

Ref: 8495

February 20, 2020

Wellesley Park LLC
c/o Mr. Victor Sheen
Aura Properties
49 Coolidge Street
Brookline, MA 02446

Re: Supplemental Transportation Impact Assessment
Wellesley Park – 148 Weston Road
Wellesley, Massachusetts

Dear Victor:

Vanasse & Associates, Inc. (VAI) has completed a review of the changes to the development program for the proposed Wellesley Park multifamily residential community that is to be located at 148 Weston Road in Wellesley, Massachusetts (hereafter referred to as the “Project”). Specifically, this assessment updates the trip-generation calculations that were presented in the February 2018 *Transportation Impact Assessment* (the “February 2018 TIA”) prepared in support of the Project to reflect a reduction in the number of proposed residential units from 55 units to 26 units, and compares the traffic characteristics and associated impacts of the current development program to the development program that was assessed in the February 2018 TIA and subsequently reviewed by the Zoning Board of Appeals’ (ZBAs’) independent review consultant, VHB.

Based on this review, we have concluded that the current development program will result in a significant reduction in traffic (up to 56 percent) on a weekday and during the weekday commuter peak hours when compared to the previous 55-unit multifamily residential community that was proposed for the Project site and, therefore, will be much less impactful on the transportation infrastructure. As such, the overall findings and conclusions that were presented in the February 2018 TIA for the Project and that were reviewed by VHB on behalf of the ZBA remain valid for the current development program, excepting that the impacts of the Project will be reduced over the conditions presented therein. A copy of the February 2018 TIA, VHB’s review letters and our response to comments submissions are attached for reference.

The following details our review of the current development program for the Project.

PROJECT DESCRIPTION

As currently proposed, the Project will entail the construction of a 26-unit multifamily residential building to be known as Wellesley Park and located at 148 Weston Road in Wellesley, Massachusetts. Access to the Project site will be provided by way of two (2) driveways configured as follows: a one-way entrance driveway that will intersect the west side of Weston Road approximately 345 feet north of Linden Street and a one-way exit driveway that will intersect the west side of Weston Road approximately 420 feet north of Linden Street. On-site parking will be provided for 64 vehicles consisting of 52 parking spaces that will be located in a garage beneath the

proposed building and 12 surface parking spaces, or a parking ratio of approximately 2.58 spaces per dwelling unit.

PROJECT-GENERATED TRAFFIC

In order to determine the traffic characteristics of the Project, trip-generation methodologies established by the Institute of Transportation Engineers (ITE)¹ were used. ITE Land Use Code (LUC) 221, *Multifamily Housing (Mid-Rise)*, was used to develop the base traffic characteristics of the Project.

Transit Use

Given the availability of public transportation services to the Project site (Massachusetts Bay Transportation Authority (MBTA) commuter rail and Metro-West Regional Transit Authority (MWRTA) bus service), the interconnected network of sidewalks and on-road bicycle accommodations, it is expected that a portion of the residents of the Project will use public transportation services, walk or bicycle, thereby reducing the volume of traffic that may be associated with the Project. In order to determine the proportion of residents of the Project that may use public transportation, walk or bicycle as their primary mode of transportation, travel mode data obtained from the 2011-2015 American Community Survey (ACS) for the Town of Wellesley were reviewed. Based on a review of this data, the following commuting modes were identified for workers ages 16 or older that reside within the Town:

- *Single-Occupant Vehicle*: 60.7%
- *Car/Vanpool*: 4.9%
- *Public Transportation*: 10.9%
- *Walk*: 13.1%
- *Bicycle*: 0.7%
- *Other*: 0.8%
- *Worked at Home*: 8.9%

Approximately 39 percent of workers that reside in the Town reported that they used an alternative mode of transportation to single-occupancy vehicles to travel to/from work, with approximately 5 percent participating in a car or vanpool, 11 percent using public transportation, 13 percent walking and 1 percent bicycling.

In order to account for the use of alternative modes of transportation to single-occupancy vehicles, the base ITE trip-generation calculations were first converted to person trips using a vehicle occupancy ratio of 1.13 persons per vehicle, which was obtained from the 2009 National Household Travel Survey, and were then disseminated to the modes of transportation that are accessible to the residents of the Project: public transportation (transit), pedestrian/bicycle and automobile.

In order to provide a conservative (high) analysis condition from which to assess the potential impact of the Project on the transportation infrastructure and consistent with the methodology that was used in the February 2018 TIA, it was assumed that 80 percent of the trips generated by the Project would consist of automobile trips, with 10 percent of trips assumed to be made using public transportation and 10 percent consisting of pedestrian/bicycle trips. Both the public transportation and pedestrian/bicycle rates are slightly lower than 11 percent and 14 percent utilization documented in the ACS, respectively.

¹*Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.



Table 1 summarizes the traffic characteristics of the current development program for the Project using the aforementioned methodology.

Table 1
TRIP-GENERATION SUMMARY – CURRENT DEVELOPMENT PROGRAM (26 UNITS)

Trip Period/Direction	ITE Trips ^a	Person Trips				Automobile Trips ^c
		Total Person Trips ^b	Automobile Trips (80%)	Transit Trips (10%)	Pedestrian/Bicycle Trips (10%)	
<i>Average Weekday Daily:</i>						
Entering	70	79	63	8	8	56
<u>Exiting</u>	<u>70</u>	<u>79</u>	<u>63</u>	<u>8</u>	<u>8</u>	<u>56</u>
Total	140	158	126	16	16	112
<i>Weekday Morning Peak Hour:</i>						
Entering	2	2	2	0	0	2
<u>Exiting</u>	<u>7</u>	<u>8</u>	<u>6</u>	<u>1</u>	<u>1</u>	<u>5</u>
Total	9	10	8	1	1	7
<i>Weekday Evening Peak Hour:</i>						
Entering	7	8	6	1	1	5
<u>Exiting</u>	<u>5</u>	<u>6</u>	<u>5</u>	<u>1</u>	<u>0</u>	<u>5</u>
Total	12	14	11	2	1	10

^aBased on ITE LUC 221, *Multifamily Housing (Mid-Rise)*, and 26 dwelling units.

^bITE vehicle trips x vehicle occupancy ratio (VOR) of 1.13. VOR obtained from: *Summary of Travel Trends: 2009 National Household Travel Survey*; FHWA; Washington, D.C.; June 2011.

^cAutomobile person trips divided by 1.13.

As can be seen in Table 1, after applying appropriate adjustments to account for the use of public transportation and pedestrian and bicycle trips, the current development program (26-units) is expected to generate approximately 112 automobile trips, 16 transit trips and 16 pedestrian/bicycle trips on an average weekday (two-way, 24-hour volumes), with 7 automobile trips (2 vehicles entering and 5 exiting), 1 transit trip and 1 pedestrian/bicycle trip expected during the weekday morning peak-hour, and 10 automobile trips (5 vehicles entering and 5 exiting), 2 transit trips and 1 pedestrian/bicycle trip expected during the weekday evening peak-hour.

Table 2 compares the traffic characteristics (automobile trips) of the current 26-unit multifamily residential community to those of the 55-unit multifamily residential community that was assessed in the February 2018 TIA and reviewed by VHB.



Table 2
TRIP GENERATION COMPARISON – AUTOMOBILE TRIPS

Time Period/Direction	Vehicle Trips		(C = A - B) Difference
	(A) Modified Development Program (26 units) ^a	(B) Previous Development Program (55 units) ^b	
<i>Average Weekday Daily:</i>	112	240	-128
<i>Weekday Morning Peak Hour:</i>	7	16	-9
<i>Weekday Evening Peak Hour:</i>	10	20	-10

^aBased on ITE LUC 210, *Multifamily Housing (Mid-Rise)*, 26-units.

^bAs presented in the February 2018 TIA.

As can be seen in Table 2, in comparison to the previous 55-unit multifamily development program, the current 26-unit multifamily residential community is expected to generate 128 fewer vehicle trips on an average weekday (a 53 percent reduction), with 9 fewer vehicle trips during the weekday morning peak-hour (a 56 percent reduction) and 10 fewer vehicle trips during the weekday evening peak-hour (a 50 percent reduction). ***As such, it can be concluded that the current development program (26 multifamily residential units) will be much less impactful on the roadway network than the previous 55-unit multifamily development program that was assessed in the February 2018 TIA.***

SUMMARY

VAI has completed an assessment of the traffic characteristics and potential impacts on the transportation infrastructure associated with the modifications to the development program for the proposed Wellesley Park multifamily residential community that is to be located at 148 Weston Road in Wellesley, Massachusetts. ***Based on this review, we have concluded that the current development program will result in a significant reduction in traffic (up to 56 percent) on a weekday and during the weekday commuter peak hours when compared to the previous 55-unit multifamily residential community that was proposed for the Project site and, therefore, will be much less impactful on the transportation infrastructure. As such, the overall findings and conclusions that were presented in the February 2018 TIA for the Project and that were reviewed by VHB on behalf of the ZBA remain valid for the current development program, excepting that the impacts of the Project will be reduced over the conditions presented therein.***



Mr. Victor Sheen
February 20, 2020
Page 5 of 5

If you should have any questions or would like to discuss the results of the supplemental assessment in more detail, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE, FITE
Partner

Professional Engineer in CT, MA, ME, NH, RI and VA

JSD/jsd

Attachments:

1. Trip-Generation Calculations (26 unit development proposal)
2. February 2018 *Transportation Impact Assessment*
3. October 4, 2018 *Transportation Peer Review Commentary*
4. October 9, 2018 *Response to Transportation Peer Review Commentary*
5. October 18, 2018 Supplement to the October 9, 2018 Response to Transportation Peer Review Commentary



ATTACHMENTS

TRIP-GENERATION CALCULATIONS (26 UNIT DEVELOPMENT PROPOSAL)

FEBRUARY 2018 TRANSPORTATION IMPACT ASSESSMENT

OCTOBER 4, 2018 TRANSPORTATION PEER REVIEW COMMENTARY

OCTOBER 9, 2018 RESPONSE TO TRANSPORTATION PEER REVIEW COMMENTARY

OCTOBER 18, 2018 SUPPLEMENT TO THE OCTOBER 9, 2018 RESPONSE TO
TRANSPORTATION PEER REVIEW COMMENTARY

TRIP-GENERATION CALCULATIONS (26 UNIT DEVELOPMENT PROPOSAL)

Multifamily Housing (Mid-Rise) (221)

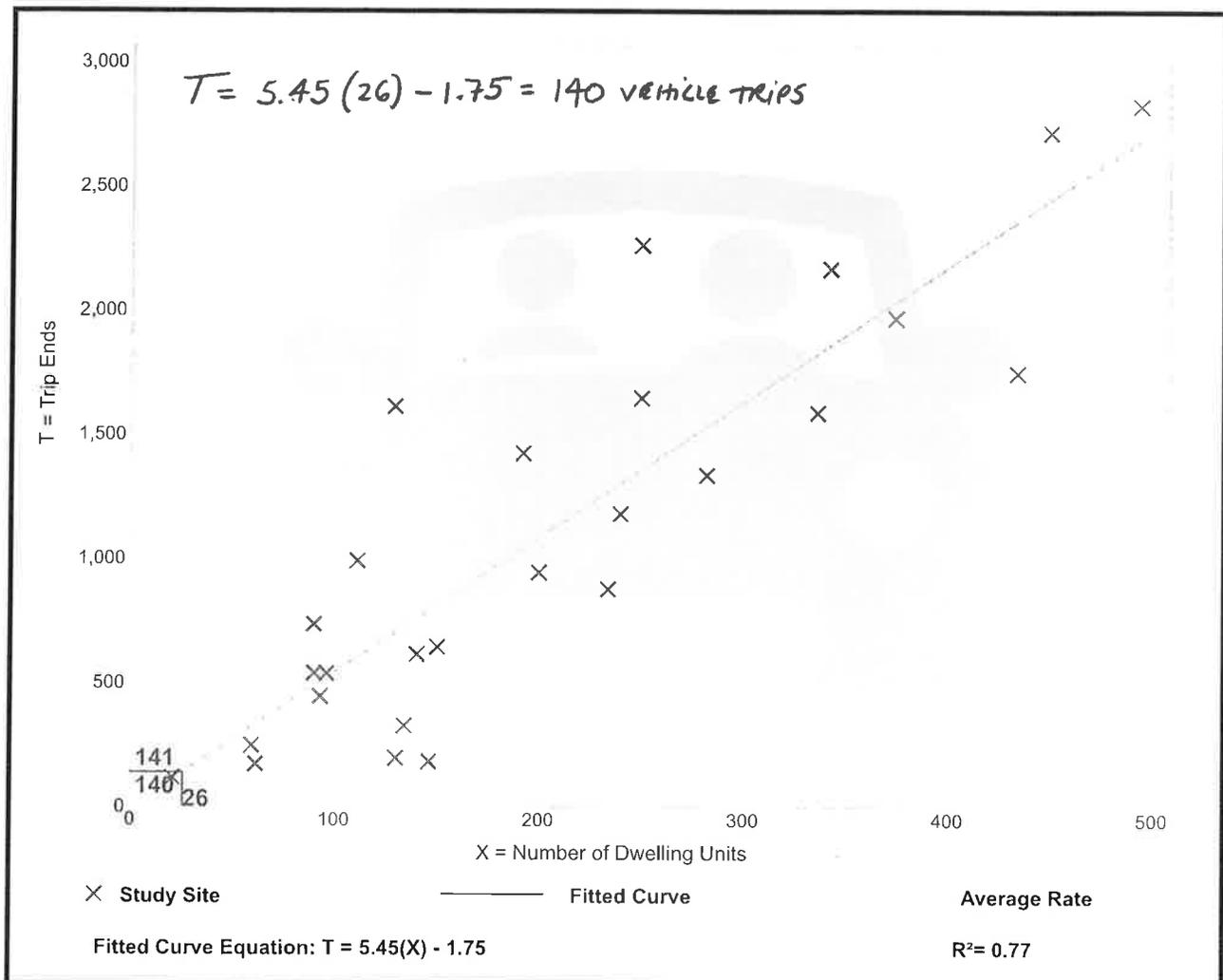
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.44	1.27 - 12.50	2.03

