA's intersection modeling guidance.[4]

The microscale analysis has been conducted using the latest versions of EPA MOBILE6.2 and CAL3QHC to estimate CO concentrations at sidewalk receptor locations.

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[3] BRA, Development Review Guidelines, 2006.

[4] U.S. EPA, Guideline for Modeling Carbon Monoxide from Roadway Intersections; EPA-454/R-92-005, November 1992.

Baseline (2012) and future year (2017) emission factor data calculated from the MOBILE6.2 model, along with traffic data, were input into the CAL3QHC program to determine CO concentrations due to traffic flowing through the selected intersections.

Existing background values of CO at the nearest monitor location in Kenmore Square were obtained from the MassDEP. CAL3QHC and AERMOD results were then added to background CO values of 1.9 ppm (one-hour) and 1.5 ppm (eight-hour), as provided by the MassDEP, to determine total air quality impacts due to the Project. This value was compared to the NAAQS for CO of 35 ppm (one-hour) and 9 ppm (eight-hour).

3.5.2.1 Intersection Selection

An analysis of the eleven intersections from the traffic study was conducted (see Chapter 2). Microscale modeling was performed for the four intersections that met the aforementioned BRA criteria for microscale analyses:

- Commonwealth Avenue and Chestnut Hill Avenue;
- Beacon Street and Chestnut Hill Avenue;
- Dean Road and Chestnut Hill Avenue; and
- Boylston Street and Chestnut Hill Avenue.

The traffic volumes and LOS calculations provided in Chapter 2 form the basis of evaluating the traffic data versus the microscale thresholds.

3.5.2.2 Emissions Calculations (MOBILE6.2)

As mentioned above, the EPA MOBILE6.2 computer program was used to estimate motor vehicle emission factors on the roadway network. Emission factors calculated by the MOBILE6.2 model are based on motor vehicle operations typical of daily periods. The Commonwealth's statewide annual Inspection and Maintenance (I&M) program was included, as well as the state specific vehicle age registration distribution. The input files for MOBILE6.2 for the existing (2012) and build year (2017) are provided by MassDEP. As is typical, minor edits to the files were necessary to allow the program to output emission factors for the various speeds used in the analysis.

The current version of MOBILE6.2 does not explicitly calculate idle emissions. However, idle emissions can be obtained from a vehicle speed of 2.5 miles per hour (mph) (the lowest speed MOBILE6 will model). The resulting emission rate given in (grams/mile) is then multiplied by 2.5 mph to estimate idle emissions (in grams/hour). Moving emissions are calculated based on actual speeds at which free-flowing vehicles travel through the intersections. A speed of 30 mph is used for all free-flow traffic. Speeds of 10 and 15 mph were used for right (and U-turns, if necessary) and left turns, respectively.

Winter CO emission factors are typically higher than summer. Therefore winter vehicular emission factors were conservatively used in the microscale analysis.

3.5.2.3 Receptors and Meteorology Inputs

Sets of up to 100 receptors were placed in the vicinity of each of the modeled intersections. Receptors extended approximately 500 feet on the sidewalks along the roadways approaching the intersection. The roadway links and receptor locations of the modeled intersections are presented in Figures 3.5-1 through 3.5-4.

For the CAL3QHC model, limited meteorological inputs are required. Following EPA guidance[5], a wind speed of one m/s, stability class D (4), and a mixing height of 1,000 meters was used. To account for the intersection geometry, wind directions from 0° to 350°, every 10°, were selected. A surface roughness length of 370 cm was selected for the more urban intersections (Commonwealth & Chestnut Hill and Beacon & Chestnut Hill) and a length of 108 cm was selected for the remaining two (Dean & Chestnut Hill and Boylston & Chestnut Hill).[6]

3.5.2.4 Impact Calculations (CAL3QHC)

The CAL3QHC model predicts one-hour concentrations using queue-links at intersections, worst-case meteorological conditions, and traffic input data. The one-hour concentrations were scaled by a factor of 0.7 to estimate eight-hour concentrations.[7] The CAL3QHC methodology was based on EPA CO modeling guidance. Signal timings were provided directly from the traffic modeling runs. The CAL3QHC input parameters are also described in Appendix B.

3.5.2.5 Background Concentrations

To estimate background pollutant levels representative of the area, the most recent air quality monitor data reported by the MassDEP in their Annual Air Quality Reports, was obtained for 2008 to 2010. MassDEP guidance specifies the use of the latest three years of available monitoring data from within 10 km of the Project Site.

The closest monitor is located at Kenmore Square, in Boston with others at One City Square in Charlestown, and 174 North Street in Boston. A summary of the background air quality concentrations are presented in Table 3.5-1. Observed concentrations are currently in compliance with applicable NAAQS.

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[5] U.S. EPA, *Guideline for Modeling Carbon Monoxide from Roadway Intersections.* EPA-454/R-92-005, November 1992.

[6] U.S. EPA, *User's Guide for CAL3QHC Version 2: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*. EPA –454/R-92-006 (Revised), September 1995

[7] U.S. EPA, Screening Procedures for Estimating the Air Quality Impact of Stationary Sources; EPA-454/R-92-019, October 1992



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Figure 3.5-1

Link and Receptor Locations for CAL3QHC modeling of Intersection 1: the intersection of Commonwealth and Chestnut Hill Avenues



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Figure 3.5-2

Link and Receptor Locations for CAL3QHC modeling of Intersection 1: the intersection of Dean Road and Chestnut Hill Avenues



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Figure 3.5-3

Link and Receptor Locations for CAL3QHC modeling of Intersection 1: the intersection of Beacon Street and Chestnut Hill Avenues



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Figure 3.5-4

Link and Receptor Locations for CAL3QHC modeling of Intersection 1: the intersection of Boylston Street and Chestnut Hill Avenues

Background CO concentrations were determined from the closest available monitoring stations to the proposed Project. For use in the microscale analysis, background concentrations of CO in ppm were required. The corresponding maximum background concentrations in ppm were 1.9 ppm for one-hour and 1.5 ppm for eight-hour CO.

Table 3.5-1 Observed Ambient Air Quality Concentrations and Selected Background Levels

Pollutant	Averaging Time	2008	2009	2010	Background Concentration ($\mu g/m^3$)	NAAQS	Location
SO_2 [4]	1 HOUR	75.4	65	69.94	75.4	195	KEN
	3 HOUR	62.4	49.4	N/A	62.4	365	KEN
	24 HOUR	46.8	23.4	21.84	46.8	1,300	KEN
	ANNUAL	10.4	6.5	5.824	10.4	80	KEN
PM-10	24 HOUR	53	69	40	69	150	CTY
	ANNUAL	23	20.6	15.5	23	50	CTY
PM-2.5	24 HOUR [1]	26	19.1	21.9	22.33	35	NTH
	ANNUAL [2]	11.14	8.98	9.31	9.81	15	NTH
NO_2	1 HOUR [3]	133.48	114.68	119.38	133.48	188	KEN
	ANNUAL	41.36	37.788	35.908	41.36	100	KEN
CO	1 HOUR	1938	1596	2166	2166	40,000	KEN
	8 HOUR	1482	1254	1710	1710	10,000	KEN

From 2008-2010 MassDEP Annual Data Summaries

KEN = Kenmore Sq. Boston; CTY = 1 City Sq. Boston, NTH = 174 North St. Boston

[1] Average of the 98th percentile 24-hour values.

[2] Average of the annual values.

[3] Maximum annual one-hour concentrations (EPA "first tier" method).

[4] The 24-hour and Annual standards were revoked by EPA on June 22, 2010, Federal Register 75-119, p. 35520. The 2010 three-hour value is not reported in the 2010 Annual Data Summary

3.5.3 Microscale Analysis Results

The results of the maximum one-hour predicted CO concentrations from CAL3QHC are provided in Tables 3.5-2 through 3.5-4 (at the end of this section) for the 2012 and 2017 scenarios. Eight-hour average concentrations are calculated by multiplying the maximum one-hour concentrations by a factor of 0.7.[8]

[8] U.S. EPA, Screening Procedures for Estimating the Air Quality Impact of Stationary Sources; EPA-454/R-92-019, October 1992

The results of the one-hour and eight-hour maximum modeled CO ground-level concentrations from CAL3QHC were added to EPA supplied background levels for comparison to the NAAQS. These values represent the highest potential concentrations at the intersection as they are predicted during the simultaneous occurrence of "defined" worst case meteorology. The highest one-hour traffic-related concentration predicted in the area of the Project, for the modeled conditions (3.0 ppm) plus background (1.9 ppm), is 4.9 ppm for the existing morning peak hour case at Chestnut Hill Avenue and Boylston Street. The highest eight-hour traffic-related concentration predicted in the area of the Project for the modeled conditions (2.1 ppm) plus background (1.5 ppm), is 3.6 ppm, for the same case. Both concentrations are well below the one-hour NAAQS of 35 ppm and the eight-hour NAAQS of 9 ppm.

3.5.4 Microscale Analysis Conclusions

Using conservative estimates, the CO concentrations at the nearest receptors for impacts from the intersections, plus monitored background values, are well under the CO NAAQS thresholds for all cases.

3.5.5 Stationary Sources

Stationary sources expected to be included in the proposed Project include boilers for heating and hot water, and emergency generators for power generation. This equipment may be subject to additional air quality permitting requirements as regulated in 310 CMR 7.00.

3.5.5.1 Heating Equipment

All heating and hot water boilers are expected to be either within or well below the requirements of MassDEP's ERP program, since individual estimated heat inputs would be within or below the 10 to 40 million British thermal units per hour (mmBtu/hr) ERP range. Boilers within this range would be required to meet applicable emissions limits and register in MassDEP's ERP program. The program includes notification requirements to provide MassDEP with boiler specifications, fuel usage, and related information. Any boilers below the ERP limit of 10 mmBtu/hr would not be required to register in MassDEP's ERP program. Boilers larger than 40 mmBtu/hr would be subject to the requirements of MassDEP's Major or Non-Major Comprehensive Plan Approval process for preconstruction permits of fuel combusting sources.

3.5.5.2 Emergency Generators

Emergency power units will be included in the design to provide life safety and standby emergency power to the buildings. These units are typically diesel-fired and located in a mechanical area on the roof or in the basement of a building. The generators must be designed such that exhaust stacks extend at least 10 feet above the individual building roof height above ground level.

Typically, generators will operate for approximately one hour each month for testing and general maintenance. The ERP regulation applies to new emergency generators greater than 37 kW. The regulation is similar to the boiler ERP in that new engines are subject to emission standards, recordkeeping, certification, and compliance with the MassDEP noise policy. If the generator maximum rating capacity is greater than the ERP limit of 37 kW, it will be subject to the ERP program. Under the ERP, the generator owner will limit operation of the generator to less than 300 hours per year and submit a certification form to MassDEP within 60 days of installation.

Table 3.5-2 Summary of Microscale Modeling Analysis (Existing 2012)

Intersection	Peak	CAL3QHC Modeled CO Impacts (ppm)	Monitored Background Concentration (ppm)	Total CO Impacts (ppm)	NAAQS (ppm)
1-Hour					
3. Commonwealth Ave. & Chestnut Hill Ave.	AM	1.7	1.9	3.6	35
	PM	1.5	1.9	3.4	35
5. Dean Rd. & Chestnut Hill Ave.	AM	1.1	1.9	3.0	35
	PM	1.1	1.9	3.0	35
11. Beacon St. & Chestnut Hill Ave.	AM	2.1	1.9	4.0	35
	PM	1.8	1.9	3.7	35
12. Chestnut Hill Ave. & Boylston St.	AM	3.0	1.9	4.9	35
	PM	2.8	1.9	4.7	35
8-Hour					
3. Commonwealth Ave. & Chestnut Hill Ave.	AM	1.2	1.5	2.7	9
	PM	1.1	1.5	2.6	9
5. Dean Rd. & Chestnut Hill Ave.	AM	0.8	1.5	2.3	9
	PM	0.8	1.5	2.3	9
11. Beacon St. & Chestnut Hill Ave.	AM	1.5	1.5	3.0	9
	PM	1.3	1.5	2.8	9
12. Chestnut Hill Ave. & Boylston St.	AM	2.1	1.5	3.6	9
	PM	1.2	1.5	2.7	9

Notes:
CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.7.

Table 3.5-3 Summary of Microscale Modeling Analysis (No-Build 2017)

Intersection	Peak	CAL3QHC Modeled CO Impacts (ppm)	Monitored Background Concentration (ppm)	Total CO Impacts (ppm)	NAAQS (ppm)
1-Hour					
3. Commonwealth Ave. & Chestnut Hill Ave.	AM	1.6	1.9	3.5	35
	PM	1.3	1.9	3.2	35
5. Dean Rd. & Chestnut Hill Ave.	AM	0.9	1.9	2.8	35
	PM	0.9	1.9	2.8	35
11. Beacon St. & Chestnut Hill Ave.	AM	1.8	1.9	3.7	35
	PM	1.6	1.9	3.5	35
12. Chestnut Hill Ave. & Boylston St.	AM	2.7	1.9	4.6	35
	PM	2.4	1.9	4.3	35
8-Hour					
3. Commonwealth Ave. & Chestnut Hill Ave.	AM	1.1	1.5	2.6	9
	PM	0.9	1.5	2.4	9
5. Dean Rd. & Chestnut Hill Ave.	AM	0.6	1.5	2.1	9
	PM	0.6	1.5	2.1	9
11. Beacon St. & Chestnut Hill Ave.	AM	1.3	1.5	2.8	9
	PM	1.1	1.5	2.6	9
12. Chestnut Hill Ave. & Boylston St.	AM	1.9	1.5	3.4	9
	PM	1.1	1.5	2.6	9

Notes:
CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.7.

Table 3.5-4 Summary of Microscale Modeling Analysis (Build 2017)

Intersection	Peak	CAL3QHC Modeled CO Impacts (ppm)	Monitored Background Concentration (ppm)	Total CO Impacts (ppm)	NAAQS (ppm)
1-Hour					
3. Commonwealth Ave. & Chestnut Hill Ave.	AM	1.5	1.9	3.4	35
	PM	1.2	1.9	3.1	35
5. Dean Rd. & Chestnut Hill Ave.	AM	0.9	1.9	2.8	35
	PM	1.0	1.9	2.9	35
11. Beacon St. & Chestnut Hill Ave.	AM	1.8	1.9	3.7	35
	PM	1.6	1.9	3.5	35
12. Chestnut Hill Ave. & Boylston St.	AM	2.6	1.9	4.5	35
	PM	2.3	1.9	4.2	35
8-Hour					
3. Commonwealth Ave. & Chestnut Hill Ave.	AM	1.1	1.5	2.6	9
	PM	0.8	1.5	2.3	9
5. Dean Rd. & Chestnut Hill Ave.	AM	0.6	1.5	2.1	9
	PM	0.7	1.5	2.2	9
11. Beacon St. & Chestnut Hill Ave.	AM	1.3	1.5	2.8	9
	PM	1.1	1.5	2.6	9
12. Chestnut Hill Ave. & Boylston St.	AM	1.8	1.5	3.3	9
	PM	1.1	1.5	2.6	9

Notes:
CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.7.

3.6 Stormwater/Water Quality

Chapter 6 includes a discussion of stormwater and water quality.

3.7 Flood Hazard Zones/Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates the FEMA Flood Zone Designations for the Project Site (City of Boston, Community-Panel Number 250286 0002 C). The map for the Project Site shows that it is located in Zone C, Area of Minimal Flooding. The Project Site does not contain any wetlands.

3.8 Geotechnical/Groundwater

Geotechnical Consultants, Inc. drilled five borings on the Project Site to analyze soil and groundwater conditions. The generalized subsurface profile is provided below.

- **Urban Fill**: The fill is predominantly granular and consists of coarse to fine sand with minor proportions of silt and very minor proportions of fine gravel. No fill was found in the borehole closest to Chestnut Hill Avenue. Where encountered, the thickness of the fill varied from about 3 to 15 feet and was deepest at the rear of the existing building.

- **Organic Silt/Peat**: A one foot thick layer of organic soil was found only at the rear of the Site. The top of this layer was encountered at about 15 feet below existing ground surface.

- **Glacial Outwash**: The glacial outwash consists predominantly of medium to fine sand with only minor proportions of coarse sand, fine gravel and silt. This layer is not present at the portion of the Project Site along Chestnut Hill Avenue.

- **Glacial Till**: Glacial till is a heterogeneous mixture of well-graded sand, gravel and siltsized particles. Based on past experience at nearby sites, the glacial till in this area typically contains cobbles and boulders; some boulders found at nearby sites exceeded five cubic yards. The glacial till at the Project Site is dense to very dense.

- **Bedrock**: Bedrock underlying the Project Site is mapped as conglomerate, sandstone, siltstone, argillite and melaphyre and is part of the Brookline member of the Milford-Dedham Zone. Rock fragments recovered from the auger cutting consisted of argillite.

Groundwater was measured at a depth of approximately 15.5 feet below existing ground surface at rear of the Site. This depth also corresponds to the depth of the organic layer. Groundwater levels change and are influenced by precipitation and other environmental factors. The Project Site is not located within the Groundwater Conservation Overlay District.

3.9 Solid and Hazardous Waste

3.9.1 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 no 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.

3.9.2 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 318 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.

Dedicated recycling areas will be included in the design.

3.10 Noise

The proposed Project is not expected to result in any adverse noise impacts at nearby sensitive receptors.

While the details of the mechanical equipment have not yet been precisely determined, 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. An emergency generator will operate only during infrequent interruptions of the electrical grid and will be tested during daytime hours only, when background levels are significantly higher. Reasonable efforts will be made, if necessary, to minimize noise impacts from any rooftop equipment, including appropriate exhaust duct silencers, enclosures, and acoustical louvers.

The Project is similar in size to buildings in the surrounding area, and given the Project's urban setting near Cleveland Circle, existing condition sound levels are relatively high. Background sound levels collected during a baseline ambient survey between the hours of 10:00 pm and 11:30 pm on Wednesday, April 18, 2012 ranged between 49 and 61 dBA, depending on location. Future Project levels were calculated at the nearest residence on Clinton Road, south of the Project, and on Beacon Street near Cleveland Circle, north of the Project. Predictions were based on representative sound emissions from a single cooling tower and five exhaust fans, and considered drop-off with distance only.

As shown in Table 3.10-1, future sound levels due to operation (Project + background) are anticipated to remain within the 10 dBA increase permitted by the MassDEP noise policy. While predicted Project-only sound levels at the nearest receptor on Clinton Road are above the 50 dBA nighttime residential noise limit specified by the City of Boston, no credit was taken for shielding from barriers, ground absorption, atmospheric attenuation, or any measures of noise mitigation in this preliminary analysis. The 5-10 dBA of additional attenuation required to meet the applicable limit can be achieved using routinely employed methods of noise control, including:

- Selecting quieter equipment models than those considered in this analysis;
- Using appropriate mufflers on all equipment;
- Installing screening barriers to provide shielding where appropriate;

- Using sound-attenuating enclosures on continuously operating equipment with outdoor exposure;
- Replacing specific construction operations and techniques with less noisy ones where feasible;
- Providing ongoing maintenance of construction equipment;
- Scheduling equipment operations to keep average levels low, to synchronize noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment; and
- Locating noisy equipment at locations that protect sensitive receptors by shielding or with distance.

Table 3.10-1 Predicted Sound Levels from Project Operation

Receptor Location	Distance to Project (ft)	Project-Only Sound Levels[1] (dBA)	Background Sound Levels (dBA)	Combined Project + Background Sound Levels (dBA)	Increase Over Background (dBA)
Clinton Road	165	56	47	57	10
Cleveland Circle	700	44	61	61	0

1. Project-Only sound levels assume one (1) Marley NC8409ULN3 3-Cell Cooling Tower with a sound power level of 98 dBA, and five (5) BESB500-4-1-FC Centrifugal Impellar Fans each with a sound power level of 81 dBA.

In summary, with appropriate mitigation, noise impacts at the nearest sensitive receptors are expected to be negligible. Any increase in projected traffic from the proposed Project is not anticipated to produce significant noise impacts. Short-term, intermittent increases in noise levels will occur during Project construction. However, every reasonable effort will be made to minimize the noise impacts and ensure the Project complies with the requirements of the City of Boston noise ordinance.

3.11 Construction

3.11.1 Introduction

A Construction Management Plan (CMP) in compliance with the City's Construction Management Program will be submitted to the Boston Transportation Department (BTD) once final plans are developed and the construction schedule is fixed. The construction contractor will be required to comply with the details and conditions of the approved CMP.

Proper pre-planning with the City and neighborhood will be essential to the successful construction of the Project. Construction methodologies, which ensure public safety and protect nearby residences and businesses, will be employed. Techniques such as barricades, walkways and signage will be used. The CMP will include routing plans for trucking and deliveries, plans for the protection of existing utilities, and control of noise and dust.

During the construction phase of the Project, the Proponent will provide the name, telephone number and address of a contact person to communicate with on issues related to the construction. The construction contact will be a person whose sole responsibility it is to respond to the questions/comments/complaints of the residents of the neighborhoods.

The Proponent intends to follow the guidelines of the City of Boston and the MassDEP, which direct the evaluation and mitigation of construction impacts.

3.11.2 Construction Methodology/Public Safety

Construction methodologies that ensure public safety and protect nearby tenants will be employed. Techniques such as barricades and signage will be used. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.

It may be necessary to occasionally occupy pedestrian walkways and portions of Chestnut Hill Avenue. As the design of the Project progresses, the Proponent will meet with BTD to discuss the specific location of barricades, the need for lane closures, pedestrian walkways, and truck queuing areas. Secure fencing, signage, and covered walkways may be employed to ensure the safety and efficiency of all pedestrian and vehicular traffic flows. In addition, sidewalk areas and walkways near construction activities will be well marked and lighted to protect pedestrians and ensure their safety. Public safety for pedestrians on abutting sidewalks will also include covered pedestrian walkways when appropriate. If required by BTD and the Boston Police Department, police details will be provided to facilitate traffic flow. These measures will be incorporated into the CMP which will be submitted to BTD for approval prior to the commencement of construction work.

3.11.3 Construction Schedule

The Proponent anticipates that the Project will commence in March 2013 and construction will finish approximately around September 2014.

Typical construction hours will be from 7:00 am to 6:00 pm, Monday through Friday, with most shifts ordinarily ending at 3:30 pm. No substantial sound-generating activity will occur before 7:00 am. If longer hours, additional shifts, or Saturday work is required, the construction manager will place a work permit request to the Boston Air Pollution Control Commission and BTD in advance. Notification should occur during normal business hours,

Monday through Friday. It is noted that some activities such as finishing activities could run beyond 6:00 pm to ensure the structural integrity of the finished product; certain components must be completed in a single pour, and placement of concrete cannot be interrupted.

3.11.4 Construction Staging/Access

Access to the site and construction staging areas will be provided in the CMP.

Although specific construction and staging details have not been finalized, the Proponent and its construction management consultant will work to ensure that staging areas will be located to minimize impacts to pedestrian and vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the site. Construction procedures will be designed to meet all Occupational Safety and Health Administration (OSHA) safety standards for specific site construction activities.

3.11.5 Construction Mitigation

The Proponent will follow City and MassDEP guidelines which will direct the evaluation and mitigation of construction impacts. As part of this process, the Proponent and construction team will evaluate the Commonwealth's Clean Air Construction Initiative.

A CMP will be submitted to BTD for review and approval prior to issuance of a Building Permit. The CMP will include detailed information on specific construction mitigation measures and construction methodologies to minimize impacts to abutters and the local community. The CMP will also define truck routes which will help in minimizing the impact of trucks on City and neighborhood streets.

"Don't Dump - Drains to Charles River" plaques will be installed at storm drains that are replaced or installed as part of the Project.

3.11.6 Construction Employment and Worker Transportation

The number of workers required during the construction period will vary. It is anticipated that approximately 100 construction jobs will be created over the length of construction. The Proponent will make reasonable good-faith efforts to have at least 50% of the total employee work hours be for Boston residents, at least 25% of total employee work hours be for minorities and at least 10% of the total employee work hours be for women. The Proponent will enter into a jobs agreement with the City of Boston.

To reduce vehicle trips to and from the construction site, minimal construction worker parking will be available at the site and all workers will be strongly encouraged to use public transportation and ridesharing options. The general contractor will work

aggressively to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the site each day.

3.11.7 Construction Truck Routes and Deliveries

Truck traffic will vary throughout the construction period, depending on the activity. The construction team will manage deliveries to the site during morning and afternoon peak hours in a manner that minimizes disruption to traffic flow on adjacent streets. Construction truck routes to and from the site for contractor personnel, supplies, materials, and removal of excavations required for the development will be coordinated with BTD. Traffic logistics and routing will be planned to minimize community impacts. Truck access during construction will be determined by the BTD as part of the CMP. These routes will be mandated as a part of all subcontractors' contracts for the development. The construction team will provide subcontractors and vendors with Construction Vehicle & Delivery Truck Route Brochures in advance of construction activity.

"No Idling" signs will be included at the loading, delivery, pick-up and drop-off areas.

3.11.8 Construction Air Quality

Short-term air quality impacts from fugitive dust may be expected during demolition, excavation and the early phases of construction. Plans for controlling fugitive dust during demolition, excavation and construction include mechanical street sweeping, wetting portions of the site during periods of high wind, and careful removal of debris by covered trucks. The construction contract will provide for a number of strictly enforced measures to be used by contractors to reduce potential emissions and minimize impacts, pursuant to this Article 80 approval. These measures are expected to include:

- Using wetting agents on areas of exposed soil on a scheduled basis;
- Using covered trucks;
- Minimizing spoils on the construction site;
- Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the site; and
- Periodic street and sidewalk cleaning with water to minimize dust accumulations.

3.11.9 Construction Noise

The Proponent is committed to mitigating noise impacts from the construction of the Project. Increased community sound levels, however, are an inherent consequence of construction activities. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities.

Mitigation measures are expected to include:

- Instituting a proactive program to ensure compliance with the City of Boston noise limitation policy;
- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques by less noisy ones where feasible;
- Selecting the quietest of alternative items of equipment where feasible;
- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment; and
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

3.11.10 Construction Vibration

All means and methods for performing work at the site will be evaluated for potential vibration impacts on adjoining property, utilities, and adjacent existing structures. Acceptable vibration criteria will be established prior to construction, and vibration will be monitored, if required, during construction to ensure compliance with the agreed-upon standard.

3.11.11 Construction Waste

The Proponent will take an active role with regard to the reprocessing and recycling of construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse

and recycling of materials when possible. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the disposal contract. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility.

3.11.12 Protection of Utilities

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities within the public way will be in accordance with the MWRA, BWSC, Boston Public Works, Dig Safe, and the governing utility company requirements. All necessary permits will be obtained before the commencement of the specific utility installation. Specific methods for constructing proposed utilities where they are near to, or connect with, existing water, sewer and drain facilities will be reviewed by BWSC as part of its site plan review process.

3.11.13 Rodent Control

A rodent extermination certificate will be filed with the building permit application for the Project. Rodent inspection monitoring and treatment will be carried out before, during, and at the completion of all construction work for each phase of the Project, in compliance with the City's requirements.

3.11.14 Wildlife Habitat

The Project Site is in an established urban neighborhood. There are no wildlife habitats in or adjacent to the Project Site.

3.12 Sustainable Design

To comply with Article 37, the Proponent intends to measure the results of their 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 C, 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, 45 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 1.1, 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 3.1, 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 will reduce the environmental impacts associated with energy use via means of increased energy performance and to exceed ASHRAE 90.1 by 20%.

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 2.1 and 2.2, 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. One point is expected for exemplary performance on the Development Density credit. Additional credits will be pursued for the Green Housekeeping program and the Green Education and Outreach program.

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

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 'D' Line right-of-way is on the Project's southeast border; and the Waterworks 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 heavily trafficked circle where a number of major avenues intersect.

4.2 Project Alternatives/Evolution of Design

The Project design has evolved over the past year with many revisions as the direct result of community input and government review. Previous design studies included alternate entries into the site, a taller residential building, and also a more uniform architectural expression. In response to feedback on these issues:

- the Project now has a center drive access into the site;
- the residential building is now only four stories over a retail base as opposed to five; and
- the different program uses are now expressed through a variety of façade treatments and design elements to create a more engaging and dynamic urban space.

4.3 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 surrounding.

For example, rather than proposing a continuous flat surface along the façade of the residential building abutting Cassidy Playground, the Project calls for a series of concave design elements (Figure 4-1 and 4-2). These design elements provide a richer backdrop to the park allowing the building to simultaneously blend in while also complimenting its surroundings.

A very different design tactic was employed along the MBTA tracks. The hotel building is not expressed as a single structure, but as a series of buildings with varied exterior color and window patterns to breakdown the apparent length of the façade (Figure 4-3).

The variety expressed in each design will not only help distinguish each building as separate uses but will also contribute to the eclectic architectural character of the local community.

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

The diverse use of each building program is reflected in the assorted design elements incorporated into the Project's overall design. The residential component is primarily a light toned metal panel with varied window types expressing the living rooms and bedrooms (Figure 4-4). The hotel is primarily a darker warm toned metal panel. The medical office space is wrapped in beige toned unit masonry (Figure 4-4). Moreover, since each program has very different uses, the window types and sizes are distinct, allowing for a more interesting and vibrant addition to the surrounding urban fabric. At the building's base, walls of transparent storefront glass provide an enhanced and unified pedestrian experience (Figure 4-2).

4.3.1 Height and Massing

4.3.1.1 Height

The Site is comprised of area in both Brookline and Boston (Figure 4-5). The height limit for the Brookline portion of the Site is 56 feet, and the proposed building will match that height (excluding mechanical equipment and penthouse). On the Boston portion of the site, the overall massing is sensitive to the increased scale of the surrounding context and the proposed height is 62 feet. At the northeast corner of site where maximizing the height is desirable for urban design reasons, the height is 64'6".



Figure 4-1
North Elevation



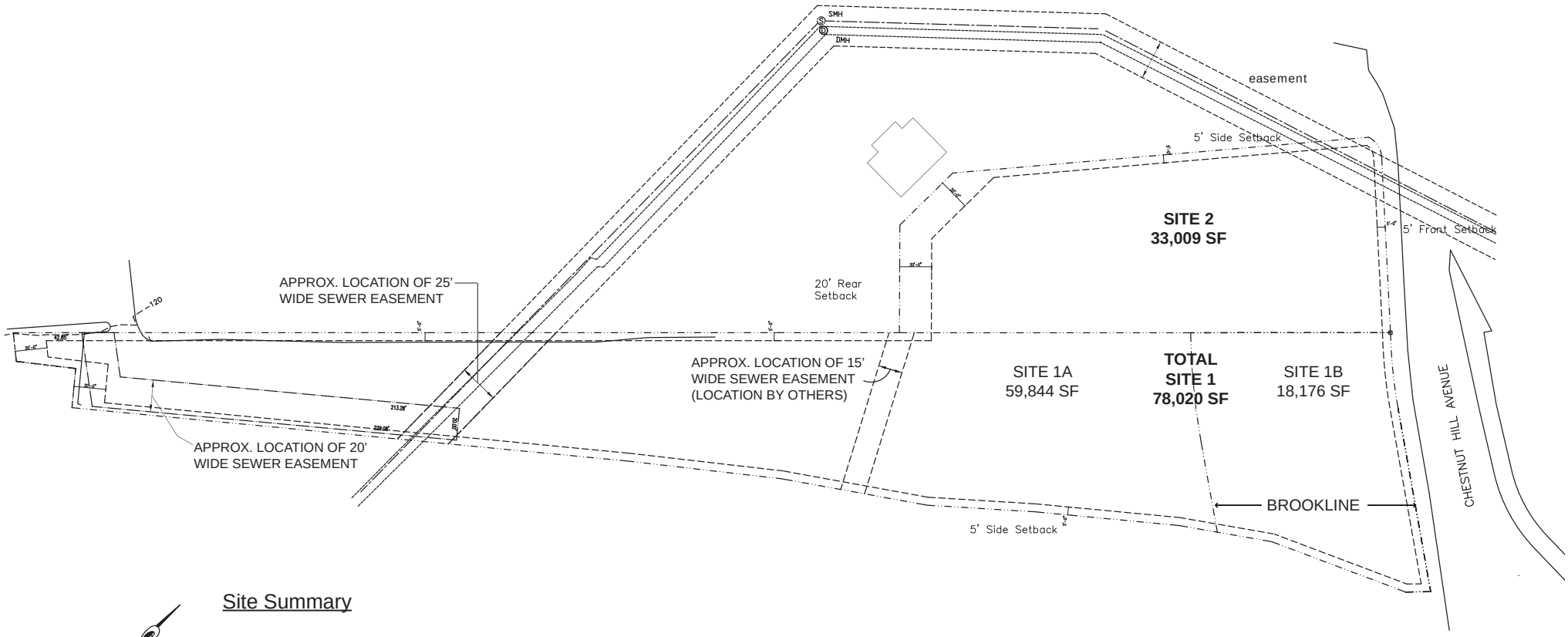
Figure 4-2
View from Corner



Figure 4-3
South Elevation



Figure 4-4
View from Bridge



Site Summary

Boston - 92,893 SF
Brookline - 18,176 SF

375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 4-5
Site Area

4.3.1.2 Massing

The Project's massing and design expression is in response to the scale and varied fabric of the immediate local context. Over the course of almost two years, the Proponent has studied the site extensively and produced a number of design options. Several priorities have emerged as a result of the design and review process:

- Creating a pedestrian-friendly new development that incorporates neighborhood-friendly retail programs;
- Extending a high quality residential use into Cleveland Circle;
- Introducing a ground floor restaurant with outdoor seating facing the Cassidy Playground;
- Respecting and supporting the integrity of Cassidy Playground, including making improvements;
- 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
- Locating the development in close proximity to a readily accessible public transportation.

4.4 Landscape Design

4.4.1 Interface With Cassidy Playground

The landscape improvements on the north side of the building, at the interface with Cassidy Playground, seek to continue the existing playground's landscape design of trees spread out over gently sloped lawn, concrete paths, and strategically placed benches (Figure 4-6). The Project proposes to provide a new concrete path to replace the existing deteriorated path extending from the existing support building to the Chestnut Hill Avenue street side parking area. A second new path will connect pedestrians walking along Chestnut Hill Avenue to the Project's residential entry, and will result in an improvement to the general character of the playground and increased activity within the playground near the building corner. The retail terrace, pool patio, and lobby dining terrace will be paved with concrete unit pavers, and a small painted steel fence will define the edge to separate it from the playground. The presence of activity along the playground's edge will be a positive influence in that it will provide "eyes" on the playground to enhance security as well as increase pedestrian activity to and through the playground.



Figure 4-6
Landscape Plan

4.4.2 Streetscape

The streetscape along Chestnut Hill Avenue will be composed of a robust planting of street trees along the curb line installed in six-foot-wide raised curbed planting beds (Figure 4-7). The mature deciduous street trees will be selected to have vegetated canopies that begin seven feet above the ground 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 the pedestrian priority 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 unify the overall appearance with Cleveland Circle.

4.4.3 Courtyard

The interior courtyard will be designed as an oasis, an area of decompression for both the pedestrian and the driver, separate from the active street experience (Figure 4-8). The courtyard is designed to create an inviting space for pedestrians that is also easily navigable for vehicular arrival and unloading. The material used in the ground plane will create a unified appearance and will be durable, yet visually interesting. The paving will be composed of primarily concrete unit pavers installed in a continuously flush surface to create the sense of the space as a piazza, a shared pedestrian and vehicular court. The raised curb plant beds at the perimeter will soften the edges and consist of a mixed palette of deciduous and evergreen shrubs and small gingko trees—one inch or less caliper—to be used in clusters or 'bouquets' providing a vertical form and fall color. Large pots will be used to assist with traffic control and add changeable seasonal color. A large screen element comprised of steel and wood slats will be placed just in front of the north facing overhead façade to provide a scaling element, add definition to the edge of the space and create a visual separation between the parking/circulation area beyond and the entry court.

4.4.4 Western Portion of Site

The remainder of the site will be comprised mainly of asphalt and concrete walks to accommodate parking, service and circulation (Figure 4-6). Parking lot areas on the north end of the site will be designed to hold paving back from the edge adjacent to the playground to create a planted and visual buffer between the parking area and the playground. A painted steel fence will be installed along the top of the stone retaining wall and a new fence installed along the MBTA property line which will enhance the sites appearance both from inside the side and views to the site from adjacent properties and the park below.



Figure 4-7
Chestnut Hill Ave Elevation



375-399 Chestnut Hill Avenue Boston/Brookline, MA

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Figure 4-8
Entry/Courtyard View

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 project over the entries. Several additions appear to have been added to the rear of the building during the late 20th century.

At a March 13, 2012 public hearing, the Brookline Preservation Commission (BPC) found the Circle Cinema building "Non-Significant." In a letter dated March 20, 2012 the Boston Landmarks Commission (BLC) found the Circle Cinema building exempt from Article 85 (Demolition Delay) review, thereby, requiring no further BLC review under Article 85.

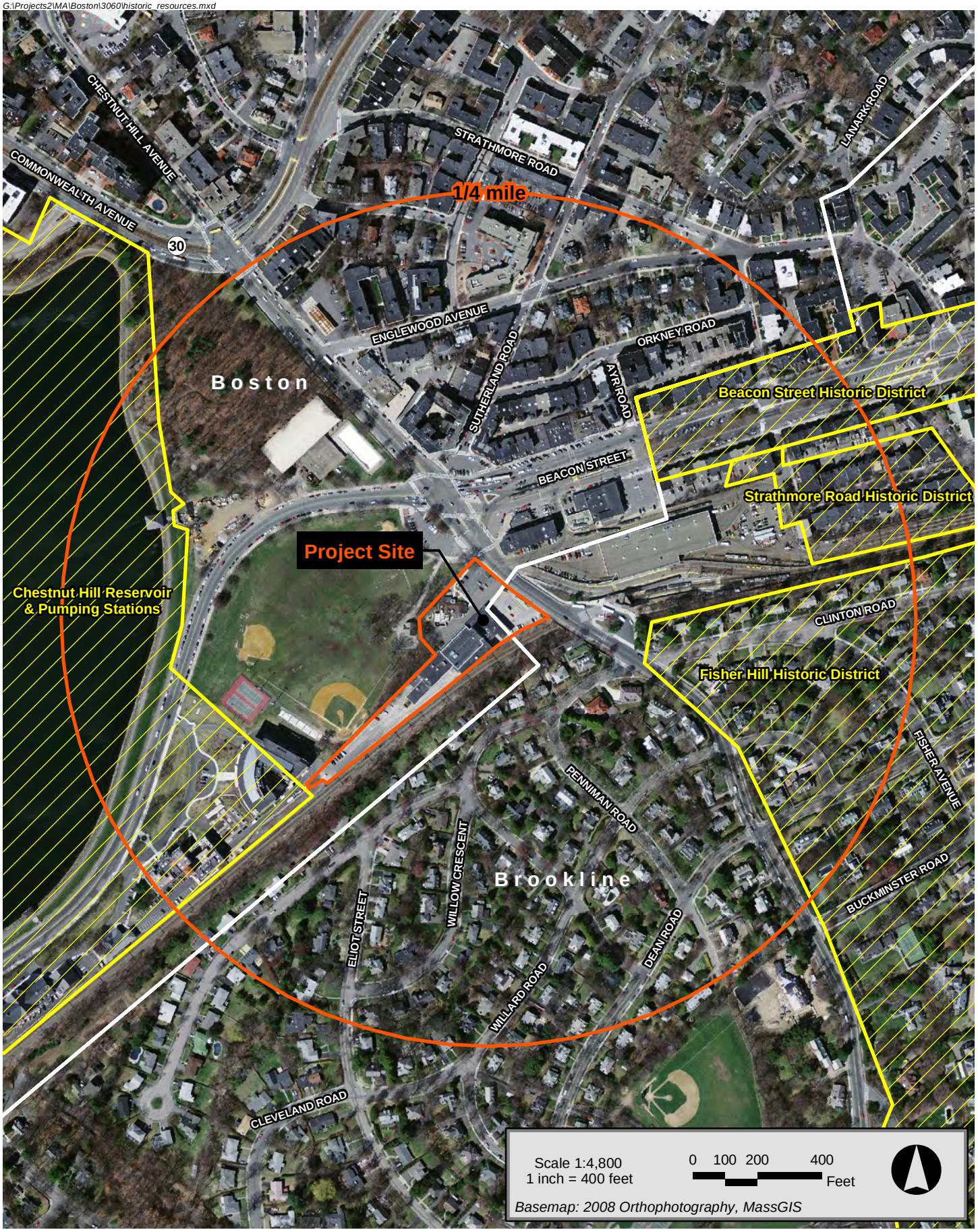
5.2 Historic Resources in the Project Vicinity

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 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 an 18-inch sewer line owned by the Town of Brookline. This sewer line enters from the south, and heads northwest cutting through the middle of the site along the rear of the existing movie theater building. 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 37,750 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.

Table 6-1 Projected Sanitary Sewer Flows

Use	Quantity	Unit Flow Rate	Estimated Maximum Daily Flow (gpd)
Residential Units	114 beds	110 gpd/bedroom	12,540 gpd
Hotel Rooms	181 rooms	110 gpd/bedroom	19,910 gpd
Restaurant	100 Seats	35 gpd/seat	3,500 gpd
Retail	7,500 sf	50 gpd/1,000 sf	375 gpd
Medical Office	19,000 sf	75 gpd/1,000 sf	1,425 gpd
Total			**37,750 gpd**

6.1.3 Sanitary Sewer Connection

The proposed building's sanitary services are expected 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 0.038 MGD, which is approximately 1.25% of this line's capacity.

The Proponent will submit a Site Plan to the BWSC for review and approval. Based on the proposed estimated sanitary flow, a Compliance Certification will be reviewed and approved by BWSC prior to submitting to the Massachusetts Department of Environmental Protection (MassDEP) as required.

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 41,525 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.

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.

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 an on-site infiltration system. 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 a water quality inlet (e.g., particle separator) before being conveyed to the existing 78″ x 84″ concrete storm drain that runs through the Site. The manner in which this culvert cuts through the Site results in the location of the proposed building on top of a small section of the culvert at the northern most corner of the site. In order to protect the culvert, the Proponent is proposing to place the building on a structural slab and use a combination of grade beams and micropiles to span this section of culvert that will fall underneath the proposed building corner. The design of this span will be submitted to BWSC for approval.

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.

The proposed buildings will occupy the majority of the site. Runoff from the rooftops 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

Coordination with Other Government Agencies

7.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES

7.1 Architectural Access Board Requirements

The Project will comply with the requirements of the Massachusetts Architectural Access Board and will be designated to comply with the standards of the Americans with Disabilities Act.

7.2 Massachusetts Environmental Policy Act (MEPA)

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 permits, state funding or involve any state land transfers.

7.3 Massachusetts Historical Commission

The Proponent does not anticipate that the Project will require any state or federal licenses, permits or approvals, and does not anticipate utilizing any state or federal funds. Therefore, review by the Massachusetts Historical Commission (MHC) is not anticipated at this time. In the event that state or federal licenses, permits, approvals or funding is involved, the Proponent will file an MHC Project Notification Form to initiate review of the Project.

7.4 Boston Civic Design Commission

The Proposed Projects will comply with the provisions of Article 28 of the Boston Zoning Code. This PNF will be submitted to the Boston Civic Design Commission by the BRA as part of the Article 80 process.

7.5 Boston Landmarks Commission

On March 14, 2012 an Article 85 (Demolition Delay) application was filed with the Boston Landmarks Commission (BLC) for the proposed demolition of the Circle Cinema building. In a letter dated March 20, 2012, the BLC determined the building exempt from review, stating no further review under Article 85 is required.

7.6 Brookline Preservation Commission

Because a portion of the Circle Cinema building is also located in the Town of Brookline, the proposed demolition is subject to the Brookline Preservation Commission's (BPC) Demolition Delay ordinance. On February 16, 2012, an application for a Demolition Certificate was filed with the BPC. At its March 13, 2012 hearing, the BPC found the building "Non-Significant;" as a result, the Demolition Delay ordinance was not invoked.

Section 8.0

Project Certification

8.0 PROJECT CERTIFICATION

This form has been submitted to the Boston Redevelopment Authority as required by the Boston Zoning Code, Article 80.

Signature of Proponent's Representative

John Meunier

Boston Development Group
93 Union Street, Suite 315
Newton Centre, MA 02459

8/16/2012
Date

Signature of Preparer

Geoffrey Starsiak

Epsilon Associates, Inc.
3 Clock Tower Place, Suite 250
Maynard, MA 01754

8-16-12
Date

Appendix A

Transportation

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

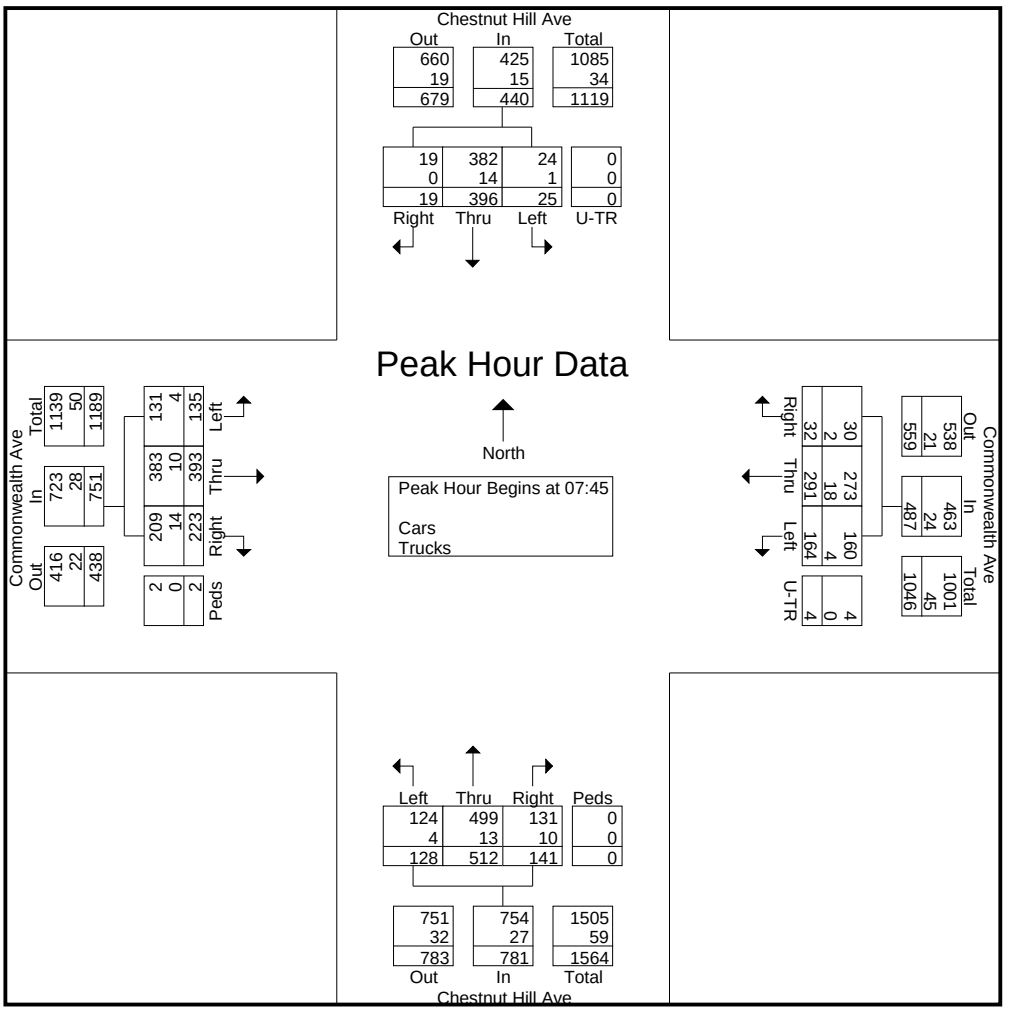
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	7	60	7	0	44	50	7	2	16	93	40	0	21	40	33	0	420
07:15	4	93	0	0	47	60	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



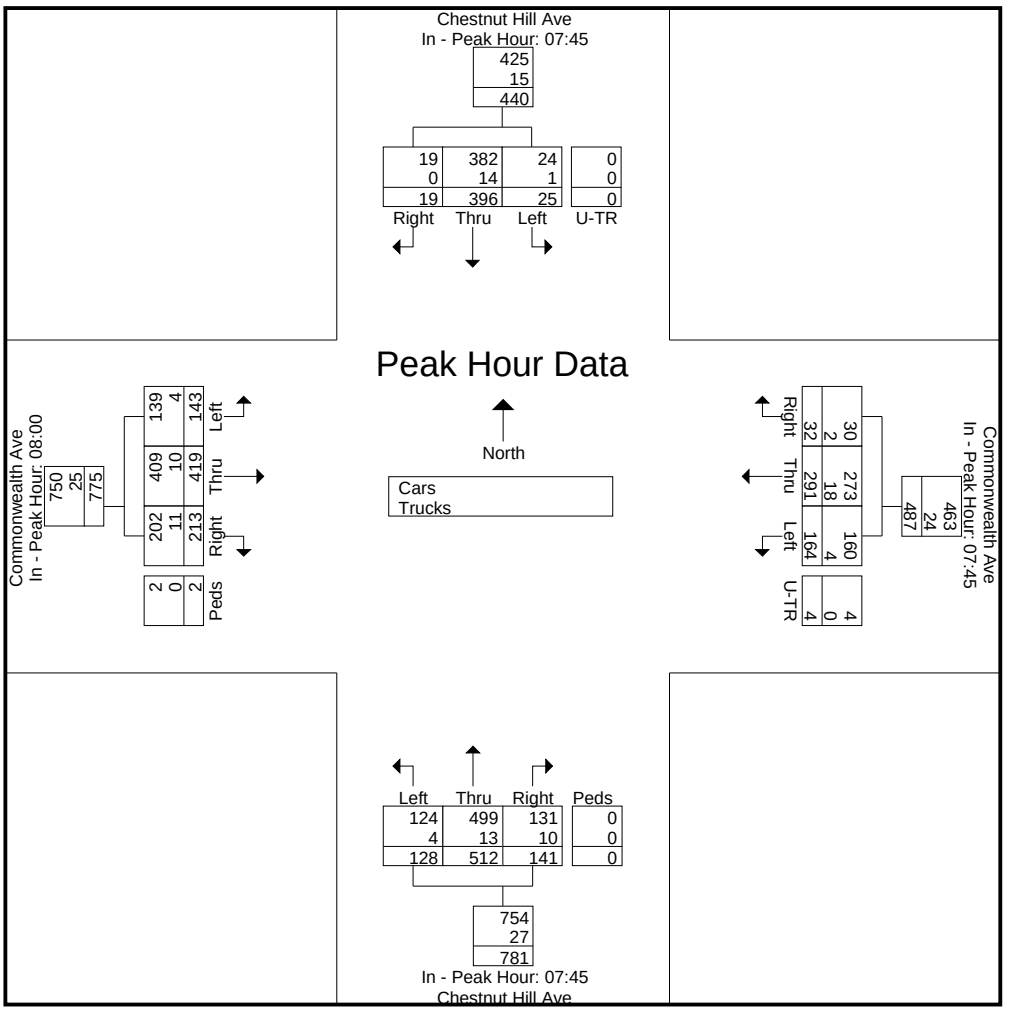
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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

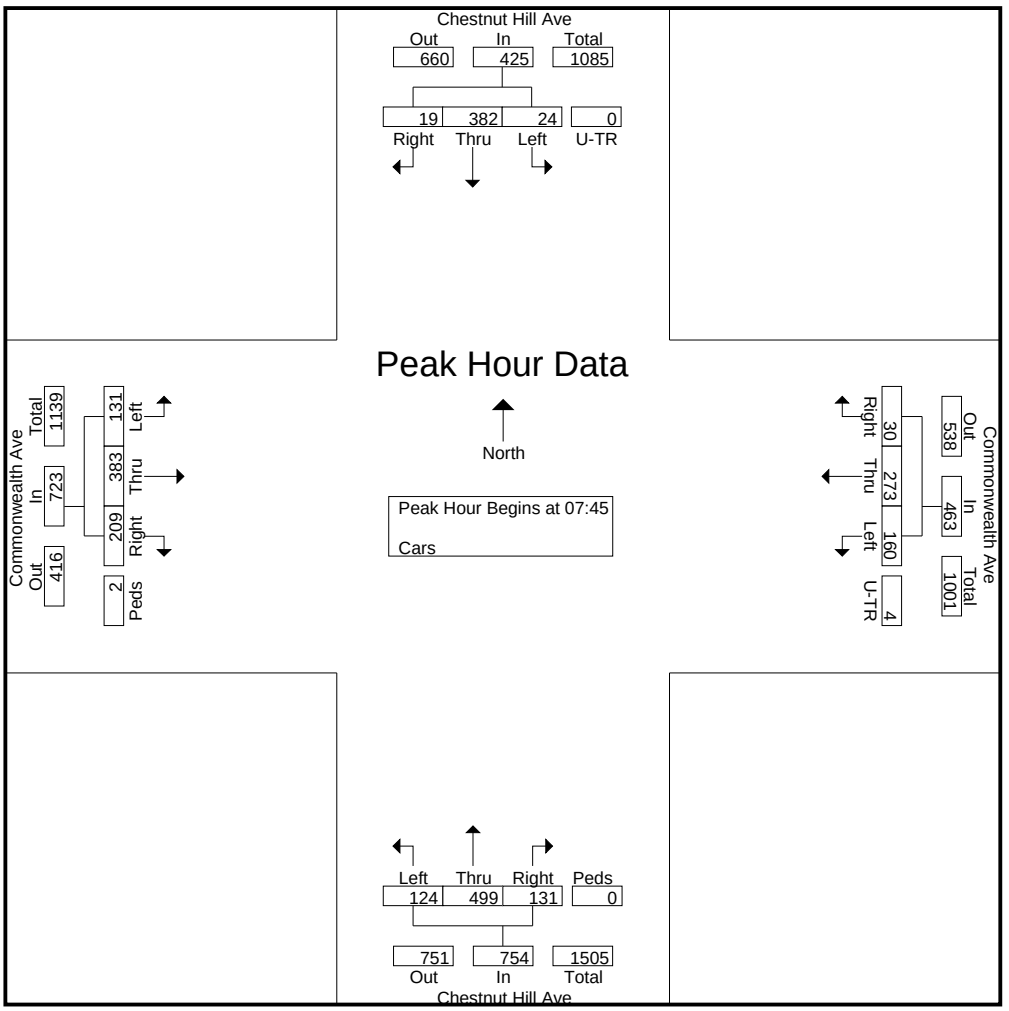
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	6	57	5	0	44	47	6	1	16	87	36	0	21	37	31	0	394
07:15	4	88	0	0	44	56	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



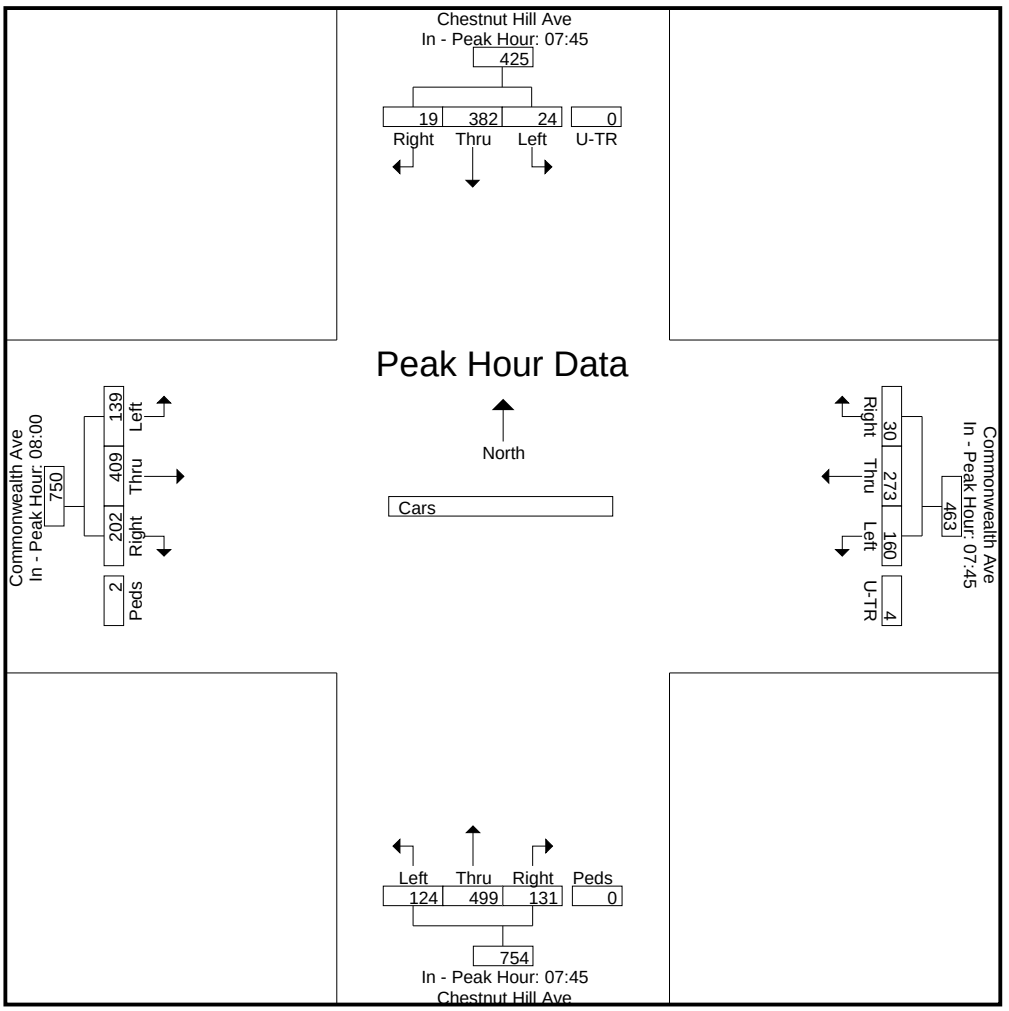
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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- Trucks

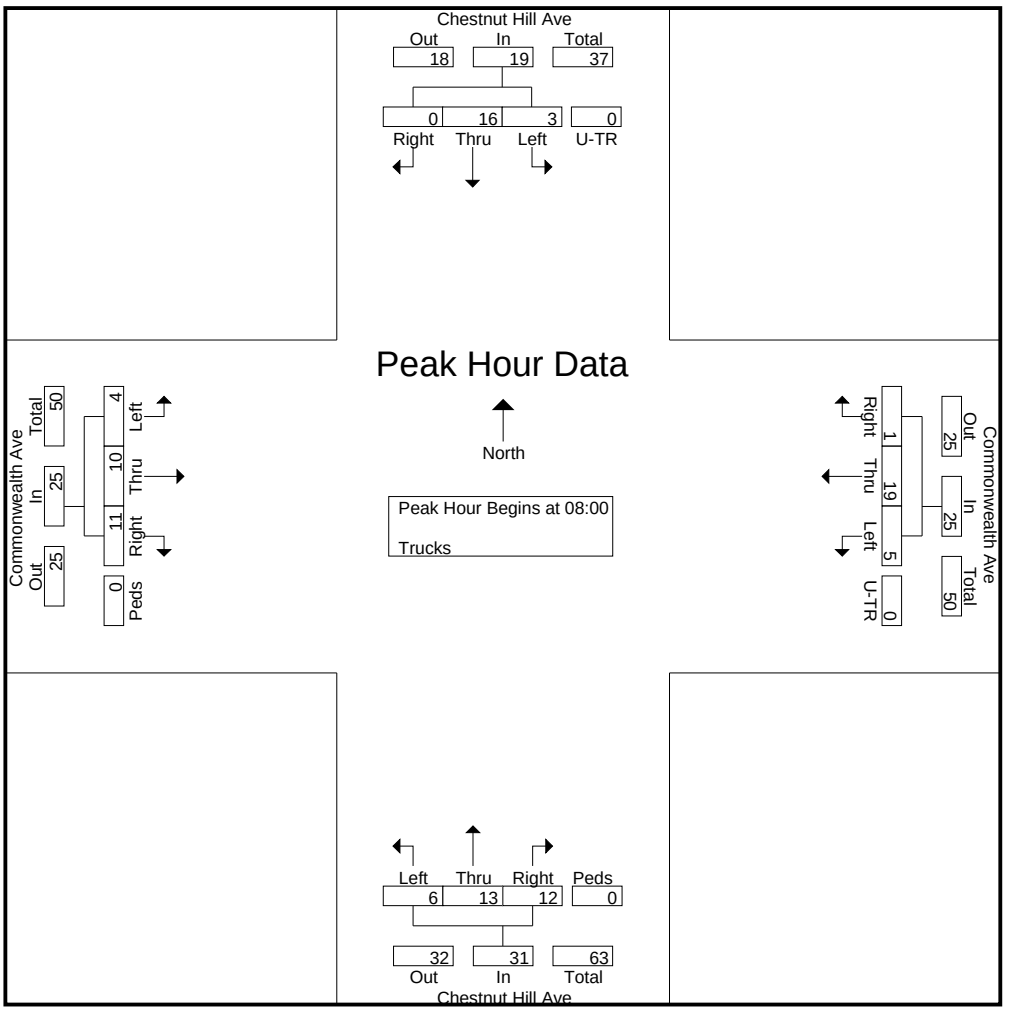
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	1	3	2	0	0	3	1	1	0	6	4	0	0	3	2	0	26
07:15	0	5	0	0	3	4	0	0	1	3	4	0	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



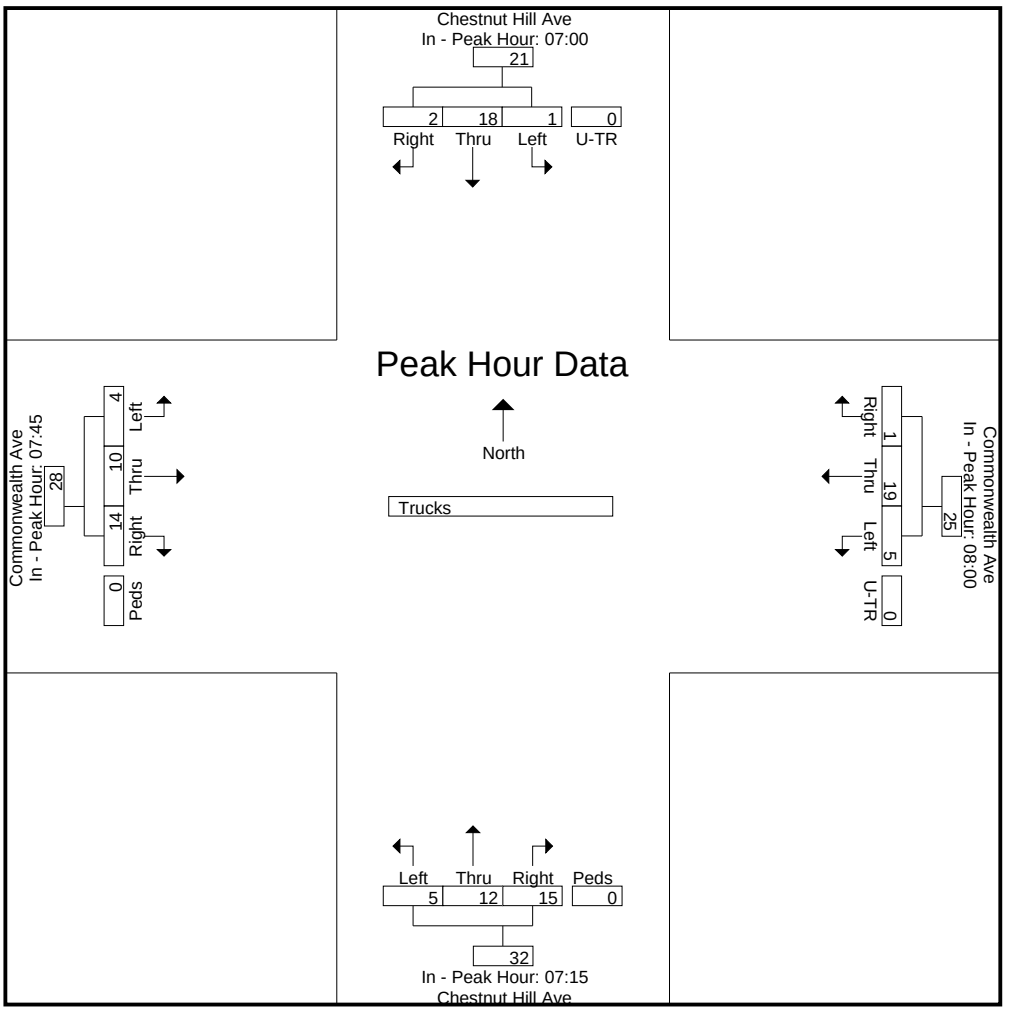
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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

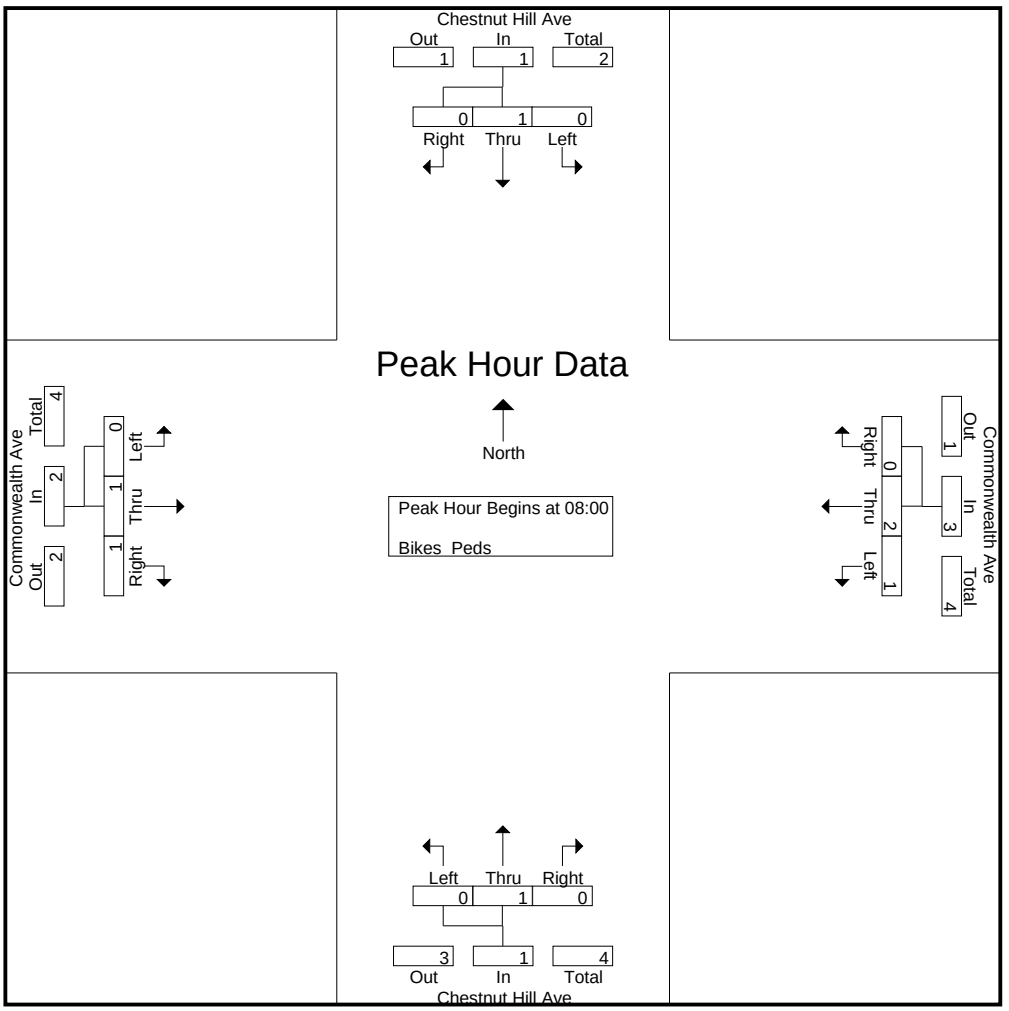
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	9	0	0	0	20	0	0	0	1	0	0	0	1	31	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



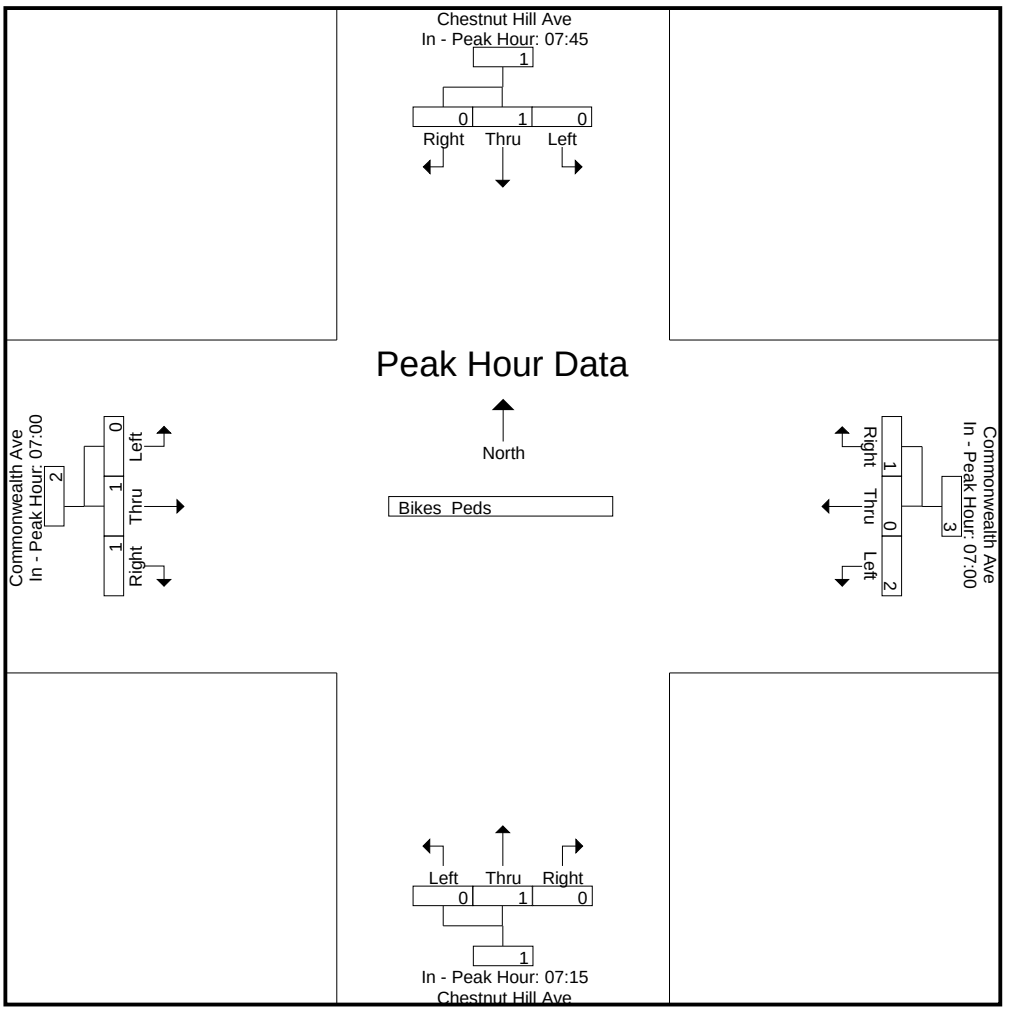
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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 - Trucks

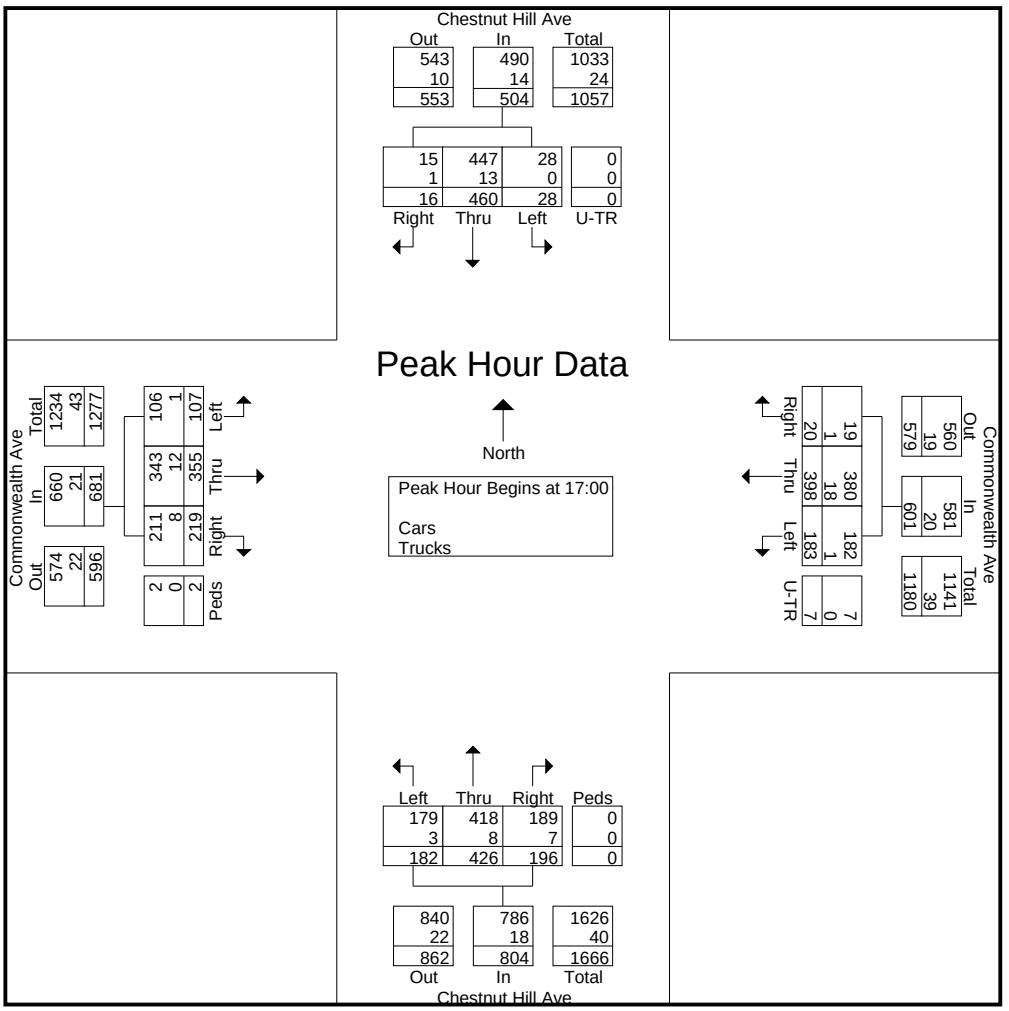
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	11	117	8	0	38	63	5	1	38	95	29	0	17	52	38	8	520
16:15	10	96	6	0	45	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



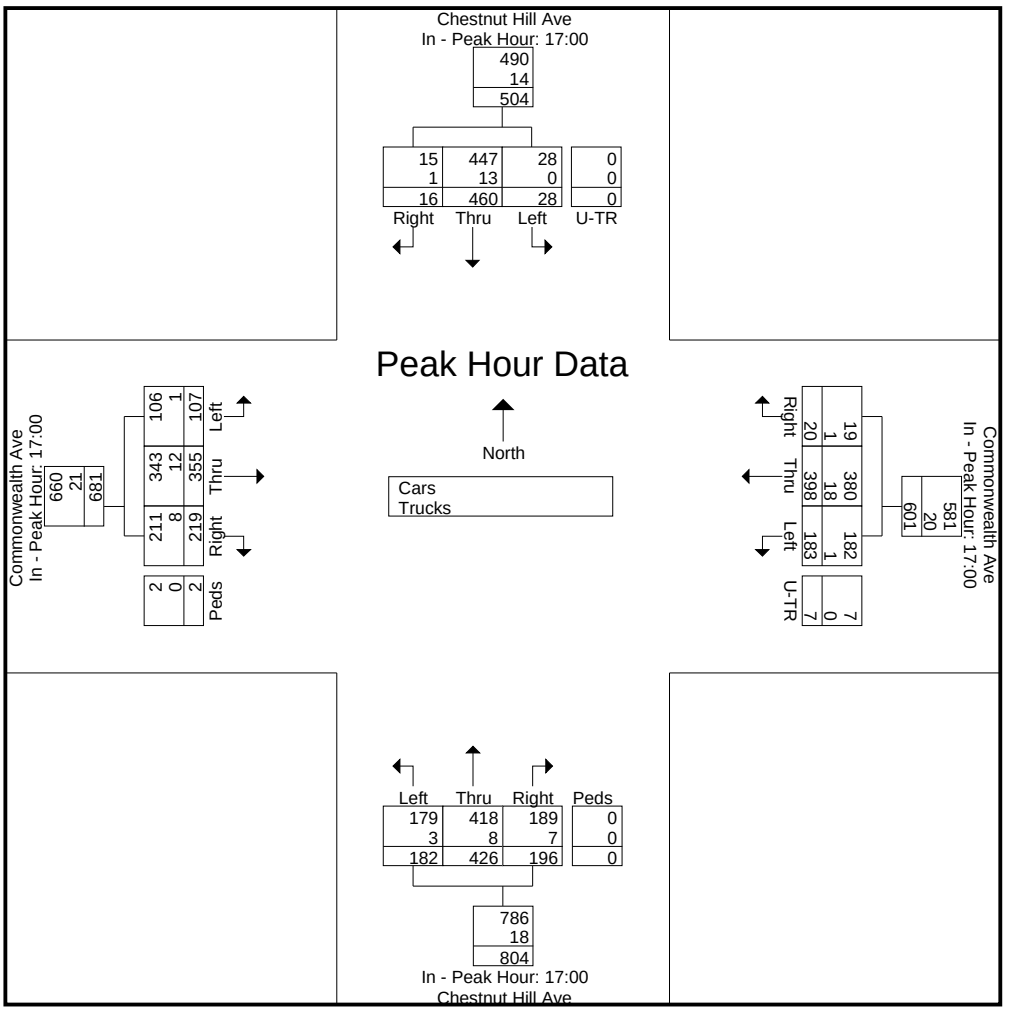
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

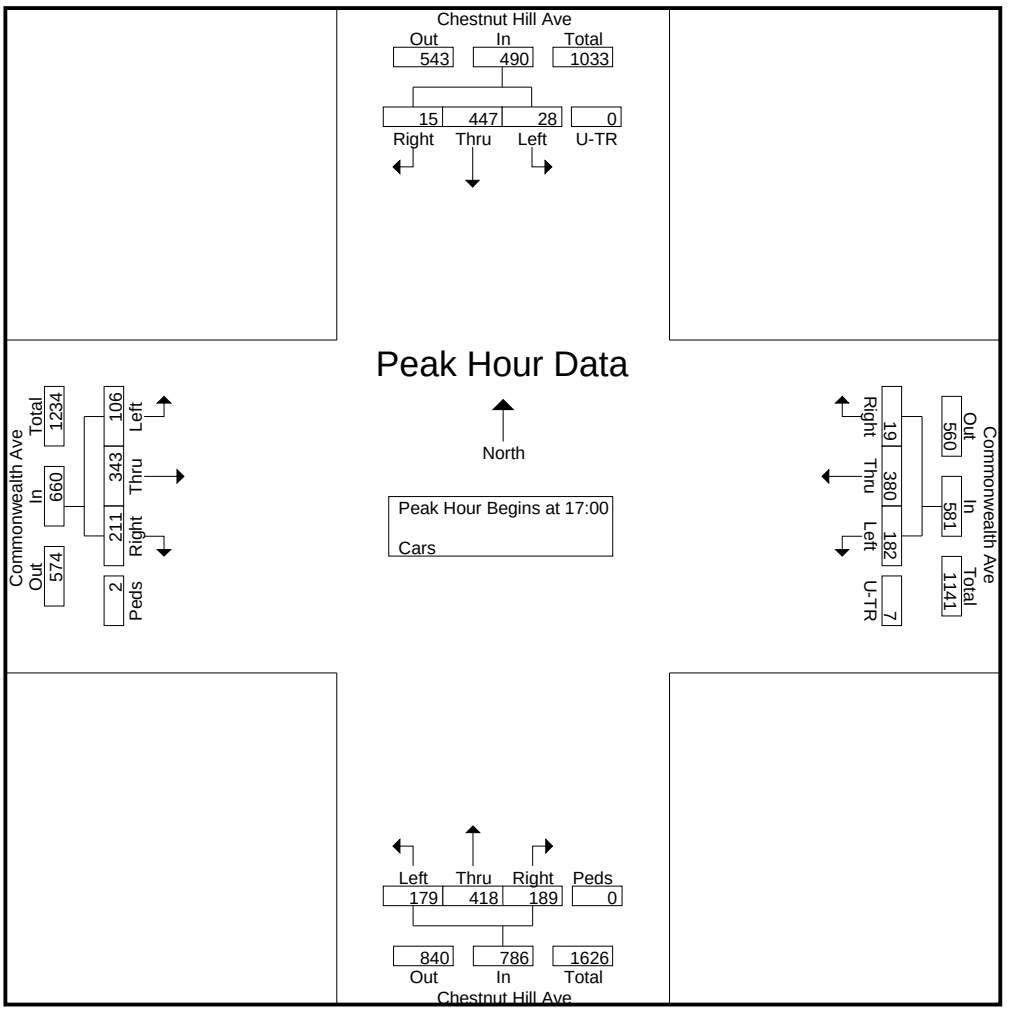
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	11	114	8	0	38	60	4	1	37	94	27	0	17	51	36	8	506
16:15	9	92	6	0	45	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



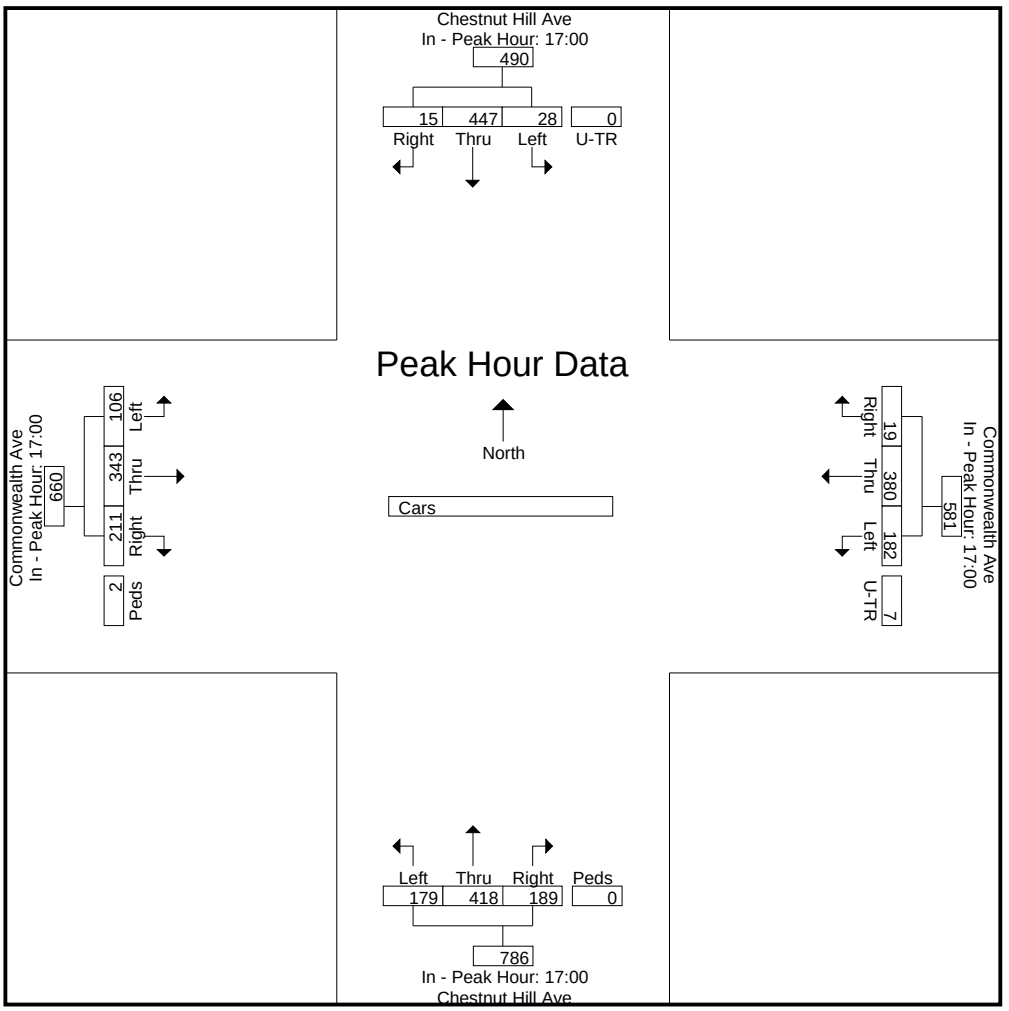
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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- Trucks

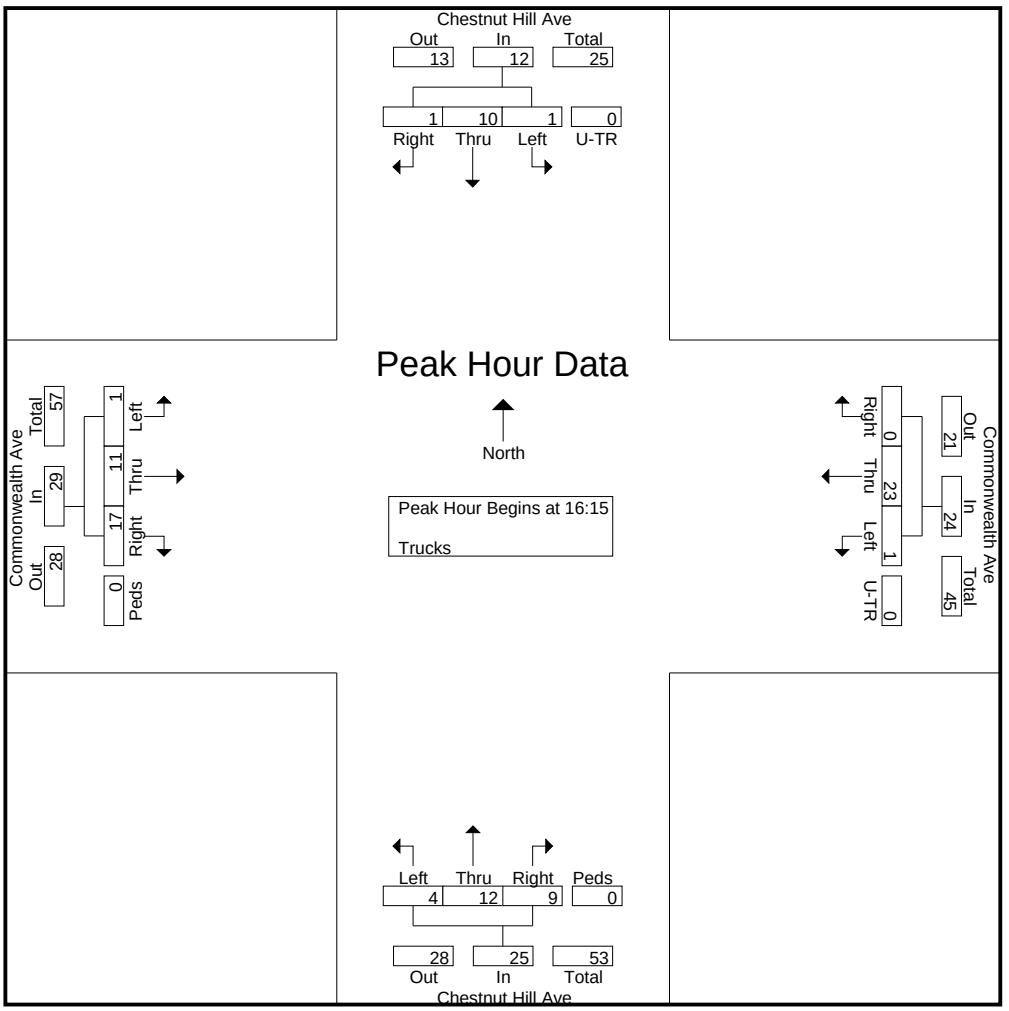
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	3	0	0	0	3	1	0	1	1	2	0	0	1	2	0	14
16:15	1	4	0	0	0	8	0	0	0	5	2	0	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



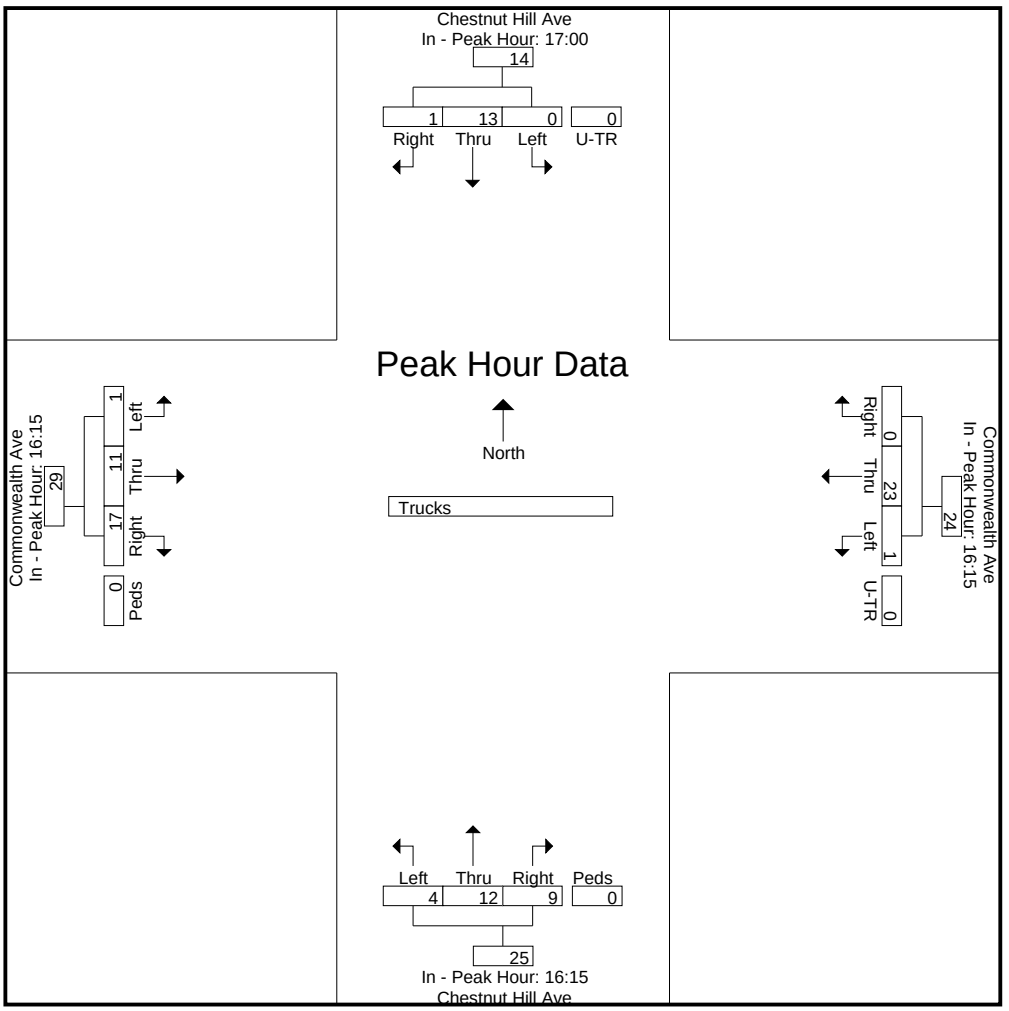
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

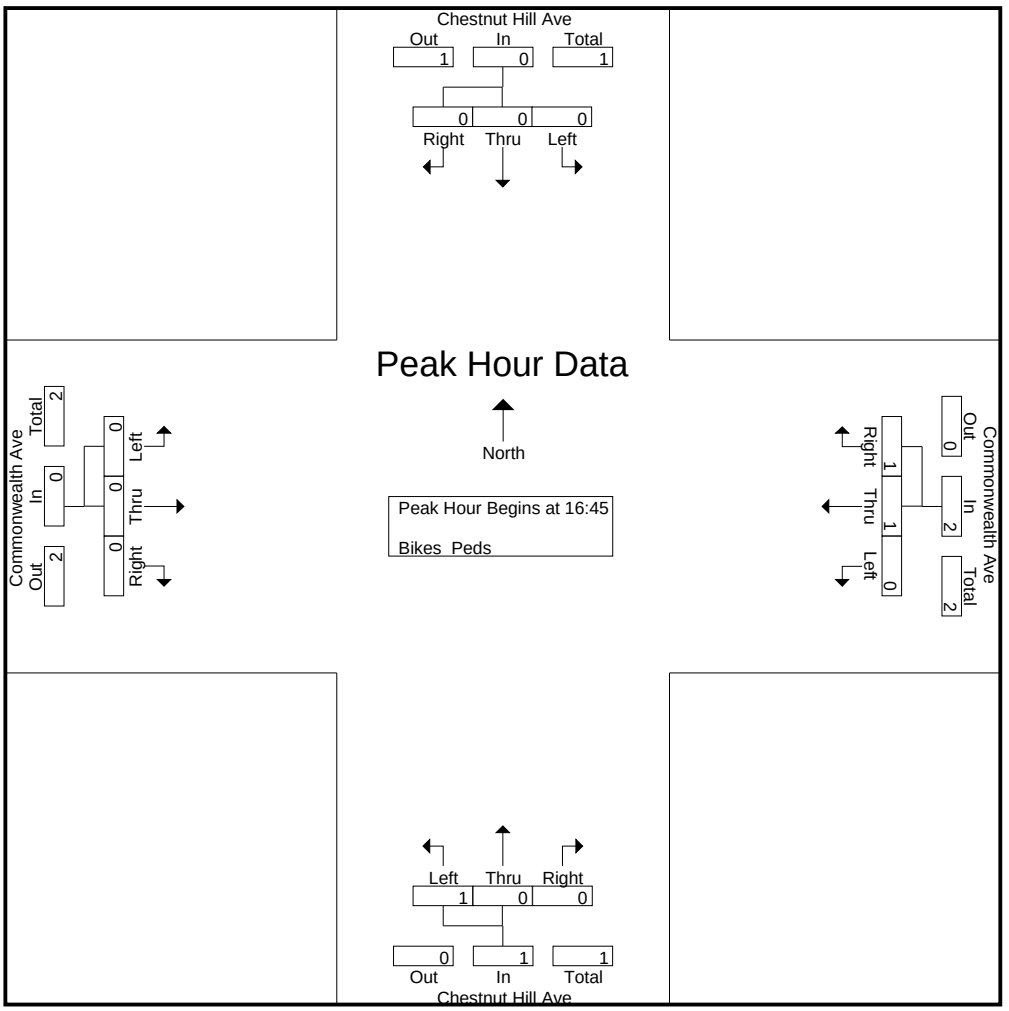
	Chestnut Hill Ave From North				Commonwealth Ave From East				Chestnut Hill Ave From South				Commonwealth Ave From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	6	0	0	0	14	0	0	0	4	0	0	0	0	24	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



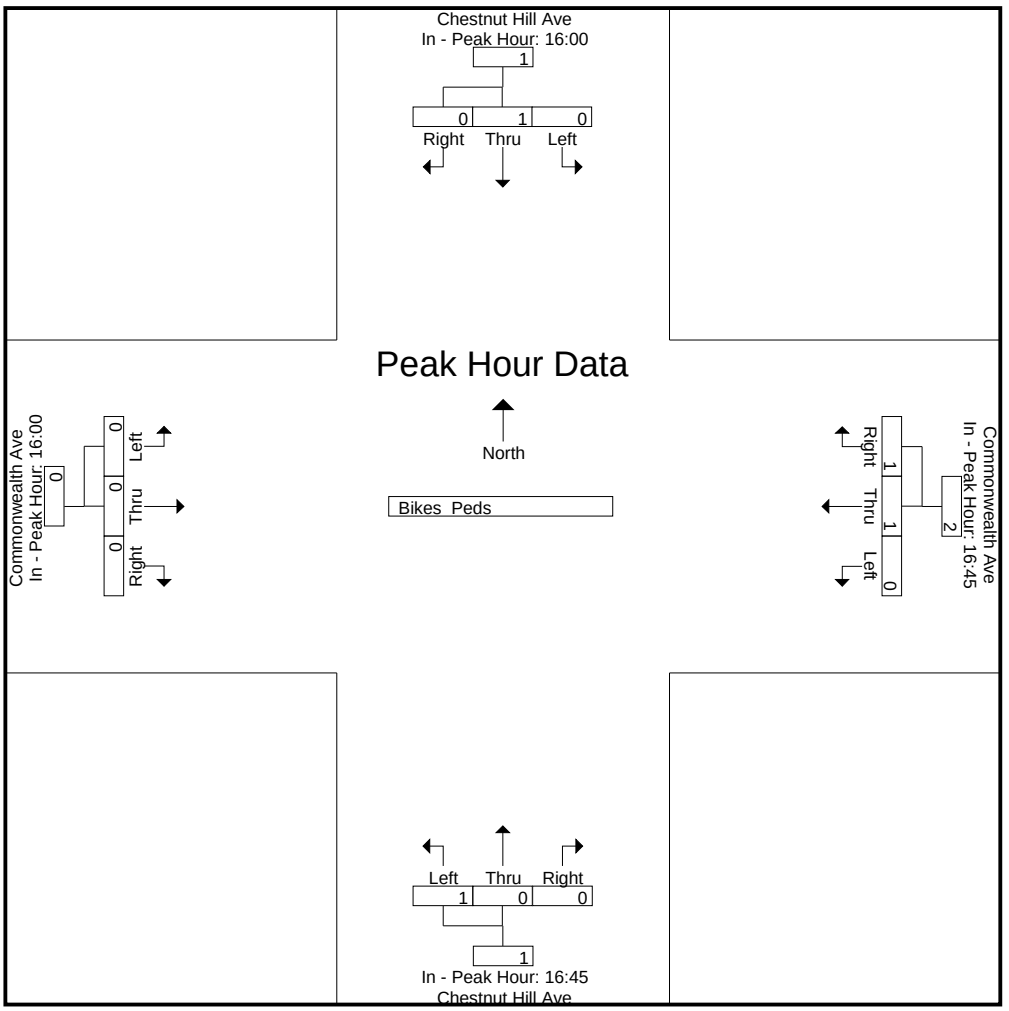
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

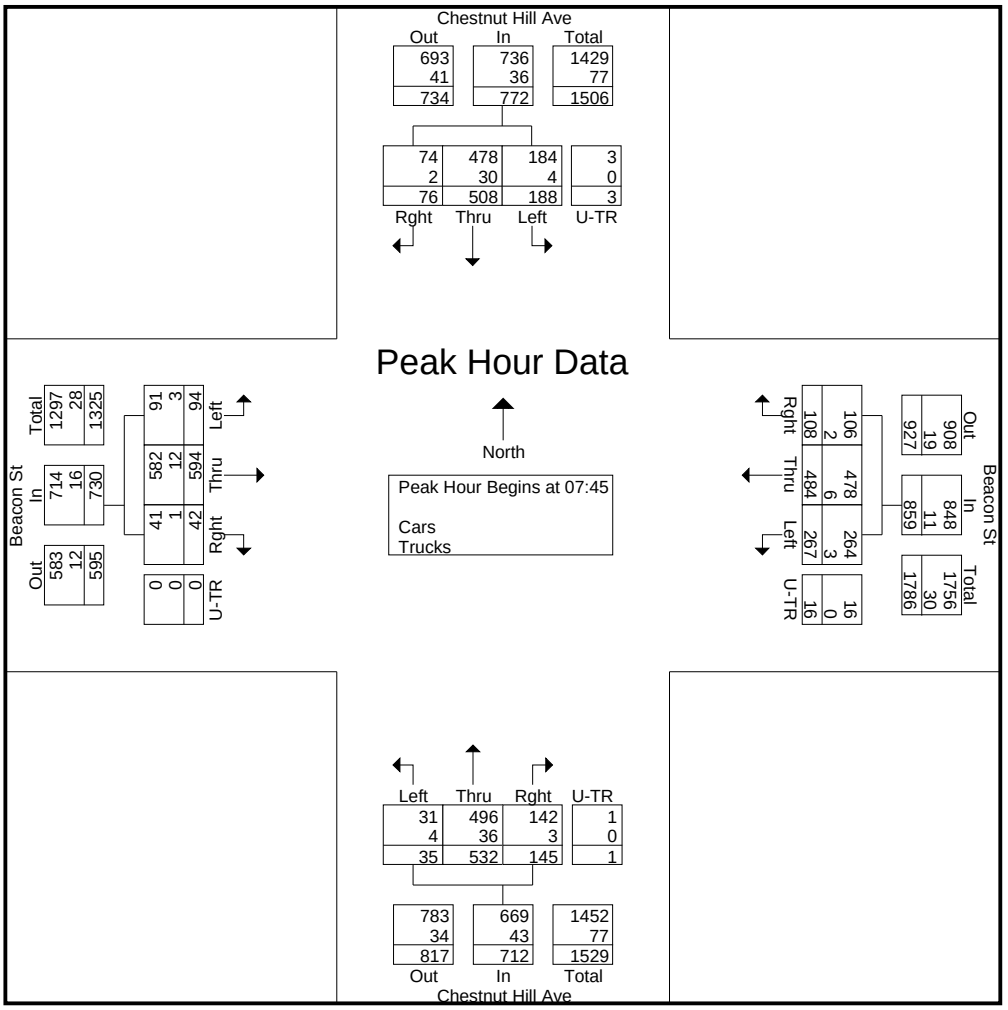
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	19	98	16	1	55	49	22	1	7	127	39	0	16	64	8	0	522
07:15	30	148	24	2	64	84	30	1	9	154	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

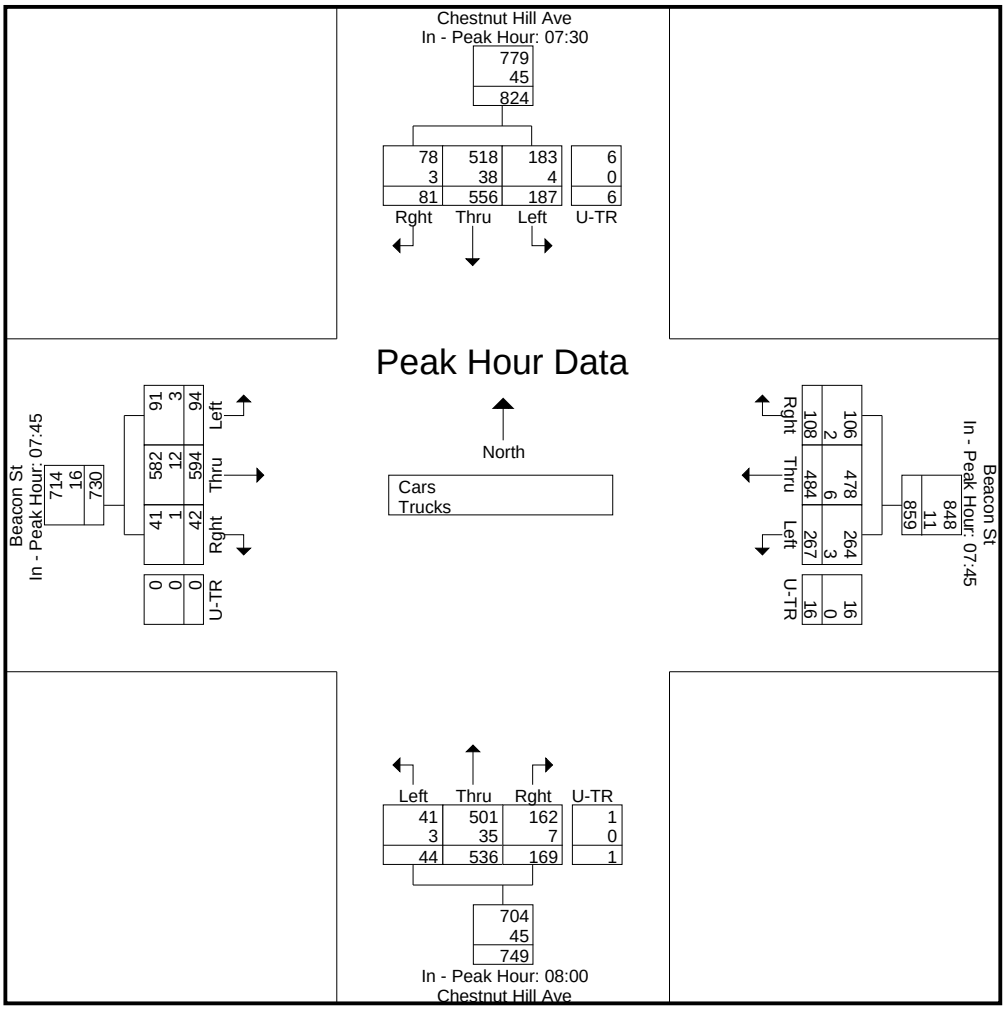
Peak Hour for Each Approach Begins at:

