



To: Mr. Ronald Simons  
1114 Beacon Street LLC  
220 Main Street  
Natick, MA 02536

Date: April 26, 2021

Memorandum

Project #: 14319.00

From: Randall C. Hart, Principal  
Matthew Duranleau, EIT  
Ashley Domogala, EIT

Re: 1114 Beacon Street Proposed Redevelopment  
Newton, Massachusetts

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## Introduction

VHB, Inc. has conducted a traffic impact and access study to assess the potential traffic impacts associated with the proposed redevelopment located at 1114 Beacon Street in Newton, Massachusetts. The proposed redevelopment Project will involve the demolition of the existing 6,059 square feet (sf) restaurant building and the construction of a 34-unit residential building supported by 50 parking spaces and 34 secured, indoor bicycle spaces.

This memorandum includes an evaluation of the existing traffic operations and safety; an assessment of future conditions with and without the Project; an estimate of projected traffic volumes for the Project and its potential impact on future traffic operations in the area; and a review of parking supply and demand for the Project.

As detailed herein, the proposed Project is expected to have a minor impact on local traffic operations.

## Site Location and Proposed Development

The Project site is located at 1114 Beacon Street in Newton, Massachusetts. The site currently consists of a single building that formerly housed a restaurant (ApguJung Sushi BBQ Lounge). Under existing conditions, access to the site is comprised of two full access site driveways, one on each side of the building. The East Site driveway is shared with a rear parking lot for the adjacent hair salon. The proposed redevelopment Project will involve the demolition of the existing building and the construction of an approximately 34-unit residential building with 4 surface parking spaces and 46 sub-surface parking spaces, for a total of 50 parking spaces on Site. In addition, 34 secured, indoor bicycle storage spaces will be provided in a designated bike room on Site. As requested by the City, the proposed condition will eliminate the West Site driveway. The East Site driveway will provide sole access to the Site and continue to be shared with the rear parking lot for the adjacent hair studio.

A figure showing the Project site in relation to the surrounding area and a conceptual site plan are included in the Attachments.

## Existing Conditions

The existing condition analysis consists of an inventory of the traffic control, roadway, driveway, and intersection geometry in the study area, the collection of daily and peak hour traffic volumes, a summary of public transit options in the area, a review of recent crash history, and a documentation of the existing sight distance at the site driveways.

## Study Area

Based on an understanding of the current traffic operations in the region, a study area comprised of the following intersections and their approach roadways were selected for review:

101 Walnut Street  
PO Box 9151  
Watertown, MA 02472-4026  
P 617.924.1770

- Beacon Street at Walnut Street (signalized)
- Beacon Street at Walgreens Driveway / Hair Studio Driveway
- Beacon Street at East Site Driveway
- Beacon Street at West Site Driveway
- Beacon Street at Citizens Bank Driveway / Townhouses Driveway
- Beacon Street at Beaconwood Road / East 1129 Beacon Street Driveway

A figure showing the intersection lane geometry and traffic control at each study area intersection is included in the Attachments.

## Study Area Roadways

### Beacon Street

In this study area, Beacon Street is a two-lane roadway running in an east-west direction. It connects to Newton Centre and Brookline in the east and Waban and Route 16 (Washington Street) in the west. Sidewalks are provided along both sides of Beacon Street and on-street parking is prohibited on both sides of the roadway. Beacon Street falls under local jurisdiction and is classified as an urban minor arterial. There is a posted speed limit of 30 mph. Land use along Beacon Street is primarily residential and commercial.

## Study Area Intersections

### Beacon Street at Walnut Street

Walnut Street intersects Beacon Street from the north and south to form a four-way signalized intersection. All four approaches consist of a dedicated left-turn lane and a shared through-right lane with the right movement channelized and under signal control. Sidewalks are provided on all approaches and crosswalks are located across all approaches. Bus stops are located on the east side of Walnut Street north of the intersection and on the west side of Walnut Street south of the intersection. Land use around the intersection is mainly commercial, with a Walgreens Pharmacy, Mobil Gas Station, and Whole Foods Market located northwest, southwest, and southeast of the intersection, respectively.

### Beacon Street at Walgreens Driveway / Hair Salon Driveway

A Walgreens driveway intersects Beacon Street from the north and a driveway for the Blondie Hair Studio intersects Beacon Street from the south to form a four-legged unsignalized intersection. The Walgreens driveway and the Hair Studio driveway are slightly offset from each other. All approaches consist of one general-purpose lane. The Walgreens driveway southbound approach and the Hair Studio driveway northbound approach operate under STOP control. Sidewalks are provided on both sides of Beacon Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential.

### Beacon Street at East Site Driveway

The East Site driveway intersects Beacon Street from the south to form a three-legged unsignalized intersection. All approaches consist of one general-purpose lane and the East Site driveway operates under STOP control. Sidewalks are provided on both sides of Beacon Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential.

### Beacon Street at West Site Driveway

The West Site driveway intersects Beacon Street from the south to form a three-legged unsignalized intersection. All approaches consist of one general-purpose lane and the West Site driveway operates under STOP control. Sidewalks are provided on both sides of Beacon Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential. This driveway is currently fenced off.

### Beacon Street at Citizens Bank Driveway / Townhouses Driveway

A driveway for the Courtyard Townhouses intersects Beacon Street from the north and a Citizens Bank driveway intersects Beacon Street from the south to form a four-legged unsignalized intersection. All approaches consist of one general-purpose lane. The Townhouses driveway southbound approach and the Citizens Bank driveway northbound approach operate under STOP control. Sidewalks are provided on both sides of Beacon Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential.

### Beacon Street at Beaconwood Road / East 1129 Beacon Street Driveway

Beaconwood Road intersects Beacon Street from the south and the east driveway for the commercial development at 1129 Beacon Street intersects Beacon Street from the north to form a four-legged unsignalized intersection. Beaconwood Road and the driveway for 1129 Beacon Street are slightly offset from each other. All approaches consist of one general-purpose lane. The Beaconwood Road northbound approach and the East 1129 Beacon Street driveway southbound approach operate under STOP control. In addition, the East 1129 Beacon Street driveway is gated and is limited to authorized vehicles only. Sidewalks are provided on both sides of Beacon Street and Beaconwood Road and crosswalks are provided across the Beaconwood Road northbound approach and the Beacon Street westbound approach. Land use at the intersection is mainly commercial and residential.

### Traffic Volumes

To assess the existing operational conditions within the study area, automatic traffic recorder (ATR) counts were conducted from Wednesday, August 15, 2018 through Thursday, August 16, 2018 along Beacon Street in the vicinity of the Site. The observed traffic volumes are summarized below in Table 1 and have been adjusted to reflect the 2021 Existing conditions. The existing count data is included in the Attachments.

**Table 1 Existing Traffic Volume Summary**

Location	Weekday Daily	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Vol (vpd) <sup>a</sup>	Vol (vph) <sup>b</sup>	K Factor <sup>c</sup>	Dir. Dist. <sup>d</sup>	Vol (vph)	K Factor	Dir. Dist.
Beacon Street west of Beaconwood Road	9,300	730	7.8%	EB 57%	800	8.6%	WB 51%

Source: Automatic Traffic Recorder (ATR) counts conducted by VHB in August 2018 and adjusted to reflect 2021 conditions.

- a Daily traffic expressed in vehicles per day.
- b Peak hour volumes expressed in vehicles per hour.
- c Percent of daily traffic, which occurs during the peak hour.
- d Directional distribution of peak period traffic.

Note: Peak hours do not necessarily coincide with the peak hours of the individual intersection turning movement counts.

As shown in Table 1, Beacon Street carries approximately 9,300 vehicles per day on a typical weekday, with 7.8-percent during the morning peak hour and 8.6-percent during the evening peak hour. Beacon Street traffic is slightly heavier in the eastbound direction during the morning peak hour and slightly heavier in the westbound direction during the evening peak hour.

In addition, peak hour turning movement counts (TMCs) were conducted at the study area intersections in August 2018 during the weekday morning peak period from 7:00 AM to 9:00 AM and during the weekday evening peak period from 4:00 PM to 6:00 PM. These time periods were considered following the standard practice of evaluating the combined peak period for roadway and development traffic. Based on a review of the count data, the weekday morning and weekday evening peak hours of vehicular activity were determined to be 8:00 AM to 9:00 AM and 4:30 PM to 5:30 PM, respectively. The traffic volume counts are provided in the Attachments.

**Count Adjustments**

The traffic data collected for the study area was obtained during the month of August 2018. To quantify the seasonal variation of traffic volumes in the area, historic traffic data available from MassDOT were reviewed. Specifically, 2018 monthly traffic volumes were reviewed at MassDOT permanent counting stations along I-90 and I-95 in the area. Multiple count stations on I-90 and I-95 were reviewed in order to get an accurate representation of seasonal traffic volumes in the region. Based on the review, traffic volumes in August are higher than average-month conditions. To present a conservative analysis, the traffic volumes were not reduced to reflect average month conditions. The seasonal adjustment factors are included in the Attachments.

The 2018 counts were also adjusted to represent the 2021 Existing conditions based on a historical growth rate described in detail later in this Memorandum.

Finally, during the 2018 counts, the Site was used as overflow parking for the nearby Whole Foods Market. As the Site is no longer used for overflow parking, the vehicles that parked on Site would need to park either at the Whole Foods Market itself or at a new satellite location. Traffic entering and exiting the West Site driveway was assumed to re-route to Whole Foods, located east of the study area.

The resulting 2021 Existing traffic volume networks for the weekday morning and weekday evening peak hours are provided in the Attachments to this memorandum.

## Public Transportation

Public transportation in Newton and the surrounding area is provided by the Massachusetts Bay Transportation Authority (MBTA). The nearest public transit to the Site is MBTA bus route 59, which travels down Walnut Street. The nearest bus stops to the site are located on Walnut Street on either side of the intersection with Beacon Street, approximately 400-500 feet east of the Site. Route 59 travels between Watertown Square in Watertown and Needham Junction in Needham. Connections are provided to the Needham Line and the Worcester Line of the commuter rail at Needham Junction and Newtonville, respectively, and to the Green Line at Newton Highlands. Route 59 operates seven days a week and service is provided approximately every 30-40 minutes during peak hours.

The Site is also located within proximity to the D branch of the MBTA's Green Line. The D branch of the Green Line connects Newton with Brookline and Boston and travels from Riverside in Newton to Government Center in Downtown Boston. The nearest stops to the Site on the D branch of the Green Line are Newton Highlands, approximately 2/3 of a mile south of the Site on Walnut Street, and Newton Centre, approximately 3/4 of a mile east of the Site on Union Street. Service is provided approximately every six-to-seven minutes during peak hours.

Public transportation route maps and schedules are provided in the Attachments to this memorandum. While ample public transportation is provided near the Site, to present a conservative analysis, no credit was taken for residents arriving and departing via public transportation.

## Crash Summary

A detailed crash analysis was conducted to identify potential vehicle accident trends and/or roadway deficiencies in the traffic study area. The most current vehicle accident data for the traffic study area intersections were obtained from MassDOT for the years 2014 to 2018. The MassDOT database is comprised of crash data from the Massachusetts Registry of Motor Vehicles (RMV) Division primarily for use in traffic studies and safety evaluations. Data files are provided for an entire city or town for an entire year, though it is possible that some crash records may be omitted either due to individual crashes not being reported, or the city crash records not being provided in a compatible format for RMV use.

Crash rates are calculated based on the number of accidents at an intersection and the volume of traffic traveling through that intersection on a daily basis. Rates that exceed MassDOT's average for accidents at intersections in the MassDOT district in which the town or city is located could indicate safety or geometric issues for a particular intersection. For our study area, the calculated crash rates for the study area intersections were compared to MassDOT's District 6 (The MassDOT district for Newton) average. The current MassDOT average crash rates for signalized and unsignalized intersections in District 6 are 0.71 crashes per million entering vehicles and 0.52 crashes per million entering vehicles, respectively. In other words, on average, 0.71 crashes occurred per million vehicles entering signalized intersections, and 0.52 crashes occurred per million vehicles entering unsignalized intersections throughout District 6.

A summary of the study area intersections vehicle accident history based on the available RMV data is presented in Table 2 and the detailed crash data is provided in the Attachments to this memorandum.

As shown in Table 2, one intersection, Beacon Street at Walnut Street, had a calculated crash rate above the MassDOT District 6 average crash rates. The majority of crashes that occurred at the study area intersections were angle collisions resulting in property damage only. None of the crashes resulted in fatal injuries. Crashes involving non-motorists (bike, pedestrian) occurred at the intersections of Beacon Street at Walnut Street (three crashes) and Beacon Street at Beaconwood Road / East 1129 Beacon Street Driveway (three crashes).

**Table 2 Vehicular Crash Data (2014 - 2018)**

	Beacon St at Walnut St	Beacon St at Walgreens Dwy/ Hair Studio Dwy	Beacon St at East Site Dwy	Beacon St at West Site Dwy	Beacon St at Townhouses Dwy/ Citizens Bank Dwy	Beacon St at Beaconwood Rd/ Commercial Dwy
Signalized?	Yes	No	No	No	No	No
MassDOT Average Crash Rate	0.71	0.52	0.52	0.52	0.52	0.52
Calculated Crash Rate	0.76	0.16	0.00	0.00	0.00	0.28
Exceeds Average?	Yes	No	No	No	No	No
<b>Year</b>						
2014	5	0	0	0	0	2
2015	5	2	0	0	0	1
2016	6	1	0	0	0	2
2017	9	0	0	0	0	0
<u>2018</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>30</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>
Yearly Average	6.0	0.6	0.0	0.0	0.0	1.0
<b>Collision Type</b>						
Angle	16	0	0	0	0	1
Head-on	0	0	0	0	0	0
Rear-end	7	1	0	0	0	1
Sideswipe, opposite direction	1	1	0	0	0	0
Sideswipe, same direction	5	1	0	0	0	0
Single Vehicle Crash	1	0	0	0	0	2
Not reported	0	0	0	0	0	1
<b>Severity</b>						
Fatal Injury	0	0	0	0	0	0
Non-Fatal Injury	6	0	0	0	0	4
Property Damage Only	24	3	0	0	0	1
Not Reported	0	0	0	0	0	0
<b>Time of day</b>						
Weekday ,7:00 AM - 9:00 AM	2	0	0	0	0	0
Weekday, 4:00 – 6:00 PM	2	1	0	0	0	2
Saturday 11:00 AM – 2:00 PM	0	0	0	0	0	0
Weekday, other time	21	2	0	0	0	3
Weekend, other time	5	0	0	0	0	0
<b>Pavement Conditions</b>						
Dry	25	3	0	0	0	4
Wet	4	0	0	0	0	0
Snow	1	0	0	0	0	0
Not reported	0	0	0	0	0	1
<b>Non-Motorist (Bike, Ped)</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>

Source: Crash data was obtained from MassDOT Crash Portal, accessed January 28, 2021.

## Highway Safety Improvement Program

In addition to calculating the crash rate, study area intersections should also be reviewed in the MassDOT's Highway Safety Improvement Program (HSIP) database. An HSIP-eligible cluster is one in which the total number of "equivalent property damage only"<sup>1</sup> crashes in the area is within the top 5% of all clusters in that region. Being HSIP-eligible makes the location eligible for FHWA and MassDOT funds to address the identified safety issues at these locations. As part of this effort, VHB reviewed this database and found that the study area is a 2008-2017 HSIP-eligible bicycle cluster.

### Sight Distance

A sight distance analysis, in conformance with guidelines of the American Association of State Highway and Transportation Officials (AASHTO) was performed at the existing unsignalized site driveway intersection along Beacon Street. The proposed Site driveway with the Project in place are anticipated to be located in approximately the same locations as the existing east Site driveways. Sight distance considerations are generally divided into two categories: Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD). Stopping Sight Distance (SSD) is the distance required for a vehicle approaching an intersection from either direction to perceive, react and come to a complete stop before colliding with an object in the road, in this case the exiting vehicle from a driveway. In this respect, SSD can be considered as the minimum visibility criterion for the safe operation of an unsignalized intersection.

Intersection Sight Distance (ISD) is based on the time required for perception, reaction and completion of the desired critical exiting maneuver once the driver on a minor street or driveway approach decided to execute the maneuver. Calculation for the critical ISD includes the time to (1) turn left, and to clear the half of the intersection without conflicting with the vehicles approaching from the left; and (2) accelerate to the operating speed of the roadway without causing approaching vehicles to unduly reduce their speed. In this context, ISD can be considered as a desirable visibility criterion for the safe operation of an unsignalized intersection. Essentially, while SSD is the minimum distance needed to avoid collisions, ISD is the minimum distance needed so that mainline motorists will not have to substantially reduce their speed due to turning vehicles. To maintain the safe operation of an unsignalized intersection, ISD only needs to be equal to the stopping sight distance, though it is desirable to meet ISD requirements by themselves.

To calculate the required SSD and ISD at the unsignalized intersections of Beacon Street at the East Site Driveway and Beacon Street at the West Site Driveway, the 85<sup>th</sup> percentile speed along Beacon Street measured by the ATR count described above was utilized. The 85<sup>th</sup> percentile speed along Beacon Street was observed to be approximately 33 mph eastbound and 38 mph westbound. Table 3 summarizes the sight distance analysis and the sight distance worksheets are included in the Attachments.

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<sup>1</sup> Equivalent property damage only" is a method of combining the number of crashes with the severity of the crashes based on a weighted scale. Crashes involving property damage only are reported at a minimal level of importance, while collisions involving personal injury (or fatalities) are weighted more heavily.

**Table 3 Sight Distance Analysis Summary**

Location	Stopping Sight Distance (ft) <sup>a</sup>			Intersection Sight Distance (ft) <sup>a</sup>		
	Traveling	Required	Measured	Looking	Desired	Measured
Beacon Street at Site	Eastbound	230	> 1000	Left	320	> 1000
Driveway	Westbound	280	> 1000	Right	420	> 1000

a Based on guidelines established in A Policy on the Geometric Design of Highways and Streets, Sixth Edition, American Association of State Highway and Transportation Officials (AASHTO), 2011 for an 85<sup>th</sup> percentile speed of 33 mph eastbound and 38 mph westbound.

As shown in Table 3, at the unsignalized intersection of Beacon Street and the Site Driveway, the required stopping sight distances and the desired intersection sight distances are exceeded in both directions. It should be noted that there is vegetation located between the two driveways that may limit the view, but it is expected that all vegetation would be trimmed / replaced with any improvements or redevelopment on Site.

### Future Conditions

To determine the impacts of the site-generated traffic volumes in the vicinity of the site, future traffic conditions were evaluated. A seven-year horizon (2028) was used for the evaluation consistent with MassDOT TIA requirements.

Traffic growth on area roadways is a function of the expected land development, environmental activity, and changes in demographics. A frequently used procedure is to identify estimated traffic generated by planned developments that would be expected to affect the project study area roadways. An alternative procedure is to estimate an annual percentage increase and apply that increase to study area traffic volumes. For this evaluation, *both* procedures were used. The following summarizes this traffic forecasting process.

### Historic Growth

Traffic studies conducted in the City of Newton and historic count data were reviewed to establish a rate at which traffic volumes can be expected to grow. A review of recent traffic studies indicated that a 0.5-percent per year growth rate is appropriate for analysis purposes.

### Planned Developments

In addition to accounting for background growth, the traffic associated with other planned and/or approved developments near the Site was considered. Based on discussions with the City of Newton, it was determined that there is one planned development project in the vicinity of the site that are likely to influence traffic conditions.

The only planned development that would have impacts to the study area is a 2,300 sf cannabis dispensary. The background development is located at 1158 Beacon Street, approximately 500 feet west of the Project. Fuss & O'Neill completed a traffic memorandum<sup>2</sup> that identifies the impacts of the cannabis dispensary. The proposed impacts of the planned development to the study area were incorporated into the 2028 No-Build and 2028 Build volume networks.

<sup>2</sup> 1158 Beacon Street – Traffic Review Letter, Fuss & O'Neill, 2019.



## Background Transportation Projects

In assessing future traffic conditions, proposed roadway improvements within the study area were considered. Based on discussions with the City of Newton, there are no transportation projects that would impact the Project study area within the seven-year horizon.

It should be noted that a reconstruction of Beacon Street was recently completed in the vicinity of the Site. As part of the project, the roadway was repaved, sidewalks were reconstructed, and a crosswalk was added across Beacon Street west of Beaconwood Road. All construction related with this project was finished prior to the collection of our traffic counts and therefore is included in the 2021 Existing conditions analysis.

## No-Build Traffic Volumes

The 2028 No-Build traffic volumes were generated by consideration of the above described factors. The resulting 2028 No-Build peak hour traffic volume networks are provided in the Attachments.

## Trip Generation

The proposed redevelopment Project will involve the construction of an approximately 34-unit residential building that will replace an existing building on-Site (restaurant building). To estimate the site-generated traffic, the Institute of Transportation Engineers' (ITE) publication *Trip Generation, 10<sup>th</sup> Edition*<sup>3</sup> was utilized. The number of vehicle trips generated by the proposed project were estimated based on ITE land use code (LUC) 221 (Mid-Rise Residential). Table 4 provides a trip generation summary and the worksheet is included in the Attachments.

**Table 4 New Trip Generation Summary**

Time Period	Direction	New Residential Trips <sup>a</sup>
Weekday Daily	Enter	92
	<u>Exit</u>	<u>92</u>
	Total	184
Weekday Morning	Enter	3
	<u>Exit</u>	<u>9</u>
	Total	12
Weekday Evening	Enter	10
	<u>Exit</u>	<u>6</u>
	Total	16

<sup>a</sup> Trip generation estimate based on ITE LUC 221 (Mid-Rise Residential) for 34 units

As shown in Table 4, the proposed Project is expected to generate approximately 12 vehicle trips (3 entering/9 exiting) during the weekday morning peak hour and approximately 16 vehicle trips (10 entering/6 exiting) during the weekday

<sup>3</sup> *Trip Generation Manual, 10<sup>th</sup> Edition*, Institute of Transportation Engineers, Washington D.C., 2017.

evening peak hour. As noted previously, to present a conservative analysis no credit was taken for residents that may commute via public transit.

### Potential Site-Generated Trips

The Site supports an approximately 6,059 sf building that formerly housed a restaurant. ITE trip generation guidelines were consulted to determine the amount of traffic a new restaurant would generate if the existing building on-Site were to be re-occupied with a new tenant. Based on ITE land use code 932 (High-Turnover (Sit-Down) Restaurant), a new restaurant on-Site would generate approximately 60 vehicle trips (33 entering/27 exiting) during the weekday morning peak hour and approximately 59 vehicle trips (37 entering/22 exiting) during the weekday evening peak hour. The trip generation calculations for the potential re-occupancy of the existing Site are included in the Attachments.

The expected rates that would be generated by a new restaurant opening in the existing building on-Site are over four times rates that are expected to be generated by the 34 residential units in the redevelopment. However, to present a conservatively worst-case analysis, **no trip credit** was taken for the potential re-occupancy of the existing Site.

### Trip Distribution

The directional distribution of the traffic approaching and departing the Site is a function of population densities, the location of employment opportunities, existing travel patterns, and the efficiency of the roadway system. Trips made from and to the Site during the peak hours are expected to be predominantly home-to-work and work-to-home trips in the weekday morning and weekday evening peak hours, respectively. Accordingly, the trip distribution for the proposed Project has been derived based on 2010 U.S. Census data. Table 5 summarizes the trip distribution. A figure displaying the trip distribution and detailed trip distribution calculations are provided in the Attachments.

**Table 5 Trip Distribution**

<b>Travel Route</b>	<b>Direction (from/to)</b>	<b>Percent Site Traffic</b>
Beacon Street	East	30%
Beacon Street	West	30%
Walnut Street	North	25%
<u>Walnut Street</u>	<u>South</u>	<u>15%</u>
Total		100%

### Build Traffic Volumes

The project-related traffic volumes shown in Table 4 are assigned to the study area roadway network based on the trip distribution patterns shown in Table 5 and added to the 2028 No-Build peak hour traffic volume networks to develop the 2028 Build peak hour traffic volume networks. The 2028 Build peak hour traffic volume networks and the Site-generated traffic volume networks are provided in the Attachments.

## Parking Analysis

The Project is proposed to have 50 parking spaces on Site for the 34 residential units, which corresponds to a parking rate of 1.47 spaces per residential unit. The City of Newton Zoning Ordinance (Section 5.1.4) provides a broad guideline with two (2) parking spaces for each dwelling unit as the starting point for apartments. However, the Ordinance provides the Board of Aldermen the ability to grant a special permit to reduce the parking provided to 1.25 spaces per unit “if circumstances warrant such modification.” Table 6 summarizes the Newton zoning requirements:

**Table 6 Newton Zoning Requirements**

Provision	Spaces per unit	Spaces indicated
Per Zoning Code	2.00	68
By Special Permit	1.25	43

Hence, the Newton Zoning Ordinance could allow as few as 43 parking spaces and might require as many as 68 parking spaces. The proposed parking supply is well within that range.

### Newton Zoning Requirements Vs. ITE Parking Generation

The Institute of Transportation Engineers’ publication *Parking Generation 5<sup>th</sup> Edition*<sup>4</sup> is widely used in the traffic engineering industry. ITE has compiled data from comparable suburban multi-family apartments across the country. Table 7 shows a comparison between the Newton zoning requirements and ITE’s observed 85<sup>th</sup>-percentile demand.

**Table 7 Newton Zoning Requirements vs. ITE Parking Generation Projections (34 Units)**

	Spaces per Unit	Total Spaces
Newton Zoning Requirement	2.00	68
ITE Parking Generation Projections <sup>a</sup>	1.47	50

<sup>a</sup> Based on ITE *Parking Generation, 5<sup>th</sup> Edition*, Land Use Code 221 (Mid-rise Apartments), 85<sup>th</sup>-percentile demand for 34 units.

As shown in Table 7, based on the Newton Zoning Ordinance, the parking requirement is two spaces per dwelling unit, which would require 68 spaces for the proposed project. In contrast, the 85<sup>th</sup>-percentile parking demand at similar residential developments studied by ITE experienced a demand of only 1.47 spaces per unit, which would require a supply of approximately 50 spaces for the proposed project. As stated previously, the Project is proposed to have 50 parking spaces on Site.

### Current Market Trends

While the zoning requirements for parking in most cities and towns have remained unchanged in recent years, shifts in the housing market as well as the demographics, needs, and desires of current renters have led to a trend of lower parking demand at multifamily developments. In a recent memorandum prepared by Stantec in May 2014<sup>5</sup> and

<sup>4</sup> *Parking Generation, 5<sup>th</sup> Edition*, Institute of Transportation Engineers, Washington D.C., 2019.

<sup>5</sup> *Parking at 135 Wells Avenue*, May 21, 2014, prepared by Stantec Urban Group

submitted to the City of Newton, they cite studies by Byrne McKinney & Associates, Inc. showing that the current market in the Boston region shows a demand between 1.25 and 1.50 spaces per unit, depending on location. This trend is due in part to young professionals opting to not own a car or couples opting to own a single car and choosing to live in communities that have pedestrian and bicycle amenities and a strong connection to public transit. Widespread acceptance of car sharing (ZipCar, Enterprise) and ridesharing (Uber, Lyft) will tend to dampen enthusiasm for car ownership. With increased fuel costs and a heightened environmental consciousness, mode splits are trending away from reliance on automobiles. Furthermore, with advances in technology, some young professionals prefer to use electronics like smartphones, tablets, and laptops on their commute instead of driving. Alternatively, these advances in technology have made it far more common for people to work from home. Based on these current trends, parking requirements outlined in the zoning code of many cities and towns overstate the actual parking needs of today's multi-family apartments and are adding unnecessary cost and inadvertently contributing to greater unaffordability.

### Empirical Data

To supplement the ITE projections and the observations made in other recent studies, parking counts were conducted at two comparable apartment complexes in Newton:

- Avalon at Newton Highlands
- Avalon at Chestnut Hill

Parking demand for each of these sites was documented between 9 PM and 12 AM on Tuesday October 14, 2014 and Wednesday October 15, 2014. These specific count times for each site were chosen to represent peak occupancy when most, if not all, residents would be at home and their vehicle(s) would be parked on site. The counts are summarized in Table 8 below and are provided in the Attachments of this memorandum.

**Table 8 Observed Parking Demand**

<b>Location</b>	<b>Number of Occupied Units</b>	<b>Observed Parking Demand (vehicles)</b>	<b>Existing Parking Demand Ratio</b>
Avalon at Newton Highlands (Newton)	288	372	1.29
<u>Avalon at Chestnut Hill (Newton)</u>	<u>202</u>	<u>239</u>	<u>1.18</u>
<i>Average</i>			<b>1.24</b>

As shown in Table 8, the observed parking demand at the two existing facilities ranged from 1.18 to 1.29. In addition, the observed demand at the two Avalon projects is comparable to the 1.26 spaces per dwelling unit at the 180-unit Arborpoint at Woodland Station, which was reported to the City of Newton by Byrne McKinney & Associates, Inc. as part of the 135 Wells Avenue project. The level of demand observed is consistent with the current market trends and using a simple average would suggest a proposed parking ratio of 1.24, or 42 parking spaces, on the 1114 Beacon Street project.

## Parking Demand Management

As discussed previously, current trends in the multifamily market are showing lower parking demands, particularly in areas with access to public transit. Another contributor to this trend is the implementation of parking demand management practices on site. The following parking demand management strategies play an important role in reducing overall parking needs:

- **Ridesharing:** Services such as Uber, Lyft, and taxis are increasing in popularity, particularly among young professionals. These services reduce the need for car ownership for occasional use. A designated (signed) area will be provided for these services along the internal driveway loop on-Site.
- **Transit Access:** Inherently, proximity to transit will reduce residents' reliance on automobiles, particularly for commuting. This positive impact can be expanded with enhancements such as posting and distributing transit schedules and maps as well as providing strong pedestrian/bicycle connections to nearby transit stops. Transit opportunities will be posted in common areas. In addition, the petitioner will assess the feasibility of having an interactive display of real time transit opportunities in common areas to assist commuters.
- **Unbundling of Parking Cost:** Property managers at multifamily developments are increasingly employing this practice, which gives residents the option to pay separately for their parking needs. Residents could potentially save money on their monthly rent if, for example, they need no parking or only one space. The proponents are studying different parking charge scenarios to signal to tenants the true cost of vehicle ownership and encourage reduced car ownership.
- **Bicycle Parking:** Presence of secure bicycle storage on site provides residents with the convenient opportunity to bike to work or to transit stops without the burden or inconvenience of having to store their bicycles in their apartment. The proponent will provide secure bicycle storage for 34 bicycles in a designated bike room within the building.

## Traffic Operations Analysis

To assess quality of flow, intersection capacity analyses were conducted with respect to 2021 Existing, 2028 No-Build, and 2028 Build traffic volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them. Roadway operating conditions are classified by calculated levels-of-service.

### Level of Service Criteria

Level-of-service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. Level-of-service provides an index to operational qualities of a roadway segment or an intersection. Level-of-service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

For this study, capacity analyses were completed for the signalized and unsignalized intersections within the study area using Synchro traffic analysis software. Level-of-service designation is reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of each lane or lane group entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. The LOS is only determined for left-turns from the main street and all movements from the minor street.

The evaluation criteria used to analyze the signalized study area intersection in this traffic study is based on the percentile-delay method (SYNCHRO results). The evaluation criteria used to analyze the unsignalized study area intersections is based on the *2016 Highway Capacity Manual* (HCM)<sup>6</sup>.

### **Intersection Capacity Analysis**

Levels-of-service analyses were conducted for the 2021 Existing, 2028 No-Build, and 2028 Build conditions for the study area intersections. Tables 9 and 10 summarize the capacity analyses for the signalized and unsignalized intersections, respectively. The capacity analyses worksheets are included in the Attachments to this memorandum.

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<sup>6</sup> Highway Capacity Manual, Sixth Edition, Transportation Research Board, Washington D.C., 2016.

**Table 9 Signalized Intersection Capacity Analysis**

Location / Movement	2021 Existing Conditions					2028 No-Build Conditions					2028 Build Conditions				
	v/c <sup>a</sup>	Del <sup>b</sup>	LOS <sup>c</sup>	50 Q <sup>d</sup>	95 Q <sup>e</sup>	v/c	Del	LOS	50 Q	95 Q	v/c	Del	LOS	50 Q	95 Q
<b>Beacon Street at Walnut Street</b>															
<i>Weekday Morning</i>															
EB L	0.58	38	D	34	#102	0.63	41	D	37	#119	0.63	41	D	37	#119
EB T/R	0.79	46	D	221	#494	0.84	50	D	243	#548	0.86	52	D	251	#567
WB L	0.30	25	C	23	64	0.31	26	C	22	64	0.33	26	C	22	64
WB T/R	0.92	58	E	275	#587	0.91	57	E	271	#611	0.91	58	E	274	#619
NB L	0.36	27	C	24	69	0.36	27	C	25	72	0.36	27	C	25	72
NB T/R	1.02	81	F	320	#717	1.03	82	F	324	#725	1.03	82	F	324	#725
SB L	0.57	37	D	34	#93	0.56	36	D	33	#95	0.56	36	D	33	#95
SB T/R	0.84	50	D	245	#507	0.82	48	D	235	#525	0.82	48	D	235	#525
<b>Overall</b>		<b>56</b>	<b>E</b>				<b>57</b>	<b>E</b>				<b>57</b>	<b>E</b>		
<i>Weekday Evening</i>															
EB L	0.37	27	C	25	71	0.40	28	C	27	77	0.41	28	C	27	77
EB T/R	0.77	44	D	217	#482	0.83	48	D	240	#537	0.84	49	D	243	#546
WB L	0.45	29	C	36	89	0.50	31	C	35	92	0.51	32	C	35	92
WB T/R	0.84	49	D	240	#499	0.83	48	D	237	#536	0.85	50	D	246	#555
NB L	0.47	31	C	28	77	0.52	33	C	31	#89	0.52	33	C	31	#89
NB T/R	0.69	41	D	193	#411	0.74	43	D	212	#461	0.74	43	D	212	#461
SB L	0.47	29	C	42	106	0.53	32	C	43	109	0.53	32	C	43	109
SB T/R	0.94	62	E	286	#644	0.97	68	E	299	#673	0.97	68	E	299	#673
<b>Overall</b>		<b>46</b>	<b>D</b>				<b>49</b>	<b>D</b>				<b>50</b>	<b>D</b>		

- a Volume to capacity ratio.
- b Average total delay, in seconds per vehicle.
- c Level-of-service.
- d 50th percentile queue, in feet.
- e 95th percentile queue, in feet.
- # 95th percentile volume exceeds capacity, queue may be longer.

**Table 10 Unsignalized Intersection Capacity Analysis**

Location / Movement	2021 Existing Conditions					2028 No-Build Conditions					2028 Build Conditions									
	D <sup>a</sup>	v/c <sup>b</sup>	Del <sup>c</sup>	LOS <sup>d</sup>	95 Q <sup>e</sup>	D	v/c	Del	LOS	95 Q	D	v/c	Del	LOS	95 Q					
<b>Beacon Street at Walgreens Driveway / Hair Studio Driveway</b>																				
<i>Weekday Morning</i>																				
EB L	10	0.01	9	A	0	10	0.01	9	A	0	10	0.01	9	A	0					
WB L	neg	0.00	9	A	0	neg	0.00	9	A	0	neg	0.00	9	A	0					
NB L/T/R	neg	0.02	26	D	3	neg	0.01	25	D	0	neg	0.01	26	D	0					
SB L/T/R	20	0.11	20	C	10	20	0.08	19	C	5	20	0.08	19	C	8					
<i>Weekday Evening</i>																				
EB L	10	0.01	9	A	0	10	0.01	9	A	0	10	0.01	9	A	0					
WB L	neg	0.00	9	A	0	neg	0.00	9	A	0	neg	0.00	9	A	0					
NB L/T/R	neg	0.02	20	C	3	neg	0.01	20	C	0	neg	0.01	20	C	0					
SB L/T/R	30	0.09	15	B	8	30	0.08	14	B	5	30	0.08	14	B	8					
<b>Beacon Street at East Site Driveway</b>																				
<i>Weekday Morning</i>																				
WB L	neg	0.00	9	A	0	neg	0.00	9	A	0	5	0.01	9	A	0					
NB L/R	neg	0.02	15	B	3	neg	0.01	15	C	0	15	0.05	15	C	3					
<i>Weekday Evening</i>																				
WB L	neg	0.00	9	A	0	neg	0.00	9	A	0	10	0.01	9	A	0					
NB L/R	neg	0.01	12	B	0	neg	0.00	12	B	0	5	0.02	15	B	3					
<b>Beacon Street at West Site Driveway</b>																				
<i>Weekday Morning</i>																				
WB L	neg	-	0	A	0	neg	-	0	A	0	<i>Does not exist under 2028 Build Conditions</i>									
NB L/R	neg	-	0	A	0	neg	-	0	A	0										
<i>Weekday Evening</i>																				
WB L	neg	-	0	A	0	neg	-	0	A	0										
NB L/R	neg	-	0	A	0	neg	-	0	A	0										
<b>Beacon Street at Citizens Bank Driveway / Townhouses Driveway</b>																				
<i>Weekday Morning</i>																				
EB L	neg	-	0	A	0	neg	-	0	A	0	neg	-	0	A	0					
WB L	5	0.01	9	A	0	5	0.01	9	A	0	5	0.01	9	A	0					
NB L/T/R	5	0.05	22	C	5	5	0.03	21	C	3	5	0.03	22	C	3					
SB L/T/R	neg	0.02	25	C	3	neg	0.01	24	C	0	neg	0.01	24	C	0					
<i>Weekday Evening</i>																				
EB L	neg	-	0	A	0	neg	-	0	A	0	neg	-	0	A	0					
WB L	5	0.01	9	A	0	5	0.01	9	A	0	5	0.01	9	A	0					
NB L/T/R	10	0.03	13	B	3	10	0.03	13	B	3	10	0.03	13	B	3					
SB L/T/R	neg	0.01	18	C	0	neg	0.01	18	C	0	neg	0.01	18	C	0					

- a Demand, in vehicles
- b Volume to capacity ratio.
- c Average total delay, in seconds per vehicle.
- d Level-of-service.
- e 95th percentile queue, in feet.



**Table 10 Unsignalized Intersection Capacity Analysis (Cont.)**

Location / Movement	2021 Existing Conditions					2028 No-Build Conditions					2028 Build Conditions				
	D <sup>a</sup>	v/c <sup>b</sup>	Del <sup>c</sup>	LOS <sup>d</sup>	95 Q <sup>e</sup>	D	v/c	Del	LOS	95 Q	D	v/c	Del	LOS	95 Q
<b>Beacon Street at Beaconwood Road / East 1129 Beacon Street Driveway</b>															
<i>Weekday Morning</i>															
EB L	neg	-	0	A	0	neg	-	0	A	0	neg	-	0	A	0
WB L	20	0.02	9	A	3	20	0.02	9	A	3	20	0.02	9	A	3
NB L/T/R	45	0.32	21	C	33	45	0.15	18	C	13	45	0.15	18	C	13
SB L/T/R	neg	0.03	30	D	3	neg	0.01	26	D	0	neg	0.01	26	D	0
<i>Weekday Evening</i>															
EB L	neg	-	0	A	0	neg	-	0	A	0	neg	-	0	A	0
WB L	15	0.02	9	A	3	15	0.02	9	A	0	15	0.02	9	A	0
NB L/T/R	35	0.15	17	C	13	35	0.11	16	C	10	35	0.11	16	C	10
SB L/T/R	neg	-	0	A	0	neg	-	0	A	0	neg	-	0	A	0

- a Demand, in vehicles
- b Volume to capacity ratio.
- c Average total delay, in seconds per vehicle.
- d Level-of-service.
- e 95th percentile queue, in feet.

As shown in Tables 9 and 10, the Project is expected to have minimal impacts on traffic operations at the study area intersections. Minimal changes to overall or individual movement delays and queues are expected between 2028 No-Build and 2028 Build conditions during both peak hours. The Site driveway is expected to operate at level-of-service C or better, with 95<sup>th</sup> percentile queues of less than one vehicle.

## Conclusion

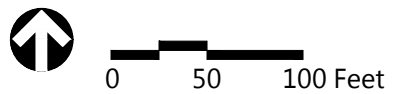
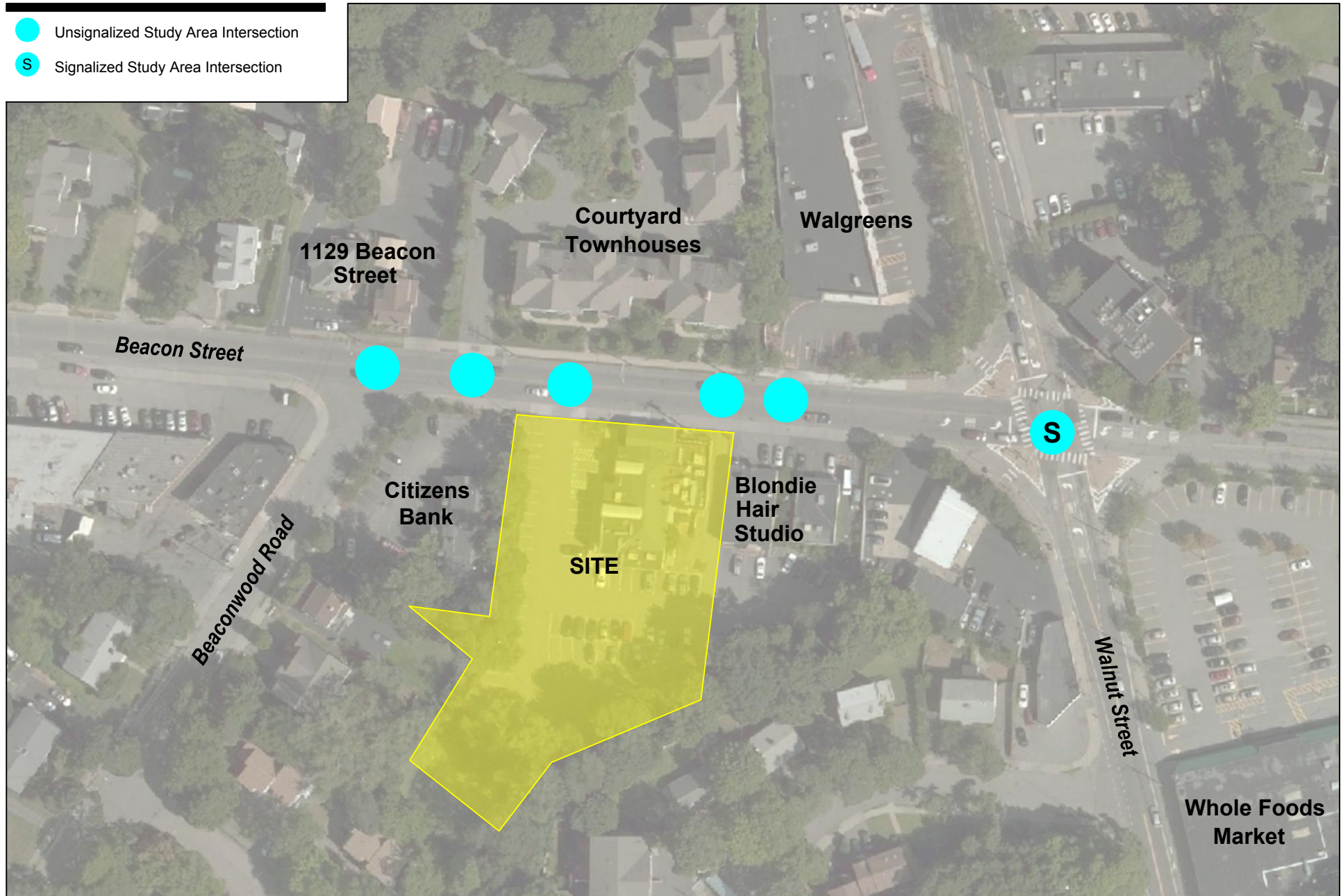
VHB has conducted a traffic impact and access study to assess the potential traffic impacts associated with the proposed redevelopment located at 1114 Beacon Street in Newton, Massachusetts. The proposed redevelopment Project will involve the demolition of one existing building and the construction of a 34-unit residential building, supported by 50 parking spaces and 34 secured, indoor bicycle spaces.

The proposed redevelopment is expected to generate approximately 12 vehicle trips (3 entering/9 exiting) during the weekday morning peak hour and approximately 16 vehicle trips (10 entering/6 exiting) during the weekday evening peak hour. As noted above, the proposed redevelopment is expected to result in substantially less traffic generation than the former restaurant on site. Based on the intersection capacity analysis, it was determined that the Project will have minimal impact upon intersection operations at the study area intersections.

# Attachments

- Figures
- Site Plan
- Traffic Count Data
- Seasonal Adjustment Factors
- Public Transit Schedules
- Crash Data
- Sight Distance Worksheets
- Background Projects
- Trip Generation Worksheets
- Trip Distribution Calculations
- Empirical Parking Counts
- Capacity Analysis Worksheets

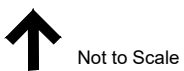
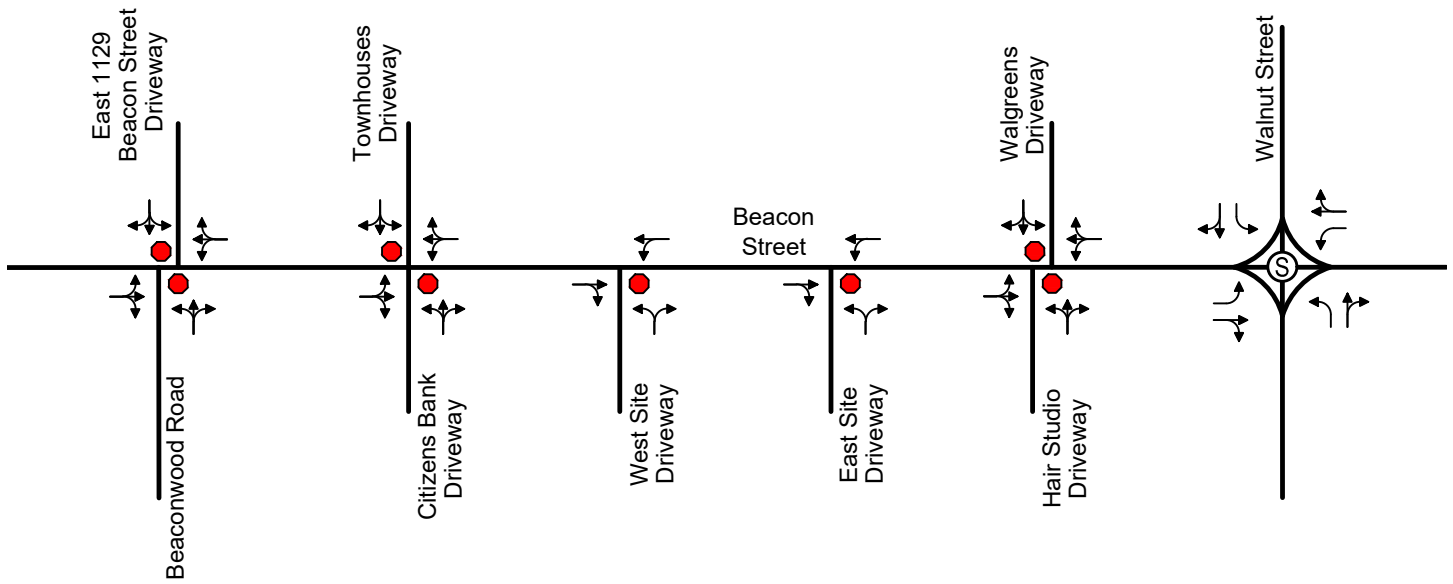




Site Location Map  
1114 Beacon Street  
Newton, Massachusetts

Figure 1

- Ⓢ Signalized Intersection
- Stop-Controlled



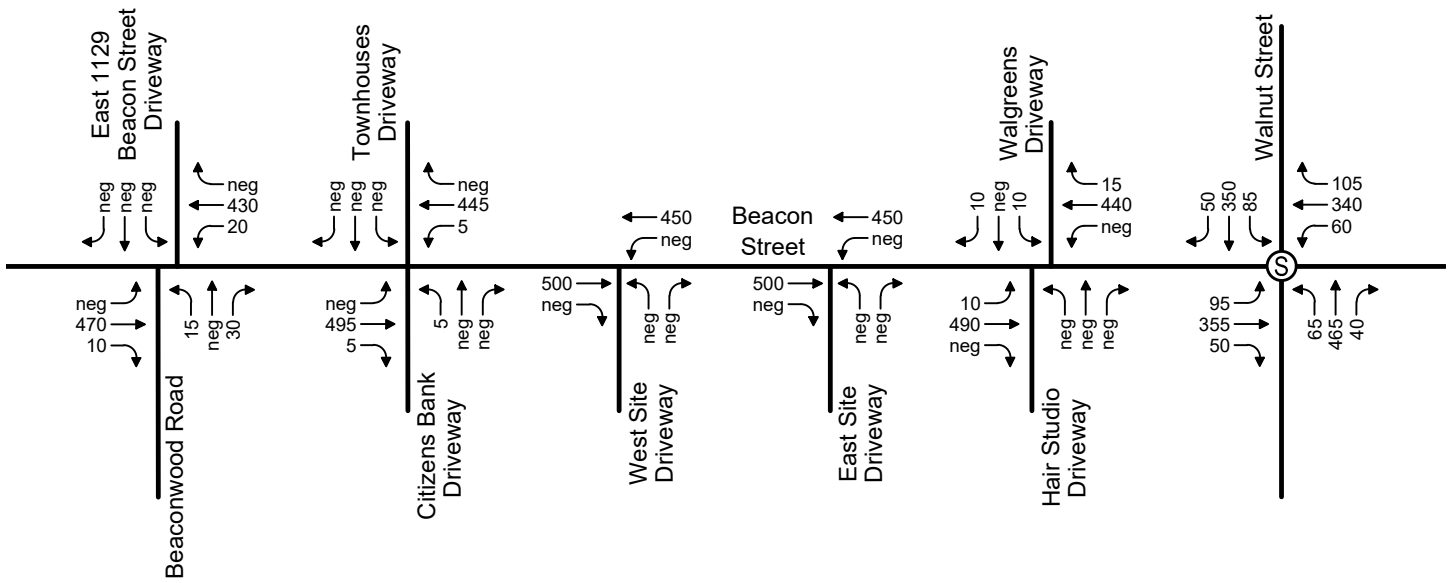
Lane Geometry and Traffic Control  
1114 Beacon Street  
Newton, Massachusetts

**Figure 2**

Weekday Morning Peak Hour

Neg = Negligible

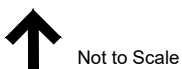
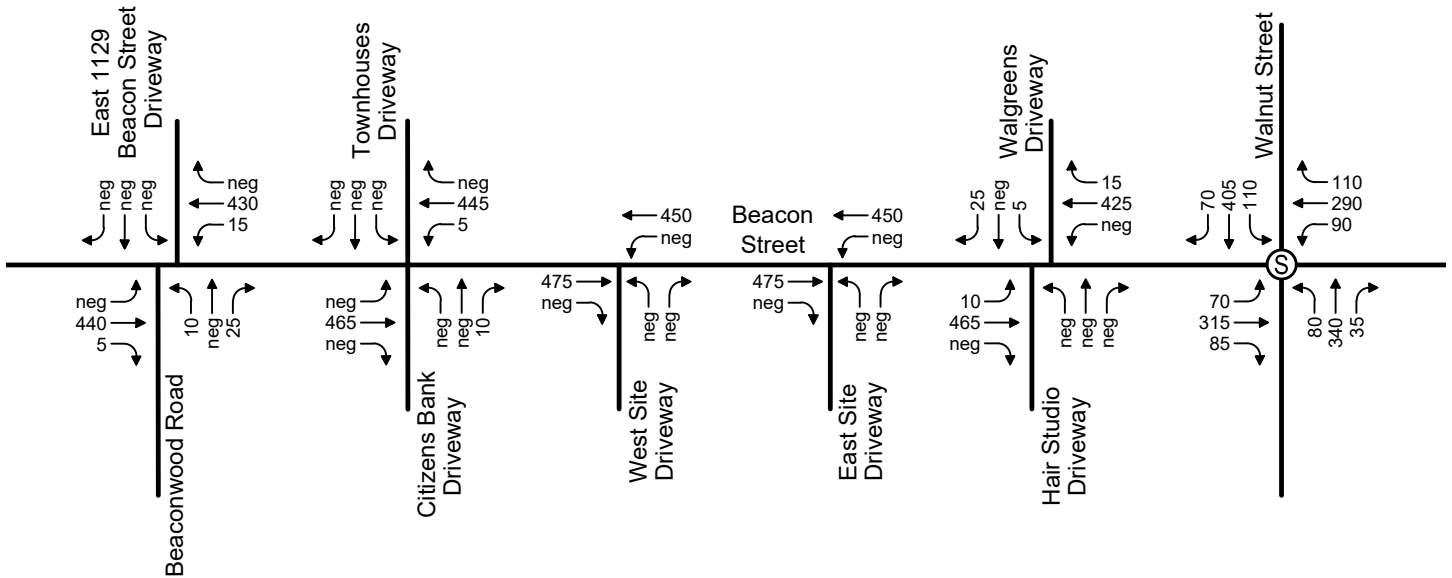
Ⓢ Signalized Intersection



