

To: Mr. Geoff Whitehouse MME Newton Retail, LLC 10115 Jefferson Blvd Culver. CA 90232 Date: November 9, 2020

Memorandum

Project #: 14559.00

From: Randall C. Hart, Principal

Matthew Duranleau, EIT

Re: Traffic Impact and Access Memorandum Proposed Recreational Marijuana Dispensary

232 Boylston Street Newton, Massachusetts

VHB has conducted a traffic assessment to determine the suitability and potential impacts of a recreational marijuana dispensary (the Project) at 232 Boylston Street (Route 9) in Newton, Massachusetts (the Site). Specifically, the Project involves the conversion of an existing jewelry store into a recreational marijuana dispensary.

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

# **Site Location and Proposed Development**

The Site is located at 232 Boylston Street (Route 9) in Newton, Massachusetts. The Site currently includes one building of approximately 5,484 square feet (sf) formerly occupied by the Shreve, Crump & Low jewelry store. The Project includes renovations to the building that will reduce the gross square footage of the proposed recreational marijuana dispensary to approximately 4,825 sf. The Site is located adjacent to the Capital Grille restaurant to the west and the mixed-use Chestnut Hill Square development to the east and south and is connected internally to these two parcels via a driveway on the south side of the Site.

Under Existing conditions, the Site is accessed via an entrance-only driveway to the west of the building on Route 9 eastbound that is shared with the Capital Grille, as well as a full-access driveway to the east that is shared with Chestnut Hill Square. The east driveway only provides access into the Site from Route 9 eastbound while the west driveway provides access into the Site from Route 9 eastbound and westbound and egress from the Site to Route 9 eastbound only. To exit the Site onto Route 9 westbound, vehicles need to turn right onto Route 9 eastbound and use the U-turn underpass at Hammond Pond Parkway approximately ¼-mile east of the Site to reach Route 9 westbound. Under the proposed redevelopment, the access configuration will remain the same as existing conditions.

A total of 16 parking spaces are provided under existing conditions, consisting of 14 customer spaces and 2 employee spaces. To maximize the efficiency of operations on-Site, some modifications to the striped parking will be made to include 19 parking spaces, 10 of which will be managed parking spaces and the 9 remaining will be open to customers to self-park. All employees will be required to park off site and will either rideshare/taxi to the proposed facility. The location of remote parking is still be evaluated.

Figure 1 shows the Project Site in relation to the surrounding area.







Ref: 14559.00 October 28, 2020 Page 3

# **Existing Conditions**

The following section provides a summary of the local intersection and roadway conditions in the immediate vicinity of the Site. 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:

- Route 9 at East Site Driveway and The Shops at Chestnut Hill Driveway
- Route 9 Eastbound at West Site Driveway

Figure 2 shows the observed existing geometry and traffic control at each study area intersection.

The existing conditions 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, and a review of recent crash history.

# **Study Area Roadways**

Boylston Street (Route 9)

In this study area, Boylston Street (Route 9) is a six-lane roadway running in an east-west direction. To the west Route 9 connects to Newton Highlands and I-95, and to the east it connects to Hammond Pond Parkway and Boston. Sidewalks are provided along both sides of Route 9 in the study area. On-street parking is not permitted. MBTA bus route 60 travels along Route 9 in the study area. Route 9 falls under MassDOT jurisdiction and is classified as an urban principal arterial. There is a posted speed limit of 40 mph. Land use along Route 9 is primarily commercial and residential.

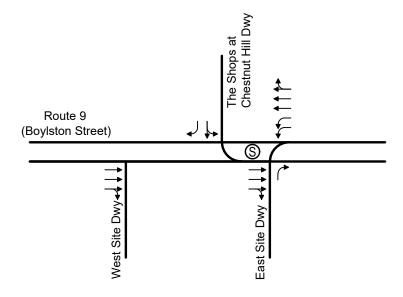
# **Study Area Intersections**

Route 9 at East Site Driveway and The Shops at Chestnut Hill Driveway

The east Site driveway intersects Route 9 from the south and The Shops at Chestnut Hill driveway intersects Route 9 from the north to form a four-way signalized intersection. The Route 9 eastbound approach consists of two through lanes and a shared through/right-turn lane. The Route 9 westbound approach consists of two left-turn lanes, two through lanes, and a shared through/right-turn lane. The east Site driveway northbound approach consists of a right-turn lane and left-turns onto Route 9 westbound are prohibited from this approach. The Shops at Chestnut Hill driveway southbound approach consists of a left-turn lane and a right-turn lane. Sidewalks are provided on all approaches and crosswalks are located across the westbound, northbound, and southbound approaches. Land use around the intersection is mainly commercial, as both the northbound and southbound legs are driveways to shopping plazas.

# Route 9 Eastbound at West Site Driveway

The west Site driveway intersects Route 9 eastbound from the south to form a three-legged unsignalized intersection. The Route 9 eastbound approach consists of two through lanes and a shared through/right-turn lane. The west Site driveway is one-way away from the intersection and consists of one receiving lane. Sidewalks are provided along Route 9 and a crosswalk is provided across the west Site driveway. Land use at the intersection is mainly commercial.



Ref: 14559.00 October 28, 2020

Page 5

# **Traffic Volumes**

To assess the existing operational conditions at the study area intersections, a review of existing condition traffic volumes was conducted. Automatic traffic recorder (ATR) counts were conducted in June 2019 on Route 9 Eastbound in the vicinity of the Site and adjusted to reflect 2020 conditions. The counts were originally conducted in 2019 adjusting them by one year to 2020 results in conditions that are pre-covid, and therefore normal conditions. The average daily traffic volume data are summarized below in Table 1 and included in the Attachments to this document.

Table 1 2020 Existing Traffic Volume Summary

	<u>Weekday</u> <u>Daily</u>	<u>Weekday</u> <u>Peak</u>			<u>/ Evening</u> Hour	Saturday Daily <sup>a</sup>		<u>y Midday</u> Hour
Location	Vol (vpd) <sup>a</sup>	Vol (vph) b	K Factor <sup>c</sup>	Vol (vph)	K Factor	Vol (vpd)	Vol (vph)	K Factor
Route 9 Eastbound, west of West Site Driveway	33,100	2,165	6.6%	2,235	6.8%	27,000	1,825	6.8%

Source: Automatic Traffic Recorder (ATR) counts conducted by VHB on 6/6/19 and 6/8/19 and adjusted to reflect 2020 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.

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

As shown in Table 1, during a typical weekday, Route 9 eastbound carries approximately 33,100 vehicles per day with approximately 2,165 vehicles during the weekday morning peak hour and approximately 2,235 vehicles during the weekday evening peak hour. During a typical Saturday, Route 9 eastbound carries approximately 27,000 vehicles per day with approximately 1,825 vehicles during the Saturday midday peak hour.

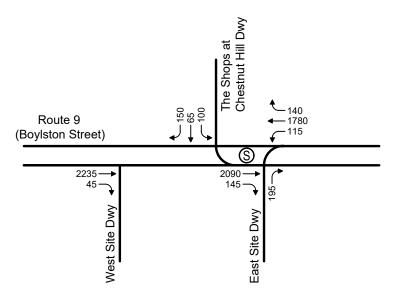
In addition to daily traffic volumes, peak hour turning movement counts (TMCs) were conducted at the study area intersections in June 2019 during the weekday evening peak period from 4:00 PM to 6:00 PM and during the Saturday midday peak period from 11:00 AM to 2:00 PM. These time periods were considered 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 evening and Saturday midday peak hours of vehicular activity were determined to be 5:00 PM to 6:00 PM and 1:00 PM to 2:00 PM, respectively. The traffic volume count data was adjusted to reflect 2020 conditions and is included in the Attachments to this memorandum.

# Seasonal Variation

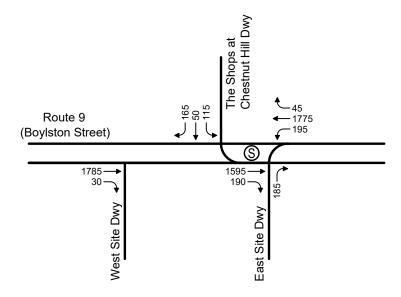
The traffic data collected for the study area was obtained during the month of June. To quantify the seasonal variation of traffic volumes in the area, historic traffic data available from MassDOT were reviewed. Specifically, 2018 monthly traffic volumes were reviewed at MassDOT permanent counting stations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

The resulting 2020 Existing traffic volume networks for the weekday evening and Saturday midday peak hours are shown in Figure 3.

Weekday Evening Peak Hour S Signalized Intersection



Saturday Midday Peak Hour S Signalized Intersection





Not to Scale

Ref: 14559.00 October 28, 2020 Page 7

# **Public Transportation**

Public transportation in Newton is provided by the Massachusetts Bay Transportation Authority (MBTA). MTBA bus route 60 travels along Route 9 and provides access to the Site. The nearest bus stop to the Site is located on Route 9 Eastbound approximately 300 feet west of the Site. Route 60 travels between The Mall at Chestnut Hill (renamed The Shops at Chestnut Hill) in Newton and Kenmore Station in Boston. Connections are provided to the Green Line at Kenmore Station. Service is provided approximately every 30-40 minutes during peak hours.

The Site is also served by 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 stop to the Site on the D branch of the Green Line is Chestnut Hill, an approximately one mile of walking from the Site via Route 9 and Hammond Street. Service is provided approximately every 6-8 minutes during peak hours.

Public transportation route maps and schedules are provided in the Attachments to this memorandum. While public transportation is provided near the Site, to present a conservative analysis, no credit was taken for customers or employees 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 2013 to 2017. 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. In District 6, the average crash rate is 0.71 for signalized intersections and 0.52 for unsignalized intersections. These rates imply that, on average, 0.71 accidents occurred per million vehicles entering signalized intersections throughout District 6 and 0.52 accidents occurred per million vehicles entering unsignalized intersections in District 6. It should be noted that the location for some accidents cannot be precisely determined from the database.

A summary of the study 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.

Ref: 14559.00 October 28, 2020

Page 8

Table 2 Vehicular Crash Data (2013-2017)

	Route 9 at	
	East Site Driveway and The Shops at Chestnut Hill Driveway	Route 9 Eastbound at West Site Driveway
Signalized?	Yes	No
MassDOT Average Crash Rate	0.71	0.52
Calculated Crash Rate	0.25	0.02
Exceeds Average?	No	No
Year		
2013	4	1
2014	5	0
2015	5	0
2016	3	0
<u>2017</u>	<u>7</u>	<u>0</u>
Total	24	1
Collision Type		
Angle	9	0
Head-On	0	0
Rear-End	8	0
Rear-to-Rear	1	0
Sideswipe, opposite direction	0	0
Sideswipe, same direction	4	0
Single Vehicle Crash	2	1
Unknown/Not Reported	0	0
Severity		
Fatal Injury	0	0
Non-Fatal Injury	7	1
Property Damage Only	16	0
Unknown/Not Reported	1	0
Officiowiff Not Reported	l	O
Time of day		
Weekday, 7:00 AM - 9:00 AM	1	1
Weekday, 4:00 – 6:00 PM	2	0
Saturday, 11:00 AM – 2:00 PM	1	0
Weekday, other time	13	0
Weekend, other time	7	0
Pavement Conditions		
Dry	20	1
Wet	3	0
Ice	1	0
Unknown/Not Reported	0	0
Non-Motorist (Bike, Pedestrian)	2	1
motorist (sixe, i caestriali)		

Source: Crash data was obtained from MassDOT Crash Portal, accessed October 2020.

Ref: 14559.00 October 28, 2020

Page 9

As shown in Table 2, none of the study area intersections have a calculated crash rate higher than the MassDOT average crash rate for District 6. The intersection of Route 9 Eastbound at West Site Driveway experienced one reported crash over the five-year period, and the intersection of Route 9 at East Site Driveway and The Shops at Chestnut Hill Driveway experienced 24 reported crashes over the five-year period. It should be noted that crashes involving parked vehicles were not included at the intersection of Route 9 at East Site Driveway and The Shops at Chestnut Hill Driveway, as it was assumed these crashes occurred in a parking lot because on-street parking is not permitted. The majority of crashes in the study area were rear-end and angle collisions on dry pavement resulting in property damage only. No fatal crashes were reported at either of the study area intersections. A total of three crashes occurred that involved bicyclists or pedestrians over the five-year period at the study area intersections.

# 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" 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 neither of the study area intersections are listed as an HSIP-eligible cluster based on the 2015-2017 HSIP cluster listing.

# **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 (2027) 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. Specifically, traffic volumes presented in the traffic study for the adjacent Chestnut Hill Square development were reviewed to see how traffic has changed in the study area over the past ten years<sup>2</sup>. A comparison of the 2020 Existing traffic volume networks and the previously published traffic volumes from 2009 indicate that traffic Route 9 in the study area has decreased or approximately stayed the same over the past ten years. However, to present a conservative analysis, a 0.5-percent per year growth rate has been used to develop the 2027 No-Build and Build conditions. A comparison of the 2020 Existing traffic volumes and the 2009 historic traffic volumes are included in the Attachments to this memorandum.

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.

<sup>2 &</sup>lt;u>Chestnut Hill Square – EEA No. 12928, Supplemental Traffic Impact Assessment</u>, Newton, Massachusetts; August 12, 2010; prepared by Vanasse & Associates, Inc.

Ref: 14559.00 October 28, 2020 Page 10

# Site Specific Growth

In addition to the historic traffic growth, VHB contacted representatives of the City of Newton to identify any other development projects planned within the vicinity of the Site. Based on these discussions, there is one planned development project that could affect traffic volumes in the vicinity of the Site:

392-404 Langley Road: Proposed residential development consisting of 20 units.

The associated traffic volumes from this project were added to the 2027 No-Build traffic volume networks and are included in the Attachments to this report.

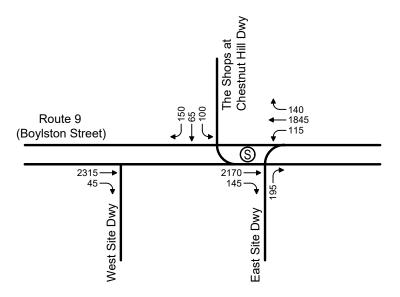
# **Background Transportation Projects**

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 projects in the study area that would affect traffic volumes within the seven-year horizon.

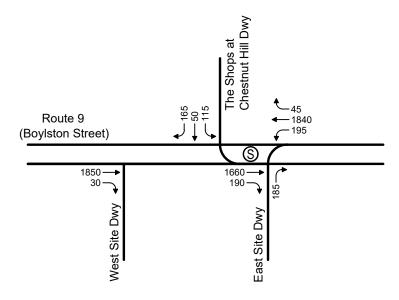
# **No-Build Traffic Volumes**

The 2027 No-Build traffic volumes were generated by consideration of the above described factors. Figure 4 illustrates the resulting 2027 No-Build condition traffic volumes for the weekday evening and Saturday midday peak hours.

Weekday Evening Peak Hour
Signalized Intersection



Saturday Midday Peak Hour
Signalized Intersection





Ref: 14559.00 October 28, 2020 Page 12

# **Trip Generation**

The rate at which any development generates traffic is dependent upon the size, location, and concentration of surrounding developments. As previously discussed, the proposed Project will include the redevelopment of an approximately 5,484 sf building currently housing a jewelry store into a 4,825-sf recreational marijuana dispensary. VHB used trip generation data provided in the *Trip Generation Manual*<sup>3</sup> published by the Institute of Transportation Engineers (ITE) to estimate the number of proposed Site-generated trips. Trip generation worksheets are included in the Attachments to this report.

#### Shared Trips

Some of the traffic to be generated by the proposed redevelopment will be contained on-Site as "internal" or "shared vehicle" trips with customers that are visiting both the dispensary and the retail, restaurant and supermarket uses in Chestnut Hill Square. While these shared trips represent new traffic to the individual uses, they would not show up as new vehicle trips on the surrounding roadway network.

As described in the ITE Trip Generation Handbook<sup>4</sup> "because of the complementary nature of these land uses, some trips are made among the on-Site uses. This capture of trips internal to the Site has the net effect of reducing vehicle trip generation between the overall development Site and the external street system (compared to the total number of trips generated by comparable land uses developed individually on stand-alone sites). An internal capture rate can generally be defined as the percentage of total person trips generated by a Site that are made entirely within the Site. The trip origin, destination, and travel path are all within the Site."

Based on the methodology outlined in the ITE Trip Generation Handbook, internal capture rates were applied to the proposed Site-generated vehicle trips to account for shared trips between the proposed dispensary and the adjacent retail, restaurants, and supermarket in the Chestnut Hill Square development. Internal capture worksheets are included in the Attachments to this report.

# Net New Project Generated Trips

To estimate the net new Project-generated vehicle trips to the Site, shared trip rates were applied as discussed above and subtracted from the ITE unadjusted Site-generated trips. Table 3 summarizes the net new Project-generated trips.

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

<sup>4</sup> Trip Generation Handbook, 3<sup>rd</sup> Edition, Institute of Transportation Engineers, Washington, D.C., 2017.

Ref: 14559.00 October 28, 2020

Page 13

**Table 3** Net New Trip Generation Summary

Time Period	Movement	Unadjusted Site- Generated Vehicle Trips <sup>a</sup>	Shared Trips <sup>b</sup>	Net New Site- Generated Vehicle Trips
Weekday Daily	Total	1,220	-354	866
Weekday Evening	Enter	53	- 11	42
Peak Hour	<u>Exit</u>	<u>53</u>	<u>-11</u>	<u>42</u>
	Total	106	- 22	84
Saturday Daily	Total	1,252	- 363	889
Saturday Midday	Enter	88	- 18	70
Peak Hour	<u>Exit</u>	<u>88</u>	<u>- 18</u>	<u>70</u>
	Total	176	- 36	140

Based on ITE land use code 882 (Marijuana Dispensary) for 4,825 sf using average rates.

As shown in Table 3, the proposed Project is expected to result in approximately 84 new vehicle trips (42 entering / 42 exiting) during the weekday evening peak hour and approximately 140 new vehicle trips (70 entering / 70 exiting) during the Saturday midday peak hour. It should be noted that the trip generation projection for marijuana dispensary is based on national ITE data and does not represent data specific to Massachusetts or to Newton. The project will implement appointment only operations at the onset of the project and as a result the generated will be significantly less than that outlined in the table.

In addition, no credit was applied to the existing trips that the Site currently generates. To present a conservative analysis, no reduction was applied to the net new Site-generated trips to account for the traffic that is currently generated by the jewelry store. To also present a conservative analysis, no credit was applied for the Site's proximity to public transportation, even though some customers and employees may arrive/depart the Site via the bus or the Green Line.

# **Trip Distribution**

The directional distribution of traffic approaching and departing the Site is a function of several variables. These include population densities, existing travel patterns, and the efficiency of the roadways leading to and from the Site. The trip distribution of the Site traffic used in this analysis is based on existing travel patterns within the study area. The trip distribution patterns for the Project, based on existing traffic conditions, are presented in Table 4 and illustrated in Figure 5.

b Internal capture rates applied based on ITE Trip Generation Handbook.







Ref: 14559.00 October 28, 2020

Page 14

# **Table 4** Trip Distribution

Roadway	Direction (From/To)	Trip Distribution
Route 9 (Boylston Street)	East	45%
Route 9 (Boylston Street)	West	55%
Total		100%

As stated previously, vehicles entering the Site from Route 9 eastbound may use the east or west driveways while vehicles entering the Site from Route 9 westbound can only access the Site via the east driveway. All vehicles exiting the Site must use the east driveway to turn right onto Route 9 eastbound, and vehicles destined for Route 9 westbound must use the U-turn at the Hammond Pond Parkway underpass approximately ¼-mile east of the Site.

#### **Build Traffic Volumes**

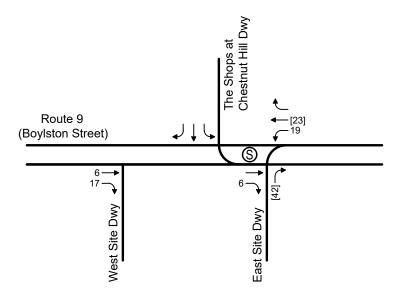
The Project-related traffic volumes are assigned to the study area roadway network based on the trip distribution patterns shown in Table 4 and added to the 2027 No-Build peak hour traffic volume networks to develop the 2027 Build weekday evening and Saturday midday peak hour traffic volume networks. The Site-generated trips and the 2027 Build traffic volumes are shown in Figures 6 and 7 respectively for the weekday evening and Saturday midday peak hours.