	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

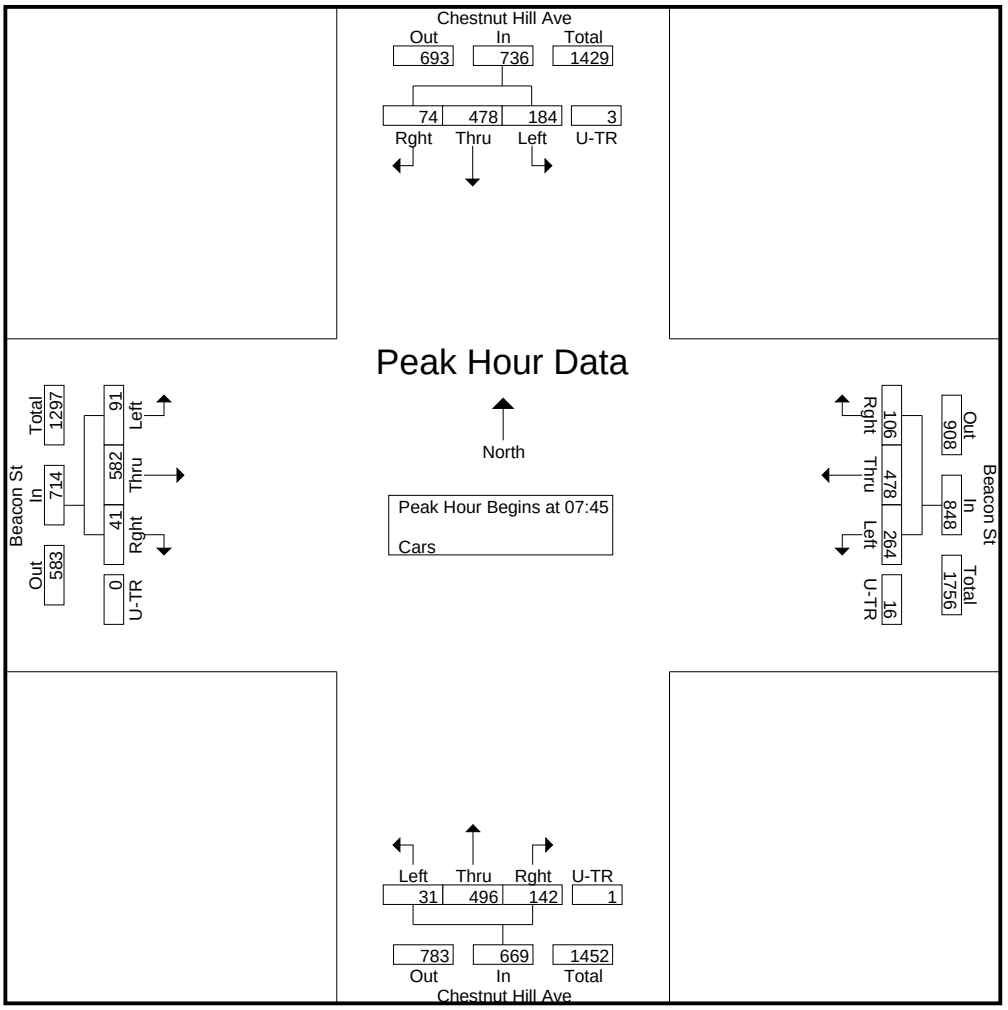
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	18	92	16	1	52	49	22	1	7	116	38	0	16	64	8	0	500
07:15	30	144	23	2	63	83	28	1	9	140	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

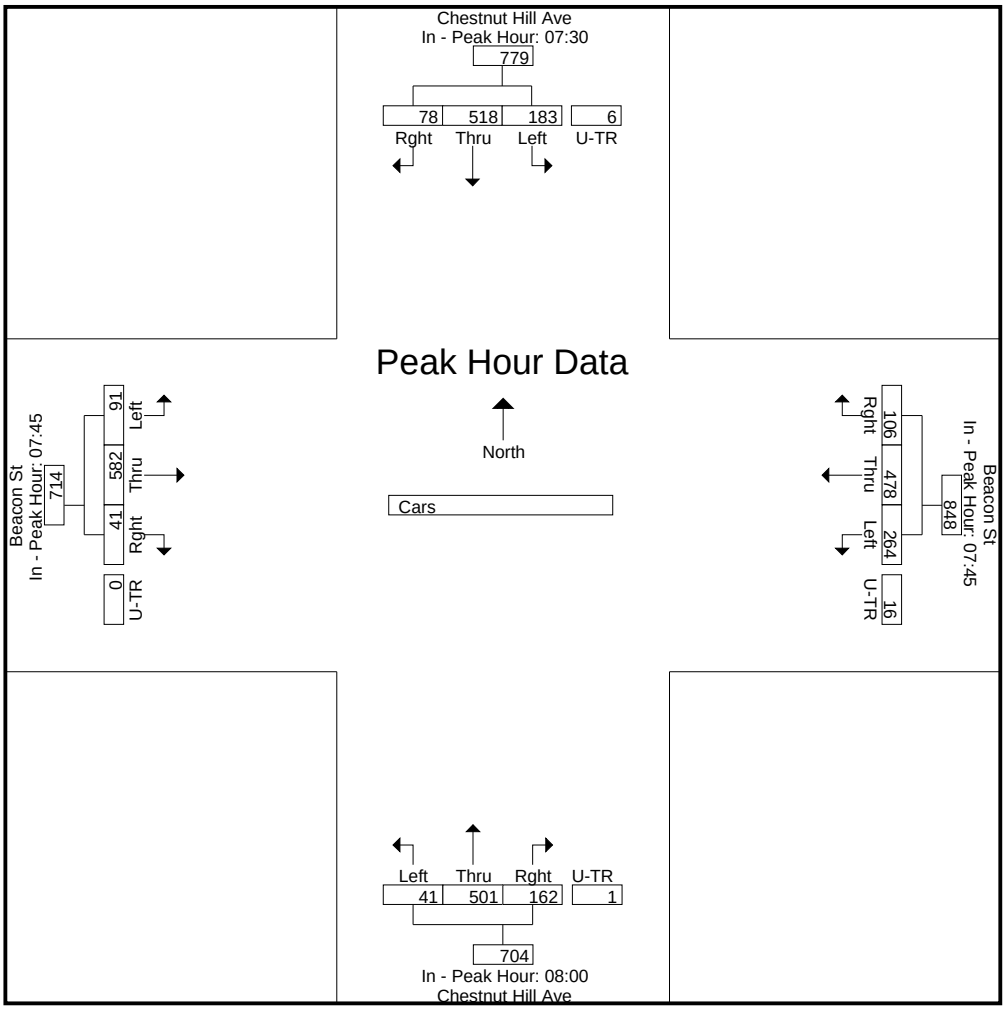
Peak Hour for Each Approach Begins at:

	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

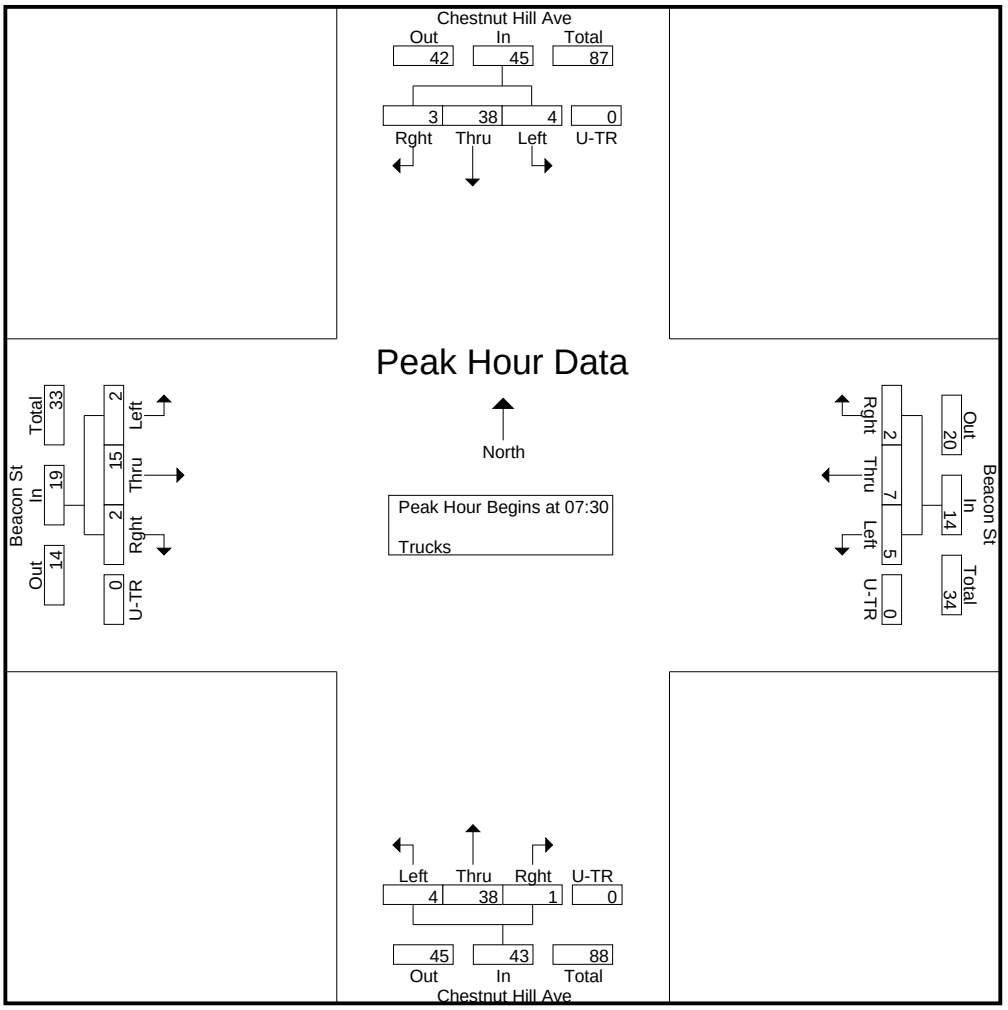
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	1	6	0	0	3	0	0	0	0	11	1	0	0	0	0	0	22
07:15	0	4	1	0	1	1	2	0	0	14	4	0	1	1	1	0	30
07:30	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

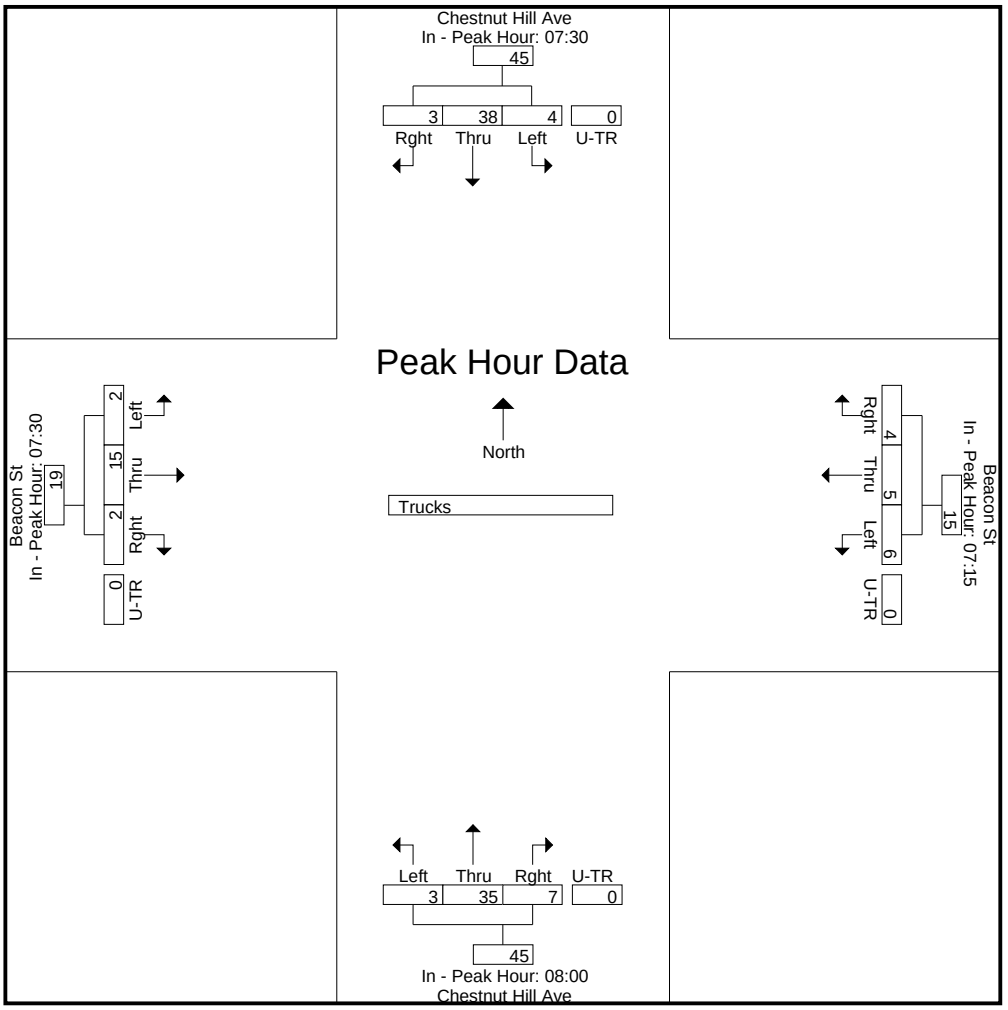
Peak Hour for Each Approach Begins at:

	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

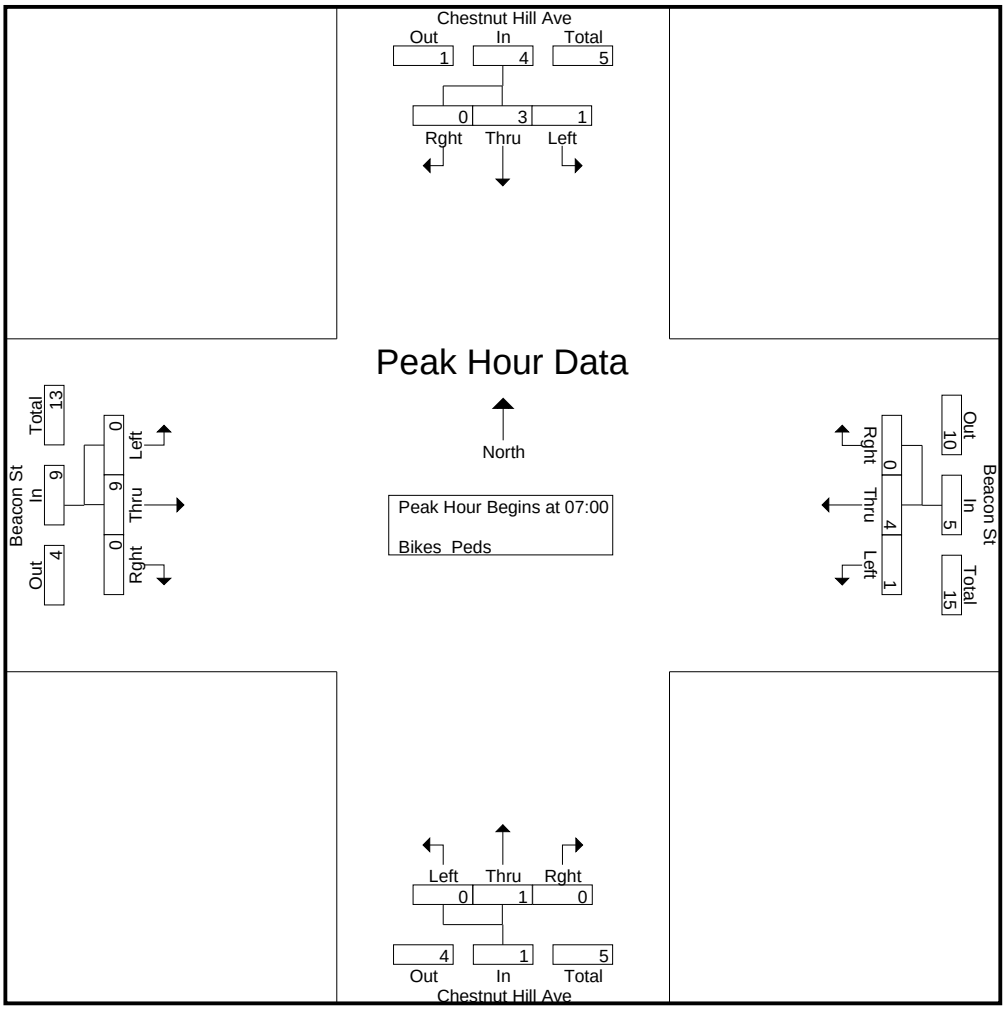
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	4	0	1	0	31	0	0	0	3	0	2	0	3	41	3	44
07:15	0	1	0	2	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

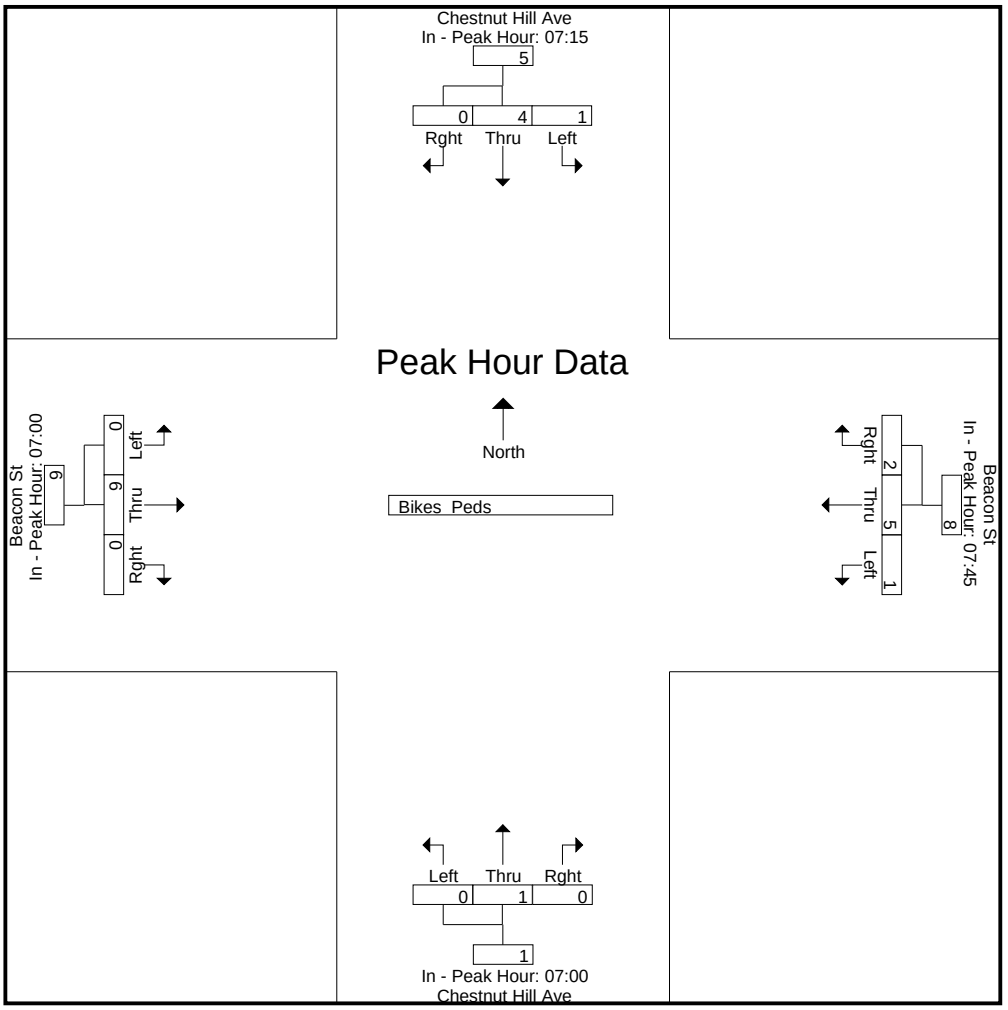
Peak Hour for Each Approach Begins at:

	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

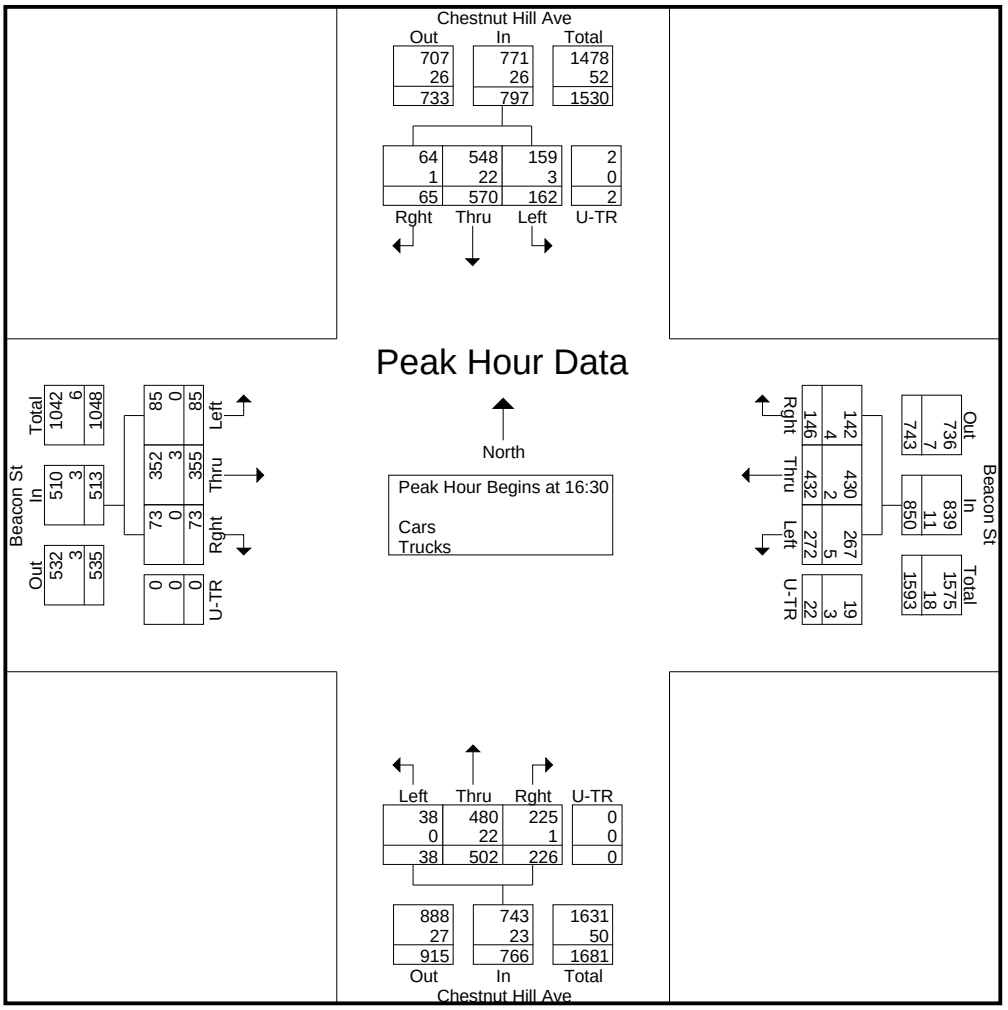
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	36	137	16	0	60	109	42	7	21	111	44	0	20	81	25	0	709
16:15	35	117	18	0	57	116	32	6	18	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



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

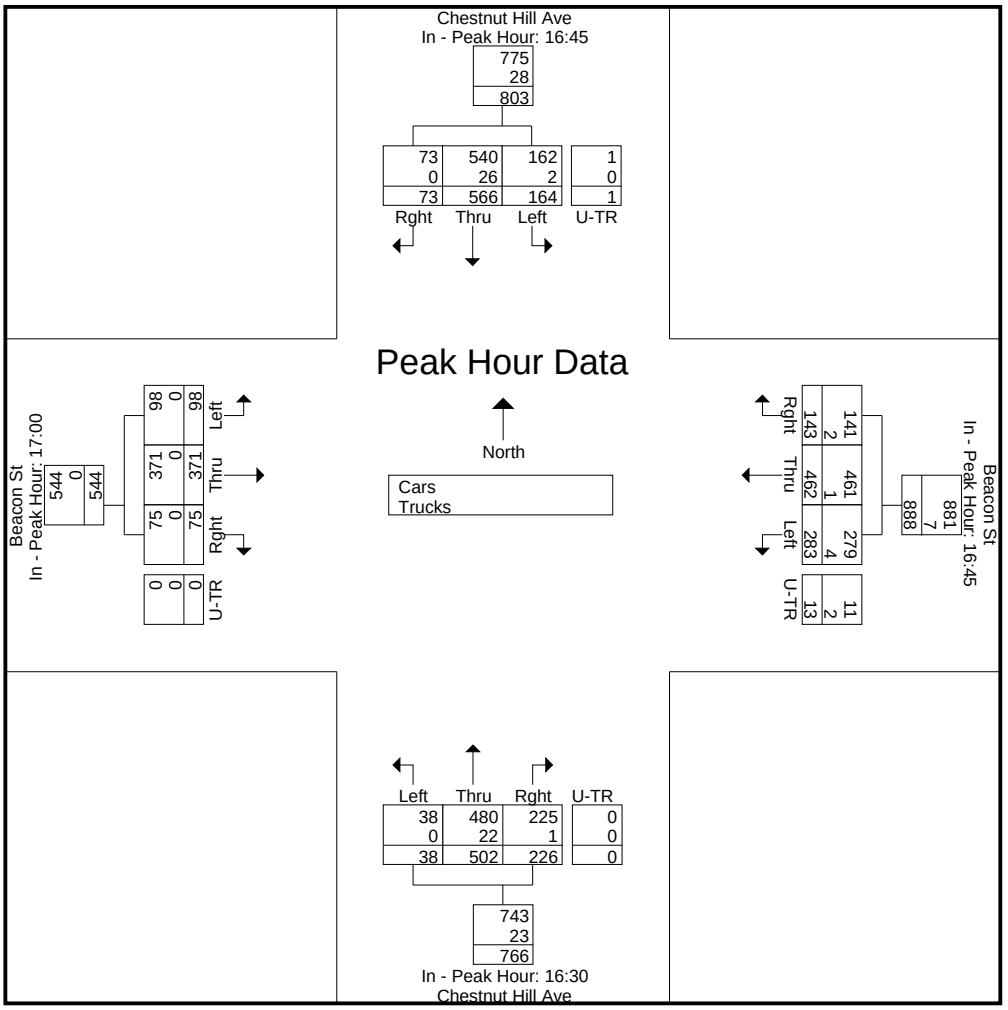
Peak Hour for Each Approach Begins at:

	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

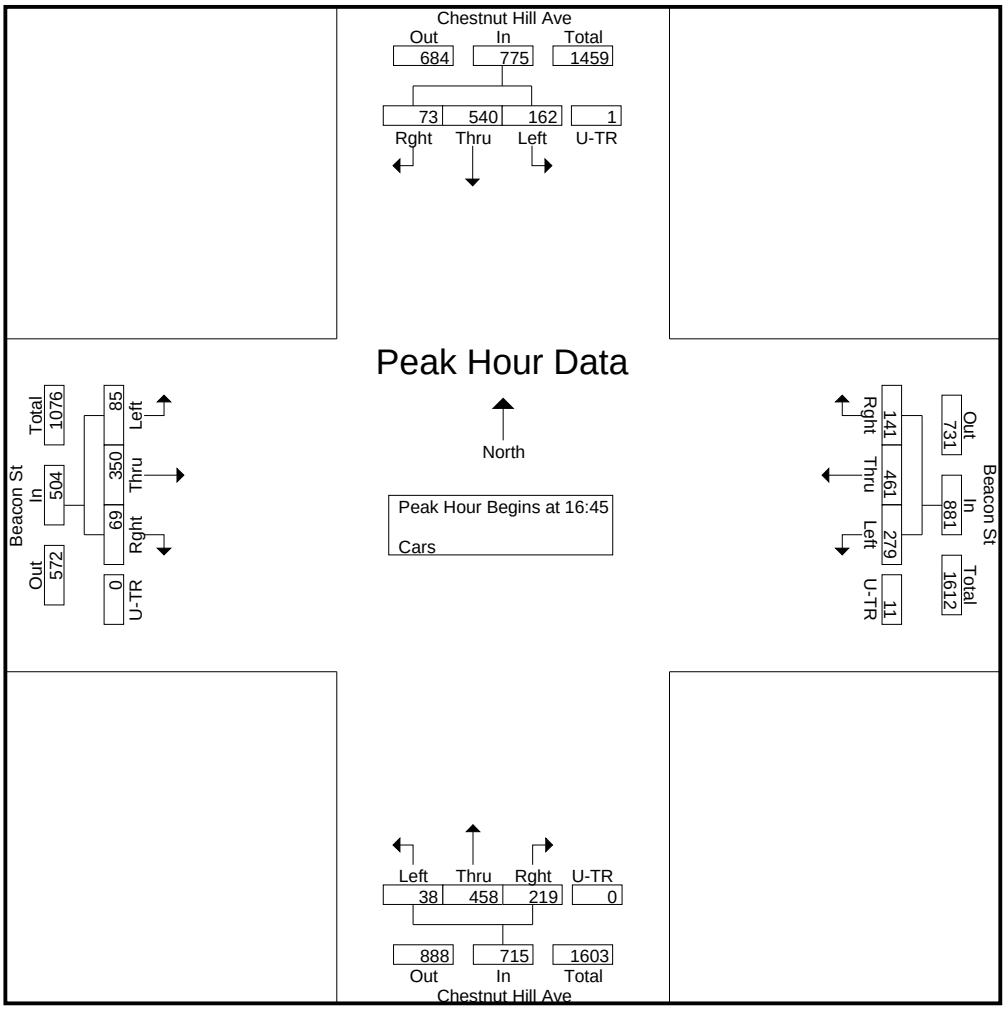
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	36	135	16	0	58	105	40	7	20	108	44	0	19	81	25	0	694
16:15	33	112	17	0	56	113	31	6	18	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

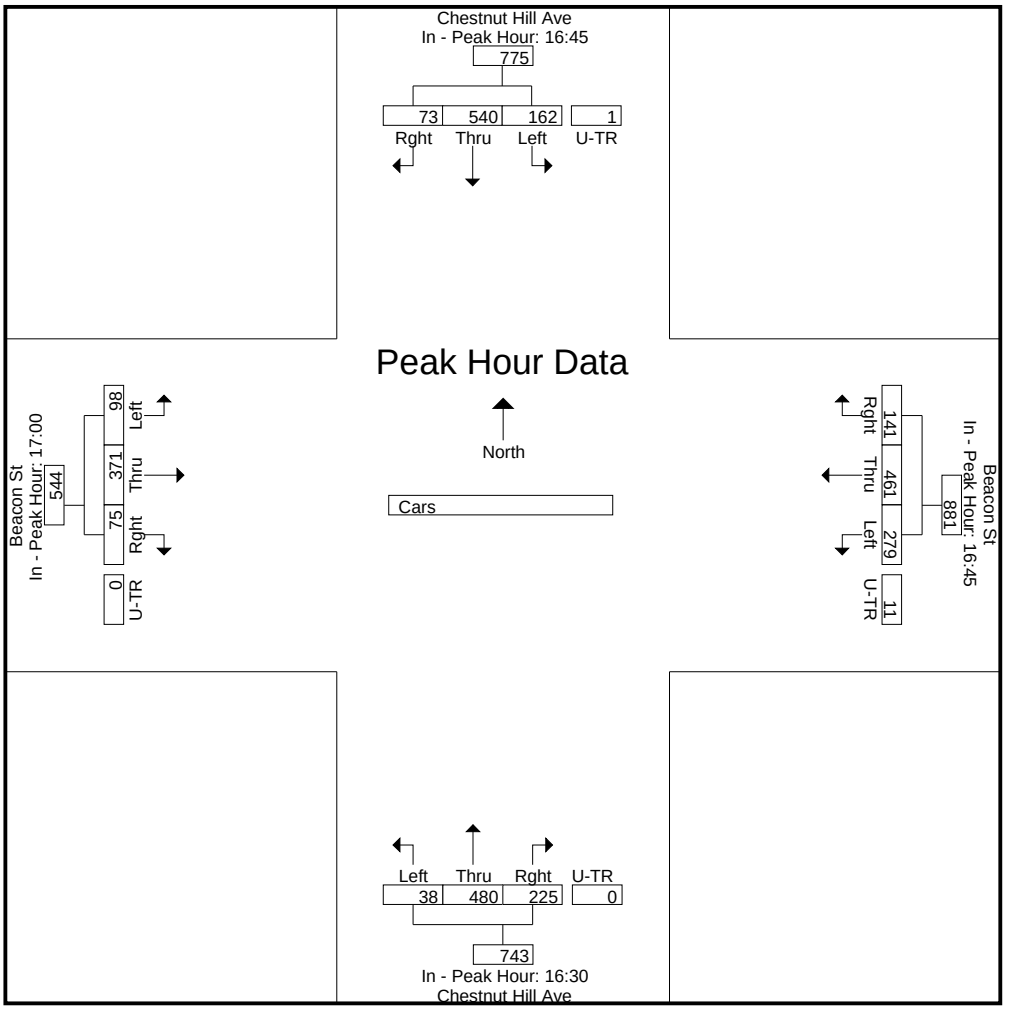
Peak Hour for Each Approach Begins at:

	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

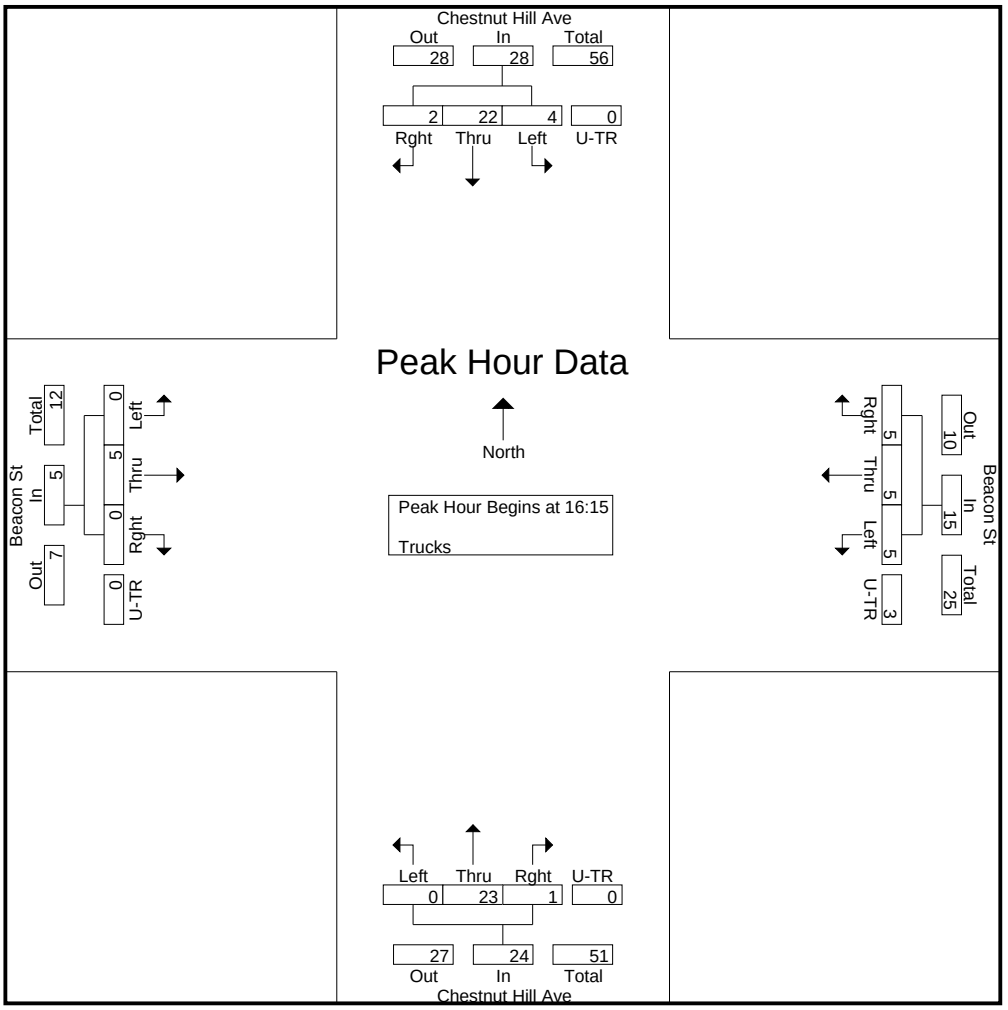
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	0	2	0	0	2	4	2	0	1	3	0	0	1	0	0	0	15
16:15	2	5	1	0	1	3	1	0	0	6	0	0	0	2	0	0	21
16:30	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

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

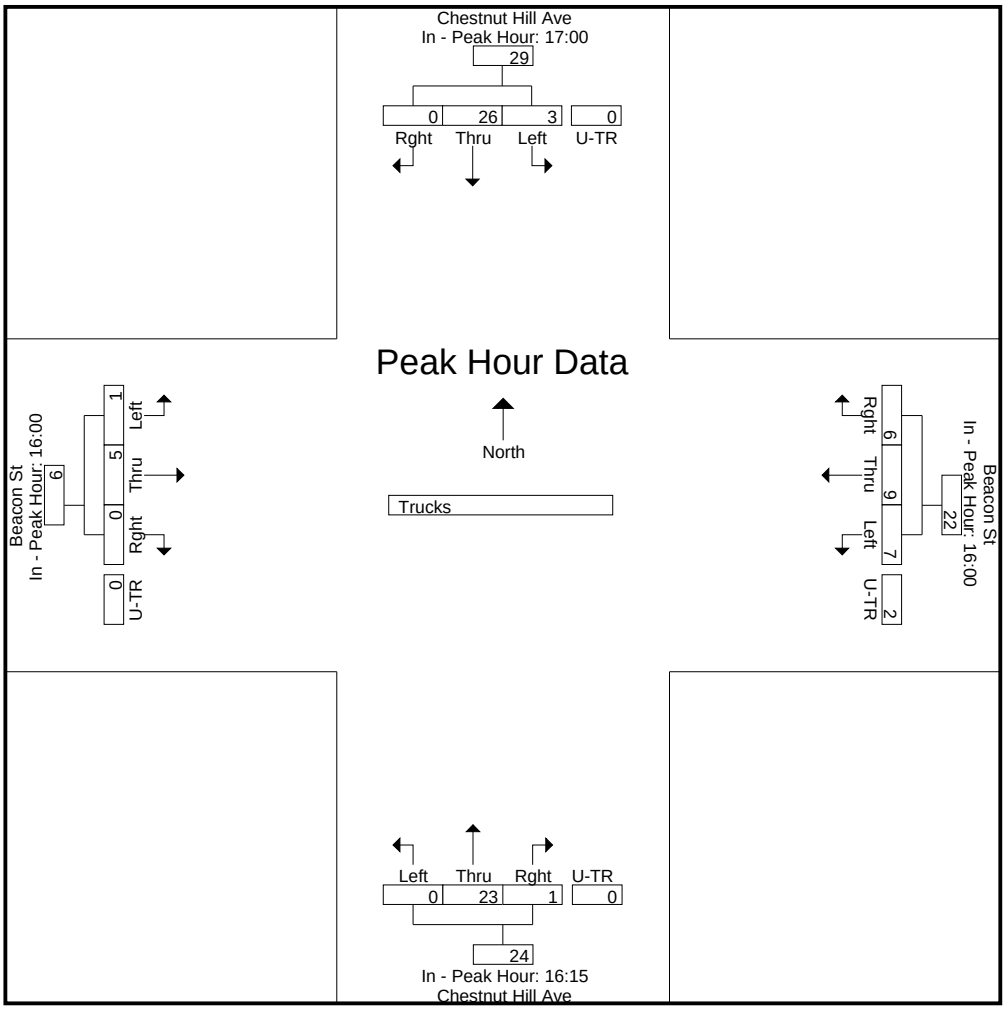
Peak Hour for Each Approach Begins at:

	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

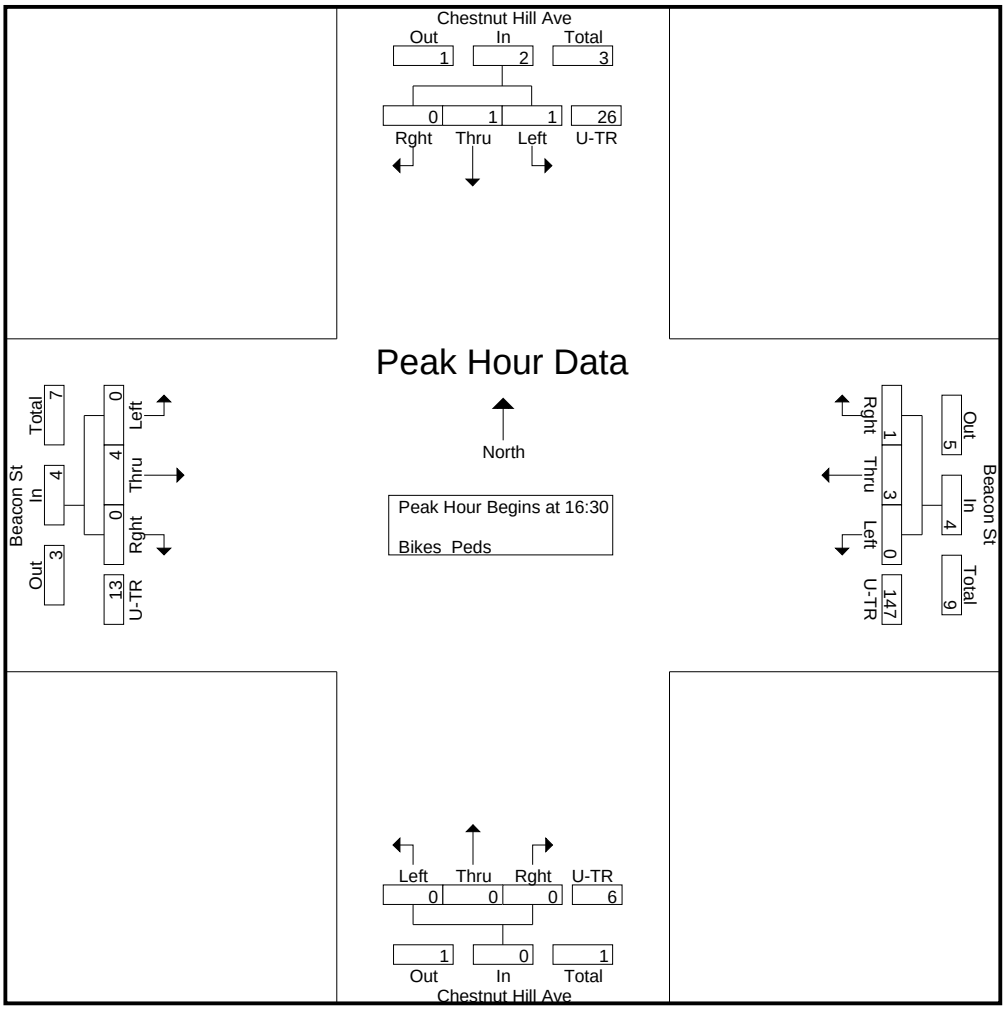
	Chestnut Hill Ave From North				Beacon St From East				Chestnut Hill Ave From South				Beacon St From West				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
16:00	0	0	0	9	0	0	0	17	0	0	0	1	0	0	0	1	28
16:15	0	0	0	6	0	0	1	26	0	0	0	0	0	1	0	0	34
16:30	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

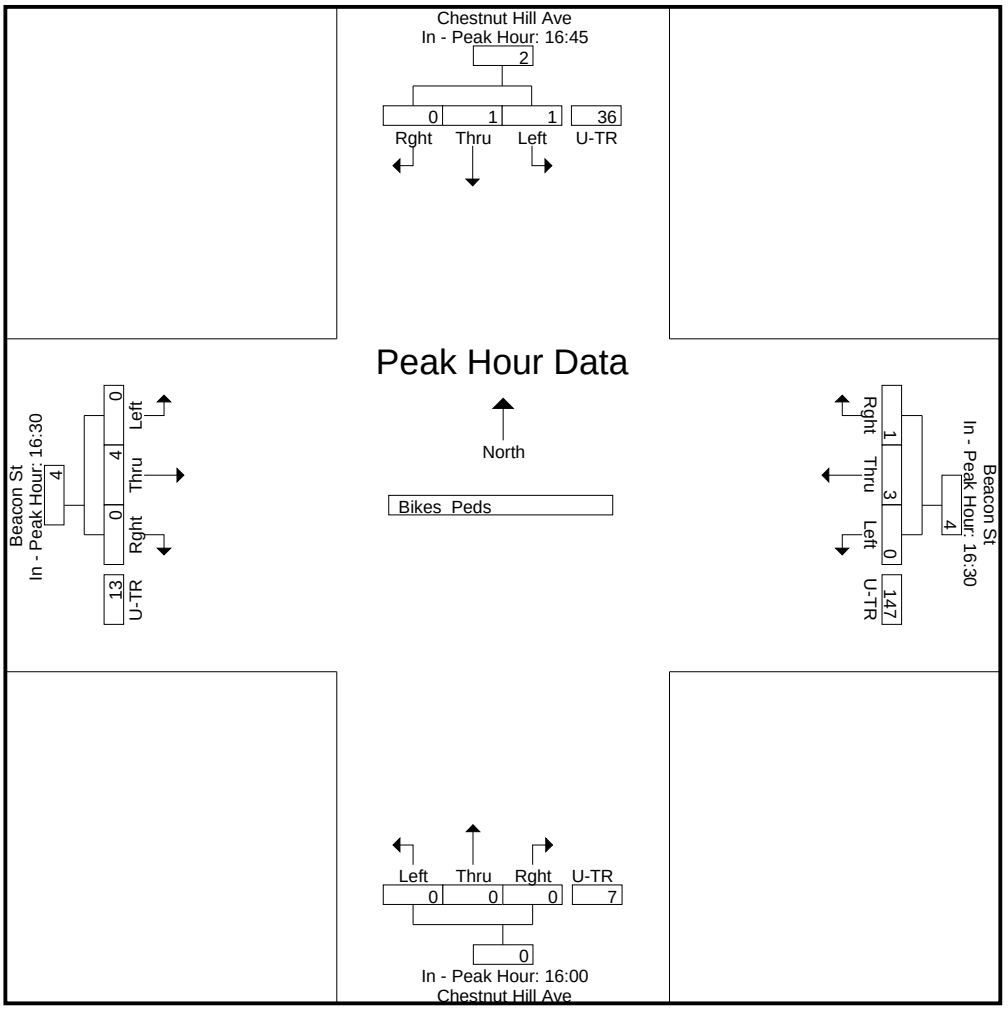
Peak Hour for Each Approach Begins at:

	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

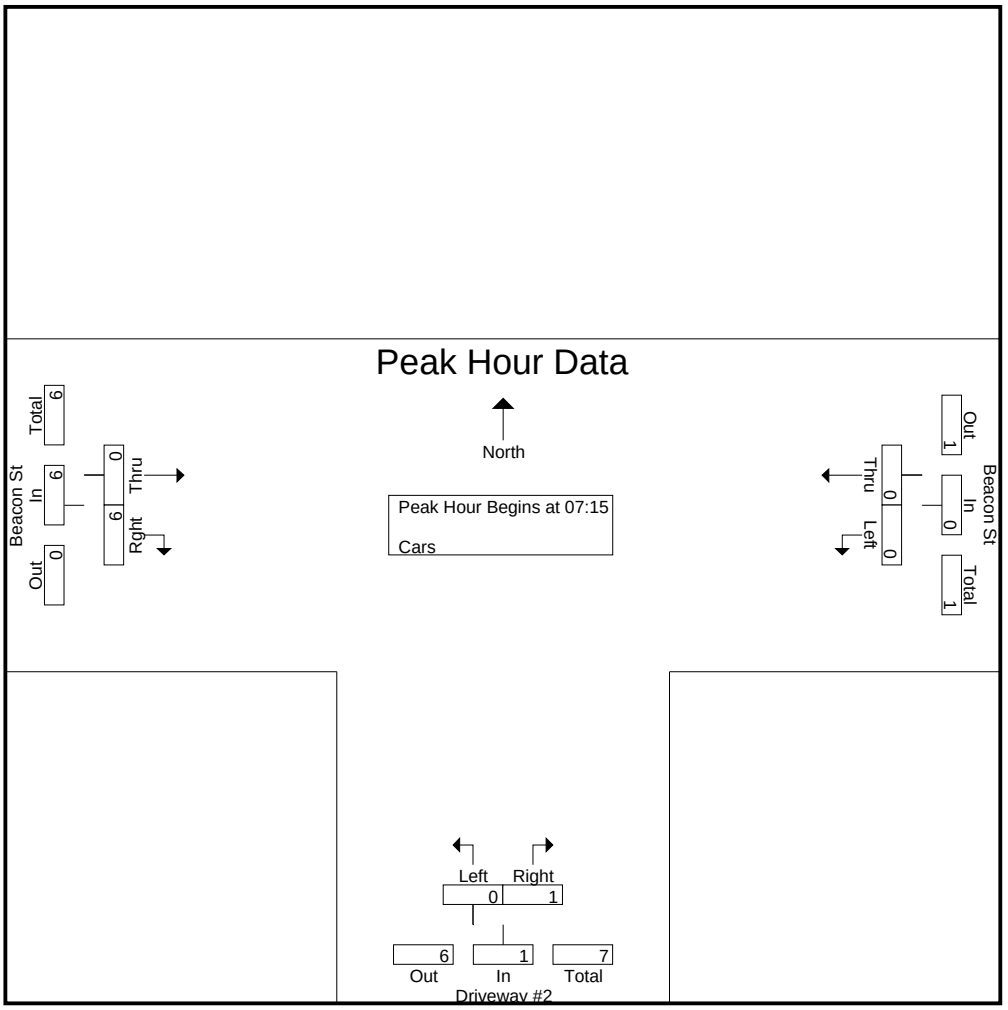
	Beacon St From East		Driveway #2 From South		Beacon St From West		
Start Time	Left	Thru	Left	Right	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	2	2
07:30	0	0	0	0	0	1	1
07:45	0	0	0	0	0	3	3
Total	0	0	0	0	0	6	6
08:00	0	0	0	1	0	0	1
08:15	0	0	0	0	0	0	0
08:30	0	0	0	0	0	1	1
08:45	0	0	0	0	0	1	1
Total	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

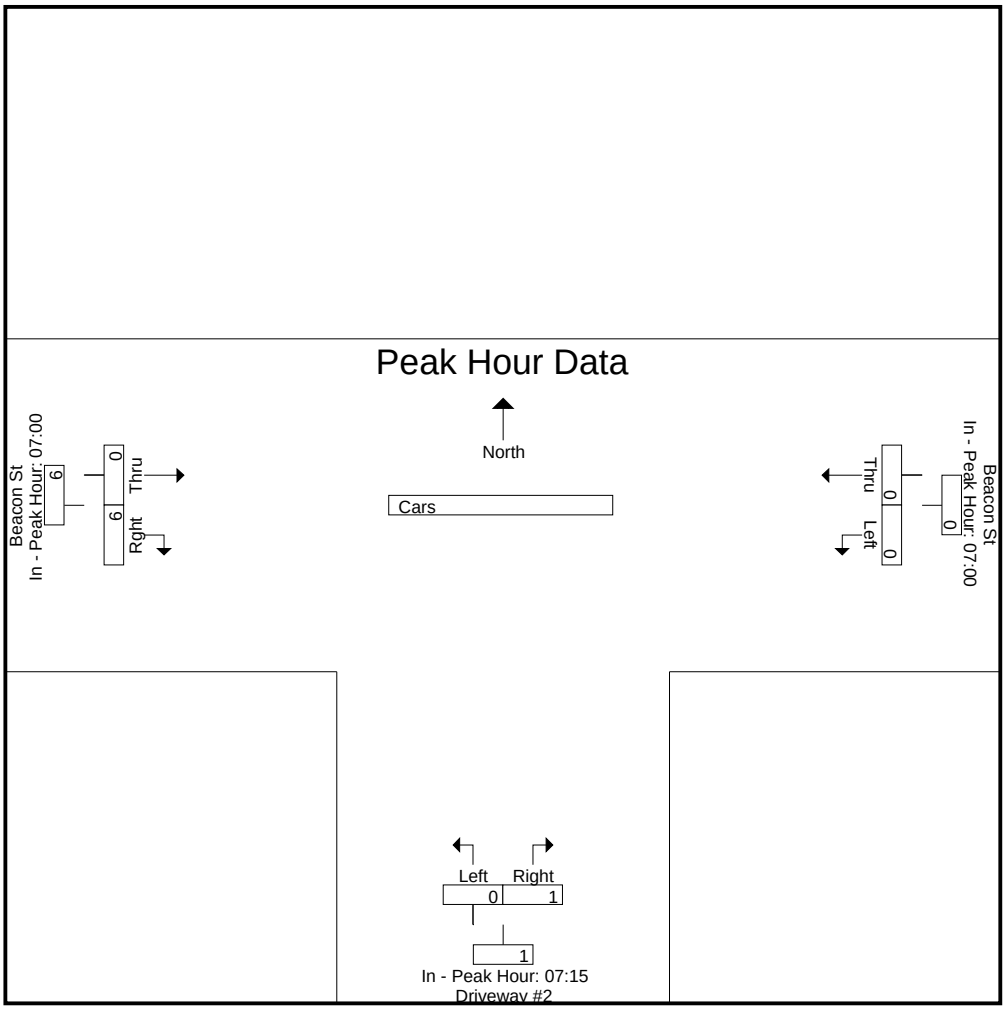
Peak Hour for Each Approach Begins at:

	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

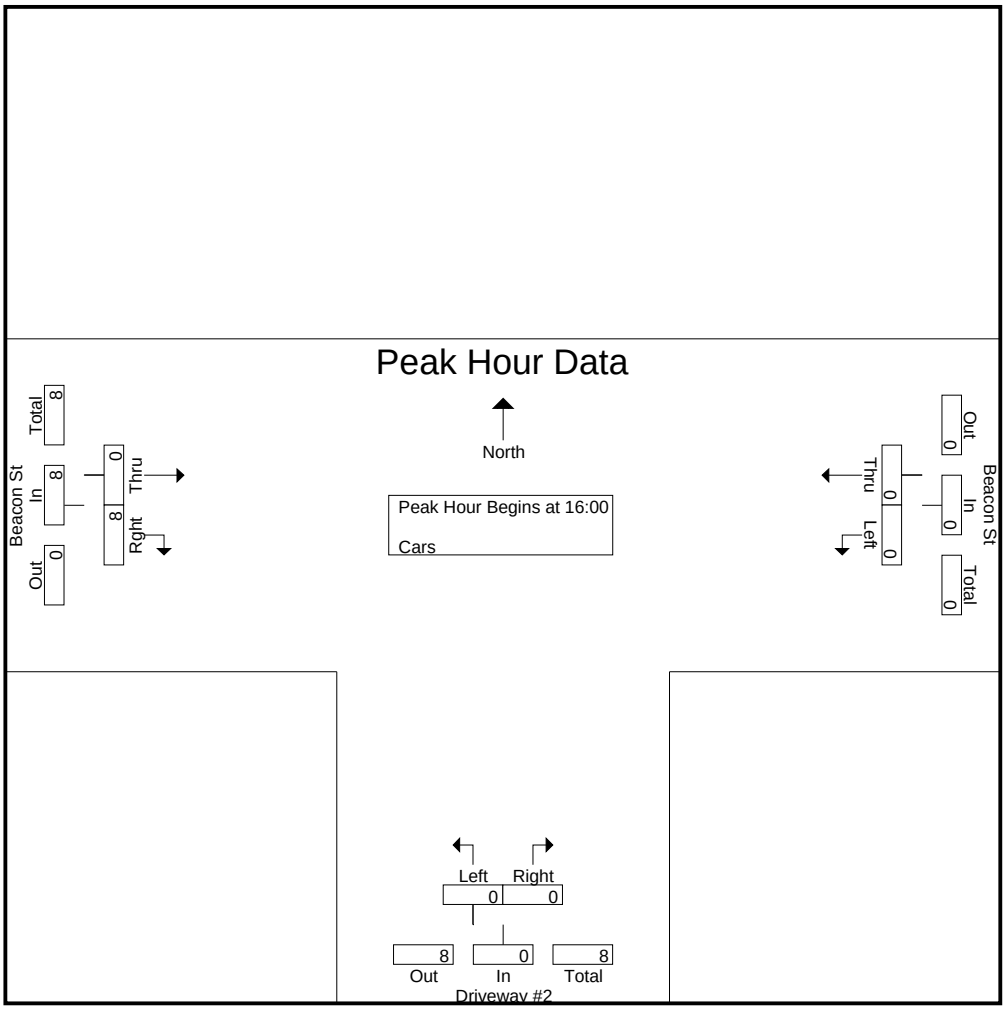
	Beacon St From East		Driveway #2 From South		Beacon St From West		
Start Time	Left	Thru	Left	Right	Thru	Rght	Int. Total
16:00	0	0	0	0	0	5	5
16:15	0	0	0	0	0	1	1
16:30	0	0	0	0	0	2	2
16:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	8	8
17:00	0	0	0	0	0	0	0
17:15	0	0	0	0	0	1	1
17:30	0	0	0	1	0	1	2
17:45	0	0	0	0	0	0	0
Total	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

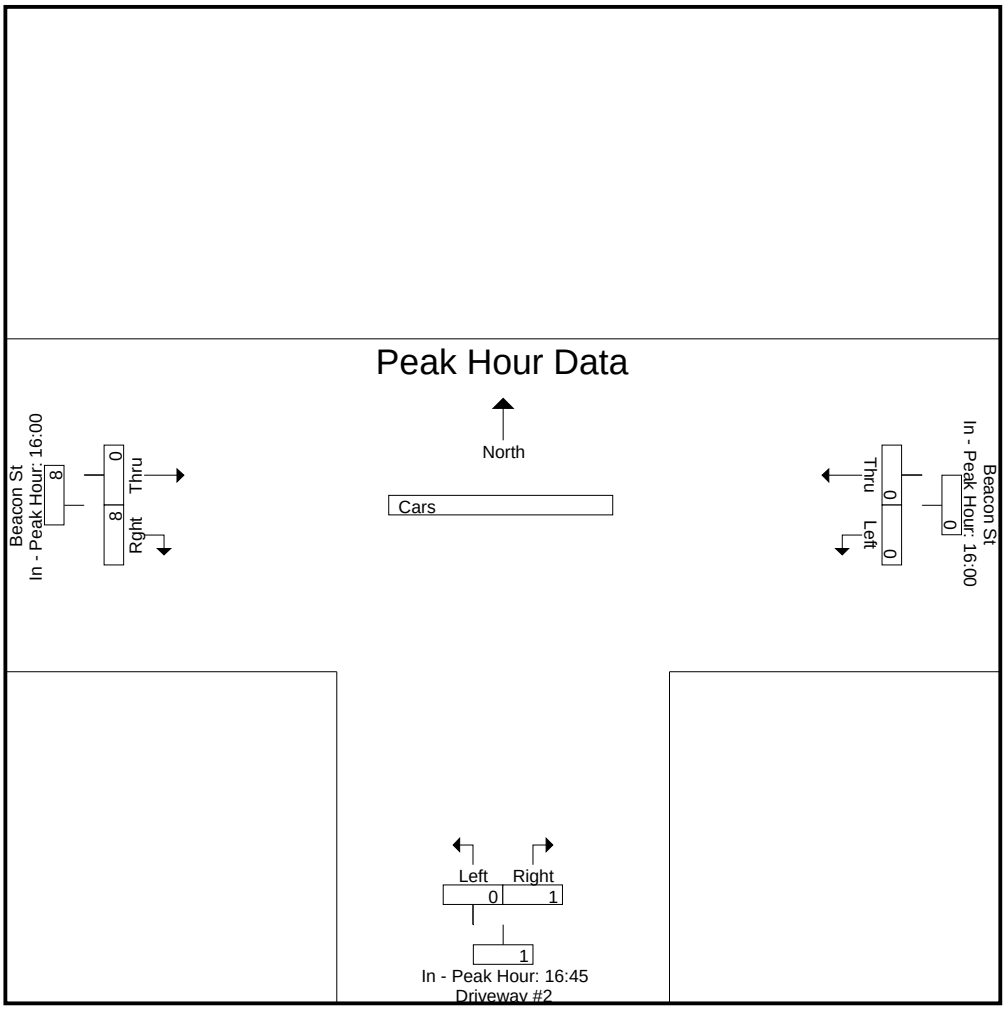
Peak Hour for Each Approach Begins at:

	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

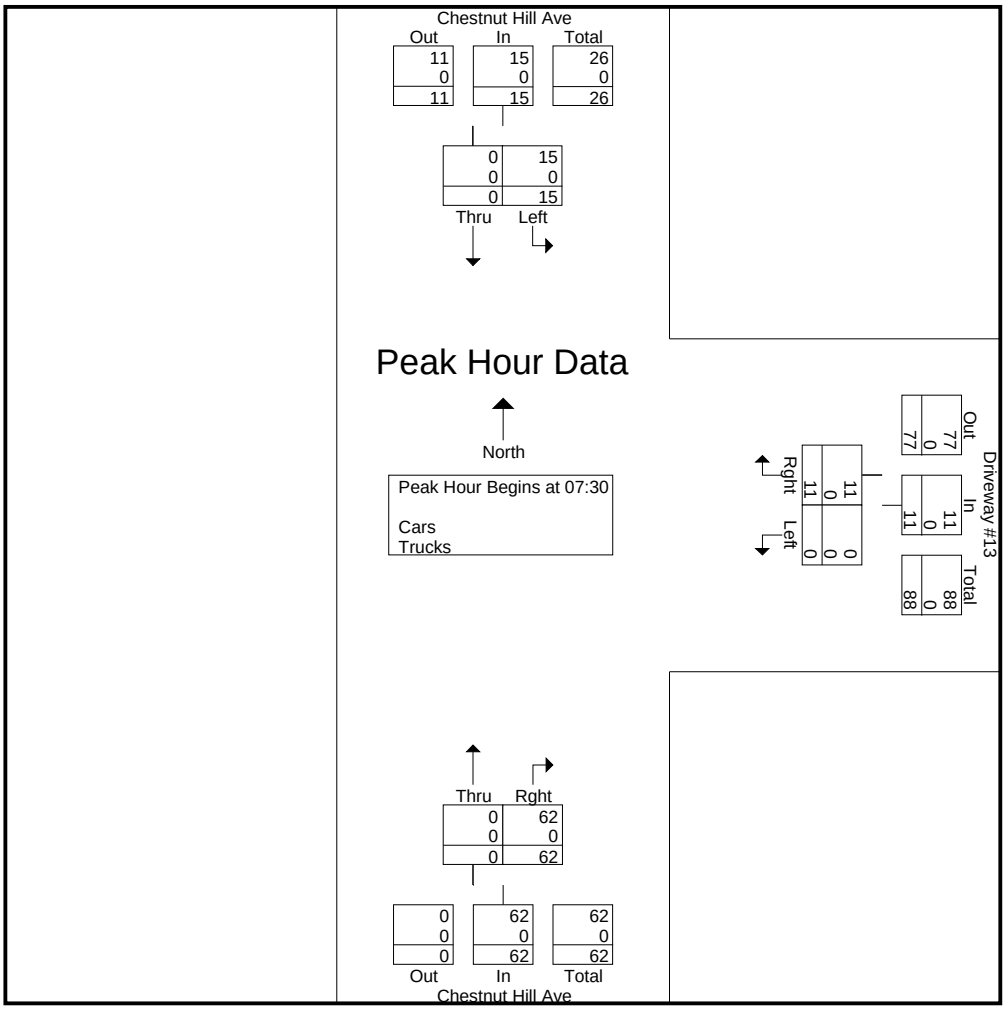
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	2	0	0	0	0	10	12
07:15	1	0	0	3	0	14	18
07:30	2	0	0	1	0	20	23
07:45	2	0	0	3	0	16	21
Total	7	0	0	7	0	60	74
08:00	4	0	0	4	0	14	22
08:15	7	0	0	3	0	12	22
08:30	2	0	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

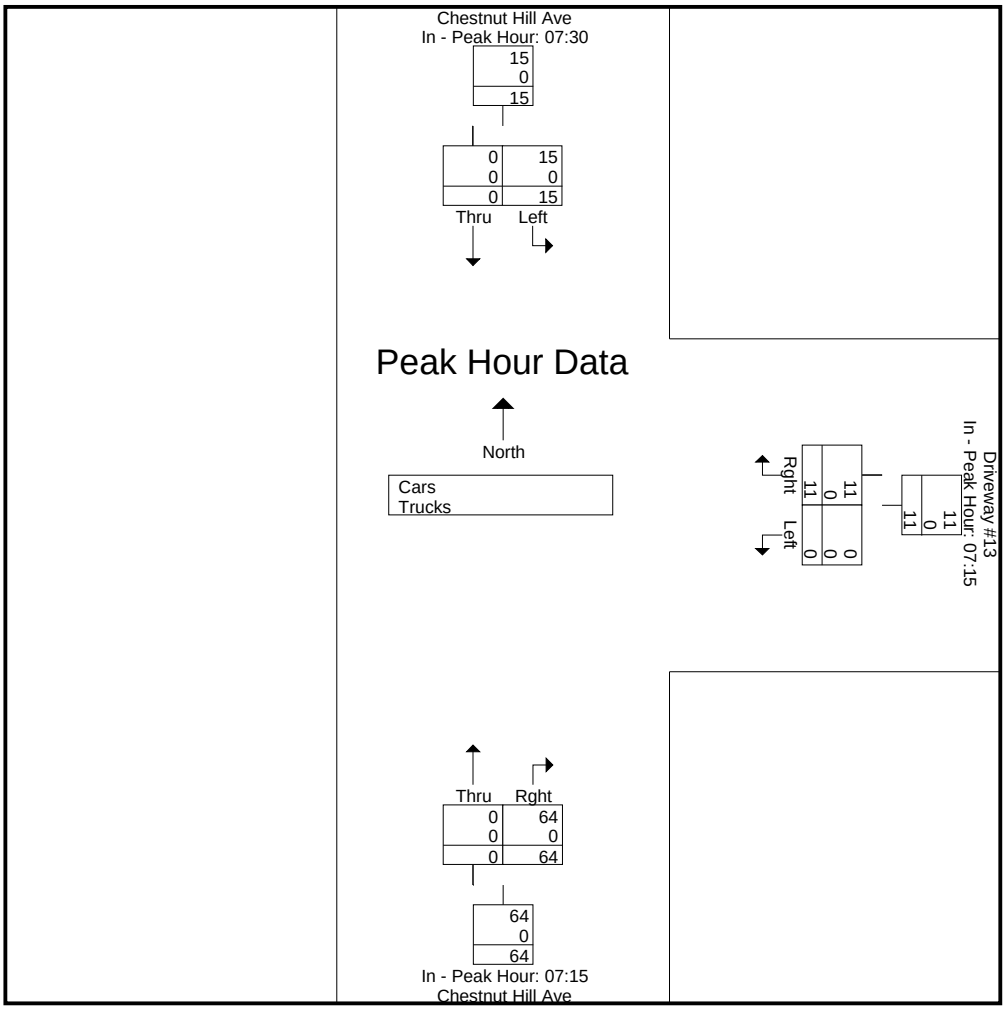
Peak Hour for Each Approach Begins at:

	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

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

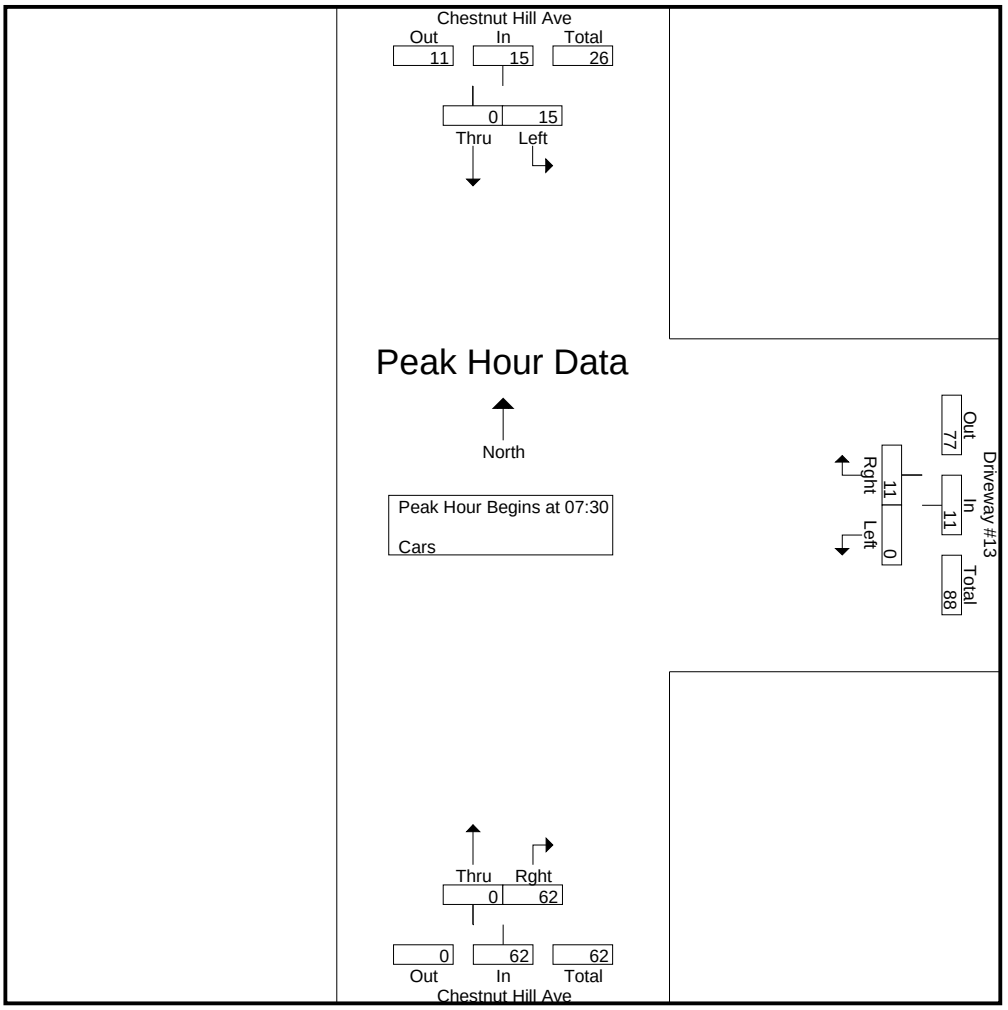
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	2	0	0	0	0	10	12
07:15	1	0	0	3	0	14	18
07:30	2	0	0	1	0	20	23
07:45	2	0	0	3	0	16	21
Total	7	0	0	7	0	60	74
08:00	4	0	0	4	0	14	22
08:15	7	0	0	3	0	12	22
08:30	2	0	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
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Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

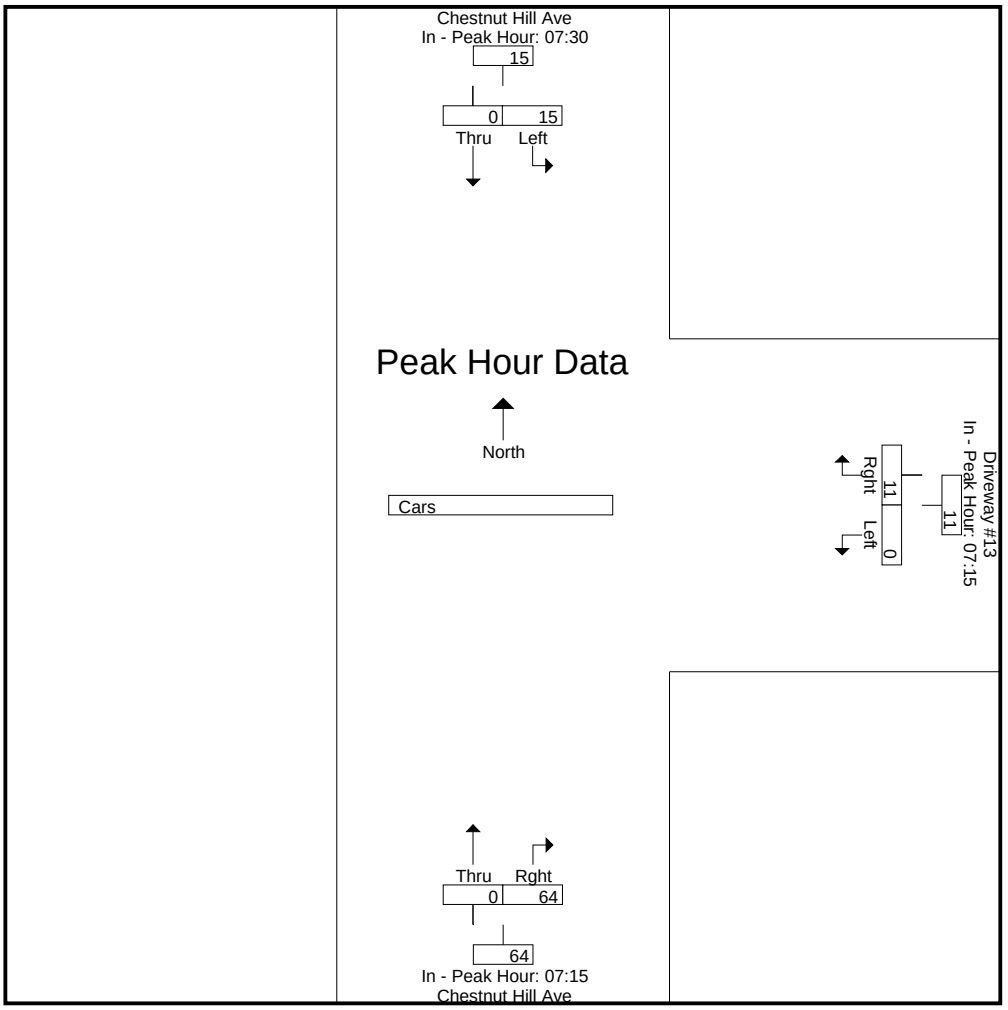
Peak Hour for Each Approach Begins at:

	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

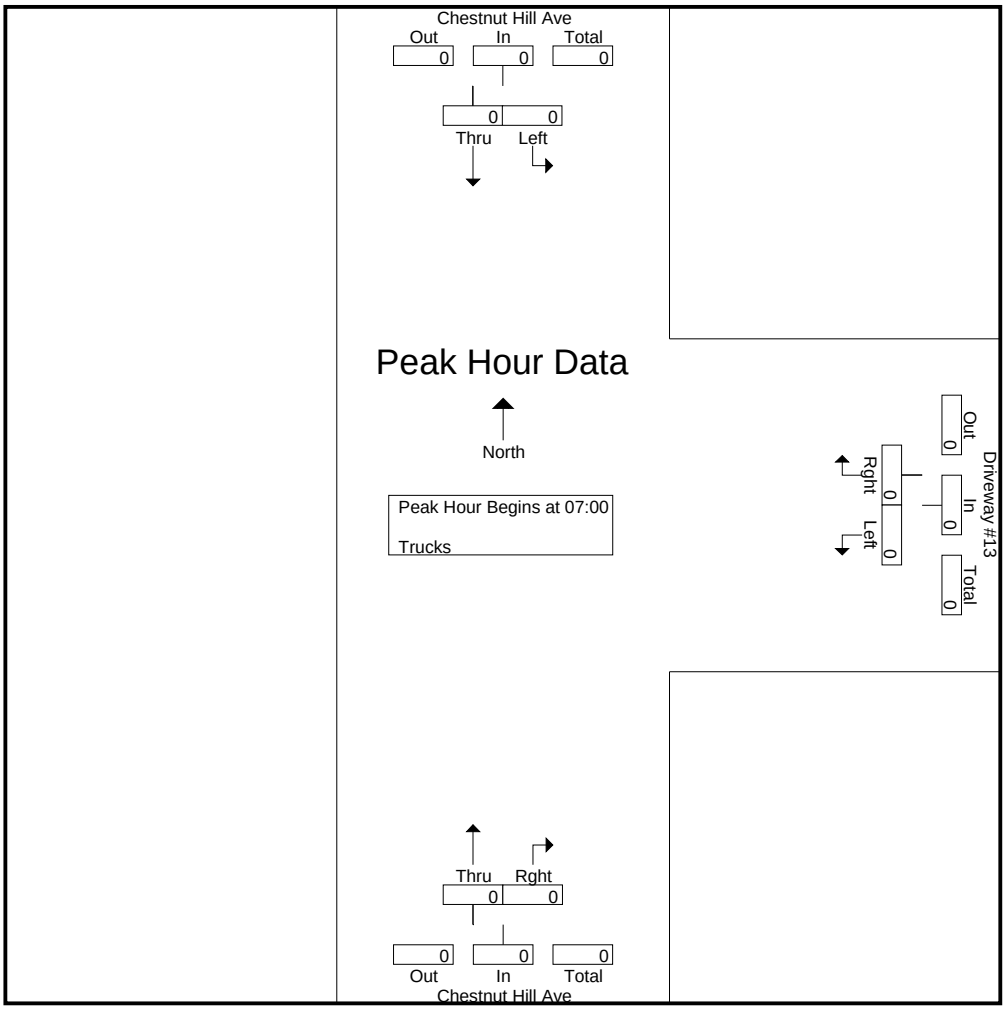
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0
08:45	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
Page No : 2



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

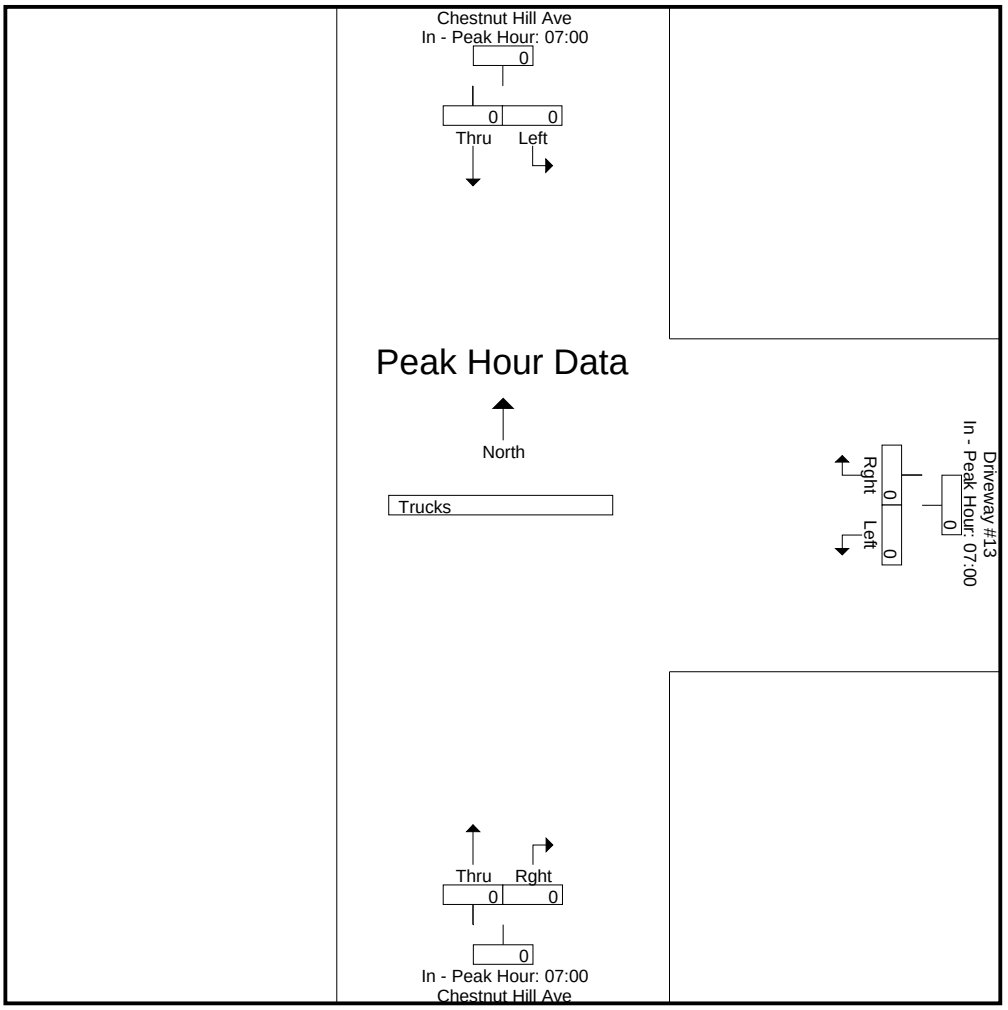
Peak Hour for Each Approach Begins at:

	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 : 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

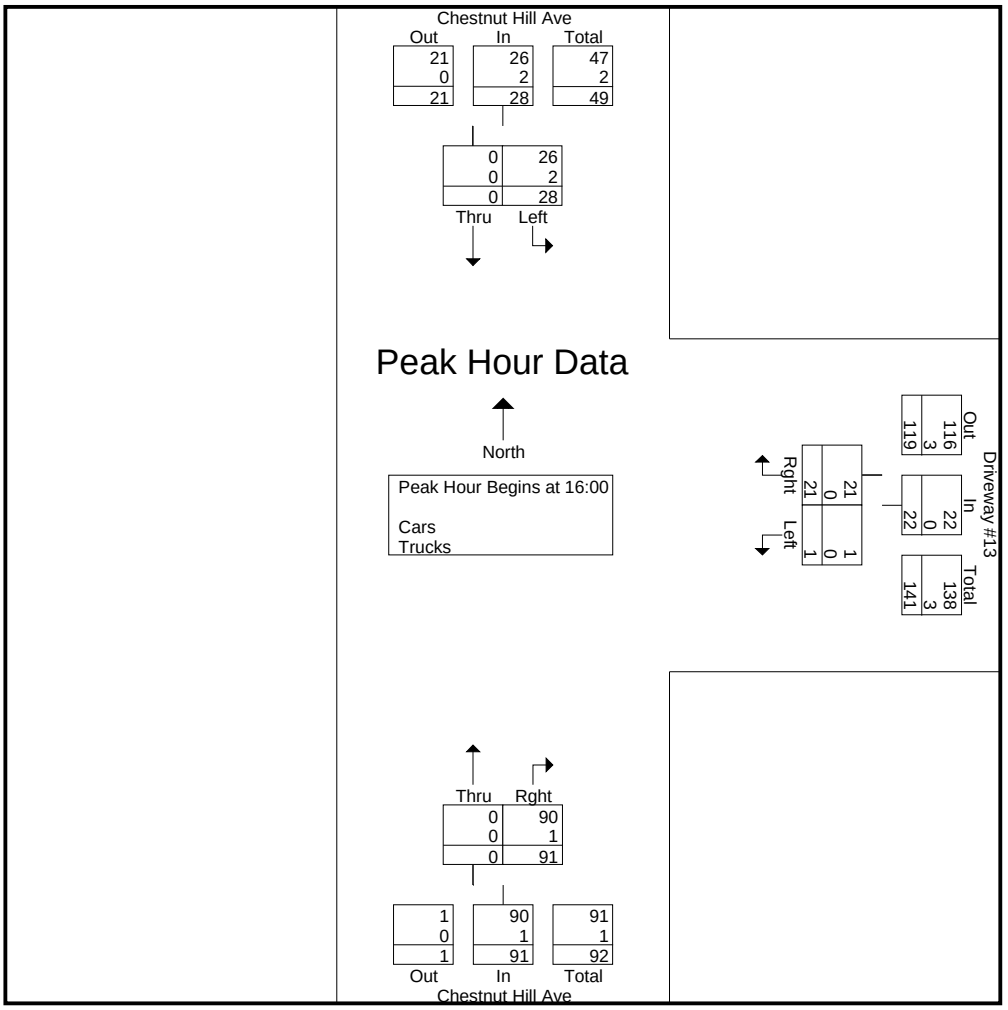
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	7	0	0	4	0	22	33
16:15	5	0	0	5	0	26	36
16:30	12	0	1	7	0	22	42
16:45	4	0	0	5	0	21	30
Total	28	0	1	21	0	91	141
17:00	2	0	0	6	0	21	29
17:15	8	0	0	8	0	22	38
17:30	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

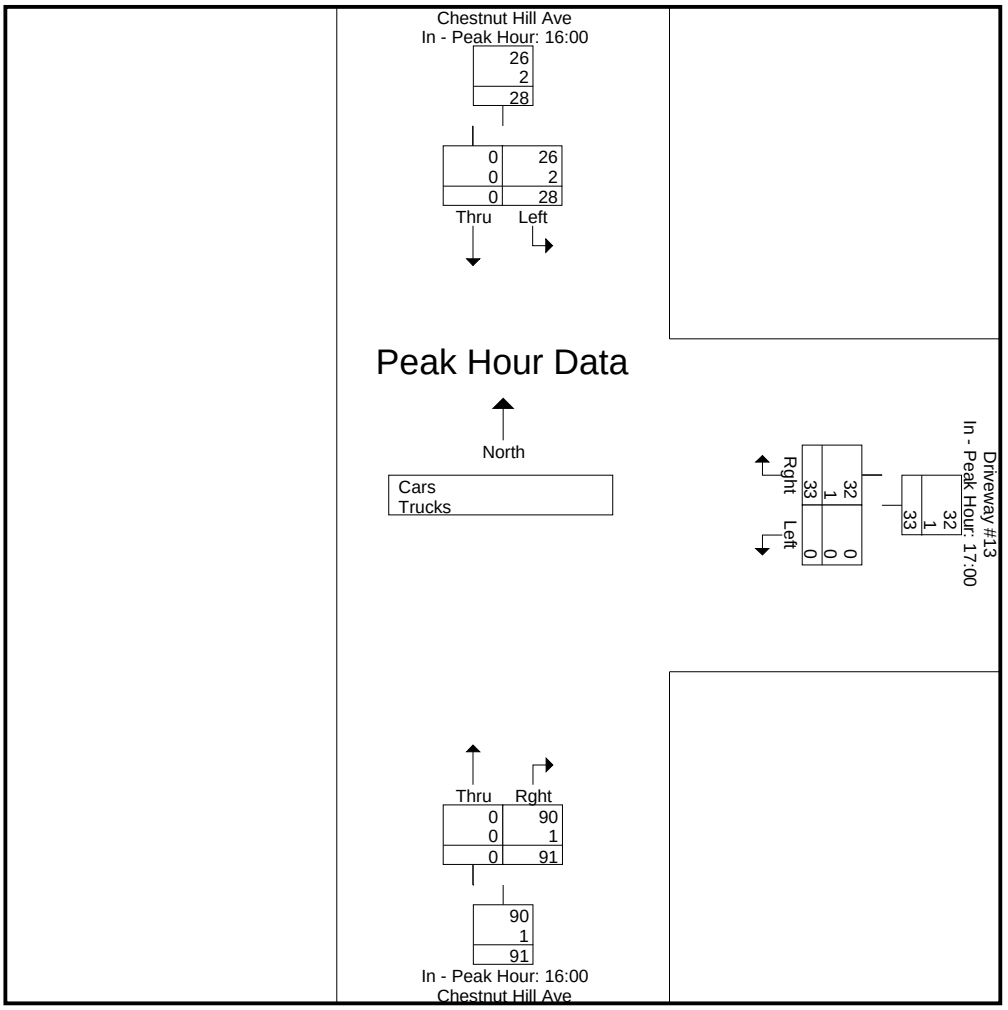
Peak Hour for Each Approach Begins at:

	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

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
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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

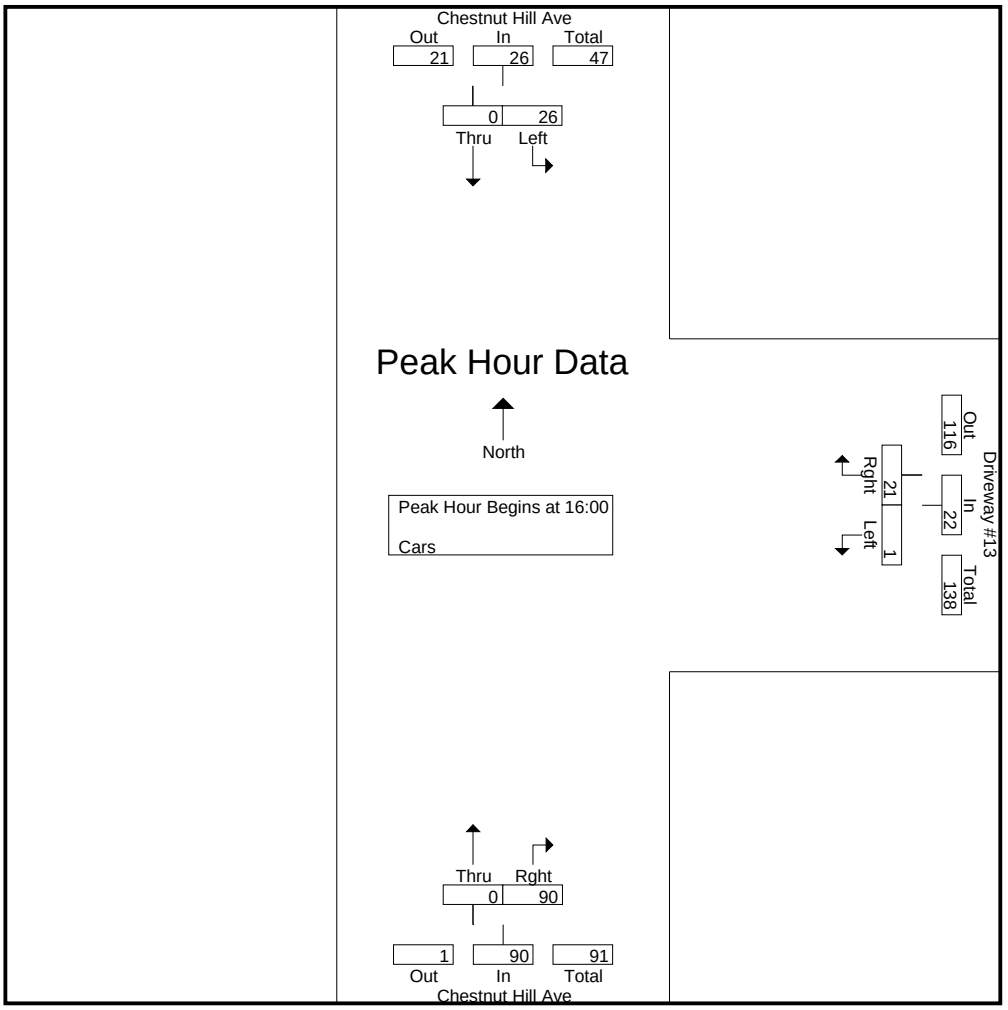
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	6	0	0	4	0	22	32
16:15	5	0	0	5	0	26	36
16:30	11	0	1	7	0	22	41
16:45	4	0	0	5	0	20	29
Total	26	0	1	21	0	90	138
17:00	2	0	0	5	0	21	28
17:15	8	0	0	8	0	22	38
17:30	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

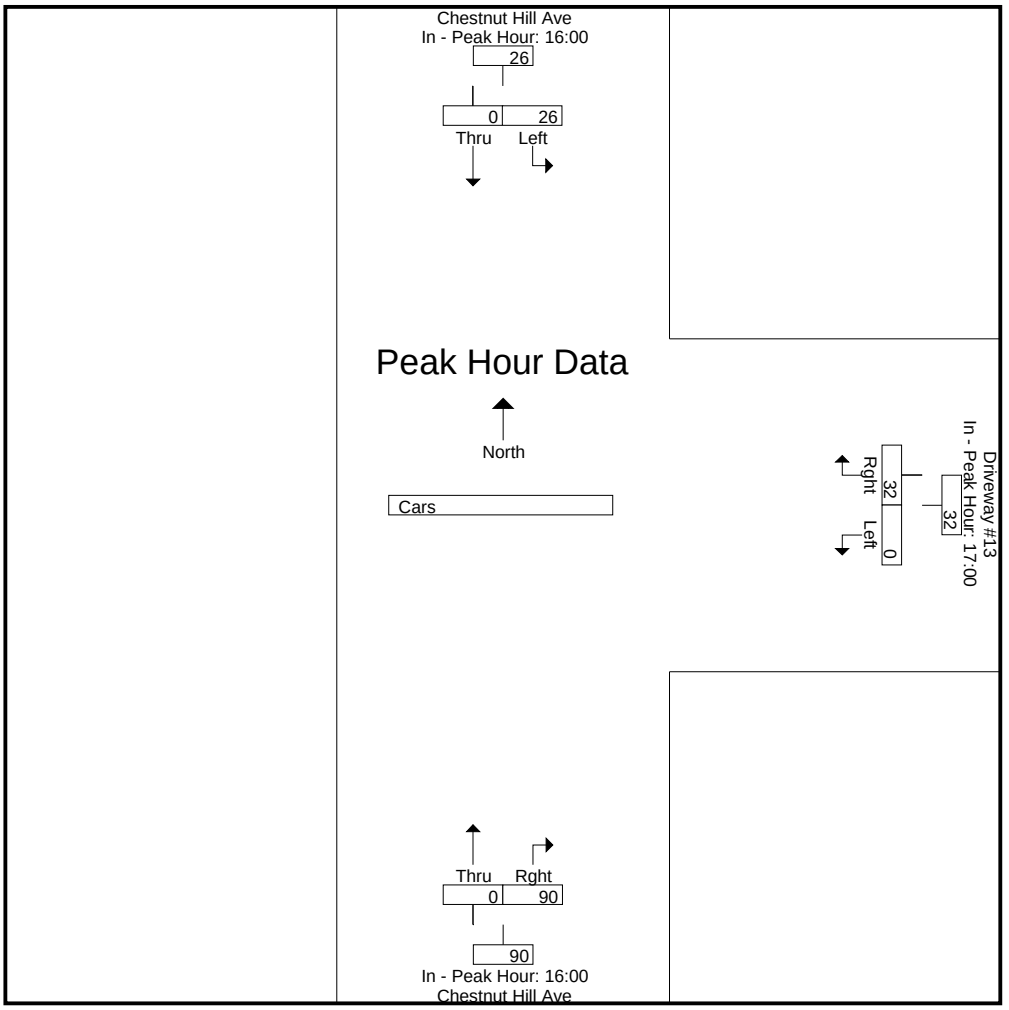
Peak Hour for Each Approach Begins at:

	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

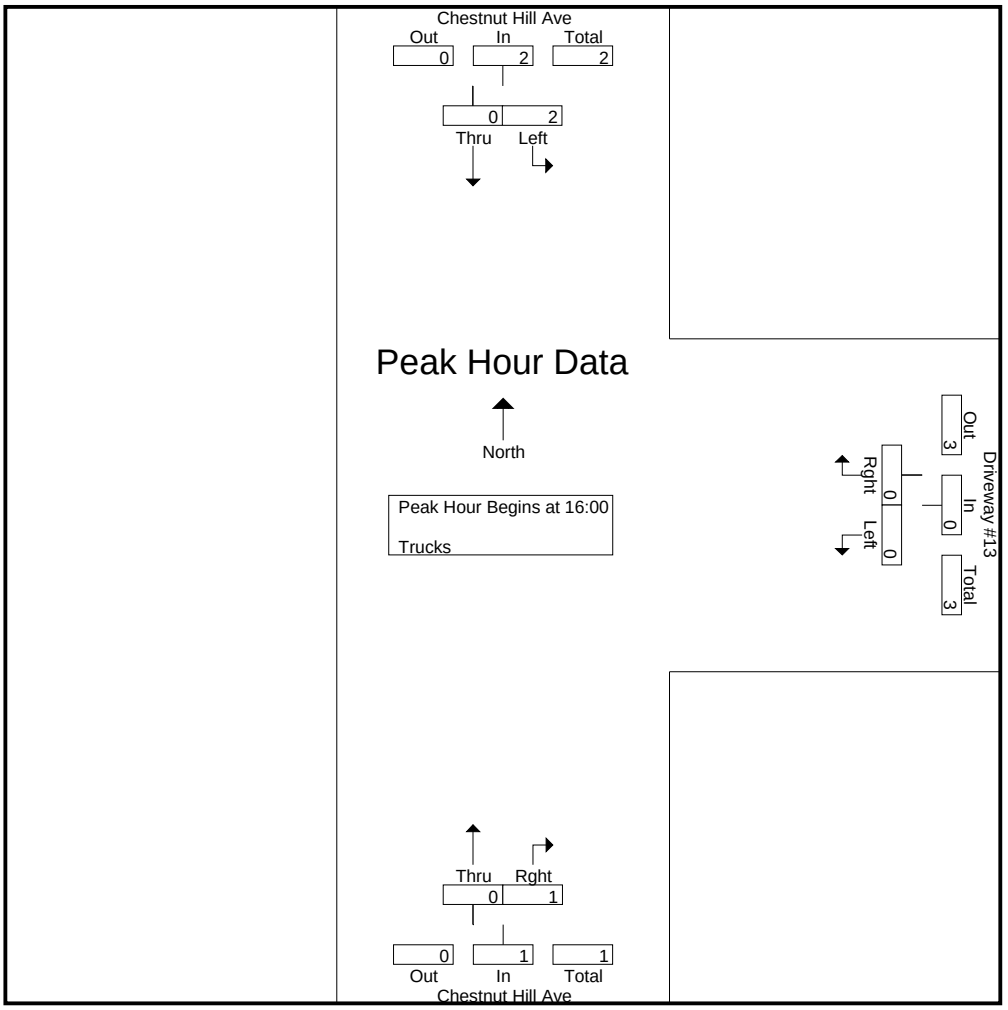
	Chestnut Hill Ave From North		Driveway #13 From East		Chestnut Hill Ave From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	1	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0
16:30	1	0	0	0	0	0	1
16:45	0	0	0	0	0	1	1
Total	2	0	0	0	0	1	3
17:00	0	0	0	1	0	0	1
17:15	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0
17:45	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

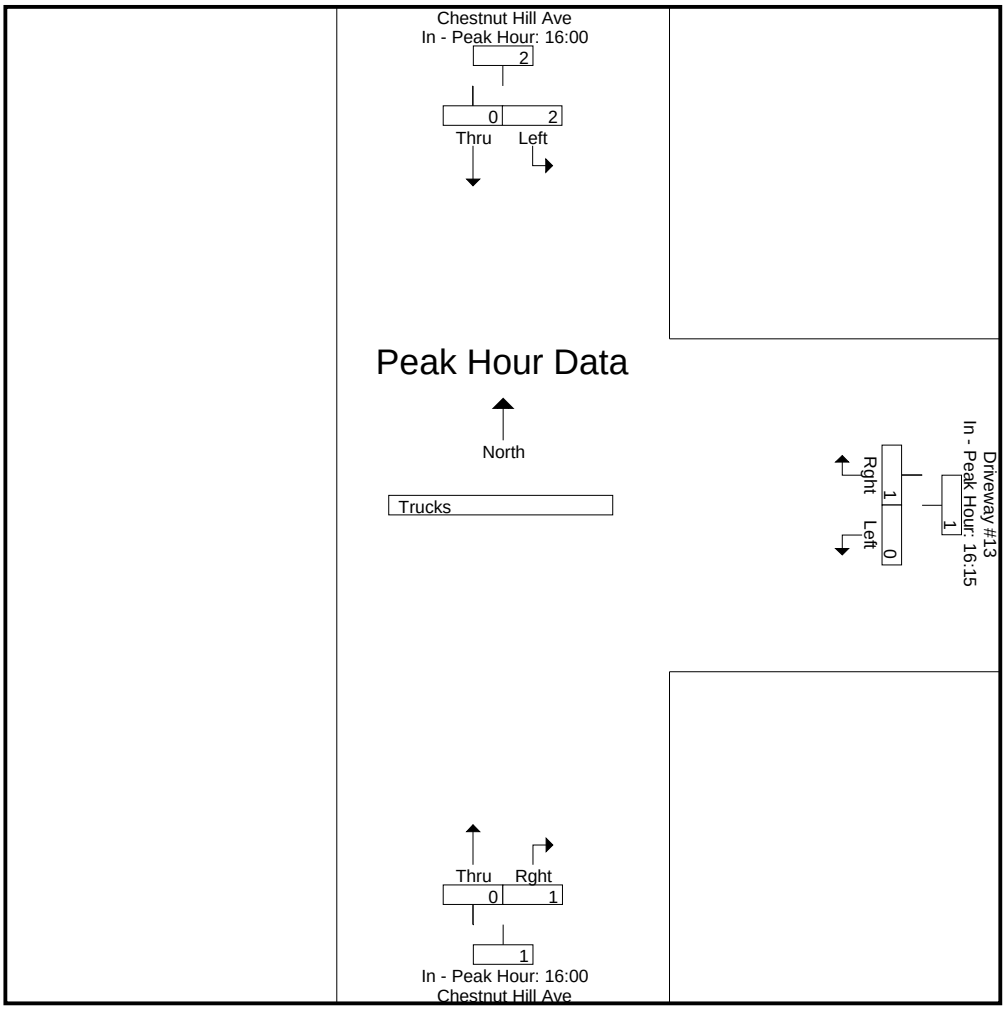
Peak Hour for Each Approach Begins at:

	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

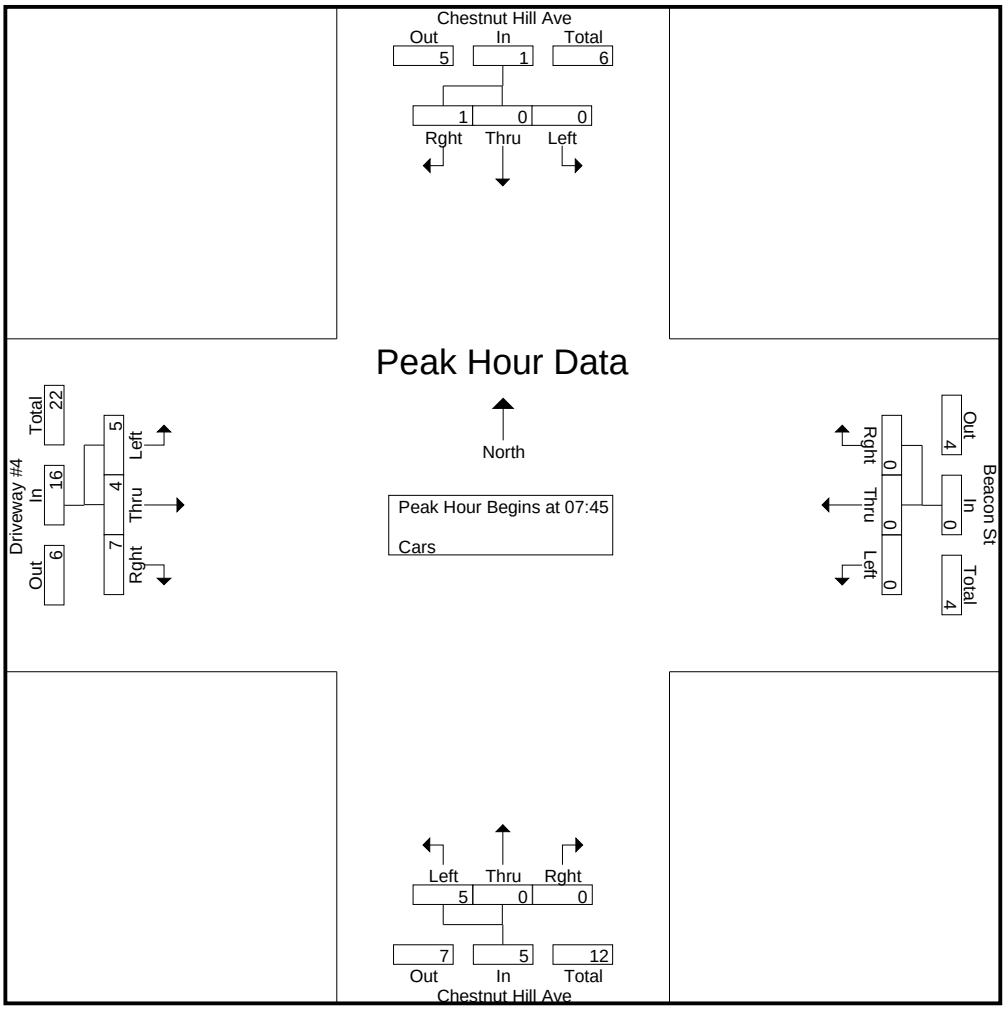
	Chestnut Hill Ave From North			Beacon St From East			Chestnut Hill Ave From South			Driveway #4 From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	1	0	0	1	2	1	5
07:45	0	0	0	0	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