Weekday Evening Peak Hour

Neg = Negligible

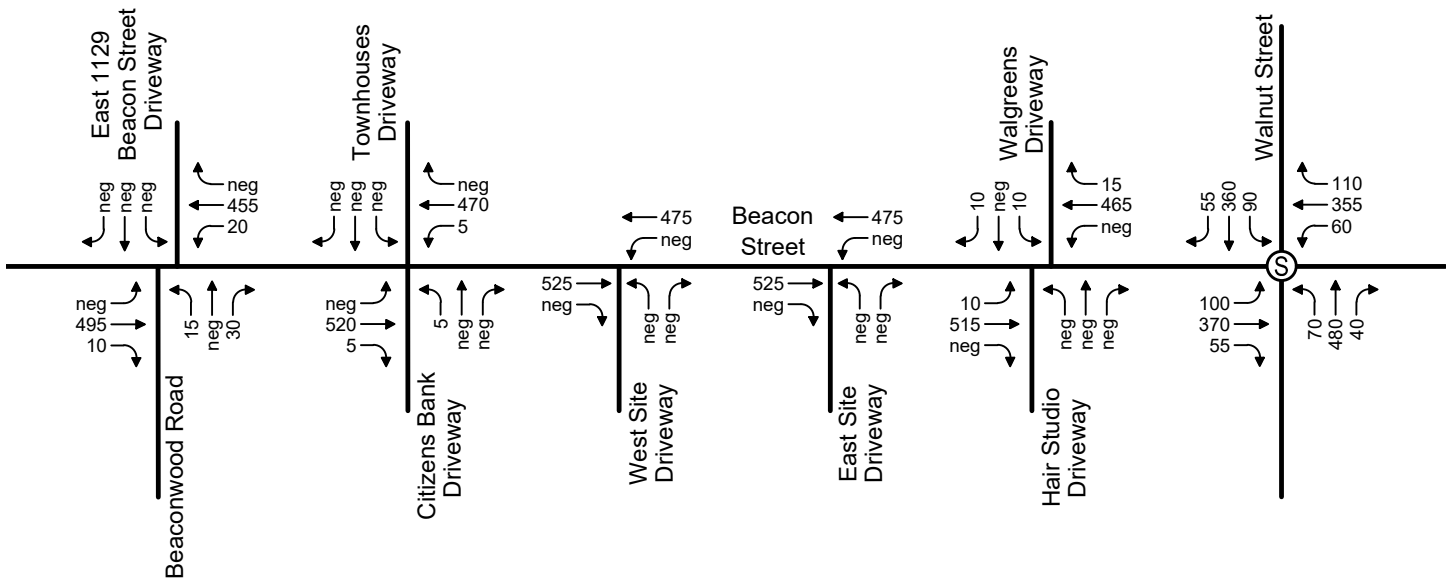
Ⓢ Signalized Intersection



Weekday Morning Peak Hour

Neg = Negligible

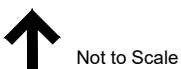
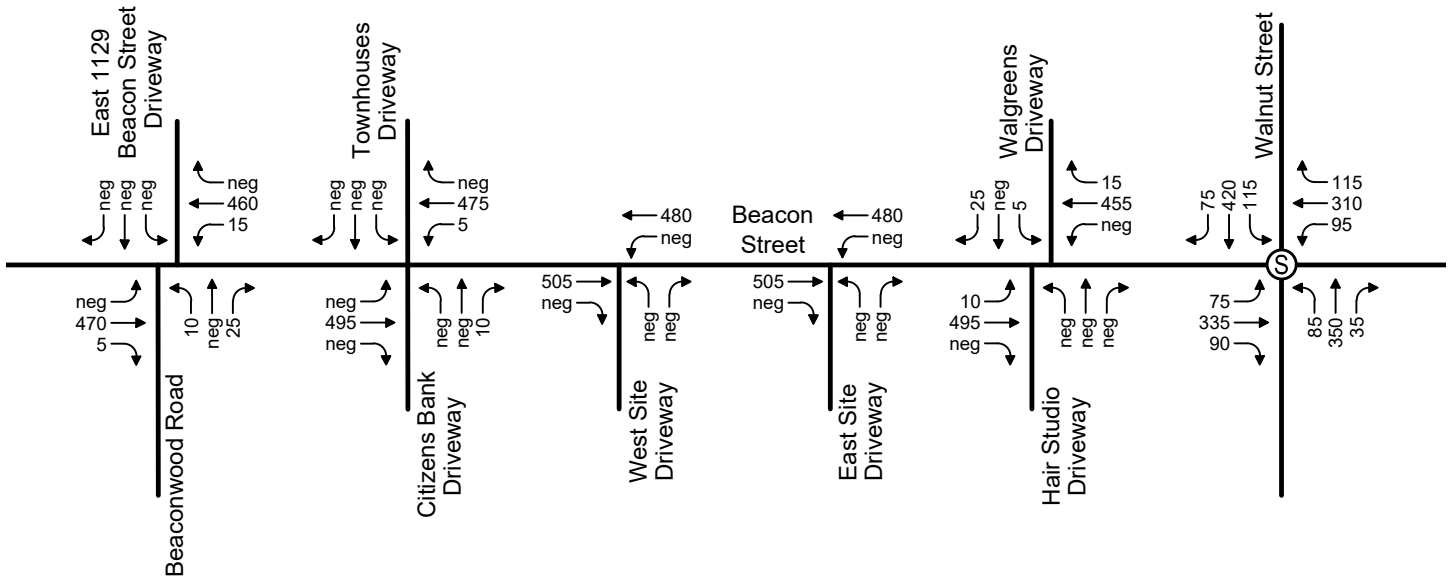
Ⓢ Signalized Intersection

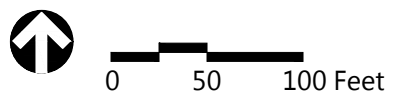


Weekday Evening Peak Hour

Neg = Negligible

Ⓢ Signalized Intersection





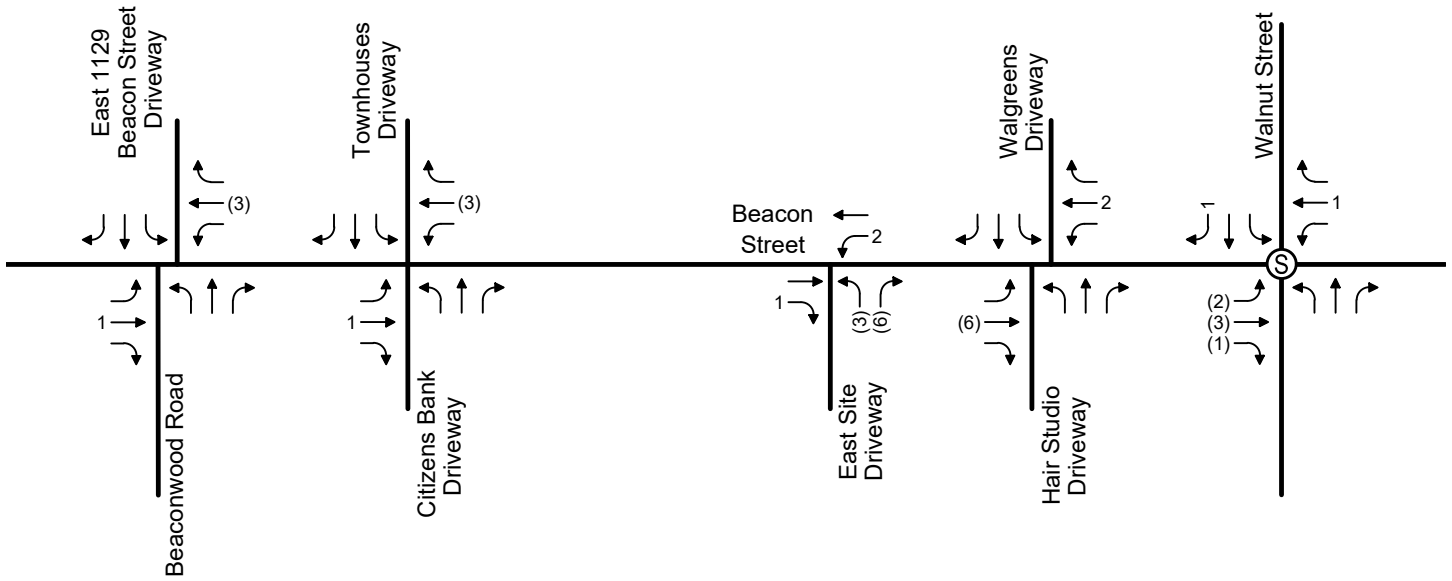
Trip Distribution  
1114 Beacon Street  
Newton, Massachusetts

Figure 5



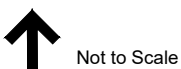
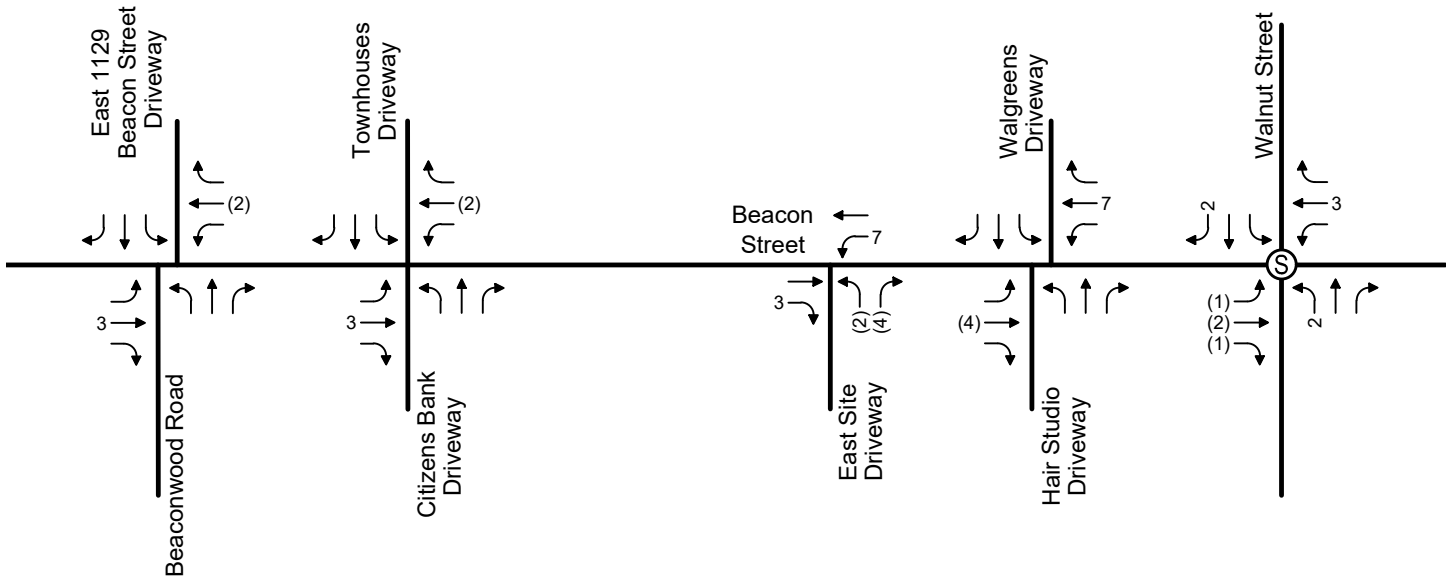
Weekday Morning Peak Hour

- Ⓢ Signalized Intersection
- XX = Entering Traffic
- (XX) = Exiting Traffic



Weekday Evening Peak Hour

- Ⓢ Signalized Intersection
- XX = Entering Traffic
- (XX) = Exiting Traffic



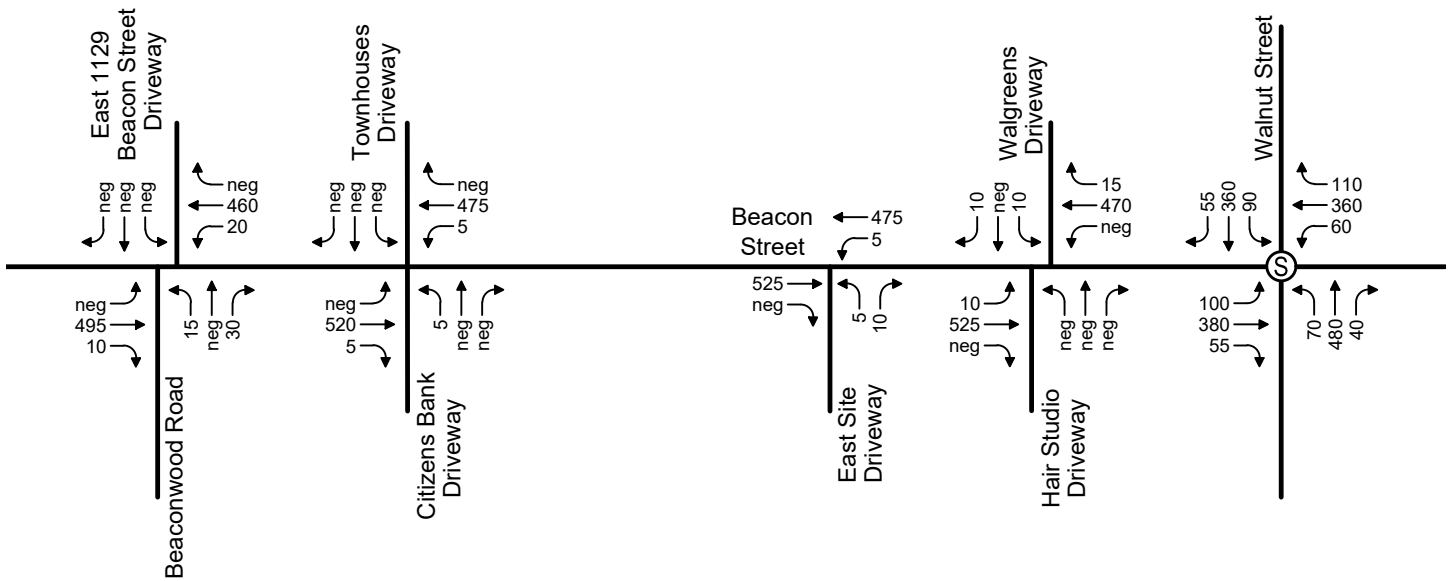
Site-Generated Trips  
1114 Beacon Street  
Newton, Massachusetts

Figure 6

Weekday Morning Peak Hour

Neg = Negligible

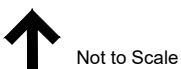
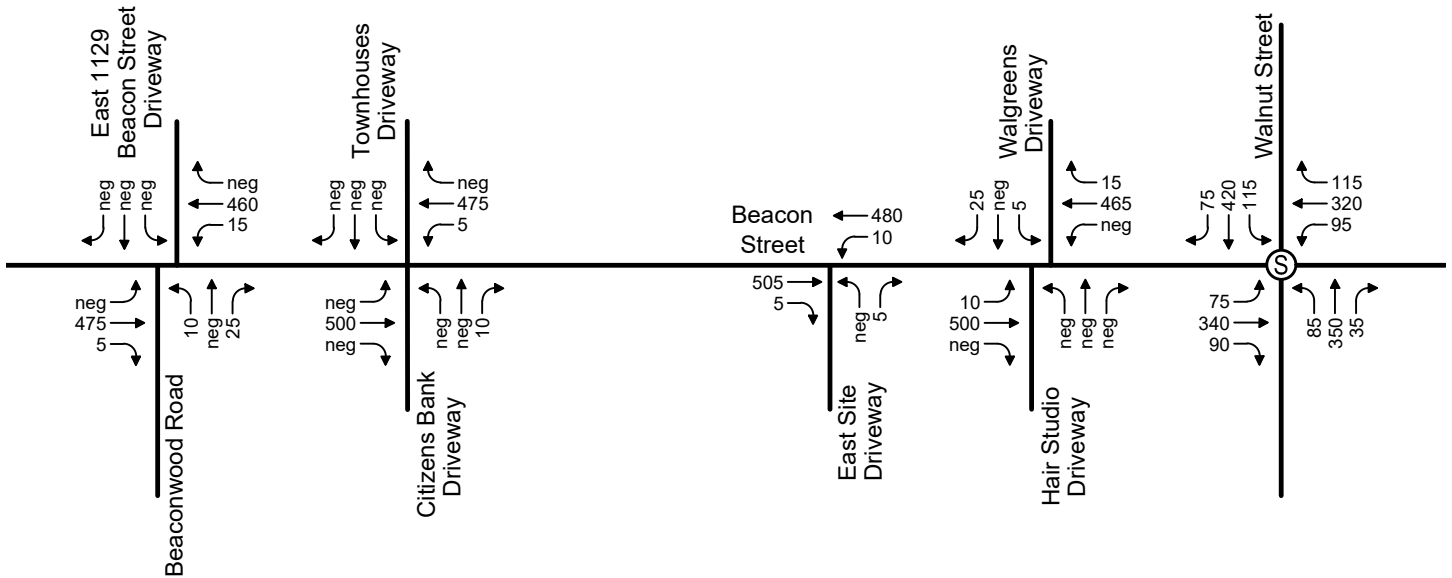
Ⓢ Signalized Intersection



Weekday Evening Peak Hour

Neg = Negligible

Ⓢ Signalized Intersection



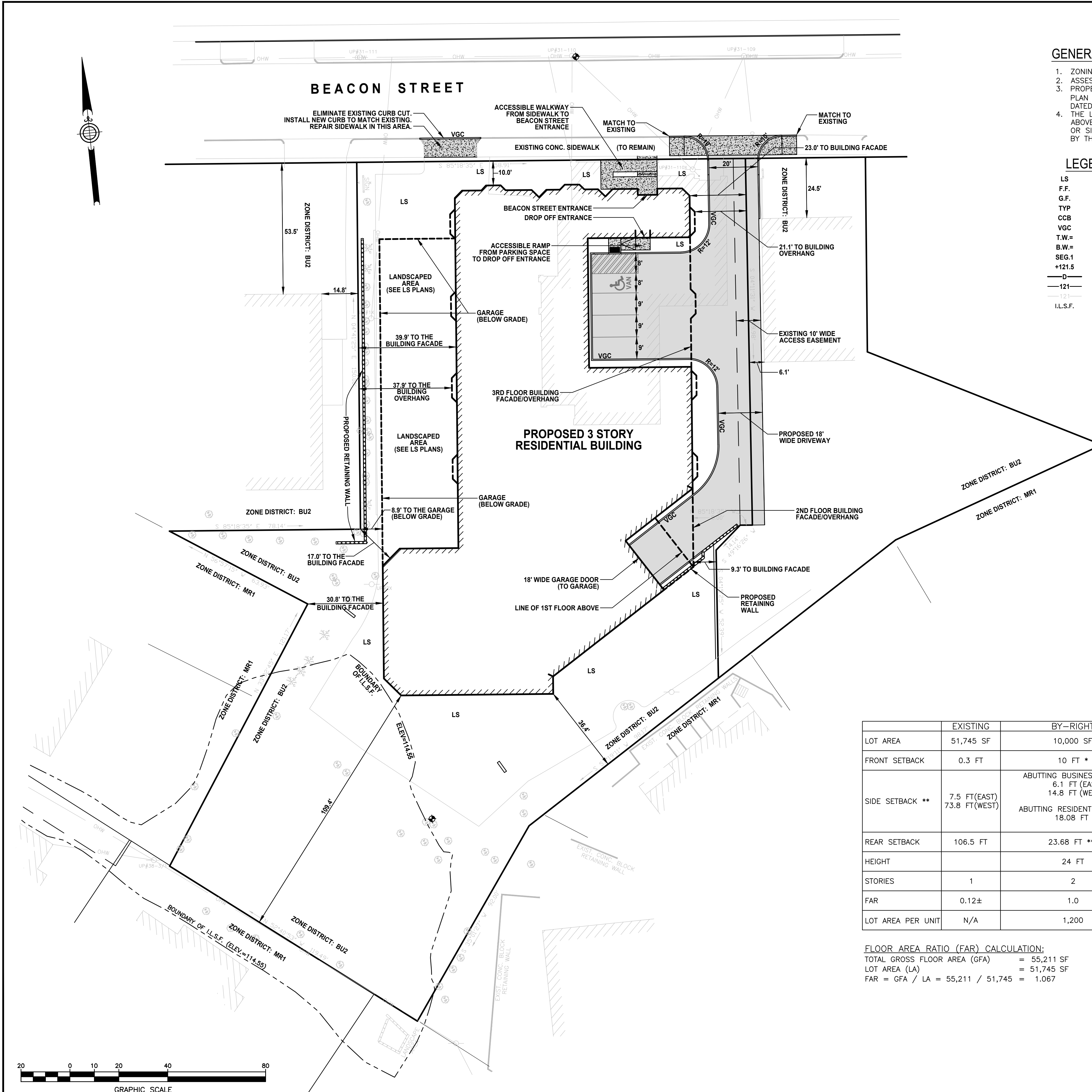


**GENERAL NOTES**

1. ZONING REFERENCE: BUSINESS USE 2 (BU2)
2. ASSESSOR'S REFERENCE: AP88SW LOT 4
3. PROPERTY LINES AND TOPOGRAPHIC INFORMATION SHOWN HEREON ARE FROM THE PLAN ENTITLED "EXISTING CONDITIONS SITE PLAN" BY TILTON AND ASSOCIATES, INC., DATED JUNE 14, 2018.
4. THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE FROM THE ABOVE REFERENCED TOPOGRAPHIC PLAN. BEFORE ANY CONSTRUCTION, DEMOLITION OR SITE WORK, THE LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR BY CONTACTING DIG-SAFE AT 811.

**LEGEND**

- LS PROPOSED LANDSCAPED AREA
- F.F. PROPOSED FIRST FLOOR ELEVATION
- G.F. PROPOSED GARAGE FLOOR ELEVATION
- TYP TYPICAL
- CCB PROPOSED CAPE COD BERM
- VGC PROPOSED VERTICAL GRANITE CURB
- T.W.= PROPOSED TOP OF WALL ELEVATION
- B.W.= PROPOSED BOTTOM OF WALL ELEVATION
- SEG.1 EXTERIOR WALL SEGMENT
- +121.5 PROPOSED SPOT GRADE ELEVATION
- 0- PROPOSED DRAIN LINE
- 121- PROPOSED CONTOUR
- 121- EXISTING CONTOUR
- IL.S.F. ISOLATED LAND SUBJECT TO FLOODING



**ZONING CHART**

	EXISTING	BY-RIGHT	BY SPECIAL PERMIT	PROPOSED
LOT AREA	51,745 SF	10,000 SF	10,000 SF	51,745 SF
FRONT SETBACK	0.3 FT	10 FT *	10 FT *	AT 1ST FLOOR FACADE: 10.0 FT
SIDE SETBACK **	7.5 FT(EAST) 73.8 FT(WEST)	ABUTTING BUSINESS ZONE: 6.1 FT (EAST) 14.8 FT (WEST)	ABUTTING BUSINESS ZONE: 6.1 FT (EAST) 14.8 FT (WEST)	ABUTTING BUSINESS ZONE: 9.3 FT (EAST) 17.0 FT (WEST)
		ABUTTING RESIDENTIAL ZONE: 18.08 FT	ABUTTING RESIDENTIAL ZONE: 18.08 FT	ABUTTING RESIDENTIAL ZONE: 36.4 FT (SOUTHEAST) 30.8 FT (WEST)
REAR SETBACK	106.5 FT	23.68 FT ***	23.68 FT ***	36.4 FT
HEIGHT		24 FT	48 FT	47.35 FT (SEE SHEET C-2)
STORIES	1	2	4	3
FAR	0.12±	1.0	2.0	1.067
LOT AREA PER UNIT	N/A	1,200	1,200	34 UNITS - 1,521.9

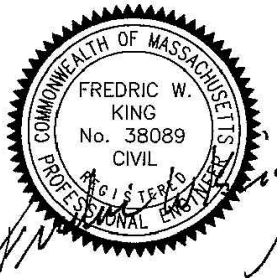
**FLOOR AREA RATIO (FAR) CALCULATION:**  
 TOTAL GROSS FLOOR AREA (GFA) = 55,211 SF  
 LOT AREA (LA) = 51,745 SF  
 FAR = GFA / LA = 55,211 / 51,745 = 1.067

\* PURSUANT TO SECTION 4.1.3 OF THE NEWTON ZONING ORDINANCE, THE FRONT SETBACK IS THE LESSER OF THE AVERAGE OF THE BUILDINGS ON THE NEAREST LOT ON EITHER SIDE OR 1/2 THE BUILDING HEIGHT. IN A BU-2 ZONE, WHEN THE BUILDINGS ON THE ABUTTING LOTS ARE SET BACK MORE THAN 10 FEET, THE AVERAGE IS COUNTED AS 10 FEET.

\*\* THERE ARE TWO SIDE SETBACK STANDARDS FOR THIS PROPERTY AS IT ABUTS BOTH THE BU-2 AND MR-1 ZONING DISTRICTS. PURSUANT TO SECTION 4.1.3 OF THE NEWTON ZONING ORDINANCE, THE SIDE SETBACK IS THE LESSER OF 1/2 THE BUILDING HEIGHT OR EQUAL TO THE ABUTTING SIDE YARD SETBACK WHERE THE PROPERTY ABUTS A BUSINESS ZONE. IT IS THE GREATER OF 1/2 THE BUILDING HEIGHT OR 15 FEET WHERE IT ABUTS A RESIDENTIAL ZONE.

\*\*\* GREATER OF 1/2 THE BUILDING HEIGHT OR 15 FEET.

PREPARED FOR:  
**BODWELL  
PINES CORP.**  
220 NORTH MAIN STREET, SUITE 105  
NATICK, MASSACHUSETTS 01760



NO.	APP.	DATE	DESCRIPTION

DATE: **NOVEMBER 5, 2020**

SCALE: **1" = 20'**

DESIGN:	DRAFTED:	CHECKED:
<b>KMR</b>	<b>KMR</b>	<b>FWK</b>

PROJECT TITLE:

**THE BEACON**

1114 BEACON STREET  
NEWTON, MASSACHUSETTS 02461

SHEET TITLE:

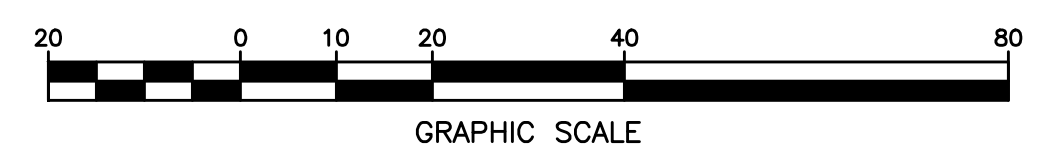
**PROPOSED SITE  
LAYOUT PLAN**

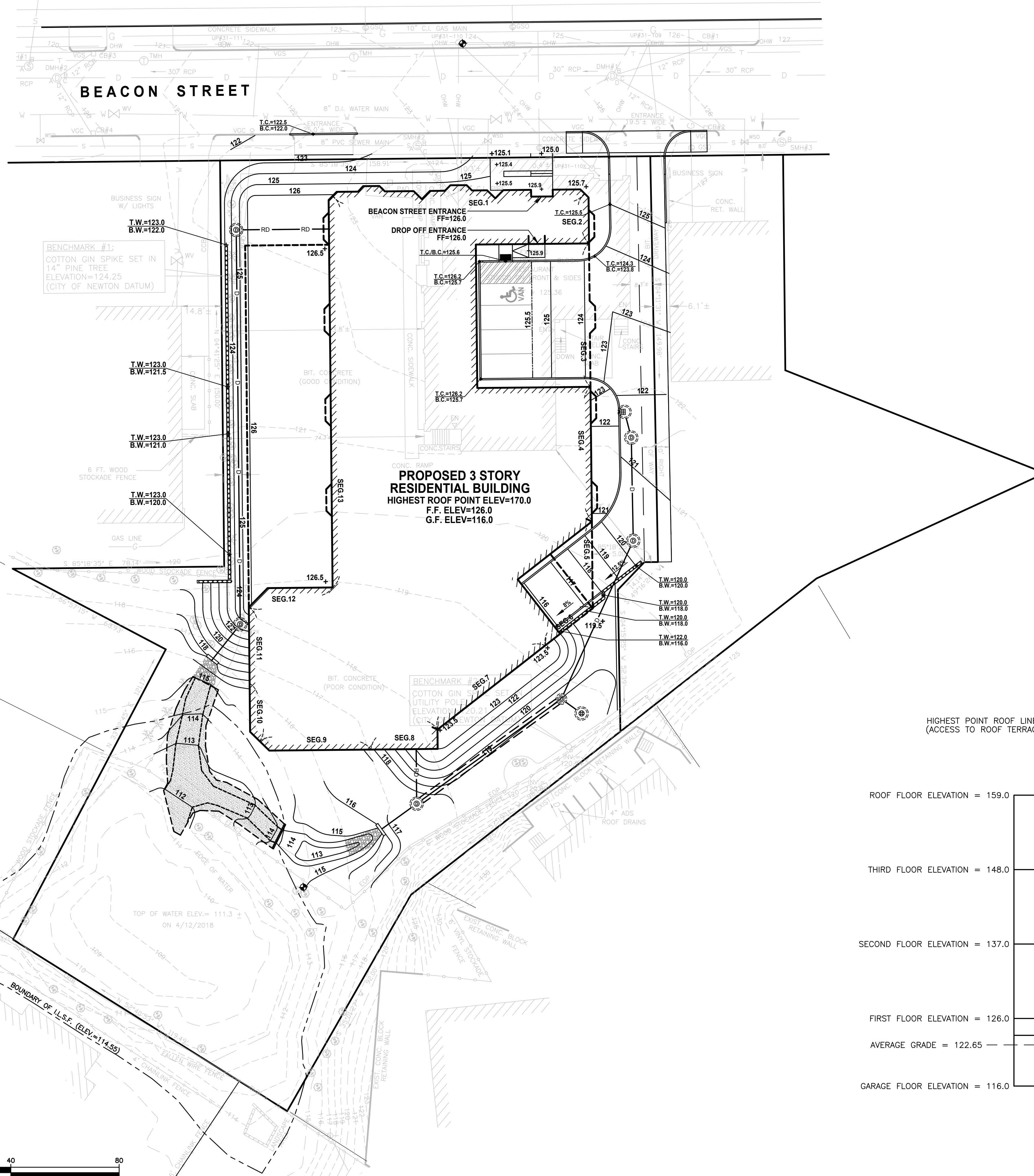
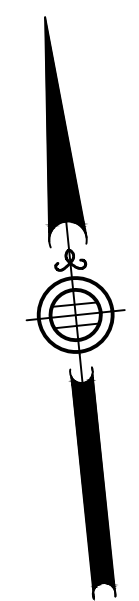
SHEET:  
**1 OF 2**

PROJECT NO.:  
**25266**

**C-1**

G:\Corporation Jobs\25266\Correspondence\To Client\2020-11-06\_Zoning Plan\25266\_Zoning Plan.dwg





**PROPOSED 3 STORY  
RESIDENTIAL BUILDING**  
HIGHEST ROOF POINT ELEV.=170.0  
F.F. ELEV.=126.0  
G.F. ELEV.=116.0

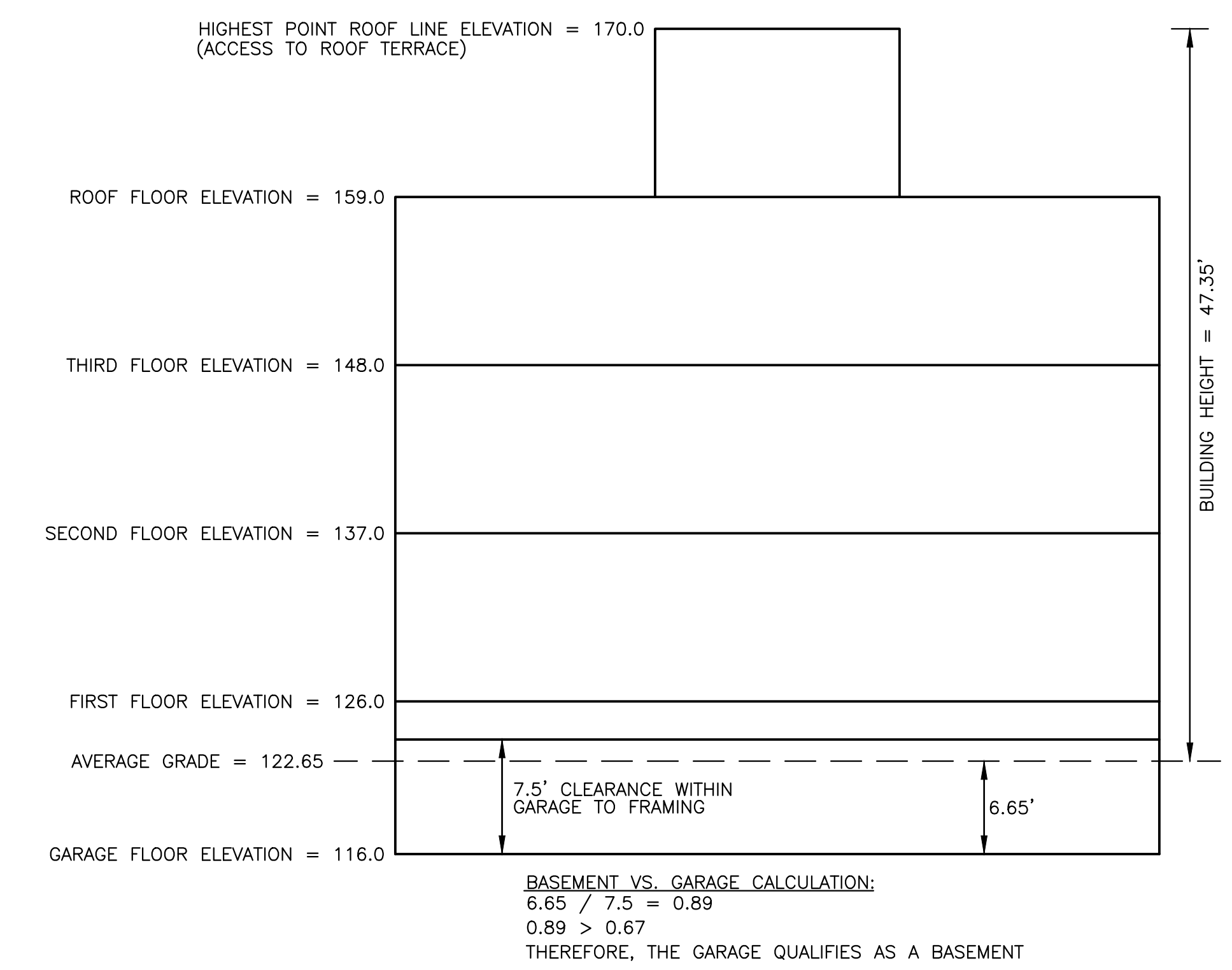
**Proposed Conditions Average Grade Calculation**

A	B	C	D	E	F
Segment	Length of Segment	E-1* Elev at Beginning of Segment	E-2* Elev at End of Segment	$E = (C+D) / 2$ Average Segment Height	$F = B \times E$
1	96.00	124.50	125.50	125.00	12,000.00
2	19.00	125.50	124.50	125.00	2,375.00
3	53.00	124.50	123.50	124.00	6,572.00
4	49.00	123.50	120.00	121.75	5,965.75
5	35.00	120.00	117.50	118.75	4,156.25
6	23.00	119.50	123.50	121.50	2,794.50
7	52.00	123.50	123.50	123.50	6,422.00
8	32.00	123.50	117.00	120.25	3,848.00
9	43.00	117.00	114.30	115.65	4,972.95
10	24.00	114.30	116.00	115.15	2,763.60
11	28.00	116.00	122.80	119.40	3,343.20
12	34.00	122.80	126.40	124.60	4,236.40
13	143.00	126.40	124.50	125.45	17,939.35
Totals	631.00				77389.00

\* E-1 AND E-2 ARE THE LOWEST ELEVATION WITHIN 6 FEET OF THE FOUNDATION.

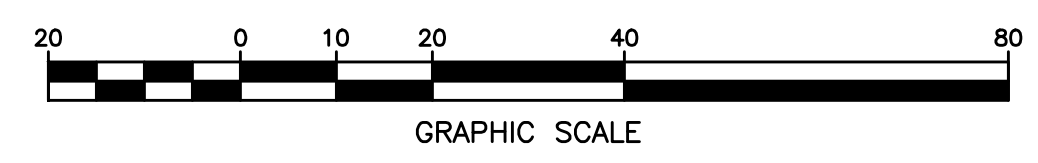
Average Grade = 122.65

**BUILDING HEIGHT CALCULATION:**  
ROOF LINE ELEVATION = 170.00  
AVERAGE GRADE = 122.65  
BUILDING HEIGHT = 47.35 FT



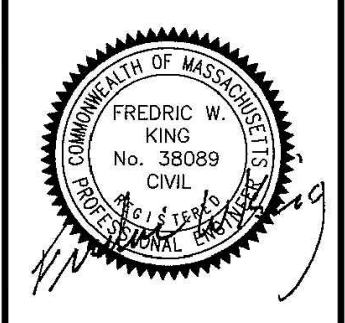
**BASEMENT VS. GARAGE CALCULATION:**  
 $6.65 / 7.5 = 0.89$   
 $0.89 > 0.67$   
THEREFORE, THE GARAGE QUALIFIES AS A BASEMENT

**BUILDING HEIGHT CALCULATION**



SEE SHEET C-1 FOR NOTES AND LEGEND

PREPARED FOR:  
**BODWELL  
PINES CORP.**  
220 NORTH MAIN STREET, SUITE 105  
NATICK, MASSACHUSETTS 01760



NO.	APP.	DATE	DESCRIPTION

DATE: **NOVEMBER 5, 2020**

SCALE: **1" = 20'**

DESIGN: **KMR**    DRAFTED: **KMR**    CHECKED: **FWK**

PROJECT TITLE:  
**THE BEACON**  
1114 BEACON STREET  
NEWTON, MASSACHUSETTS 02461

SHEET TITLE:  
**PROPOSED SITE  
GRADING PLAN**

SHEET:  
**2 OF 2**  
PROJECT NO.:  
**25266**  
**C-2**  
© 2020 BY DGT ASSOCIATES

G:\Corban Jobs\25266 Correspondence\To Client\2020-11-06\_Zoning Plan\25266\_Zoning Plan.dwg





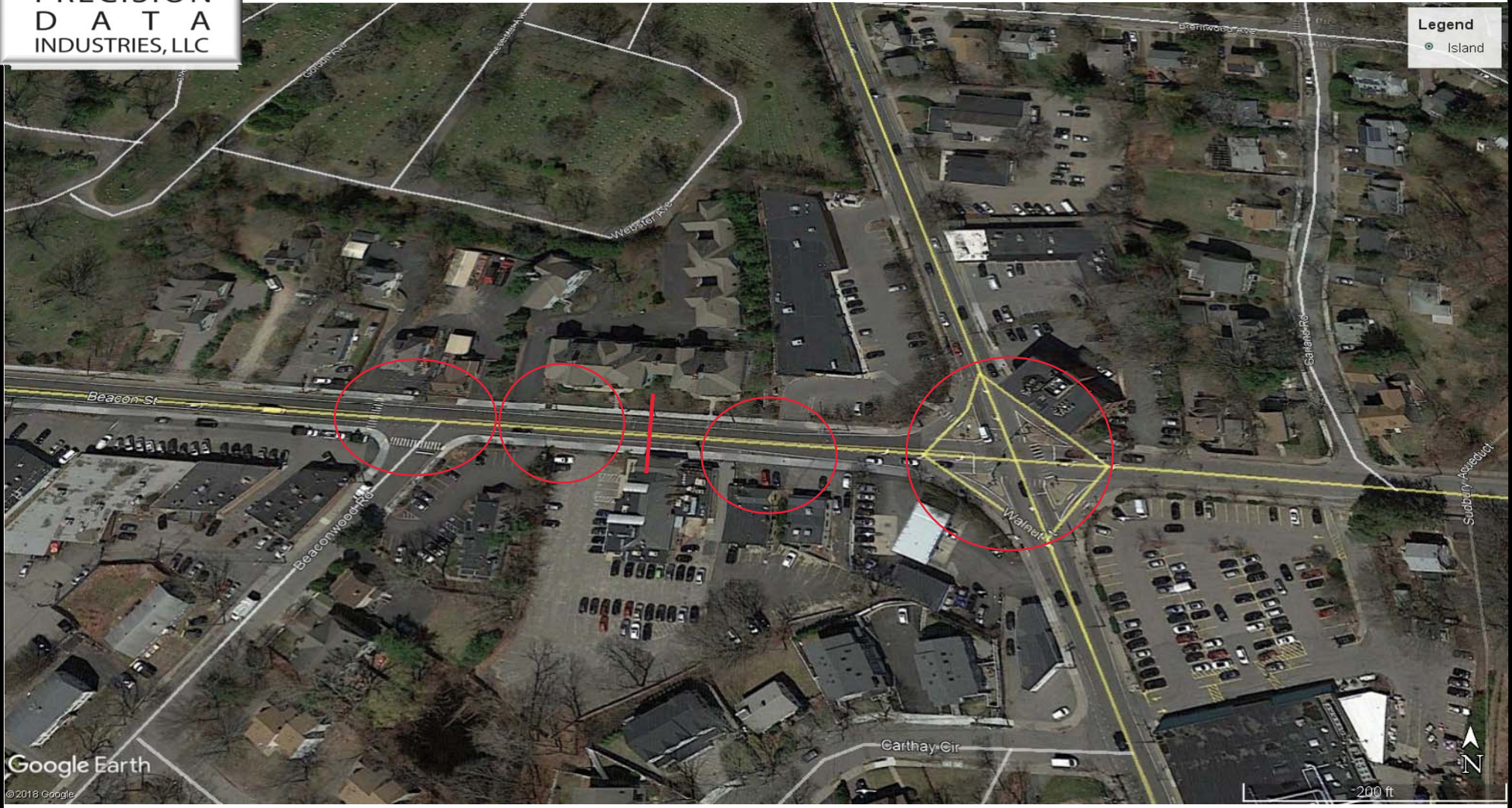
PRECISION  
DATA  
INDUSTRIES, LLC

PRECISION DATA INDUSTRIES, LLC

Office: 508.875.0100 Fax: 508.875.0118

Email: [datarequests@pdillc.com](mailto:datarequests@pdillc.com)

*Traffic Counts with Precision*



Client:  
VHB

Engineer:  
M. Duranleau

Site Code:  
83060.18

Date:  
Wed 8/8 thru Thurs 8/9/18

PDI Job Number:  
186389

City, State:  
Newton, MA



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
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Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau  
WB

186389 AA Class  
Site Code: 83060.18

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/15/1														
8	0	12	2	0	0	0	0	0	0	0	0	0	0	14
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
03:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	18	3	0	1	1	0	0	0	0	0	0	0	23
06:00	1	48	24	0	2	1	0	0	0	0	0	0	0	76
07:00	3	184	33	1	22	6	2	2	2	0	0	0	0	255
08:00	9	227	41	2	20	2	2	0	2	0	0	0	0	305
09:00	4	237	46	1	16	3	0	1	1	0	0	0	0	309
10:00	4	152	37	3	12	2	0	1	0	0	0	0	0	211
11:00	2	171	54	0	14	1	1	2	1	0	0	0	0	246
12 PM	3	198	58	3	26	4	0	2	0	0	0	0	0	294
13:00	5	206	64	2	22	0	0	1	0	0	0	0	0	300
14:00	8	201	57	1	24	5	0	1	0	0	0	0	0	297
15:00	8	251	57	1	12	1	0	1	0	0	0	0	0	331
16:00	8	321	84	0	20	2	0	1	1	0	0	0	0	437
17:00	15	312	48	1	9	0	0	0	0	0	0	0	0	385
18:00	7	254	38	4	6	1	0	0	0	0	0	0	0	310
19:00	2	191	25	2	3	1	0	0	0	0	0	0	0	224
20:00	0	150	33	0	4	1	0	0	0	0	0	0	0	188
21:00	1	114	22	0	0	1	0	1	0	0	0	0	0	139
22:00	0	62	7	0	0	0	0	0	0	0	0	0	0	69
23:00	1	29	5	0	1	0	0	0	0	0	0	0	0	36
Total	81	3352	740	21	216	32	5	13	7	0	0	0	0	4467
Percent	1.8%	75.0%	16.6%	0.5%	4.8%	0.7%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	09:00	11:00	10:00	07:00	07:00	07:00	07:00	07:00					09:00
Vol.	9	237	54	3	22	6	2	2	2					309
PM Peak	17:00	16:00	16:00	18:00	12:00	14:00		12:00	16:00					16:00
Vol.	15	321	84	4	26	5		2	1					437





PRECISION  
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INDUSTRIES, LLC

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Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau  
WB

186389 AA Class  
Site Code: 83060.18

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/16/1														
8	0	12	1	0	1	0	0	0	0	0	0	0	0	14
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	12	2	0	1	0	0	0	0	0	0	0	0	15
06:00	3	63	14	1	5	0	0	0	0	0	0	0	0	86
07:00	7	165	30	3	11	0	1	0	4	0	0	0	0	221
08:00	5	220	55	3	13	1	0	0	1	0	0	0	0	298
09:00	6	175	54	2	15	1	0	0	1	0	0	0	0	254
10:00	5	193	37	4	14	1	0	1	1	0	0	0	0	256
11:00	6	199	53	2	12	0	0	0	0	0	0	0	0	272
12 PM	5	183	61	0	15	0	0	1	0	0	0	0	0	265
13:00	4	214	63	2	18	0	1	3	0	0	0	0	0	305
14:00	4	205	65	1	11	3	0	0	1	0	0	0	0	290
15:00	3	249	61	0	23	2	0	2	0	0	0	0	0	340
16:00	4	271	76	1	22	1	0	1	0	0	0	0	0	376
17:00	10	267	60	0	9	2	0	1	0	0	0	0	0	349
18:00	6	230	51	1	4	2	0	0	0	0	0	0	0	294
19:00	2	173	30	0	8	1	0	0	0	0	0	0	0	214
20:00	2	138	21	0	2	0	0	1	0	0	0	0	0	164
21:00	0	99	16	0	0	0	0	0	0	0	0	0	0	115
22:00	0	43	10	0	0	0	0	0	0	0	0	0	0	53
23:00	1	19	5	0	1	0	0	0	0	0	0	0	0	26
Total	74	3139	766	20	185	14	2	10	8	0	0	0	0	4218
Percent	1.8%	74.4%	18.2%	0.5%	4.4%	0.3%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	08:00	10:00	09:00	08:00	07:00	10:00	07:00					08:00
Vol.	7	220	55	4	15	1	1	1	4					298
PM Peak	17:00	16:00	16:00	13:00	15:00	14:00	13:00	13:00	14:00					16:00
Vol.	10	271	76	2	23	3	1	3	1					376



PRECISION  
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Beacon Street  
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City, State: Newton, MA  
Client: VHB/M. Duranleau

186389 AA Class  
Site Code: 83060.18

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/15/1														
8	0	12	0	0	1	0	0	0	0	0	0	0	0	13
01:00	1	6	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
05:00	0	28	7	0	1	0	0	0	0	0	0	0	0	36
06:00	0	128	27	0	1	1	0	1	0	0	0	0	0	158
07:00	4	264	43	0	4	3	0	1	2	0	0	0	0	321
08:00	8	347	35	1	6	1	2	1	0	0	0	0	0	401
09:00	7	325	34	2	4	1	0	0	0	0	0	0	0	373
10:00	7	271	28	1	7	2	0	1	2	0	0	0	0	319
11:00	1	285	37	0	8	1	0	0	1	0	0	0	0	333
12 PM	6	304	27	0	5	0	0	1	0	0	0	0	0	343
13:00	6	258	23	0	2	1	0	0	0	0	0	0	0	290
14:00	9	256	23	1	2	2	0	0	0	0	0	0	0	293
15:00	6	273	15	0	3	1	1	1	0	0	0	0	0	300
16:00	11	362	24	0	1	0	0	0	0	0	0	0	0	398
17:00	7	384	15	0	1	1	1	0	0	0	0	0	0	409
18:00	4	395	8	0	1	0	0	0	0	0	0	0	0	408
19:00	2	233	8	0	5	0	0	0	0	0	0	0	0	248
20:00	0	143	5	0	0	0	0	0	0	0	0	0	0	148
21:00	3	83	1	0	0	0	0	0	0	0	0	0	0	87
22:00	0	50	1	0	0	0	0	0	0	0	0	0	0	51
23:00	0	40	1	0	0	0	0	0	0	0	0	0	0	41
Total	82	4470	364	5	52	14	4	6	5	0	0	0	0	5002
Percent	1.6%	89.4%	7.3%	0.1%	1.0%	0.3%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	07:00	09:00	11:00	07:00	08:00	06:00	07:00					08:00
Vol.	8	347	43	2	8	3	2	1	2					401
PM Peak	16:00	18:00	12:00	14:00	12:00	14:00	15:00	12:00						17:00
Vol.	11	395	27	1	5	2	1	1						409



PRECISION  
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Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau

186389 AA Class  
Site Code: 83060.18

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/16/1														
8	0	12	0	0	0	0	0	0	0	0	0	0	0	12
01:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
05:00	1	43	6	0	1	0	0	0	0	0	0	0	0	51
06:00	1	121	23	0	3	3	0	0	1	0	0	0	0	152
07:00	2	243	34	0	6	2	0	1	1	0	0	0	0	289
08:00	8	344	31	4	5	1	2	0	0	0	0	0	0	395
09:00	9	299	36	1	8	0	0	0	1	0	0	0	0	354
10:00	4	269	29	2	2	2	0	1	1	0	0	0	0	310
11:00	2	271	25	0	5	1	0	1	0	0	0	0	0	305
12 PM	4	278	29	0	5	0	0	1	0	0	0	0	0	317
13:00	4	235	27	1	4	1	0	1	1	0	0	0	0	274
14:00	3	239	24	1	1	1	0	0	0	0	0	0	0	269
15:00	5	254	16	0	6	0	0	2	0	0	0	0	0	283
16:00	2	290	22	0	1	0	0	0	0	0	0	0	0	315
17:00	7	368	12	0	7	0	0	1	0	0	0	0	0	395
18:00	5	331	7	0	0	0	0	0	0	0	0	0	0	343
19:00	4	217	3	0	1	0	0	0	0	0	0	0	0	225
20:00	1	142	3	0	1	0	0	0	0	0	0	0	0	147
21:00	0	94	2	0	0	0	0	0	1	0	0	0	0	97
22:00	0	49	0	0	0	0	0	0	0	0	0	0	0	49
23:00	0	33	0	0	0	0	0	0	0	0	0	0	0	33
Total	62	4154	330	9	56	11	2	8	6	0	0	0	0	4638
Percent	1.3%	89.6%	7.1%	0.2%	1.2%	0.2%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	08:00	09:00	08:00	09:00	06:00	08:00	07:00	06:00					08:00
Vol.	9	344	36	4	8	3	2	1	1					395
PM Peak	17:00	17:00	12:00	13:00	17:00	13:00		15:00	13:00					17:00
Vol.	7	368	29	1	7	1		2	1					395



PRECISION  
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Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau  
WB

186389 AA Speed  
Site Code: 83060.18

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
08/15/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
18	0	0	0	2	4	4	3	1	0	0	0	0	0	14	42	36
01:00	0	0	0	0	3	3	0	0	0	0	0	0	0	6	37	35
02:00	0	0	0	0	3	1	0	0	0	1	0	0	0	5	55	38
03:00	0	0	0	0	0	1	2	0	0	1	0	0	0	4	56	44
04:00	0	0	0	0	0	0	1	1	0	1	0	0	0	3	56	49
05:00	0	0	1	2	5	9	5	1	0	0	0	0	0	23	41	36
06:00	2	2	7	8	17	24	13	2	1	0	0	0	0	76	40	33
07:00	<b>13</b>	<b>10</b>	22	42	58	78	<b>22</b>	7	<b>3</b>	0	0	0	0	255	38	32
08:00	10	10	30	<b>78</b>	75	<b>80</b>	20	1	1	0	0	0	0	305	37	31
09:00	13	5	<b>53</b>	57	<b>82</b>	74	21	3	0	0	0	0	<b>1</b>	<b>309</b>	37	30
10:00	7	3	16	38	61	57	20	<b>9</b>	0	0	0	0	0	211	38	32
11:00	8	7	23	45	74	63	22	4	0	0	0	0	0	246	38	31
12 PM	12	<b>10</b>	<b>33</b>	52	90	70	22	4	0	0	0	0	1	294	37	31
13:00	8	3	18	44	106	92	25	4	0	0	0	0	0	300	38	32
14:00	11	3	15	26	110	86	35	<b>9</b>	1	0	0	0	1	297	39	33
15:00	16	3	5	46	110	105	<b>39</b>	5	<b>2</b>	0	0	0	0	331	38	33
16:00	15	8	27	<b>74</b>	<b>153</b>	<b>123</b>	32	4	1	0	0	0	0	<b>437</b>	37	32
17:00	<b>25</b>	5	28	61	137	90	32	6	1	0	0	0	0	385	37	31
18:00	20	3	11	45	112	81	33	4	1	0	0	0	0	310	38	32
19:00	6	3	13	30	85	72	11	2	0	0	0	0	<b>2</b>	224	37	32
20:00	3	4	9	23	91	50	8	0	0	0	0	0	0	188	36	32
21:00	2	3	3	8	43	59	15	6	0	0	0	0	0	139	39	35
22:00	1	0	2	6	20	32	8	0	0	0	0	0	0	69	38	34
23:00	0	0	0	3	11	12	8	2	0	0	0	0	0	36	41	36
Total	172	82	316	690	1450	1266	397	75	11	3	0	0	5	4467		
%	3.9%	1.8%	7.1%	15.4%	32.5%	28.3%	8.9%	1.7%	0.2%	0.1%	0.0%	0.0%	0.1%			
AM Peak	07:00	07:00	09:00	08:00	09:00	08:00	07:00	10:00	07:00	02:00			09:00	09:00		
Vol.	13	10	53	78	82	80	22	9	3	1			1	309		
PM Peak	17:00	12:00	12:00	16:00	16:00	16:00	15:00	14:00	15:00				19:00	16:00		
Vol.	25	10	33	74	153	123	39	9	2				2	437		