Weekday Evening Peak Hour

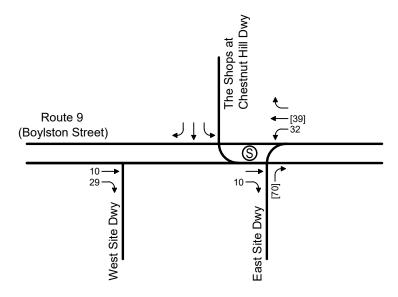
Signalized Intersection

XX = Entering Trips

[XX] = Exiting Trips

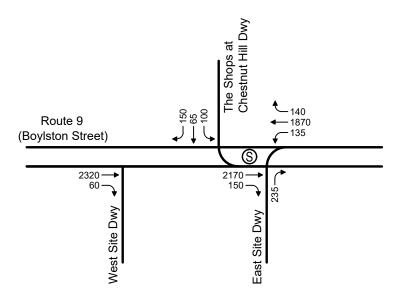


Saturday Midday Peak Hour
S Signalized Intersection
XX = Entering Trips
[XX] = Exiting Trips

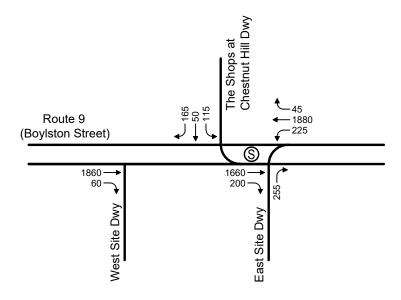




Weekday Evening Peak Hour
Signalized Intersection



Saturday Midday Peak Hour
Signalized Intersection





Newton, Massachusetts

Ref: 14559.00 October 28, 2020 Page 16

# **Traffic Operations Analysis**

To assess quality of flow, intersection capacity analyses were conducted with respect to 2020 Existing, 2027 No-Build, and 2027 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 which occur for a given roadway segment or intersection under various traffic volume loads. It is a qualitative measure of a number of factors including roadway geometrics, speed, travel delay and freedom to maneuver. Level-of-service provides an index to the 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 congested operating conditions.

For this study, capacity analyses were completed for the signalized Route 9 at East Site Driveway / Shops at Chestnut Hill Driveway intersection using Synchro traffic analysis software. 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.

A capacity analysis was not completed for the unsignalized Route 9 Eastbound at West Site Driveway intersection because it does not have any conflicting movements. For unsignalized intersections, the analysis typically assumes that traffic on the mainline is not affected by traffic on the side streets and 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).

# **Intersection Capacity Analysis**

Levels-of-service analyses were conducted for the 2020 Existing, 2027 No-Build, and 2027 Build conditions for the signalized study area intersection. Table 5 summarizes the capacity analyses for the signalized intersection. The capacity analyses worksheets are included in the Attachments to this memorandum.

Ref: 14559.00 October 28, 2020

Page 17

Table 5 Signalized Intersection Capacity Analysis

Location /	2	2020 Exi	sting Co	onditions	;	20	27 No-I	Build Co	ondition	S		2027 B	uild Co	nditions	
Movement	v/c ª	Del <sup>b</sup>	LOS c	50 Q <sup>d</sup>	95 Q e	v/c	Del	LOS	50 Q	95 Q	v/c	Del	LOS	50 Q	95 Q
Route 9 at East Sit	te Drivewa	ay and T	he Sho	ps at Che	estnut Hi	l Driveway	y								
Weekday Evening															
EB T/R	0.80	23	C	447	601	0.87	25.2	C	519	#758	0.90	28	C	559	#768
WB L	0.31	46	D	42	66	0.33	46.4	D	43	67	0.34	45	D	49	76
WB T/R	0.55	7	Α	200	232	0.57	7.0	Α	215	249	0.58	7	Α	220	254
NB R	0.77	39	D	72	140	0.75	36.8	D	64	137	0.82	45	D	95	180
SB L	0.86	82	F	128	#247	0.85	80.6	F	125	#241	0.85	81	F	125	#241
SB T/R	0.49	21	С	36	102	0.48	20.4	С	33	98	0.48	20	С	33	98
Total		20	В				21	C				23	c		
Saturday Midday															
EB T/R	0.68	19	В	347	426	0.70	19	В	366	453	0.73	21	С	393	470
WB L	0.59	53	D	78	108	0.56	52	D	75	106	0.52	47	D	82	119
WB T/R	0.55	7	Α	225	214	0.54	7	Α	222	220	0.55	7	Α	210	227
NB R	0.70	33	С	54	126	0.71	33	С	56	128	0.85	49	D	110	#219
SB L	0.80	72	Е	122	#249	0.80	74	Е	120	#246	0.83	78	Е	123	#246
SB T/R	0.52	23	С	44	117	0.52	23	С	42	116	0.53	24	С	44	116
Total		18	В				18	В				20	С		

- 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.

As shown in Table 5, between the 2027 No-Build conditions and the 2027 Build conditions, the overall level-of-service at the intersection of Route 9 at East Site Driveway and The Shops at Chestnut Hill Driveway is expected to maintain LOS C during the weekday evening peak hour and degrade to LOS C during the Saturday midday peak hour. While degradation in LOS is expected during the Saturday midday peak, it should be noted that the increase in delay is minor, approximately two seconds, and the increase in the queue is minimal for each movement/approach. LOS C is considered to be an acceptable level of service.

Between the 2020 existing conditions and the 2027 No-Build conditions, overall level-of-service is expected to deteriorate from LOS B to LOS C during the weekday evening peak hour and maintain LOS B during the Saturday midday peak hour. At the northbound Site Driveway approach to the intersection, the right-turn only movement is expected to maintain LOS D during the weekday evening peak hour and deteriorate from LOS C to LOS D during the Saturday midday peak hour. The 95<sup>th</sup>-percentile queues on the northbound Site Driveway approach are expected to be between eight and nine vehicle lengths under the 2027 Build conditions with the Project in place.

As stated previously, the trip generation estimates are conservative and do not take into account the existing trips generated on-Site or the effect of customers or employees taking public transit to the Site. Therefore, the results presented above represent a conservative assessment and the actual operations may be better than what is summarized in the table.

Ref: 14559.00 October 28, 2020 Page 18

# Conclusion

VHB has conducted a traffic assessment to determine the suitability and potential impacts of a recreational marijuana dispensary at 232 Boylston Street (Route 9) in Newton, Massachusetts. Specifically, the Project will include the conversion of an existing jewelry store into a recreational marijuana dispensary of approximately 4,825 sf.

Under existing conditions, the Site is accessed via an entrance-only driveway to the west of the Site on Route 9 eastbound as well as a full-access driveway to the east shared with Chestnut Hill Square. While the East Site Driveway provides access into the Site from both Route 9 eastbound and westbound, exiting traffic is restricted to right-turns only onto Route 9 eastbound and vehicles destined for Route 9 westbound must use the U-turn at the Hammond Pond Parkway underpass approximately ¼-mile east of the Site. Under the proposed redevelopment, the access configuration will remain the same as Existing conditions.

A total of 16 parking spaces are provided under Existing conditions, consisting of 14 customer spaces and 2 employee spaces. To maximize the efficiency of operations on-Site, some modifications to the striped parking will be made to include 19 parking spaces, 10 of which will be managed parking spaces and 9 remaining will be open to customers in general. All employees will be required to park off site and will either rideshare/taxi or shuttle to the proposed facility. The location of remote parking is still be evaluated.

The proposed Project is expected to generate approximately 84 new vehicle trips (42 entering / 42 exiting) during the weekday evening peak hour and approximately 140 new vehicle trips (70 entering / 70 exiting) during the Saturday midday peak hour. Based on the intersection capacity analysis, it is expected that the Project will have a minimal impact upon intersection operations within the study area. The project will implement appointment only operations at the onset of the project and as a result the generated will be significantly less than that outlined in the table.

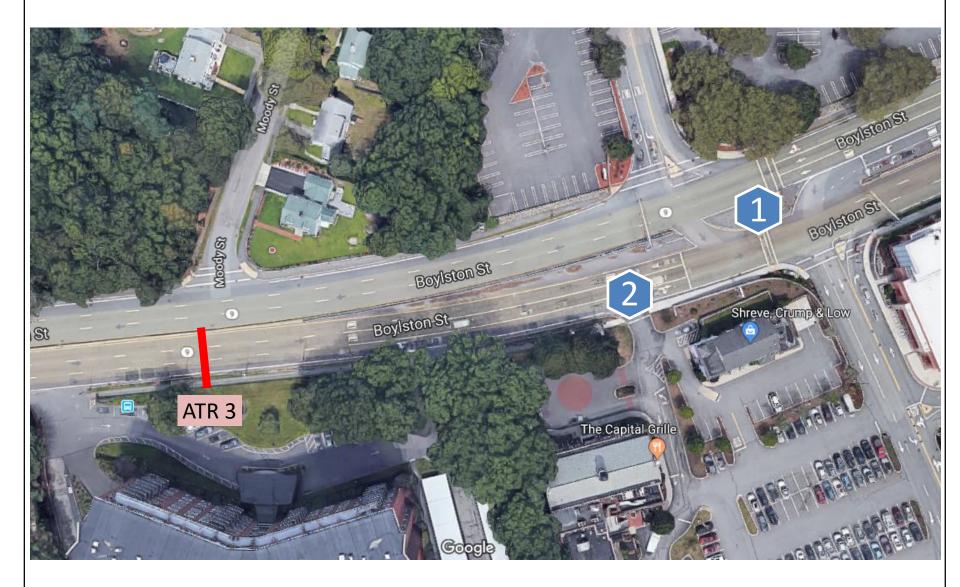


# **Attachments**

- Traffic Volume Data
- Seasonal Adjustment Factors
- Public Transportation
- Vehicular Crash Data
- Historic Traffic Growth
- Planned/Approved Developments
- Trip Generation
- Intersection Capacity Analyses



**Traffic Volume Data** 



Map Credit: Google.com

<b>BOSTON</b>	DTD ID 202 071 1/1/D	Newton, MA	# of TMC's: 02	Client: Vanasse Hangen Brustlin, Inc.
TRAFFIC DATA	BTD ID: 393_071_VHB	Collected on June 6 & 8, 2019	# of ATR's: 01	Contact: Matthew Duranleau

Street 1: Route 9 at 250 Boylston St Driveway
Street 2: Chestnut Hill Mall Driveway

Count Date: 6/6/2019
Day of Week: Thursday
Weather: Partly Sunny, 70°F



PO BOX 1723, Framingham, MA 01701 Office: 978-746-1259 DataRequest@BostonTrafficData.com www.BostonTrafficData.com

# **HEAVY VEHICLES**

	250	Boylston S	Street Drive	way	Cl	nestnut Hill	Mall Drivew	ay		Rou	ıte 9			Rou	ıte 9	
		North	bound			South	bound			Easth	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	4	0	0	0	0	13	0	0	0	11	0
4:15 PM	0	0	0	0	0	1	0	4	0	0	18	1	0	0	6	2
4:30 PM	0	0	0	0	0	3	0	2	0	0	2	1	0	0	3	1
4:45 PM	0	0	0	0	0	2	0	1	0	0	5	0	0	0	3	1
5:00 PM	0	0	0	0	0	3	0	0	0	0	6	1	0	0	6	1
5:15 PM	0	0	0	0	0	0	0	1	0	0	6	0	0	1	5	0
5:30 PM	0	0	0	0	0	2	0	0	0	0	8	1	0	0	8	1
5:45 PM	0	0	0	0	0	4	0	1	0	0	7	1	0	0	6	1

Γ	PM PEAK HOUR	250	Boylston S	Street Drive	way	Ch	estnut Hill	Mall Drivew	ay		Rou	ite 9			Rou	te 9	
	4:00 PM		North	bound			South	bound			Eastb	ound			Westh	oound	
	to	U-Turn					Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	5:00 PM	0	0	0	0	0	10	0	7	0	0	38	2	0	0	23	4
	PHF		0.00				0.	85			0.	53			0.0	61	

Street 1: Route 9 at 250 Boylston St Driveway Street 2: Chestnut Hill Mall Driveway

Count Date: 6/6/2019
Day of Week: Thursday
Weather: Partly Sunny, 70°F



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#### PEDESTRIANS & BICYCLES

		250 Boyl	ston Street	Driveway		Chestnu	ut Hill Mall D	Priveway			Route 9				Route 9		
			Northbound	I			Southbound	d			Eastbound				Westbound		
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	
4:00 PM	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	3	
4:15 PM	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	7	
4:30 PM	0	0	0	5	0	0	0	3	0	0	0	0	0	0	0	5	
4:45 PM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	4	
5:00 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	
5:15 PM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	7	
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	
5:45 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	

PM PEAK HOUR <sup>1</sup>		250 Boyl	ston Street	Driveway		Chestnu	ut Hill Mall D	riveway			Route 9				Route 9		
5:00 PM			Northbound				Southbound				Eastbound				Westbound		
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	
6:00 PM	0	0	0	9	0	0	0	1	0	0	0	0	0	0	0	17	

Peak hours corresponds to vehicular peak hours.

Street 1: Route 9 at 250 Boylston St Driveway
Street 2: Chestnut Hill Mall Driveway

Count Date: 6/8/2019
Day of Week: Saturday
Weather: Mostly Sunny, 70°F



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# PASSENGER CARS & HEAVY VEHICLES COMBINED

	250	Boylston S	Street Drive	way	CI	nestnut Hill	Mall Drivew	ay		Rou	ite 9			Rou	ıte 9	
		North	bound			South	bound			Easth	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	49	0	20	12	36	0	0	40	365	0	40	470	17
11:15 AM	0	0	0	48	0	30	13	20	0	0	49	388	0	45	442	24
11:30 AM	0	0	0	51	0	36	14	32	0	0	51	416	0	36	458	27
11:45 AM	0	0	0	53	0	37	12	29	0	0	46	340	0	48	443	19
12:00 PM	0	0	0	60	0	33	12	42	0	0	55	437	0	40	389	17
12:15 PM	0	0	0	41	0	41	11	35	0	0	53	384	0	45	409	13
12:30 PM	0	0	0	50	0	40	14	30	0	0	50	341	0	35	405	7
12:45 PM	0	0	0	55	0	39	13	42	0	0	43	386	0	43	373	8
1:00 PM	0	0	0	49	0	35	12	32	0	0	23	411	0	45	385	19
1:15 PM	0	0	0	48	0	26	11	36	0	0	47	372	0	60	438	10
1:30 PM	0	0	0	43	0	29	14	46	0	0	53	387	0	45	430	5
1:45 PM	0	0	0	43	0	26	12	53	0	0	67	416	0	44	515	10

MID PEAK HOUR	250	Boylston S	Street Drive	way	CI	nestnut Hill	Mall Drivew	ay		Rou	ite 9			Rou	ite 9	
1:00 PM		North	bound			South	bound			Eastb	ound			Westl	bound	
to	U-Turn	ŭ				Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
2:00 PM	0	0	0	183	0	116	49	167	0	0	190	1586	0	194	1768	44
PHF	0.93					0.	91			0.	92			0.	88	
HV %	0.0% 0.0% 0.0% 0.0%			0.0%	0.0%	0.9%	0.0%	0.6%	0.0%	0.0%	6.8%	0.0%	0.0%	1.0%	1.5%	2.3%

Street 1: Route 9 at 250 Boylston St Driveway
Street 2: Chestnut Hill Mall Driveway

Count Date: 6/8/2019
Day of Week: Saturday
Weather: Mostly Sunny, 70°F



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# **HEAVY VEHICLES**

	250		Street Drive	way	CI	hestnut Hill South	Mall Drivew	<i>ı</i> ay			ute 9 oound				ite 9 bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	1	0	0	0	0	0	0	7	0	0	2	8	0
11:15 AM	0	0	0	0	0	2	0	0	0	0	4	0	0	0	7	0
11:30 AM	0	0	0	0	0	0	0	1	0	0	7	0	0	1	9	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	6	1	0	4	4	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	8	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	10	0
12:30 PM	0	0	0	1	0	0	0	0	0	0	6	0	0	0	5	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0
1:00 PM	0	0	0	0	0	1	0	0	0	0	6	0	0	0	9	1
1:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	11	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0
1:45 PM	0	0	0	0	0	0	0	1	0	0	4	0	0	0	4	0

MID PEAK HOUR	250	Boylston S	Street Drive	way	Cł	nestnut Hill	Mall Drivew	ay		Rou	ite 9			Rou	ite 9	
11:00 AM		North	bound			South	bound			Easth	oound			West	oound	
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
12:00 PM	0	0	0	1	0	2	0	1	0	0	24	1	0	7	28	1
PHF		0.	.25			0.	38	•		0.	89	•		0.	82	

Street 1: Route 9 at 250 Boylston St Driveway Street 2: Chestnut Hill Mall Driveway

Count Date: 6/8/2019
Day of Week: Saturday
Weather: Mostly Sunny, 70°F



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# PEDESTRIANS & BICYCLES

	250	D Boylston S North	Street Driverbound	way	Cl	nestnut Hill South	Mall Drivew bound	<i>r</i> ay			ite 9 oound				ute 9 bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	6
12:00 PM	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	9
1:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
1:30 PM	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	8
1:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3

MID PEAK HOUR	250	Boylston S	treet Drive	way	CI	hestnut Hill	Mall Drivew	ay		Rou	ite 9			Rou	ite 9	
1:00 PM		North	oound			South	bound			Easth	oound			West	bound	
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
2:00 PM	0	0	0	14	0	0	0	1	0	0	0	0	0	0	0	23

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Street 2: Capital Grille Driveway

Count Date: 6/6/2019
Day of Week: Thursday
Weather: Partly Sunny, 70°F



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#### PASSENGER CARS & HEAVY VEHICLES COMBINED

Capital Grille Driveway Route 9 Route 9 Northbound Eastbound Westbound Southbound Start Time U-Turn Thru Right U-Turn U-Turn Right Left Left Thru Right Left Thru U-Turn Left Thru Right 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 

PM PEAK HOUR		Capital Gril	le Driveway	,						Rou	ıte 9			Rou	ıte 9	
5:00 PM		North	bound			South	bound			Easth	oound			West	bound	
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 PM	0	0	0	1	0	0	0	0	0	0	2226	45	0	0	0	0
PHF		0.	25			0.	00			0.	96			0.	.00	
HV~%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	2.2%	0.0%	0.0%	0.0%	0.0%

Street 2: Capital Grille Driveway

Count Date: 6/6/2019
Day of Week: Thursday
Weather: Partly Sunny, 70°F



PO BOX 1723, Framingham, MA 01701 Office: 978-746-1259 DataRequest@BostonTrafficData.com www.BostonTrafficData.com

#### **HEAVY VEHICLES**

Capital Grille Driveway Route 9 Route 9 Northbound Southbound Eastbound Westbound Start Time U-Turn Thru Right U-Turn Right U-Turn Right Left Left Thru Left Thru U-Turn Left Thru Right 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 

PM PEAK HOUR	(	Capital Gril	le Driveway	1						Rou	ıte 9			Rou	te 9	
4:00 PM		North	bound			South	bound			Easth	oound			Westl	oound	
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
5:00 PM	0	0	0	0	0	0	0	0	0	0	40	3	0	0	0	0
PHF		0.	00			0.	00			0.	54			0.	00	

Street 1: Route 9 at 250 Boylston St Driveway
Street 2: Chestnut Hill Mall Driveway

Count Date: 6/6/2019
Day of Week: Thursday
Weather: Partly Sunny, 70°F



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# **PASSENGER CARS & HEAVY VEHICLES COMBINED**

	250	Boylston S	Street Drive	way	CI	nestnut Hill	Mall Drivew	/ay		Rou	ıte 9			Rou	ıte 9	
		North	bound			South	bound			Eastl	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	36	0	34	6	44	0	0	459	37	0	34	473	34
4:15 PM	0	0	0	48	0	23	10	43	0	0	438	26	0	46	451	28
4:30 PM	0	0	0	42	0	16	18	42	0	0	476	28	0	22	472	26
4:45 PM	0	0	0	57	0	23	13	39	0	0	453	21	0	25	480	29
5:00 PM	0	0	0	44	0	17	14	41	0	0	528	31	0	30	478	34
5:15 PM	0	0	0	56	0	26	21	39	0	0	511	30	0	22	453	32
5:30 PM	0	0	0	44	0	31	17	40	0	0	519	34	0	36	423	28
5:45 PM	0	0	0	50	0	27	11	32	0	0	524	50	0	28	418	45

PM PEAK HOUR	250	Boylston S	Street Drive	way	Ch	estnut Hill	Mall Drivew	ay		Rou	te 9			Rou	te 9	
5:00 PM		North	bound			South	bound			Eastb	ound			Westl	oound	
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 PM	0	0	0	194	0	101	63	152	0	0	2082	145	0	116	1772	139
PHF		0.	87			0.	90			0.	97			0.	93	
HV~%	0.0%	0.0%	0.0%	0.0%	0.0%	8.9%	0.0%	1.3%	0.0%	0.0%	1.3%	2.1%	0.0%	0.9%	1.4%	2.2%

Client: Matthew Duranleau
Project #: 393\_071\_VHB
BTD #: Location 2
Location: Newton, MA
Street 1: Route 9
Street 2: Capital Grille Driveway

Count Date: 6/6/2019
Day of Week: Thursday
Weather: Partly Sunny, 70°F



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#### PEDESTRIANS & BICYCLES

								, LD	-01111711	J & DIO I	ULLU							
		Capit	al Grille Dri	veway								Route 9				Route 9		
			Northbound	i			Southbound	d				Eastbound				Westbound		
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED		Left	Thru	Right	PED	Left	Thru	Right	PED	
4:00 PM	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	1	0	0	0	0		0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	4	0	0	0	0		0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	2	0	0	0	0		0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	1	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	
5:30 PM	0	0	0	5	0	0	0	0		0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	2	0	0	0	0		0	0	0	0	0	0	0	0	

PM PEAK HOUR <sup>1</sup>		Capit	al Grille Driv	/eway							Route 9				Route 9		
5:00 PM			Northbound				Southbound	l			Eastbound				Westbound		
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	
6:00 PM	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	

Peak hours corresponds to vehicular peak hours.