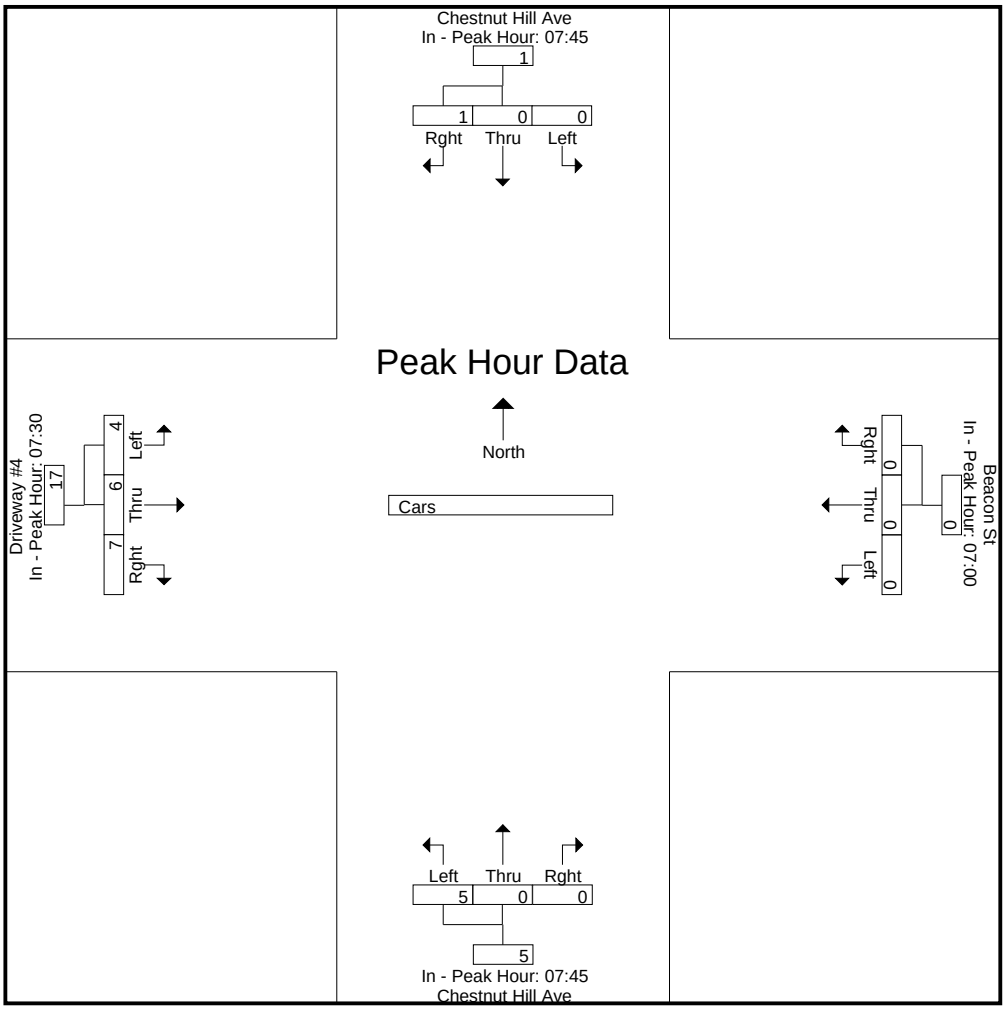
Peak Hour for Each Approach Begins at:

	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

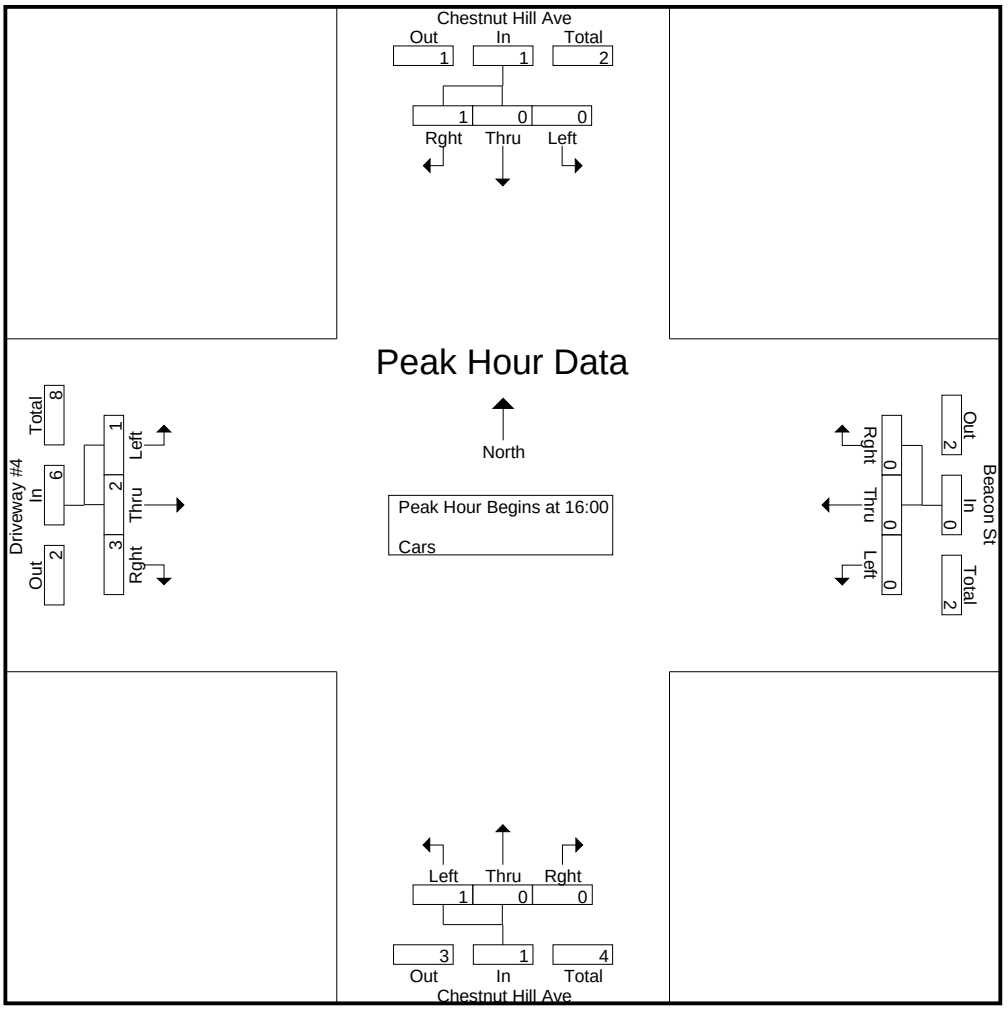
	Chestnut Hill Ave From North			Beacon St From East			Chestnut Hill Ave From South			Driveway #4 From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	0	0	0	0	0	0	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	1	2	3
16:30	0	0	0	0	0	0	1	0	0	1	1	0	3
16:45	0	0	1	0	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



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

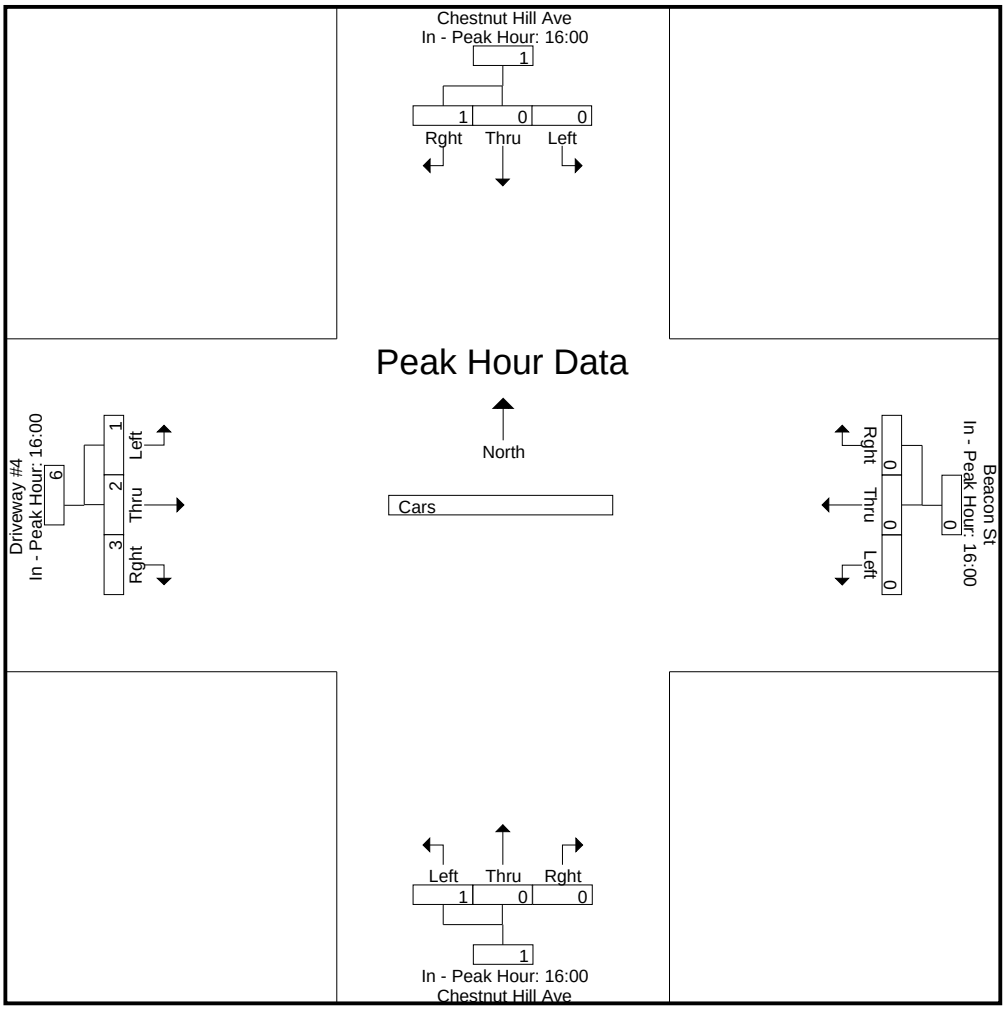
Peak Hour for Each Approach Begins at:

	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

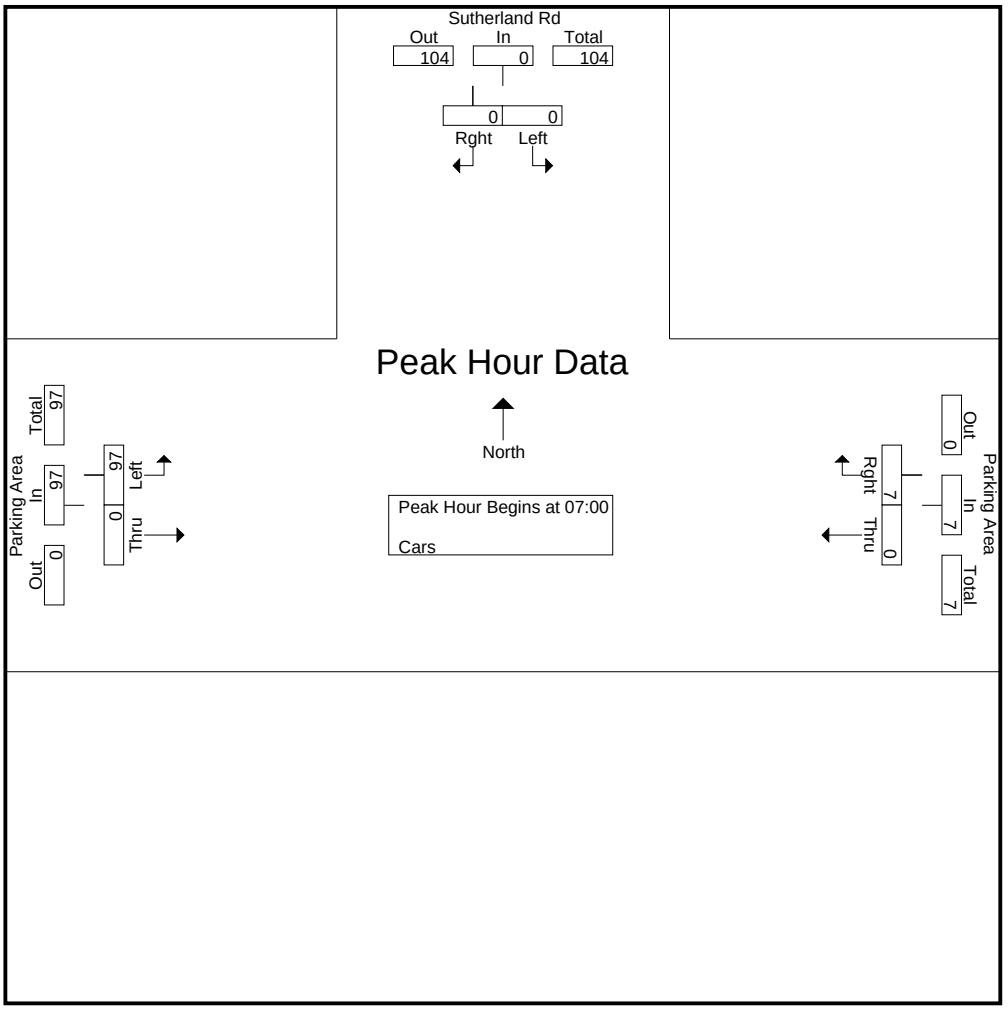
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
07:00	0	0	0	2	21	0	23
07:15	0	0	0	3	24	0	27
07:30	0	0	0	0	23	0	23
07:45	0	0	0	2	29	0	31
Total	0	0	0	7	97	0	104
08:00	0	0	0	1	22	0	23
08:15	0	0	0	1	24	0	25
08:30	0	0	0	1	24	0	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

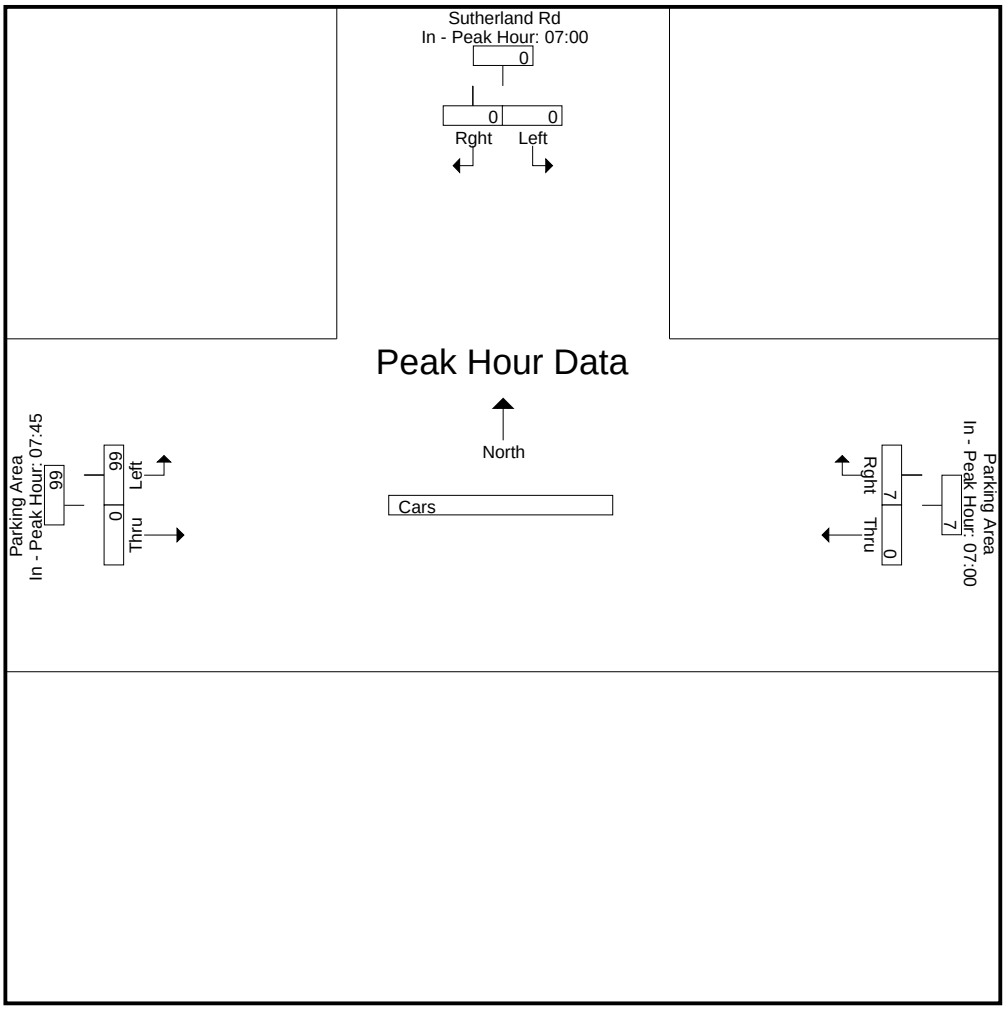
Peak Hour for Each Approach Begins at:

	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

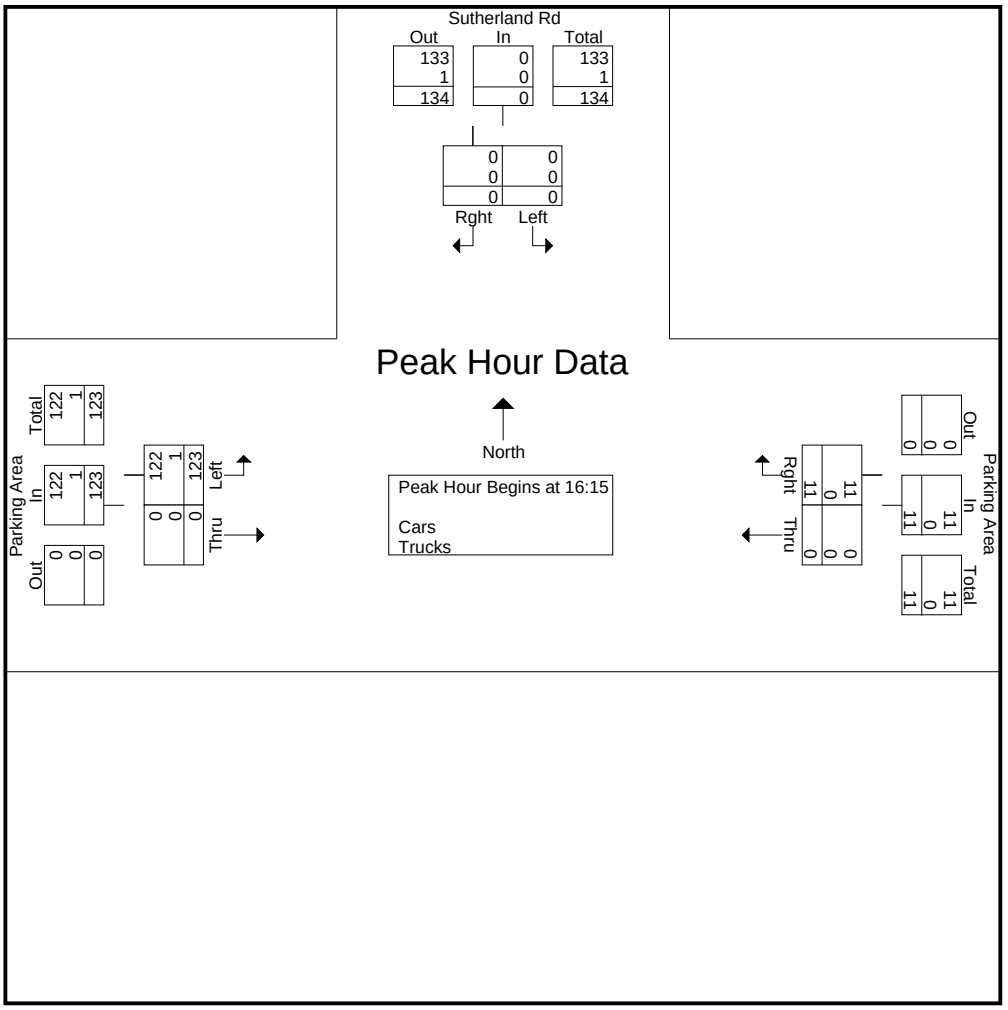
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	0	0	3	25	0	28
16:15	0	0	0	4	27	0	31
16:30	0	0	0	1	34	0	35
16:45	0	0	0	3	36	0	39
Total	0	0	0	11	122	0	133
17:00	0	0	0	3	26	0	29
17:15	0	0	0	3	26	0	29
17:30	0	0	0	1	33	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

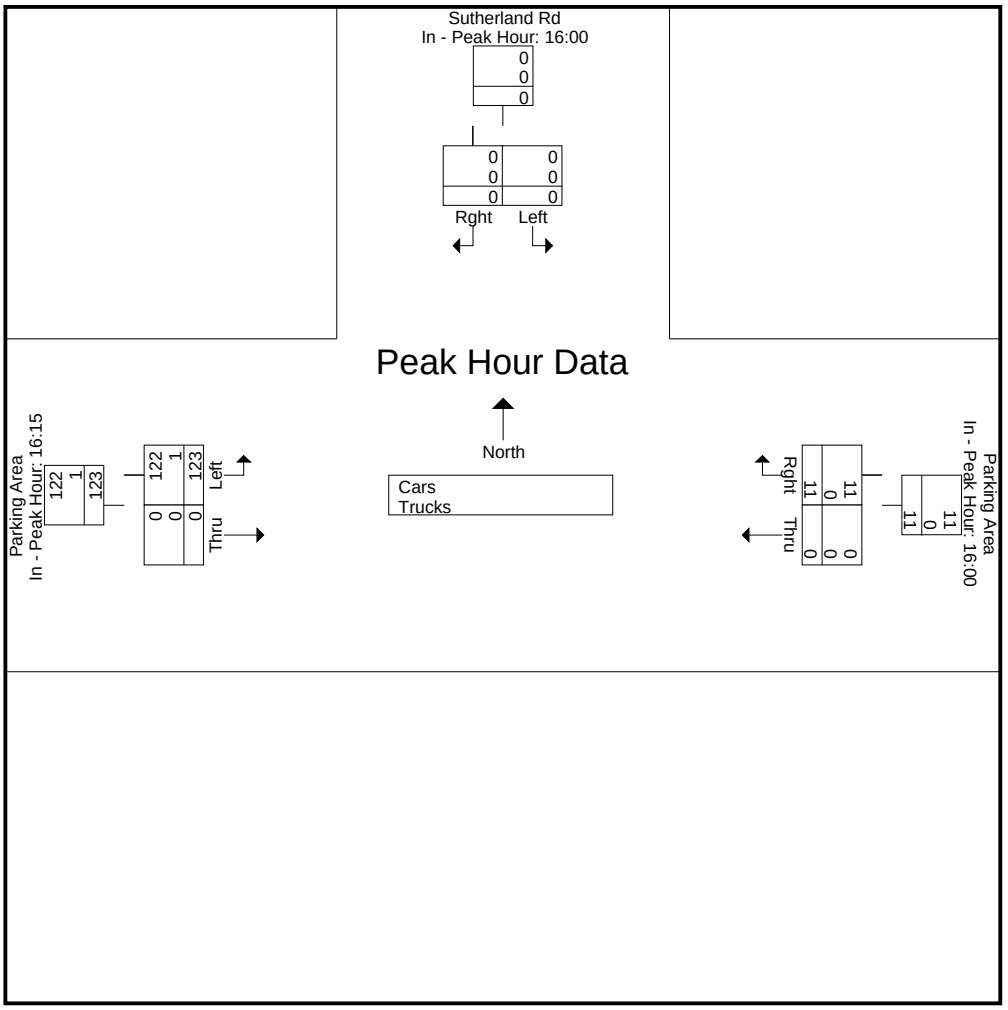
Peak Hour for Each Approach Begins at:

	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

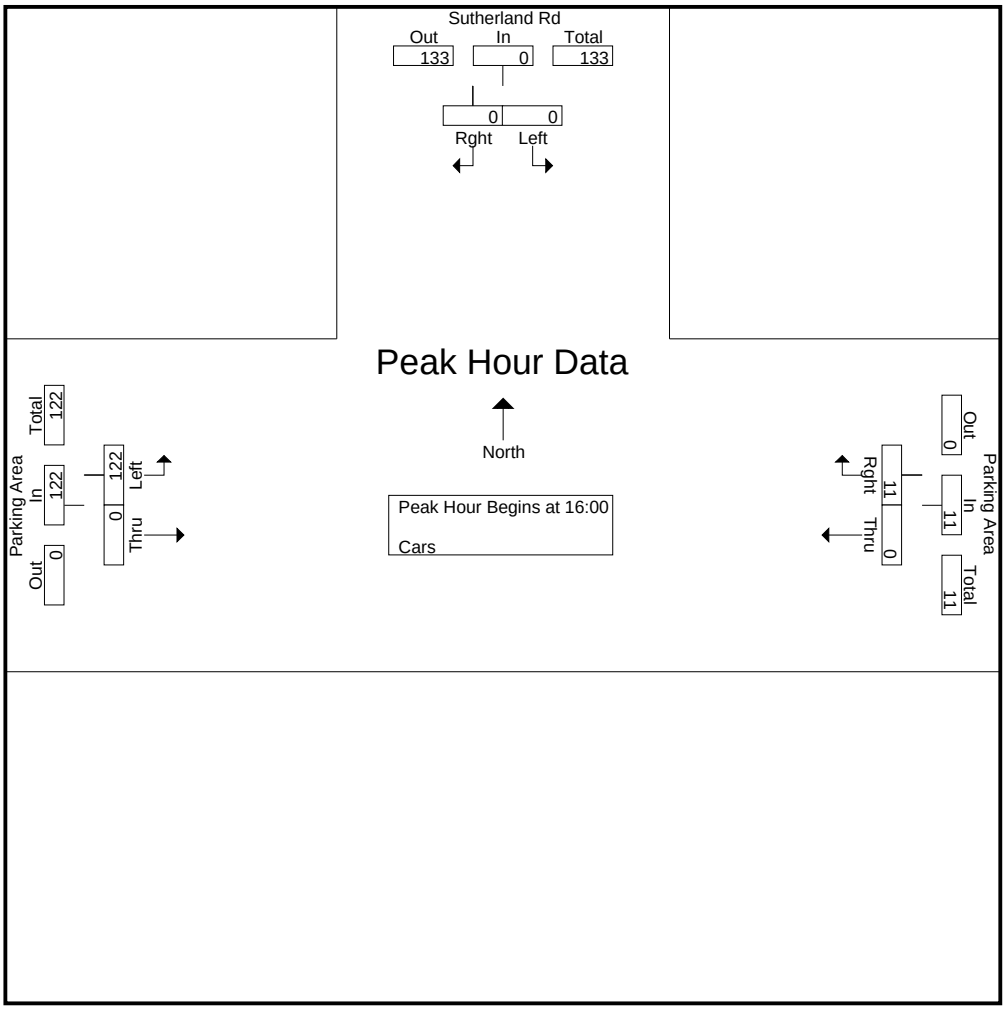
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	0	0	3	25	0	28
16:15	0	0	0	4	27	0	31
16:30	0	0	0	1	34	0	35
16:45	0	0	0	3	36	0	39
Total	0	0	0	11	122	0	133
17:00	0	0	0	3	25	0	28
17:15	0	0	0	3	26	0	29
17:30	0	0	0	1	33	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

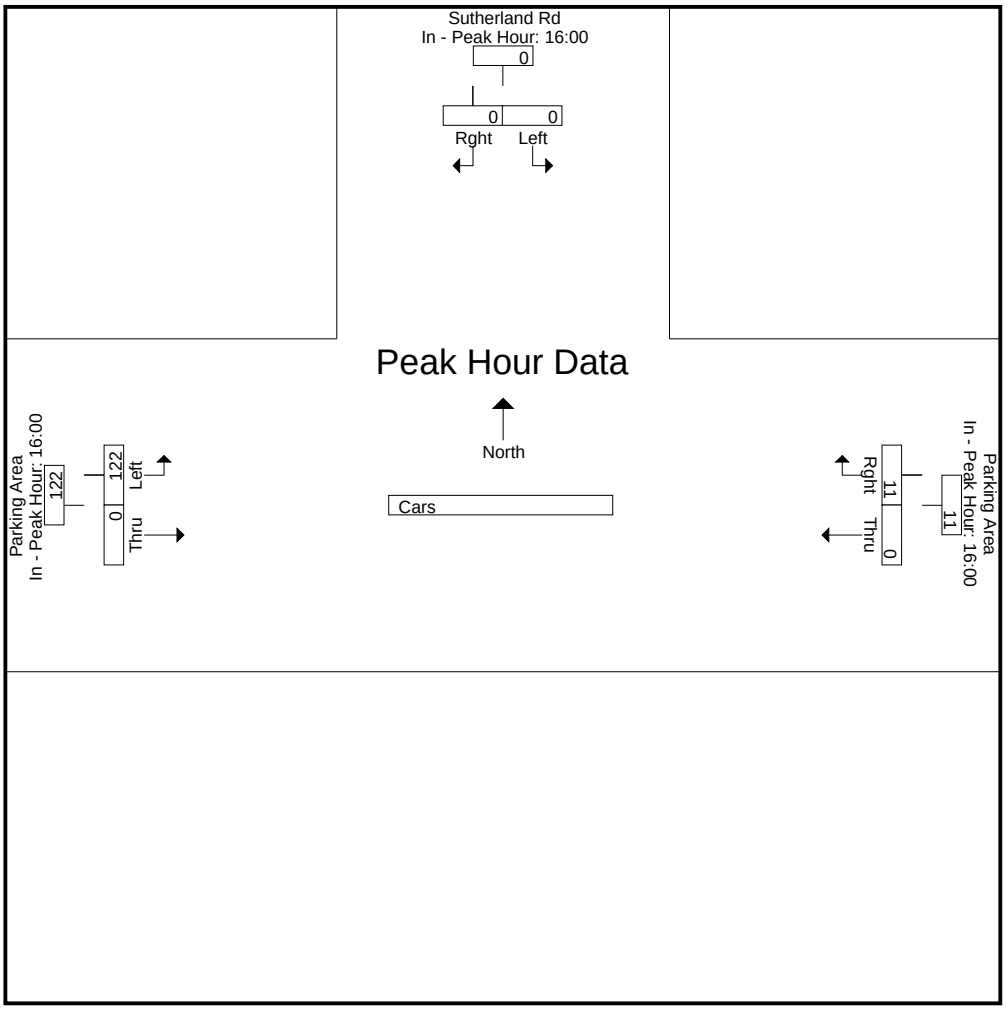
Peak Hour for Each Approach Begins at:

	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

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- Trucks

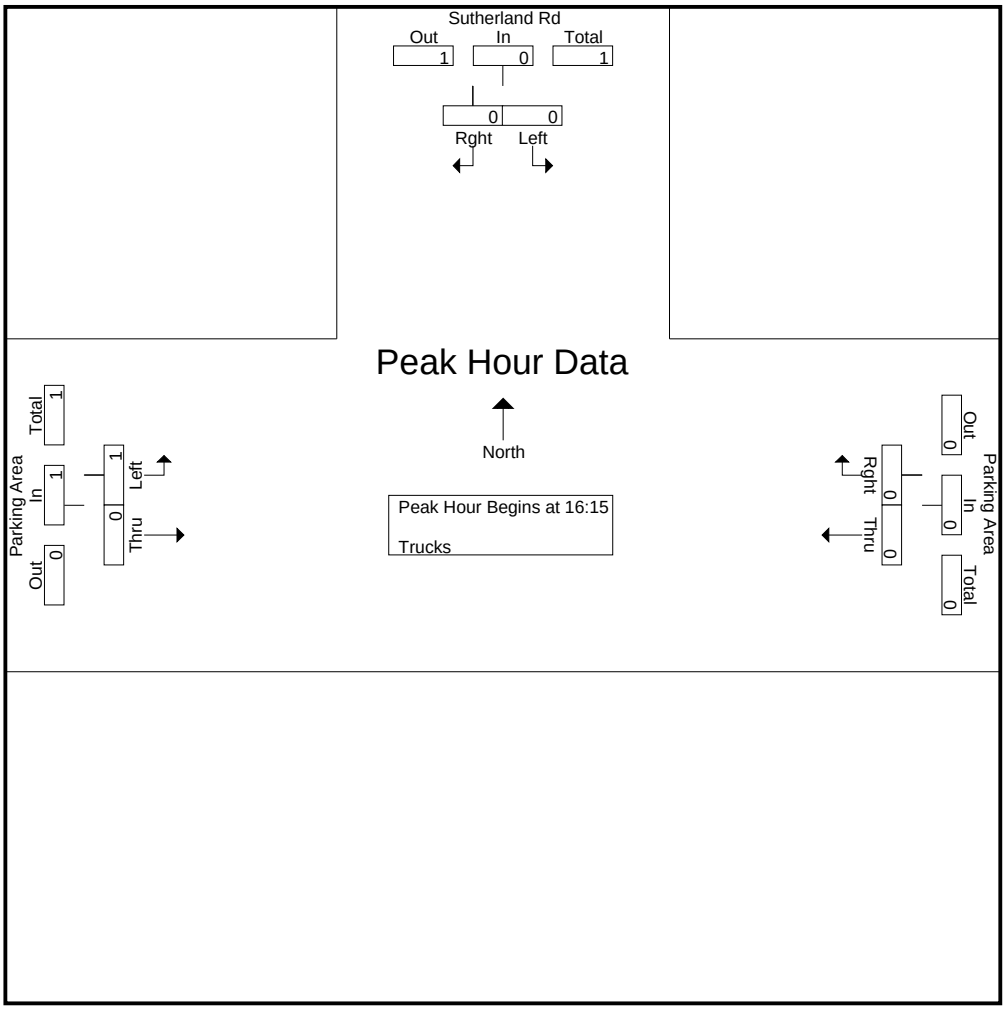
	Sutherland Rd From North		Parking Area From East		Parking Area From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
17:00	0	0	0	0	1	0	1
17:15	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0
17:45	0	0	0	0	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

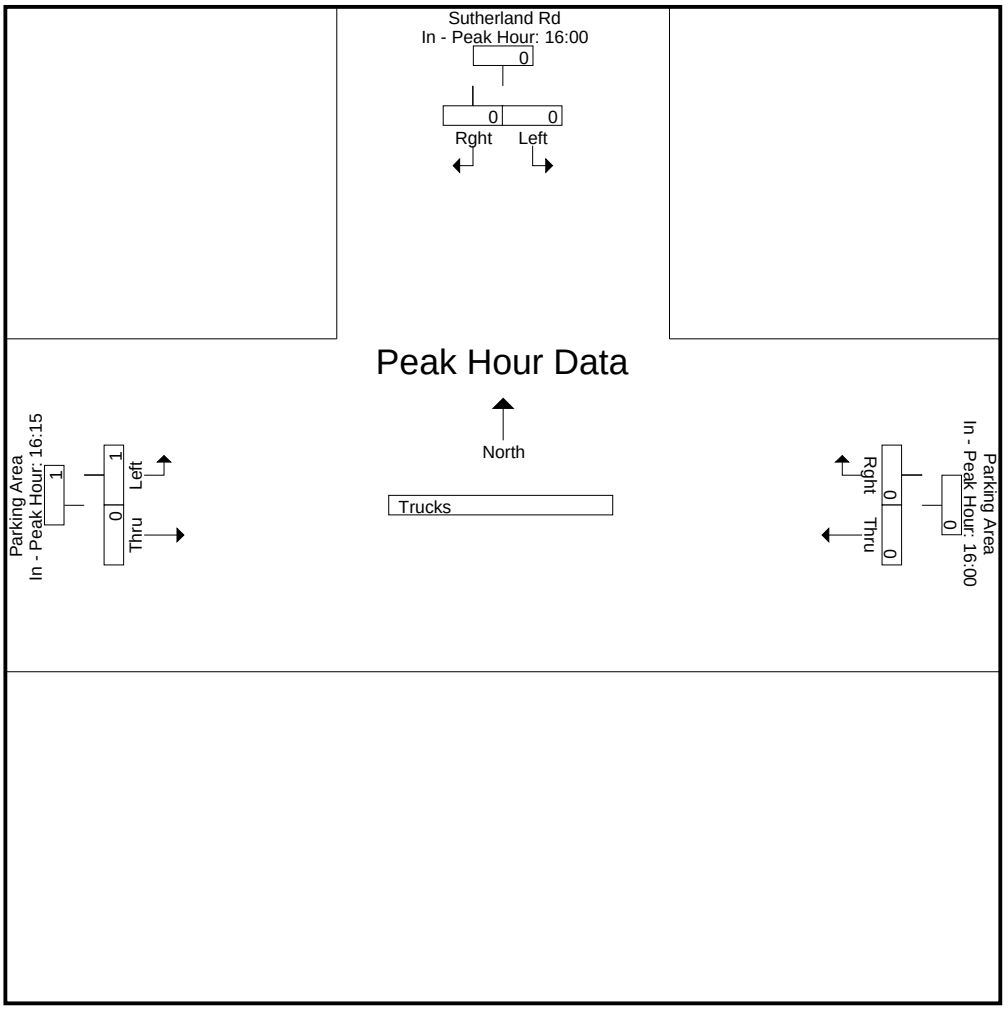
Peak Hour for Each Approach Begins at:

	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

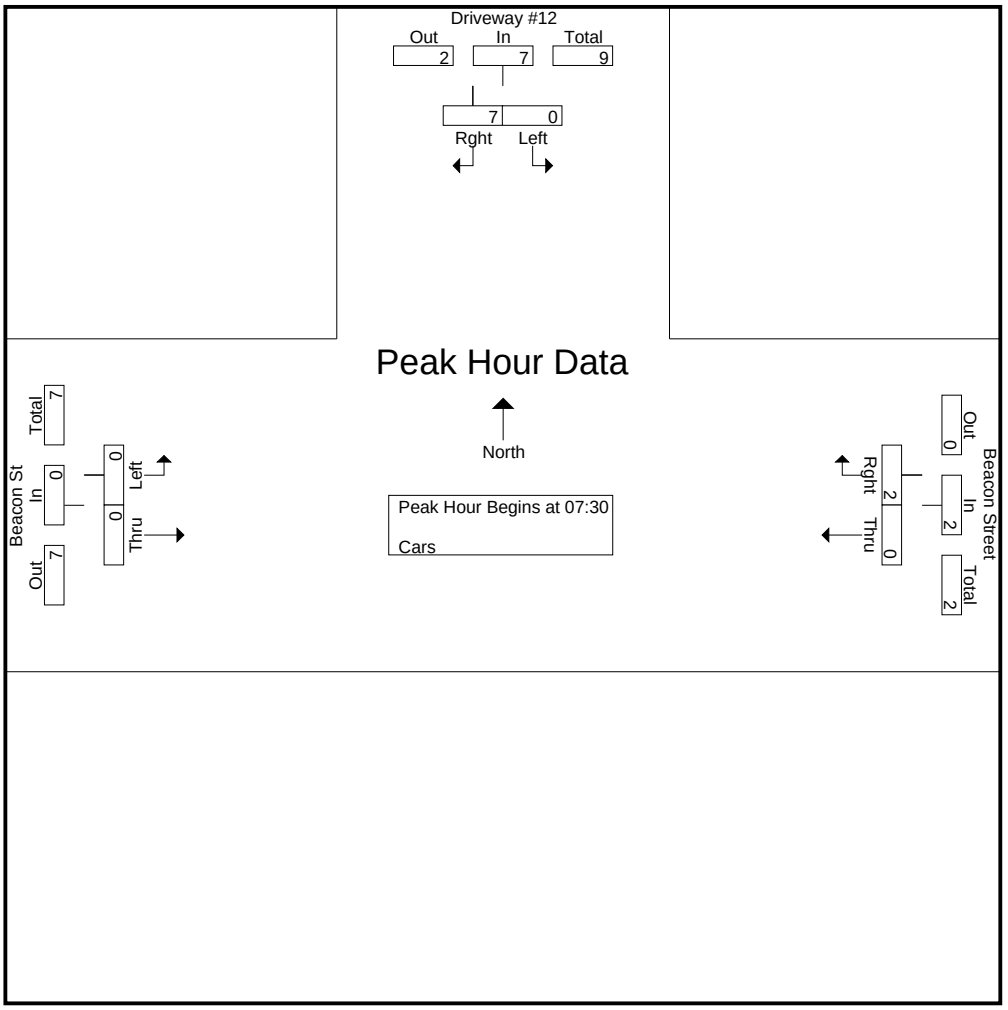
	Driveway #12 From North		Beacon Street From East		Beacon St From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
07:00	0	2	0	0	0	0	2
07:15	0	0	0	0	0	0	0
07:30	0	2	0	0	0	0	2
07:45	0	2	0	2	0	0	4
Total	0	6	0	2	0	0	8
08:00	0	2	0	0	0	0	2
08:15	0	1	0	0	0	0	1
08:30	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	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

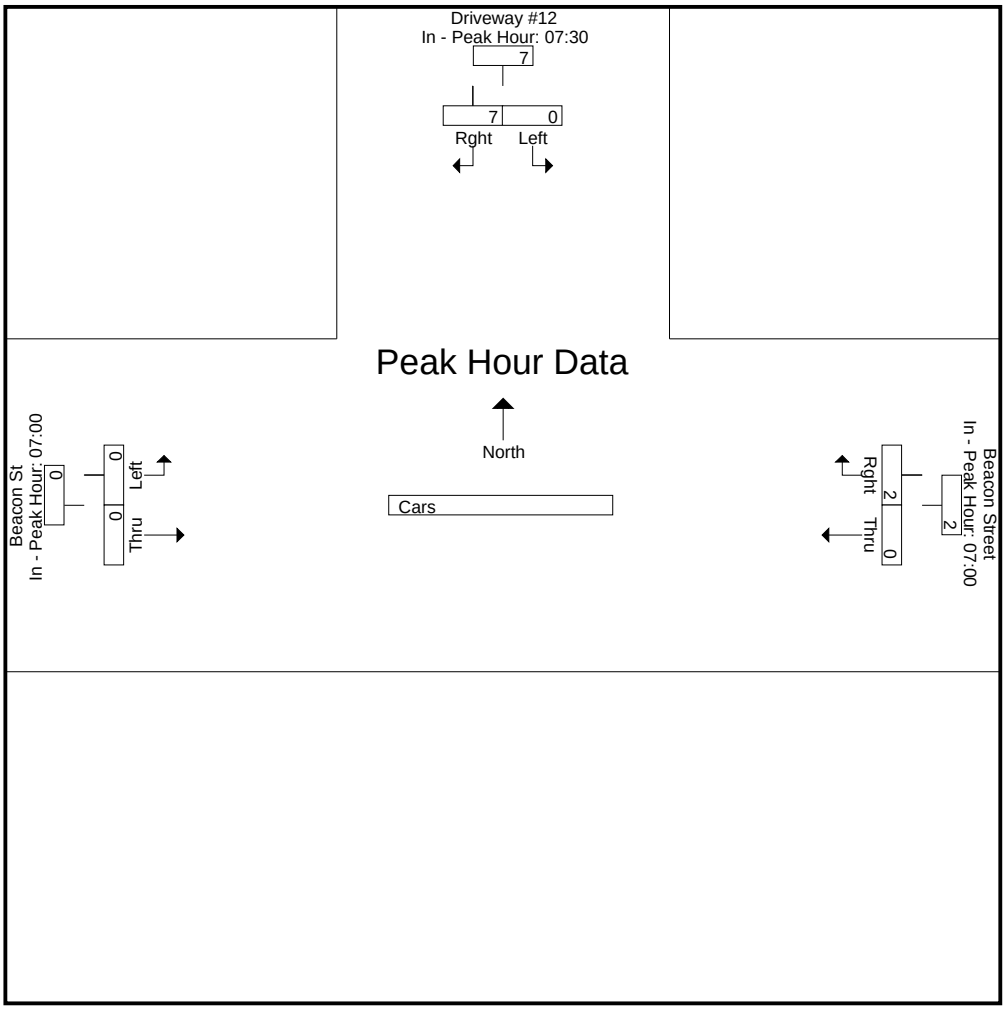
Peak Hour for Each Approach Begins at:

	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

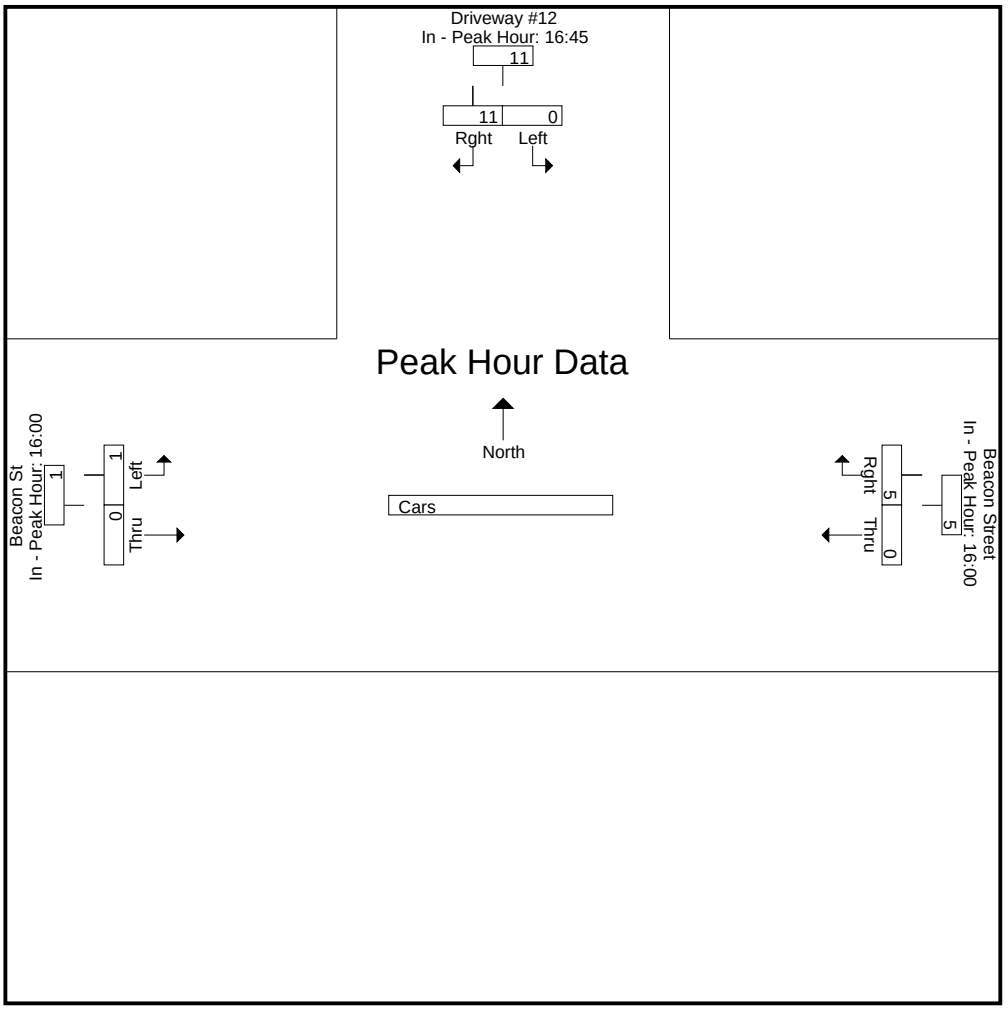
	Driveway #12 From North		Beacon Street From East		Beacon St From West		
Start Time	Left	Rght	Thru	Rght	Left	Thru	Int. Total
16:00	0	1	0	1	1	0	3
16:15	0	0	0	1	0	0	1
16:30	0	1	0	1	0	0	2
16:45	0	2	0	2	0	0	4
Total	0	4	0	5	1	0	10
17:00	0	2	0	1	0	0	3
17:15	0	1	0	0	0	0	1
17:30	0	6	0	0	0	0	6
17:45	0	0	0	1	0	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	

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



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 Time	09-Dec-10 Thu	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals 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

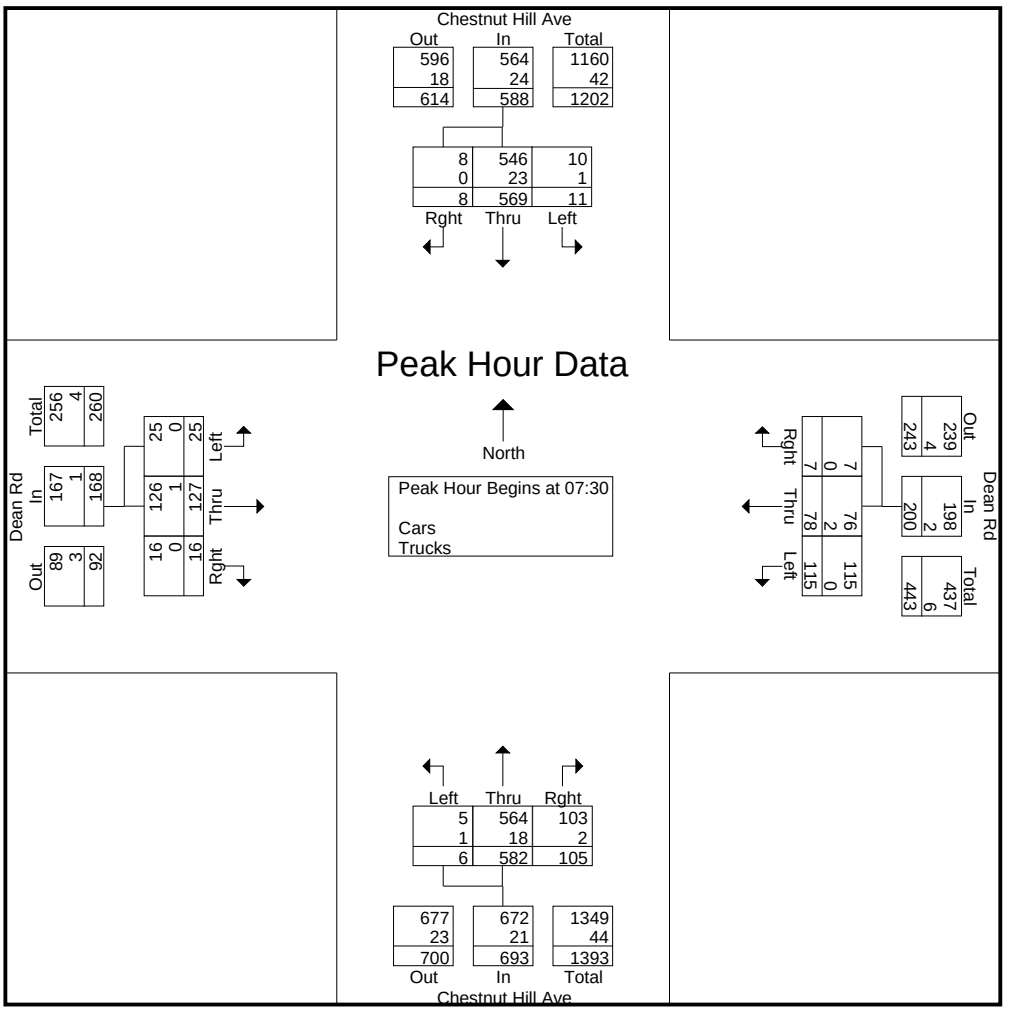
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	1	117	3	17	6	1	3	134	16	4	3	3	308
07:15	2	162	14	20	8	2	2	128	19	4	10	2	373
07:30	1	128	4	30	24	2	0	164	26	7	23	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

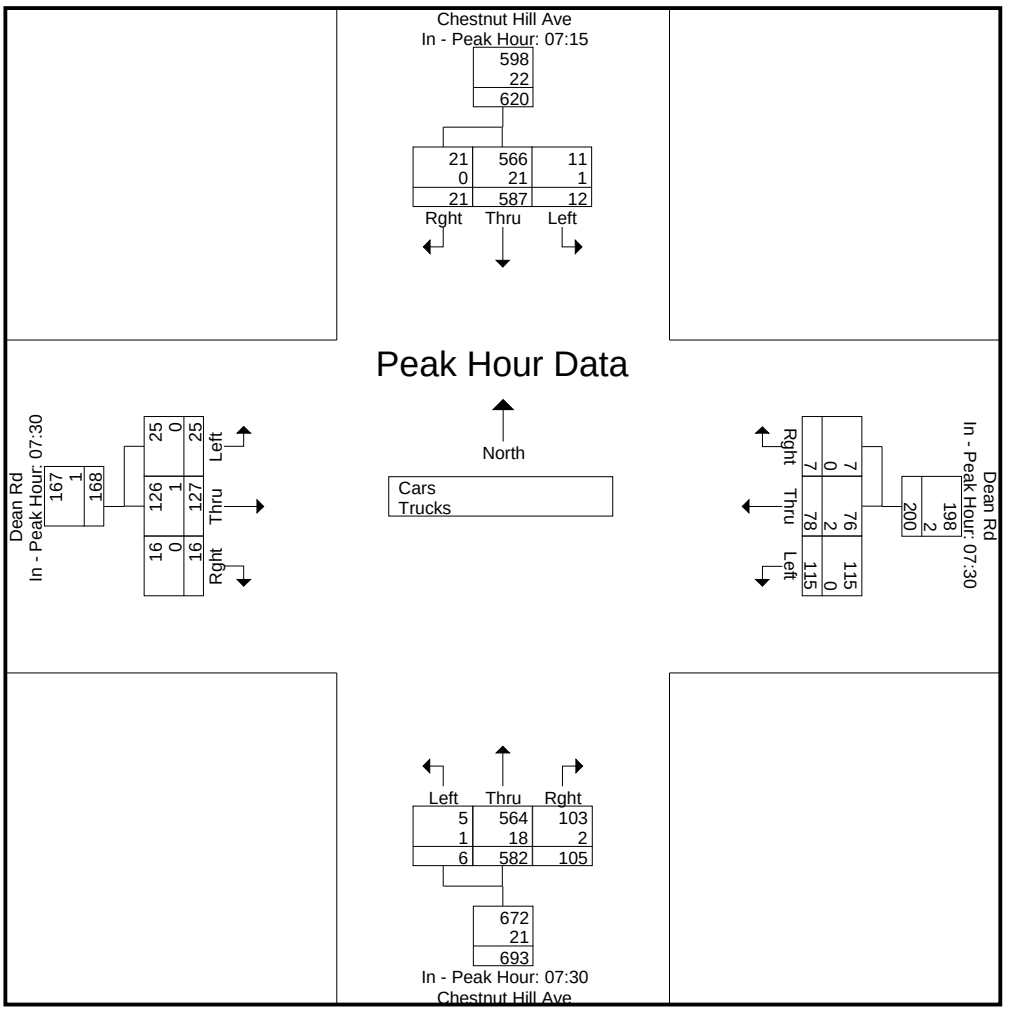
Peak Hour for Each Approach Begins at:

	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

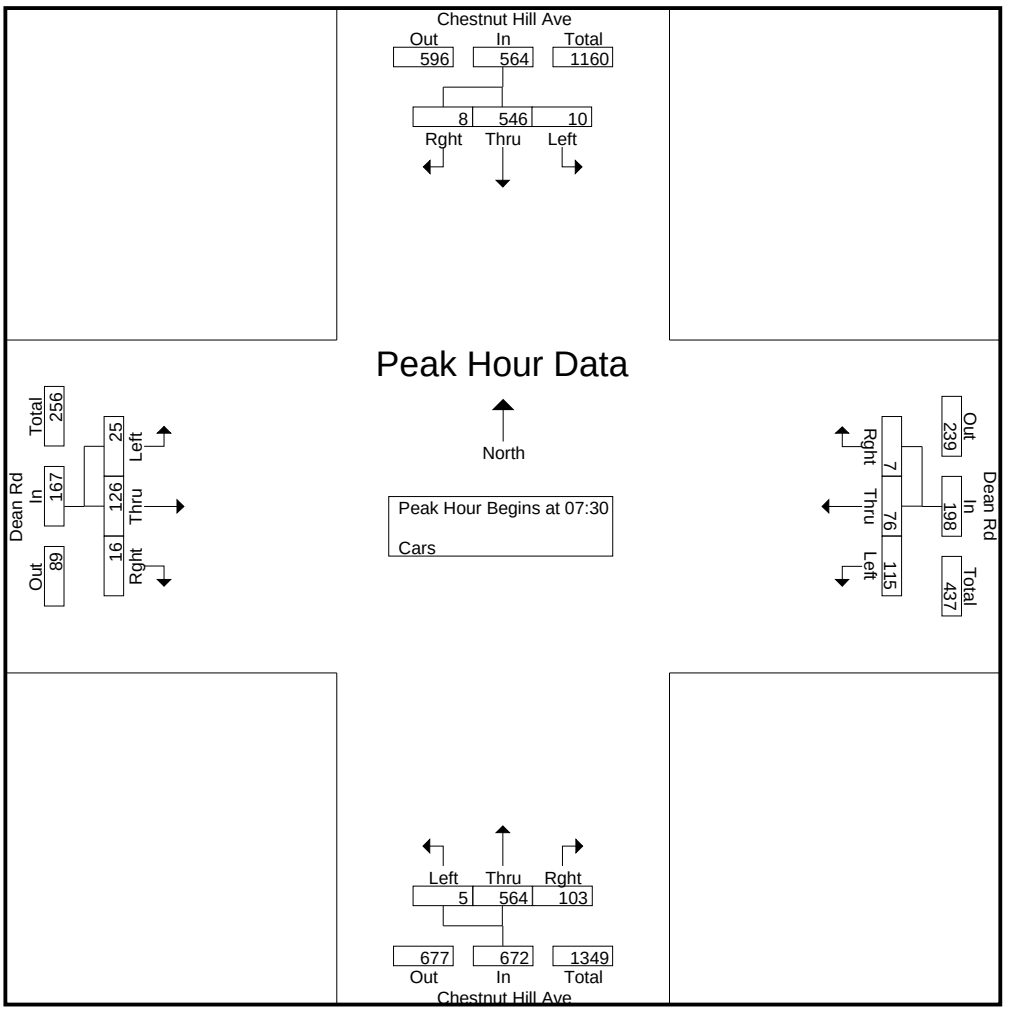
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	1	115	3	17	6	1	3	129	16	4	3	3	301
07:15	2	157	14	20	8	2	0	124	19	4	10	2	362
07:30	1	122	4	30	23	2	0	159	25	7	22	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

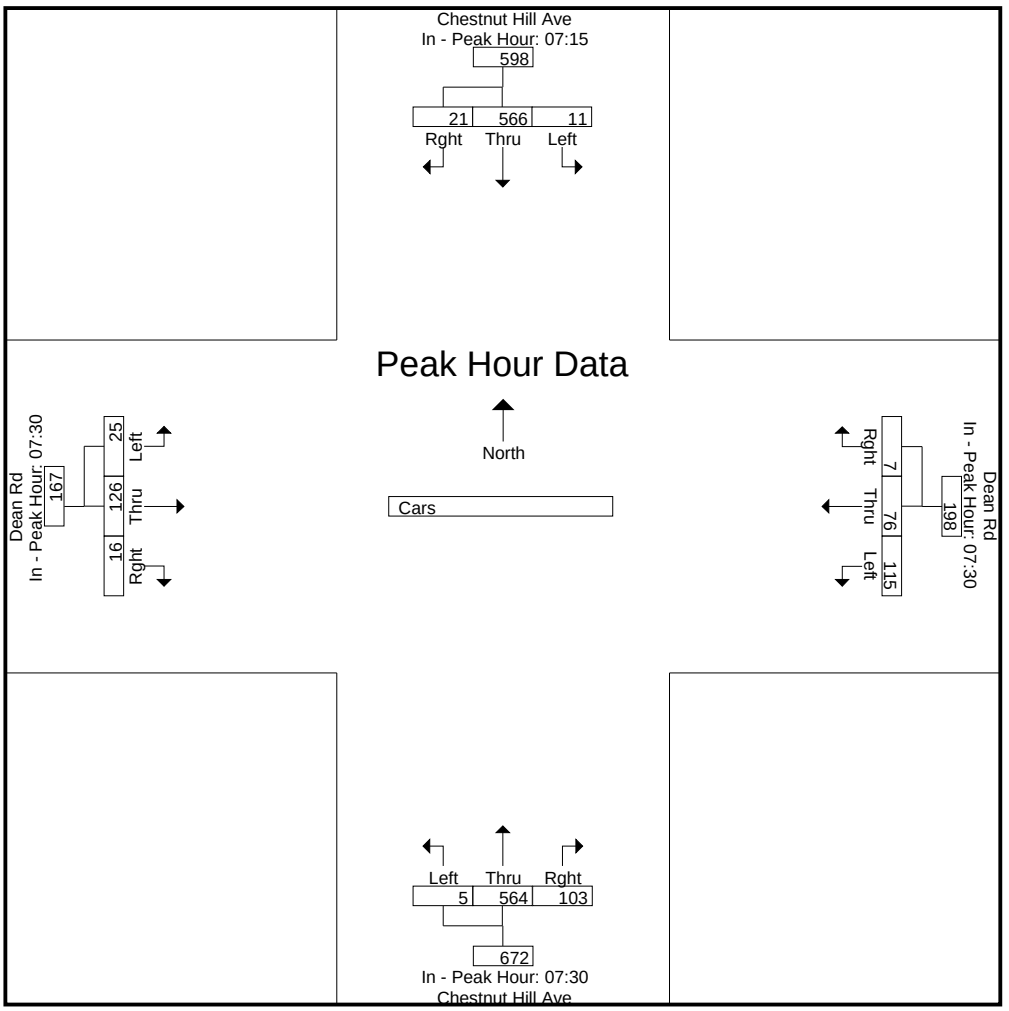
Peak Hour for Each Approach Begins at:

	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

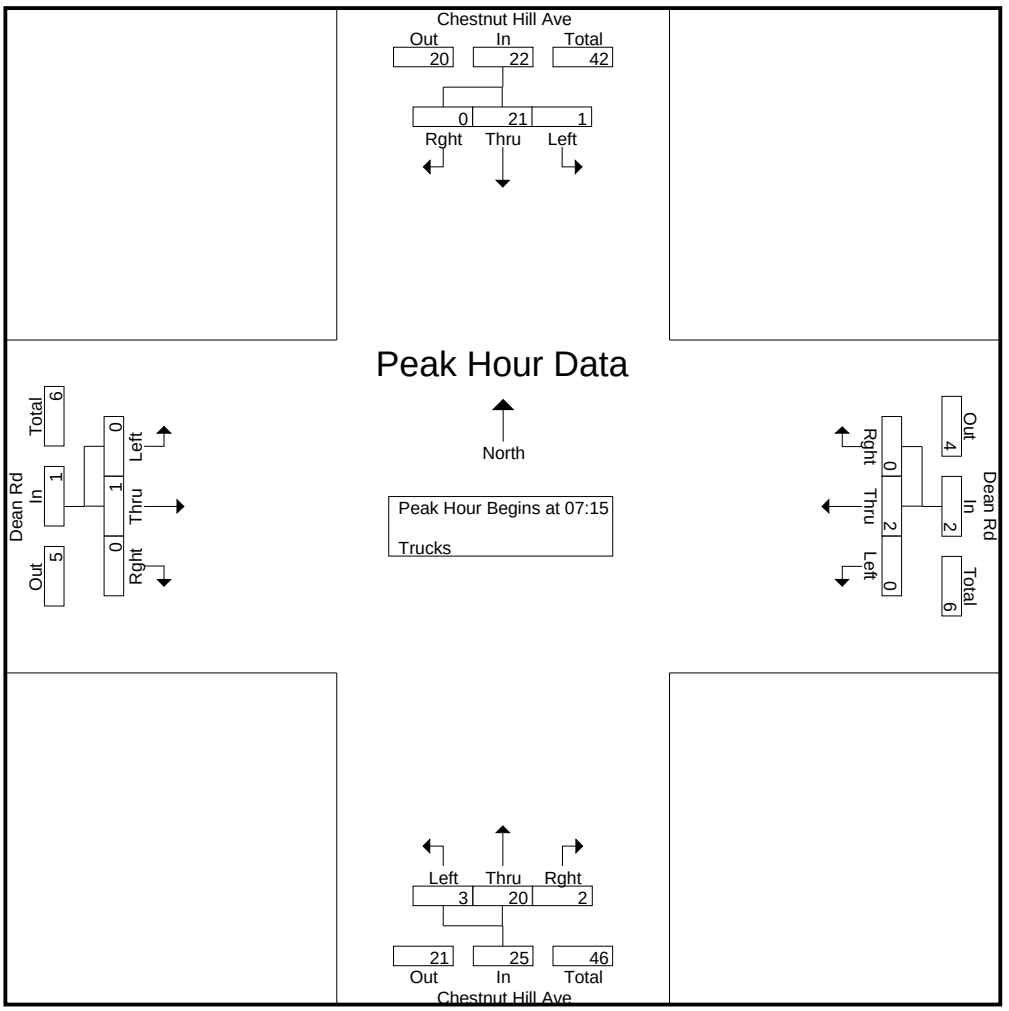
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	0	2	0	0	0	0	0	5	0	0	0	0	7
07:15	0	5	0	0	0	0	2	4	0	0	0	0	11
07:30	0	6	0	0	1	0	0	5	1	0	1	0	14
07:45	1	4	0	0	1	0	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

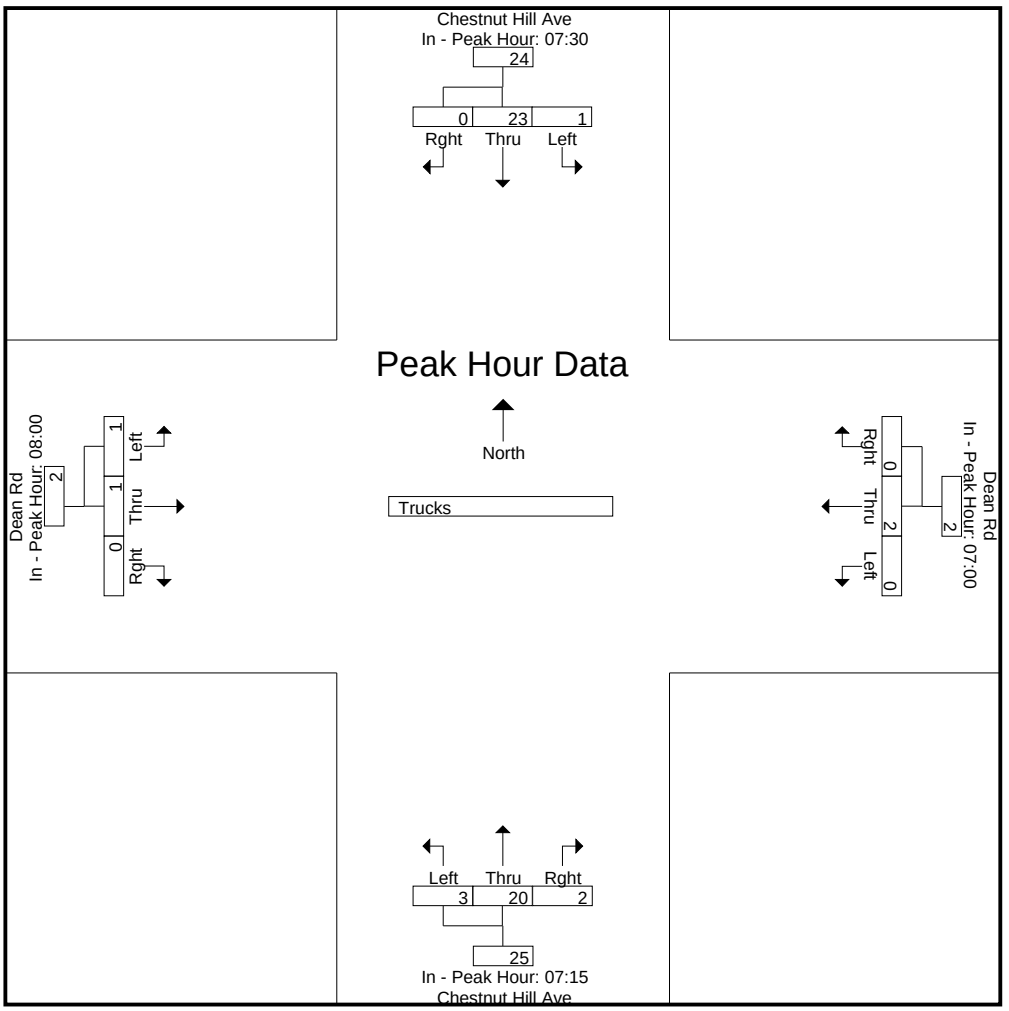
Peak Hour for Each Approach Begins at:

	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

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

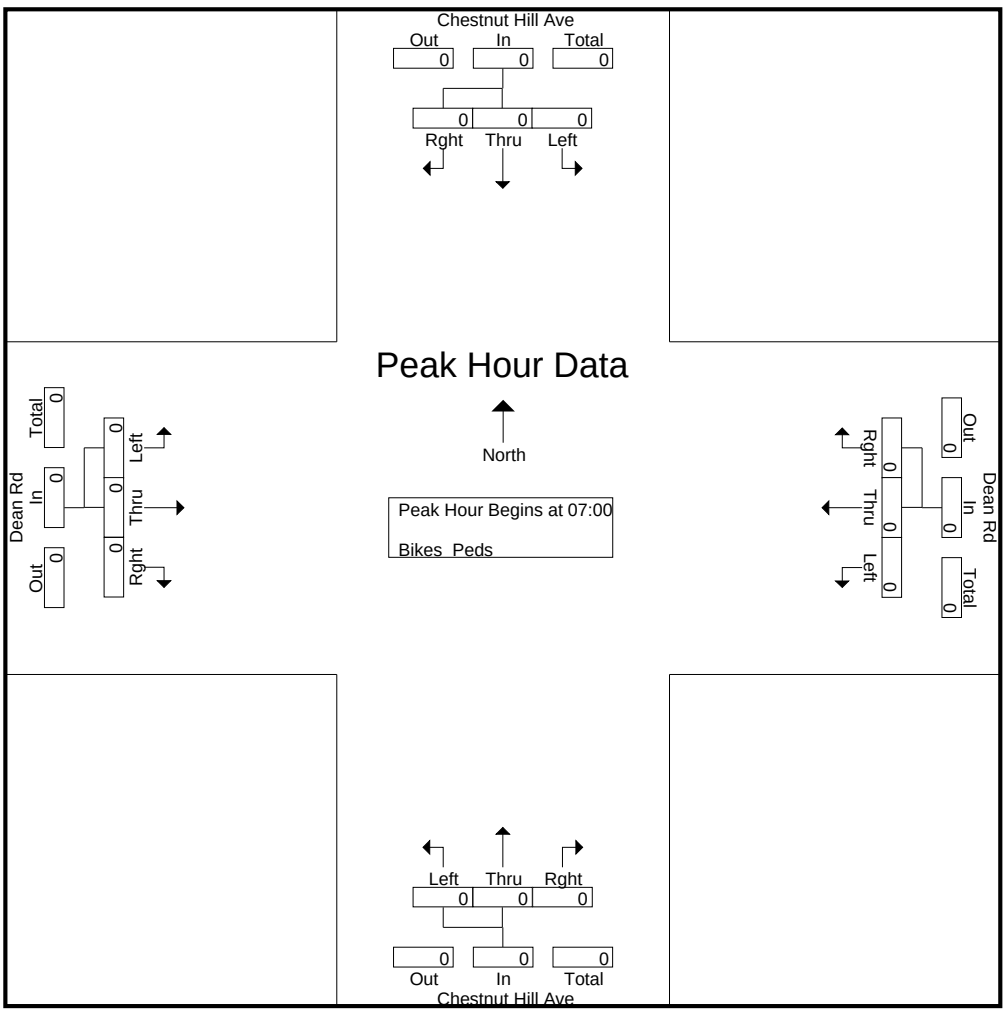
N/S Street : Chestnut Hill Avenue
E/W Street: Dean Road
City/State : Brookline, MA
Weather : Light Rain

File Name : 01900005
Site Code : 01900005
Start Date : 1/19/2011
Page No : 1

Groups Printed- 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

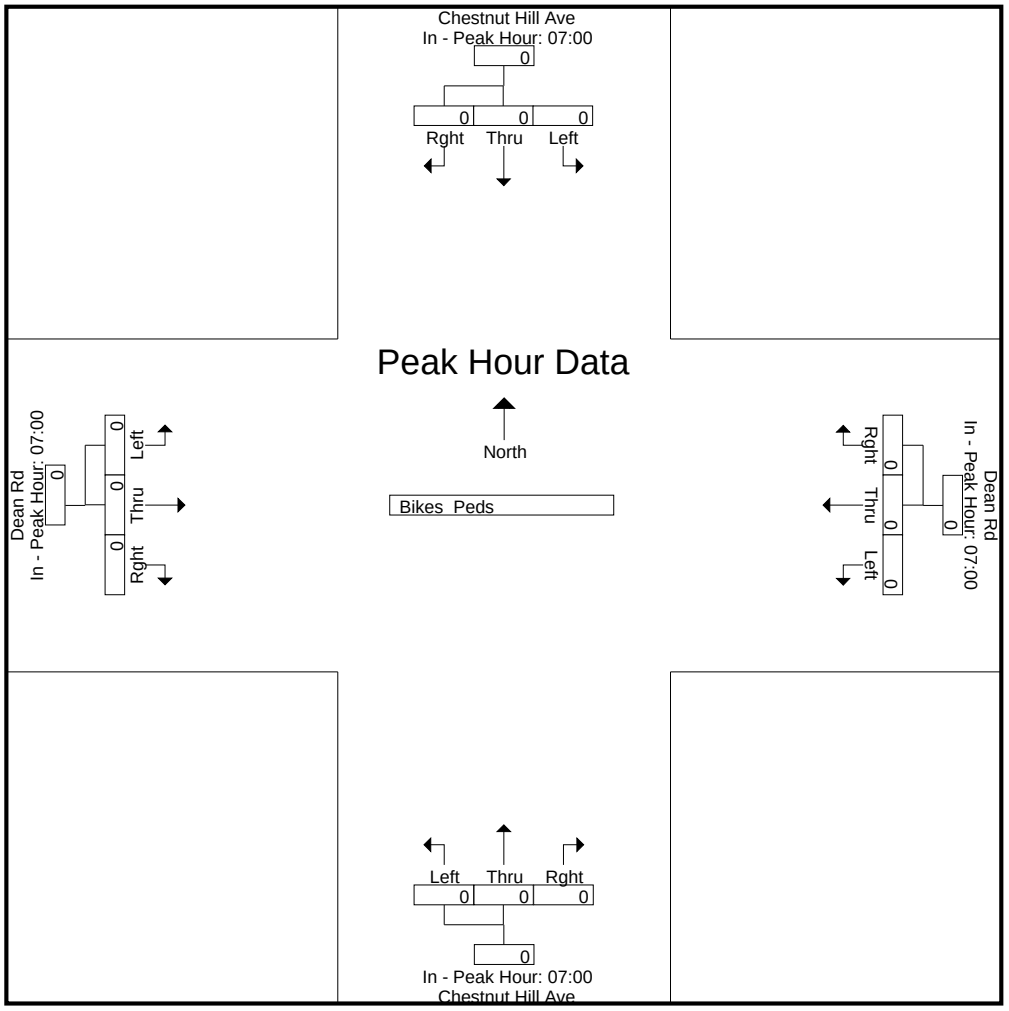


Accurate Counts
978-664-2565

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

	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

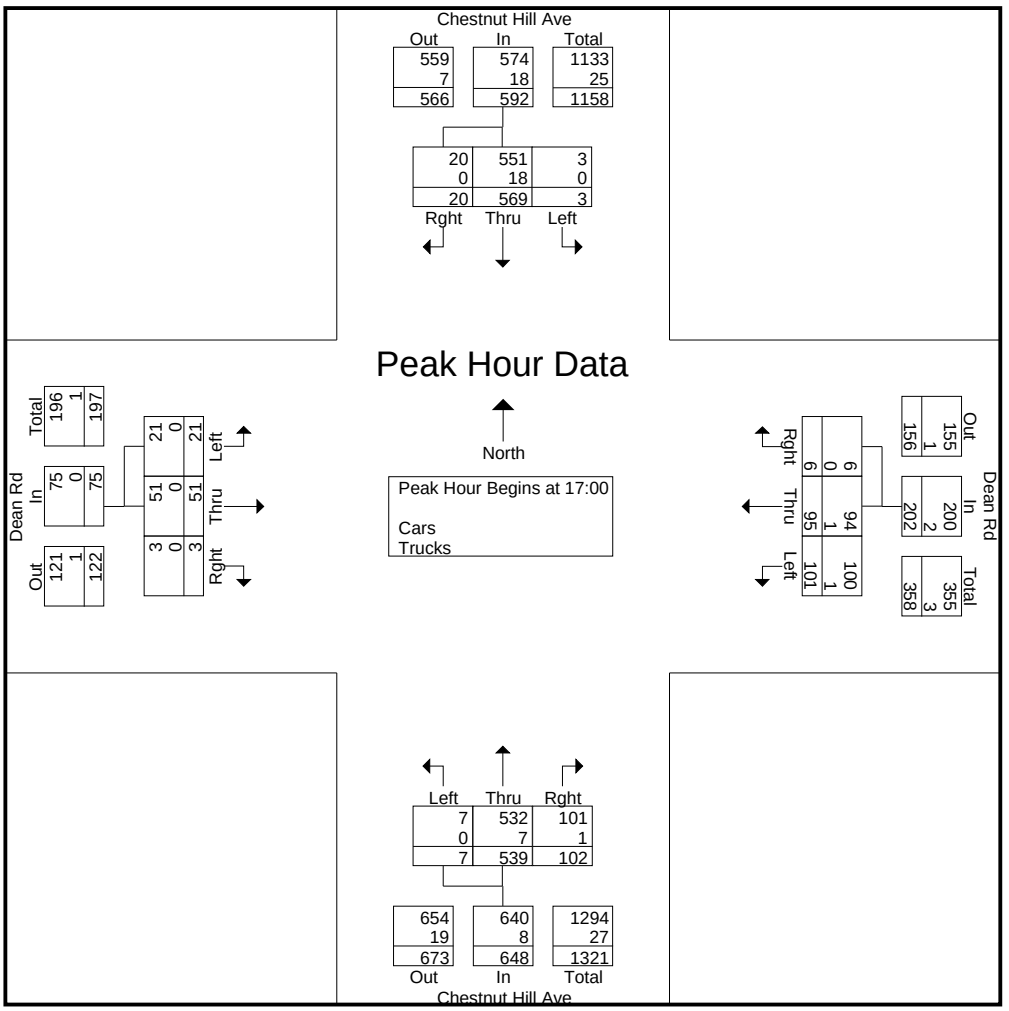
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	153	3	25	16	4	1	112	28	4	8	1	355
16:15	0	149	4	15	19	1	1	132	18	4	7	2	352
16:30	2	153	3	31	18	0	1	132	31	9	14	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

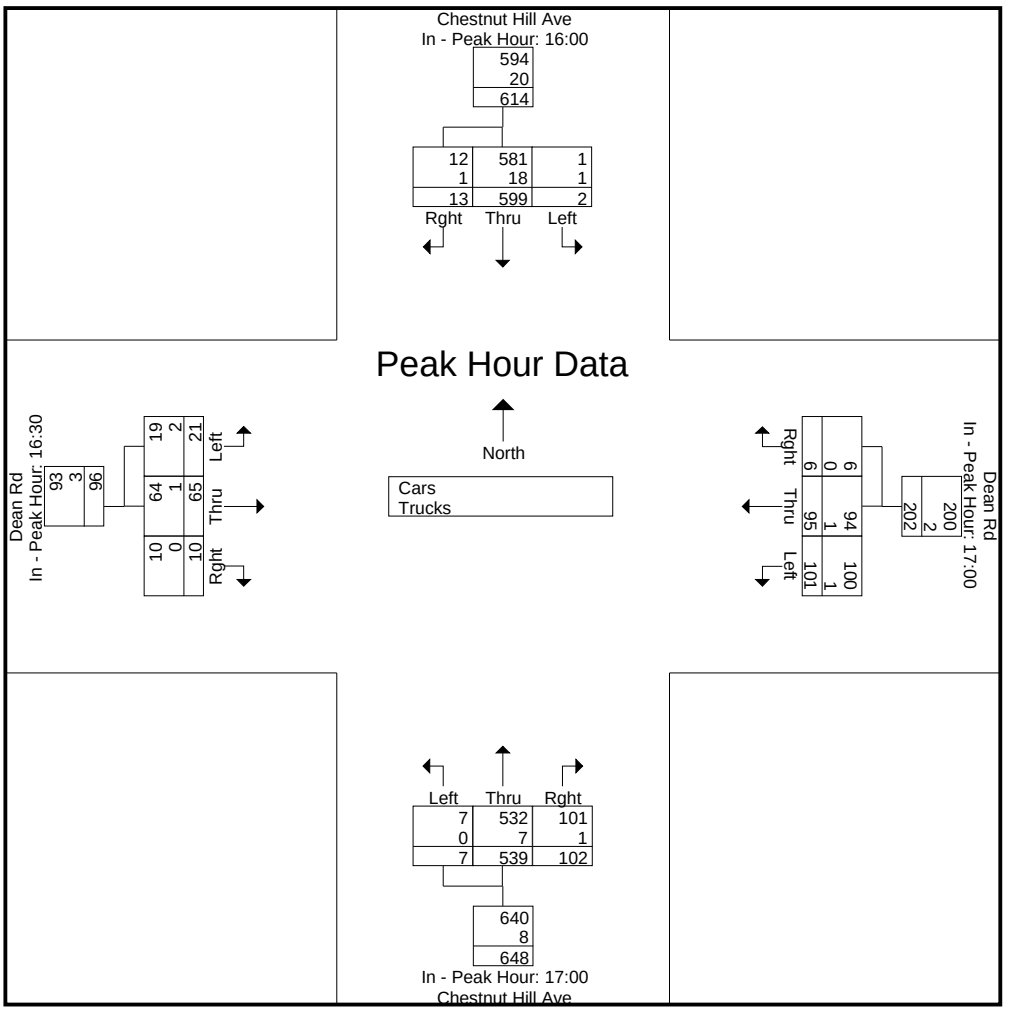
Peak Hour for Each Approach Begins at:

	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

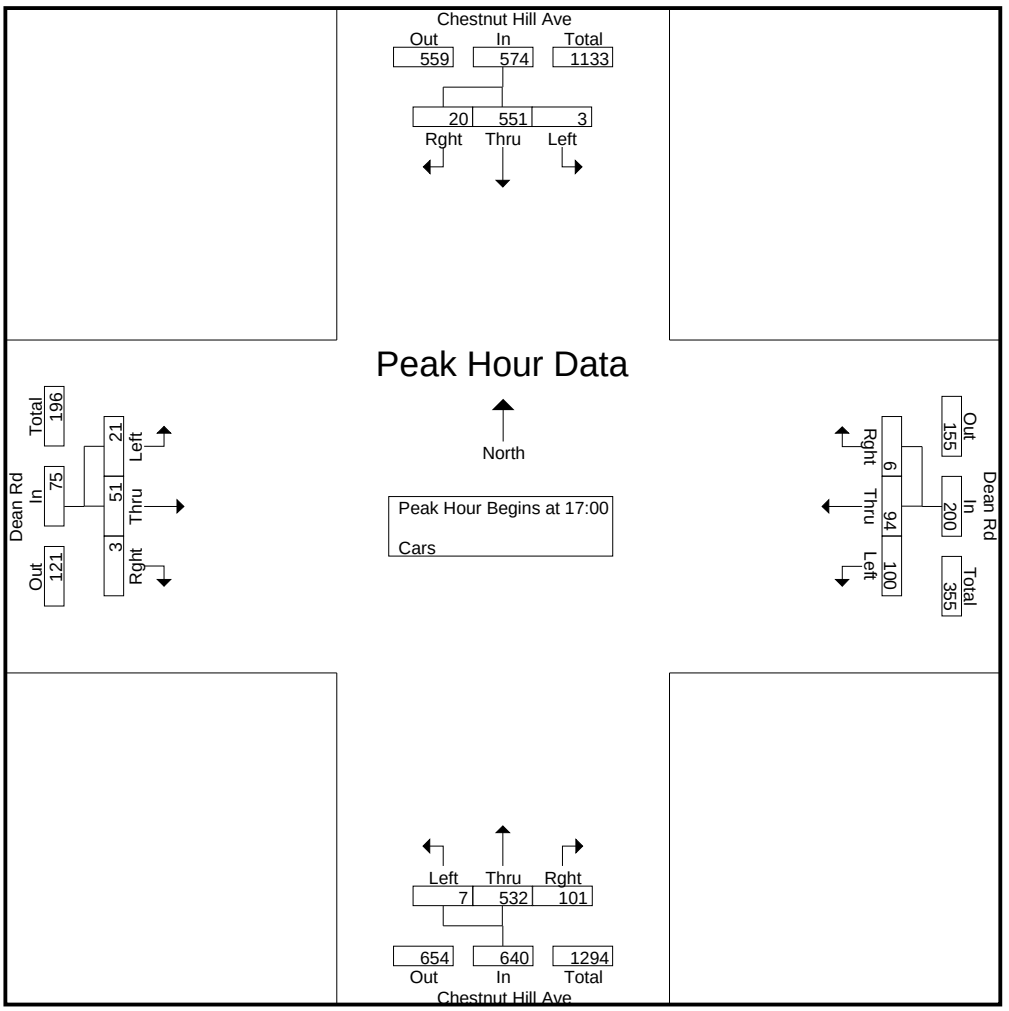
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	150	3	25	16	4	1	111	28	4	8	1	351
16:15	0	141	3	15	19	1	1	129	18	4	7	2	340
16:30	1	148	3	31	18	0	1	126	31	8	14	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

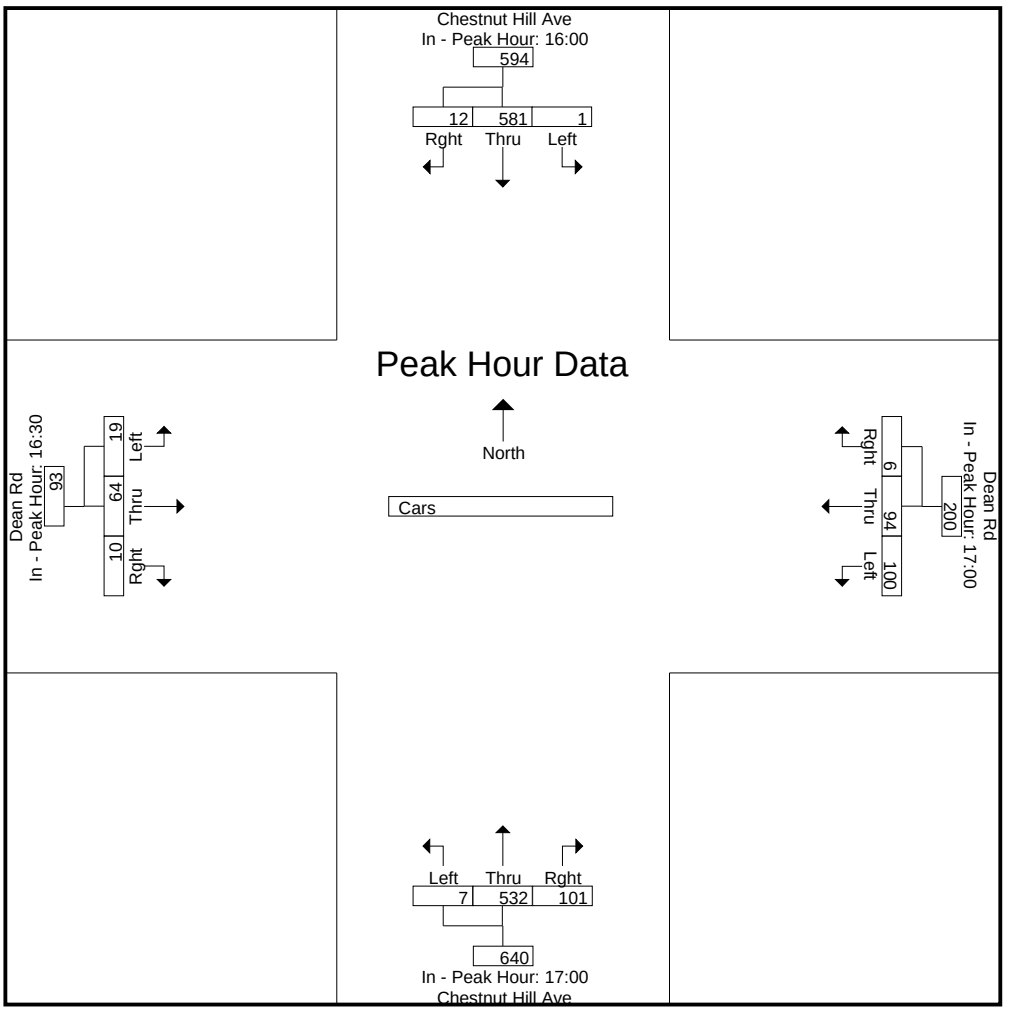
Peak Hour for Each Approach Begins at:

	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

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

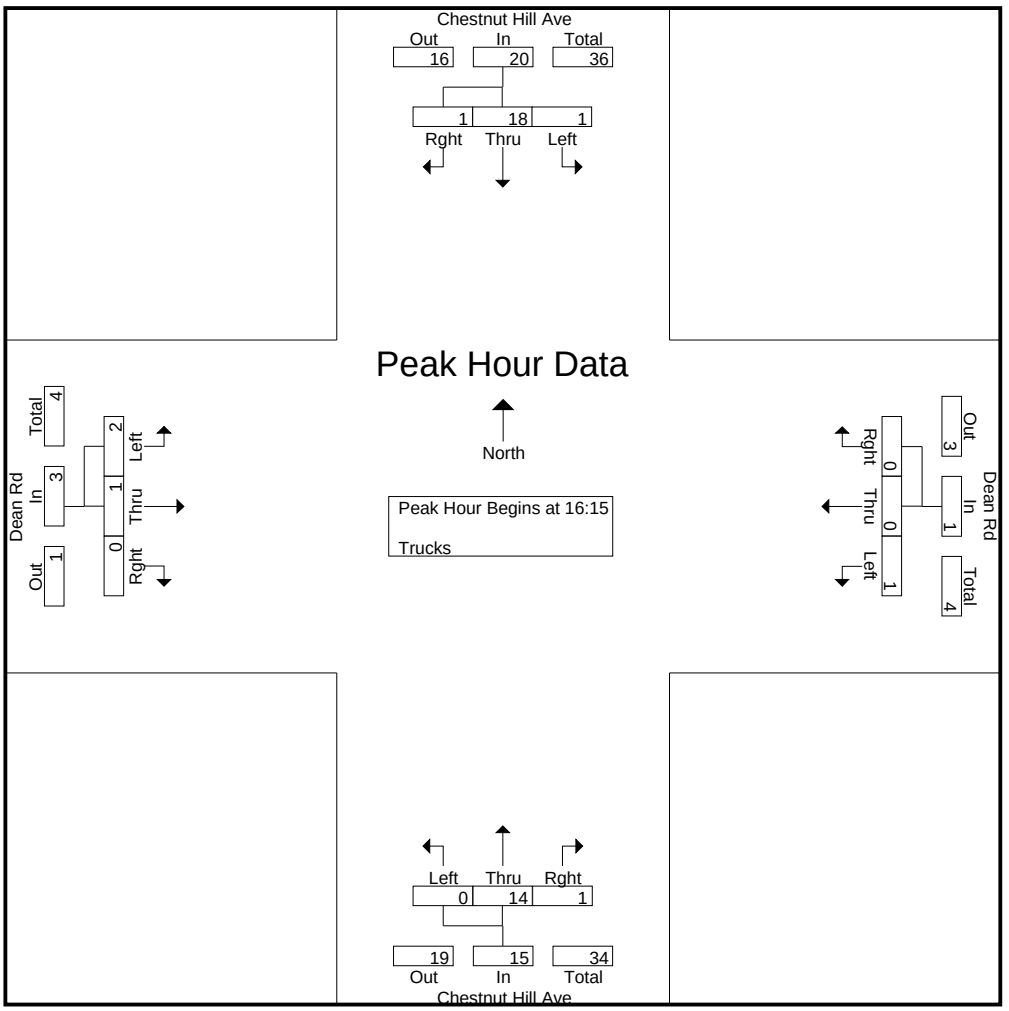
	Chestnut Hill Ave From North			Dean Rd From East			Chestnut Hill Ave From South			Dean Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	0	3	0	0	0	0	0	1	0	0	0	0	4
16:15	0	8	1	0	0	0	0	3	0	0	0	0	12
16:30	1	5	0	0	0	0	0	6	0	1	0	0	13
16:45	0	2	0	0	0	0	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

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

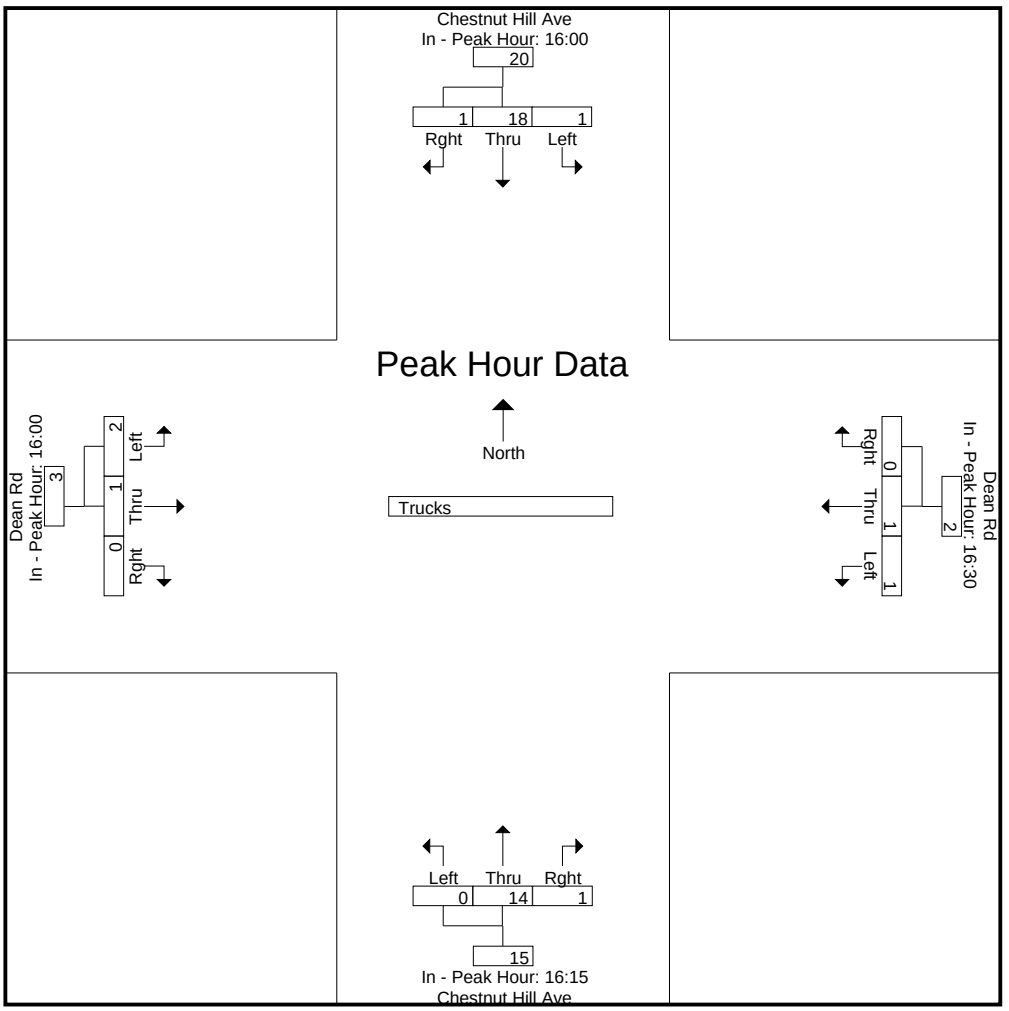
Peak Hour for Each Approach Begins at:

	16:00				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

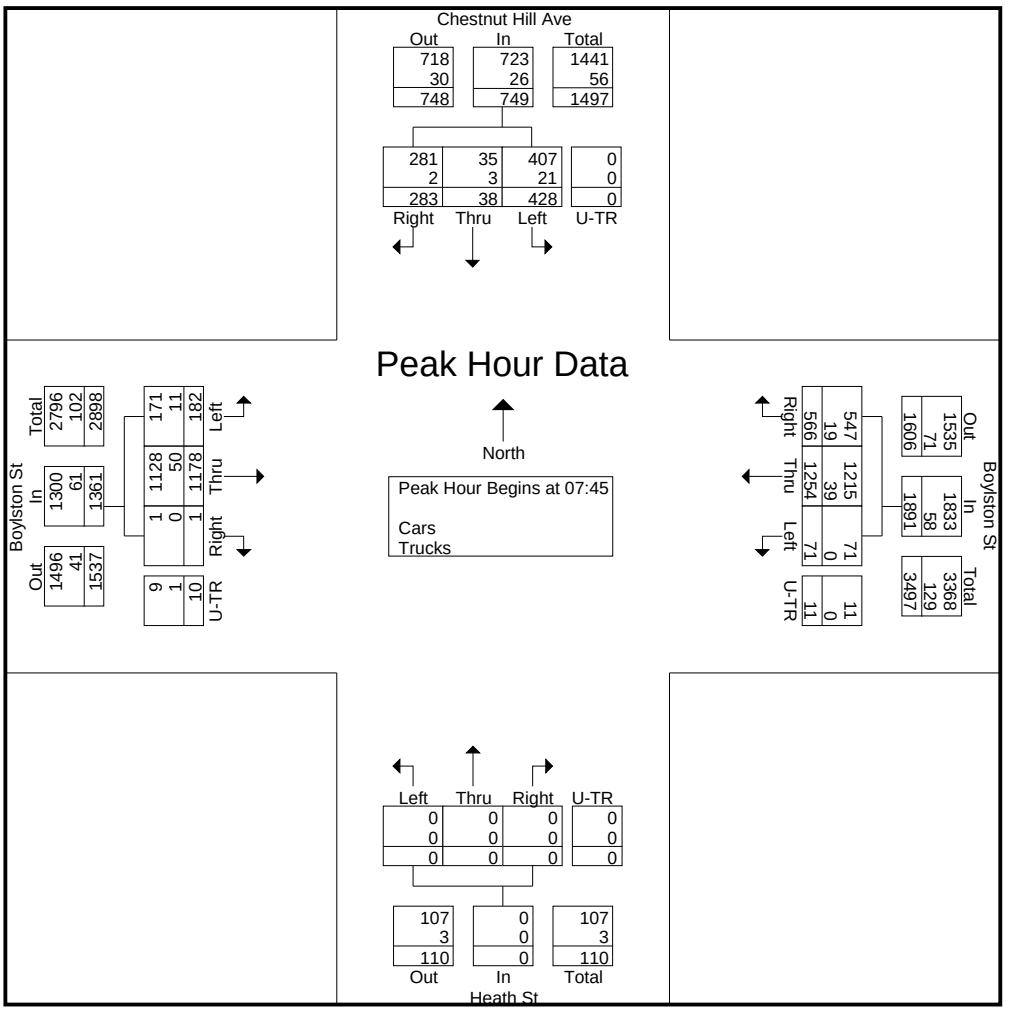
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00	80	7	66	0	5	197	106	0	0	0	0	0	42	304	0	1	808
07:15	99	5	75	0	15	266	116	2	0	0	0	0	42	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



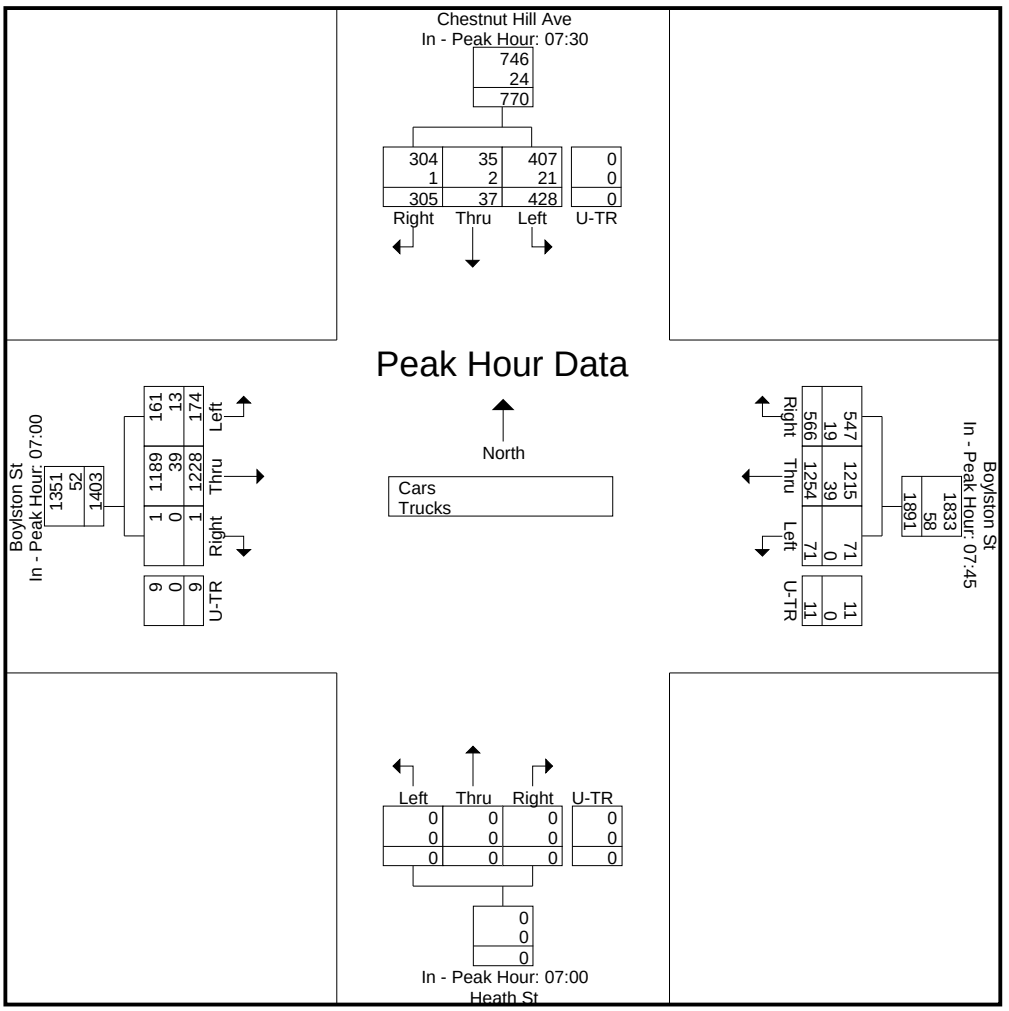
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

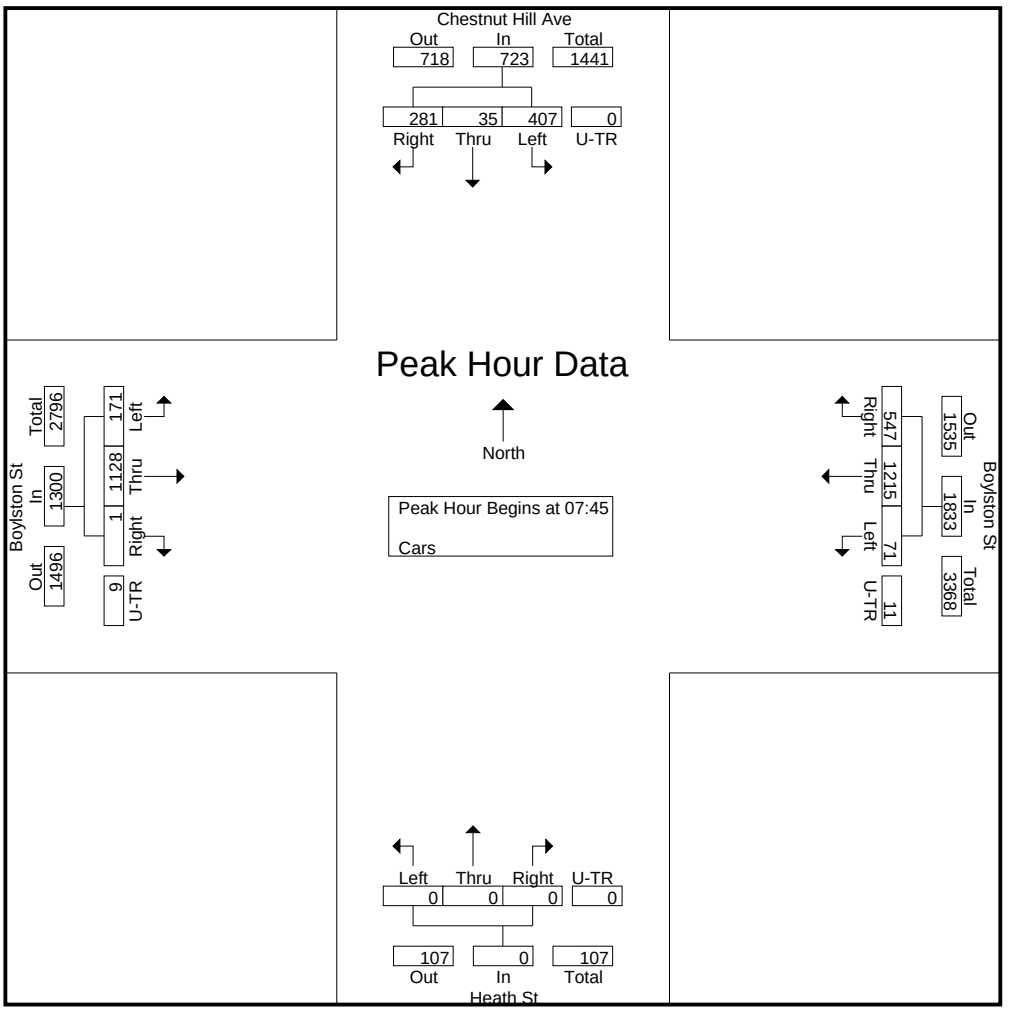
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00	78	6	66	0	5	190	97	0	0	0	0	0	40	292	0	1	775
07:15	96	5	73	0	14	260	110	2	0	0	0	0	39	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