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 53

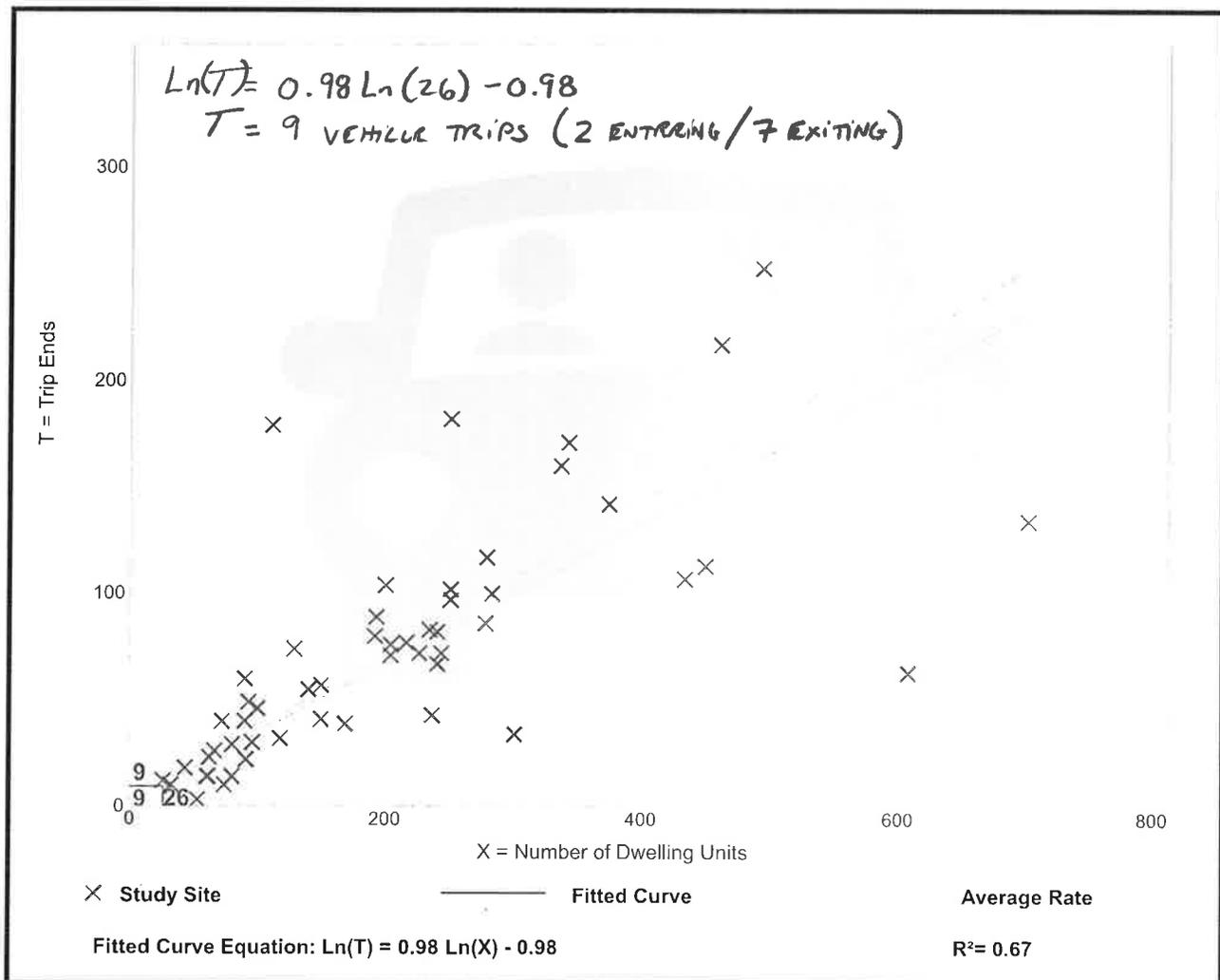
Avg. Num. of Dwelling Units: 207

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.06 - 1.61	0.19

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

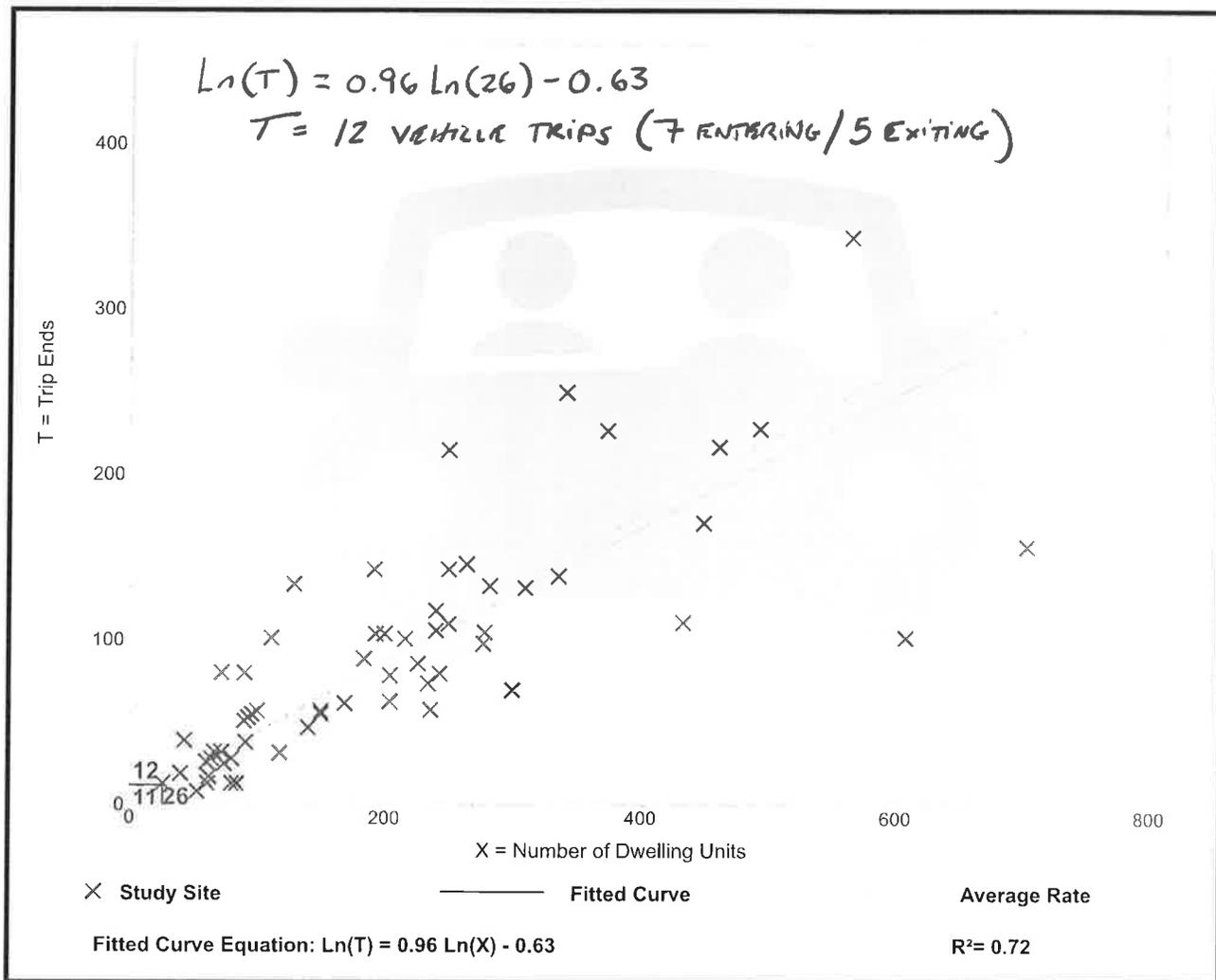
Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 60
 Avg. Num. of Dwelling Units: 208
 Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.11	0.19

Data Plot and Equation



FEBRUARY 2018 TRANSPORTATION IMPACT ASSESSMENT

TRANSPORTATION IMPACT ASSESSMENT

WELLESLEY PARK
148 WESTON ROAD
WELLESLEY, MASSACHUSETTS

Prepared for:

WELLESLEY PARK LLC
Boston, Massachusetts

February 2018

Prepared by:

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Dear Reviewer:

This letter shall certify that this *Transportation Impact Assessment* has been prepared under my direct supervision and responsible charge. I am a Registered Professional Engineer (P.E.) in the Commonwealth of Massachusetts (Massachusetts P.E. No. 38871, Civil) and hold Certification as a Professional Traffic Operations Engineer (PTOE) from the Transportation Professional Certification Board, Inc. (TPCB), an affiliate of the Institute of Transportation Engineers (ITE) (PTOE Certificate No. 993). I am also a Fellow of the Institute of Transportation Engineers (FITE).

Sincerely,

VANASSE & ASSOCIATES, INC.

Jeffrey S. Dirk, P.E., PTOE, FITE
Principal

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EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a 55-unit residential apartment community to be known as Wellesley Park and located at 148 Weston Road in Wellesley, Massachusetts (hereafter referred to as the “Project”). At present, the Project site consists of areas of open and wooded space, with portions of the property previously occupied by a single-family home and associated appurtenances that have since been removed.

This assessment was prepared in consultation with the Massachusetts Department of Transportation (MassDOT) and the Town of Wellesley; was performed in accordance with MassDOT’s *Transportation Impact Assessment (TIA) Guidelines* and the Traffic Review standards for a Project of Significant Impact (PSI) as defined in Section XVIA of the Town of Wellesley Zoning Bylaw; and was conducted pursuant to the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)¹ and with adjustment to account for the use of public transportation and pedestrian and bicycle trips, the Project is expected to generate approximately 240 automobile trips, 34 transit trips and 34 pedestrian/bicycle trips on an average weekday (two-way, 24-hour volumes), with 16 automobile trips, 3 transit trips and 2 pedestrian/bicycle trips expected during the weekday morning peak-hour, and 20 automobile trips, 3 transit trips and 3 pedestrian/bicycle trips expected during the weekday evening peak-hour;
2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with no predicted changes in level-of-service (LOS) and the majority of the movements at the study intersections shown to operate at LOS D or better under all analysis conditions where an LOS of “D” or better is defined as “acceptable” operating conditions;
3. Independent of the Project, left-turn movements from Linden Street at Weston Road were identified as operating over capacity (defined as LOS “F”) during both the weekday morning and evening peak hours, with Project-related impacts at the intersection defined as an increase in vehicle queuing of up to one (1) vehicle;

¹*Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.

4. Similarly, the Weston Road/Central Street intersection was shown to operate at or over capacity (LOS “E” or “F”, respectively) during both the weekday morning and evening peak hours under 2025 traffic volume conditions independent of the Project, with Project-related impacts at the intersection defined as an increase in overall motorist delay of less than 3.0 seconds and in vehicle queuing of up to one (1) vehicle;
5. All movements exiting the Project site driveway intersection with Weston Road are expected to operate at LOS D or better during the peak hours with vehicle queueing of approximately one (1) vehicle;
6. Both the Weston Road/Linden Street and Weston Road/Central Street intersections were found to have motor vehicle crash rates that were above the MassDOT average crash rates for a signalized or unsignalized intersection, as appropriate. Recommendations have been provided as a part of this assessment to advance safety-related improvements at both intersections (discussion follows); and
7. Lines of sight to and from the Project site driveway at its intersection with Weston Road were found to meet, exceed or could be made to meet or exceed the recommended minimum sight distance to function in a safe manner for the appropriate approach speed along Weston Road.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project will be provided by way of a new driveway that will intersect the west side of Weston Road approximately 420 feet north of Linden Street. The following recommendations are offered with respect to Project access and internal circulation:

- The Project site driveway should be a minimum of 18-feet wide and a maximum of 24-feet wide, or as required to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle as defined by the Town of Wellesley Fire Department pursuant to the requirements of NFPA® 1.²
- Where perpendicular parking is provided, the drive aisle behind the parking should be a minimum of 23-feet in order to allow for vehicle maneuvering.

²National Fire Protection Association (NFPA)® 1, *Fire Code*, Seventh Edition; NFPA; Quincy, Massachusetts; 2015; as amended per 527 CMR.

- A STOP-sign and marked STOP-line should be provided for vehicles exiting the Project site to Weston Road.
- All signs and pavement markings to be installed within the Project site shall conform to the applicable standards of the *Manual on Uniform Traffic Control Devices (MUTCD)*.³
- Consideration should be given to installing a sidewalk along the Project site frontage on Weston Road and extending to the crosswalk at Linden Street.
- Marked crosswalks with Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at all proposed pedestrian crossings.
- A school bus waiting area should be provided at an appropriate location on Weston Road defined in consultation with the Town.
- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.
- Existing vegetation located along the west side of Weston Road, south of the Project site driveway and within the public right-of-way, should be selectively trimmed in order to provide the required line of sight to/from the south from the driveway.
- Snow windrows within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.
- Consideration should be given to installing electric vehicle charging stations within the Project site and to accommodating the staging of car-sharing vehicles (ZipCar or similar).

Off-Site

Weston Road at Linden Street

The addition of Project-related traffic to the intersection of Weston Road at Linden Street was not shown to result in a change in LOS, with Project-related impacts at the intersection defined as an increase in vehicle queuing of up to one (1) vehicle. Independent of and unrelated to the Project, the intersection was found to have a motor vehicle crash rate that was slightly above the MassDOT District 6 average for an unsignalized intersection. In an effort to advance safety improvements at this location that are warranted as a result of existing conditions unrelated to the Project, the Project proponent will facilitate the completion of a Road Safety Audit (RSA) in order to identify improvements strategies for this intersection.

Weston Road at Central Street

The addition of Project-related traffic to the intersection of Weston Road at Central Street was not shown to result in a change in LOS with the Project-related impacts at the intersection defined as an increase in overall motorist delay of less than 3.0 seconds and in vehicle queuing of up to one (1) vehicle. Independent of and unrelated to the Project, the intersection was found to have a motor vehicle crash rate that was slightly above the MassDOT District 6 average for a signalized intersection. In an effort to advance safety improvements at this location that are warranted as a result of existing conditions unrelated to the Project, the Project proponent will facilitate the

³*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.

completion of an RSA in order to identify improvements strategies for this intersection. In addition, Project proponent will design and implement an optimal traffic signal timing plan to improve overall traffic operations. With implementation of an optimal traffic signal timing plan, overall intersection operations are predicted to remain at LOS F during the weekday morning peak-hour with reduced motorist delay, and to improve to LOS D (from LOS E) during the weekday evening peak-hour (an improvement over No-Build conditions).

Transportation Demand Management

Public transportation services are provided within the study area by the Massachusetts Bay Transportation Authority (MBTA) (Commuter Rail) and the MetroWest Regional Transit Authority (MWRTA) (fixed-route bus service), and are accessible to residents of the Project. Wellesley Square Station on the Framingham/Worcester Line of the MBTA commuter rail system is located at 1 Grove Street which is within a 10-minute walking distance of the Project site. MWRTA bus Route 8 provides service along Linden Street and Central Street with a stop at Cross Street which is within a 5-minute walking distance of the Project site. In addition to scheduled stops, MWRTA buses also operate in a passenger demand service mode and will stop anywhere along the service route where it is safe to pick-up or discharge a passenger. The MWRTA also operates Paratransit Services for passengers who meet ADA requirements and provides transportation services for seniors and the disabled through the Wellesley Council on Aging.

In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles, the following Transportation Demand Management (TDM) measures should be implemented as a part of the Project:

- The owner or property manager should contact MassRIDES to obtain information on facilitating and encouraging healthy transportation options for residents of the Project;
- Information regarding public transportation services, maps, schedules and fare information should be posted in a central location and/or otherwise made available to residents;
- A “welcome packet” should be provided to residents detailing available public transportation services, bicycle and walking alternatives, and commuter options available through MassRIDES’ and their NuRide program which rewards individuals that choose to walk, bicycle, carpool, vanpool or that use public transportation to travel to and from work;
- Residents should be made aware of the Emergency Ride Home (ERH) program available through MassRIDES, which reimburses employees of a participating MassRIDES employer partner worksite that is registered for ERH and that carpool, take transit, bicycle, walk or vanpool to work;
- Pedestrian accommodations should consist of installing a sidewalk along the Project site frontage on Weston Road and extending to the crosswalk at Linden Street;
- A mail drop should be provided in a central location; and
- Secure bicycle parking should be provided consisting of: i) exterior bicycle parking conveniently located proximate to the building entrance; and ii) weather protected bicycle parking located in a secure area within the building.

With implementation of the above recommendations, safe and efficient vehicular, pedestrian and bicycle access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a 55-unit residential apartment community to be known as Wellesley Park and located at 148 Weston Road in Wellesley, Massachusetts (hereafter referred to as the “Project”). This study evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project, along Weston Road, and at the following specific intersections: Weston Road at Central Street; Weston Road at Linden Street; and Weston Road at Howe Street.

PROJECT DESCRIPTION

The Project will entail the construction of a 55-unit residential apartment community to be known as Wellesley Park and located at 148 Weston Road in Wellesley, Massachusetts. The Project site encompasses approximately 0.83± acres of land that is bounded by residential properties and areas of open and wooded space to the north and south; Weston Road to the east; and the Crosstown Trail and areas of open and wooded space to the west. Figure 1 depicts the Project site location in relation to the existing roadway network. At present, the Project site consists of areas of open and wooded space, with portions of the property previously occupied by a single-family home and associated appurtenances that have since been removed.

Access to the Project will be provided by way of a new driveway that will intersect the west side of Weston Road approximately 420 feet north of Linden Street. On-site parking will be provided for 67 vehicles consisting of: 60 parking spaces for residents of the Project that will be located in a garage beneath the proposed building; six (6) surface parking spaces for visitors; and one (1) parking space for deliveries; or a parking ratio of approximately 1.22 spaces per dwelling unit.



Figure 1
Site Location Map



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STUDY METHODOLOGY

This study was prepared in consultation with the Massachusetts Department of Transportation (MassDOT) and the Town of Wellesley; was performed in accordance with: i) MassDOT's *Transportation Impact Assessment (TIA) Guidelines*; ii) the Traffic Review standards for a Project of Significant Impact (PSI) as defined in Section XVIA of the Town of Wellesley Zoning Bylaw; and iii) the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports; and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometrics; pedestrian and bicycle facilities; on-street parking; public transportation services; observations of traffic flow; and collection of pedestrian, bicycle and vehicle counts.

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A seven-year time horizon from the current year was selected for analyses consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. The analysis conducted in stage two identifies existing or projected future capacity, safety, and access issues, as these areas relate to the transportation infrastructure.

The third stage of the study presents and evaluates measures to address deficiencies in the transportation infrastructure, if any, identified in stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in January 2018. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; on-street parking; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area for the Project was selected to contain the major roadway providing access to the Project site, Weston Road, as well as the following specific intersections: Weston Road at Central Street; Weston Road at Linden Street; and Weston Road at Howe Street.

The following describes the study area roadway and intersections as observed in January 2018.

Roadway

Weston Road

- Two-lane urban minor arterial roadway under Town jurisdiction
- Traverses a general north-south direction and provide access to Route 9 to the north and Central Street (Route 135) and Washington Street (Route 16) to the south
- Provides two 11 to 12-foot wide travel lanes separated by a double-yellow centerline with 1 to 2-foot wide marked shoulders
- Posted speed limit is 30 miles per hour (mph)
- Sidewalks are provided along the east side of the roadway in the vicinity of the Project site
- Illumination is provided by way of street lights mounted on wood poles
- Land use within the study area consists of the Project site, the Crosstown Trail, areas of open and wooded space, and residential properties

Intersections

Table 1 and Figure 2 summarize lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in January 2018.