Street 2: Capital Grille Driveway

Count Date: 6/8/2019
Day of Week: Saturday
Weather: Mostly Sunny, 70°F



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# PASSENGER CARS & HEAVY VEHICLES COMBINED

		Capital Gril	le Driveway	1						Rou	ıte 9			Rou	ute 9	
		North	bound			South	bound			Eastl	oound			West	bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	405	5	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	437	6	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	467	6	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	386	2	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	492	4	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	437	4	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	391	8	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	429	3	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	434	6	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	419	7	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	440	12	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	483	6	0	0	0	0

MID PEAK HOUR		Capital Gril	e Driveway							Rou	ite 9			Rou	ite 9	
1:00 PM		North	oound			South	bound			Easth	oound			West	bound	
to	U-Turn					Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
2:00 PM	0	0 0 0 0				0	0	0	0	0	1776	31	0	0	0	0
PHF		0.	00			0.	00			0.	92			0.	00	
HV%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	3.2%	0.0%	0.0%	0.0%	0.0%

Street 2: Capital Grille Driveway

Count Date: 6/8/2019
Day of Week: Saturday
Weather: Mostly Sunny, 70°F



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# **HEAVY VEHICLES**

			lle Driveway	/		South	bound				ute 9 oound				ite 9 bound	
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0

MID PEAK HOUR		Capital Gril	le Driveway	1						Rou	ite 9			Rou	ite 9	
11:00 AM		North	bound			South	bound			Eastb	oound			Westl	bound	
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
12:00 PM	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0
PHF		0.	00			0.	00	•		0.	89	•		0.	00	

Street 2: Capital Grille Driveway

Count Date: 6/8/2019
Day of Week: Saturday
Weather: Mostly Sunny, 70°F



PO BOX 1723, Framingham, MA 01701 Office: 978-746-1259 DataRequest@BostonTrafficData.com www.BostonTrafficData.com

# PEDESTRIANS & BICYCLES

		Capital Gril	le Driveway	/						Rou	ıte 9			Rou	ute 9	
		North	bound			South	bound			Easth	oound			West	bound	
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1·45 PM	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ	Λ

N	MID PEAK HOUR		Capital Gril	e Driveway							Rou	ite 9			Rou	ite 9	
	1:00 PM		North	oound			South	bound			Easth	ound			West	bound	
	to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	2:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

# **Volume Report**

Job 393\_071\_VHB Area Newton, MA

Location Route 9 Eastbound (east of 280 Boylston St Condo Driveway)

# BOSTON TRAFFIC DATA PO BOX 1723, Framingham, MA 01701 Office: 978-746-1259 DataRequest@BostonTrafficData.com www.BostonTrafficData.com

# Thursday, June 6, 2019

Time	E	В	E	В	Time	E	В	E	В	
	Vehicles	& Trucks	Tru	icks		Vehicles	& Trucks	Tru	cks	
0000	46		2		1200	518		24		
0015	34		0		1215	618		23		
0030	33		2		1230	626		16		
0045	29	142	3	7	1245	645	2407	20	83	
0100	37		3		1300	646		10		
0115	18		0		1315	694		31		
0130	20		0		1330	400		14		
0145	15	90	1	4	1345	472	2212	17	72	
0200	12		0		1400	466		14		
0215	10		1		1415	434		11		
0230	8		1		1430	463		14		
0245	10	40	1	3	1445	400	1763	8	47	
0300	13		1		1500	411		7		
0315	17		1		1515	420		9		
0330	20		2		1530	452		10		
0345	11	61	1	5	1545	435	1718	8	34	
0400	30		2		1600	496		2		
0415	35		2		1615	464		7		
0430	48		3		1630	493		3		
0445	93	206	8	15	1645	474	1927	4	16	
0500	108		12		1700	559		1		
0515	201		7		1715	541		4		
0530	324		17		1730	553		3		
0545	386	1019	22	58	1745	573	2226	3	11	
0600	450		24		1800	516		3		
0615	516		25		1815	523		4		
0630	533		23		1830	480		2		
0645	491	1990	20	92	1845	508	2027	4	13	
0700	441		23		1900	438		3		
0715	527		26		1915	413		2		
0730	568		22		1930	468		2		
0745	528	2064	20	91	1945	457	1776	5	12	
0800	513	_50.	25	٥.	2000	359		2	.=	
0815	507		19		2015	299		4		
0830	580		23		2030	278		3		
0845	556	2156	11	78	2045	218	1154	3	12	
0900	478	2.00	20	. 0	2100	213	1104	3		
0900	492		17		2115	224		1		
0913	523		25		2130	155		1		
0930	523 504	1997	25 25	87	2145	144	736	0	5	
1000	50 <del>4</del> 545	1991	25 15	O1	2200	191	130	1	5	
1000			20		2200 2215	191		3		
	516 500							3 1		
1030	509	2402	20	71	2230	154 105	611		e	
1045	533	2103	19	74	2245	105	644	1	6	
1100	478		34		2300	156		2		
1115	523		38		2315	115		2		
1130	463	4057	22	400	2330	101	407	0	-	
1145	493	1957	35	129	2345	115	487	1	5	
					Total	32902		959		

### **Volume Report**

Job 393\_071\_VHB Area Newton, MA

Location Route 9 Eastbound (east of 280 Boylston St Condo Driveway)

#### BOSTON TRAFFIC DATA PO BOX 1723, Framingham, MA 01701 Office: 978-746-1259 DataRequest@BostonTrafficData.com www.BostonTrafficData.com

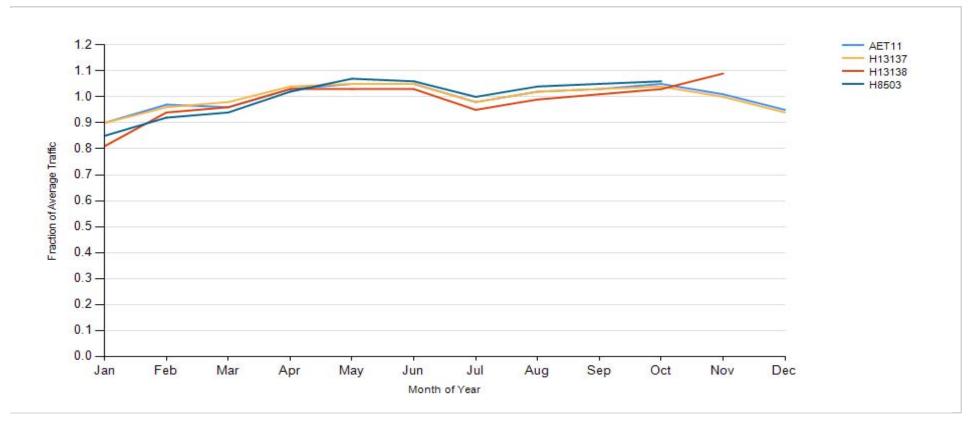
#### Saturday, June 8, 2019

Vehicles & Trucks											
00000         84         3         1200         492         8           00015         55         0         1215         437         6           00030         52         0         1230         391         8           0045         96         287         3         6         1245         429         1749         10         32           01100         38         1         1300         434         4         4         10         130         140         4         1419         3         10130         440         4         4         1415         419         3         10130         440         4         4         1415         419         3         10130         440         4         4         1415         429         140         4         1415         483         1776         7         18         18         171         2         4         1445         483         1776         7         18         18         2         1415         495         1         492         4         1445         426         16         3         12         16         492         4         493         3         3         12	Time	E	В	Е	В	Time		EB	Е	В	
0015         55         0         1215         437         6         0         1230         391         8         0         320045         96         287         3         6         1245         429         1749         10         32         0         32         0         1300         434         4         4         0         1300         434         4         4         0         1300         434         4         0         4         1315         419         3         0         0         1330         440         4         0         4         1345         483         1776         7         18         0         1400         436         2         2         1415         405         1         1         0         1400         436         2         1         18         0         1415         405         1         1         18         0         1415         405         1         1         1415         405         1         1         1415         405         1         1         1415         405         1         1         1415         426         1693         2         8         1         1415         426         1		Vehicles	& Trucks	Tru	cks		Vehicles	s & Trucks	Tru	icks	
00300         52         0         1230         391         8         00045         96         287         3         6         1245         429         1749         10         32         10100         38         1         1300         434         4         10115         40         3         1315         419         3         3         1315         419         3         3         1315         419         3         3         1315         419         3         3         1315         419         3         3         1315         419         3         3         1315         419         3         3         1315         419         3         1014         4         4         1440         44         44         1440         436         2         2         12020         14         400         436         2         102245         18         71         2         4         1445         426         13         3         8         12245         18         71         2         4         1445         426         1693         2         8         30315         2         0         1530         435         5         5         30315 <t< td=""><td>0000</td><td>84</td><td></td><td>3</td><td></td><td>1200</td><td>492</td><td></td><td>8</td><td></td><td></td></t<>	0000	84		3		1200	492		8		
0045         96         287         3         6         1245         429         1749         10         32           01105         40         3         1         1300         434         4         4           0115         40         3         1315         419         3         3           0130         22         0         0         1330         440         4           0145         24         124         0         4         1345         483         1776         7         18           10200         15         0         4         1345         483         1776         7         18           10201         15         0         4         1345         483         1776         7         18           10215         24         2         1414         405         1         12         1415         405         1         12         1415         405         1         12         1415         405         1         18         22         1414         1445         426         1693         2         8         13030         1         1530         435         5         5         13 <td>0015</td> <td>55</td> <td></td> <td>0</td> <td></td> <td>1215</td> <td>437</td> <td></td> <td>6</td> <td></td> <td></td>	0015	55		0		1215	437		6		
01000         38         1         1300         434         4           0115         40         3         1315         419         3           01130         22         0         1330         440         4           0145         24         124         0         4         1345         483         1776         7         18           0200         15         0         1400         436         483         1776         7         18           02215         24         2         1415         405         1         2020         12         2021         44         426         3         2021         3         2021         14         405         3         <	0030	52		0		1230	391		8		
0115         40         3         1315         419         3           01130         22         0         1330         440         4           0145         24         124         0         4         1345         483         1776         7         18           0200         15         0         1400         436         2         0         12020         14         0         1430         426         3         1         0         1430         426         3         1         0         1430         426         1693         2         8         0         1430         426         1693         2         8         0         1500         439         3         3         0         1500         439         3         0         1503         446         488         2         0         0         1530         445         5         5         0         0         1530         445         5         6         16         0         1600         433         1789         6         16         0         0         1530         4419         4         4         4         4         4         4         4         4	0045	96	287	3	6	1245	429	1749	10	32	
0130         22         0         1330         440         4         1145         24         124         0         4         1345         483         1776         7         18         18         12020         15         0         0         1400         436         2         2         1415         405         1         2         2         1415         405         1         2         2         1415         405         1         2         2         1415         405         1         2         2         14145         405         3         2         8         3         2         2         8         3         2         8         3         44         4         4         4         4         4         4         4         4         4         4         4         4         4 <td>0100</td> <td>38</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4</td> <td></td> <td></td>	0100	38							4		
0145         24         124         0         4         1345         483         1776         7         18           0200         15         0         1400         436         2           0215         24         2         1415         405         1           02230         14         0         1430         426         3         3           02245         18         71         2         4         1445         426         1693         2         8           03300         25         0         1500         439         3         4 <td< td=""><td>0115</td><td>40</td><td></td><td>3</td><td></td><td>1315</td><td>419</td><td></td><td>3</td><td></td><td></td></td<>	0115	40		3		1315	419		3		
0145         24         124         0         4         1345         483         1776         7         18           0200         15         0         0         1400         436         2           0215         24         2         1415         405         1           0230         14         0         1430         426         3         3           0245         18         71         2         4         1445         426         1693         2         8           03000         25         0         1500         439         3         4	0130	22		0		1330	440		4		
0215         24         2         1415         405         1           0230         14         0         1430         426         3           0245         18         71         2         4         1445         426         1693         2         8           0300         25         0         1         1500         439         3         3           0315         20         1         1515         468         2         3         2         8         4         2         1615         488         2         1600         433         2         4	0145	24	124	0	4	1345	483	1776	7	18	
0230         14         0         1430         426         3         8           0245         18         71         2         4         1445         426         1693         2         8           03300         25         0         0         1500         439         3         3           03315         20         1         1515         468         2         0         1530         435         5           03345         12         66         0         1         1545         447         1789         6         16           0400         8         2         1600         433         2         4         2           0415         18         2         1616         429         4	0200	15		0		1400	436		2		
0245         18         71         2         4         1445         426         1693         2         8           0300         25         0         1500         439         3         3           0315         20         1         1515         468         2           03345         12         66         0         1         1530         435         5           0400         8         2         1600         433         2         4           0415         18         2         1615         429         4           0430         31         2         1630         419         1           0445         28         85         2         8         1645         435         1716         3         10           0550         34         2         1700         419         4         4         10         11         463         3         10	0215	24		2		1415	405		1		
0300         25         0         1500         439         3           0315         20         1         1515         468         2           03330         9         0         1530         435         5           0345         12         66         0         1         1545         447         1789         6         16           0400         8         2         1600         433         2         40	0230	14		0		1430	426		3		
0315         20         1         1515         468         2           0330         9         0         1530         435         5           0345         12         66         0         1         1545         447         1789         6         16           0400         8         2         1600         433         2         40         416         447         1789         6         16         416         447         1789         6         16         416         447         1789         6         16         416         447         1789         6         16         416         447         1789         6         16         416         447         1789         6         16         416         447         1789         4         16         448         44	0245	18	71	2	4	1445	426	1693	2	8	
0330         9         0         1530         435         5         1           0345         12         66         0         1         1545         447         1789         6         16           0400         8         2         1600         433         2         2           0415         18         2         1615         429         4           0430         31         2         1630         419         1           0445         28         85         2         8         1645         435         1716         3         10           0500         34         2         1700         419         4         1         1         0515         56         2         1715         463         3         1         0530         95         3         1730         472         2         2         1         0515         56         2         9         1745         454         1808         3         12         1         0         0500         93         4         1800         463         4         1         0         0         0         1         1         1         0         0	0300	25		0		1500	439		3		
0345         12         66         0         1         1545         447         1789         6         16           0400         8         2         1600         433         2         2           0415         18         2         1615         429         4         4           0430         31         2         1630         419         1         1           0445         28         85         2         8         1645         435         1716         3         10           0500         34         2         1700         419         4 </td <td>0315</td> <td>20</td> <td></td> <td>1</td> <td></td> <td>1515</td> <td>468</td> <td></td> <td>2</td> <td></td> <td></td>	0315	20		1		1515	468		2		
0345         12         66         0         1         1545         447         1789         6         16           0400         8         2         1600         433         2         2           0415         18         2         1615         429         4         4           0430         31         2         1630         419         1         1           0445         28         85         2         8         1645         435         1716         3         10           0500         34         2         1700         419         4 </td <td>0330</td> <td>9</td> <td></td> <td>0</td> <td></td> <td>1530</td> <td>435</td> <td></td> <td>5</td> <td></td> <td></td>	0330	9		0		1530	435		5		
0400         8         2         1600         433         2           0415         18         2         1615         429         4           0430         31         2         1630         419         1           0445         28         85         2         8         1645         435         1716         3         10           0500         34         2         1700         419         4         4         4         20515         56         2         1715         463         3         3         10         3530         95         3         1730         472         2         2         2         2         2         2         2         2         2         2         2         2         2         3         12         3         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3         12         3 <td< td=""><td>0345</td><td>12</td><td>66</td><td>0</td><td>1</td><td></td><td></td><td>1789</td><td></td><td>16</td><td></td></td<>	0345	12	66	0	1			1789		16	
0430         31         2         1630         419         1           0445         28         85         2         8         1645         435         1716         3         10           0500         34         2         1700         419         4         4         10	0400	8				1600	433				
0445         28         85         2         8         1645         435         1716         3         10           0500         34         2         1700         419         4         4           0515         56         2         1715         463         3         3         05530         95         3         1730         472         2         2         05530         95         3         1730         472         2         2         05530         95         3         1730         472         2         2         056530         95         3         1730         472         2         2         05656         2         05656         472         2         2         2         05656         3         12         05656         472         2         2         2         05650         18         1800         463         4         4         1808         3         12         05650         18         1800         44         1808         3         12         05650         18         620         11         37         1845         473         1862         3         12         05715         244         12         1915	0415	18		2		1615	429		4		
0500         34         2         1700         419         4           0515         56         2         1715         463         3           0530         95         3         1730         472         2           0545         84         269         2         9         1745         454         1808         3         12           0600         93         4         1800         463         4         4         1800         463         4         4         1800         463         4         4         1800         463         4         4         1800         463         4         4         1800         463         4         4         1800         463         4         4         1800         463         4         4         1800         180         4         1850         620         11         37         1845         473         1862         3         12         12         12         12         12         12         12         12         18         12         12         12         12         12         12         12         12         12         12         12         12         12	0430	31		2		1630	419		1		
0515         56         2         1715         463         3           0530         95         3         1730         472         2           0545         84         269         2         9         1745         454         1808         3         12           0600         93         4         1800         463         4         4         1800         463         4         4         1800         14         1800         463         4         4         1800         14         1800         463         4         4         1800         14         1800         463         4         4         1800         180         14         1830         481         2         2         2         2         3         12         2         1800         14         1830         481         2         3         12         2         12         1800         180         14         1830         481         2         12         2         3         12         2         3         12         2         3         12         2         3         12         2         3         12         2         3         12         2	0445	28	85	2	8	1645	435	1716	3	10	
05330         95         3         1730         472         2           0545         84         269         2         9         1745         454         1808         3         12           0600         93         4         1800         463         4         6615         162         8         1815         445         3         4         6615         162         8         1815         445         3         12         6630         180         14         1830         481         2         6630         180         14         1830         481         2         6645         185         620         11         37         1845         473         1862         3         12         12         12         1915         489         3         12         12         12         1915         489         3         12         20715         244         12         1915         489         3         12         20715         244         947         18         62         1945         317         1741         1         8         12         18         12         12         18         12         18         18         18         18	0500	34		2		1700	419		4		
0530         95         3         1730         472         2           0545         84         269         2         9         1745         454         1808         3         12           0600         93         4         1800         463         4         60615         162         8         1815         445         3         0         0         0         14         1830         481         2         0         0         0         14         1830         481         2         0         0         0         0         14         1830         481         2         0         0         0         0         0         14         1830         481         2         0         0         0         0         12         0         <	0515	56		2		1715	463		3		
06000       93       4       1800       463       4         0615       162       8       1815       445       3         0630       180       14       1830       481       2         0645       185       620       11       37       1845       473       1862       3       12         0700       177       14       1900       464       2	0530	95		3		1730	472				
0615       162       8       1815       445       3         0630       180       14       1830       481       2         0645       185       620       11       37       1845       473       1862       3       12         0700       1777       14       1900       464       2       2       2       2       2       2       2       2       2       2       3       12       3       3       3       2<	0545	84	269	2	9	1745	454	1808	3	12	
0615       162       8       1815       445       3         0630       180       14       1830       481       2         0645       185       620       11       37       1845       473       1862       3       12         0700       177       14       1900       464       2 <td>0600</td> <td>93</td> <td></td> <td>4</td> <td></td> <td>1800</td> <td>463</td> <td></td> <td>4</td> <td></td> <td></td>	0600	93		4		1800	463		4		
0630       180       14       1830       481       2         0645       185       620       11       37       1845       473       1862       3       12         0700       177       14       1900       464       2       2       2         0715       244       12       1915       489       3       3       3       2         0745       284       947       18       62       1945       317       1741       1       8         0800       262       22       2000       341       1       1       8       8       8       8       9       2 <td>0615</td> <td>162</td> <td></td> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td>3</td> <td></td> <td></td>	0615	162		8					3		
0645       185       620       11       37       1845       473       1862       3       12         0700       177       14       1900       464       2         0715       244       12       1915       489       3         0730       242       18       1930       471       2         0745       284       947       18       62       1945       317       1741       1       8         0800       262       22       2000       341       1       1       8       1       1       1       1       8       1 <td>0630</td> <td></td>	0630										
0700       177       14       1900       464       2         0715       244       12       1915       489       3         0730       242       18       1930       471       2         0745       284       947       18       62       1945       317       1741       1       8         0800       262       22       2000       341       1       1       8         0815       283       14       2015       322       2       2         0830       329       21       2030       351       1       1         0845       365       1239       8       65       2045       370       1384       2       6         0900       326       13       2100       268       1       1       0       0       1       0       0       1       0       0       0       1       0       0       0       1       1       0       0       0       1       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	0645		620		37			1862		12	
0730     242     18     1930     471     2       0745     284     947     18     62     1945     317     1741     1     8       0800     262     22     2000     341     1     1       0815     283     14     2015     322     2     2       0830     329     21     2030     351     1       0845     365     1239     8     65     2045     370     1384     2     6       0900     326     13     2100     268     1     1       0915     454     11     2115     255     3     1       0930     431     14     2130     213     1       0945     461     1672     4     42     2145     251     987     2     7       1000     459     4     2200     217     1     1       1015     465     3     2215     214     1     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1115     437     9     2315 </td <td>0700</td> <td></td> <td></td> <td>14</td> <td></td> <td>1900</td> <td>464</td> <td></td> <td></td> <td></td> <td></td>	0700			14		1900	464				
0745       284       947       18       62       1945       317       1741       1       8         0800       262       22       2000       341       1       1       1         0815       283       14       2015       322       2       2       2         0830       329       21       2030       351       1       1       0       0       0       0       0       0       0       0       0       0       1       0 <td>0715</td> <td>244</td> <td></td> <td>12</td> <td></td> <td>1915</td> <td>489</td> <td></td> <td>3</td> <td></td> <td></td>	0715	244		12		1915	489		3		
0745       284       947       18       62       1945       317       1741       1       8         0800       262       22       2000       341       1       1       1         0815       283       14       2015       322       2       2       2         0830       329       21       2030       351       1       1       0       0       0       0       0       0       0       0       0       0       1       0 <td>0730</td> <td>242</td> <td></td> <td>18</td> <td></td> <td>1930</td> <td>471</td> <td></td> <td>2</td> <td></td> <td></td>	0730	242		18		1930	471		2		
0815       283       14       2015       322       2         0830       329       21       2030       351       1         0845       365       1239       8       65       2045       370       1384       2       6         0900       326       13       2100       268       1 <td>0745</td> <td>284</td> <td>947</td> <td>18</td> <td>62</td> <td>1945</td> <td>317</td> <td>1741</td> <td></td> <td>8</td> <td></td>	0745	284	947	18	62	1945	317	1741		8	
0830       329       21       2030       351       1         0845       365       1239       8       65       2045       370       1384       2       6         0900       326       13       2100       268       1	0800	262		22		2000	341		1		
0845     365     1239     8     65     2045     370     1384     2     6       0900     326     13     2100     268     1       0915     454     11     2115     255     3       0930     431     14     2130     213     1       0945     461     1672     4     42     2145     251     987     2     7       1000     459     4     2200     217     1     1       1015     465     3     2215     214     1     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1     1       1115     437     9     2315     172     0     0       1130     467     13     2330     158     1     1       1145     386     1695     11     36     2345     152     665     1     3	0815	283		14		2015	322		2		
0845     365     1239     8     65     2045     370     1384     2     6       0900     326     13     2100     268     1       0915     454     11     2115     255     3       0930     431     14     2130     213     1       0945     461     1672     4     42     2145     251     987     2     7       1000     459     4     2200     217     1     1       1015     465     3     2215     214     1     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1     1       1115     437     9     2315     172     0     0       1130     467     13     2330     158     1     1       1145     386     1695     11     36     2345     152     665     1     3	0830	329		21		2030	351		1		
0900       326       13       2100       268       1         0915       454       11       2115       255       3         0930       431       14       2130       213       1         0945       461       1672       4       42       2145       251       987       2       7         1000       459       4       2200       217       1	0845		1239		65			1384		6	
0930     431     14     2130     213     1       0945     461     1672     4     42     2145     251     987     2     7       1000     459     4     2200     217     1       1015     465     3     2215     214     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	0900								1		
0930     431     14     2130     213     1       0945     461     1672     4     42     2145     251     987     2     7       1000     459     4     2200     217     1       1015     465     3     2215     214     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	0915										
0945     461     1672     4     42     2145     251     987     2     7       1000     459     4     2200     217     1     1       1015     465     3     2215     214     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	0930										
1000     459     4     2200     217     1       1015     465     3     2215     214     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	0945		1672	4	42			987	2	7	
1015     465     3     2215     214     1       1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	1000								1		
1030     440     6     2230     209     2       1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	1015										
1045     452     1816     4     17     2245     198     838     0     4       1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	1030										
1100     405     3     2300     183     1       1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	1045		1816		17			838		4	
1115     437     9     2315     172     0       1130     467     13     2330     158     1       1145     386     1695     11     36     2345     152     665     1     3	1100										
1130 467 13 2330 158 1 1145 386 1695 11 36 2345 152 665 1 3	1115										
1145 386 1695 11 36 2345 152 665 1 3	1130										
	1145		1695		36			665		3	