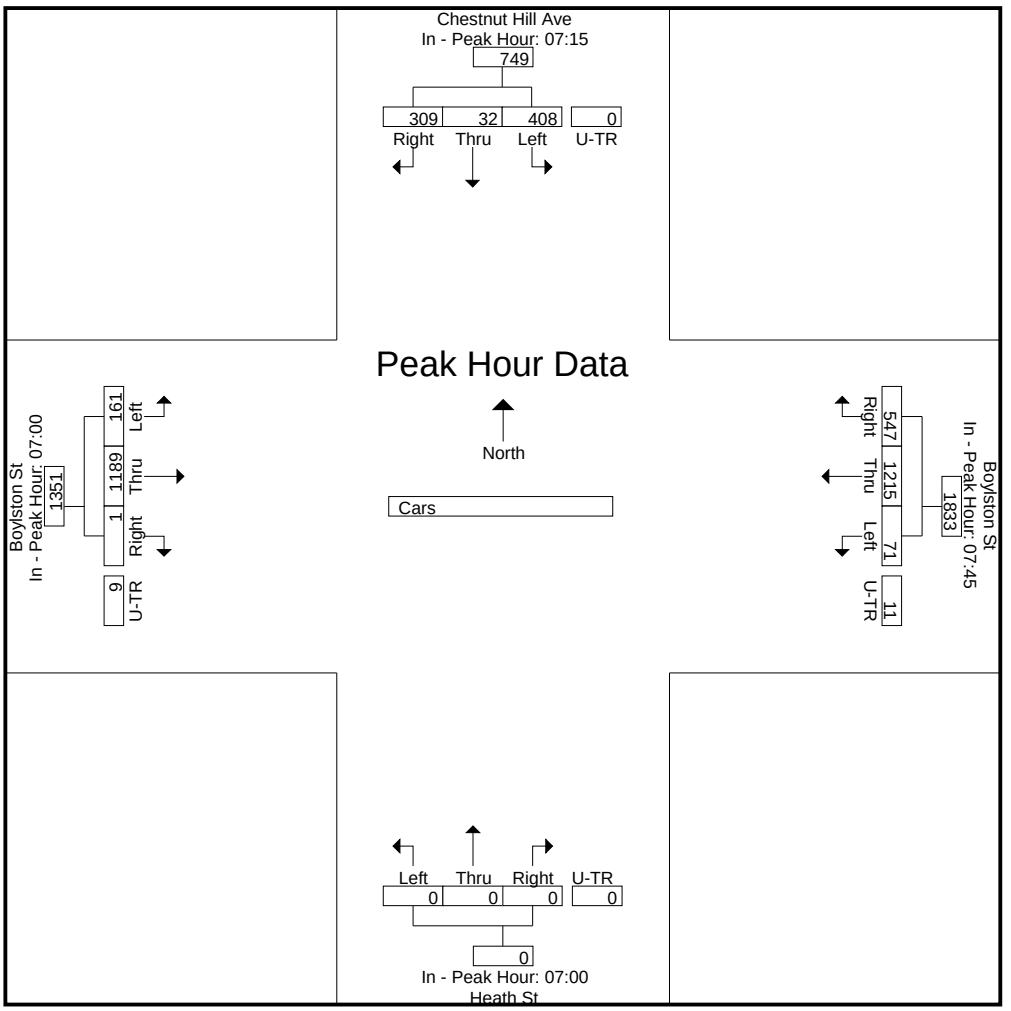
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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
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Start Date : 1/19/2011
Page No : 1

Groups Printed- Trucks

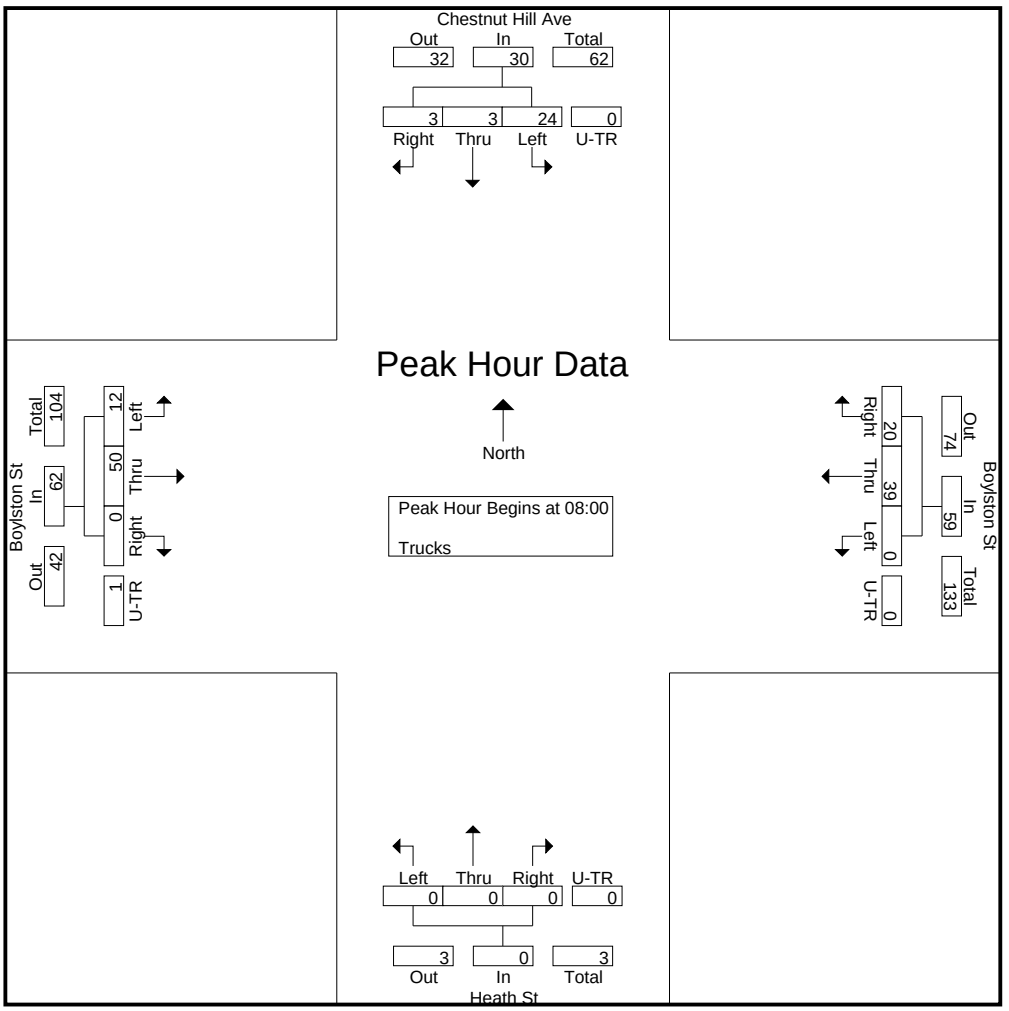
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
07:00	2	1	0	0	0	7	9	0	0	0	0	0	2	12	0	0	33
07:15	3	0	2	0	1	6	6	0	0	0	0	0	3	6	0	0	27
07:30	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



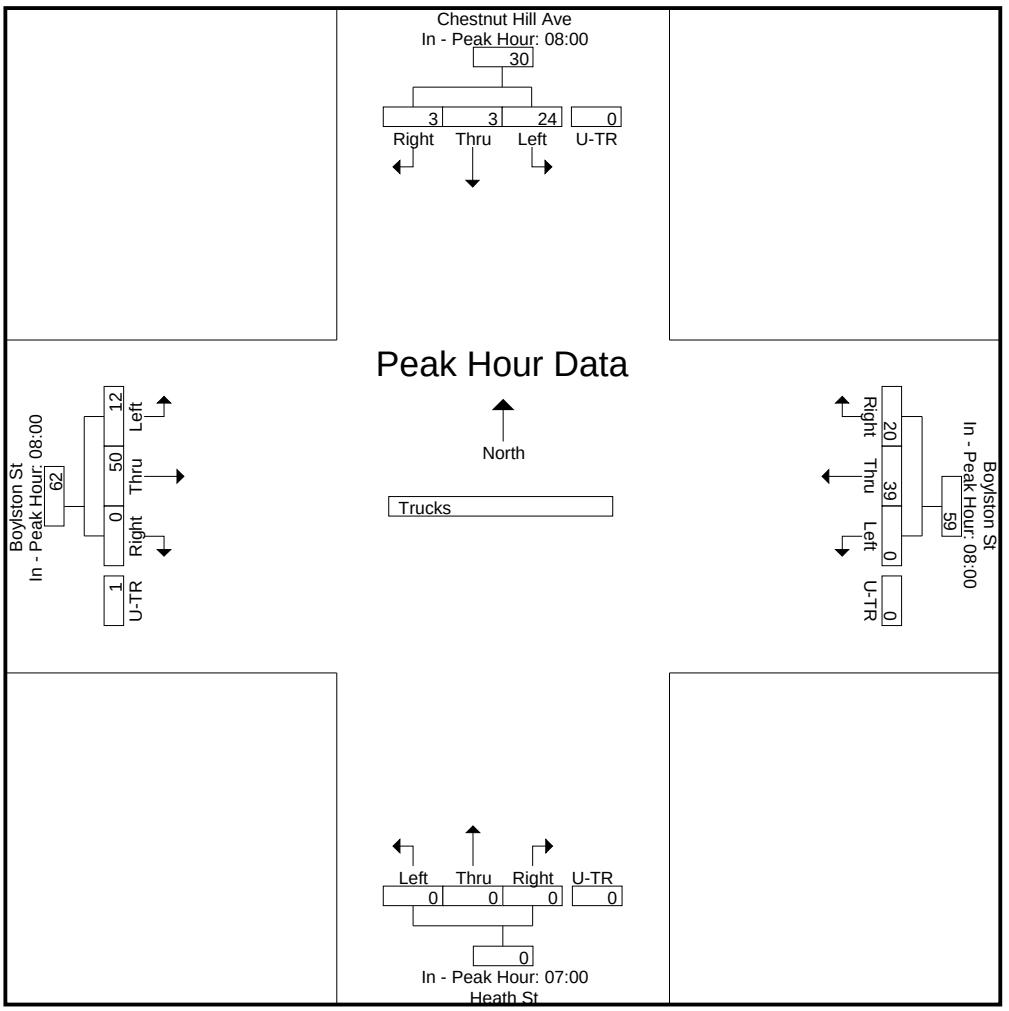
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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
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City/State : Brookline, MA
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File Name : 01900007
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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

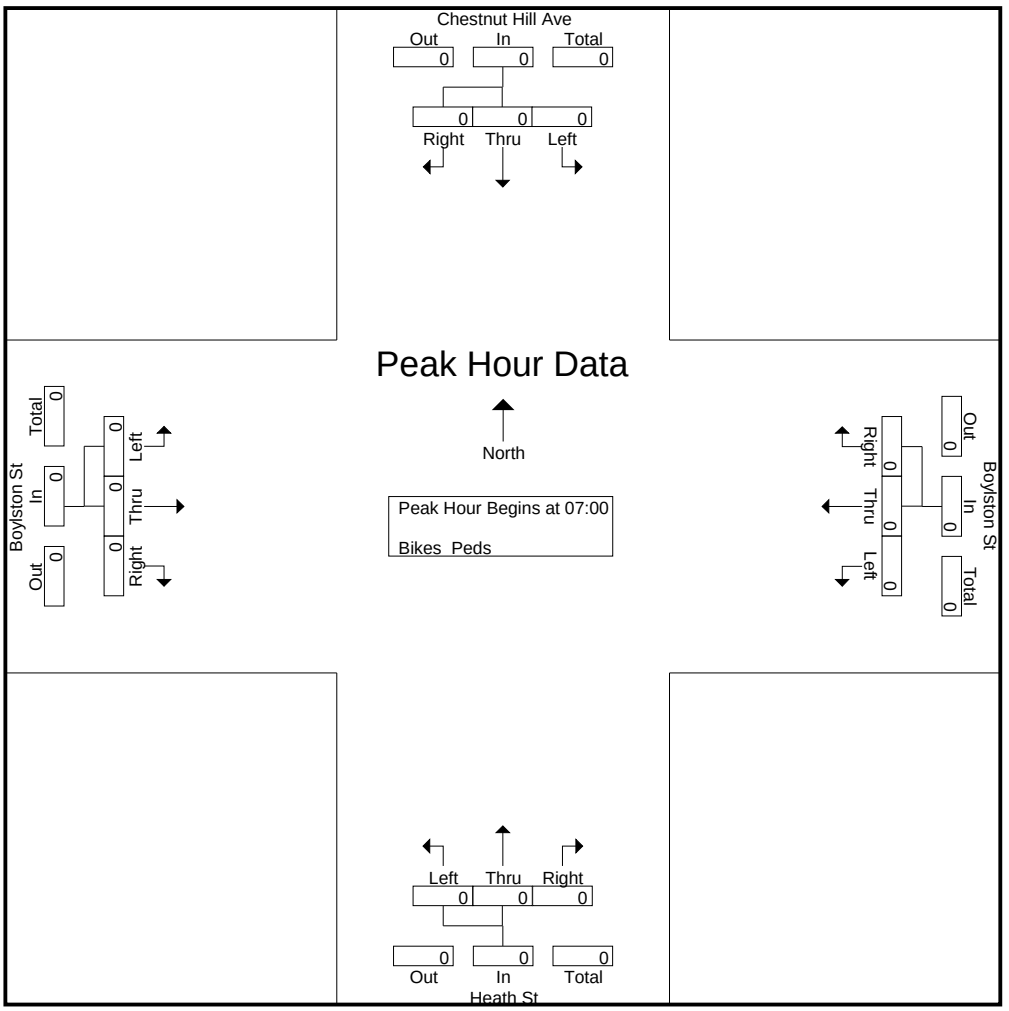
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
07:15	0	0	0	0	0	0	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

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File Name : 01900007
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Start Date : 1/19/2011
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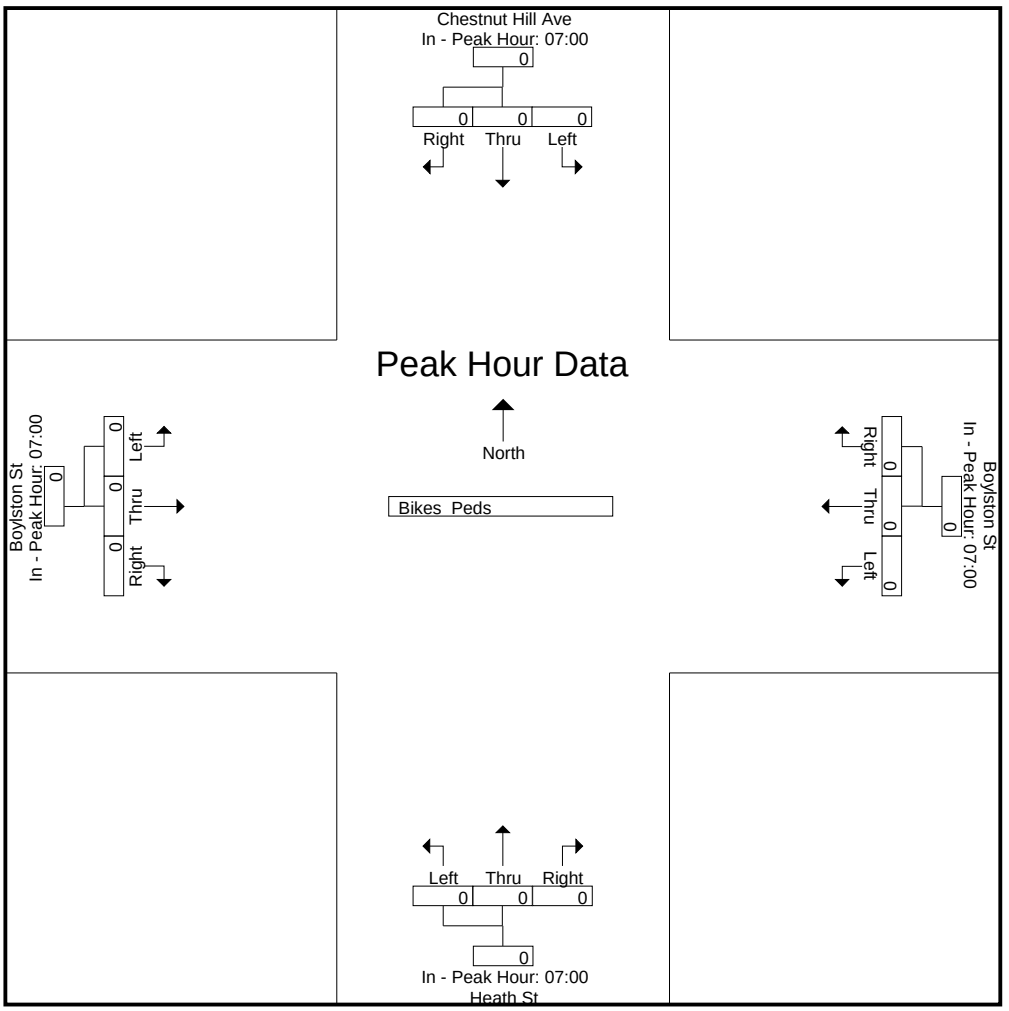
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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
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File Name : 01900007
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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

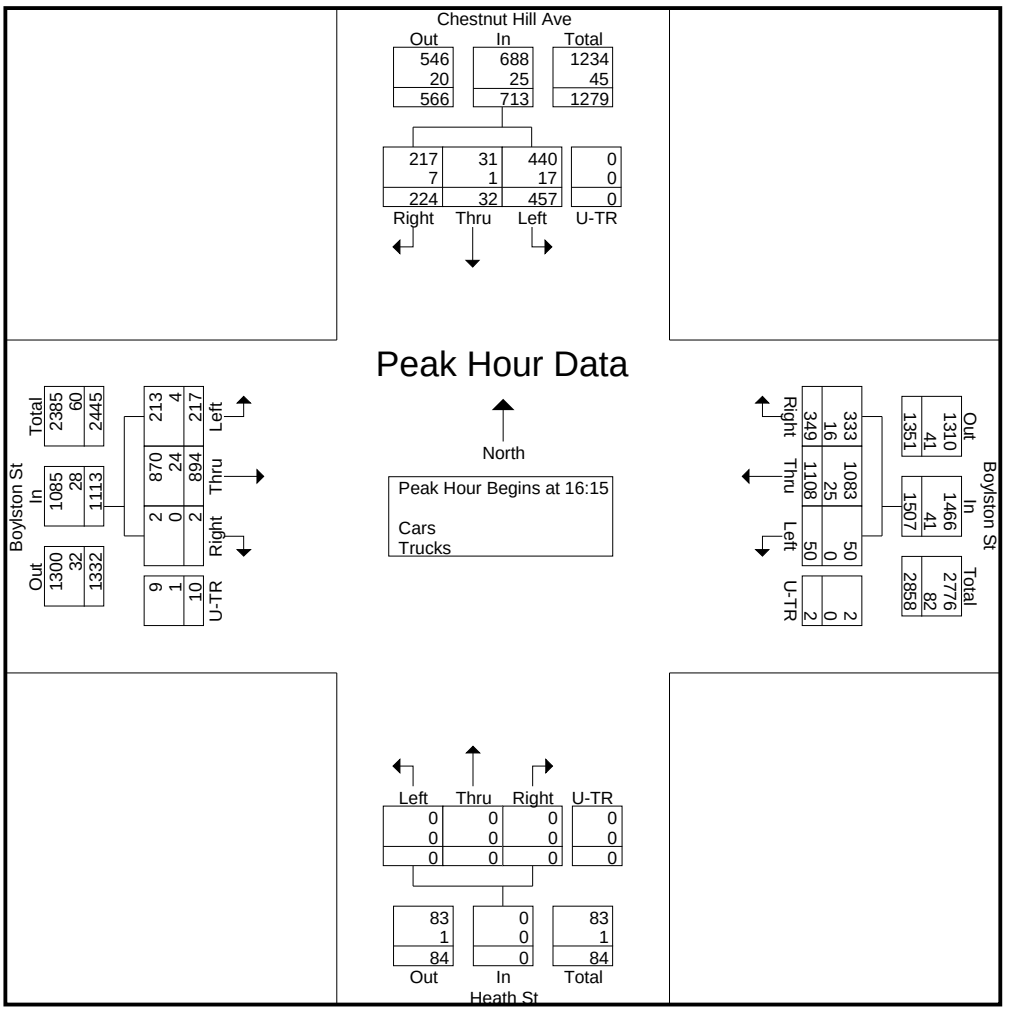
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
16:00	119	7	52	0	12	284	72	0	0	0	0	0	39	238	0	4	827
16:15	122	8	58	0	15	263	92	0	0	0	0	0	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



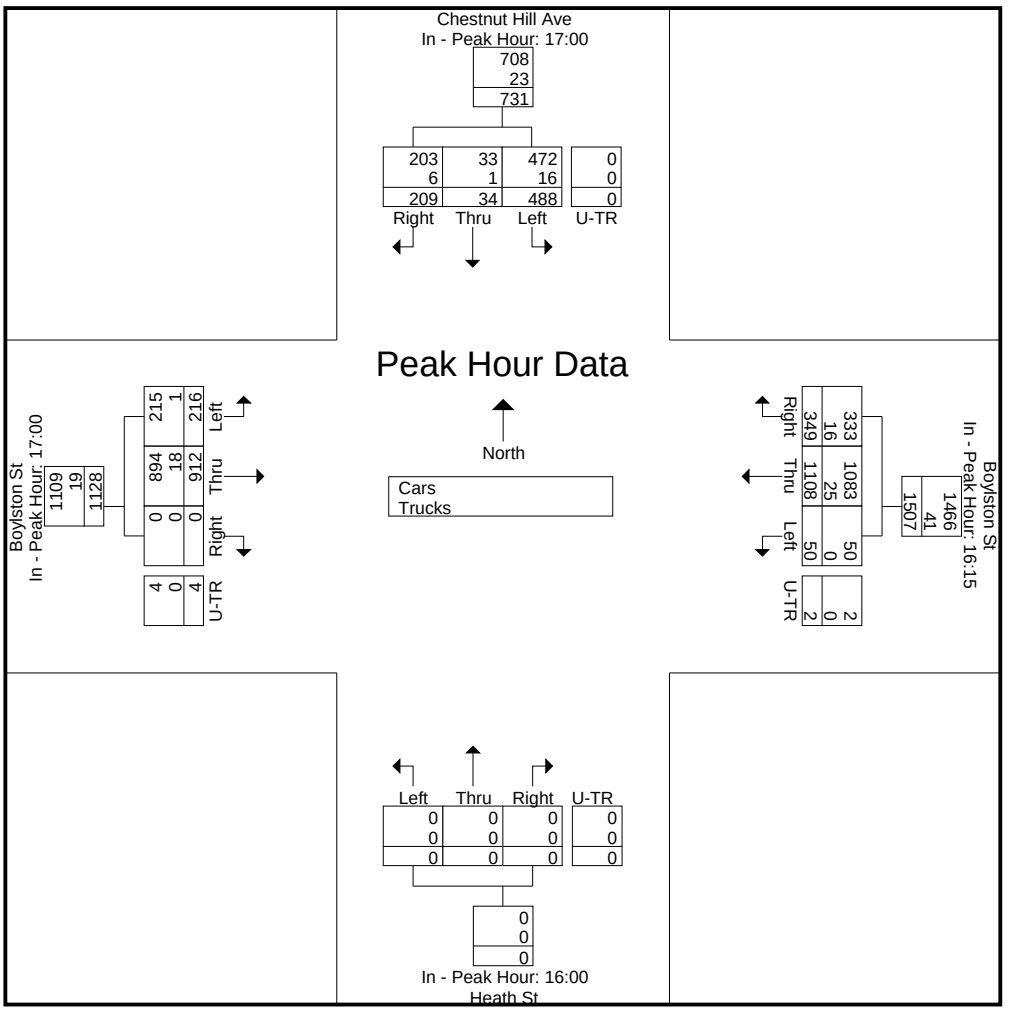
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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
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N/S Street : Chestnut Hill Ave/Heath St
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Groups Printed- Cars

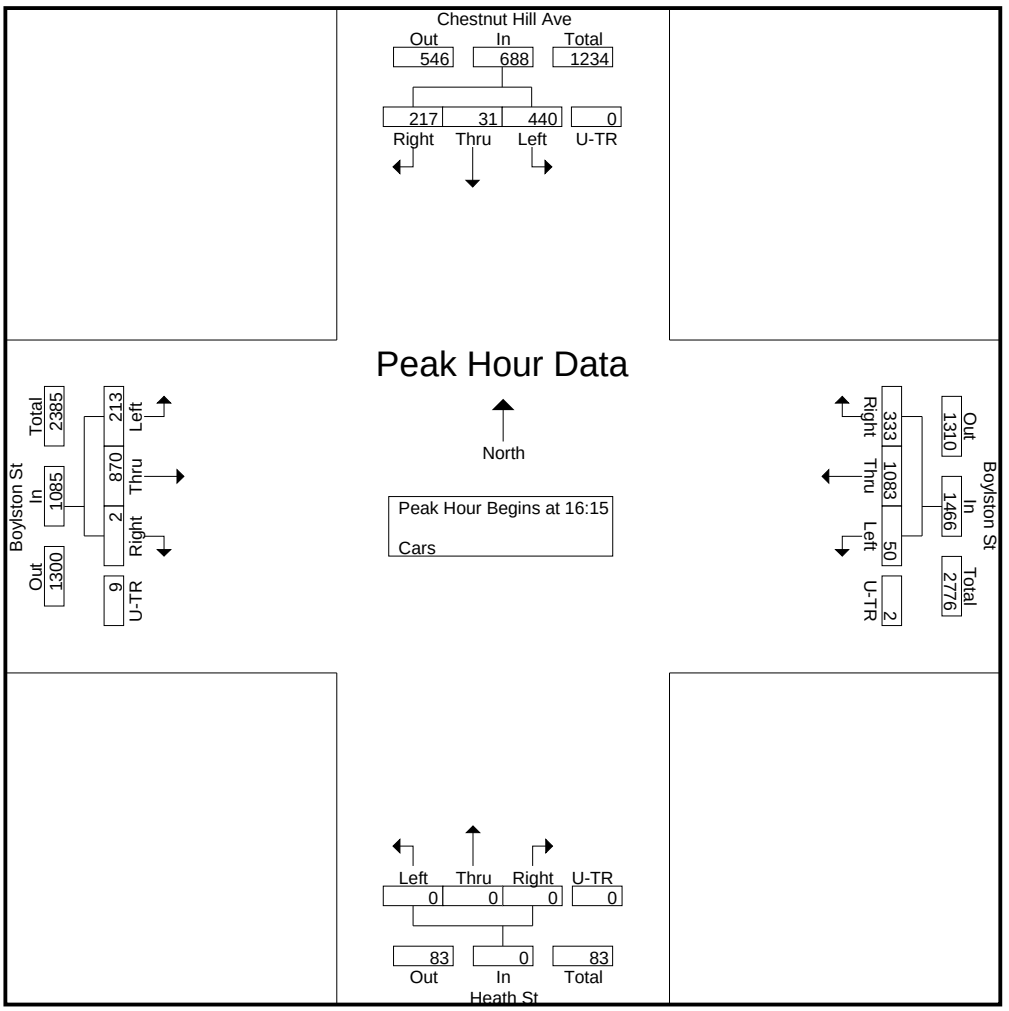
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
16:00	115	7	51	0	12	274	70	0	0	0	0	0	35	235	0	4	803
16:15	113	8	57	0	15	253	86	0	0	0	0	0	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



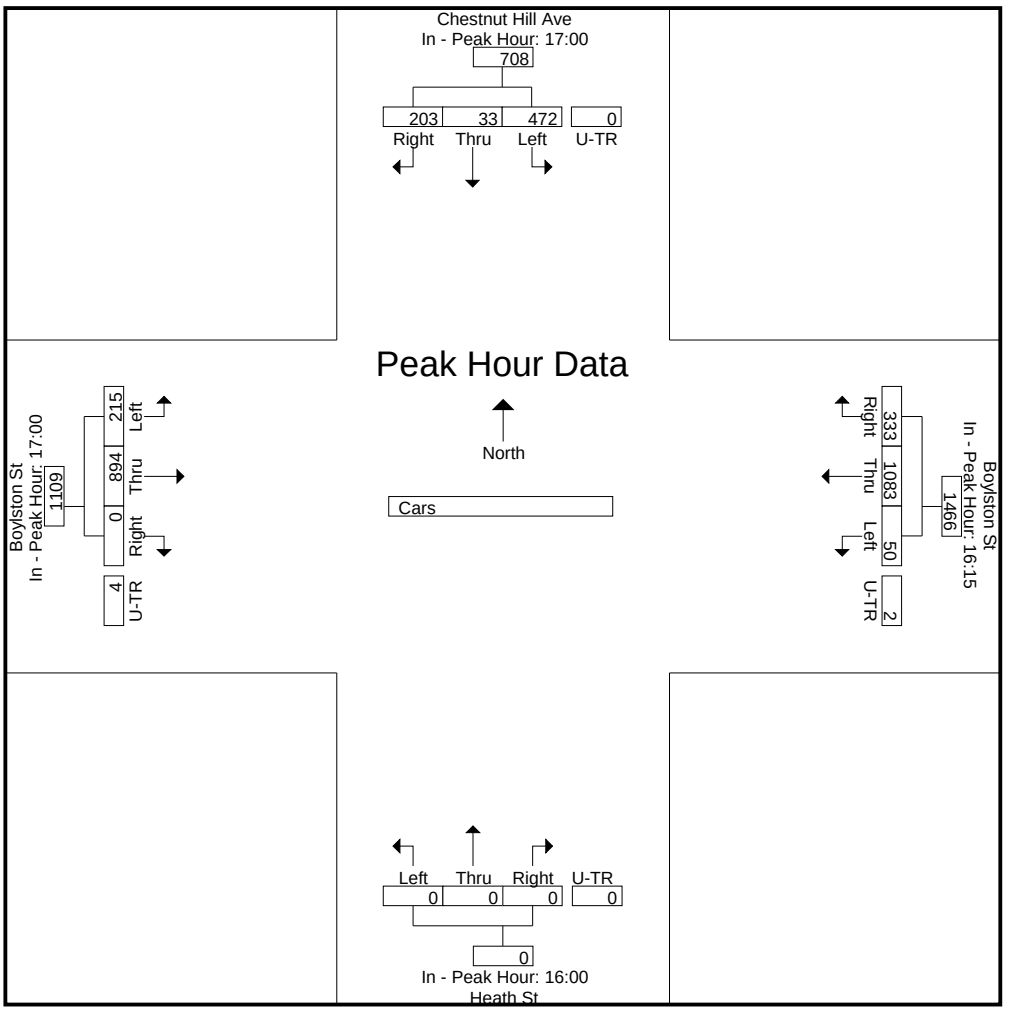
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

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

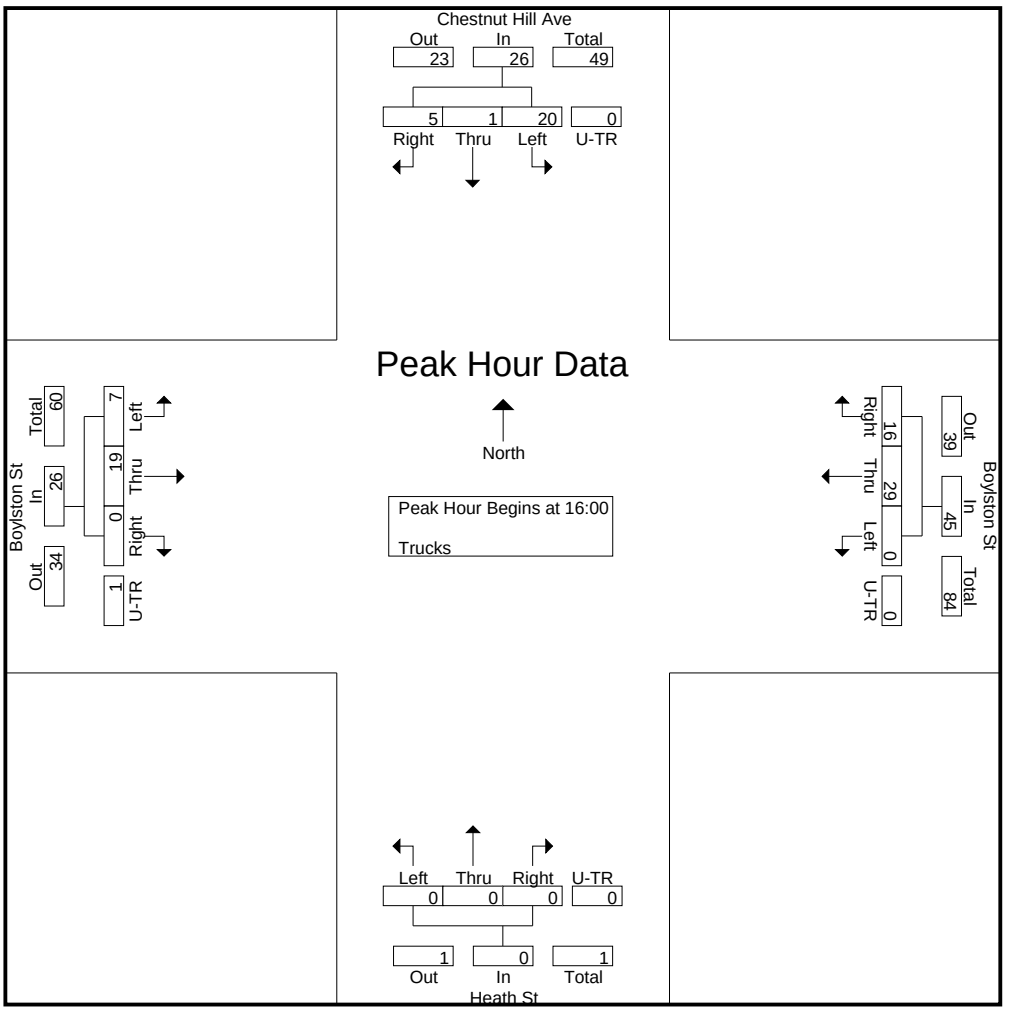
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West				
Start Time	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Left	Thru	Right	U-TR	Int. Total
16:00	4	0	1	0	0	10	2	0	0	0	0	0	4	3	0	0	24
16:15	9	0	1	0	0	10	6	0	0	0	0	0	0	6	0	1	33
16:30	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



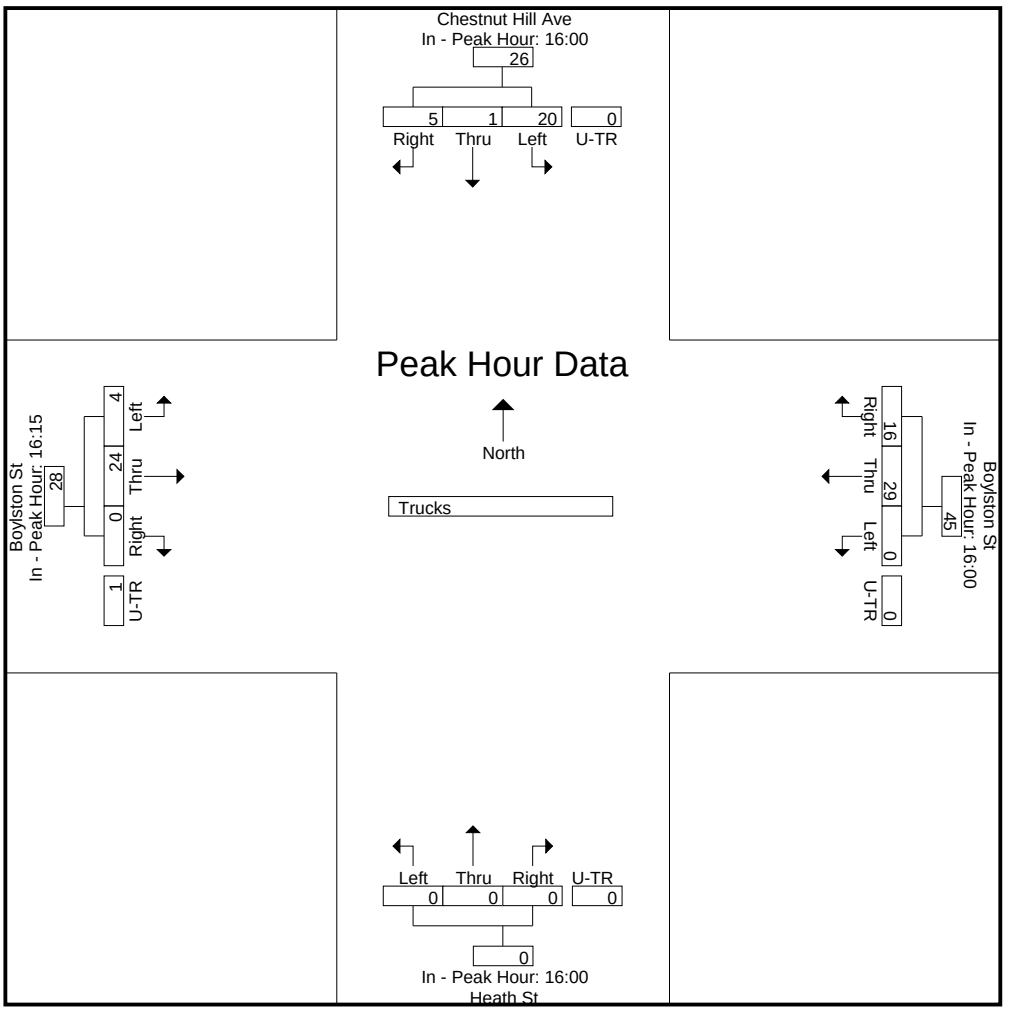
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

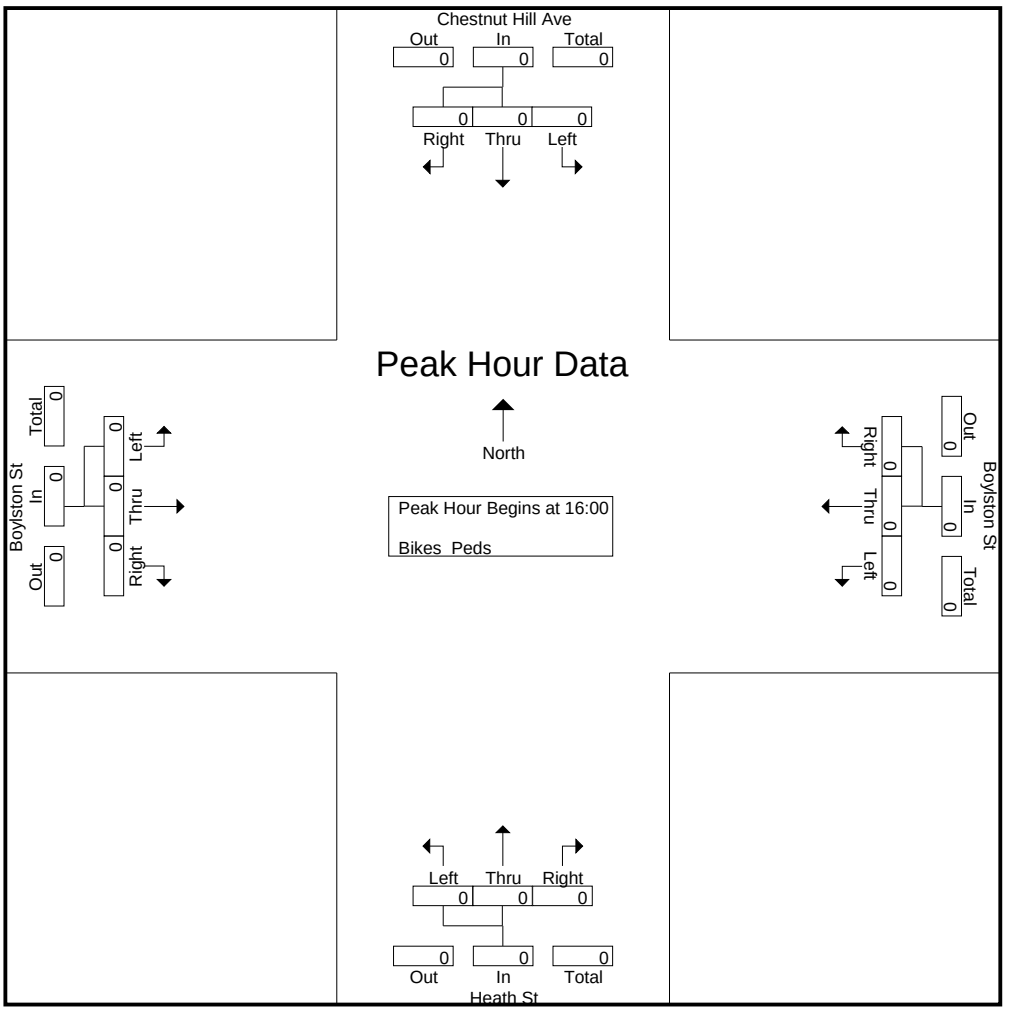
	Chestnut Hill Ave From North				Boylston St From East				Heath St From South				Boylston St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
16:15	0	0	0	0	0	0	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



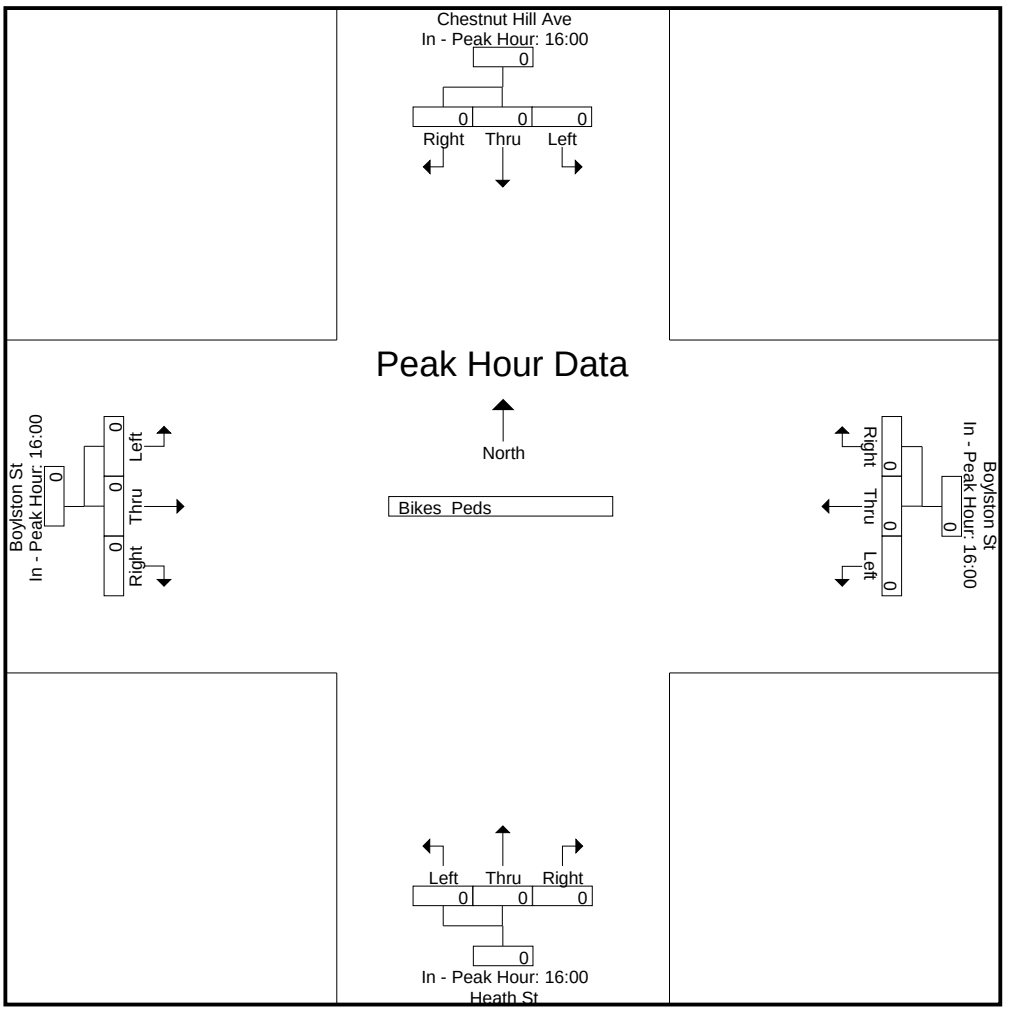
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

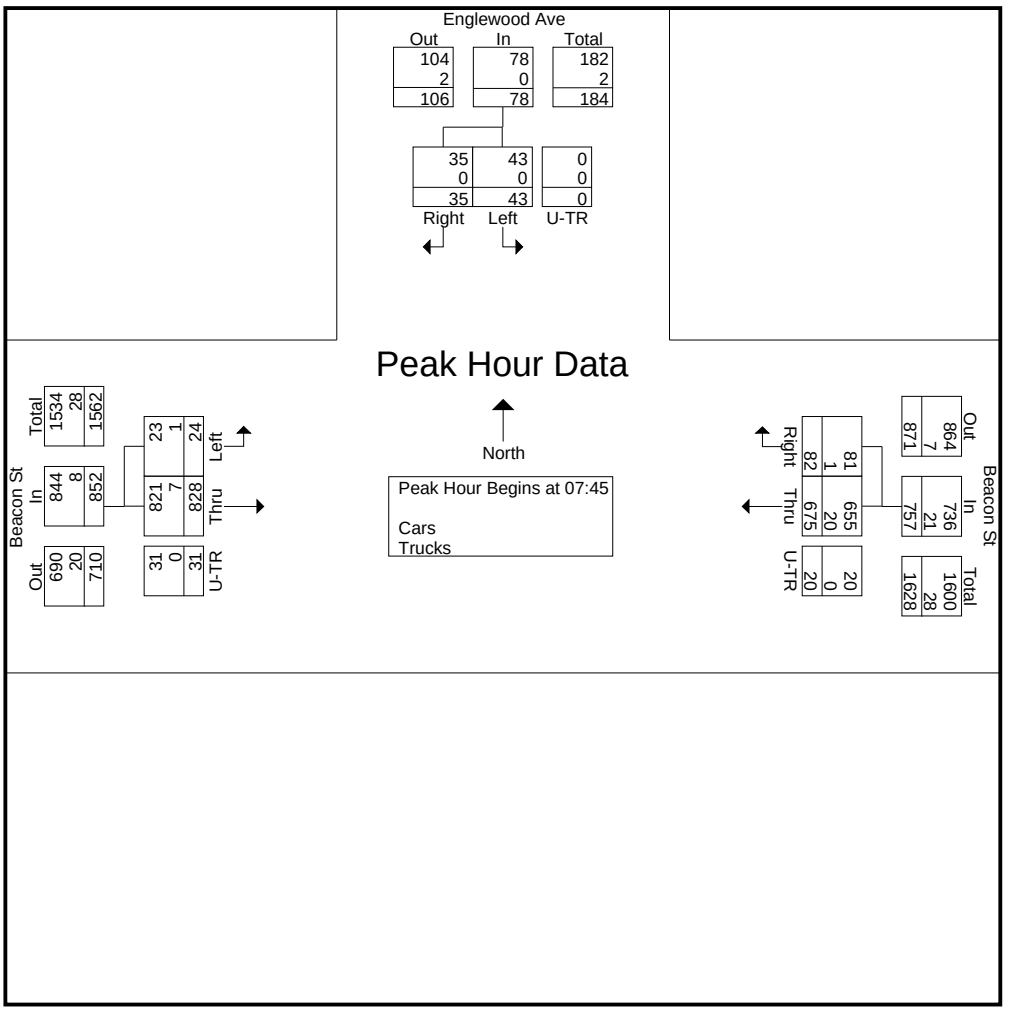
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
07:00	4	3	0	80	10	2	2	118	9	228
07:15	1	7	0	109	5	2	1	152	12	289
07:30	10	10	0	155	6	4	4	191	11	391
07:45	10	11	0	152	21	4	6	218	5	427
Total	25	31	0	496	42	12	13	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



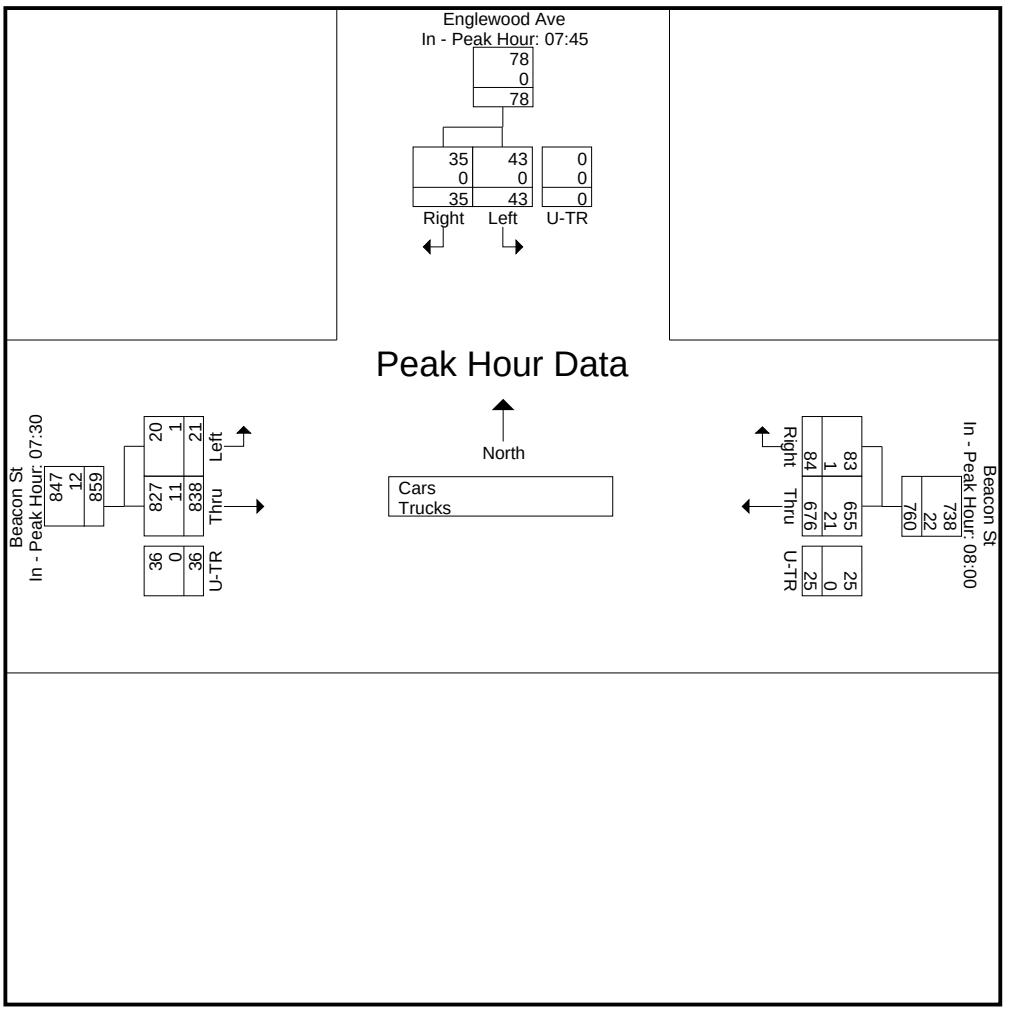
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

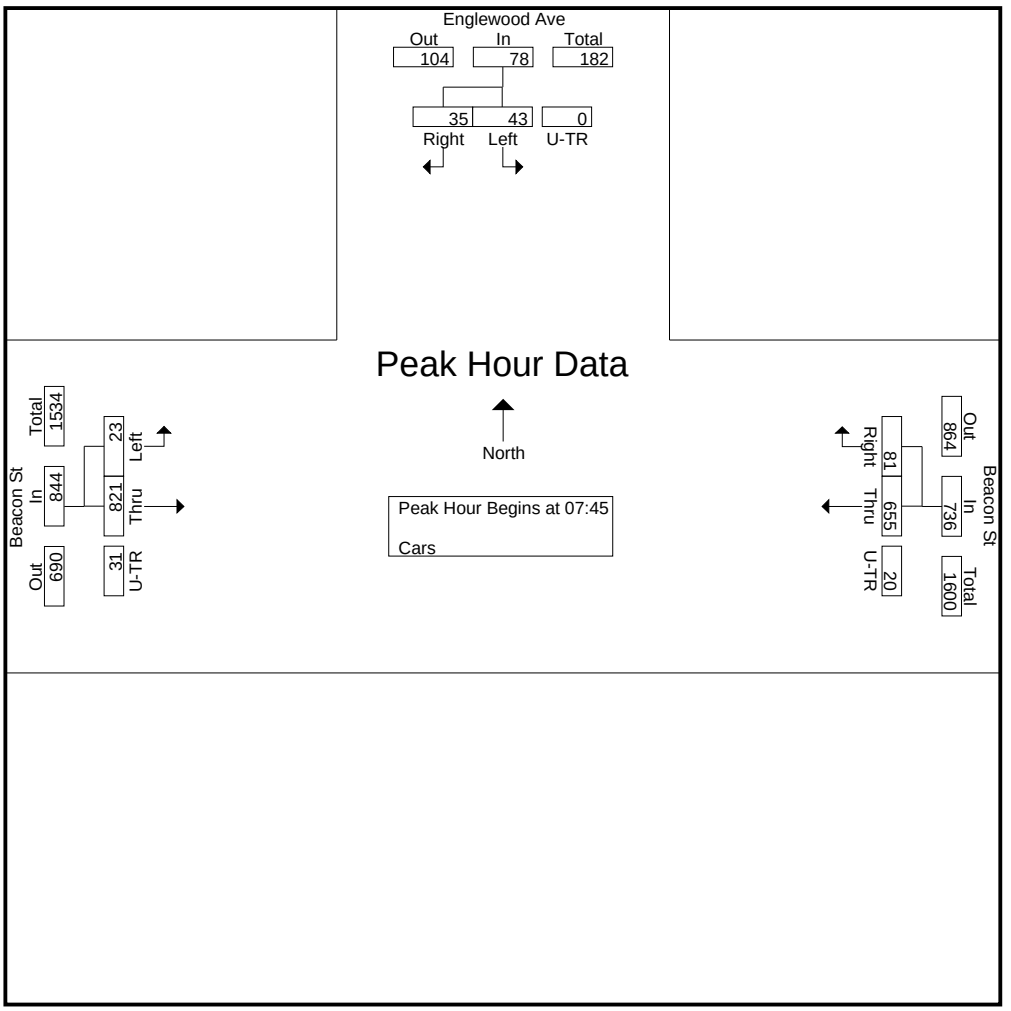
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
07:00	3	3	0	79	10	1	2	113	9	220
07:15	1	7	0	107	5	1	1	150	12	284
07:30	10	10	0	150	6	4	4	185	11	380
07:45	10	11	0	151	21	4	6	217	5	425
Total	24	31	0	487	42	10	13	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



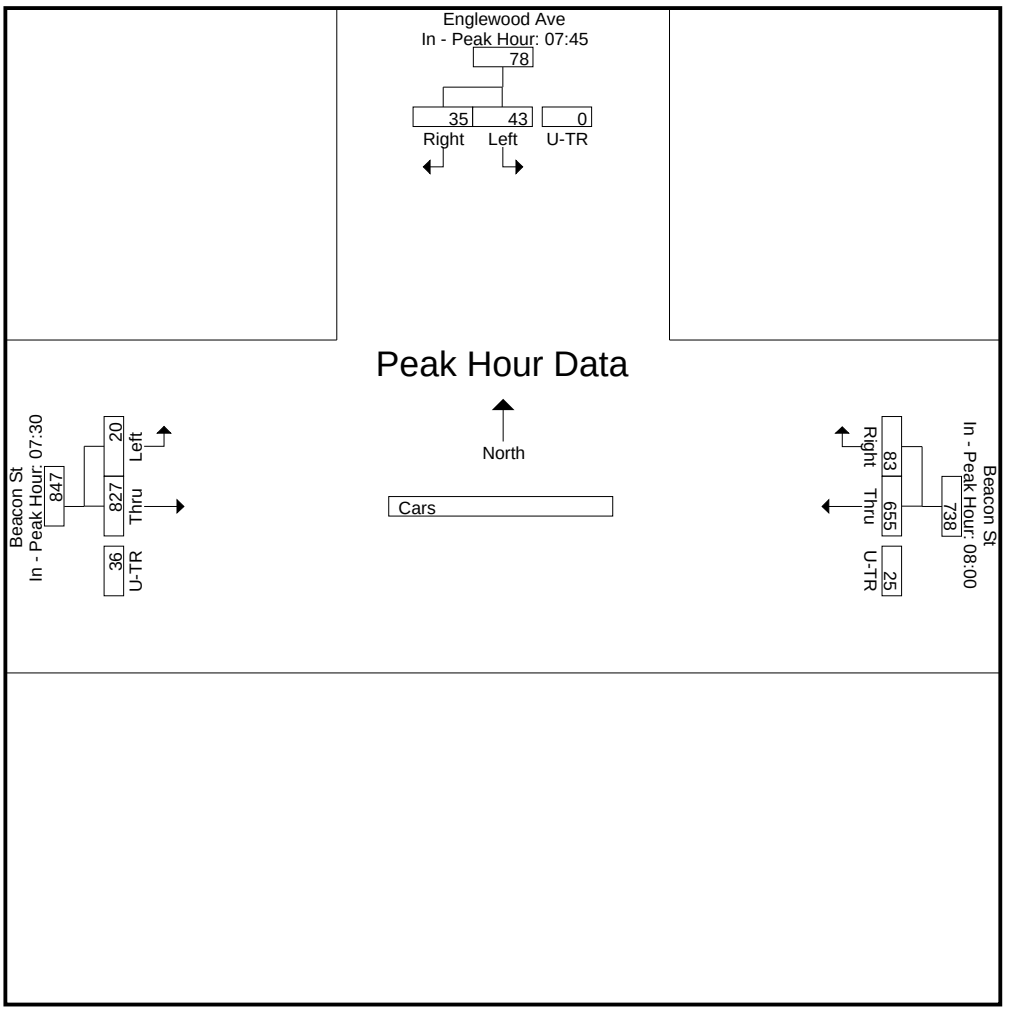
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

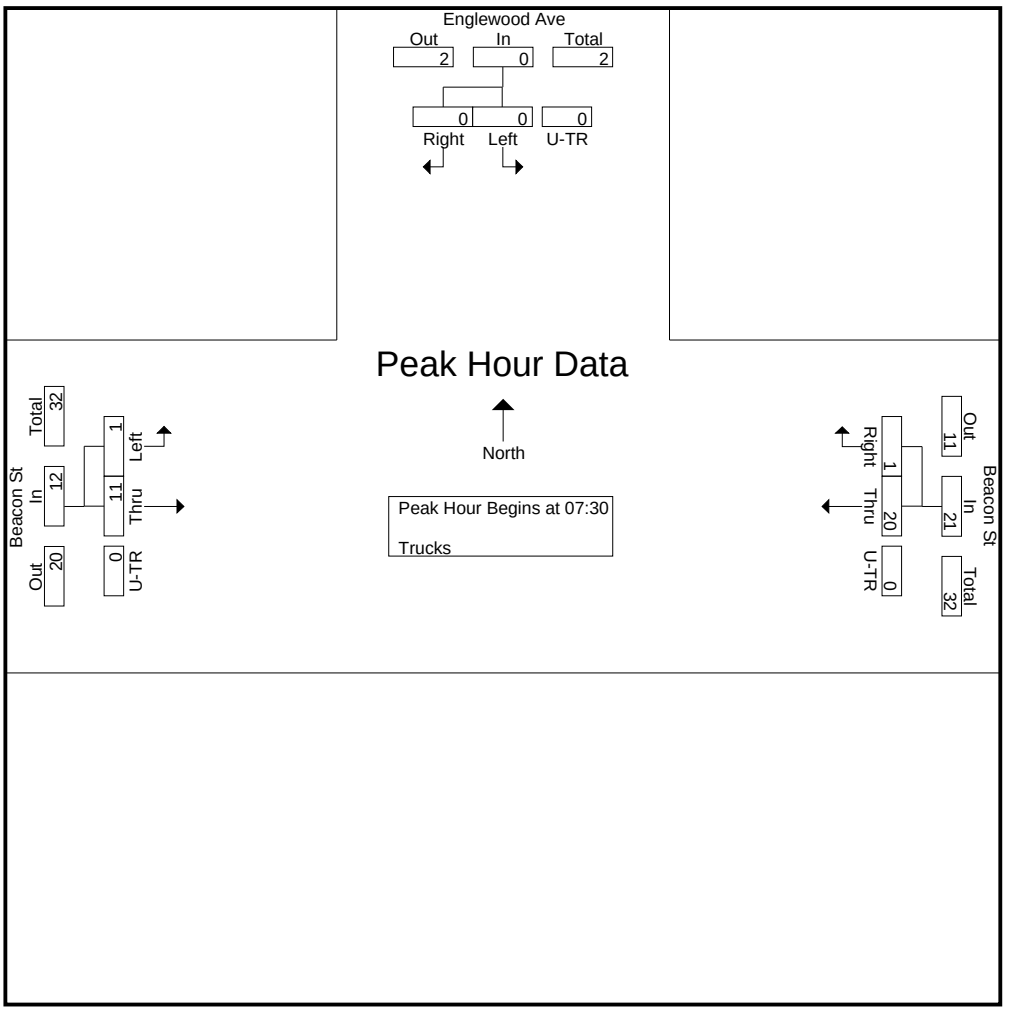
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
07:00	1	0	0	1	0	1	0	5	0	8
07:15	0	0	0	2	0	1	0	2	0	5
07:30	0	0	0	5	0	0	0	6	0	11
07:45	0	0	0	1	0	0	0	1	0	2
Total	1	0	0	9	0	2	0	14	0	26
08:00	0	0	0	8	0	0	0	3	0	11
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



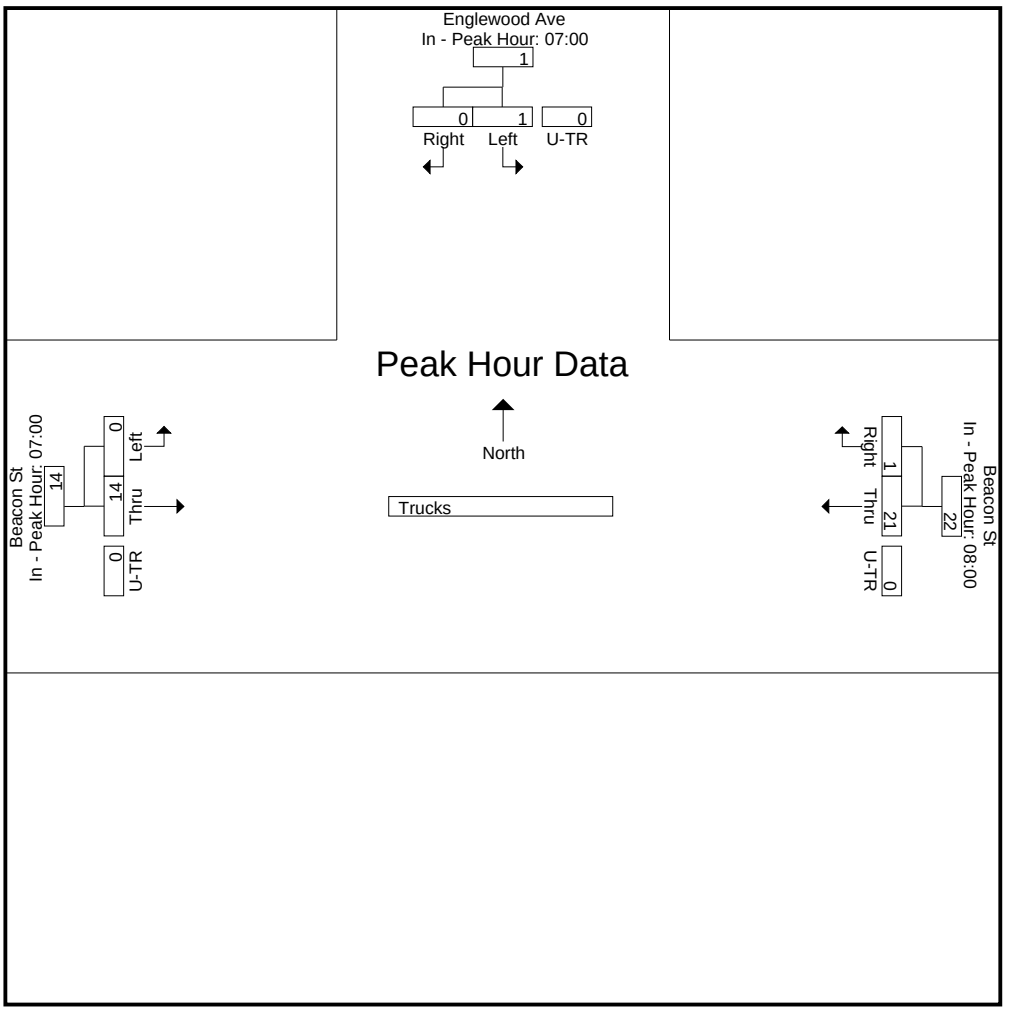
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

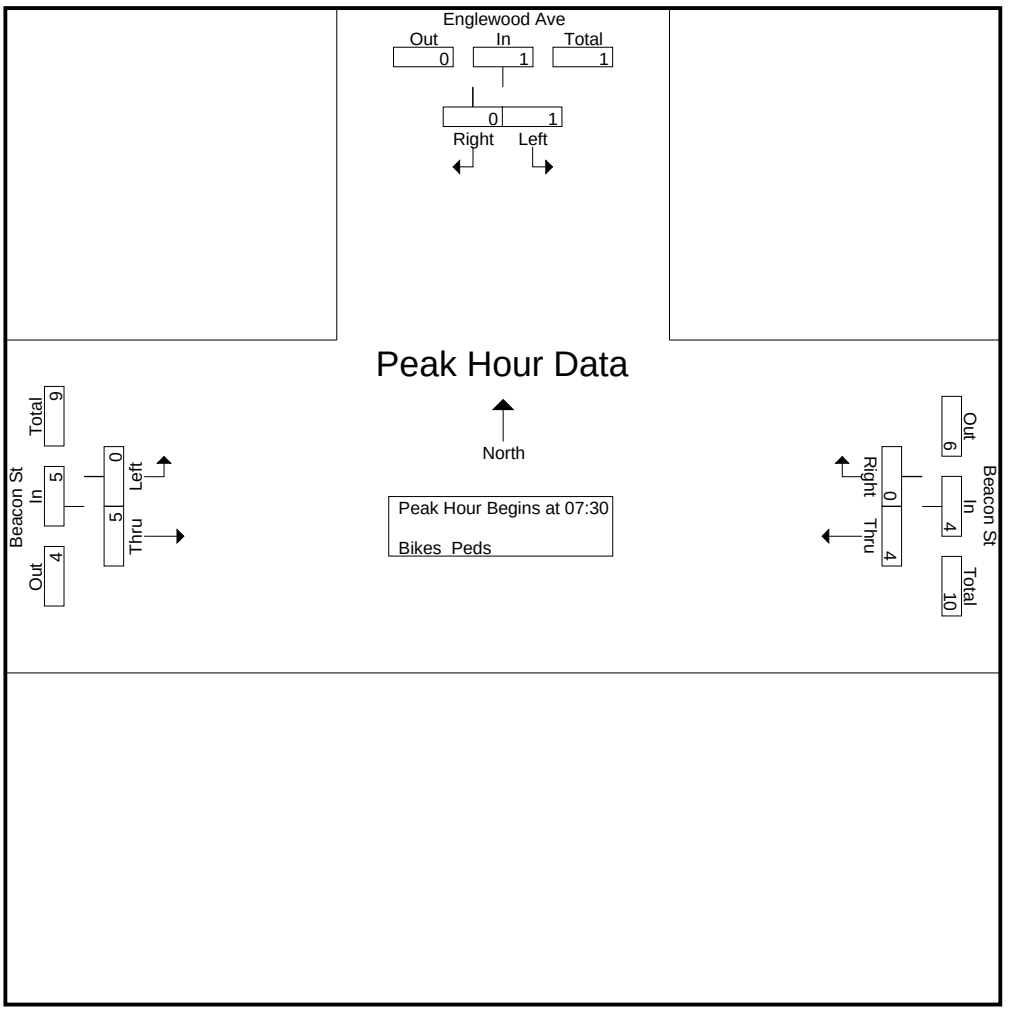
	Englewood Ave From North			Beacon St From East			Beacon St From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	26	0	0	4	0	0	15	45	0	45
07:15	0	0	22	0	0	1	0	0	26	49	0	49
07:30	0	0	15	1	0	3	0	3	24	42	4	46
07:45	1	0	11	1	0	2	0	0	51	64	2	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



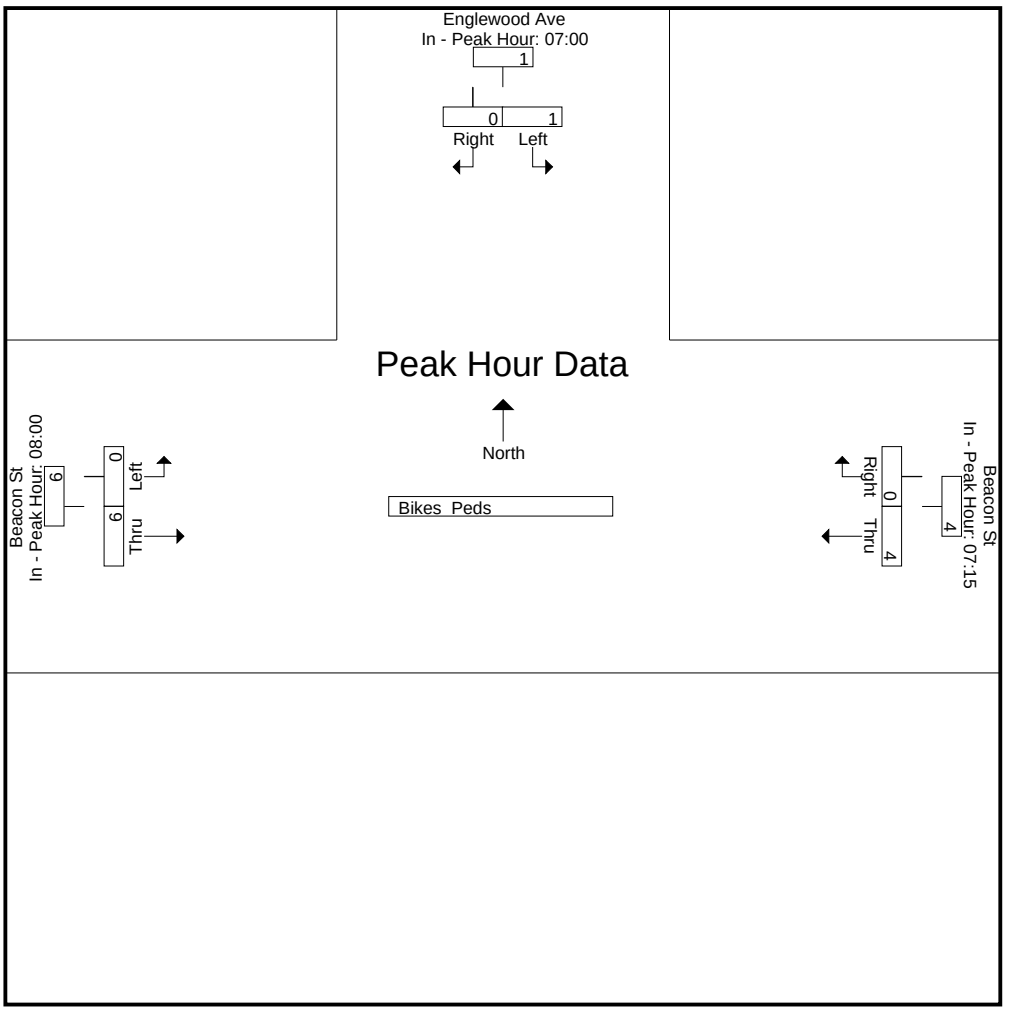
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

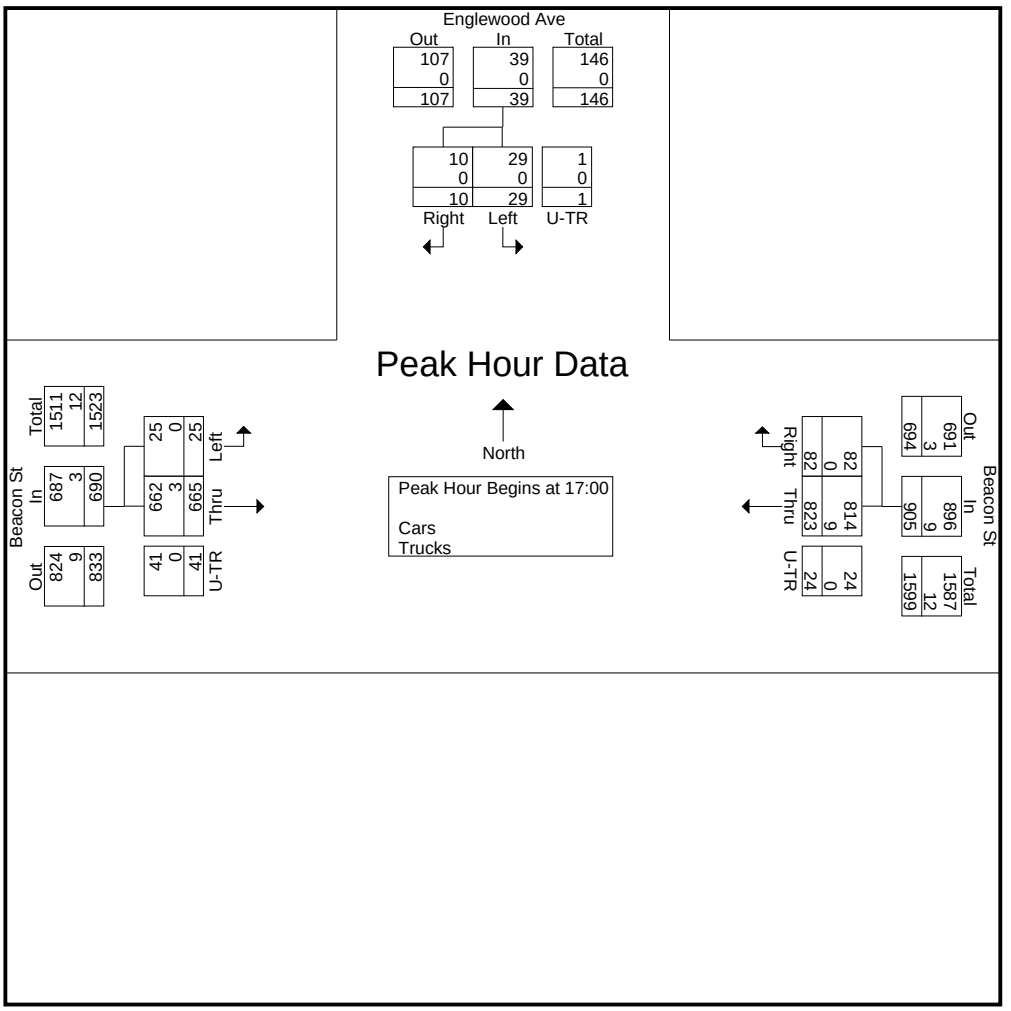
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
16:00	13	3	0	182	15	3	4	143	9	372
16:15	9	5	0	187	14	2	6	137	4	364
16:30	5	2	0	182	16	9	5	142	6	367
16:45	6	6	0	179	14	3	3	140	7	358
Total	33	16	0	730	59	17	18	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



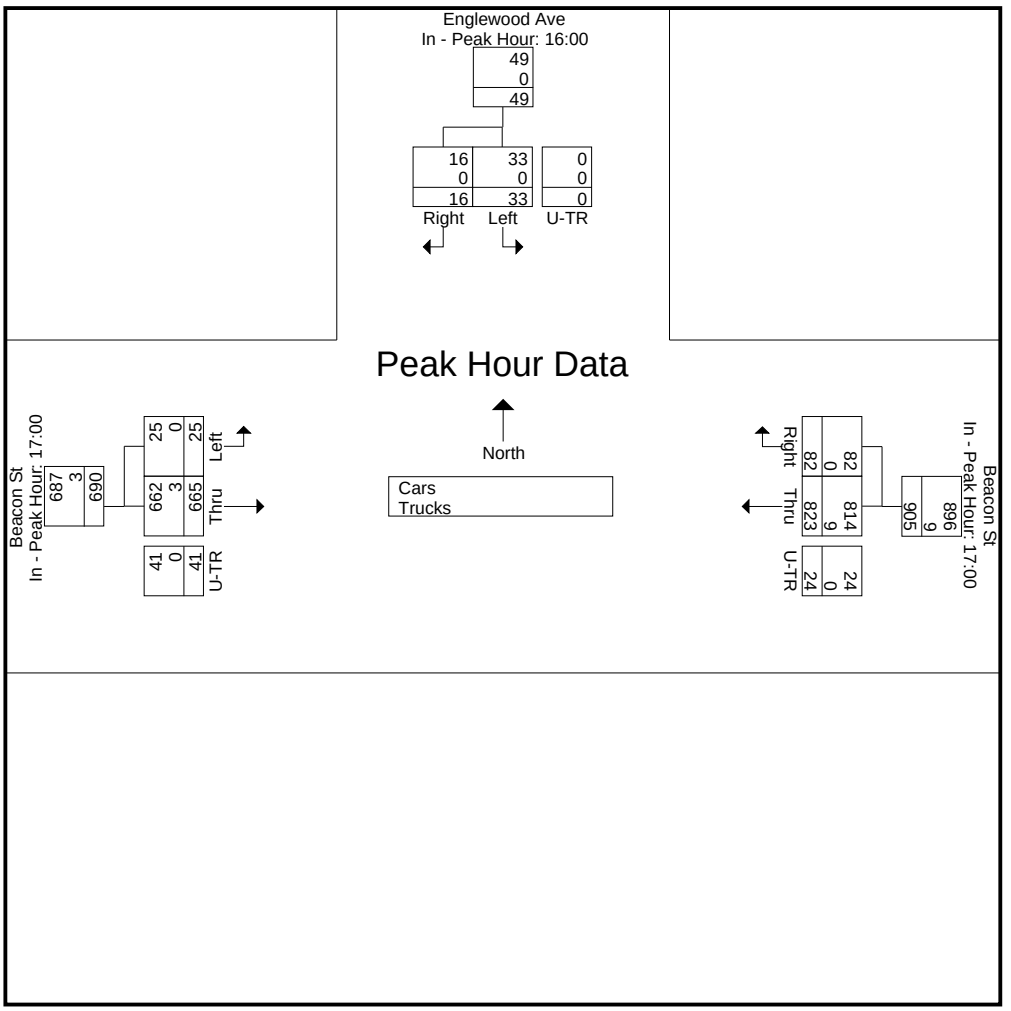
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

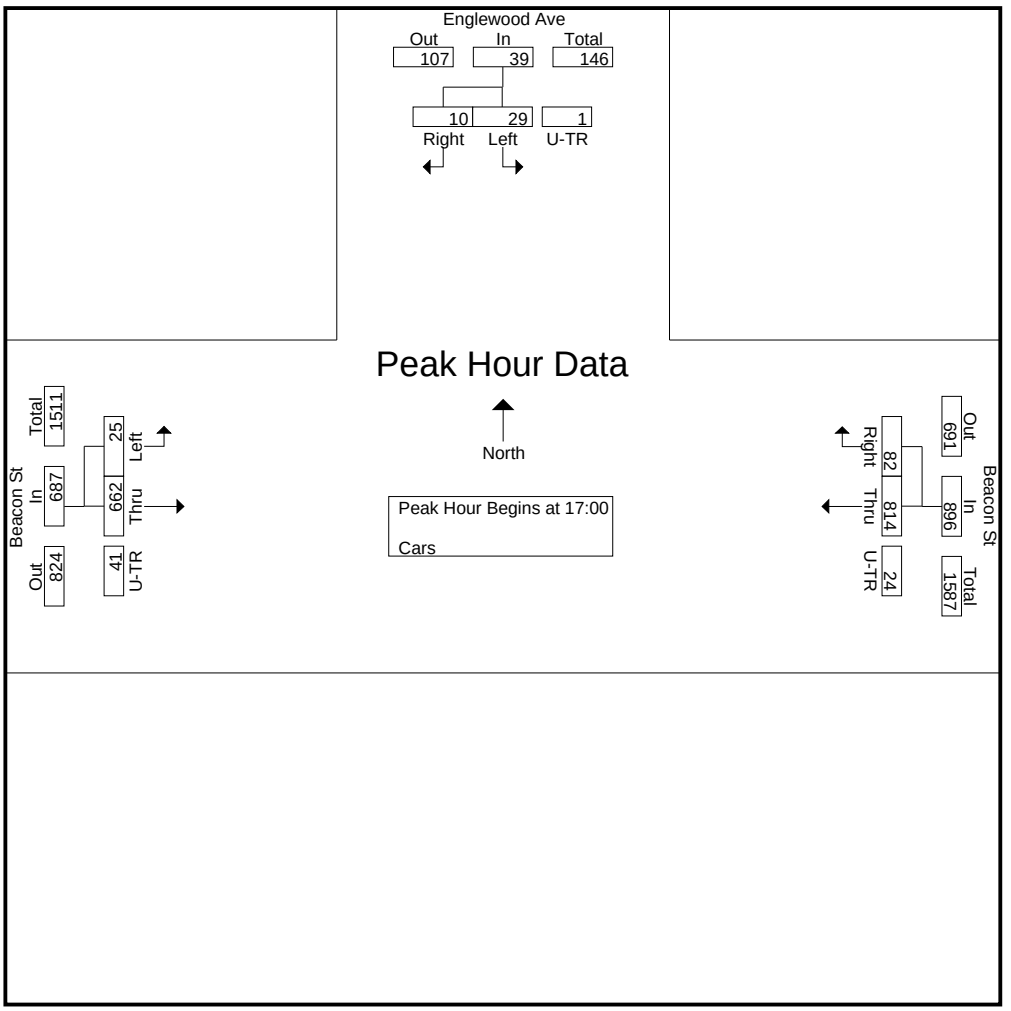
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
16:00	13	3	0	176	15	3	4	139	9	362
16:15	9	5	0	184	14	2	6	134	4	358
16:30	5	2	0	181	15	9	5	140	6	363
16:45	6	6	0	178	14	3	3	137	7	354
Total	33	16	0	719	58	17	18	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



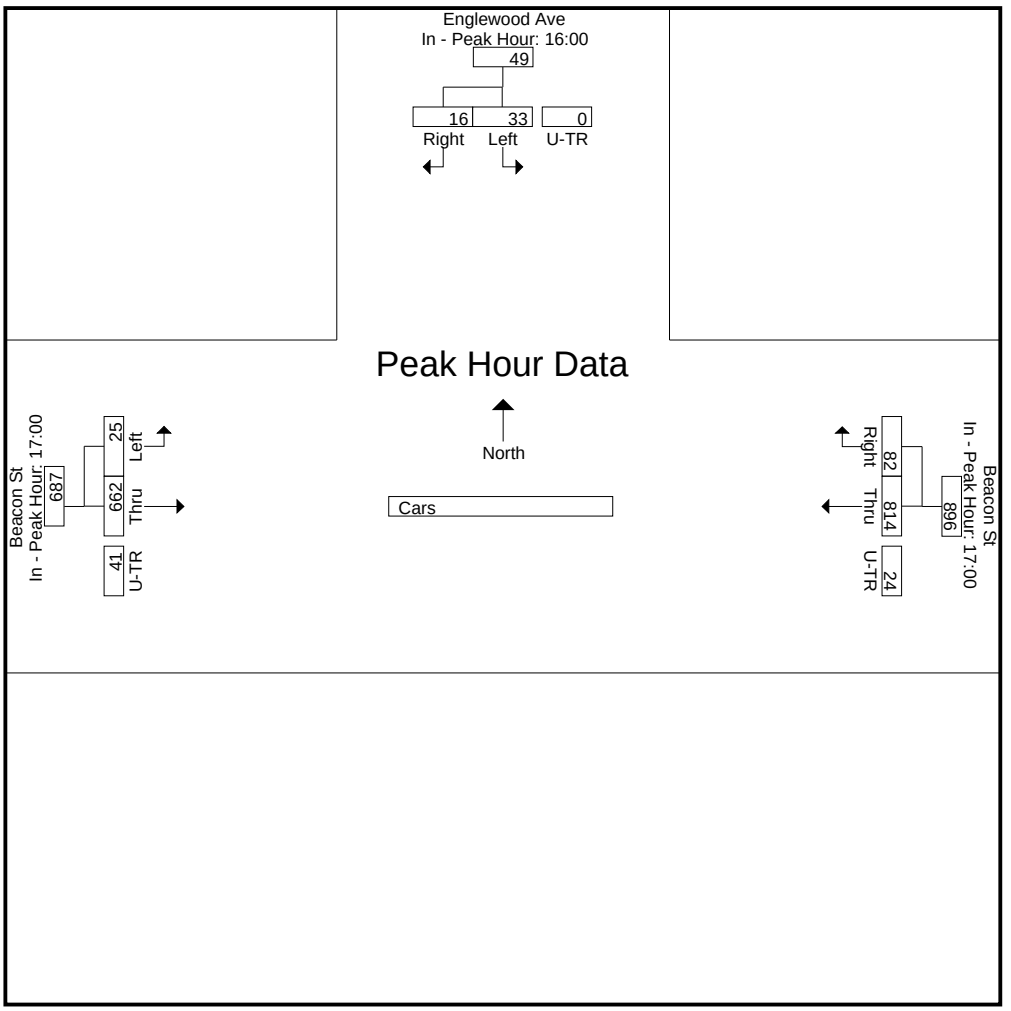
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

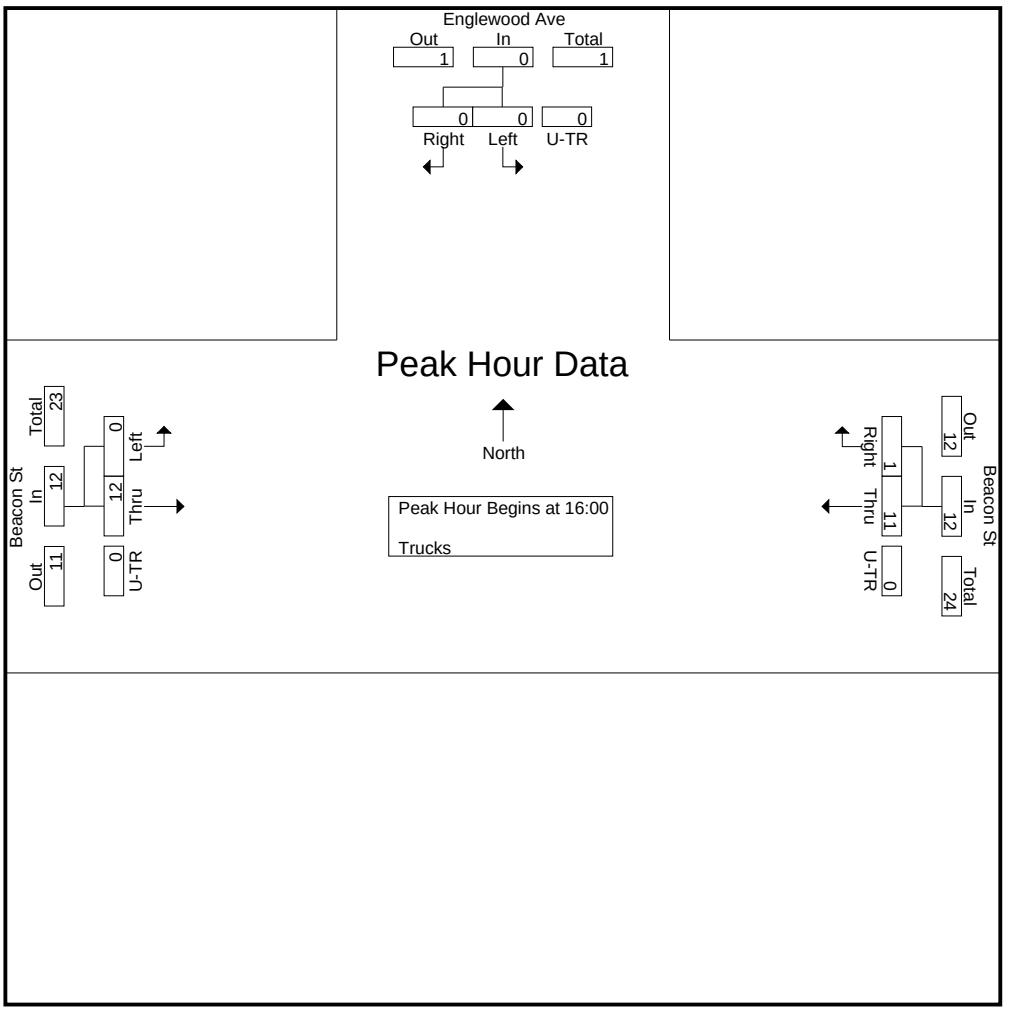
	Englewood Ave From North			Beacon St From East			Beacon St From West			
Start Time	Left	Right	U-TR	Thru	Right	U-TR	Left	Thru	U-TR	Int. Total
16:00	0	0	0	6	0	0	0	4	0	10
16:15	0	0	0	3	0	0	0	3	0	6
16:30	0	0	0	1	1	0	0	2	0	4
16:45	0	0	0	1	0	0	0	3	0	4
Total	0	0	0	11	1	0	0	12	0	24
17:00	0	0	0	3	0	0	0	0	0	3
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



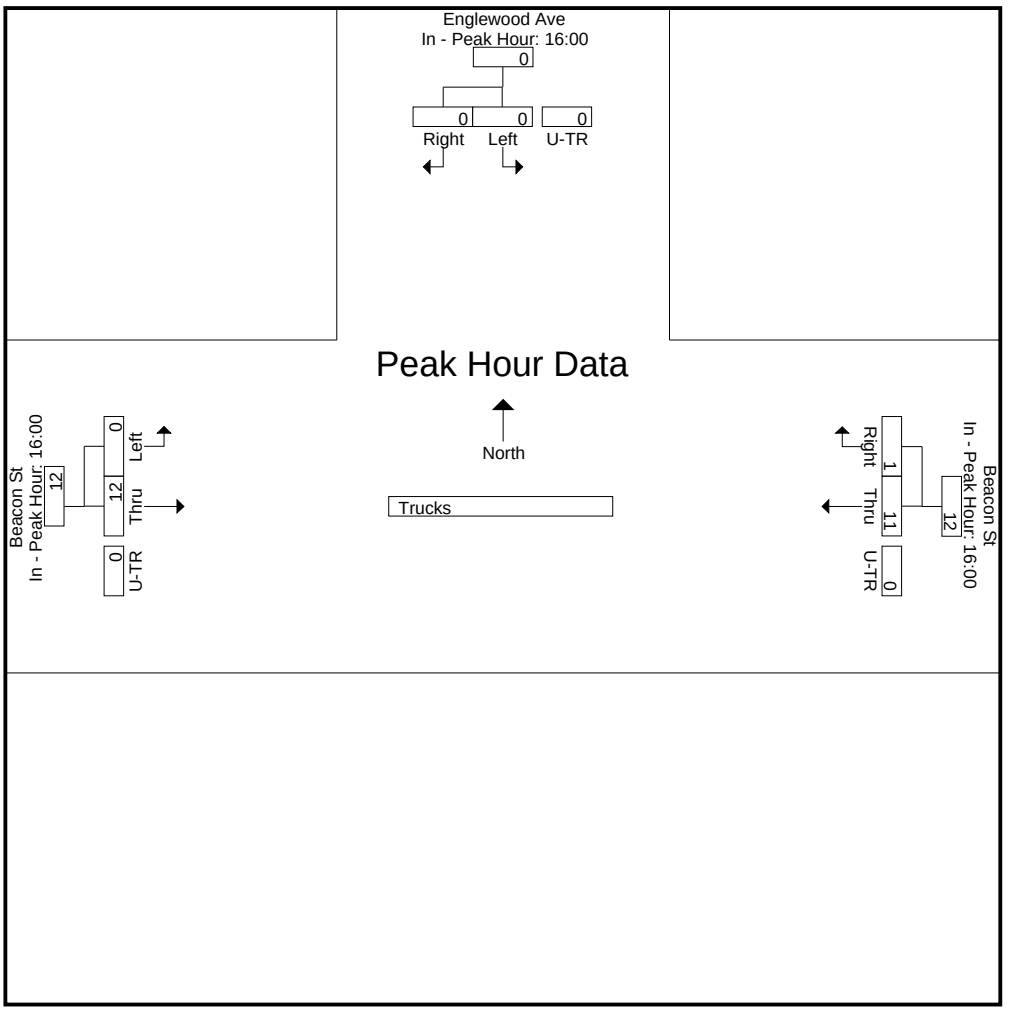
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

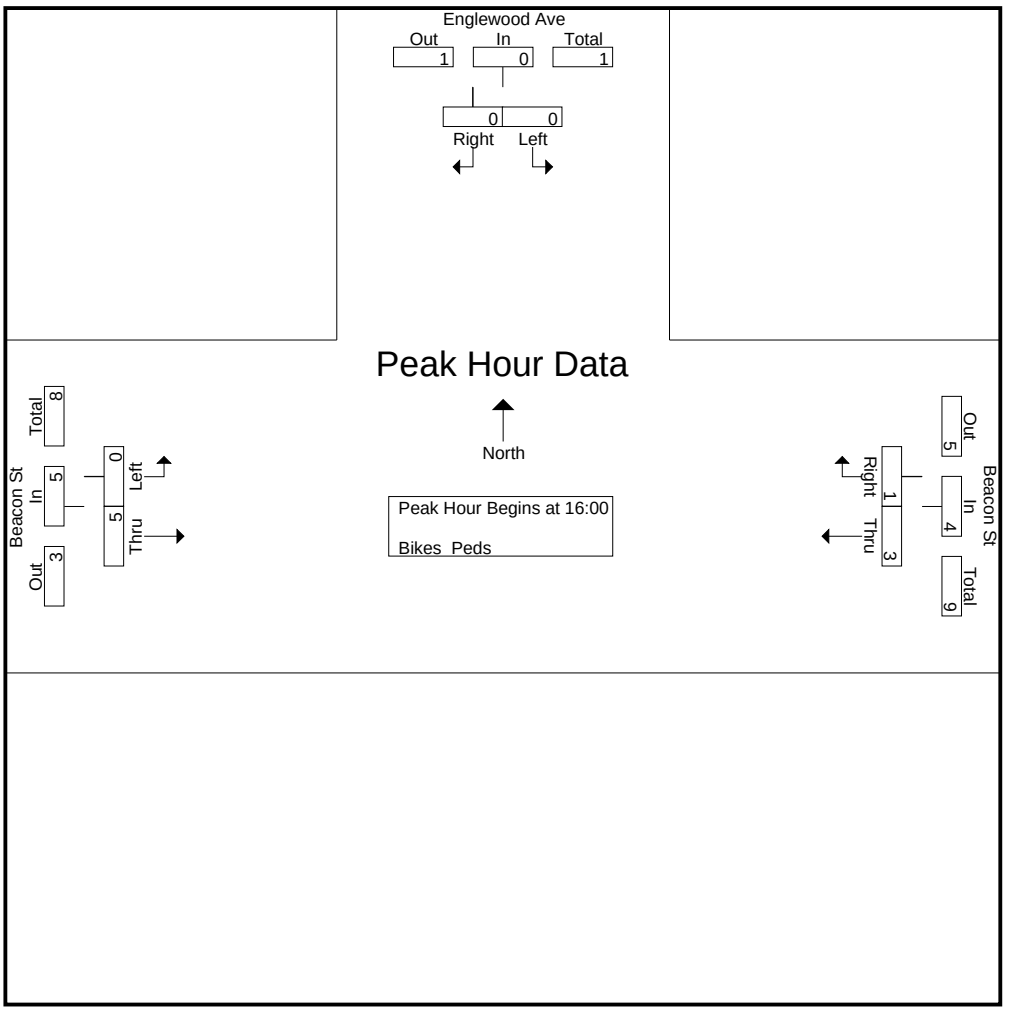
	Englewood Ave From North			Beacon St From East			Beacon St From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	11	0	0	1	0	2	19	31	2	33
16:15	0	0	8	1	1	1	0	1	10	19	3	22
16:30	0	0	8	1	0	2	0	2	15	25	3	28
16:45	0	0	17	1	0	1	0	0	23	41	1	42
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



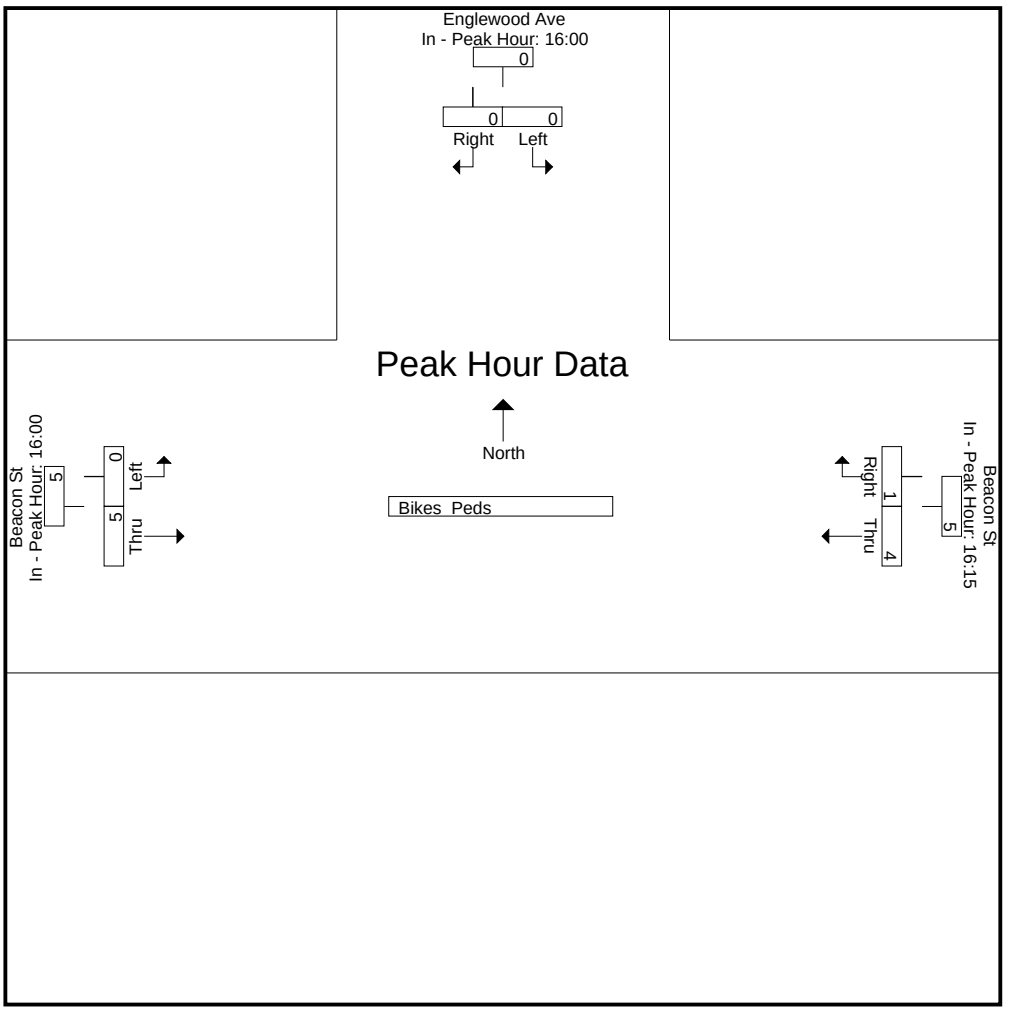
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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

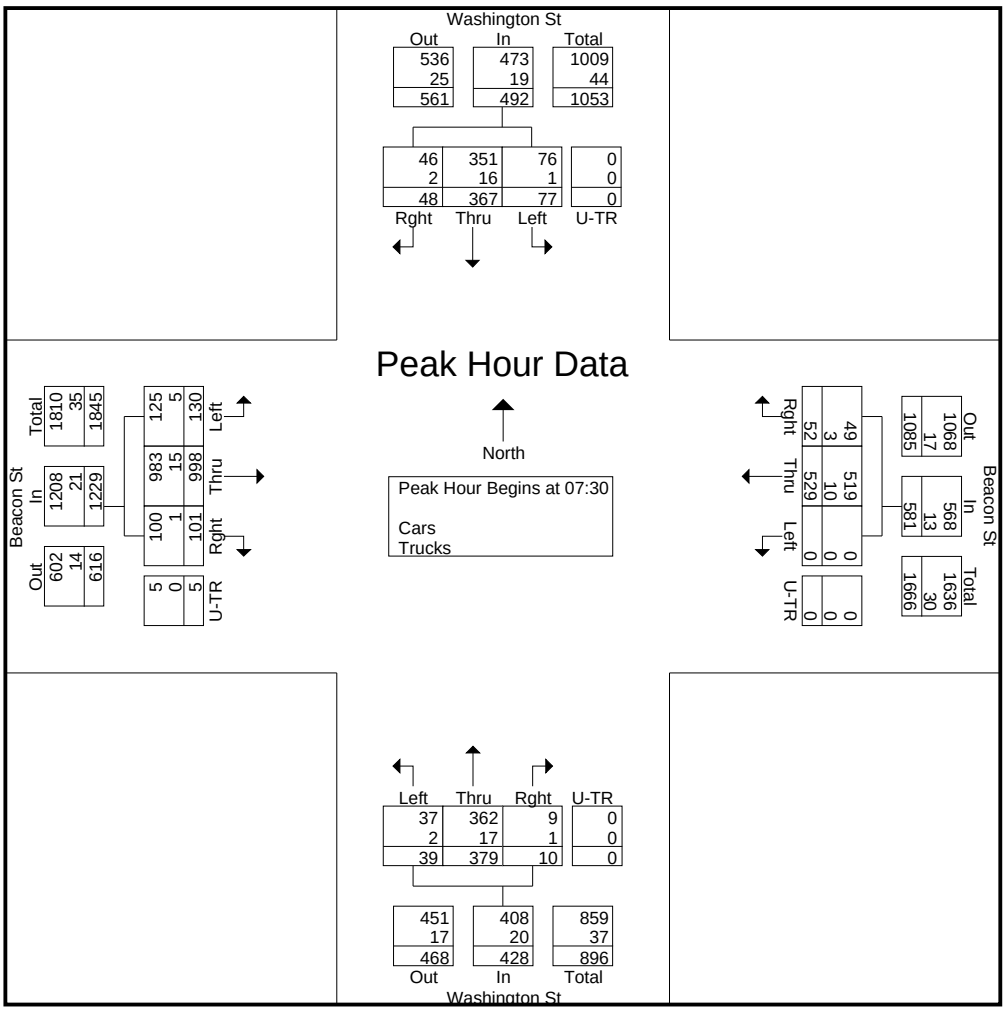
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	16	58	5	0	0	103	10	0	11	79	4	1	28	116	31	2	464
07:15	19	76	4	0	0	122	20	0	15	79	2	0	32	183	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