Table 1
STUDY AREA INTERSECTION DESCRIPTION

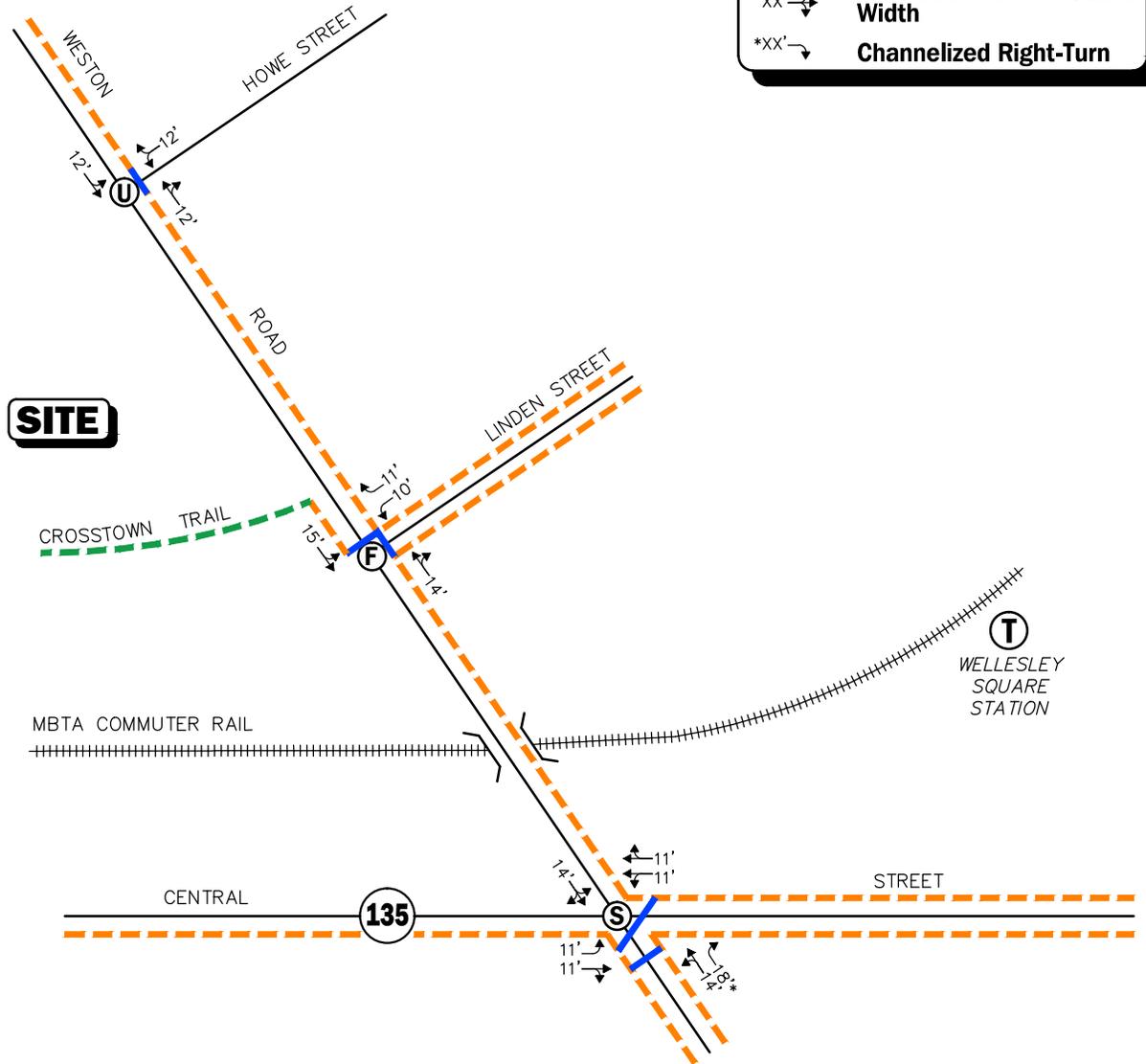
Intersection	Traffic Control Type^a	No. of Travel Lanes Provided	Shoulder Provided? (Yes/No/Width)	Pedestrian Accommodations? (Yes/No/Description)	Bicycle Accommodations? (Yes/No/Description)
Weston Rd./ Linden St.	F	1 per direction on Weston Rd.; 1 left-turn and 1 right-turn lane on Linden St.	Yes – 1 to 2-feet on Weston Rd. and 1-foot on Linden St.	Yes – Sidewalks along both sides of Linden St. and the east side of Weston Rd.; crosswalks for crossing north and east legs of intersection; pedestrian traffic signal equipment and phasing provided	Yes ^b – Shared traveled-way on Weston Rd.
Weston Rd./ Central St.	TS	1 left-turn lane and 1 general-purpose lane on Central St. eastbound; 2 general-purpose lanes on Central St. westbound; 1 left/through lane and 1 channelized right-turn lane on Weston Rd. northbound and 1 general-purpose lane on Weston Rd. southbound	Yes – 2 to 3-feet on Weston Rd.	Yes – Sidewalks along both sides of Central St. east of intersection and Weston Rd. south of the intersection, along south side of Central St. west of intersection and along east side of Weston Rd. north of the intersection; crosswalks for crossing Central St. and the south leg of intersection; pedestrian traffic signal equipment and phasing provided	Yes – Shared traveled-way
Weston Rd./ Howe Rd.	S	1 per direction on all approaches	Yes – 1-foot on Weston Rd.	Yes – Sidewalk along the east side of Weston Rd.; crosswalk for crossing Howe St.	No

^aTS = traffic signal control; F = flashing signal/beacon; S = STOP-sign control; NC = no control present.

^bCombined shoulder and travel lane width equal to or exceed 14 feet.

Legend:

- Ⓢ Signalized Intersection
- ⓕ Flashing Signal/Beacon
- Ⓤ Unsignalized Intersection
- Sidewalk
- Crosswalk
- Trail
- XX' Lane Use and Travel Lane Width
- *XX' Channelized Right-Turn



Not To Scale



Figure 2

Existing Intersection Lane Use, Travel Lane Width and Pedestrian Facilities

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EXISTING TRAFFIC VOLUMES

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts, manual turning movement counts (TMCs) and vehicle classification counts were completed in January 2018 while public schools were in regular session. The ATR counts were conducted over a continuous 48-hour period from January 23, 2018 (Tuesday) through January 24, 2018 (Wednesday) on Weston Road in the vicinity of the Project site in order to record weekday traffic conditions over an extended period, with weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period manual TMCs performed at the study intersections on January 24, 2018 (Wednesday).⁴ These time periods were selected for analysis purposes as they are representative of the peak-traffic-volume hours for both the Project and the adjacent roadway network.

Traffic-Volume Adjustments

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, traffic volume data from MassDOT Continuous Count Station No. 32 located on I-95 south of Route 20 in Weston were reviewed.⁵ Based on a review of this data, it was determined that traffic volumes for the month of January are approximately 9.7 percent below average-month conditions and, therefore, the January traffic count data was adjusted upward to average-month conditions. The 2018 Existing traffic volumes are summarized in Table 2, with the weekday morning and evening peak-hour traffic volumes graphically depicted on Figure 3. Note that the peak-hour traffic volumes presented in Table 2 were obtained from the aforementioned Figure.

Table 2
2018 EXISTING TRAFFIC VOLUMES

Location	AWT ^a	Weekday Morning Peak-Hour (8:00 – 9:00 AM)			Weekday Evening Peak-Hour (4:15 – 5:15 PM)		
		VPH ^b	K Factor ^c	Directional Distribution	VPH	K Factor	Directional Distribution
Weston Road, south of Howe Street	16,255	1,552	9.5	57.1% NB	1,363	8.4	51.4% SB

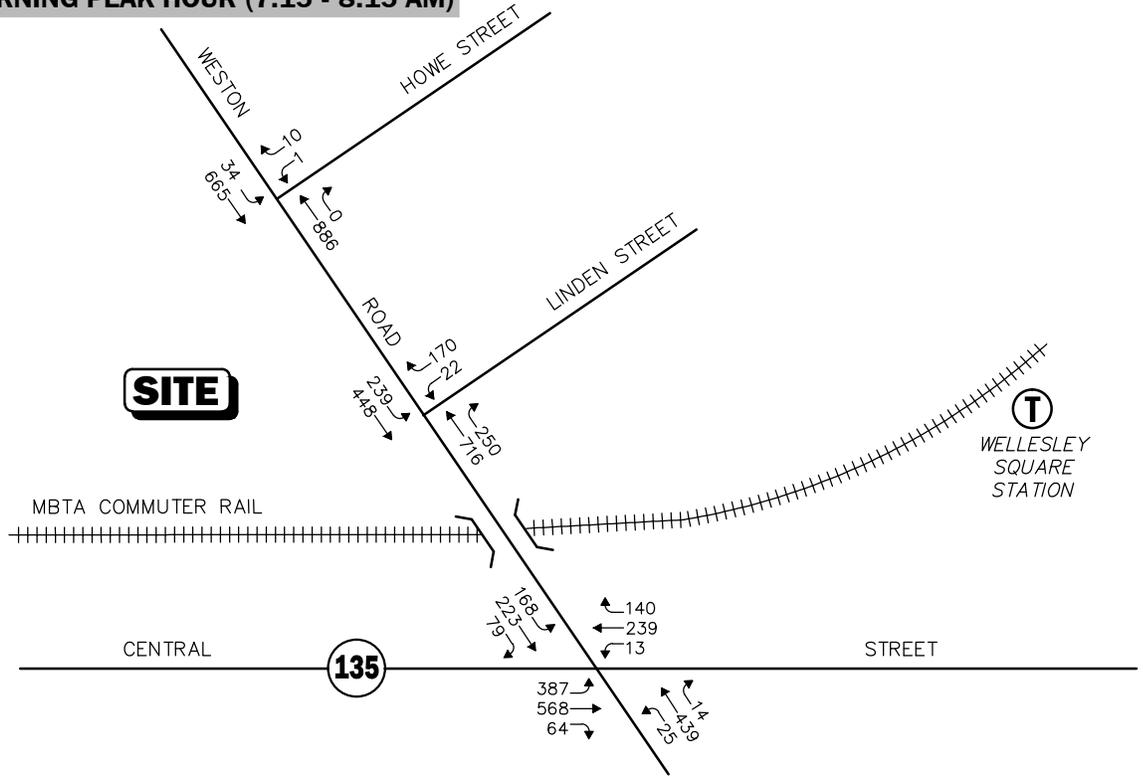
^aAverage weekday traffic in vehicles per day.
^bVehicles per hour.
^cPercent of daily traffic occurring during the peak-hour.
 NB = northbound; SB = southbound.

As can be seen in Table 2, Weston Road in the vicinity of the Project site was found to accommodate approximately 16,255 vehicles on an average weekday (two-way, 24-hour volume), with approximately 1,552 vehicles per hour (vph) during the weekday morning peak-hour and 1,363 vph during the weekday evening peak-hour.

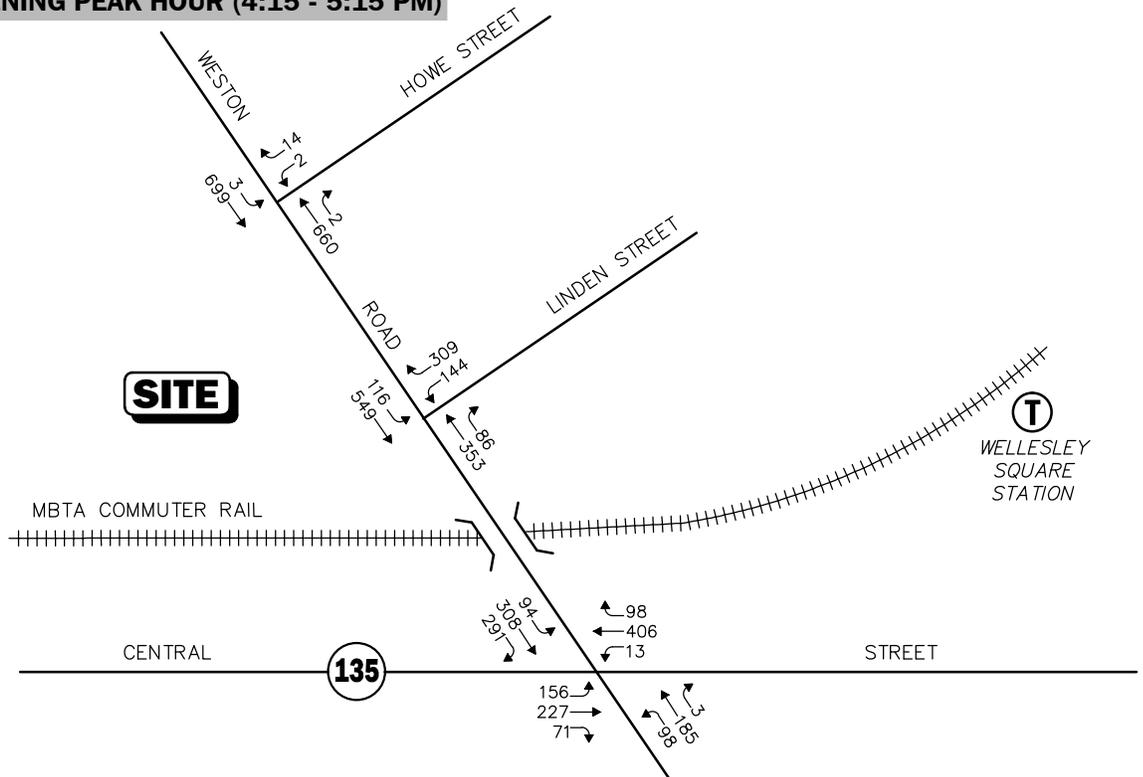
⁴Recognizing that Wednesday is a half-day for elementary schools in Wellesley, a comparison of the traffic volume data collected on Tuesday and Wednesday as a part of the ATR count along Weston Road was completed. This comparison indicated that traffic volumes on a Wednesday are approximately 11 percent higher on daily (24-hour) basis, with peak-hour traffic volumes approximately 8 percent higher during the morning peak-hour and 10 percent higher during the evening peak-hour.

⁵MassDOT Traffic Volumes for the Commonwealth of Massachusetts; 2018.

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
Not To Scale

Figure 3



2018 Existing Peak Hour Traffic Volumes

SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed on Linden Street in the vicinity of the Project site in conjunction with the ATR counts. Table 3 summarizes the vehicle travel speed measurements.

Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

	Weston Road, south of Howe Street	
	Northbound	Southbound
Mean Travel Speed (mph)	28	28
85 th Percentile Speed (mph)	32	34
Posted Speed Limit (mph)	30	30

mph = miles per hour.

As can be seen in Table 3, the mean vehicle travel speed along Weston Road in the vicinity of the Project site was found to be approximately 28 mph in both directions. The measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be approximately 32 mph in the northbound direction and 34 mph southbound, which is slightly above the posted speed limit of 30 mph. The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances, and is often used in establishing posted speed limits.

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in January 2018. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections, as well as the location of existing and planned future bicycle facilities.

Pedestrian Facilities

As detailed on Figure 2, sidewalks are generally provided along one or both sides of the study area roadways, with marked crosswalks provided for crossing one or more approaches of the study intersections. The crossings at the signalized study area intersections are included as a part of the traffic signal system at the intersections (pedestrian pushbuttons, signal indications and phasing are provided for the crossings). An inventory of sidewalk conditions along the Project site frontage and within 600 feet of the Project site indicates that the sidewalks are generally in good condition, with Americans with Disabilities Act (ADA) compliant wheelchair ramps provided at pedestrian crossings and detectable panels provided at the crossings at the Weston Road/Linden Street intersection. In addition, the Crosstown Trail, a pedestrian trail along the Cochituate Aqueduct, is located south of the Project site and is accessible from Weston Road.

Figure 4 depicts the 2018 Existing weekday morning and evening peak-hour pedestrian volumes at the study area intersections which were collected in conjunction with the January 2018 TMCs. A review of the pedestrian volume data at the study intersections indicates that the largest number of pedestrian crossings occurred at the south crossing of Weston Road at the Weston Road/Central Street intersection during both the weekday morning and evening peak hours (30 to 38 crossings were observed).

Bicycle Facilities

Linden Street, Weston Road and portions of Central Street generally provide sufficient width (combined travel lane and paved shoulder) to support bicycle travel in a shared traveled-way configuration.⁶ Figure 5 depicts the 2018 Existing weekday morning and evening peak-hour bicycle volumes at the study area intersections which were collected in conjunction with the January 2018 TMCs. Given the seasonality of the bicycle count data (January), bicycle activity within the study area was found to be relatively modest, with bi-directional bicycle volumes found to range from approximately one (1) to two (2) bicyclists during the peak hours.

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by the MBTA (Commuter Rail) and the MetroWest Regional Transit Authority (MWRTA) (fixed-route bus service), and are accessible to residents of the Project. Wellesley Square Station on the Framingham/Worcester Line of the MBTA Commuter Rail system is located at 1 Grove Street which is within a 10-minute walking distance of the Project site. MWRTA bus Route 8 provides service along Linden Street and Central Street with a stop at Cross Street which is within a 5-minute walking distance of the Project site. In addition to scheduled stops, MWRTA buses also operate in a passenger demand service mode and will stop anywhere along the service route where it is safe to pick-up or discharge a passenger. The MWRTA also operates Paratransit Services for passengers who meet ADA requirements and provides transportation services for seniors and the disabled through the Wellesley Council on Aging.

As noted in the previous section, sidewalks are generally provided along one or both sides of the study area roadways that provide opportunities (with additional enhancements) to link the Project site to Wellesley Square Station and the MWRTA bus service along Linden Street and Central Street. As such, it is expected that a portion of the residents of the Project will use public transportation as their primary mode of transportation.

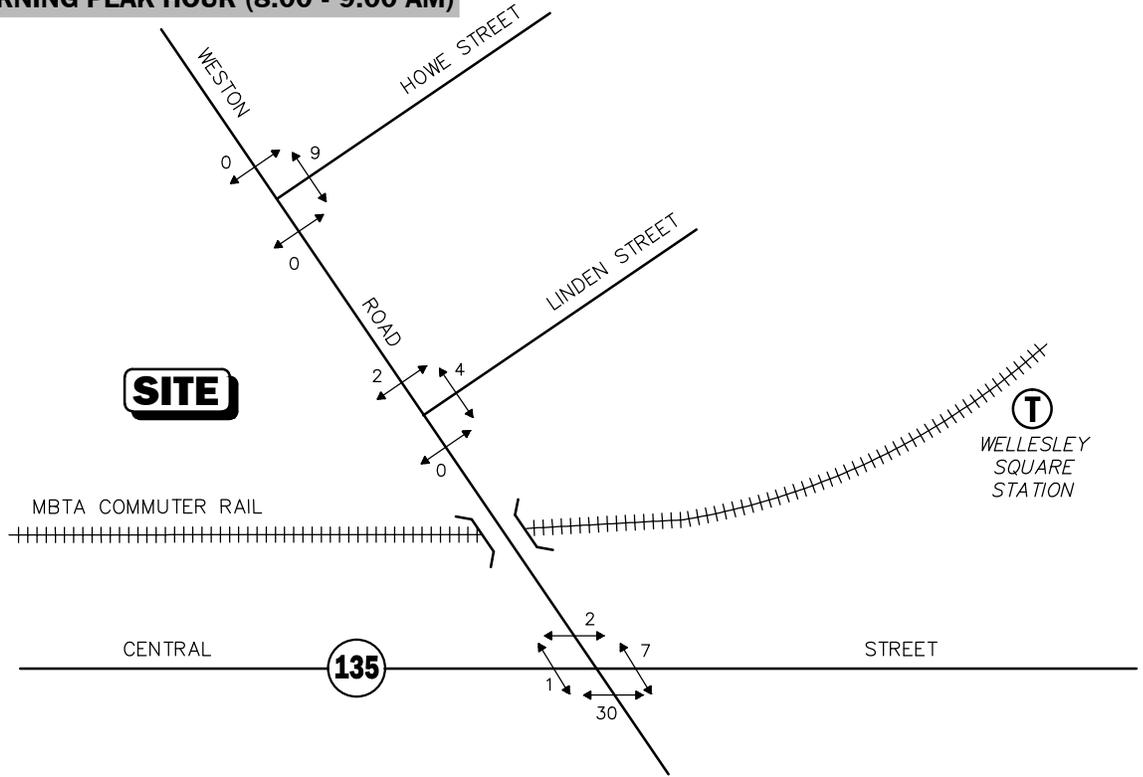
The public transportation schedules and fare information are provided in the Appendix.