Seasonal Adjustment Factors

Traffic Pattern by Month for 1/1/2018 - 12/31/2018
Criteria: Location ID = 41, 6161, 6345, 4165, 415, H8504, 32, H8503, H8502, H8501, H8500, H8499, H13137, H13138, H13139, H13140, AET11



<sup>\*</sup>Source: Massachusetts Department of Transportation Interactive Traffic Data Collection Map

#### Traffic Pattern by Month for 1/1/2018 - 12/31/2018

Criteria: Location ID = 41, 6161, 6345, 4165, 415, H8504, 32, H8503, H8502, H8501, H8500, H8499, H13137, H13138, H13139, H13140, AET11

Station	Municipality	Location	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AET11	Newton	I-90, e of Lowell Ave	0.902	0.971	0.961	1.035	1.052	1.053	0.979	1.015	1.033	1.049	1.006	0.946
H13137	Newton	I-90, e of I-95	0.899	0.958	0.978	1.040	1.054	1.048	0.981	1.019	1.033	1.043	1.004	0.940
H13138	Newton	I-90, e of Chestnut St	0.807	0.944	0.962	1.027	1.027	1.027	0.953	0.992	1.006	1.032	1.093	
H8503	Weston	I-95, s of Recreation Rd	0.846	0.916	0.937	1.017	1.066	1.063	0.996	1.038	1.054	1.065		
Average of Wei	ghted Factors		0.864	0.947	0.960	1.030	1.050	1.048	0.977	1.016	1.032	1.047	1.034	0.943

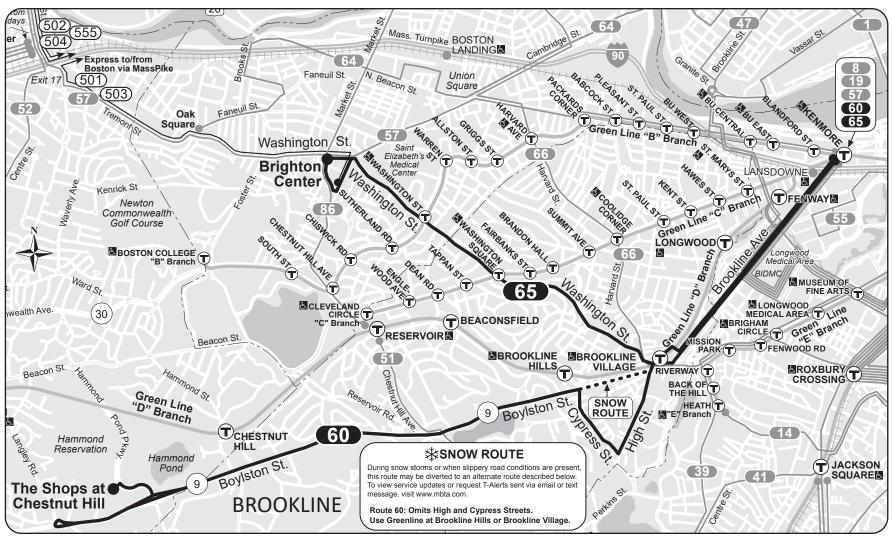
<sup>\*</sup>Source: Massachusetts Department of Transportation Interactive Traffic Data Collection Map

Generated 4/9/2019 Page 2 of 2





### Route 60 Chestnut Hill - Kenmore Station Route 65 Brighton Center - Kenmore Station



**Schedule Change** 

Effective August 30, 2020

**60** Chestnut Hill-Kenmore Station

**65** Brighton Center-Kenmore Station

#### Serving

- The Shops at Chestnut Hill
- St. Elizabeth's Medical Center
- Brookline Village
- Longwood Medical Area



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60	Inb	ound	Wee	kday	Outb	ound		60	Inbound	Satu	rday	Outbound	
Leave Shops at Chestnut Hill	Lv/Arrive Boylston at Tully	Arrive Brookline Village	Arrive Kenmore Station	Leave Kenmore Station	Arrive Brookline Village	Arrive Shops at Chestnut Hill	Arrive Boylston at Tully	Leave Shops at Chestnut Hill	Arrive Brookline Village	Arrive Kenmore Station	Leave Kenmore Station	Lv/Arrive Brookline Village	Arrive Shops at Chestnut Hill
Chestnut	Boylston	Brookline	Kenmore	Kenmore	Brookline	Chestnut	Boylston at Tully 5:07A 5:54 6:24 6:51 7:14 7:36 8:11 8:37 9:01 9:34 11:56	Chestnut Hill 5:05A 6:00 7:00 7:30 8:30 8:30 9:00 9:35 10:10 10:45 11:20 11:55 12:30P 1:05 1:45 2:25 3:05 3:45 4:25 5:05 5:40 6:20 6:55 7:30 8:05 8:40 9:10 10:10 11:10 12:00M 12:50  60	Brookline Village 5:15A 6:12 7:13 7:43 8:13 8:43 9:15 0:25 11:00 11:35 12:10P 12:45 1:20 2:00 2:40 3:20 4:40 5:21 5:56 6:36 7:11 7:46 8:19 8:54 10:24 11:24 11:24 11:21 Inbound	Kenmore Station  5:23A 6:20 7:24 7:54 8:54 9:27 10:02 10:38 11:13 11:48 12:23P  12:58 1:33 2:13 2:53 3:33 4:13 4:58 5:39 6:14 6:54 7:29 8:03 8:34 9:09 9:39 10:39 11:39 12:29A	Kenmore Station	Brookline Village  4:55A 5:38 6:38 7:08 7:38 8:08 8:38 9:08 9:43 10:18 10:53 11:28 12:03P  12:38 1:13 1:53 2:33 3:53 4:33 5:53 6:28 7:08 7:43 8:17 8:47 10:47 11:36 12:31A  Outbound	Chestnut Hill 5:02A 5:52 6:52 7:52 8:24 8:54 9:59 10:37 11:12 11:47 12:22P 12:57 1:32 2:12 2:52 3:34 4:14 4:54 5:34 6:14 6:49 7:27 8:02 8:34 9:04 10:04 11:52 12:47A  Arrive
11:15 12:06A	11:17	11:26 11:26 12:18A	11:38	10:45 11:40	9:52 10:52 11:46	11:07 12:01A		Shops at Chestnut Hill 6:30A Every	Arrive Brookline Village 6:42A Hour	Arrive Kenmore Station 6:52A Until	Leave Kenmore Station 6:00A Every	Arrive Brookline Village 6:06A Hour	Shops at Chestnut Hill 6:23A Until
								11:30 12:35P 1:45 2:55 4:05 5:15 6:25 7:30 8:30 9:30	11:44 12:52P 2:02 3:12 4:22 5:32 6:42 7:45 8:45 9:45	1:54 1:04P 2:14 3:24 4:34 5:42 6:52 7:55 8:55 9:55	11:00 12:00N 1:10 2:20 3:30 4:40 5:50 7:00 8:00 9:00	11:06 12:08P 1:18 2:28 3:38 4:48 5:58 7:08 8:07 9:07	11:23 12:28P 1:38 2:48 3:58 5:08 6:18 7:27 8:25 9:25

#### Route 60 **Chestnut Hill-Kenmore Station**

### Route 65 **Brighton Center-Kenmore Station**

### No Route 65 service on Sunday

All buses are accessible to persons with disabilities

		+	Ä	+ 🛱
Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$2.00	\$2.00	\$2.90	\$4.90
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinkPass (\$90.00/mo.); Local Bus (\$55/mo.); \*Student/Youth LinkPass (\$30.00/mo.); \*\*Senior/TAP LinkPass (\$30/mo.); and express bus, commuter rail, and boat passes.

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

\* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available.

to students through participating middle schools and high schools. Youth CharlieCards \*\* Requires Senior/TAP CharlieCard, available to Medicare cardiolders, seniors 65+, and persons with disabilities.

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

Fall 2020 & Winter 2021 Holidays 9/7/20: Sunday; 10/12/20 & 11/11/20: Weekday 11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat

ı	65		Wee	kday		
		Inbound			Outbound	
	Leave Brighton Center	Arrive Brookline Village	Arrive Kenmore Station	Leave Kenmore Station	Arrive Brookline Village	Arrive Brightor Center
	7:48 7:55 8:03 8:10 8:18 8:25 8:33 8:40 8:50 9:00 9:30 10:40 11:45 <b>12:55P</b> <b>2:05</b>	6:10A 6:22 6:37 6:54 7:03 / 8 mins or les 8:07 8:14 8:22 8:29 8:35 8:41 8:48 8:55 9:05 9:15 9:45 10:52 11:57	8:26 8:33 8:41 8:47 8:53 8:59 9:06 9:13 9:23 9:33 10:03 11:09 12:14P 1:24 2:36	6:13A 6:51 7:23 7:40 7:56 8:13 8:31 8:51 9:11 9:31 10:10 11:15 12:25P 1:35 2:00 2:25 2:45 3:15 3:40 4:00 4:14	6:22A 7:00 7:33 7:52 8:06 8:23 8:41 9:21 9:40 10:19 11:24 12:36P 1:46 2:11 2:36 3:26 3:51 4:19	6:36A 7:18 7:53 8:11 8:24 8:41 8:59 9:19 9:38 9:57 10:36 11:43 12:55P 2:05 3:15 3:45 4:10 4:32 4:51
	2:35 3:00 3:20 3:35 4:19 4:41 4:52 5:03 5:14 5:25 5:36 5:47 5:58 6:09 6:20 6:42 7:05 8:09	2:49 3:14 3:34 3:49 4:11 4:33 4:55 5:06 5:17 5:28 5:39 5:50 6:01 6:12 6:23 6:34 6:56 7:17 8:19	3:07 3:32 3:52 4:07 4:51 5:13 5:24 5:35 5:46 5:57 6:08 6:19 6:19 6:41 6:52 7:14 7:29 8:31	4:25 4:36 4:47 4:58 5:09 5:20 5:31 5:42 5:53 6:04 6:15 6:26 6:37 6:37 8:35 8:35	4:40 4:51 5:02 5:13 5:24 5:35 5:46 5:57 6:06 6:15 6:26 6:37 6:48 7:01 7:46 8:44	5:02 5:13 5:24 5:35 5:46 5:57 6:07 6:16 6:25 6:34 6:45 6:56 7:07 7:20 8:05 8:58

65	Inbound	Satu	rday	Outbound	
Leave Brighton Center	Arrive Brookline Village	Arrive Kenmore Station	Leave Kenmore Station	Arrive Brookline Village	Arrive Brighton Center
6:45A 7:45 8:45 9:45 10:45 11:45	6:54A 7:54 8:55 9:57 10:56 11:57	7:03A 8:03 9:04 10:05 11:05 <b>12:06P</b>	7:15A 8:15 9:15 10:15 11:15	7:23A 8:23 9:23 10:23 11:23	7:37A 8:36 9:36 10:36 11:37
12:45P 1:45 2:45 3:45 4:45 5:45	12:57P 1:57 2:57 3:58 4:58 5:58	1:06P 2:08 3:08 4:07 5:09 6:08	12:15P 1:15 2:15 3:15 4:15 5:15 6:15	12:26P 1:26 2:26 3:24 4:24 5:24 6:26	12:39P 1:44 2:44 3:42 4:42 5:39 6:39

<b>T</b> Fares				
		+	Ā	+ 🖺
PRICE PER TRIP	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$2.00	\$2.00	\$2.90	\$4.90***
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90***
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10
UNLIMITED TRIP	PASSES			
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
Senior/TAP Mon	•	/month for and Rapid 1		ravel on

VALID PASSES: LinkPass (\$84.50/mo.); Student /Youth LinkPass\* (\$30/mo.); Senior/TAP LinkPass\* (\$30/mo.); and express bus, commuter rail, and boat passes.

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

- \* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.
- \*\* Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.
- \*\*\* For Silver Line SL4 or SL5 pay \$2.75. Also see "transfers."

#### TRANSFERS

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

#### **SCHEDULES**

Schedules are available at the following stations: Park Street, Airport, Malden, Harvard, Haymarket (Green Line Level), Back Bay and Downtown Crossing (Orange Line Level) or see station personnel. Schedules also available at the Transportation Building (10 Park Plaza), 45 High St, and online at mbta.com.

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



# Rapid Transit

Effective August 30, 2020















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

Rapid		We	ekday			Saturday			Sunday	
Transit Line	First Trip	Peak	Off Peak	Last Trip	First Trip	Arriving Every	Last Trip	First Trip	Arriving Every	Last Trip
Red Line Alewife Braintree	5:24 AM	9	12-16	12:20 AM	5:24 AM	12-16	12:20 AM	6:08AM	12-16	12:20 AM
	5:08 AM	mins	mins	12:17 AM	5:09 AM	mins	12:17 AM	6:00AM	mins	12:17 AM
Alewife	5:16 AM	9	12-16	w 12:27 AM	5:16 AM	12-16	w 12:27 AM	6:00AM	12-16	w 12:27 AM
Ashmont	5:16 AM	mins	mins	w 12:30 AM	5:16 AM	mins	w 12:30 AM	6:00AM	mins	w 12:30 AM
"M" Ashmont	5:17 AM	5	8-12 Day	w 1:05 AM	5:15 AM	8-12 Day	w 1:05 AM	6:03AM	8-12 Day	w 1:05 AM
Mattapan	5:05 AM	mins	26 Late	12:53 AM	5:05 AM	26 Early/Late	12:53 AM	5:51AM	26 Early/Late	12:53 AM
Blue Line 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
Orange Line Oak Grove Forest Hills	5:16 AM 5:16 AM	6 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
Green Line*  B Boston College Park Street	5:01 AM	5-6	7-9	12:10 AM	4:45 AM <sup>2</sup>	7-8	12:09 AM	5:20AM <sup>2</sup>	9	12:10 AM
	5:45 AM	mins	mins	w 12:52 AM	5:40 AM	mins	w 12:52 AM	6:12AM	mins	w 12:52 AM
C Cleveland Circle	4:57 AM <sup>1</sup>	6-8	9-11	12:07 AM	4:50 AM <sup>2</sup>	9-10	12:10 AM	5:30AM <sup>2</sup>	10	12:10 AM
North Station	5:48 AM	mins	mins	w 12:46 AM	5:30 AM	mins	w 12:46 AM	6:06AM	mins	w 12:46 AM
D Riverside	4:56 AM	6	8-11	12:05 AM	4:55 AM	8-9	12:02 AM	5:25AM	11-12	12:05 AM
Government Ctr.	5:45 AM	mins	mins	w 12:49 AM	5:38 AM	mins	w 12:49 AM	6:10AM	mins	w 12:49 AM
E Lechmere *	5:00 AM <sup>4</sup>	6-7	8-10	12:30 AM	5:01 AM	10	12:30 AM	5:35AM	12	12:30 AM
Heath Street	5:45 AM	mins	mins	12:47 AM <sup>3</sup>	5:39 AM	mins	12:47 AM <sup>3</sup>	6:15AM	mins	12:47 AM <sup>3</sup>
Silver Line SL1 Logan Airport South Station	5:38 AM 5:40 AM	7-12 mins	10-12 mins	f 1:03 AM w 1:02 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	6:07 AM	6	14-16	12:37 AM	6:03 AM	14-16	12:35 AM	6:51AM	14-16	12:51 AM
South Station	5:44 AM	mins	mins	12:50 AM	5:47 AM	mins	12:45 AM	6:35AM	mins	12:36 AM
SL3 Chelsea Station	4:55 AM	6-11	8-13	f 1:05 AM	5:30 AM	8-13	1:22 AM	6:26AM	8-13	f 1:25 AM
South Station	4:20 AM	mins	mins	w 12:35 AM	4:56 AM	mins	w 12:55 AM	5:53AM	mins	w 12:55 AM
SL4 Nubian Station	5:20 AM	6-11	6-11	12:20 AM	5:23 AM	13-20	12:20 AM	6:02AM	13-20	12:20 AM
South Station	5:38 AM	mins	mins	12:37 AM	5:40 AM	mins	12:40 AM	6:20AM	mins	12:40 AM
SL5 Nubian Station	5:15 AM	11-14	13-20	12:51 AM	5:19 AM	6-11	12:43 AM	6:00AM	6-11	12:25 AM
Downtown Xing	5:32 AM	mins	mins	w 1:07 AM	5:34 AM	mins	w 1:00 AM	6:16AM	mins	w 12:47 AM

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

#### **Green Line Notes:**

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

## See GL service changes at mbta.com/GLwork View service alerts at 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

- 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.