Stats

15th Percentile : 24 MPH  
 50th Percentile : 32 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 42 MPH

Mean Speed(Average) : 32 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 2716  
 Percent in Pace : 60.8%  
 Number of Vehicles > 30 MPH : 2917  
 Percent of Vehicles > 30 MPH : 65.3%



PRECISION  
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WB

186389 AA Speed  
Site Code: 83060.18

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
08/16/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
18	0	0	0	1	1	9	1	2	0	0	0	0	0	14	43	38
01:00	0	0	0	1	2	0	0	1	0	0	0	0	0	4	46	34
02:00	0	0	0	0	1	1	0	0	0	0	0	0	0	2	37	35
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	1	1	2	0	0	1	0	0	0	5	55	42
05:00	0	1	1	0	7	0	6	0	0	0	0	0	0	15	42	34
06:00	5	3	3	12	24	20	13	5	0	1	0	0	0	86	41	33
07:00	12	6	11	31	56	85	19	1	0	0	0	0	0	221	38	32
08:00	19	8	29	34	72	97	33	4	0	0	0	0	2	298	38	31
09:00	9	10	38	57	73	52	13	2	0	0	0	0	0	254	36	30
10:00	10	7	22	50	74	60	25	8	0	0	0	0	0	256	38	31
11:00	17	7	17	40	83	80	22	5	1	0	0	0	0	272	38	31
12 PM	21	8	20	39	75	75	25	2	0	0	0	0	0	265	38	31
13:00	7	6	28	67	104	62	24	4	1	1	0	1	0	305	37	31
14:00	11	10	25	47	96	66	28	7	0	0	0	0	0	290	38	31
15:00	13	11	20	61	99	96	34	6	0	0	0	0	0	340	38	32
16:00	11	7	23	48	121	129	24	11	2	0	0	0	0	376	38	33
17:00	11	2	13	47	119	97	47	9	2	0	1	0	1	349	39	33
18:00	11	1	13	39	91	98	32	7	2	0	0	0	0	294	38	33
19:00	4	3	7	27	69	80	16	7	1	0	0	0	0	214	38	34
20:00	3	4	9	26	65	47	8	0	2	0	0	0	0	164	37	32
21:00	0	0	4	18	51	35	6	1	0	0	0	0	0	115	37	33
22:00	0	0	0	5	23	18	6	1	0	0	0	0	0	53	38	35
23:00	0	0	2	3	10	9	2	0	0	0	0	0	0	26	37	33
Total	164	94	285	653	1317	1217	386	83	11	3	1	1	3	4218		
%	3.9%	2.2%	6.8%	15.5%	31.2%	28.9%	9.2%	2.0%	0.3%	0.1%	0.0%	0.0%	0.1%			
AM Peak	08:00	09:00	09:00	09:00	11:00	08:00	08:00	10:00	11:00	04:00			08:00	08:00		
Vol.	19	10	38	57	83	97	33	8	1	1			2	298		
PM Peak	12:00	15:00	13:00	13:00	16:00	16:00	17:00	16:00	16:00	13:00	17:00	13:00	17:00	16:00		
Vol.	21	11	28	67	121	129	47	11	2	1	1	1	1	376		

Stats

- 15th Percentile : 24 MPH
- 50th Percentile : 32 MPH
- 85th Percentile : 38 MPH
- 95th Percentile : 42 MPH
  
- Mean Speed(Average) : 32 MPH
- 10 MPH Pace Speed : 30-39 MPH
- Number in Pace : 2534
- Percent in Pace : 60.1%
- Number of Vehicles > 30 MPH : 2759
- Percent of Vehicles > 30 MPH : 65.4%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau

186389 AA Speed  
Site Code: 83060.18

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
08/15/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
18	0	0	0	2	8	3	0	0	0	0	0	0	0	13	35	32
01:00	0	1	0	1	2	2	1	0	0	0	0	0	0	7	38	32
02:00	0	0	0	3	3	3	0	0	0	0	0	0	0	9	36	32
03:00	0	0	0	0	1	2	0	0	0	0	0	0	0	3	37	35
04:00	0	0	0	0	9	3	1	0	0	0	0	0	0	13	37	34
05:00	0	5	1	8	12	9	1	0	0	0	0	0	0	36	36	30
06:00	5	16	7	29	72	23	6	0	0	0	0	0	0	158	35	29
07:00	9	30	43	85	130	22	1	1	0	0	0	0	0	321	33	28
08:00	25	32	72	135	119	16	2	0	0	0	0	0	0	401	32	26
09:00	27	28	57	154	91	16	0	0	0	0	0	0	0	373	31	26
10:00	23	25	53	108	97	11	1	0	0	0	0	0	1	319	32	26
11:00	7	27	58	104	113	21	3	0	0	0	0	0	0	333	32	27
12 PM	43	45	60	102	75	18	0	0	0	0	0	0	0	343	31	24
13:00	18	17	22	92	113	25	3	0	0	0	0	0	0	290	33	28
14:00	18	19	29	99	110	18	0	0	0	0	0	0	0	293	32	27
15:00	25	16	30	108	107	12	1	1	0	0	0	0	0	300	32	27
16:00	31	33	58	140	101	32	1	0	2	0	0	0	0	398	32	26
17:00	56	41	56	138	103	13	0	0	0	0	1	0	1	409	31	24
18:00	25	36	77	151	98	18	3	0	0	0	0	0	0	408	31	26
19:00	6	15	26	97	89	13	1	0	0	0	0	0	1	248	32	28
20:00	5	6	9	64	54	9	1	0	0	0	0	0	0	148	32	28
21:00	3	3	6	21	36	18	0	0	0	0	0	0	0	87	35	30
22:00	0	0	1	18	22	8	2	0	0	0	0	0	0	51	35	31
23:00	0	0	0	6	24	10	1	0	0	0	0	0	0	41	36	33
Total	326	395	665	1665	1589	325	29	2	2	0	1	0	3	5002		
%	6.5%	7.9%	13.3%	33.3%	31.8%	6.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	09:00	08:00	08:00	09:00	07:00	06:00	06:00	07:00					10:00	08:00		
Vol.	27	32	72	154	130	23	6	1					1	401		
PM Peak	17:00	12:00	18:00	18:00	13:00	16:00	13:00	15:00	16:00		17:00		17:00	17:00		
Vol.	56	45	77	151	113	32	3	1	2		1		1	409		

Stats

15th Percentile : 19 MPH  
 50th Percentile : 27 MPH  
 85th Percentile : 32 MPH  
 95th Percentile : 35 MPH

Mean Speed(Average) : 27 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 3254  
 Percent in Pace : 65.1%  
 Number of Vehicles > 30 MPH : 1633  
 Percent of Vehicles > 30 MPH : 32.7%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
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Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau

186389 AA Speed  
Site Code: 83060.18

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
08/16/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
18	0	0	0	1	4	6	1	0	0	0	0	0	0	12	38	35
01:00	0	1	1	1	4	1	1	0	0	0	0	0	0	9	37	30
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	2	1	1	0	0	0	0	0	0	0	4	36	31
04:00	0	0	0	1	6	3	0	0	0	0	0	0	0	10	36	33
05:00	3	6	1	7	22	7	4	1	0	0	0	0	0	51	37	30
06:00	3	12	5	28	71	30	3	0	0	0	0	0	0	152	35	30
07:00	14	28	35	71	108	31	2	0	0	0	0	0	0	289	33	28
08:00	40	52	59	118	101	23	2	0	0	0	0	0	0	395	32	25
09:00	76	52	69	87	51	17	2	0	0	0	0	0	0	354	30	22
10:00	29	25	40	95	97	22	2	0	0	0	0	0	0	310	32	26
11:00	20	29	43	98	96	19	0	0	0	0	0	0	0	305	32	26
12 PM	19	27	55	111	91	14	0	0	0	0	0	0	0	317	32	26
13:00	22	25	30	98	79	19	1	0	0	0	0	0	0	274	32	26
14:00	10	27	31	78	96	27	0	0	0	0	0	0	0	269	33	27
15:00	14	22	37	84	105	19	1	1	0	0	0	0	0	283	32	27
16:00	16	13	34	99	124	27	1	0	0	0	0	0	1	315	33	28
17:00	15	20	50	146	127	35	2	0	0	0	0	0	0	395	33	28
18:00	7	4	29	111	151	32	8	1	0	0	0	0	0	343	33	30
19:00	7	6	22	72	94	23	1	0	0	0	0	0	0	225	33	29
20:00	12	6	10	54	51	13	1	0	0	0	0	0	0	147	33	27
21:00	1	0	5	28	44	16	3	0	0	0	0	0	0	97	35	31
22:00	1	2	2	11	17	16	0	0	0	0	0	0	0	49	36	31
23:00	0	0	2	12	11	8	0	0	0	0	0	0	0	33	35	31
Total	309	357	560	1413	1551	409	35	3	0	0	0	0	1	4638		
%	6.7%	7.7%	12.1%	30.5%	33.4%	8.8%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	08:00	09:00	08:00	07:00	07:00	05:00	05:00							08:00	
Vol.	76	52	69	118	108	31	4	1							395	
PM Peak	13:00	12:00	12:00	17:00	18:00	17:00	18:00	15:00					16:00	17:00		
Vol.	22	27	55	146	151	35	8	1					1	395		

Stats

15th Percentile : 19 MPH  
 50th Percentile : 27 MPH  
 85th Percentile : 33 MPH  
 95th Percentile : 36 MPH

Mean Speed(Average) : 27 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 2964  
 Percent in Pace : 63.9%  
 Number of Vehicles > 30 MPH : 1689  
 Percent of Vehicles > 30 MPH : 36.4%



PRECISION  
D A T A  
INDUSTRIES, LLC

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Office: 508-875-0100 Fax: 508-875-0118  
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Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau

186389 AA Volume  
Site Code: 83060.18

Start Time	WB		EB		Combin ed		8/15/2018 Wed
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	3	69	3	94	6	163	
12:15	4	72	4	75	8	147	
12:30	3	76	5	84	8	160	
12:45	4	14 77	294	1 13	90	343	5 27 167 637
01:00	4	72	2	61	6	133	
01:15	0	74	0	68	0	142	
01:30	1	71	3	70	4	141	
01:45	1	6 83	300	2 7	91	290	3 13 174 590
02:00	1	60	4	69	5	129	
02:15	0	74	2	69	2	143	
02:30	1	74	0	94	1	168	
02:45	3	5 89	297	3 9	61	293	6 14 150 590
03:00	0	84	0	68	0	152	
03:15	0	79	2	71	2	150	
03:30	2	80	0	79	2	159	
03:45	2	4 88	331	1 3	82	300	3 7 170 631
04:00	0	91	1	78	1	169	
04:15	0	121	1	106	1	227	
04:30	1	123	4	96	5	219	
04:45	2	3 102	437	7 13	118	398	9 16 220 835
05:00	2	100	4	97	6	197	
05:15	2	102	5	97	7	199	
05:30	10	83	7	92	17	175	
05:45	9	23 100	385	20 36	123	409	29 59 223 794
06:00	10	89	17	122	27	211	
06:15	20	72	38	125	58	197	
06:30	21	73	58	83	79	156	
06:45	25	76 76	310	45 158	78	408	70 234 154 718
07:00	42	63	87	83	129	146	
07:15	46	63	68	62	114	125	
07:30	72	62	94	57	166	119	
07:45	95	255 36	224	72 321	46	248	167 576 82 472
08:00	81	65	92	52	173	117	
08:15	81	51	98	38	179	89	
08:30	78	36	97	23	175	59	
08:45	65	305 36	188	114 401	35	148	179 706 71 336
09:00	94	45	99	20	193	65	
09:15	68	31	99	30	167	61	
09:30	60	35	90	19	150	54	
09:45	87	309 28	139	85 373	18	87	172 682 46 226
10:00	60	25	97	14	157	39	
10:15	51	14	74	18	125	32	
10:30	50	15	75	12	125	27	
10:45	50	211 15	69	73 319	7	51	123 530 22 120
11:00	72	9	58	10	130	19	
11:15	52	9	86	14	138	23	
11:30	76	8	82	11	158	19	
11:45	46	246 10	36	107 333	6	41	153 579 16 77
Total	1457	3010	1986	3016	3443	6026	
Percent	42.3%	50.0%	57.7%	50.0%			
Day Total		4467		5002		9469	
Peak	07:45	- 04:15	- 08:30	- 05:30	- 08:15	- 04:15	- - -
Vol.	335	- 446	- 409	- 462	- 726	- 863	- - -
P.H.F.	0.882	0.907	0.897	0.924	0.940	0.950	





PRECISION  
D A T A  
INDUSTRIES, LLC

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Beacon Street  
west of Beaconwood Road (at Dunkin Donuts)  
City, State: Newton, MA  
Client: VHB/M. Duranleau

186389 AA Volume  
Site Code: 83060.18

Start Time	WB		EB		Combin ed		8/16/2018 Thu
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	5	71	6	83	11	154	
12:15	5	56	2	77	7	133	
12:30	4	72	3	78	7	150	
12:45	0	14 66	265	1 79	317	1 145	582
01:00	1	79	3	73	4	152	
01:15	0	77	1	80	1	157	
01:30	0	69	3	59	3	128	
01:45	3	4 80	305	2 9 62	274	5 13 142	579
02:00	1	67	0	56	1	123	
02:15	0	83	0	62	0	145	
02:30	1	70	0	75	1	145	
02:45	0	2 70	290	0 0 76	269	0 2 146	559
03:00	0	85	1	64	1	149	
03:15	0	88	1	75	1	163	
03:30	0	89	1	73	1	162	
03:45	0	0 78	340	1 4 71	283	1 4 149	623
04:00	0	86	0	87	0	173	
04:15	0	91	4	72	4	163	
04:30	0	102	2	78	2	180	
04:45	5	5 97	376	4 10 78	315	9 15 175	691
05:00	1	85	3	105	4	190	
05:15	2	98	10	95	12	193	
05:30	4	71	19	92	23	163	
05:45	8	15 95	349	19 51 103	395	27 66 198	744
06:00	7	80	21	89	28	169	
06:15	25	82	21	88	46	170	
06:30	21	64	55	86	76	150	
06:45	33	86 68	294	55 152 80	343	88 238 148	637
07:00	43	54	79	84	122	138	
07:15	50	60	60	62	110	122	
07:30	48	65	66	42	114	107	
07:45	80	221 35	214	84 289 37	225	164 510 72	439
08:00	63	50	79	44	142	94	
08:15	84	43	83	42	167	85	
08:30	84	33	120	28	204	61	
08:45	67	298 38	164	113 395 33	147	180 693 71	311
09:00	65	36	93	24	158	60	
09:15	63	32	81	28	144	60	
09:30	62	25	99	29	161	54	
09:45	64	254 22	115	81 354 16	97	145 608 38	212
10:00	58	19	78	13	136	32	
10:15	79	13	83	14	162	27	
10:30	53	7	75	10	128	17	
10:45	66	256 14	53	74 310 12	49	140 566 26	102
11:00	59	5	61	10	120	15	
11:15	76	4	65	6	141	10	
11:30	75	12	90	8	165	20	
11:45	62	272 5	26	89 305 9	33	151 577 14	59
Total	1427	2791	1891	2747	3318	5538	
Percent	43.0%	50.4%	57.0%	49.6%			
Day Total		4218		4638		8856	
Peak	07:45	- 04:30	- 08:15	- 05:00	- 08:15	- 05:00	- - -
Vol.	311	- 382	- 409	- 395	- 709	- 744	- - -
P.H.F.	0.926	0.936	0.852	0.940	0.869	0.939	

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars and Heavy Vehicles (Combined)**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	7	28	9	0	44	11	25	2	0	38	5	43	14	0	62	5	59	17	0	81	225
7:15 AM	12	48	15	0	75	22	29	4	0	55	4	71	10	0	85	11	56	22	0	89	304
7:30 AM	5	58	4	0	67	22	48	2	0	72	7	89	15	0	111	6	53	21	0	80	330
7:45 AM	11	65	27	0	103	25	54	11	0	90	4	110	14	0	128	9	62	19	0	90	411
<b>Total</b>	<b>35</b>	<b>199</b>	<b>55</b>	<b>0</b>	<b>289</b>	<b>80</b>	<b>156</b>	<b>19</b>	<b>0</b>	<b>255</b>	<b>20</b>	<b>313</b>	<b>53</b>	<b>0</b>	<b>386</b>	<b>31</b>	<b>230</b>	<b>79</b>	<b>0</b>	<b>340</b>	<b>1270</b>
8:00 AM	8	70	12	0	90	25	71	13	0	109	15	103	15	0	133	9	78	27	0	114	446
8:15 AM	15	97	19	0	131	27	71	10	0	108	10	131	15	0	156	7	81	23	0	111	506
8:30 AM	11	84	23	0	118	26	89	23	0	138	6	106	12	0	124	14	81	23	0	118	498
8:45 AM	17	95	28	0	140	27	102	14	0	143	6	119	21	0	146	19	83	23	0	125	554
<b>Total</b>	<b>51</b>	<b>346</b>	<b>82</b>	<b>0</b>	<b>479</b>	<b>105</b>	<b>333</b>	<b>60</b>	<b>0</b>	<b>498</b>	<b>37</b>	<b>459</b>	<b>63</b>	<b>0</b>	<b>559</b>	<b>49</b>	<b>323</b>	<b>96</b>	<b>0</b>	<b>468</b>	<b>2004</b>
Grand Total	86	545	137	0	768	185	489	79	0	753	57	772	116	0	945	80	553	175	0	808	3274
Approach %	11.2	71.0	17.8	0.0		24.6	64.9	10.5	0.0		6.0	81.7	12.3	0.0		9.9	68.4	21.7	0.0		
Total %	2.6	16.6	4.2	0.0	23.5	5.7	14.9	2.4	0.0	23.0	1.7	23.6	3.5	0.0	28.9	2.4	16.9	5.3	0.0	24.7	
Exiting Leg Total	1132					747					704					691					3274
Cars	85	527	130	0	742	177	481	77	0	735	55	733	112	0	900	75	535	170	0	780	3157
% Cars	98.8	96.7	94.9	0.0	96.6	95.7	98.4	97.5	0.0	97.6	96.5	94.9	96.6	0.0	95.2	93.8	96.7	97.1	0.0	96.5	96.4
Exiting Leg Total	1080					720					679					678					3157
Heavy Vehicles	1	18	7	0	26	8	8	2	0	18	2	39	4	0	45	5	18	5	0	28	117
% Heavy Vehicles	1.2	3.3	5.1	0.0	3.4	4.3	1.6	2.5	0.0	2.4	3.5	5.1	3.4	0.0	4.8	6.3	3.3	2.9	0.0	3.5	3.6
Exiting Leg Total	52					27					25					13					117

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	8	70	12	0	90	25	71	13	0	109	15	103	15	0	133	9	78	27	0	114	446
8:15 AM	15	97	19	0	131	27	71	10	0	108	10	131	15	0	156	7	81	23	0	111	506
8:30 AM	11	84	23	0	118	26	89	23	0	138	6	106	12	0	124	14	81	23	0	118	498
8:45 AM	17	95	28	0	140	27	102	14	0	143	6	119	21	0	146	19	83	23	0	125	554
Total Volume	51	346	82	0	479	105	333	60	0	498	37	459	63	0	559	49	323	96	0	468	2004
% Approach Total	10.6	72.2	17.1	0.0		21.1	66.9	12.0	0.0		6.6	82.1	11.3	0.0		10.5	69.0	20.5	0.0		
PHF	0.750	0.892	0.732	0.000	0.855	0.972	0.816	0.652	0.000	0.871	0.617	0.876	0.750	0.000	0.896	0.645	0.973	0.889	0.000	0.936	0.904
Cars	51	337	79	0	467	101	328	58	0	487	35	439	63	0	537	48	315	94	0	457	1948
Cars %	100.0	97.4	96.3	0.0	97.5	96.2	98.5	96.7	0.0	97.8	94.6	95.6	100.0	0.0	96.1	98.0	97.5	97.9	0.0	97.6	97.2
Heavy Vehicles	0	9	3	0	12	4	5	2	0	11	2	20	0	0	22	1	8	2	0	11	56
Heavy Vehicles %	0.0	2.6	3.7	0.0	2.5	3.8	1.5	3.3	0.0	2.2	5.4	4.4	0.0	0.0	3.9	2.0	2.5	2.1	0.0	2.4	2.8
Cars Enter Leg	51	337	79	0	467	101	328	58	0	487	35	439	63	0	537	48	315	94	0	457	1948
Heavy Enter Leg	0	9	3	0	12	4	5	2	0	11	2	20	0	0	22	1	8	2	0	11	56
Total Entering Leg	51	346	82	0	479	105	333	60	0	498	37	459	63	0	559	49	323	96	0	468	2004
Cars Exiting Leg	634					429					443					442					1948
Heavy Exiting Leg	26					13					12					5					56
Total Exiting Leg	660					442					455					447					2004

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	7	27	9	0	43	10	25	2	0	37	5	41	14	0	60	4	56	17	0	77	217
7:15 AM	11	45	13	0	69	21	28	4	0	53	4	66	9	0	79	10	53	21	0	84	285
7:30 AM	5	55	3	0	63	20	48	2	0	70	7	80	13	0	100	6	50	20	0	76	309
7:45 AM	11	63	26	0	100	25	52	11	0	88	4	107	13	0	124	7	61	18	0	86	398
Total	34	190	51	0	275	76	153	19	0	248	20	294	49	0	363	27	220	76	0	323	1209
8:00 AM	8	68	12	0	88	25	70	12	0	107	13	98	15	0	126	9	78	27	0	114	435
8:15 AM	15	94	17	0	126	24	71	10	0	105	10	125	15	0	150	6	77	22	0	105	486
8:30 AM	11	81	22	0	114	26	88	22	0	136	6	100	12	0	118	14	80	22	0	116	484
8:45 AM	17	94	28	0	139	26	99	14	0	139	6	116	21	0	143	19	80	23	0	122	543
Total	51	337	79	0	467	101	328	58	0	487	35	439	63	0	537	48	315	94	0	457	1948
Grand Total	85	527	130	0	742	177	481	77	0	735	55	733	112	0	900	75	535	170	0	780	3157
Approach %	11.5	71.0	17.5	0.0		24.1	65.4	10.5	0.0		6.1	81.4	12.4	0.0		9.6	68.6	21.8	0.0		
Total %	2.7	16.7	4.1	0.0	23.5	5.6	15.2	2.4	0.0	23.3	1.7	23.2	3.5	0.0	28.5	2.4	16.9	5.4	0.0	24.7	
Exiting Leg Total	1080					720					679					678					3157

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	8	68	12	0	88	25	70	12	0	107	13	98	15	0	126	9	78	27	0	114	435
8:15 AM	15	94	17	0	126	24	71	10	0	105	10	125	15	0	150	6	77	22	0	105	486
8:30 AM	11	81	22	0	114	26	88	22	0	136	6	100	12	0	118	14	80	22	0	116	484
8:45 AM	17	94	28	0	139	26	99	14	0	139	6	116	21	0	143	19	80	23	0	122	543
Total Volume	51	337	79	0	467	101	328	58	0	487	35	439	63	0	537	48	315	94	0	457	1948
% Approach Total	10.9	72.2	16.9	0.0		20.7	67.4	11.9	0.0		6.5	81.8	11.7	0.0		10.5	68.9	20.6	0.0		
PHF	0.750	0.896	0.705	0.000	0.840	0.971	0.828	0.659	0.000	0.876	0.673	0.878	0.750	0.000	0.895	0.632	0.984	0.870	0.000	0.936	0.897
Entering Leg	51	337	79	0	467	101	328	58	0	487	35	439	63	0	537	48	315	94	0	457	1948
Exiting Leg	634					429					443					442					1948
Total	1101					916					980					899					3896

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	1	3	0	0	4	8
7:15 AM	1	3	2	0	6	1	1	0	0	2	0	5	1	0	6	1	3	1	0	5	19
7:30 AM	0	3	1	0	4	2	0	0	0	2	0	9	2	0	11	0	3	1	0	4	21
7:45 AM	0	2	1	0	3	0	2	0	0	2	0	3	1	0	4	2	1	1	0	4	13
<b>Total</b>	<b>1</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>14</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>19</b>	<b>4</b>	<b>0</b>	<b>23</b>	<b>4</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>17</b>	<b>61</b>
8:00 AM	0	2	0	0	2	0	1	1	0	2	2	5	0	0	7	0	0	0	0	0	11
8:15 AM	0	3	2	0	5	3	0	0	0	3	0	6	0	0	6	1	4	1	0	6	20
8:30 AM	0	3	1	0	4	0	1	1	0	2	0	6	0	0	6	0	1	1	0	2	14
8:45 AM	0	1	0	0	1	1	3	0	0	4	0	3	0	0	3	0	3	0	0	3	11
<b>Total</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>1</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>56</b>
<b>Grand Total</b>	<b>1</b>	<b>18</b>	<b>7</b>	<b>0</b>	<b>26</b>	<b>8</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>18</b>	<b>2</b>	<b>39</b>	<b>4</b>	<b>0</b>	<b>45</b>	<b>5</b>	<b>18</b>	<b>5</b>	<b>0</b>	<b>28</b>	<b>117</b>
Approach %	3.8	69.2	26.9	0.0		44.4	44.4	11.1	0.0		4.4	86.7	8.9	0.0		17.9	64.3	17.9	0.0		
Total %	0.9	15.4	6.0	0.0	22.2	6.8	6.8	1.7	0.0	15.4	1.7	33.3	3.4	0.0	38.5	4.3	15.4	4.3	0.0	23.9	
Exiting Leg Total	52					27					25					13					117
Buses	0	6	1	0	7	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	13
% Buses	0.0	33.3	14.3	0.0	26.9	0.0	0.0	0.0	0.0	0.0	50.0	12.8	0.0	0.0	13.3	0.0	0.0	0.0	0.0	0.0	11.1
Exiting Leg Total	5					2					6					0					13
Single-Unit Trucks	1	10	3	0	14	7	6	1	0	14	1	29	3	0	33	4	12	5	0	21	82
% Single-Unit	100.0	55.6	42.9	0.0	53.8	87.5	75.0	50.0	0.0	77.8	50.0	74.4	75.0	0.0	73.3	80.0	66.7	100.0	0.0	75.0	70.1
Exiting Leg Total	41					16					15					10					82
Articulated Trucks	0	2	3	0	5	1	2	1	0	4	0	5	1	0	6	1	6	0	0	7	22
% Articulated	0.0	11.1	42.9	0.0	19.2	12.5	25.0	50.0	0.0	22.2	0.0	12.8	25.0	0.0	13.3	20.0	33.3	0.0	0.0	25.0	18.8
Exiting Leg Total	6					9					4					3					22

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	0	3	1	0	4	2	0	0	0	2	0	9	2	0	11	0	3	1	0	4	21
7:45 AM	0	2	1	0	3	0	2	0	0	2	0	3	1	0	4	2	1	1	0	4	13
8:00 AM	0	2	0	0	2	0	1	1	0	2	2	5	0	0	7	0	0	0	0	0	11
8:15 AM	0	3	2	0	5	3	0	0	0	3	0	6	0	0	6	1	4	1	0	6	20
<b>Total Volume</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>0</b>	<b>14</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>23</b>	<b>3</b>	<b>0</b>	<b>28</b>	<b>3</b>	<b>8</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>65</b>
% Approach Total	0.0	71.4	28.6	0.0		55.6	33.3	11.1	0.0		7.1	82.1	10.7	0.0		21.4	57.1	21.4	0.0		
PHF	0.000	0.833	0.500	0.000	0.700	0.417	0.375	0.250	0.000	0.750	0.250	0.639	0.375	0.000	0.636	0.375	0.500	0.750	0.000	0.583	0.774
Buses	0	2	1	0	3	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	7
Buses %	0.0	20.0	25.0	0.0	21.4	0.0	0.0	0.0	0.0	0.0	50.0	13.0	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	10.8
Single-Unit Trucks	0	6	1	0	7	4	3	0	0	7	1	18	3	0	22	3	3	3	0	9	45
Single-Unit %	0.0	60.0	25.0	0.0	50.0	80.0	100.0	0.0	0.0	77.8	50.0	78.3	100.0	0.0	78.6	100.0	37.5	100.0	0.0	64.3	69.2
Articulated Trucks	0	2	2	0	4	1	0	1	0	2	0	2	0	0	2	0	5	0	0	5	13
Articulated %	0.0	20.0	50.0	0.0	28.6	20.0	0.0	100.0	0.0	22.2	0.0	8.7	0.0	0.0	7.1	0.0	62.5	0.0	0.0	35.7	20.0
Buses	0	2	1	0	3	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	7
Single-Unit Trucks	0	6	1	0	7	4	3	0	0	7	1	18	3	0	22	3	3	3	0	9	45
Articulated Trucks	0	2	2	0	4	1	0	1	0	2	0	2	0	0	2	0	5	0	0	5	13
<b>Total Entering Leg</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>0</b>	<b>14</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>23</b>	<b>3</b>	<b>0</b>	<b>28</b>	<b>3</b>	<b>8</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>65</b>
Buses	3					2					2					0					7
Single-Unit Trucks	25					9					9					6					45
Articulated Trucks	3					7					3					0					13
<b>Total Exiting Leg</b>	<b>31</b>					<b>14</b>					<b>14</b>					<b>6</b>					<b>65</b>

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
7:00 AM	7	20	8	0	35	10	24	2	0	36	4	34	11	0	49	4	48	13	0	65	185					
7:15 AM	10	36	12	0	58	20	24	4	0	48	4	56	8	0	68	7	43	19	0	69	243					
7:30 AM	4	48	2	0	54	18	45	2	0	65	5	75	12	0	92	5	43	18	0	66	277					
7:45 AM	11	57	21	0	89	23	48	11	0	82	4	93	13	0	110	6	48	13	0	67	348					
<b>Total</b>	<b>32</b>	<b>161</b>	<b>43</b>	<b>0</b>	<b>236</b>	<b>71</b>	<b>141</b>	<b>19</b>	<b>0</b>	<b>231</b>	<b>17</b>	<b>258</b>	<b>44</b>	<b>0</b>	<b>319</b>	<b>22</b>	<b>182</b>	<b>63</b>	<b>0</b>	<b>267</b>	<b>1053</b>					
8:00 AM	8	63	10	0	81	24	69	10	0	103	10	91	14	0	115	9	71	24	0	104	403					
8:15 AM	15	84	14	0	113	24	66	10	0	100	10	106	15	0	131	6	72	19	0	97	441					
8:30 AM	8	74	20	0	102	24	85	22	0	131	5	92	12	0	109	13	76	21	0	110	452					
8:45 AM	16	79	27	0	122	25	93	14	0	132	6	111	19	0	136	19	75	22	0	116	506					
<b>Total</b>	<b>47</b>	<b>300</b>	<b>71</b>	<b>0</b>	<b>418</b>	<b>97</b>	<b>313</b>	<b>56</b>	<b>0</b>	<b>466</b>	<b>31</b>	<b>400</b>	<b>60</b>	<b>0</b>	<b>491</b>	<b>47</b>	<b>294</b>	<b>86</b>	<b>0</b>	<b>427</b>	<b>1802</b>					
Grand Total	79	461	114	0	654	168	454	75	0	697	48	658	104	0	810	69	476	149	0	694	2855					
Approach %	12.1	70.5	17.4	0.0		24.1	65.1	10.8	0.0		5.9	81.2	12.8	0.0		9.9	68.6	21.5	0.0							
Total %	2.8	16.1	4.0	0.0	22.9	5.9	15.9	2.6	0.0	24.4	1.7	23.0	3.6	0.0	28.4	2.4	16.7	5.2	0.0	24.3						
Exiting Leg Total						975					638					605					637					2855

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
8:00 AM	8	63	10	0	81	24	69	10	0	103	10	91	14	0	115	9	71	24	0	104	403					
8:15 AM	15	84	14	0	113	24	66	10	0	100	10	106	15	0	131	6	72	19	0	97	441					
8:30 AM	8	74	20	0	102	24	85	22	0	131	5	92	12	0	109	13	76	21	0	110	452					
8:45 AM	16	79	27	0	122	25	93	14	0	132	6	111	19	0	136	19	75	22	0	116	506					
Total Volume	47	300	71	0	418	97	313	56	0	466	31	400	60	0	491	47	294	86	0	427	1802					
% Approach Total	11.2	71.8	17.0	0.0		20.8	67.2	12.0	0.0		6.3	81.5	12.2	0.0		11.0	68.9	20.1	0.0							
PHF	0.734	0.893	0.657	0.000	0.857	0.970	0.841	0.636	0.000	0.883	0.775	0.901	0.789	0.000	0.903	0.618	0.967	0.896	0.000	0.920	0.890					
Entering Leg	47	300	71	0	418	97	313	56	0	466	31	400	60	0	491	47	294	86	0	427	1802					
Exiting Leg						583					396					403					420	1802				
Total						1001					862					894					847					3604

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
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 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
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 Class:



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**Light Goods Vehicle**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	7	1	0	8	0	1	0	0	1	1	7	3	0	11	0	8	4	0	12	32
7:15 AM	1	9	1	0	11	1	4	0	0	5	0	10	1	0	11	3	10	2	0	15	42
7:30 AM	1	7	1	0	9	2	3	0	0	5	2	5	1	0	8	1	6	2	0	9	31
7:45 AM	0	6	5	0	11	2	4	0	0	6	0	14	0	0	14	1	13	5	0	19	50
<b>Total</b>	<b>2</b>	<b>29</b>	<b>8</b>	<b>0</b>	<b>39</b>	<b>5</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>3</b>	<b>36</b>	<b>5</b>	<b>0</b>	<b>44</b>	<b>5</b>	<b>37</b>	<b>13</b>	<b>0</b>	<b>55</b>	<b>155</b>
8:00 AM	0	5	2	0	7	1	1	2	0	4	3	7	1	0	11	0	7	3	0	10	32
8:15 AM	0	10	3	0	13	0	5	0	0	5	0	19	0	0	19	0	5	3	0	8	45
8:30 AM	3	7	2	0	12	2	3	0	0	5	1	8	0	0	9	1	4	1	0	6	32
8:45 AM	1	15	1	0	17	1	6	0	0	7	0	5	1	0	6	0	5	1	0	6	36
<b>Total</b>	<b>4</b>	<b>37</b>	<b>8</b>	<b>0</b>	<b>49</b>	<b>4</b>	<b>15</b>	<b>2</b>	<b>0</b>	<b>21</b>	<b>4</b>	<b>39</b>	<b>2</b>	<b>0</b>	<b>45</b>	<b>1</b>	<b>21</b>	<b>8</b>	<b>0</b>	<b>30</b>	<b>145</b>
Grand Total	6	66	16	0	88	9	27	2	0	38	7	75	7	0	89	6	58	21	0	85	300
Approach %	6.8	75.0	18.2	0.0		23.7	71.1	5.3	0.0		7.9	84.3	7.9	0.0		7.1	68.2	24.7	0.0		
Total %	2.0	22.0	5.3	0.0	29.3	3.0	9.0	0.7	0.0	12.7	2.3	25.0	2.3	0.0	29.7	2.0	19.3	7.0	0.0	28.3	
Exiting Leg Total	105					81					74					40					300

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:45 AM	0	6	5	0	11	2	4	0	0	6	0	14	0	0	14	1	13	5	0	19	50
8:00 AM	0	5	2	0	7	1	1	2	0	4	3	7	1	0	11	0	7	3	0	10	32
8:15 AM	0	10	3	0	13	0	5	0	0	5	0	19	0	0	19	0	5	3	0	8	45
8:30 AM	3	7	2	0	12	2	3	0	0	5	1	8	0	0	9	1	4	1	0	6	32
Total Volume	3	28	12	0	43	5	13	2	0	20	4	48	1	0	53	2	29	12	0	43	159
% Approach Total	7.0	65.1	27.9	0.0		25.0	65.0	10.0	0.0		7.5	90.6	1.9	0.0		4.7	67.4	27.9	0.0		
PHF	0.250	0.700	0.600	0.000	0.827	0.625	0.650	0.250	0.000	0.833	0.333	0.632	0.250	0.000	0.697	0.500	0.558	0.600	0.000	0.566	0.795
Entering Leg	3	28	12	0	43	5	13	2	0	20	4	48	1	0	53	2	29	12	0	43	159
Exiting Leg	65					45					32					17					159
Total	108					65					85					60					318

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Buses**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	
<b>Total</b>	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	
8:00 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	
8:15 AM	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	
8:30 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
<b>Total</b>	0	5	1	0	6	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	9	
Grand Total	0	6	1	0	7	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	13	
Approach %	0.0	85.7	14.3	0.0		0.0	0.0	0.0	0.0		16.7	83.3	0.0	0.0		0.0	0.0	0.0	0.0			
Total %	0.0	46.2	7.7	0.0	53.8	0.0	0.0	0.0	0.0	0.0	7.7	38.5	0.0	0.0	46.2	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total						5					2					6					0	13

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	
8:00 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	
8:15 AM	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	
8:30 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	
Total Volume	0	4	1	0	5	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	9	
% Approach Total	0.0	80.0	20.0	0.0		0.0	0.0	0.0	0.0		25.0	75.0	0.0	0.0		0.0	0.0	0.0	0.0			
PHF	0.000	0.500	0.250	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.250	0.750	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.750	
Entering Leg	0	4	1	0	5	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	9	
Exiting Leg						3					2					4					0	9
Total						8					2					8					0	18

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Single-Unit Trucks**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	0	2	0	0	2	5
7:15 AM	1	2	1	0	4	1	1	0	0	2	0	3	0	0	3	1	3	1	0	5	14
7:30 AM	0	2	0	0	2	2	0	0	0	2	0	8	2	0	10	0	0	1	0	1	15
7:45 AM	0	2	0	0	2	0	2	0	0	2	0	2	1	0	3	2	0	1	0	3	10
<b>Total</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>17</b>	<b>3</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>44</b>
8:00 AM	0	1	0	0	1	0	1	0	0	1	1	3	0	0	4	0	0	0	0	0	6
8:15 AM	0	1	1	0	2	2	0	0	0	2	0	5	0	0	5	1	3	1	0	5	14
8:30 AM	0	1	1	0	2	0	0	1	0	1	0	4	0	0	4	0	1	1	0	2	9
8:45 AM	0	0	0	0	0	1	2	0	0	3	0	3	0	0	3	0	3	0	0	3	9
<b>Total</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>1</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>38</b>
<b>Grand Total</b>	<b>1</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>7</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>29</b>	<b>3</b>	<b>0</b>	<b>33</b>	<b>4</b>	<b>12</b>	<b>5</b>	<b>0</b>	<b>21</b>	<b>82</b>
Approach %	7.1	71.4	21.4	0.0		50.0	42.9	7.1	0.0		3.0	87.9	9.1	0.0		19.0	57.1	23.8	0.0		
Total %	1.2	12.2	3.7	0.0	17.1	8.5	7.3	1.2	0.0	17.1	1.2	35.4	3.7	0.0	40.2	4.9	14.6	6.1	0.0	25.6	
Exiting Leg Total	41					16					15					10					82

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:15 AM	1	2	1	0	4	1	1	0	0	2	0	3	0	0	3	1	3	1	0	5	14
7:30 AM	0	2	0	0	2	2	0	0	0	2	0	8	2	0	10	0	0	1	0	1	15
7:45 AM	0	2	0	0	2	0	2	0	0	2	0	2	1	0	3	2	0	1	0	3	10
8:00 AM	0	1	0	0	1	0	1	0	0	1	1	3	0	0	4	0	0	0	0	0	6
<b>Total Volume</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>16</b>	<b>3</b>	<b>0</b>	<b>20</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>9</b>	<b>45</b>
<b>% Approach Total</b>	<b>11.1</b>	<b>77.8</b>	<b>11.1</b>	<b>0.0</b>		<b>42.9</b>	<b>57.1</b>	<b>0.0</b>	<b>0.0</b>		<b>5.0</b>	<b>80.0</b>	<b>15.0</b>	<b>0.0</b>		<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>0.0</b>		
PHF	0.250	0.875	0.250	0.000	0.563	0.375	0.500	0.000	0.000	0.875	0.250	0.500	0.375	0.000	0.500	0.375	0.250	0.750	0.000	0.450	0.750
Entering Leg	1	7	1	0	9	3	4	0	0	7	1	16	3	0	20	3	3	3	0	9	45
Exiting Leg	22					5					10					8					45
<b>Total</b>	<b>31</b>					<b>12</b>					<b>30</b>					<b>17</b>					<b>90</b>



PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Articulated Trucks**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	2	3
7:15 AM	0	0	1	0	1	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3
7:30 AM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	5
7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
<b>Total</b>	0	1	3	0	4	0	0	0	0	0	0	2	1	0	3	1	5	0	0	6	13
8:00 AM	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	3
8:15 AM	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	3
8:30 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	0	1	0	0	1	1	2	1	0	4	0	3	0	0	3	0	1	0	0	1	9
<b>Grand Total</b>	0	2	3	0	5	1	2	1	0	4	0	5	1	0	6	1	6	0	0	7	22
Approach %	0.0	40.0	60.0	0.0		25.0	50.0	25.0	0.0		0.0	83.3	16.7	0.0		14.3	85.7	0.0	0.0		
Total %	0.0	9.1	13.6	0.0	22.7	4.5	9.1	4.5	0.0	18.2	0.0	22.7	4.5	0.0	27.3	4.5	27.3	0.0	0.0	31.8	
Exiting Leg Total	6					9					4					3					22

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	2	3
7:15 AM	0	0	1	0	1	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3
7:30 AM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	5
7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
<b>Total Volume</b>	0	1	3	0	4	0	0	0	0	0	0	2	1	0	3	1	5	0	0	6	13
<b>% Approach Total</b>	0.0	25.0	75.0	0.0		0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0		16.7	83.3	0.0	0.0		
PHF	0.000	0.250	0.750	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.375	0.250	0.417	0.000	0.000	0.500	0.650
Entering Leg	0	1	3	0	4	0	0	0	0	0	0	2	1	0	3	1	5	0	0	6	13
Exiting Leg	2					8					2					1					13
<b>Total</b>	6					8					5					7					26

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Bicycles (on Roadway and Crosswalks)**

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1		
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2		
7:45 AM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4		
Total	0	3	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7		
8:00 AM	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1		
8:30 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	1	1	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4		
Grand Total	0	4	1	0	0	0	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11		
Approach %	0.0	80.0	20.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0		
Total %	0.0	19.0	4.8	0.0	0.0	0.0	23.8	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	52.4	0.0	0.0	0.0		
Exiting Leg Total	2							12							4							3							21

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:45 AM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4		
7:45 AM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4		
8:00 AM	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1		
8:30 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	2	
Total Volume	0	3	1	0	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	8	0	0	8	
% Approach Total	0.0	75.0	25.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.375	0.250	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000		
Entering Leg	0	3	1	0	0	0	4	0	2	0	0	0	0	2	0	2	0	0	0	0	0	2	0	8	0	0	0	8	
Exiting Leg	2							9							3							2							16
Total	6							11							5							10							32

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

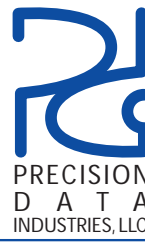
**Pedestrians**

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total		
	from North							from East							from South							from West									
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	2	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	3	3	6	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	8
Grand Total	0	0	0	0	0	0	0	0	0	0	0	5	4	9	0	0	0	0	0	0	3	3	0	0	0	0	0	0	2	2	14
Approach %	0	0	0	0	0	0	0	0	0	0	0	55.6	44.4	0	0	0	0	0	0	100	0	0	0	0	0	0	100				
Total %	0	0	0	0	0	0	0	0	0	0	0	35.7	28.6	64.3	0	0	0	0	0	0	21.4	21.4	0	0	0	0	0	0	14.3	14.3	
Exiting Leg Total	0							9							3							2							14		

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total		
	from North							from East							from South							from West									
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	3	3	6	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	8
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.750	0.500	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	3	3	6	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	8
Exiting Leg	0							6							2							0							8		
Total	0							12							4							0							16		

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars and Heavy Vehicles (Combined)**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	15	85	30	0	130	21	83	20	0	124	3	80	20	0	103	28	47	10	0	85	442
4:15 PM	8	106	18	0	132	27	64	15	0	106	10	91	21	0	122	20	63	14	0	97	457
4:30 PM	19	105	34	0	158	29	89	21	0	139	12	78	20	0	110	30	61	18	0	109	516
4:45 PM	11	96	22	0	129	22	67	26	0	115	10	80	15	0	105	14	74	22	0	110	459
<b>Total</b>	<b>53</b>	<b>392</b>	<b>104</b>	<b>0</b>	<b>549</b>	<b>99</b>	<b>303</b>	<b>82</b>	<b>0</b>	<b>484</b>	<b>35</b>	<b>329</b>	<b>76</b>	<b>0</b>	<b>440</b>	<b>92</b>	<b>245</b>	<b>64</b>	<b>0</b>	<b>401</b>	<b>1874</b>
5:00 PM	23	102	22	0	147	25	64	22	0	111	6	88	22	0	116	20	87	15	0	122	496
5:15 PM	14	97	32	0	143	31	62	20	0	113	6	90	21	0	117	21	79	14	0	114	487
5:30 PM	16	96	39	0	151	25	62	16	0	103	8	75	20	0	103	19	72	14	0	105	462
5:45 PM	15	116	34	0	165	27	71	21	0	119	15	75	21	0	111	22	76	22	0	120	515
<b>Total</b>	<b>68</b>	<b>411</b>	<b>127</b>	<b>0</b>	<b>606</b>	<b>108</b>	<b>259</b>	<b>79</b>	<b>0</b>	<b>446</b>	<b>35</b>	<b>328</b>	<b>84</b>	<b>0</b>	<b>447</b>	<b>82</b>	<b>314</b>	<b>65</b>	<b>0</b>	<b>461</b>	<b>1960</b>
Grand Total	121	803	231	0	1155	207	562	161	0	930	70	657	160	0	887	174	559	129	0	862	3834
Approach %	10.5	69.5	20.0	0.0		22.3	60.4	17.3	0.0		7.9	74.1	18.0	0.0		20.2	64.8	15.0	0.0		
Total %	3.2	20.9	6.0	0.0	30.1	5.4	14.7	4.2	0.0	24.3	1.8	17.1	4.2	0.0	23.1	4.5	14.6	3.4	0.0	22.5	
Exiting Leg Total					993					860					1138					843	3834
Cars	119	790	228	0	1137	200	553	161	0	914	70	645	159	0	874	174	556	127	0	857	3782
% Cars	98.3	98.4	98.7	0.0	98.4	96.6	98.4	100.0	0.0	98.3	100.0	98.2	99.4	0.0	98.5	100.0	99.5	98.4	0.0	99.4	98.6
Exiting Leg Total					972					854					1125					831	3782
Heavy Vehicles	2	13	3	0	18	7	9	0	0	16	0	12	1	0	13	0	3	2	0	5	52
% Heavy Vehicles	1.7	1.6	1.3	0.0	1.6	3.4	1.6	0.0	0.0	1.7	0.0	1.8	0.6	0.0	1.5	0.0	0.5	1.6	0.0	0.6	1.4
Exiting Leg Total					21					6					13					12	52

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
5:00 PM	23	102	22	0	147	25	64	22	0	111	6	88	22	0	116	20	87	15	0	122	496
5:15 PM	14	97	32	0	143	31	62	20	0	113	6	90	21	0	117	21	79	14	0	114	487
5:30 PM	16	96	39	0	151	25	62	16	0	103	8	75	20	0	103	19	72	14	0	105	462
5:45 PM	15	116	34	0	165	27	71	21	0	119	15	75	21	0	111	22	76	22	0	120	515
Total Volume	68	411	127	0	606	108	259	79	0	446	35	328	84	0	447	82	314	65	0	461	1960
% Approach Total	11.2	67.8	21.0	0.0		24.2	58.1	17.7	0.0		7.8	73.4	18.8	0.0		17.8	68.1	14.1	0.0		
PHF	0.739	0.886	0.814	0.000	0.918	0.871	0.912	0.898	0.000	0.937	0.583	0.911	0.955	0.000	0.955	0.932	0.902	0.739	0.000	0.945	0.951
Cars	68	406	126	0	600	107	257	79	0	443	35	325	84	0	444	82	312	65	0	459	1946
Cars %	100.0	98.8	99.2	0.0	99.0	99.1	99.2	100.0	0.0	99.3	100.0	99.1	100.0	0.0	99.3	100.0	99.4	100.0	0.0	99.6	99.3
Heavy Vehicles	0	5	1	0	6	1	2	0	0	3	0	3	0	0	3	0	2	0	0	2	14
Heavy Vehicles %	0.0	1.2	0.8	0.0	1.0	0.9	0.8	0.0	0.0	0.7	0.0	0.9	0.0	0.0	0.7	0.0	0.6	0.0	0.0	0.4	0.7
Cars Enter Leg	68	406	126	0	600	107	257	79	0	443	35	325	84	0	444	82	312	65	0	459	1946
Heavy Enter Leg	0	5	1	0	6	1	2	0	0	3	0	3	0	0	3	0	2	0	0	2	14
Total Entering Leg	68	411	127	0	606	108	259	79	0	446	35	328	84	0	447	82	314	65	0	461	1960
Cars Exiting Leg					497					473					567					409	1946
Heavy Exiting Leg					4					3					5					2	14
Total Exiting Leg					501					476					572					411	1960

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	14	85	29	0	128	20	81	20	0	121	3	79	20	0	102	28	47	10	0	85	436
4:15 PM	8	101	18	0	127	25	63	15	0	103	10	87	20	0	117	20	63	13	0	96	443
4:30 PM	18	105	34	0	157	27	86	21	0	134	12	76	20	0	108	30	60	17	0	107	506
4:45 PM	11	93	21	0	125	21	66	26	0	113	10	78	15	0	103	14	74	22	0	110	451
Total	51	384	102	0	537	93	296	82	0	471	35	320	75	0	430	92	244	62	0	398	1836
5:00 PM	23	99	22	0	144	25	64	22	0	111	6	88	22	0	116	20	87	15	0	122	493
5:15 PM	14	96	31	0	141	31	62	20	0	113	6	89	21	0	116	21	78	14	0	113	483
5:30 PM	16	96	39	0	151	25	61	16	0	102	8	75	20	0	103	19	71	14	0	104	460
5:45 PM	15	115	34	0	164	26	70	21	0	117	15	73	21	0	109	22	76	22	0	120	510
Total	68	406	126	0	600	107	257	79	0	443	35	325	84	0	444	82	312	65	0	459	1946
Grand Total	119	790	228	0	1137	200	553	161	0	914	70	645	159	0	874	174	556	127	0	857	3782
Approach %	10.5	69.5	20.1	0.0		21.9	60.5	17.6	0.0		8.0	73.8	18.2	0.0		20.3	64.9	14.8	0.0		
Total %	3.1	20.9	6.0	0.0	30.1	5.3	14.6	4.3	0.0	24.2	1.9	17.1	4.2	0.0	23.1	4.6	14.7	3.4	0.0	22.7	
Exiting Leg Total	972					854					1125					831					3782

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
5:00 PM	23	99	22	0	144	25	64	22	0	111	6	88	22	0	116	20	87	15	0	122	493
5:15 PM	14	96	31	0	141	31	62	20	0	113	6	89	21	0	116	21	78	14	0	113	483
5:30 PM	16	96	39	0	151	25	61	16	0	102	8	75	20	0	103	19	71	14	0	104	460
5:45 PM	15	115	34	0	164	26	70	21	0	117	15	73	21	0	109	22	76	22	0	120	510
Total Volume	68	406	126	0	600	107	257	79	0	443	35	325	84	0	444	82	312	65	0	459	1946
% Approach Total	11.3	67.7	21.0	0.0		24.2	58.0	17.8	0.0		7.9	73.2	18.9	0.0		17.9	68.0	14.2	0.0		
PHF	0.739	0.883	0.808	0.000	0.915	0.863	0.918	0.898	0.000	0.947	0.583	0.913	0.955	0.000	0.957	0.932	0.897	0.739	0.000	0.941	0.954
Entering Leg	68	406	126	0	600	107	257	79	0	443	35	325	84	0	444	82	312	65	0	459	1946
Exiting Leg	497					473					567					409					1946
Total	1097					916					1011					868					3892