MOTOR VEHICLE CRASH DATA

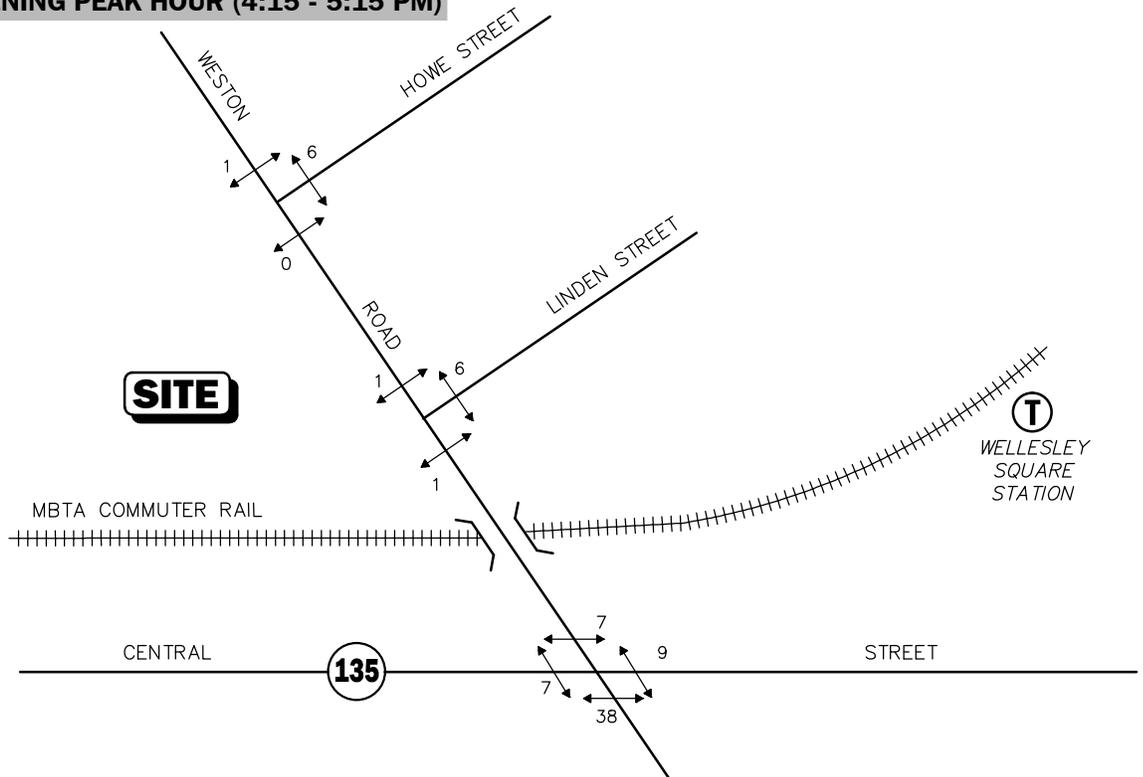
Motor vehicle crash information for the study area intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2011 through 2015, inclusive) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, roadway and weather conditions and day of occurrence, and presented in Table 4.

⁶A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared traveled-way condition.

WEEKDAY MORNING PEAK HOUR (8:00 - 9:00 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



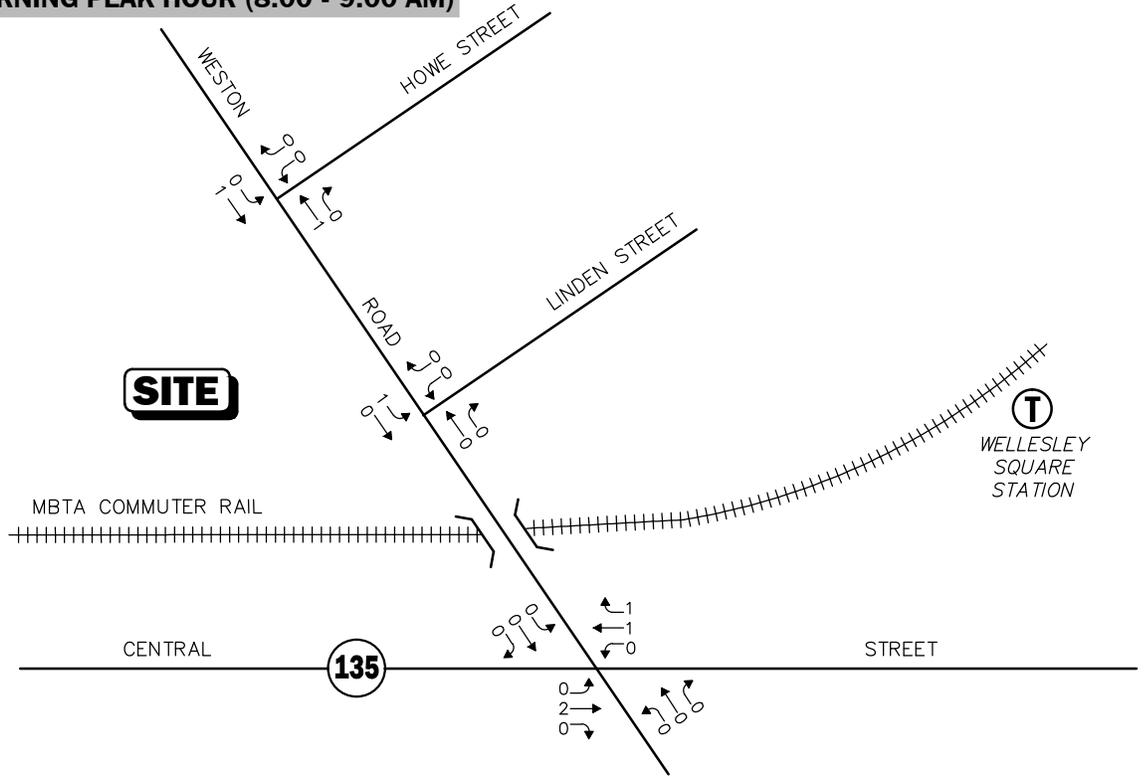
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
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Figure 4

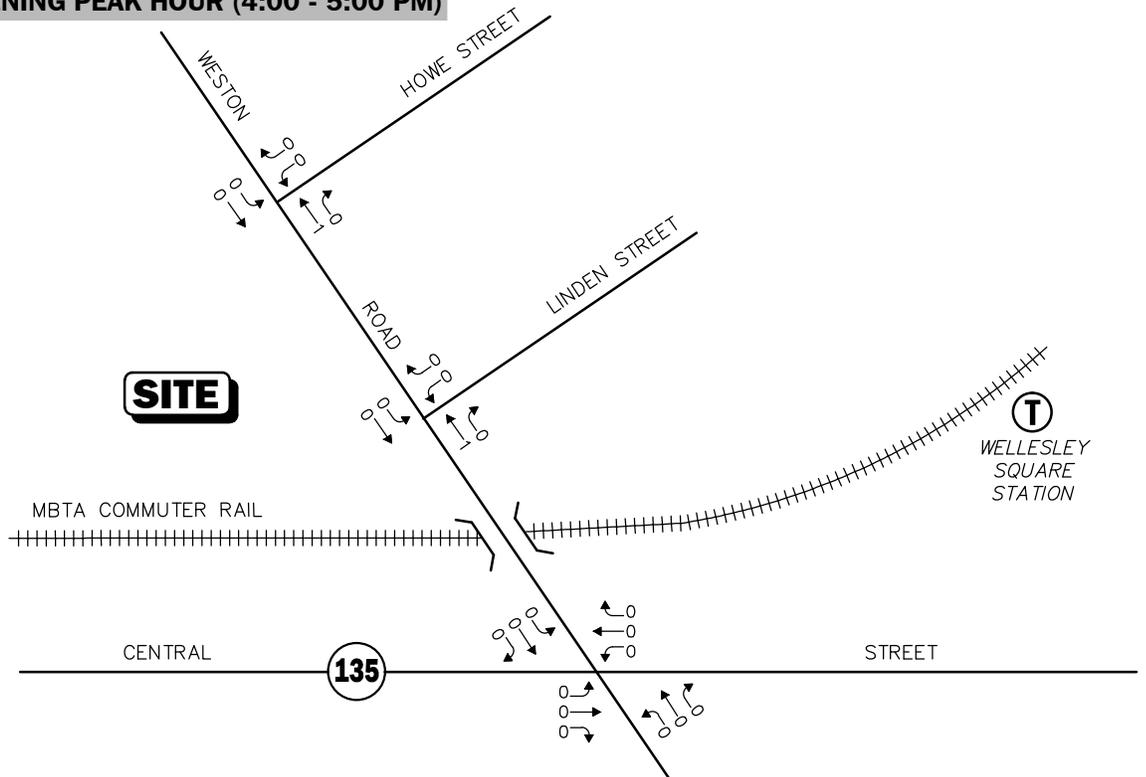


2018 Existing Peak Hour Pedestrian Volumes

WEEKDAY MORNING PEAK HOUR (8:00 - 9:00 AM)



WEEKDAY EVENING PEAK HOUR (4:00 - 5:00 PM)



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
Not To Scale

Figure 5



2018 Existing Peak Hour Bicycle Volumes

Table 4
MOTOR VEHICLE CRASH DATA SUMMARY^a

	Weston Road/ Linden Street	Weston Road/ Central Street	Weston Road/ Howe Street
Traffic Control Type: ^b	U	TS	U
<i>Year:</i>			
2011	3	4	0
2012	7	5	1
2013	3	9	1
2014	2	5	1
<u>2015</u>	<u>2</u>	<u>6</u>	<u>0</u>
Total	17	29	3
Average	3.40	5.80	0.60
Rate ^c	0.57	0.73	0.11
MassDOT Crash Rate: ^d	0.58/0.53	0.77/0.70	0.58/0.53
Significant? ^e	Yes	Yes	No
<i>Type:</i>			
Angle	3	7	0
Rear-End	10	16	3
Head-On	0	1	0
Sideswipe	2	2	0
Fixed Object	0	0	0
Pedestrian/Bicycle	2	2	0
<u>Unknown/Other</u>	<u>0</u>	<u>1</u>	<u>0</u>
Total	17	29	3
<i>Conditions:</i>			
Clear	10	18	2
Cloudy	4	6	1
Rain	3	4	0
<u>Snow/Ice</u>	<u>0</u>	<u>1</u>	<u>0</u>
Total	17	29	3
<i>Lighting:</i>			
Daylight	14	24	3
Dawn/Dusk	1	0	0
Dark (Road Lit)	2	5	0
<u>Dark (Road Unlit)</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	17	29	3
<i>Day of Week:</i>			
Monday through Friday	16	21	2
Saturday	1	6	1
<u>Sunday</u>	<u>0</u>	<u>2</u>	<u>0</u>
Total	17	29	3
<i>Severity:</i>			
Property Damage Only	12	28	2
Personal Injury	4	1	1
<u>Fatality</u>	<u>1</u>	<u>0</u>	<u>0</u>
Total	17	29	3

^aSource: MassDOT Safety Management/Traffic Operations Unit records, 2011 through 2015.

^bTraffic Control Type: U = unsignalized; TS = traffic signal.

^cCrash rate per million vehicles entering the intersection.

^dStatewide/District crash rate.

^eThe intersection crash rate is significant if it is found to exceed the MassDOT statewide or District (District 6) crash rates.

As can be seen in Table 4, the Weston Road/Linden Street intersection was reported to have experienced a total of 17 crashes over the five-year review period, the majority of which resulted in property damage only; occurred on a weekday; under clear weather and during daylight; and were classified as rear-end type crashes. This intersection was found to have a motor vehicle crash rate that was slightly above the MassDOT District average crash rate (District 6) for an unsignalized intersection. In addition, a motor vehicle crash that resulted in a fatality was also reported at the intersection. The subject crash occurred on August 24, 2012 at 1:58 PM and involved a truck that struck a bicyclist travelling along Weston Road. After a thorough investigation by the Wellesley Police Department and the Massachusetts State Police, it was determined that probable cause existed to charge the truck driver with negligent/unsafe operation. After presentation of the case to the Norfolk County Grand Jury, the grand jury found that there was insufficient evidence to pursue charges against the truck driver.

The Weston Road/Central Street intersection was reported to have experienced a total of 29 crashes over the five-year review period, the majority of which resulted in property damage only; occurred on a weekday; under clear weather and during daylight; and were classified as rear-end type crashes. This intersection was found to have a motor vehicle crash rate that was slightly above the MassDOT District average crash rate for a signalized intersection.

The Weston Road/Howe Street intersection was reported to have experienced a total of three (3) crashes over the five-year review period, the majority of which resulted in property damage only; occurred on a weekday; under clear weather and during daylight; and were classified as rear-end type crashes. This intersection was found to have a motor vehicle crash rate below both the MassDOT statewide and District averages for an unsignalized intersection.

A review of the MassDOT statewide High Crash Location List indicated that a section of Central Street between Weston Road and a point east of Cross Street is included on MassDOT's Highway Safety Improvement Program (HSIP) listing as high crash cluster location for 2013-2015. MassDOT defines a HSIP eligible cluster as: *"...a cluster in which the total number of 'equivalent property damage only' crashes is within the top 5 percent of all clusters in that region. 'Equivalent property damage only' is a method of combining the number of crashes with the severity of crashes based on a weighted scale where a fatal crash is worth 10, an injury crash is worth 5 and a property damage only crash is worth 1."* Designation as a HSIP location allows for MassDOT to prioritize funding for safety-related improvements in a specific region of the state.

The detailed MassDOT Crash Rate Worksheets and High Crash Location mapping are provided in the Appendix.

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2025, which reflects a seven-year planning horizon consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. Independent of the Project, traffic volumes on the roadway network in the year 2025 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2025 No-Build traffic volumes reflect 2025 Build traffic volume conditions with the Project.

FUTURE TRAFFIC GROWTH

Future traffic growth is a function of the expected land development in the immediate area and the surrounding region. Several methods can be used to estimate this growth. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

An alternative procedure identifies the location and type of planned development, estimates the traffic to be generated, and assigns it to the area roadway network. This procedure produces a more realistic estimate of growth for local traffic; however, potential population growth and development external to the study area would not be accounted for in the resulting traffic projections.

To provide a conservative analysis framework, both procedures were used, the salient components of which are described below.

Specific Development by Others

The Town of Wellesley Planning Department was contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on this discussion, the following projects were identified for inclusion in this assessment:

- ***Sport Complex, 900 Worcester Road, Wellesley Massachusetts.*** This proposed project will entail the construction of a 130,000 square foot (sf) sport complex that will include two (2) regulation-sized ice rinks, a synthetic turf field and a 35,000 sf health club with an aquatics center that will feature an Olympic-size swimming pool.
- ***Wellesley Crossing, 8 Delanson Circle, Wellesley, Massachusetts.*** This proposed project consists of the construction of a 90-unit residential apartment community to be located at 8 Delanson Circle in Wellesley, Massachusetts.

Traffic volumes associated with the aforementioned specific development projects by others were obtained from their respective traffic studies or using trip-generation information available from the Institute of Transportation Engineers (ITE)⁷ for the appropriate land use, and were assigned onto the study area roadway network based on existing traffic patterns where no other information was available. No other developments were identified at this time that are expected to result in an increase in traffic within the study area beyond the general background traffic growth rate.