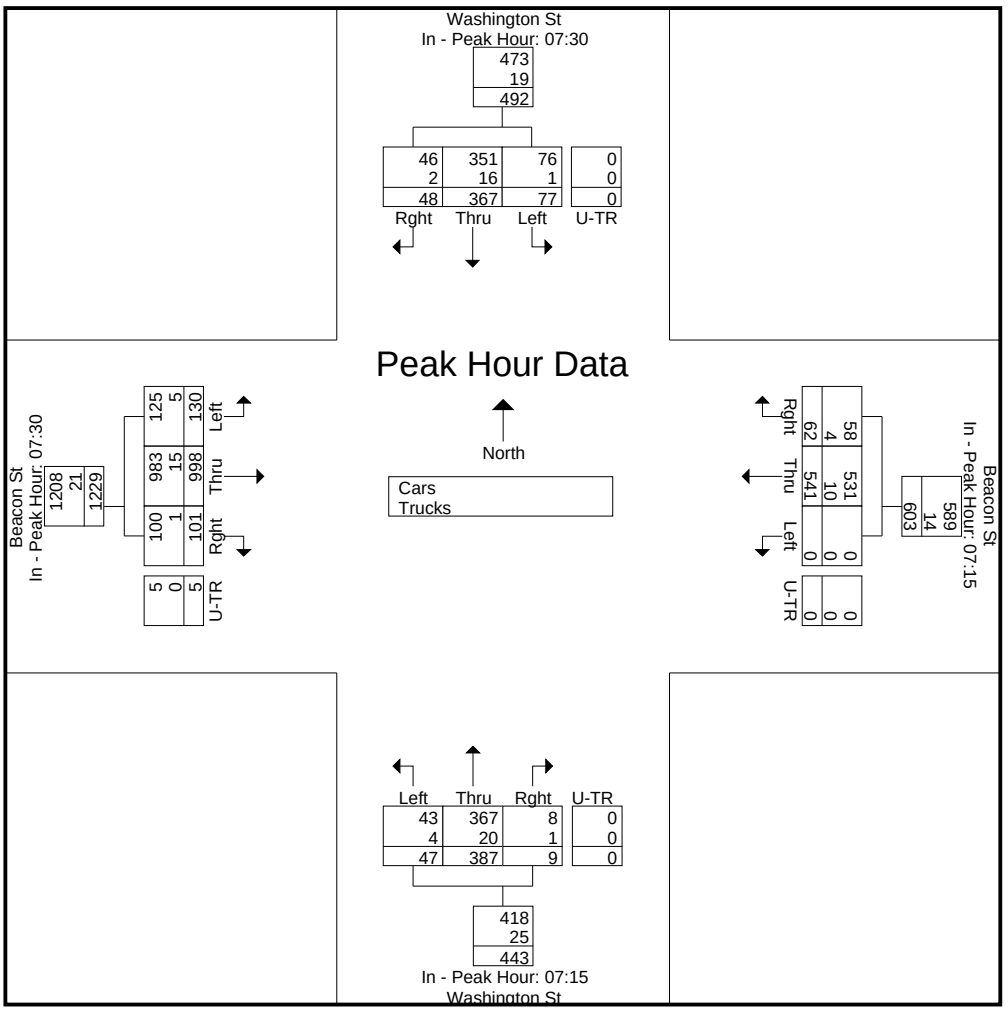
Peak Hour for Each Approach Begins at:

	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

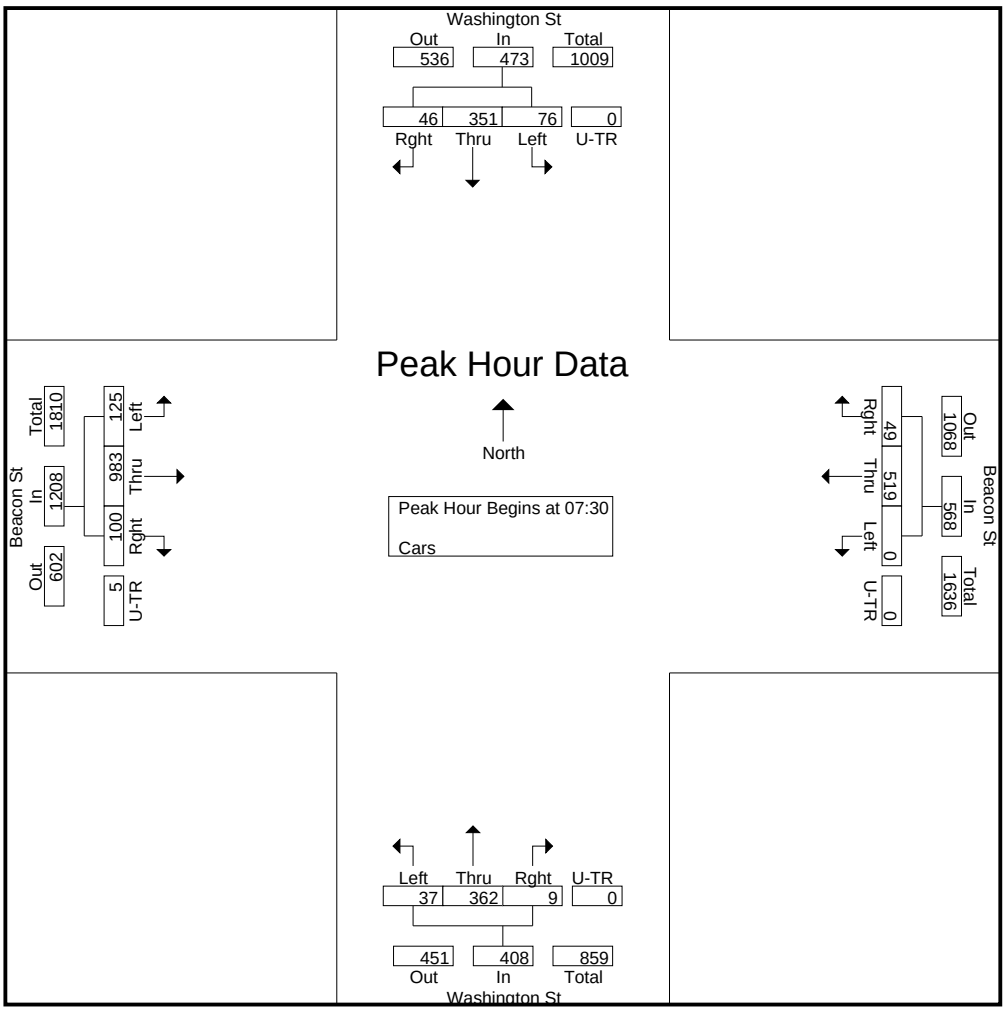
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	16	55	5	0	0	98	10	0	11	74	4	1	26	114	31	2	447
07:15	18	74	4	0	0	118	19	0	13	74	1	0	32	179	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

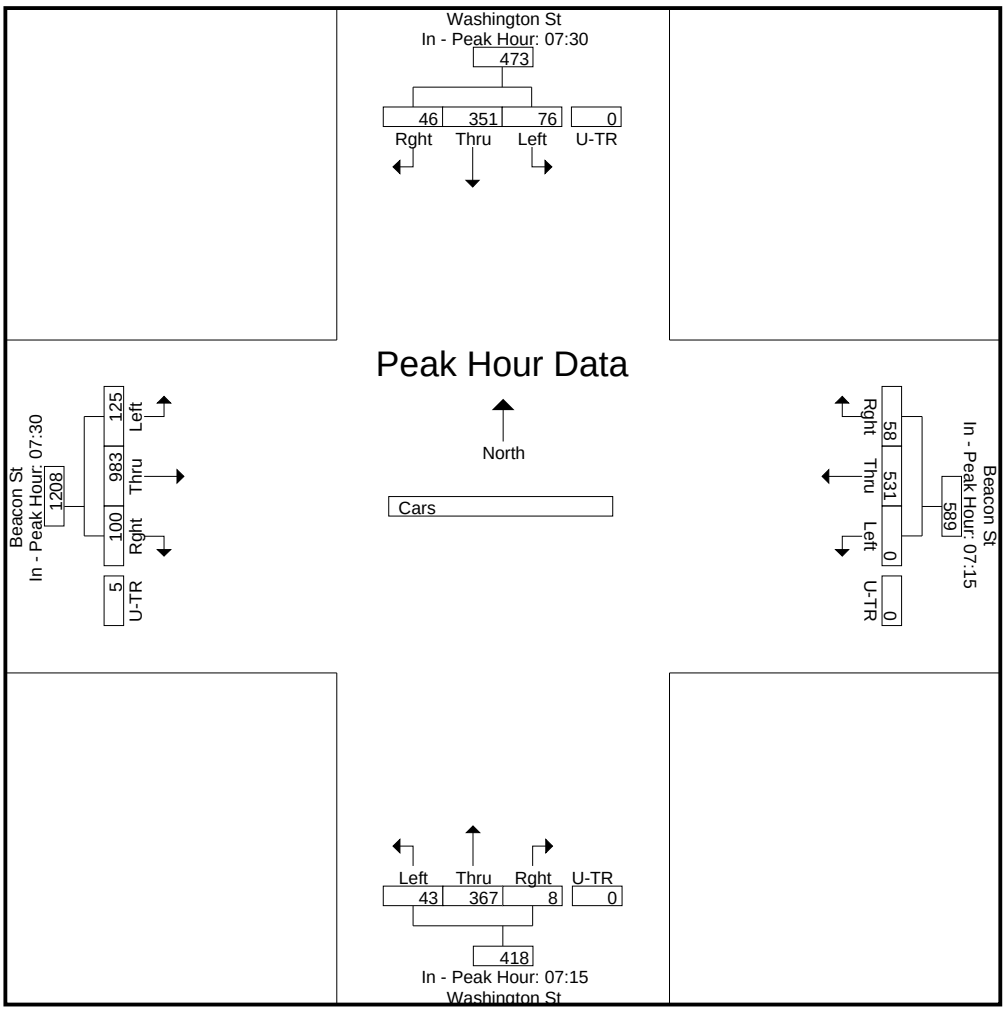
Peak Hour for Each Approach Begins at:

	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

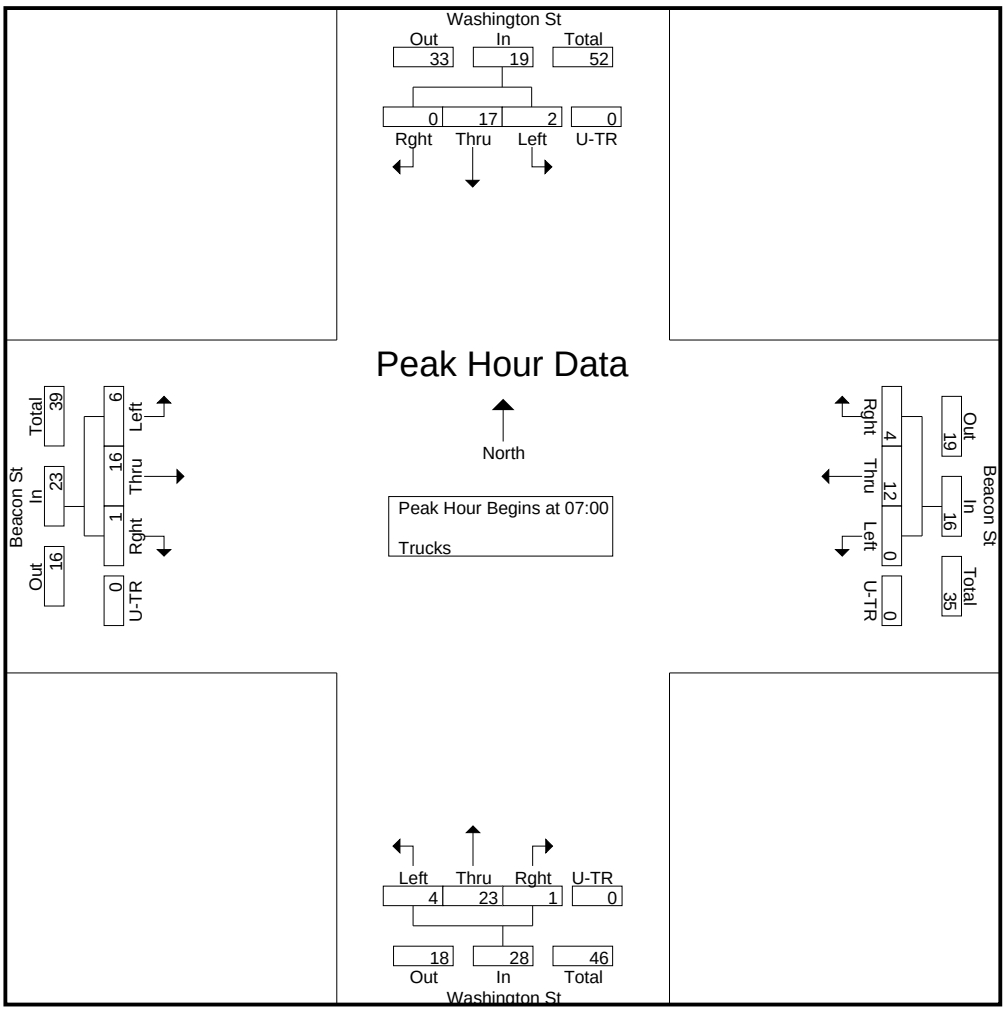
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
07:00	0	3	0	0	0	5	0	0	0	5	0	0	2	2	0	0	17
07:15	1	2	0	0	0	4	1	0	2	5	1	0	0	4	0	0	20
07:30	0	3	0	0	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

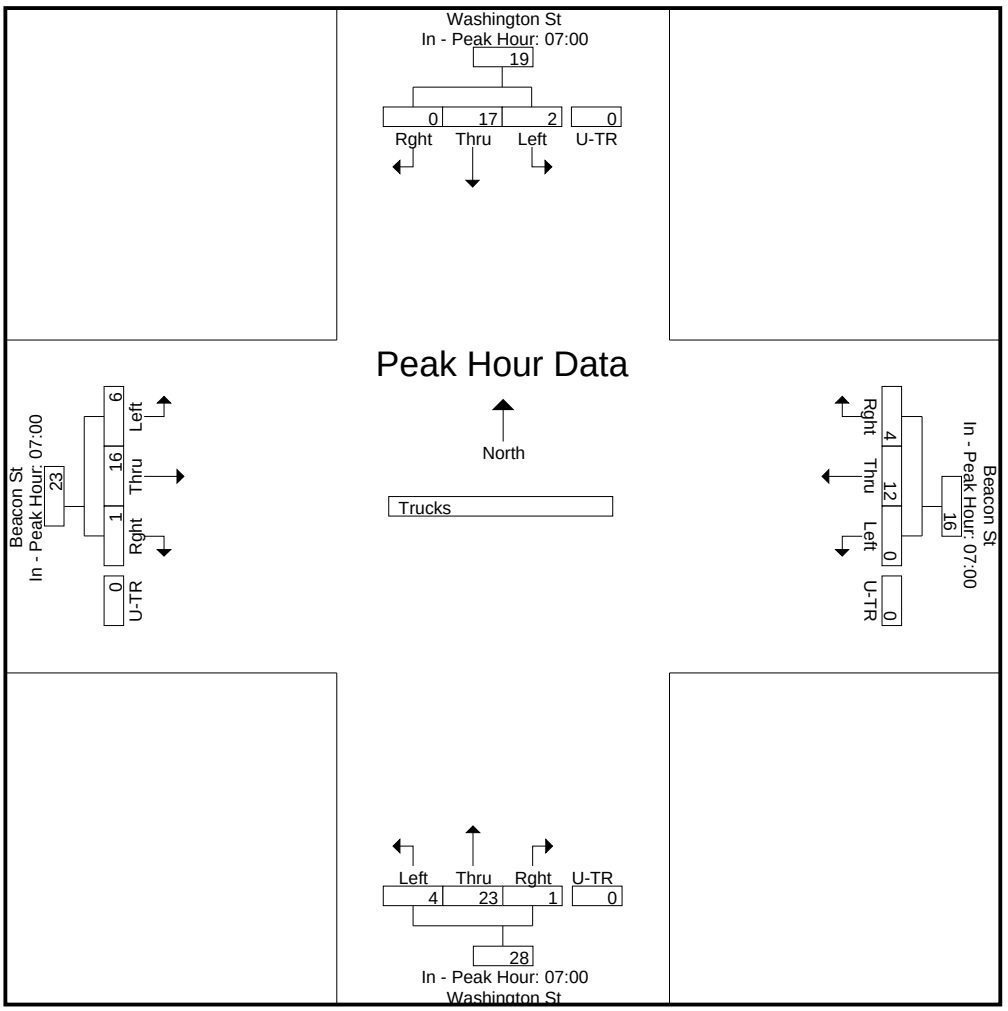
Peak Hour for Each Approach Begins at:

	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

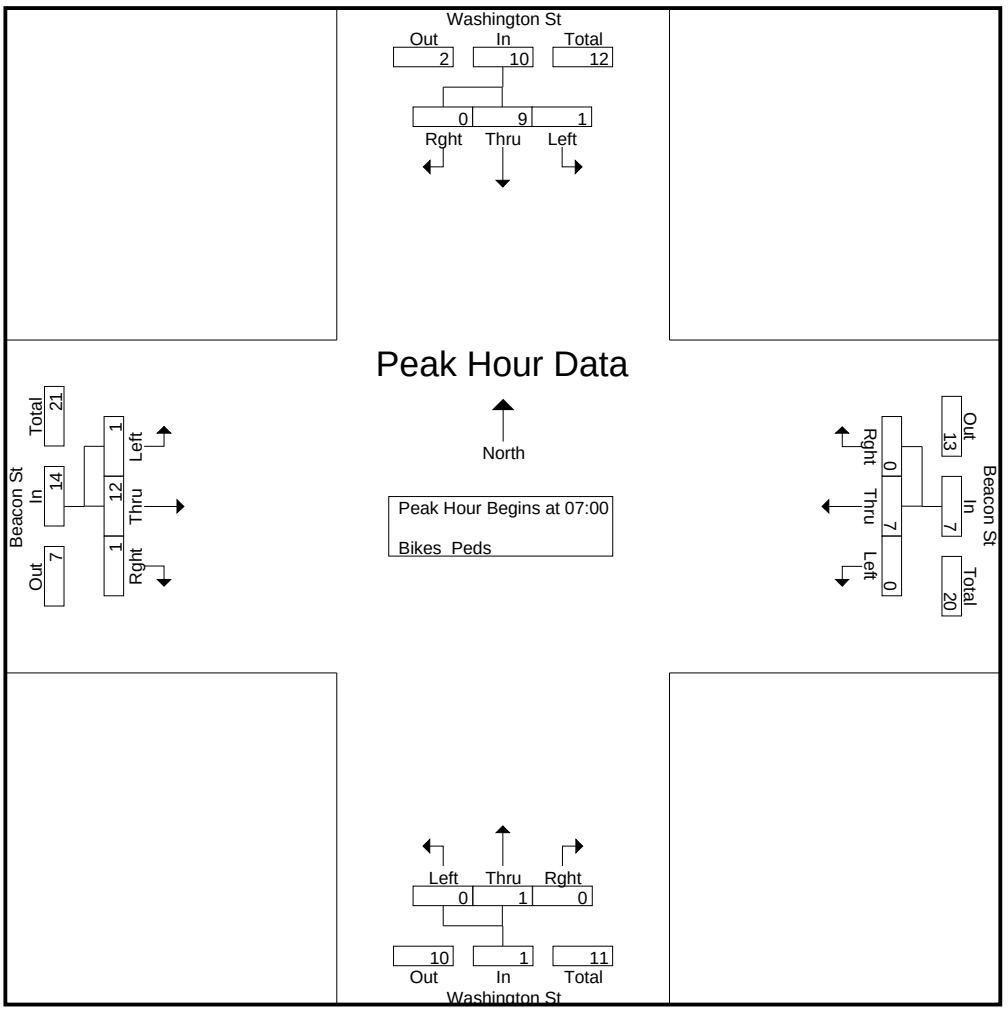
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	5	0	2	0	10	0	1	0	3	0	1	0	4	22	4	26
07:15	0	2	0	10	0	2	0	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



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

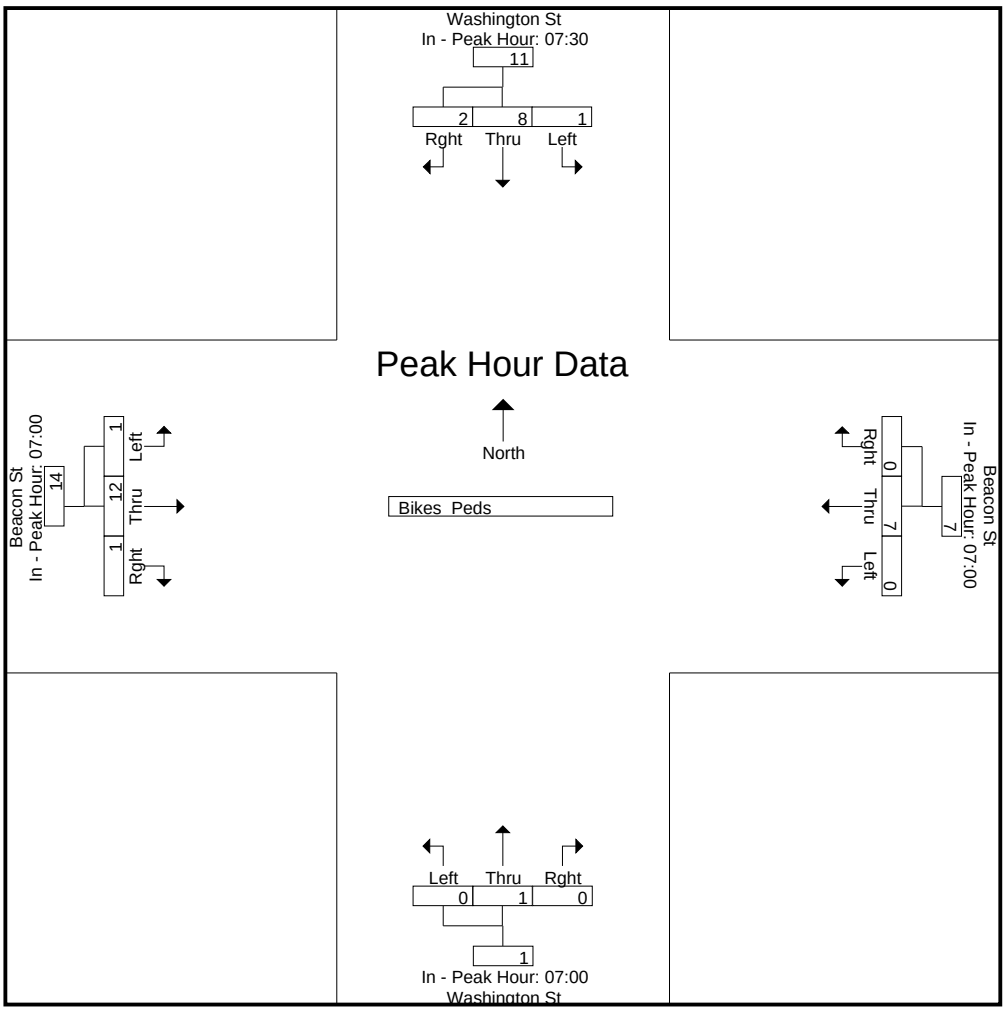
Peak Hour for Each Approach Begins at:

	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

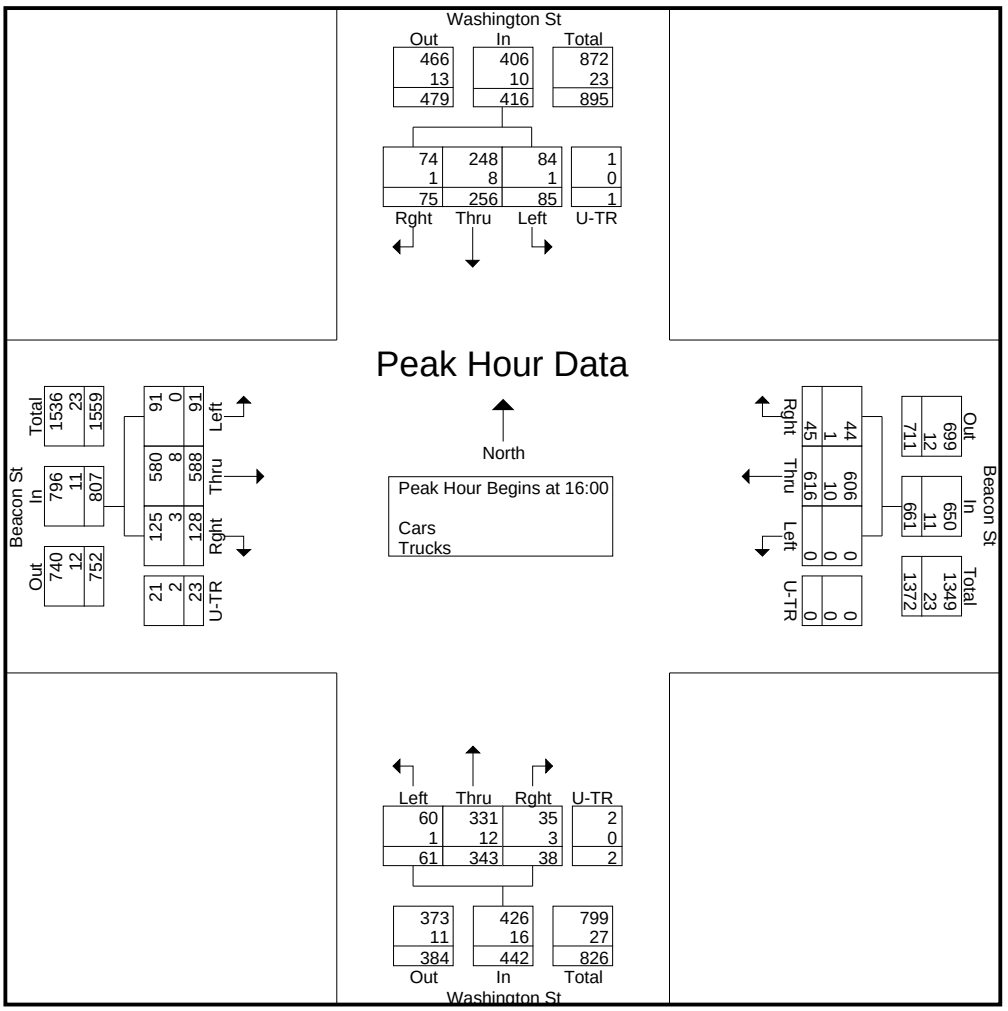
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	29	55	13	0	0	134	15	0	17	67	9	0	29	133	30	10	541
16:15	18	81	33	0	0	151	18	0	10	92	8	1	22	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

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

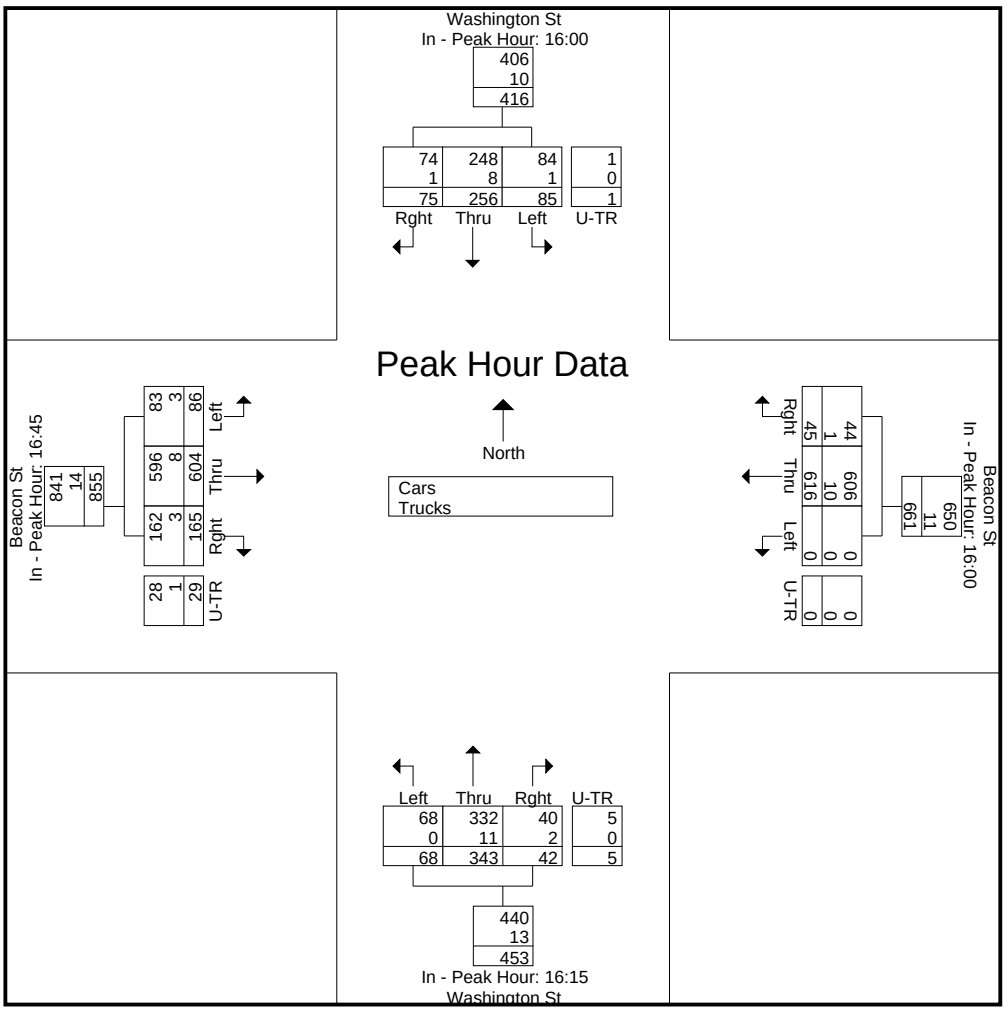
Peak Hour for Each Approach Begins at:

	16:00					16:00					16:15					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

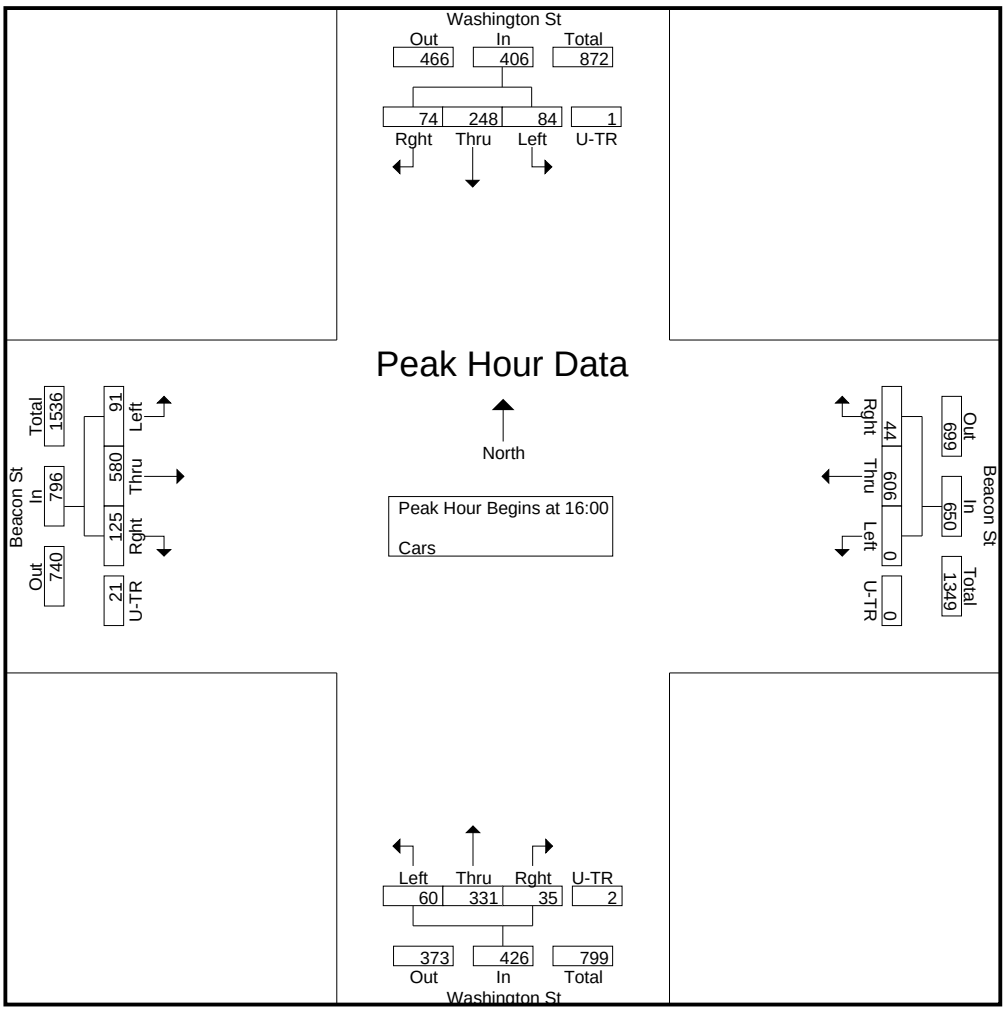
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	28	53	13	0	0	128	15	0	16	64	8	0	29	130	30	9	523
16:15	18	81	32	0	0	150	18	0	10	88	6	1	22	151	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

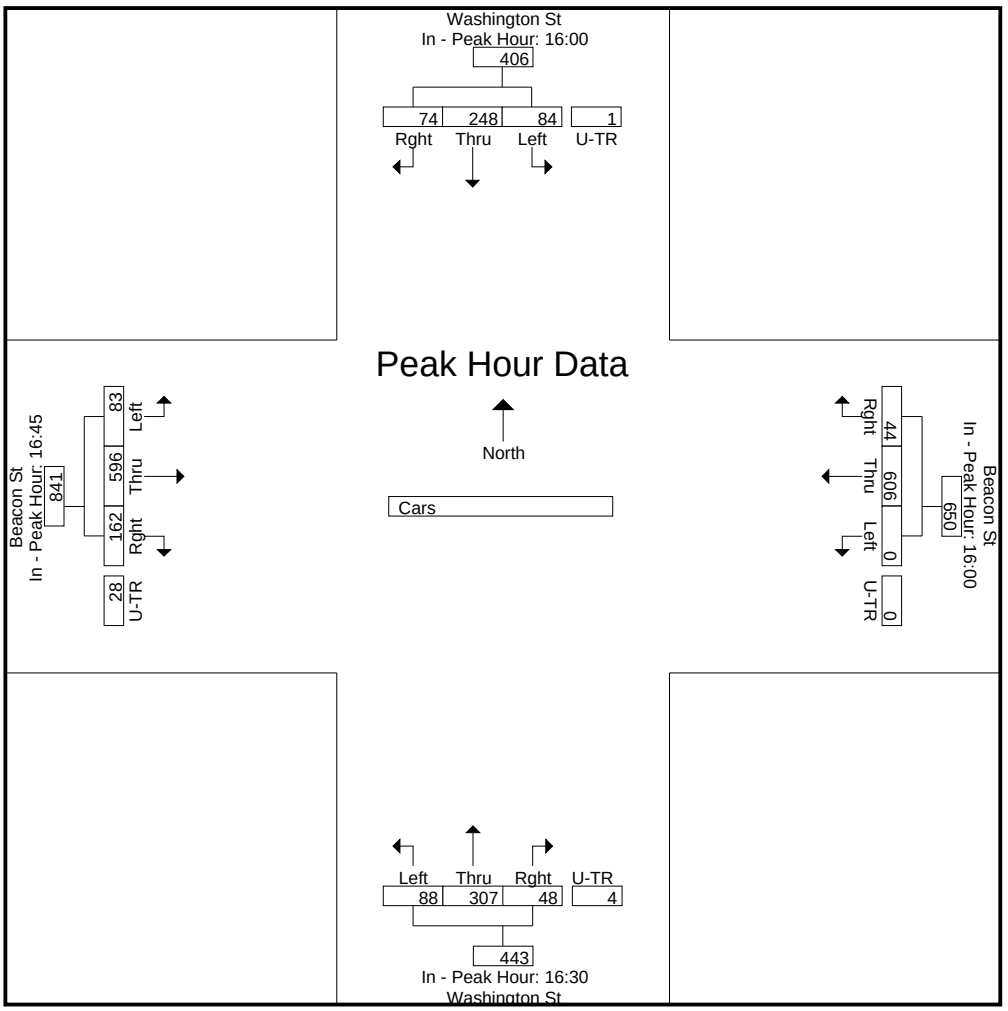
Peak Hour for Each Approach Begins at:

	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

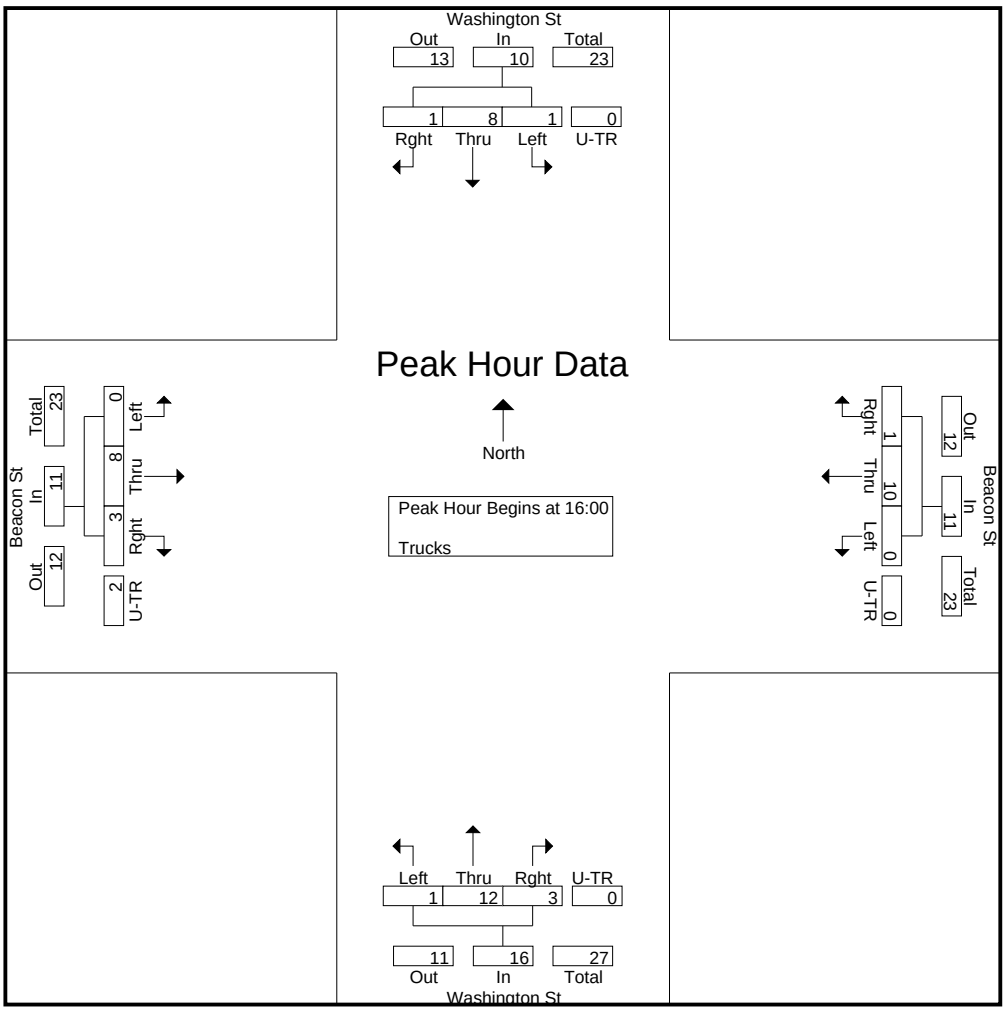
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West				
Start Time	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Left	Thru	Rght	U-TR	Int. Total
16:00	1	2	0	0	0	6	0	0	1	3	1	0	0	3	0	1	18
16:15	0	0	1	0	0	1	0	0	0	4	2	0	0	2	0	0	10
16:30	0	2	0	0	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

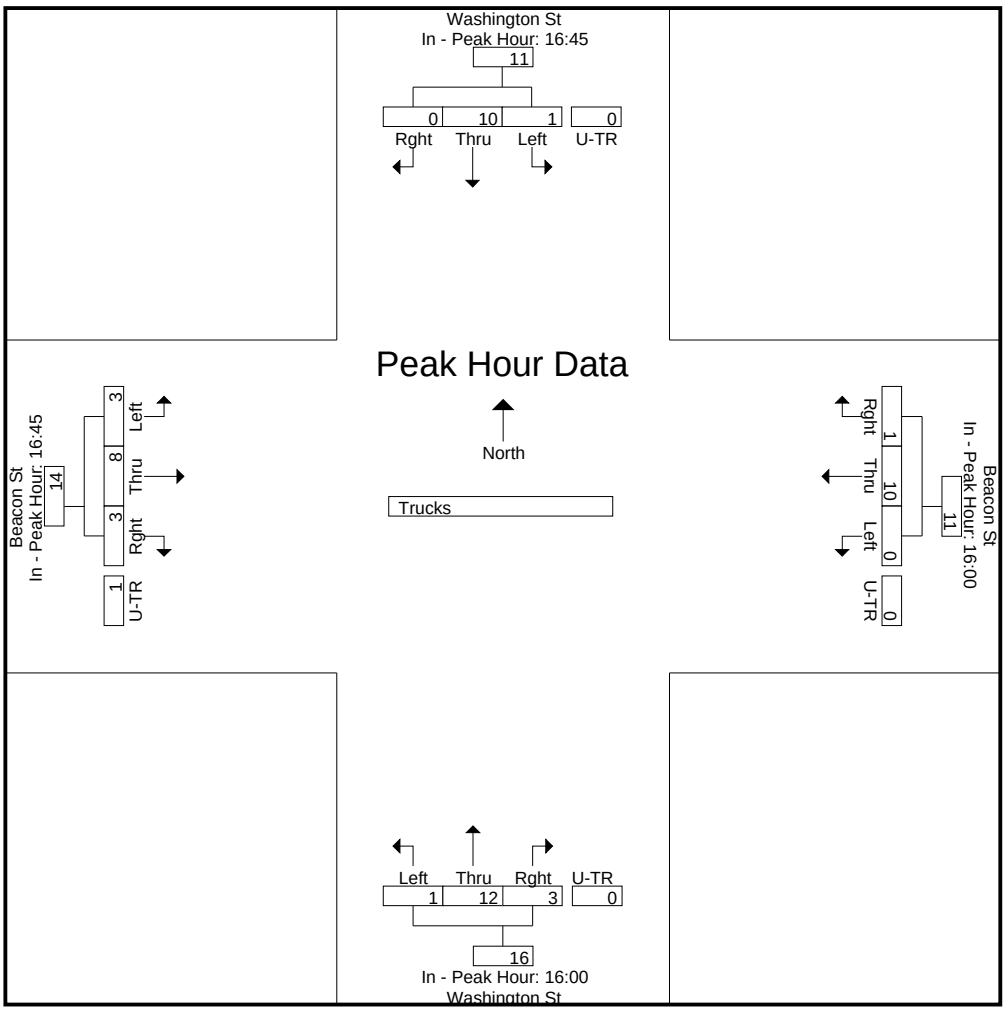
Peak Hour for Each Approach Begins at:

	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
Page No : 1

Groups Printed- Bikes Peds

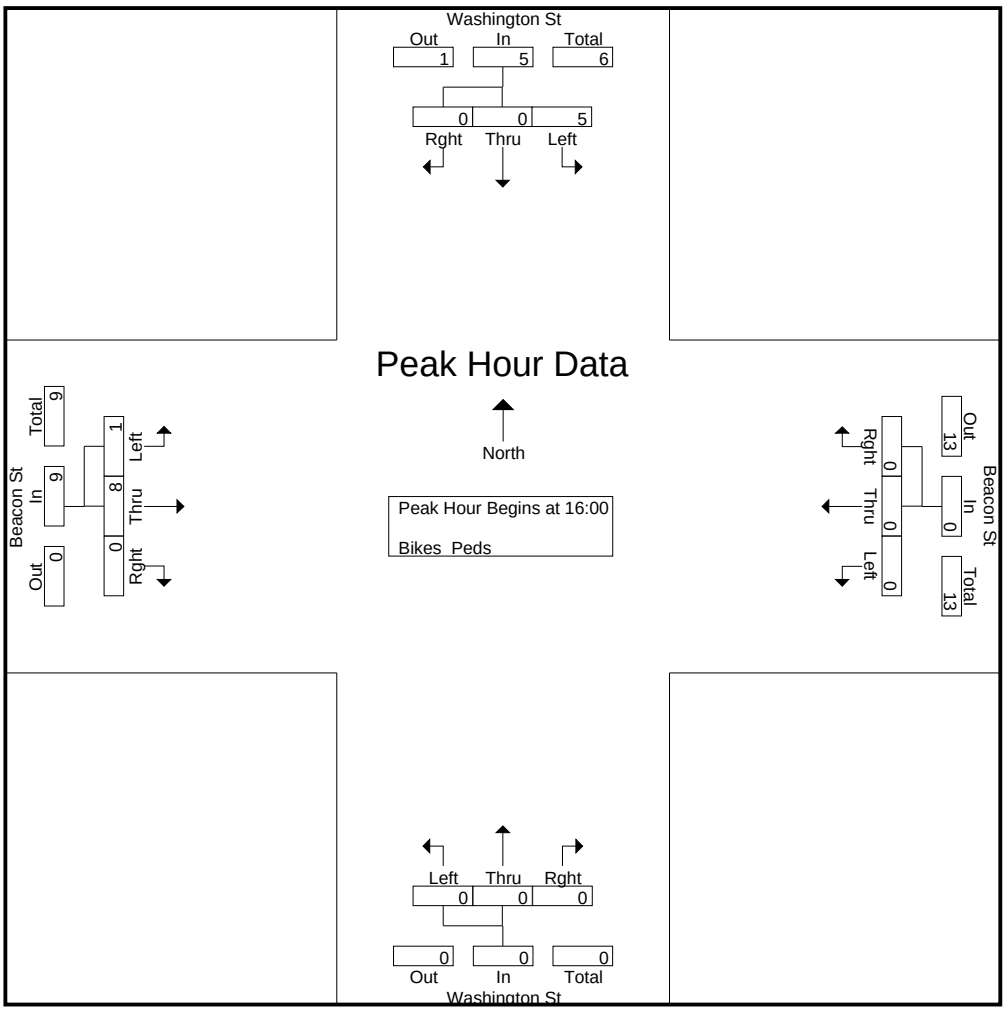
	Washington St From North				Beacon St From East				Washington St From South				Beacon St From West						
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	3	0	0	0	0	0	0	0	20	0	2	0	0	23	2	25
16:15	4	0	0	5	0	0	0	0	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

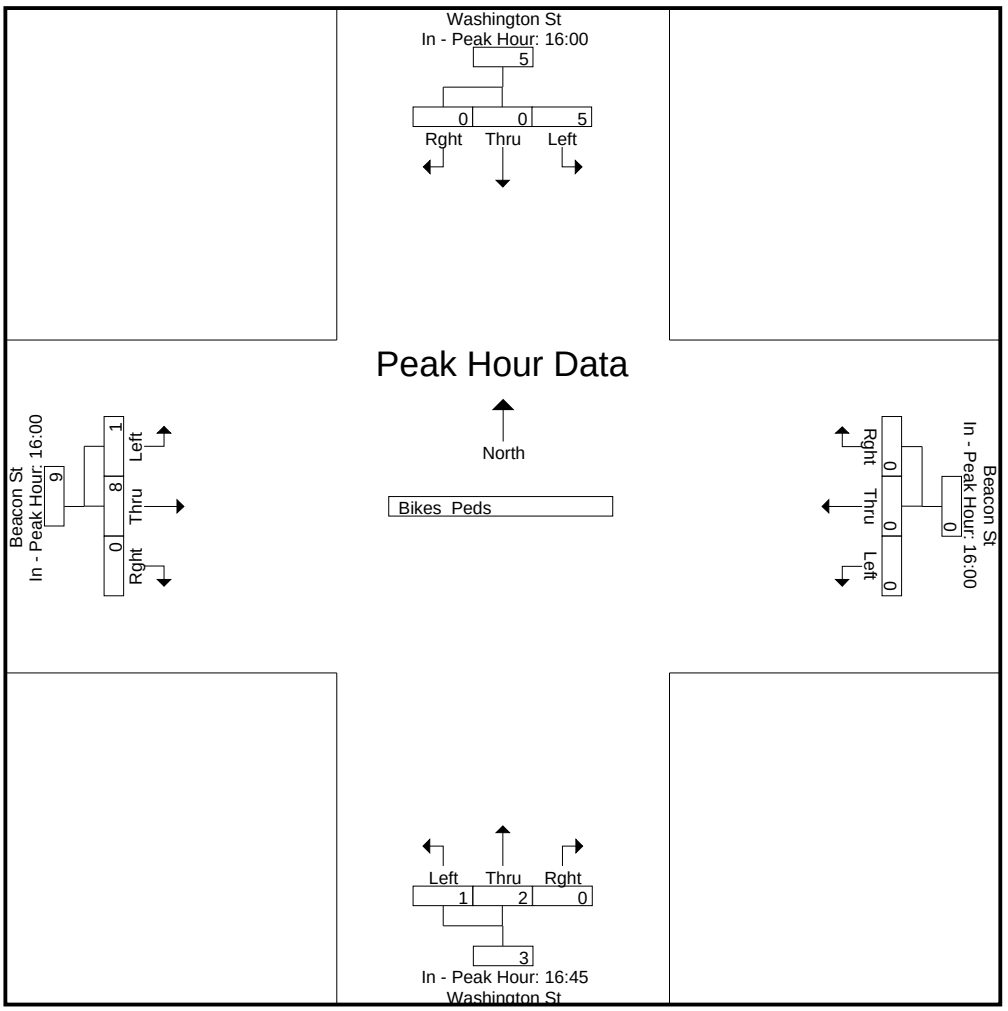
Peak Hour for Each Approach Begins at:

	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

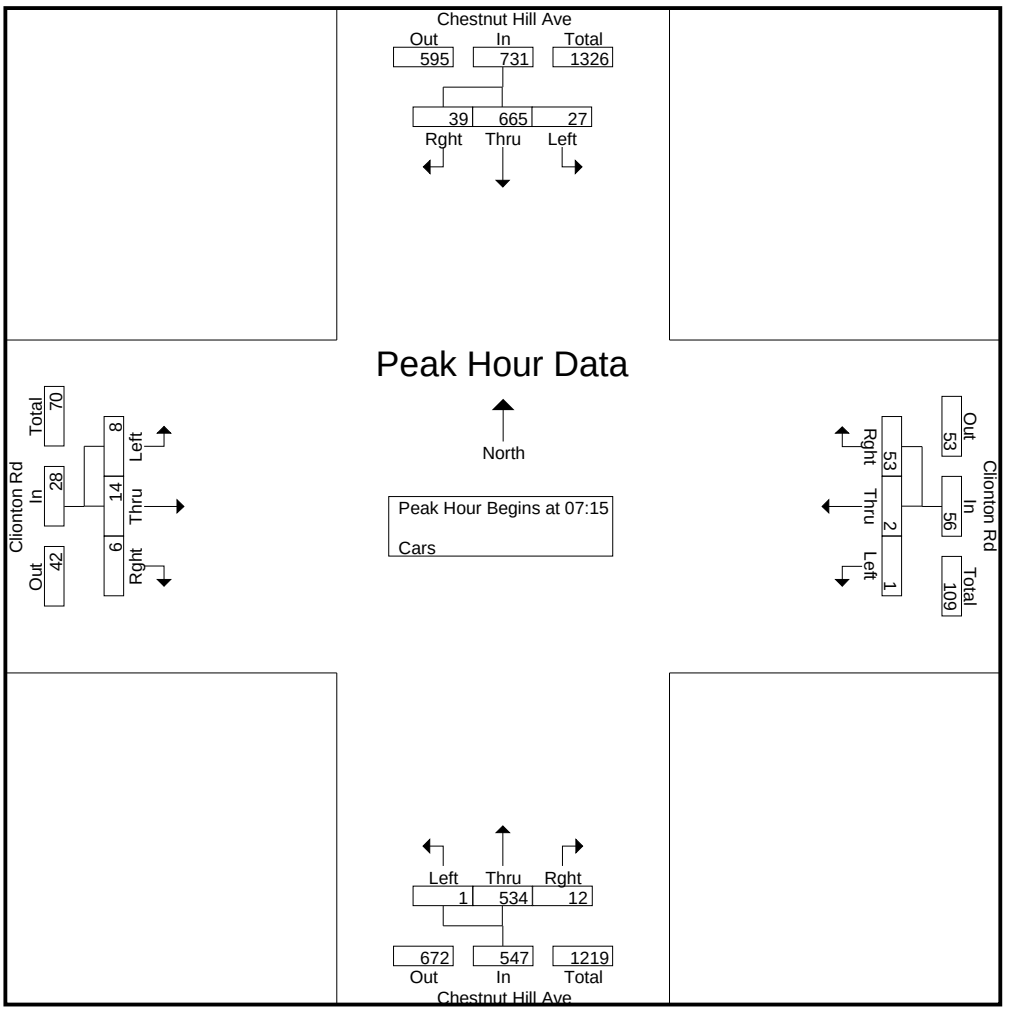
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	5	121	0	3	0	8	0	134	3	1	1	0	276
07:15	5	172	0	0	1	15	0	126	4	0	4	2	329
07:30	6	170	13	0	0	9	0	135	1	0	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

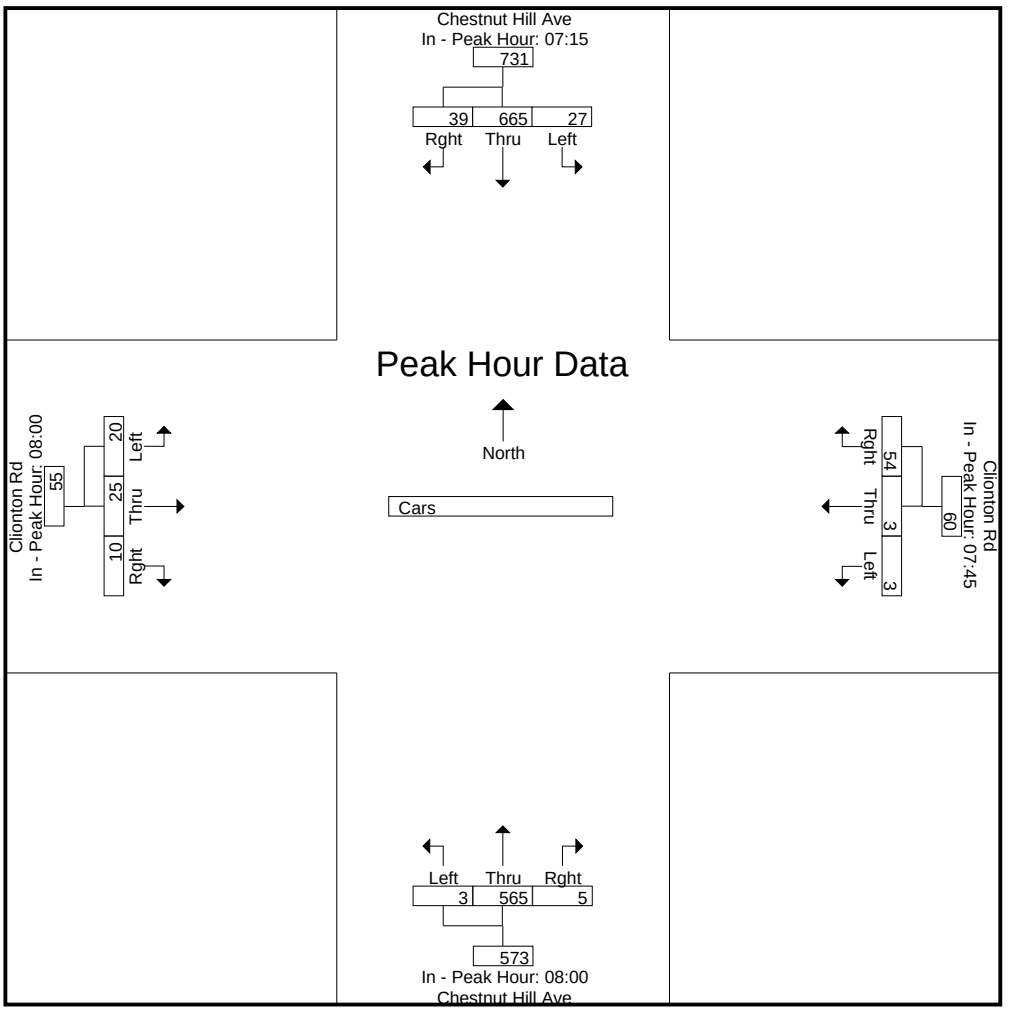
Peak Hour for Each Approach Begins at:

	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

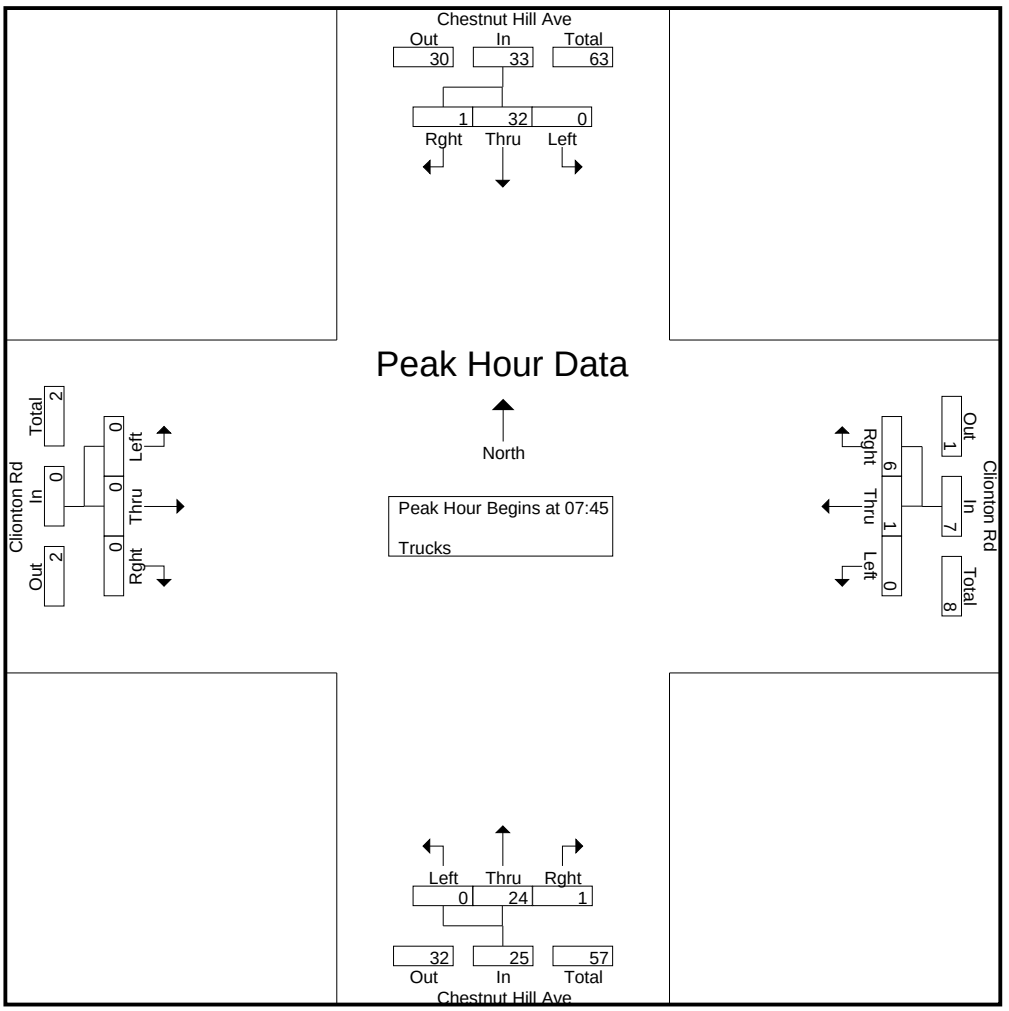
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
07:00	0	2	0	0	0	0	0	4	0	0	0	0	6
07:15	0	5	0	0	0	0	0	4	0	0	1	0	10
07:30	0	4	0	0	0	1	0	3	0	0	0	0	8
07:45	0	11	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

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

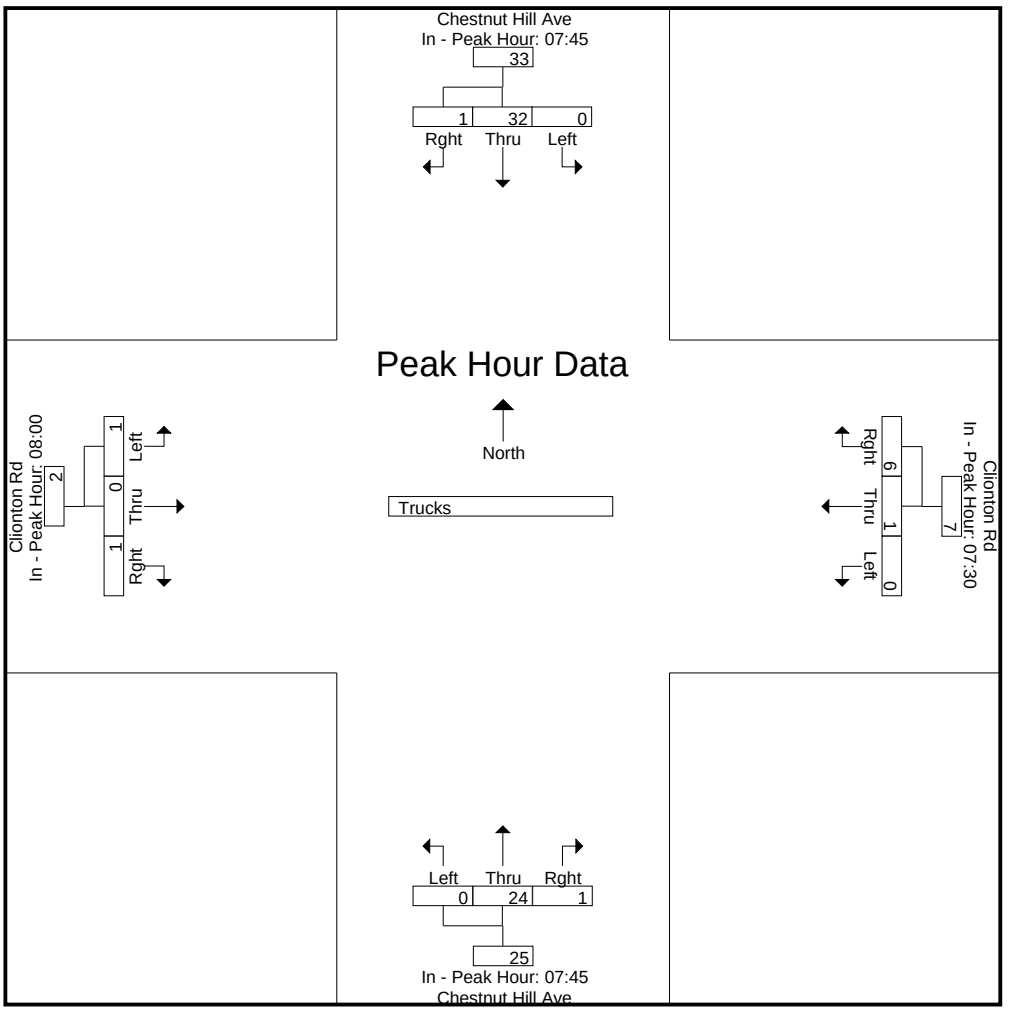
Peak Hour for Each Approach Begins at:

	07:45				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

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

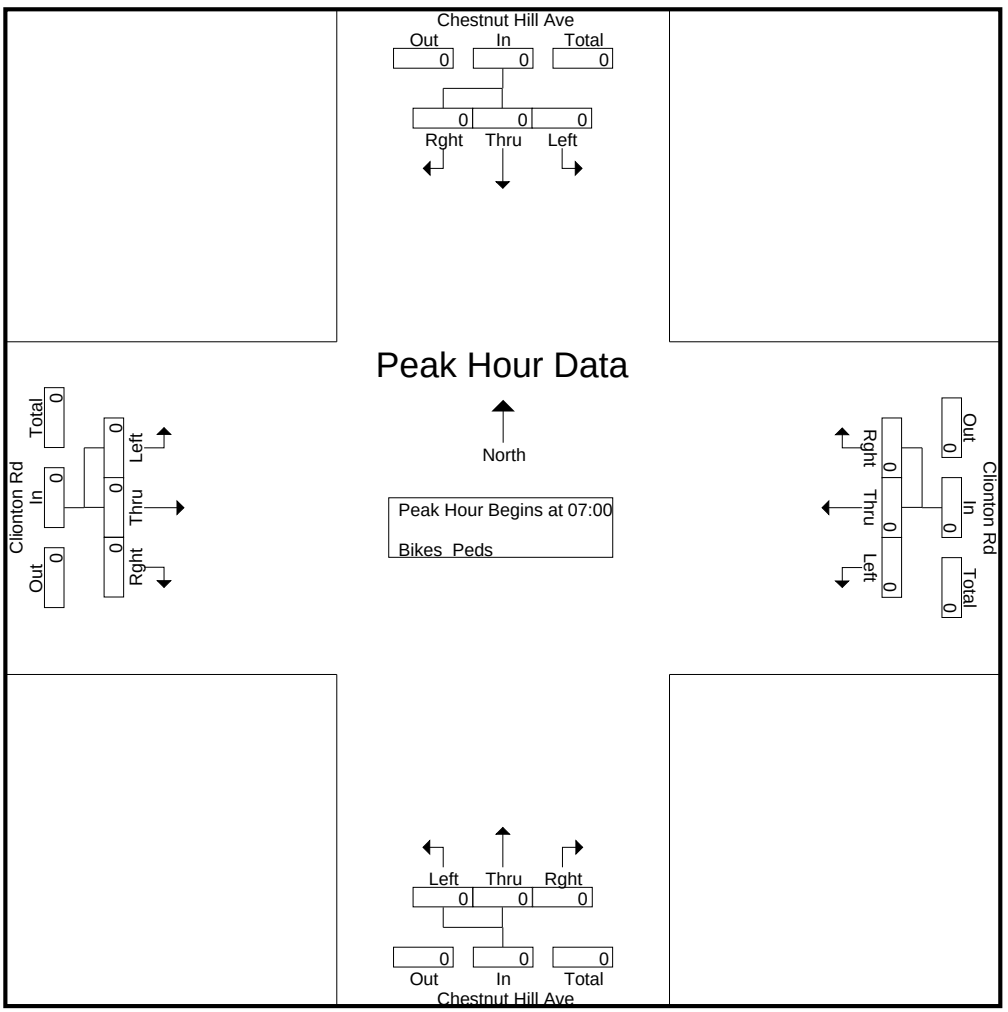
N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

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
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

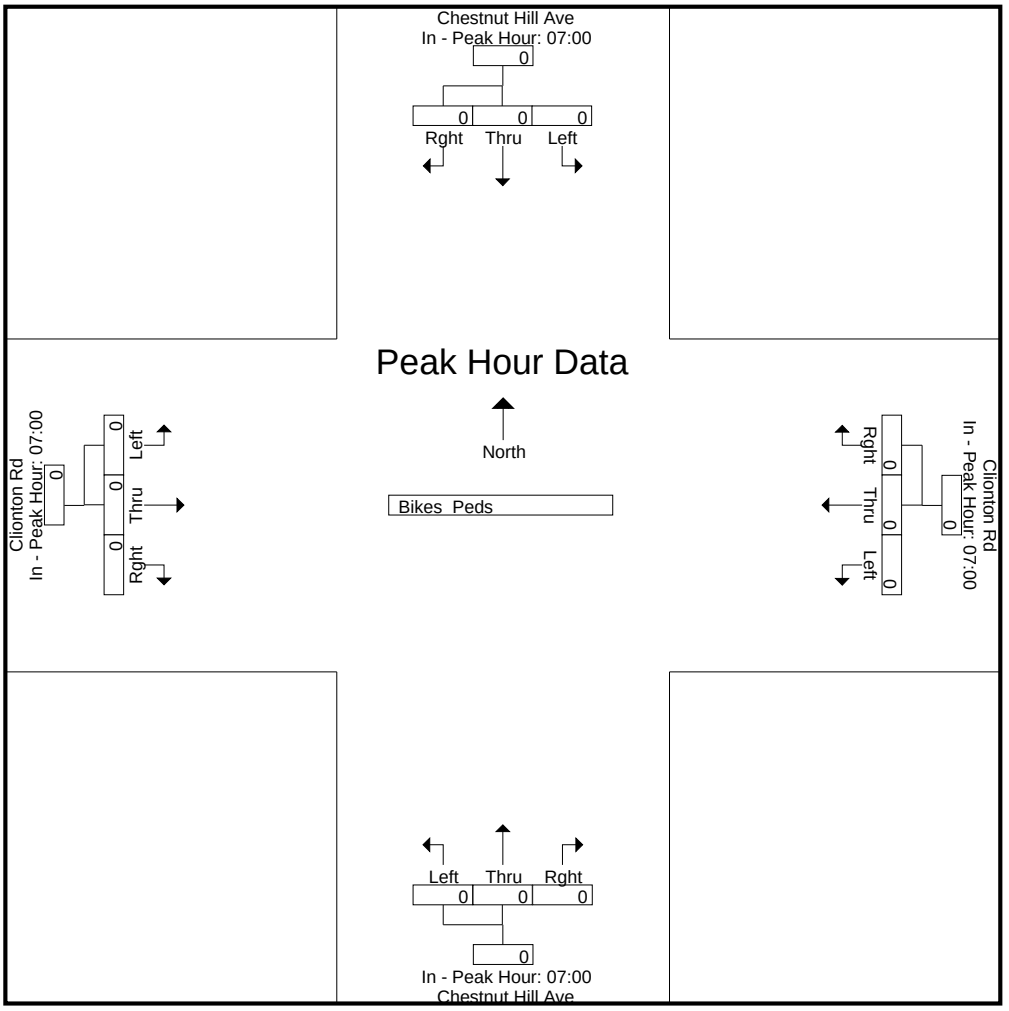


Accurate Counts
978-664-2565

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

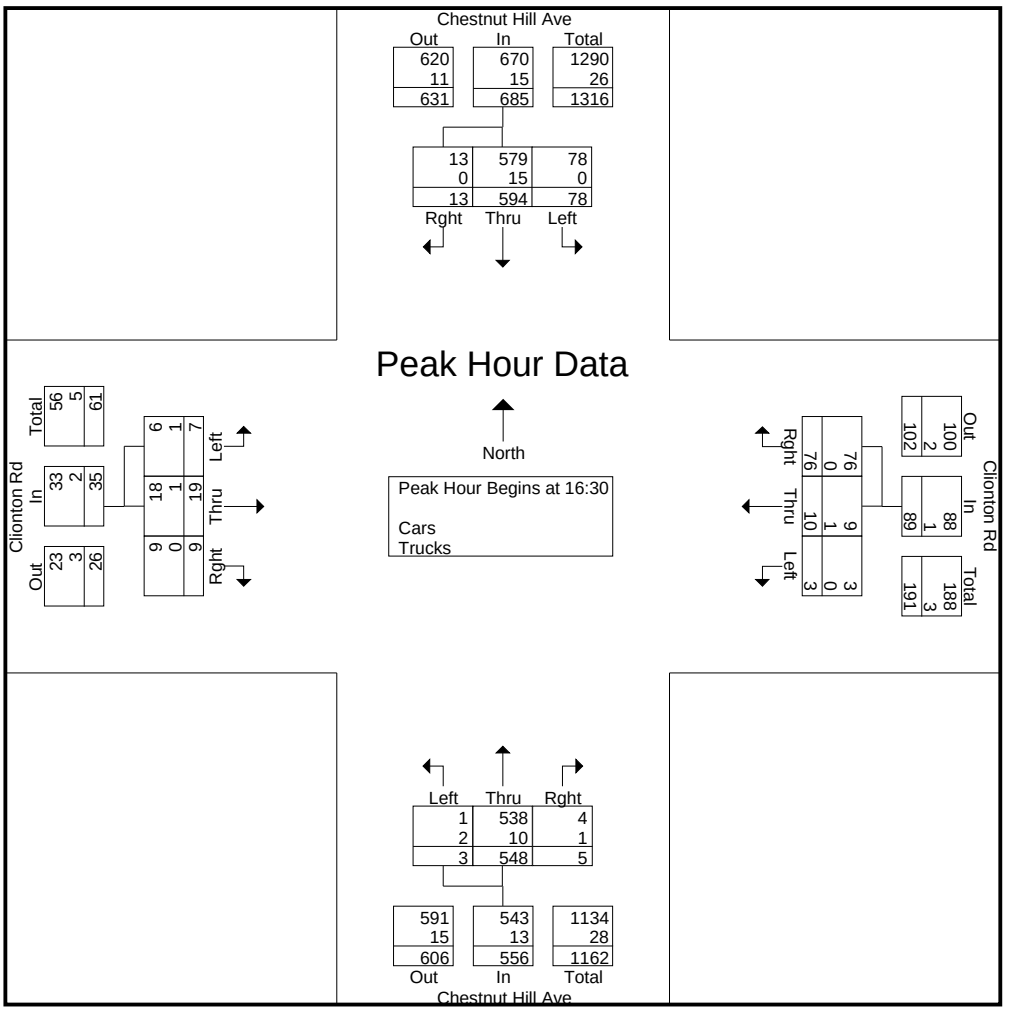
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	16	151	5	1	0	28	0	112	0	4	7	1	325
16:15	13	141	4	0	5	10	0	120	0	3	5	1	302
16:30	26	150	7	1	4	18	1	152	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
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Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

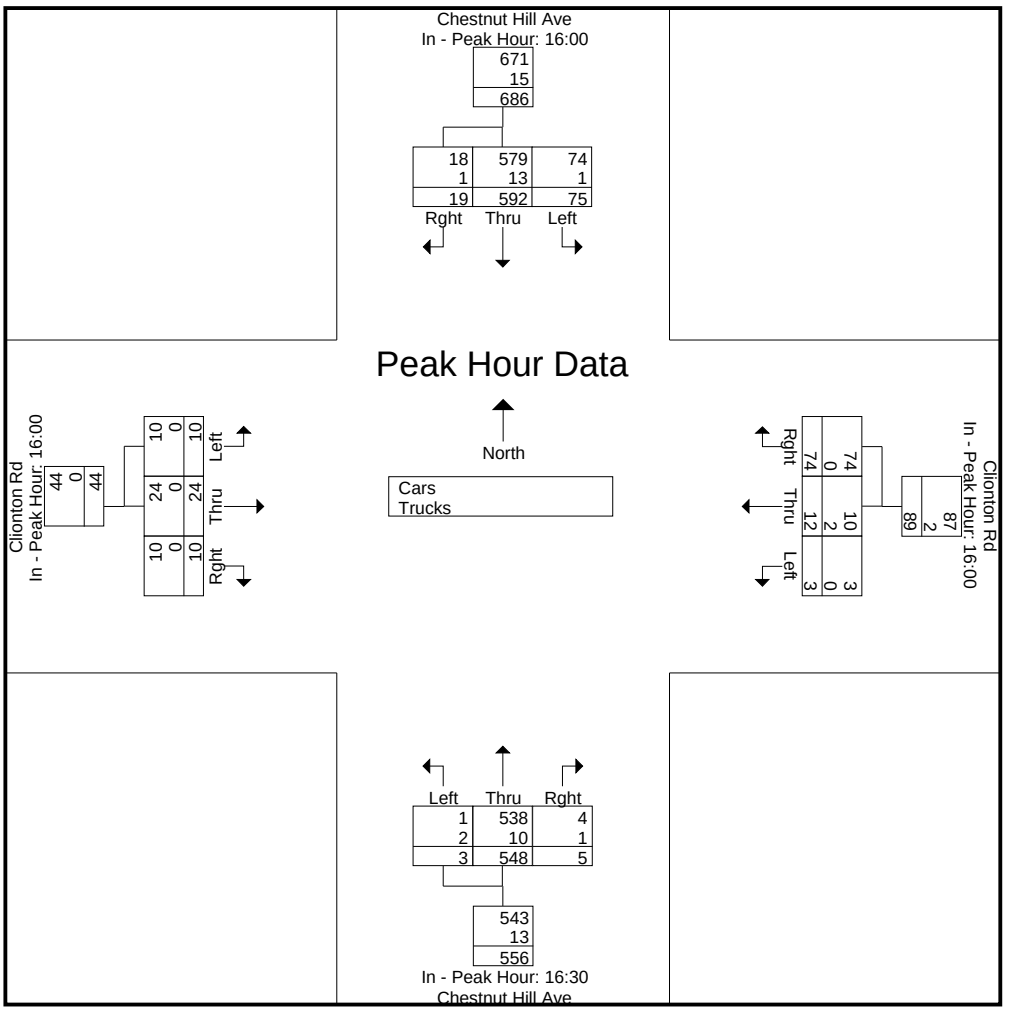
Peak Hour for Each Approach Begins at:

	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

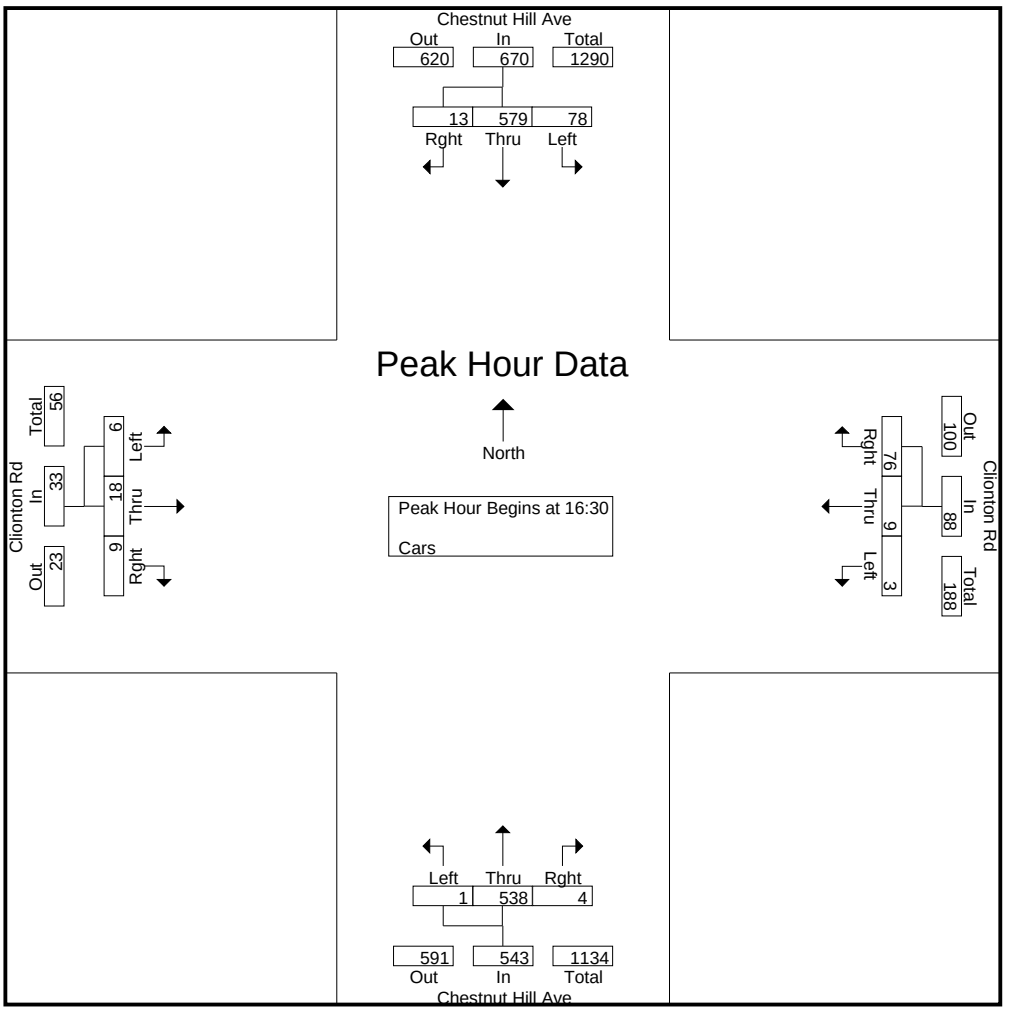
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	15	149	4	1	0	28	0	112	0	4	7	1	321
16:15	13	136	4	0	4	10	0	116	0	3	5	1	292
16:30	26	146	7	1	3	18	0	147	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
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Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

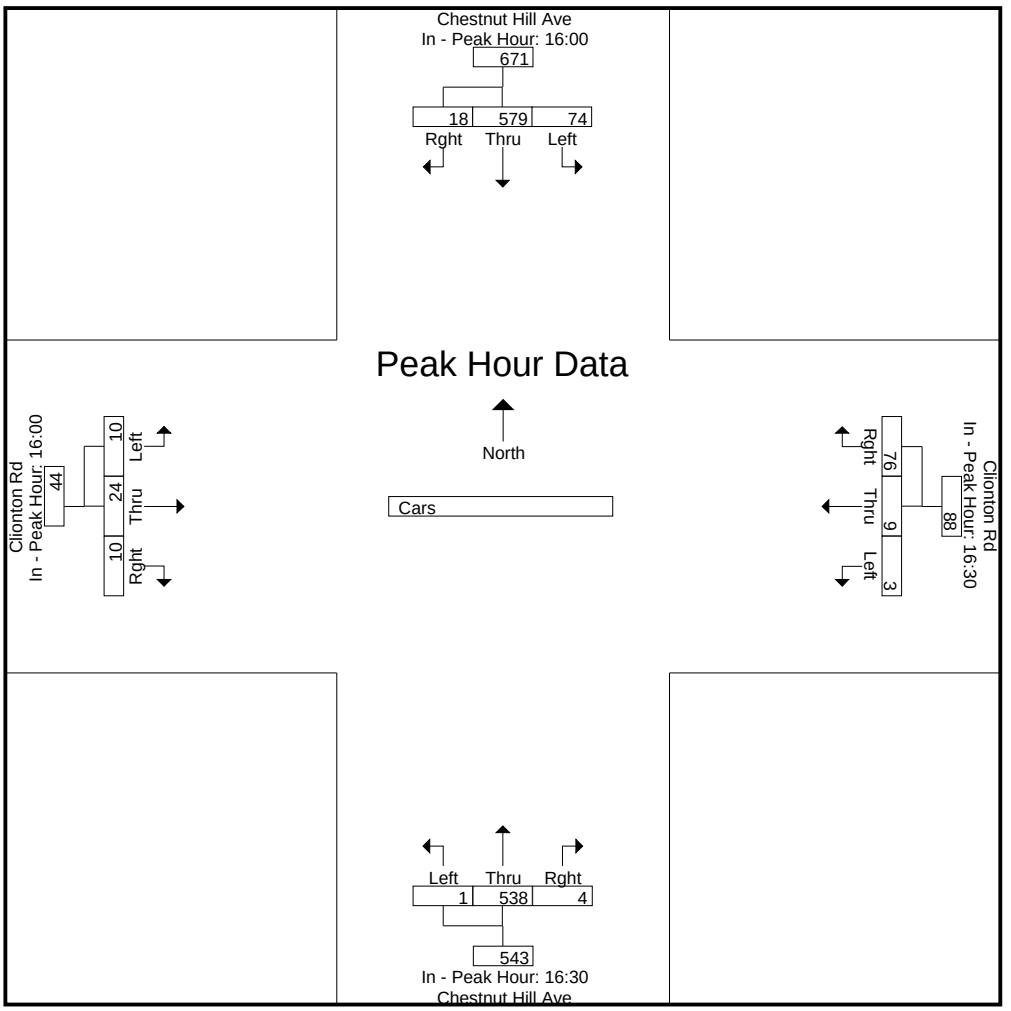
Peak Hour for Each Approach Begins at:

	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
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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

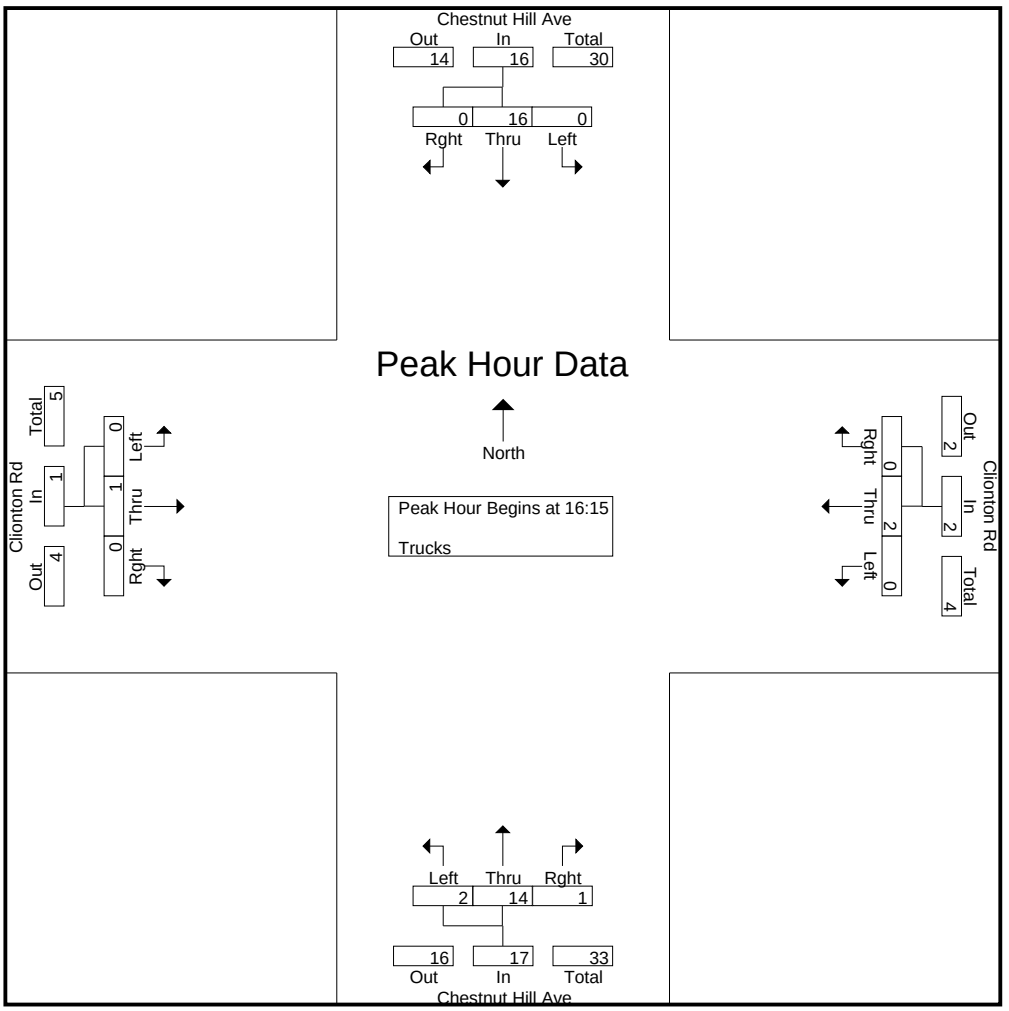
	Chestnut Hill Ave From North			Clionton Rd From East			Chestnut Hill Ave From South			Clionton Rd From West			
Start Time	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Left	Thru	Rght	Int. Total
16:00	1	2	1	0	0	0	0	0	0	0	0	0	4
16:15	0	5	0	0	1	0	0	4	0	0	0	0	10
16:30	0	4	0	0	1	0	1	5	0	0	0	0	11
16:45	0	2	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

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

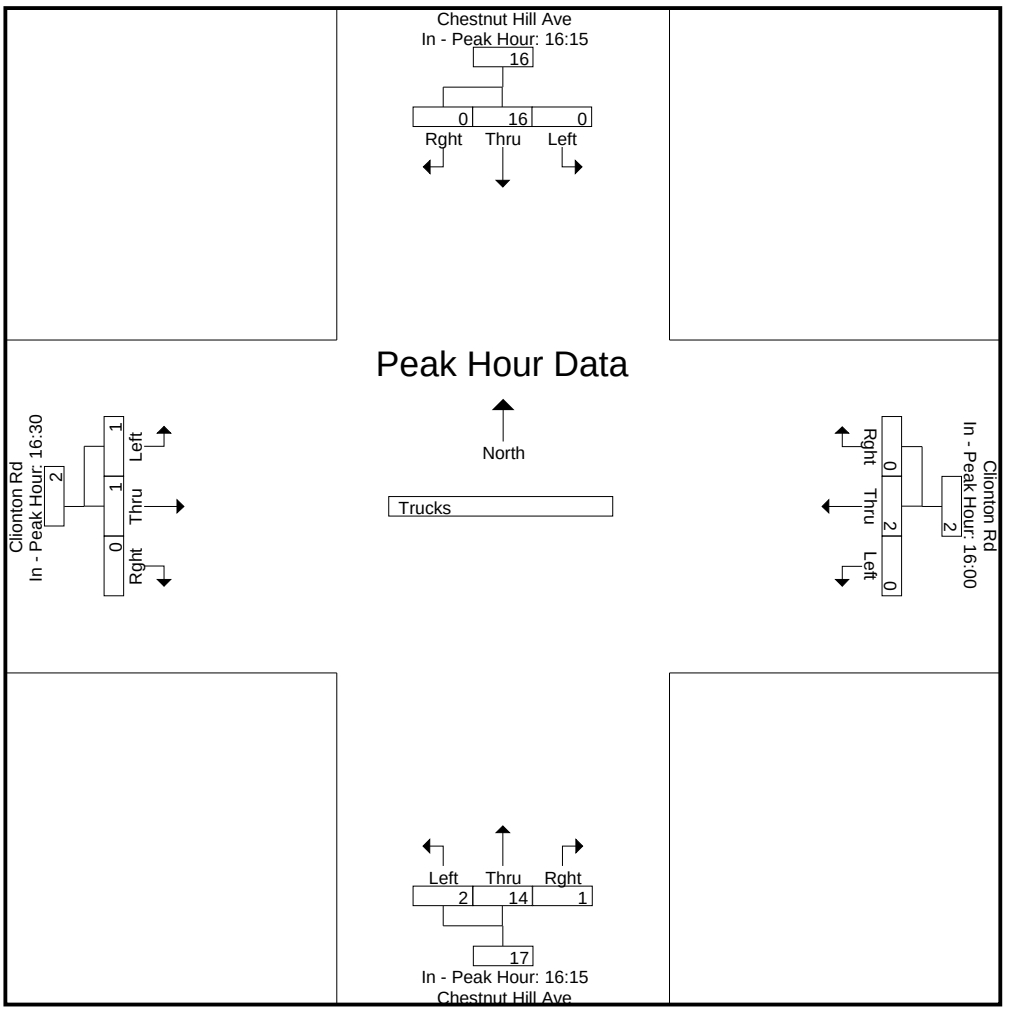
Peak Hour for Each Approach Begins at:

	16:15				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

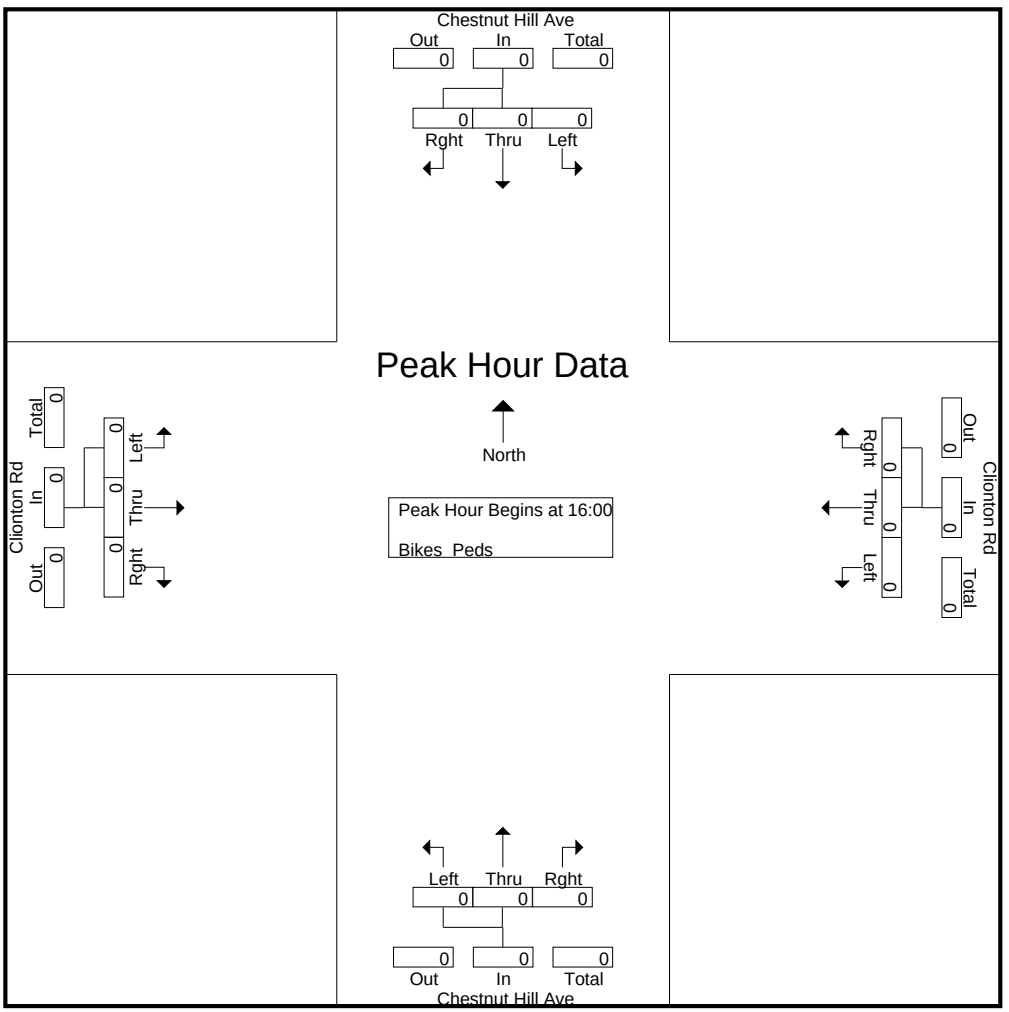
N/S Street : Chestnut Hill Avenue
E/W Street: Clinton Road
City/State : Brookline, MA
Weather : Light Rain

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

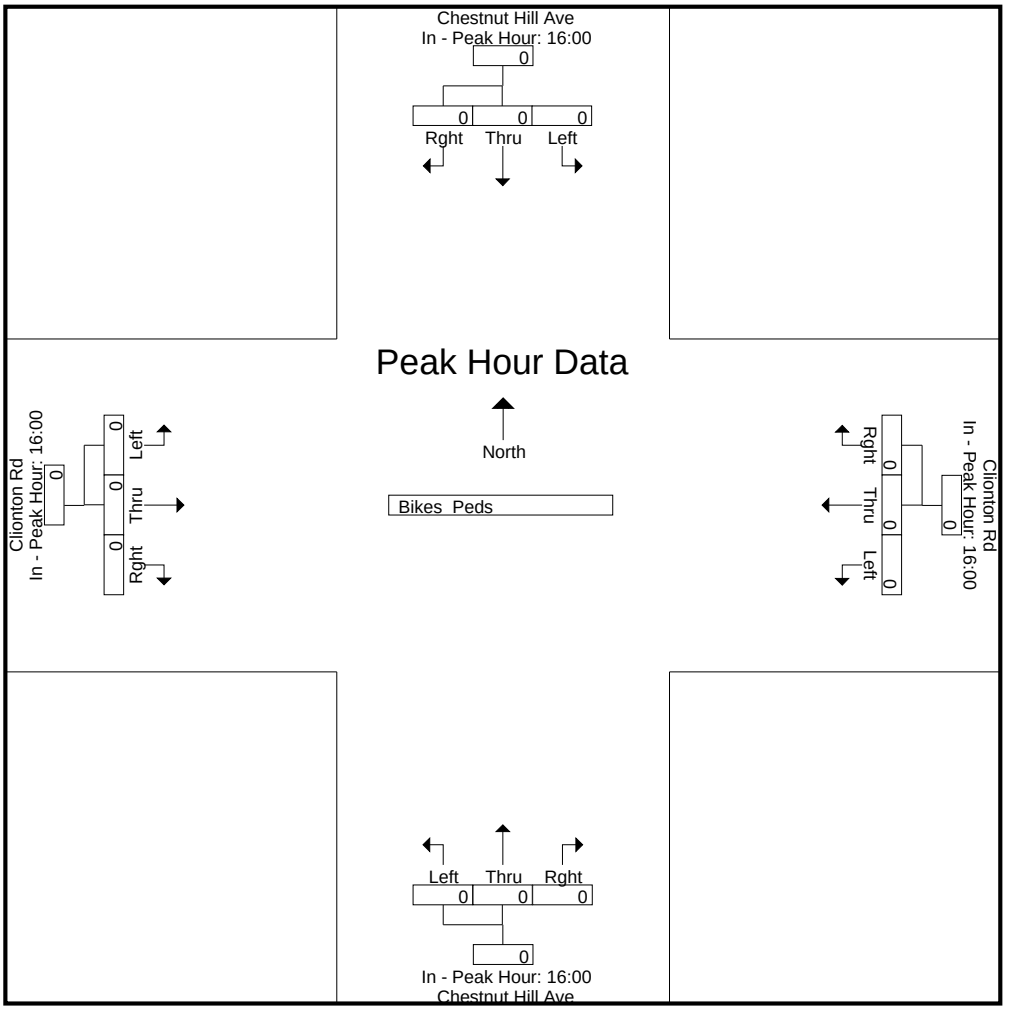


Accurate Counts
978-664-2565

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

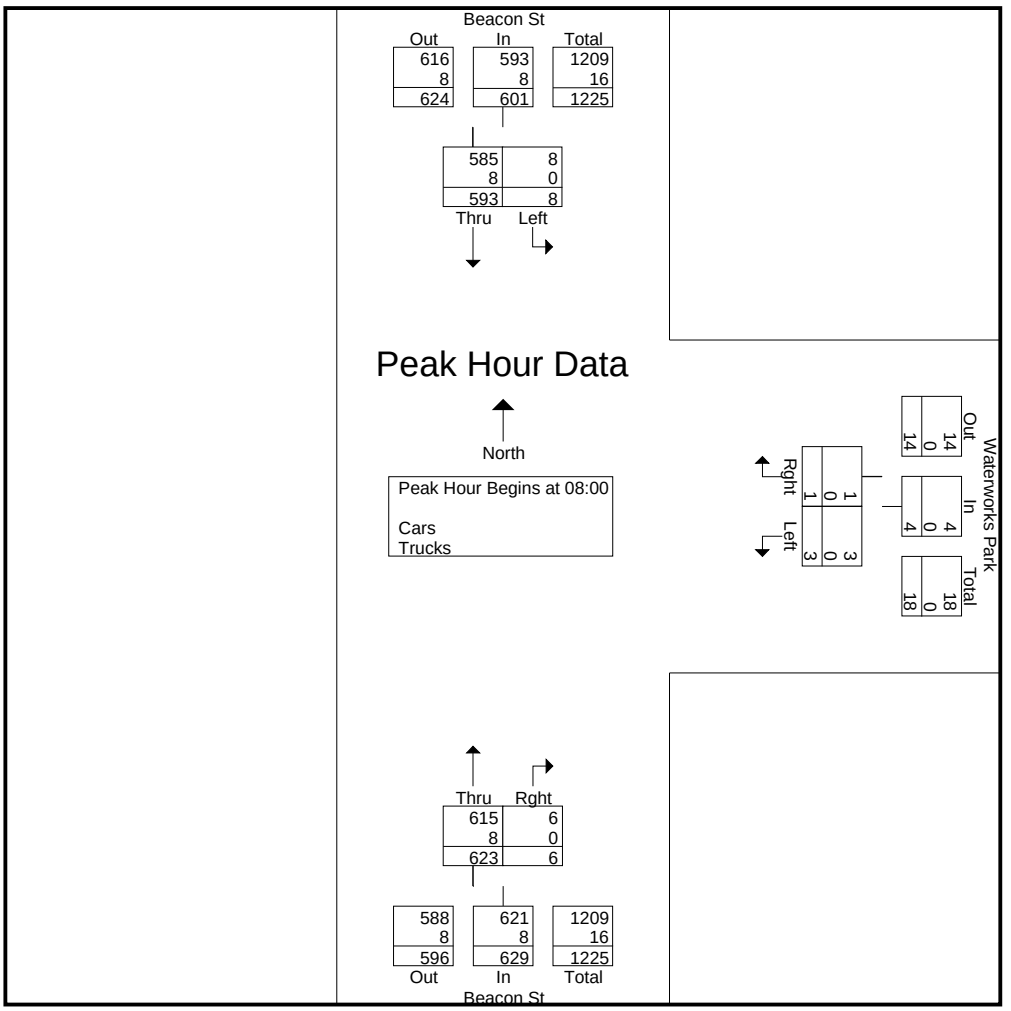
	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	89	0	0	97	1	187
07:15	0	104	0	2	117	1	224
07:30	1	126	0	1	140	1	269
07:45	1	137	0	2	163	0	303
Total	2	456	0	5	517	3	983
08:00	2	135	0	1	163	4	305
08:15	2	147	2	0	161	1	313
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

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



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

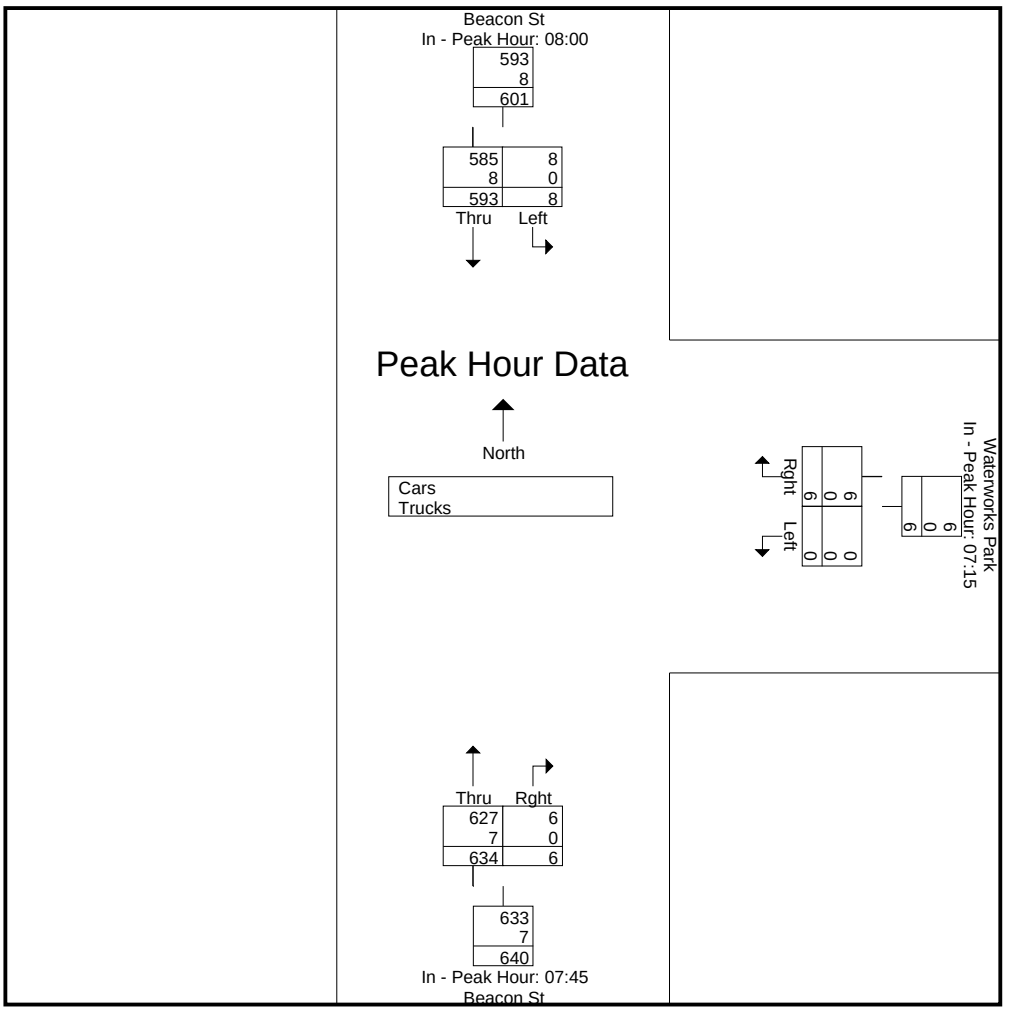
Peak Hour for Each Approach Begins at:

	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

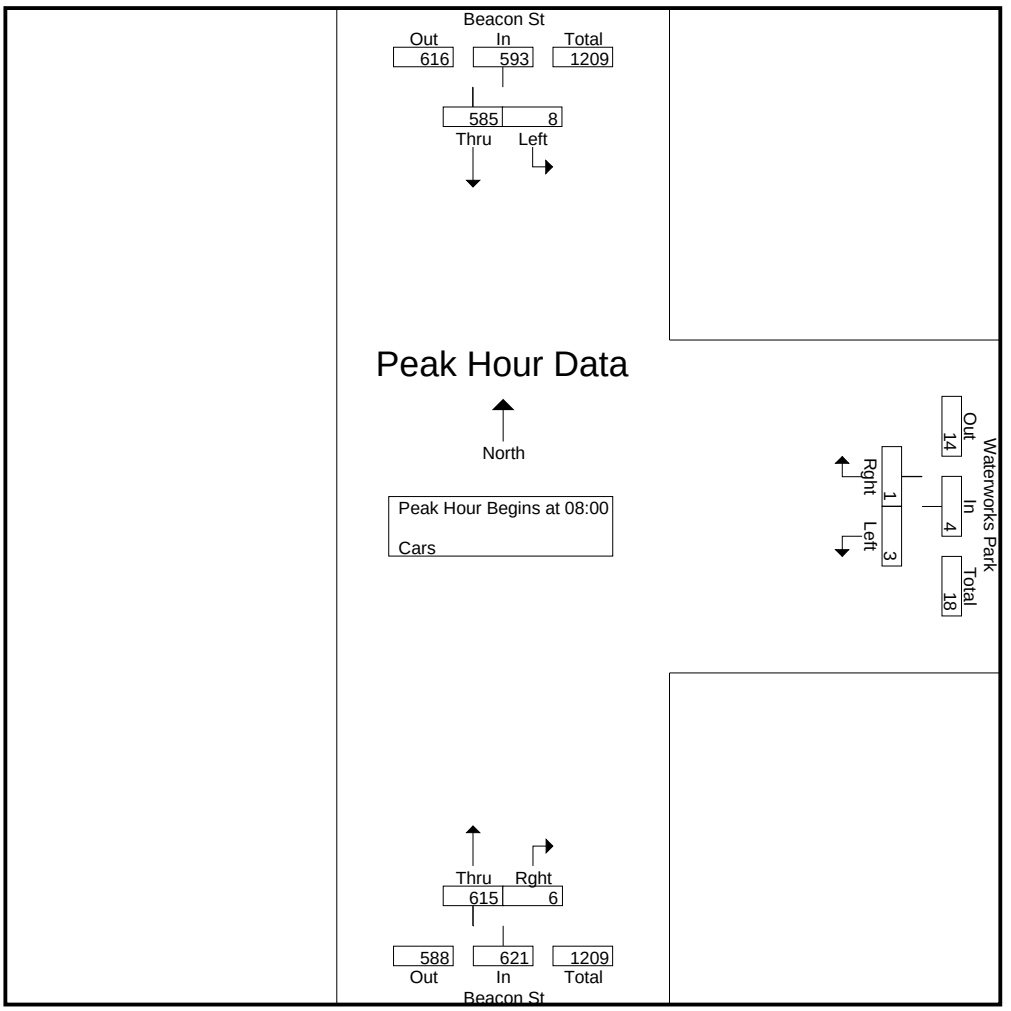
	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	87	0	0	97	1	185
07:15	0	104	0	2	116	1	223
07:30	1	126	0	1	137	1	266
07:45	1	136	0	2	163	0	302
Total	2	453	0	5	513	3	976
08:00	2	133	0	1	162	4	302
08:15	2	146	2	0	160	1	311
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