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

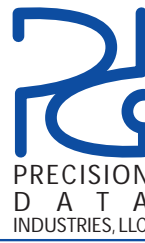
**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	1	0	1	0	2	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	6
4:15 PM	0	5	0	0	5	2	1	0	0	3	0	4	1	0	5	0	0	1	0	1	14
4:30 PM	1	0	0	0	1	2	3	0	0	5	0	2	0	0	2	0	1	1	0	2	10
4:45 PM	0	3	1	0	4	1	1	0	0	2	0	2	0	0	2	0	0	0	0	0	8
<b>Total</b>	<b>2</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>12</b>	<b>6</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>38</b>
5:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
5:45 PM	0	1	0	0	1	1	1	0	0	2	0	2	0	0	2	0	0	0	0	0	5
<b>Total</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>14</b>
<b>Grand Total</b>	<b>2</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>18</b>	<b>7</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>52</b>
Approach %	11.1	72.2	16.7	0.0		43.8	56.3	0.0	0.0		0.0	92.3	7.7	0.0		0.0	60.0	40.0	0.0		
Total %	3.8	25.0	5.8	0.0	34.6	13.5	17.3	0.0	0.0	30.8	0.0	23.1	1.9	0.0	25.0	0.0	5.8	3.8	0.0	9.6	
Exiting Leg Total	21					6					13					12					52
Buses	0	4	1	0	5	1	1	0	0	2	0	6	0	0	6	0	0	0	0	0	13
% Buses	0.0	30.8	33.3	0.0	27.8	14.3	11.1	0.0	0.0	12.5	0.0	50.0	0.0	0.0	46.2	0.0	0.0	0.0	0.0	0.0	25.0
Exiting Leg Total	7					1					4					1					13
Single-Unit Trucks	2	5	2	0	9	4	6	0	0	10	0	3	1	0	4	0	3	2	0	5	28
% Single-Unit	100.0	38.5	66.7	0.0	50.0	57.1	66.7	0.0	0.0	62.5	0.0	25.0	100.0	0.0	30.8	0.0	100.0	100.0	0.0	100.0	53.8
Exiting Leg Total	9					5					5					9					28
Articulated Trucks	0	4	0	0	4	2	2	0	0	4	0	3	0	0	3	0	0	0	0	0	11
% Articulated	0.0	30.8	0.0	0.0	22.2	28.6	22.2	0.0	0.0	25.0	0.0	25.0	0.0	0.0	23.1	0.0	0.0	0.0	0.0	0.0	21.2
Exiting Leg Total	5					0					4					2					11

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	1	0	1	0	2	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	6
4:15 PM	0	5	0	0	5	2	1	0	0	3	0	4	1	0	5	0	0	1	0	1	14
4:30 PM	1	0	0	0	1	2	3	0	0	5	0	2	0	0	2	0	1	1	0	2	10
4:45 PM	0	3	1	0	4	1	1	0	0	2	0	2	0	0	2	0	0	0	0	0	8
<b>Total Volume</b>	<b>2</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>12</b>	<b>6</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>38</b>
% Approach Total	16.7	66.7	16.7	0.0		46.2	53.8	0.0	0.0		0.0	90.0	10.0	0.0		0.0	33.3	66.7	0.0		
PHF	0.500	0.400	0.500	0.000	0.600	0.750	0.583	0.000	0.000	0.650	0.000	0.563	0.250	0.000	0.500	0.000	0.250	0.500	0.000	0.375	0.679
Buses	0	2	1	0	3	1	1	0	0	2	0	4	0	0	4	0	0	0	0	0	9
Buses %	0.0	25.0	50.0	0.0	25.0	16.7	14.3	0.0	0.0	15.4	0.0	44.4	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	23.7
Single-Unit Trucks	2	4	1	0	7	4	5	0	0	9	0	2	1	0	3	0	1	2	0	3	22
Single-Unit %	100.0	50.0	50.0	0.0	58.3	66.7	71.4	0.0	0.0	69.2	0.0	22.2	100.0	0.0	30.0	0.0	100.0	100.0	0.0	100.0	57.9
Articulated Trucks	0	2	0	0	2	1	1	0	0	2	0	3	0	0	3	0	0	0	0	0	7
Articulated %	0.0	25.0	0.0	0.0	16.7	16.7	14.3	0.0	0.0	15.4	0.0	33.3	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	18.4
Buses	0	2	1	0	3	1	1	0	0	2	0	4	0	0	4	0	0	0	0	0	9
Single-Unit Trucks	2	4	1	0	7	4	5	0	0	9	0	2	1	0	3	0	1	2	0	3	22
Articulated Trucks	0	2	0	0	2	1	1	0	0	2	0	3	0	0	3	0	0	0	0	0	7
<b>Total Entering Leg</b>	<b>2</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>12</b>	<b>6</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>38</b>
Buses	5					1					2					1					9
Single-Unit Trucks	8					2					4					8					22
Articulated Trucks	4					0					2					1					7
<b>Total Exiting Leg</b>	<b>17</b>					<b>3</b>					<b>8</b>					<b>10</b>					<b>38</b>

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	13	80	29	0	122	18	69	18	0	105	3	77	20	0	100	26	44	9	0	79	406
4:15 PM	7	92	16	0	115	25	58	14	0	97	9	81	19	0	109	18	59	10	0	87	408
4:30 PM	16	97	33	0	146	25	77	18	0	120	11	74	19	0	104	29	55	15	0	99	469
4:45 PM	11	87	20	0	118	20	61	25	0	106	9	75	14	0	98	14	68	20	0	102	424
<b>Total</b>	<b>47</b>	<b>356</b>	<b>98</b>	<b>0</b>	<b>501</b>	<b>88</b>	<b>265</b>	<b>75</b>	<b>0</b>	<b>428</b>	<b>32</b>	<b>307</b>	<b>72</b>	<b>0</b>	<b>411</b>	<b>87</b>	<b>226</b>	<b>54</b>	<b>0</b>	<b>367</b>	<b>1707</b>
5:00 PM	23	91	22	0	136	24	58	22	0	104	6	85	22	0	113	19	86	12	0	117	470
5:15 PM	13	92	29	0	134	30	58	17	0	105	6	87	21	0	114	21	77	12	0	110	463
5:30 PM	15	92	37	0	144	23	58	16	0	97	7	72	17	0	96	19	68	14	0	101	438
5:45 PM	14	114	33	0	161	26	64	19	0	109	15	71	20	0	106	21	74	22	0	117	493
<b>Total</b>	<b>65</b>	<b>389</b>	<b>121</b>	<b>0</b>	<b>575</b>	<b>103</b>	<b>238</b>	<b>74</b>	<b>0</b>	<b>415</b>	<b>34</b>	<b>315</b>	<b>80</b>	<b>0</b>	<b>429</b>	<b>80</b>	<b>305</b>	<b>60</b>	<b>0</b>	<b>445</b>	<b>1864</b>
Grand Total	112	745	219	0	1076	191	503	149	0	843	66	622	152	0	840	167	531	114	0	812	3571
Approach %	10.4	69.2	20.4	0.0		22.7	59.7	17.7	0.0		7.9	74.0	18.1	0.0		20.6	65.4	14.0	0.0		
Total %	3.1	20.9	6.1	0.0	30.1	5.3	14.1	4.2	0.0	23.6	1.8	17.4	4.3	0.0	23.5	4.7	14.9	3.2	0.0	22.7	
Exiting Leg Total	927					816					1061					767					3571

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
5:00 PM	23	91	22	0	136	24	58	22	0	104	6	85	22	0	113	19	86	12	0	117	470
5:15 PM	13	92	29	0	134	30	58	17	0	105	6	87	21	0	114	21	77	12	0	110	463
5:30 PM	15	92	37	0	144	23	58	16	0	97	7	72	17	0	96	19	68	14	0	101	438
5:45 PM	14	114	33	0	161	26	64	19	0	109	15	71	20	0	106	21	74	22	0	117	493
Total Volume	65	389	121	0	575	103	238	74	0	415	34	315	80	0	429	80	305	60	0	445	1864
% Approach Total	11.3	67.7	21.0	0.0		24.8	57.3	17.8	0.0		7.9	73.4	18.6	0.0		18.0	68.5	13.5	0.0		
PHF	0.707	0.853	0.818	0.000	0.893	0.858	0.930	0.841	0.000	0.952	0.567	0.905	0.909	0.000	0.941	0.952	0.887	0.682	0.000	0.951	0.945
Entering Leg	65	389	121	0	575	103	238	74	0	415	34	315	80	0	429	80	305	60	0	445	1864
Exiting Leg	478					460					543					383					1864
Total	1053					875					972					828					3728

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Light Goods Vehicle**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	1	5	0	0	6	2	11	2	0	15	0	2	0	0	2	1	2	1	0	4	27
4:15 PM	1	9	2	0	12	0	5	1	0	6	0	6	1	0	7	2	4	3	0	9	34
4:30 PM	2	8	1	0	11	2	8	3	0	13	1	2	1	0	4	1	5	2	0	8	36
4:45 PM	0	6	1	0	7	1	4	1	0	6	1	3	1	0	5	0	6	2	0	8	26
<b>Total</b>	<b>4</b>	<b>28</b>	<b>4</b>	<b>0</b>	<b>36</b>	<b>5</b>	<b>28</b>	<b>7</b>	<b>0</b>	<b>40</b>	<b>2</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>18</b>	<b>4</b>	<b>17</b>	<b>8</b>	<b>0</b>	<b>29</b>	<b>123</b>
5:00 PM	0	8	0	0	8	1	6	0	0	7	0	3	0	0	3	1	1	3	0	5	23
5:15 PM	1	4	2	0	7	1	4	3	0	8	0	2	0	0	2	0	1	2	0	3	20
5:30 PM	1	4	2	0	7	2	3	0	0	5	1	3	3	0	7	0	3	0	0	3	22
5:45 PM	1	1	1	0	3	0	6	2	0	8	0	2	1	0	3	1	2	0	0	3	17
<b>Total</b>	<b>3</b>	<b>17</b>	<b>5</b>	<b>0</b>	<b>25</b>	<b>4</b>	<b>19</b>	<b>5</b>	<b>0</b>	<b>28</b>	<b>1</b>	<b>10</b>	<b>4</b>	<b>0</b>	<b>15</b>	<b>2</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>14</b>	<b>82</b>
<b>Grand Total</b>	<b>7</b>	<b>45</b>	<b>9</b>	<b>0</b>	<b>61</b>	<b>9</b>	<b>47</b>	<b>12</b>	<b>0</b>	<b>68</b>	<b>3</b>	<b>23</b>	<b>7</b>	<b>0</b>	<b>33</b>	<b>6</b>	<b>24</b>	<b>13</b>	<b>0</b>	<b>43</b>	<b>205</b>
Approach %	11.5	73.8	14.8	0.0		13.2	69.1	17.6	0.0		9.1	69.7	21.2	0.0		14.0	55.8	30.2	0.0		
Total %	3.4	22.0	4.4	0.0	29.8	4.4	22.9	5.9	0.0	33.2	1.5	11.2	3.4	0.0	16.1	2.9	11.7	6.3	0.0	21.0	
Exiting Leg Total	45					36					63					61					205

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	1	5	0	0	6	2	11	2	0	15	0	2	0	0	2	1	2	1	0	4	27
4:15 PM	1	9	2	0	12	0	5	1	0	6	0	6	1	0	7	2	4	3	0	9	34
4:30 PM	2	8	1	0	11	2	8	3	0	13	1	2	1	0	4	1	5	2	0	8	36
4:45 PM	0	6	1	0	7	1	4	1	0	6	1	3	1	0	5	0	6	2	0	8	26
<b>Total Volume</b>	<b>4</b>	<b>28</b>	<b>4</b>	<b>0</b>	<b>36</b>	<b>5</b>	<b>28</b>	<b>7</b>	<b>0</b>	<b>40</b>	<b>2</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>18</b>	<b>4</b>	<b>17</b>	<b>8</b>	<b>0</b>	<b>29</b>	<b>123</b>
<b>% Approach Total</b>	<b>11.1</b>	<b>77.8</b>	<b>11.1</b>	<b>0.0</b>		<b>12.5</b>	<b>70.0</b>	<b>17.5</b>	<b>0.0</b>		<b>11.1</b>	<b>72.2</b>	<b>16.7</b>	<b>0.0</b>		<b>13.8</b>	<b>58.6</b>	<b>27.6</b>	<b>0.0</b>		
PHF	0.500	0.778	0.500	0.000	0.750	0.625	0.636	0.583	0.000	0.667	0.500	0.542	0.750	0.000	0.643	0.500	0.708	0.667	0.000	0.806	0.854
Entering Leg	4	28	4	0	36	5	28	7	0	40	2	13	3	0	18	4	17	8	0	29	123
Exiting Leg	26					23					39					35					123
<b>Total</b>	<b>62</b>					<b>63</b>					<b>57</b>					<b>64</b>					<b>246</b>



PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Buses**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
<b>Total</b>	0	2	1	0	3	1	1	0	0	2	0	4	0	0	4	0	0	0	0	0	0
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
<b>Total</b>	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
<b>Grand Total</b>	0	4	1	0	5	1	1	0	0	2	0	6	0	0	6	0	0	0	0	0	0
Approach %	0.0	80.0	20.0	0.0		50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	30.8	7.7	0.0	38.5	7.7	7.7	0.0	0.0	15.4	0.0	46.2	0.0	0.0	46.2	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total						7					1					4					1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
4:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
<b>Total Volume</b>	0	2	1	0	3	1	1	0	0	2	0	4	0	0	4	0	0	0	0	0	0
<b>% Approach Total</b>	0.0	66.7	33.3	0.0		50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.250	0.000	0.375	0.250	0.250	0.000	0.000	0.250	0.000	1.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	2	1	0	3	1	1	0	0	2	0	4	0	0	4	0	0	0	0	0	0
Exiting Leg						5					1					2					1
<b>Total</b>						8					3					6					1

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

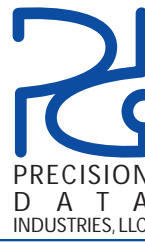
**Single-Unit Trucks**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
4:00 PM	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	2	0	0	2	2	1	0	0	3	0	1	1	0	2	0	0	1	0	1	0	0	1	0	1	8
4:30 PM	1	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	0	1	1	0	2	5
4:45 PM	0	2	0	0	2	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
<b>Total</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>22</b>
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>6</b>
<b>Grand Total</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>9</b>	<b>4</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>28</b>
Approach %	22.2	55.6	22.2	0.0		40.0	60.0	0.0	0.0		0.0	75.0	25.0	0.0		0.0	60.0	40.0	0.0		0.0	60.0	40.0	0.0		
Total %	7.1	17.9	7.1	0.0	32.1	14.3	21.4	0.0	0.0	35.7	0.0	10.7	3.6	0.0	14.3	0.0	10.7	7.1	0.0	17.9	0.0	10.7	7.1	0.0	17.9	
Exiting Leg Total	9					5					5					9					28					

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
4:00 PM	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	2	0	0	2	2	1	0	0	3	0	1	1	0	2	0	0	1	0	1	0	0	1	0	1	8
4:30 PM	1	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	0	1	1	0	2	5
4:45 PM	0	2	0	0	2	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
<b>Total Volume</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>22</b>
% Approach Total	28.6	57.1	14.3	0.0		44.4	55.6	0.0	0.0		0.0	66.7	33.3	0.0		0.0	33.3	66.7	0.0		0.0	33.3	66.7	0.0		
PHF	0.500	0.500	0.250	0.000	0.875	0.500	0.625	0.000	0.000	0.750	0.000	0.500	0.250	0.000	0.375	0.000	0.250	0.500	0.000	0.375	0.000	0.250	0.500	0.000	0.375	0.688
Entering Leg	2	4	1	0	7	4	5	0	0	9	0	2	1	0	3	0	1	2	0	3	0	1	2	0	3	22
Exiting Leg	8					2					4					8					22					
<b>Total</b>	<b>15</b>					<b>11</b>					<b>7</b>					<b>11</b>					<b>44</b>					

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

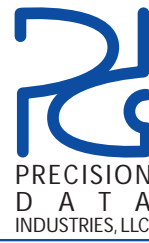
**Articulated Trucks**

	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
<b>Total</b>	0	2	0	0	2	1	1	0	0	2	0	3	0	0	3	0	0	0	0	0	7
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3
<b>Total</b>	0	2	0	0	2	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	4	0	0	4	2	2	0	0	4	0	3	0	0	3	0	0	0	0	0	11
Approach %	0.0	100.0	0.0	0.0		50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	36.4	0.0	0.0	36.4	18.2	18.2	0.0	0.0	36.4	0.0	27.3	0.0	0.0	27.3	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						5					0					4					2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Walnut Street					Beacon Street					Walnut Street					Beacon Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	3	0	0	3	1	1	0	0	2	0	3	0	0	3	0	0	0	0	0	8
% Approach Total	0.0	100.0	0.0	0.0		50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.750	0.000	0.000	0.750	0.250	0.250	0.000	0.000	0.250	0.000	0.375	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.667
Entering Leg	0	3	0	0	3	1	1	0	0	2	0	3	0	0	3	0	0	0	0	0	8
Exiting Leg						4					0					3					1
Total						7					2					6					1

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

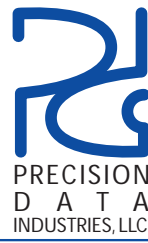
**Bicycles (on Roadway and Crosswalks)**

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total								
	from North							from East							from South							from West															
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total									
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	1	0	0	0	0	1	0	2	0	0	0	0	2	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:45 PM	0	1	0	0	1	0	2	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Total	0	2	0	0	1	0	3	0	7	0	0	0	0	7	0	5	1	0	0	0	0	6	0	1	0	0	0	0	0	0	1	0	0	0	0	1	17
5:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	2	0	0	0	0	2	0	1	0	0	0	0	1	0	2	0	0	0	0	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	8
5:30 PM	0	3	0	0	0	0	3	0	2	0	0	0	0	2	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0	0	9
5:45 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	6	0	0	0	0	6	0	5	0	0	0	0	5	0	6	0	0	0	0	0	6	0	3	0	0	0	0	0	0	3	0	0	0	0	0	23
Grand Total	0	8	0	0	1	0	9	0	12	0	0	0	0	12	0	11	1	0	0	0	0	12	0	4	0	0	0	0	0	0	4	0	0	0	0	0	40
Approach %	0.0	88.9	0.0	0.0	11.1	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	91.7	8.3	0.0	0.0	0.0		0.0	57.1	0.0	0.0	28.6	14.3										
Total %	0.0	20.0	0.0	0.0	2.5	0.0	22.5	0.0	30.0	0.0	0.0	0.0	0.0	30.0	0.0	27.5	2.5	0.0	0.0	0.0	30.0	0.0	10.0	0.0	0.0	5.0	2.5	17.5									
Exiting Leg Total	12							4							8							16							40								

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total								
	from North							from East							from South							from West															
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total									
4:45 PM	0	1	0	0	1	0	2	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	2	0	0	0	0	2	0	1	0	0	0	0	1	0	2	0	0	0	0	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	8
5:30 PM	0	3	0	0	0	0	3	0	2	0	0	0	0	2	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0	0	9
Total Volume	0	7	0	0	1	0	8	0	7	0	0	0	0	7	0	5	0	0	0	0	0	5	0	3	0	0	0	0	0	0	3	0	0	0	0	0	26
% Approach Total	0.0	87.5	0.0	0.0	12.5	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	50.0	0.0	0.0	33.3	16.7										
PHF	0.000	0.583	0.000	0.000	0.250	0.000	0.667	0.000	0.438	0.000	0.000	0.000	0.438	0.000	0.625	0.000	0.000	0.000	0.000	0.625	0.000	0.375	0.000	0.000	0.250	0.250	0.500	0.722									
Entering Leg	0	7	0	0	1	0	8	0	7	0	0	0	7	0	5	0	0	0	0	5	0	3	0	0	0	0	0	0	3	0	0	0	0	0	26		
Exiting Leg	6							3							7							10							26								
Total	14							10							12							16							52								

PDI File #: **186389 A**  
 Location: **N: Walnut Street S: Walnut Street**  
 Location: **E: Beacon Street W: Beacon Street**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
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**Pedestrians**

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total			
	from North							from East							from South							from West										
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
4:15 PM	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	
4:45 PM	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Total	0	0	0	0	1	1	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	5	6	6	10	
5:00 PM	0	0	0	0	1	1	2	0	0	0	0	1	0	1	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	6		
5:15 PM	0	0	0	0	0	2	2	0	0	0	0	1	2	3	0	0	0	0	2	2	4	0	0	0	0	1	1	2	2	11		
5:30 PM	0	0	0	0	1	1	2	0	0	0	0	1	0	1	0	0	0	0	0	2	2	0	0	0	0	0	3	3	3	8		
5:45 PM	0	0	0	0	0	2	2	0	0	0	0	0	2	2	0	0	0	0	1	1	2	0	0	0	0	0	1	1	1	7		
Total	0	0	0	0	2	6	8	0	0	0	0	3	4	7	0	0	0	0	5	6	11	0	0	0	0	1	5	6	6	32		
Grand Total	0	0	0	0	3	7	10	0	0	0	0	3	6	9	0	0	0	0	5	6	11	0	0	0	0	2	10	12	12	42		
Approach %	0	0	0	0	30	70		0	0	0	0	33.3	66.7		0	0	0	0	45.5	54.5		0	0	0	0	16.7	83.3					
Total %	0	0	0	0	7.14	16.7	23.8	0	0	0	0	7.14	14.3	21.4	0	0	0	0	11.9	14.3	26.2	0	0	0	0	4.76	23.8	28.6				
Exiting Leg Total	10							9							11							12							42			

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walnut Street							Beacon Street							Walnut Street							Beacon Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
5:00 PM	0	0	0	0	1	1	2	0	0	0	0	1	0	1	0	0	0	0	2	1	3	0	0	0	0	0	0	0	6
5:15 PM	0	0	0	0	0	2	2	0	0	0	0	1	2	3	0	0	0	0	2	2	4	0	0	0	0	1	1	2	11
5:30 PM	0	0	0	0	1	1	2	0	0	0	0	1	0	1	0	0	0	0	0	2	2	0	0	0	0	0	3	3	8
5:45 PM	0	0	0	0	0	2	2	0	0	0	0	0	2	2	0	0	0	0	1	1	2	0	0	0	0	0	1	1	7
Total Volume	0	0	0	0	2	6	8	0	0	0	0	3	4	7	0	0	0	0	5	6	11	0	0	0	0	1	5	6	32
% Approach Total	0.0	0.0	0.0	0.0	25.0	75.0		0.0	0.0	0.0	0.0	42.9	57.1		0.0	0.0	0.0	0.0	45.5	54.5		0.0	0.0	0.0	0.0	16.7	83.3		
PHF	0.000	0.000	0.000	0.000	0.500	0.750	1.000	0.000	0.000	0.000	0.000	0.750	0.500	0.583	0.000	0.000	0.000	0.000	0.625	0.750	0.688	0.000	0.000	0.000	0.000	0.250	0.417	0.500	0.727
Entering Leg	0	0	0	0	2	6	8	0	0	0	0	3	4	7	0	0	0	0	5	6	11	0	0	0	0	1	5	6	32
Exiting Leg	8							7							11							6							32
Total	16							14							22							12							64

PDI File #: 186389 B  
 Location: N: Walgreens Driveway S: Blondies Hair Salon Driveway  
 Location: E: Beacon Street W: Beacon Street SW: Former Sushi Drive East  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	1	43	1	0	0	45	0	0	1	0	0	1	0	0	0	0	0	0	0	0	82	0	0	82	128
7:15 AM	3	0	0	0	0	3	2	50	1	0	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	2	0	93	149
7:30 AM	0	0	0	1	0	1	0	66	0	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	0	0	78	145
7:45 AM	2	0	0	1	0	3	2	77	1	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	2	0	90	173
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>236</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>244</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>339</b>	<b>4</b>	<b>0</b>	<b>343</b>	<b>595</b>
8:00 AM	1	0	0	1	0	2	3	94	0	0	0	97	0	0	0	0	0	0	0	1	0	1	0	2	0	0	117	3	0	120	221
8:15 AM	4	0	0	3	0	7	5	96	1	0	0	102	0	0	0	0	0	0	0	0	0	0	0	0	0	1	112	1	0	114	223
8:30 AM	3	0	0	1	0	4	5	108	0	1	0	114	0	0	1	0	0	1	0	0	0	0	0	0	0	0	111	4	0	115	234
8:45 AM	3	0	0	3	0	6	4	134	0	0	0	138	0	0	0	0	0	0	0	1	0	0	0	1	0	0	124	3	0	127	272
<b>Total</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>19</b>	<b>17</b>	<b>432</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>451</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>464</b>	<b>11</b>	<b>0</b>	<b>476</b>	<b>950</b>
Grand Total	16	0	0	10	0	26	22	668	4	1	0	695	0	0	2	0	0	2	0	2	0	1	0	3	0	1	803	15	0	819	1545
Approach %	61.5	0.0	0.0	38.5	0.0		3.2	96.1	0.6	0.1	0.0		0.0	0.0	100.0	0.0	0.0		0.0	66.7	0.0	33.3	0.0		0.0	0.1	98.0	1.8	0.0		
Total %	1.0	0.0	0.0	0.6	0.0	1.7	1.4	43.2	0.3	0.1	0.0	45.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.1	52.0	1.0	0.0	53.0	
Exiting Leg Total	37						815						2						4						687	1545					
Cars	16	0	0	10	0	26	22	654	4	1	0	681	0	0	2	0	0	2	0	2	0	1	0	3	0	1	774	15	0	790	1502
% Cars	100.0	0.0	0.0	100.0	0.0	100.0	100.0	97.9	100.0	100.0	0.0	98.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	96.4	100.0	0.0	96.5	97.2
Exiting Leg Total	37						786						2						4						673	1502					
Heavy Vehicles	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	29	43
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	3.5	2.8
Exiting Leg Total	0						29						0						0						14	43					

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
8:00 AM	1	0	0	1	0	2	3	94	0	0	0	97	0	0	0	0	0	0	0	1	0	1	0	2	0	0	117	3	0	120	221
8:15 AM	4	0	0	3	0	7	5	96	1	0	0	102	0	0	0	0	0	0	0	0	0	0	0	0	0	1	112	1	0	114	223
8:30 AM	3	0	0	1	0	4	5	108	0	1	0	114	0	0	1	0	0	1	0	0	0	0	0	0	0	0	111	4	0	115	234
8:45 AM	3	0	0	3	0	6	4	134	0	0	0	138	0	0	0	0	0	0	0	1	0	0	0	1	0	0	124	3	0	127	272
Total Volume	11	0	0	8	0	19	17	432	1	1	0	451	0	0	1	0	0	1	0	2	0	1	0	3	0	1	464	11	0	476	950
% Approach Total	57.9	0.0	0.0	42.1	0.0		3.8	95.8	0.2	0.2	0.0		0.0	0.0	100.0	0.0	0.0		0.0	66.7	0.0	33.3	0.0		0.0	0.2	97.5	2.3	0.0		
PHF	0.688	0.000	0.000	0.667	0.000	0.679	0.850	0.806	0.250	0.250	0.000	0.817	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.375	0.000	0.250	0.935	0.688	0.000	0.937	0.873
Cars	11	0	0	8	0	19	17	426	1	1	0	445	0	0	1	0	0	1	0	2	0	1	0	3	0	1	452	11	0	464	932
Cars %	100.0	0.0	0.0	100.0	0.0	100.0	100.0	98.6	100.0	100.0	0.0	98.7	0.0	0.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	97.4	100.0	0.0	97.5	98.1
Heavy Vehicles	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	12	18
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	2.5	1.9
Cars Enter Leg	11	0	0	8	0	19	17	426	1	1	0	445	0	0	1	0	0	1	0	2	0	1	0	3	0	1	452	11	0	464	932
Heavy Enter Leg	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	12	18
Total Entering Leg	11	0	0	8	0	19	17	432	1	1	0	451	0	0	1	0	0	1	0	2	0	1	0	3	0	1	464	11	0	476	950
Cars Exiting Leg	28						462						2						1						439	932					
Heavy Exiting Leg	0						12						0						0						6	18					
Total Exiting Leg	28						474						2						1						445	950					

PDI File #: **186389 B**  
 Location: **N: Walgreens Driveway S: Blondies Hair Salon Driveway**  
 Location: **E: Beacon Street W: Beacon Street SW: Former Sushi Drive East**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	1	43	1	0	0	45	0	0	1	0	0	1	0	0	0	0	0	0	0	0	78	0	0	78	124
7:15 AM	3	0	0	0	0	3	2	47	1	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	2	0	88	141
7:30 AM	0	0	0	1	0	1	0	65	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	0	0	74	140
7:45 AM	2	0	0	1	0	3	2	73	1	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	2	0	86	165
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>228</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>236</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>322</b>	<b>4</b>	<b>0</b>	<b>326</b>	<b>570</b>
8:00 AM	1	0	0	1	0	2	3	93	0	0	0	96	0	0	0	0	0	0	0	1	0	1	0	2	0	0	117	3	0	120	220
8:15 AM	4	0	0	3	0	7	5	96	1	0	0	102	0	0	0	0	0	0	0	0	0	0	0	0	0	1	106	1	0	108	217
8:30 AM	3	0	0	1	0	4	5	107	0	1	0	113	0	0	1	0	0	1	0	0	0	0	0	0	0	0	109	4	0	113	231
8:45 AM	3	0	0	3	0	6	4	130	0	0	0	134	0	0	0	0	0	0	0	1	0	0	0	1	0	0	120	3	0	123	264
<b>Total</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>19</b>	<b>17</b>	<b>426</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>445</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>452</b>	<b>11</b>	<b>0</b>	<b>464</b>	<b>932</b>
Grand Total	16	0	0	10	0	26	22	654	4	1	0	681	0	0	2	0	0	2	0	2	0	1	0	3	0	1	774	15	0	790	1502
Approach %	61.5	0.0	0.0	38.5	0.0		3.2	96.0	0.6	0.1	0.0		0.0	0.0	100.0	0.0	0.0		0.0	66.7	0.0	33.3	0.0		0.0	0.1	98.0	1.9	0.0		
Total %	1.1	0.0	0.0	0.7	0.0	1.7	1.5	43.5	0.3	0.1	0.0	45.3	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.1	51.5	1.0	0.0	52.6	
Exiting Leg Total	37						786						2						4						673						1502

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
8:00 AM	1	0	0	1	0	2	3	93	0	0	0	96	0	0	0	0	0	0	0	1	0	1	0	2	0	0	117	3	0	120	220
8:15 AM	4	0	0	3	0	7	5	96	1	0	0	102	0	0	0	0	0	0	0	0	0	0	0	0	0	1	106	1	0	108	217
8:30 AM	3	0	0	1	0	4	5	107	0	1	0	113	0	0	1	0	0	1	0	0	0	0	0	0	0	0	109	4	0	113	231
8:45 AM	3	0	0	3	0	6	4	130	0	0	0	134	0	0	0	0	0	0	0	1	0	0	0	1	0	0	120	3	0	123	264
Total Volume	11	0	0	8	0	19	17	426	1	1	0	445	0	0	1	0	0	1	0	2	0	1	0	3	0	1	452	11	0	464	932
% Approach Total	57.9	0.0	0.0	42.1	0.0		3.8	95.7	0.2	0.2	0.0		0.0	0.0	100.0	0.0	0.0		0.0	66.7	0.0	33.3	0.0		0.0	0.2	97.4	2.4	0.0		
PHF	0.688	0.000	0.000	0.667	0.000	0.679	0.850	0.819	0.250	0.250	0.000	0.830	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.375	0.000	0.250	0.942	0.688	0.000	0.943	0.883	
Entering Leg	11	0	0	8	0	19	17	426	1	1	0	445	0	0	1	0	0	1	0	2	0	1	0	3	0	1	452	11	0	464	932
Exiting Leg	28						462						2						1						439						932
<b>Total</b>	<b>47</b>						<b>907</b>						<b>3</b>						<b>4</b>						<b>903</b>						<b>1864</b>





PDI File #: **186389 B**  
 Location: **N: Walgreens Driveway S: Blondies Hair Salon Driveway**  
 Location: **E: Beacon Street W: Beacon Street SW: Former Sushi Drive East**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars**

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	1	39	1	0	0	41	0	0	1	0	0	1	0	0	0	0	0	0	0	0	66	0	0	66	108
7:15 AM	3	0	0	0	0	3	2	41	1	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	2	0	72	119
7:30 AM	0	0	0	1	0	1	0	60	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	0	0	63	124
7:45 AM	2	0	0	1	0	3	2	69	1	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	1	0	67	142
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>209</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>217</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>265</b>	<b>3</b>	<b>0</b>	<b>268</b>	<b>493</b>
8:00 AM	1	0	0	1	0	2	3	89	0	0	0	92	0	0	0	0	0	0	0	1	0	1	0	2	0	0	106	3	0	109	205
8:15 AM	4	0	0	3	0	7	5	90	1	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	1	97	1	0	99	202
8:30 AM	3	0	0	1	0	4	5	102	0	1	0	108	0	0	1	0	0	1	0	0	0	0	0	0	0	0	102	4	0	106	219
8:45 AM	3	0	0	3	0	6	4	120	0	0	0	124	0	0	0	0	0	0	0	1	0	0	0	1	0	0	114	3	0	117	248
<b>Total</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>19</b>	<b>17</b>	<b>401</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>420</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>419</b>	<b>11</b>	<b>0</b>	<b>431</b>	<b>874</b>
Grand Total	16	0	0	10	0	26	22	610	4	1	0	637	0	0	2	0	0	2	0	2	0	1	0	3	0	1	684	14	0	699	1367
Approach %	61.5	0.0	0.0	38.5	0.0	7	3.5	95.8	0.6	0.2	0.0	96	0.0	0.0	100.0	0.0	0.0	0.0	0.0	66.7	0.0	33.3	0.0	0.0	0.0	0.1	97.9	2.0	0.0	0.0	
Total %	1.2	0.0	0.0	0.7	0.0	1.9	1.6	44.6	0.3	0.1	0.0	46.6	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.1	50.0	1.0	0.0	51.1	
Exiting Leg Total	36						696						2						4						629						1367

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
8:00 AM	1	0	0	1	0	2	3	89	0	0	0	92	0	0	0	0	0	0	0	1	0	1	0	2	0	0	106	3	0	109	205
8:15 AM	4	0	0	3	0	7	5	90	1	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	1	97	1	0	99	202
8:30 AM	3	0	0	1	0	4	5	102	0	1	0	108	0	0	1	0	0	1	0	0	0	0	0	0	0	0	102	4	0	106	219
8:45 AM	3	0	0	3	0	6	4	120	0	0	0	124	0	0	0	0	0	0	0	1	0	0	0	1	0	0	114	3	0	117	248
Total Volume	11	0	0	8	0	19	17	401	1	1	0	420	0	0	1	0	0	1	0	2	0	1	0	3	0	1	419	11	0	431	874
% Approach Total	57.9	0.0	0.0	42.1	0.0	7	4.0	95.5	0.2	0.2	0.0	96	0.0	0.0	100.0	0.0	0.0	0.0	0.0	66.7	0.0	33.3	0.0	0.0	0.0	0.2	97.2	2.6	0.0	0.0	
PHF	0.688	0.000	0.000	0.667	0.000	0.679	0.850	0.835	0.250	0.250	0.000	0.847	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.375	0.000	0.250	0.919	0.688	0.000	0.921	0.881
Entering Leg	11	0	0	8	0	19	17	401	1	1	0	420	0	0	1	0	0	1	0	2	0	1	0	3	0	1	419	11	0	431	874
Exiting Leg	28						429						2						1						414						874
<b>Total</b>	<b>47</b>						<b>849</b>						<b>3</b>						<b>4</b>						<b>845</b>						<b>1748</b>

PDI File #: **186389 B**  
 Location: **N: Walgreens Driveway S: Blondies Hair Salon Driveway**  
 Location: **E: Beacon Street W: Beacon Street SW: Former Sushi Drive East**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Light Goods Vehicle**

	Walgreens Driveway						Beacon Street					Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total	
	from North						from East					from South						from Southwest						from West							
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn		Total
7:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	12	16
7:15 AM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	16	22
7:30 AM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	15
7:45 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	1	0	19	23
<b>Total</b>	0	0	0	0	0	0	0	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	1	0	57	76
8:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	15
8:15 AM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	15
8:30 AM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	12
8:45 AM	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	15
<b>Total</b>	0	0	0	0	0	0	0	24	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	33	57
Grand Total	0	0	0	0	0	0	0	43	0	0	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	1	0	90	133
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.9	1.1	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.3	0.0	0.0	0.0	32.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.9	0.8	0.0	67.7	
Exiting Leg Total	1						89					0						0						43	133						

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Walgreens Driveway						Beacon Street					Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total	
	from North						from East					from South						from Southwest						from West							
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn		Total
7:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	12	16
7:15 AM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	16	22
7:30 AM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	15
7:45 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	1	0	19	23
Total Volume	0	0	0	0	0	0	0	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	1	0	57	76
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.2	1.8	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.792	0.000	0.000	0.000	0.792	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.778	0.250	0.000	0.750	0.826
Entering Leg	0						0					0						0						0	76						
Exiting Leg	1						56					0						0						19	76						
<b>Total</b>	1						75					0						0						76	152						











PDI File #: 186389 B  
 Location: N: Walgreens Driveway S: Blondies Hair Salon Driveway  
 Location: E: Beacon Street W: Beacon Street SW: Former Sushi Drive East  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
4:00 PM	3	0	0	2	0	5	5	119	0	0	0	124	0	0	0	0	0	0	0	0	0	1	0	0	81	7	0	88	218		
4:15 PM	6	0	0	1	0	7	4	90	0	0	0	94	0	0	1	0	0	1	0	0	0	0	0	0	96	4	0	100	202		
4:30 PM	7	0	0	1	0	8	4	125	1	1	0	131	1	0	0	0	0	1	0	1	0	0	1	0	1	103	3	0	107	248	
4:45 PM	6	0	0	3	0	9	2	90	0	1	0	93	0	0	0	0	0	0	0	0	0	0	0	1	0	105	3	0	109	211	
<b>Total</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>29</b>	<b>15</b>	<b>424</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>442</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>385</b>	<b>17</b>	<b>0</b>	<b>404</b>	<b>879</b>
5:00 PM	4	0	0	1	0	5	2	104	0	0	0	106	0	0	1	0	0	1	0	0	0	0	0	0	0	1	127	0	0	128	240
5:15 PM	5	0	0	2	0	7	5	91	0	0	0	96	0	1	0	0	0	1	0	0	0	0	0	0	0	0	109	4	0	113	217
5:30 PM	8	0	0	2	0	10	2	100	0	0	0	102	0	0	0	0	0	0	0	1	0	0	0	1	0	0	106	4	0	110	223
5:45 PM	5	0	0	3	0	8	3	104	1	0	0	108	0	0	0	0	0	0	0	1	0	0	0	1	0	0	115	4	0	119	236
<b>Total</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>30</b>	<b>12</b>	<b>399</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>412</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>457</b>	<b>12</b>	<b>0</b>	<b>470</b>	<b>916</b>	
Grand Total	44	0	0	15	0	59	27	823	2	2	0	854	1	1	2	0	0	4	0	3	0	1	0	4	1	2	842	29	0	874	1795
Approach %	74.6	0.0	0.0	25.4	0.0		3.2	96.4	0.2	0.2	0.0		25.0	25.0	50.0	0.0	0.0		0.0	75.0	0.0	25.0	0.0		0.1	0.2	96.3	3.3	0.0		
Total %	2.5	0.0	0.0	0.8	0.0	3.3	1.5	45.8	0.1	0.1	0.0	47.6	0.1	0.1	0.1	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.2	0.1	0.1	46.9	1.6	0.0	48.7	
Exiting Leg Total						57						861						4						3						870	1795
Cars	43	0	0	15	0	58	27	814	2	2	0	845	1	1	2	0	0	4	0	3	0	1	0	4	1	2	835	29	0	867	1778
% Cars	97.7	0.0	0.0	100.0	0.0	98.3	100.0	98.9	100.0	100.0	0.0	98.9	100.0	100.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	99.2	100.0	0.0	99.2	99.1
Exiting Leg Total						57						854						4						3						860	1778
Heavy Vehicles	1	0	0	0	0	1	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	17
% Heavy Vehicles	2.3	0.0	0.0	0.0	0.0	1.7	0.0	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.8	0.9
Exiting Leg Total						0						7						0						0						10	17

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total	
	from North						from East						from South						from Southwest						from West							
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total		
4:30 PM	7	0	0	1	0	8	4	125	1	1	0	131	1	0	0	0	0	1	0	1	0	0	0	1	0	1	103	3	0	107	248	
4:45 PM	6	0	0	3	0	9	2	90	0	1	0	93	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	105	3	0	109	211
5:00 PM	4	0	0	1	0	5	2	104	0	0	0	106	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	127	0	0	128	240
5:15 PM	5	0	0	2	0	7	5	91	0	0	0	96	0	1	0	0	0	1	0	0	0	0	0	0	0	0	109	4	0	113	217	
Total Volume	22	0	0	7	0	29	13	410	1	2	0	426	1	1	1	0	0	3	0	1	0	0	0	1	1	2	444	10	0	457	916	
% Approach Total	75.9	0.0	0.0	24.1	0.0		3.1	96.2	0.2	0.5	0.0		33.3	33.3	33.3	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.2	0.4	97.2	2.2	0.0			
PHF	0.786	0.000	0.000	0.583	0.000	0.806	0.650	0.820	0.250	0.500	0.000	0.813	0.250	0.250	0.250	0.000	0.000	0.750	0.000	0.250	0.000	0.000	0.000	0.250	0.250	0.500	0.874	0.625	0.000	0.893	0.923	
Cars	21	0	0	7	0	28	13	406	1	2	0	422	1	1	1	0	0	3	0	1	0	0	0	1	1	2	441	10	0	454	908	
Cars %	95.5	0.0	0.0	100.0	0.0	96.6	100.0	99.0	100.0	100.0	0.0	99.1	100.0	100.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	100.0	100.0	100.0	99.3	100.0	0.0	99.3	99.1	
Heavy Vehicles	1	0	0	0	0	1	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	8	
Heavy Vehicles %	4.5	0.0	0.0	0.0	0.0	3.4	0.0	1.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.9		
Cars Enter Leg	21	0	0	7	0	28	13	406	1	2	0	422	1	1	1	0	0	3	0	1	0	0	0	1	1	2	441	10	0	454	908	
Heavy Enter Leg	1	0	0	0	0	1	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	8	
Total Entering Leg	22	0	0	7	0	29	13	410	1	2	0	426	1	1	1	0	0	3	0	1	0	0	0	1	1	2	444	10	0	457	916	
Cars Exiting Leg						24						450						4						2						428	908	
Heavy Exiting Leg						0						3						0						0						5	8	
Total Exiting Leg						24						453						4						2						433	916	



PDI File #: **186389 B**  
 Location: **N: Walgreens Driveway S: Blondies Hair Salon Driveway**  
 Location: **E: Beacon Street W: Beacon Street SW: Former Sushi Drive East**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
4:00 PM	3	0	0	2	0	5	5	117	0	0	0	122	0	0	0	0	0	0	0	0	0	1	0	1	0	0	79	7	0	86	214
4:15 PM	6	0	0	1	0	7	4	89	0	0	0	93	0	0	1	0	0	1	0	0	0	1	0	0	0	0	95	4	0	99	200
4:30 PM	6	0	0	1	0	7	4	122	1	1	0	128	1	0	0	0	0	1	0	1	0	0	0	1	0	1	101	3	0	105	242
4:45 PM	6	0	0	3	0	9	2	89	0	1	0	92	0	0	0	0	0	0	0	0	0	0	0	0	1	0	105	3	0	109	210
<b>Total</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>28</b>	<b>15</b>	<b>417</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>435</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>380</b>	<b>17</b>	<b>0</b>	<b>399</b>	<b>866</b>
5:00 PM	4	0	0	1	0	5	2	104	0	0	0	106	0	0	1	0	0	1	0	0	0	0	0	0	0	1	127	0	0	128	240
5:15 PM	5	0	0	2	0	7	5	91	0	0	0	96	0	1	0	0	0	1	0	0	0	0	0	0	0	0	108	4	0	112	216
5:30 PM	8	0	0	2	0	10	2	99	0	0	0	101	0	0	0	0	0	0	0	1	0	0	0	1	0	0	105	4	0	109	221
5:45 PM	5	0	0	3	0	8	3	103	1	0	0	107	0	0	0	0	0	0	0	1	0	0	0	1	0	0	115	4	0	119	235
<b>Total</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>30</b>	<b>12</b>	<b>397</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>410</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>455</b>	<b>12</b>	<b>0</b>	<b>468</b>	<b>912</b>
Grand Total	43	0	0	15	0	58	27	814	2	2	0	845	1	1	2	0	0	4	0	3	0	1	0	4	1	2	835	29	0	867	1778
Approach %	74.1	0.0	0.0	25.9	0.0		3.2	96.3	0.2	0.2	0.0		25.0	25.0	50.0	0.0	0.0		0.0	75.0	0.0	25.0	0.0		0.1	0.2	96.3	3.3	0.0		
Total %	2.4	0.0	0.0	0.8	0.0	3.3	1.5	45.8	0.1	0.1	0.0	47.5	0.1	0.1	0.1	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.2	0.1	0.1	47.0	1.6	0.0	48.8	
Exiting Leg Total	57						854						4						3						860						1778

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
5:00 PM	4	0	0	1	0	5	2	104	0	0	0	106	0	0	1	0	0	1	0	0	0	0	0	0	0	1	127	0	0	128	240
5:15 PM	5	0	0	2	0	7	5	91	0	0	0	96	0	1	0	0	0	1	0	0	0	0	0	0	0	0	108	4	0	112	216
5:30 PM	8	0	0	2	0	10	2	99	0	0	0	101	0	0	0	0	0	0	0	1	0	0	0	1	0	0	105	4	0	109	221
5:45 PM	5	0	0	3	0	8	3	103	1	0	0	107	0	0	0	0	0	0	0	1	0	0	0	1	0	0	115	4	0	119	235
Total Volume	22	0	0	8	0	30	12	397	1	0	0	410	0	1	1	0	0	2	0	2	0	0	0	2	0	1	455	12	0	468	912
% Approach Total	73.3	0.0	0.0	26.7	0.0		2.9	96.8	0.2	0.0	0.0		0.0	50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.2	97.2	2.6	0.0		
PHF	0.688	0.000	0.000	0.667	0.000	0.750	0.600	0.954	0.250	0.000	0.000	0.958	0.000	0.250	0.250	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.250	0.896	0.750	0.000	0.914	0.950
Entering Leg	22	0	0	8	0	30	12	397	1	0	0	410	0	1	1	0	0	2	0	2	0	0	0	2	0	1	455	12	0	468	912
Exiting Leg	25						465						1						3						420						912
Total	55						875						3						3						888						1824



PDI File #: **186389 B**  
 Location: **N: Walgreens Driveway S: Blondies Hair Salon Driveway**  
 Location: **E: Beacon Street W: Beacon Street SW: Former Sushi Drive East**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



**Cars**

	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
4:00 PM	2	0	0	2	0	4	5	104	0	0	0	109	0	0	0	0	0	0	0	0	0	1	0	1	0	0	76	6	0	82	196
4:15 PM	5	0	0	1	0	6	4	82	0	0	0	86	0	0	1	0	0	1	0	0	0	0	0	0	0	0	86	3	0	89	182
4:30 PM	5	0	0	1	0	6	4	109	1	1	0	115	1	0	0	0	0	1	0	1	0	0	0	1	0	1	91	3	0	95	218
4:45 PM	6	0	0	3	0	9	2	85	0	1	0	88	0	0	0	0	0	0	0	0	0	0	0	0	1	0	99	3	0	103	200
<b>Total</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>25</b>	<b>15</b>	<b>380</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>398</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>352</b>	<b>15</b>	<b>0</b>	<b>369</b>	<b>796</b>
5:00 PM	4	0	0	1	0	5	2	98	0	0	0	100	0	0	1	0	0	1	0	0	0	0	0	0	0	0	123	0	0	124	230
5:15 PM	5	0	0	2	0	7	5	86	0	0	0	91	0	1	0	0	0	1	0	0	0	0	0	0	0	0	105	4	0	109	208
5:30 PM	8	0	0	2	0	10	2	92	0	0	0	94	0	0	0	0	0	0	0	1	0	0	0	1	0	0	101	4	0	105	210
5:45 PM	5	0	0	3	0	8	3	95	1	0	0	99	0	0	0	0	0	0	0	1	0	0	0	1	0	0	114	4	0	118	226
<b>Total</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>30</b>	<b>12</b>	<b>371</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>384</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>443</b>	<b>12</b>	<b>0</b>	<b>456</b>	<b>874</b>
Grand Total	40	0	0	15	0	55	27	751	2	2	0	782	1	1	2	0	0	4	0	3	0	1	0	4	1	2	795	27	0	825	1670
Approach %	72.7	0.0	0.0	27.3	0.0		3.5	96.0	0.3	0.3	0.0		25.0	25.0	50.0	0.0	0.0		0.0	75.0	0.0	25.0	0.0		0.1	0.2	96.4	3.3	0.0		
Total %	2.4	0.0	0.0	0.9	0.0	3.3	1.6	45.0	0.1	0.1	0.0	46.8	0.1	0.1	0.1	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.2	0.1	0.1	47.6	1.6	0.0	49.4	
Exiting Leg Total	55						814						4						3						794						1670

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total	
	from North						from East						from South						from Southwest						from West							
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total		
5:00 PM	4	0	0	1	0	5	2	98	0	0	0	100	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	123	0	0	124	230
5:15 PM	5	0	0	2	0	7	5	86	0	0	0	91	0	1	0	0	0	1	0	0	0	0	0	0	0	0	105	4	0	109	208	
5:30 PM	8	0	0	2	0	10	2	92	0	0	0	94	0	0	0	0	0	0	0	1	0	0	0	1	0	0	101	4	0	105	210	
5:45 PM	5	0	0	3	0	8	3	95	1	0	0	99	0	0	0	0	0	0	0	1	0	0	0	1	0	0	114	4	0	118	226	
Total Volume	22	0	0	8	0	30	12	371	1	0	0	384	0	1	1	0	0	2	0	2	0	0	0	2	0	1	443	12	0	456	874	
% Approach Total	73.3	0.0	0.0	26.7	0.0		3.1	96.6	0.3	0.0	0.0		0.0	50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.2	97.1	2.6	0.0			
PHF	0.688	0.000	0.000	0.667	0.000	0.750	0.600	0.946	0.250	0.000	0.000	0.960	0.000	0.250	0.250	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.250	0.900	0.750	0.000	0.919	0.950	
Entering Leg	22	0	0	8	0	30	12	371	1	0	0	384	0	1	1	0	0	2	0	2	0	0	0	2	0	1	443	12	0	456	874	
Exiting Leg	25						453						1						394						874							
<b>Total</b>	<b>55</b>						<b>837</b>						<b>3</b>						<b>3</b>						<b>850</b>						<b>1748</b>	

PDI File #: **186389 B**  
 Location: **N: Walgreens Driveway S: Blondies Hair Salon Driveway**  
 Location: **E: Beacon Street W: Beacon Street SW: Former Sushi Drive East**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
4:00 PM	1	0	0	0	0	1	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	17
4:15 PM	1	0	0	0	0	1	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	10	18
4:30 PM	1	0	0	0	0	1	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	23
4:45 PM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	10
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>2</b>	<b>0</b>	<b>30</b>	<b>68</b>
5:00 PM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	10
5:15 PM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	8
5:30 PM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	11
5:45 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	9
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>38</b>
Grand Total	3	0	0	0	0	3	0	61	0	0	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	2	0	42	106
Approach %	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	95.2	4.8	0.0		
Total %	2.8	0.0	0.0	0.0	0.0	2.8	0.0	57.5	0.0	0.0	0.0	57.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.7	1.9	0.0	39.6	
Exiting Leg Total	2						40						0						0						64	106					

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Walgreens Driveway						Beacon Street						Blondies Hair Salon Driveway						Former Sushi Drive East						Beacon Street						Total
	from North						from East						from South						from Southwest						from West						
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
4:00 PM	1	0	0	0	0	1	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	17
4:15 PM	1	0	0	0	0	1	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	10	18
4:30 PM	1	0	0	0	0	1	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	23
4:45 PM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	10
Total Volume	3	0	0	0	0	3	0	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	2	0	30	68
% Approach Total	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	93.3	6.7	0.0		
PHF	0.750	0.000	0.000	0.000	0.000	0.750	0.000	0.729	0.000	0.000	0.000	0.729	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700	0.500	0.000	0.750	0.739
Entering Leg	3	0	0	0	0	3	0	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	2	0	30	68
Exiting Leg	2						28						0						0						38	68					
Total	5						63						0						0						68	136					











PDI File #: 186389 B  
 Location: N: Walgreens Driveway S: Blondies Hair Salon Driveway  
 Location: E: Beacon Street W: Beacon Street SW: Former Sushi Drive East  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Pedestrians**

	Walgreens Driveway										Beacon Street						Blondies Hair Salon Driveway								Former Sushi Drive East								Beacon Street								Total
	from North										from East						from South								from Southwest								from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	2	3	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	5
4:15 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	2	0	0	0	0	0	2	1	3	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	9
4:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	7
4:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	5
Total	0	0	0	0	0	0	5	5	0	0	0	0	0	1	2	3	0	0	0	0	0	8	2	10	0	0	0	0	0	6	2	8	0	0	0	0	0	0	0	0	26
5:00 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	7
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	9	0	0	0	0	0	2	7	9	0	0	0	0	0	0	0	0	18
5:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	3	1	4	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	11
5:45 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	0	10
Total	0	0	0	0	0	3	3	6	0	0	0	0	0	1	0	1	0	0	0	0	0	10	10	20	0	0	0	0	0	9	10	19	0	0	0	0	0	0	0	0	46
Grand Total	0	0	0	0	0	3	8	11	0	0	0	0	0	2	2	4	0	0	0	0	0	18	12	30	0	0	0	0	0	15	12	27	0	0	0	0	0	0	0	0	72
Approach %	0	0	0	0	0	27	73	0	0	0	0	0	50	50	0	0	0	0	0	60	40	0	0	0	0	0	56	44	0	0	0	0	0	0	0	0					
Total %	0	0	0	0	0	4.2	11	15	0	0	0	0	0	2.8	2.8	5.6	0	0	0	0	0	25	17	42	0	0	0	0	0	21	17	38	0	0	0	0	0	0	0	0	
Exiting Leg Total	11								4				30				27				0				72																