General Background Traffic Growth

Traffic-volume data compiled by MassDOT from Continuous Count Station No. 32 located on I-95 south of Route 20 in Weston were reviewed. Based on a review of this data, it was determined that traffic volumes within the study area have remained relatively stable (little or no growth) over the past several years. In order to provide a conservative (high) analysis scenario and a prudent planning condition for the Project, a 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

Roadway Improvement Projects

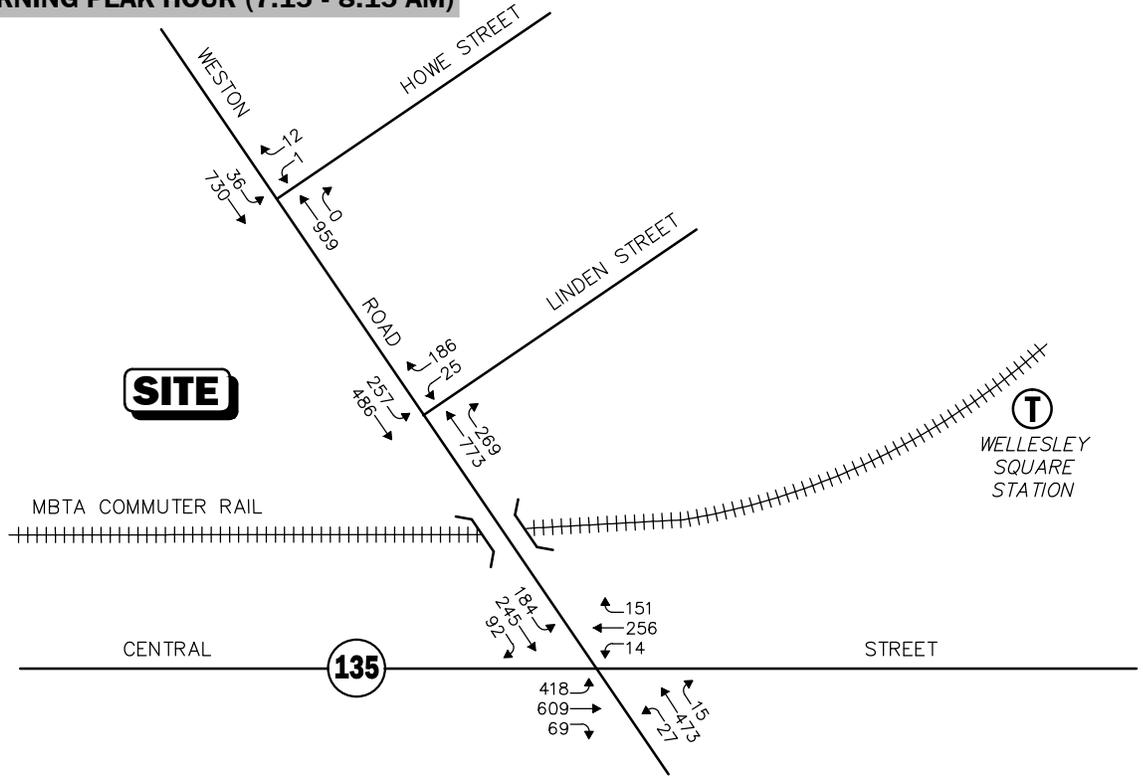
The MassDOT and the Town of Wellesley were contacted in order to determine if there were any planned future roadway improvement projects expected to be complete by 2025 within the study area. Based on these discussions, no roadway improvement projects aside from routine maintenance activities were identified to be planned within the study area at this time.

No-Build Traffic Volumes

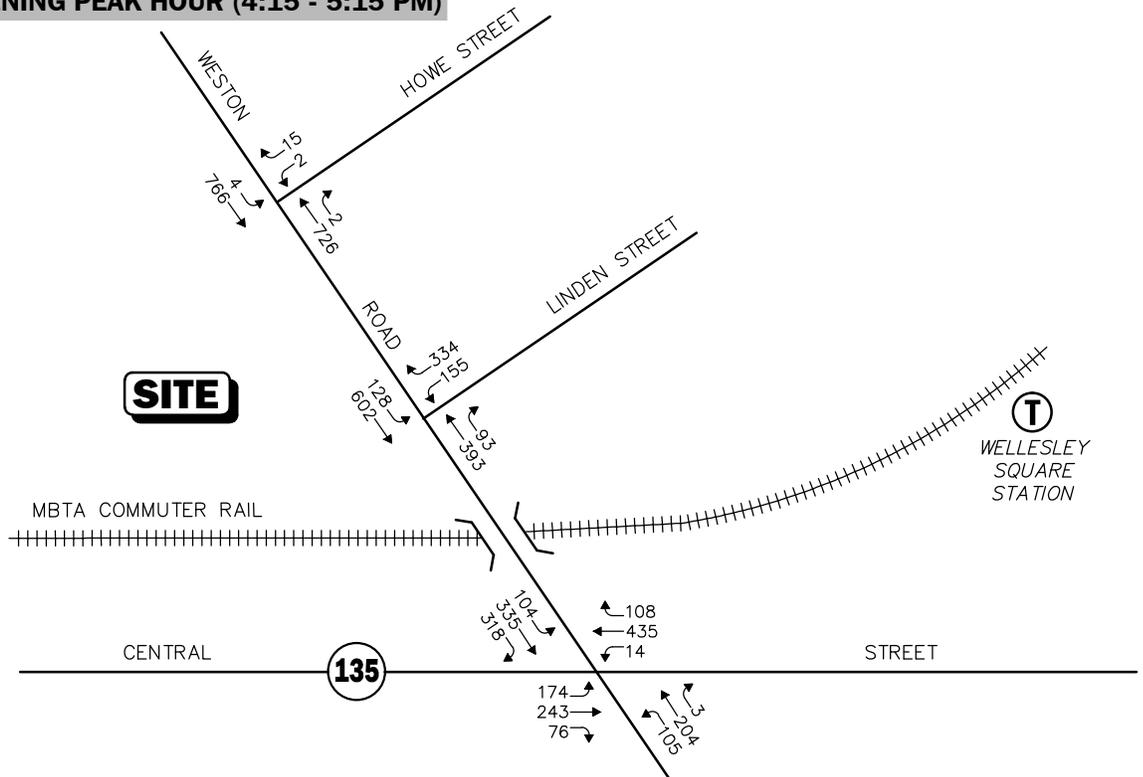
The 2025 No-Build condition peak-hour traffic-volumes were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2018 Existing peak-hour traffic volumes and then adding the peak-hour traffic volumes associated with the identified specific development projects by others. The resulting 2025 No-Build weekday morning and evening peak-hour traffic volumes are shown on Figure 6.

⁷Ibid 1

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
Not To Scale

Figure 6



2025 No-Build Peak Hour Traffic Volumes

PROJECT-GENERATED TRAFFIC

Design year (2025 Build) traffic volumes for the study area roadways were determined by estimating Project-generated traffic volumes and assigning those volumes on the study roadways. The following sections describe the methodology used to develop the anticipated traffic characteristics of the Project.

As proposed, the Project will entail the construction of a 55-unit residential apartment community. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the ITE⁸ for a similar land use as that proposed were used. ITE Land Use Code (LUC) 221, *Multifamily Housing (Mid-Rise)*, was used to develop the base traffic characteristics of the Project.

Transit Use

Given the availability of public transportation services to the Project site (MBTA commuter rail and MWRTA bus service), the interconnected network of sidewalks and on-road bicycle accommodations, it is expected that a portion of the residents of the Project will use public transportation services, walk or bicycle, thereby reducing the volume of traffic that may be associated with the Project. In order to determine the proportion of residents of the Project that may use public transportation, walk or bicycle as their primary mode of transportation, travel mode data obtained from the 2011-2015 American Community Survey (ACS) for the Town of Wellesley were reviewed. Based on a review of this data, the following commuting modes were identified for workers age 16 or older that reside within the Town:

- *Single-Occupant Vehicle: 60.7%*
- *Car/Vanpool: 4.9%*
- *Public Transportation: 10.9%*
- *Walk: 13.1%*
- *Bicycle: 0.7%*
- *Other: 0.8%*
- *Worked at Home: 8.9%*

Approximately 39 percent of workers that reside in the Town reported that they used an alternative mode of transportation to single-occupancy vehicles to travel to/from work, with approximately 5 percent participating in a car or vanpool, 11 percent using public transportation, 13 percent walking and 1 percent bicycling.

In order to account for the use of alternative modes of transportation to single-occupancy vehicles, the base ITE trip-generation calculations were first converted to person trips using a vehicle occupancy ratio of 1.13 persons per vehicle, which was obtained from the 2009 National Household Travel Survey, and were then disseminated to the modes of transportation that are accessible to the residents of the Project: public transportation (transit), pedestrian/bicycle and automobile.

In order to provide a conservative (high) analysis condition from which to assess the potential impact of the Project on the transportation infrastructure, it was assumed that 80 percent of the trips generated by the Project would consist of automobile trips, with 10 percent of trips assumed to be made using public transportation and 10 percent consisting of pedestrian/bicycle trips. Both

⁸Ibid 1.

the public transportation and pedestrian/bicycle rates are slightly lower than 11 percent and 14 percent utilization documented in the ACS, respectively.

Table 5 summarizes the traffic characteristics of the Project using the above methodology.

Table 5
TRIP-GENERATION SUMMARY

Trip Period/Direction	ITE Trips ^a	Person Trips				
		Total Person Trips ^b	Automobile Trips (80%)	Transit Trips (10%)	Pedestrian/Bicycle Trips (10%)	Automobile Trips ^c
<i>Average Weekday Daily:</i>						
Entering	150	170	136	17	17	120
<u>Exiting</u>	<u>150</u>	<u>170</u>	<u>136</u>	<u>17</u>	<u>17</u>	<u>120</u>
Total	300	340	272	34	34	240
<i>Weekday Morning Peak Hour:</i>						
Entering	5	6	5	1	0	4
<u>Exiting</u>	<u>15</u>	<u>17</u>	<u>13</u>	<u>2</u>	<u>2</u>	<u>12</u>
Total	20	23	18	3	2	16
<i>Weekday Evening Peak Hour:</i>						
Entering	15	17	13	2	2	12
<u>Exiting</u>	<u>10</u>	<u>11</u>	<u>9</u>	<u>1</u>	<u>1</u>	<u>8</u>
Total	25	28	22	3	3	20

^aBased on ITE LUC 221, *Multifamily Housing (Mid-Rise)*, and 55 dwelling units.

^bITE vehicle trips x vehicle occupancy ratio (VOR) of 1.13. VOR obtained from: *Summary of Travel Trends: 2009 National Household Travel Survey*; FHWA; Washington, D.C.; June 2011.

^cAutomobile person trips divided by 1.13.

Project-Generated Traffic Volume Summary

As can be seen in Table 5, after applying appropriate adjustments to account for the use of public transportation and pedestrian and bicycle trips, the Project is expected to generate approximately 240 automobile trips, 34 transit trips and 34 pedestrian/bicycle trips on an average weekday (two-way, 24-hour volumes), with 16 automobile trips (4 vehicles entering and 12 exiting), 3 transit trips and 2 pedestrian/bicycle trips expected during the weekday morning peak-hour, and 20 automobile trips (12 vehicles entering and 8 exiting), 3 transit trips and 3 pedestrian/bicycle trips expected during the weekday evening peak-hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of generated trips to and from the Project site was determined based on a review of Journey-to-Work data obtained from the U.S. Census for persons residing in the Town of Wellesley, and then refined based on existing traffic patterns within the study area during the commuter peak periods. This methodology is consistent with the residential nature of

the Project and commuter traffic patterns during the peak hours. The general trip distribution for the Project is graphically depicted on Figure 7. The additional traffic expected to be generated by the Project was assigned on the study area roadway network as shown on Figure 8.

FUTURE TRAFFIC VOLUMES - BUILD CONDITION

The 2025 Build condition traffic volumes were developed by adding the traffic expected to be generated by the Project to the 2025 No-Build traffic volumes. The resulting 2025 Build peak-hour traffic-volumes are graphically depicted on Figure 9.

A summary of peak-hour projected traffic-volume increases outside of the study area that is the subject of this assessment is shown in Table 6. These volumes are based on the expected increases from the Project.

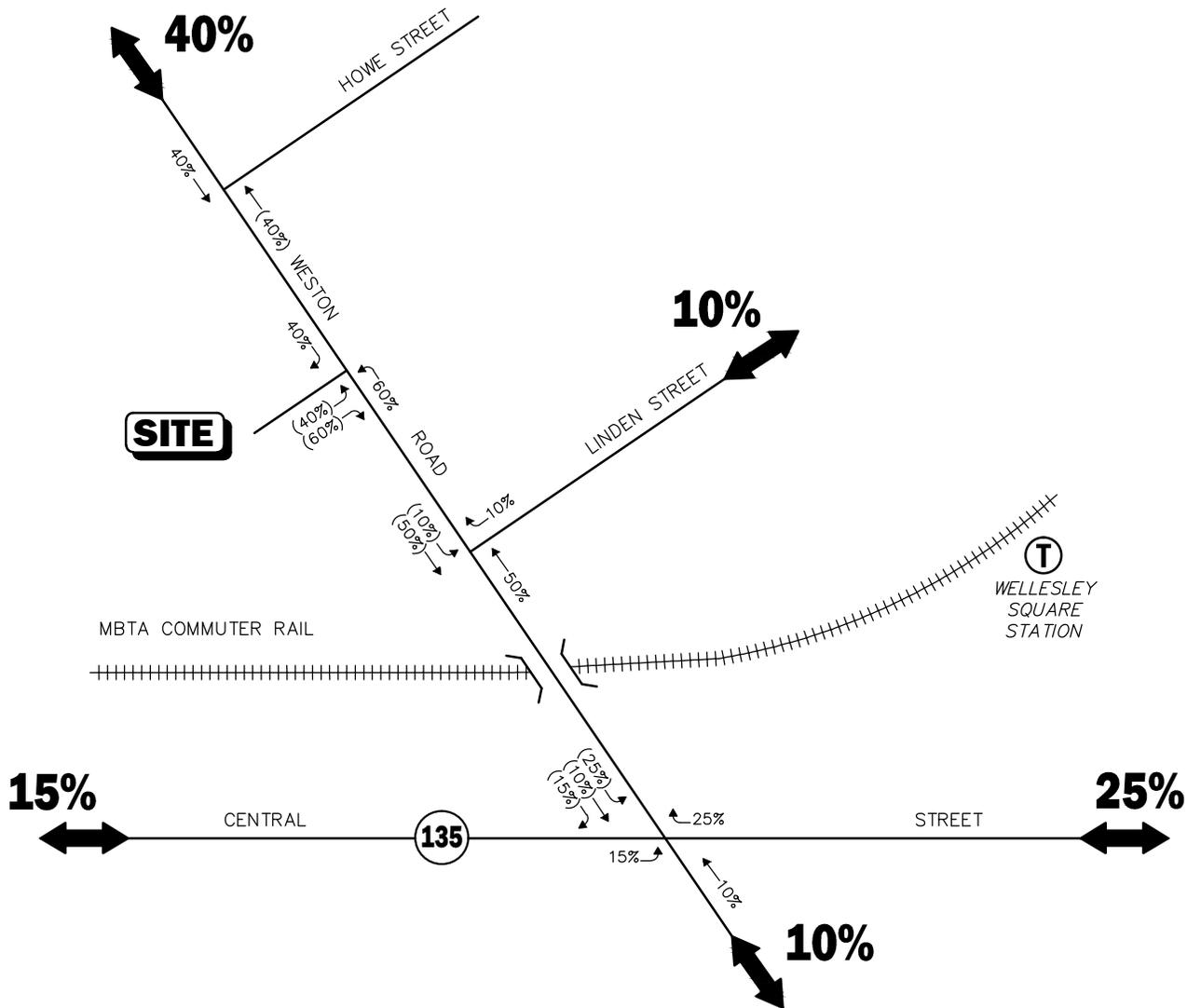
Table 6
PEAK-HOUR TRAFFIC-VOLUME INCREASES

Location/Peak Hour	2018 Existing	2025 No-Build	2025 Build	Traffic Volume Increase Over No-Build	Percent Increase Over No-Build
<i>Weston Road, north of Howe Street:</i>					
Weekday Morning	1,595	1,737	1,744	7	0.4
Weekday Evening	1,376	1,511	1,519	8	0.5
<i>Weston Road, south of Central Street:</i>					
Weekday Morning	778	843	844	1	0.1
Weekday Evening	678	737	739	2	0.3
<i>Linden Street, east of Weston Road:</i>					
Weekday Morning	681	737	738	1	0.1
Weekday Evening	655	710	712	2	0.3
<i>Central Street, east of Weston Road:</i>					
Weekday Morning	1,142	1,229	1,233	4	0.3
Weekday Evening	841	907	912	5	0.6
<i>Central Street, west of Weston Road:</i>					
Weekday Morning	1,362	1,471	1,474	3	0.2
Weekday Evening	1,249	1,351	1,354	3	0.2

As shown in Table 6, Project-related traffic-volume increases outside of the study area relative to 2025 No-Build conditions are anticipated to range from 0.1 to 0.6 percent during the peak periods, with vehicle increases shown to range from 1 to 8 vehicles. *When dispersed over the peak-hour, such increases would not result in a significant impact (increase) on motorist delays or vehicle queuing outside of the immediate study area that is the subject of this assessment.*

Legend:

- XX Entering Trips
- (XX) Exiting Trips



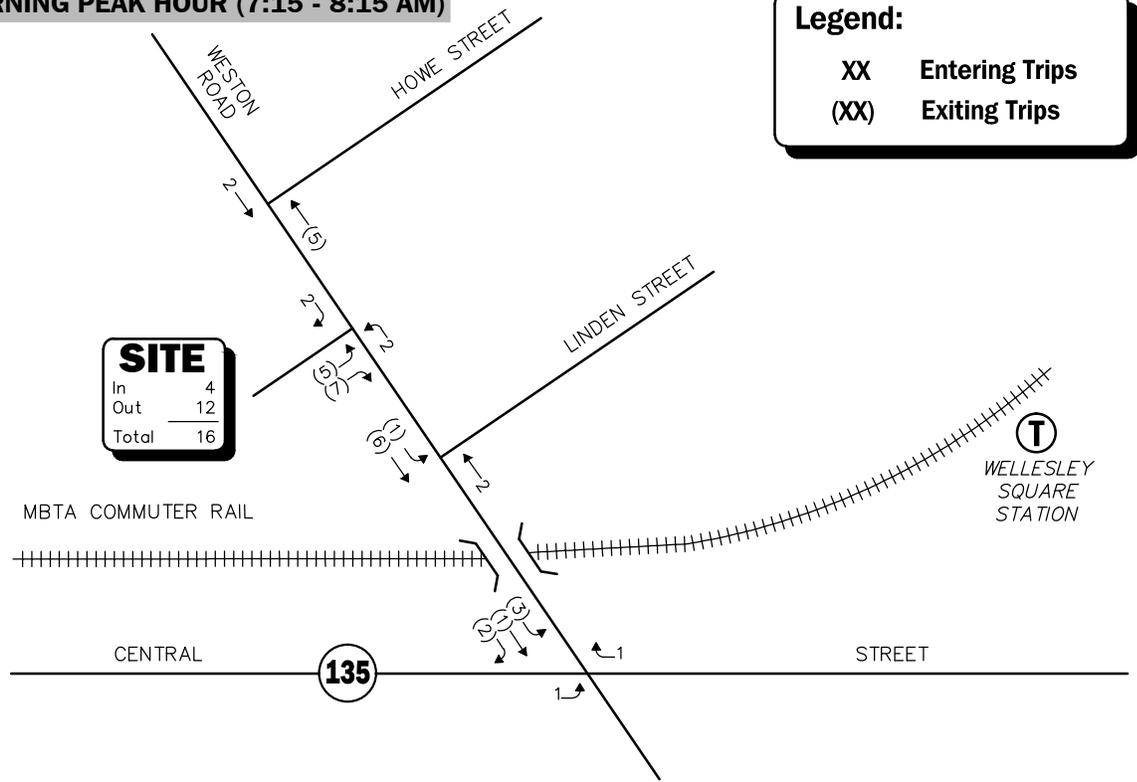
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Figure 7