Fall 2020 & Winter 2021 Holidays 9/7/20: Sunday; 10/12/20 & 11/11/20: Weekday 11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat



Vehicular Crash Data

1. Route 9 at East Site Driveway and The Shops at Chestnut Hill Driveway

1. Route	9 at Eas	t Site Driv	eway and	The Shops	at Chestnut F	lill Driveway										Ago of Drive	or I										
Crash Number	Crash Date	Day of Week	Crash Time	City/Town	MassHighway District	Crash Severity	Maximum Injury Severity Reported	Number of NonFatal Injuries	Number of Fatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Youngest	Age of Drive	er - Driver Contributing Codes wn	Non Motorist Type Road Surfa	ce Ambient Light	Weather Condition	Street Number	Roadway	Near Intersection Roadway	Police Agency	RMV Document #	Report IDs
														V1:(Collision with parket	1	Known											
							Non-fatal					V1: Travelling		motor vehicle)													
3556698	8/11/2013	Sun	3.43 DM	NEWTON		Non-fatal injury	injury - Non- incapacitating		1 0	, ,	Rear-end	straight ahead / V2:Parked	V1:W / V2:W		V1:(Passenger car) V2:(Passenger car)	35-44	35-44	D1:(Other improper action) D2:()	Dny	Daylight	Clear	225	BOYLSTON ST		Local police	PW201322701508	1300000753
3330038	8/11/201	Juli	3.43 FIV	INEWTON		Non-latal injuly	incapacitating		1 0		ivear-end	V1: Slowing or	V1.VV / V2.VV	V1:(Collision with motor	V1:(Light truck(van, mini-van,	33-44	33-44	D2.()	ыу	Daylight	Clear	223	30123101131		police	F W201322701308	1300000733
						Property damage						stopped in traffic /		vehicle in traffic)	panel, pickup, sport utility) with												
2500200	0 /47 /204		6 45 44	NEWFOR		only (none						V2:Travelling		V2:(Collision with motor	only four tires) V2:(Passenger	24.24	24.24	D1:(No improper driving)		D. Pala	Cl		BOYLSTON		State	D14/204225200440	2042 0115 005522
3590280	9/17/2013	lue	6:45 AIV	NEWTON		injured)	No injury		0 0	2	Rear-end	straight ahead	V1:W / V2:W	vehicle in traffic) V1:(Collision with motor	car)	21-24	21-24	D2:(Inattention)	Dry	Daylight	Clear	225	STREET Rte 9 W		police	PW201326300410	2013-0H5-005532
						Property damage						V1: Changing lanes		vehicle in traffic)													
						only (none					Sideswipe,	/ V2:Travelling		V2:(Collision with motor	V1:(Passenger car)			D1:(Inattention) D2:(No					BOYLSTON		State		
3658002	11/13/2013	Wed	10:14 AM	NEWTON		injured)	No injury	(	0 0	2	same direction	straight ahead V1: Travelling	V1:W / V2:W	vehicle in traffic) V1:(Collision with motor	V2:(Passenger car)	65-74	65-74	improper driving)	Dry	Daylight	Clear	220	STREET Rte 9 W	-	police	PW201332300510	2013-0H5-006847
							Non-fatal					straight ahead /		vehicle in traffic)													
							injury -					V2:Entering traffic		V2:(Collision with motor	V1:(Passenger car)			D1:() D2:(Disregarded traffic					BOYLSTON		State		
3720937	12/30/2013	Mon	6:50 AM	NEWTON		Non-fatal injury	Incapacitating	3	1 0	2	Angle	lane V1: Travelling	V1:W / V2:S	vehicle in traffic) V1:(Collision with motor	V2:(Truck/trailer) V1:(Light truck(van, mini-van,	21-24	25-34	signs, signals, road markings)	Ice	Daylight	Clear		STREET Rte 9 W		police	PW201402201008	2013-0H5-007740
						Property damage						straight ahead /		vehicle in traffic)	panel, pickup, sport utility) with												
						only (none						V2:Slowing or		V2:(Collision with motor	only four tires) V2:(Passenger			D1:(Other improper action)					BOYLSTON		State		
3748807	2/16/2014	Sun	5:25 PM	NEWTON	(	injured)	No injury	(	0 0	) 2	Rear-end	stopped in traffic	V1:W / V2:W	vehicle in traffic)	car)	35-44	35-44	D2:()	Dry	Daylight	Clear		STREET Rte 9 W		police	PW201406400303	2014-0H5-000891
							Non-fatal injury -				Single vehicle			V1:(Collision with					P2:Pedest				BOYLSTON		State		
3828014	5/30/2014	l Fri	12:24 PM	NEWTON		Non-fatal injury	Possible	:	1 0	1	crash	V1: Turning right	V1:W	pedestrian)	V1:(Passenger car)	35-44	35-44	D1:(Made an improper turn)	rian Dry	Daylight	Clear		STREET Rte 9 W		police	PW201416000532	2014-0H5-002971
														V1:(Collision with motor													
						Property damage only (none						V1: Backing /		vehicle in traffic) V2:(Collision with motor	V1:(Passenger car)			D1:(Inattention)							Local		
3862165	6/21/2014	Sat	4:05 PM	NEWTON		injured)	No injury		0 0	2	Rear-to-rear	V1. Backing / V2:Backing	V1:N / V2:S	vehicle in traffic)	V2:(Passenger car)	55-64	65-74	D2:(Inattention)	Dry	Daylight	Clear	225	BOYLSTON ST		police	PW201417401213	1400000684
														,	V1:(Light truck(van, mini-van,			,							ľ		
2050072	40/40/204		4 20 01	NEWFOR							Single vehicle	1/4 D. II.		V1:(Collision with	panel, pickup, sport utility) with			24 (01)		D. Pala	Cl	225	DOW STON ST		Local	DIA 2004 4 2007000 40	4400004005
3968073	10/10/2014	Fri	1:29 PW	NEWTON		Not Reported	Not reported		0 0	1	crash	V1: Backing	V1:8	pedestrian)	only four tires) V1:(Light truck(van, mini-van,	55-64	55-64	D1:(Other improper action)	Dry	Daylight	Clear	225	BOYLSTON ST		police	PW201430700948	1400001086
															panel, pickup, sport utility) with												
												V1: Travelling		V1:(Collision with motor	only four tires) V2:(Light												
						Property damage only (none						straight ahead / V2:Slowing or		vehicle in traffic) V2:(Collision with motor	truck(van, mini-van, panel, pickup, sport utility) with only			D1:(Visibility obstructed)					BOYLSTON		State		
3974578	11/8/2014	Sat	1:35 PM	NEWTON		injured)	No injury		0 0	2	Rear-end	stopped in traffic	V1:W / V2:W		four tires)	25-34	45-54	D2:(No improper driving)	Dry	Daylight	Clear		STREET Rte 9 W		police	PW201432300234	2014-0H5-006548
														V1:(Collision with motor	,								-		ľ		
						Property damage						V1: Travelling		vehicle in traffic)				D1:(No improper driving)					DOW STON				
4007854	2/7/2019	Sat	3:40 PM	NEWTON		only (none injured)	No injury		0 0	2	Angle	straight ahead / V2:Turning right	V1:W / V2:S	V2:(Collision with motor vehicle in traffic)	V1:(Passenger car) V2:(Passenger car)	55-64	75-84	D2:(Failed to yield right of way)	Dry	Daylight	Cloudy		BOYLSTON STREET Rte 9 W		State police	PW201504801139	2015-0H5-000749
1007031	2,7,201	Juli	3.1011		`	injures,	i i i i i i i i i i i i i i i i i i i		<u> </u>	1	, mgic	V1: Travelling	V2.VV / V2.IS	vernere in trainer	VE.(r asseriger car)	33 0 1	75 0.	,	5.7	Dayiigiic	cioudy	i i			ponee	1 1120130 1001103	2013 0113 0007 13
												straight ahead /		V1:(Collision with motor													
						Property damage only (none						V2:Travelling straight ahead /	V1:E / V2:E /	vehicle in traffic) V2:(Collision with motor	V1:(Passenger car)			D1:(Followed too closely)					BOYLSTON		State		
4061777	6/5/2019	Fri	10:20 AM	NEWTON		injured)	No injury		0 0	3	Rear-end	V3:Not reported	V3:8	vehicle in traffic) V3:()	V2:(Passenger car) V3:()	16-20	45-54	D2:(Followed too closely) D3:(	Dry	Daylight	Clear		STREET Rte 9 E			PW201519405253	2015-0H5-003180
												·		V1:(Collision with motor				, , , , ,		, ,					ĺ		
												V1: Turning right /		vehicle in traffic)	V1:(Passenger car)												
							Non-fatal					V2:Slowing or stopped in traffic /		V2:(Collision with motor vehicle in traffic)	V2:(Passenger car) V3:(Light truck(van, mini-van, panel,			D1:(Made an improper turn)									
							injury - Non-				Sideswipe,	V3:Travelling	V1:W / V2:S /		pickup, sport utility) with only			D2:(No improper driving)					BOYLSTON		State		
4087987	8/13/2015	Thu	12:01 PM	NEWTON	(	Non-fatal injury	incapacitating	3	3 0	3	same direction	straight ahead	V3:W	vehicle in traffic)	four tires)	25-34	65-74	D3:(No improper driving)	Dry	Daylight	Clear		STREET Rte 9 W		police	PW201526600819	2015-0H5-004541
						Property damage						V1: Turning left /		V1:(Collision with motor vehicle in traffic)													2015-0H5-007055 /
						only (none						V2:Travelling		V2:(Collision with motor	V1:(Passenger car)			D1:(Made an improper turn)					BOYLSTON		State		2015-0H5-007055 /
4119012	12/1/2019	Tue	11:10 AM	NEWTON	(	injured)	No injury	(	0 0	) 2	Angle	straight ahead	V1:W / V2:W	vehicle in traffic)	V2:(Passenger car)	25-34	45-54	D2:(No improper driving)	Dry	Daylight	Cloudy	220	STREET Rte 9 W		police	PW201534301282	2015-0H5-007055
															V1:(Light truck(van, mini-van, panel, pickup, sport utility) with												
														V1:(Collision with motor	only four tires) V2:(Light												
						Property damage						V1: Changing lanes		vehicle in traffic)	truck(van, mini-van, panel,												
4120202	12/8/2019	Tuo	0.22 44/	1 NEWTON		only (none	No injury	,			Sideswipe,	/ V2:Slowing or	V1.E / V2.E	V2:(Collision with motor vehicle in traffic)	pickup, sport utility) with only four tires)	35-44	35-44	D1:(Other improper action) D2:(No improper driving)	Dry	Daylight	Claudy		BOYLSTON STREET Rte 9 E		State police	PW201534500194	2015 0UE 007204
4120293	12/8/2013	rue	8:32 AIV	INEWION	,	injured)	No injury		0 0	2	same direction	stopped in traffic V1: Travelling	V1:E / V2:E	V1:(Collision with motor	Tour tires)	35-44	35-44	D2:(No improper driving)	Dry	Daylight	Cloudy	i i	JIREET RIE 9 E		police	PW201534500194	2015-085-007204
												straight ahead /		vehicle in traffic)													
												V2:Travelling		V2:(Collision with motor	V1:(Passenger car) V2:(Light			D4 (S.II)									
						Property damage only (none						straight ahead / V3:Travelling	V1:W / V2:W	vehicle in traffic) / V3:(Collision with motor	truck(van, mini-van, panel, pickup, sport utility) with only			D1:(Followed too closely) D2:(Followed too closely)					BOYLSTON		State		
4204371	5/10/2016	Tue	5:34 PM	NEWTON		injured)	No injury		0 0	3	Rear-end	straight ahead	V3:W	vehicle in traffic)	four tires) V3:(Passenger car)	16-20	55-64	D3:(No improper driving)	Dry	Daylight	Cloudy		STREET Rte 9 W			PW201616600428	2016-0H5-003612
															V1:(Light truck(van, mini-van,												
						Property damage only (none						V1: Turning right / V2:Travelling			panel, pickup, sport utility) with only four tires) V2:(Passenger			D1:(Made an improper turn)					BOYLSTON		State		
4282139	10/18/2016	Tue	5:16 PM	NEWTON		injured)	No injury		0 0	2	Rear-end	straight ahead	V1:W / V2:W	V1:() V2:()	car)	21-24	35-44	D2:(No improper driving)	Dry	Daylight	Clear		STREET Rte 9 W			PW201632000426	2016-0H5-007813
																			P2:Pedest								
							Non-fatal				1	1		V1:(Collision with					rian /		1				Local	PW201700901029	
4307687	11/25/2016	Fri	1:19 PM	NEWTON		Non-fatal injury	injury - Non- incapacitating	,	2 0	1	Angle	V1: Turning left	V1:E	V1:(Collision with pedestrian)	V1:(Passenger car)	65-74	65-74	D1:(Unknown),(Unknown)	P3:Pedest rian Wet	Davlight	Rain/Rain	225	BOYLSTON ST		Local police	/ PW201800306437	1600001278 / 1600001278
	, ,,			1	1	, , , , , , , , , , , , , , , , , , , ,	,	<u> </u>	Ť		<u> </u>	V1: Slowing or		V1:(Collision with motor	,			, , , , , , , , , , , , , , , , , , , ,		. ,							
						Property damage						stopped in traffic /		vehicle in traffic) /				D4 (N)					DOM 677			1	
4327743	2/3/2017	7 Friday	10:24 AM	NEWTON		only (none injured)	No injury	,	0 0	,	Rear-end	V2: Travelling straight ahead	V1 · W / V2 · V	V2:(Collision with motor vehicle in traffic)	V1:(Passenger car) / V2:(Passenger car)	25-34	45-54	D1: (No improper driving) / D2: (Inattention)	Dry	Daylight	Clear		BOYLSTON STREET Rte 9 W		State police	PW201705200606	2017-045-00066
432//43	2/3/201	riudy	10.24 MIVI	INT AN LOIN	1	injureu)	NO MJULY	<del>                                     </del>	0	1	incar-end	V1: Travelling	v 1. VV / VZ: V	V1:(Collision with motor	V2:(Passenger car) V1:(Light truck(van, mini-van,	25-24	+3-34	DZ. (mattention)	Ury	payiignt	CIEdl	1	TINEEL VIE A M	<b>-</b>	police	. vv201/0320000b	2017-0113-000333
							Non-fatal				1	straight ahead / V2	:	vehicle in traffic) /	pickup, sport utility)) / V2:(Light			D1: (No improper driving) /			1			BOYLSTON		1	
422	2/42/202	Morde	11.17 ***	NEWTON	1 .	Non fetal in	injury - Non-				Angle	Travelling straight	V1.6 / 12	V2:(Collision with motor	truck(van, mini-van, pickup,	25.24	65.74	D2: (Disregarded traffic signs,	,	Devilla	Class		BOYLSTON	STREET Rte 9	State	DW/20170520055	2017 005 001222
4327748	2/13/2017	Monday	11:17 AM	NEWTON	-	Non-fatal injury	incapacitating	1	1 0	2	Angle	ahead	v1: 5 / V2: W	vehicle in traffic)	sport utility))	25-34	65-74	signals, road markings)	Wet	Daylight	clear	1	STREET Rte 9 W	vV	police	PW201705200611	2017-UH5-UU1232
						1						1		V1:(Collision with motor												1	
							Non-fatal				1	V1: Travelling		vehicle in traffic) /	L.,	1								1	l	PW201721902950	
4402637	6/2/2017	7 Friday	2:14 PM	NEWTON		Non-fatal injury	injury - Non- incapacitating	, .	1 0	,	Angle	straight ahead / V2 Backing	: V1: N / V2: E	V2:(Collision with motor vehicle in traffic)	V1:(Passenger car) / V2:(Passenger car)	65-74	75-84		Dry	Daylight	Clear	225	BOYLSTON ST	1	Local police	/ PW201826306793	1700000641 /
4402037	0/2/201	riudy	∠.14 PIVI	INTANION		Trion-ididi injury	incapacitating	·	-1 0	1 4	Aligie	Packing	*1. N / VZ: E	vernicie III tranife)	vz.(rassengel tal)	05-74	73-64	l	Dry	Daylight	CICAI	223	POTESTON 21	L	police	. MATOTOTO20200/33	1,00000041

	•					•																			
																									i
													V1:(Light truck(van, mini-van,												ı
					Property damage								pickup, sport utility)) / V2:(Light											PW201723501006	
					only (none					V1: Parked / V2:		V2:(Collision with parked	truck(van, mini-van, pickup,									L	Local	/	1700000926 /
4411232	8/12/2017	Saturday	5:56 PM	NEWTON	6 injured)	No injury	0	0	2 Angle	Turning left	V1: W / V2: N	motor vehicle)	sport utility))	18-20	21-24		Dry D	Daylight	Clear	220	BOYLSTON ST	F	police	PW201826307915	1700000926
																									1
												V1:(Collision with motor													i
					Property damage					V1: Travelling		vehicle in traffic) /	V1:(Passenger car) / V2:(Light											PW201723602509	i
					only (none					straight ahead / V2:		V2:(Collision with motor	truck(van, mini-van, pickup,									ı	Local	/	1700000889 /
4411822	8/5/2017	Saturday	3:43 PM	NEWTON		No injury	0	0		_	V1: F / V2: N	· ·		21-24	45-54		Wet D	Daylight	Rain	225	BOYLSTON ST	r	nolice	PW201826307847	
	0,0,000	,			,,	,,	1		-18.4		,					D1: (No improper driving) /									
												V1:(Collision with motor				D2: (Operating vehicle in									i
										144 To 182		,	va tradition of the contract of			, ,									i
					Property damage					V1: Travelling			V1:(Light truck(van, mini-van,			erratic, reckless, careless,									ı
					only (none				Sideswipe,	straight ahead / V2:		V2:(Collision with motor				negligent or aggressive					BOYLSTON	9	State		i
4472443	12/19/2017	Tuesday	3:35 PM	NEWTON	6 injured)	No injury	0	0	2 same direction	Backing	V1: W / V2: V	/ vehicle in traffic)	V2:(Passenger car)	55-64	>84	manner)	Dry D	aylight	Clear		STREET Rte 9 W	F	police	PW201735901635	2017-0H5-009487
					Property damage																				i
					only (none							V1:(Collision with										L	Local		i
4473377	12/10/2017	Sunday	3:26 PM	NEWTON	6 injured)	No injury	0	0	1 Angle	V1: Turning left	V1: W	pedestrian)	V1:(Passenger car)				Dry D	Dusk	Clear	225	BOYLSTON ST	F	police	PW201736100609	1700001436

#### 2. Route 9 Eastbound at West Site Driveway

Crash Numbe	Crash Date	Day of Week	Crash Time	City/Town	MassHighway District	Crash Severity	Maximum Injury Severity Reported	Number of NonFatal Injuries	Number of Fatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Age of Driver - Youngest Known	Age of Driver Oldest Known	Driver Contributing Codes	Non Motorist Type	Road Surface	Ambient Light	Weather Condition	Street Ro Number	Roadway	Near Intersection Roadway	olice Agency	RMV Document #	Report IDs
							Non-fatal								V1:(Light truck(van, mini-van,													
							injury - Non-			S	Single vehicle			V1:(Collision with	panel, pickup, sport utility) with				P2:Pedest			Not	BOYLS	STON	St	tate		
3491309	5/29/2013	Wed	7:28 AM	NEWTON	6	Non-fatal injury	incapacitating	1	0	1 c	crash	V1: Turning right	V1:E	pedestrian)	only four tires)	45-54	45-54	D1:(No improper driving)	rian	Dry	Daylight	Reported	232 STREET	T	pe	olice P	W201318301022 2	013-0H5-002845



### INTERSECTION CRASH RATE WORKSHEET

riveway  at Chestnut Hill Drive		N DATA ~	· 	veway
at Chestnut Hill Drive	PEAK H	The Shops at C	hestnut Hill Driv vay	veway
at Chestnut Hill Drive	PEAK H	East Site Drivey	vay	-
n	PEAK H	East Site Drivey	vay	-
		East Site Drivey	vay	-
		•	· 	T
1		IOUR VOLUMES		F
	,			
2		4	5	Total Peak Hourly
SB	ЕВ	WB		Approach Volume
315	2,225	2,025		4,760
0		CTION ADT ( <b>V</b> ) = APPROACH VOLUME	:	52,889
# OF YEARS	: 5			4.80
		TF = (A * 1,0	000,000)	
•		# OF YEARS : 5	# OF YEARS : 5  AVERAGE # OF YEARS	# OF YEARS:  5  AVERAGE # OF CRASHES PER YEAR ( A ):



### INTERSECTION CRASH RATE WORKSHEET

ITY/TOWN : Newton	_		<del></del>	COUNT DATE :	June	2019
DISTRICT: 6	UNSIG	NALIZED :	Х	SIGNA	LIZED :	
		~ 11	0.52 NTERSECTION D	ATA ~		0.71
AJOR STREET :	Route 9					
IINOR STREET(S) :	Wost Sita Drivo	way				
MINOR STREET(S).	West Site Drive	way				
	<b>†</b>					
INTERSECTION	North	]				
DIAGRAM (Label Approaches)		Route 9				_
				West Site Drive	eway	
			DEAK HOLL	•	eway	
APPROACH :	1	2	PEAK HOU	West Site Drive	eway	Total Peak
			3	R VOLUMES		Hourly Approach
DIRECTION :	1 NB	<b>2</b> SB		R VOLUMES		Hourly
			3	R VOLUMES		Hourly Approach
DIRECTION :  PEAK HOURLY VOLUMES  (AM/PM) :	NB n/a	SB	3 EB 2,270	R VOLUMES 4 WB		Hourly Approach Volume 2,270
DIRECTION : PEAK HOURLY VOLUMES	NB	SB n/a	3 EB 2,270 INTERSECTIO	R VOLUMES  4  WB  n/a	5	Hourly Approach Volume
DIRECTION:  PEAK HOURLY VOLUMES (AM/PM):  "K" FACTOR:	NB n/a 0.090	SB n/a	3 EB 2,270 INTERSECTIO	R VOLUMES  4  WB  n/a  ON ADT (V) =  ROACH VOLUME	5	Hourly Approach Volume 2,270 25,222
DIRECTION :  PEAK HOURLY VOLUMES  (AM/ <b>PM)</b> :	NB n/a	SB n/a	3 EB 2,270 INTERSECTIO	R VOLUMES  4  WB  n/a  ON ADT (V) = ROACH VOLUME  AVERAGE # O	5	Hourly Approach Volume 2,270
DIRECTION:  PEAK HOURLY VOLUMES (AM/PM):  "K" FACTOR:	NB n/a 0.090	SB n/a	3 EB 2,270 INTERSECTIO	R VOLUMES  4  WB  n/a  ON ADT (V) = ROACH VOLUME  AVERAGE # O	5 :	Hourly Approach Volume 2,270 25,222



**Historic Traffic Growth** 

232 Boylston Street 14559.00

#### **Historic Traffic Comparison**

#### Approach Volumes at Intersection of Route 9 and East Site Dwy / Shops at Chestnut Hill Dwy

Deals	Diversities	Approach Volume at 2009 Existing <sup>a</sup>	D:#*	
Peak	Direction	2009 Existing	2020 Existing <sup>b</sup>	Difference
Weekday	EB	2204	2235	31
Evening	WB	2401	2035	-366
Saturday	ЕВ	2204	1785	-419
Midday	WB	2185	2015	-170

a - Based on Figures 5 and 6; Chestnut Hill Square (EEA No. 12928) Supplemental Traffic Impact Assessment; Newton, MA; August 12,2010; Prepared by VAI.

b - Based on turning movement counts coducted by VHB in June, 2019, and adjusted to 2020.