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Walgreens Driveway										Beacon Street						Blondies Hair Salon Driveway								Former Sushi Drive East								Beacon Street								Total
	from North										from East						from South								from Southwest								from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
5:00 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	7
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	9	0	0	0	0	0	2	7	9	0	0	0	0	0	0	0	0	18
5:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	3	1	4	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	11
5:45 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	0	10
Total Volume	0	0	0	0	0	3	3	6	0	0	0	0	0	1	0	1	0	0	0	0	0	10	10	20	0	0	0	0	0	9	10	19	0	0	0	0	0	0	0	0	46
% Approach Total	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	47.4	52.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
PHF	0.000	0.000	0.000	0.000	0.000	0.375	0.375	0.750	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.833	0.357	0.556	0.000	0.000	0.000	0.000	0.000	0.750	0.357	0.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.639
Entering Leg	0	0	0	0	0	3	3	6	0	0	0	0	0	1	0	1	0	0	0	0	0	10	10	20	0	0	0	0	0	9	10	19	0	0	0	0	0	0	0	0	46
Exiting Leg	6								1				20				19				0				46																
Total	12								2				40				38				0				92																

PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total				
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total
7:00 AM	0	0	0	1	0	1	0	42	1	1	0	44	0	0	1	0	0	1	0	1	0	0	0	1	0	0	80	1	0	81	128
7:15 AM	0	0	0	0	0	0	0	52	0	1	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	1	93	0	0	94	147
7:30 AM	0	0	0	0	0	0	0	66	0	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	1	77	0	0	79	145	
7:45 AM	0	0	0	0	0	0	0	78	1	0	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0	0	91	170	
<b>Total</b>	0	0	0	1	0	1	0	238	2	2	0	242	0	0	1	0	0	1	0	1	0	0	0	1	1	2	341	1	0	345	590
8:00 AM	0	0	0	0	0	0	1	93	1	1	0	96	0	0	0	0	0	0	0	1	0	0	0	1	1	1	121	0	0	123	220
8:15 AM	0	0	0	1	0	1	0	95	5	1	0	101	0	0	0	0	0	0	0	0	2	0	2	0	1	117	0	0	118	222	
8:30 AM	0	0	0	0	0	0	0	111	0	1	0	112	0	0	1	0	0	1	0	1	0	1	0	2	1	0	115	0	0	116	231
8:45 AM	0	0	0	1	0	1	0	136	0	0	0	136	0	0	0	0	0	0	0	0	0	0	0	1	2	133	0	0	136	273	
<b>Total</b>	0	0	0	2	0	2	1	435	6	3	0	445	0	0	1	0	0	1	0	2	0	3	0	5	3	4	486	0	0	493	946
Grand Total	0	0	0	3	0	3	1	673	8	5	0	687	0	0	2	0	0	2	0	3	0	3	0	6	4	6	827	1	0	838	1536
Approach %	0.0	0.0	0.0	100.0	0.0		0.1	98.0	1.2	0.7	0.0		0.0	0.0	100.0	0.0	0.0		0.0	50.0	0.0	50.0	0.0		0.5	0.7	98.7	0.1	0.0		
Total %	0.0	0.0	0.0	0.2	0.0	0.2	0.1	43.8	0.5	0.3	0.0	44.7	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.2	0.0	0.2	0.0	0.4	0.3	0.4	53.8	0.1	0.0	54.6	
Exiting Leg Total	2						833					11					12					678					1536				
Cars	0	0	0	3	0	3	1	658	8	5	0	672	0	0	2	0	0	2	0	3	0	3	0	6	4	6	799	1	0	810	1493
% Cars	0.0	0.0	0.0	100.0	0.0	100.0	100.0	97.8	100.0	100.0	0.0	97.8	0.0	0.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	96.6	100.0	0.0	96.7	97.2
Exiting Leg Total	2						805					11					12					663					1493				
Heavy Vehicles	0	0	0	0	0	0	0	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	28	43
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	3.3	2.8
Exiting Leg Total	0						28					0					0					15					43				

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total				
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total
8:00 AM	0	0	0	0	0	0	1	93	1	1	0	96	0	0	0	0	0	0	0	1	0	0	0	1	1	1	121	0	0	123	220
8:15 AM	0	0	0	1	0	1	0	95	5	1	0	101	0	0	0	0	0	0	0	0	2	0	2	0	1	117	0	0	118	222	
8:30 AM	0	0	0	0	0	0	0	111	0	1	0	112	0	0	1	0	0	1	0	1	0	1	0	2	1	0	115	0	0	116	231
8:45 AM	0	0	0	1	0	1	0	136	0	0	0	136	0	0	0	0	0	0	0	0	0	0	0	1	2	133	0	0	136	273	
Total Volume	0	0	0	2	0	2	1	435	6	3	0	445	0	0	1	0	0	1	0	2	0	3	0	5	3	4	486	0	0	493	946
% Approach Total	0.0	0.0	0.0	100.0	0.0		0.2	97.8	1.3	0.7	0.0		0.0	0.0	100.0	0.0	0.0		0.0	40.0	0.0	60.0	0.0		0.6	0.8	98.6	0.0	0.0		
PHF	0.000	0.000	0.000	0.500	0.000	0.500	0.250	0.800	0.300	0.750	0.000	0.818	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.500	0.000	0.375	0.000	0.625	0.750	0.500	0.914	0.000	0.000	0.906	0.866
Cars	0	0	0	2	0	2	1	428	6	3	0	438	0	0	1	0	0	1	0	2	0	3	0	5	3	4	473	0	0	480	926
Cars %	0.0	0.0	0.0	100.0	0.0	100.0	100.0	98.4	100.0	100.0	0.0	98.4	0.0	0.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	97.3	0.0	0.0	97.4	97.9
Heavy Vehicles	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	20
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	2.6	2.1
Cars Enter Leg	0	0	0	2	0	2	1	428	6	3	0	438	0	0	1	0	0	1	0	2	0	3	0	5	3	4	473	0	0	480	926
Heavy Enter Leg	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	20
Total Entering Leg	0	0	0	2	0	2	1	435	6	3	0	445	0	0	1	0	0	1	0	2	0	3	0	5	3	4	486	0	0	493	946
Cars Exiting Leg	1						477					7					9					432					926				
Heavy Exiting Leg	0						13					0					0					7					20				
Total Exiting Leg	1						490					7					9					439					946				

PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total	
	from North						from East						from Southeast						from South						from West							
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total		
7:00 AM	0	0	0	1	0	1	0	42	1	1	0	44	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0	76	1	0	77	124
7:15 AM	0	0	0	0	0	0	0	49	0	1	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	1	89	0	0	90	140	
7:30 AM	0	0	0	0	0	0	0	65	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	1	1	74	0	0	76	141	
7:45 AM	0	0	0	0	0	0	0	74	1	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	0	0	87	162	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>230</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>234</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>326</b>	<b>1</b>	<b>0</b>	<b>330</b>	<b>567</b>	
8:00 AM	0	0	0	0	0	0	1	92	1	1	0	95	0	0	0	0	0	0	0	1	0	0	0	1	1	1	121	0	0	123	219	
8:15 AM	0	0	0	1	0	1	0	95	5	1	0	101	0	0	0	0	0	0	0	0	0	2	0	2	0	1	111	0	0	112	216	
8:30 AM	0	0	0	0	0	0	0	110	0	1	0	111	0	0	1	0	0	1	0	1	0	1	0	2	1	0	113	0	0	114	228	
8:45 AM	0	0	0	1	0	1	0	131	0	0	0	131	0	0	0	0	0	0	0	0	0	0	0	0	1	2	128	0	0	131	263	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>428</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>438</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>473</b>	<b>0</b>	<b>0</b>	<b>480</b>	<b>926</b>	
Grand Total	0	0	0	3	0	3	1	658	8	5	0	672	0	0	2	0	0	2	0	3	0	3	0	6	4	6	799	1	0	810	1493	
Approach %	0.0	0.0	0.0	100.0	0.0		0.1	97.9	1.2	0.7	0.0		0.0	0.0	100.0	0.0	0.0		0.0	50.0	0.0	50.0	0.0		0.5	0.7	98.6	0.1	0.0			
Total %	0.0	0.0	0.0	0.2	0.0	0.2	0.1	44.1	0.5	0.3	0.0	45.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.2	0.0	0.2	0.0	0.4	0.3	0.4	53.5	0.1	0.0	54.3		
Exiting Leg Total	2						805						11						12						663						1493	

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	1	92	1	1	0	95	0	0	0	0	0	0	0	1	0	0	0	1	1	1	121	0	0	123	219
8:15 AM	0	0	0	1	0	1	0	95	5	1	0	101	0	0	0	0	0	0	0	0	0	2	0	2	0	1	111	0	0	112	216
8:30 AM	0	0	0	0	0	0	0	110	0	1	0	111	0	0	1	0	0	1	0	1	0	1	0	2	1	0	113	0	0	114	228
8:45 AM	0	0	0	1	0	1	0	131	0	0	0	131	0	0	0	0	0	0	0	0	0	0	0	0	1	2	128	0	0	131	263
<b>Total Volume</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>428</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>438</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>473</b>	<b>0</b>	<b>0</b>	<b>480</b>	<b>926</b>
% Approach Total	0.0	0.0	0.0	100.0	0.0		0.2	97.7	1.4	0.7	0.0		0.0	0.0	100.0	0.0	0.0		0.0	40.0	0.0	60.0	0.0		0.6	0.8	98.5	0.0	0.0		
PHF	0.000	0.000	0.000	0.500	0.000	0.500	0.250	0.817	0.300	0.750	0.000	0.836	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.000	0.375	0.000	0.625	0.750	0.500	0.924	0.000	0.000	0.916	0.880	
Entering Leg	0						1						0						0						3						926
Exiting Leg	0						1						0						0						5						926
<b>Total</b>	<b>3</b>						<b>915</b>						<b>8</b>						<b>14</b>						<b>912</b>						<b>1852</b>



PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



**Cars**

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	1	0	1	0	38	1	1	0	40	0	0	1	0	0	1	0	1	0	0	0	1	0	0	63	1	0	64	107
7:15 AM	0	0	0	0	0	0	0	44	0	1	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	72	0	0	73	118
7:30 AM	0	0	0	0	0	0	0	60	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	1	1	64	0	0	66	126
7:45 AM	0	0	0	0	0	0	0	71	1	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	0	0	68	140
<b>Total</b>	0	0	0	1	0	1	0	213	2	2	0	217	0	0	1	0	0	1	0	1	0	0	0	1	1	2	267	1	0	271	491
8:00 AM	0	0	0	0	0	0	0	89	1	1	0	91	0	0	0	0	0	0	0	1	0	0	0	1	0	1	109	0	0	110	202
8:15 AM	0	0	0	0	0	0	0	90	4	1	0	95	0	0	0	0	0	0	0	0	0	1	0	1	0	1	103	0	0	104	200
8:30 AM	0	0	0	0	0	0	0	105	0	1	0	106	0	0	1	0	0	1	0	1	0	1	0	2	1	0	105	0	0	106	215
8:45 AM	0	0	0	1	0	1	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0	0	0	1	2	123	0	0	126	250
<b>Total</b>	0	0	0	1	0	1	0	407	5	3	0	415	0	0	1	0	0	1	0	2	0	2	0	4	2	4	440	0	0	446	867
Grand Total	0	0	0	2	0	2	0	620	7	5	0	632	0	0	2	0	0	2	0	3	0	2	0	5	3	6	707	1	0	717	1358
Approach %	0.0	0.0	0.0	100.0	0.0		0.0	98.1	1.1	0.8	0.0		0.0	0.0	100.0	0.0	0.0		0.0	60.0	0.0	40.0	0.0		0.4	0.8	98.6	0.1	0.0		
Total %	0.0	0.0	0.0	0.1	0.0	0.1	0.0	45.7	0.5	0.4	0.0	46.5	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.4	0.2	0.4	52.1	0.1	0.0	52.8	
Exiting Leg Total	1						712						11						10						624						1358

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	0	89	1	1	0	91	0	0	0	0	0	0	0	1	0	0	0	1	0	1	109	0	0	110	202
8:15 AM	0	0	0	0	0	0	0	90	4	1	0	95	0	0	0	0	0	0	0	0	0	1	0	1	0	1	103	0	0	104	200
8:30 AM	0	0	0	0	0	0	0	105	0	1	0	106	0	0	1	0	0	1	0	1	0	1	0	2	1	0	105	0	0	106	215
8:45 AM	0	0	0	1	0	1	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0	0	0	1	2	123	0	0	126	250
<b>Total Volume</b>	0	0	0	1	0	1	0	407	5	3	0	415	0	0	1	0	0	1	0	2	0	2	0	4	2	4	440	0	0	446	867
% Approach Total	0.0	0.0	0.0	100.0	0.0		0.0	98.1	1.2	0.7	0.0		0.0	0.0	100.0	0.0	0.0		0.0	50.0	0.0	50.0	0.0		0.4	0.9	98.7	0.0	0.0		
PHF	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.827	0.313	0.750	0.000	0.843	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.000	0.500	0.000	0.500	0.500	0.500	0.894	0.000	0.000	0.885	0.867	
Entering Leg	0	0	0	1	0	1	0	407	5	3	0	415	0	0	1	0	0	1	0	2	0	2	0	4	2	4	440	0	0	446	867
Exiting Leg	0						443						7						11						410						867
<b>Total</b>	1						858						8						11						856						1734

PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	17	
7:15 AM	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	17	22		
7:30 AM	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	14			
7:45 AM	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	19	22			
Total	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	58	0	0	58	75			
8:00 AM	0	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	12	0	0	13	17		
8:15 AM	0	0	0	1	0	1	0	5	1	0	6	0	0	0	0	0	0	0	0	1	0	1	0	0	8	0	0	8	16		
8:30 AM	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	13			
8:45 AM	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	12			
Total	0	0	0	1	0	1	1	20	1	0	22	0	0	0	0	0	0	0	0	1	0	1	1	0	33	0	0	34	58		
Grand Total	0	0	0	1	0	1	1	37	1	0	39	0	0	0	0	0	0	0	0	1	0	1	1	0	91	0	0	92	133		
Approach %	0.0	0.0	0.0	100.0	0.0		2.6	94.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0		1.1	0.0	98.9	0.0	0.0				
Total %	0.0	0.0	0.0	0.8	0.0	0.8	0.8	27.8	0.8	0.0	29.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8	0.8	0.0	68.4	0.0	0.0	69.2			
Exiting Leg Total	1						92						0						2						38						133

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	17			
7:15 AM	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	17	22			
7:30 AM	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	14				
7:45 AM	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	19	0	0	19	22				
Total Volume	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	58	0	0	58	75				
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0				
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.000	0.000	0.850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.763	0.000	0.000	0.763	0.852		
Entering Leg	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	58	0	0	58	75			
Exiting Leg	0						75						0						0						75						150
Total	0						75						0						0						75						150













PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars and Heavy Vehicles (Combined)**

	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total				
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	122	1	0	0	123	1	0	2	0	0	3	0	5	0	1	0	6	1	0	82	0	0	83	215
4:15 PM	0	0	0	1	0	1	0	96	1	0	0	97	2	0	0	0	0	2	0	2	0	1	0	3	1	0	98	0	0	99	202
4:30 PM	0	0	0	1	0	1	1	126	2	1	0	130	0	0	1	0	0	1	0	3	0	0	0	3	0	0	105	0	0	105	240
4:45 PM	0	0	0	0	0	0	1	91	1	0	0	93	1	0	2	0	0	3	0	2	0	1	0	3	1	0	109	0	0	110	209
<b>Total</b>	0	0	0	2	0	2	2	435	5	1	0	443	4	0	5	0	0	9	0	12	0	3	0	15	3	0	394	0	0	397	866
5:00 PM	1	0	0	0	0	1	0	112	2	0	0	114	1	0	0	0	0	1	0	2	0	0	0	2	1	0	127	0	0	128	246
5:15 PM	0	0	0	0	0	0	0	93	0	0	0	93	0	0	0	0	0	0	0	1	0	0	0	1	0	0	114	0	0	114	208
5:30 PM	2	0	0	2	0	4	0	110	0	0	0	110	1	0	0	0	0	1	0	0	0	0	0	0	0	0	104	0	0	104	219
5:45 PM	0	0	0	0	0	0	0	110	0	0	0	110	1	0	0	0	0	1	0	0	0	0	0	0	0	0	118	0	0	118	229
<b>Total</b>	3	0	0	2	0	5	0	425	2	0	0	427	3	0	0	0	0	3	0	3	0	0	0	3	1	0	463	0	0	464	902
Grand Total	3	0	0	4	0	7	2	860	7	1	0	870	7	0	5	0	0	12	0	15	0	3	0	18	4	0	857	0	0	861	1768
Approach %	42.9	0.0	0.0	57.1	0.0		0.2	98.9	0.8	0.1	0.0		58.3	0.0	41.7	0.0	0.0		0.0	83.3	0.0	16.7	0.0		0.5	0.0	99.5	0.0	0.0		
Total %	0.2	0.0	0.0	0.2	0.0	0.4	0.1	48.6	0.4	0.1	0.0	49.2	0.4	0.0	0.3	0.0	0.0	0.7	0.0	0.8	0.0	0.2	0.0	1.0	0.2	0.0	48.5	0.0	0.0	48.7	
Exiting Leg Total	2						883					1					11					871					1768				
Cars	3	0	0	4	0	7	2	851	7	1	0	861	7	0	5	0	0	12	0	14	0	3	0	17	4	0	853	0	0	857	1754
% Cars	100.0	0.0	0.0	100.0	0.0	100.0	100.0	99.0	100.0	100.0	0.0	99.0	100.0	0.0	100.0	0.0	0.0	100.0	0.0	93.3	0.0	100.0	0.0	94.4	100.0	0.0	99.5	0.0	0.0	99.5	99.2
Exiting Leg Total	2						878					1					11					862					1754				
Heavy Vehicles	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	0	0	4	14
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	5.6	0.0	0.0	0.5	0.0	0.0	0.5	0.8
Exiting Leg Total	0						5					0					0					9					14				

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total				
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total
4:30 PM	0	0	0	1	0	1	1	126	2	1	0	130	0	0	1	0	0	1	0	3	0	0	0	3	0	0	105	0	0	105	240
4:45 PM	0	0	0	0	0	0	1	91	1	0	0	93	1	0	2	0	0	3	0	2	0	1	0	3	1	0	109	0	0	110	209
5:00 PM	1	0	0	0	0	1	0	112	2	0	0	114	1	0	0	0	0	1	0	2	0	0	0	2	1	0	127	0	0	128	246
5:15 PM	0	0	0	0	0	0	0	93	0	0	0	93	0	0	0	0	0	0	0	1	0	0	0	1	0	0	114	0	0	114	208
Total Volume	1	0	0	1	0	2	2	422	5	1	0	430	2	0	3	0	0	5	0	8	0	1	0	9	2	0	455	0	0	457	903
% Approach Total	50.0	0.0	0.0	50.0	0.0		0.5	98.1	1.2	0.2	0.0		40.0	0.0	60.0	0.0	0.0		0.0	88.9	0.0	11.1	0.0		0.4	0.0	99.6	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.500	0.500	0.837	0.625	0.250	0.000	0.827	0.500	0.000	0.375	0.000	0.000	0.417	0.000	0.667	0.000	0.250	0.000	0.750	0.500	0.000	0.896	0.000	0.000	0.893	0.918
Cars	1	0	0	1	0	2	2	419	5	1	0	427	2	0	3	0	0	5	0	7	0	1	0	8	2	0	452	0	0	454	896
Cars %	100.0	0.0	0.0	100.0	0.0	100.0	100.0	99.3	100.0	100.0	0.0	99.3	100.0	0.0	100.0	0.0	0.0	100.0	0.0	87.5	0.0	100.0	0.0	88.9	100.0	0.0	99.3	0.0	0.0	99.3	99.2
Heavy Vehicles	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	0	0	3	7
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	11.1	0.0	0.0	0.7	0.0	0.0	0.7	0.8
Cars Enter Leg	1	0	0	1	0	2	2	419	5	1	0	427	2	0	3	0	0	5	0	7	0	1	0	8	2	0	452	0	0	454	896
Heavy Enter Leg	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	0	0	3	7
Total Entering Leg	1	0	0	1	0	2	2	422	5	1	0	430	2	0	3	0	0	5	0	8	0	1	0	9	2	0	455	0	0	457	903
Cars Exiting Leg	2						462					1					7					424					896				
Heavy Exiting Leg	0						4					0					0					3					7				
Total Exiting Leg	2						466					1					7					427					903				

PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	119	1	0	0	120	1	0	2	0	0	3	0	5	0	1	0	6	1	0	81	0	0	82	
4:15 PM	0	0	0	1	0	1	0	94	1	0	0	95	2	0	0	0	0	2	0	2	0	1	0	3	1	0	98	0	0	99	
4:30 PM	0	0	0	1	0	1	1	124	2	1	0	128	0	0	1	0	0	1	0	2	0	0	0	2	0	0	104	0	0	104	
4:45 PM	0	0	0	0	0	0	1	90	1	0	0	92	1	0	2	0	0	3	0	2	0	1	0	3	1	0	109	0	0	110	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>427</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>435</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>392</b>	<b>0</b>	<b>0</b>	<b>395</b>	
5:00 PM	1	0	0	0	0	1	0	112	2	0	0	114	1	0	0	0	0	1	0	2	0	0	0	2	1	0	127	0	0	128	
5:15 PM	0	0	0	0	0	0	0	93	0	0	0	93	0	0	0	0	0	0	0	1	0	0	0	1	0	0	112	0	0	112	
5:30 PM	2	0	0	2	0	4	0	109	0	0	0	109	1	0	0	0	0	1	0	0	0	0	0	0	0	0	104	0	0	104	
5:45 PM	0	0	0	0	0	0	0	110	0	0	0	110	1	0	0	0	0	1	0	0	0	0	0	0	0	0	118	0	0	118	
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>424</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>426</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>461</b>	<b>0</b>	<b>0</b>	<b>462</b>	
Grand Total	3	0	0	4	0	7	2	851	7	1	0	861	7	0	5	0	0	12	0	14	0	3	0	17	4	0	853	0	0	857	
Approach %	42.9	0.0	0.0	57.1	0.0		0.2	98.8	0.8	0.1	0.0		58.3	0.0	41.7	0.0	0.0		0.0	82.4	0.0	17.6	0.0		0.5	0.0	99.5	0.0	0.0		
Total %	0.2	0.0	0.0	0.2	0.0	0.4	0.1	48.5	0.4	0.1	0.0	49.1	0.4	0.0	0.3	0.0	0.0	0.7	0.0	0.8	0.0	0.2	0.0	1.0	0.2	0.0	48.6	0.0	0.0	48.9	
Exiting Leg Total	2						878						1						11						862	1754					

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
5:00 PM	1	0	0	0	0	1	0	112	2	0	0	114	1	0	0	0	0	1	0	2	0	0	0	2	1	0	127	0	0	128	
5:15 PM	0	0	0	0	0	0	0	93	0	0	0	93	0	0	0	0	0	0	0	1	0	0	0	1	0	0	112	0	0	112	
5:30 PM	2	0	0	2	0	4	0	109	0	0	0	109	1	0	0	0	0	1	0	0	0	0	0	0	0	0	104	0	0	104	
5:45 PM	0	0	0	0	0	0	0	110	0	0	0	110	1	0	0	0	0	1	0	0	0	0	0	0	0	0	118	0	0	118	
<b>Total Volume</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>424</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>426</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>461</b>	<b>0</b>	<b>0</b>	<b>462</b>	
% Approach Total	60.0	0.0	0.0	40.0	0.0		0.0	99.5	0.5	0.0	0.0		100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.2	0.0	99.8	0.0	0.0		
PHF	0.375	0.000	0.000	0.250	0.000	0.313	0.000	0.946	0.250	0.000	0.000	0.934	0.750	0.000	0.000	0.000	0.000	0.750	0.000	0.375	0.000	0.000	0.000	0.375	0.250	0.000	0.907	0.000	0.000	0.902	
Entering Leg	3	0	0	2	0	5	0	424	2	0	0	426	3	0	0	0	0	3	0	3	0	0	0	3	1	0	461	0	0	462	
Exiting Leg	0						469						3						3						427	899					
<b>Total</b>	<b>5</b>						<b>895</b>						<b>3</b>						<b>6</b>						<b>889</b>	<b>1798</b>					

PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total										
	from North						from East					from Southeast					from South					from West															
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total						
4:00 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	4
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	11
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3
Grand Total	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	14
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	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	64.3	0.0	0.0	0.0	64.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	7.1	0.0	0.0	28.6	0.0	0.0	28.6							
Exiting Leg Total	0						5					0					0					9	14														
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0						0					0					0					0	0.0														
Single-Unit Trucks	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	14
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Exiting Leg Total	0						5					0					0					9	14														
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0						0					0					0					0	0.0														

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total										
	from North						from East					from Southeast					from South					from West															
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total						
4:00 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	4
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total Volume</b>	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	11
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500	0.000	0.000	0.500	0.688						
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	11
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	11
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0						8					0					1					2	11														
Buses	0						0					0					0					0	0														
Single-Unit Trucks	0						3					0					0					3	11														
Articulated Trucks	0						0					0					0					0	0														
Total Exiting Leg	0						3					0					0					3	11														

PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Cars**

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total	
	from North						from East						from Southeast						from South						from West							
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	106	1	0	0	107	1	0	2	0	0	3	0	5	0	1	0	6	1	0	76	0	0	77	193	
4:15 PM	0	0	0	1	0	1	0	87	1	0	0	88	2	0	0	0	0	2	0	2	0	1	0	3	1	0	89	0	0	90	184	
4:30 PM	0	0	0	1	0	1	1	109	2	1	0	113	0	0	1	0	0	1	0	2	0	0	0	2	0	0	93	0	0	93	210	
4:45 PM	0	0	0	0	0	0	1	86	1	0	0	88	1	0	2	0	0	3	0	2	0	1	0	3	1	0	102	0	0	103	197	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>388</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>396</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>360</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>784</b>	
5:00 PM	1	0	0	0	0	1	0	106	2	0	0	108	1	0	0	0	0	1	0	2	0	0	0	2	1	0	122	0	0	123	235	
5:15 PM	0	0	0	0	0	0	0	88	0	0	0	88	0	0	0	0	0	0	0	1	0	0	0	1	0	0	109	0	0	109	198	
5:30 PM	2	0	0	2	0	4	0	102	0	0	0	102	1	0	0	0	0	1	0	0	0	0	0	0	0	0	100	0	0	100	207	
5:45 PM	0	0	0	0	0	0	0	103	0	0	0	103	1	0	0	0	0	1	0	0	0	0	0	0	0	0	116	0	0	116	220	
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>399</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>401</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>447</b>	<b>0</b>	<b>0</b>	<b>448</b>	<b>860</b>
Grand Total	3	0	0	4	0	7	2	787	7	1	0	797	7	0	5	0	0	12	0	14	0	3	0	17	4	0	807	0	0	811	1644	
Approach %	42.9	0.0	0.0	57.1	0.0		0.3	98.7	0.9	0.1	0.0		58.3	0.0	41.7	0.0	0.0		0.0	82.4	0.0	17.6	0.0		0.5	0.0	99.5	0.0	0.0			
Total %	0.2	0.0	0.0	0.2	0.0	0.4	0.1	47.9	0.4	0.1	0.0	48.5	0.4	0.0	0.3	0.0	0.0	0.7	0.0	0.9	0.0	0.2	0.0	1.0	0.2	0.0	49.1	0.0	0.0	49.3		
Exiting Leg Total	2						832						1						11						798						1644	

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
5:00 PM	1	0	0	0	0	1	0	106	2	0	0	108	1	0	0	0	0	1	0	2	0	0	0	2	1	0	122	0	0	123	235
5:15 PM	0	0	0	0	0	0	0	88	0	0	0	88	0	0	0	0	0	0	0	1	0	0	0	1	0	0	109	0	0	109	198
5:30 PM	2	0	0	2	0	4	0	102	0	0	0	102	1	0	0	0	0	1	0	0	0	0	0	0	0	0	100	0	0	100	207
5:45 PM	0	0	0	0	0	0	0	103	0	0	0	103	1	0	0	0	0	1	0	0	0	0	0	0	0	0	116	0	0	116	220
Total Volume	3	0	0	2	0	5	0	399	2	0	0	401	3	0	0	0	0	3	0	3	0	0	0	3	1	0	447	0	0	448	860
% Approach Total	60.0	0.0	0.0	40.0	0.0		0.0	99.5	0.5	0.0	0.0		100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.2	0.0	99.8	0.0	0.0		
PHF	0.375	0.000	0.000	0.250	0.000	0.313	0.000	0.941	0.250	0.000	0.000	0.928	0.750	0.000	0.000	0.000	0.000	0.750	0.000	0.375	0.000	0.000	0.000	0.375	0.250	0.000	0.916	0.000	0.000	0.911	0.915
Entering Leg	3	0	0	2	0	5	0	399	2	0	0	401	3	0	0	0	0	3	0	3	0	0	0	3	1	0	447	0	0	448	860
Exiting Leg	0						455						3						3						402						860
<b>Total</b>	<b>5</b>						<b>856</b>						<b>3</b>						<b>6</b>						<b>850</b>						<b>1720</b>

PDI File #: **186389 C**  
 Location: **N: Townhouse Driveway S: Citizens Bank Driveway**  
 Location: **E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West**  
 City, State: **Newton, MA**  
 Client: **VHB/ M. Duranleau**  
 Site Code: **83060.18**  
 Count Date: **Thursday, August 09, 2018**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total				
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	17
4:15 PM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	16
4:30 PM	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	25
4:45 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	10
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>68</b>
5:00 PM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	11
5:15 PM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	8
5:30 PM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	10
5:45 PM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	7
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>36</b>
Grand Total	0	0	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	0	0	46	104
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.8	0.0	0.0	0.0	55.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.2	0.0	0.0	44.2	
Exiting Leg Total	0						46					0					0					58	104								

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Townhouse Driveway						Beacon Street					Former Sushi Driveway West					Citizens Bank Driveway					Beacon Street					Total				
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right		Thru	Left	U-Turn	Total
4:00 PM	0	0	0	0	0	0	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	17
4:15 PM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	16
4:30 PM	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	25
4:45 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	10
Total Volume	0	0	0	0	0	0	0	36	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	32	68
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.643	0.000	0.000	0.000	0.643	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.727	0.000	0.000	0.727	0.680
Entering Leg	0						36					0					0					32	68								
Exiting Leg	0						32					0					0					36	68								
Total	0						68					0					0					68	136								





PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

Single-Unit Trucks

	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	4
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	11
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
Grand Total	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	0	0	4	14
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.3	0.0	0.0	0.0	64.3	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	7.1	0.0	0.0	28.6	0.0	0.0	28.6		
Exiting Leg Total	0						5						0						0						9						14

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Townhouse Driveway						Beacon Street						Former Sushi Driveway West						Citizens Bank Driveway						Beacon Street						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	4
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	11
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500	0.000	0.000	0.500	0.688	
Entering Leg	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	11
Exiting Leg	0						3						0						0						8						11
Total	0						11						0						1						10						22





PDI File #: 186389 C  
 Location: N: Townhouse Driveway S: Citizens Bank Driveway  
 Location: E: Beacon Street W: Beacon Street SE: Former Sushi Driveway West  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Pedestrians**

	Townhouse Driveway									Beacon Street									Former Sushi Driveway West									Citizens Bank Driveway									Beacon Street									Total
	from North									from East									from Southeast									from South									from West									
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	3						
4:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3				
4:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3					
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	4				
Total	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	3	1	4	0	0	0	0	0	0	1	1	11	11						
5:00 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	4						
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	9	0	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	14						
5:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	7						
5:45 PM	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	8						
Total	0	0	0	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0	0	7	10	17	0	0	0	0	3	5	8	0	0	0	0	0	0	0	0	0	0	33						
Grand Total	0	0	0	0	0	4	6	10	0	0	0	0	0	0	0	0	0	0	0	10	11	21	0	0	0	0	6	6	12	0	0	0	0	0	0	1	1	1	44							
Approach %	0	0	0	0	0	40	60		0	0	0	0	0	0	0		0	0	0	0	48	52		0	0	0	50	50		0	0	0	0	0	0	100										
Total %	0	0	0	0	0	9.1	14	23	0	0	0	0	0	0	0		0	0	0	0	23	25	48	0	0	0	0	14	14	27	0	0	0	0	0	0	2.3	2.3								
Exiting Leg Total	10									0									21									12									1	44								

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Townhouse Driveway									Beacon Street									Former Sushi Driveway West									Citizens Bank Driveway									Beacon Street									Total
	from North									from East									from Southeast									from South									from West									
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total						
5:00 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	4							
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	9	0	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	14							
5:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	7							
5:45 PM	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	8							
Total Volume	0	0	0	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0	0	7	10	17	0	0	0	0	3	5	8	0	0	0	0	0	0	0	0	0	33							
% Approach Total	0.0	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	41.2	58.8		0.0	0.0	0.0	0.0	37.5	62.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0										
PHF	0.0000	0.0000	0.0000	0.0000	0.0000	0.3333	0.3333	0.6667	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.875	0.357	0.472	0.0000	0.0000	0.0000	0.0000	0.750	0.313	0.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.589									
Entering Leg	0	0	0	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0	0	7	10	17	0	0	0	0	3	5	8	0	0	0	0	0	0	0	0	33								
Exiting Leg	8									0									17									8									0	33								
Total	16									0									34									16									0	66								

PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



Cars and Heavy Vehicles (Combined)

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total									
	from North							from East					from South					from Southwest					from West					from Northwest														
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn
7:00 AM	0	0	0	0	3	0	3	0	0	38	0	5	0	43	1	0	0	3	0	0	4	0	0	0	0	0	0	0	2	73	0	0	0	75	0	0	0	0	0	0	0	125
7:15 AM	0	0	0	0	0	0	0	0	0	51	0	1	0	52	5	0	0	0	0	0	5	0	0	0	0	0	0	3	88	0	0	0	91	0	0	0	0	0	0	0	148	
7:30 AM	0	0	0	0	0	0	0	0	0	64	0	2	0	66	6	0	0	0	0	0	6	0	0	0	0	0	0	1	73	0	0	0	74	0	0	0	0	0	0	0	146	
7:45 AM	0	0	0	0	0	0	0	0	0	73	0	4	0	77	9	0	0	2	0	0	11	0	0	0	0	0	0	1	84	0	0	0	85	1	0	0	0	0	0	1	174	
Total	0	0	0	0	3	0	3	0	0	226	0	12	0	238	21	0	0	5	0	0	26	0	0	0	0	0	0	7	318	0	0	0	325	1	0	0	0	0	0	1	593	
8:00 AM	0	0	0	0	0	0	0	0	0	92	0	1	0	93	6	0	0	0	0	0	6	0	0	0	0	0	0	0	114	0	0	1	115	0	0	0	0	0	0	0	214	
8:15 AM	0	0	0	0	0	0	0	0	0	93	0	4	0	97	9	0	0	3	0	0	12	3	0	0	0	0	3	107	0	0	0	110	0	0	0	0	0	0	0	222		
8:30 AM	0	0	0	0	1	0	1	1	0	109	0	5	0	115	11	0	0	3	0	0	14	5	0	0	0	0	5	107	0	0	0	107	1	0	0	1	0	0	2	244		
8:45 AM	0	0	0	0	0	0	0	0	0	129	0	8	0	137	6	0	0	8	0	0	14	2	0	0	0	0	2	122	0	0	0	124	0	0	0	0	0	0	0	277		
Total	0	0	0	0	1	0	1	1	0	423	0	18	0	442	32	0	0	14	0	0	46	10	0	0	0	0	10	10	445	0	0	1	456	1	0	0	1	0	0	2	957	
Grand Total	0	0	0	0	4	0	4	1	0	649	0	30	0	680	53	0	0	19	0	0	72	10	0	0	0	0	10	17	763	0	0	1	781	2	0	0	1	0	0	3	1550	
Approach %	0.0	0.0	0.0	0.0	100.0	0.0		0.1	0.0	95.4	0.0	4.4	0.0		73.6	0.0	0.0	26.4	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	97.7	0.0	0.0	0.1		66.7	0.0	0.0	33.3	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.1	0.0	41.9	0.0	1.9	0.0	43.9	4.6	0.0	0.0	1.2	0.0	0.0	4.6	0.6	0.0	0.0	0.0	0.6	0.0	1.1	49.2	0.0	0.0	0.1	50.4	0.1	0.0	0.0	0.1	0.0	0.0	0.2		
Exiting Leg Total							1						821							57					0							671								0	1550	
Cars	0	0	0	0	2	0	2	1	0	639	0	28	0	668	51	0	0	16	0	0	67	9	0	0	0	9	16	739	0	0	1	756	2	0	0	1	0	0	3	1505		
% Cars	0.0	0.0	0.0	0.0	50.0	0.0	50.0	100.0	0.0	98.5	0.0	93.3	0.0	98.2	96.2	0.0	0.0	84.2	0.0	0.0	93.1	90.0	0.0	0.0	0.0	90.0	0.0	94.1	96.9	0.0	0.0	100.0	96.8	100.0	0.0	0.0	100.0	0.0	0.0	100.0	97.1	
Exiting Leg Total							1						793							53					0							658								0	1505	
Heavy Vehicles	0	0	0	0	2	0	2	0	0	10	0	2	0	12	2	0	0	3	0	0	5	1	0	0	0	0	1	1	24	0	0	0	0	0	0	0	0	0	0	0	45	
% Heavy Vehicles	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	1.5	0.0	6.7	0.0	1.8	3.8	0.0	0.0	15.8	0.0	0.0	6.9	10.0	0.0	0.0	0.0	0.0	0.0	5.9	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	
Exiting Leg Total							0						28							4					0							13								0	49	

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total									
	from North							from East					from South					from Southwest					from West					from Northwest														
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn
8:00 AM	0	0	0	0	0	0	0	0	0	92	0	1	0	93	6	0	0	0	0	0	6	0	0	0	0	0	0	0	114	0	0	1	115	0	0	0	0	0	0	0	214	
8:15 AM	0	0	0	0	0	0	0	0	0	93	0	4	0	97	9	0	0	3	0	0	12	3	0	0	0	0	3	107	0	0	0	110	0	0	0	0	0	0	0	222		
8:30 AM	0	0	0	0	1	0	1	1	0	109	0	5	0	115	11	0	0	3	0	0	14	5	0	0	0	0	5	107	0	0	0	107	1	0	0	1	0	0	2	244		
8:45 AM	0	0	0	0	0	0	0	0	0	129	0	8	0	137	6	0	0	8	0	0	14	2	0	0	0	0	2	122	0	0	0	124	0	0	0	0	0	0	0	277		
Total Volume	0	0	0	0	1	0	1	1	0	423	0	18	0	442	32	0	0	14	0	0	46	10	0	0	0	0	10	10	445	0	0	1	456	1	0	0	1	0	0	2	957	
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0		0.2	0.0	95.7	0.0	4.1	0.0		69.6	0.0	0.0	30.4	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	97.6	0.0	0.0	0.2		50.0	0.0	0.0	50.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.820	0.000	0.563	0.000	0.807	0.727	0.000	0.000	0.438	0.000	0.000	0.821	0.500	0.000	0.000	0.000	0.500	0.000	0.500	0.912	0.000	0.000	0.250	0.919	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.864	
Cars	0	0	0	0	1	0	1	1	0	419	0	17	0	437	32	0	0	11	0	0	43	9	0	0	0	9	9	431	0	0	1	441	1	0	0	1	0	0	2	933		
% Cars	0.0	0.0	0.0	0.0	100.0	0.0	100.0	100.0	0.0	99.1	0.0	94.4	0.0	98.9	100.0	0.0	0.0	78.6	0.0	0.0	93.5	90.0	0.0	0.0	0.0	90.0	0.0	90.0	96.9	0.0	0.0	100.0	96.7	100.0	0.0	0.0	100.0	0.0	0.0	100.0	97.5	
Heavy Vehicles	0	0	0	0	0	0	0	0	0	4	0	1	0	5	0	0	0	3	0	0	3	1	0	0	0	0	1	14	0	0	0	15	0	0	0	0	0	0	0	24		
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	5.6	0.0	1.1	0.0	0.0	0.0	21.4	0.0	0.0	6.5	10.0	0.0	0.0	0.0	0.0	10.0	0.0	10.0	3.1	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	2.5	
Cars Enter Leg	0	0	0	0	1	0	1	1	0	419	0	17	0	437	32	0	0	11	0	0	43	9	0	0	0	9	9	431	0	0	1	441	1	0	0	1	0	0	2	933		
Heavy Enter Leg	0	0	0	0	0	0	0	0	0	4	0	1	0	5	0	0	0	3	0	0	3	1	0	0	0	0	1	14	0	0	0	15	0	0	0	0	0	0	0	24		
Total Entering Leg	0	0	0	0	1	0	1	1	0	423	0	18	0	442	32	0	0	14	0	0	46	10	0	0	0	0	10	10	445	0	0	1	456	1	0	0	1	0	0	2	957	
Cars Exiting Leg							1						465							35					0						432								0	933		
Heavy Exiting Leg							0						14						3						0						7								0	24		
Total Exiting Leg							1						479						38						0						439								0	957		

PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total																	
	from North							from East					from South					from Southwest					from West					from Northwest																						
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total							
7:00 AM	0	0	0	0	1	0	1	0	0	38	0	5	0	43	1	0	0	3	0	0	4	0	0	0	0	0	0	0	0	2	71	0	0	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121
7:15 AM	0	0	0	0	0	0	0	0	0	49	0	1	0	50	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	3	85	0	0	0	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143
7:30 AM	0	0	0	0	0	0	0	0	0	64	0	1	0	65	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	1	71	0	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142
7:45 AM	0	0	0	0	0	0	0	0	0	69	0	4	0	73	8	0	0	2	0	0	10	0	0	0	0	0	0	0	0	1	81	0	0	0	82	1	0	0	0	0	0	1	1	0	0	0	0	0	1	166
Total	0	0	0	0	1	0	1	0	0	220	0	11	0	231	19	0	0	5	0	0	24	0	0	0	0	0	0	0	0	7	308	0	0	0	315	1	0	0	0	0	0	1	1	0	0	0	0	0	1	572
8:00 AM	0	0	0	0	0	0	0	0	0	91	0	1	0	92	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	113	0	0	1	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
8:15 AM	0	0	0	0	0	0	0	0	0	93	0	4	0	97	9	0	0	2	0	0	11	3	0	0	0	0	0	3	0	3	101	0	0	0	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
8:30 AM	0	0	0	0	1	0	1	1	0	109	0	5	0	115	11	0	0	3	0	0	14	5	0	0	0	0	0	5	0	5	99	0	0	0	104	1	0	0	1	0	0	2	1	0	0	1	0	0	2	241
8:45 AM	0	0	0	0	0	0	0	0	0	126	0	7	0	133	6	0	0	6	0	0	12	1	0	0	0	0	0	1	0	1	118	0	0	0	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265
Total	0	0	0	0	1	0	1	1	0	419	0	17	0	437	32	0	0	11	0	0	43	9	0	0	0	0	0	9	0	9	431	0	0	1	441	1	0	0	1	0	0	2	1	0	0	1	0	0	2	933
Grand Total	0	0	0	0	2	0	2	1	0	639	0	28	0	668	51	0	0	16	0	0	67	9	0	0	0	0	0	9	0	16	739	0	0	1	756	2	0	0	1	0	0	3	2	0	0	1	0	0	3	1505
Approach %	0.0	0.0	0.0	0.0	100.0	0.0	0.1	0.0	95.7	0.0	4.2	0.0	76.1	0.0	0.0	23.9	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	97.8	0.0	0.0	0.1	66.7	0.0	0.0	33.3	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	0.1	0.0	0.1	0.1	0.0	42.5	0.0	1.9	0.0	44.4	3.4	0.0	0.0	1.1	0.0	0.0	4.5	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.1	49.1	0.0	0.0	0.1	50.2	0.1	0.0	0.0	0.1	0.0	0.0	0.2								
Exiting Leg Total	1							793					53					0					658					0					1505																	

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total																	
	from North							from East					from South					from Southwest					from West					from Northwest																						
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total							
8:00 AM	0	0	0	0	0	0	0	0	0	91	0	1	0	92	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	113	0	0	1	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
8:15 AM	0	0	0	0	0	0	0	0	0	93	0	4	0	97	9	0	0	2	0	0	11	3	0	0	0	0	0	3	0	3	101	0	0	0	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
8:30 AM	0	0	0	0	1	0	1	1	0	109	0	5	0	115	11	0	0	3	0	0	14	5	0	0	0	0	0	5	0	5	99	0	0	0	104	1	0	0	1	0	0	2	1	0	0	1	0	0	2	241
8:45 AM	0	0	0	0	0	0	0	0	0	126	0	7	0	133	6	0	0	6	0	0	12	1	0	0	0	0	0	1	0	1	118	0	0	0	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265
Total Volume	0	0	0	0	1	0	1	1	0	419	0	17	0	437	32	0	0	11	0	0	43	9	0	0	0	0	0	9	0	9	431	0	0	1	441	1	0	0	1	0	0	2	1	0	0	1	0	0	2	933
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0	0.2	0.0	95.9	0.0	3.9	0.0	74.4	0.0	0.0	25.6	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	97.7	0.0	0.0	0.2	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.831	0.000	0.607	0.000	0.821	0.727	0.000	0.000	0.458	0.000	0.000	0.768	0.450	0.000	0.000	0.000	0.000	0.000	0.450	0.000	0.450	0.913	0.000	0.000	0.250	0.926	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.880							
Entering Leg	0	0	0	0	1	0	1	1	0	419	0	17	0	437	32	0	0	11	0	0	43	9	0	0	0	0	0	9	0	9	431	0	0	1	441	1	0	0	1	0	0	2	1	0	0	1	0	0	2	933
Exiting Leg	1							465					35					0					432					0					933																	
Total	2							902					78					9					873					2					1866																	





PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



Cars

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total																	
	from North							from East					from South					from Southwest					from West					from Northwest																						
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total							
7:00 AM	0	0	0	0	0	0	0	0	0	36	0	3	0	39	1	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	59	0	0	0	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101
7:15 AM	0	0	0	0	0	0	0	0	0	42	0	0	42	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	69	0	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	
7:30 AM	0	0	0	0	0	0	0	0	0	60	0	0	60	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	61	0	0	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	
7:45 AM	0	0	0	0	0	0	0	0	0	67	0	3	70	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	67	0	0	0	68	1	0	0	0	0	0	1	0	0	0	0	0	0	0	142	
Total	0	0	0	0	0	0	0	0	0	205	0	6	211	10	0	0	2	0	0	12	0	0	0	0	0	0	0	0	2	256	0	0	0	258	1	0	0	0	0	0	1	0	0	0	0	0	0	0	482	
8:00 AM	0	0	0	0	0	0	0	0	0	88	0	1	89	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	104	0	0	1	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198	
8:15 AM	0	0	0	0	0	0	0	0	0	87	0	4	91	6	0	0	2	0	0	8	0	2	96	0	0	0	98	0	0	96	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200	
8:30 AM	0	0	0	0	0	0	0	0	0	104	0	5	109	10	0	0	3	0	0	13	5	0	0	0	0	0	5	0	5	94	0	0	0	99	1	0	0	1	0	0	2	0	0	0	0	0	0	0	228	
8:45 AM	0	0	0	0	0	0	0	0	0	121	0	5	126	5	0	0	6	0	0	11	1	0	0	0	0	0	1	0	1	113	0	0	0	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252	
Total	0	0	0	0	0	0	0	0	0	400	0	15	415	25	0	0	11	0	0	36	9	0	0	0	0	0	9	0	8	407	0	0	1	416	1	0	0	1	0	0	2	0	0	0	0	0	0	0	878	
Grand Total	0	0	0	0	0	0	0	0	0	605	0	21	626	35	0	0	13	0	0	48	9	0	0	0	0	0	9	0	10	663	0	0	1	674	2	0	0	1	0	0	3	0	0	0	0	0	0	0	1360	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.6	0.0	3.4	0.0	72.9	0.0	0.0	27.1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	98.4	0.0	0.0	0.1	66.7	0.0	0.0	33.3	0.0	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	44.5	0.0	1.5	46.0	2.6	0.0	0.0	1.0	0.0	3.5	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.7	48.8	0.0	0.0	0.1	49.6	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
Exiting Leg Total	0							699					40					0					621					0					1360																	

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total																
	from North							from East					from South					from Southwest					from West					from Northwest																					
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total						
8:00 AM	0	0	0	0	0	0	0	0	0	88	0	1	89	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	104	0	0	1	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198
8:15 AM	0	0	0	0	0	0	0	0	0	87	0	4	91	6	0	0	2	0	0	8	0	2	96	0	0	0	98	0	0	96	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200
8:30 AM	0	0	0	0	0	0	0	0	0	104	0	5	109	10	0	0	3	0	0	13	5	0	0	0	0	0	5	0	5	94	0	0	0	99	1	0	0	1	0	0	2	0	0	0	0	0	0	0	228
8:45 AM	0	0	0	0	0	0	0	0	0	121	0	5	126	5	0	0	6	0	0	11	1	0	0	0	0	0	1	0	1	113	0	0	0	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252
Total Volume	0	0	0	0	0	0	0	0	0	400	0	15	415	25	0	0	11	0	0	36	9	0	0	0	0	0	9	0	8	407	0	0	1	416	1	0	0	1	0	0	2	0	0	0	0	0	0	0	878
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.4	0.0	3.6	0.0	69.4	0.0	0.0	30.6	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	97.8	0.0	0.0	0.2	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.871		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.826	0.000	0.750	0.000	0.823	0.625	0.000	0.000	0.458	0.000	0.000	0.692	0.450	0.000	0.000	0.000	0.000	0.450	0.000	0.400	0.900	0.000	0.000	0.250	0.912	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.871							
Entering Leg	0	0	0	0	0	0	0	0	0	400	0	15	415	25	0	0	11	0	0	36	9	0	0	0	0	0	9	0	8	407	0	0	1	416	1	0	0	1	0	0	2	0	0	0	0	0	0	0	878
Exiting Leg	0							433					32					0					413					0					878																
Total	0							848					68					9					829					2					1756																

PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



Light Goods Vehicle

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total																			
	from North							from East						from South						from Southwest						from West						from Northwest																									
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total														
7:00 AM	0	0	0	0	1	0	1	0	0	2	0	2	0	4	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	12	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
7:15 AM	0	0	0	0	0	0	0	0	0	7	0	1	0	8	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2	16	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
7:30 AM	0	0	0	0	0	0	0	0	0	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
7:45 AM	0	0	0	0	0	0	0	0	0	2	0	1	0	3	5	0	0	2	0	0	7	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Total	0	0	0	0	1	0	1	0	0	15	0	5	0	20	8	0	0	3	0	0	11	0	0	0	0	0	0	0	0	5	52	0	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
8:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
8:15 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	5	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
8:30 AM	0	0	0	0	1	0	1	1	0	5	0	0	0	6	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
8:45 AM	0	0	0	0	0	0	0	0	0	4	0	2	0	6	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Total	0	0	0	0	1	0	1	1	0	18	0	2	0	21	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	1	24	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54
Grand Total	0	0	0	0	2	0	2	1	0	33	0	7	0	41	15	0	0	3	0	0	18	0	0	0	0	0	0	0	0	6	76	0	0	0	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143
Approach %	0.0	0.0	0.0	0.0	100.0	0.0	2.4	0.0	80.5	0.0	17.1	0.0	83.3	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	92.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	1.4	0.0	1.4	0.7	0.0	23.1	0.0	4.9	0.0	28.7	10.5	0.0	0.0	2.1	0.0	0.0	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	53.1	0.0	0.0	0.0	57.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Exiting Leg Total	1							93						13						0						36						0						143																			

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total																			
	from North							from East						from South						from Southwest						from West						from Northwest																									
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total														
7:00 AM	0	0	0	0	1	0	1	0	0	2	0	2	0	4	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	12	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
7:15 AM	0	0	0	0	0	0	0	0	0	7	0	1	0	8	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2	16	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
7:30 AM	0	0	0	0	0	0	0	0	0	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
7:45 AM	0	0	0	0	0	0	0	0	0	2	0	1	0	3	5	0	0	2	0	0	7	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Total Volume	0	0	0	0	1	0	1	0	0	15	0	5	0	20	8	0	0	3	0	0	11	0	0	0	0	0	0	0	0	5	52	0	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	75.0	0.0	25.0	0.0	72.7	0.0	0.0	27.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	91.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.767				
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.536	0.000	0.625	0.000	0.625	0.400	0.000	0.000	0.375	0.000	0.000	0.393	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.813	0.000	0.000	0.000	0.792	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000								
Entering Leg	0							20						11						0						57						0						89																			
Exiting Leg	0							61						10						0						18						0						89																			
Total	1							81						21						0						75						0						178																			





PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



**Articulated Trucks**

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total													
	from North							from East						from South						from Southwest						from West						from Northwest																			
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total								
7:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Grand Total	0	0	0	0	1	0	1	0	0	2	0	0	0	2	1	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
Approach %	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		50.0	0.0	0.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	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	9.1	0.0	9.1	0.0	0.0	18.2	0.0	0.0	0.0	18.2	9.1	0.0	0.0	9.1	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.5	0.0	0.0	0.0	54.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Exiting Leg Total	0							8						0						0						3						0						11													