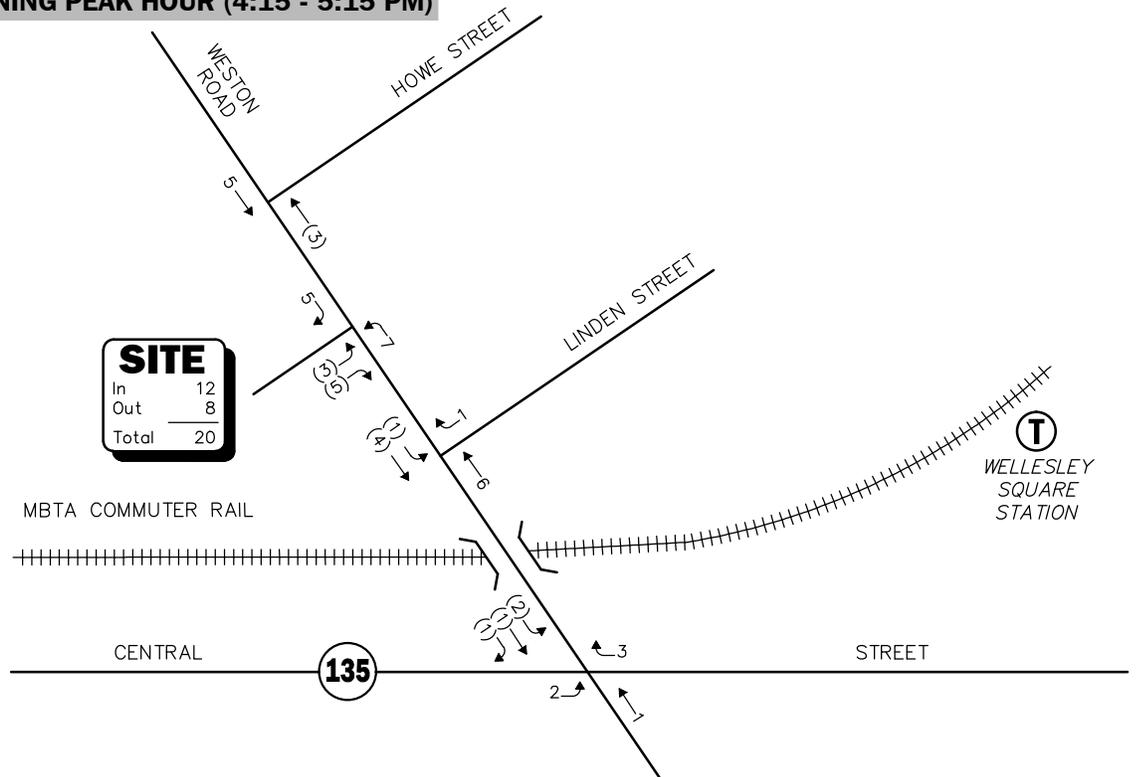


Trip Distribution Map

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



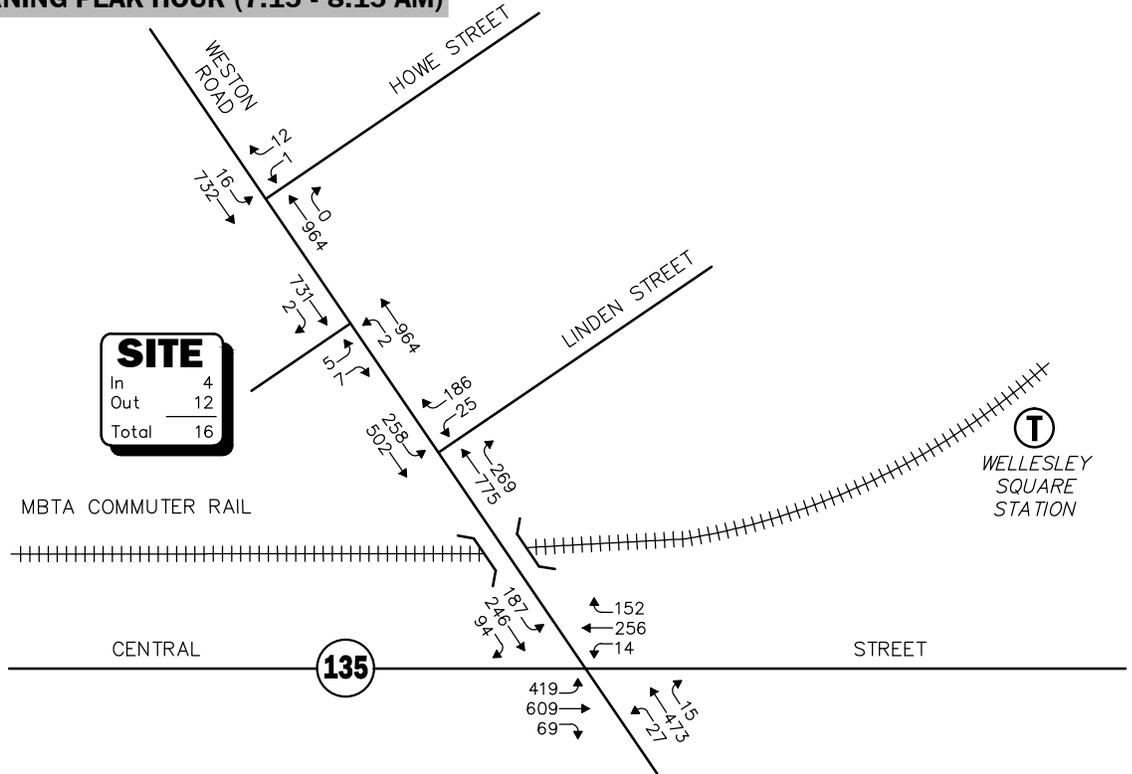
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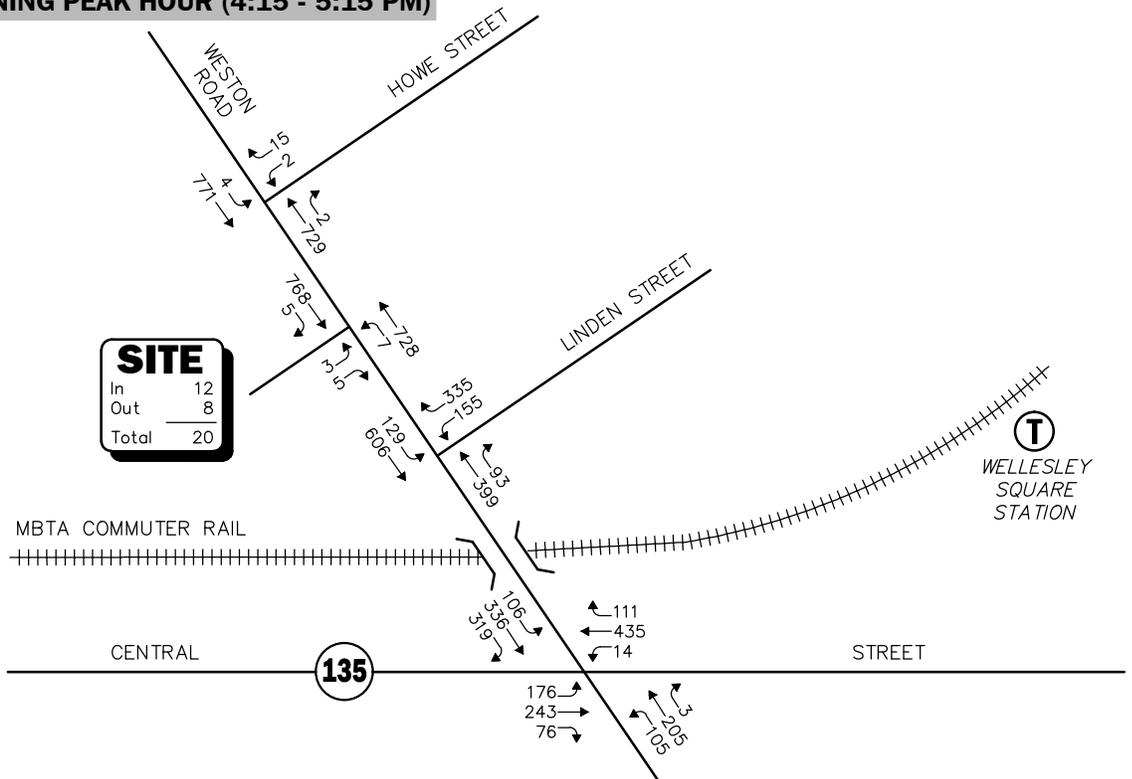
Figure 8

Project-Generated Peak Hour Traffic Volumes

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
 Not To Scale Figure 9



2025 Build
 Peak Hour Traffic Volumes

TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under Existing, No-Build and Build traffic volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.⁹ The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

⁹The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010.

Signalized Intersections

The six levels of service for signalized intersections may be described as follows:

- *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- *LOS B* describes operations with relatively low control delay. However, more vehicles stop than *LOS A*.
- *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable.
- *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.
- *LOS F* describes operations with high control delay values that often occur with over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections were calculated using the Percentile Delay Method implemented as a part of the Synchro™ 8 software as required by MassDOT. The Percentile Delay Method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on “percentile” delay. Level-of-service designations are based on the criterion of percentile delay per vehicle and is a measure of: i) driver discomfort; ii) motorist frustration; and iii) fuel consumption; and includes a uniform delay based on percentile volumes using a Poisson arrival pattern, an initial queue move-up time, and a queue interaction delay that accounts for delays resulting from queues extending from adjacent intersections. Table 7 summarizes the relationship between level-of-service and percentile delay, and uses the same numerical delay thresholds as the HCM method. The tabulated percentile delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 7
LEVEL-OF-SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS

Level of Service	Percentile Delay Per Vehicle (Seconds)
A	≤ 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	> 80.0

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the 2010 *Highway Capacity Manual*.¹⁰ Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the 2010 *Highway Capacity Manual*. Table 8 summarizes the relationship between level of service and average control delay for two-way stop controlled and all-way stop controlled intersections.

¹⁰*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010.

Table 8
LEVEL-OF-SERVICE CRITERIA FOR
UNSIGNALIZED INTERSECTIONS^a

Level-of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
v/c ≤ 1.0	v/c > 1.0	
A	F	≤10.0
B	F	10.1 to 15.0
C	F	15.1 to 25.0
D	F	25.1 to 35.0
E	F	35.1 to 50.0
F	F	>50.0

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010; page 19-2.

Vehicle Queue Analysis

Vehicle queue analyses are a direct measurement of an intersection’s ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro™ intersection capacity analysis software which is based upon the methodology and procedures presented in the 2010 *Highway Capacity Manual*. The Synchro™ vehicle queue analysis methodology is a simulation based model which reports the number of vehicles that experience a delay of six seconds or more at an intersection. For signalized intersections, Synchro™ reports both the average (50th percentile) the 95th percentile vehicle queue. For unsignalized intersections, Synchro™ reports the 95th percentile vehicle queue. Vehicle queue lengths are a function of the capacity of the movement under study and the volume of traffic being processed by the intersection during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only 5 percent of the time, or approximately three minutes out of 60 minutes during the peak one hour of the day (during the remaining 57 minutes, the vehicle queue length will be less than the 95th percentile queue length).

ANALYSIS RESULTS

Level-of-service and vehicle queue analyses were conducted for 2018 Existing, 2025 No-Build and 2025 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Tables 9 and 10. The detailed analysis results are presented in the Appendix.

The following is a summary of the level-of-service and vehicle queue analyses for the intersections within the study area. For context, a LOS of “D” or better is generally defined as “acceptable” operating conditions.

Signalized Intersection

Weston Road/Central Street – Under 2018 Existing conditions, this signalized intersection was shown to operate at an overall LOS E during the weekday morning peak-hour and at LOS D during the weekday evening peak-hour. Under 2025 No-Build and 2025 Build conditions, overall operating conditions at the intersection were shown to degrade to LOS F during the weekday morning peak-hour and to LOS E during the weekday evening peak-hour as a result of traffic increases independent of the Project. Project-related impacts at this intersection were defined as an increase in overall motorist delay of less than 3.0 seconds and in vehicle queuing of up to one (1) vehicle.

Unsignalized Intersections

Weston Road/Linden Street – Left-turn movements from Linden Street were shown to operate at LOS F under all analysis conditions, with no change in LOS for any movement predicted to occur as a result of the Project. Project-related impacts were defined as an increase in vehicle queuing of up to one (1) vehicle.

Weston Road/Howe Street – All movements at this intersection were shown to operate at LOS C or better under all analysis conditions, with no change in LOS for any movement predicted to occur as a result of the Project. Project-related impacts were defined as an increase in average motorist delay of less than 1.0 seconds with no material increase in vehicle queuing.

Weston Road/Project Site Driveway – All movements exiting the Project site driveway were shown to operate at LOS D or better during both the weekday morning and evening peak hours, with a predicted vehicle queue of up to one (1) vehicle. All movements along Weston Road approaching the Project site driveway were shown to operate at LOS A during the peak hours with negligible vehicle queuing.

Table 9
SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Signalized Intersection/Peak-hour/Movement	2018 Existing				2025 No-Build				2025 Build			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d 50 th /95 th	V/C	Delay	LOS	Queue 50 th /95 th	V/C	Delay	LOS	Queue 50 th /95 th
Weston Road at Central Street												
<i>Weekday Morning:</i>												
Central Street EB LT	1.04	>80.0	F	7/23	1.10	>80.0	F	9/26	1.10	>80.0	F	9/26
Central Street EB TH/RT	0.89	41.8	D	14/30	0.89	42.1	D	16/33	0.89	42.1	D	16/33
Central Street WB LT/TH/RT	0.58	35.8	D	5/8	0.58	35.9	D	5/9	0.58	35.9	D	5/9
Weston Road NB LT/TH	0.56	24.8	C	9/18	0.63	28.0	C	10/20	0.63	28.0	C	10/20
Weston Road NB RT	0.02	0.1	A	0/0	0.02	0.1	A	0/0	0.02	0.1	A	0/0
Weston Road SB LT/TH/RT	1.30	>80.0	F	17/31	1.84	>80.0	F	22/31	1.86	>80.0	F	22/31
Overall	--	71.0	E	--	--	>80.0	F	--	--	>80.0	F	--
<i>Weekday Evening:</i>												
Central Street EB LT	0.53	25.4	C	2/5	0.60	27.7	C	3/6	0.60	27.9	C	3/6
Central Street EB TH/RT	0.45	23.0	C	4/10	0.47	23.3	C	5/10	0.47	23.3	C	5/10
Central Street WB LT	0.77	41.1	D	6/10	0.81	43.0	D	6/11	0.81	43.2	D	6/12
Weston Road NB LT/TH	0.62	30.3	C	5/13	0.74	37.5	D	6/15	0.74	37.8	D	6/15
Weston Road NB RT	0.00	0.0	A	0/0	0.00	0.0	A	0/0	0.00	0.0	A	0/0
Weston Road SB LT/TH/RT	1.01	62.1	E	13/33	1.21	>80.0	F	20/38	1.22	>80.0	F	20/39
Overall	--	42.9	D	--	--	69.6	E	--	--	72.4	E	--

^aVolume-to-capacity ratio.

^bPercentile delay per vehicle in seconds.

^cLevel-of-Service.

^dQueue length in vehicles.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Table 10
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/ Peak Hour/Movement	2018 Existing				2025No-Build				2025 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Weston Road at Linden Street												
<i>Weekday Morning:</i>												
Linden Street WB LT	22	>50.0	F	2	25	>50.0	F	3	25	>50.0	F	3
Linden Street WB RT	170	25.6	C	3	186	32.5	D	4	186	32.7	D	4
Weston Road NB TH/RT	966	0.0	A	0	1,042	0.0	A	0	1,044	0.0	A	0
Weston Road SB LT/TH	687	4.6	A	2	753	5.0	A	2	760	5.0	A	2
<i>Weekday Evening:</i>												
Linden Street WB LT	144	>50.0	F	7	155	>50.0	F	10	155	>50.0	F	11
Linden Street WB RT	309	16.3	C	3	334	19.0	C	4	335	19.3	C	4
Weston Road NB TH/RT	439	0.0	A	0	486	0.0	A	0	492	0.0	A	0
Weston Road SB LT/TH	665	1.5	A	1	730	1.6	A	1	735	1.6	A	1
Weston Road at Howe Street												
<i>Weekday Morning:</i>												
Howe Street WB LT/RT	11	20.0	C	1	13	21.9	C	1	13	22.0	C	1
Weston Road NB TH/RT	886	0.0	A	0	959	0.0	A	0	964	0.0	A	0
Weston Road SB LT/TH	699	0.5	A	1	766	0.5	A	1	368	0.5	A	1
<i>Weekday Evening:</i>												
Howe Street WB LT/RT	16	16.5	C	1	17	18.2	C	1	17	18.2	C	1
Weston Road NB TH/RT	662	0.0	A	0	728	0.0	A	0	731	0.0	A	0
Weston Road SB LT/TH	702	0.0	A	0	766	0.0	A	0	775	0.0	A	0
Weston Road at the Project Site Driveway												
<i>Weekday Morning:</i>												
Project Site Driveway EB LT/RT	--	--	--	--	--	--	--	--	12	30.9	D	1
Weston Road NB LT/TH	--	--	--	--	--	--	--	--	966	0.0	A	0
Weston Road SB TH/RT	--	--	--	--	--	--	--	--	733	0.0	A	0
<i>Weekday Evening:</i>												
Project Site Driveway EB LT/RT	--	--	--	--	--	--	--	--	8	24.6	C	0
Weston Road NB LT/TH	--	--	--	--	--	--	--	--	735	0.1	A	0
Weston Road SB TH/RT	--	--	--	--	--	--	--	--	773	0.0	A	0

^aDemand in vehicles per hour.