### Planned/Approved Developments

### TRAFFIC GROWTH CALCULATIONS

Project Name: 232 Boylston Street

**Project No:** 14559.00

			DEVELOPMENT - EY ROAD
INTERSECTION	MOVEMENT	PM	SAT
1. ROUTE 9 AT EAST SITE DRIVEWAY AND THE SHOPS DRIVEWAY			
Route 9	EB T	1	1
	EB R		
Route 9	WB L		
	WB T	1	1
	WB R		
East Site Driveway	NB R		
The Shops Driveway	SB L		
	SB T		
	SB R		
2. ROUTE 9 AT WEST SITE DRIVEWAY	+		
Route 9	EB T	1	1
	EB R		



Trip Generation

#### ITE TRIP GENERATION WORKSHEET

(10th Edition, Updated 2017)

LANDUSE: Marijuana Dispensary

LANDUSE CODE: 882

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

SETTING/LOCATION: General Urban/Suburban

JOB NAME: JOB NUMBER: FLOOR AREA (KSF): 4.825

#### **WEEKDAY**

									Direct	tional
RATES:			T	otal Trip End	ds	Indepen	dent Variabl	e Range	Distrib	oution
	# Studies	R^2	Average	Low	High	Average	Low	High	Enter	Exit
DAILY	4		252.70	79.74	791.22	2	0	4	50%	50%
AM PEAK OF GENERATOR	4		20.88	6.33	63.51	2	0	4	52%	48%
PM PEAK OF GENERATOR	9		29.93	5.88	128.38	2	0	4	50%	50%
AM PEAK (ADJACENT ST)	4		10.44	1.17	31.08	2	0	4	56%	44%
PM PEAK (ADJACENT ST)	12		21.83	2.94	98.65	2	0	4	50%	50%

TRIPS:

DAILY AM PEAK (ADJACENT ST) PM PEAK (ADJACENT ST)

BY AVERAGE				
Total	Enter	Exit		
1,219	610	610		
50	28	22		
105	53	53		

BY REGRESSION					
Total	Enter	Exit			
N/A	N/A	N/A			
N/A	N/A	N/A			
N/A	N/A	N/A			

#### **SATURDAY**

RATES:

	# Studies	R^2	-
DAILY	4		
PEAK OF GENERATOR	4		

	Total Trip Ends	
Average	Low	High
259.31	75.34	852.03
36.43	10.85	118.92

_	Independent Variable Range					
•	Average	Low	High			
•	2	0	4			
	2	0	4			

Directional Distribution					
Enter	Exit				
50%	50%				
50%	50%				

TRIPS:

DAILY PEAK OF GENERATOR

BY AVERAGE					
Total	Enter	Exit			
1,251	626	626			
176	88	88			

BY REGRESSION					
Total	Enter	Exit			
N/A	N/A	N/A			
N/A	N/A	N/A			

#### **SUNDAY**

RATES:

			To	otal Trip End	is	Independ	dent Variabl	e Range	Direct Distrib	
	# Studies	R^2	Average	Low	High	Average	Low	High	Enter	Exit
DAILY										
PEAK OF GENERATOR										

TRIPS:

	DAILY
PEAK OF C	GENERATOR

I	BY AVERAGE	
Total	Enter	Exit
N/A	N/A	N/A
N/A	N/A	N/A

В	REGRESSIO	ON
Total	Enter	Exit
N/A	N/A	N/A
N/A	N/A	N/A

#### SHARED TRIPS 1,2

						RETAIL - RETAIL <sup>3</sup>				
		WE	EKDAY EVENING	i			TOTAL SHARED T	RIPS - WEEK	DAY EVEN	ING
RETAIL (CH HILL SQ) <sup>4</sup>	<u>%</u>	#	BALANCED	#	<u>%</u>	RETAIL (RMD) 5		ENTER	EXIT	TOTAL
EXIT ->	20%	403	11	53	20%	-> ENTER	CHESNUT HILL SQUARE	11	11	22
ENTER <-	20%	403	11	53	20%	<- EXIT	PROPOSED RMD	11	11	22
							TOTAL	22	22	44

		SAT	URDAY MIDDA	Υ		
RETAIL (CH HILL SQ)⁴	<u>%</u>	<u>#</u>	<u>BALANCED</u>	<u>#</u>	<u>%</u>	RETAIL (RMD) 5
EXIT ->	20%	458	18	88	20%	-> ENTER
ENTER <-	20%	497	18	88	20%	<- EXIT

TOTAL SHARED T	RIPS - SATU	RDAY MID	DAY
	<u>ENTER</u>	<b>EXIT</b>	<b>TOTAL</b>
CHESNUT HILL SQUARE	18	18	36
PROPOSED RMD	18	18	36
TOTAL	36	36	72

- 1 Internal capture rates based on ITE Trip Generation Handbook, 2nd Edition (2004), Tables 7.1-7.2. Saturday rates assumed to be the same as weekday rates.
- 2 ITE Trip Generation Handbook 2nd Edition used due to lack of retail-to-retail trip capture rates in the 3rd Edition (2017).
- 3 Retail internal capture rates used for recreational marijuana dispensary due to lack of specific data.
- 4 Based on 146,668 sf of retail/supermarket in adjacent Chestnut Hill Square Development (as specified in August 12, 2010, TIA for Chestnut Hill Square, Table 2)
- 5 Based on dispensary of 4,825 sf



### Intersection Capacity Analyses

	۶	-	•	•	←	•	4	<b>†</b>	/	-	<b>↓</b>	4	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
ane Configurations		ተተ <sub>ጉ</sub>		ሻሻ	ተተኈ				7		स	7	
raffic Volume (vph)	0	2090	145	115	1780	140	0	0	195	100	65	150	
uture Volume (vph)	0	2090	145	115	1780	140	0	0	195	100	65	150	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
torage Length (ft)	0	1300	0	325	1300	0	0	1000	0	0	1300	0	
torage Lanes	0		0	2		0	0		1	0		1	
aper Length (ft)	25		U	25		U	25			25			
	0	5072	0	3467	5071	0	0	0	1644	0	1749	1599	
Satd. Flow (prot)	U	3072	U		50 <i>1</i> I	U	U	U	1044	U	0.971	1099	
It Permitted	^	E070	0	0.950	E074	^	^	^	4044	0		4500	
atd. Flow (perm)	0	5072	0	3467	5071	0	0	0	1644	0	1749	1599	
Right Turn on Red			Yes		0.4	Yes			Yes			Yes	
Satd. Flow (RTOR)		14			31				119			109	
ink Speed (mph)		30			30			30			30		
ink Distance (ft)		150			929			314			396		
ravel Time (s)		3.4			21.1			7.1			9.0		
Confl. Peds. (#/hr)			9			1							
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.87	0.87	0.87	0.90	0.90	0.90	
leavy Vehicles (%)	0%	1%	2%	1%	1%	1%	0%	0%	0%	9%	0%	1%	
Shared Lane Traffic (%)													
ane Group Flow (vph)	0	2304	0	124	2065	0	0	0	224	0	183	167	
urn Type		NA		Prot	NA				Over	Perm	NA	custom	
Protected Phases		2		1	6				1		8	3	
Permitted Phases										8			
etector Phase		2		1	6				1	8	8	3	
Switch Phase		_		•	•				•	•		•	
Minimum Initial (s)		20.0		8.0	20.0				8.0	8.0	8.0	8.0	
Minimum Split (s)		27.0		17.0	30.0				17.0	19.0	19.0	12.0	
		62.0		26.0	62.0				26.0	22.0	22.0	22.0	
Total Split (s)										20.0%		20.0%	
otal Split (%)		56.4%		23.6%	56.4%				23.6%		20.0%		
'ellow Time (s)		4.0		4.0	4.0				4.0	3.0	3.0	3.0	
II-Red Time (s)		3.0		3.0	3.0				3.0	5.0	5.0	1.0	
ost Time Adjust (s)		0.0		0.0	0.0				0.0		0.0	0.0	
otal Lost Time (s)		7.0		7.0	7.0				7.0		8.0	4.0	
ead/Lag		Lag		Lead					Lead				
ead-Lag Optimize?													
Recall Mode		C-Min		None	C-Min				None	None	None	None	
ct Effct Green (s)		62.1		12.5	81.6				12.5		13.4	17.4	
Actuated g/C Ratio		0.56		0.11	0.74				0.11		0.12	0.16	
/c Ratio		0.80		0.31	0.55				0.77		0.86	0.49	
Control Delay		22.7		45.6	6.8				38.9		82.3	21.2	
Queue Delay		0.0		0.0	0.0				0.0		0.0	0.0	
otal Delay		22.7		45.6	6.8				38.9		82.3	21.2	
OS		C		70.0 D	Α				D		62.6 F	C	
pproach Delay		22.7		U	9.0			38.9	U		53.1	J	
pproach LOS		22.1 C			9.0 A			30.9 D			55.1 D		
		447		40	200			U	70		128	36	
ueue Length 50th (ft)				42					72				
ueue Length 95th (ft)		601		66	232			004	140		#247	102	
nternal Link Dist (ft)		70		00-	849			234			316		
urn Bay Length (ft)				325							,		
ase Capacity (vph)		2868		598	3770				382		222	352	
tarvation Cap Reductn		0		0	0				0		0	0	
pillback Cap Reductn		0		0	0				0		0	0	
Storage Cap Reductn		0		0	0				0		0	0	
Reduced v/c Ratio		0.80		0.21	0.55				0.59		0.82	0.47	

Area Type: Other

Cycle Length: 110
Actuated Cycle Length: 110

Offset: 10 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

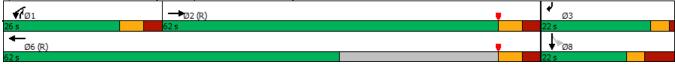
Natural Cycle: 80

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.86 Intersection Signal Delay: 19.6 Intersection LOS: B Intersection Capacity Utilization 83.0% ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



		_	_	_	_	_
	<b>→</b>	*	•	-	7	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ተተ <sub>ጉ</sub>			ተተተ		
Traffic Volume (vph)	2235	45	0	1930	0	0
Future Volume (vph)	2235	45	0	1930	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	5119	0	0	5085	0	0
Flt Permitted						
Satd. Flow (perm)	5119	0	0	5085	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1049			150	256	
Travel Time (s)	23.8			3.4	5.8	
Confl. Peds. (#/hr)		8				
Peak Hour Factor	0.96	0.96	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2375	0	0	2098	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utiliza				IC	U Level o	f Service A