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

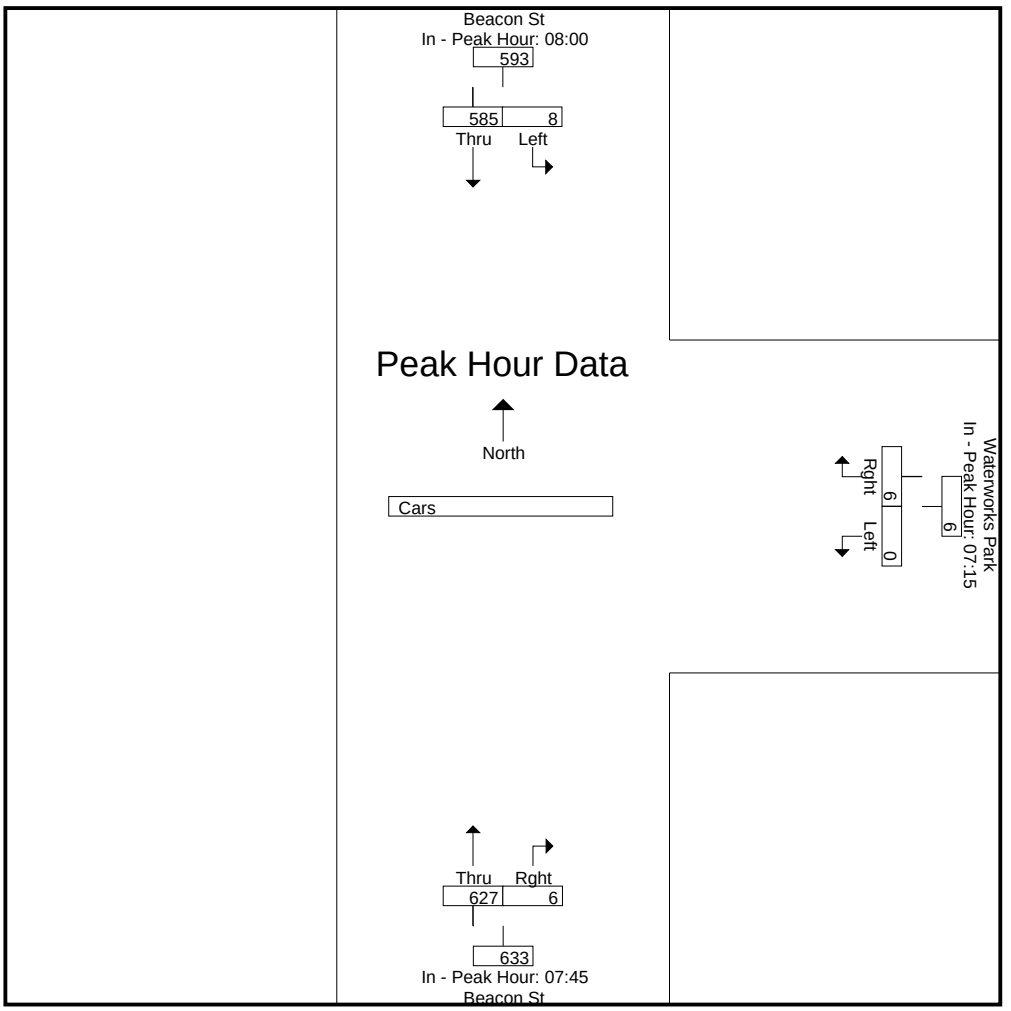
Peak Hour for Each Approach Begins at:

	08:00			07:15			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

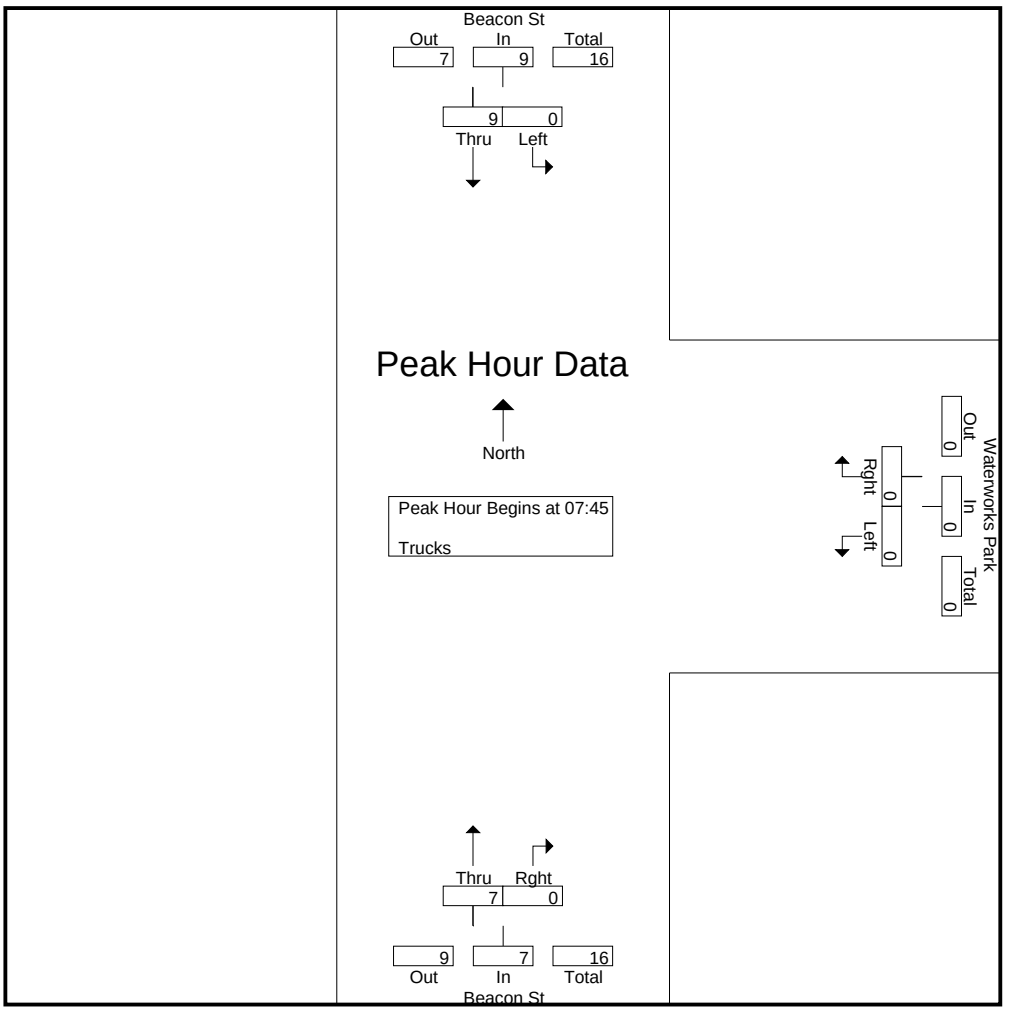
	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	2	0	0	0	0	2
07:15	0	0	0	0	1	0	1
07:30	0	0	0	0	3	0	3
07:45	0	1	0	0	0	0	1
Total	0	3	0	0	4	0	7
08:00	0	2	0	0	1	0	3
08:15	0	1	0	0	1	0	2
08:30	0	5	0	0	5	0	10
08:45	0	0	0	0	1	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

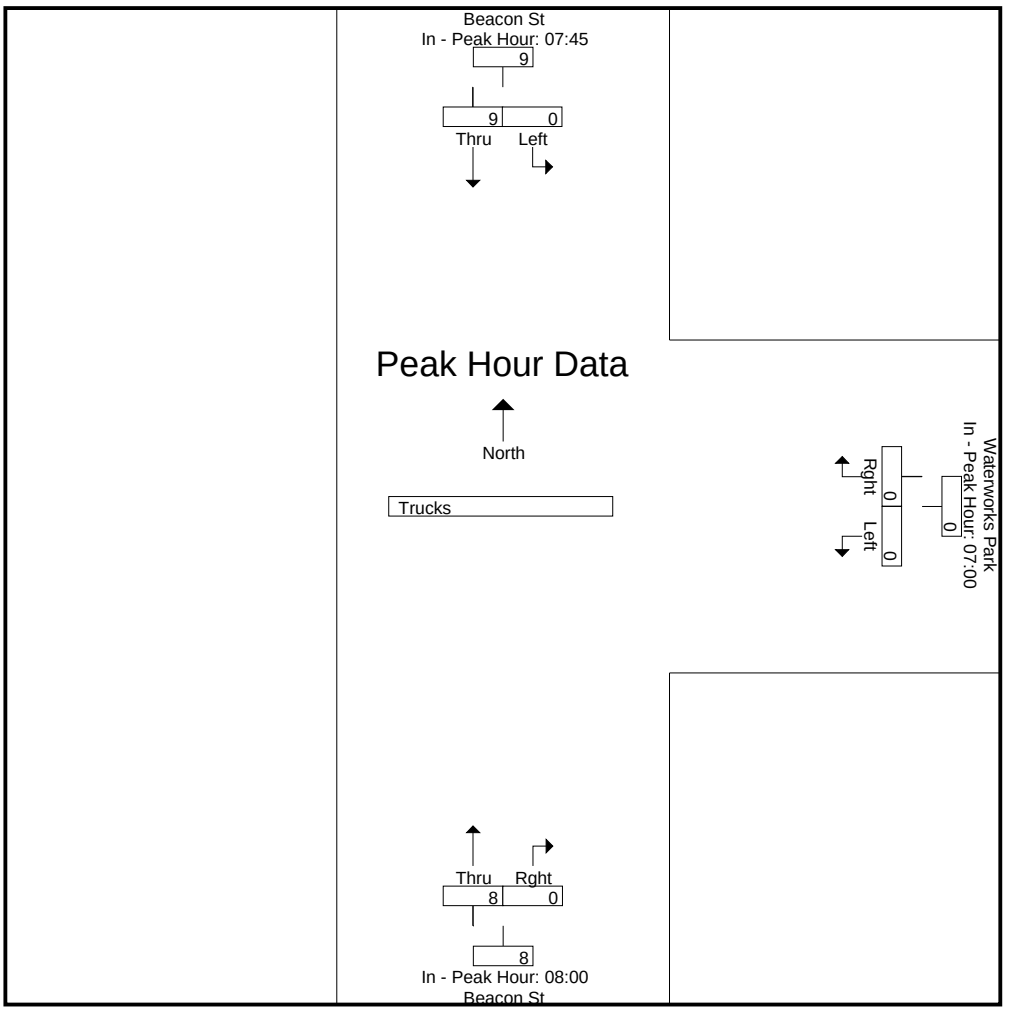
Peak Hour for Each Approach Begins at:

	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

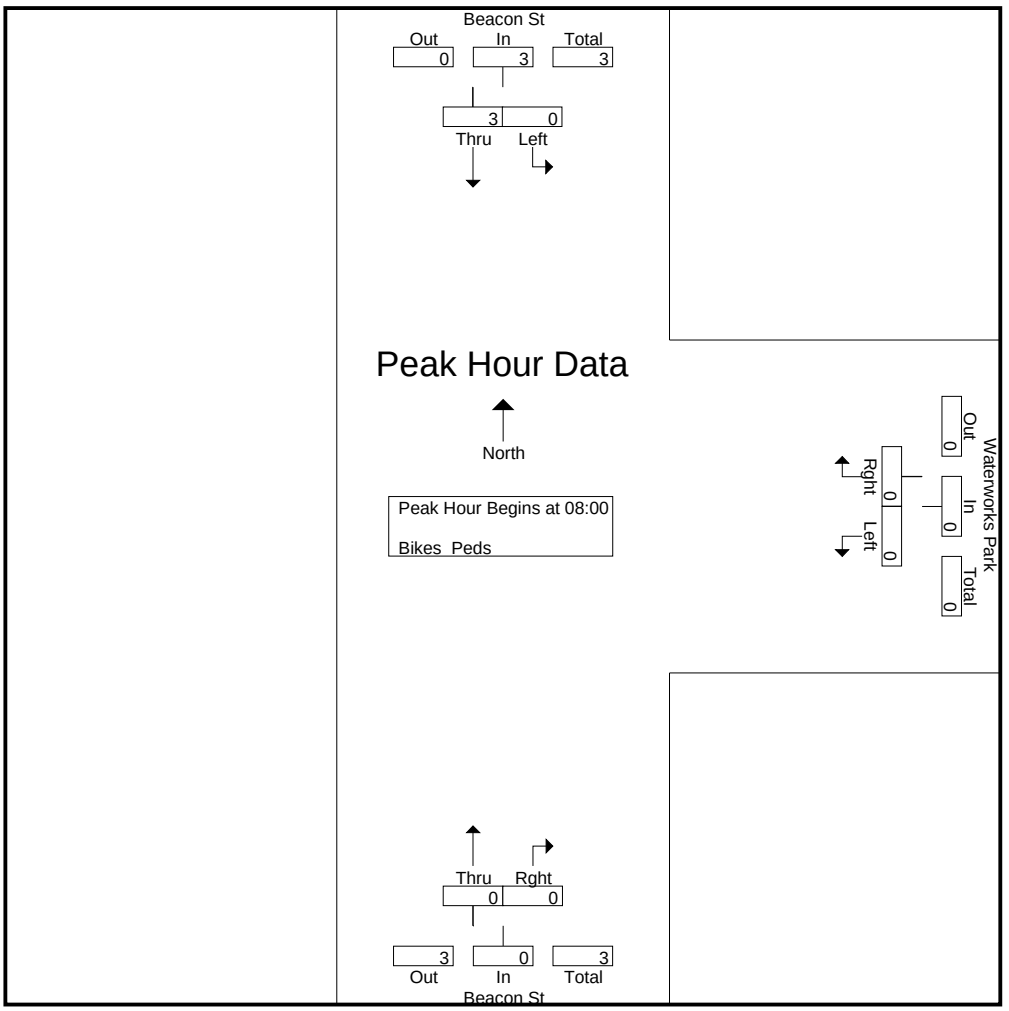
	Beacon St From North			Waterworks Park From East			Beacon St From South					
Start Time	Left	Thru	Peds	Left	Rght	Peds	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	1	0	0	0	1	0	1
07:15	0	0	0	0	0	1	0	0	0	1	0	1
07:30	0	1	0	0	0	2	0	0	0	2	1	3
07:45	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	1	0	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

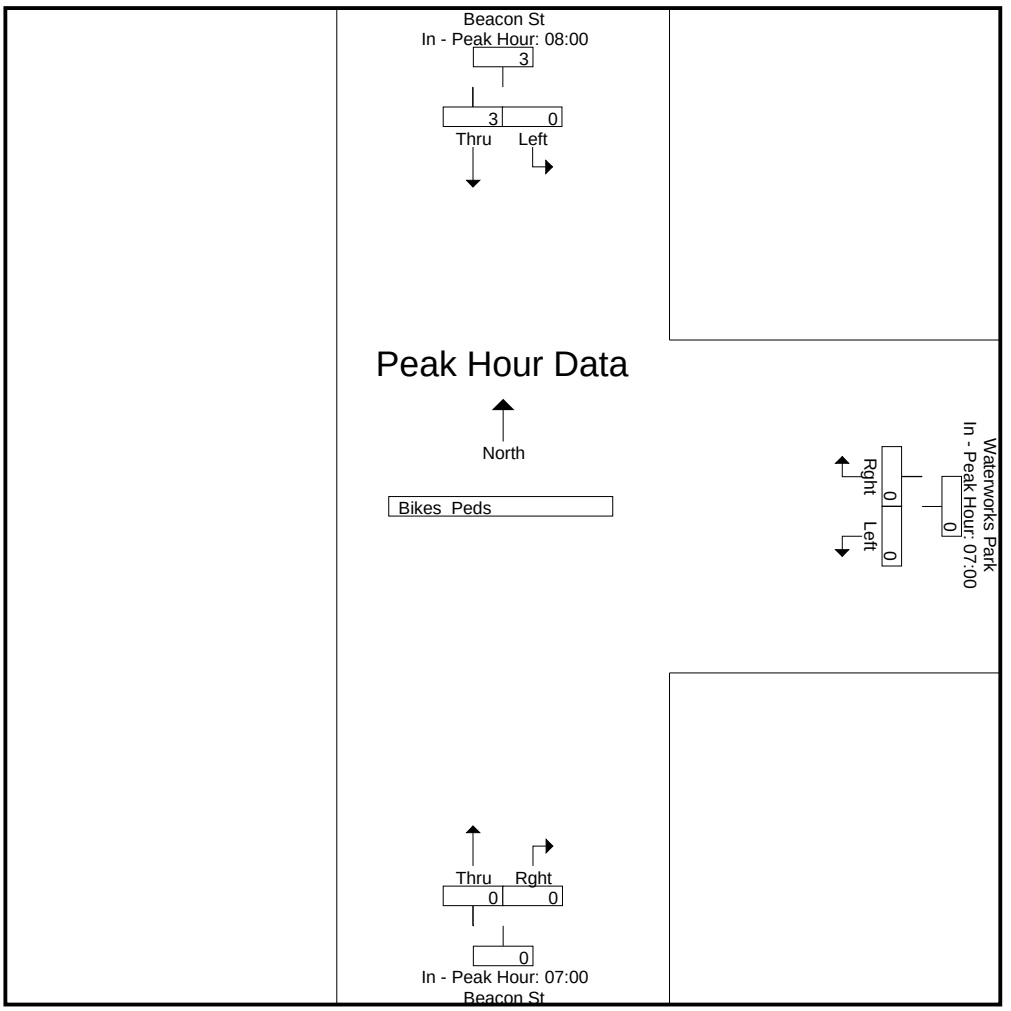
Peak Hour for Each Approach Begins at:

	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
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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

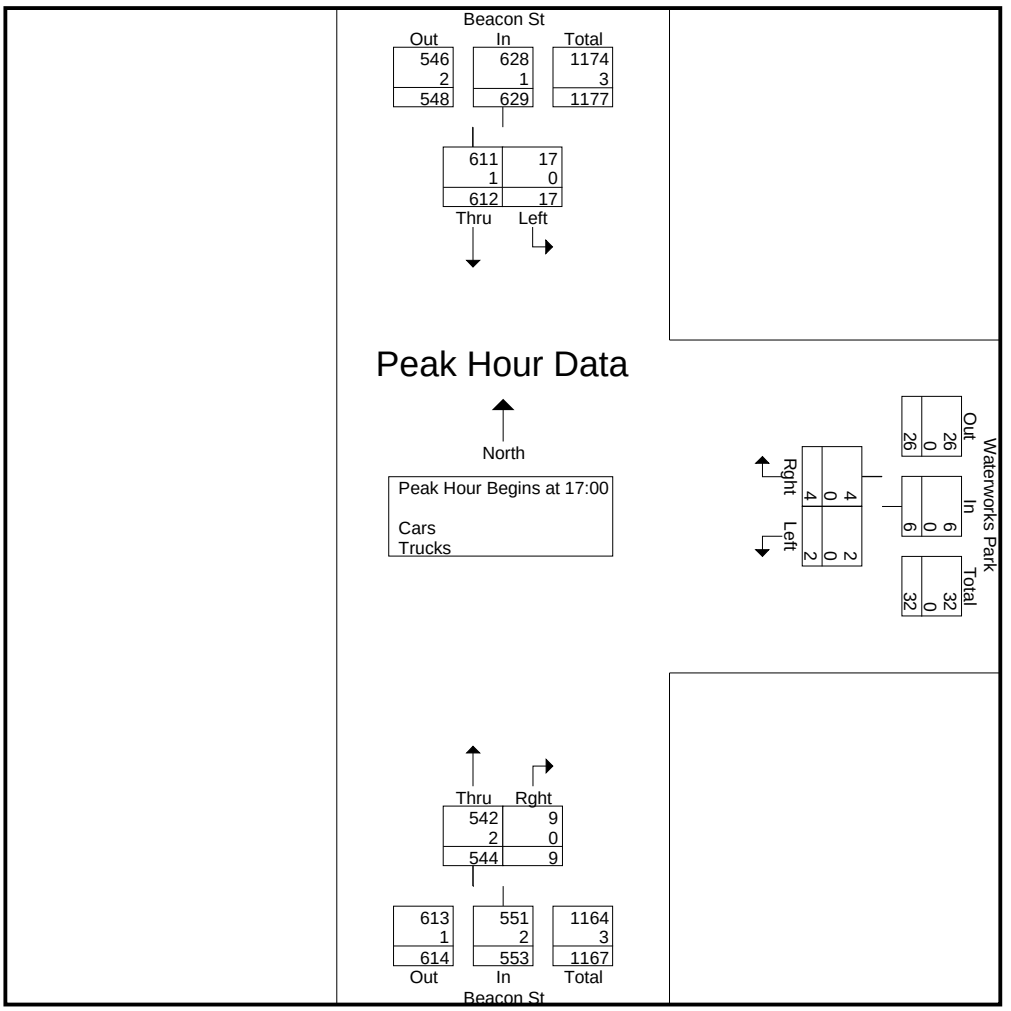
	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	3	139	0	0	114	1	257
16:15	3	142	0	1	102	4	252
16:30	4	129	0	1	123	2	259
16:45	3	144	0	0	116	1	264
Total	13	554	0	2	455	8	1032
17:00	4	136	0	3	144	3	290
17:15	3	175	1	0	127	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

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



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

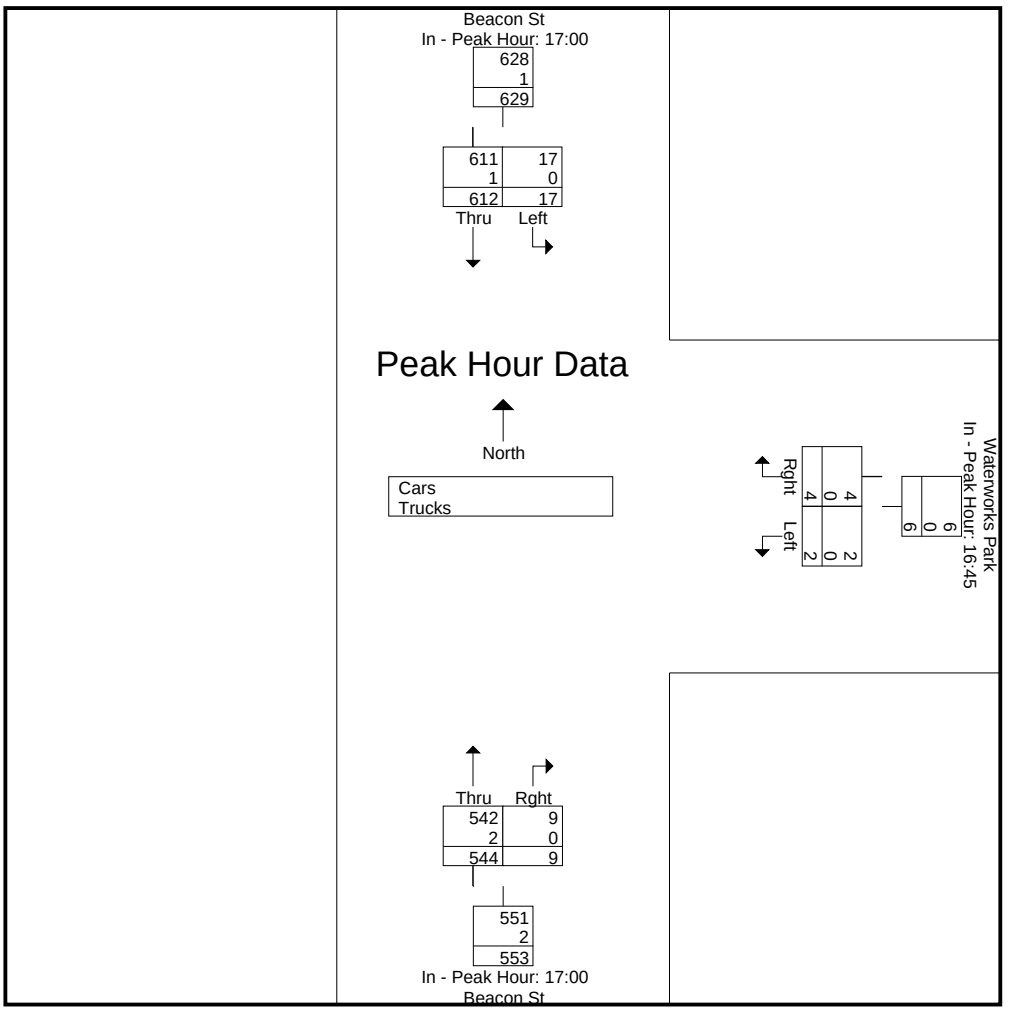
Peak Hour for Each Approach Begins at:

	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

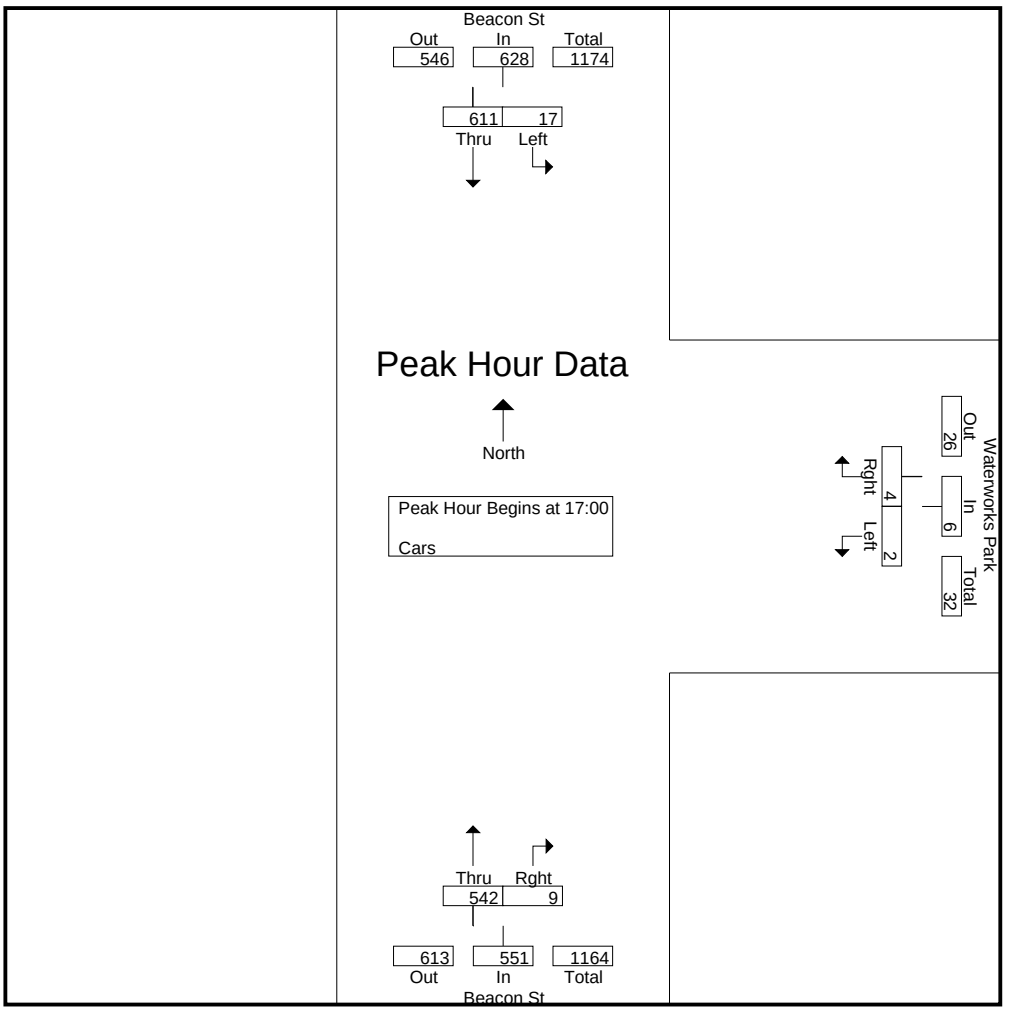
	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	3	138	0	0	113	1	255
16:15	3	142	0	1	100	4	250
16:30	4	129	0	1	122	2	258
16:45	3	143	0	0	116	1	263
Total	13	552	0	2	451	8	1026
17:00	4	136	0	3	143	3	289
17:15	3	175	1	0	127	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

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 16:00 to 17:45 - Peak 1 of 1

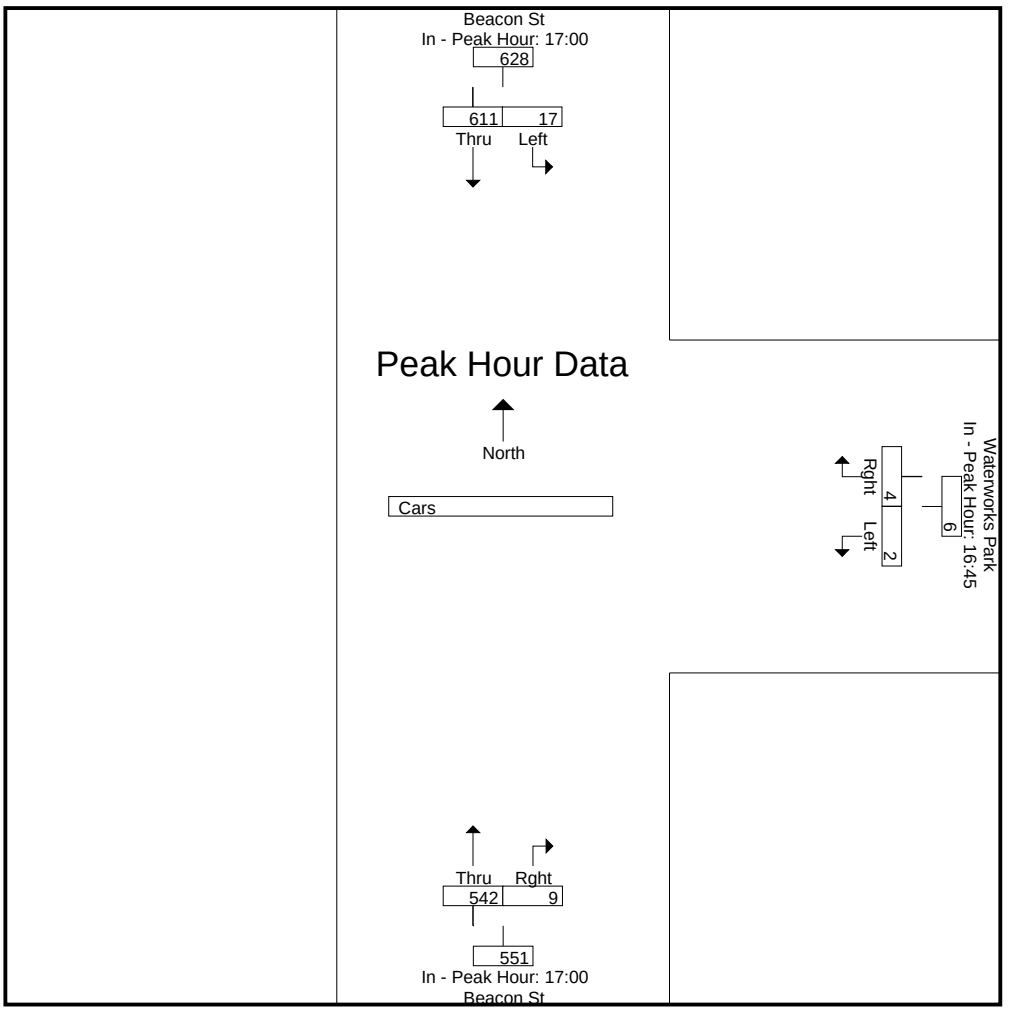
Peak Hour for Each Approach Begins at:

	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

Groups Printed- Trucks

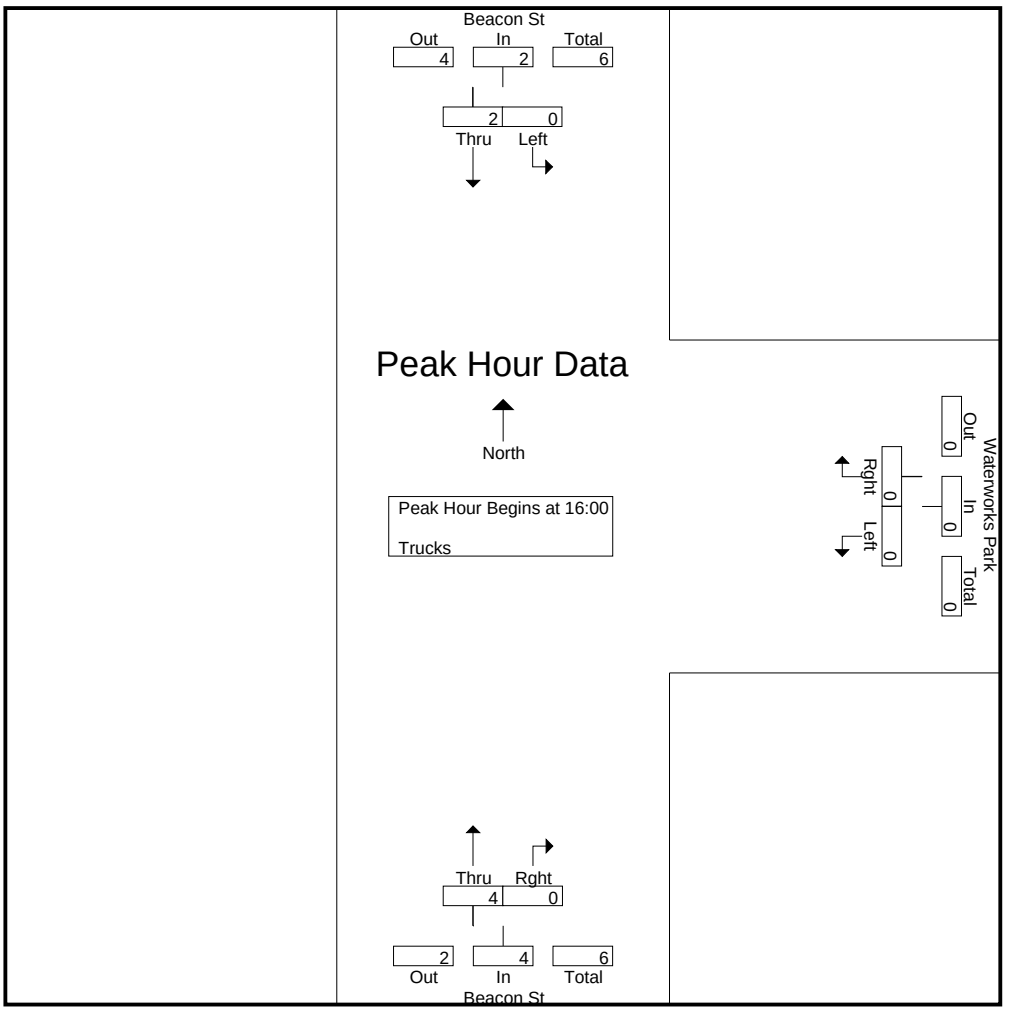
	Beacon St From North		Waterworks Park From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	0	1	0	0	1	0	2
16:15	0	0	0	0	2	0	2
16:30	0	0	0	0	1	0	1
16:45	0	1	0	0	0	0	1
Total	0	2	0	0	4	0	6
17:00	0	0	0	0	1	0	1
17:15	0	0	0	0	0	0	0
17:30	0	0	0	0	1	0	1
17:45	0	1	0	0	0	0	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

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 16:00 to 17:45 - Peak 1 of 1

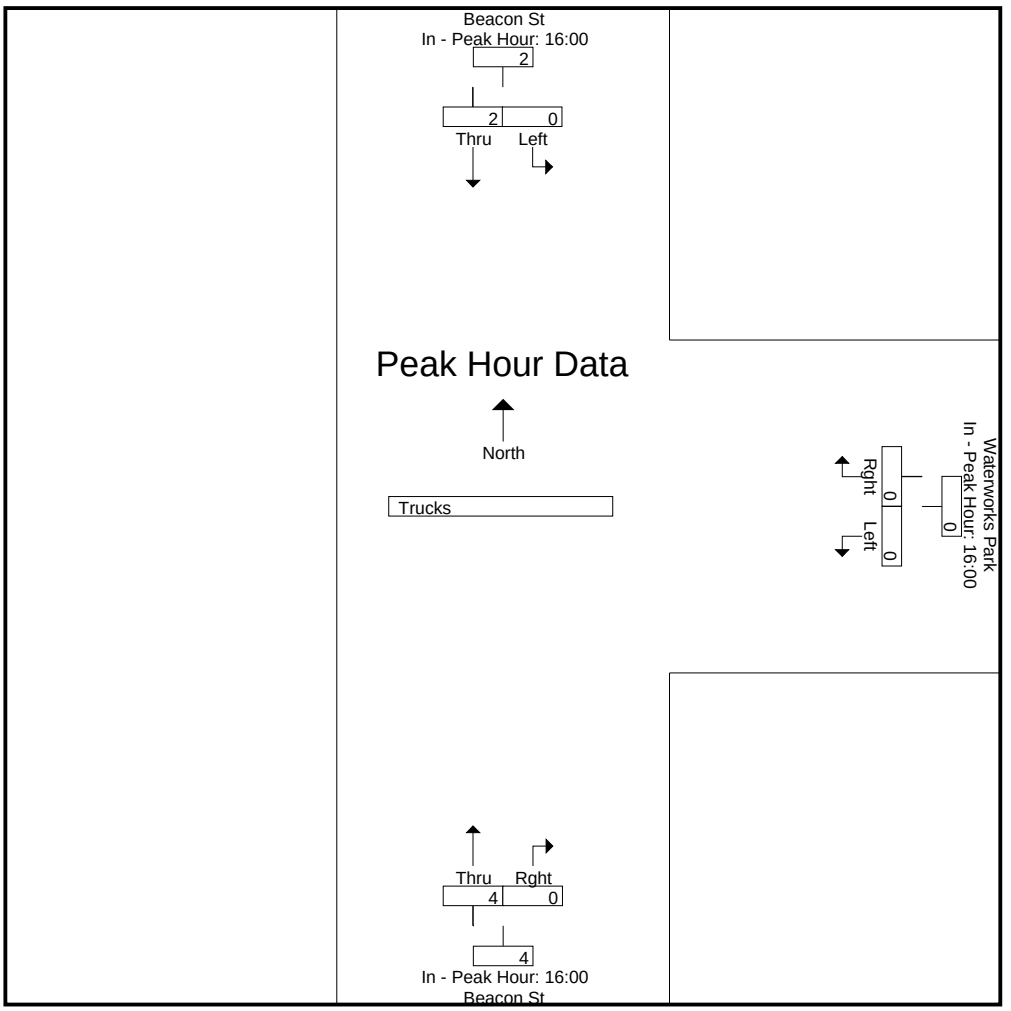
Peak Hour for Each Approach Begins at:

	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

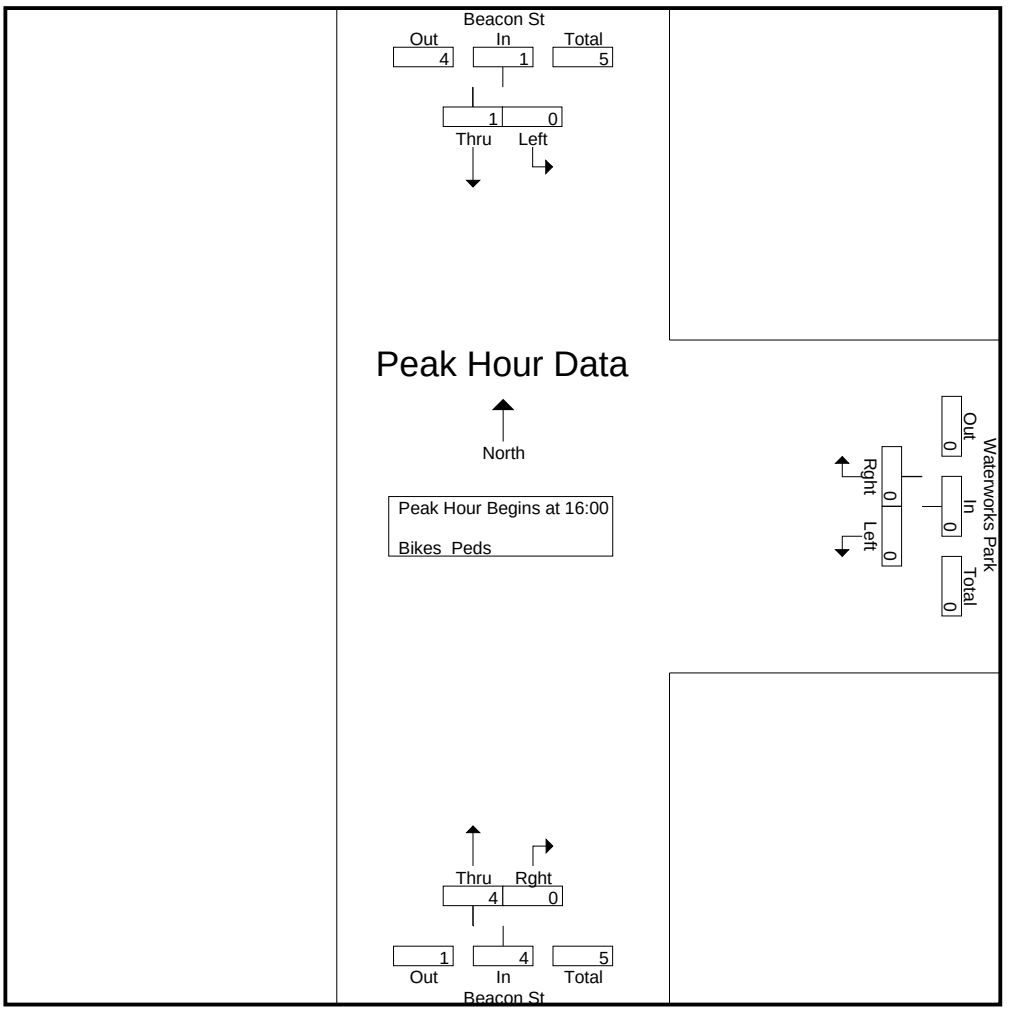
	Beacon St From North			Waterworks Park From East			Beacon St From South					
Start Time	Left	Thru	Peds	Left	Rght	Peds	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	0	0	0	0	0	2	2	0	0	2	2	4
16:15	0	1	0	0	0	10	1	0	0	10	2	12
16:30	0	0	0	0	0	1	1	0	0	1	1	2
16:45	0	0	0	0	0	2	0	0	0	2	0	2
Total	0	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

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 16:00 to 17:45 - Peak 1 of 1

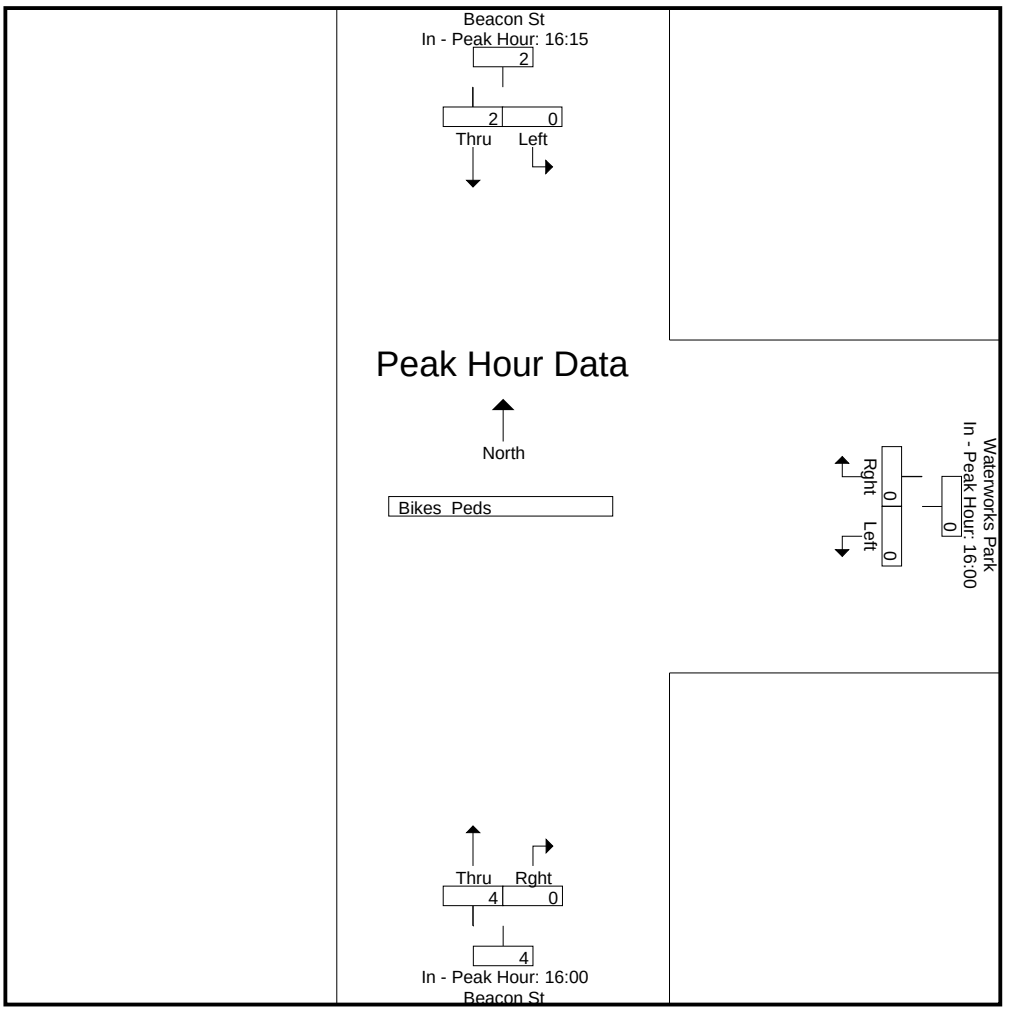
Peak Hour for Each Approach Begins at:

	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

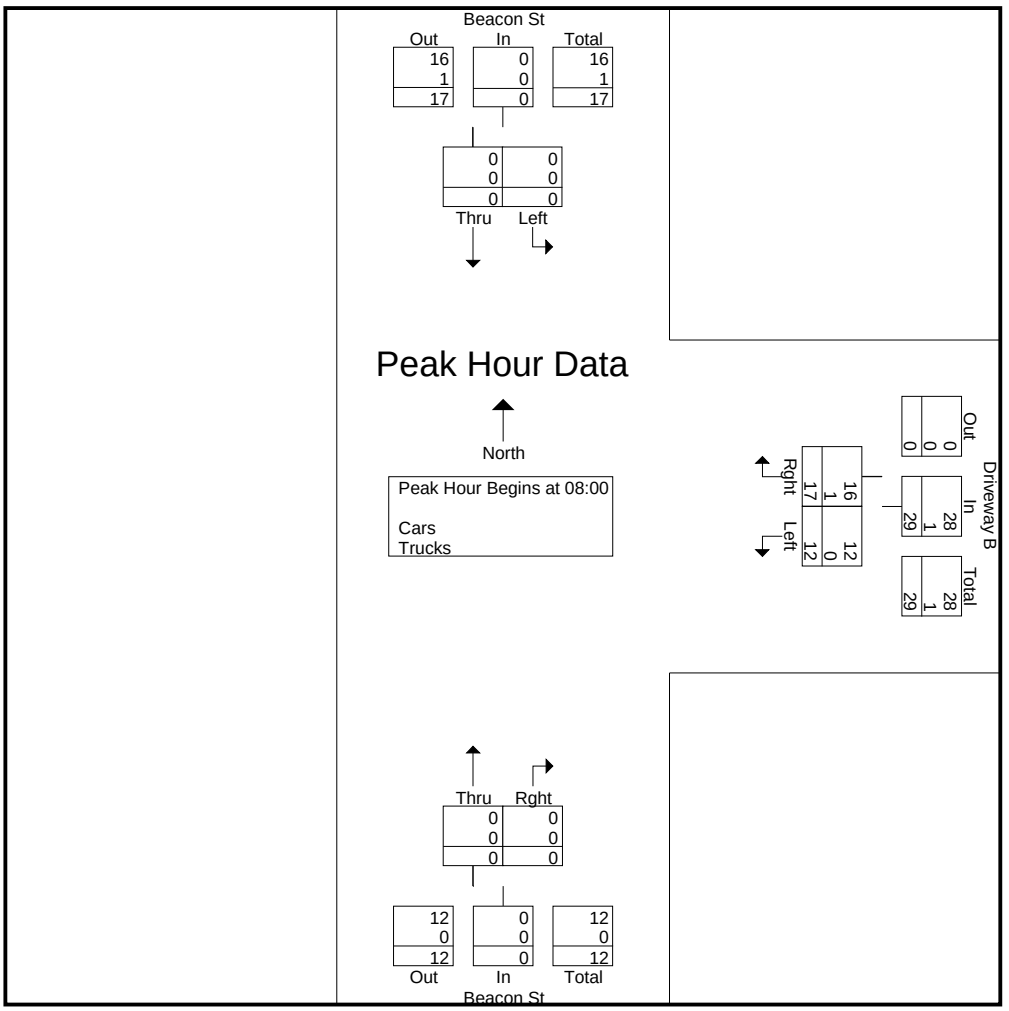
Groups Printed- Cars - Trucks

	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

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

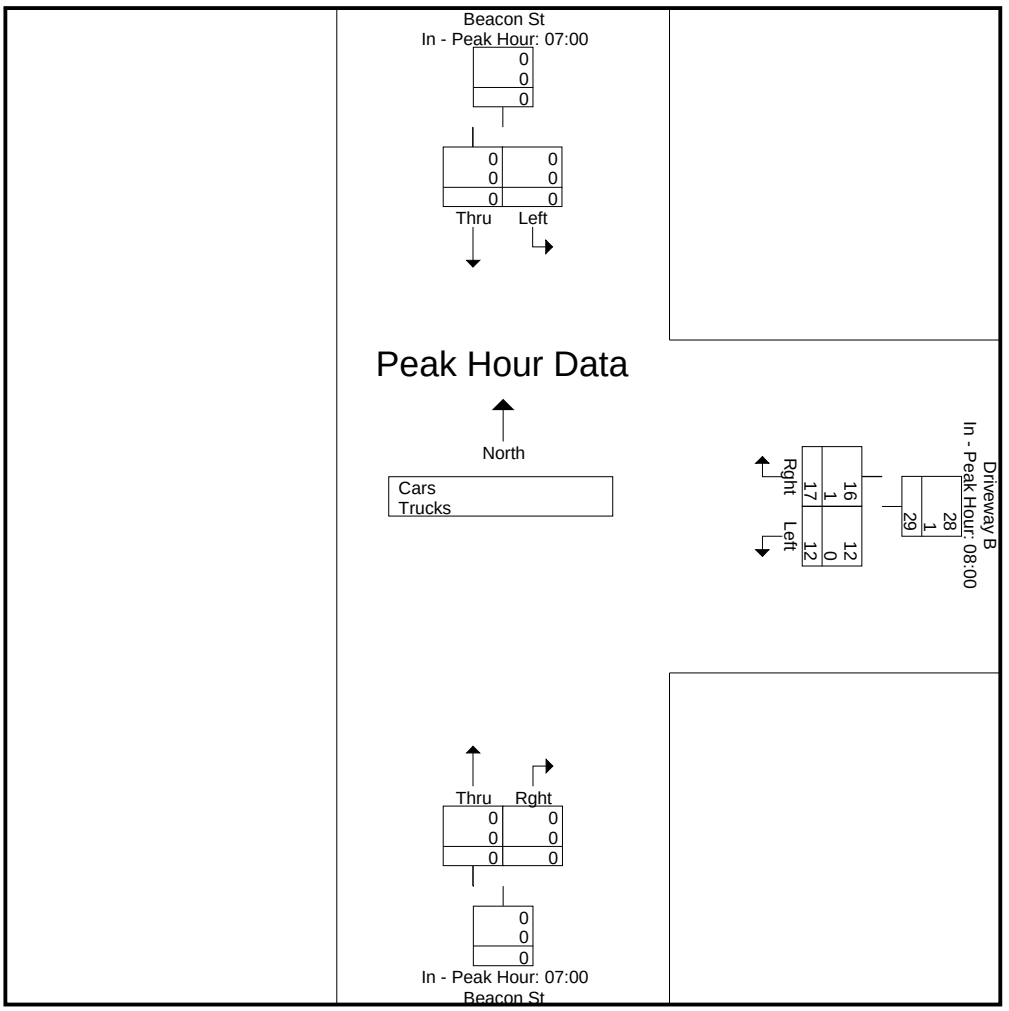
Peak Hour for Each Approach Begins at:

	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

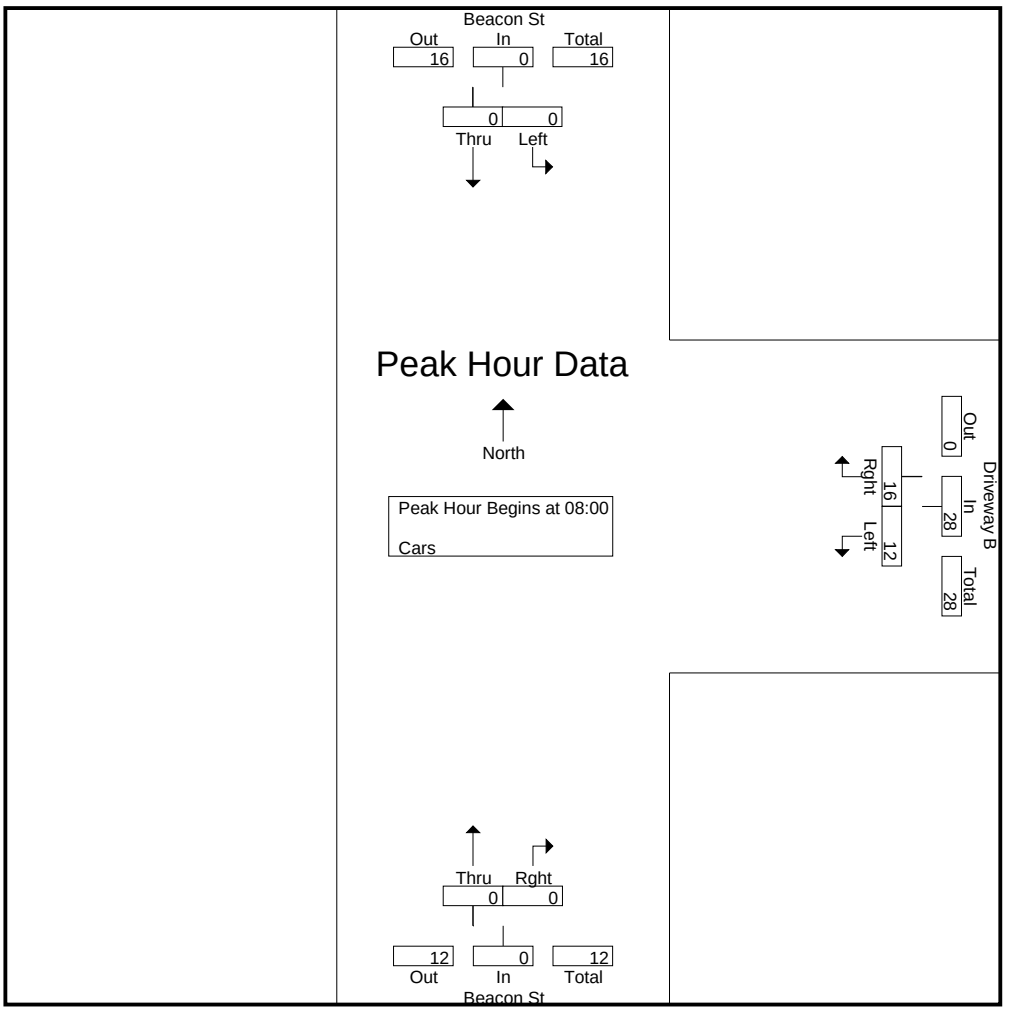
	Beacon St From North		Driveway B From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	0	2	1	0	0	3
07:15	0	0	1	5	0	0	6
07:30	0	0	4	5	0	0	9
07:45	0	0	0	2	0	0	2
Total	0	0	7	13	0	0	20
08:00	0	0	2	4	0	0	6
08:15	0	0	4	1	0	0	5
08:30	0	0	2	8	0	0	10
08:45	0	0	4	3	0	0	7
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

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

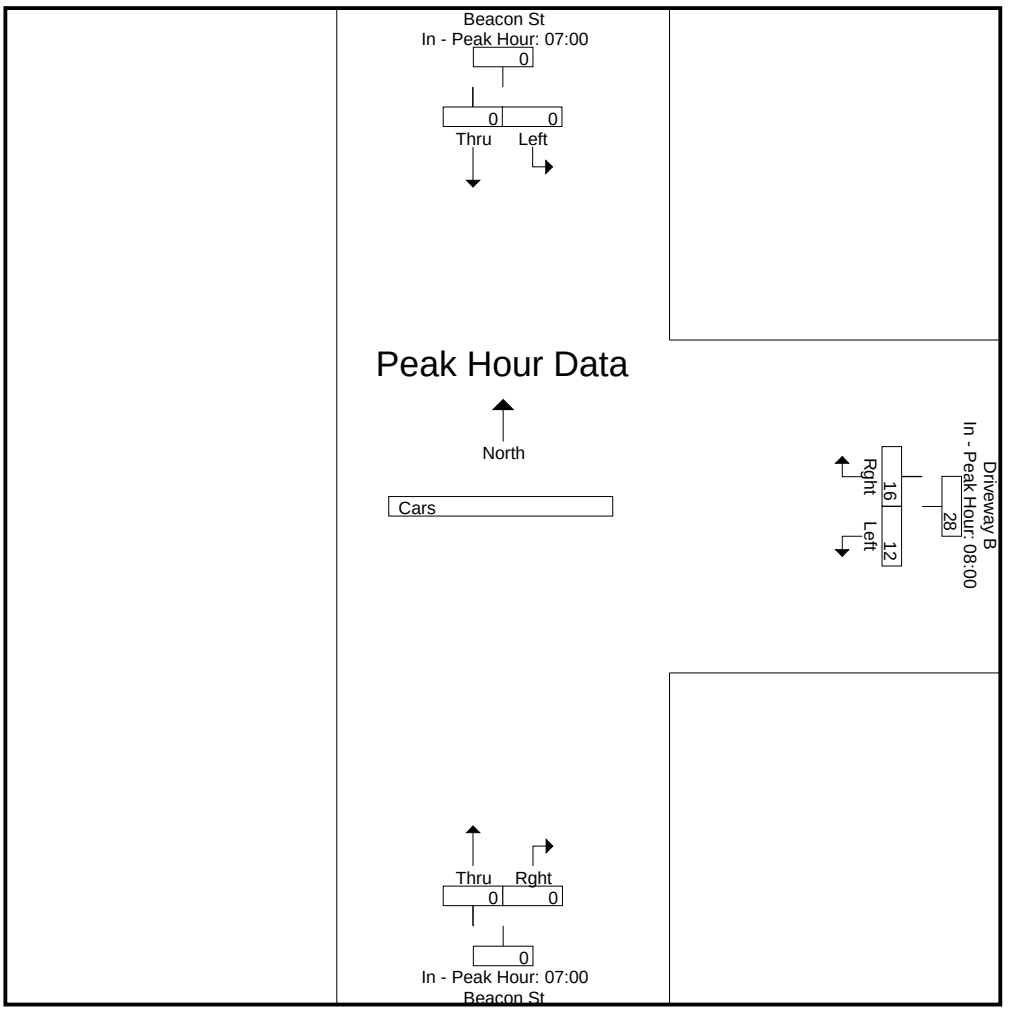
Peak Hour for Each Approach Begins at:

	07:00			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

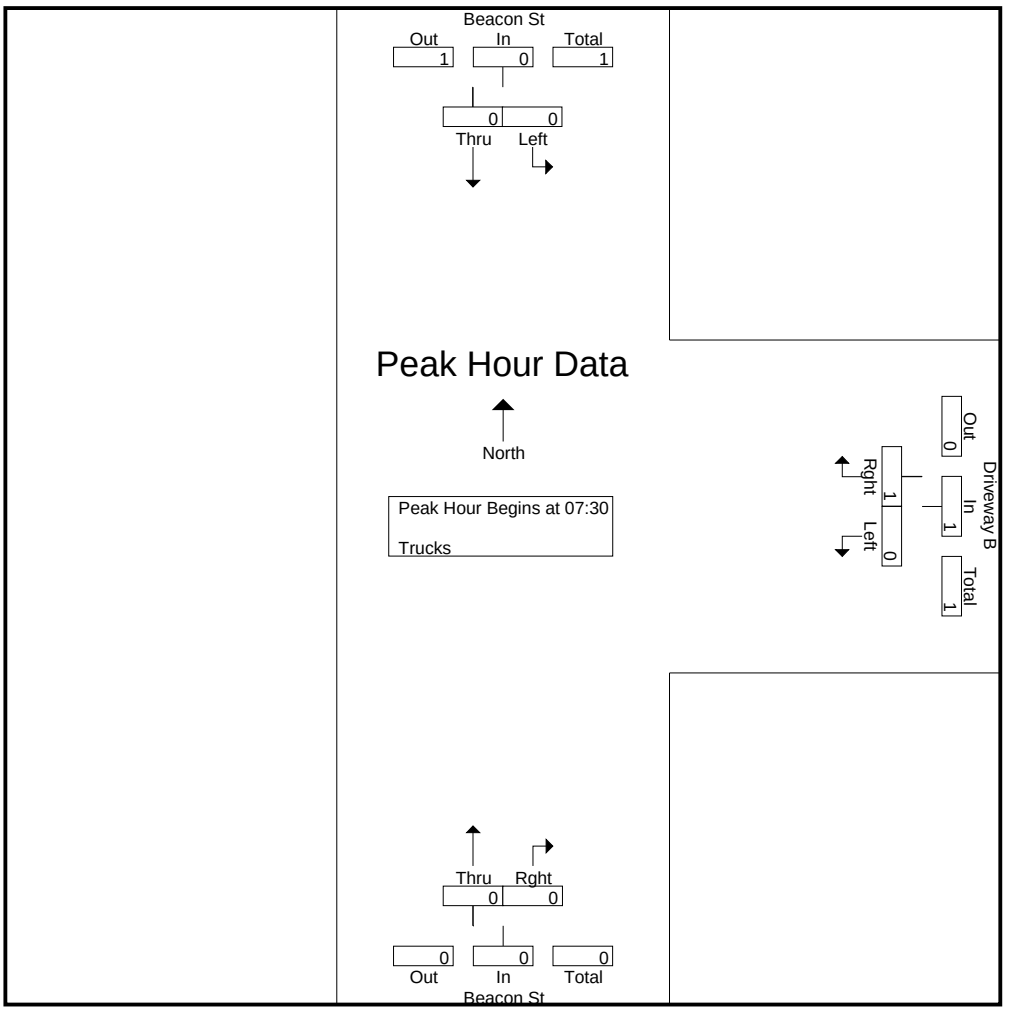
	Beacon St From North		Driveway B From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0
08:15	0	0	0	1	0	0	1
08:30	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0
Total	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

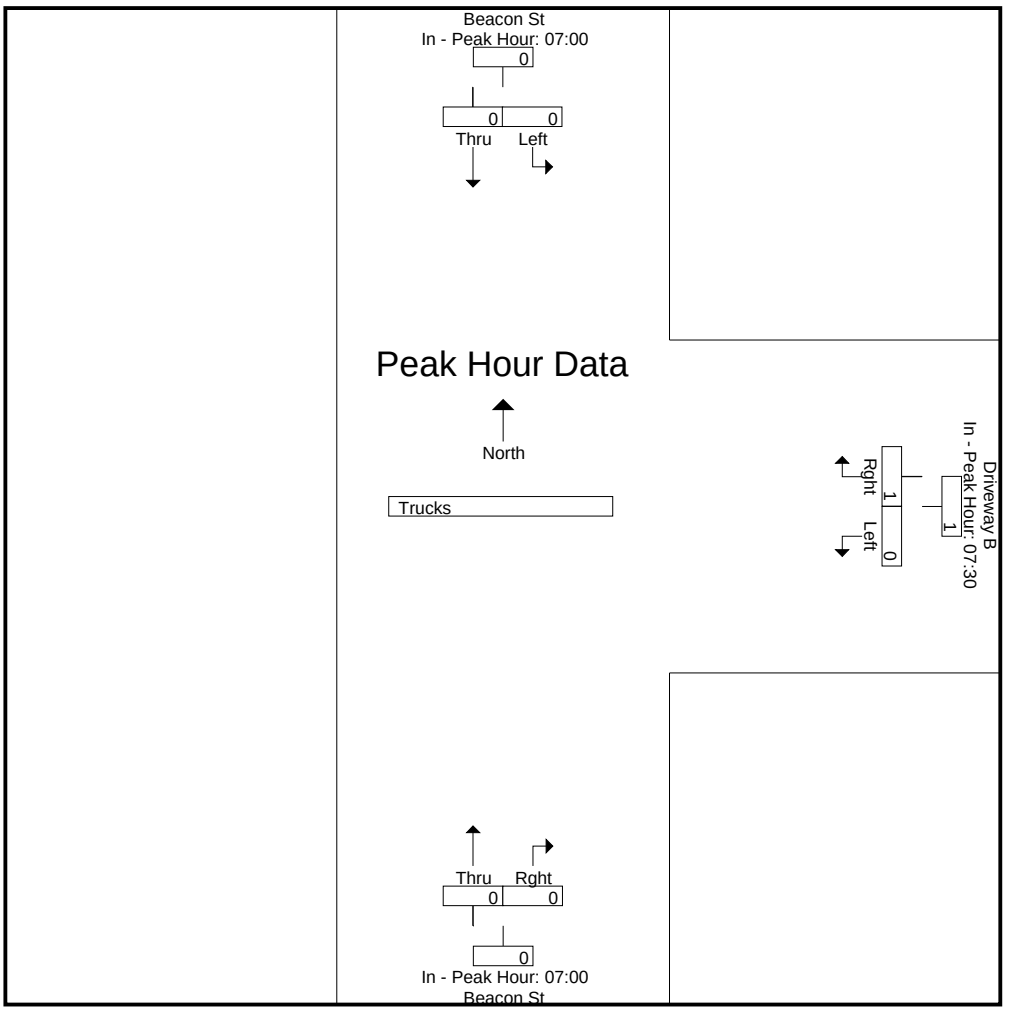
Peak Hour for Each Approach Begins at:

	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
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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

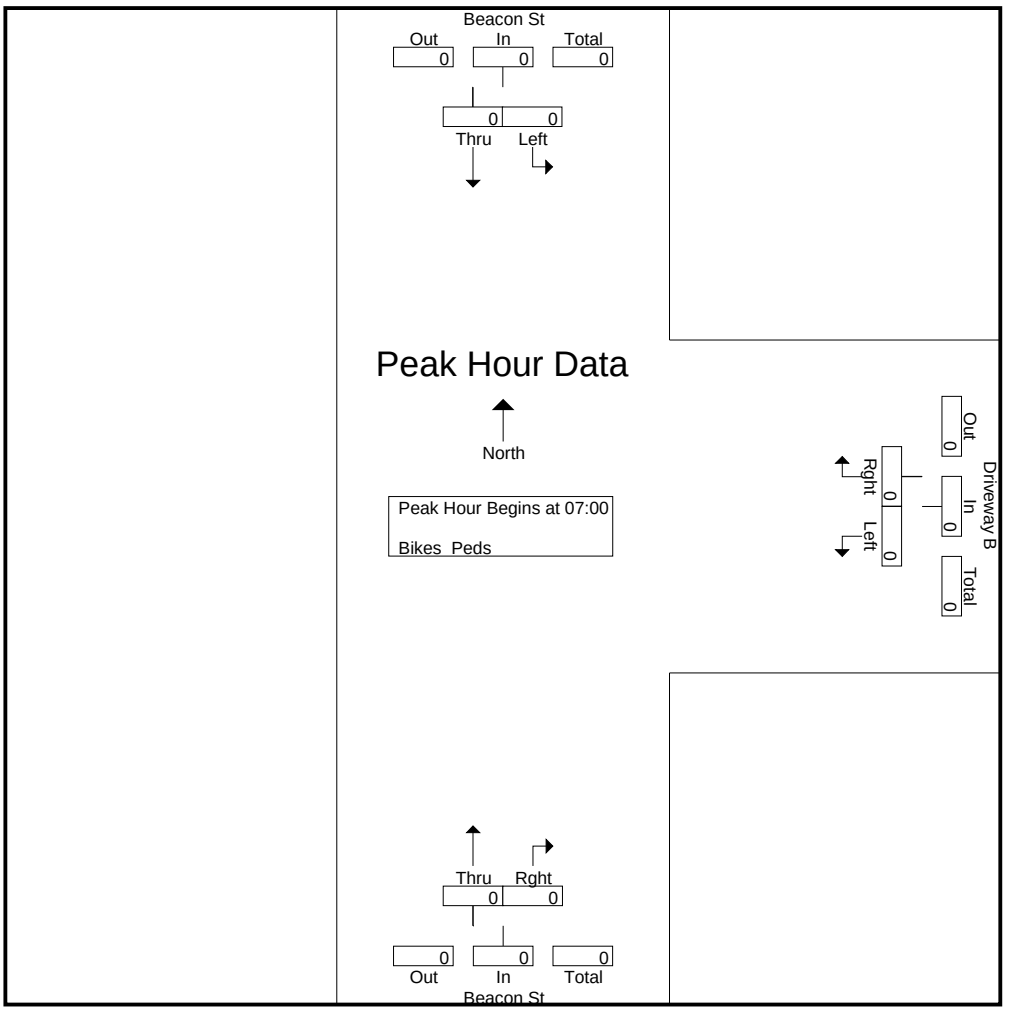
	Beacon St From North			Driveway B From East			Beacon St From South					
Start Time	Left	Thru	Peds	Left	Rght	Peds	Thru	Rght	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	0	1	0	0	0	1	0	1
07:15	0	0	0	0	0	1	0	0	0	1	0	1
07:30	0	0	0	0	0	2	0	0	0	2	0	2
07:45	0	0	0	0	0	2	0	0	0	2	0	2
Total	0	0	0	0	0	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

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

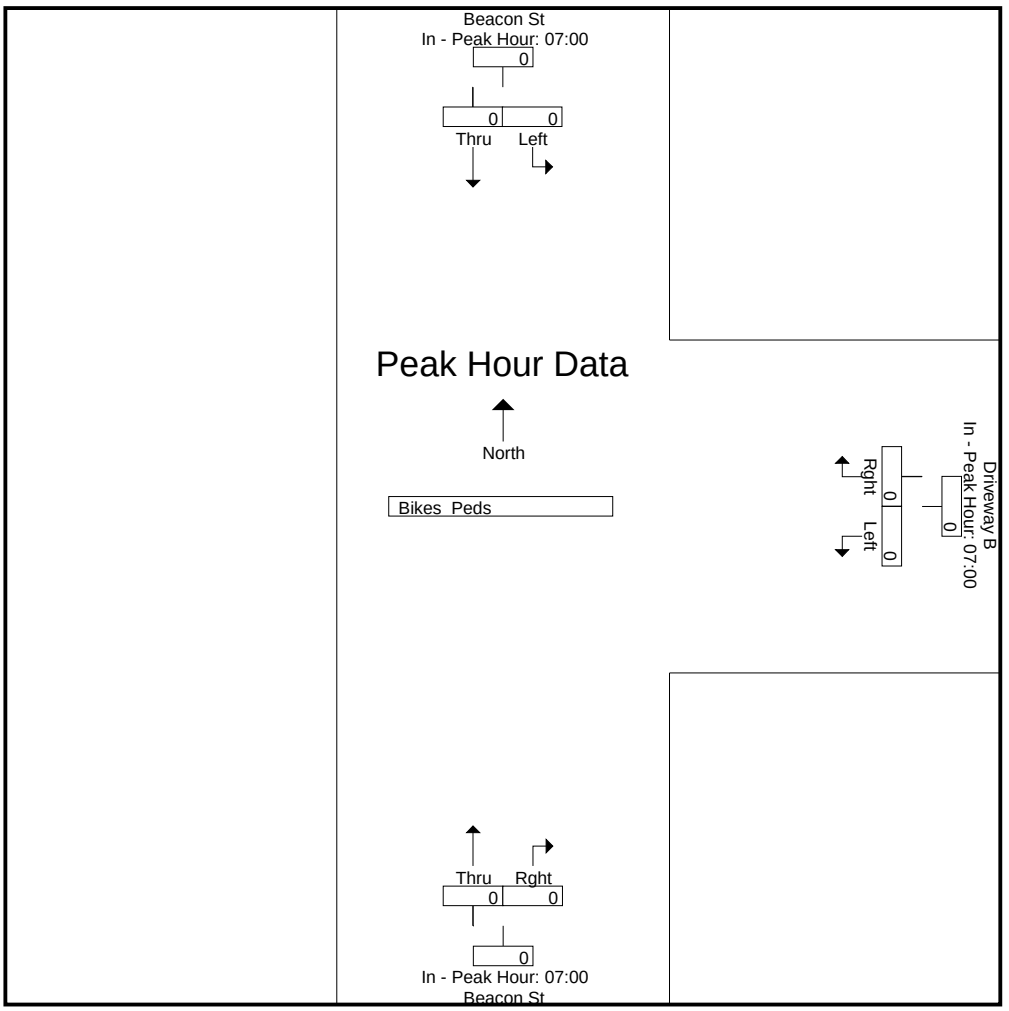
Peak Hour for Each Approach Begins at:

	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

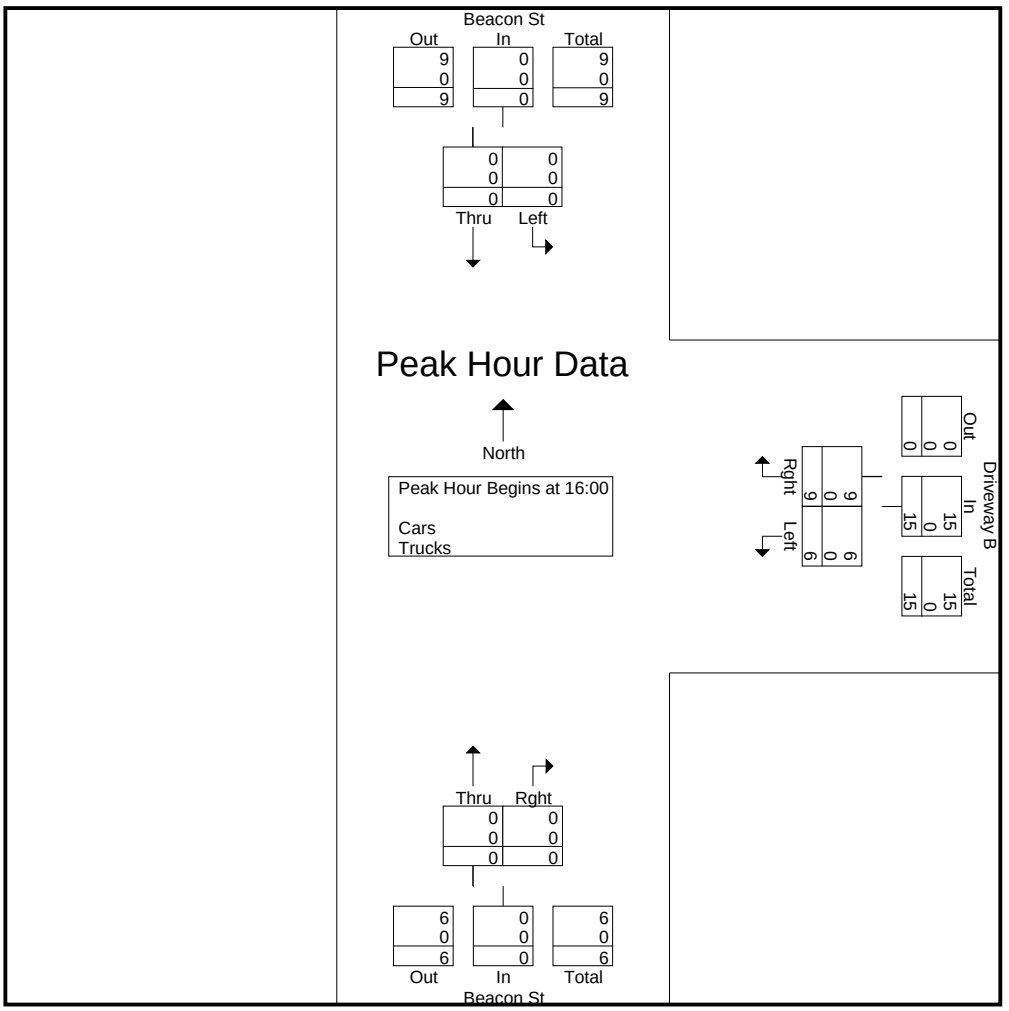
	Beacon St From North		Driveway B From East		Beacon St From South		
Start Time	Left	Thru	Left	Rght	Thru	Rght	Int. Total
16:00	0	0	2	2	0	0	4
16:15	0	0	1	2	0	0	3
16:30	0	0	1	1	0	0	2
16:45	0	0	2	4	0	0	6
Total	0	0	6	9	0	0	15
17:00	1	0	2	1	0	0	4
17:15	0	0	0	1	0	0	1
17:30	0	0	3	1	0	0	4
17:45	0	0	3	2	0	1	6
Total	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
Page No : 2



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

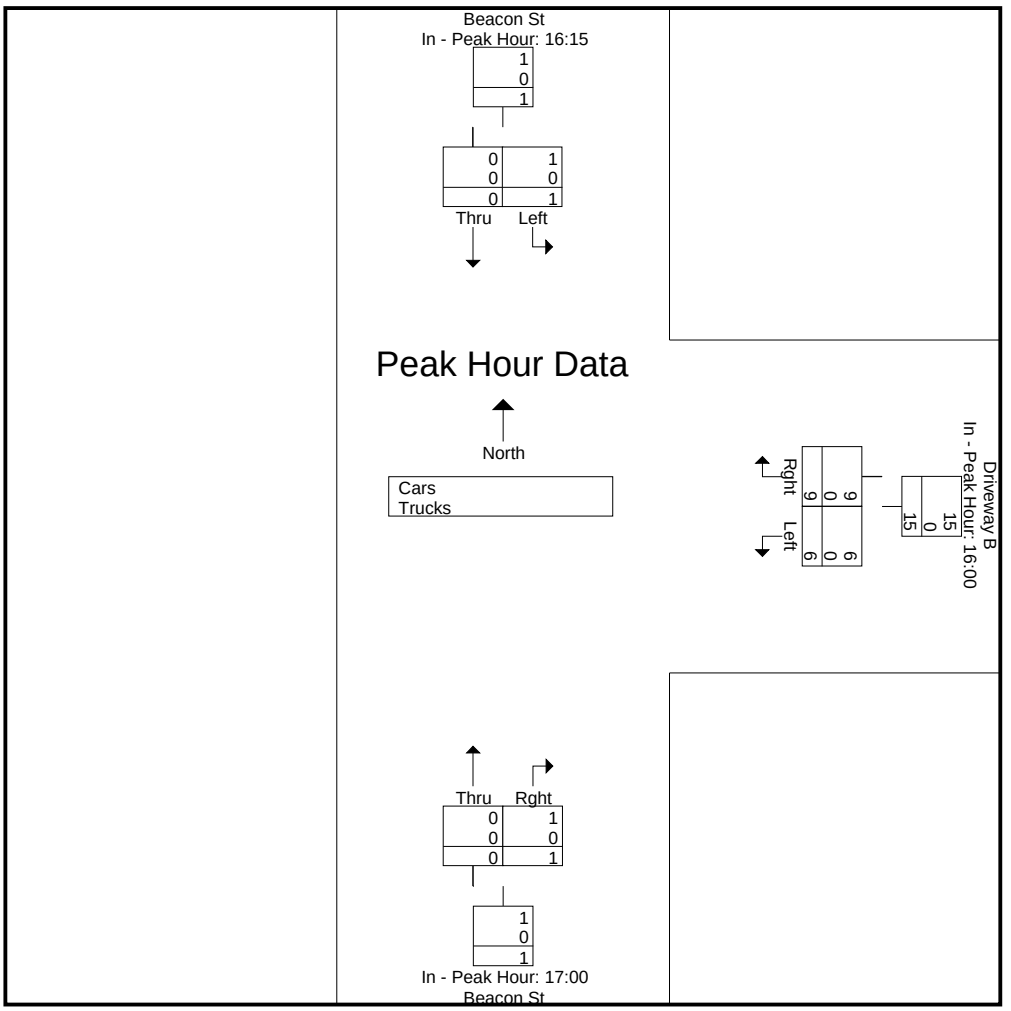
Peak Hour for Each Approach Begins at:

	16:15			16:00			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

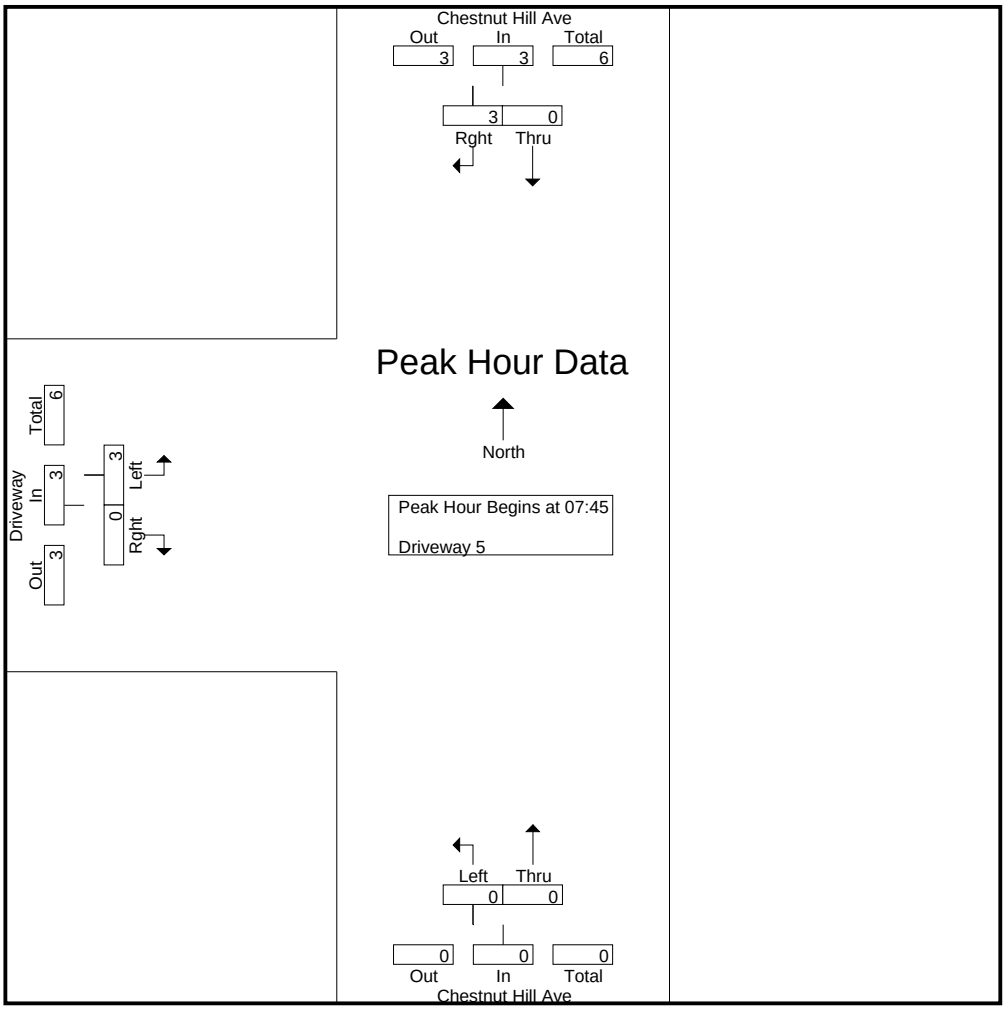
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	1	0	0	0	1	2
07:30	0	1	0	0	0	0	1
07:45	0	0	0	0	1	0	1
Total	0	2	0	0	1	1	4
08:00	0	0	0	0	1	0	1
08:15	0	2	0	0	0	0	2
08:30	0	1	0	0	1	0	2
08:45	0	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
Page No : 2



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

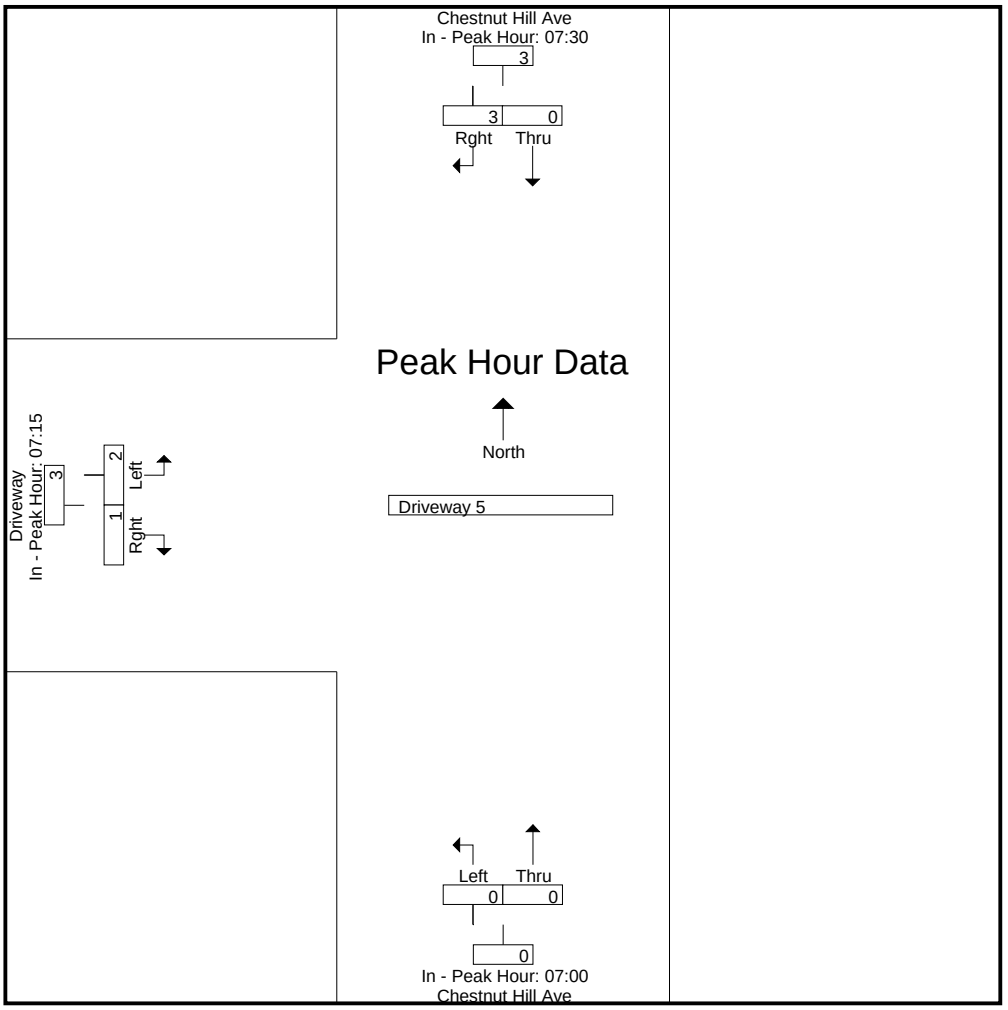
Peak Hour for Each Approach Begins at:

	07:30			07:00			07:15		
+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

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
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Groups Printed- Driveway 6

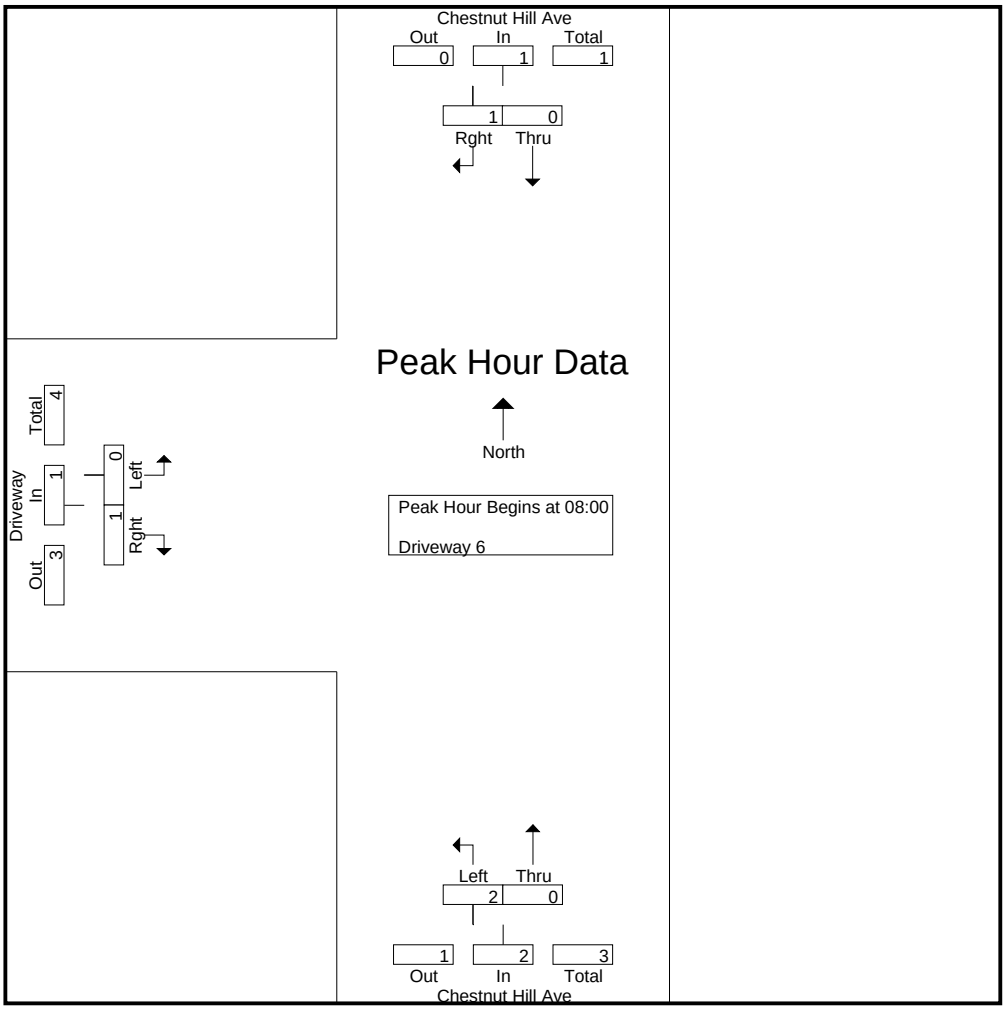
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	0	0	0	0	1	1
07:45	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1
08:00	0	1	0	0	0	0	1
08:15	0	0	0	0	0	0	0
08:30	0	0	1	0	0	1	2
08:45	0	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

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

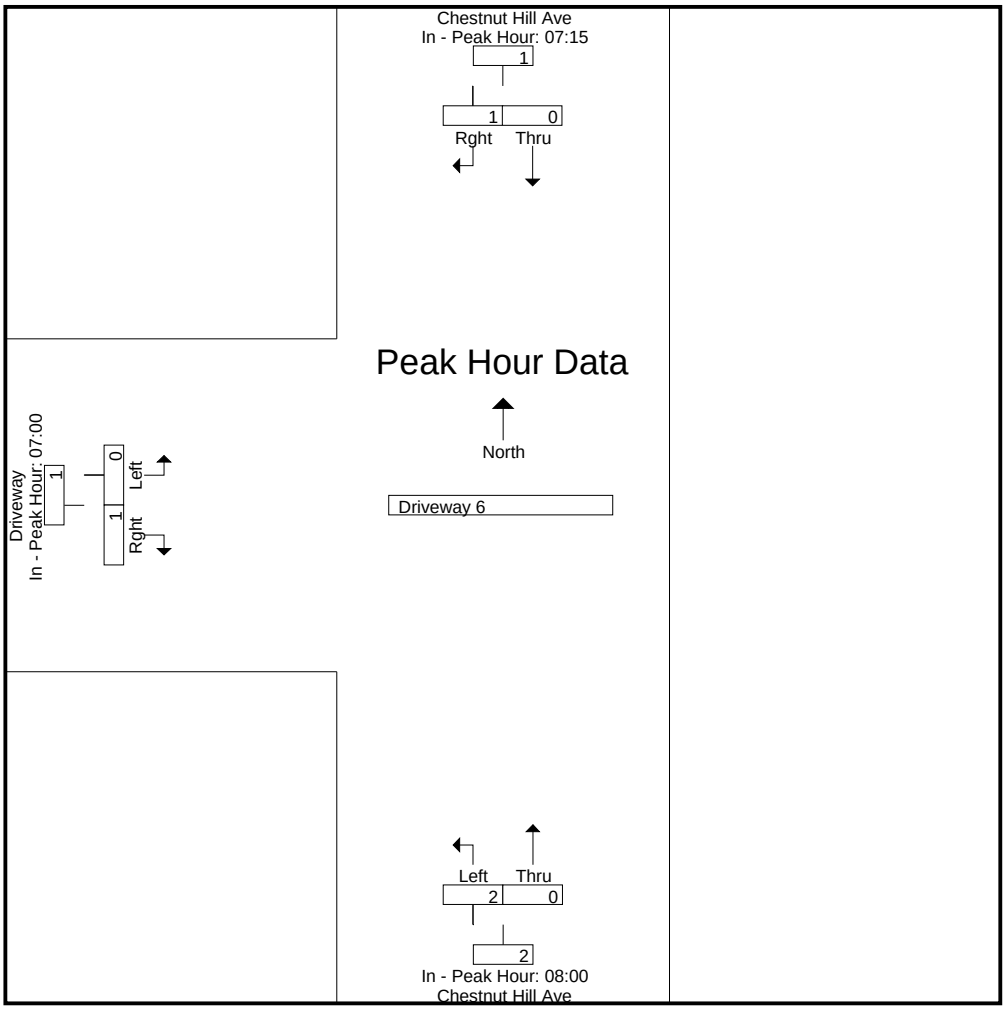
Peak Hour for Each Approach Begins at:

	07:15			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
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Groups Printed- Driveway 5

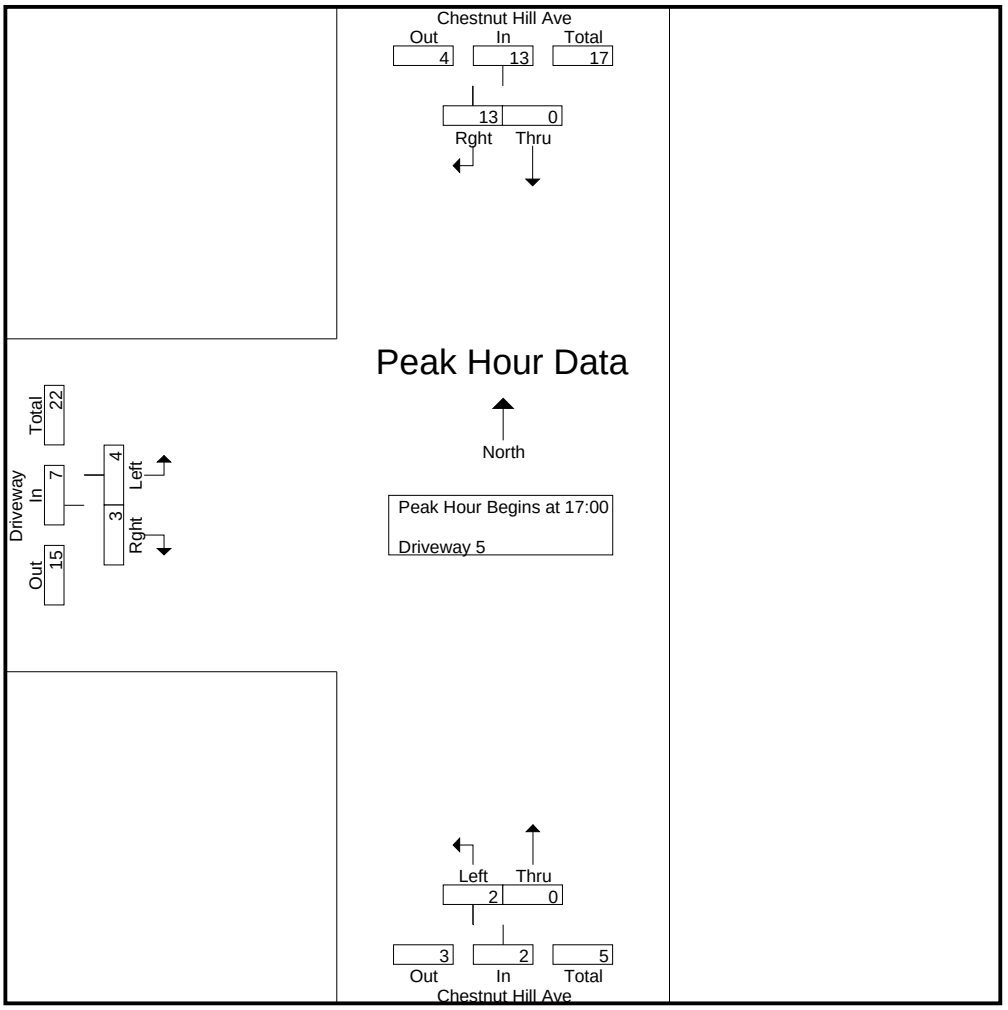
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	0	0	0	0	0	0
16:15	0	3	0	0	0	0	3
16:30	0	0	0	0	0	1	1
16:45	0	1	0	0	2	0	3
Total	0	4	0	0	2	1	7
17:00	0	5	2	0	1	0	8
17:15	0	2	0	0	1	1	4
17:30	0	3	0	0	2	1	6
17:45	0	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

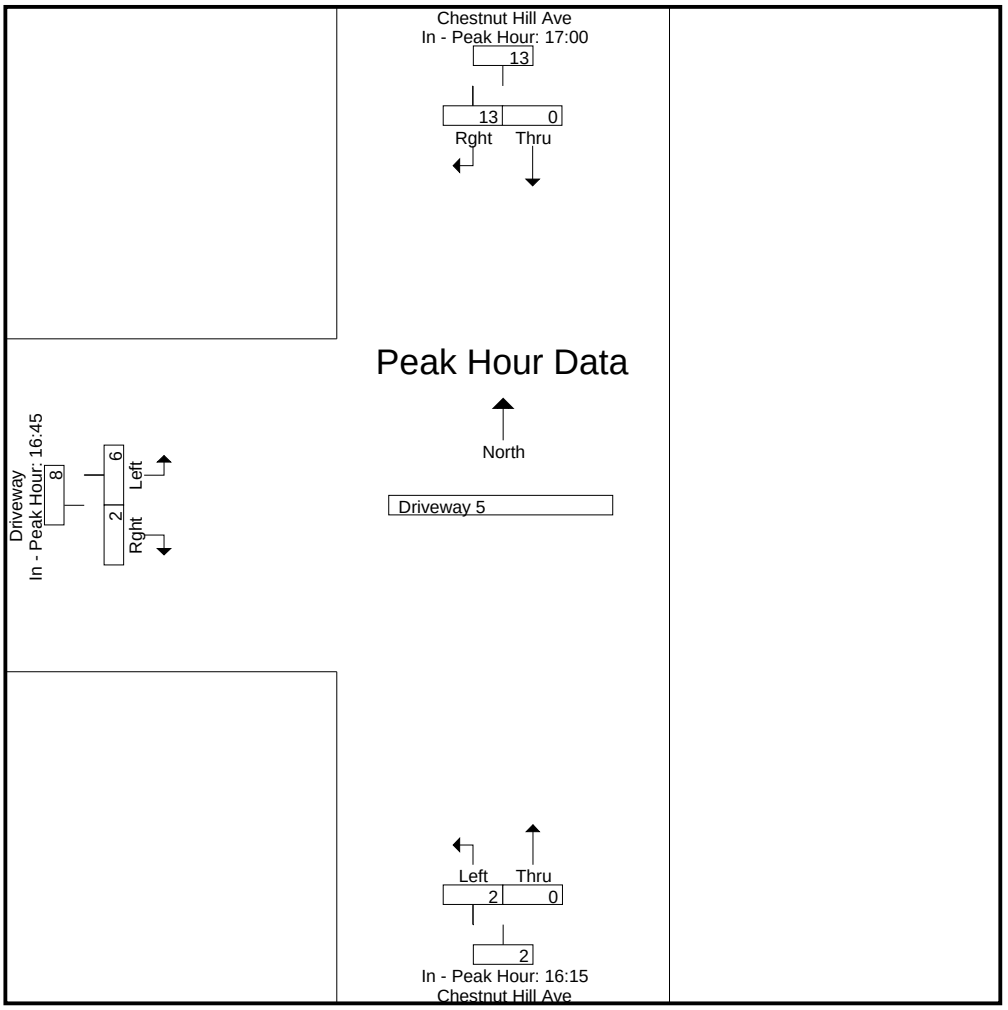
Peak Hour for Each Approach Begins at:

	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

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 6

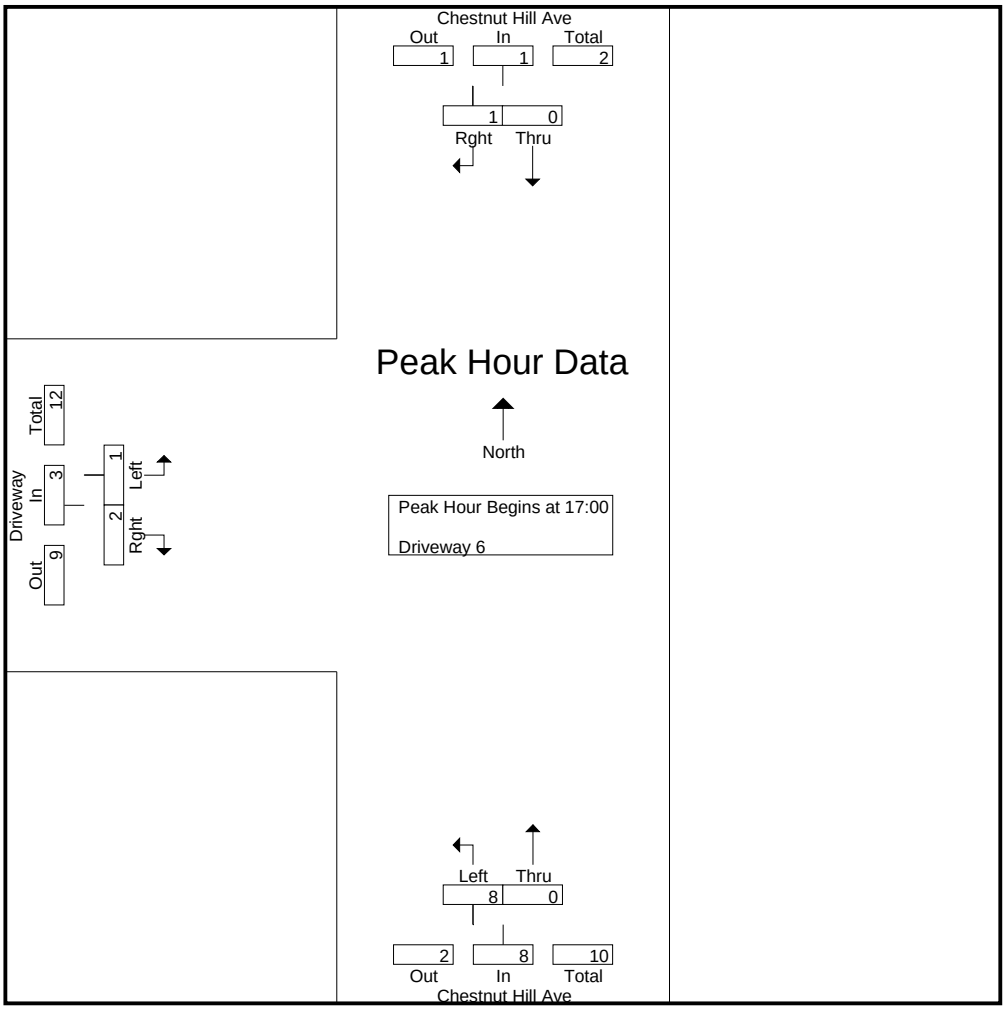
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	0	0	0	1	3	4
16:15	0	0	1	0	0	1	2
16:30	0	0	1	0	1	0	2
16:45	0	1	0	0	1	1	3
Total	0	1	2	0	3	5	11
17:00	0	0	1	0	0	1	2
17:15	0	0	1	0	0	0	1
17:30	0	1	3	0	1	0	5
17:45	0	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