^bAverage control delay per vehicle (in seconds).

^cLevel-of-Service.

^dQueue length in vehicles.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersection with Weston Road in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)¹¹ requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. In accordance with AASHTO standards, if the measured ISD is at least equal to the required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 11 presents the measured SSD and ISD at the subject intersection.

Table 11
SIGHT DISTANCE MEASUREMENTS^a

Intersection/Sight Distance Measurement	Feet		
	Recommended Minimum (SSD)	Desirable (ISD) ^b	Measured
<i>Weston Road at the Project Site Driveway</i>			
<i>Stopping Sight Distance:</i>			
Weston Road approaching from the north	250	--	600+
Weston Road approaching from the south	250	--	600+
<i>Intersection Sight Distance:</i>			
Looking to the north from the Project Site Driveway	250	335/390	251+
Looking to the south from the Project Site Driveway	250	335/390	201/322 ^c

^aRecommended minimum values obtained from: *A Policy on Geometric Design of Highways and Streets*, 6th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2011; and based on an approach speed of 35 mph along Weston Road.

^bValue shown is the intersection sight distance for a vehicle turning right/left exiting a roadway or driveway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed.

^cSight distance that can be achieved with the trimming of vegetation located along the west side of Weston Road within the public right-of-way.

¹¹*A Policy on Geometric Design of Highway and Streets*, 6th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2011.

As can be seen in Table 11, the available lines of sight at the Project site driveway intersection with Weston Road were found to meet, exceed or could be made to meet or exceed the recommended minimum sight distance (SSD) to function in a safe manner based on a 35 mph approach speed along Weston Road, which is slightly above the 85th percentile vehicle travel speed that was measured along Weston Road (32 to 34 mph) and 5 mph above the posted speed limit (30 mph).

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

VAI has completed a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed construction of a 55-unit residential apartment community to be known as Wellesley Park and located at 148 Weston Road in Wellesley, Massachusetts. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE¹² and with adjustment to account for the use of public transportation and pedestrian and bicycle trips, the Project is expected to generate approximately 240 automobile trips, 34 transit trips and 34 pedestrian/bicycle trips on an average weekday (two-way, 24-hour volumes), with 16 automobile trips, 3 transit trips and 2 pedestrian/bicycle trips expected during the weekday morning peak-hour, and 20 automobile trips, 3 transit trips and 3 pedestrian/bicycle trips expected during the weekday evening peak-hour;
2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with no predicted changes in LOS and the majority of the movements at the study intersections shown to operate at LOS D or better under all analysis conditions where an LOS of “D” or better is defined as “acceptable” operating conditions;
3. Independent of the Project, left-turn movements from Linden Street at Weston Road were identified as operating over capacity (defined as LOS “F”) during both the weekday morning and evening peak hours, with Project-related impacts at the intersection defined as an increase in vehicle queuing of up to one (1) vehicle;
4. Similarly, the Weston Road/Central Street intersection was shown to operate at or over capacity (LOS “E” or “F”, respectively) during both the weekday morning and evening peak hours under 2025 traffic volume conditions independent of the Project, with Project-

¹²Ibid 1.

- related impacts at the intersection defined as an increase in overall motorist delay of less than 3.0 seconds and in vehicle queuing of up to one (1) vehicle;
5. All movements exiting the Project site driveway intersection with Weston Road are expected to operate at LOS D or better during the peak hours with vehicle queuing of approximately one (1) vehicle;
 6. Both the Weston Road/Linden Street and Weston Road/Central Street intersections were found to have motor vehicle crash rates that were above the MassDOT average crash rates for a signalized or unsignalized intersection, as appropriate. Recommendations have been provided as a part of this assessment to advance safety-related improvements at both intersections (discussion follows); and
 7. Lines of sight to and from the Project site driveway at its intersection with Weston Road were found to meet, exceed or could be made to meet or exceed the recommended minimum sight distance to function in a safe manner for the appropriate approach speed along Weston Road.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project will be provided by way of a new driveway that will intersect the west side of Weston Road approximately 420 feet north of Linden Street. The following recommendations are offered with respect to Project access and internal circulation:

- The Project site driveway should be a minimum of 18-feet wide and a maximum of 24-feet wide, or as required to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle as defined by the Town of Wellesley Fire Department pursuant to the requirements of NFPA® 1.¹³
- Where perpendicular parking is provided, the drive aisle behind the parking should be a minimum of 23-feet in order to allow for vehicle maneuvering.
- A STOP-sign and marked STOP-line should be provided for vehicles exiting the Project site to Weston Road.

¹³Ibid 2.

- All signs and pavement markings to be installed within the Project site shall conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).¹⁴
- Consideration should be given to installing a sidewalk along the Project site frontage on Weston Road and extending to the crosswalk at Linden Street.
- Marked crosswalks with Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at all proposed pedestrian crossings.
- A school bus waiting area should be provided at an appropriate location on Weston Road defined in consultation with the Town.
- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.
- Existing vegetation located along the west side of Weston Road, south of the Project site driveway and within the public right-of-way, should be selectively trimmed in order to provide the required line of sight to/from the south from the driveway.
- Snow windrows within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.
- Consideration should be given to installing electric vehicle charging stations within the Project site and to accommodating the staging of car-sharing vehicles (ZipCar or similar).

Off-Site

Weston Road at Linden Street

The addition of Project-related traffic to the intersection of Weston Road at Linden Street was not shown to result in a change in LOS, with Project-related impacts at the intersection defined as an increase in vehicle queuing of up to one (1) vehicle. Independent of and unrelated to the Project, the intersection was found to have a motor vehicle crash rate that was slightly above the MassDOT District 6 average for an unsignalized intersection. In an effort to advance safety improvements at this location that are warranted as a result of existing conditions unrelated to the Project, the Project proponent will facilitate the completion of a Road Safety Audit (RSA) in order to identify improvements strategies for this intersection.

Weston Road at Central Street

The addition of Project-related traffic to the intersection of Weston Road at Central Street was not shown to result in a change in LOS with the Project-related impacts at the intersection defined as an increase in overall motorist delay of less than 3.0 seconds and in vehicle queuing of up to one (1) vehicle. Independent of and unrelated to the Project, the intersection was found to have a motor vehicle crash rate that was slightly above the MassDOT District 6 average for a signalized intersection. In an effort to advance safety improvements at this location that are warranted as a result of existing conditions unrelated to the Project, the Project proponent will facilitate the completion of an RSA in order to identify improvements strategies for this intersection. In addition, Project proponent will design and implement an optimal traffic signal timing plan to improve overall traffic operations. With implementation of an optimal traffic signal timing plan,

¹⁴Ibid 3.

overall intersection operations are predicted to remain at LOS F during the weekday morning peak-hour with reduced motorist delay, and to improve to LOS D (from LOS E) during the weekday evening peak-hour (an improvement over No-Build conditions).

Transportation Demand Management

Public transportation services are provided within the study area by the MBTA (Commuter Rail) and the MWRTA (fixed-route bus service), and are accessible to residents of the Project. Wellesley Square Station on the Framingham/Worcester Line of the MBTA commuter rail system is located at 1 Grove Street which is within a 10-minute walking distance of the Project site. MWRTA bus Route 8 provides service along Linden Street and Central Street with a stop at Cross Street which is within a 5-minute walking distance of the Project site. In addition to scheduled stops, MWRTA buses also operate in a passenger demand service mode and will stop anywhere along the service route where it is safe to pick-up or discharge a passenger. The MWRTA also operates Paratransit Services for passengers who meet ADA requirements and provides transportation services for seniors and the disabled through the Wellesley Council on Aging.

In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles, the following Transportation Demand Management (TDM) measures should be implemented as a part of the Project:

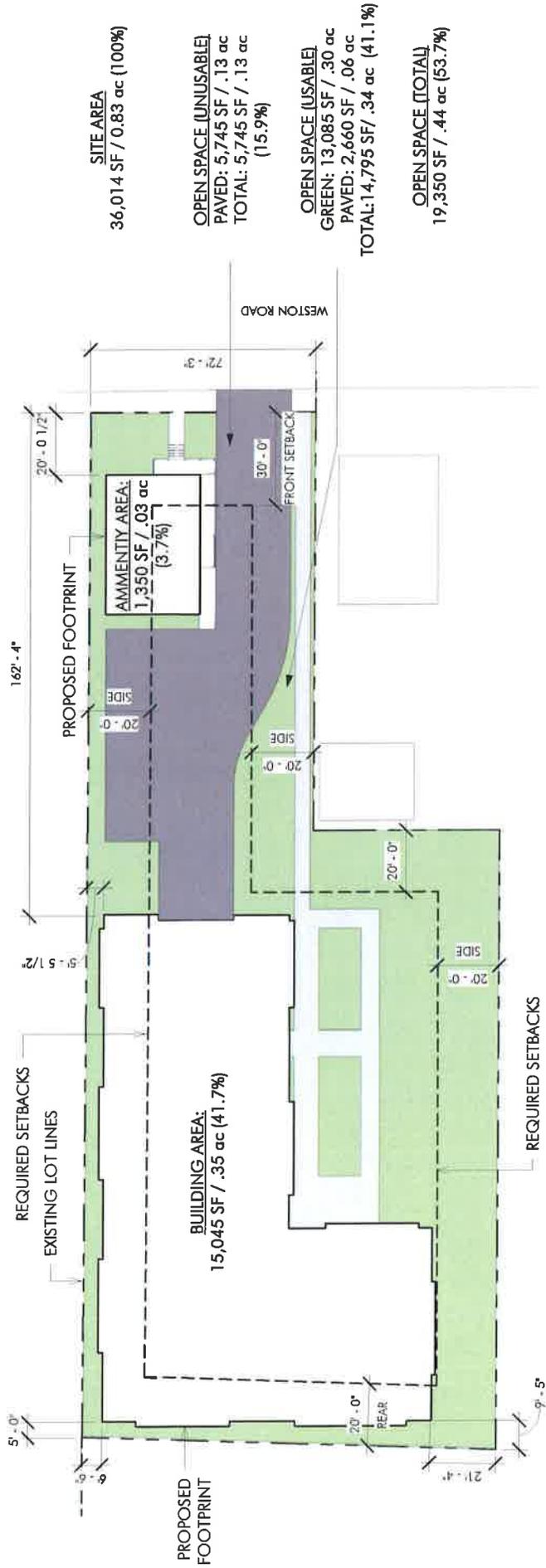
- The owner or property manager should contact MassRIDES to obtain information on facilitating and encouraging healthy transportation options for residents of the Project;
- Information regarding public transportation services, maps, schedules and fare information should be posted in a central location and/or otherwise made available to residents;
- A “welcome packet” should be provided to residents detailing available public transportation services, bicycle and walking alternatives, and commuter options available through MassRIDES’ and their NuRide program which rewards individuals that choose to walk, bicycle, carpool, vanpool or that use public transportation to travel to and from work;
- Residents should be made aware of the Emergency Ride Home (ERH) program available through MassRIDES, which reimburses employees of a participating MassRIDES employer partner worksite that is registered for ERH and that carpool, take transit, bicycle, walk or vanpool to work;
- Pedestrian accommodations should consist of installing a sidewalk along the Project site frontage on Weston Road and extending to the crosswalk at Linden Street;
- A mail drop should be provided in a central location; and
- Secure bicycle parking should be provided consisting of: i) exterior bicycle parking conveniently located proximate to the building entrance; and ii) weather protected bicycle parking located in a secure area within the building.

With implementation of the above recommendations, safe and efficient vehicular, pedestrian and bicycle access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.

APPENDIX

PROJECT SITE PLAN
AUTOMATIC TRAFFIC RECORDER COUNT DATA
MANUAL TURNING MOVEMENT COUNT DATA
SEASONAL ADJUSTMENT DATA
CROSSTOWN TRAIL MAP
PUBLIC TRANSPORTATION SCHEDULES
VEHICLE TRAVEL SPEED DATA
MASSDOT CRASH RATE WORKSHEETS
GENERAL BACKGROUND TRAFFIC GROWTH
BACKGROUND DEVELOPMENT TRAFFIC-VOLUME NETWORKS
TRIP-GENERATION CALCULATIONS
MODE OF TRANSPORTATION FOR THE TOWN OF WELLESLEY
JOURNEY TO WORK TRIP DISTRIBUTION
CAPACITY ANALYSIS WORKSHEETS

PROJECT SITE PLAN



SITE AREA
36,014 SF / 0.83 ac (100%)

OPEN SPACE (UNUSABLE)
PAVED: 5,745 SF / .13 ac
TOTAL: 5,745 SF / .13 ac (15.9%)

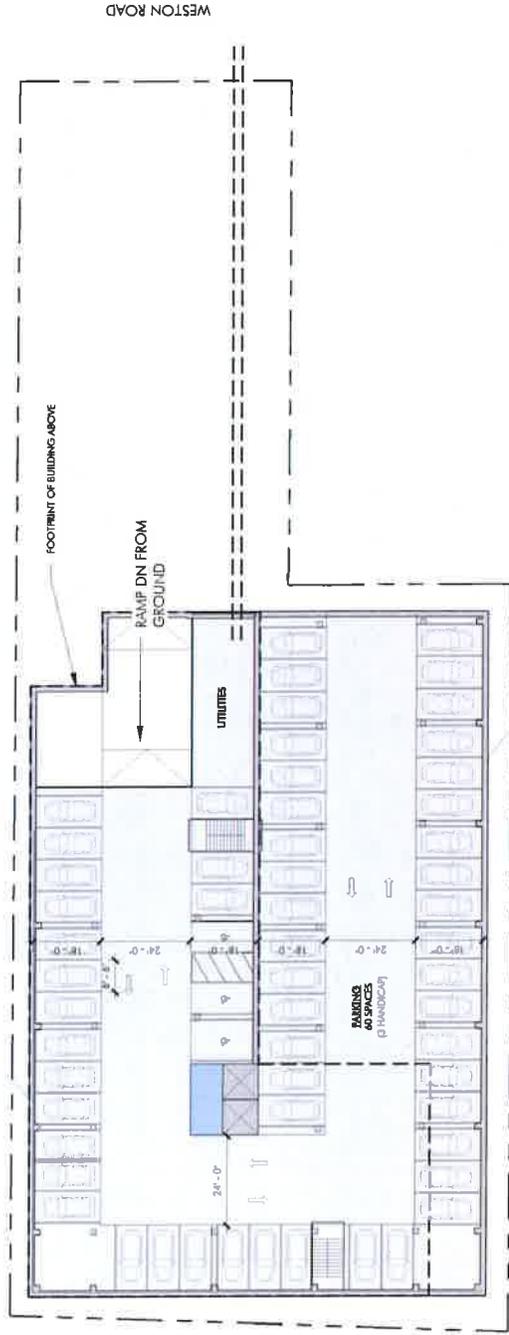
OPEN SPACE (USABLE)
GREEN: 13,085 SF / .30 ac
PAVED: 2,660 SF / .06 ac
TOTAL: 14,795 SF / .34 ac (41.1%)

OPEN SPACE (TOTAL)
19,350 SF / .44 ac (53.7%)

ZONING OVERVIEW

SINGLE RESIDENCE 15	ALLOWABLE/REQ'D	PROPOSED	COMPLIANCE
MAXIMUM BUILDING HEIGHT	45'-0"	58'-7"	NO
MINIMUM LOT SIZE	15,000 SF	36,014 SF	YES
MINIMUM OPEN SPACE	20%	53%	YES
MINIMUM LOT FRONTAGE	60'-0"	72'-3"	YES
MINIMUM FRONT YARD WIDTH	60'-0"	72'-3"	YES
MINIMUM FRONT YARD DEPTH	30'-0"	20'-0"	NO
MINIMUM SIDE YARD	20'-0"	5'-0"	NO
MINIMUM REAR YARD	20'-0"	5'-0"	NO





WESTON ROAD



1/32" = 1'-0"

01

EMBARC

PARKING PLAN BELOW GRADE
 148 WESTON ROAD
 148 WESTON ROAD WELLESLEY, MA 02482
 OCTOBER 17, 2017

EMBARC STUDIO
 ARCHITECTURE DESIGN

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AUTOMATIC TRAFFIC RECORDER COUNT DATA