Analysis Period (min) 15

ane Group	<b>,</b>	↓ ✓	
ame Configurations affic Volume (vph) affic Volume (vph) affic Volume (vph) 0 1595 190 195 1775 45 0 0 185 aal Flow (vphp) 1900 1900 1900 1900 1900 1900 1900 1900	SBL S	SBT SBF	?
raffic Volume (vph)		4 7	
uture Volume (vph)         0         1595         190         195         1775         45         0         0         185           ease la Flow (vphpl)         1900         14         14         1         185         184         184         1900	115	50 165	
Part	115	50 165	
torage Length (ff)		1900 1900	
Document   Content   Con		1300 1300	
aper Length (ft)	0	1	
atd. Flow (prot)	25		I
the Permitted bate. Flow (perm)		1823 1599	)
atd. Flow (perm)         0         5039         0         3467         5111         0         0         0         1644           gight Turn on Red         Yes		1623 1598 1.966	9
Separation   Sep			
atd. Flow (RTOR)         27         9         119           nk Speed (mph)         30         30         30           nk Distance (ft)         150         929         314           avel Time (s)         3.4         21.1         7.1           onfl. Peds. (#/hrr)         14         1         1           ask Hour Factor         0.92         0.92         0.92         0.88         0.88         0.88         0.93         0.93         0.93           eavy Vehicles (%)         0%         1%         0%         1%         2%         0%         0%         0%           ared Lane Traffic (%)         ared Cane From Flow (vph)         0         1941         0         222         2068         0         0         0         0%           are Group Flow (vph)         0         1941         0         222         2068         0         0         199           Jam Geroup Flow (vph)         0         1941         0         222         2068         0         0         0         0           Jam Geroup Flow (vph)         0         1941         0         222         2068         0         0         0         0           Jam Geroup Flow (		1823 1599	
nk Speed (mph)		Yes	
nk Distance (ft) 150 929 314		109	9
Target   Time (s)   3.4   21.1   7		30	
confi. Peds. (#hr)         14         1           pask Hour Factor         0.92         0.92         0.92         0.88         0.88         0.88         0.93         0.93         0.93           pare dup Felow (vph)         0         1%         0%         1%         2%         0%         0%         0%           pare Group Flow (vph)         0         1941         0         222         2068         0         0         0         199           ym Type         NA         Prot         NA         Prot         NA         Over           protected Phases         2         1         6         1         1           permitted Phases         2         1         6         1         1           permitted Phases         2         1         6         1         1           petrotector Phase         2         1         6         1         1           witch Phase         2         1         6         1         1           witch Phase         2         0         8.0         20.0         8.0         1           permitted Phases         2         1         6         1         1         2		396	
eak Hour Factor 0.92 0.92 0.92 0.88 0.88 0.88 0.93 0.93 0.93 eavy Vehicles (%) 0% 1% 0% 1% 1% 2% 0% 0% 0% 0% landed Lane Traffic (%) and Group Flow (vph) 0 1941 0 222 2068 0 0 0 0 199 urn Type NA Prot NA Over rotected Phases etector Phases 2 1 1 6 1 1 eteration witch Phases etector Phase 2 1 1 6 1 1 eteration witch Phase inimum Initial (s) inimum Split (s) 20.0 8.0 20.0 8.0 inimum Split (s) 63.0 26.0 63.0 26.0 tal Split (%) 57.3% 23.6% 57.3% 23.6		9.0	
Bearly Vehicles (%)   0% 1% 0% 1% 1% 2% 0% 0% 0% 0%			
hared Lane Traffic (%) ane Group Flow (vph)		0.91 0.91	
ane Group Flow (vph) 0 1941 0 222 2068 0 0 0 199 urn Type NA Prot NA Over Totected Phases 2 1 1 6 1 1 ermitted Phases etector Phase 2 1 1 6 1 1 ermitted Phases etector Phase 2 1 1 6 1 1 ermitted Phases etector Phase 2 1 1 6 1 1 ermitted Phases etector Phase 2 2 1 1 6 1 1 ermitted Phases etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase etector Phase 2 2 1 1 6 1 1 ermitted Phase 2 2 1 1 6 1 1 ermitted Phase 2 2 2 1 1 6 1 1 ermitted Phase 2 2 2 1 1 6 1 1 ermitted Phase 2 2 2 1 1 6 1 1 ermitted Phase 2 2 2 1 1 6 1 1 ermitted Phase 2 2 2 1 1 6 1 1 ermitted Phase 2 2 2 1 1 6 1 1 ermitted Phase 2 2 2 1 1 ermitted Phase 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1%	0% 1%	0
MA			
um Type         NA         Prot         NA         Over rotected Phases           erector Phase         2         1         6         1           erector Phase         2         1         6         1           witch Phase         Inimum Initial (s)         20.0         8.0         20.0         8.0           inimum Split (s)         27.0         17.0         30.0         17.0           otal Split (s)         63.0         26.0         63.0         26.0           otal Split (s)         57.3%         23.6%         57.3%         23.6%           ellow Time (s)         4.0         4.0         4.0         4.0           I-Red Time (s)         3.0         3.0         3.0         3.0           set Time Adjust (s)         0.0         0.0         0.0         0.0           otal Lost Time (s)         7.0         7.0         7.0         7.0           sead/Lag         Lag         Lead         Lead           seat Time Adjust (s)         0.0         0.0         0.0           otal Lost Time (s)         7.0         7.0         7.0         7.0           ceall Mode         C-Min         None         C-Min         None <td>0</td> <td>181 181</td> <td><u> </u></td>	0	181 181	<u> </u>
rotected Phases ermitted Phases effector Phase 2 1 6 1 6 1 witch Phase inimum Initial (s) 20.0 8.0 20.0 8.0 inimum Split (s) 27.0 17.0 30.0 17.0 otal Split (s) 63.0 26.0 63.0 26.0 otal Split (%) 57.3% 23.6% 57.3% 23.6% ellow Time (s) 4.0 4.0 4.0 4.0 ell-Red Time (s) 3.0 3.0 3.0 3.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	Perm	NA custom	ı
etector Phase witch Phase infimum Initial (s) 20.0 8.0 20.0 8.0 20.0 17.0 17.0 20.0 26.0 26.0 26.0 26.0 26.0 26.0 26		8 3	3
witch Phase inimum Initial (s) 20.0 8.0 20.0 8.0 inimum Split (s) 27.0 17.0 30.0 17.0 chal Split (s) 63.0 26.0 63.0 26.0 63.0 26.0 chal Split (w) 57.3% 23.6% 57.3% 23.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	8		
witch Phase inimum Initial (s) 20.0 8.0 20.0 8.0 inimum Split (s) 27.0 17.0 30.0 17.0 26.0 26.0 26.0 26.0 26.0 26.0 26.0 26	8	8 3	3
Inimum Initial (s)         20.0         8.0         20.0         8.0           Inimum Split (s)         27.0         17.0         30.0         17.0           otal Split (s)         63.0         26.0         63.0         26.0           otal Split (s)         57.3%         23.6%         57.3%         23.6%           ellow Time (s)         4.0         4.0         4.0         4.0           II-Red Time (s)         3.0         3.0         3.0         3.0           post Time Adjust (s)         0.0         0.0         0.0         0.0           post Time Adjust (s)         0.0         0.0         0.0         0.0           post Time Adjust (s)         0.0         0.0         0.0         0.0           post Time Adjust (s)         0.0			
inimum Split (s)         27.0         17.0         30.0         17.0           otal Split (s)         63.0         26.0         63.0         26.0           otal Split (%)         57.3%         23.6%         57.3%         23.6%           ellow Time (s)         4.0         4.0         4.0         4.0           Il-Red Time (s)         3.0         3.0         3.0         3.0           Il-Red Time (s)         0.0         0.0         0.0         0.0           otal Lost Time (s)         7.0         7.0         7.0         7.0           otal Lost Time (s)         0.0         0.0         0.0         0.0           otal Lost Time (s)         62.3         12.0         81.3         12.0         12.0         12.0         12.0         12.0         12.0         12.0         12.0         12.0         12.0         12.0         12.0	8.0	8.0 8.0	)
otal Split (s)         63.0         26.0         63.0         26.0           otal Split (%)         57.3%         23.6%         57.3%         23.6%           ellow Time (s)         4.0         4.0         4.0         4.0           Il-Red Time (s)         3.0         3.0         3.0         3.0           stat Time Adjust (s)         0.0         0.0         0.0         0.0           otal Lost Time (s)         7.0         7.0         7.0         7.0           sed/Lag         Lag         Lead         Lead           sed/Lag Optimize?         Lead         Lead           secall Mode         C-Min         None         C-Min         None           ct Effct Green (s)         62.3         12.0         81.3         12.0           ctuated g/C Ratio         0.57         0.11         0.74         0.11           c Ratio         0.68         0.59         0.55         0.70           ontrol Delay         18.6         52.6         7.0         32.7           ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           opproach Delay		19.0 12.0	
otal Split (%)         57.3%         23.6%         57.3%         23.6%           ellow Time (s)         4.0         4.0         4.0         4.0           II-Red Time (s)         3.0         3.0         3.0         3.0           set Time Adjust (s)         0.0         0.0         0.0         0.0           otal Lost Time (s)         7.0         7.0         7.0         7.0           otal Lost Time (s)         7.0         7.0         7.0         7.0           otal Lost Time (s)         6.2         1.2         8.1         1.2           otal Lost Time (s)         7.0         7.0         7.0         7.0           otal Lost Time (s)         6.2         1.2         8.1         1.2           otal Lost Time (s)         6.2         1.2         8.1         1.2           otal Lost Time (s)         6.2         1.2         8.1         3.3         1.2           otal Lost Time (s)         6.2         3.1         1.0         7.4         1.1         0.1         1.1         0.1         1.1         0.1         0.1         0.1         0.1         0.1         0.1         0.1         0.1         0.1         0.1         0.1         0.1 <t< td=""><td></td><td>21.0 21.0</td><td></td></t<>		21.0 21.0	
A		9.1% 19.1%	
		3.0 3.0	
ost Time Adjust (s)         0.0         0.0         0.0         0.0           otal Lost Time (s)         7.0         7.0         7.0         7.0           ead/Lag         Lag         Lead         Lead           ead/Lag Optimize?         eecall Mode         C-Min         None         C-Min         None         C-Min         None           ct Effct Green (s)         62.3         12.0         81.3         12.0           ct Effct Green (s)         62.3         12.0         81.3         12.0           ct atto         0.57         0.11         0.74         0.11           c Ratio         0.68         0.59         0.55         0.70           ontrol Delay         18.6         52.6         7.0         32.7           ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           opproach Delay         18.6         11.4         32.7           opproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225 </td <td></td> <td>5.0 1.0</td> <td></td>		5.0 1.0	
otal Lost Time (s)         7.0         7.0         7.0         7.0           pad/Lag         Lag         Lead         Lead           pad/Lag Optimize?         eeall Mode         C-Min         None         None         None         C-Min         None         None<			
Bad/Lag         Lag         Lead           Bead-Lag Optimize?         Bead-Lag Optimize?           Becall Mode         C-Min         None         C-Min         None           Ct Effct Green (s)         62.3         12.0         81.3         12.0           Ctuated g/C Ratio         0.57         0.11         0.74         0.11           c Ratio         0.68         0.59         0.55         0.70           control Delay         18.6         52.6         7.0         32.7           ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           poproach Delay         18.6         11.4         32.7           poproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325         382           tarvation Cap Reductn		0.0	
Bad-Lag Optimize?         C-Min         None         C-Min         None           ct Effct Green (s)         62.3         12.0         81.3         12.0           ctuated g/C Ratio         0.57         0.11         0.74         0.11           c Ratio         0.68         0.59         0.55         0.70           ontrol Delay         18.6         52.6         7.0         32.7           ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           opproach Delay         18.6         11.4         32.7           opproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 50th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325         383         382           tarvation Cap Reductn         0         0         0         0           pillback Cap Reductn         0		8.0 4.0	J
ecall Mode         C-Min         None         C-Min         None           ct Effct Green (s)         62.3         12.0         81.3         12.0           ctuated g/C Ratio         0.57         0.11         0.74         0.11           c Ratio         0.68         0.59         0.55         0.70           ontrol Delay         18.6         52.6         7.0         32.7           ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           pproach Delay         18.6         11.4         32.7           pproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 50th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325           ase Capacity (vph)         2866         598         3833         382           tarvation Cap Reductn         0         0         0 <t< td=""><td></td><td></td><td></td></t<>			
tet Effet Green (s) 62.3 12.0 81.3 12.0 ctuated g/C Ratio 0.57 0.11 0.74 0.11 c Ratio 0.68 0.59 0.55 0.70 ontrol Delay 18.6 52.6 7.0 32.7 ueue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			
ctuated g/C Ratio         0.57         0.11         0.74         0.11           c Ratio         0.68         0.59         0.55         0.70           ontrol Delay         18.6         52.6         7.0         32.7           ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           opproach Delay         18.6         11.4         32.7           opproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325           ase Capacity (vph)         2866         598         3833         382           tarvation Cap Reductn         0         0         0           pillback Cap Reductn         0         0         0		None None	
c Ratio     0.68     0.59     0.55     0.70       ontrol Delay     18.6     52.6     7.0     32.7       ueue Delay     0.0     0.0     0.0     0.0       otal Delay     18.6     52.6     7.0     32.7       OS     B     D     A     C       opproach Delay     18.6     11.4     32.7       opproach LOS     B     B     B     C       ueue Length 50th (ft)     347     78     225     54       ueue Length 95th (ft)     426     108     214     126       termal Link Dist (ft)     70     849     234       urm Bay Length (ft)     325       ase Capacity (vph)     2866     598     3833     382       tarvation Cap Reductn     0     0     0     0       pillback Cap Reductn     0     0     0     0		13.7 17.7	
control Delay         18.6         52.6         7.0         32.7           ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           opproach Delay         18.6         11.4         32.7           opproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           termal Link Dist (ft)         70         849         234           um Bay Length (ft)         325           ase Capacity (vph)         2866         598         3833         382           tarvation Cap Reductn         0         0         0         0           pillback Cap Reductn         0         0         0         0		0.12 0.16	
ueue Delay         0.0         0.0         0.0         0.0           otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           oproach Delay         18.6         11.4         32.7           oproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325           ase Capacity (vph)         2866         598         3833         382           tarvation Cap Reductn         0         0         0         0           pillback Cap Reductn         0         0         0         0		0.80 0.52	
otal Delay         18.6         52.6         7.0         32.7           OS         B         D         A         C           opproach Delay         18.6         11.4         32.7           opproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325           ase Capacity (vph)         2866         598         3833         382           tarvation Cap Reductn         0         0         0           pillback Cap Reductn         0         0         0	7	72.2 23.4	4
DS         B         D         A         C           Oproach Delay         18.6         11.4         32.7           Oproach LOS         B         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325         325           ase Capacity (vph)         2866         598         3833         382           Jarvation Cap Reductn         0         0         0         0           pillback Cap Reductn         0         0         0         0		0.0	)
proach Delay 18.6 11.4 32.7 proach LOS B B B C ueue Length 50th (ft) 347 78 225 54 ueue Length 95th (ft) 426 108 214 126 ternal Link Dist (ft) 70 849 234 urum Bay Length (ft) 325 325 325 325 325 325 325 325 325 325	7	72.2 23.4	4
pproach LOS         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325           ase Capacity (vph)         2866         598         3833         382           tarvation Cap Reductn         0         0         0         0           pillback Cap Reductn         0         0         0         0		E C	
pproach LOS         B         B         C           ueue Length 50th (ft)         347         78         225         54           ueue Length 95th (ft)         426         108         214         126           ternal Link Dist (ft)         70         849         234           um Bay Length (ft)         325           ase Capacity (vph)         2866         598         3833         382           tarvation Cap Reductn         0         0         0         0           pillback Cap Reductn         0         0         0         0	Δ	47.8	
ueue Length 50th (ft)     347     78     225     54       ueue Length 95th (ft)     426     108     214     126       ternal Link Dist (ft)     70     849     234       um Bay Length (ft)     325       ase Capacity (vph)     2866     598     3833     382       tarvation Cap Reductn     0     0     0     0       pillback Cap Reductn     0     0     0     0		D	
ueue Length 95th (ft)     426     108     214     126       ternal Link Dist (ft)     70     849     234       um Bay Length (ft)     325       ase Capacity (vph)     2866     598     3833     382       tarvation Cap Reductn     0     0     0     0       pillback Cap Reductn     0     0     0     0		122 44	1
ternal Link Dist (ft) 70 849 234  um Bay Length (ft) 325  ase Capacity (vph) 2866 598 3833 382  arvation Cap Reductn 0 0 0 0 0  billback Cap Reductn 0 0 0 0		#249 117	
rm Bay Length (ft) 325 ase Capacity (vph) 2866 598 3833 382 arvation Cap Reductn 0 0 0 0 oillback Cap Reductn 0 0 0 0		316	
ase Capacity (vph)         2866         598         3833         382           arvation Cap Reductn         0         0         0         0           pillback Cap Reductn         0         0         0         0			
arvation Cap Reductn         0         0         0         0           billback Cap Reductn         0         0         0         0		234 355	5
billback Cap Reductn 0 0 0		0 (	
			)
torage Cap Reductn 0 0 0 0		0 (	
educed v/c Ratio 0.68 0.37 0.54 0.52	0	0.77 0.51	
tersection Summary			

Area Type:

Cycle Length: 110
Actuated Cycle Length: 110

Offset: 17 (15%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

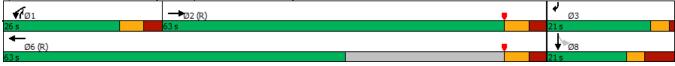
Natural Cycle: 70

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.80 Intersection Signal Delay: 17.9 Intersection LOS: B Intersection Capacity Utilization 74.0% ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Analysis Period (min) 15

	•	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	~	<b>\</b>	<b>↓</b>	1
Lana Graun	EBL	EDT	EDD.	\MDI	\\/DT	WBR	NIDI		NBR	SBL	CDT	SBR
Lane Group	EDL	EBT	EBR	WBL	WBT	WDK	NBL	NBT		SDL	SBT	
Lane Configurations	0	<b>^^</b>	445	77	<b>†††</b>	4.40	^	0	405	400	4	450
Traffic Volume (vph)	0	2170	145	115	1845	140	0	0	195	100	65	150
Future Volume (vph)	0	2170	145	115	1845	140	0	0	195	100	65	150
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		0	0		0	0		0
Storage Lanes	0		0	2		0	0		1	0		1
Taper Length (ft)	25		•	25	5074	•	25	•	1011	25	4750	4500
Satd. Flow (prot)	0	5077	0	3467	5071	0	0	0	1644	0	1750	1599
Flt Permitted	^	F077	^	0.950	F074	0	^	0	4044	^	0.971	4500
Satd. Flow (perm)	0	5077	0	3467	5071	0	0	0	1644	0	1750	1599
Right Turn on Red		4.4	Yes		20	Yes			Yes			Yes
Satd. Flow (RTOR)		14			30			20	119		20	109
ink Speed (mph)		30			30			30			30	
Link Distance (ft)		150			929			314			396	
Fravel Time (s)		3.4	0		21.1	4		7.1			9.0	
Confl. Peds. (#/hr)	0.00	0.00	9	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	1%	1%	1%	0%	0%	0%	9%	0%	1%
Shared Lane Traffic (%)		0547	0	105	0457	0	0	0	040	0	400	460
ane Group Flow (vph)	0	2517	0	125	2157	0	0	0	212	0 Dorm	180	163
Furn Type		NA 2		Prot 1	NA				Over 1	Perm	NA 8	custom
Protected Phases Permitted Phases		2		1	6					8	0	3
Detector Phase		2		1	6				1	8	8	3
Switch Phase		2		- 1	O				- 1	0	0	J
Minimum Initial (s)		20.0		8.0	20.0				8.0	8.0	8.0	8.0
Minimum Split (s)		27.0		17.0	30.0				17.0	19.0	19.0	12.0
Total Split (s)		62.0		26.0	62.0				26.0	22.0	22.0	22.0
otal Split (%)		56.4%		23.6%	56.4%				23.6%	20.0%	20.0%	20.0%
Yellow Time (s)		4.0		4.0	4.0				4.0	3.0	3.0	3.0
All-Red Time (s)		3.0		3.0	3.0				3.0	5.0	5.0	1.0
ost Time Adjust (s)		0.0		0.0	0.0				0.0	5.0	0.0	0.0
Total Lost Time (s)		7.0		7.0	7.0				7.0		8.0	4.0
_ead/Lag		Lag		Lead	7.0				Lead		0.0	7.0
_ead-Lag Optimize?		Lug		Loud					Loud			
Recall Mode		C-Min		None	C-Min				None	None	None	None
Act Effct Green (s)		62.7		12.0	81.7				12.0		13.3	17.3
Actuated g/C Ratio		0.57		0.11	0.74				0.11		0.12	0.16
/c Ratio		0.87		0.33	0.57				0.75		0.85	0.48
Control Delay		25.2		46.4	7.0				36.8		80.6	20.4
Queue Delay		0.0		0.0	0.0				0.0		0.0	0.0
otal Delay		25.2		46.4	7.0				36.8		80.6	20.4
.OS		С		D	Α				D		F	С
Approach Delay		25.2			9.2			36.8			52.0	
Approach LOS		С			Α			D			D	
Queue Length 50th (ft)		519		43	215				64		125	33
Queue Length 95th (ft)		#758		67	249				137		#241	98
nternal Link Dist (ft)		70			849			234			316	
urn Bay Length (ft)				325								
Base Capacity (vph)		2898		598	3772				382		222	352
Starvation Cap Reductn		0		0	0				0		0	0
pillback Cap Reductn		0		0	0				0		0	0
torage Cap Reductn		0		0	0				0		0	0
Reduced v/c Ratio		0.87		0.21	0.57				0.55		0.81	0.46
ntorpostion Comment												
tersection Summary	OII											
ea Type:	Other											

Area Type:
Cycle Length: 110
Actuated Cycle Length: 110

Offset: 10 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

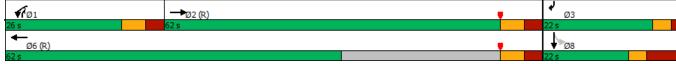
Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.87 Intersection Signal Delay: 20.6 Intersection LOS: C Intersection Capacity Utilization 84.6% ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



		_	_	_	_	
	<b>→</b>	*	•	-	7	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<del>ተ</del> ተጉ			ተተተ		
Traffic Volume (vph)	2315	45	0	1995	0	0
Future Volume (vph)	2315	45	0	1995	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	5119	0	0	5085	0	0
Flt Permitted						
Satd. Flow (perm)	5119	0	0	5085	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1049			150	256	
Travel Time (s)	23.8			3.4	5.8	
Confl. Peds. (#/hr)		8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2565	0	0	2168	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized	t					
Intersection Capacity Utiliz	ation 49.1%			IC	U Level o	f Service /