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

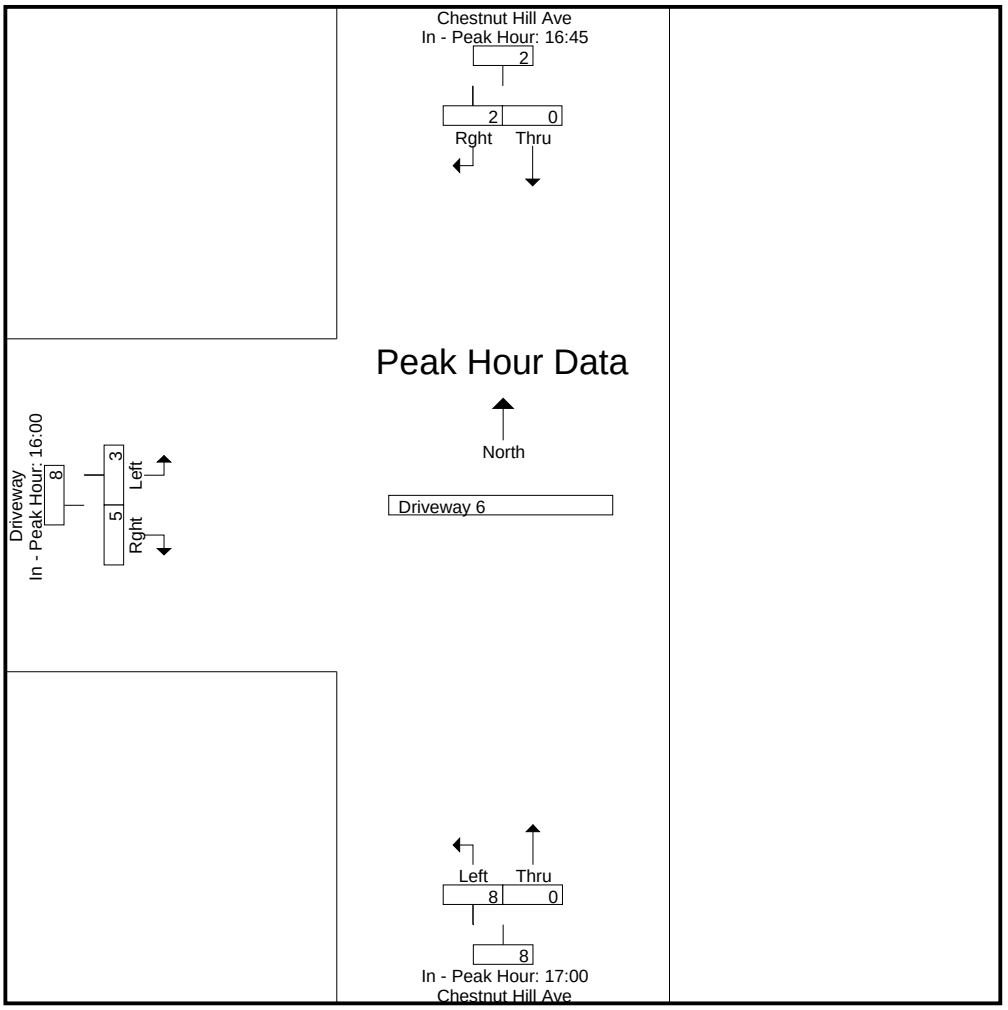
Peak Hour for Each Approach Begins at:

	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

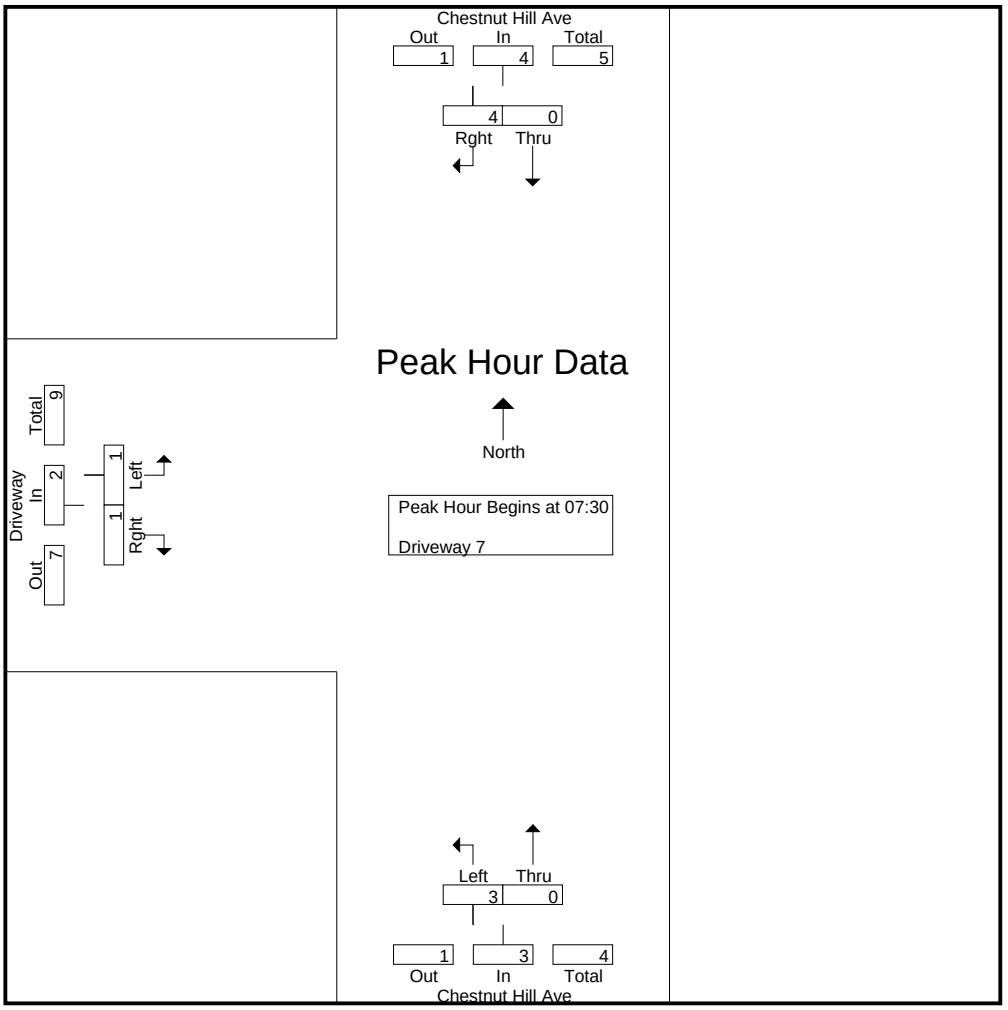
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	1	0	1
07:30	0	1	0	0	0	0	1
07:45	0	1	0	0	0	0	1
Total	0	2	0	0	1	0	3
08:00	0	1	0	0	1	0	2
08:15	0	1	3	0	0	1	5
08:30	0	0	0	0	0	0	0
08:45	0	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

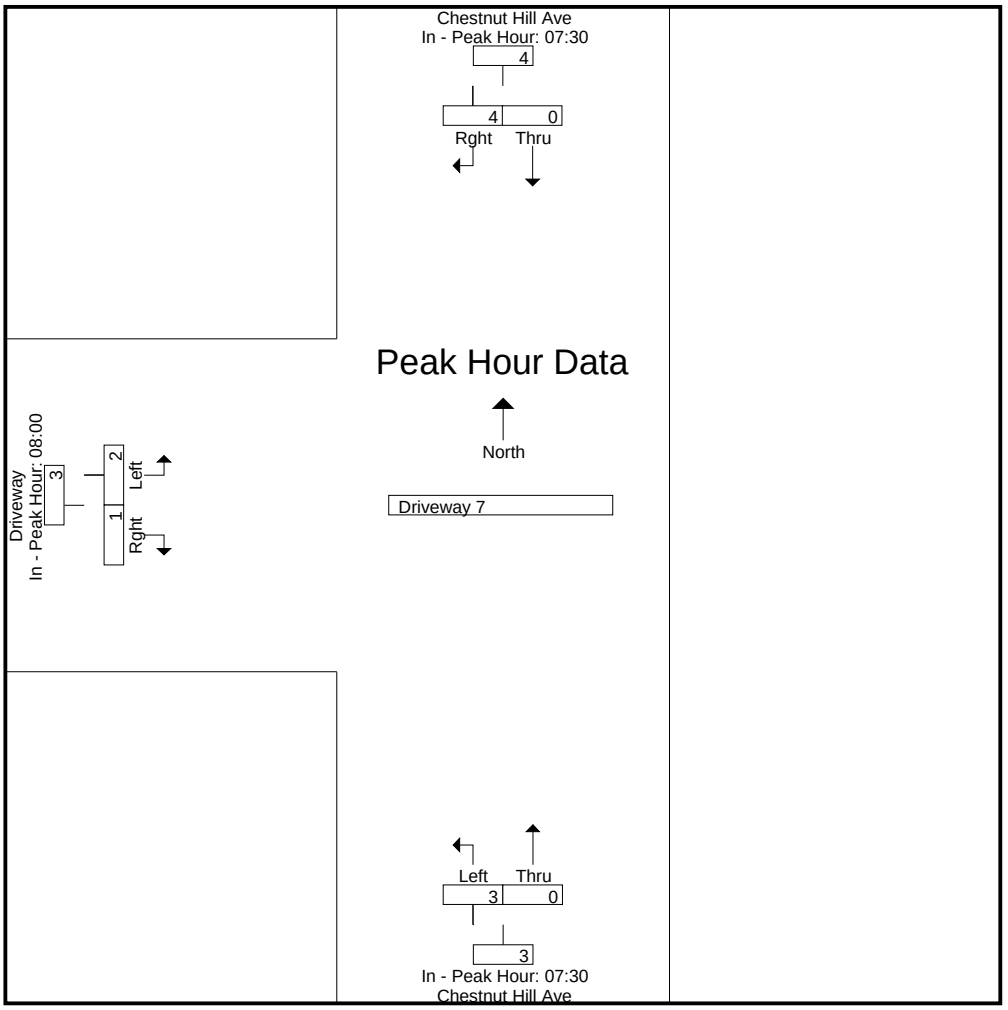
Peak Hour for Each Approach Begins at:

	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

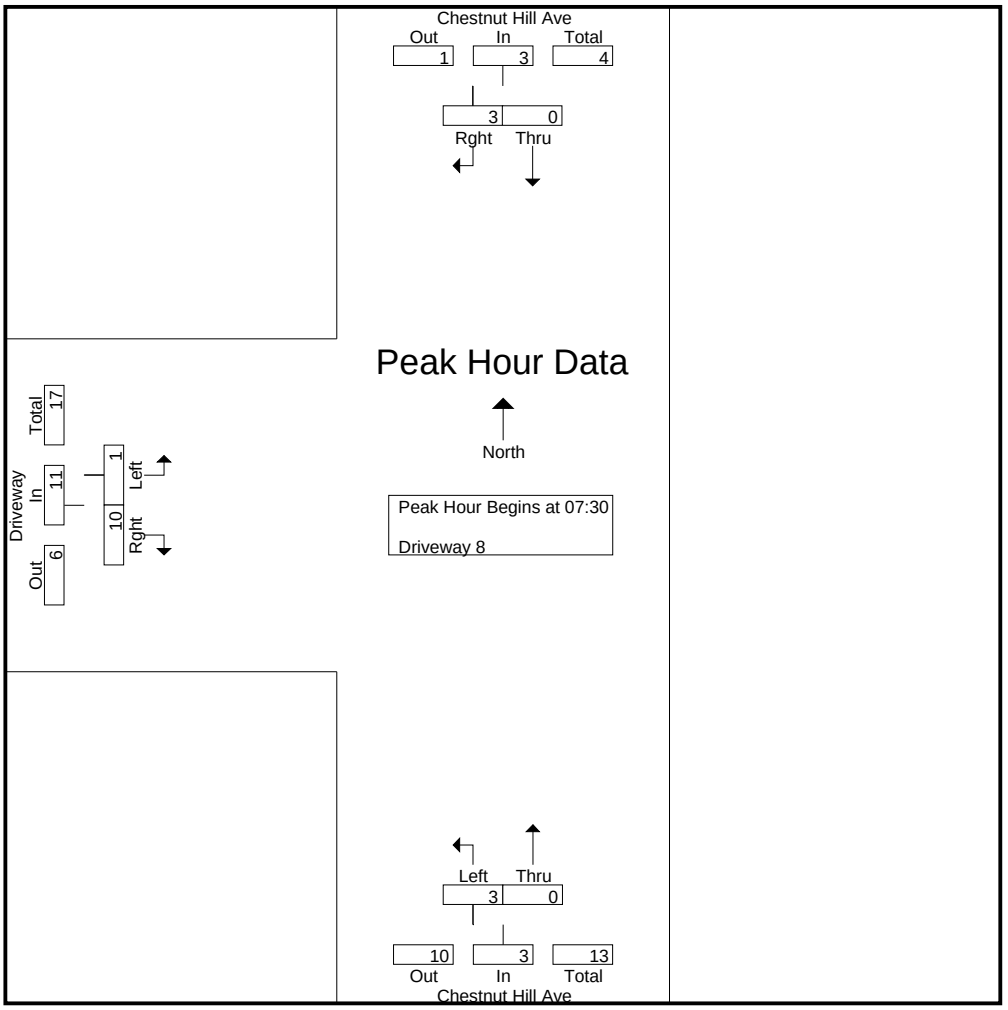
Groups Printed- Driveway 8

	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
Page No : 2



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

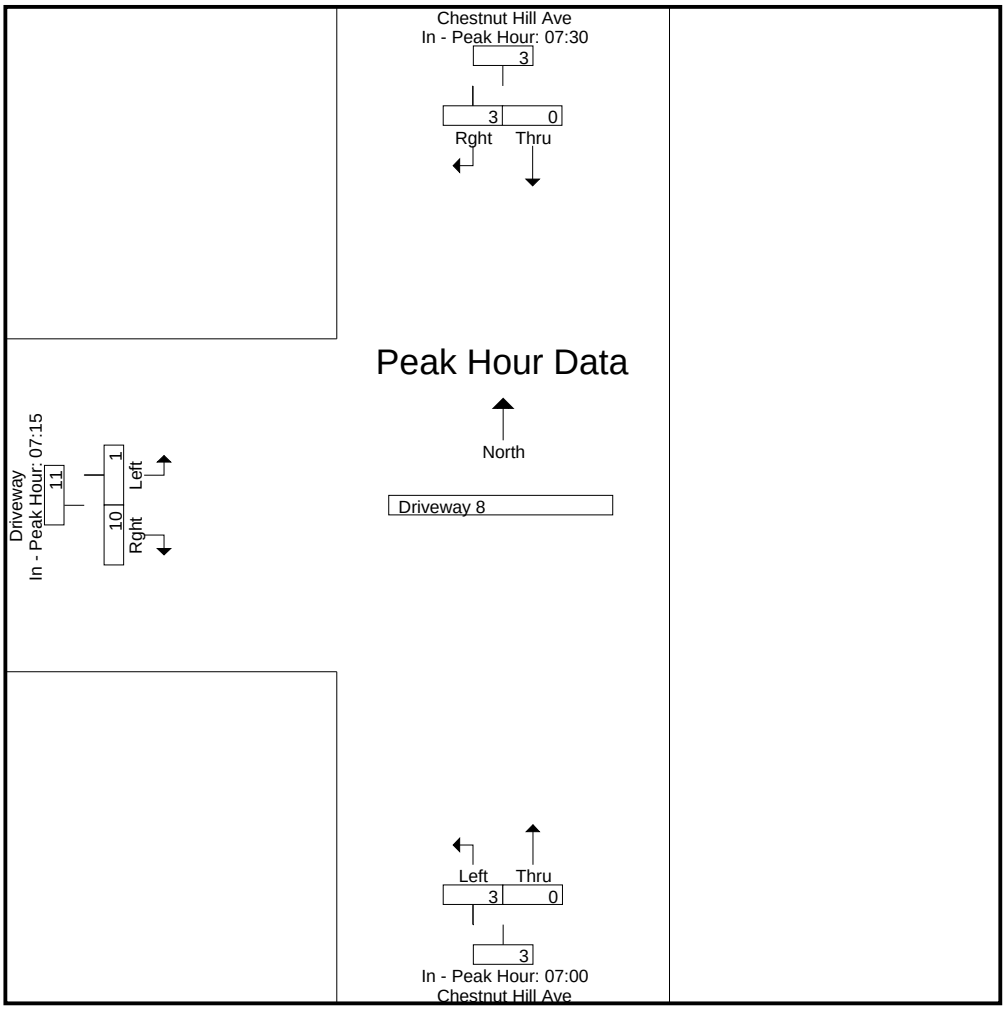
Peak Hour for Each Approach Begins at:

	07:30			07:00			07:15		
+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

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 7

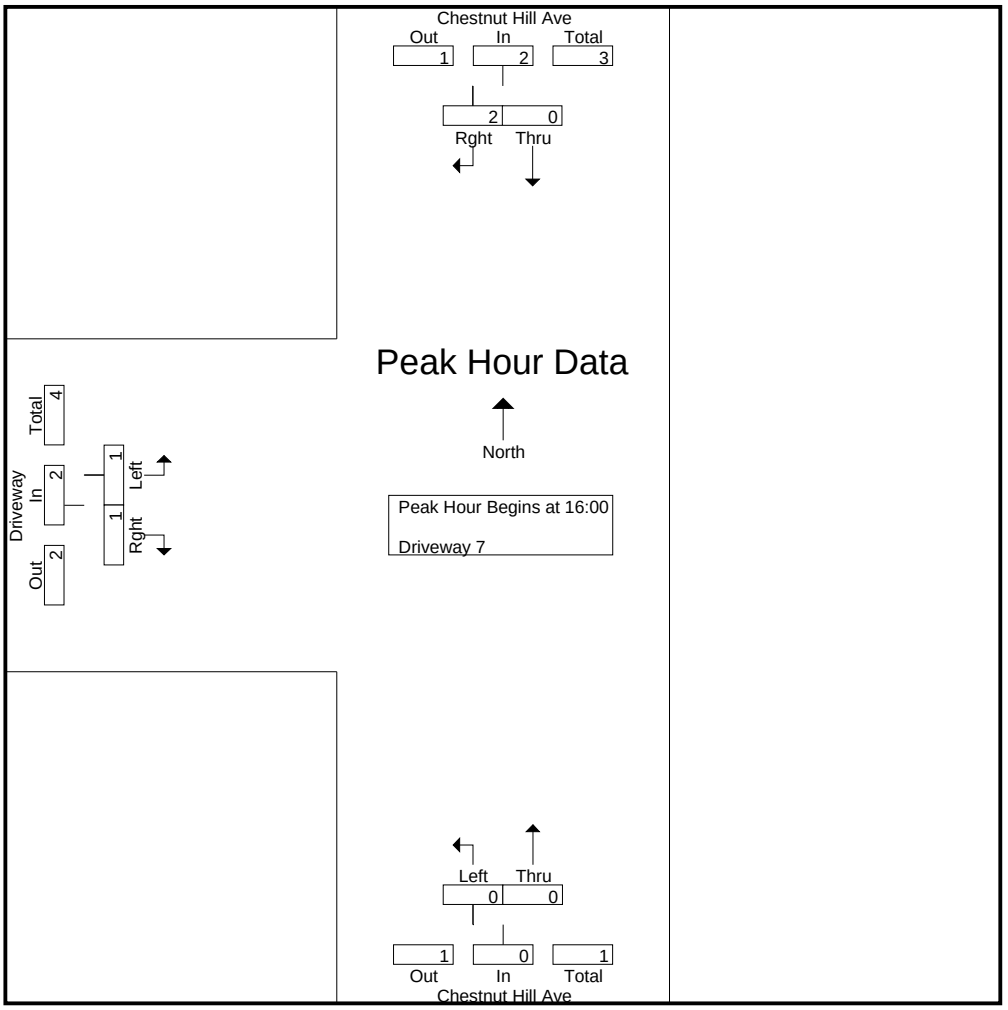
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	2	0	0	0	1	3
16:15	0	0	0	0	0	0	0
16:30	0	0	0	0	1	0	1
16:45	0	0	0	0	0	0	0
Total	0	2	0	0	1	1	4
17:00	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0
17:30	0	0	1	0	0	0	1
17:45	0	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

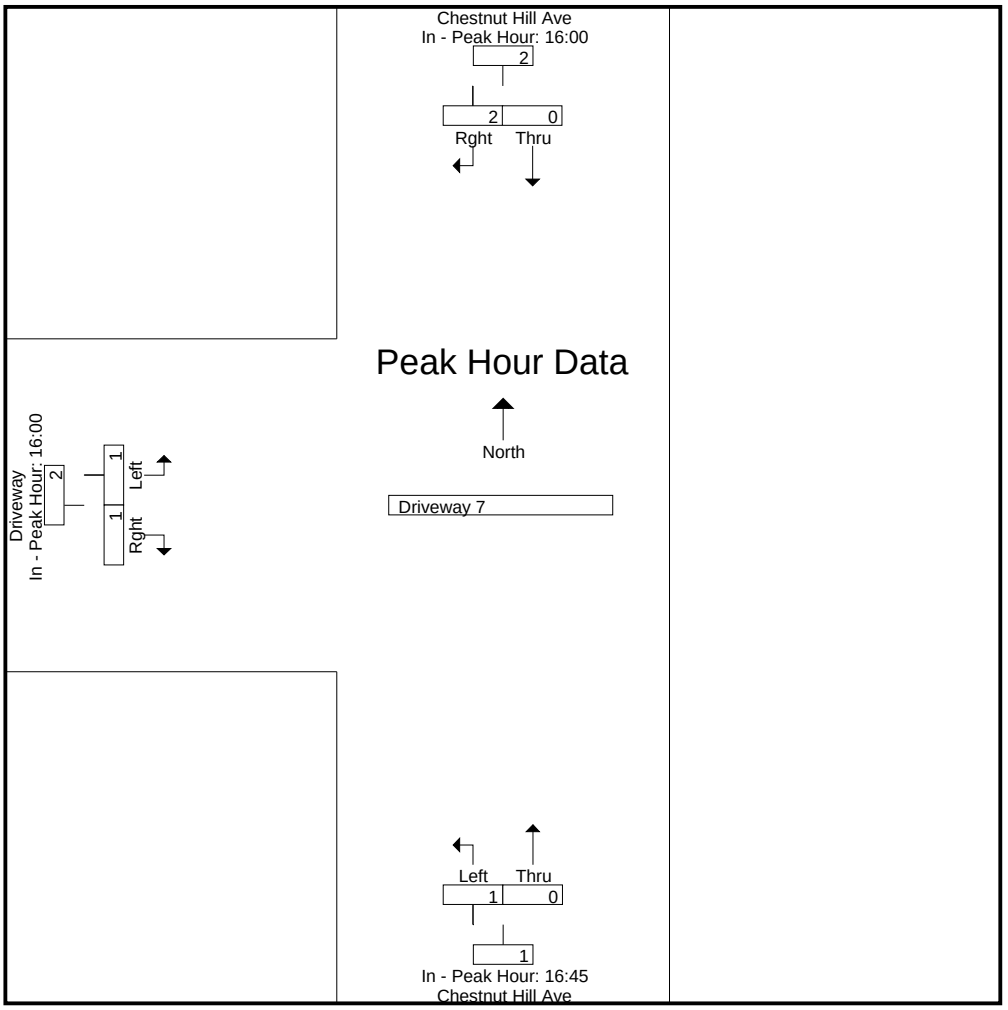
Peak Hour for Each Approach Begins at:

	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
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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

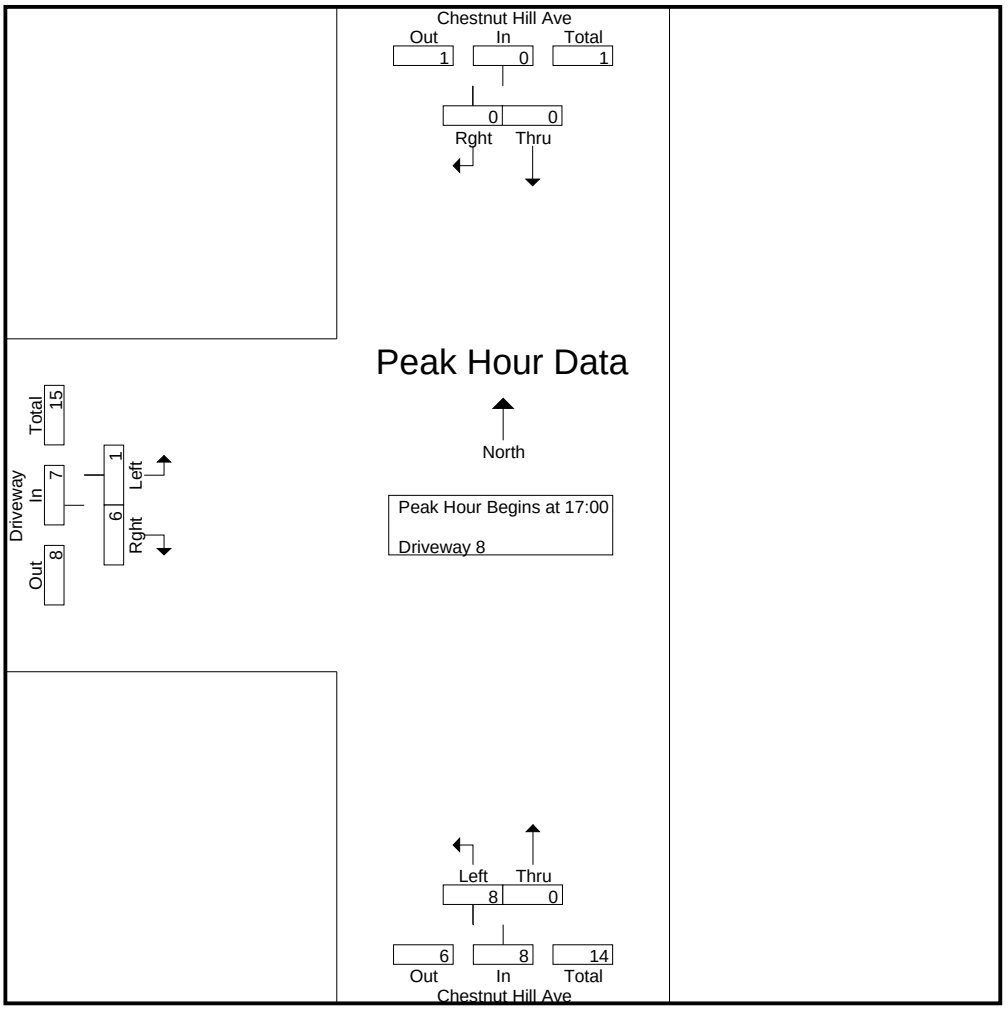
	Chestnut Hill Ave From North		Chestnut Hill Ave From South		Driveway From West		
Start Time	Thru	Rght	Left	Thru	Left	Rght	Int. Total
16:00	0	1	0	0	0	1	2
16:15	0	0	3	0	0	0	3
16:30	0	0	2	0	1	1	4
16:45	0	0	0	0	1	1	2
Total	0	1	5	0	2	3	11
17:00	0	0	0	0	0	2	2
17:15	0	0	1	0	0	2	3
17:30	0	0	3	0	0	0	3
17:45	0	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

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

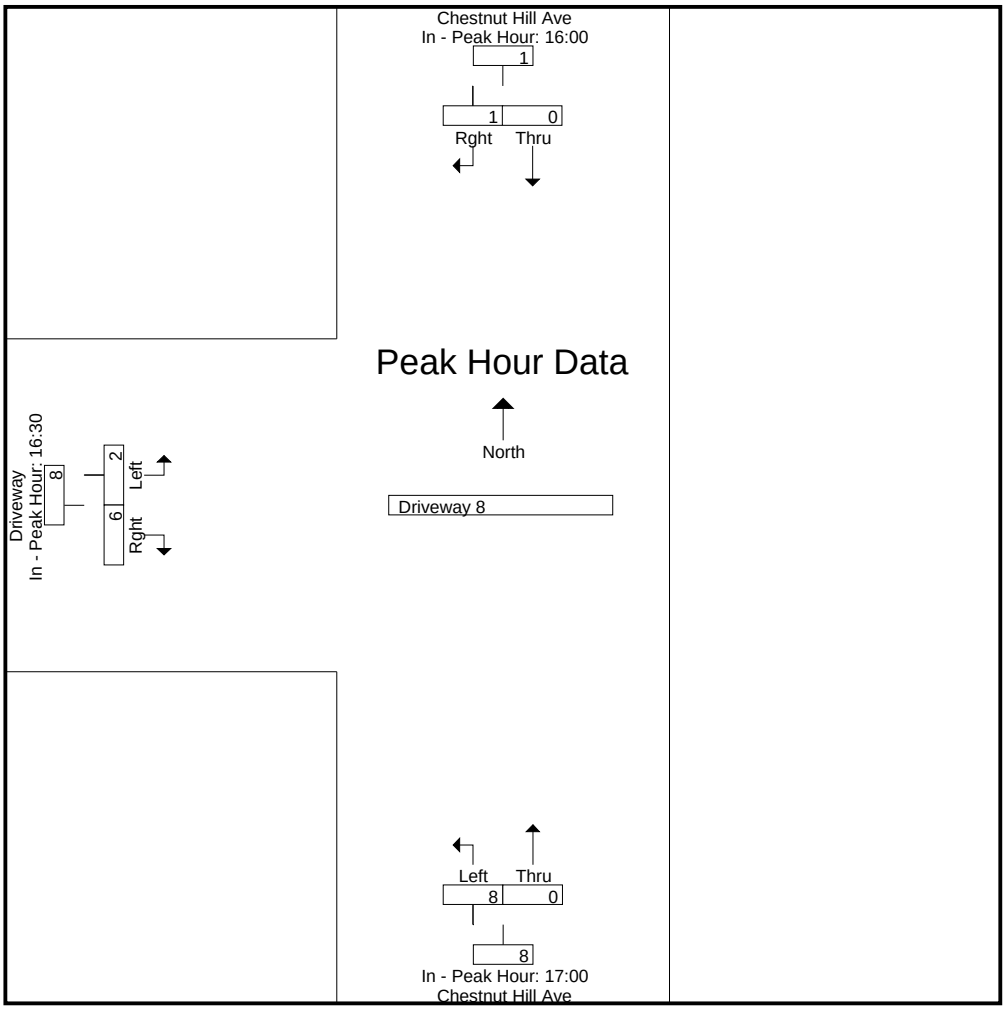
Peak Hour for Each Approach Begins at:

	16:00			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

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



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

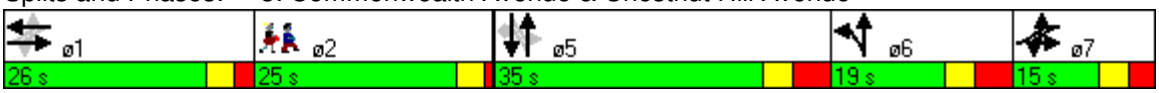


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1615	
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.			

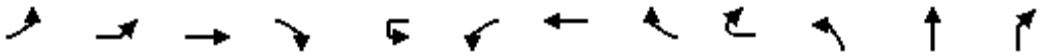
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





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								

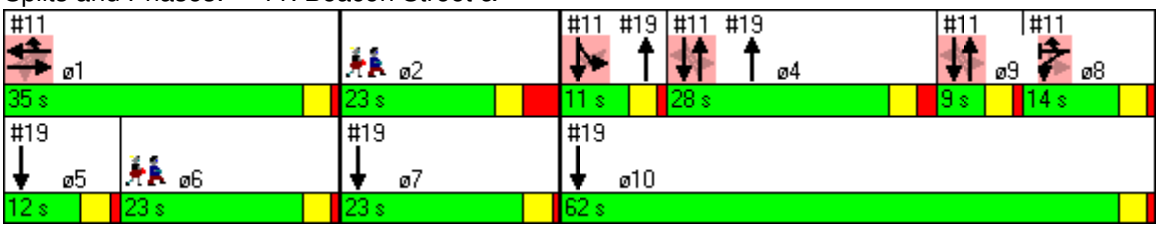
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			88.9	
Total Delay	342.9		88.8			55.9	48.1	28.4			166.4	
LOS	F		F			E	D	C			F	
Approach Delay			123.8				45.2				130.9	
Approach LOS			F				D				F	
90th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
90th %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.

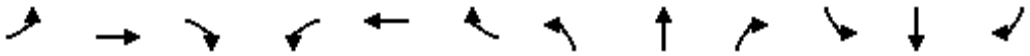
Splits and Phases: 11: Beacon Street &





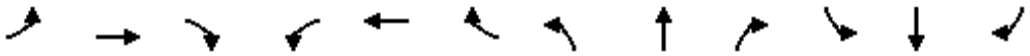
Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.1			173.0								
LOS	A			F								
Approach Delay				173.0								
Approach LOS				F								
90th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	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	

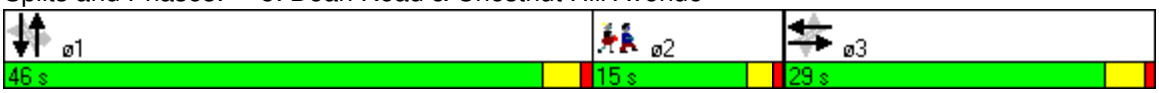
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on 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

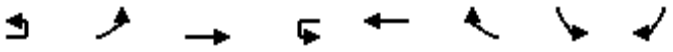
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 85 (61%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 41.4		Intersection LOS: D	
Intersection 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



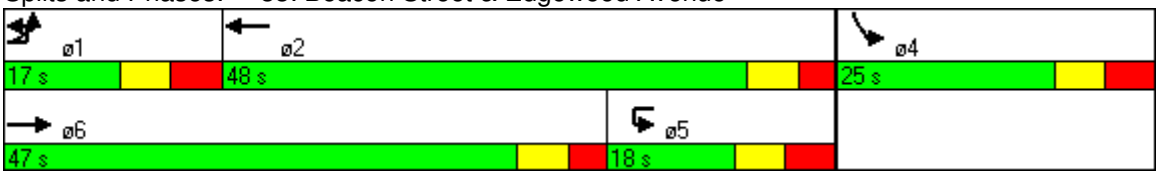
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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	

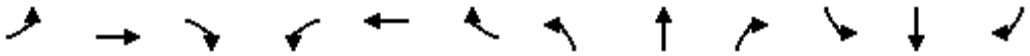


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.6	9.5	18.2	4.8		24.8	
LOS		D	A	B	A		C	
Approach Delay			11.8		5.2		24.8	
Approach LOS			B		A		C	
90th %ile Green (s)	12.7	12.7	43.1	13.1	43.5		10.8	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.2	10.2	40.4	18.0	48.2		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	

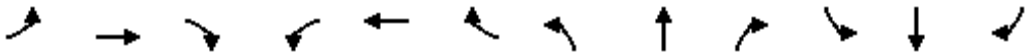
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 9.5		Intersection LOS: 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





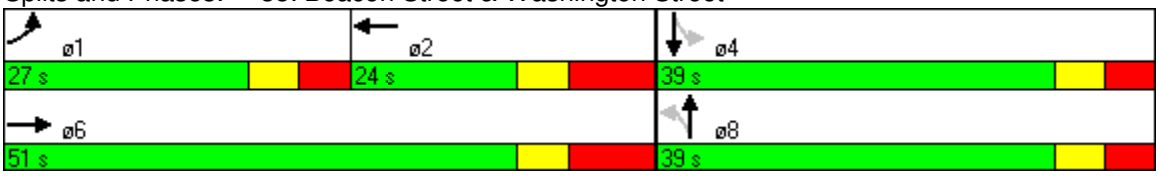
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total 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			

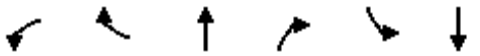
Splits and Phases: 38: Beacon Street & Washington Street



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		

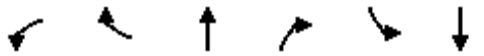
Intersection Summary			
Average Delay	444.4		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		



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		

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

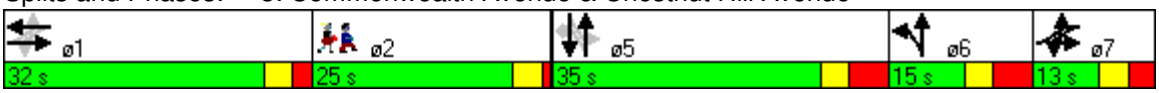


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1524	
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.			

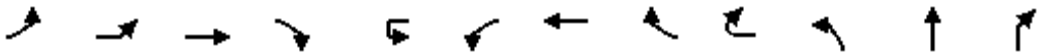
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





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	



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								

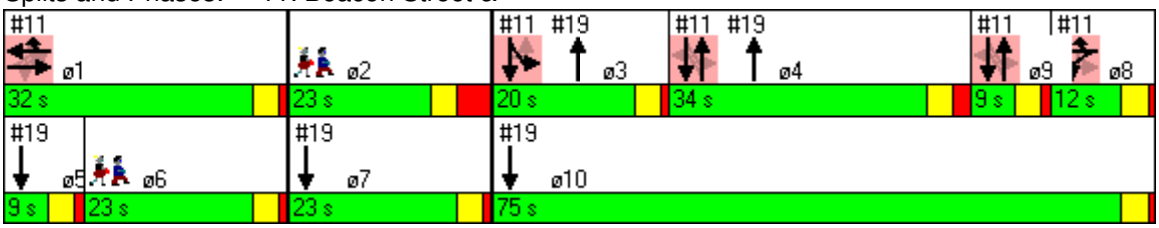
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			4.3	
Total Delay	427.5		283.2			122.8	98.9	38.4			26.0	
LOS	F		F			F	F	D			C	
Approach Delay			302.4				89.5				18.7	
Approach LOS			F				F				B	
90th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
90th %ile 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.

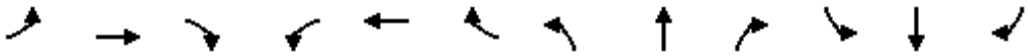
Splits and Phases: 11: Beacon Street &





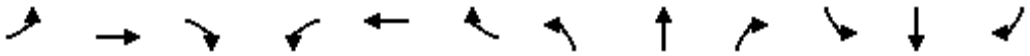
Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.2			40.3								
LOS	A			D								
Approach Delay				40.3								
Approach LOS				D								
90th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	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	

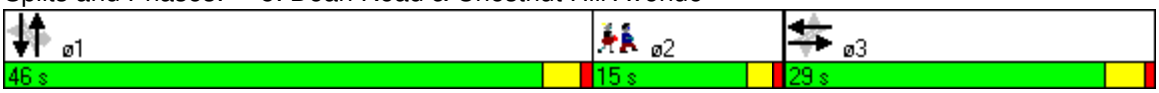
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (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.			

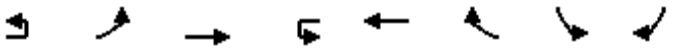
Splits and Phases: 12: Boylston Street & Chestnut Hill Avenue





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



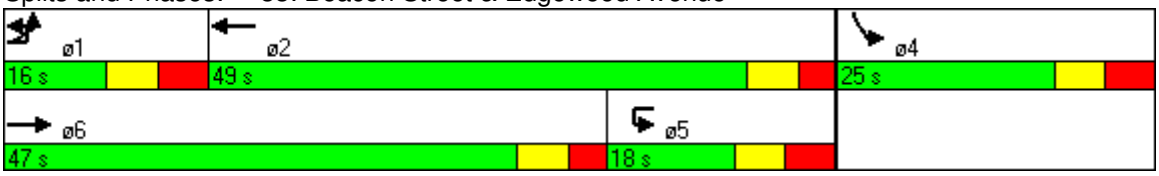
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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	



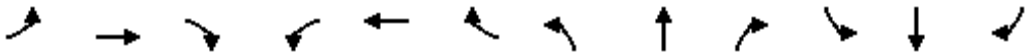
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.5	9.1	20.2	5.7		26.0	
LOS		D	A	C	A		C	
Approach Delay			12.0		6.2		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	13.8	13.8	42.2	16.4	44.8		8.4	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.1	11.1	38.0	21.0	47.9		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		

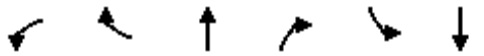
Intersection Summary			
Average Delay	234.1		
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		



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		



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	0.295				0.182			0.277				0.513
Satd. Flow (perm)	544	3269	0	0	339	3348	0	511	1775	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	173	308	34	146	582	161	27	418
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	186	362	47	206	685	173	52	475
Lane Group Flow (vph)	164	725	0	0	194	409	0	206	858	0	0	527
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	1.15			1.15
Control Delay	19.5	26.0			27.4	25.4		53.0	118.2			129.0
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			27.4	25.4		53.0	118.2			129.0
LOS	B	C			C	C		D	F			F
Approach Delay		24.8				26.1			105.6			125.0
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			98	224		153	643			371
Fuel Used(gal)	3	13			3	6		4	28			17
CO Emissions (g/hr)	181	918			204	397		256	1940			1170
NOx Emissions (g/hr)	35	179			40	77		50	377			228
VOC Emissions (g/hr)	42	213			47	92		59	450			271
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	65	196			79	111		148	~798			~252
Queue Length 95th (ft)	102	256			124	141		m137	m#682			#352
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	374	1337			295	1317		351	747			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	1.15			1.15

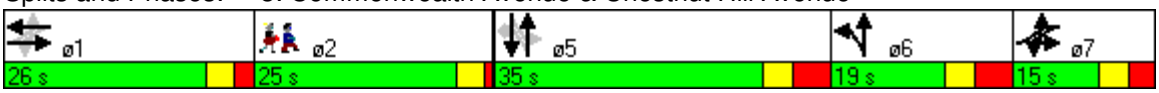
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 70.4		Intersection LOS: E	
Intersection Capacity Utilization 94.9%		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.

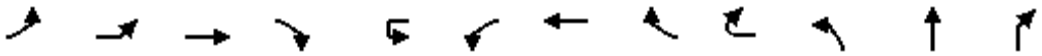
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





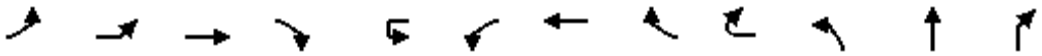
Lane Group	SBR	ø2
Total Delay	23.8	
LOS	C	
Approach Delay		
Approach LOS		
90th %ile Green (s)	28.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	28.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	28.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	28.0	0.0
30th %ile Term Code	Max	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			0.990					0.850			0.995	
Flt Protected	0.950		0.998			0.950	0.989				0.996	
Satd. Flow (prot)	1557	0	3203	0	0	1615	3491	1794	0	0	3228	0
Flt Permitted	0.161		0.786			0.129	0.526				0.687	
Satd. Flow (perm)	264	0	2523	0	0	219	1857	1794	0	0	2227	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	42	16	266	483	171	22	36	543	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	52	24	286	549	197	25	54	624	22
Lane Group Flow (vph)	112	0	752	0	0	155	704	222	0	0	700	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		1.15			0.81	0.91	0.33			1.14	
Control Delay	378.6		126.2			58.6	51.1	28.5			93.8	

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				0.526								
Satd. Flow (perm)	1599	0	0	1799	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)	145	3	200	541	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	601	99							
Lane Group Flow (vph)	191	0	0	929	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			1.34								
Control Delay	0.1			189.3								

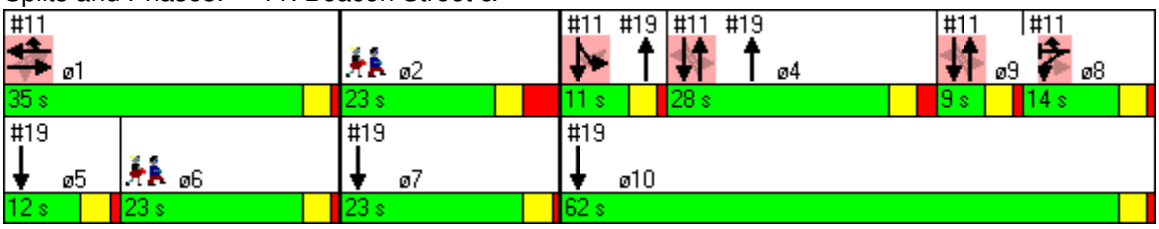


Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			93.3	
Total Delay	378.6		126.2			58.6	51.1	28.5			187.1	
LOS	F		F			E	D	C			F	
Approach Delay			158.9				47.6				147.0	
Approach LOS			F				D				F	
90th %ile Green (s)	31.0	31.0	31.0		10.0	10.0						
90th %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			506	
Fuel Used(gal)	8		27			4	17	4			15	
CO Emissions (g/hr)	579		1868			269	1211	297			1043	
NOx Emissions (g/hr)	113		363			52	236	58			203	
VOC Emissions (g/hr)	134		433			62	281	69			242	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~138		~377			90	232	121			~344	
Queue Length 95th (ft)	#237		#490			#205	#319	180			#446	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	68		652			191	771	673			612	
Starvation Cap Reductn	0		0			0	0	0			96	
Spillback Cap Reductn	0		0			0	0	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.65		1.15			0.81	0.91	0.33			1.36	

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: 131.6		Intersection LOS: F	
Intersection Capacity Utilization 88.4%		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.

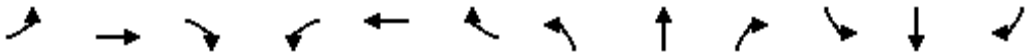
Splits and Phases: 11: Beacon Street &





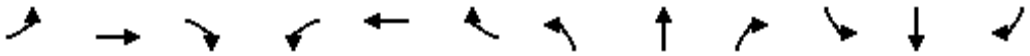
Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.1			189.3								
LOS	A			F								
Approach Delay				189.3								
Approach LOS				F								
90th %ile Green (s)		7.0	7.0			16.0	23.0	31.0	0.0	19.0	5.0	58.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	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			767								
Fuel Used(gal)	0			43								
CO Emissions (g/hr)	13			3012								
NOx Emissions (g/hr)	2			586								
VOC Emissions (g/hr)	3			698								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			~511								
Queue Length 95th (ft)	m0			m#525								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1599			692								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.12			1.34								

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			0.999	
Satd. Flow (prot)	0	1866	0	0	1827	0	0	1840	1599	0	1820	0
Flt Permitted		0.930			0.563			0.984			0.808	
Satd. Flow (perm)	0	1749	0	0	1057	0	0	1812	1564	0	1472	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		5							128		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	618	116	14	758	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	672	130	25	815	11
Lane Group Flow (vph)	0	260	0	0	240	0	0	684	130	0	851	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	0.14		1.07	
Control Delay		24.9			38.1			19.4	2.9		72.4	

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	
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		72.4	
LOS		C			D			B	A		E	
Approach Delay		24.9			38.1			16.7			72.4	
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)		126			158			437	12		601	
Fuel Used(gal)		2			4			8	1		19	
CO Emissions (g/hr)		175			272			542	46		1315	
NOx Emissions (g/hr)		34			53			105	9		256	
VOC Emissions (g/hr)		40			63			126	11		305	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		91			95			206	0		~433	
Queue Length 95th (ft)		128			#194			#493	29		#842	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		567			340			981	905		797	
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	0.14		1.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 42.0		Intersection LOS: D	
Intersection Capacity Utilization 96.9%		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			

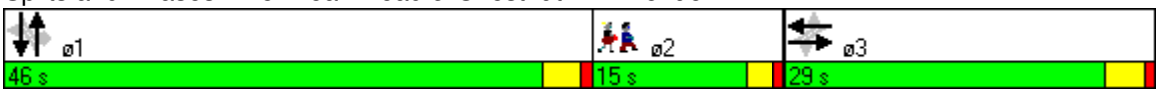
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.

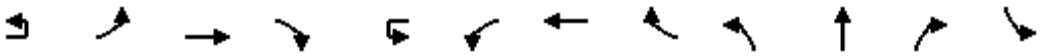
Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile 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.

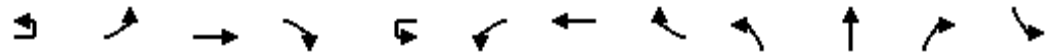
Splits and Phases: 5: Dean Road & Chestnut Hill Avenue





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)								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	192	1244	0	11	75	1325	598	0	0	0	452
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	211	1323	0	16	110	1380	604	0	0	0	486
Lane Group Flow (vph)	0	231	1323	0	0	126	1380	604	0	0	0	486
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				1.06
Control Delay		70.7	22.1			114.7	39.0	3.1				109.0
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	298		
Peak Hour Factor	0.63	0.87		
Heavy Vehicles (%)	8%	1%		
Adj. Flow (vph)	63	343		
Lane Group Flow (vph)	63	343		
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	9.5		
Queue Delay	0.0	0.0		



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Total Delay		70.7	22.7			114.7	60.1	3.7				109.0
LOS		E	C			F	E	A				F
Approach Delay			29.8				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				389
Fuel Used(gal)		6	24			3	22	3				13
CO Emissions (g/hr)		429	1656			192	1568	228				898
NOx Emissions (g/hr)		83	322			37	305	44				175
VOC Emissions (g/hr)		99	384			45	363	53				208
Dilemma Vehicles (#)		0	0			0	0	0				0
Queue Length 50th (ft)		202	414			119	639	14				~487
Queue Length 95th (ft)		#321	490			m#136	m667	m115				#708
Internal Link Dist (ft)			1319				414			1330		
Turn Bay Length (ft)		280				160						
Base Capacity (vph)		305	2008			132	1652	1342				457
Starvation Cap Reductn		0	0			0	315	391				0
Spillback Cap Reductn		0	316			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				1.06

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: 1.06			
Intersection Signal Delay: 45.0		Intersection LOS: D	
Intersection Capacity Utilization 82.9%		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.			
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	9.5		
LOS	D	A		
Approach Delay	66.0			
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)	30	43		
Fuel Used(gal)	1	1		
CO Emissions (g/hr)	39	87		
NOx Emissions (g/hr)	8	17		
VOC Emissions (g/hr)	9	20		
Dilemma Vehicles (#)	0	0		
Queue Length 50th (ft)	45	27		
Queue Length 95th (ft)	58	98		
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

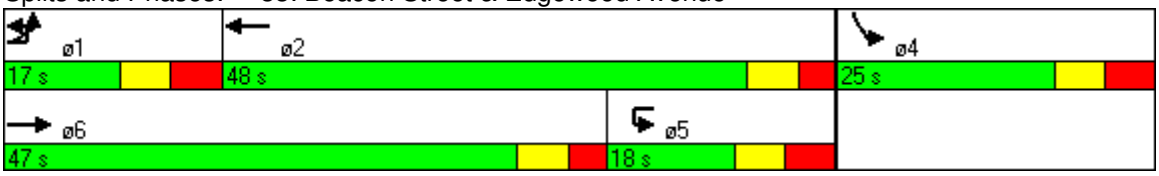
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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	18.7	5.3		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

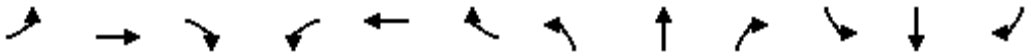


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.6	9.7	18.7	5.3		26.0	
LOS		D	A	B	A		C	
Approach Delay			11.9		5.7		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	13.0	13.0	42.2	13.3	42.5		11.5	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.4	10.4	41.3	16.5	47.4		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	9	133		51	
Fuel Used(gal)		1	15	1	19		1	
CO Emissions (g/hr)		102	1021	42	1314		90	
NOx Emissions (g/hr)		20	199	8	256		18	
VOC Emissions (g/hr)		24	237	10	304		21	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		42	65	10	42		38	
Queue Length 95th (ft)		77	236	m6	m84		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	

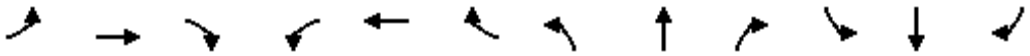
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 9.9		Intersection LOS: 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





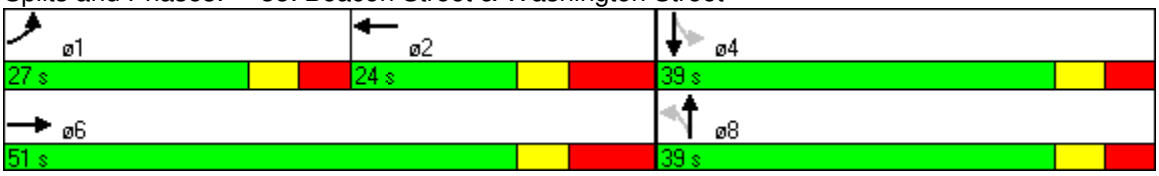
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total 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)	120	961	87	0	487	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)	156	1080	101	0	686	84	33	436	12	109	485	49
Lane Group Flow (vph)	156	1181	0	0	770	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)	16.4	49.4			29.0		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	45.3	11.4			34.8		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	45.3	11.4			34.8		25.6	35.2		35.9	39.1	
LOS	D	B			C		C	D		D	D	
Approach Delay		15.4			34.8			34.5			38.5	
Approach LOS		B			C			C			D	
90th %ile Green (s)	17.1	40.0			14.9		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	13.2	40.0			18.8		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	12.8	40.0			19.2		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)	8.0	48.7			32.7		22.3	22.3		22.3	22.3	
10th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
Stops (vph)	100	434			436		20	306		70	314	
Fuel Used(gal)	4	27			9		0	6		2	8	
CO Emissions (g/hr)	296	1911			662		29	454		120	537	
NOx Emissions (g/hr)	58	372			129		6	88		23	104	
VOC Emissions (g/hr)	69	443			154		7	105		28	124	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	76	177			214		12	211		47	259	
Queue Length 95th (ft)	109	127			223		33	272		86	242	
Internal Link Dist (ft)		2673			695			732			988	
Turn Bay Length (ft)	150											
Base Capacity (vph)	444	1872			1030		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 75.6%		ICU Level of Service D	
Analysis Period (min) 15			

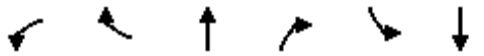
Splits and Phases: 38: Beacon Street & Washington Street



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	67	28	767	53	3	640	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	89	54	843	76	8	821	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	1928	1845	881	1873	1873	831	841			919		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2345	2225	881	2266	2265	754	769			919		
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	63	67	91			99		
cM capacity (veh/h)	8	27	349	0	22	273	589			751		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	76	105	972	848
Volume Left	22	8	54	8
Volume Right	24	89	76	20
cSH	19	0	589	751
Volume to Capacity	4.00	Err	0.09	0.01
Queue Length 95th (ft)	Err	Err	8	1
Control Delay (s)	Err	Err	2.9	0.3
Lane LOS	F	F	A	A
Approach Delay (s)	Err	Err	2.9	0.3
Approach LOS	F	F		

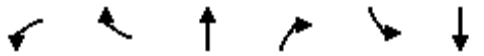
Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	3	669	6	6	613
Peak Hour Factor	0.38	0.38	0.97	0.38	0.75	0.90
Hourly flow rate (vph)	8	8	690	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	1395	698			705	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1395	698			705	
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			902	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	705	689
Volume Left	8	0	8
Volume Right	8	16	0
cSH	231	1700	902
Volume to Capacity	0.07	0.41	0.01
Queue Length 95th (ft)	5	0	1
Control Delay (s)	21.7	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	21.7	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	673	0	0	611
Peak Hour Factor	0.50	0.50	0.97	0.38	0.92	0.90
Hourly flow rate (vph)	16	32	694	0	0	679
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	1373	694			694	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1373	694			694	
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			902	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	694	679
Volume Left	16	0	0
Volume Right	32	0	0
cSH	279	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	45.4%	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	0.301				0.150			0.269				0.513
Satd. Flow (perm)	566	3304	0	0	282	3404	0	501	1756	0	0	1803
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		84				5			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)	113	375	213	7	177	420	21	181	423	195	30	446
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	213	438	30	223	510	264	52	485
Lane Group Flow (vph)	143	651	0	0	225	468	0	223	774	0	0	537
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			0.87	0.31		0.76	1.12			1.15
Control Delay	16.2	20.9			48.2	22.1		57.2	107.8			131.2
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0



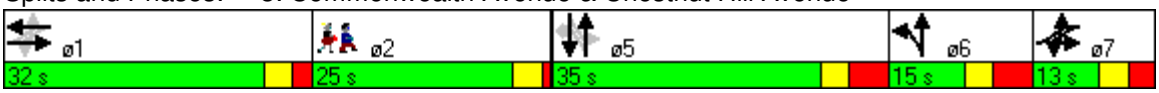
Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1524	
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			48.2	22.1		57.2	107.8			131.2
LOS	B	C			D	C		E	F			F
Approach Delay		20.1				30.6			96.5			125.1
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			89	273		149	509			396
Fuel Used(gal)	2	11			4	7		4	22			18
CO Emissions (g/hr)	136	769			261	487		313	1514			1266
NOx Emissions (g/hr)	26	150			51	95		61	295			246
VOC Emissions (g/hr)	32	178			61	113		72	351			293
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	52	155			86	119		121	~682			~257
Queue Length 95th (ft)	74	205			#171	160		164	#808			#371
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	384	1506			259	1506		292	689			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			0.87	0.31		0.76	1.12			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: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 67.0		Intersection LOS: E	
Intersection Capacity Utilization 88.1%		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.			

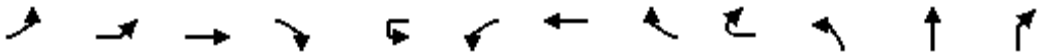
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





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	

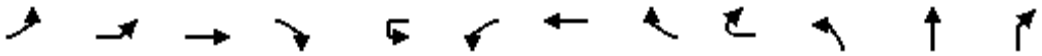
Intersection Summary



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		0.523			0.143	0.531				0.767	
Satd. Flow (perm)	239	0	1692	0	0	243	1893	1812	0	0	2567	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	371	75	12	259	469	138	34	45	473	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	395	125	16	316	521	189	37	56	514	31
Lane Group Flow (vph)	86	0	595	0	0	166	687	226	0	0	601	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	1.69		1.63			1.09	1.10	0.41			0.78	
Control Delay	411.9		331.1			136.9	107.6	38.3			22.4	



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			0.983								
Flt Protected				0.989								
Satd. Flow (prot)	1615	0	0	3433	0							
Flt Permitted				0.580								
Satd. Flow (perm)	1615	0	0	2014	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	229											
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	565	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	614	106							
Lane Group Flow (vph)	238	0	0	925	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			0.90								
Control Delay	0.2			42.9								



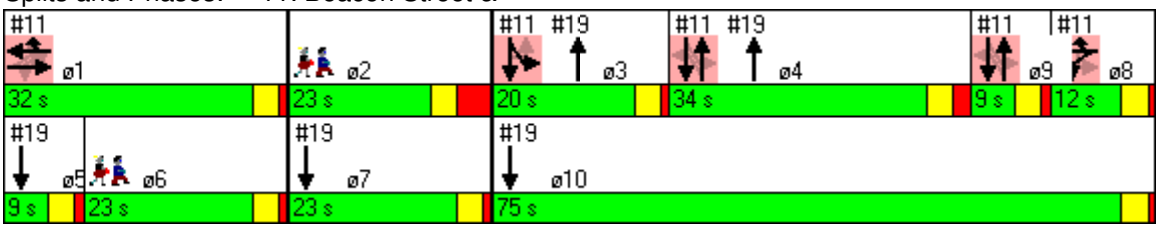
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		0.0			0.0	0.0	0.0			5.4	
Total Delay	411.9		331.1			136.9	107.6	38.3			27.9	
LOS	F		F			F	F	D			C	
Approach Delay			341.3				97.6				20.0	
Approach LOS			F				F				B	
90th %ile Green (s)	28.0	28.0	28.0		8.0	8.0						
90th %ile 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)	42		352			88	550	133			515	
Fuel Used(gal)	6		41			6	24	4			6	
CO Emissions (g/hr)	451		2878			413	1661	294			421	
NOx Emissions (g/hr)	88		560			80	323	57			82	
VOC Emissions (g/hr)	105		667			96	385	68			97	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~116		~397			~121	~309	151			258	
Queue Length 95th (ft)	#196		#521			#239	#464	177			337	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	51		364			152	624	558			770	
Starvation Cap Reductn	0		0			0	0	0			117	
Spillback Cap Reductn	0		0			0	0	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.69		1.63			1.09	1.10	0.41			0.92	

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: 1.69			
Intersection Signal Delay: 111.8		Intersection LOS: F	
Intersection Capacity Utilization 87.2%		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.

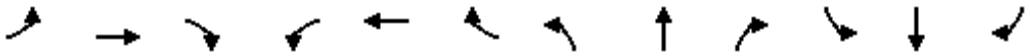
Splits and Phases: 11: Beacon Street &





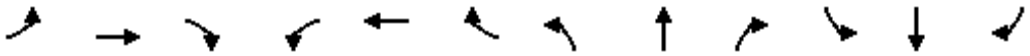
Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.2			42.9								
LOS	A			D								
Approach Delay				42.9								
Approach LOS				D								
90th %ile Green (s)		16.0	16.0			16.0	29.0	28.0	0.0	19.0	5.0	71.0
90th %ile Term Code		MaxR	MaxR			Max	MaxR	Coord	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			692								
Fuel Used(gal)	0			18								
CO Emissions (g/hr)	19			1269								
NOx Emissions (g/hr)	4			247								
VOC Emissions (g/hr)	4			294								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			301								
Queue Length 95th (ft)	0			#395								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1615			1027								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.15			0.90								

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		0.858			0.791			0.986			0.960	
Satd. Flow (perm)	0	1614	0	0	1480	0	0	1855	1599	0	1763	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	6	7	633	108	4	769	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	12	12	745	135	5	793	39
Lane Group Flow (vph)	0	107	0	0	281	0	0	757	135	0	837	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			0.59			0.75	0.15		0.88	
Control Delay		21.1			29.4			21.4	3.4		29.3	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		21.1			29.4			21.4	3.4		29.3	

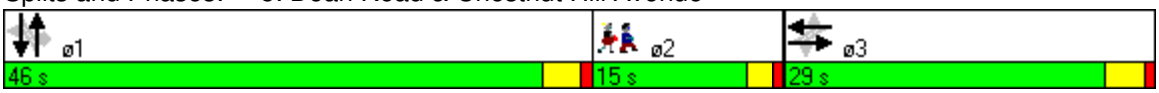
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (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		21.1			29.4			18.7			29.3	
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			174			452	14		591	
Fuel Used(gal)		1			4			8	1		12	
CO Emissions (g/hr)		81			268			575	45		850	
NOx Emissions (g/hr)		16			52			112	9		165	
VOC Emissions (g/hr)		19			62			133	10		197	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		34			106			240	3		297	
Queue Length 95th (ft)		83			188			#543	26		#735	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		523			477			1004	920		956	
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			0.59			0.75	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: 24.4		Intersection LOS: C	
Intersection Capacity Utilization 98.2%		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			
# 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	228	963	0	76	1023	351	0	0	0	516	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	304	1094	0	101	1176	390	0	0	0	645	51
Lane Group Flow (vph)	0	316	1094	0	101	1176	390	0	0	0	645	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		0.98	0.53		0.77	0.71	0.30				1.38	0.11
Control Delay		100.4	19.2		94.0	33.8	4.1				225.0	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)	247		
Headway Factor	0.85		
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Volume (vph)	220		
Peak Hour Factor	0.89		
Heavy Vehicles (%)	3%		
Adj. Flow (vph)	247		
Lane Group Flow (vph)	247		
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		100.4	19.2		94.0	35.1	4.4				225.0	40.7
LOS		F	B		F	D	A				F	D
Approach Delay			37.4			31.5						157.8
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)		203	565		69	852	70				395	28
Fuel Used(gal)		8	17		2	16	2				27	1
CO Emissions (g/hr)		587	1216		149	1097	142				1857	35
NOx Emissions (g/hr)		114	237		29	213	28				361	7
VOC Emissions (g/hr)		136	282		34	254	33				430	8
Dilemma Vehicles (#)		0	0		0	0	0				0	0
Queue Length 50th (ft)		290	306		93	482	59				~779	36
Queue Length 95th (ft)		#351	354		m#134	538	127				#856	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	90		0	0	0				0	0
Storage Cap Reductn		0	0		0	0	0				0	0
Reduced v/c Ratio		0.98	0.56		0.77	0.85	0.46				1.38	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: 1.38			
Intersection Signal Delay: 63.2		Intersection LOS: E	
Intersection Capacity Utilization 79.7%		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)	640		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.39		

Intersection Summary

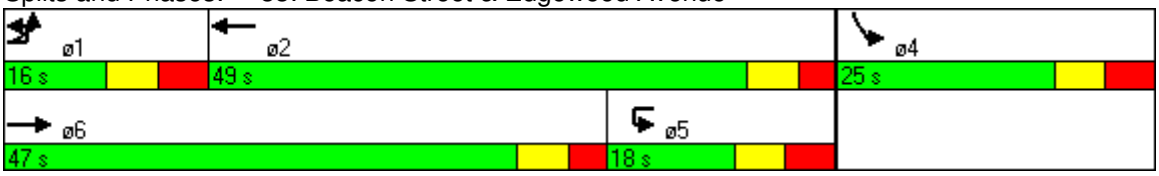
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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		0.949	
Flt Protected		0.950		0.950			0.970	
Satd. Flow (prot)	0	1685	3369	1745	3400	0	1982	0
Flt Permitted		0.950		0.950			0.970	
Satd. Flow (perm)	0	1685	3369	1745	3400	0	1982	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					22		22	
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	29	702	26	869	90	33	11
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	42	826	35	924	118	36	22
Lane Group Flow (vph)	0	96	826	35	1042	0	58	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)		13.8	67.4	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		0.20	
Control Delay		37.5	9.0	21.7	5.9		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

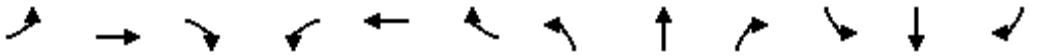


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.5	9.0	21.7	5.9		26.0	
LOS		D	A	C	A		C	
Approach Delay			12.0		6.4		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	14.2	14.2	42.6	15.7	44.1		8.7	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.5	11.5	38.6	20.4	47.5		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)	7.7	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)		62	264	14	232		27	
Fuel Used(gal)		2	11	1	23		1	
CO Emissions (g/hr)		124	798	53	1626		46	
NOx Emissions (g/hr)		24	155	10	316		9	
VOC Emissions (g/hr)		29	185	12	377		11	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		50	55	14	97		18	
Queue Length 95th (ft)		68	187	m17	123		53	
Internal Link Dist (ft)			1503		2709		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		267	2535	334	2351		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	

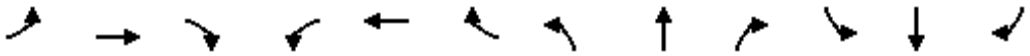
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 9.4		Intersection LOS: 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			0.976	
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						0.281			0.415		
Satd. Flow (perm)	1719	3332	0	0	3412	0	493	1750	0	722	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)	105	626	165	0	583	31	109	231	48	62	306	49
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)	118	703	239	0	648	53	127	272	62	78	382	73
Lane Group Flow (vph)	118	942	0	0	701	0	127	334	0	78	455	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	51.5			36.6		30.5	30.5		30.5	30.5	
Actuated g/C Ratio	0.15	0.57			0.41		0.34	0.34		0.34	0.34	
v/c Ratio	0.45	0.49			0.51		0.76	0.55		0.32	0.75	
Control Delay	52.6	9.0			24.0		55.5	26.3		24.8	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	52.6	9.0			24.0		55.5	26.3		24.8	33.8	
LOS	D	A			C		E	C		C	C	
Approach Delay		13.9			24.0			34.3			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)	10.9	41.9			23.0		29.1	29.1		29.1	29.1	
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			461		92	209		44	297	
Fuel Used(gal)	4	20			12		3	5		1	6	
CO Emissions (g/hr)	275	1408			821		182	341		68	452	
NOx Emissions (g/hr)	53	274			160		35	66		13	88	
VOC Emissions (g/hr)	64	326			190		42	79		16	105	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	67	135			174		61	139		31	210	
Queue Length 95th (ft)	120	83			237		#140	200		58	265	
Internal Link Dist (ft)		2709			1215			942			780	
Turn Bay Length (ft)	150											
Base Capacity (vph)	287	1906			1387		186	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	0.49			0.51		0.68	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: 0.76			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 72.0%		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.			

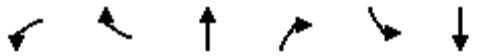
Splits and Phases: 38: Beacon Street & Washington Street



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	82	85	798	10	2	660	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	108	96	849	15	4	742	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	1913	1801	856	1813	1806	744	746			864		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2403	2231	856	2249	2239	606	609			864		
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	8	99	0	49	67	85			99		
cM capacity (veh/h)	5	22	360	3	24	325	637			609		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	124	959	750
Volume Left	15	4	96	4
Volume Right	4	108	15	4
cSH	9	61	637	609
Volume to Capacity	4.29	2.02	0.15	0.01
Queue Length 95th (ft)	Err	294	13	0
Control Delay (s)	Err	618.9	4.4	0.2
Lane LOS	F	F	A	A
Approach Delay (s)	Err	618.9	4.4	0.2
Approach LOS	F	F		

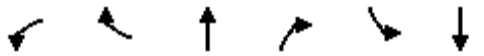
Intersection Summary			
Average Delay	252.4		
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	4	574	9	18	646
Peak Hour Factor	0.50	0.33	0.92	0.56	0.61	0.87
Hourly flow rate (vph)	4	12	624	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	1433	632			640	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1433	632			640	
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	484			954	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	640	772
Volume Left	4	0	30
Volume Right	12	16	0
cSH	306	1700	954
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	577	0	0	656
Peak Hour Factor	0.67	0.63	0.92	0.25	0.25	0.87
Hourly flow rate (vph)	12	8	627	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	1381	627			627	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1381	627			627	
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	487			964	

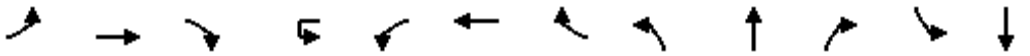
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	627	754
Volume Left	12	0	0
Volume Right	8	0	0
cSH	219	1700	1700
Volume to Capacity	0.09	0.37	0.44
Queue Length 95th (ft)	7	0	0
Control Delay (s)	23.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	23.1	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

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			0.968			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1752	3269	0	0	1771	3348	0	1752	1771	0	0	3454
Flt Permitted	0.295				0.182			0.272				0.513
Satd. Flow (perm)	544	3269	0	0	339	3348	0	502	1771	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	191	308	34	146	585	174	27	423
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	205	362	47	206	688	187	52	481
Lane Group Flow (vph)	164	725	0	0	213	409	0	206	875	0	0	533
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			0.72	0.31		0.59	1.17			1.16
Control Delay	19.5	26.0			31.7	25.4		52.3	125.4			133.6
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)	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			31.7	25.4		52.3	125.4			133.6
LOS	B	C			C	C		D	F			F
Approach Delay		24.8				27.6			111.5			129.4
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		134	538			373
Fuel Used(gal)	3	13			3	6		4	29			17
CO Emissions (g/hr)	181	918			235	397		247	2014			1212
NOx Emissions (g/hr)	35	179			46	77		48	392			236
VOC Emissions (g/hr)	42	213			55	92		57	467			281
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	65	196			88	111		133	~776			~256
Queue Length 95th (ft)	102	256			#151	141		m123	m#620			#357
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	374	1337			295	1317		349	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			0.72	0.31		0.59	1.17			1.16

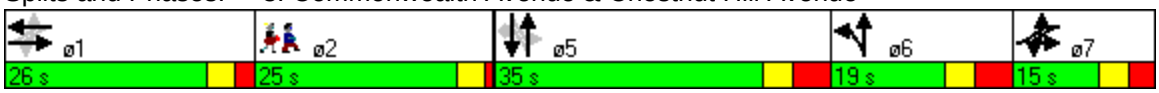
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay: 73.6		Intersection LOS: E	
Intersection Capacity Utilization 97.0%		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.

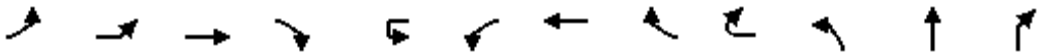
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





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	

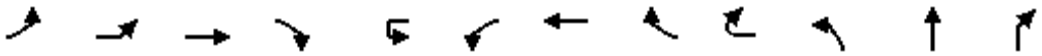
Intersection Summary



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			0.987					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	0.157		0.760			0.129	0.529				0.663	
Satd. Flow (perm)	257	0	2431	0	0	219	1867	1794	0	0	2149	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)	103	17	595	55	16	278	483	171	22	38	552	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)	127	21	676	68	24	299	549	197	25	57	634	22
Lane Group Flow (vph)	116	0	776	0	0	162	710	222	0	0	713	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		1.14			0.83	0.87	0.31			1.21	
Control Delay	357.2		118.2			58.3	44.1	26.5			118.4	



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				0.523								
Satd. Flow (perm)	1599	0	0	1788	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	173											
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	564	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	627	99							
Lane Group Flow (vph)	197	0	0	955	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			1.39								
Control Delay	0.1			203.0								



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		125.6			14.2	14.0	0.0			99.9	
Total Delay	357.2		243.7			72.5	58.1	26.5			218.3	
LOS	F		F			E	E	C			F	
Approach Delay			258.5				53.8				171.0	
Approach LOS			F				D				F	
90th %ile Green (s)	32.6	32.6	32.6		10.0	10.0						
90th %ile Term Code	Coord	Coord	Coord		Max	Max						
70th %ile Green (s)	34.0	34.0	34.0		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		571			91	543	130			495	
Fuel Used(gal)	8		26			4	16	4			18	
CO Emissions (g/hr)	570		1849			279	1153	289			1265	
NOx Emissions (g/hr)	111		360			54	224	56			246	
VOC Emissions (g/hr)	132		429			65	267	67			293	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~140		~382			91	224	116			~364	
Queue Length 95th (ft)	#245		#508			#216	#303	176			m#395	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	72		683			196	816	714			591	
Starvation Cap Reductn	0		0			0	0	0			93	
Spillback Cap Reductn	0		137			24	105	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.61		1.42			0.94	1.00	0.31			1.43	

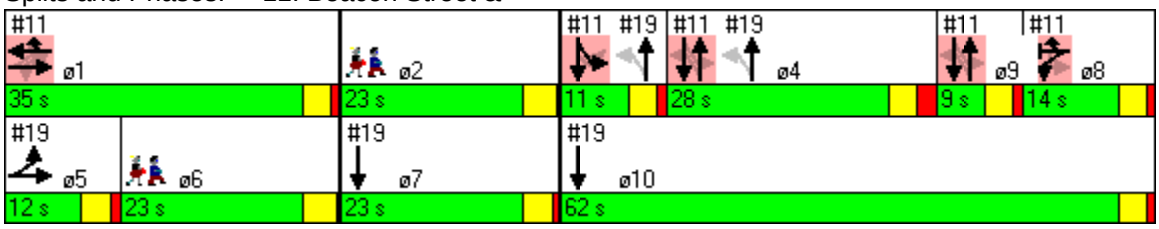
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.61			
Intersection Signal Delay: 165.9		Intersection LOS: 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.

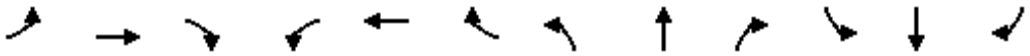
Splits and Phases: 11: Beacon Street &





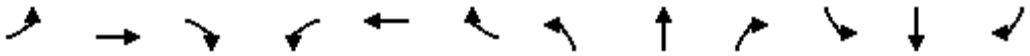
Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø9	ø10
Queue Delay	0.0			0.0								
Total Delay	0.1			203.0								
LOS	A			F								
Approach Delay				203.0								
Approach LOS				F								
90th %ile Green (s)		7.0	7.0			17.4	23.0	32.6	0.0	17.4	5.0	58.0
90th %ile Term Code		MaxR	MaxR			Hold	MaxR	Coord	Skip	Gap	MaxR	MaxR
70th %ile Green (s)		7.0	7.0			16.0	23.0	34.0	0.0	16.0	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			524								
Fuel Used(gal)	0			45								
CO Emissions (g/hr)	13			3164								
NOx Emissions (g/hr)	3			616								
VOC Emissions (g/hr)	3			733								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			~431								
Queue Length 95th (ft)	m0			m#454								
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			1.39								

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			0.999	
Satd. Flow (prot)	0	1866	0	0	1827	0	0	1840	1599	0	1820	0
Flt Permitted		0.930			0.563			0.984			0.767	
Satd. Flow (perm)	0	1749	0	0	1057	0	0	1812	1564	0	1397	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		5							124		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	641	116	14	774	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	697	130	25	832	11
Lane Group Flow (vph)	0	260	0	0	240	0	0	709	130	0	868	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	0.14		1.15	
Control Delay		24.9			38.1			20.3	3.1		102.5	

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	
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			20.3	3.1		102.5	
LOS		C			D			C	A		F	
Approach Delay		24.9			38.1			17.6			102.5	
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			453	13		613	
Fuel Used(gal)		2			4			8	1		24	
CO Emissions (g/hr)		175			272			570	47		1680	
NOx Emissions (g/hr)		34			53			111	9		327	
VOC Emissions (g/hr)		40			63			132	11		389	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		91			95			219	1		~472	
Queue Length 95th (ft)		128			#194			#555	31		#885	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		567			340			981	903		757	
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	0.14		1.15	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 54.1		Intersection LOS: D	
Intersection Capacity Utilization 97.8%		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			

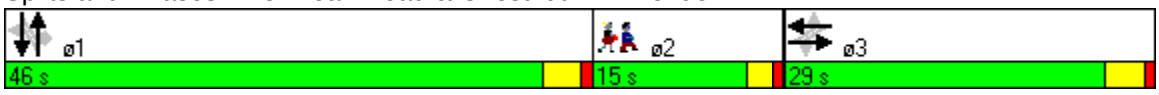
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.

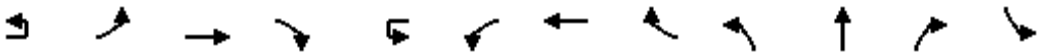
Lane Group	ø2
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	12.0
90th %ile Term Code	Ped
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile 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





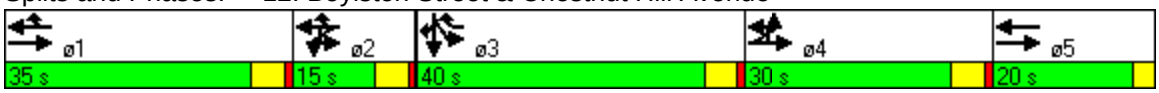
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	10	12	13	12	12	12	13
Storage Length (ft)		280		0		160		0	0		0	0
Storage Lanes		1		0		1		1	0		0	1
Total 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)								573				
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	207	1244	0	11	75	1325	606	0	0	0	455
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	227	1323	0	16	110	1380	612	0	0	0	489
Lane Group Flow (vph)	0	247	1323	0	0	126	1380	612	0	0	0	489
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		0.81	0.66			0.95	0.84	0.46				1.07
Control Delay		75.4	22.1			114.7	39.0	3.4				110.9
Queue Delay		0.0	0.6			0.0	21.1	0.7				0.0

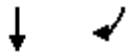
Lane Group	SBT	SBR	ø1	ø5
Lane Configurations				
Ideal Flow (vphpl)	1900	1900		
Lane Width (ft)	11	16		
Storage Length (ft)		0		
Storage Lanes		1		
Total Lost Time (s)	4.0	4.0		
Leading Detector (ft)	50	50		
Trailing Detector (ft)	0	0		
Turning Speed (mph)		9		
Lane Util. Factor	1.00	1.00		
Frt		0.850		
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	309		
Peak Hour Factor	0.63	0.87		
Heavy Vehicles (%)	8%	1%		
Adj. Flow (vph)	67	355		
Lane Group Flow (vph)	67	355		
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	0.51		
Control Delay	41.4	10.5		
Queue Delay	0.0	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Total Delay		75.4	22.7			114.7	60.1	4.0				110.9
LOS		E	C			F	E	A				F
Approach Delay			31.0				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)		199	819			74	1230	119				392
Fuel Used(gal)		7	24			3	22	3				13
CO Emissions (g/hr)		475	1656			192	1568	238				916
NOx Emissions (g/hr)		92	322			37	305	46				178
VOC Emissions (g/hr)		110	384			45	363	55				212
Dilemma Vehicles (#)		0	0			0	0	0				0
Queue Length 50th (ft)		218	414			119	639	18				~493
Queue Length 95th (ft)		#355	490			m#136	m667	m135				#714
Internal Link Dist (ft)			1319				414			1330		
Turn Bay Length (ft)		280				160						
Base Capacity (vph)		305	2008			132	1652	1338				457
Starvation Cap Reductn		0	0			0	315	386				0
Spillback Cap Reductn		0	317			0	0	0				0
Storage Cap Reductn		0	0			0	0	0				0
Reduced v/c Ratio		0.81	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: 45.5		Intersection LOS: D	
Intersection Capacity Utilization 83.9%		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.			
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	10.5		
LOS	D	B		
Approach Delay	66.6			
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	50		
Fuel Used(gal)	1	1		
CO Emissions (g/hr)	42	97		
NOx Emissions (g/hr)	8	19		
VOC Emissions (g/hr)	10	22		
Dilemma Vehicles (#)	0	0		
Queue Length 50th (ft)	47	36		
Queue Length 95th (ft)	61	111		
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	0.51		

Intersection Summary

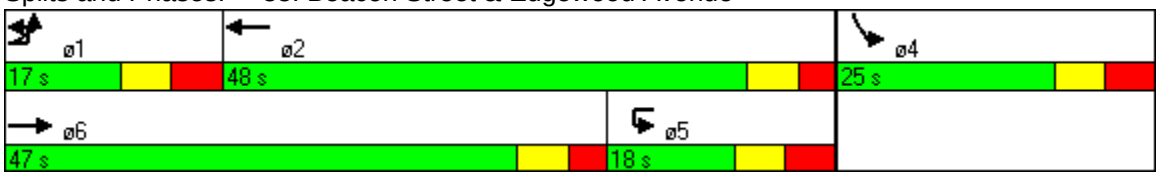
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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	884	22	725	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	931	27	797	94	64	49
Lane Group Flow (vph)	0	81	931	27	891	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	64.0	13.4	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	0.41		0.36	
Control Delay		37.6	9.6	19.4	5.9		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

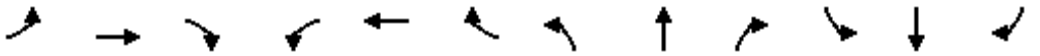


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.6	9.6	19.4	5.9		26.0	
LOS		D	A	B	A		C	
Approach Delay			11.8		6.3		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	13.0	13.0	42.6	12.9	42.5		11.5	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.4	10.4	41.6	16.2	47.4		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	380	8	145		51	
Fuel Used(gal)		1	15	1	19		1	
CO Emissions (g/hr)		102	1030	42	1344		90	
NOx Emissions (g/hr)		20	200	8	262		18	
VOC Emissions (g/hr)		24	239	10	312		21	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		42	66	10	43		38	
Queue Length 95th (ft)		77	237	m7	m98		67	
Internal Link Dist (ft)			1503		2673		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		260	2374	307	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	0.41		0.23	

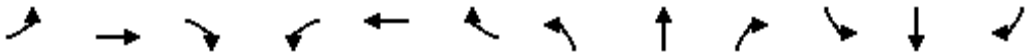
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 10.1		Intersection LOS: 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)	125	967	87	0	495	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)	162	1087	101	0	697	84	33	436	12	109	485	53
Lane Group Flow (vph)	162	1188	0	0	781	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)	16.7	49.3			28.5		32.7	32.7		32.7	32.7	
Actuated g/C Ratio	0.19	0.55			0.32		0.36	0.36		0.36	0.36	
v/c Ratio	0.50	0.64			0.77		0.27	0.77		0.57	0.84	
Control Delay	44.5	11.6			36.2		25.9	34.9		35.7	39.3	

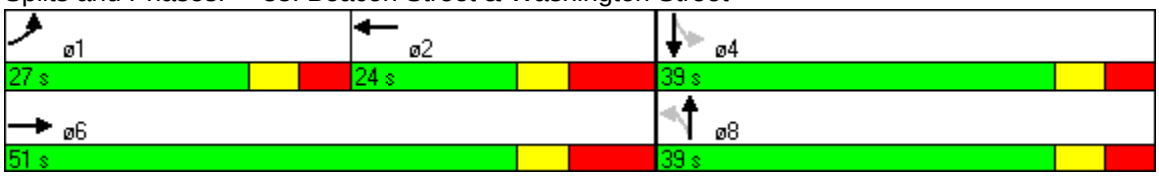


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	44.5	11.6			36.2		25.9	34.9		35.7	39.3	
LOS	D	B			D		C	C		D	D	
Approach Delay		15.5			36.2			34.2			38.7	
Approach LOS		B			D			C			D	
90th %ile Green (s)	17.8	40.0			14.2		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	13.6	40.0			18.4		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	13.1	40.0			18.9		31.0	31.0		31.0	31.0	
50th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Max	Max	
30th %ile Green (s)	10.9	42.9			24.0		28.1	28.1		28.1	28.1	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	8.2	48.4			32.2		22.6	22.6		22.6	22.6	
10th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
Stops (vph)	103	439			443		20	304		70	317	
Fuel Used(gal)	4	28			10		0	6		2	8	
CO Emissions (g/hr)	306	1925			683		30	452		120	544	
NOx Emissions (g/hr)	60	375			133		6	88		23	106	
VOC Emissions (g/hr)	71	446			158		7	105		28	126	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	78	178			219		12	211		47	262	
Queue Length 95th (ft)	110	129			#233		33	272		86	245	
Internal Link Dist (ft)		2673			695			732			988	
Turn Bay Length (ft)	150											
Base Capacity (vph)	444	1867			1012		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	0.36	0.64			0.77		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: 27.9 Intersection LOS: C
Intersection Capacity Utilization 76.0% 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



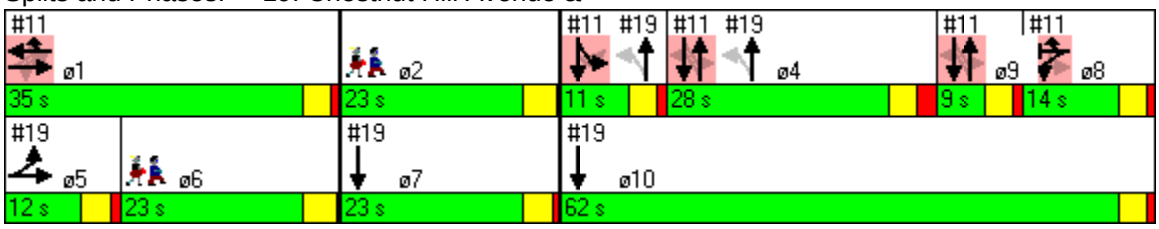
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	16	12	16	12	11	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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		0.950									0.993	
Flt Protected		0.969						0.998				
Satd. Flow (prot)	0	1715	0	0	0	0	0	3259	0	0	3450	0
Flt Permitted		0.969						0.895				
Satd. Flow (perm)	0	1715	0	0	0	0	0	2923	0	0	3450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10									8	
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)	16	0	9	0	0	0	23	721	0	0	854	40
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)	17	0	10	0	0	0	25	801	0	0	928	43
Lane Group Flow (vph)	0	27	0	0	0	0	0	826	0	0	971	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		0.06						0.97			0.43	
Control Delay		23.4						66.4			6.7	
Queue Delay		0.0						105.3			184.8	
Total Delay		23.4						171.7			191.6	
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		23.4						171.7			191.6	
Approach LOS		C						F			F	
90th %ile Green (s)	32.6	32.6										
90th %ile Term Code	Coord	Coord										
70th %ile Green (s)	34.0	34.0										
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)		14						666			248	
Fuel Used(gal)		0						18			4	
CO Emissions (g/hr)		16						1223			259	
NOx Emissions (g/hr)		3						238			50	
VOC Emissions (g/hr)		4						284			60	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		10						332			106	
Queue Length 95th (ft)		33						#467			m97	
Internal Link Dist (ft)		98			393			570			79	
Turn Bay Length (ft)												
Base Capacity (vph)		489						853			2217	
Starvation Cap Reductn		0						0			1526	
Spillback Cap Reductn		1						192			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.06						1.25			1.41	

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: 180.1		Intersection LOS: F	
Intersection Capacity Utilization 48.2%		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: Chestnut Hill Avenue &



Lane Group	ø1	ø2	ø3	ø4	ø6	ø7	ø8	ø9	ø10
Approach Delay									
Approach LOS									
90th %ile Green (s)	32.6	17.4	7.0	23.0	0.0	17.4	10.0	5.0	58.0
90th %ile Term Code	Coord	Hold	MaxR	MaxR	Skip	Gap	Max	MaxR	MaxR
70th %ile Green (s)	34.0	16.0	7.0	23.0	0.0	16.0	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

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	67	28	783	53	3	663	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	89	54	860	76	8	850	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	0.72	0.81	0.81	0.67	0.67			0.72		
vC, conflicting volume	1975	1892	898	1920	1920	860	870			936		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1683	1580	858	1615	1614	791	805			911		
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 %	32	63	91	81	88	65	90			99		
cM capacity (veh/h)	33	79	258	41	66	252	553			543		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	76	105	990	878
Volume Left	22	8	54	8
Volume Right	24	89	76	20
cSH	66	157	553	543
Volume to Capacity	1.14	0.67	0.10	0.01
Queue Length 95th (ft)	149	96	8	1
Control Delay (s)	261.5	64.9	3.2	0.5
Lane LOS	F	F	A	A
Approach Delay (s)	261.5	64.9	3.2	0.5
Approach LOS	F	F		

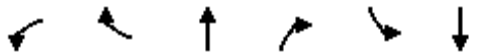
Intersection Summary			
Average Delay	14.7		
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	3	675	6	6	617
Peak Hour Factor	0.38	0.38	0.97	0.38	0.75	0.90
Hourly flow rate (vph)	8	8	696	16	8	686
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	1405	704			712	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1405	704			712	
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)	154	441			897	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	712	694
Volume Left	8	0	8
Volume Right	8	16	0
cSH	228	1700	897
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		47.3%	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)	10	34	679	0	0	613
Peak Hour Factor	0.50	0.50	0.97	0.38	0.92	0.90
Hourly flow rate (vph)	20	68	700	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	1381	700			700	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1381	700			700	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	88	84			100	
cM capacity (veh/h)	160	433			897	

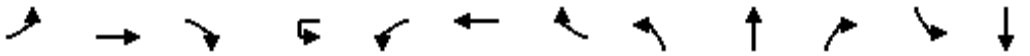
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	88	700	681
Volume Left	20	0	0
Volume Right	68	0	0
cSH	312	1700	1700
Volume to Capacity	0.28	0.41	0.40
Queue Length 95th (ft)	28	0	0
Control Delay (s)	21.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	21.0	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	45.7%	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			0.945			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1787	3304	0	0	1788	3404	0	1770	1748	0	0	3497
Flt Permitted	0.300				0.150			0.264				0.513
Satd. Flow (perm)	564	3304	0	0	282	3404	0	492	1748	0	0	1803
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		84				6			28			
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	201	420	22	181	429	221	30	452
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	242	438	31	223	517	299	52	491
Lane Group Flow (vph)	143	651	0	0	254	469	0	223	816	0	0	543
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			0.98	0.31		0.77	1.19			1.17
Control Delay	16.3	20.9			71.2	22.1		58.2	131.9			135.7
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0



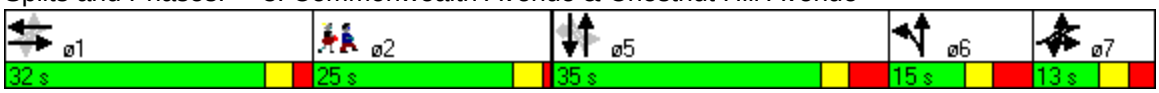
Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1524	
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	16.3	20.9			71.2	22.1		58.2	131.9			135.7
LOS	B	C			E	C		E	F			F
Approach Delay		20.1				39.4			116.1			129.5
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			98	272		148	519			399
Fuel Used(gal)	2	11			5	7		5	26			19
CO Emissions (g/hr)	136	769			363	486		315	1807			1312
NOx Emissions (g/hr)	26	150			71	95		61	352			255
VOC Emissions (g/hr)	32	178			84	113		73	419			304
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	52	155			99	119		121	~750			~263
Queue Length 95th (ft)	74	205			#222	160		#164	#873			#377
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	383	1506			259	1507		289	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			0.98	0.31		0.77	1.19			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: 1.19			
Intersection Signal Delay: 76.5		Intersection LOS: E	
Intersection Capacity Utilization 91.5%		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.			