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total																				
	from North							from East						from South						from Southwest						from West						from Northwest																										
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total															
7:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1							
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2							
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1							
Total Volume	0	0	0	0	1	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6								
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0										
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750																	
Entering Leg	0	0	0	0	1	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	6															
Exiting Leg	0							5						0						0						1						0						6																				
Total	1							6						1						0						4						0						12																				









PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total																			
	from North							from East						from South						from Southwest						from West						from Northwest																									
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total														
4:00 PM	0	0	0	0	0	0	0	0	116	0	7	0	123	2	0	0	3	0	0	5	0	1	0	0	0	0	1	0	4	78	0	0	0	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	211								
4:15 PM	0	0	0	0	1	0	1	0	0	92	0	2	0	94	7	0	0	3	0	0	10	0	2	0	0	0	0	2	0	3	87	0	1	0	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198							
4:30 PM	0	0	0	0	0	0	0	0	1	119	0	4	0	124	2	0	0	2	0	0	4	0	3	0	0	0	0	3	0	1	100	0	1	1	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	234							
4:45 PM	0	0	0	0	0	0	0	0	0	90	0	5	0	95	6	0	0	0	0	0	6	0	4	0	0	0	0	4	0	2	101	0	0	0	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208							
Total	0	0	0	0	1	0	1	0	1	417	0	18	0	436	17	0	0	8	0	0	25	0	10	0	0	0	0	10	0	10	366	0	2	1	379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	851							
5:00 PM	0	0	0	0	0	0	0	0	1	107	0	5	0	113	6	0	0	5	0	0	11	0	0	0	0	0	0	0	0	2	119	0	0	0	121	1	0	0	0	1	0	0	2	247													
5:15 PM	0	0	0	0	0	0	0	0	0	91	0	3	0	94	9	0	0	3	0	0	12	0	0	0	0	0	0	0	0	0	98	0	0	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204							
5:30 PM	0	0	0	0	0	0	0	0	1	102	0	6	0	109	5	0	0	3	0	0	8	0	0	0	0	0	0	0	0	2	94	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213							
5:45 PM	0	1	0	0	0	0	1	0	0	96	0	10	0	106	9	0	0	1	0	0	10	0	0	0	0	0	0	0	0	1	106	1	0	0	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225							
Total	0	1	0	0	0	0	1	0	2	396	0	24	0	422	29	0	0	12	0	0	41	0	0	0	0	0	0	0	0	5	417	1	0	0	423	1	0	0	0	1	0	0	2	889													
Grand Total	0	1	0	0	1	0	2	0	3	813	0	42	0	858	46	0	0	20	0	0	66	0	10	0	0	0	0	10	0	15	783	1	2	1	802	1	0	0	0	1	0	0	2	1740													
Approach %	0.0	50.0	0.0	0.0	50.0	0.0		0.0	0.3	94.8	0.0	4.9	0.0	69.7	0.0	0.0	30.3	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	97.6	0.1	0.2	0.1	50.0	0.0	0.0	50.0	0.0	0.0																				
Total %	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.2	46.7	0.0	2.4	0.0	49.3	2.6	0.0	0.0	1.1	0.0	0.0	3.8	0.0	0.6	0.0	0.0	0.0	0.0	0.6	0.0	0.9	45.0	0.1	0.1	0.1	46.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1															
Exiting Leg Total	1							841						57						0						836						5						1740																			

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total																			
	from North							from East						from South						from Southwest						from West						from Northwest																									
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total														
4:30 PM	0	0	0	0	0	0	0	0	1	119	0	4	0	124	2	0	0	2	0	0	4	0	3	0	0	0	0	3	0	1	100	0	1	1	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	234							
4:45 PM	0	0	0	0	0	0	0	0	0	90	0	5	0	95	6	0	0	0	0	0	6	0	4	0	0	0	0	4	0	2	101	0	0	0	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208							
5:00 PM	0	0	0	0	0	0	0	0	1	107	0	5	0	113	6	0	0	5	0	0	11	0	0	0	0	0	0	0	0	2	119	0	0	0	121	1	0	0	0	1	0	0	2	247													
5:15 PM	0	0	0	0	0	0	0	0	0	91	0	3	0	94	9	0	0	3	0	0	12	0	0	0	0	0	0	0	0	0	98	0	0	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204							
Total Volume	0	0	0	0	0	0	0	0	2	407	0	17	0	426	23	0	0	10	0	0	33	0	7	0	0	0	0	7	0	5	418	0	1	1	425	1	0	0	0	1	0	0	2	893													
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.5	95.5	0.0	4.0	0.0	69.7	0.0	0.0	30.3	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	98.4	0.0	0.2	0.2	50.0	0.0	0.0	50.0	0.0	0.0																				
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.855	0.000	0.850	0.000	0.859	0.639	0.000	0.000	0.500	0.000	0.000	0.688	0.000	0.438	0.000	0.000	0.000	0.000	0.438	0.000	0.625	0.878	0.000	0.250	0.250	0.878	0.250	0.000	0.000	0.250	0.000	0.000	0.250															
Entering Leg	0	0	0	0	0	0	0	0	2	407	0	17	0	426	23	0	0	10	0	0	33	0	7	0	0	0	0	7	0	5	418	0	1	1	425	1	0	0	0	1	0	0	2	893													
Exiting Leg	0							449						22						0						419						3						893																			
Total	0							875						55						7						844						5						1786																			



PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



Cars

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total												
	from North							from East						from South						from Southwest						from West						from Northwest																		
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total							
4:00 PM	0	0	0	0	0	0	0	0	0	103	0	6	0	109	2	0	0	1	0	0	3	0	1	0	0	0	0	1	0	4	74	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191
4:15 PM	0	0	0	0	0	0	0	0	0	84	0	2	0	86	5	0	0	3	0	0	8	0	1	0	0	0	0	1	0	3	81	0	1	0	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180
4:30 PM	0	0	0	0	0	0	0	0	1	105	0	4	0	110	2	0	0	2	0	0	4	0	2	0	0	0	0	2	0	1	90	0	1	1	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209
4:45 PM	0	0	0	0	0	0	0	0	0	86	0	5	0	91	4	0	0	0	0	0	4	0	4	0	0	0	0	4	0	1	96	0	0	0	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
Total	0	0	0	0	0	0	0	0	1	378	0	17	0	396	13	0	0	6	0	0	19	0	8	0	0	0	0	8	0	9	341	0	2	1	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	776
5:00 PM	0	0	0	0	0	0	0	0	1	101	0	5	0	107	6	0	0	4	0	0	10	0	0	0	0	0	0	0	0	2	115	0	0	0	117	1	0	0	1	0	0	2	0	0	0	0	0	0	0	236
5:15 PM	0	0	0	0	0	0	0	0	0	86	0	3	0	89	8	0	0	3	0	0	11	0	0	0	0	0	0	0	0	0	96	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
5:30 PM	0	0	0	0	0	0	0	0	1	96	0	6	0	103	4	0	0	3	0	0	7	0	0	0	0	0	0	0	0	2	92	0	0	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
5:45 PM	0	1	0	0	0	0	1	0	0	89	0	9	0	98	9	0	0	1	0	0	10	0	0	0	0	0	0	0	0	1	105	0	0	0	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
Total	0	1	0	0	0	0	1	0	2	372	0	23	0	397	27	0	0	11	0	0	38	0	0	0	0	0	0	0	0	5	408	0	0	0	413	1	0	0	1	0	0	2	0	0	0	0	0	0	0	851
Grand Total	0	1	0	0	0	0	1	0	3	750	0	40	0	793	40	0	0	17	0	0	57	0	8	0	0	0	0	8	0	14	749	0	2	1	766	1	0	0	1	0	0	2	0	0	0	0	0	0	0	1627
Approach %	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.4	94.6	0.0	5.0	0.0	70.2	0.0	0.0	29.8	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	1.8	97.8	0.0	0.3	0.1	50.0	0.0	0.0	50.0	0.0	0.0													
Total %	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	46.1	0.0	2.5	0.0	48.7	2.5	0.0	1.0	0.0	0.0	3.5	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.9	46.0	0.0	0.1	47.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1				
Exiting Leg Total	0							798						54						0						770						5						1627												

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	East Drive							Beacon Street						Beaconwood Road						Plaza Driveway						Beacon Street						West Drive						Total												
	from North							from East						from South						from Southwest						from West						from Northwest																		
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right		Bear Right	Bear Left	Hard Left	U-Turn	Total							
5:00 PM	0	0	0	0	0	0	0	0	1	101	0	5	0	107	6	0	0	4	0	0	10	0	0	0	0	0	0	0	0	2	115	0	0	0	117	1	0	0	1	0	0	2	0	0	0	0	0	0	0	236
5:15 PM	0	0	0	0	0	0	0	0	0	86	0	3	0	89	8	0	0	3	0	0	11	0	0	0	0	0	0	0	0	0	96	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
5:30 PM	0	0	0	0	0	0	0	0	1	96	0	6	0	103	4	0	0	3	0	0	7	0	0	0	0	0	0	0	0	2	92	0	0	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
5:45 PM	0	1	0	0	0	0	1	0	0	89	0	9	0	98	9	0	0	1	0	0	10	0	0	0	0	0	0	0	0	1	105	0	0	0	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
Total Volume	0	1	0	0	0	0	1	0	2	372	0	23	0	397	27	0	0	11	0	0	38	0	0	0	0	0	0	0	0	5	408	0	0	0	413	1	0	0	1	0	0	2	0	0	0	0	0	0	0	851
% Approach Total	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.5	93.7	0.0	5.8	0.0	71.1	0.0	0.0	28.9	0.0	0.0	1	0.0	0.0	0.0	0.0	0.0	0.0	1.2	98.8	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0													
PHF	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.921	0.000	0.639	0.000	0.928	0.750	0.000	0.000	0.688	0.000	0.000	0.864	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.882	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.901				
Entering Leg	0	1	0	0	0	0	1	0	2	372	0	23	0	397	27	0	0	11	0	0	38	0	0	0	0	0	0	0	0	5	408	0	0	0	413	1	0	0	1	0	0	2	0	0	0	0	0	0	0	851
Exiting Leg	0							436						28						0						385						2						851												
Total	1							833						66						0						798						4						1702												

PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



Light Goods Vehicle

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total												
	from North							from East					from South					from Southwest					from West					from Northwest																	
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	12	0	1	0	13	0	0	0	2	0	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	19
4:15 PM	0	0	0	0	1	0	1	0	0	8	0	0	0	8	2	0	0	0	0	0	2	0	1	0	0	0	1	0	0	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	18
4:30 PM	0	0	0	0	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	10	0	0	0	0	0	10	0	0	0	0	0	0	0	0	24
4:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	2	0	0	0	0	0	2	0	0	0	0	0	0	0	1	5	0	0	0	0	6	0	0	0	0	0	0	0	0	11	
Total	0	0	0	0	1	0	1	0	0	36	0	1	0	37	4	0	0	2	0	0	6	0	2	0	0	2	0	1	25	0	0	0	0	0	26	0	0	0	0	0	0	0	0	72	
5:00 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	11	
5:15 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	5	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	8	
5:30 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	9	
5:45 PM	0	0	0	0	0	0	0	0	0	7	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	10		
Total	0	0	0	0	0	0	0	0	0	24	0	1	0	25	2	0	0	1	0	0	3	0	0	0	0	0	0	0	9	1	0	0	0	0	10	0	0	0	0	0	0	0	0	38	
Grand Total	0	0	0	0	1	0	1	0	0	60	0	2	0	62	6	0	0	3	0	0	9	0	2	0	0	2	0	1	34	1	0	0	0	36	0	0	0	0	0	0	0	0	110		
Approach %	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	96.8	0.0	3.2	0.0		66.7	0.0	0.0	33.3	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0	2.8	94.4	2.8	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	0.9	0.0	0.9	0.0	0.0	54.5	0.0	1.8	0.0	56.4	5.5	0.0	0.0	2.7	0.0	0.0	8.2	0.0	1.8	0.0	0.0	0.0	0.0	0.9	30.9	0.9	0.0	0.0	32.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Exiting Leg Total							1						43							3																							110		

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	East Drive							Beacon Street					Beaconwood Road					Plaza Driveway					Beacon Street					West Drive					Total												
	from North							from East					from South					from Southwest					from West					from Northwest																	
	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left		Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	12	0	1	0	13	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	19		
4:15 PM	0	0	0	0	1	0	1	0	0	8	0	0	0	8	2	0	0	0	0	0	2	0	1	0	0	0	1	0	0	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	18
4:30 PM	0	0	0	0	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	10	0	0	0	0	0	10	0	0	0	0	0	0	0	0	24
4:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	2	0	0	0	0	0	2	0	0	0	0	0	0	1	5	0	0	0	0	6	0	0	0	0	0	0	0	0	11		
Total Volume	0	0	0	0	1	0	1	0	0	36	0	1	0	37	4	0	0	2	0	0	6	0	2	0	0	2	0	1	25	0	0	0	0	0	26	0	0	0	0	0	0	0	0	72	
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	97.3	0.0	2.7	0.0		66.7	0.0	0.0	33.3	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	3.8	96.2	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.692	0.000	0.250	0.000	0.712	0.500	0.000	0.000	0.250	0.000	0.000	0.750	0.000	0.500	0.000	0.000	0.000	0.000	0.250	0.625	0.000	0.000	0.000	0.650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750			
Entering Leg	0	0	0	0	1	0	1	0	0	36	0	1	0	37	4	0	0	2	0	0	6	0	2	0	0	2	0	1	25	0	0	0	0	26	0	0	0	0	0	0	0	0	72		
Exiting Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72		
Total							1						69							8																							144		







PDI File #: 186389 D  
 Location: N: East Drive S: Beaconwood Road NW: West Drive  
 Location: E: Beacon Street W: Beacon Street SW: Plaza Driveway  
 City, State: Newton, MA  
 Client: VHB/ M. Duranleau  
 Site Code: 83060.18  
 Count Date: Thursday, August 09, 2018  
 Start Time: 4:00 PM  
 End Time: 6:00 PM  
 Class:



**Bicycles (on Roadway and Crosswalks)**

	East Drive										Beacon Street										Beaconwood Road										Plaza Driveway										Beacon Street										West Drive										Total																				
	from North										from East										from South										from Southwest										from West										from Northwest																														
	Hard Right	Right	Rear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Rear Right	Thru	Rear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Rear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Rear Right	Rear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SB	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Right	Rear Right	Rear Left	Hard Left	U-Turn	CW-NWB	CW-SWB	Total																											
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1									
4:30 PM	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5									
4:45 PM	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6																		
Total	0	0	0	0	0	0	1	2	3	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17																		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2																		
5:30 PM	0	0	0	0	0	0	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6																	
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2																		
Total	0	0	0	0	0	0	2	2	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10																			
Grand Total	0	0	0	0	0	1	4	5	0	0	13	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	27																	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	20.0	80.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	75.0										
Total %	0.0	0.0	0.0	0.0	0.0	0.0	3.7	14.8	18.5	0.0	0.0	48.1	0.0	0.0	0.0	0.0	48.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	11.1	14.8																										
Exiting Leg Total	5									5									0									0									13									4									27																										

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

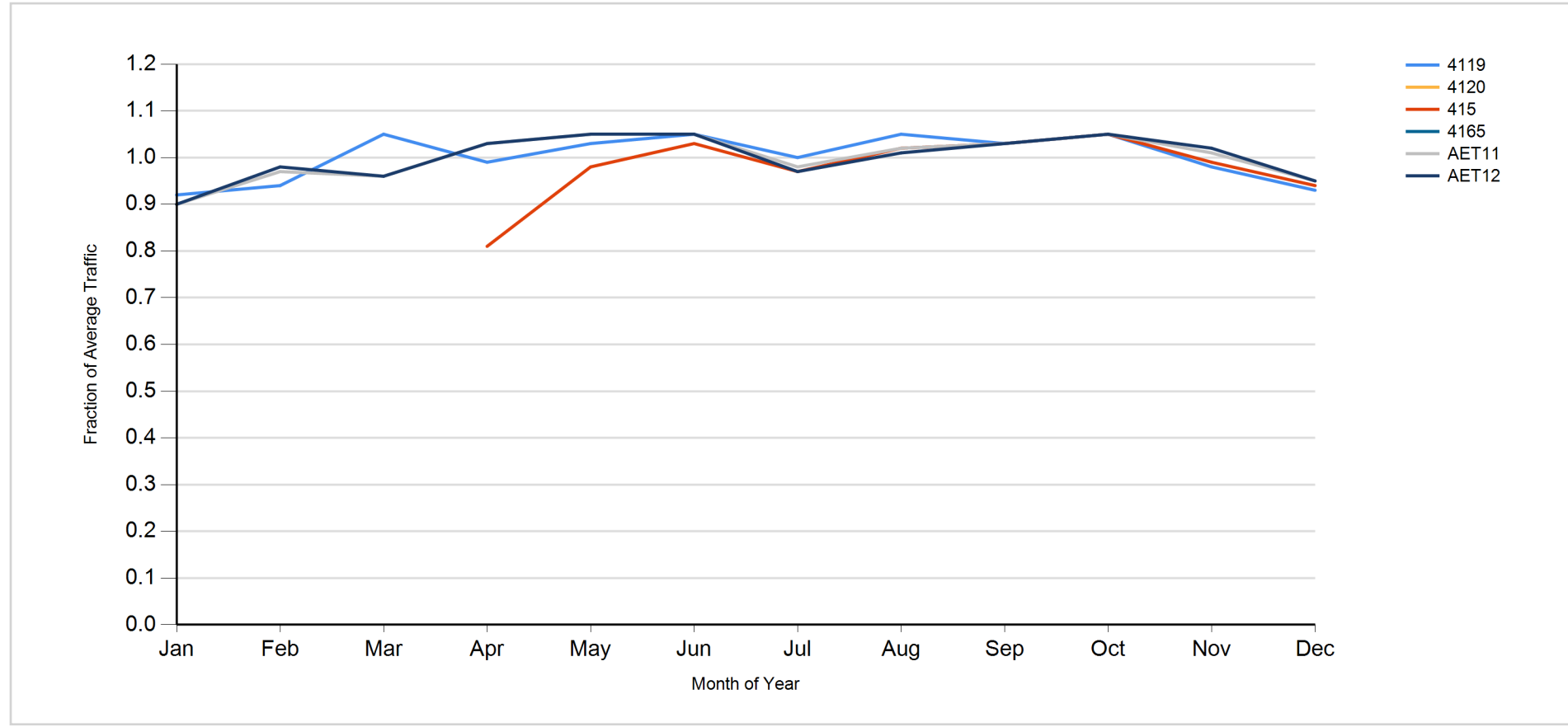
	East Drive										Beacon Street										Beaconwood Road										Plaza Driveway										Beacon Street										West Drive										Total																			
	from North										from East										from South										from Southwest										from West										from Northwest																													
	Hard Right	Right	Rear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Rear Right	Thru	Rear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Rear Left	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Rear Right	Rear Left	Left	Hard Left	U-Turn	CW-NWB	CW-SB	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Right	Rear Right	Rear Left	Hard Left	U-Turn	CW-NWB	CW-SWB	Total																										
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5								
4:30 PM	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5								
4:45 PM	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6								
Total Volume	0	0	0	0	0	0	1	2	3	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	4	17						
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	33.3	66.7	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	66.7																		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.500	0.750	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.500	0.750	0.708																								
Entering Leg	0									0									0									0									0									0									17																									
Exiting Leg	0									0									0									0									0									0									0									17																
Total	6									11									0									0									11									6									34																									







Traffic Pattern by Month for 1/1/2018 - 12/31/2018  
Criteria: Functional Class = 1



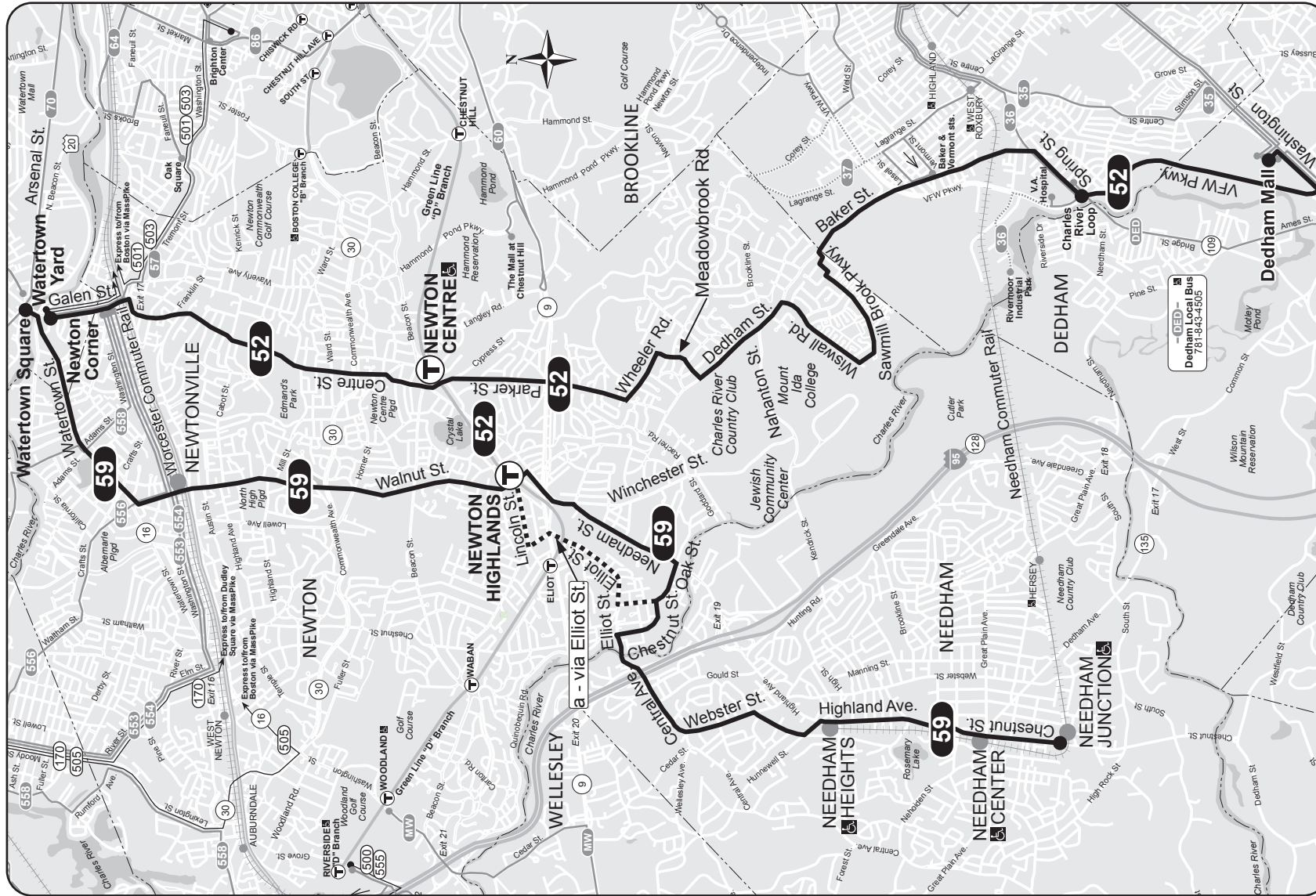
Massachusetts Highway Department

Traffic Pattern by Month for 1/1/2018 - 12/31/2018  
Criteria: Functional Class = 1

Factor Group	Station	Weight	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
U1-Boston	4119	1	0.923	0.944	1.046	0.992	1.031	1.045	1.000	1.049	1.030	1.049	0.982	0.930
U1-Boston	4120	0					0.999				1.003			
U1-Boston	415	0				0.807	0.980	1.027	0.973	1.018	1.027	1.055	0.993	0.943
U1-Boston	4165	0	1.000											
U1-Boston	AET11	1	0.902	0.971	0.961	1.035	1.052	1.053	0.979	1.015	1.033	1.049	1.006	0.946
U1-Boston	AET12	1	0.904	0.977	0.965	1.033	1.047	1.048	0.970	1.010	1.033	1.051	1.015	0.950
	<b>Average of Weighted Factors</b>		<b>0.910</b>	<b>0.964</b>	<b>0.991</b>	<b>1.020</b>	<b>1.043</b>	<b>1.049</b>	<b>0.983</b>	<b>1.025</b>	<b>1.032</b>	<b>1.050</b>	<b>1.001</b>	<b>0.942</b>



**Route 52 Dedham Mall - Watertown Yard**  
**Route 59 Needham Junction - Watertown Square**



Schedule Change

# 52•59

**Effective December 20, 2020**

**52 Dedham Mall - Watertown Yard**

**59 Needham Junction-Watertown Square**

**Serving**

- Newton Centre
- Oak Hill
- Newton Corner
- Jewish Community Center
- BC Law School
- Needham Center
- Needham Heights
- Newton Highlands
- Newtonville
- Green Line
- Needham Commuter Rail
- Worcester Commuter Rail



**T** Massachusetts Bay Transportation Authority **massDOT**  
 Massachusetts Department of Transportation

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

52 Weekday							
Inbound				Outbound			
Leave Dedham Mall	Lv/Arrive Charles River	Arrive Newton Center	Arrive Watertown Yard	Leave Watertown Yard	Arrive Newton Center	Arrive Charles River	Arrive Dedham Mall
.....	6:08A	6:25A	6:35A	6:38A	6:47A	7:05A	.....
.....	6:42	6:59	7:10	7:33	7:42	8:00	.....
.....	7:12	7:31	7:42	8:40	8:48	9:06	9:14A
.....	8:05	8:24	8:35				
				<b>s 3:00P</b>	<b>3:09P</b>	<b>3:29P</b>	<b>3:38P</b>
.....	<b>2:36P</b>	<b>2:55P</b>	<b>3:06P</b>	<b>4:48</b>	<b>4:57</b>	<b>5:17</b>	<b>5:26</b>
<b>4:00P</b>	<b>4:02</b>	<b>4:20</b>	<b>4:32</b>	<b>6:35</b>	<b>6:44</b>	<b>7:04</b>	.....
<b>5:50</b>	<b>5:52</b>	<b>6:09</b>	<b>6:21</b>				

59 Weekday					
Inbound			Outbound		
Leave Needham Junction	Arrive Newton Highlands	Arrive Watertown Square	Leave Watertown Square	Arrive Newton Highlands	Arrive Needham Junction
6:20A	6:38A	6:55A	6:05A	6:18A	6:37A
6:50	7:09	7:30	6:35	6:48	7:07
a7:20	7:41	8:02	7:05	7:25	7:44
7:55	8:17	8:39	7:35	7:55	8:15
a 8:25	8:51	9:10	8:10	8:30	8:50
9:00	9:19	9:36	8:45	9:04	9:24
9:35	9:54	10:11	9:25	9:44	10:04
10:10	10:29	10:46	10:05	10:22	10:42
10:55	11:14	11:31	10:55	11:12	11:33
11:45	<b>12:04P</b>	<b>12:21P</b>	11:45	<b>12:02P</b>	<b>12:23P</b>

<b>12:35P</b>	<b>12:54</b>	<b>1:11</b>	<b>12:35P</b>	<b>12:52</b>	<b>1:13</b>
<b>1:25</b>	<b>1:44</b>	<b>2:01</b>	<b>1:25</b>	<b>1:42</b>	<b>2:03</b>
<b>2:15</b>	<b>2:34</b>	<b>2:51</b>	<b>2:10</b>	<b>2:27</b>	<b>2:52</b>
<b>3:10</b>	<b>3:33</b>	<b>3:56</b>	<b>3:00</b>	<b>3:20</b>	<b>3:45</b>
<b>4:00</b>	<b>4:22</b>	<b>4:44</b>	<b>3:50</b>	<b>4:10</b>	<b>4:35</b>
<b>4:50</b>	<b>5:13</b>	<b>5:33</b>	<b>a 4:30</b>	<b>4:50</b>	<b>5:14</b>
<b>5:25</b>	<b>5:48</b>	<b>6:08</b>	<b>5:05</b>	<b>5:28</b>	<b>5:53</b>
<b>6:05</b>	<b>6:28</b>	<b>6:46</b>	<b>a 5:45</b>	<b>6:08</b>	<b>6:32</b>
<b>6:40</b>	<b>6:58</b>	<b>7:16</b>	<b>6:25</b>	<b>6:42</b>	<b>7:05</b>
<b>7:15</b>	<b>7:31</b>	<b>7:46</b>	<b>7:00</b>	<b>7:16</b>	<b>7:39</b>
<b>7:50</b>	<b>8:07</b>	<b>8:22</b>			

a - Via Elliot St.

59 Saturday					
Inbound			Outbound		
Leave Needham Junction	Arrive Newton Highlands	Arrive Watertown Square	Leave Watertown Square	Arrive Newton Highlands	Arrive Needham Junction
7:05A	7:23A	7:36A	6:20A	6:35A	6:49A
8:35	8:55	9:10	7:50	8:05	8:22
10:05	10:28	10:45	9:20	9:35	9:56
11:36	<b>12:01P</b>	<b>12:18P</b>	10:50	11:05	11:30
<b>1:10P</b>	<b>1:35P</b>	<b>1:50P</b>	<b>12:22P</b>	<b>12:37P</b>	<b>1:02P</b>
<b>2:40</b>	<b>3:02</b>	<b>3:17</b>	<b>1:55</b>	<b>2:10</b>	<b>2:31</b>
<b>4:10</b>	<b>4:31</b>	<b>4:46</b>	<b>3:25</b>	<b>3:40</b>	<b>3:59</b>
<b>5:40</b>	<b>6:01</b>	<b>6:15</b>	<b>4:55</b>	<b>5:10</b>	<b>5:29</b>
<b>7:05</b>	<b>7:25</b>	<b>7:39</b>	<b>6:25</b>	<b>6:40</b>	<b>6:57</b>

59 Sunday					
Inbound			Outbound		
Leave Needham Junction	Arrive Newton Highlands	Arrive Watertown Square	Leave Watertown Square	Arrive Newton Highlands	Arrive Needham Junction
7:50A	8:07A	8:20A	7:05A	7:17A	7:33A
9:20	9:39	9:53	8:35	8:47	9:05
10:50	11:09	11:23	10:05	10:18	10:38
			11:35	11:48	12:08
<b>12:20P</b>	<b>12:40P</b>	<b>12:56P</b>			
<b>1:50</b>	<b>2:08</b>	<b>2:24</b>	<b>1:05P</b>	<b>1:18P</b>	<b>1:38P</b>
<b>3:20</b>	<b>3:39</b>	<b>3:56</b>	<b>2:35</b>	<b>2:48</b>	<b>3:08</b>
<b>4:50</b>	<b>5:09</b>	<b>5:25</b>	<b>4:05</b>	<b>4:18</b>	<b>4:38</b>
<b>6:20</b>	<b>6:39</b>	<b>6:55</b>	<b>5:35</b>	<b>5:49</b>	<b>6:09</b>





s - Does NOT run during school vacation

**No Route 52 service on Saturday or Sunday**

**Route 52  
Dedham Mall -  
Watertown Yard**

**Route 59  
Needham Junction-  
Watertown Square**

 All buses are accessible to persons with disabilities

Fare	   			
	Local Bus	Bus + Bus	Subway	Bus + Subway
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$1.70	\$1.70	\$2.40	\$4.10*
Cash-on-Board	\$1.70	\$3.40	\$2.40	\$4.10
Student/Youth**	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP***	\$0.85	\$0.85	\$1.10	\$1.10

**FREE FARES:** Children 11 and under ride free when accompanied by a paying customer; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.  
 \* Transfers Subway to Silver Line SL4 or SL5 pay \$2.40  
 \*\* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards available to students through participating middle and high schools. Youth CharlieCards available through community partners across Greater Boston.  
 \*\*\* Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

**Winter 2021 Holidays**  
 12/25/20 & 1/1/21 Sun; 1/18/21 & 2/15/21: Sat

T Fares				
<b>PER TRIP</b>	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$1.70	\$1.70	\$2.40	\$4.10
Cash-on-Board	\$1.70	\$3.40	\$2.40	\$4.10
Student/Youth**	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP***	\$0.85	\$0.85	\$1.10	\$1.10
<b>UNLIMITED TRIP PASSES</b>				
1-Day	\$12.75	\$12.75	\$12.75	\$12.75
7-Day	\$22.50	\$22.50	\$22.50	\$22.50
Monthly	\$55.00	\$55.00	\$90.00	\$90.00

**FREE FARES:** Children 11 and under ride free when accompanied by a paying customer; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

- \* Transfers Subway to Silver Line SL4 or SL5 pay \$2.40
- \*\* Requires Student CharlieCard or Youth CharlieCard.

Student CharlieCards available to students through participating middle and high schools. Youth CharlieCards available through community partners across Greater Boston.

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

**TRANSFERS**

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

**SCHEDULES**

Schedules are available at the subway stations that a route serves. All schedules available at: South Station, Park Street and Airport.

For real-time subway and bus tracking, download the Transit app on any smartphone.



**Schedule Change**

# Rapid Transit

**Effective December 20, 2020**



**T** Massachusetts Bay Transportation Authority *massDOT*  
Massachusetts Department of Transportation

**Information 617-222-3200 • 1-800-392-6100**  
**(TTY) 617-222-5146 • www.mbt.com**



Rapid Transit Line	Weekday				Saturday			Sunday		
	First Trip	Peak	Off Peak	Last Trip	First Trip	Arriving Every	Last Trip	First Trip	Arriving Every	Last Trip
<b>Red Line</b> Alewife Braintree	5:24 AM 5:08 AM	9 mins	12-16 mins	12:23 AM 12:17 AM	5:24 AM 5:09 AM	12-16 mins	12:20 AM 12:17 AM	6:08AM 5:56AM	12-16 mins	12:20 AM 12:17 AM
Alewife Ashmont	5:16 AM 5:16 AM	9 mins	12-16 mins	w 12:30 AM w 12:30 AM	5:16 AM 5:16 AM	12-16 mins	w 12:27 AM w 12:30 AM	6:00AM 6:00AM	12-16 mins	w 12:27 AM w 12:30 AM
“M” Ashmont Mattapan	5:17 AM 5:05 AM	5 mins	8-12 Day 26 Late	w 1:05 AM 12:53 AM	5:15 AM 5:05 AM	8-12 Day 26 Early/Late	w 1:05 AM 12:53 AM	6:03AM 5:51AM	8-12 Day 26 Early/Late	w 1:05 AM 12:55 AM
<b>Blue Line</b> Wonderland Orient Heights Bowdoin	5:13 AM 5:14 AM 5:30 AM	5 mins	9-13 mins	12:28 AM 12:33 AM w 1:00 AM	5:25 AM 5:13 AM 5:29 AM	9-13 mins	12:28 AM 12:33 AM w 1:00 AM	5:58AM 6:03AM 6:21AM	9-13 mins	12:28 AM 12:33 AM w 1:00 AM
<b>Orange Line</b> Oak Grove Forest Hills	5:16 AM 5:16 AM	7 mins	9-11 mins	w 12:30 AM w 12:28 AM	5:16 AM 5:16 AM	9-11 mins	w 12:30 AM w 12:28 AM	6:00AM 6:00AM	9-11 mins	w 12:30 AM w 12:28 AM
<b>Green Line*</b> B Boston College Park Street	5:01 AM 5:45 AM	6 mins	7-10 mins	12:10 AM w 12:52 AM	4:45 AM <sup>2</sup> 5:41 AM	7-8 mins	12:09 AM w 12:52 AM	5:20AM <sup>2</sup> 6:15AM	9 mins	12:10 AM w 12:52 AM
C Cleveland Circle North Station	4:57 AM <sup>1</sup> 5:48 AM	6-8 mins	9-11 mins	12:07 AM w 12:46 AM	4:50 AM <sup>2</sup> 5:30 AM	9-10 mins	12:10 AM w 12:46 AM	5:30AM <sup>2</sup> 6:06AM	10 mins	12:10 AM w 12:46 AM
D Riverside Government Ctr.	4:56 AM 5:45 AM	6-7 mins	8-11 mins	12:02 AM w 12:49 AM	4:55 AM 5:41 AM	8-9 mins	12:02 AM w 12:49 AM	5:25AM 6:12AM	11-12 mins	12:05 AM w 12:49 AM
E Lechmere* Heath Street	5:00 AM <sup>4</sup> 5:44 AM	6-7 mins	8-10 mins	12:35 AM 12:47 AM <sup>3</sup>	5:00 AM 5:40 AM	10 mins	12:34 AM 12:47 AM <sup>3</sup>	5:36AM 6:16AM	12 mins	12:34 AM 12:47 AM <sup>3</sup>
<b>Silver Line</b> SL1 Logan Airport South Station	5:38 AM 5:37 AM	7-12 mins	10-12 mins	f 1:06 AM w 12:49 AM	5:48 AM 5:45 AM	10-12 mins	1:15 AM w 12:59 AM	5:50AM 6:12AM	10-12 mins	f 1:12 AM w 1:00 AM
SL2 Design Center South Station	6:18 AM 5:54 AM	6 mins	14-16 mins	12:37 AM 12:51 AM	6:03 AM 5:47 AM	14-16 mins	12:35 AM 12:45 AM	6:51AM 6:35AM	14-16 mins	12:51 AM 12:36 AM
SL3 Chelsea Station South Station	4:55 AM 4:20 AM	6-11 mins	8-13 mins	f 1:05 AM w 12:35 AM	5:30 AM 4:56 AM	8-13 mins	1:22 AM w 12:55 AM	6:26AM 5:53AM	8-13 mins	f 1:25 AM w 12:55 AM
SL4 Nubian Station South Station	5:20 AM 5:38 AM	6-11 mins	6-11 mins	12:20 AM 12:37 AM	5:23 AM 5:40 AM	13-20 mins	12:20 AM 12:40 AM	6:02AM 6:20AM	13-20 mins	12:20 AM 12:40 AM
SL5 Nubian Station Downtown Xing	5:15 AM 5:32 AM	11-14 mins	13-20 mins	12:51 AM w 1:07 AM	5:19 AM 5:34 AM	6-11 mins	12:43 AM w 1:00 AM	6:00AM 6:16AM	6-11 mins	12:25 AM w 12:47 AM

**Peak Service:**  
Weekdays 7 AM - 9 AM, 4 PM - 6:30 PM

**Green Line Notes:**

New and ongoing infrastructure projects may result in diversions on some branches at various times.

See **GL service changes at [mbta.com/GLwork](http://mbta.com/GLwork)**

View service alerts at [mbta.com/alerts](http://mbta.com/alerts)

\* E trains start/end at North Station for Green Line Extension work – shuttles provided between North Station and Lechmere.

More: [mbta.com/GLEwork](http://mbta.com/GLEwork)

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

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

3 - On weekdays the 12:27 AM trip (weekends the 12:32 AM trip) from Heath St is the last connecting train to other lines downtown. The 12:37AM and 12:47AM trips (weekends the 12:47AM trip) from Heath St. runs in service to Lechmere with no guaranteed connections.

4 - Early morning service from Lechmere to Riverside departs Lechmere at 5:00 AM.

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

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

**Winter 2021 Holidays**  
12/25/20 & 1/1/21 Sun; 1/18/21 & 2/15/21: Sat



1. Beacon St at Walnut St (1 of 2)

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Driver Contributing Circumstances (All Drivers)	First Harmful Event	Light Conditions	Manner of Collision	Non-Motorist Type (All Persons)	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Weather Conditions
3910030	NEWTON	Thursday, August 7, 2014	Property damage only (none injured)	7:06 PM	No injury	2	D1: (No improper driving) / D2: (No improper driving)	Collision with motor vehicle in traffic	Daylight	Angle		Dry	0	0	V1: Turning left / V2: Turning right	Clear
3928256	NEWTON	Friday, August 15, 2014	Property damage only (none injured)	7:12 PM	No injury	2	D1: (No improper driving) / D2: (Inattention)	Collision with motor vehicle in traffic	Daylight	Sideswipe, same direction		Dry	0	0	V1: Travelling straight ahead / V2: Changing lanes	Clear
3955563	NEWTON	Sunday, September 28, 2014	Property damage only (none injured)	5:20 PM	No injury	2	D1: (Unknown) / D2: (Unknown)	Collision with motor vehicle in traffic	Daylight	Angle		Dry	0	0	V1: Turning left / V2: Turning left	Clear
3978440	NEWTON	Thursday, November 20, 2014	Property damage only (none injured)	4:04 PM	No injury	3	D1: (No improper driving), (No improper driving) / D2: (No improper driving), (No improper driving) / D3: (Inattention), (Inattention)	Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead / V3: Travelling straight ahead	Clear/Clear
3984049	NEWTON	#####	Property damage only (none injured)	3:25 PM	No injury	2	D1: (Inattention) / D2: (Inattention)	Collision with motor vehicle in traffic	Daylight	Angle		Wet	0	0	V1: Turning left / V2: Travelling straight ahead	Rain
4021796	NEWTON	Monday, March 9, 2015	Non-fatal injury	5:24 PM	Non-fatal injury - Non-incapacitating	2	D1: (No improper driving) / D2: (No improper driving)	Collision with motor vehicle in traffic	Daylight	Angle		Dry	0	1	V1: Travelling straight ahead / V2: Travelling straight ahead	Clear
4027447	NEWTON	Wednesday, March 25, 2015	Property damage only (none injured)	2:09 PM	No injury	2	D1: (No improper driving) / D2: (Failed to yield right of way)	Collision with motor vehicle in traffic	Daylight	Angle		Dry	0	0	V1: Travelling straight ahead / V2: Entering traffic lane	Clear
4038599	NEWTON	Friday, April 10, 2015	Property damage only (none injured)	12:30 PM	No injury	2	D1: (No improper driving)	Collision with motor vehicle in traffic	Daylight	Sideswipe, same direction		Dry	0	0	V1: Slowing or stopped in traffic / V2: Overtaking/passing	Cloudy
4072424	NEWTON	Monday, July 6, 2015	Non-fatal injury	7:47 PM	Non-fatal injury - Non-incapacitating	2	D1: (No improper driving) / D2: (No improper driving)	Collision with motor vehicle in traffic	Daylight	Angle		Dry	0	1	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	Clear
4100712	NEWTON	#####	Property damage only (none injured)	8:42 AM	No injury	2	D1: (Other improper action) / D2: (No improper driving)	Collision with motor vehicle in traffic	Daylight	Sideswipe, same direction		Dry	0	0	V1: Turning left / V2: Slowing or stopped in traffic	Clear
4175562	NEWTON	Friday, April 1, 2016	Property damage only (none injured)	7:12 PM	No injury	2	D1: (Unknown), (Unknown) / D2: (No improper driving), (No improper driving)	Collision with motor vehicle in traffic	Dusk	Angle		Dry	0	0	V1: Turning left / V2: Travelling straight ahead	Cloudy/Cloudy
4181423	NEWTON	Friday, April 8, 2016	Property damage only (none injured)	8:16 AM	No injury	2		Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	Clear
4181432	NEWTON	Thursday, April 14, 2016	Property damage only (none injured)	6:34 PM	No injury	2		Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	Clear
4215198	NEWTON	Thursday, May 12, 2016	Non-fatal injury	6:08 AM	Non-fatal injury - Possible	1		Collision with pedalcycle (bicycle, tricycle, unicycle, pedal car)	Daylight	Angle	P3: Cyclist	Dry	0	1	V1: Travelling straight ahead	Clear/Clear
4224226	NEWTON	Tuesday, July 19, 2016	Non-fatal injury	2:40 PM	Non-fatal injury - Non-incapacitating	1		Collision with pedalcycle (bicycle, tricycle, unicycle, pedal car)	Daylight	Single vehicle crash	P2: Cyclist	Dry	0	1	V1: Turning right	Clear
4249702	NEWTON	Sunday, August 28, 2016	Property damage only (none injured)	5:58 PM	No injury	2		Collision with motor vehicle in traffic	Daylight	Angle		Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	Clear
4402409	NEWTON	Tuesday, June 6, 2017	Property damage only (none injured)	10:21 PM	No injury	2		Collision with motor vehicle in traffic	Dark - lighted roadway	Angle		Wet	0	0	V1: Travelling straight ahead / V2: Turning left	Rain
4408444	NEWTON	Monday, February 27, 2017	Property damage only (none injured)	1:24 PM	No injury	2		Collision with motor vehicle in traffic	Daylight	Sideswipe, same direction		Dry	0	0	V1: Travelling straight ahead / V2: Turning left	Clear
4408625	NEWTON	Friday, May 5, 2017	Property damage only (none injured)	6:25 PM	No injury	2		Collision with motor vehicle in traffic	Dusk	Angle		Wet	0	0	V1: Other / V2: Travelling straight ahead	Rain
4409293	NEWTON	Wednesday, March 15, 2017	Property damage only (none injured)	10:49 PM	No injury	3	D1: (No improper driving) / D2: (No improper driving)	Collision with motor vehicle in traffic	Dark - lighted roadway	Sideswipe, same direction		Dry	0	0	V1: Travelling straight ahead / V2: Turning left / V3: Travelling straight ahead	Clear
4436090	NEWTON	Sunday, September 17, 2017	Property damage only (none injured)	4:18 PM	No injury	2		Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	Clear
4436117	NEWTON	Monday, October 2, 2017	Property damage only (none injured)	12:04 PM	No injury	2		Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	Clear
4442934	NEWTON	Thursday, October 12, 2017	Non-fatal injury	11:57 AM	Non-fatal injury - Possible	1		Collision with pedalcycle (bicycle, tricycle, unicycle, pedal car)	Daylight	Angle	P2: Cyclist	Dry	0	1	V1: Turning right	Clear
4452597	NEWTON	Friday, October 27, 2017	Property damage only (none injured)	2:30 PM	No injury	1		Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Travelling straight ahead	Clear

1. Beacon St at Walnut St (2 of 2)

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Driver Contributing Circumstances (All Drivers)	First Harmful Event	Light Conditions	Manner of Collision	Non-Motorist Type (All Persons)	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Weather Conditions
4470704	NEWTON	Sunday, December 10, 2017	Property damage only (none injured)	1:33 PM	No injury	2	D1: (Followed too closely)	Collision with motor vehicle in traffic	Daylight	Rear-end		Wet	0	0	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	Clear
4504077	NEWTON	Thursday, February 8, 2018	Property damage only (none injured)	6:05 PM	No injury	2	D1: (Unknown)	Collision with motor vehicle in traffic	Dark - lighted roadway	Angle		Dry	0	0	V1: Travelling straight ahead / V2: Turning left	Clear
4524668	NEWTON	Tuesday, March 13, 2018	Property damage only (none injured)	11:48 AM	No injury	2	D1: (Failure to keep in proper lane or running off road)	Collision with motor vehicle in traffic	Daylight	Sideswipe, opposite direction		Snow	0	0	V2: Slowing or stopped in traffic / V1: Travelling straight ahead	Snow
4548104	NEWTON	Tuesday, May 15, 2018	Property damage only (none injured)	2:12 PM	No injury	2	D1: (No improper driving) / D2: (Failed to yield right of way)	Collision with motor vehicle in traffic	Daylight	Angle		Dry	0	0	V1: Travelling straight ahead / V2: Turning left	Clear/Clear
4579633	NEWTON	Saturday, July 21, 2018	Non-fatal injury	9:13 AM	Non-fatal injury - Incapacitating	1	D1: (Unknown)	Other non-collision	Daylight	Angle		Dry	0	1	V1: Leaving traffic lane	Clear
4589141	NEWTON	Wednesday, August 1, 2018	Property damage only (none injured)	8:32 PM	No injury	2	D1: (Failed to yield right of way) / D2: (No improper driving)	Collision with motor vehicle in traffic	Dark - lighted roadway	Angle		Dry	0	0	V1: Entering traffic lane / V2: Travelling straight ahead	Clear

2. Beacon St at Walgreens Driveway / Hair Studio Driveway

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Driver Contributing Circumstances (All Drivers)	First Harmful Event	Light Conditions	Manner of Collision	Non-Motorist Type (All Persons)	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Weather Conditions
4129829	NEWTON	Thursday, December 3, 2015	Property damage only (none injured)	3:48 PM	No injury	3	D1: (No improper driving) / D2: (No improper driving) / D3: (Followed too closely)	Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic / V3: Travelling straight ahead	Clear
4132219	NEWTON	Thursday, December 10, 2015	Property damage only (none injured)	6:59 PM	No injury	2	D1: (No improper driving) / D2: (No improper driving)	Collision with parked motor vehicle	Other	Sideswipe, same direction		Dry	0	0	V1: Parked / V2: Turning left	Clear/Clear
4307701	NEWTON	Thursday, December 22, 2016	Property damage only (none injured)	5:41 PM	No injury	3		Collision with motor vehicle in traffic	Dark - lighted roadway	Sideswipe, opposite direction		Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead / V3: Travelling straight ahead	Clear

6. Beacon St at Beaconwood St/ East 1129 Beacon St Dwy

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Driver Contributing Circumstances (All Drivers)	First Harmful Event	Light Conditions	Manner of Collision	Non-Motorist Type (All Persons)	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Weather Conditions
3949615	NEWTON	Wednesday, August 27, 2014	Non-fatal injury	5:04 PM	Non-fatal injury - Incapacitating	1	D1: (No improper driving)	Collision with pedestrian	Daylight	Single vehicle crash	P4: Pedestrian / P6: Pedestrian	Dry	0	1	V1: Travelling straight ahead	Clear
3965345	NEWTON	Wednesday, October 8, 2014	Non-fatal injury	6:25 PM	Non-fatal injury - Non-incapacitating	1	D1: (Failed to yield right of way),(Other improper action)	Collision with pedalcycle (bicycle, tricycle, unicycle, pedal car)	Dusk	Single vehicle crash	P2: Cyclist	Dry	0	1	V1: Turning left	Clear
4072448	NEWTON	Wednesday, July 22, 2015	Non-fatal injury	5:25 PM	Non-fatal injury - Possible	1	D1: (No improper driving),(No improper driving)	Collision with pedalcycle (bicycle, tricycle, unicycle, pedal car)	Daylight	Angle	P2: Cyclist	Dry	0	1	V1: Turning left	Clear/Clear
4215296	NEWTON	Thursday, June 9, 2016	Property damage only (none injured)	10:32 AM	No injury	2	D1: (Inattention),(Inattention) / D2: (No improper driving),(No improper driving)	Collision with motor vehicle in traffic	Daylight	Rear-end		Dry	0	0	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	Clear/Clear
4226064	NEWTON	Monday, July 18, 2016	Non-fatal injury	7:34 PM	Non-fatal injury - Non-incapacitating	2	D1: (Failure to keep in proper lane or running off road),(Operating defective equipment)	Not reported	Not reported	Not reported		Not reported	0	1	V1: Turning right / V2: Travelling straight ahead	Not Reported

## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton, MA COUNT DATE : August 2018

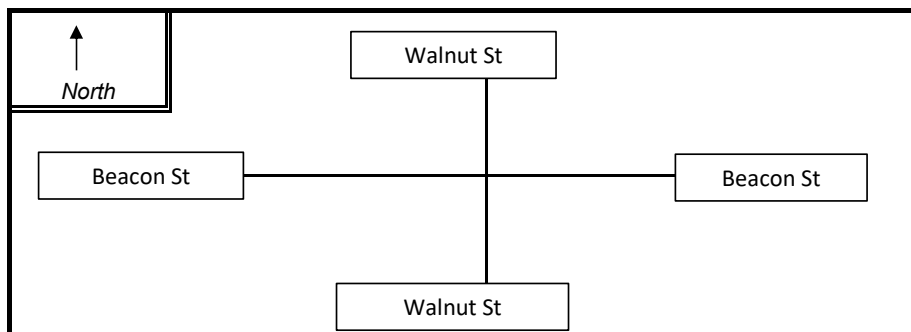
DISTRICT : 6 UNSIGNALIZED :  SIGNALIZED :  **X**  
0.71

~ INTERSECTION DATA ~

MAJOR STREET : Beacon St

MINOR STREET(S) : Walnut St

**INTERSECTION  
 DIAGRAM**  
 (Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	455	475	450	575		<b>1,955</b>

" K " FACTOR :  INTERSECTION ADT ( V ) =  
 TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES :  # OF YEARS :  AVERAGE # OF CRASHES PER YEAR ( A ) :

**CRASH RATE CALCULATION :**

**0.76**

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

Comments : MassDOT Accident Data (2014-2018)  
 Project Title & Date: 1114 Beacon St - 14319.00

## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton, MA COUNT DATE : August 2018

DISTRICT : 6 UNSIGNALIZED :  **X** SIGNALIZED :   
0.52 0.71

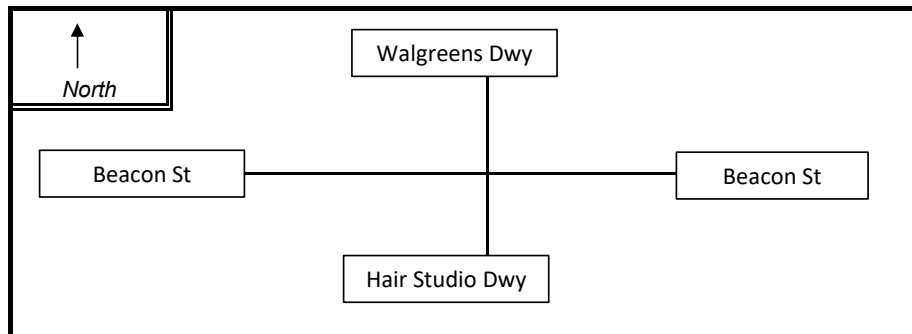
~ INTERSECTION DATA ~

MAJOR STREET : Beacon St

MINOR STREET(S) : Walgreens Dwy

Hair Studio Dwy

**INTERSECTION  
 DIAGRAM**  
 (Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	SB	NB		
PEAK HOURLY VOLUMES (AM/PM) :	462	427	30	3		<b>922</b>