uture Volume (vph)	<b>†</b> /*	-	¥	4	
A		SBL	SBT	SBR	
raffic Volume (vph)	7		सी	7	
uture Volume (vph)         0         1660         190         195         1840         45         0           leal Flow (vphpl)         1900         1800         1900 <td>0 185</td> <td>115</td> <td>50</td> <td>165</td> <td></td>	0 185	115	50	165	
Iteal Flow (vphpl)	0 185	115	50	165	
torage Length (fft)		1900	1900	1900	
torage Lanes 0 0 0 2 0 0 0 2 0 0 0 2 2 5 25 25 25 25 25 25 25 25 25 25 25	0	0	1300	0	
aper Length (ft)	1	0		1	
atd. Flow (prot)  atd. Flow (prot)  til Permitted  0.950  atd. Flow (perm)  0 5044  0 3467  5111  0 0  ight Turn on Red  Yes  atd. Flow (RTOR)  ight Turn on Red  Yes  atd. Flow (RTOR)  26  9  ink Distance (ft)  150  929  31  ravel Time (s)  3.4  21.1  7.  onfl. Peds. (#/hr)  eak Hour Factor  0.92  0	1	25		- 1	
tit Permitted	0 1011	0	1000	1599	
atd. Flow (perm)	0 1644	U	1823	1599	
Section   Sect	0 1644	۸	0.966	1500	
atd. Flow (RTOR)  nk Speed (mph)  nk Distance (ft)  150  929  31  ravel Time (s)  3.4  21.1  7.  onfl. Peds. (#/hr)  eak Hour Factor  eavy Vehicles (%)  hared Lane Traffic (%)  ane Group Flow (vph)  ordected Phases  etector Phase  witch Phase  inimum Initial (s)  10 inimum Split (s)  otal Split (s)  otal Split (s)  18-8d Time (s)  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.		0	1823	1599	
ink Speed (mph)	Yes			Yes	
ink Distance (ft)	119			109	
ravel Time (s) 3.4 21.1 7.  onfl. Peds. (#/hr) 14 1 1  eak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	30		30		
onfl. Peds. (#/hr) eak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	314		396		
eak Hour Factor	7.1		9.0		
eavy Vehicles (%)					
hared Lane Traffic (%) ane Group Flow (vph)	.92 0.92	0.92	0.92	0.92	
ane Group Flow (vph)	0% 0%	1%	0%	1%	
um Type         NA         Prot         NA           rotected Phases         2         1         6           emitted Phases         2         1         6           witch Phase         2         1         6           witch Phase         witch Phase         30         20.0         30.0           inimum Initial (s)         20.0         8.0         20.0         30.0           inimum Split (s)         27.0         17.0         30					
urn Type         NA         Prot         NA           rotected Phases         2         1         6           ermitted Phases         2         1         6           etector Phase         2         1         6           winimum Initial (s)         20.0         8.0         20.0           linimum Split (s)         27.0         17.0         30.0           otal Split (s)         63.0         26.0         63.0           otal Split (s)         63.0         20.0         20.0           otal Split (s)         63.0         20.0         20.0           otal Split (s)         63.0         20.0	0 201	0	179	179	
rotected Phases ermitted Phases efector Phase witch Phase witch Phase inimum Initial (s) inimum Split (s) otal Split (s) otal Split (w) inimum Split (s) otal Split (s)	Over	Perm	NA	custom	
etector Phase	1		8	3	
witch Phase inimum Initial (s) 20.0 8.0 20.0 inimum Initial (s) 27.0 17.0 30.0 otal Split (s) 63.0 26.0 63.0 otal Split (s) 57.3% 23.6% 57.3% ellow Time (s) 4.0 4.0 4.0 ill-Red Time (s) 3.0 3.0 3.0 sost Time Adjust (s) 0.0 0.0 0.0 otal Lost Time (s) 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 otal Lost Time (s) 8.0 0.0 0.0 0.0 otal Lost Time (s) 8.0 0.57 otal Lost Time (s) 8.0 0.57 otal 1.0 0.74 otal Lost Time (s) 8.0 0.57 otal 1.0 0.74 otal Lost Time (s) 8.0 0.0 0.0 0.0 otal Delay 19.0 51.8 6.8 otal Delay 19.0 51.8 6.8 otal Delay 19.0 51.8 6.8 otal Delay 19.0 otal Delay		8			
witch Phase inimum Initial (s) 20.0 8.0 20.0 inimum Initial (s) 27.0 17.0 30.0 otal Split (s) 63.0 26.0 63.0 otal Split (s) 57.3% 23.6% 57.3% ellow Time (s) 4.0 4.0 4.0 ill-Red Time (s) 3.0 3.0 3.0 sost Time Adjust (s) 0.0 0.0 0.0 otal Lost Time (s) 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 otal Lost Time (s) 8.0 0.0 0.0 0.0 otal Lost Time (s) 8.0 0.57 otal Lost Time (s) 8.0 0.57 otal 1.0 0.74 otal Lost Time (s) 8.0 0.57 otal 1.0 0.74 otal Lost Time (s) 8.0 0.0 0.0 0.0 otal Delay 19.0 51.8 6.8 otal Delay 19.0 51.8 6.8 otal Delay 19.0 51.8 6.8 otal Delay 19.0 otal Delay	1	8	8	3	
inimum Initial (s) 20.0 8.0 20.0 inimum Split (s) 27.0 17.0 30.0 otal Split (s) 63.0 26.0 63.0 otal Split (s) 57.3% 23.6% 57.3% ellow Time (s) 4.0 4.0 4.0 el-Red Time (s) 3.0 3.0 3.0 sost Time Adjust (s) 0.0 0.0 0.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 7.0 7.0 7.0 otal Lost Time (s) 7.0 0.0 otal Lost Time (s) 7.0 0.56 0.54 otal Lost Delay 19.0 51.8 6.8 otal Lost Delay 19.0 51.8 6.8 otal Delay 19.0 51.8 otal Delay 19.0 51.8 otal Delay 19.0 51.8 otal Delay		•	-	-	
inimum Split (s) 27.0 17.0 30.0 otal Split (s) 63.0 26.0 63.0 otal Split (s) 57.3% 23.6% 57.3% ellow Time (s) 4.0 4.0 4.0 d.0 d.0 d.0 d.0 d.0 d.0 d.0 d.0 d.0 d	8.0	8.0	8.0	8.0	
otal Split (s)       63.0       26.0       63.0         otal Split (%)       57.3%       23.6%       57.3%         ellow Time (s)       4.0       4.0       4.0         II-Red Time (s)       3.0       3.0       3.0         set Time Adjust (s)       0.0       0.0       0.0         otal Lost Time (s)       7.0       7.0       7.0         set Time Adjust (s)       0.0       0.0       0.0         otal Lost Time (s)       7.0       7.0       7.0         sead/Lag       Lead       Lead       Lead         sead/Lag       Lead       Lead       Lead         seall Mode       C-Min       None       C-Min         ct Effct Green (s)       62.6       12.0       81.5         ctuated g/C Ratio       0.57       0.11       0.74         c Ratio       0.70       0.56       0.54         ontrol Delay       19.0       51.8       6.8         useue Delay       19.0       51.8       6.8         OS       B       D       A         pproach Delay       19.0       11.0       33.         pproach LOS       B       B       B	17.0	19.0	19.0	12.0	
otal Split (%)       57.3%       23.6%       57.3%         ellow Time (s)       4.0       4.0       4.0         II-Red Time (s)       3.0       3.0       3.0         ost Time Adjust (s)       0.0       0.0       0.0         ost Time Adjust (s)       0.0       0.0       0.0         otal Lost Time (s)       7.0       7.0       7.0         ead-Lag Optimize?       Lead       Lead         ecall Mode       C-Min       None       C-Min         ct Effct Green (s)       62.6       12.0       81.5         ctuated g/C Ratio       0.57       0.11       0.74         c Ratio       0.70       0.56       0.54         ontrol Delay       19.0       51.8       6.8         ueue Delay       0.0       0.0       0.0         otal Delay       19.0       51.8       6.8         OS       B       D       A         opproach Delay       19.0       11.0       33.         opproach LOS       B       B       B         ueue Length 50th (ft)       366       75       222         ueue Length 95th (ft)       453       106       220         t	26.0	21.0	21.0	21.0	
ellow Time (s)	23.6%	19.1%	19.1%	19.1%	
II-Red Time (s)	4.0	3.0	3.0	3.0	
ost Time Adjust (s) 0.0 0.0 0.0  otal Lost Time (s) 7.0 7.0 7.0  ead/Lag Lag Lead  ead-Lag Optimize?  ecall Mode C-Min None C-Min Ct Effct Green (s) 62.6 12.0 81.5  ct Lated g/C Ratio 0.57 0.11 0.74  c Ratio 0.70 0.56 0.54  ontrol Delay 19.0 51.8 6.8  sueue Delay 0.0 0.0 0.0  otal Delay 19.0 51.8 6.8  OS B D A  pproach Delay 19.0 11.0 33.  pproach LOS B B D A  pproach LOS B B B D  incurred B B  ueue Length 50th (ft) 366 75 222  ueueue Length 95th (ft) 453 106 220  utm Bay Length (ft) 325  um Bay Length (ft) 325  ase Capacity (vph) 2879 598 3834	3.0	5.0	5.0	1.0	
otal Lost Time (s)       7.0       7.0       7.0         ead/Lag       Lag       Lead         ead-Lag Optimize?       ecall Mode       C-Min       None       C-Min         ct Effct Green (s)       62.6       12.0       81.5       ctctuated g/C Ratio       0.57       0.11       0.74       c         c Ratio       0.70       0.56       0.54       ontrol Delay       19.0       51.8       6.8         ueue Delay       0.0       0.0       0.0       0.0       ontrol Delay       19.0       51.8       6.8       0.0       0.0       ontrol Delay       19.0       51.8       6.8       0.0 <td></td> <td>5.0</td> <td></td> <td></td> <td></td>		5.0			
Bead/Lag     Lag     Lead       Bead-Lag Optimize?     Becal Mode     C-Min     None     C-Min       Ct Effct Green (s)     62.6     12.0     81.5       Ct Lated g/C Ratio     0.57     0.11     0.74       C Ratio     0.70     0.56     0.54       Ontrol Delay     19.0     51.8     6.8       Ueue Delay     0.0     0.0     0.0       Otal Delay     19.0     51.8     6.8       OS     B     D     A       OPProach Delay     19.0     11.0     33.       OPProach LOS     B     B     B       Ueue Length 50th (ft)     366     75     222       Ueue Length 95th (ft)     453     106     220       Iternal Link Dist (ft)     70     849     23       Um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	0.0		0.0	0.0	
ead-Lag Optimize? ecall Mode	7.0		8.0	4.0	
ecall Mode	Lead				
ct Effct Green (s) 62.6 12.0 81.5 ctuated g/C Ratio 0.57 0.11 0.74 c Ratio 0.57 0.56 0.54 ontrol Delay 19.0 51.8 6.8 ueue Delay 0.0 0.0 0.0 otal Delay 19.0 51.8 6.8 OS B D A Deproach Delay 19.0 11.0 33. pproach LOS B B B D A ueue Length 50th (ft) 453 106 220 ternal Link Dist (ft) 70 849 23 um Bay Length (ft) 2879 598 3834					
ctuated g/C Ratio     0.57     0.11     0.74       c Ratio     0.70     0.56     0.54       ontrol Delay     19.0     51.8     6.8       ueue Delay     0.0     0.0     0.0       otal Delay     19.0     51.8     6.8       OS     B     D     A       pproach Delay     19.0     11.0     33.       pproach LOS     B     B     B       ueue Length 50th (ft)     366     75     222       ueue Length 95th (ft)     453     106     220       ternal Link Dist (ft)     70     849     23       um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	None	None	None	None	
c Ratio 0.70 0.56 0.54 ontrol Delay 19.0 51.8 6.8 ueue Delay 0.0 0.0 0.0 otal Delay 19.0 51.8 6.8 OS B D A pproach Delay 19.0 11.0 33. pproach LOS B B B ueue Length 50th (ft) 366 75 222 ueue Length 95th (ft) 453 106 220 ternal Link Dist (ft) 70 849 23 urn Bay Length (ft) 325 ase Capacity (vph) 2879 598 3834	12.0		13.5	17.5	
ontrol Delay     19.0     51.8     6.8       ueue Delay     0.0     0.0     0.0       otal Delay     19.0     51.8     6.8       OS     B     D     A       pproach Delay     19.0     11.0     33.       pproach LOS     B     B     B       ueue Length 50th (ft)     366     75     222       ueue Length 95th (ft)     453     106     220       uternal Link Dist (ft)     70     849     23       um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	0.11		0.12	0.16	
ueue Delay     0.0     0.0     0.0       otal Delay     19.0     51.8     6.8       OS     B     D     A       pproach Delay     19.0     11.0     33.       pproach LOS     B     B     B       ueue Length 50th (ft)     366     75     222       ueue Length 95th (ft)     453     106     220       ternal Link Dist (ft)     70     849     23       um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	0.71		0.80	0.52	
otal Delay     19.0     51.8     6.8       OS     B     D     A       opproach Delay     19.0     11.0     33.       opproach LOS     B     B     B       ueue Length 50th (ft)     366     75     222       ueue Length 95th (ft)     453     106     220       ternal Link Dist (ft)     70     849     23       um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	33.4		73.5	23.3	
OS         B         D         A           pproach Delay         19.0         11.0         33.           pproach LOS         B         B         B           ueue Length 50th (ft)         366         75         222           ueue Length 95th (ft)         453         106         220           ternal Link Dist (ft)         70         849         23           um Bay Length (ft)         325           ase Capacity (vph)         2879         598         3834	0.0		0.0	0.0	
pproach Delay     19.0     11.0     33.       pproach LOS     B     B     B       ueue Length 50th (ft)     366     75     222       ueue Length 95th (ft)     453     106     220       ternal Link Dist (ft)     70     849     23       um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	33.4		73.5	23.3	
Sproach LOS         B         B         B           ueue Length 50th (ft)         366         75         222           ueue Length 95th (ft)         453         106         220           ternal Link Dist (ft)         70         849         23           um Bay Length (ft)         325           ase Capacity (vph)         2879         598         3834	С		Е	С	
Sproach LOS         B         B         B           ueue Length 50th (ft)         366         75         222           ueue Length 95th (ft)         453         106         220           ternal Link Dist (ft)         70         849         23           um Bay Length (ft)         325           ase Capacity (vph)         2879         598         3834	3.4		48.4		
ueue Length 50th (ft)     366     75     222       ueue Length 95th (ft)     453     106     220       ternal Link Dist (ft)     70     849     23       um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	С		D		
ueue Length 95th (ft)     453     106     220       ternal Link Dist (ft)     70     849     23       um Bay Length (ft)     325       ase Capacity (vph)     2879     598     3834	56		120	42	
ternal Link Dist (ft) 70 849 23 Im Bay Length (ft) 325 ase Capacity (vph) 2879 598 3834	128		#246	116	
urn Bay Length (ft) 325 ase Capacity (vph) 2879 598 3834	234		316	7.10	
ase Capacity (vph) 2879 598 3834			310		
	382		231	352	
aranon van regulan – v – V – V	0		0	0	
				0	
	0		0		
torage Cap Reductn 0 0 0	0		0	0	
educed v/c Ratio 0.70 0.35 0.53	0.53		0.77	0.51	
tersection Summary					

Area Type:

Cycle Length: 110
Actuated Cycle Length: 110

Offset: 17 (15%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

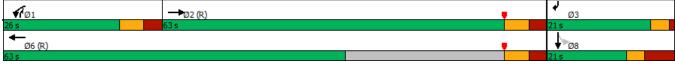
Natural Cycle: 70

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.80 Intersection Signal Delay: 18.0 Intersection LOS: B Intersection Capacity Utilization 75.2% 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.



-	•	•	•	1	~
EBT	EBR	WBL	WBT	NBL	NBR
<b>^</b>			ተተተ		
1850	30	0	2005	0	0
1850	30	0	2005	0	0
1900	1900	1900	1900	1900	1900
5124	0	0	5085	0	0
5124	0	0	5085	0	0
30			30	30	
1049			150	256	
23.8			3.4	5.8	
	1				
0.92	0.92	0.92	0.92	0.92	0.92
1%	3%	2%	2%	2%	2%
2044	0	0	2179	0	0
Free			Free	Stop	
Other					
Other					
tion 12 1%			IC	III aval a	f Sanica /
	** *** *** *** *** *** *** *** *** ***	1850 30 1850 30 1850 30 1900 1900 5124 0 5124 0 5124 0 30 1049 23.8 1 0.92 0.92 1% 3% 2044 0 Free	1850 30 0 1850 30 0 1850 30 0 1900 1900 1900 5124 0 0  5124 0 0  5124 0 0 30 1049 23.8 1 0.92 0.92 0.92 1% 3% 2%  2044 0 0 Free	↑↑↑         ↑↑↑           1850         30         0         2005           1850         30         0         2005           1900         1900         1900         1900           5124         0         0         5085           5124         0         0         5085           30         30         30           1049         150         23.8         3.4           0.92         0.92         0.92         0.92           1%         3%         2%         2%           2044         0         0         2179           Free         Free	1850         30         0         2005         0           1850         30         0         2005         0           1900         1900         1900         1900         1900           5124         0         0         5085         0           5124         0         0         5085         0           30         30         30         30           1049         150         256           23.8         3.4         5.8           1         0.92         0.92         0.92         0.92           1%         3%         2%         2%         2%           2044         0         0         2179         0           Free         Free         Stop

	•	-	•	•	<b>←</b>	•	•	<b>†</b>	1	-	Ţ	1
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations		ተተኈ		ሻሻ	ተተኈ				7		स	7
Fraffic Volume (vph)	0	2170	150	135	1870	140	0	0	235	100	65	150
Future Volume (vph)	0	2170	150	135	1870	140	0	0	235	100	65	150
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
torage Length (ft)	0	1300	0	325	1300	0	0	1300	0	0	1300	0
	0		0	2		0	0		1	0		1
Storage Lanes			U	25		U	25		Į.	25		
Taper Length (ft)	25	F070	٥		F070	٥		^	4044		4750	4500
Satd. Flow (prot)	0	5072	0	3467	5076	0	0	0	1644	0	1750	1599
It Permitted	0	F070	^	0.950	F070	^	^	0	4044	0	0.971	4500
Satd. Flow (perm)	0	5072	0	3467	5076	0	0	0	1644	0	1750	1599
Right Turn on Red			Yes		00	Yes			Yes			Yes
Satd. Flow (RTOR)		14			29				119			109
ink Speed (mph)		30			30			30			30	
ink Distance (ft)		150			929			314			396	
ravel Time (s)		3.4			21.1			7.1			9.0	
confl. Peds. (#/hr)			9			1						
eak 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
leavy Vehicles (%)	0%	1%	2%	1%	1%	1%	0%	0%	0%	9%	0%	1%
nared Lane Traffic (%)												
ane Group Flow (vph)	0	2522	0	147	2185	0	0	0	255	0	180	163
urn Type		NA		Prot	NA				Over	Perm	NA	custom
Protected Phases		2		1	6				1		8	3
Permitted Phases										8		
etector Phase		2		1	6				1	8	8	3
witch Phase												
linimum Initial (s)		20.0		8.0	20.0				8.0	8.0	8.0	8.0
linimum Split (s)		27.0		17.0	30.0				17.0	19.0	19.0	12.0
otal Split (s)		62.0		26.0	62.0				26.0	22.0	22.0	22.0
otal Split (%)		56.4%		23.6%	56.4%				23.6%	20.0%	20.0%	20.0%
ellow Time (s)		4.0		4.0	4.0				4.0	3.0	3.0	3.0
II-Red Time (s)		3.0		3.0	3.0				3.0	5.0	5.0	1.0
ost Time Adjust (s)		0.0		0.0	0.0				0.0	3.0	0.0	0.0
otal Lost Time (s)		7.0		7.0	7.0				7.0		8.0	4.0
ead/Lag		Lag		Lead	7.0				Lead		0.0	4.0
		Lay		Leau					Leau			
ead-Lag Optimize? lecall Mode		C-Min		None	C-Min				None	None	None	None
				None					None	None	None	
ct Effct Green (s)		60.8		13.9	81.7				13.9		13.3	17.3
ctuated g/C Ratio		0.55		0.13	0.74				0.13		0.12	0.16
c Ratio		0.90		0.34	0.58				0.82		0.85	0.48
ontrol Delay		28.2		44.8	7.1				45.3		80.6	20.4
ueue Delay		0.0		0.0	0.0				0.0		0.0	0.0
otal Delay		28.2		44.8	7.1				45.3		80.6	20.4
OS		С		D	Α				D		F	С
pproach Delay		28.2			9.5			45.3			52.0	
pproach LOS		С			Α			D			D	
lueue Length 50th (ft)		559		49	220				95		125	33
lueue Length 95th (ft)		#768		76	254				180		#241	98
ternal Link Dist (ft)		70			849			234			316	
urn Bay Length (ft)				325								
ase Capacity (vph)		2809		598	3775				382		222	352
arvation Cap Reductn		0		0	0				0		0	0
pillback Cap Reductn		0		0	0				0		0	0
		0		0	0				0		0	0
torage Lan Reguleto		U		U	U						J	
torage Cap Reductn educed v/c Ratio		0.90		0.25	0.58				0.67		0.81	0.46

Area Type:

Cycle Length: 110
Actuated Cycle Length: 110

Offset: 10 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

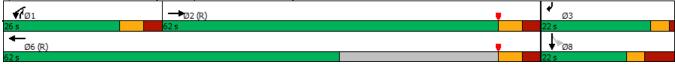
Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.90 Intersection Signal Delay: 22.5 Intersection LOS: C Intersection Capacity Utilization 87.2% ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



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	<b>→</b>	•	•	•	7	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ተተቡ			ተተተ		
Traffic Volume (vph)	2320	60	0	2020	0	0
Future Volume (vph)	2320	60	0	2020	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	5114	0	0	5085	0	0
Flt Permitted						
Satd. Flow (perm)	5114	0	0	5085	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1049			150	256	
Travel Time (s)	23.8			3.4	5.8	
Confl. Peds. (#/hr)		8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2587	0	0	2196	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalize						
Intersection Capacity Utiliz				IC	U Level o	f Service

	•	<b>→</b>	*	•	<b>←</b>	•	4	†	<b>/</b>	<b>\</b>	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	LDL	<b>††</b>	LDIX	ሻሻ	ተተጉ	WDIX	NDL	IIDI	7	ODL	4	7
Traffic Volume (vph)	0	1660	200	225	1880	45	0	0	255	115	50	165
Future Volume (vph)	0	1660	200	225	1880	45	0	0	255	115	50	165
· · · /	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)		1900			1900	0		1900			1900	
Storage Length (ft)	0		0	325			0		0	0		0
Storage Lanes	0		0	2		0	0		1	0		1
Taper Length (ft)	25	E020	^	25	E444	^	25	0	4044	25	4000	4500
Satd. Flow (prot)	0	5039	0	3467	5111	0	0	0	1644	0	1823	1599
Flt Permitted	0	E020	^	0.950	E444	^	^	^	4044	0	0.966	4500
Satd. Flow (perm)	0	5039	0	3467	5111	0	0	0	1644	0	1823	1599
Right Turn on Red		00	Yes		0	Yes			Yes			Yes
Satd. Flow (RTOR)		28			9			00	119		00	109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			929			314			396	
Travel Time (s)		3.4	4.4		21.1			7.1			9.0	
Confl. Peds. (#/hr)	0.00	0.00	14	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	1%	1%	2%	0%	0%	0%	1%	0%	1%
Shared Lane Traffic (%)	^	0004	0	045	2000	^	0	0	077	^	470	470
Lane Group Flow (vph)	0	2021	0	245	2092	0	0	0	277	0	179	179
Turn Type Protected Phases		NA 2		Prot 1	NA 6				Over 1	Perm	NA 8	custom 3
Protected Phases Permitted Phases		2		1	ь				1	0	ŏ	3
***************************************		2		1	C				1	8	0	2
Detector Phase		2		1	6				1	ŏ	8	3
Switch Phase		20.0		0.0	20.0				0.0	0.0	0.0	0.0
Minimum Initial (s)		20.0		8.0	20.0				8.0	8.0	8.0	8.0
Minimum Split (s)		27.0		17.0	30.0				17.0	19.0	19.0	12.0
Fotal Split (s)		63.0		26.0	63.0				26.0	21.0	21.0	21.0
Total Split (%)		57.3%		23.6%	57.3%				23.6%	19.1%	19.1%	19.1%
Yellow Time (s)		4.0		4.0	4.0				4.0	3.0	3.0	3.0
All-Red Time (s)		3.0		3.0	3.0				3.0	5.0	5.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0				0.0		0.0	0.0
Total Lost Time (s)		7.0		7.0	7.0				7.0		8.0	4.0
Lead/Lag		Lag		Lead					Lead			
Lead-Lag Optimize?		0.14		Messa	0.14				Mana	Maria	Maria	NI
Recall Mode		C-Min		None	C-Min				None	None	None	None
Act Effct Green (s)		60.0		15.0	82.0				15.0		13.0	17.0
Actuated g/C Ratio		0.55		0.14	0.75				0.14		0.12	0.15
//c Ratio		0.73		0.52	0.55				0.85		0.83	0.53
Control Delay		21.4		47.4	6.7				49.1		77.8	23.8
Queue Delay		0.0		0.0	0.0				0.0		0.0	0.0
Total Delay		21.4		47.4	6.7				49.1		77.8	23.8
LOS Approach Dolov		C 21.4		D	A 11.0			10.1	D		50.8	С
Approach Delay					-			49.1				
Approach LOS		C 393		00	210			D	110		D 123	44
Queue Length 50th (ft)				82					110			
Queue Length 95th (ft)		470		119	227			004	#219		#246	116
nternal Link Dist (ft)		70		205	849			234			316	
Turn Bay Length (ft)		0704		325	2024				200		000	0.40
Base Capacity (vph)		2761		598	3834				382		223	346
Starvation Cap Reductn		0		0	0				0		0	0
Spillback Cap Reductn		0		0	0				0		0	0
Storage Cap Reductn		0.72		0 44	0				0.73		0	0.50
Reduced v/c Ratio		0.73		0.41	0.55				0.73		0.80	0.52
ntersection Summary												

Area Type: Other

Cycle Length: 110
Actuated Cycle Length: 110

Offset: 17 (15%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

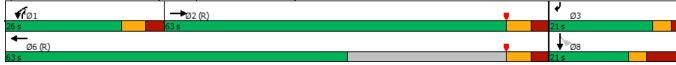
Natural Cycle: 75

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.85 Intersection Signal Delay: 20.2 Intersection LOS: C Intersection Capacity Utilization 79.8% 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.



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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ተተ <sub>ጉ</sub>			ተተተ		
Traffic Volume (vph)	1860	60	0	2045	0	0
Future Volume (vph)	1860	60	0	2045	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	5107	0	0	5085	0	0
Flt Permitted						
Satd. Flow (perm)	5107	0	0	5085	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1049			150	256	
Travel Time (s)	23.8			3.4	5.8	
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	3%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2087	0	0	2223	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
	Other					
71	Other					
Control Type: Unsignalized Intersection Capacity Utilizat	: 40 00/			10	اللامينوا ال	f Service A