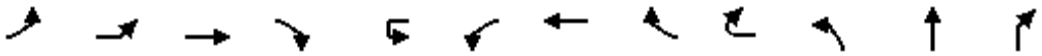
Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





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	

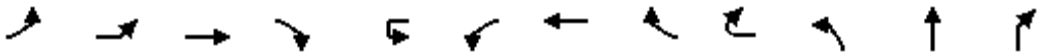
Intersection Summary



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			0.964					0.850			0.993	
Flt Protected	0.950		0.994			0.950	0.988				0.995	
Satd. Flow (prot)	1588	0	3203	0	0	1616	3522	1812	0	0	3334	0
Flt Permitted	0.143		0.515			0.143	0.536				0.730	
Satd. Flow (perm)	239	0	1660	0	0	243	1910	1812	0	0	2446	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)	114	21	376	93	12	274	469	138	34	51	495	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)	148	27	400	155	16	334	521	189	37	64	538	30
Lane Group Flow (vph)	93	0	637	0	0	175	696	226	0	0	632	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	1.82		1.78			1.15	1.11	0.41			0.86	
Control Delay	467.1		392.7			155.2	110.0	38.3			27.6	



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	3432	0							
Flt Permitted				0.570								
Satd. Flow (perm)	1615	0	0	1978	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)	228	2	179	595	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	647	106							
Lane Group Flow (vph)	251	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	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			0.94								
Control Delay	0.1			48.8								



Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		314.8			115.2	109.3	0.0			52.9	
Total Delay	467.1		707.5			270.4	219.2	38.3			80.5	
LOS	F		F			F	F	D			F	
Approach Delay			676.9				190.1				57.7	
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		359			91	557	133			540	
Fuel Used(gal)	8		50			7	24	4			7	
CO Emissions (g/hr)	549		3499			471	1701	294			488	
NOx Emissions (g/hr)	107		681			92	331	57			95	
VOC Emissions (g/hr)	127		811			109	394	68			113	
Dilemma Vehicles (#)	0		0			0	0	0			0	
Queue Length 50th (ft)	~129		~440			~138	~317	151			280	
Queue Length 95th (ft)	#212		#568			#259	#472	177			#377	
Internal Link Dist (ft)			1256				1503				93	
Turn Bay Length (ft)	25					150		150				
Base Capacity (vph)	51		358			152	628	558			734	
Starvation Cap Reductn	0		0			0	0	0			164	
Spillback Cap Reductn	0		101			29	116	0			0	
Storage Cap Reductn	0		0			0	0	0			0	
Reduced v/c Ratio	1.82		2.48			1.42	1.36	0.41			1.11	

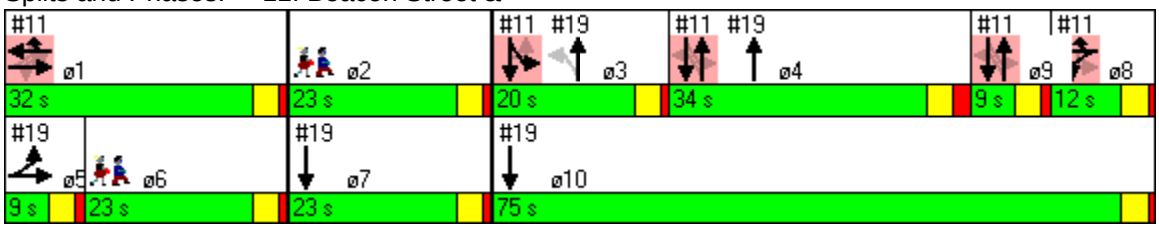
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.82			
Intersection Signal Delay: 218.2		Intersection LOS: F	
Intersection Capacity Utilization 88.8%		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			48.8								
LOS	A			D								
Approach Delay				48.8								
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			715								
Fuel Used(gal)	0			20								
CO Emissions (g/hr)	22			1387								
NOx Emissions (g/hr)	4			270								
VOC Emissions (g/hr)	5			321								
Dilemma Vehicles (#)	0			0								
Queue Length 50th (ft)	0			315								
Queue Length 95th (ft)	m0			#442								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)												
Base Capacity (vph)	1615			1016								
Starvation Cap Reductn	0			0								
Spillback Cap Reductn	0			0								
Storage Cap Reductn	0			0								
Reduced v/c Ratio	0.16			0.94								

Intersection Summary

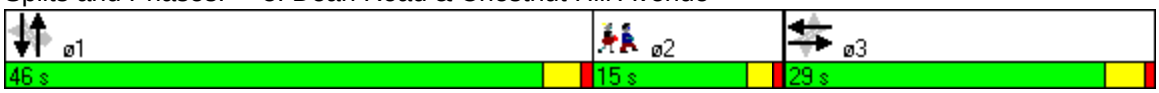
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	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		0.858			0.791			0.986			0.892	
Satd. Flow (perm)	0	1614	0	0	1480	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	6	7	663	108	4	801	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	12	12	780	135	5	826	39
Lane Group Flow (vph)	0	107	0	0	281	0	0	792	135	0	870	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			0.59			0.79	0.15		0.98	
Control Delay		21.1			29.4			23.1	3.6		45.9	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		21.1			29.4			23.1	3.6		45.9	

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		21.1			29.4			20.2			45.9	
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			174			477	16		636	
Fuel Used(gal)		1			4			9	1		16	
CO Emissions (g/hr)		81			268			618	46		1089	
NOx Emissions (g/hr)		16			52			120	9		212	
VOC Emissions (g/hr)		19			62			143	11		252	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		34			106			259	4		347	
Queue Length 95th (ft)		83			188			#585	28		#814	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		523			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			0.59			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: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 99.9%		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)							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	248	963	0	76	1023	361	0	0	0	522	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	331	1094	0	101	1176	401	0	0	0	652	56
Lane Group Flow (vph)	0	343	1094	0	101	1176	401	0	0	0	652	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		1.06	0.53		0.77	0.71	0.31				1.40	0.12
Control Delay		119.8	19.2		94.0	33.8	4.1				231.1	40.9
Queue Delay		0.0	0.0		0.0	1.3	0.4				0.0	0.0

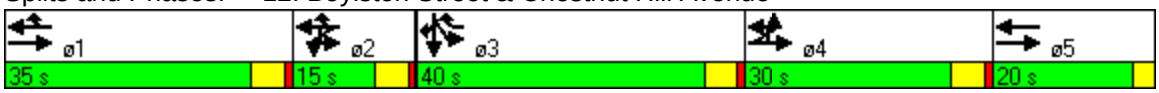


Lane Group	SBR	ø1	ø5
Lane Configurations			
Ideal Flow (vphpl)	1900		
Lane Width (ft)	16		
Storage Length (ft)	0		
Storage Lanes	1		
Total Lost Time (s)	4.0		
Leading Detector (ft)	50		
Trailing Detector (ft)	0		
Turning Speed (mph)	9		
Lane Util. Factor	1.00		
Frt	0.850		
Flt Protected			
Satd. Flow (prot)	1777		
Flt Permitted			
Satd. Flow (perm)	1777		
Right Turn on Red	Yes		
Satd. Flow (RTOR)	272		
Headway Factor	0.85		
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Volume (vph)	242		
Peak Hour Factor	0.89		
Heavy Vehicles (%)	3%		
Adj. Flow (vph)	272		
Lane Group Flow (vph)	272		
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	6.5		
Queue Delay	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay		119.8	19.2		94.0	35.1	4.5				231.1	40.9
LOS		F	B		F	D	A				F	D
Approach Delay			43.3			31.3						157.9
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)		215	565		69	852	73				396	29
Fuel Used(gal)		10	17		2	16	2				28	1
CO Emissions (g/hr)		705	1216		149	1097	147				1923	39
NOx Emissions (g/hr)		137	237		29	213	29				374	8
VOC Emissions (g/hr)		163	282		34	254	34				446	9
Dilemma Vehicles (#)		0	0		0	0	0				0	0
Queue Length 50th (ft)		~342	306		93	482	61				~792	39
Queue Length 95th (ft)		#399	354		m#134	538	130				#868	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	92		0	0	0				0	0
Storage Cap Reductn		0	0		0	0	0				0	0
Reduced v/c Ratio		1.06	0.56		0.77	0.85	0.47				1.40	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: 1.40			
Intersection Signal Delay: 65.8		Intersection LOS: E	
Intersection Capacity Utilization 81.2%		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)	22		
Fuel Used(gal)	1		
CO Emissions (g/hr)	55		
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)	659		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.41		

Intersection Summary

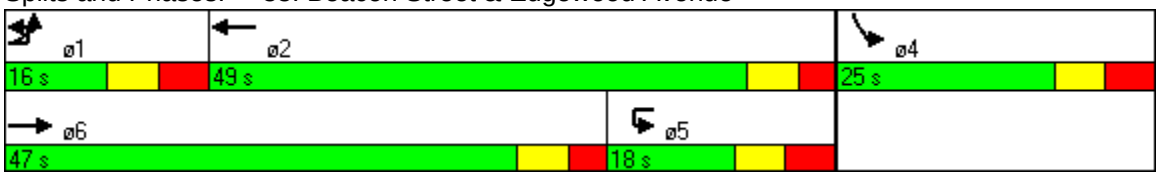
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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		0.949	
Flt Protected		0.950		0.950			0.970	
Satd. Flow (prot)	0	1685	3369	1745	3400	0	1982	0
Flt Permitted		0.950		0.950			0.970	
Satd. Flow (perm)	0	1685	3369	1745	3400	0	1982	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					22		22	
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	29	718	26	884	90	33	11
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	42	845	35	940	118	36	22
Lane Group Flow (vph)	0	96	845	35	1058	0	58	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)		13.8	67.7	14.6	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	0.45		0.20	
Control Delay		37.5	8.9	21.7	5.9		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

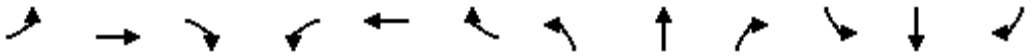


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.5	8.9	21.7	5.9		26.0	
LOS		D	A	C	A		C	
Approach Delay			11.8		6.4		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	14.2	14.2	43.2	15.1	44.1		8.7	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.5	11.5	39.2	19.8	47.5		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)	7.7	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)		62	269	15	236		27	
Fuel Used(gal)		2	12	1	24		1	
CO Emissions (g/hr)		124	814	53	1651		46	
NOx Emissions (g/hr)		24	158	10	321		9	
VOC Emissions (g/hr)		29	189	12	383		11	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		50	57	14	98		18	
Queue Length 95th (ft)		68	190	m16	125		53	
Internal Link Dist (ft)			1503		2709		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		267	2539	329	2351		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	0.11	0.45		0.12	

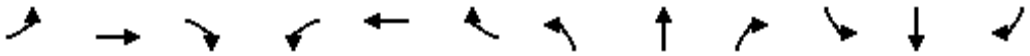
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 49.0%		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			0.974	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1719	3332	0	0	3412	0	1668	1750	0	1652	1760	0
Flt Permitted	0.950						0.274			0.415		
Satd. Flow (perm)	1719	3332	0	0	3412	0	481	1750	0	722	1760	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)	110	637	165	0	594	31	109	231	48	62	306	53
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)	124	716	239	0	660	53	127	272	62	78	382	79
Lane Group Flow (vph)	124	955	0	0	713	0	127	334	0	78	461	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)	14.0	51.3			33.3		30.7	30.7		30.7	30.7	
Actuated g/C Ratio	0.16	0.57			0.37		0.34	0.34		0.34	0.34	
v/c Ratio	0.46	0.50			0.57		0.77	0.55		0.32	0.76	
Control Delay	52.4	9.2			26.0		57.2	26.0		24.6	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	52.4	9.2			26.0		57.2	26.0		24.6	33.8	
LOS	D	A			C		E	C		C	C	
Approach Delay		14.2			26.0			34.6			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)	9.8	47.3			29.5		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)	99	275			491		91	208		44	301	
Fuel Used(gal)	4	20			12		3	5		1	7	
CO Emissions (g/hr)	288	1431			862		185	340		68	457	
NOx Emissions (g/hr)	56	278			168		36	66		13	89	
VOC Emissions (g/hr)	67	332			200		43	79		16	106	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	68	137			181		60	136		30	210	
Queue Length 95th (ft)	124	86			242		#142	200		58	268	
Internal Link Dist (ft)		2709			1215			942			780	
Turn Bay Length (ft)	150											
Base Capacity (vph)	287	1898			1261		182	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	0.43	0.50			0.57		0.70	0.50		0.29	0.68	

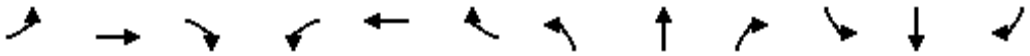
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 24.1		Intersection LOS: C	
Intersection Capacity Utilization 72.8%		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



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		0.951									0.992	
Flt Protected		0.969						0.998				
Satd. Flow (prot)	0	1717	0	0	0	0	0	3414	0	0	3511	0
Flt Permitted		0.969						0.863				
Satd. Flow (perm)	0	1717	0	0	0	0	0	2953	0	0	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16									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)	39	0	22	0	0	0	30	740	0	0	896	53
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)	42	0	24	0	0	0	33	804	0	0	974	58
Lane Group Flow (vph)	0	66	0	0	0	0	0	837	0	0	1032	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		0.25						0.74			0.41	
Control Delay		45.1						39.1			8.7	
Queue Delay		0.0						8.3			95.9	
Total Delay		45.1						47.4			104.6	
LOS		D						D			F	
Approach Delay		45.1						47.4			104.6	

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								

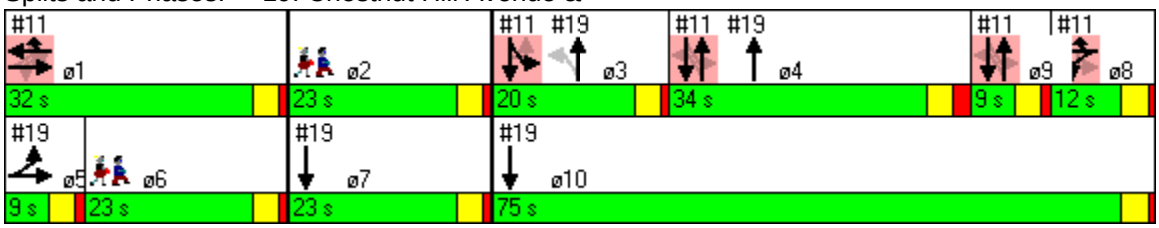


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D						D			F	
90th %ile Green (s)	5.0	5.0					16.0					
90th %ile Term Code	Coord	Coord					MaxR					
70th %ile Green (s)	5.0	5.0					16.0					
70th %ile Term Code	Coord	Coord					MaxR					
50th %ile Green (s)	28.0	28.0					16.0					
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)		35						648			372	
Fuel Used(gal)		1						14			5	
CO Emissions (g/hr)		60						945			351	
NOx Emissions (g/hr)		12						184			68	
VOC Emissions (g/hr)		14						219			81	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		34						315			173	
Queue Length 95th (ft)		#130						395			m162	
Internal Link Dist (ft)		153			370			555			93	
Turn Bay Length (ft)												
Base Capacity (vph)		262						1136			2542	
Starvation Cap Reductn		0						0			1686	
Spillback Cap Reductn		1						264			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.25						0.96			1.21	

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: 1.82			
Intersection Signal Delay: 77.9		Intersection LOS: E	
Intersection Capacity Utilization 53.2%		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: Chestnut Hill Avenue &



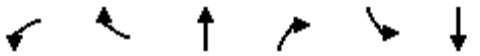
Lane Group	ø1	ø2	ø4	ø6	ø7	ø8	ø9	ø10
Approach LOS								
90th %ile Green (s)	28.0	19.0	29.0	19.0	19.0	8.0	5.0	71.0
90th %ile Term Code	Coord	Hold	MaxR	Hold	MaxR	Max	MaxR	MaxR
70th %ile Green (s)	28.0	19.0	29.0	19.0	19.0	8.0	5.0	71.0
70th %ile Term Code	Coord	Hold	MaxR	Hold	MaxR	Max	MaxR	MaxR
50th %ile 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

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	82	85	830	10	2	690	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	108	96	883	15	4	775	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	0.76	0.76	0.72	0.76	0.76	0.62	0.62			0.72		
vC, conflicting volume	1981	1869	890	1881	1874	777	779			898		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1732	1585	847	1601	1592	640	643			858		
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 %	31	69	98	91	83	63	84			99		
cM capacity (veh/h)	22	64	262	43	68	295	588			439		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	124	993	783
Volume Left	15	4	96	4
Volume Right	4	108	15	4
cSH	39	195	588	439
Volume to Capacity	1.01	0.63	0.16	0.01
Queue Length 95th (ft)	97	92	14	1
Control Delay (s)	307.9	50.7	5.0	0.3
Lane LOS	F	F	A	A
Approach Delay (s)	307.9	50.7	5.0	0.3
Approach LOS	F	F		

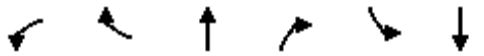
Intersection Summary			
Average Delay	12.1		
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	4	583	9	18	658
Peak Hour Factor	0.50	0.33	0.92	0.56	0.61	0.87
Hourly flow rate (vph)	4	12	634	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	1457	642			650	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1457	642			650	
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	478			946	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	650	786
Volume Left	4	0	30
Volume Right	12	16	0
cSH	299	1700	946
Volume to Capacity	0.05	0.38	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	17.7	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	17.7	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	30	585	0	0	662
Peak Hour Factor	0.67	0.63	0.92	0.25	0.25	0.92
Hourly flow rate (vph)	16	48	636	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	1355	636			636	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1355	636			636	
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	90			100	
cM capacity (veh/h)	166	482			957	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	64	636	720
Volume Left	16	0	0
Volume Right	48	0	0
cSH	324	1700	1700
Volume to Capacity	0.20	0.37	0.42
Queue Length 95th (ft)	18	0	0
Control Delay (s)	18.8	0.0	0.0
Lane LOS	C		
Approach Delay (s)	18.8	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.8		
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			0.968			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1752	3269	0	0	1771	3348	0	1752	1771	0	0	3454
Flt Permitted	0.267				0.267			0.362				0.539
Satd. Flow (perm)	493	3269	0	0	498	3348	0	668	1771	0	0	1871
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		87				10			16			
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	191	308	34	146	585	174	27	423
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	205	362	47	206	688	187	52	481
Lane Group Flow (vph)	164	725	0	0	213	409	0	206	875	0	0	533
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			0.75	0.36		0.52	0.98			0.85dl
Control Delay	31.3	32.4			42.1	30.7		28.4	55.0			38.0
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0

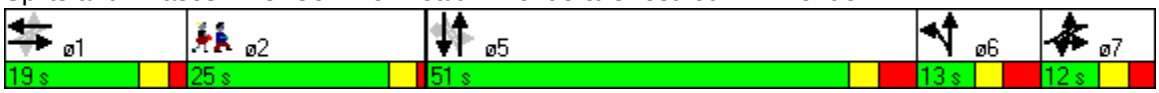


Lane Group	SBR	ø2
Lane Configurations		
Ideal Flow (vphpl)	1900	
Lane Width (ft)	12	
Storage Length (ft)	50	
Storage Lanes	1	
Total Lost Time (s)	4.0	
Leading Detector (ft)	50	
Trailing Detector (ft)	0	
Turning Speed (mph)	9	
Lane Util. Factor	1.00	
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1615	
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			42.1	30.7		28.4	55.0			38.0
LOS	C	C			D	C		C	D			D
Approach Delay		32.2				34.6			49.9			37.1
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			132	246		84	641			377
Fuel Used(gal)	3	14			4	6		3	18			9
CO Emissions (g/hr)	212	995			275	432		178	1293			601
NOx Emissions (g/hr)	41	194			53	84		35	252			117
VOC Emissions (g/hr)	49	231			64	100		41	300			139
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	78	219			104	122		87	636			182
Queue Length 95th (ft)	122	286			#186	156		103	#840			245
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	281	1148			284	1123		393	894			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			0.75	0.36		0.52	0.98			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: 0.98			
Intersection Signal Delay: 39.6		Intersection LOS: D	
Intersection Capacity Utilization 97.0%		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





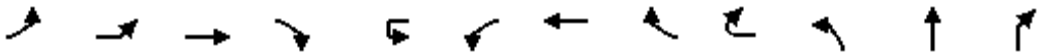
Lane Group	SBR	ø2
Total Delay	14.8	
LOS	B	
Approach Delay		
Approach LOS		
90th %ile Green (s)	44.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	44.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	44.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	44.0	0.0
30th %ile Term Code	Max	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	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		0		200		150		150		50		0
Storage Lanes		1		1		2		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	
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	1.00	0.95	0.95	0.95	1.00	0.97	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.987					0.850			0.995	
Flt Protected	0.950		0.999			0.950				0.950		
Satd. Flow (prot)	1711	0	3336	0	0	3438	1944	1794	0	1572	3251	0
Flt Permitted	0.950		0.664			0.950				0.294		
Satd. Flow (perm)	1711	0	2217	0	0	3438	1944	1794	0	486	3251	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)	103	17	595	55	16	278	483	171	22	38	552	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)	127	21	676	68	24	299	549	197	25	57	634	22
Lane Group Flow (vph)	127	0	765	0	0	323	549	222	0	57	656	0
Turn Type	custom	Perm			custom	custom		custom		Perm		
Protected Phases	9		1		9	9	1	1 3!			4 8	
Permitted Phases	9	1			9	9		1 3!		4 8	4 8	
Detector Phases	9	1	1		9	9	1	1 3		4 8	4 8	
Minimum Initial (s)	4.0	21.0	21.0		4.0	4.0	21.0					
Minimum Split (s)	8.0	25.0	25.0		8.0	8.0	25.0					
Total Split (s)	22.0	49.0	49.0	0.0	22.0	22.0	49.0	65.0	0.0	37.0	37.0	0.0
Total Split (%)	14.7%	32.7%	32.7%	0.0%	14.7%	14.7%	32.7%	43.3%	0.0%	24.7%	24.7%	0.0%
Maximum Green (s)	18.0	45.0	45.0		18.0	18.0	45.0					
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0					
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0					
Lead/Lag	Lag				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0					
Recall Mode	None	C-Max	C-Max		None	None	C-Max					
Walk Time (s)		7.0	7.0				7.0					
Flash Dont Walk (s)		12.0	12.0				12.0					
Pedestrian Calls (#/hr)		10	10				10					
Act Effct Green (s)	18.0		48.6			18.0	48.6	60.6		33.0	33.0	
Actuated g/C Ratio	0.12		0.32			0.12	0.32	0.40		0.22	0.22	
v/c Ratio	0.62		1.06			0.78	0.87	0.31		0.53	0.92	
Control Delay	76.8		99.7			78.0	63.7	19.2		18.6	24.0	



Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø8	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	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	1677	3369	0							
Flt Permitted			0.950									
Satd. Flow (perm)	1599	0	1677	3369	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	151											
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	564	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	627	99							
Lane Group Flow (vph)	197	0	229	726	0							
Turn Type	Free	custom	Prot									
Protected Phases		3!	3	3 4 8		2	4	5	6	7	8	10
Permitted Phases	Free	3!										
Detector Phases		3	3	3 4 8								
Minimum Initial (s)		7.0	7.0			16.0	13.0	4.0	5.0	4.0	4.0	7.0
Minimum Split (s)		11.0	11.0			26.0	18.0	8.0	9.0	26.0	8.0	11.0
Total Split (s)	0.0	16.0	16.0	53.0	0.0	26.0	29.0	22.0	27.0	26.0	8.0	75.0
Total Split (%)	0.0%	10.7%	10.7%	35.3%	0.0%	17%	19%	15%	18%	17%	5%	50%
Maximum Green (s)		12.0	12.0			22.0	24.0	18.0	23.0	22.0	4.0	71.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			1.0	2.0	0.5	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	3.0	2.0	2.0	2.0	2.0
Recall Mode		None	None			None	Min	C-Min	None	Min	None	Max
Walk Time (s)						7.0						
Flash Dont Walk (s)						13.0						
Pedestrian Calls (#/hr)						20						
Act Effct Green (s)	150.0		12.0	49.0								
Actuated g/C Ratio	1.00		0.08	0.33								
v/c Ratio	0.12		1.71	0.66								
Control Delay	0.1		386.8	46.8								



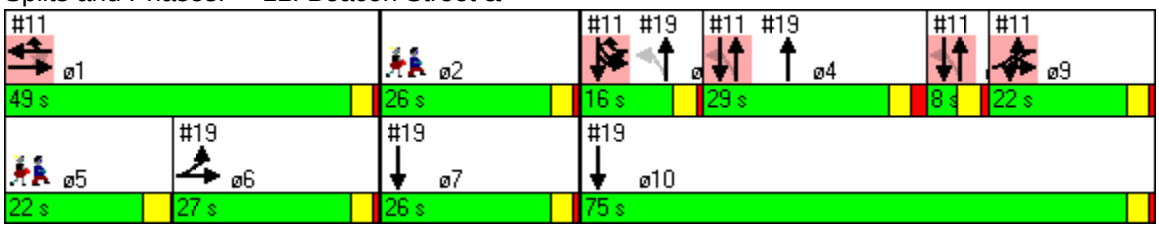
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		1.7			0.0	0.0	0.0		8.1	194.1	
Total Delay	76.8		101.4			78.0	63.7	19.2		26.6	218.1	
LOS	E		F			E	E	B		C	F	
Approach Delay			97.9				58.9				158.9	
Approach LOS			F				E				F	
90th %ile Green (s)	18.0	47.0	47.0		18.0	18.0	47.0					
90th %ile Term Code	Max	Coord	Coord		Max	Max	Coord					
70th %ile Green (s)	18.0	47.0	47.0		18.0	18.0	47.0					
70th %ile Term Code	Max	Coord	Coord		Max	Max	Coord					
50th %ile Green (s)	18.0	47.0	47.0		18.0	18.0	47.0					
50th %ile Term Code	Max	Coord	Coord		Max	Max	Coord					
30th %ile Green (s)	18.0	51.0	51.0		18.0	18.0	51.0					
30th %ile Term Code	Hold	Coord	Coord		Hold	Hold	Coord					
10th %ile Green (s)	18.0	51.0	51.0		18.0	18.0	51.0					
10th %ile Term Code	Hold	Coord	Coord		Hold	Hold	Coord					
Stops (vph)	99		566			277	431	126		26	501	
Fuel Used(gal)	3		24			10	15	4		0	6	
CO Emissions (g/hr)	226		1651			687	1021	268		23	437	
NOx Emissions (g/hr)	44		321			134	199	52		5	85	
VOC Emissions (g/hr)	52		383			159	237	62		5	101	
Dilemma Vehicles (#)	0		0			0	0	0		0	0	
Queue Length 50th (ft)	120		~445			160	516	100		22	253	
Queue Length 95th (ft)	173		#556			#224	#699	141		m23	m240	
Internal Link Dist (ft)			1256				1503				79	
Turn Bay Length (ft)						150		150		50		
Base Capacity (vph)	205		719			413	630	725		107	715	
Starvation Cap Reductn	0		0			0	0	0		25	259	
Spillback Cap Reductn	0		3			0	0	0		0	0	
Storage Cap Reductn	0		0			0	0	0		0	0	
Reduced v/c Ratio	0.62		1.07			0.78	0.87	0.31		0.70	1.44	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:Ped, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.71
Intersection Signal Delay: 108.8 Intersection LOS: F
Intersection Capacity Utilization 86.5% 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.
! Phase conflict between lane groups.

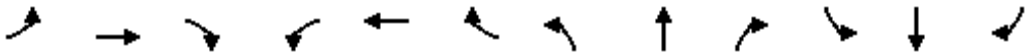
Splits and Phases: 11: Beacon Street &





Lane Group	NBR2	SBL2	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø8	ø10
Queue Delay	0.0		0.0	0.0								
Total Delay	0.1		386.8	46.8								
LOS	A		F	D								
Approach Delay				128.3								
Approach LOS				F								
90th %ile Green (s)		12.0	12.0			20.0	24.0	7.5	35.5	20.0	4.0	71.0
90th %ile Term Code		Max	Max			Ped	Max	Coord	Hold	Hold	Max	MaxR
70th %ile Green (s)		12.0	12.0			20.0	24.0	7.5	35.5	20.0	4.0	71.0
70th %ile Term Code		Max	Max			Ped	Max	Coord	Hold	Hold	Max	MaxR
50th %ile Green (s)		12.0	12.0			20.0	24.0	7.5	35.5	20.0	4.0	71.0
50th %ile Term Code		Max	Max			Ped	Max	Coord	Hold	Hold	Max	MaxR
30th %ile Green (s)		12.0	12.0			16.0	24.0	51.0	0.0	16.0	4.0	71.0
30th %ile Term Code		Max	Max			Hold	Max	Coord	Skip	Hold	Max	MaxR
10th %ile Green (s)		12.0	12.0			16.0	24.0	51.0	0.0	16.0	4.0	71.0
10th %ile Term Code		Max	Max			Hold	Max	Coord	Skip	Hold	Max	MaxR
Stops (vph)	0		137	544								
Fuel Used(gal)	0		18	15								
CO Emissions (g/hr)	13		1291	1025								
NOx Emissions (g/hr)	3		251	199								
VOC Emissions (g/hr)	3		299	237								
Dilemma Vehicles (#)	0		0	0								
Queue Length 50th (ft)	0		~329	321								
Queue Length 95th (ft)	m0		#497	394								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)			150									
Base Capacity (vph)	1599		134	1101								
Starvation Cap Reductn	0		0	0								
Spillback Cap Reductn	0		0	0								
Storage Cap Reductn	0		0	0								
Reduced v/c Ratio	0.12		1.71	0.66								

Intersection Summary



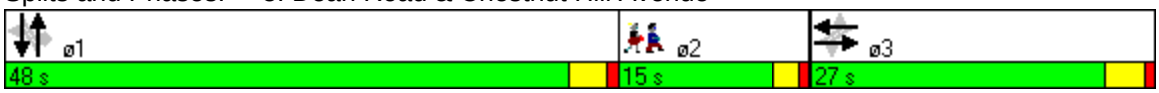
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		200	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	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			0.999	
Satd. Flow (prot)	0	1866	0	0	1827	0	0	1840	1599	0	1820	0
Flt Permitted		0.927			0.541			0.984			0.827	
Satd. Flow (perm)	0	1744	0	0	1016	0	0	1812	1565	0	1506	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		4							129		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	641	116	14	774	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	697	130	25	832	11
Lane Group Flow (vph)	0	260	0	0	240	0	0	709	130	0	868	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		1.02	
Control Delay		27.4			48.1			17.8	2.6		54.8	

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		27.4			48.1			17.8	2.6		54.8	
LOS		C			D			B	A		D	
Approach Delay		27.4			48.1			15.5			54.8	
Approach LOS		C			D			B			D	
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			440	12		604	
Fuel Used(gal)		3			4			8	1		16	
CO Emissions (g/hr)		183			301			542	46		1138	
NOx Emissions (g/hr)		36			59			106	9		221	
VOC Emissions (g/hr)		42			70			126	11		264	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		96			100			203	0		356	
Queue Length 95th (ft)		133			#214			#485	28		#833	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		520			302			1028	943		855	
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		1.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 35.9		Intersection LOS: D	
Intersection Capacity Utilization 97.8%		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	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	207	1244	0	11	75	1325	606	0	0	0	455
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	227	1323	0	16	110	1380	612	0	0	0	489
Lane Group Flow (vph)	0	247	1323	0	0	126	1380	612	0	0	0	489
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)		24.1	73.1			14.0	63.0	104.1				40.9
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		86.0	28.9			78.2	40.6	2.8				76.0
Queue Delay		0.0	1.3			0.0	34.2	0.6				0.0

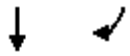
Lane Group	SBT	SBR	ø1	ø5
Lane Configurations				
Ideal Flow (vphpl)	1900	1900		
Lane Width (ft)	11	16		
Storage Length (ft)		0		
Storage Lanes		1		
Total Lost Time (s)	4.0	4.0		
Leading Detector (ft)	50	50		
Trailing Detector (ft)	0	0		
Turning Speed (mph)		9		
Lane Util. Factor	1.00	1.00		
Frt		0.850		
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	309		
Peak Hour Factor	0.63	0.87		
Heavy Vehicles (%)	8%	1%		
Adj. Flow (vph)	67	355		
Lane Group Flow (vph)	67	355		
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)	40.9	40.9		
Actuated g/C Ratio	0.29	0.29		
v/c Ratio	0.13	0.48		
Control Delay	37.5	10.3		
Queue Delay	0.0	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Total Delay		86.0	30.2			78.2	74.8	3.4				76.0
LOS		F	C			E	E	A				E
Approach Delay			38.9				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)	23.5	23.5			13.0	13.0						39.5
10th %ile Term Code	Max	Max			MaxR	MaxR						Gap
Stops (vph)		196	934			80	1241	96				406
Fuel Used(gal)		7	26			2	23	3				10
CO Emissions (g/hr)		507	1820			150	1602	224				695
NOx Emissions (g/hr)		99	354			29	312	44				135
VOC Emissions (g/hr)		117	422			35	371	52				161
Dilemma Vehicles (#)		0	0			0	0	0				0
Queue Length 50th (ft)		222	476			117	651	14				436
Queue Length 95th (ft)		#377	564			m128	m680	m99				#654
Internal Link Dist (ft)			1319				414			1330		
Turn Bay Length (ft)		280				160						
Base Capacity (vph)		282	1812			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: 47.8		Intersection LOS: D	
Intersection Capacity Utilization 83.9%		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	10.3		
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)	39.5	39.5	44.0	0.0
10th %ile Term Code	Gap	Gap	Coord	Skip
Stops (vph)	31	54		
Fuel Used(gal)	1	1		
CO Emissions (g/hr)	39	98		
NOx Emissions (g/hr)	8	19		
VOC Emissions (g/hr)	9	23		
Dilemma Vehicles (#)	0	0		
Queue Length 50th (ft)	45	42		
Queue Length 95th (ft)	58	114		
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



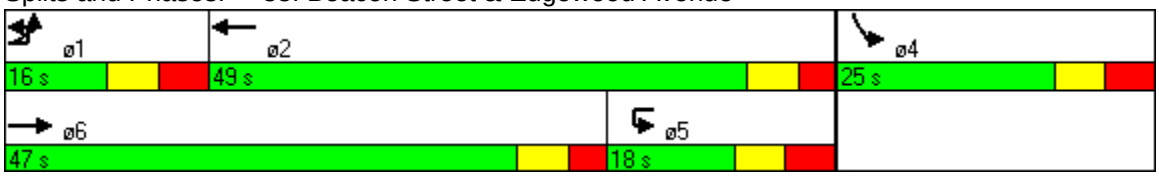
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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		0.941	
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	884	22	725	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	931	27	797	94	64	49
Lane Group Flow (vph)	0	81	931	27	891	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)	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	64.0	13.4	58.8		12.9	
Actuated g/C Ratio		0.15	0.71	0.15	0.65		0.14	
v/c Ratio		0.34	0.39	0.10	0.41		0.36	
Control Delay		37.5	9.6	17.4	5.3		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

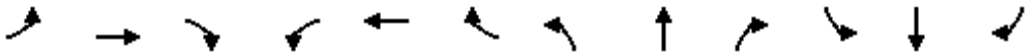


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.5	9.6	17.4	5.3		26.0	
LOS		D	A	B	A		C	
Approach Delay			11.8		5.7		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	13.1	13.1	42.6	12.9	42.4		11.5	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	10.5	10.5	41.6	16.2	47.3		9.2	
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	380	8	132		51	
Fuel Used(gal)		1	15	1	19		1	
CO Emissions (g/hr)		102	1030	42	1332		90	
NOx Emissions (g/hr)		20	200	8	259		18	
VOC Emissions (g/hr)		24	239	10	309		21	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		42	66	10	41		38	
Queue Length 95th (ft)		77	237	m6	m86		67	
Internal Link Dist (ft)			1503		2673		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		252	2374	307	2188		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		0.32	0.39	0.09	0.41		0.23	

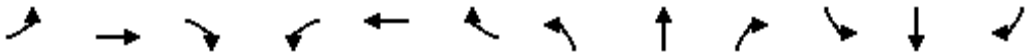
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 9.8		Intersection LOS: A	
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)	125	967	87	0	495	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)	162	1087	101	0	697	84	33	436	12	109	485	53
Lane Group Flow (vph)	162	1188	0	0	781	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)	16.7	49.3			28.5		32.7	32.7		32.7	32.7	
Actuated g/C Ratio	0.19	0.55			0.32		0.36	0.36		0.36	0.36	
v/c Ratio	0.50	0.64			0.77		0.27	0.77		0.57	0.84	
Control Delay	45.8	11.7			36.2		25.9	34.9		35.7	39.3	

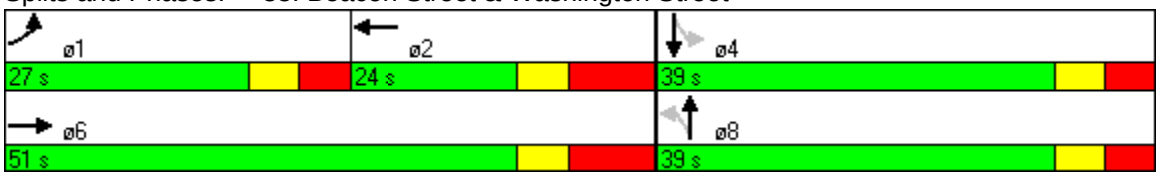


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	45.8	11.7			36.2		25.9	34.9		35.7	39.3	
LOS	D	B			D		C	C		D	D	
Approach Delay		15.8			36.2			34.2			38.7	
Approach LOS		B			D			C			D	
90th %ile Green (s)	17.8	40.0			14.2		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	13.6	40.0			18.4		31.0	31.0		31.0	31.0	
70th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
50th %ile Green (s)	13.1	40.0			18.9		31.0	31.0		31.0	31.0	
50th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Max	Max	
30th %ile Green (s)	10.9	42.9			24.0		28.1	28.1		28.1	28.1	
30th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
10th %ile Green (s)	8.2	48.4			32.2		22.6	22.6		22.6	22.6	
10th %ile Term Code	Gap	Coord			Coord		Hold	Hold		Gap	Gap	
Stops (vph)	106	443			443		20	304		70	317	
Fuel Used(gal)	4	28			10		0	6		2	8	
CO Emissions (g/hr)	310	1929			683		30	452		120	544	
NOx Emissions (g/hr)	60	375			133		6	88		23	106	
VOC Emissions (g/hr)	72	447			158		7	105		28	126	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	81	181			219		12	211		47	262	
Queue Length 95th (ft)	113	133			#233		33	272		86	245	
Internal Link Dist (ft)		2673			695			732			988	
Turn Bay Length (ft)	150											
Base Capacity (vph)	444	1867			1012		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	0.36	0.64			0.77		0.25	0.72		0.53	0.79	

Intersection Summary

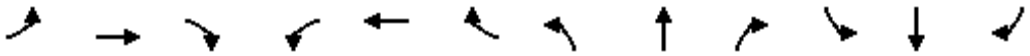
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 11 (12%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 28.0 Intersection LOS: C
Intersection Capacity Utilization 76.0% ICU 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



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		0.950									0.993	
Flt Protected		0.969						0.998				
Satd. Flow (prot)	0	1715	0	0	0	0	0	3259	0	0	3450	0
Flt Permitted		0.969						0.889				
Satd. Flow (perm)	0	1715	0	0	0	0	0	2903	0	0	3450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10									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)		178			473			650			159	
Travel Time (s)		4.0			10.8			14.8			3.6	
Volume (vph)	16	0	9	0	0	0	23	721	0	0	854	40
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)	17	0	10	0	0	0	25	801	0	0	928	43
Lane Group Flow (vph)	0	27	0	0	0	0	0	826	0	0	971	0
Turn Type	custom						custom					
Protected Phases	6	6						3 4			7 10	
Permitted Phases	6	6					3	4				
Detector Phases	6	6					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)	27.0	27.0	0.0	0.0	0.0	0.0	16.0	45.0	0.0	0.0	101.0	0.0
Total Split (%)	18.0%	18.0%	0.0%	0.0%	0.0%	0.0%	10.7%	30.0%	0.0%	0.0%	67.3%	0.0%
Maximum Green (s)	23.0	23.0					12.0					
Yellow Time (s)	3.0	3.0					3.0					
All-Red Time (s)	1.0	1.0					1.0					
Lead/Lag	Lag	Lag					Lead					
Lead-Lag Optimize?	Yes	Yes					Yes					
Vehicle Extension (s)	2.0	2.0					2.0					
Recall Mode	None	None					None					
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.3						41.0			93.4	
Actuated g/C Ratio		0.16						0.27			0.62	
v/c Ratio		0.10						1.04			0.45	
Control Delay		33.4						95.3			3.7	
Queue Delay		0.0						127.2			1.0	
Total Delay		33.4						222.6			4.8	
LOS		C						F			A	

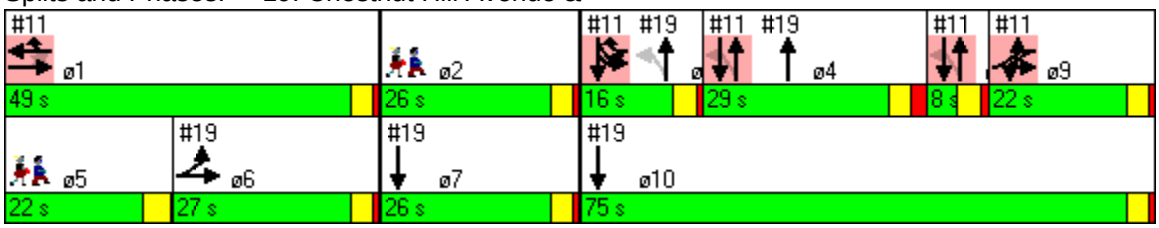
Lane Group	ø1	ø2	ø4	ø5	ø7	ø8	ø9	ø10
Lane Configurations								
Ideal Flow (vphpl)								
Lane Width (ft)								
Total Lost Time (s)								
Leading Detector (ft)								
Trailing Detector (ft)								
Turning Speed (mph)								
Lane Util. Factor								
Frt								
Flt Protected								
Satd. Flow (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	4	5	7	8	9	10
Permitted Phases								
Detector Phases								
Minimum Initial (s)	21.0	16.0	13.0	4.0	4.0	4.0	4.0	7.0
Minimum Split (s)	25.0	26.0	18.0	8.0	26.0	8.0	8.0	11.0
Total Split (s)	49.0	26.0	29.0	22.0	26.0	8.0	22.0	75.0
Total Split (%)	33%	17%	19%	15%	17%	5%	15%	50%
Maximum Green (s)	45.0	22.0	24.0	18.0	22.0	4.0	18.0	71.0
Yellow Time (s)	3.0	3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	2.0	0.5	1.0	1.0	1.0	1.0
Lead/Lag			Lag	Lead		Lead	Lag	
Lead-Lag Optimize?			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0
Recall Mode	C-Max	None	Min	C-Min	Min	None	None	Max
Walk Time (s)	7.0	7.0						
Flash Dont Walk (s)	12.0	13.0						
Pedestrian Calls (#/hr)	10	20						
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		33.4						222.6			4.8	
Approach LOS		C						F			A	
90th %ile Green (s)	35.5	35.5					12.0					
90th %ile Term Code	Hold	Hold					Max					
70th %ile Green (s)	35.5	35.5					12.0					
70th %ile Term Code	Hold	Hold					Max					
50th %ile Green (s)	35.5	35.5					12.0					
50th %ile Term Code	Hold	Hold					Max					
30th %ile Green (s)	0.0	0.0					12.0					
30th %ile Term Code	Skip	Skip					Max					
10th %ile Green (s)	0.0	0.0					12.0					
10th %ile Term Code	Skip	Skip					Max					
Stops (vph)		16						662			97	
Fuel Used(gal)		0						22			2	
CO Emissions (g/hr)		21						1529			162	
NOx Emissions (g/hr)		4						297			32	
VOC Emissions (g/hr)		5						354			38	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		13						~458			36	
Queue Length 95th (ft)		40						#592			m75	
Internal Link Dist (ft)		98			393			570			79	
Turn Bay Length (ft)												
Base Capacity (vph)		357						793			2123	
Starvation Cap Reductn		0						0			831	
Spillback Cap Reductn		1						177			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.08						1.34			0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:Ped, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.71			
Intersection Signal Delay: 103.8		Intersection LOS: F	
Intersection Capacity Utilization 47.4%		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: Chestnut Hill Avenue &



Lane Group	ø1	ø2	ø4	ø5	ø7	ø8	ø9	ø10
Approach Delay								
Approach LOS								
90th %ile Green (s)	47.0	20.0	24.0	7.5	20.0	4.0	18.0	71.0
90th %ile Term Code	Coord	Ped	Max	Coord	Hold	Max	Max	MaxR
70th %ile Green (s)	47.0	20.0	24.0	7.5	20.0	4.0	18.0	71.0
70th %ile Term Code	Coord	Ped	Max	Coord	Hold	Max	Max	MaxR
50th %ile Green (s)	47.0	20.0	24.0	7.5	20.0	4.0	18.0	71.0
50th %ile Term Code	Coord	Ped	Max	Coord	Hold	Max	Max	MaxR
30th %ile Green (s)	51.0	16.0	24.0	51.0	16.0	4.0	18.0	71.0
30th %ile Term Code	Coord	Hold	Max	Coord	Hold	Max	Hold	MaxR
10th %ile Green (s)	51.0	16.0	24.0	51.0	16.0	4.0	18.0	71.0
10th %ile Term Code	Coord	Hold	Max	Coord	Hold	Max	Hold	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

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	67	28	783	53	3	663	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	89	54	860	76	8	850	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	0.82	0.82	0.73	0.82	0.82	0.68	0.68			0.73		
vC, conflicting volume	1975	1892	898	1920	1920	860	870			936		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1704	1602	861	1637	1636	795	810			913		
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 %	31	62	91	80	88	65	90			99		
cM capacity (veh/h)	32	78	263	39	65	257	564			554		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	76	105	990	878
Volume Left	22	8	54	8
Volume Right	24	89	76	20
cSH	65	157	564	554
Volume to Capacity	1.16	0.67	0.10	0.01
Queue Length 95th (ft)	150	96	8	1
Control Delay (s)	268.7	65.4	3.1	0.4
Lane LOS	F	F	A	A
Approach Delay (s)	268.7	65.4	3.1	0.4
Approach LOS	F	F		

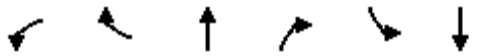
Intersection Summary			
Average Delay	15.0		
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	3	675	6	6	617
Peak Hour Factor	0.38	0.38	0.97	0.38	0.75	0.90
Hourly flow rate (vph)	8	8	696	16	8	686
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	1405	704			712	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1405	704			712	
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)	154	441			897	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	712	694
Volume Left	8	0	8
Volume Right	8	16	0
cSH	228	1700	897
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		47.3%	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	34	679	0	0	613
Peak Hour Factor	0.50	0.50	0.97	0.38	0.92	0.90
Hourly flow rate (vph)	20	68	700	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	1381	700			700	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1381	700			700	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	88	84			100	
cM capacity (veh/h)	160	433			897	

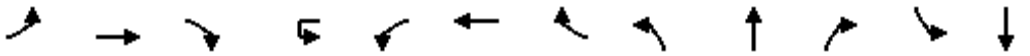
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	88	700	681
Volume Left	20	0	0
Volume Right	68	0	0
cSH	312	1700	1700
Volume to Capacity	0.28	0.41	0.40
Queue Length 95th (ft)	28	0	0
Control Delay (s)	21.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	21.0	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	45.7%	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			0.945			
Flt Protected	0.950				0.950			0.950				0.995
Satd. Flow (prot)	1787	3304	0	0	1788	3404	0	1770	1748	0	0	3497
Flt Permitted	0.213				0.190			0.314				0.527
Satd. Flow (perm)	401	3304	0	0	358	3404	0	585	1748	0	0	1852
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)		78				5			30			
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	201	420	22	181	429	221	30	452
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	242	438	31	223	517	299	52	491
Lane Group Flow (vph)	143	651	0	0	254	469	0	223	816	0	0	543
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			0.84	0.36		0.70	1.07			0.93
Control Delay	20.7	26.0			44.1	27.1		46.3	87.1			63.2
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)	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	



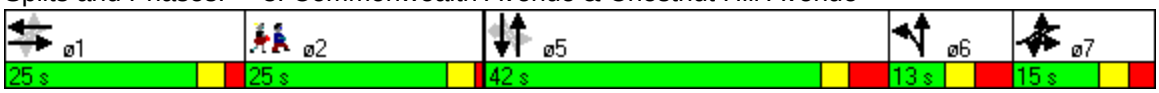
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay	20.7	26.0			44.1	27.1		46.3	87.1			63.2
LOS	C	C			D	C		D	F			E
Approach Delay		25.1				33.1			78.3			60.8
Approach LOS		C				C			E			E
90th %ile Green (s)	9.0	45.0		9.0	9.0	45.0		6.0			35.0	35.0
90th %ile Term Code	Max	Coord		Max	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			115	303		131	538			425
Fuel Used(gal)	2	12			4	8		4	20			12
CO Emissions (g/hr)	145	828			289	530		277	1400			825
NOx Emissions (g/hr)	28	161			56	103		54	272			160
VOC Emissions (g/hr)	34	192			67	123		64	324			191
Dilemma Vehicles (#)	0	0			0	0		0	0			0
Queue Length 50th (ft)	57	175			109	133		112	~690			213
Queue Length 95th (ft)	82	231			#174	178		152	#813			#326
Internal Link Dist (ft)		1361				924			1011			784
Turn Bay Length (ft)	100				100							
Base Capacity (vph)	318	1315			301	1308		318	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			0.84	0.36		0.70	1.07			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: 1.07			
Intersection Signal Delay: 51.1		Intersection LOS: D	
Intersection Capacity Utilization 91.5%		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.

Splits and Phases: 3: Commonwealth Avenue & Chestnut Hill Avenue





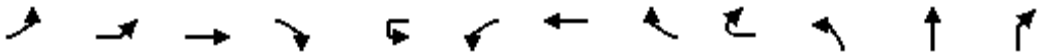
Lane Group	SBR	ø2
Total Delay	18.8	
LOS	B	
Approach Delay		
Approach LOS		
90th %ile Green (s)	35.0	0.0
90th %ile Term Code	Max	Skip
70th %ile Green (s)	35.0	0.0
70th %ile Term Code	Max	Skip
50th %ile Green (s)	35.0	0.0
50th %ile Term Code	Max	Skip
30th %ile Green (s)	35.0	0.0
30th %ile Term Code	Max	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	11	10	12	12	13	16	12	11	11	12
Grade (%)			0%				0%				0%	
Storage Length (ft)		0		200		150		150		50		0
Storage Lanes		1		1		2		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	
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	1.00	0.95	0.95	0.95	1.00	0.97	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.960					0.850			0.992	
Flt Protected	0.950		0.998			0.950				0.950		
Satd. Flow (prot)	1745	0	3343	0	0	3456	1963	1812	0	1745	3335	0
Flt Permitted	0.950		0.606			0.950				0.253		
Satd. Flow (perm)	1745	0	2030	0	0	3456	1963	1812	0	465	3335	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)	114	21	376	93	12	274	469	138	34	51	495	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)	148	27	400	155	16	334	521	189	37	64	538	30
Lane Group Flow (vph)	148	0	582	0	0	350	521	226	0	64	568	0
Turn Type	custom	Perm			custom	custom		pt+ov		Perm		
Protected Phases	9		1		9	9	1	1 3!			4 8	
Permitted Phases	9	1			9	9				4 8	4 8	
Detector Phases	9	1	1		9	9	1	1 3		4 8	4 8	
Minimum Initial (s)	4.0	21.0	21.0		4.0	4.0	21.0					
Minimum Split (s)	8.0	25.0	25.0		8.0	8.0	25.0					
Total Split (s)	23.0	38.0	38.0	0.0	23.0	23.0	38.0	52.0	0.0	29.0	29.0	0.0
Total Split (%)	17.7%	29.2%	29.2%	0.0%	17.7%	17.7%	29.2%	40.0%	0.0%	22.3%	22.3%	0.0%
Maximum Green (s)	19.0	34.0	34.0		19.0	19.0	34.0					
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0					
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0					
Lead/Lag	Lag				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0					
Recall Mode	None	C-Max	C-Max		None	None	C-Max					
Walk Time (s)		7.0	7.0				7.0					
Flash Dont Walk (s)		12.0	12.0				12.0					
Pedestrian Calls (#/hr)		10	10				10					
Act Effct Green (s)	19.0		38.4			19.0	38.4	48.4		25.0	25.0	
Actuated g/C Ratio	0.15		0.30			0.15	0.30	0.37		0.19	0.19	
v/c Ratio	0.58		0.97			0.69	0.90	0.33		0.72	0.89	
Control Delay	61.8		75.6			60.7	63.9	18.4		19.6	14.2	



Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø8	ø10
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900							
Lane Width (ft)	12	12	10	12	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	1677	3439	0							
Flt Permitted			0.950									
Satd. Flow (perm)	1615	0	1677	3439	0							
Right Turn on Red	Yes				No							
Satd. Flow (RTOR)	251											
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	595	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	647	106							
Lane Group Flow (vph)	251	0	205	753	0							
Turn Type	Free	custom	Prot									
Protected Phases		3!	3	3 4 8		2	4	5	6	7	8	10
Permitted Phases	Free	3!										
Detector Phases		3	3	3 4 8								
Minimum Initial (s)		7.0	7.0			16.0	13.0	4.0	5.0	4.0	4.0	7.0
Minimum Split (s)		11.0	11.0			26.0	18.0	8.0	9.0	26.0	8.0	11.0
Total Split (s)	0.0	14.0	14.0	43.0	0.0	26.0	20.0	22.0	16.0	26.0	9.0	66.0
Total Split (%)	0.0%	10.8%	10.8%	33.1%	0.0%	20%	15%	17%	12%	20%	7%	51%
Maximum Green (s)		10.0	10.0			22.0	15.0	18.0	12.0	22.0	5.0	62.0
Yellow Time (s)		3.0	3.0			3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)		1.0	1.0			1.0	2.0	0.5	1.0	1.0	1.0	1.0
Lead/Lag		Lead	Lead				Lag	Lead	Lag		Lead	
Lead-Lag Optimize?								Yes				
Vehicle Extension (s)		2.0	2.0			2.0	2.0	3.0	2.0	2.0	2.0	2.0
Recall Mode		None	None			None	Min	C-Min	None	Min	None	Max
Walk Time (s)						7.0						
Flash Dont Walk (s)						13.0						
Pedestrian Calls (#/hr)						20						
Act Effct Green (s)	130.0		10.0	39.0								
Actuated g/C Ratio	1.00		0.08	0.30								
v/c Ratio	0.16		1.59	0.73								
Control Delay	0.0		336.2	45.7								



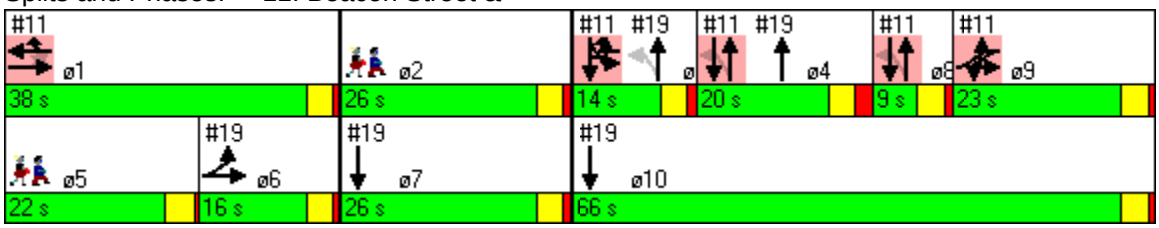
Lane Group	EBL2	EBL	EBT	EBR	WBU	WBL	WBT	WBR	WBR2	NBL	NBT	NBR
Queue Delay	0.0		8.9			0.0	0.0	0.0		4.6	258.2	
Total Delay	61.8		84.5			60.7	63.9	18.4		24.2	272.4	
LOS	E		F			E	E	B		C	F	
Approach Delay			79.9				53.5				177.0	
Approach LOS			E				D				F	
90th %ile Green (s)	19.0	36.0	36.0		19.0	19.0	36.0					
90th %ile Term Code	Max	Coord	Coord		Max	Max	Coord					
70th %ile Green (s)	19.0	36.0	36.0		19.0	19.0	36.0					
70th %ile Term Code	Max	Coord	Coord		Max	Max	Coord					
50th %ile Green (s)	19.0	40.0	40.0		19.0	19.0	40.0					
50th %ile Term Code	Hold	Coord	Coord		Hold	Hold	Coord					
30th %ile Green (s)	19.0	40.0	40.0		19.0	19.0	40.0					
30th %ile Term Code	Hold	Coord	Coord		Hold	Hold	Coord					
10th %ile Green (s)	19.0	40.0	40.0		19.0	19.0	40.0					
10th %ile Term Code	Hold	Coord	Coord		Hold	Hold	Coord					
Stops (vph)	105		418			268	405	116		37	433	
Fuel Used(gal)	3		15			9	14	3		0	5	
CO Emissions (g/hr)	224		1045			597	987	238		33	322	
NOx Emissions (g/hr)	44		203			116	192	46		6	63	
VOC Emissions (g/hr)	52		242			138	229	55		8	75	
Dilemma Vehicles (#)	0		0			0	0	0		0	0	
Queue Length 50th (ft)	118		250			146	414	90		27	171	
Queue Length 95th (ft)	160		#396			179	#657	105		m19	m108	
Internal Link Dist (ft)			1256				1503				93	
Turn Bay Length (ft)						150		150		50		
Base Capacity (vph)	255		600			505	580	675		89	641	
Starvation Cap Reductn	0		0			0	0	0		6	281	
Spillback Cap Reductn	0		24			0	0	0		0	0	
Storage Cap Reductn	0		0			0	0	0		0	0	
Reduced v/c Ratio	0.58		1.01			0.69	0.90	0.33		0.77	1.58	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:Ped, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.59
Intersection Signal Delay: 102.7 Intersection LOS: F
Intersection Capacity Utilization 85.5% 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.
! Phase conflict between lane groups.

Splits and Phases: 11: Beacon Street &





Lane Group	NBR2	SBU	SBL	SBT	SBR	ø2	ø4	ø5	ø6	ø7	ø8	ø10
Queue Delay	0.0		0.0	0.0								
Total Delay	0.0		336.2	45.7								
LOS	A		F	D								
Approach Delay				107.9								
Approach LOS				F								
90th %ile Green (s)		10.0	10.0			20.0	15.0	7.5	24.5	20.0	5.0	62.0
90th %ile Term Code		Max	Max			Ped	Max	Coord	Hold	Hold	Max	MaxR
70th %ile Green (s)		10.0	10.0			20.0	15.0	7.5	24.5	20.0	5.0	62.0
70th %ile Term Code		Max	Max			Ped	Max	Coord	Hold	Hold	Max	MaxR
50th %ile Green (s)		10.0	10.0			16.0	15.0	11.5	24.5	16.0	5.0	62.0
50th %ile Term Code		Max	Max			Hold	Max	Coord	Hold	Hold	Max	MaxR
30th %ile Green (s)		10.0	10.0			16.0	15.0	11.5	24.5	16.0	5.0	62.0
30th %ile Term Code		Max	Max			Hold	Max	Coord	Hold	Hold	Max	MaxR
10th %ile Green (s)		10.0	10.0			16.0	15.0	40.0	0.0	16.0	5.0	62.0
10th %ile Term Code		Max	Max			Hold	Max	Coord	Skip	Hold	Max	MaxR
Stops (vph)	0		125	598								
Fuel Used(gal)	0		15	15								
CO Emissions (g/hr)	22		1022	1079								
NOx Emissions (g/hr)	4		199	210								
VOC Emissions (g/hr)	5		237	250								
Dilemma Vehicles (#)	0		0	0								
Queue Length 50th (ft)	0		~246	299								
Queue Length 95th (ft)	m0		#400	374								
Internal Link Dist (ft)				1011								
Turn Bay Length (ft)			150									
Base Capacity (vph)	1615		129	1032								
Starvation Cap Reductn	0		0	0								
Spillback Cap Reductn	0		0	0								
Storage Cap Reductn	0		0	0								
Reduced v/c Ratio	0.16		1.59	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
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		0.855			0.789			0.986			0.931	
Satd. Flow (perm)	0	1608	0	0	1476	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	6	7	663	108	4	801	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	12	12	780	135	5	826	39
Lane Group Flow (vph)	0	107	0	0	281	0	0	792	135	0	870	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			31.3			21.5	3.3		33.3	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		22.0			31.3			21.5	3.3		33.3	

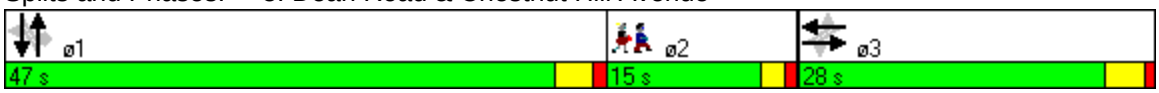
Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (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			31.3			18.9			33.3	
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			174			469	14		625	
Fuel Used(gal)		1			4			9	1		13	
CO Emissions (g/hr)		83			274			601	45		936	
NOx Emissions (g/hr)		16			53			117	9		182	
VOC Emissions (g/hr)		19			63			139	10		217	
Dilemma Vehicles (#)		0			0			0	0		0	
Queue Length 50th (ft)		34			108			250	3		318	
Queue Length 95th (ft)		84			191			#572	26		#781	
Internal Link Dist (ft)		661			883			507			580	
Turn Bay Length (ft)									200			
Base Capacity (vph)		500			456			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: 26.4 Intersection LOS: C
Intersection Capacity Utilization 99.9% 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)							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	248	963	0	76	1023	361	0	0	0	522	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	331	1094	0	101	1176	401	0	0	0	652	56
Lane Group Flow (vph)	0	343	1094	0	101	1176	401	0	0	0	652	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	83.0	0.0	17.0	70.0	90.0	0.0	0.0	0.0	40.0	40.0
Total Split (%)	21.4%	21.4%	59.3%	0.0%	12.1%	50.0%	64.3%	0.0%	0.0%	0.0%	28.6%	28.6%
Maximum Green (s)	25.0	25.0			12.0						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	79.0		13.0	66.0	102.2				36.0	36.0
Actuated g/C Ratio		0.19	0.56		0.09	0.47	0.73				0.26	0.26
v/c Ratio		1.06	0.55		0.65	0.71	0.31				1.40	0.12
Control Delay		119.8	20.5		79.7	33.8	4.1				231.1	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)	272		
Headway Factor	0.85		
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Volume (vph)	242		
Peak Hour Factor	0.89		
Heavy Vehicles (%)	3%		
Adj. Flow (vph)	272		
Lane Group Flow (vph)	272		
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	33.0	20.0
Total Split (%)	28.6%	24%	14%
Maximum Green (s)	35.0	28.0	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	6.5		
Queue Delay	0.0		

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Delay		119.8	20.6		79.7	35.1	4.5				231.1	40.9
LOS		F	C		E	D	A				F	D
Approach Delay			44.3			30.5						157.9
Approach LOS			D			C						F
90th %ile Green (s)	25.0	25.0			12.0						35.0	35.0
90th %ile Term Code	Max	Max			MaxR						Max	Max
70th %ile Green (s)	25.0	25.0			12.0						35.0	35.0
70th %ile Term Code	Max	Max			MaxR						Max	Max
50th %ile Green (s)	25.0	25.0			12.0						35.0	35.0
50th %ile Term Code	Max	Max			MaxR						Max	Max
30th %ile Green (s)	25.0	25.0			12.0						35.0	35.0
30th %ile Term Code	Max	Max			MaxR						Max	Max
10th %ile Green (s)	25.0	25.0			12.0						35.0	35.0
10th %ile Term Code	Max	Max			MaxR						Max	Max
Stops (vph)		215	584		73	852	73				396	29
Fuel Used(gal)		10	18		2	16	2				28	1
CO Emissions (g/hr)		705	1241		135	1097	147				1923	39
NOx Emissions (g/hr)		137	242		26	213	29				374	8
VOC Emissions (g/hr)		163	288		31	254	34				446	9
Dilemma Vehicles (#)		0	0		0	0	0				0	0
Queue Length 50th (ft)		~342	318		92	482	61				~792	39
Queue Length 95th (ft)		#399	368		m127	538	130				#868	60
Internal Link Dist (ft)			1319			414			1330			107
Turn Bay Length (ft)		280			160							
Base Capacity (vph)		324	1997		156	1668	1302				466	458
Starvation Cap Reductn		0	0		0	277	447				0	0
Spillback Cap Reductn		0	81		0	0	0				0	0
Storage Cap Reductn		0	0		0	0	0				0	0
Reduced v/c Ratio		1.06	0.57		0.65	0.85	0.47				1.40	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: 1.40			
Intersection Signal Delay: 65.8		Intersection LOS: E	
Intersection Capacity Utilization 81.2%		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	29.0	16.0
90th %ile Term Code	Max	Coord	Ped
70th %ile Green (s)	35.0	48.0	0.0
70th %ile Term Code	Max	Coord	Skip
50th %ile Green (s)	35.0	48.0	0.0
50th %ile Term Code	Max	Coord	Skip
30th %ile Green (s)	35.0	48.0	0.0
30th %ile Term Code	Max	Coord	Skip
10th %ile Green (s)	35.0	48.0	0.0
10th %ile Term Code	Max	Coord	Skip
Stops (vph)	22		
Fuel Used(gal)	1		
CO Emissions (g/hr)	55		
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)	659		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.41		

Intersection Summary



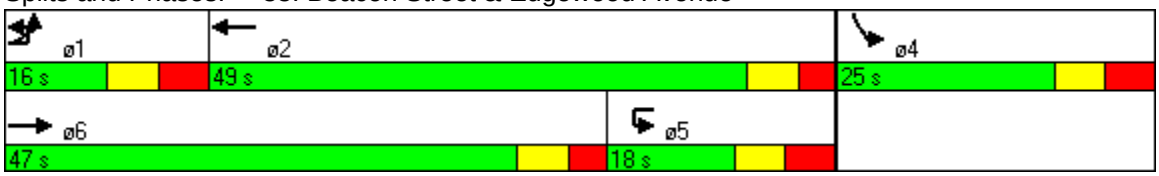
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	11	11	12	16	12
Storage Length (ft)		75		50		0	0	0
Storage Lanes		1		1		0	1	0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (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		0.949	
Flt Protected		0.950		0.950			0.970	
Satd. Flow (prot)	0	1685	3369	1745	3400	0	1982	0
Flt Permitted		0.950		0.950			0.970	
Satd. Flow (perm)	0	1685	3369	1745	3400	0	1982	0
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)					22		22	
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	29	718	26	884	90	33	11
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	42	845	35	940	118	36	22
Lane Group Flow (vph)	0	96	845	35	1058	0	58	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)		13.8	67.7	14.6	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	0.45		0.20	
Control Delay		37.5	8.9	19.8	6.0		26.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	

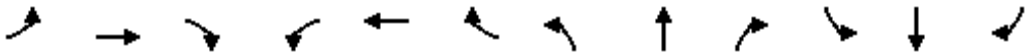


Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Total Delay		37.5	8.9	19.8	6.0		26.0	
LOS		D	A	B	A		C	
Approach Delay			11.8		6.4		26.0	
Approach LOS			B		A		C	
90th %ile Green (s)	14.2	14.2	43.2	15.1	44.1		8.7	
90th %ile Term Code	Gap	Gap	Coord	Hold	Coord		Gap	
70th %ile Green (s)	11.5	11.5	39.2	19.8	47.5		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)	7.7	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)		62	269	16	227		27	
Fuel Used(gal)		2	12	1	24		1	
CO Emissions (g/hr)		124	814	53	1650		46	
NOx Emissions (g/hr)		24	158	10	321		9	
VOC Emissions (g/hr)		29	189	12	382		11	
Dilemma Vehicles (#)		0	0	0	0		0	
Queue Length 50th (ft)		50	57	13	100		18	
Queue Length 95th (ft)		68	190	m17	114		53	
Internal Link Dist (ft)			1503		2709		713	
Turn Bay Length (ft)		75		50				
Base Capacity (vph)		267	2539	329	2351		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	0.11	0.45		0.12	

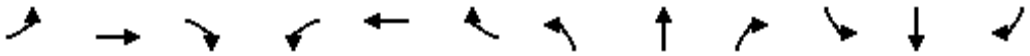
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 53 (59%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 49.0%		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





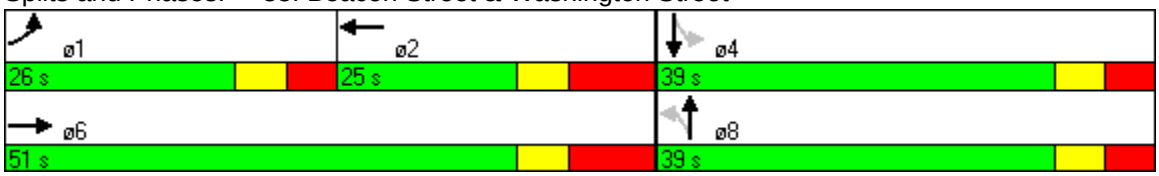
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Total 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			0.974	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1719	3332	0	0	3412	0	1668	1750	0	1652	1760	0
Flt Permitted	0.950						0.285			0.423		
Satd. Flow (perm)	1719	3332	0	0	3412	0	500	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)	110	637	165	0	594	31	109	231	48	62	306	53
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)	124	716	239	0	660	53	127	272	62	78	382	79
Lane Group Flow (vph)	124	955	0	0	713	0	127	334	0	78	461	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)	15.5	51.3			31.8		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			0.59		0.75	0.55		0.31	0.76	
Control Delay	50.7	10.1			28.5		52.8	26.0		24.2	33.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	

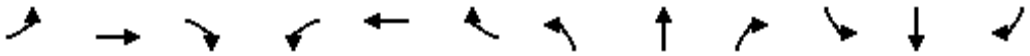


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	50.7	10.1			28.5		52.8	26.0		24.2	33.7	
LOS	D	B			C		D	C		C	C	
Approach Delay		14.8			28.5			33.4			32.4	
Approach LOS		B			C			C			C	
90th %ile Green (s)	16.5	40.0			15.5		31.0	31.0		31.0	31.0	
90th %ile Term Code	Gap	Coord			Coord		Max	Max		Max	Max	
70th %ile Green (s)	13.2	40.0			18.8		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	43.2			23.7		27.8	27.8		27.8	27.8	
50th %ile Term Code	Gap	Coord			Coord		Gap	Gap		Hold	Hold	
30th %ile Green (s)	9.4	47.5			30.1		23.5	23.5		23.5	23.5	
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)	103	301			493		93	207		44	299	
Fuel Used(gal)	4	21			13		3	5		1	7	
CO Emissions (g/hr)	286	1451			885		179	339		67	456	
NOx Emissions (g/hr)	56	282			172		35	66		13	89	
VOC Emissions (g/hr)	66	336			205		41	79		16	106	
Dilemma Vehicles (#)	0	0			0		0	0		0	0	
Queue Length 50th (ft)	72	135			175		62	142		32	219	
Queue Length 95th (ft)	125	104			#292		#135	196		57	262	
Internal Link Dist (ft)		2709			1215			942			780	
Turn Bay Length (ft)	150											
Base Capacity (vph)	420	1901			1206		194	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			0.59		0.65	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: 24.7		Intersection LOS: C	
Intersection Capacity Utilization 72.8%		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.			

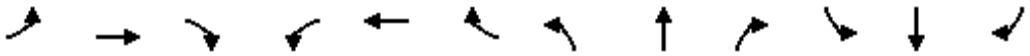
Splits and Phases: 38: Beacon Street & Washington Street





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		0.951									0.992	
Flt Protected		0.969						0.998				
Satd. Flow (prot)	0	1717	0	0	0	0	0	3414	0	0	3511	0
Flt Permitted		0.969						0.857				
Satd. Flow (perm)	0	1717	0	0	0	0	0	2932	0	0	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17									10	
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)	39	0	22	0	0	0	30	740	0	0	896	53
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)	42	0	24	0	0	0	33	804	0	0	974	58
Lane Group Flow (vph)	0	66	0	0	0	0	0	837	0	0	1032	0
Turn Type	custom						custom					
Protected Phases	6	6						3 4			7 10	
Permitted Phases	6	6					3	4				
Detector Phases	6	6					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)	16.0	16.0	0.0	0.0	0.0	0.0	14.0	34.0	0.0	0.0	92.0	0.0
Total Split (%)	12.3%	12.3%	0.0%	0.0%	0.0%	0.0%	10.8%	26.2%	0.0%	0.0%	70.8%	0.0%
Maximum Green (s)	12.0	12.0					10.0					
Yellow Time (s)	3.0	3.0					3.0					
All-Red Time (s)	1.0	1.0					1.0					
Lead/Lag	Lag	Lag					Lead					
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0					2.0					
Recall Mode	None	None					None					
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.6						30.0			83.6	
Actuated g/C Ratio		0.16						0.23			0.64	
v/c Ratio		0.23						1.24			0.46	
Control Delay		35.9						160.8			4.4	
Queue Delay		0.0						162.5			1.4	
Total Delay		35.9						323.3			5.9	
LOS		D						F			A	
Approach Delay		35.9						323.3			5.9	

Lane Group	ø1	ø2	ø4	ø5	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	5	7	8	9	10
Permitted Phases								
Detector Phases								
Minimum Initial (s)	21.0	16.0	13.0	4.0	4.0	4.0	4.0	7.0
Minimum Split (s)	25.0	26.0	18.0	8.0	26.0	8.0	8.0	11.0
Total Split (s)	38.0	26.0	20.0	22.0	26.0	9.0	23.0	66.0
Total Split (%)	29%	20%	15%	17%	20%	7%	18%	51%
Maximum Green (s)	34.0	22.0	15.0	18.0	22.0	5.0	19.0	62.0
Yellow Time (s)	3.0	3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	2.0	0.5	1.0	1.0	1.0	1.0
Lead/Lag			Lag	Lead		Lead	Lag	
Lead-Lag Optimize?				Yes				
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0
Recall Mode	C-Max	None	Min	C-Min	Min	None	None	Max
Walk Time (s)	7.0	7.0						
Flash Dont Walk (s)	12.0	13.0						
Pedestrian Calls (#/hr)	10	20						
Act Effct Green (s)								
Actuated g/C Ratio								
v/c Ratio								
Control Delay								
Queue Delay								
Total Delay								
LOS								
Approach Delay								

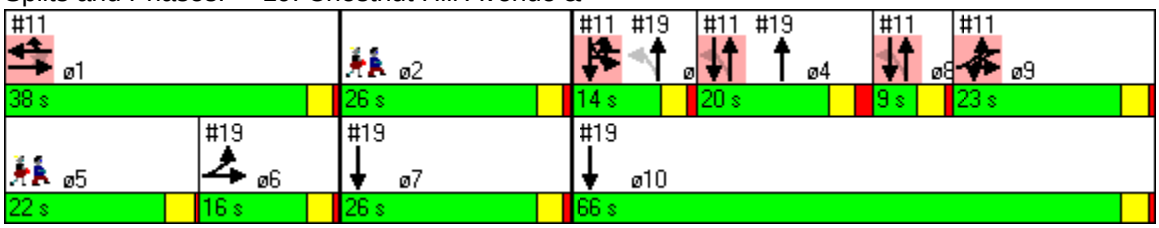


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D						F			A	
90th %ile Green (s)	24.5	24.5					10.0					
90th %ile Term Code	Hold	Hold					Max					
70th %ile Green (s)	24.5	24.5					10.0					
70th %ile Term Code	Hold	Hold					Max					
50th %ile Green (s)	24.5	24.5					10.0					
50th %ile Term Code	Hold	Hold					Max					
30th %ile Green (s)	24.5	24.5					10.0					
30th %ile Term Code	Hold	Hold					Max					
10th %ile Green (s)	0.0	0.0					10.0					
10th %ile Term Code	Skip	Skip					Max					
Stops (vph)		39						630			154	
Fuel Used(gal)		1						32			3	
CO Emissions (g/hr)		54						2271			209	
NOx Emissions (g/hr)		11						442			41	
VOC Emissions (g/hr)		13						526			48	
Dilemma Vehicles (#)		0						0			0	
Queue Length 50th (ft)		35						~459			69	
Queue Length 95th (ft)		77						#589			m98	
Internal Link Dist (ft)		153			370			555			93	
Turn Bay Length (ft)												
Base Capacity (vph)		304						677			2240	
Starvation Cap Reductn		0						0			950	
Spillback Cap Reductn		1						154			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.22						1.60			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 1:EBWB and 5:Ped, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.59			
Intersection Signal Delay: 144.2		Intersection LOS: F	
Intersection Capacity Utilization 53.2%		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: Chestnut Hill Avenue &



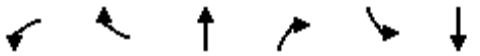
Lane Group	ø1	ø2	ø4	ø5	ø7	ø8	ø9	ø10
Approach LOS								
90th %ile Green (s)	36.0	20.0	15.0	7.5	20.0	5.0	19.0	62.0
90th %ile Term Code	Coord	Ped	Max	Coord	Hold	Max	Max	MaxR
70th %ile Green (s)	36.0	20.0	15.0	7.5	20.0	5.0	19.0	62.0
70th %ile Term Code	Coord	Ped	Max	Coord	Hold	Max	Max	MaxR
50th %ile Green (s)	40.0	16.0	15.0	11.5	16.0	5.0	19.0	62.0
50th %ile Term Code	Coord	Hold	Max	Coord	Hold	Max	Hold	MaxR
30th %ile Green (s)	40.0	16.0	15.0	11.5	16.0	5.0	19.0	62.0
30th %ile Term Code	Coord	Hold	Max	Coord	Hold	Max	Hold	MaxR
10th %ile Green (s)	40.0	16.0	15.0	40.0	16.0	5.0	19.0	62.0
10th %ile Term Code	Coord	Hold	Max	Coord	Hold	Max	Hold	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

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	82	85	830	10	2	690	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	108	96	883	15	4	775	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	0.79	0.79	0.68	0.79	0.79	0.63	0.63			0.68		
vC, conflicting volume	1981	1869	890	1881	1874	777	779			898		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1639	1497	839	1512	1504	645	648			850		
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 %	45	74	98	93	85	64	84			99		
cM capacity (veh/h)	27	76	251	54	80	297	594			420		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	124	993	783
Volume Left	15	4	96	4
Volume Right	4	108	15	4
cSH	47	211	594	420
Volume to Capacity	0.83	0.59	0.16	0.01
Queue Length 95th (ft)	84	82	14	1
Control Delay (s)	217.7	43.7	4.9	0.3
Lane LOS	F	E	A	A
Approach Delay (s)	217.7	43.7	4.9	0.3
Approach LOS	F	E		

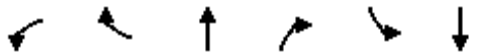
Intersection Summary			
Average Delay	9.8		
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	4	583	9	18	658
Peak Hour Factor	0.50	0.33	0.92	0.56	0.61	0.87
Hourly flow rate (vph)	4	12	634	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	1457	642			650	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1457	642			650	
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	478			946	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	650	786
Volume Left	4	0	30
Volume Right	12	16	0
cSH	299	1700	946
Volume to Capacity	0.05	0.38	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	17.7	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	17.7	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	30	585	0	0	662
Peak Hour Factor	0.67	0.63	0.92	0.25	0.25	0.92
Hourly flow rate (vph)	16	48	636	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	1355	636			636	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1355	636			636	
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	90			100	
cM capacity (veh/h)	166	482			957	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	64	636	720
Volume Left	16	0	0
Volume Right	48	0	0
cSH	324	1700	1700
Volume to Capacity	0.20	0.37	0.42
Queue Length 95th (ft)	18	0	0
Control Delay (s)	18.8	0.0	0.0
Lane LOS	C		
Approach Delay (s)	18.8	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.8		
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

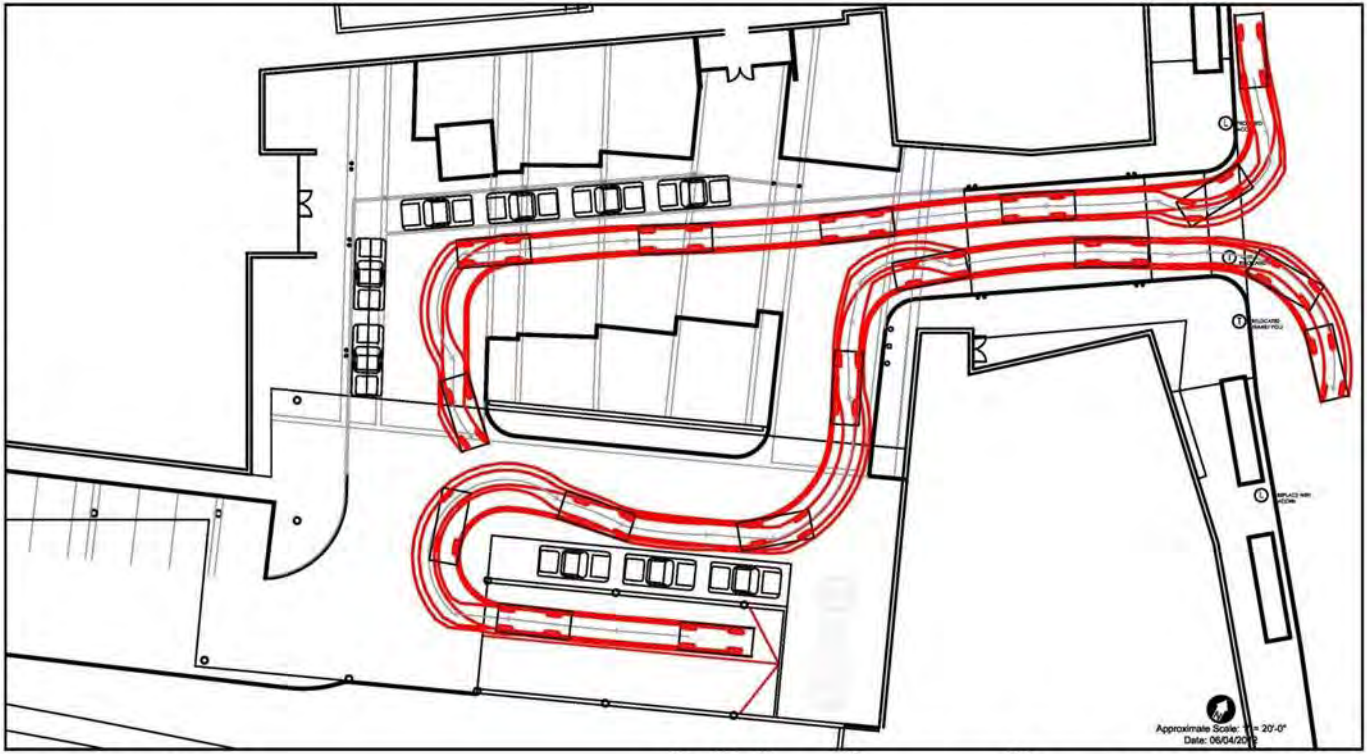
July 31, 2012

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]	181	Total	8.17	1479	2.1	**3,105**	0%	3105	5%	**155**	30%	**932**	65%	2019	2.1	**961**
	units	In	4.09	739	2.1	**1,553**	0%	1553	5%	**78**	30%	**466**	65%	1009	2.1	**481**
		Out	4.09	739	2.1	**1,553**	0%	1553	5%	**78**	30%	**466**	65%	1009	2.1	**481**
Restaurant [8]	6.50	Total	89.95	585	1.8	**1,052**	25%	789	5%	**39**	30%	**237**	65%	513	1.8	**285**
	KSF	In	44.98	292	1.8	**526**	25%	395	5%	**20**	30%	**118**	65%	257	1.8	**143**
		Out	44.98	292	1.8	**526**	25%	395	5%	**20**	30%	**118**	65%	257	1.8	**143**
Apartment [7]	78.0	Total	7.64	596	1.1	**656**	0%	656	19%	**125**	22%	**144**	59%	387	1.1	**352**
	Units	In	3.82	298	1.1	**328**	0%	328	19%	**62**	22%	**72**	59%	193	1.1	**176**
		Out	3.82	298	1.1	**328**	0%	328	19%	**62**	22%	**72**	59%	193	1.1	**176**
Retail [5]	7.50	Total	42.94	322	1.8	**580**	25%	435	5%	**22**	30%	**130**	65%	283	1.8	**157**
	KSF	In	21.47	161	1.8	**290**	25%	217	5%	**11**	30%	**65**	65%	141	1.8	**78**
		Out	21.47	161	1.8	**290**	25%	217	5%	**11**	30%	**65**	65%	141	1.8	**78**
Medical Office [6]	19.0	Total	29.58	562	1.2	**674**	0%	674	9%	**61**	15%	**101**	76%	512	1.2	**427**
	KSF	In	14.79	281	1.2	**337**	0%	337	9%	**30**	15%	**51**	76%	256	1.2	**214**
		Out	14.79	281	1.2	**337**	0%	337	9%	**30**	15%	**51**	76%	256	1.2	**214**
Daily		Total		**3,544**		**6,068**		5,660		**402**		**1,544**				**2,182**
Total		In		**1,772**		**3,034**		2,830		**201**		**772**				**1,091**
		Out		**1,772**		**3,034**		2,830		**201**		**772**				**1,091**
AM Peak-hour Trip Generation																
Hotel [4]	181	Total	0.47	85	2.1	**179**	0%	179		**12**		**64**		**103**	2.1	**49**
	units	In	0.29	52	2.1	**109**	0%	109	5%	**5**	40%	**44**	55%	**60**	2.1	**29**
		Out	0.18	33	2.1	**70**	0%	70	10%	**7**	29%	**20**	61%	**43**	2.1	**20**
Restaurant [8]	6.50	Total	0.81	5	1.8	**9**	25%	7		**0**		**3**		**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]	78.00	Total	0.57	45	1.1	**49**	0%	49		**13**		**11**		**25**	1.1	**22**
	Units	In	0.17	13	1.1	**14**	0%	14	19%	**3**	30%	**4**	51%	**7**	1.1	**7**
		Out	0.41	32	1.1	**35**	0%	35	30%	**10**	20%	**7**	50%	**17**	1.1	**16**
Retail [5]	7.50	Total	1.00	8	1.8	**14**	25%	10		**1**		**4**		**6**	1.8	**3**
	KSF	In	0.61	5	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]	19.00	Total	2.30	44	1.2	**52**	0%	52		**6**		**10**		**36**	1.2	**30**
	KSF	In	1.82	35	1.2	**41**	0%	41	10%	**4**	21%	**9**	69%	**29**	1.2	**24**
		Out	0.48	9	1.2	**11**	0%	11	17%	**2**	14%	**2**	69%	**8**	1.2	**6**
AM Peak		Total		**186**		**304**		298		**33**		**92**				**107**
Total		In		**107**		**179**		175		**13**		**61**				**62**
		Out		**79**		**125**		122		**20**		**31**				**45**
PM Peak-hour Trip Generation																
Hotel [4]	181	Total	0.59	107	2.1	**224**	0%	224		**17**		**77**		**130**	2.1	**62**
	units	In	0.31	57	2.1	**119**	0%	119	10%	**12**	29%	**34**	61%	**73**	2.1	**35**
		Out	0.28	50	2.1	**105**	0%	105	5%	**5**	40%	**42**	55%	**58**	2.1	**28**
Restaurant [8]	6.50	Total	7.49	49	1.8	**88**	25%	66		**5**		**23**		**38**	1.8	**21**
	KSF	In	5.02	24	1.8	**43**	25%	32	10%	**3**	29%	**9**	61%	**20**	1.8	**11**
		Out	2.47	25	1.8	**45**	25%	34	5%	**2**	40%	**13**	55%	**18**	1.8	**10**
Apartment [7]	78.00	Total	0.79	62	1.1	**68**	0%	68		**17**		**16**		**34**	1.1	**31**
	Units	In	0.48	38	1.1	**41**	0%	41	30%	**12**	20%	**8**	50%	**21**	1.1	**19**
		Out	0.31	24	1.1	**26**	0%	26	19%	**5**	30%	**8**	51%	**14**	1.1	**12**
Retail [5]	7.50	Total	3.73	28	1.8	**50**	25%	38		**3**		**13**		**22**	1.8	**12**
	KSF	In	1.83	14	1.8	**25**	25%	19	10%	**2**	29%	**5**	61%	**11**	1.8	**6**
		Out	1.90	14	1.8	**26**	25%	19	5%	**1**	40%	**8**	55%	**11**	1.8	**6**
Medical Office [6]	19.00	Total	3.44	65	1.2	**79**	0%	79		**9**		**15**		**54**	1.2	**45**
	KSF	In	0.93	18	1.2	**21**	0%	21	17%	**4**	14%	**3**	69%	**15**	1.2	**12**
		Out	2.51	48	1.2	**57**	0%	57	10%	**6**	21%	**12**	69%	**40**	1.2	**33**
PM Peak		Total		**311**		**509**		474		**52**		**144**				**172**
Total		In		**149**		**249**		232		**33**		**60**				**83**
		Out		**161**		**260**		242		**19**		**83**				**89**
Saturday Peak-hour Trip Generation																
Hotel [4]	181	Total	0.72	130	2.1	**274**	0%	274	5%	**14**	30%	**82**	65%	178	2.1	**85**
	units	In	0.40	69	2.1	**145**	0%	145	5%	**7**	30%	**44**	65%	94	2.1	**45**
		Out	0.32	61	2.1	**129**	0%	129	5%	**6**	30%	**39**	65%	84	2.1	**40**
Restaurant [8]	6.50	Total	10.82	70	1.8	**127**	25%	95	5%	**5**	30%	**28**	65%	62	1.8	**34**
	KSF	In	6.38	43	1.8	**77**	25%	58	5%	**3**	30%	**17**	65%	38	1.8	**21**
		Out	4.44	27	1.8	**49**	25%	37	5%	**2**	30%	**11**	65%	24	1.8	**13**
Apartment [7]	78.00	Total	0.66	51	1.1	**56**	0%	56	19%	**11**	22%	**12**	59%	33	1.1	**30**
	Units	In	0.33	26	1.1	**28**	0%	28	19%	**5**	22%	**6**	59%	17	1.1	**15**
		Out	0.33	26	1.1	**28**	0%	28	19%	**5**	22%	**6**	59%	17	1.1	**15**
Retail [5]	7.50	Total	4.89	37	1.8	**66**	25%	50	5%	**2**	30%	**15**	65%	32	1.8	**18**
	KSF	In	2.54	18	1.8	**32**	25%	24	5%	**1**	30%	**7**	65%	16	1.8	**9**
		Out	2.35	19	1.8	**34**	25%	25	5%	**1**	30%	**8**	65%	16	1.8	**9**
Medical Office [6]	19.00	Total	3.63	69	1.2	**83**	0%	83	9%	**7**	15%	**12**	76%	63	1.2	**52**
	KSF	In	2.07	39	1.2	**47**	0%	47	9%	**4**	15%	**7**	76%	36	1.2	**30**
		Out	1.56	30	1.2	**36**	0%	36	9%	**3**	15%	**5**	76%	27	1.2	**23**
Sat Peak		Total		**358**		**605**		557		**39**		**150**				**220**
Total		In		**195**		**330**		303		**21**		**81**				**120**
		Out		**163**		**275**		255		**18**		**69**				**100**

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 312 (Business Hotel) for weekdays and LUC 310 (Hotel) for Saturdays
5. ITE Trip Generation, 8th Edition, LUC 820 (Shopping Center)
6. ITE Trip Generation, 8th Edition, LUC 720 (Medical Office Building)
7. ITE Trip Generation, 8th Edition, LUC 220 (Apartment)
8. ITE Trip Generation, 8th Edition, LUC 931 (Quality Restaurant).

Vehicle Maneuvers



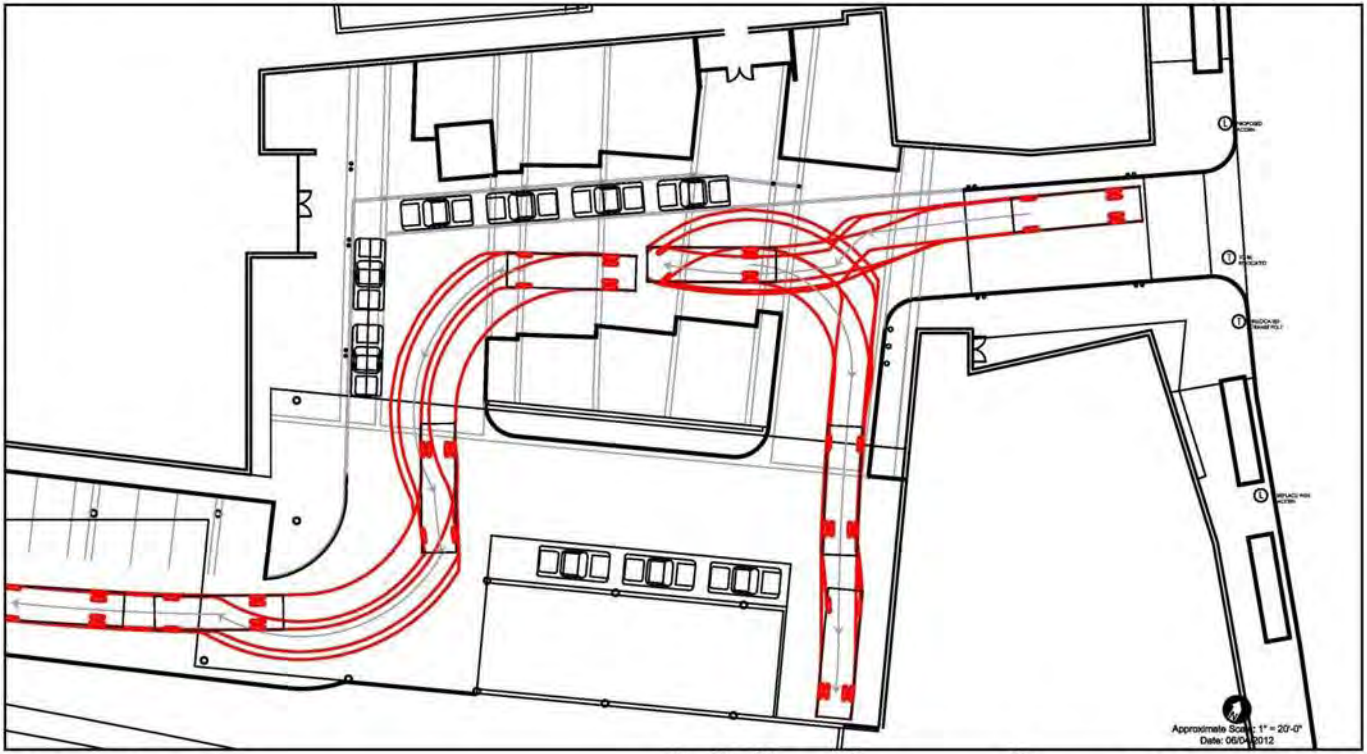
Passenger Vehicle Maneuvers

0 10 20 40 80 FEET

1" = 20'–0"

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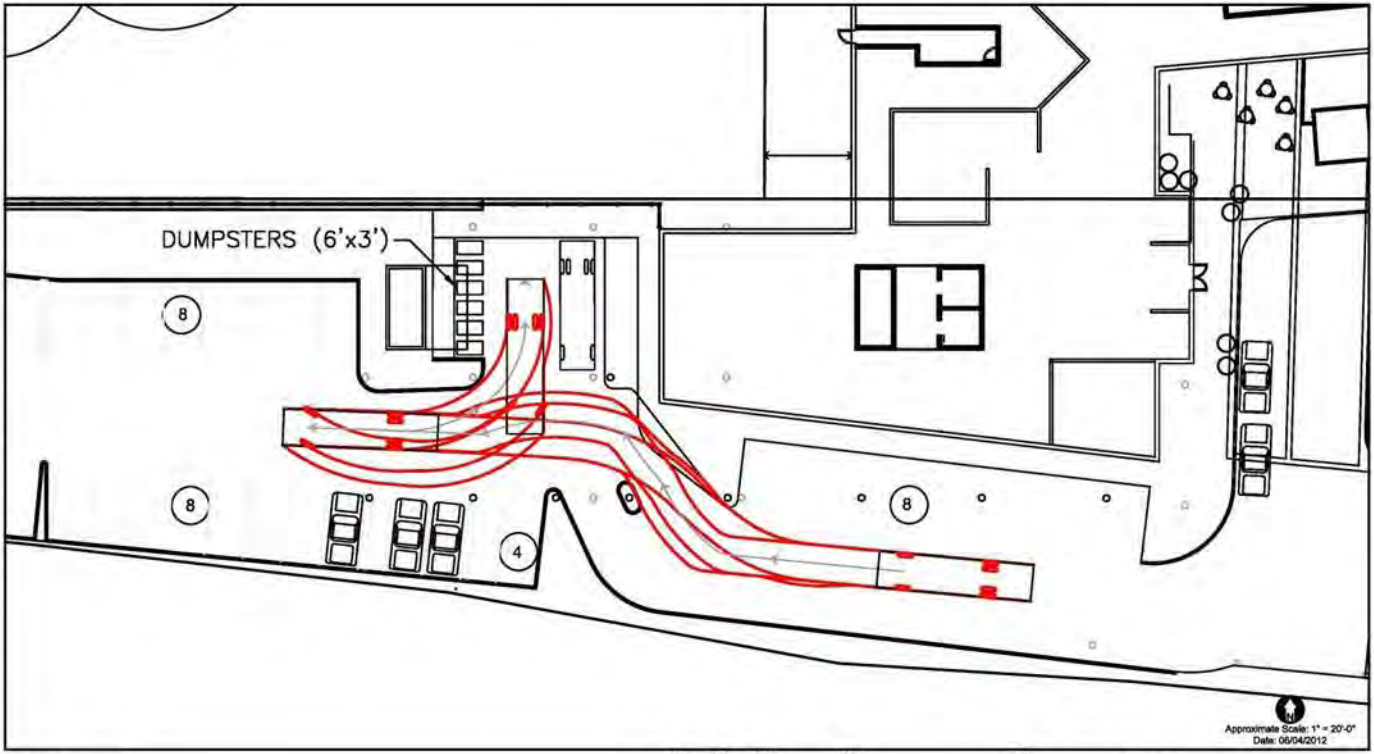
SU-36 Vehicle Maneuvers

0 10 20 40 80 FEET

1" = 20'-0"

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L:\10190\AUTOTURN and SITE PLANNING\CURRENT\HSH-SITE PLAN 6-4-2012 CGP - Passenger.dwg, 17x11 (2), 6/4/2012 1:52:43 PM, 1:1



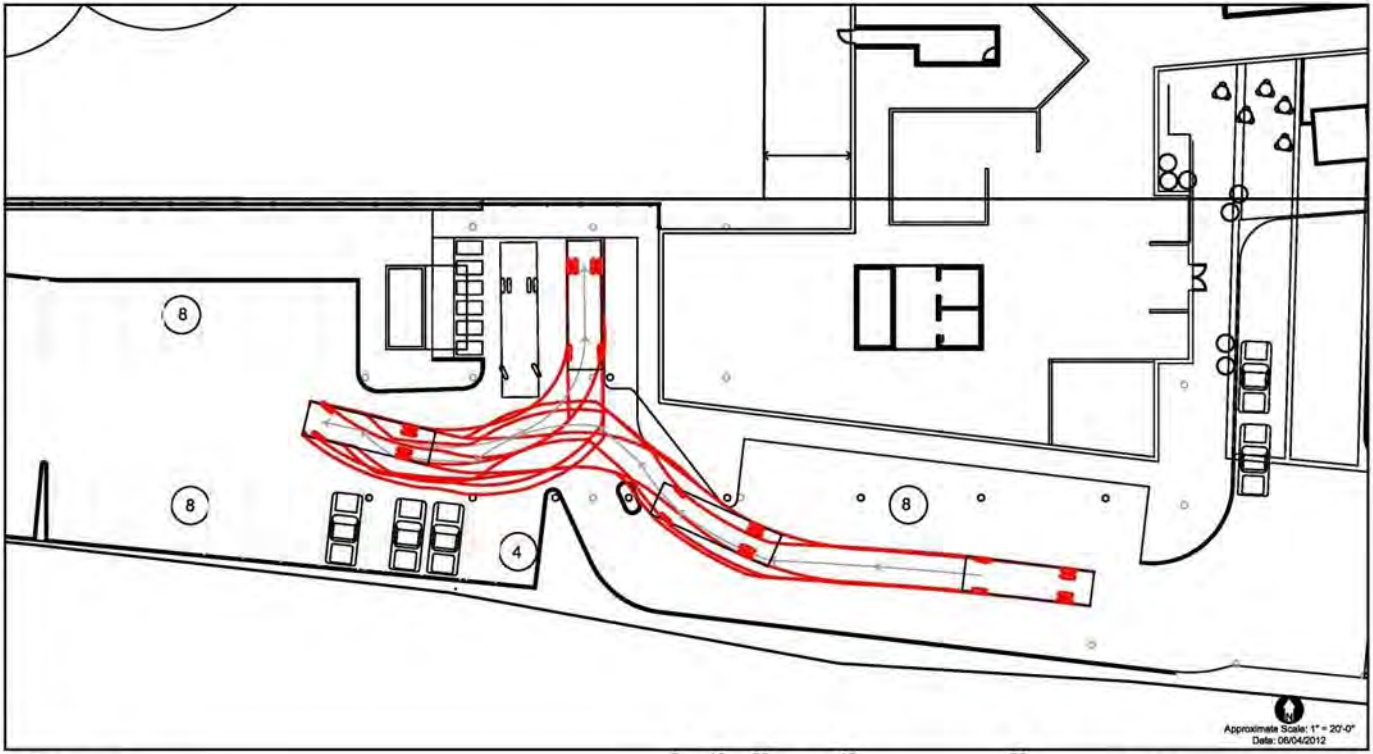
SU-36 Entering

0 10 20 40 80 FEET

1" = 20'-0"

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L:\10190\AUTOTURN and SITE PLANNING\CURRENT\HSH-SITE PLAN 6-4-2012.CDP - Truck.dwg, (1), 6/4/2012 2:00:47 PM, 1:1



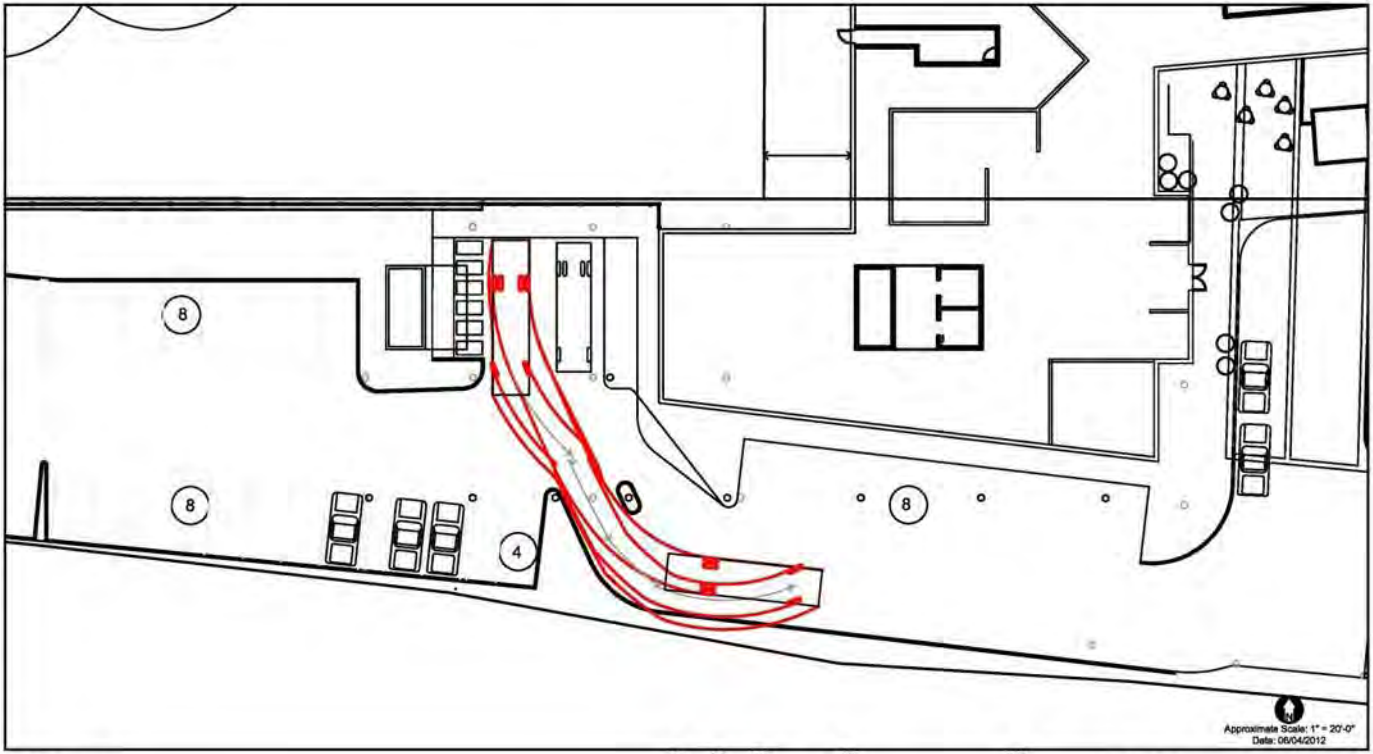
SU-30 Entering

0 10 20 40 80 FEET

1" = 20'-0"

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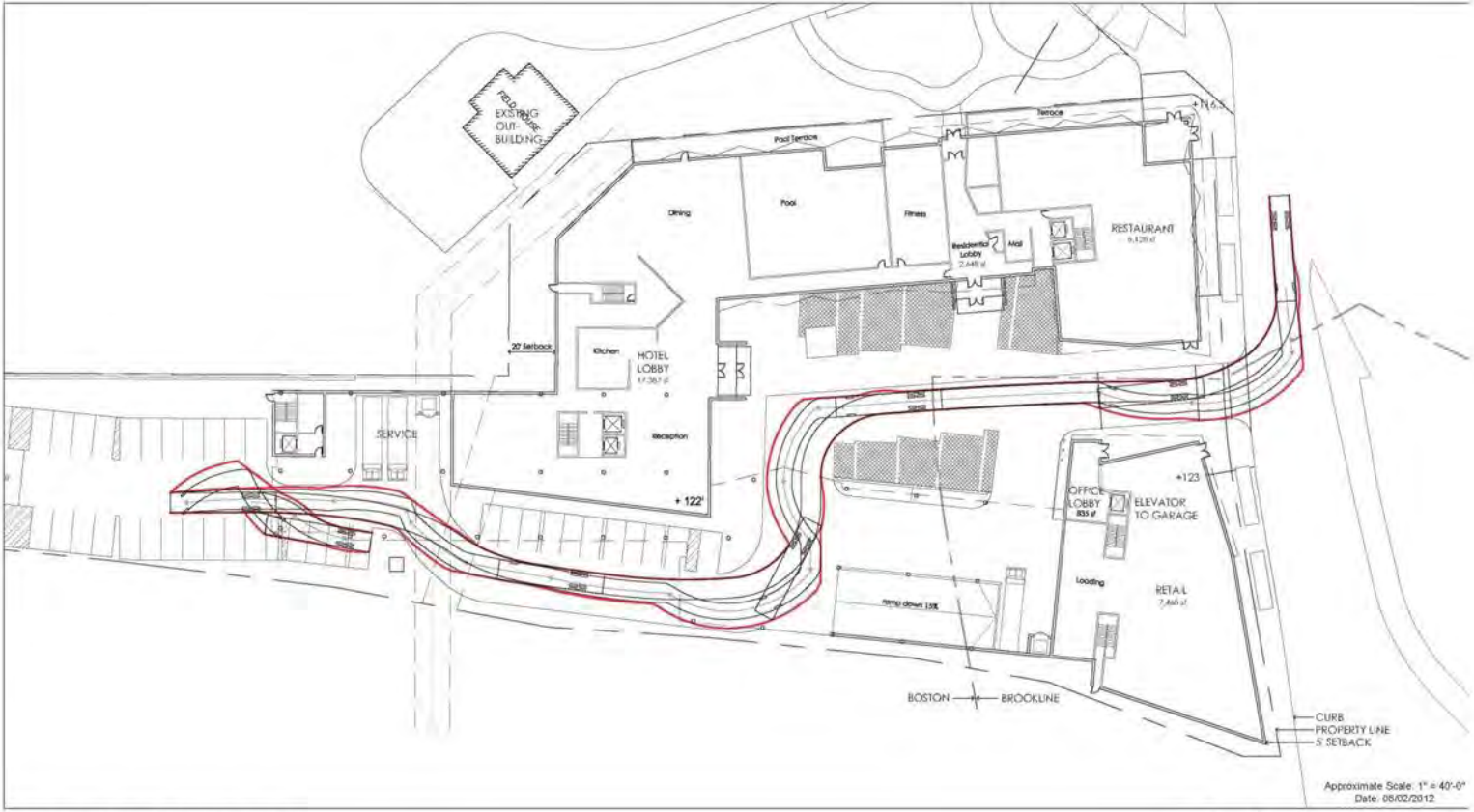
SU-36 Exiting

0 10 20 40 80 FEET

1" = 20'-0"

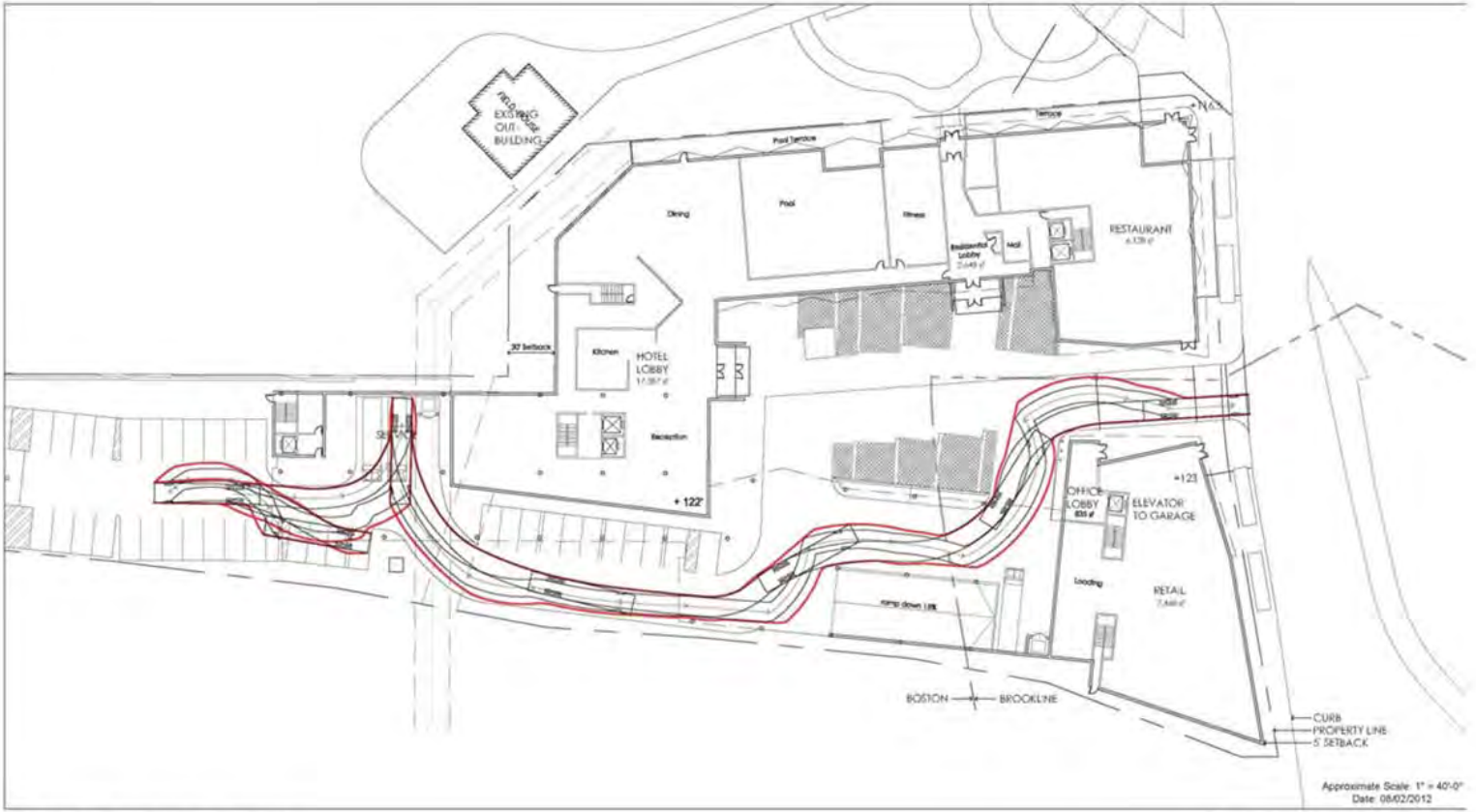
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L:\10190\AUTOTURN and SITE PLANNING\CURRENT\HSH-SITE PLAN 6-4-2012 CGP - Truck.dwg, (2), 6/4/2012 2:01:23 PM, 1:1



45' Charter Bus Entering the Site

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45' Charter Bus Exiting the Site

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Appendix B

Air Quality

APPENDIX B AIR QUALITY

Introduction

This Air Quality Appendix provides modeling assumptions and backup for results presented in Section 3.5 of the report. Included within this documentation is a brief description of the methodology employed along with pertinent calculations and data used in the emissions and dispersion calculations supporting the microscale air quality analyses.

Motor Vehicle Emissions

The EPA MOBILE6.2 computer program generated motor vehicle emissions used in the mobile source CAL3QHC modeling. The model input parameters were provided by MassDEP. Emission rates were derived for 2012 and 2017 for speed limits of 2.5, 10, 15, and 30 mph for use in the microscale analyses.

CAL3QHC

For the intersections studied, the CAL3QHC model was applied to calculate CO concentrations at sensitive receptor locations using emission rates derived in MOBILE6.2. The intersection's queue links and free flow links were input to the model along with sensitive receptors at all locations nearby each intersection. The meteorological assumptions input into the model were a 1.0 meter per second wind speed, Pasquill-Gifford Class D stability combined with a mixing height of 1000 meters. For each direction, the full range of wind directions at 10 degree intervals was examined. In addition, a surface roughness (z_0) of 370 cm was used for the intersection. Idle emission rates for queue links were based on 2.5 mph emission rates derived in MOBILE6.2 and converted from grams per mile to grams per hour. Emission rates for speeds of 10, 15, and 30 mph were used for right turn, left turn, and free flow links, respectively.

Cleveland Circle - 375-399 Chestnut Hill Ave. - Boston, MA
Calculation of Microscale Modeling Emission Rates
Summary of MOBILE6.2 Output

Carbon Monoxide Only

Queues	Idle
Free Flow	30 mph
Right Turns	10 mph
Left Turns	15 mph

Summer	**2012**	**2017**	**Units**
Idle	32.245	27.355	g/hr
2.5 mph	12.898	10.942	g/mile
10 mph	5.783	4.952	g/mile
15 mph	4.897	4.185	g/mile
30 mph	4.017	3.397	g/mile

Winter	**2012**	**2017**	**Units**
Idle	50.753	43.320	g/hr
2.5 mph	20.301	17.328	g/mile
10 mph	10.920	9.468	g/mile
15 mph	9.803	8.531	g/mile
30 mph	8.727	7.636	g/mile

Due to excessive size AERMOD, CAL3QHC, and MOBILE6.2 input and output files are available on digital media upon request.

Appendix C

LEED Checklist

LEED 2009 for New Construction and Major Renovations

Project Checklist

375-399 Cleveland Circle, Boston, MA 02135

Y	?	N			
19	6	1	**Sustainable Sites**	Possible Points:	**26**
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
4	2	4	**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
5	9	21	**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
2	6	6	**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

Y	?	N			
	Materials and Resources, Continued				
	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
9	3	3	**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
3	3		**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: Exemplary Performance SS7.1	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
3	1		**Regional Priority Credits**	Possible Points:	**4**
1			Credit 1.1	Regional Priority: SS7.1	1
1			Credit 1.2	Regional Priority: SS7.2	1
1			Credit 1.3	Regional Priority: SS6.1	1
	1		Credit 1.4	Regional Priority: SS3	1
45	30	35	**Total**	Possible Points:	**110**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110