" K " FACTOR :  INTERSECTION ADT ( **V** ) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES :  # OF YEARS :  AVERAGE # OF CRASHES PER YEAR ( **A** ) :

**CRASH RATE CALCULATION :**

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

Comments : MassDOT Accident Data (2014-2018)  
 Project Title & Date: 1114 Beacon St - 14319.00





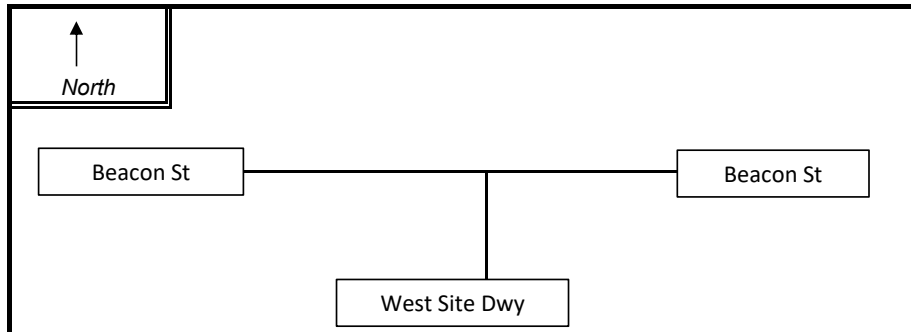
**INTERSECTION CRASH RATE WORKSHEET**

CITY/TOWN : Newton, MA COUNT DATE : August 2018  
 DISTRICT : 6 UNSIGNALIZED :  **X**  SIGNALIZED :   
0.52 0.71

~ INTERSECTION DATA ~

MAJOR STREET : Beacon St  
 MINOR STREET(S) : West Site Dwy

**INTERSECTION  
 DIAGRAM**  
 (Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	470	431	7			<b>908</b>

" K " FACTOR :  INTERSECTION ADT ( V ) =  
 TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES :  # OF YEARS :  AVERAGE # OF CRASHES  
 PER YEAR ( A ) :

**CRASH RATE CALCULATION :**

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

Comments : MassDOT Accident Data (2014-2018)  
 Project Title & Date: 1114 Beacon St - 14319.00

## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton, MA COUNT DATE : August 2018

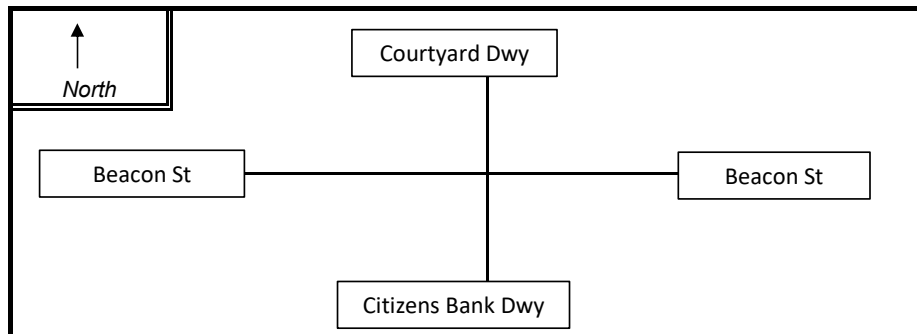
DISTRICT : 6 UNSIGNALIZED :  0.52 SIGNALIZED :  0.71

~ INTERSECTION DATA ~

MAJOR STREET : Beacon St

MINOR STREET(S) : Citizens Bank Dwy, Courtyard Dwy

**INTERSECTION  
DIAGRAM**  
(Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	462	437	11	2		<b>912</b>

" K " FACTOR :	0.090	INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :	<b>10,133</b>
----------------	-------	---	---------------

TOTAL # OF CRASHES :	0	# OF YEARS :	5	AVERAGE # OF CRASHES PER YEAR ( A ) :	<b>0.00</b>
----------------------	---	--------------	---	---------------------------------------	-------------

CRASH RATE CALCULATION : 0.00

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

Comments : MassDOT Accident Data (2014-2018)  
 Project Title & Date: 1114 Beacon St - 14319.00

**INTERSECTION CRASH RATE WORKSHEET**

CITY/TOWN : Newton, MA COUNT DATE : August 2018

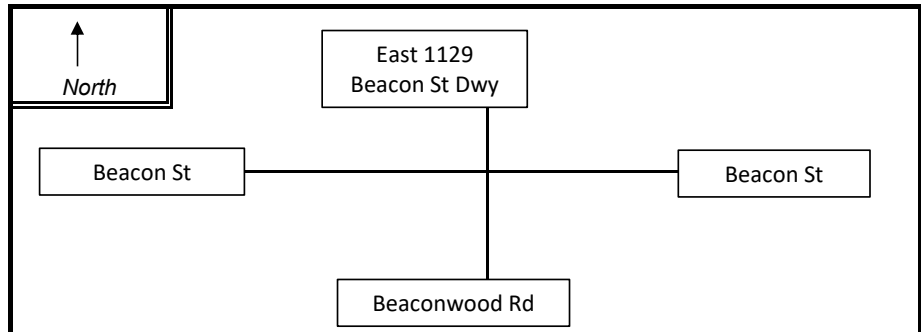
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :   
0.52 0.71

~ INTERSECTION DATA ~

MAJOR STREET : Beacon St

MINOR STREET(S) : Beaconwood Rd

**INTERSECTION  
 DIAGRAM**  
 (Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	425	432	35	0		892

" K " FACTOR : 0.090 INTERSECTION ADT ( **V** ) =  
 TOTAL DAILY APPROACH VOLUME : 9,911

TOTAL # OF CRASHES : 5 # OF YEARS : 5 AVERAGE # OF CRASHES  
 PER YEAR ( **A** ) : 1.00

**CRASH RATE CALCULATION :** 0.28 RATE =  $\frac{( A * 1,000,000 )}{( V * 365 )}$

Comments : MassDOT Accident Data (2014-2018)  
 Project Title & Date: 1114 Beacon St - 14319.00





**Stopping Sight Distance and Intersection Sight Distance Calculator** [v0.97]  
Based on 'A Policy on Geometric Design of Highways and Streets', AASHTO, 2004

<b>Section I</b>			<b>Section III</b>			
<b>Project Information</b>			<b>ISD and SSD Calculations</b> (rounded up to the next highest 5 feet) [sources: SSD - AASHTO, pp.110-117; ISD - AASHTO, pp. 650 - 664]			
Project Number:	14319.00	Analyst:	VHB			
City/Town, State:	Newton, MA	Client:				
Location:	1114 Beacon Street East Driveway					
<b>Street Names and Directions</b>		<b>Street Notes</b>				
Major Street name:	Beacon Street	EB/WB				
Minor Street name:	E 1114 Beacon Dwy	NB/SB				
Minor Street intersects from the:	south					
The minor street <i>predominantly</i> serves...	Passenger Cars					
Sight distance location intersection is...	Existing					
Total number of lanes on Major Street is...	2					
<b>Grade Information</b> [enter down slope as a negative number]						
Major Street Approach Grade:	0.00%	EB				
	0.00%	WB				
Minor Street Approach Grade:	0.00%	SB				
	0.00%	NB				
<b>Major Street Speed Information</b>						
		<i>Posted</i>		<i>Observed *</i>		
		-	EB	33		
		-	WB	38		
<i>* note: off-peak 85th percentile speeds</i>						
<b>Section II</b>			<b>Section IV</b>			
<b>ISD and SSD Observations</b>			<b>AASHTO Guidance</b>			
<i>Instructions on how to observe and measure ISD and SSD are included on subsequent pages.</i>						
<i>ISD</i> - Intersection sight distance is the distance that is based on the time required for perception, reaction and completion of the desired critical exiting maneuver [typically, a left turn] once the driver on a minor street approach [or a site drive] decides to execute the maneuver. Calculation for the critical ISD includes the time to [1] turn left, and to clear the near half of the intersection without conflicting with the vehicles approaching from the left; and [2] upon turning left, to accelerate to the operating speed on the roadway without causing approaching vehicles on the main road to unduly reduce their speed. In this context, ISD can be considered as a <i>desirable</i> visibility criterion for the safe operation of an unsignalized intersection.						
<i>SSD</i> - Stopping sight distance is the distance required for a vehicle approaching an intersection from either direction to perceive, react, and come to a complete stop before colliding with the exiting vehicle from a driveway. In this respect, SSD can be considered as the <i>minimum</i> visibility criterion for the safe operation of an unsignalized intersection.						
			<b>Limiting Factors:</b>			
<i>Observed ISD:</i>	1320	looking left [west]	horizontal curve			
(rounded to nearest 5 feet)	1050	looking right [east]	vertical curve			
<i>Observed SSD:</i>	1320	traveling EB	horizontal curve			
(rounded to nearest 5 feet)	1050	traveling WB	vertical curve			
<i>Cases are described in detail on subsequent pages. In summary...</i>						
B1: left turn from minor road, from stop control						
B2: right turn from minor road, from stop control						
B3: crossing maneuver from minor road, from stop control, assuming left- and right turns are not permitted [otherwise, case B1 or B2 would supercede]						
<i>Desirable Calculated...</i>						
... ISD, case B1:		420			<i>Condition Met?</i>	
... ISD, case B2:		320			Yes	
... ISD, case B3:		365			Yes	
<i>[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]</i>						
<i>Minimum Calculated ...</i>						
... ISD, case B1:		280			<i>Condition Met?</i>	
... ISD, case B2:		230			Yes	
... ISD, case B3:		280			Yes	
<i>[note: minimum ISD is equal to required SSD]</i>						
<i>Calculated ...</i>						
... SSD:		230	traveling EB	<i>Condition Met?</i>		
		280	traveling WB	Yes		
Refer to AASHTO for specific guidance on SSD and ISD if presented with an unusual/atypical case.						
Adequate ISD is not needed at signalized intersections, assuming traffic signal heads are visible on all approaches.						
Any object that would obstruct the driver's view should be removed or lowered, if practical. Such objects include buildings, parked cars, highway structures, hedges/vegetation/trees/bushes/unmowed lawn, walls, fences, and terrain.						
For ISD, an object should be considered an obstruction if it obstructs the vision of a driver whose eye height is 3.5 feet above the roadway surface and the object to be seen is 3.5 feet above the surface of the intersecting road.						
Where horizontal sight restrictions occur on downgrades, particularly at the ends of long downgrades, it is desirable to provide SSD that exceeds those values indicated above (refer to page 114 of AASHTO).						

**Stopping Sight Distance and Intersection Sight Distance Calculator [v0.97]**  
**Based on 'A Policy on Geometric Design of Highways and Streets', AASHTO, 2004**

Section I				Section III																																										
<b>Project Information</b>				<b>ISD and SSD Calculations</b> (rounded up to the next highest 5 feet) [sources: SSD - AASHTO, pp.110-117; ISD - AASHTO, pp. 650 - 664]																																										
Project Number:	14319.00	Analyst:	VHB	Cases are described in detail on subsequent pages. In summary...																																										
City/Town, State:	Newton, MA	Client:		B1: left turn from minor road, from stop control B2: right turn from minor road, from stop control B3: crossing maneuver from minor road, from stop control, assuming left- and right turns are not permitted [otherwise, case B1 or B2 would supercede]																																										
Location:	1114 Beacon Street West Driveway			<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="color: red; text-align: center;"><u>Desirable Calculated...</u></td> <td></td> <td style="color: red; text-align: center;"><u>Condition Met?</u></td> </tr> <tr> <td>... ISD, case B1:</td> <td style="text-align: center;">420</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>... ISD, case B2:</td> <td style="text-align: center;">320</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>... ISD, case B3:</td> <td style="text-align: center;">365</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td colspan="3" style="text-align: center; font-size: small;">[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]</td> </tr> <tr> <td style="color: red; text-align: center;"><u>Minimum Calculated ...</u></td> <td></td> <td style="color: red; text-align: center;"><u>Condition Met?</u></td> </tr> <tr> <td>... ISD, case B1:</td> <td style="text-align: center;">280</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>... ISD, case B2:</td> <td style="text-align: center;">230</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>... ISD, case B3:</td> <td style="text-align: center;">280</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td colspan="3" style="text-align: center; font-size: small;">[note: minimum ISD is equal to required SSD]</td> </tr> <tr> <td style="color: red; text-align: center;"><u>Calculated ...</u></td> <td></td> <td style="color: red; text-align: center;"><u>Condition Met?</u></td> </tr> <tr> <td>... SSD:</td> <td style="text-align: center;">230</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td></td> <td style="text-align: center;">280</td> <td style="text-align: center;">Yes</td> </tr> </table>				<u>Desirable Calculated...</u>		<u>Condition Met?</u>	... ISD, case B1:	420	Yes	... ISD, case B2:	320	Yes	... ISD, case B3:	365	Yes	[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]			<u>Minimum Calculated ...</u>		<u>Condition Met?</u>	... ISD, case B1:	280	Yes	... ISD, case B2:	230	Yes	... ISD, case B3:	280	Yes	[note: minimum ISD is equal to required SSD]			<u>Calculated ...</u>		<u>Condition Met?</u>	... SSD:	230	Yes		280	Yes
<u>Desirable Calculated...</u>		<u>Condition Met?</u>																																												
... ISD, case B1:	420	Yes																																												
... ISD, case B2:	320	Yes																																												
... ISD, case B3:	365	Yes																																												
[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]																																														
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... ISD, case B2:	230	Yes																																												
... ISD, case B3:	280	Yes																																												
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<b>Limiting Factors:</b>																																														
<u>Observed ISD:</u>	1200	looking left [west]		horizontal curve vertical curve																																										
(rounded to nearest 5 feet)	1170	looking right [east]																																												
<u>Observed SSD:</u>	1200	traveling EB		horizontal curve vertical curve																																										
(rounded to nearest 5 feet)	1170	traveling WB																																												







FUSS & O'NEILL

April 2, 2019

Amy McNamee, CEO  
Union Twist, Inc.  
c/o Prince Lobel Tye, LLP  
One International Place  
Boston, MA 02110

Re: Traffic Review Letter  
Cannabis Dispensary  
1158 Beacon Street, Newton, MA  
Fuss & O'Neill Reference No. 20190241.A30

Dear Ms. McNamee:

Union Twist, Inc. proposes to remodel a portion of the existing building at 1158 Beacon Street Newton, Massachusetts and convert its use to a cannabis dispensary. The proposed project building will have approximately 2,300 square feet of gross floor area to be used for retail. The development is expected to open in 2020.

The existing property is situated on 20,000 square feet of land, approximately 800 feet west of the intersection of Beacon Street and Walnut Street at the City of Newton. Two existing driveways provide access to the parcel from Beacon Street. The proposed development will continue using the two existing driveways for access and egress. On-street parking is not permitted in the vicinity of the site.

The site is accessible via the Massachusetts Bay Transportation Authority (MBTA) bus line number 59 which runs north and south on Walnut Street, approximately 800 feet away, as noted above. The 59 bus connects directly to the T system at the Newton Highlands station on the Green Line. The site is also located approximately one mile west of the Waban Green Line station, with a walking time of approximately 20 minutes. Sidewalks are provided on Beacon Street throughout the area, and have recently been reconstructed by the City of Newton.

The parcel is bounded by Beacon Street to the north, commercial properties to the east, the Caliper Corporation Mapping Software to the west and residential property to the south. This area is located in the Business 2 District (BU2).

Fuss & O'Neill has been retained to study the impact of the proposed development on traffic conditions throughout the adjacent roadway network. This letter has been prepared to document

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Connecticut  
Massachusetts  
Rhode Island  
New Hampshire

Ms. McNamee

April 2, 2019

Page 2

the findings of the study and is being submitted to the City of Newton in support of the project's land use applications.

### Traffic Volumes and Speeds

The greatest potential for traffic impact on the roadway network by the proposed development will occur during the morning and afternoon peak hours, the periods when commuter related trips are at their highest levels. In order to determine the traffic impact of the proposed development on adjacent street traffic, representatives of Fuss & O'Neill, Inc. conducted 24-hour traffic volume and speed counts with automatic traffic recorder (ATR) road tubes. The count was located on Beacon Street east of Beaconwood Road. Copies of the ATR data is included as an attachment to this letter.

The 85<sup>th</sup> percentile speed on Beacon Street was recorded at 33 miles per hour westbound and 29 miles per hour. The 24-hour traffic volume on this roadway (total for both directions) was recorded to be 11,539 vehicles.

### Trip Generation

The expected site generated traffic for the morning and afternoon peak hours was calculated using existing empirical data from the Institute of Transportation Engineers (ITE) publication Trip Generation, 10th edition, 2017. This publication is an industry-accepted resource for determining trip generation.

Land Use Code (LUC) 882, "Marijuana Dispensary" was used for the analysis. This LUC is expected to provide a conservative estimate of the number of trips generated by this facility.

Based on approximately 2,300 square feet of retail space, ITE Trip Generation indicates that the facility is expected to generate a total of 24 vehicle trips (13 entering, 11 exiting) in the morning peak hour, and 50 vehicle trips (25 entering, 25 exiting) in the afternoon peak hour.

### Trip Distribution

The distribution of traffic entering and exiting the proposed site was applied to the road network based on the existing regional traffic distributions and the layout of the adjacent roadway network. During the peak hours, the following arrival distributions of traffic are anticipated:

- 55 percent from Beacon Street east of the site
- 45 percent from Beacon Street west of the site

Ms. McNamee

April 2, 2019

Page 3

A regional arrival/departure distribution for the new site generated traffic traveling to and from the project site is depicted in *Figure No. 1* of the attached traffic volume figures.

#### Intersection Sight Distance Analysis

Intersection sight distances were calculated at the proposed site driveway in accordance with criteria set forth in the 2006 Massachusetts Highway Department Project Development & Design Guide (PDDG). This sight distance is measured from a point 15 feet back from the edge of travel-way at a height of 3.5 feet, the standard height of a driver's eye.

The 85<sup>th</sup> percentile speed on Beacon Street was recorded at 33 miles per hour westbound and 29 miles per hour eastbound. In accordance with criteria set forth in the 2006 PDDG, 325 feet of intersection sight distance is required for a passenger car looking to the right and 370 is required for a passenger car looking to the left from the site driveway when approaching a two-lane roadway.

At the site driveway, sight distance extends approximately 650 feet looking left (west) and 800 feet looking right (East).

For drivers looking left or right out of the site driveway, the sight distance triangle is not obstructed and does not encroach upon abutting landowner property. The sight distances exceed MassDOT criteria for safe egress from the site.

#### Crash Analysis

Crash data was gathered from the MassDOT Crash Portal along Beacon Street in vicinity of the site driveway. The records were gathered for the most recent three years of available data, 2014 through 2016. A total of 12 crashes were reported over this time period, four in 2016, three in 2015 and five in 2014, for an average of four crashes per year. Of these 12 crashes, only four were associated with personal injury, and the majority occurred in the area east of the site between Beaconwood Road and Walnut Street.

A summary of the crash data per segment is attached as Table A-1.

#### Conclusions

The purpose of preparing a traffic impact study is to identify the impact of the proposed development's site generated traffic. The study efforts have indicated that the proposed facility will generate a total of 24 vehicle trips (13 entering, 11 exiting) in the morning peak hour, and 50 vehicle trips (25 entering, 25 exiting) in the afternoon peak hour.



Ms. McNamee

April 2, 2019

Page 4

The 85<sup>th</sup> percentile speed on Beacon Street was recorded at 33 miles per hour westbound and 29 miles per hour eastbound. The 24-hour traffic volume on this roadway (total for both directions) was recorded to be 11,539 vehicles.

A review of crash data provided by the MassDOT Crash Portal indicated that there were no abnormal crash patterns or frequencies in the study area.

For drivers looking left or right out of the site driveway, the sight distance triangle is not obstructed and does not encroach upon abutting landowner property. The sight distances exceed CTDOT criteria for safe egress from the site.

Based on the results of the foregoing analysis, it is the professional opinion of Fuss & O'Neill, Inc. that the proposed development will not have a significant impact to traffic operations within the study area.

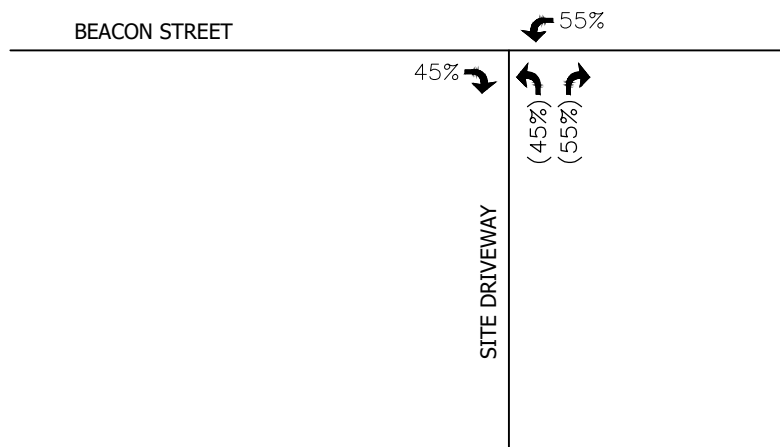
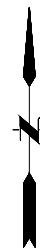
We trust that this information will be sufficient for your review; however, if you should require additional information or have any questions, please contact me.

Sincerely,

A handwritten signature in blue ink that reads 'Matt Skelly'.

Matthew Skelly, PTOE

Senior Transportation Engineer



xxx(xxx) = ENTERING TRAFFIC (EXITING TRAFFIC)



**FUSS & O'NEILL**

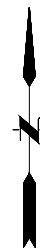
108 MYRTLE STREET, SUITE 502  
QUINCY, MA 02171  
617.282.4675  
www.fando.com

## FIGURE 1: TRIP DISTRIBUTION

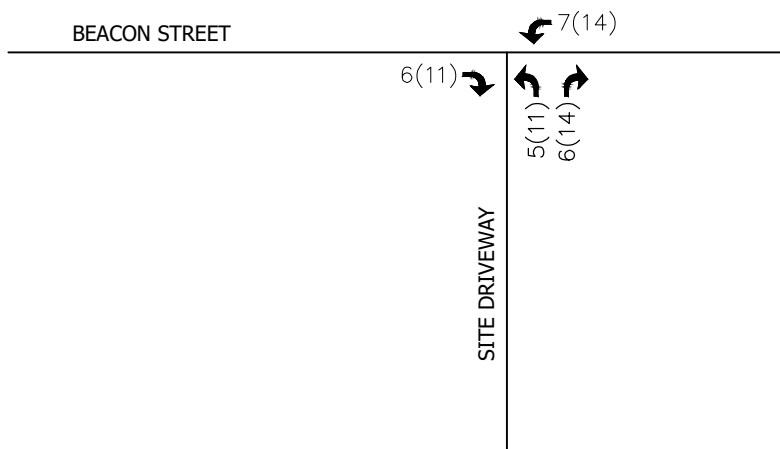
PROJ. NO: 20190241.A30

1158 BEACON STREET  
NEWTON, MA

APRIL 2, 2019



SITE GENERATED TRAFFIC VOLUMES			
	ENTER	EXIT	TOTAL
MORNING	13	11	24
AFTERNOON	25	25	50



xxx(xxx) = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR)



**FUSS & O'NEILL**

108 MYRTLE STREET, SUITE 502  
QUINCY, MA 02171  
617.282.4675  
www.fando.com

## FIGURE 2: TRIP GENERATION

PROJ. NO: 20190241.A30

1158 BEACON STREET  
NEWTON, MA

APRIL 2, 2019

**Accurate Counts**  
978-664-2565

Location : Beacon Street  
Location : East of Beaconwood Road  
City/State: Newton, MA

1158VOL1

Start Time	3/28/2019 Thu	WB		Hour Totals		EB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	81			2	97				
12:15		0	86			0	86				
12:30		1	86			2	98				
12:45		2	106	4	359	0	96	4	377	8	736
01:00		4	89			2	78				
01:15		0	71			3	78				
01:30		0	86			0	97				
01:45		1	105	5	351	1	100	6	353	11	704
02:00		2	91			2	77				
02:15		2	91			0	91				
02:30		0	110			0	109				
02:45		0	127	4	419	1	80	3	357	7	776
03:00		3	117			1	103				
03:15		1	156			5	120				
03:30		0	115			2	107				
03:45		1	118	5	506	2	130	10	460	15	966
04:00		1	132			3	116				
04:15		2	126			1	93				
04:30		1	128			6	122				
04:45		1	121	5	507	2	111	12	442	17	949
05:00		5	124			10	114				
05:15		6	120			14	85				
05:30		6	134			17	124				
05:45		7	113	24	491	25	138	66	461	90	952
06:00		10	118			22	118				
06:15		15	110			34	127				
06:30		22	112			56	111				
06:45		44	88	91	428	78	98	190	454	281	882
07:00		37	72			110	72				
07:15		63	69			138	42				
07:30		84	52			133	61				
07:45		88	73	272	266	125	66	506	241	778	507
08:00		96	47			146	57				
08:15		107	38			143	43				
08:30		95	35			165	49				
08:45		89	35	387	155	155	30	609	179	996	334
09:00		77	36			139	38				
09:15		76	34			152	27				
09:30		80	29			114	33				
09:45		59	34	292	133	117	17	522	115	814	248
10:00		65	20			119	17				
10:15		69	20			84	9				
10:30		71	20			68	12				
10:45		61	7	266	67	103	12	374	50	640	117
11:00		67	4			79	7				
11:15		67	12			80	3				
11:30		97	4			107	6				
11:45		78	4	309	24	93	3	359	19	668	43
Total		1664	3706			2661	3508			4325	7214
Percent		31.0%	69.0%			43.1%	56.9%			37.5%	62.5%
Grand Total		1664	3706			2661	3508			4325	7214
Percent		31.0%	69.0%			43.1%	56.9%			37.5%	62.5%

ADT                      ADT 11,539                      AADT 11,539



Location : Beacon Street  
Location : East of Beaconwood Road  
City/State: Newton, MA

1158VOL1

Start Time	3/28/2019		Total
	Thu	WB EB	
12:00 AM		4 4	8
01:00		5 6	11
02:00		4 3	7
03:00		5 10	15
04:00		5 12	17
05:00		24 66	90
06:00		91 190	281
07:00		272 506	778
08:00		<b>387 609</b>	<b>996</b>
09:00		292 522	814
10:00		266 374	640
11:00		309 359	668
12:00 PM		359 377	736
01:00		351 353	704
02:00		419 357	776
03:00		506 460	<b>966</b>
04:00		<b>507</b> 442	949
05:00		491 <b>461</b>	952
06:00		428 454	882
07:00		266 241	507
08:00		155 179	334
09:00		133 115	248
10:00		67 50	117
11:00		24 19	43
Total		5370 6169	11539
Percent		46.5% 53.5%	
AM Peak	-	08:00 08:00	08:00
Vol.	-	387 609	996
PM Peak	-	16:00 17:00	15:00
Vol.	-	507 461	966
Grand Total		5370 6169	11539
Percent		46.5% 53.5%	
ADT		ADT 11,539	AADT 11,539

Accurate Counts  
978-664-2565

Location : Beacon Street  
Location : East of Beaconwood Road  
City/State: Newton, MA

1158SPD1

WB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
03/28/19	0	0	0	1	3	0	0	0	0	0	0	0	0	0	4
01:00	0	0	0	2	2	1	0	0	0	0	0	0	0	0	5
02:00	0	0	2	1	1	0	0	0	0	0	0	0	0	0	4
03:00	0	1	0	2	0	2	0	0	0	0	0	0	0	0	5
04:00	0	0	1	1	2	0	1	0	0	0	0	0	0	0	5
05:00	1	1	1	9	9	3	0	0	0	0	0	0	0	0	24
06:00	0	1	10	26	32	21	1	0	0	0	0	0	0	0	91
07:00	6	10	29	99	94	26	8	0	0	0	0	0	0	0	272
08:00	3	11	61	161	118	32	1	0	0	0	0	0	0	0	387
09:00	11	16	55	108	80	20	2	0	0	0	0	0	0	0	292
10:00	10	16	41	90	84	24	1	0	0	0	0	0	0	0	266
11:00	4	17	51	127	84	16	10	0	0	0	0	0	0	0	309
12 PM	0	12	65	163	100	18	1	0	0	0	0	0	0	0	359
13:00	9	16	45	137	113	26	5	0	0	0	0	0	0	0	351
14:00	4	12	83	171	113	30	6	0	0	0	0	0	0	0	419
15:00	10	22	124	185	152	13	0	0	0	0	0	0	0	0	506
16:00	11	26	101	230	110	26	3	0	0	0	0	0	0	0	507
17:00	17	76	155	157	76	9	1	0	0	0	0	0	0	0	491
18:00	23	40	98	160	94	12	1	0	0	0	0	0	0	0	428
19:00	4	13	48	111	79	11	0	0	0	0	0	0	0	0	266
20:00	0	11	12	80	43	7	2	0	0	0	0	0	0	0	155
21:00	0	7	16	47	56	6	1	0	0	0	0	0	0	0	133
22:00	0	3	8	20	24	12	0	0	0	0	0	0	0	0	67
23:00	0	0	4	7	7	6	0	0	0	0	0	0	0	0	24
Total	113	311	1010	2095	1476	321	44	0	0	0	0	0	0	0	5370

Daily  
 15th Percentile : 21 MPH  
 50th Percentile : 27 MPH  
 85th Percentile : 33 MPH  
 95th Percentile : 36 MPH  
 Mean Speed(Average) : 28 MPH  
 10 MPH Pace Speed : 26-35 MPH  
 Number in Pace : 3571  
 Percent in Pace : 66.5%  
 Number of Vehicles > 30 MPH : 1841  
 Percent of Vehicles > 30 MPH : 34.3%

Grand Total	113	311	1010	2095	1476	321	44	0	0	0	0	0	0	0	5370
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Overall  
 15th Percentile : 21 MPH  
 50th Percentile : 27 MPH  
 85th Percentile : 33 MPH  
 95th Percentile : 36 MPH  
 Mean Speed(Average) : 28 MPH  
 10 MPH Pace Speed : 26-35 MPH  
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 Percent in Pace : 66.5%  
 Number of Vehicles > 30 MPH : 1841  
 Percent of Vehicles > 30 MPH : 34.3%

Accurate Counts  
978-664-2565

Location : Beacon Street  
Location : East of Beaconwood Road  
City/State: Newton, MA

1158SPD1

EB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
03/28/19	0	0	0	0	2	2	0	0	0	0	0	0	0	0	4
01:00	0	0	0	4	2	0	0	0	0	0	0	0	0	0	6
02:00	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3
03:00	0	1	3	1	3	2	0	0	0	0	0	0	0	0	10
04:00	0	1	3	1	6	1	0	0	0	0	0	0	0	0	12
05:00	1	1	11	23	21	7	1	1	0	0	0	0	0	0	66
06:00	4	11	28	63	51	29	3	1	0	0	0	0	0	0	190
07:00	106	131	144	76	42	6	1	0	0	0	0	0	0	0	506
08:00	120	168	183	89	42	5	2	0	0	0	0	0	0	0	609
09:00	107	138	171	66	27	12	1	0	0	0	0	0	0	0	522
10:00	26	52	95	125	60	15	1	0	0	0	0	0	0	0	374
11:00	18	44	103	135	51	6	2	0	0	0	0	0	0	0	359
12 PM	7	51	106	146	58	8	1	0	0	0	0	0	0	0	377
13:00	23	33	103	127	57	8	2	0	0	0	0	0	0	0	353
14:00	31	51	88	119	57	11	0	0	0	0	0	0	0	0	357
15:00	42	64	166	147	36	4	1	0	0	0	0	0	0	0	460
16:00	53	87	131	121	46	3	1	0	0	0	0	0	0	0	442
17:00	187	140	94	31	9	0	0	0	0	0	0	0	0	0	461
18:00	118	122	107	71	30	6	0	0	0	0	0	0	0	0	454
19:00	3	20	71	92	48	7	0	0	0	0	0	0	0	0	241
20:00	0	7	43	80	41	8	0	0	0	0	0	0	0	0	179
21:00	4	1	19	51	36	3	1	0	0	0	0	0	0	0	115
22:00	0	1	6	21	17	4	1	0	0	0	0	0	0	0	50
23:00	0	1	0	9	7	2	0	0	0	0	0	0	0	0	19
Total	850	1125	1675	1599	751	149	18	2	0	0	0	0	0	0	6169

Daily  
 15th Percentile : 15 MPH  
 50th Percentile : 23 MPH  
 85th Percentile : 29 MPH  
 95th Percentile : 34 MPH  
 Mean Speed(Average) : 23 MPH  
 10 MPH Pace Speed : 21-30 MPH  
 Number in Pace : 3274  
 Percent in Pace : 53.1%  
 Number of Vehicles > 30 MPH : 920  
 Percent of Vehicles > 30 MPH : 14.9%

Grand Total	850	1125	1675	1599	751	149	18	2	0	0	0	0	0	0	6169
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Overall  
 15th Percentile : 15 MPH  
 50th Percentile : 23 MPH  
 85th Percentile : 29 MPH  
 95th Percentile : 34 MPH  
 Mean Speed(Average) : 23 MPH  
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Accurate Counts  
978-664-2565

Location : Beacon Street  
Location : East of Beaconwood Road  
City/State: Newton, MA

1158SPD1

WB, EB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
03/28/19	0	0	0	1	5	2	0	0	0	0	0	0	0	0	8
01:00	0	0	0	6	4	1	0	0	0	0	0	0	0	0	11
02:00	0	0	2	2	3	0	0	0	0	0	0	0	0	0	7
03:00	0	2	3	3	3	4	0	0	0	0	0	0	0	0	15
04:00	0	1	4	2	8	1	1	0	0	0	0	0	0	0	17
05:00	2	2	12	32	30	10	1	1	0	0	0	0	0	0	90
06:00	4	12	38	89	83	50	4	1	0	0	0	0	0	0	281
07:00	112	141	173	175	136	32	9	0	0	0	0	0	0	0	778
08:00	123	179	244	250	160	37	3	0	0	0	0	0	0	0	996
09:00	118	154	226	174	107	32	3	0	0	0	0	0	0	0	814
10:00	36	68	136	215	144	39	2	0	0	0	0	0	0	0	640
11:00	22	61	154	262	135	22	12	0	0	0	0	0	0	0	668
12 PM	7	63	171	309	158	26	2	0	0	0	0	0	0	0	736
13:00	32	49	148	264	170	34	7	0	0	0	0	0	0	0	704
14:00	35	63	171	290	170	41	6	0	0	0	0	0	0	0	776
15:00	52	86	290	332	188	17	1	0	0	0	0	0	0	0	966
16:00	64	113	232	351	156	29	4	0	0	0	0	0	0	0	949
17:00	204	216	249	188	85	9	1	0	0	0	0	0	0	0	952
18:00	141	162	205	231	124	18	1	0	0	0	0	0	0	0	882
19:00	7	33	119	203	127	18	0	0	0	0	0	0	0	0	507
20:00	0	18	55	160	84	15	2	0	0	0	0	0	0	0	334
21:00	4	8	35	98	92	9	2	0	0	0	0	0	0	0	248
22:00	0	4	14	41	41	16	1	0	0	0	0	0	0	0	117
23:00	0	1	4	16	14	8	0	0	0	0	0	0	0	0	43
Total	963	1436	2685	3694	2227	470	62	2	0	0	0	0	0	0	11539

Daily  
 15th Percentile : 17 MPH  
 50th Percentile : 25 MPH  
 85th Percentile : 32 MPH  
 95th Percentile : 34 MPH  
 Mean Speed(Average) : 25 MPH  
 10 MPH Pace Speed : 21-30 MPH  
 Number in Pace : 6379  
 Percent in Pace : 55.3%  
 Number of Vehicles > 30 MPH : 2761  
 Percent of Vehicles > 30 MPH : 23.9%

Grand Total	963	1436	2685	3694	2227	470	62	2	0	0	0	0	0	0	11539
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Overall  
 15th Percentile : 17 MPH  
 50th Percentile : 25 MPH  
 85th Percentile : 32 MPH  
 95th Percentile : 34 MPH  
 Mean Speed(Average) : 25 MPH  
 10 MPH Pace Speed : 21-30 MPH  
 Number in Pace : 6379  
 Percent in Pace : 55.3%  
 Number of Vehicles > 30 MPH : 2761  
 Percent of Vehicles > 30 MPH : 23.9%

# Marijuana Dispensary (882)

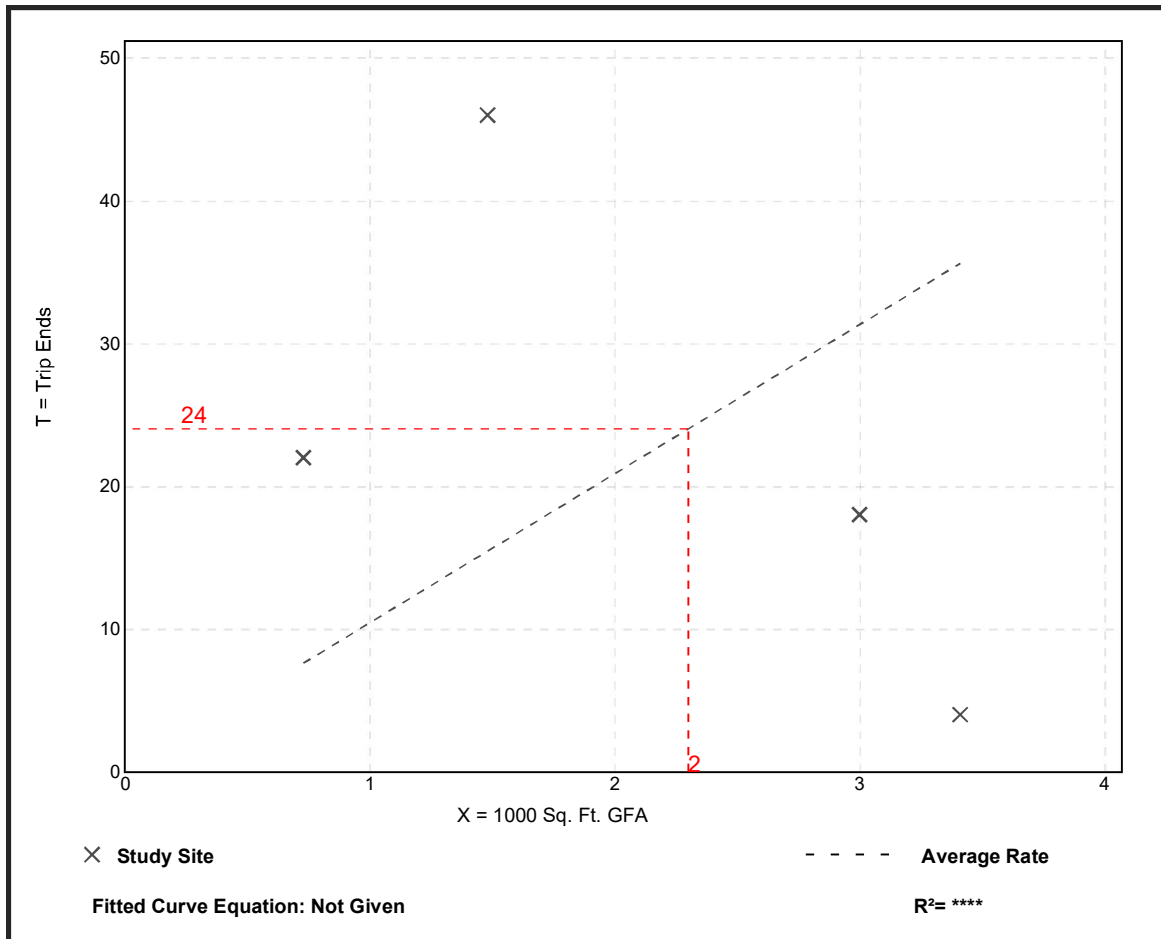
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 4  
 Avg. 1000 Sq. Ft. GFA: 2  
 Directional Distribution: 56% entering, 44% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.44	1.17 - 31.08	14.00

## Data Plot and Equation

*Caution – Small Sample Size*



*Trip Generation Manual, 10th Edition • Institute of Transportation Engineers*

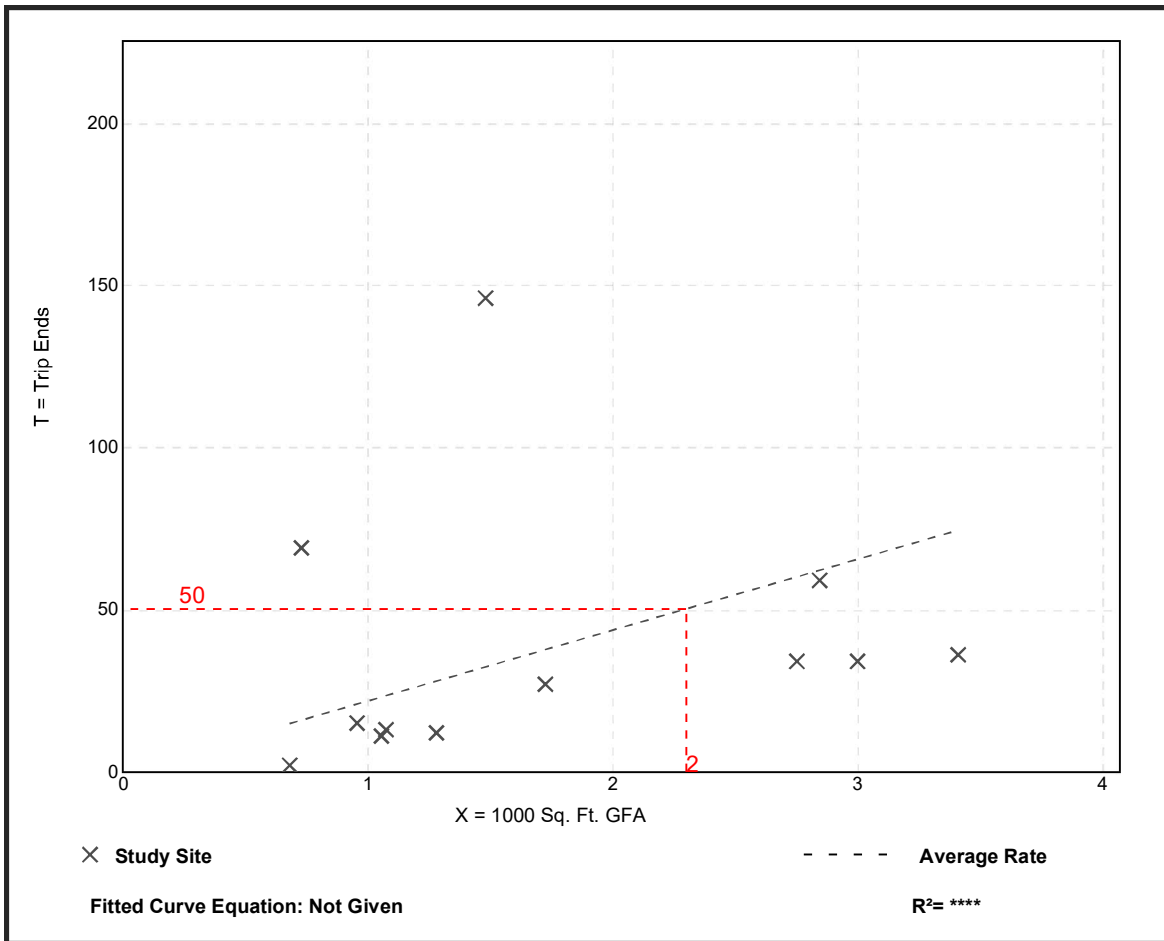
# Marijuana Dispensary (882)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 12  
 Avg. 1000 Sq. Ft. GFA: 2  
 Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
21.83	2.94 - 98.65	27.36

## Data Plot and Equation



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**TABLE A-1**  
**CRASH DATA SUMMARY - 2014 to 2016**  
**STUDY AREA SEGMENT**

	<b>Beacon Street</b>
<hr/>	
<b>Criteria</b>	
<b>YEAR</b>	
2014	5
2015	3
<u>2016</u>	<u>4</u>
Total	12
Average No. of Crashes	4.00
Crash Rate	1.90
<b>TYPE</b>	
Angle	2
Rear-End	5
Head-On	0
Sideswipe	2
Pedestrian/Bicycle	2
Collision w/ Fixed Object	0
<u>Unknown/Other</u>	<u>1</u>
Total	12
<b>SEVERITY</b>	
Property Damage Only	7
Non-fatal Injury	4
Fatality	0
<u>Unknown/Other</u>	<u>1</u>
Total	12
<b>WEATHER</b>	
Clear	9
Wet	0
Snow/Ice	0
Clouds	2
Fog	0
<u>Unknown/Other</u>	<u>1</u>
Total	12
<b>TIME</b>	
Weekday 7:30 AM - 9:30 AM	1
Weekday 3:30 PM - 5:30 PM	4
<u>Other</u>	<u>0</u>
Total	5
<hr/>	

District #6 Average Crash Rates: 0.71 Signalized Intersections  
0.52 Unsignalized Intersections  
Major Collector: 3.58





**ITE TRIP GENERATION WORKSHEET**  
 (10th Edition, Updated 2017)

**\*PROPOSED REDEVELOPMENT (34 RESIDENTIAL UNITS)\***

**LANDUSE:** Mid-Rise Residential  
**LANDUSE CODE:** 221  
**SETTING/LOCATION:** General Urban/Suburban  
**JOB NAME:**  
**JOB NUMBER:**

Independent Variable --- Number of Units

34 units

**WEEKDAY**

RATES:	# Studies	R <sup>2</sup>	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	27	0.77	5.44	1.27	12.50	205	21	494	50%	50%
AM PEAK (ADJACENT ST)	53	0.67	0.36	0.06	1.61	207	26	703	26%	74%
PM PEAK (ADJACENT ST)	60	0.72	0.44	0.15	1.11	208	26	703	61%	39%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	185	92	92	184	92	92
AM PEAK (ADJACENT ST)	12	3	9	12	3	9
PM PEAK (ADJACENT ST)	15	9	6	16	10	6

**SATURDAY**

RATES:	# Studies	R <sup>2</sup>	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.73	4.91	4.03	8.51	224	111	336	50%	50%
PEAK OF GENERATOR	8	0.89	0.44	0.34	0.73	264	111	462	49%	51%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	167	83	83	520	260	260
PEAK OF GENERATOR	15	7	8	21	10	11

**SUNDAY**

RATES:	# Studies	R <sup>2</sup>	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	--	4.09	3.06	8.41	224	111	336	50%	50%
PEAK OF GENERATOR	6	--	0.39	0.26	1.07	224	111	336	62%	38%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	139	70	70	N/A	N/A	N/A
PEAK OF GENERATOR	13	8	5	N/A	N/A	N/A

**ITE TRIP GENERATION WORKSHEET**  
 (10th Edition, Updated 2017)

**\*REOCCUPANCY OF EXISTING RESTAURANT BUILDING\***

**LANDUSE:** High-Turnover (Sit-Down) Restaurant  
**LANDUSE CODE:** 932 Independent Variable --- 1,000 Sq. Feet Gross Floor Area  
**SETTING/LOCATION:** General Urban/Suburban  
**JOB NAME:** FLOOR AREA (KSF): 6.1  
**JOB NUMBER:**

**WEEKDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	50	--	112.18	13.04	742.41	5	2	13	50%	50%
AM PEAK (ADJACENT ST)	39	--	9.94	0.76	102.39	5	2	13	55%	45%
PM PEAK (ADJACENT ST)	107	--	9.77	0.92	62.00	6	2	14	62%	38%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	680	340	340	N/A	N/A	N/A
AM PEAK (ADJACENT ST)	60	33	27	N/A	N/A	N/A
PM PEAK (ADJACENT ST)	59	37	22	N/A	N/A	N/A

**SATURDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	3	--	122.40	101.99	173.07	6	5	9	50%	50%
PEAK OF GENERATOR	22	--	11.19	1.63	50.40	5	2	13	51%	49%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	742	371	371	N/A	N/A	N/A
PEAK OF GENERATOR	68	35	33	N/A	N/A	N/A

**SUNDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	2	--	142.64	119.62	164.43	5	4.8	5.1	50%	50%
PEAK OF GENERATOR	3	--	25.83	9.81	43.20	4	2.5	5.1	55%	45%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	864	432	432	N/A	N/A	N/A
PEAK OF GENERATOR	157	86	70	N/A	N/A	N/A



**Home to Work  
Live in Newton**

Workplace  State/U.S. Island Area/Foreign Country	Count	Adjustment Percentage <sup>1</sup>	Adjusted Count	Percent of Total	Cumulative Total	Total of Work					CHECK	Cumulative Total				
						Beacon Street East	Beacon Street West	Walnut Street North	Walnut Street South	Total		Beacon Street East	Beacon Street West	Walnut Street North	Walnut Street South	Total
Boston city, Suffolk County, Massachusetts	12,204	1	12,204	26.5%	26.5%	60%		30%	10%	100%		15.9%	0.0%	7.9%	2.6%	26.5%
Newton city, Middlesex County, Massachusetts	11,118	1	11,118	24.1%	50.6%	25%	25%	25%	25%	100%		6.0%	6.0%	6.0%	6.0%	24.1%
Cambridge city, Middlesex County, Massachusetts	2,972	1	2,972	6.4%	57.0%	50%		50%		100%		3.2%	0.0%	3.2%	0.0%	6.4%
Waltham city, Middlesex County, Massachusetts	2,018	1	2,018	4.4%	61.4%		50%	50%		100%		0.0%	2.2%	2.2%	0.0%	4.4%
Wellesley town, Norfolk County, Massachusetts	1,048	1	1,048	2.3%	63.7%		100%			100%		0.0%	2.3%	0.0%	0.0%	2.3%
Brookline town, Norfolk County, Massachusetts	993	1	993	2.2%	65.8%	80%			20%	100%		1.7%	0.0%	0.0%	0.4%	2.2%
Framingham town, Middlesex County, Massachusetts	835	1	835	1.8%	67.6%		100%			100%		0.0%	1.8%	0.0%	0.0%	1.8%
Watertown Town city, Middlesex County, Massachusetts	751	1	751	1.6%	69.2%			100%		100%		0.0%	0.0%	1.6%	0.0%	1.6%
Needham town, Norfolk County, Massachusetts	748	1	748	1.6%	70.9%				100%	100%		0.0%	0.0%	0.0%	1.6%	1.6%
Burlington town, Middlesex County, Massachusetts	450	1	450	1.0%	71.8%		100%			100%		0.0%	1.0%	0.0%	0.0%	1.0%
Natick town, Middlesex County, Massachusetts	409	1	409	0.9%	72.7%		100%			100%		0.0%	0.9%	0.0%	0.0%	0.9%
Lexington town, Middlesex County, Massachusetts	387	1	387	0.8%	73.6%		100%			100%		0.0%	0.8%	0.0%	0.0%	0.8%
Quincy city, Norfolk County, Massachusetts	332	1	332	0.7%	74.3%				100%	100%		0.0%	0.0%	0.0%	0.7%	0.7%
Belmont town, Middlesex County, Massachusetts	316	1	316	0.7%	75.0%			100%		100%		0.0%	0.0%	0.7%	0.0%	0.7%
Lowell city, Middlesex County, Massachusetts	305	1	305	0.7%	75.6%		100%			100%		0.0%	0.7%	0.0%	0.0%	0.7%
Marlborough city, Middlesex County, Massachusetts	285	1	285	0.6%	76.2%		100%			100%		0.0%	0.6%	0.0%	0.0%	0.6%
Medford city, Middlesex County, Massachusetts	274	1	274	0.6%	76.8%	50%		50%		100%		0.3%	0.0%	0.3%	0.0%	0.6%
Canton town, Norfolk County, Massachusetts	270	1	270	0.6%	77.4%				100%	100%		0.0%	0.0%	0.0%	0.6%	0.6%
Woburn city, Middlesex County, Massachusetts	251	1	251	0.5%	78.0%		100%			100%		0.0%	0.5%	0.0%	0.0%	0.5%
Malden city, Middlesex County, Massachusetts	244	2	488	1.1%	79.0%	50%		50%		100%		0.5%	0.0%	0.5%	0.0%	1.1%
Weston town, Middlesex County, Massachusetts	227	3	681	1.5%	80.5%		100%			100%		0.0%	1.5%	0.0%	0.0%	1.5%
Dedham town, Norfolk County, Massachusetts	222	4	888	1.9%	82.4%				100%	100%		0.0%	0.0%	0.0%	1.9%	1.9%
Worcester city, Worcester County, Massachusetts	222	5	1,110	2.4%	84.8%		100%			100%		0.0%	2.4%	0.0%	0.0%	2.4%
Stoneham town, Middlesex County, Massachusetts	205	6	1,230	2.7%	87.5%	25%	50%	25%		100%		0.7%	1.3%	0.7%	0.0%	2.7%
Somerville city, Middlesex County, Massachusetts	189	7	1,323	2.9%	90.4%	50%		50%		100%		1.4%	0.0%	1.4%	0.0%	2.9%
Bedford town, Middlesex County, Massachusetts	179	8	1,432	3.1%	93.5%		100%			100%		0.0%	3.1%	0.0%	0.0%	3.1%
Chelmsford town, Middlesex County, Massachusetts	162	9	1,458	3.2%	96.6%		100%			100%		0.0%	3.2%	0.0%	0.0%	3.2%
Billerica town, Middlesex County, Massachusetts	155	10	1,550	3.4%	100.0%		100%			100%		0.0%	3.4%	0.0%	0.0%	3.4%
<b>Totals</b>	<b>35,966</b>		<b>46,126</b>	<b>100.0%</b>								<b>29.8%</b>	<b>31.7%</b>	<b>24.6%</b>	<b>14.0%</b>	<b>100.0%</b>
												<b>30.0%</b>	<b>32.0%</b>	<b>25.0%</b>	<b>14.0%</b>	<b>101.0%</b>

<sup>1</sup> Adjustments were made to some communities based on the likelihood that people who work in those communities would opt to live closer to their place of employment or closer to transit opportunities.

<b>30.0%</b>	<b>30.0%</b>	<b>25.0%</b>	<b>15.0%</b>	<b>100.0%</b>
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PRECISION  
DATA  
INDUSTRIES, LLC

PRECISION DATA INDUSTRIES, LLC

Office: 508.481.3999 Fax: 508.545.1234

Email: [datarequests@pdillc.com](mailto:datarequests@pdillc.com)

*Traffic Counts with Precision*



**Client:**  
VHB

**Engineer:**  
K. Keen

**Site Code:**  
12812.00

**Date:**  
Tue 10/14 & Wed 10/15/14

**PDI Job Number:**  
144123

**City, State:**  
Chestnut Hill, MA



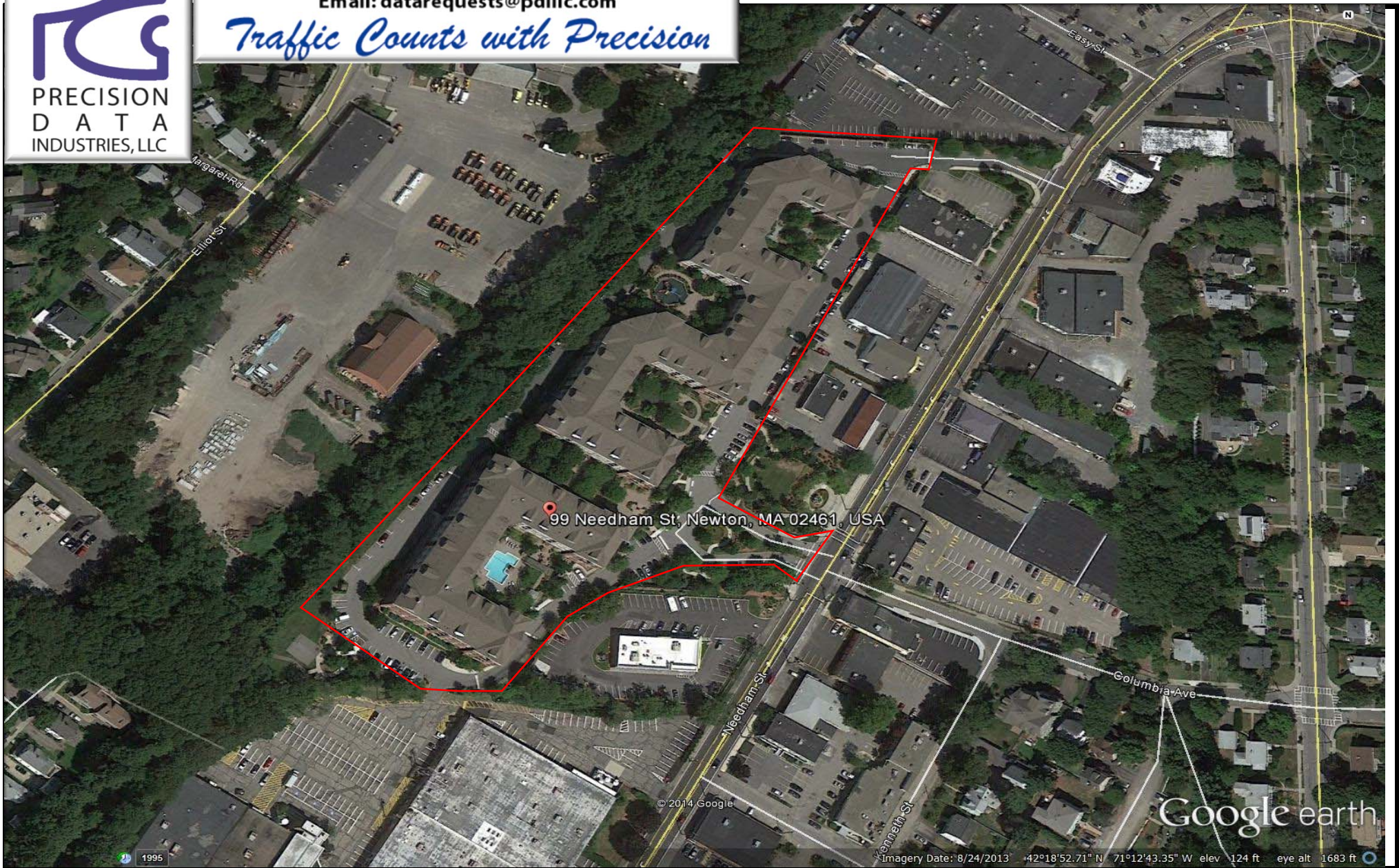
PRECISION  
DATA  
INDUSTRIES, LLC

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*Traffic Counts with Precision*



Client:  
VHB

Engineer:  
K. Keen

Site Code:  
12812.00

Date:  
Tue 10/14 & Wed 10/15/14

PDI Job Number:  
144123

City, State:  
Newton, MA



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DATA  
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*Traffic Counts with Precision*



Client:

VHB

Engineer:

K. Keen

Site Code:

12812.00

Date:

Tue 10/14 & Wed 10/15/14

PDI Job Number:

144123

City, State:

Watertown, MA





PRECISION  
D A T A  
INDUSTRIES, LLC

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

Total # Cars in each parking Lot

Date: Tues 10/14

Time	Avalon at Newton Highlands 99 Needham St, Newton			Alta at the Estate 200 Waltham St, Watertown		Time	Avalon a Chestnut Hill 160 Boylston Street, Chestnut Hill				
	Surface Lot	Garage		Surface Lot			Surface Lot	P1 Visitor	P1 lvl 1	P1 lvl2	P2
10:00pm	125	218		165		9:30pm	9	7	75	26	115
11:00pm	128	244		173							

Date: Wed 10/15

Time	Avalon at Newton Highlands			Alta at the Estate		Time	Avalon a Chestnut Hill				
	Surface Lot	Garage		Surface Lot			Surface Lot	P1 Visitor	P1 Lvl 1	P1 Lvl2	P2
10:00pm	121	228		169		9:30pm	12	9	75	26	117
11:00pm	122	239		171							



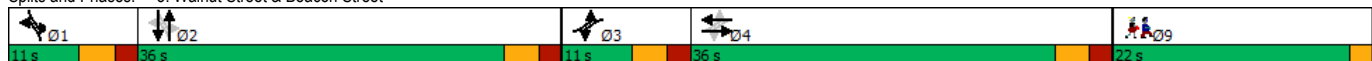


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	95	355	50	60	340	105	65	465	40	85	350	50	
Future Volume (vph)	95	355	50	60	340	105	65	465	40	85	350	50	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	60		0	75		0	125		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1736	1787	0	1787	1806	0	1736	1799	0	1752	1805	0	
Flt Permitted	0.128			0.220			0.174			0.128			
Satd. Flow (perm)	234	1787	0	413	1806	0	318	1799	0	235	1805	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		6			13			4				6	
Link Speed (mph)		30			30			30				30	
Link Distance (ft)		206			365			541				413	
Travel Time (s)		4.7			8.3			12.3				9.4	
Confl. Peds. (#/hr)			4	4					9	9			
Confl. Bikes (#/hr)			4			2			2			1	
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.90	0.90	0.90	0.86	0.86	0.86	
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	4%	4%	4%	3%	3%	3%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	101	431	0	69	512	0	72	561	0	99	465	0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	4		3	4		1	2		1	2		9
Permitted Phases	4			4			2			2			
Detector Phase	3	4		3	4		1	2		1	2		
Switch Phase													
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0		5.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	13.0		11.0	13.0		22.0
Total Split (s)	11.0	36.0		11.0	36.0		11.0	36.0		11.0	36.0		22.0
Total Split (%)	9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		19%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max		None
Act Effect Green (s)	37.4	31.3		37.4	31.3		37.4	31.3		37.4	31.3		
Actuated g/C Ratio	0.36	0.30		0.36	0.30		0.36	0.30		0.36	0.30		
v/c Ratio	0.58	0.79		0.30	0.92		0.36	1.02		0.57	0.84		
Control Delay	37.6	45.8		25.1	58.1		27.0	80.5		36.5	49.8		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	37.6	45.8		25.1	58.1		27.0	80.5		36.5	49.8		
LOS	D	D		C	E		C	F		D	D		
Approach Delay		44.3			54.2			74.4			47.5		
Approach LOS		D			D			E			D		
Queue Length 50th (ft)	34	221		23	275		24	320		34	245		
Queue Length 95th (ft)	#102	#494		64	#587		69	#717		#93	#507		
Internal Link Dist (ft)		126			285			461			333		
Turn Bay Length (ft)		50		60			75			125			
Base Capacity (vph)	173	548		231	559		199	550		175	554		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.58	0.79		0.30	0.92		0.36	1.02		0.57	0.84		

**Intersection Summary**

Area Type: Other  
 Cycle Length: 116  
 Actuated Cycle Length: 102.8  
 Natural Cycle: 120  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.02  
 Intersection Signal Delay: 55.8  
 Intersection LOS: E  
 Intersection Capacity Utilization 78.2%  
 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: 3: Walnut Street & Beacon Street



Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	490	1	1	440	15	1	0	0	10	0	10
Future Vol, veh/h	10	490	1	1	440	15	1	0	0	10	0	10
Conflicting Peds, #/hr	2	0	13	13	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	81	81	81	25	25	25	67	67	67
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	0	0	0
Mvmt Flow	11	521	1	1	543	19	4	0	0	15	0	15

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	564	0	0	535	0	0	1119	1123	535	1101	1114	555
Stage 1	-	-	-	-	-	-	557	557	-	557	557	-
Stage 2	-	-	-	-	-	-	562	566	-	544	557	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1003	-	-	1038	-	-	186	207	549	191	210	535
Stage 1	-	-	-	-	-	-	518	515	-	518	515	-
Stage 2	-	-	-	-	-	-	515	511	-	527	515	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1001	-	-	1025	-	-	176	201	542	188	204	534
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	201	-	188	204	-
Stage 1	-	-	-	-	-	-	504	501	-	509	513	-
Stage 2	-	-	-	-	-	-	500	509	-	519	501	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	25.9	19.5
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1001	-	-	1025	-	-	278
HCM Lane V/C Ratio	0.023	0.011	-	-	0.001	-	-	0.107
HCM Control Delay (s)	25.9	8.6	0	-	8.5	0	-	19.5
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	500	0	1	450	1	2
Future Vol, veh/h	500	0	1	450	1	2
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	81	81	38	38
Heavy Vehicles, %	3	3	1	1	0	0
Mvmt Flow	532	0	1	556	3	5

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	545	0	1103
Stage 1	-	-	-	-	545
Stage 2	-	-	-	-	558
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	1029	-	236
Stage 1	-	-	-	-	585
Stage 2	-	-	-	-	577
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1016	-	233
Mov Cap-2 Maneuver	-	-	-	-	233
Stage 1	-	-	-	-	578
Stage 2	-	-	-	-	576

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	374	-	-	1016	-
HCM Lane V/C Ratio	0.021	-	-	0.001	-
HCM Control Delay (s)	14.8	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	500	0	0	450	0	0
Future Vol, veh/h	500	0	0	450	0	0
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	82	82	25	25
Heavy Vehicles, %	3	3	2	2	0	0
Mvmt Flow	549	0	0	549	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	559	0	1108
Stage 1	-	-	-	-	559
Stage 2	-	-	-	-	549
Critical Hdwy	-	-	4.12	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.218	-	3.5
Pot Cap-1 Maneuver	-	-	1012	-	234
Stage 1	-	-	-	-	576
Stage 2	-	-	-	-	583
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1002	-	232
Mov Cap-2 Maneuver	-	-	-	-	232
Stage 1	-	-	-	-	570
Stage 2	-	-	-	-	583

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1002	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	495	5	5	445	1	5	0	2	2	0	0
Future Vol, veh/h	0	495	5	5	445	1	5	0	2	2	0	0
Conflicting Peds, #/hr	6	0	10	10	0	6	4	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	82	82	82	63	63	63	50	50	50
Heavy Vehicles, %	3	3	3	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	544	5	6	543	1	8	0	3	4	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	550	0	0	559	0	0	1117	1119	557	1110	1121	554
Stage 1	-	-	-	-	-	-	557	557	-	562	562	-
Stage 2	-	-	-	-	-	-	560	562	-	548	559	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1015	-	-	1012	-	-	186	209	534	188	208	536
Stage 1	-	-	-	-	-	-	518	515	-	515	513	-
Stage 2	-	-	-	-	-	-	516	513	-	524	514	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1009	-	-	1002	-	-	182	204	529	185	203	531
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	204	-	185	203	-
Stage 1	-	-	-	-	-	-	513	510	-	512	505	-
Stage 2	-	-	-	-	-	-	509	505	-	521	509	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			21.9			24.9		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	224	1009	-	-	1002	-	-	185				
HCM Lane V/C Ratio	0.05	-	-	-	0.006	-	-	0.022				
HCM Control Delay (s)	21.9	0	-	-	8.6	0	-	24.9				
HCM Lane LOS	C	A	-	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	470	10	20	430	1	15	0	30	1	0	0
Future Vol, veh/h	0	470	10	20	430	1	15	0	30	1	0	0
Conflicting Peds, #/hr	6	0	10	10	0	6	6	0	0	0	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	80	80	80	44	44	44	25	25	25
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	516	11	25	538	1	34	0	68	4	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	545	0	0	537	0	0	1127	532	1151	1132	551	
Stage 1	-	-	-	-	-	-	532	532	-	595	595	-
Stage 2	-	-	-	-	-	-	595	595	-	537	537	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1019	-	-	1036	-	-	183	206	551	177	205	538
Stage 1	-	-	-	-	-	-	535	529	-	494	496	-
Stage 2	-	-	-	-	-	-	494	496	-	519	526	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1013	-	-	1026	-	-	175	196	546	150	195	532
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	196	-	150	195	-
Stage 1	-	-	-	-	-	-	530	524	-	491	476	-
Stage 2	-	-	-	-	-	-	474	476	-	454	521	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.4			21.4			29.7		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	320	1013	-	-	1026	-	-	150				
HCM Lane V/C Ratio	0.32	-	-	-	0.024	-	-	0.027				
HCM Control Delay (s)	21.4	0	-	-	8.6	0	-	29.7				
HCM Lane LOS	C	A	-	-	A	A	-	D				
HCM 95th %tile Q(veh)	1.3	0	-	-	0.1	-	-	0.1				



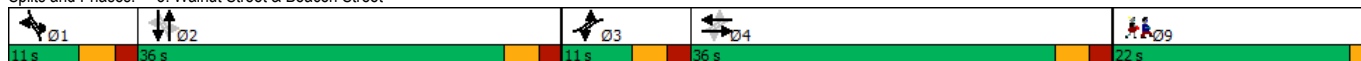


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	70	315	85	90	290	110	80	340	35	110	405	70	
Future Volume (vph)	70	315	85	90	290	110	80	340	35	110	405	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	60		0	75		0	125		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1787	1808	0	1787	1786	0	1787	1848	0	1770	1813	0	
Flt Permitted	0.174			0.221			0.128			0.275			
Satd. Flow (perm)	326	1808	0	414	1786	0	240	1848	0	511	1813	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		11			16			4				7	
Link Speed (mph)		30			30			30				30	
Link Distance (ft)		206			365			541				413	
Travel Time (s)		4.7			8.3			12.3				9.4	
Confl. Peds. (#/hr)	5		7	7		5	3		5	5		3	
Confl. Bikes (#/hr)			1			5			7			4	
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.96	0.96	0.96	0.91	0.91	0.91	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	75	430	0	105	465	0	83	390	0	121	522	0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	4		3	4		1	2		1	2		9
Permitted Phases	4			4			2			2			
Detector Phase	3	4		3	4		1	2		1	2		
Switch Phase													
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0		5.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	13.0		11.0	13.0		22.0
Total Split (s)	11.0	36.0		11.0	36.0		11.0	36.0		11.0	36.0		22.0
Total Split (%)	9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		19%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max		None
Act Effect Green (s)	37.4	31.3		37.4	31.3		37.4	31.3		37.4	31.3		
Actuated g/C Ratio	0.36	0.30		0.36	0.30		0.36	0.30		0.36	0.30		
v/c Ratio	0.37	0.77		0.45	0.84		0.47	0.69		0.47	0.94		
Control Delay	26.9	44.2		29.1	48.9		30.8	40.6		29.2	62.1		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	26.9	44.2		29.1	48.9		30.8	40.6		29.2	62.1		
LOS	C	D		C	D		C	D		C	E		
Approach Delay		41.6			45.2			38.9			56.0		
Approach LOS		D			D			D			E		
Queue Length 50th (ft)	25	217		36	240		28	193		42	286		
Queue Length 95th (ft)	71	#482		89	#499		77	#411		106	#644		
Internal Link Dist (ft)		126			285			461			333		
Turn Bay Length (ft)	50			60			75			125			
Base Capacity (vph)	204	558		231	555		178	566		260	557		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.37	0.77		0.45	0.84		0.47	0.69		0.47	0.94		

Intersection Summary

Area Type: Other  
 Cycle Length: 116  
 Actuated Cycle Length: 102.8  
 Natural Cycle: 110  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 46.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 74.4%  
 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: 3: Walnut Street & Beacon Street



Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	465	2	2	425	15	1	1	1	5	0	25
Future Vol, veh/h	10	465	2	2	425	15	1	1	1	5	0	25
Conflicting Peds, #/hr	4	0	17	17	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	81	81	81	75	75	75	83	83	83
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	3	3	3
Mvmt Flow	11	517	2	2	525	19	1	1	1	6	0	30

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	548	0	0	536	0	0	1111	1109	535	1084	1101	539
Stage 1	-	-	-	-	-	-	557	557	-	543	543	-
Stage 2	-	-	-	-	-	-	554	552	-	541	558	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.1	6.5	6.2	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.5	4	3.3	3.527	4.027	3.327
Pot Cap-1 Maneuver	1027	-	-	1037	-	-	188	211	549	194	211	541
Stage 1	-	-	-	-	-	-	518	515	-	522	518	-
Stage 2	-	-	-	-	-	-	520	518	-	523	510	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1023	-	-	1020	-	-	172	203	540	189	203	539
Mov Cap-2 Maneuver	-	-	-	-	-	-	172	203	-	189	203	-
Stage 1	-	-	-	-	-	-	502	499	-	512	514	-
Stage 2	-	-	-	-	-	-	489	514	-	513	494	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	20.4	14.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	238	1023	-	-	1020	-	-	412
HCM Lane V/C Ratio	0.017	0.011	-	-	0.002	-	-	0.088
HCM Control Delay (s)	20.4	8.6	0	-	8.5	0	-	14.6
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	475	1	1	450	0	1
Future Vol, veh/h	475	1	1	450	0	1
Conflicting Peds, #/hr	0	16	16	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	81	81	25	25
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	528	1	1	556	0	4

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	545	1103
Stage 1	-	-	-	545
Stage 2	-	-	-	558
Critical Hdwy	-	-	4.11	6.4
Critical Hdwy Stg 1	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	3.5
Pot Cap-1 Maneuver	-	-	1029	236
Stage 1	-	-	-	585
Stage 2	-	-	-	577
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1013	232
Mov Cap-2 Maneuver	-	-	-	232
Stage 1	-	-	-	576
Stage 2	-	-	-	576

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	534	-	-	1013	-
HCM Lane V/C Ratio	0.007	-	-	0.001	-
HCM Control Delay (s)	11.8	-	-	8.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	475	0	0	450	0	0
Future Vol, veh/h	475	0	0	450	0	0
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	83	83	42	42
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	528	0	0	542	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	541	0	1083	541
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	542	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1033	-	243	545
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	587	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1020	-	240	538
Mov Cap-2 Maneuver	-	-	-	-	240	-
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	587	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1020	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	465	2	5	445	2	1	0	10	1	0	1
Future Vol, veh/h	0	465	2	5	445	2	1	0	10	1	0	1
Conflicting Peds, #/hr	3	0	9	9	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	83	83	83	83	83	83	50	50	50
Heavy Vehicles, %	1	1	1	1	1	1	10	10	10	0	0	0
Mvmt Flow	0	517	2	6	536	2	1	0	12	2	0	2
Major/Minor	Major1	Major2		Minor1			Minor2					
Conflicting Flow All	541	0	0	528	0	0	1077	1080	527	1076	1080	540
Stage 1	-	-	-	-	-	-	527	527	-	552	552	-
Stage 2	-	-	-	-	-	-	550	553	-	524	528	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.2	6.6	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.59	4.09	3.39	3.5	4	3.3
Pot Cap-1 Maneuver	1033	-	-	1044	-	-	190	211	536	199	220	546
Stage 1	-	-	-	-	-	-	520	515	-	522	518	-
Stage 2	-	-	-	-	-	-	505	502	-	540	531	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1030	-	-	1035	-	-	187	207	531	193	216	544
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	207	-	193	216	-
Stage 1	-	-	-	-	-	-	515	510	-	520	512	-
Stage 2	-	-	-	-	-	-	499	496	-	528	526	-
Approach	EB	WB		NB			SB					
HCM Control Delay, s	0	0.1		13.1			17.8					
HCM LOS				B			C					
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	455	1030	-	-	1035	-	-	285				
HCM Lane V/C Ratio	0.029	-	-	-	0.006	-	-	0.014				
HCM Control Delay (s)	13.1	0	-	-	8.5	0	-	17.8				
HCM Lane LOS	B	A	-	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	440	5	15	430	2	10	0	25	0	0	0
Future Vol, veh/h	0	440	5	15	430	2	10	0	25	0	0	0
Conflicting Peds, #/hr	3	0	13	13	0	3	5	0	1	1	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	67	67	67	92	92	92
Heavy Vehicles, %	0	0	0	1	1	1	3	3	3	0	0	0
Mvmt Flow	0	500	6	17	500	2	15	0	37	0	0	0
Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	505	0	0	519	0	0	1056	1055	517	1061	1057	509
Stage 1	-	-	-	-	-	-	516	516	-	538	538	-
Stage 2	-	-	-	-	-	-	540	539	-	523	519	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1070	-	-	1052	-	-	202	225	556	203	227	568
Stage 1	-	-	-	-	-	-	540	533	-	531	526	-
Stage 2	-	-	-	-	-	-	524	520	-	541	536	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1067	-	-	1039	-	-	195	216	549	185	218	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	216	-	185	218	-
Stage 1	-	-	-	-	-	-	534	527	-	529	512	-
Stage 2	-	-	-	-	-	-	510	506	-	504	530	-
Approach	EB	WB			NB			SB				
HCM Control Delay, s	0	0.3			16.7			0				
HCM LOS		C			C			A				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	361	1067	-	-	1039	-	-	-				
HCM Lane V/C Ratio	0.145	-	-	-	0.017	-	-	-				
HCM Control Delay (s)	16.7	0	-	-	8.5	0	-	0				
HCM Lane LOS	C	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	-				

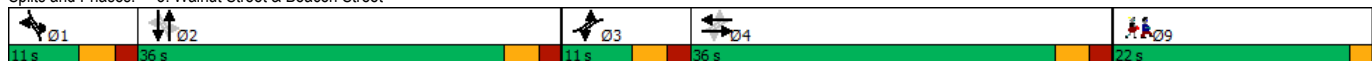


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	100	370	55	60	355	110	70	480	40	90	360	55	
Future Volume (vph)	100	370	55	60	355	110	70	480	40	90	360	55	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	60		0	75		0	125		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1736	1785	0	1787	1804	0	1736	1801	0	1752	1803	0	
Flt Permitted	0.128			0.178			0.193			0.128			
Satd. Flow (perm)	234	1785	0	334	1804	0	353	1801	0	235	1803	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		6			13			3				6	
Link Speed (mph)		30			30			30				30	
Link Distance (ft)		206			365			541				413	
Travel Time (s)		4.7			8.3			12.3				9.4	
Confl. Peds. (#/hr)			4	4					9	9			
Confl. Bikes (#/hr)			4			2			2			1	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	4%	4%	4%	3%	3%	3%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	109	462	0	65	506	0	76	565	0	98	451	0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	4		3	4		1	2		1	2		9
Permitted Phases	4			4			2			2			
Detector Phase	3	4		3	4		1	2		1	2		
Switch Phase													
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0		5.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	13.0		11.0	13.0		22.0
Total Split (s)	11.0	36.0		11.0	36.0		11.0	36.0		11.0	36.0		22.0
Total Split (%)	9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		19%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max		None
Act Effect Green (s)	37.4	31.3		37.4	31.3		37.4	31.3		37.4	31.3		
Actuated g/C Ratio	0.36	0.30		0.36	0.30		0.36	0.30		0.36	0.30		
v/c Ratio	0.63	0.84		0.31	0.91		0.36	1.03		0.56	0.82		
Control Delay	40.9	50.4		25.8	56.8		26.8	82.3		36.2	47.8		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	40.9	50.4		25.8	56.8		26.8	82.3		36.2	47.8		
LOS	D	D		C	E		C	F		D	D		
Approach Delay		48.6			53.3			75.8			45.7		
Approach LOS		D			D			E			D		
Queue Length 50th (ft)	37	243		22	271		25	324		33	235		
Queue Length 95th (ft)	#119	#548		64	#611		72	#725		#95	#525		
Internal Link Dist (ft)		126			285			461			333		
Turn Bay Length (ft)		50		60			75			125			
Base Capacity (vph)	173	548		207	558		210	550		175	553		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.63	0.84		0.31	0.91		0.36	1.03		0.56	0.82		

Intersection Summary

Area Type: Other  
 Cycle Length: 116  
 Actuated Cycle Length: 102.8  
 Natural Cycle: 120  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 56.5  
 Intersection LOS: E  
 Intersection Capacity Utilization 80.3%  
 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: 3: Walnut Street & Beacon Street



Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	515	1	1	465	15	1	0	0	10	0	10
Future Vol, veh/h	10	515	1	1	465	15	1	0	0	10	0	10
Conflicting Peds, #/hr	2	0	13	13	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	0	0	0
Mvmt Flow	11	560	1	1	505	16	1	0	0	11	0	11

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	523	0	0	574	0	0	1117	574	1100	1113	515	
Stage 1	-	-	-	-	-	-	596	596	-	517	517	-
Stage 2	-	-	-	-	-	-	521	525	-	583	596	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1038	-	-	1004	-	-	186	208	522	191	210	564
Stage 1	-	-	-	-	-	-	494	495	-	545	537	-
Stage 2	-	-	-	-	-	-	542	533	-	502	495	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1036	-	-	992	-	-	178	202	516	188	204	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	202	-	188	204	-
Stage 1	-	-	-	-	-	-	481	482	-	536	535	-
Stage 2	-	-	-	-	-	-	531	531	-	494	482	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	25.3	18.8
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	178	1036	-	-	992	-	-	282
HCM Lane V/C Ratio	0.006	0.01	-	-	0.001	-	-	0.077
HCM Control Delay (s)	25.3	8.5	0	-	8.6	0	-	18.8
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	525	0	1	475	1	2
Future Vol, veh/h	525	0	1	475	1	2
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	1	1	0	0
Mvmt Flow	571	0	1	516	1	2

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	584	0	1102
Stage 1	-	-	-	-	584
Stage 2	-	-	-	-	518
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	996	-	236
Stage 1	-	-	-	-	561
Stage 2	-	-	-	-	602
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	984	-	233
Mov Cap-2 Maneuver	-	-	-	-	233
Stage 1	-	-	-	-	554
Stage 2	-	-	-	-	601

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	365	-	-	984	-
HCM Lane V/C Ratio	0.009	-	-	0.001	-
HCM Control Delay (s)	15	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	525	0	0	475	0	0
Future Vol, veh/h	525	0	0	475	0	0
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	2	2	0	0
Mvmt Flow	571	0	0	516	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	581	0	1097
Stage 1	-	-	-	-	581
Stage 2	-	-	-	-	516
Critical Hdwy	-	-	4.12	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.218	-	3.5
Pot Cap-1 Maneuver	-	-	993	-	238
Stage 1	-	-	-	-	563
Stage 2	-	-	-	-	603
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	984	-	236
Mov Cap-2 Maneuver	-	-	-	-	236
Stage 1	-	-	-	-	557
Stage 2	-	-	-	-	603

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	984	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	520	5	5	470	1	5	0	2	2	0	0
Future Vol, veh/h	0	520	5	5	470	1	5	0	2	2	0	0
Conflicting Peds, #/hr	6	0	10	10	0	6	4	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	565	5	5	511	1	5	0	2	2	0	0

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	518	0	0	580	0	0	1104	1106	578	1097	1108	522
Stage 1	-	-	-	-	-	-	578	578	-	528	528	-
Stage 2	-	-	-	-	-	-	526	528	-	569	580	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1043	-	-	994	-	-	190	212	519	192	212	559
Stage 1	-	-	-	-	-	-	505	504	-	538	531	-
Stage 2	-	-	-	-	-	-	539	531	-	511	503	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1037	-	-	985	-	-	186	207	514	189	207	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	207	-	189	207	-
Stage 1	-	-	-	-	-	-	500	499	-	535	524	-
Stage 2	-	-	-	-	-	-	533	524	-	509	498	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	21.4	24.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	227	1037	-	-	985	-	-	189
HCM Lane V/C Ratio	0.034	-	-	-	0.006	-	-	0.012
HCM Control Delay (s)	21.4	0	-	-	8.7	0	-	24.3
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	495	10	20	455	1	15	0	30	1	0	0
Future Vol, veh/h	0	495	10	20	455	1	15	0	30	1	0	0
Conflicting Peds, #/hr	6	0	10	10	0	6	6	0	0	0	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	538	11	22	495	1	16	0	33	1	0	0

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	502	0	0	559	0	0	1100	1100	554	1106	1105	508
Stage 1	-	-	-	-	-	-	554	554	-	546	546	-
Stage 2	-	-	-	-	-	-	546	546	-	560	559	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1057	-	-	1017	-	-	191	214	536	190	213	569
Stage 1	-	-	-	-	-	-	520	517	-	526	521	-
Stage 2	-	-	-	-	-	-	526	521	-	516	514	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1051	-	-	1007	-	-	184	204	531	173	203	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	204	-	173	203	-
Stage 1	-	-	-	-	-	-	515	512	-	523	502	-
Stage 2	-	-	-	-	-	-	507	502	-	484	509	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	18	25.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	326	1051	-	-	1007	-	-	173
HCM Lane V/C Ratio	0.15	-	-	-	0.022	-	-	0.006
HCM Control Delay (s)	18	0	-	-	8.7	0	-	25.9
HCM Lane LOS	C	A	-	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0

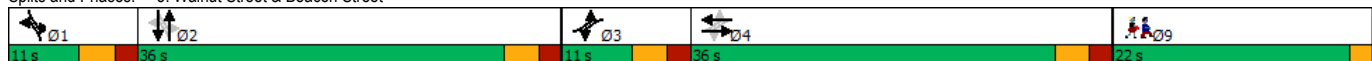


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	75	335	90	95	310	115	85	350	35	115	420	75	
Future Volume (vph)	75	335	90	95	310	115	85	350	35	115	420	75	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	60		0	75		0	125		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1787	1808	0	1787	1786	0	1787	1848	0	1770	1811	0	
Flt Permitted	0.178			0.178			0.128			0.237			
Satd. Flow (perm)	334	1808	0	334	1786	0	240	1848	0	440	1811	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		11			16			4			8		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		206			365			541			413		
Travel Time (s)		4.7			8.3			12.3			9.4		
Confl. Peds. (#/hr)	5		7	7		5	3		5	5		3	
Confl. Bikes (#/hr)			1			5			7			4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	82	462	0	103	462	0	92	418	0	125	539	0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	4		3	4		1	2		1	2		9
Permitted Phases	4			4			2			2			
Detector Phase	3	4		3	4		1	2		1	2		
Switch Phase													
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0		5.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	13.0		11.0	13.0		22.0
Total Split (s)	11.0	36.0		11.0	36.0		11.0	36.0		11.0	36.0		22.0
Total Split (%)	9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		19%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max		None
Act Effect Green (s)	37.4	31.3		37.4	31.3		37.4	31.3		37.4	31.3		
Actuated g/C Ratio	0.36	0.30		0.36	0.30		0.36	0.30		0.36	0.30		
v/c Ratio	0.40	0.83		0.50	0.83		0.52	0.74		0.53	0.97		
Control Delay	27.7	48.3		31.3	48.4		33.4	42.9		31.9	68.0		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	27.7	48.3		31.3	48.4		33.4	42.9		31.9	68.0		
LOS	C	D		C	D		C	D		C	E		
Approach Delay		45.2			45.3			41.2			61.2		
Approach LOS		D			D			D			E		
Queue Length 50th (ft)	27	240		35	237		31	212		43	299		
Queue Length 95th (ft)	77	#537		92	#536		#89	#461		109	#673		
Internal Link Dist (ft)		126			285			461			333		
Turn Bay Length (ft)	50			60			75			125			
Base Capacity (vph)	207	558		207	555		178	566		238	557		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.40	0.83		0.50	0.83		0.52	0.74		0.53	0.97		

Intersection Summary

Area Type: Other  
 Cycle Length: 116  
 Actuated Cycle Length: 102.8  
 Natural Cycle: 110  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 49.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 76.9%  
 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: 3: Walnut Street & Beacon Street



Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	495	2	2	455	15	1	1	1	5	0	25
Future Vol, veh/h	10	495	2	2	455	15	1	1	1	5	0	25
Conflicting Peds, #/hr	4	0	17	17	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	3	3	3
Mvmt Flow	11	538	2	2	495	16	1	1	1	5	0	27

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	515	0	0	557	0	0	1099	1097	556	1073	1090	507
Stage 1	-	-	-	-	-	-	578	578	-	511	511	-
Stage 2	-	-	-	-	-	-	521	519	-	562	579	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.1	6.5	6.2	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.5	4	3.3	3.527	4.027	3.327
Pot Cap-1 Maneuver	1056	-	-	1019	-	-	192	215	534	197	214	564
Stage 1	-	-	-	-	-	-	505	504	-	543	535	-
Stage 2	-	-	-	-	-	-	542	536	-	510	499	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1052	-	-	1003	-	-	177	207	525	192	206	562
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	207	-	192	206	-
Stage 1	-	-	-	-	-	-	489	488	-	533	531	-
Stage 2	-	-	-	-	-	-	514	532	-	500	484	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	20.1	14.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	1052	-	-	1003	-	-	425
HCM Lane V/C Ratio	0.013	0.01	-	-	0.002	-	-	0.077
HCM Control Delay (s)	20.1	8.5	0	-	8.6	0	-	14.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	505	1	1	480	0	1
Future Vol, veh/h	505	1	1	480	0	1
Conflicting Peds, #/hr	0	16	16	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	549	1	1	522	0	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	566	0	1090
Stage 1	-	-	-	-	566
Stage 2	-	-	-	-	524
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	1011	-	240
Stage 1	-	-	-	-	572
Stage 2	-	-	-	-	598
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	996	-	236
Mov Cap-2 Maneuver	-	-	-	-	236
Stage 1	-	-	-	-	563
Stage 2	-	-	-	-	597

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	520	-	-	996	-
HCM Lane V/C Ratio	0.002	-	-	0.001	-
HCM Control Delay (s)	11.9	-	-	8.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	505	0	0	480	0	0
Future Vol, veh/h	505	0	0	480	0	0
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	549	0	0	522	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	562	0	1084
Stage 1	-	-	-	-	562
Stage 2	-	-	-	-	522
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	1014	-	242
Stage 1	-	-	-	-	575
Stage 2	-	-	-	-	599
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1001	-	239
Mov Cap-2 Maneuver	-	-	-	-	239
Stage 1	-	-	-	-	568
Stage 2	-	-	-	-	599

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1001	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	495	2	5	475	2	1	0	10	1	0	1
Future Vol, veh/h	0	495	2	5	475	2	1	0	10	1	0	1
Conflicting Peds, #/hr	3	0	9	9	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1	10	10	10	0	0	0
Mvmt Flow	0	538	2	5	516	2	1	0	11	1	0	1

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	521	0	0	549	0	0	1076	1079	548	1075	1079	520
Stage 1	-	-	-	-	-	-	548	548	-	530	530	-
Stage 2	-	-	-	-	-	-	528	531	-	545	549	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.2	6.6	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.59	4.09	3.39	3.5	4	3.3
Pot Cap-1 Maneuver	1050	-	-	1026	-	-	190	211	521	199	220	560
Stage 1	-	-	-	-	-	-	507	504	-	536	530	-
Stage 2	-	-	-	-	-	-	520	513	-	526	520	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1047	-	-	1017	-	-	187	207	517	193	216	558
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	207	-	193	216	-
Stage 1	-	-	-	-	-	-	502	499	-	534	525	-
Stage 2	-	-	-	-	-	-	515	508	-	515	515	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	13.3	17.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	446	1047	-	-	1017	-	-	287
HCM Lane V/C Ratio	0.027	-	-	-	0.005	-	-	0.008
HCM Control Delay (s)	13.3	0	-	-	8.6	0	-	17.6
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	470	5	15	460	2	10	0	25	0	0	0
Future Vol, veh/h	0	470	5	15	460	2	10	0	25	0	0	0
Conflicting Peds, #/hr	3	0	13	13	0	3	5	0	1	1	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	1	1	1	3	3	3	0	0	0
Mvmt Flow	0	511	5	16	500	2	11	0	27	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	505	0	0	529	0	0	1065	1064	528	1064	1065	509
Stage 1	-	-	-	-	-	-	527	527	-	536	536	-
Stage 2	-	-	-	-	-	-	538	537	-	528	529	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1070	-	-	1043	-	-	199	222	548	202	224	568
Stage 1	-	-	-	-	-	-	533	527	-	532	527	-
Stage 2	-	-	-	-	-	-	525	521	-	538	530	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1067	-	-	1030	-	-	192	214	541	188	216	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	192	214	-	188	216	-
Stage 1	-	-	-	-	-	-	527	521	-	530	514	-
Stage 2	-	-	-	-	-	-	511	508	-	510	524	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			16.3			0		
HCM LOS							C			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	356	1067	-	-	1030	-	-	-				
HCM Lane V/C Ratio	0.107	-	-	-	0.016	-	-	-				
HCM Control Delay (s)	16.3	0	-	-	8.6	0	-	0				
HCM Lane LOS	C	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-				

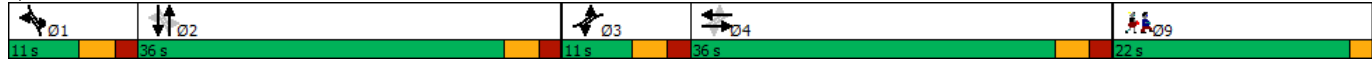


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	100	380	55	60	360	110	70	480	40	90	360	55	
Future Volume (vph)	100	380	55	60	360	110	70	480	40	90	360	55	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	60		0	75		0	125		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1736	1785	0	1787	1806	0	1736	1801	0	1752	1803	0	
Flt Permitted	0.128			0.164			0.193			0.128			
Satd. Flow (perm)	234	1785	0	308	1806	0	353	1801	0	235	1803	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		6			13			3				6	
Link Speed (mph)		30			30			30				30	
Link Distance (ft)		206			365			541				413	
Travel Time (s)		4.7			8.3			12.3				9.4	
Confl. Peds. (#/hr)			4	4					9	9			
Confl. Bikes (#/hr)			4			2			2			1	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	4%	4%	4%	3%	3%	3%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	109	473	0	65	511	0	76	565	0	98	451	0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	4		3	4		1	2		1	2		9
Permitted Phases	4			4			2			2			
Detector Phase	3	4		3	4		1	2		1	2		
Switch Phase													
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0		5.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	13.0		11.0	13.0		22.0
Total Split (s)	11.0	36.0		11.0	36.0		11.0	36.0		11.0	36.0		22.0
Total Split (%)	9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		19%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max		None
Act Effect Green (s)	37.4	31.3		37.4	31.3		37.4	31.3		37.4	31.3		
Actuated g/C Ratio	0.36	0.30		0.36	0.30		0.36	0.30		0.36	0.30		
v/c Ratio	0.63	0.86		0.33	0.91		0.36	1.03		0.56	0.82		
Control Delay	40.9	52.4		26.2	57.8		26.8	82.3		36.2	47.8		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	40.9	52.4		26.2	57.8		26.8	82.3		36.2	47.8		
LOS	D	D		C	E		C	F		D	D		
Approach Delay		50.2			54.3			75.8			45.7		
Approach LOS		D			D			E			D		
Queue Length 50th (ft)	37	251		22	274		25	324		33	235		
Queue Length 95th (ft)	#119	#567		64	#619		72	#725		#95	#525		
Internal Link Dist (ft)		126			285			461			333		
Turn Bay Length (ft)		50		60			75			125			
Base Capacity (vph)	173	548		199	559		210	550		175	553		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.63	0.86		0.33	0.91		0.36	1.03		0.56	0.82		

Intersection Summary

Area Type: Other  
 Cycle Length: 116  
 Actuated Cycle Length: 102.8  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 57.1  
 Intersection LOS: E  
 Intersection Capacity Utilization 80.6%  
 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: 3: Walnut Street & Beacon Street



Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	525	1	1	470	15	1	0	0	10	0	10
Future Vol, veh/h	10	525	1	1	470	15	1	0	0	10	0	10
Conflicting Peds, #/hr	2	0	13	13	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	0	0	0
Mvmt Flow	11	571	1	1	511	16	1	0	0	11	0	11

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	529	0	0	585	0	0	1134	1138	585	1117	1130	521
Stage 1	-	-	-	-	-	-	607	607	-	523	523	-
Stage 2	-	-	-	-	-	-	527	531	-	594	607	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1033	-	-	995	-	-	181	203	515	186	205	559
Stage 1	-	-	-	-	-	-	487	489	-	541	534	-
Stage 2	-	-	-	-	-	-	538	529	-	495	489	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1031	-	-	983	-	-	173	197	509	183	199	558
Mov Cap-2 Maneuver	-	-	-	-	-	-	173	197	-	183	199	-
Stage 1	-	-	-	-	-	-	473	475	-	531	532	-
Stage 2	-	-	-	-	-	-	527	527	-	487	475	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	25.9	19.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	173	1031	-	-	983	-	-	276
HCM Lane V/C Ratio	0.006	0.011	-	-	0.001	-	-	0.079
HCM Control Delay (s)	25.9	8.5	0	-	8.7	0	-	19.2
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	525	1	5	475	5	10
Future Vol, veh/h	525	1	5	475	5	10
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	1	1	0	0
Mvmt Flow	571	1	5	516	5	11

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	585	1111
Stage 1	-	-	-	585
Stage 2	-	-	-	526
Critical Hdwy	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	5.4
Follow-up Hdwy	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	995	233
Stage 1	-	-	-	561
Stage 2	-	-	-	597
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	983	229
Mov Cap-2 Maneuver	-	-	-	229
Stage 1	-	-	-	554
Stage 2	-	-	-	593

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	362	-	-	983	-
HCM Lane V/C Ratio	0.045	-	-	0.006	-
HCM Control Delay (s)	15.4	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	520	5	5	475	1	5	0	2	2	0	0
Future Vol, veh/h	0	520	5	5	475	1	5	0	2	2	0	0
Conflicting Peds, #/hr	6	0	10	10	0	6	4	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	565	5	5	516	1	5	0	2	2	0	0

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	523	0	0	580	0	0	1109	1111	578	1102	1113	527
Stage 1	-	-	-	-	-	-	578	578	-	533	533	-
Stage 2	-	-	-	-	-	-	531	533	-	569	580	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1038	-	-	994	-	-	189	211	519	191	210	555
Stage 1	-	-	-	-	-	-	505	504	-	534	528	-
Stage 2	-	-	-	-	-	-	536	528	-	511	503	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1032	-	-	985	-	-	185	206	514	188	205	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	206	-	188	205	-
Stage 1	-	-	-	-	-	-	500	499	-	531	521	-
Stage 2	-	-	-	-	-	-	530	521	-	509	498	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	21.5	24.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	226	1032	-	-	985	-	-	188
HCM Lane V/C Ratio	0.034	-	-	-	0.006	-	-	0.012
HCM Control Delay (s)	21.5	0	-	-	8.7	0	-	24.4
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	495	10	20	460	1	15	0	30	1	0	0
Future Vol, veh/h	0	495	10	20	460	1	15	0	30	1	0	0
Conflicting Peds, #/hr	6	0	10	10	0	6	6	0	0	0	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	538	11	22	500	1	16	0	33	1	0	0
Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	507	0	0	559	0	0	1105	1105	554	1111	1110	513
Stage 1	-	-	-	-	-	-	554	554	-	551	551	-
Stage 2	-	-	-	-	-	-	551	551	-	560	559	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1053	-	-	1017	-	-	190	213	536	188	211	565
Stage 1	-	-	-	-	-	-	520	517	-	522	519	-
Stage 2	-	-	-	-	-	-	522	519	-	516	514	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1047	-	-	1007	-	-	183	203	531	171	202	559
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	203	-	171	202	-
Stage 1	-	-	-	-	-	-	515	512	-	519	500	-
Stage 2	-	-	-	-	-	-	503	500	-	484	509	-
Approach	EB	WB			NB			SB				
HCM Control Delay, s	0	0.4			18			26.2				
HCM LOS		C			C			D				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	325	1047	-	-	1007	-	-	171				
HCM Lane V/C Ratio	0.151	-	-	-	0.022	-	-	0.006				
HCM Control Delay (s)	18	0	-	-	8.7	0	-	26.2				
HCM Lane LOS	C	A	-	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0				

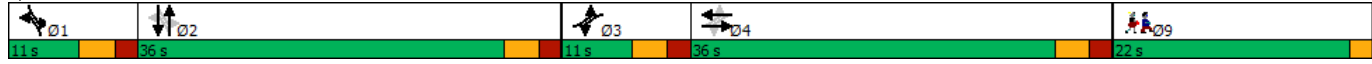


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	75	340	90	95	320	115	85	350	35	115	420	75	
Future Volume (vph)	75	340	90	95	320	115	85	350	35	115	420	75	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	60		0	75		0	125		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1787	1810	0	1787	1789	0	1787	1848	0	1770	1811	0	
Flt Permitted	0.164			0.171			0.128			0.237			
Satd. Flow (perm)	308	1810	0	320	1789	0	240	1848	0	440	1811	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		11			15			4				8	
Link Speed (mph)		30			30			30				30	
Link Distance (ft)		206			365			541				413	
Travel Time (s)		4.7			8.3			12.3				9.4	
Confl. Peds. (#/hr)	5		7	7		5	3		5	5		3	
Confl. Bikes (#/hr)			1			5			7			4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	82	468	0	103	473	0	92	418	0	125	539	0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	4		3	4		1	2		1	2		9
Permitted Phases	4			4			2			2			
Detector Phase	3	4		3	4		1	2		1	2		
Switch Phase													
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0		5.0
Minimum Split (s)	11.0	13.0		11.0	13.0		11.0	13.0		11.0	13.0		22.0
Total Split (s)	11.0	36.0		11.0	36.0		11.0	36.0		11.0	36.0		22.0
Total Split (%)	9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		9.5%	31.0%		19%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max		None
Act Effect Green (s)	37.4	31.3		37.4	31.3		37.4	31.3		37.4	31.3		
Actuated g/C Ratio	0.36	0.30		0.36	0.30		0.36	0.30		0.36	0.30		
v/c Ratio	0.41	0.84		0.51	0.85		0.52	0.74		0.53	0.97		
Control Delay	28.3	49.2		32.0	50.2		33.4	42.9		31.9	68.0		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	28.3	49.2		32.0	50.2		33.4	42.9		31.9	68.0		
LOS	C	D		C	D		C	D		C	E		
Approach Delay		46.1			47.0			41.2			61.2		
Approach LOS		D			D			D			E		
Queue Length 50th (ft)	27	243		35	246		31	212		43	299		
Queue Length 95th (ft)	77	#546		92	#555		#89	#461		109	#673		
Internal Link Dist (ft)		126			285			461			333		
Turn Bay Length (ft)	50			60			75			125			
Base Capacity (vph)	199	559		202	556		178	566		238	557		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.41	0.84		0.51	0.85		0.52	0.74		0.53	0.97		

Intersection Summary

Area Type: Other  
 Cycle Length: 116  
 Actuated Cycle Length: 102.8  
 Natural Cycle: 110  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 49.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 77.4%  
 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: 3: Walnut Street & Beacon Street





Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	500	2	2	465	15	1	1	1	5	0	25
Future Vol, veh/h	10	500	2	2	465	15	1	1	1	5	0	25
Conflicting Peds, #/hr	4	0	17	17	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	3	3	3
Mvmt Flow	11	543	2	2	505	16	1	1	1	5	0	27
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	525	0	0	562	0	0	1114	1112	561	1088	1105	517
Stage 1	-	-	-	-	-	-	583	583	-	521	521	-
Stage 2	-	-	-	-	-	-	531	529	-	567	584	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.1	6.5	6.2	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.5	4	3.3	3.527	4.027	3.327
Pot Cap-1 Maneuver	1047	-	-	1014	-	-	187	211	531	192	210	556
Stage 1	-	-	-	-	-	-	502	502	-	537	530	-
Stage 2	-	-	-	-	-	-	536	530	-	507	496	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1043	-	-	998	-	-	173	203	522	188	202	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	173	203	-	188	202	-
Stage 1	-	-	-	-	-	-	486	486	-	527	526	-
Stage 2	-	-	-	-	-	-	508	526	-	497	481	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.2		0			20.3			14.3			
HCM LOS	C		C			C			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	238	1043	-	-	998	-	-	418				
HCM Lane V/C Ratio	0.014	0.01	-	-	0.002	-	-	0.078				
HCM Control Delay (s)	20.3	8.5	0	-	8.6	0	-	14.3				
HCM Lane LOS	C	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3				

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Vol, veh/h	505	5	10	480	2	5
Future Vol, veh/h	505	5	10	480	2	5
Conflicting Peds, #/hr	0	16	16	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	549	5	11	522	2	5

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	570	0	1112
Stage 1	-	-	-	-	568
Stage 2	-	-	-	-	544
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	1007	-	233
Stage 1	-	-	-	-	571
Stage 2	-	-	-	-	586
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	992	-	226
Mov Cap-2 Maneuver	-	-	-	-	226
Stage 1	-	-	-	-	562
Stage 2	-	-	-	-	577

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	378	-	-	992	-
HCM Lane V/C Ratio	0.02	-	-	0.011	-
HCM Control Delay (s)	14.7	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	500	2	5	475	2	1	0	10	1	0	1
Future Vol, veh/h	0	500	2	5	475	2	1	0	10	1	0	1
Conflicting Peds, #/hr	3	0	9	9	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1	10	10	10	0	0	0
Mvmt Flow	0	543	2	5	516	2	1	0	11	1	0	1

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	521	0	0	554	0	0	1081	1084	553	1080	1084	520
Stage 1	-	-	-	-	-	-	553	553	-	530	530	-
Stage 2	-	-	-	-	-	-	528	531	-	550	554	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.2	6.6	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.59	4.09	3.39	3.5	4	3.3
Pot Cap-1 Maneuver	1050	-	-	1021	-	-	189	210	518	197	219	560
Stage 1	-	-	-	-	-	-	503	502	-	536	530	-
Stage 2	-	-	-	-	-	-	520	513	-	523	517	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1047	-	-	1012	-	-	186	206	514	191	215	558
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	206	-	191	215	-
Stage 1	-	-	-	-	-	-	498	497	-	534	525	-
Stage 2	-	-	-	-	-	-	515	508	-	512	512	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	13.4	17.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	443	1047	-	-	1012	-	-	285
HCM Lane V/C Ratio	0.027	-	-	-	0.005	-	-	0.008
HCM Control Delay (s)	13.4	0	-	-	8.6	0	-	17.7
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	475	5	15	460	2	10	0	25	0	0	0
Future Vol, veh/h	0	475	5	15	460	2	10	0	25	0	0	0
Conflicting Peds, #/hr	3	0	13	13	0	3	5	0	1	1	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	1	1	1	3	3	3	0	0	0
Mvmt Flow	0	516	5	16	500	2	11	0	27	0	0	0
Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	505	0	0	534	0	0	1070	1069	533	1069	1070	509
Stage 1	-	-	-	-	-	-	532	532	-	536	536	-
Stage 2	-	-	-	-	-	-	538	537	-	533	534	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1070	-	-	1039	-	-	198	220	545	201	223	568
Stage 1	-	-	-	-	-	-	529	524	-	532	527	-
Stage 2	-	-	-	-	-	-	525	521	-	534	528	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1067	-	-	1026	-	-	191	212	538	187	215	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	191	212	-	187	215	-
Stage 1	-	-	-	-	-	-	523	518	-	530	514	-
Stage 2	-	-	-	-	-	-	511	508	-	507	522	-
Approach	EB	WB			NB			SB				
HCM Control Delay, s	0	0.3			16.4			0				
HCM LOS		C			C			A				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	354	1067	-	-	1026	-	-	-				
HCM Lane V/C Ratio	0.107	-	-	-	0.016	-	-	-				
HCM Control Delay (s)	16.4	0	-	-	8.6	0	-	0				
HCM Lane LOS	C	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-				