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774VOL1

Start Time	1/23/2018 Tue	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	110			3	109				
12:15		2	116			5	113				
12:30		2	112			4	96				
12:45		0	108	6	446	1	98	13	416	19	862
01:00		0	118			2	107				
01:15		1	110			1	100				
01:30		1	102			0	90				
01:45		0	110	2	440	1	99	4	396	6	836
02:00		0	102			1	91				
02:15		0	106			2	106				
02:30		0	141			1	99				
02:45		1	130	1	479	0	105	4	401	5	880
03:00		1	104			1	155				
03:15		0	138			0	164				
03:30		1	163			0	145				
03:45		3	128	5	533	1	138	2	602	7	1135
04:00		2	132			3	139				
04:15		4	136			4	145				
04:30		2	170			3	134				
04:45		7	128	15	566	8	116	18	534	33	1100
05:00		2	147			11	146				
05:15		13	131			13	143				
05:30		17	144			8	113				
05:45		16	136	48	558	23	143	55	545	103	1103
06:00		37	129			32	123				
06:15		54	113			23	148				
06:30		83	108			52	112				
06:45		127	89	301	439	93	139	200	522	501	961
07:00		145	93			98	85				
07:15		178	102			156	82				
07:30		210	77			135	55				
07:45		170	56	703	328	163	50	552	272	1255	600
08:00		160	73			176	48				
08:15		164	62			152	40				
08:30		156	78			160	42				
08:45		143	57	623	270	149	41	637	171	1260	441
09:00		133	50			127	25				
09:15		124	50			96	25				
09:30		121	27			87	24				
09:45		118	24	496	151	117	15	427	89	923	240
10:00		113	19			101	18				
10:15		90	18			96	6				
10:30		101	15			87	14				
10:45		94	13	398	65	93	4	377	42	775	107
11:00		105	9			114	9				
11:15		103	6			108	7				
11:30		113	5			98	3				
11:45		113	1	434	21	116	2	436	21	870	42
Total		3032	4296			2725	4011			5757	8307
Percent		41.4%	58.6%			40.5%	59.5%			40.9%	59.1%

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774VOL1

Start Time	1/24/2018 Wed	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	133			6	117				
12:15		1	116			0	121				
12:30		5	118			4	103				
12:45		4	102	14	469	1	125	11	466	25	935
01:00		1	110			1	127				
01:15		0	125			0	112				
01:30		2	121			0	119				
01:45		0	137	3	493	1	134	2	492	5	985
02:00		0	131			0	158				
02:15		0	109			1	161				
02:30		1	160			0	173				
02:45		1	151	2	551	1	174	2	666	4	1217
03:00		1	147			0	157				
03:15		0	146			1	176				
03:30		3	146			0	172				
03:45		1	155	5	594	4	161	5	666	10	1260
04:00		0	126			3	152				
04:15		3	140			3	158				
04:30		0	163			1	164				
04:45		3	140	6	569	9	173	16	647	22	1216
05:00		9	151			9	136				
05:15		13	144			13	127				
05:30		15	121			18	164				
05:45		22	131	59	547	24	150	64	577	123	1124
06:00		25	113			27	118				
06:15		50	95			19	155				
06:30		66	103			62	150				
06:45		122	107	263	418	92	133	200	556	463	974
07:00		148	84			122	118				
07:15		179	103			177	73				
07:30		239	98			129	75				
07:45		190	67	756	352	175	65	603	331	1359	683
08:00		165	89			149	51				
08:15		172	62			158	50				
08:30		175	49			169	32				
08:45		124	51	636	251	168	29	644	162	1280	413
09:00		158	47			141	33				
09:15		136	52			128	33				
09:30		125	40			132	19				
09:45		98	45	517	184	117	14	518	99	1035	283
10:00		116	29			108	19				
10:15		119	22			98	28				
10:30		125	16			102	8				
10:45		124	9	484	76	121	13	429	68	913	144
11:00		124	18			113	8				
11:15		130	4			124	3				
11:30		148	3			135	4				
11:45		132	3	534	28	144	3	516	18	1050	46
Total		3279	4532			3010	4748			6289	9280
Percent		42.0%	58.0%			38.8%	61.2%			40.4%	59.6%
Grand Total		6311	8828			5735	8759			12046	17587
Percent		41.7%	58.3%			39.6%	60.4%			40.7%	59.3%

ADT ADT 14,816 AADT 14,816

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774VOL1

Start Time	1/22/2018		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	13	11	14	11	*	*	*	*	*	*	*	*	10	12
01:00	*	*	4	2	3	2	*	*	*	*	*	*	*	*	2	3
02:00	*	*	1	2	2	2	*	*	*	*	*	*	*	*	2	3
03:00	*	*	5	5	5	5	*	*	*	*	*	*	*	*	5	4
04:00	*	*	15	16	6	16	*	*	*	*	*	*	*	*	10	17
05:00	*	*	48	55	59	64	*	*	*	*	*	*	*	*	54	60
06:00	*	*	301	200	263	200	*	*	*	*	*	*	*	*	282	200
07:00	*	*	703	552	756	603	*	*	*	*	*	*	*	*	730	578
08:00	*	*	623	637	636	644	*	*	*	*	*	*	*	*	630	640
09:00	*	*	496	427	517	518	*	*	*	*	*	*	*	*	506	472
10:00	*	*	398	377	484	429	*	*	*	*	*	*	*	*	441	403
11:00	*	*	434	436	534	516	*	*	*	*	*	*	*	*	484	476
12:00 PM	*	*	446	416	469	466	*	*	*	*	*	*	*	*	458	441
01:00	*	*	440	396	493	492	*	*	*	*	*	*	*	*	466	444
02:00	*	*	479	401	551	492	*	*	*	*	*	*	*	*	515	534
03:00	*	*	533	602	594	666	*	*	*	*	*	*	*	*	564	634
04:00	*	*	566	534	569	647	*	*	*	*	*	*	*	*	568	590
05:00	*	*	558	545	547	577	*	*	*	*	*	*	*	*	552	561
06:00	*	*	439	522	418	556	*	*	*	*	*	*	*	*	428	539
07:00	*	*	328	272	352	331	*	*	*	*	*	*	*	*	340	302
08:00	*	*	270	171	251	162	*	*	*	*	*	*	*	*	260	166
09:00	*	*	151	89	184	99	*	*	*	*	*	*	*	*	168	94
10:00	*	*	65	42	76	68	*	*	*	*	*	*	*	*	70	55
11:00	*	*	21	21	28	18	*	*	*	*	*	*	*	*	24	20
Lane	0	0	7328	6736	7811	7758	0	0	0	0	0	0	0	0	7569	7248
Day	0	0	14064	14064	15569	15569	0	0	0	0	0	0	0	0	14817	14817
AM Peak	-	-	07:00	08:00	07:00	08:00	-	-	-	-	-	-	-	-	07:00	08:00
Vol.	-	-	703	637	756	644	-	-	-	-	-	-	-	-	730	640
PM Peak	-	-	16:00	15:00	15:00	14:00	-	-	-	-	-	-	-	-	16:00	15:00
Vol.	-	-	566	602	594	666	-	-	-	-	-	-	-	-	568	634

Comb. Total 0 14064 15569 0 0 0 14817

ADT ADT 14,816 AADT 14,816

MANUAL TURNING MOVEMENT COUNT DATA

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Weston Rd From North		Howe St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	2	119	0	0	145	1	267
07:15 AM	6	169	1	0	196	0	372
07:30 AM	5	134	0	3	241	0	383
07:45 AM	14	159	0	1	211	1	386
Total	27	581	1	4	793	2	1408
08:00 AM	6	144	0	5	160	1	316
08:15 AM	6	149	0	1	180	0	336
08:30 AM	2	157	0	1	159	1	320
08:45 AM	2	163	1	0	147	1	314
Total	16	613	1	7	646	3	1286
Grand Total	43	1194	2	11	1439	5	2694
Apprch %	3.5	96.5	15.4	84.6	99.7	0.3	
Total %	1.6	44.3	0.1	0.4	53.4	0.2	
Cars	43	1184	2	9	1424	5	2667
% Cars	100	99.2	100	81.8	99	100	99
Trucks	0	10	0	2	15	0	27
% Trucks	0	0.8	0	18.2	1	0	1

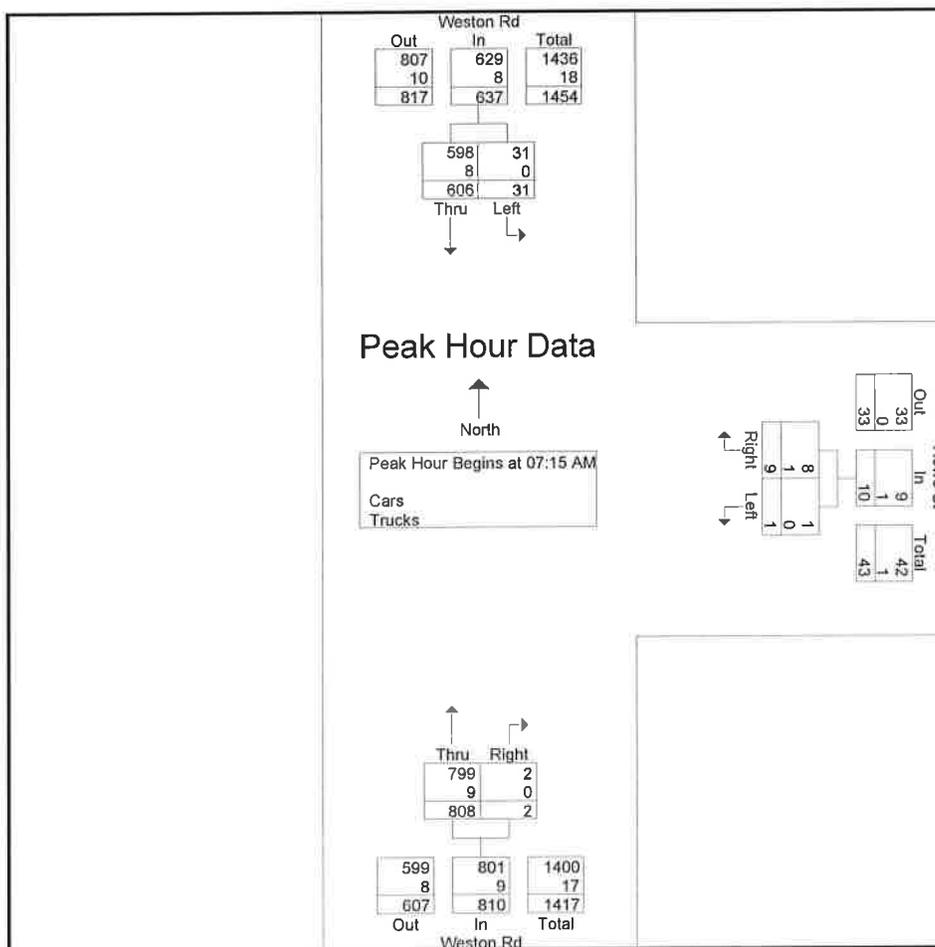
Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Howe Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740001
 Site Code : 77740001
 Start Date : 1/24/2018
 Page No : 2

Start Time	Weston Rd From North			Howe St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	6	169	175	1	0	1	196	0	196	372
07:30 AM	5	134	139	0	3	3	241	0	241	383
07:45 AM	14	159	173	0	1	1	211	1	212	386
08:00 AM	6	144	150	0	5	5	160	1	161	316
Total Volume	31	606	637	1	9	10	808	2	810	1457
% App. Total	4.9	95.1		10	90		99.8	0.2		
PHF	.554	.896	.910	.250	.450	.500	.838	.500	.840	.944
Cars	31	598	629	1	8	9	799	2	801	1439
% Cars	100	98.7	98.7	100	88.9	90.0	98.9	100	98.9	98.8
Trucks	0	8	8	0	1	1	9	0	9	18
% Trucks	0	1.3	1.3	0	11.1	10.0	1.1	0	1.1	1.2



Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 4

Groups Printed- Cars

Start Time	Weston Rd From North		Howe St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	2	118	0	0	143	1	264
07:15 AM	6	166	1	0	195	0	368
07:30 AM	5	132	0	3	239	0	379
07:45 AM	14	156	0	0	208	1	379
Total	27	572	1	3	785	2	1390
08:00 AM	6	144	0	5	157	1	313
08:15 AM	6	148	0	1	180	0	335
08:30 AM	2	157	0	0	157	1	317
08:45 AM	2	163	1	0	145	1	312
Total	16	612	1	6	639	3	1277
Grand Total	43	1184	2	9	1424	5	2667
Apprch %	3.5	96.5	18.2	81.8	99.7	0.3	
Total %	1.6	44.4	0.1	0.3	53.4	0.2	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 7

Groups Printed- Trucks

Start Time	Weston Rd From North		Howe St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	0	1	0	0	2	0	3
07:15 AM	0	3	0	0	1	0	4
07:30 AM	0	2	0	0	2	0	4
07:45 AM	0	3	0	1	3	0	7
Total	0	9	0	1	8	0	18
08:00 AM	0	0	0	0	3	0	3
08:15 AM	0	1	0	0	0	0	1
08:30 AM	0	0	0	1	2	0	3
08:45 AM	0	0	0	0	2	0	2
Total	0	1	0	1	7	0	9
Grand Total	0	10	0	2	15	0	27
Apprch %	0	100	0	100	100	0	
Total %	0	37	0	7.4	55.6	0	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 10

Groups Printed- Bikes Peds

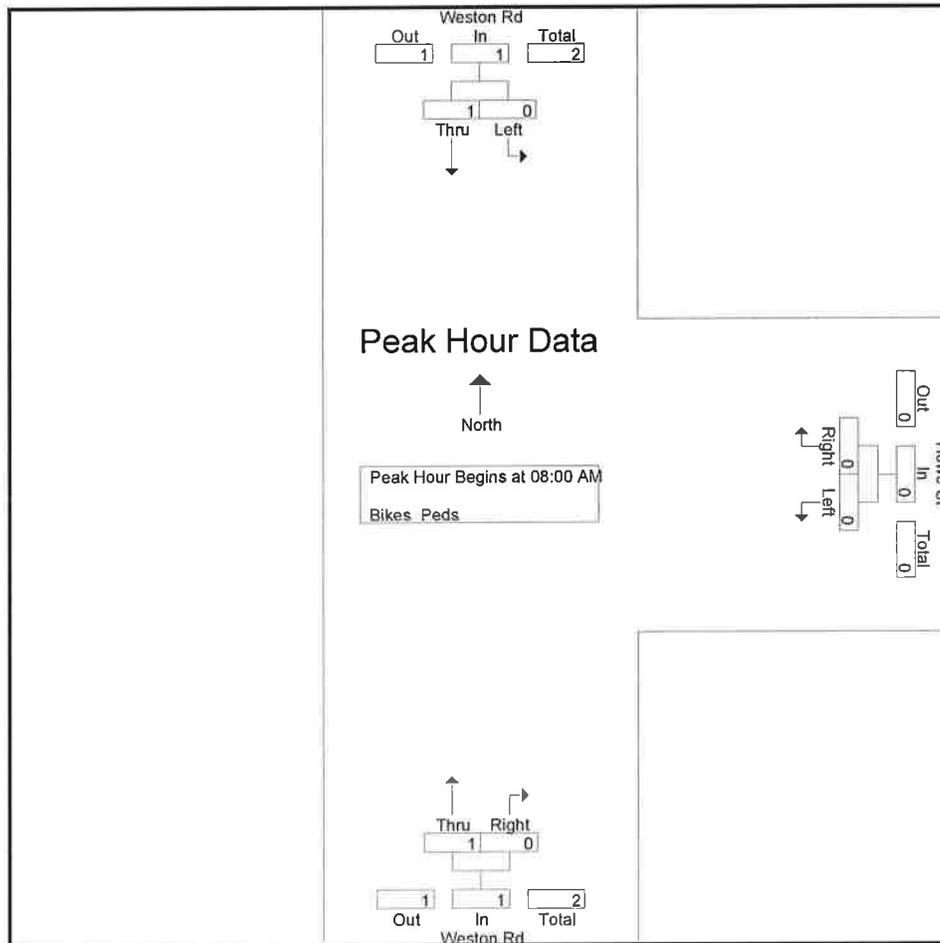
Start Time	Weston Rd From North			Howe St From East			Weston Rd From South			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	3	0	0	0	3	0	3
07:30 AM	0	0	0	0	0	1	0	0	0	1	0	1
07:45 AM	0	0	0	0	0	2	0	0	0	2	0	2
Total	0	0	0	0	0	6	0	0	0	6	0	6
08:00 AM	0	0	0	0	0	3	0	0	0	3	0	3
08:15 AM	0	0	0	0	0	1	0	0	0	1	0	1
08:30 AM	0	0	0	0	0	0	1	0	0	0	1	1
08:45 AM	0	1	0	0	0	2	0	0	0	2	1	3
Total	0	1	0	0	0	6	1	0	0	6	2	8
Grand Total	0	1	0	0	0	12	1	0	0	12	2	14
Approch %	0	100		0	0		100	0				
Total %	0	50		0	0		50	0		85.7	14.3	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 11

Start Time	Weston Rd From North			Howe St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	1	1	0	0	0	1	0	1	2
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.250	.000	.250	.500



Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Weston Rd From North		Howe St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	3	159	0	7	135	0	304
04:15 PM	0	147	1	1	140	0	289
04:30 PM	0	168	0	2	167	2	339
04:45 PM	0	163	1	3	139	0	306
Total	3	637	2	13	581	2	1238
05:00 PM	2	138	0	2	153	0	295
05:15 PM	1	132	0	5	140	1	279
05:30 PM	0	154	0	2	125	0	281
05:45 PM	4	141	0	3	139	0	287
Total	7	565	0	12	557	1	1142
Grand Total	10	1202	2	25	1138	3	2380
Apprch %	0.8	99.2	7.4	92.6	99.7	0.3	
Total %	0.4	50.5	0.1	1.1	47.8	0.1	
Cars	10	1198	2	24	1134	3	2371
% Cars	100	99.7	100	96	99.6	100	99.6
Trucks	0	4	0	1	4	0	9
% Trucks	0	0.3	0	4	0.4	0	0.4

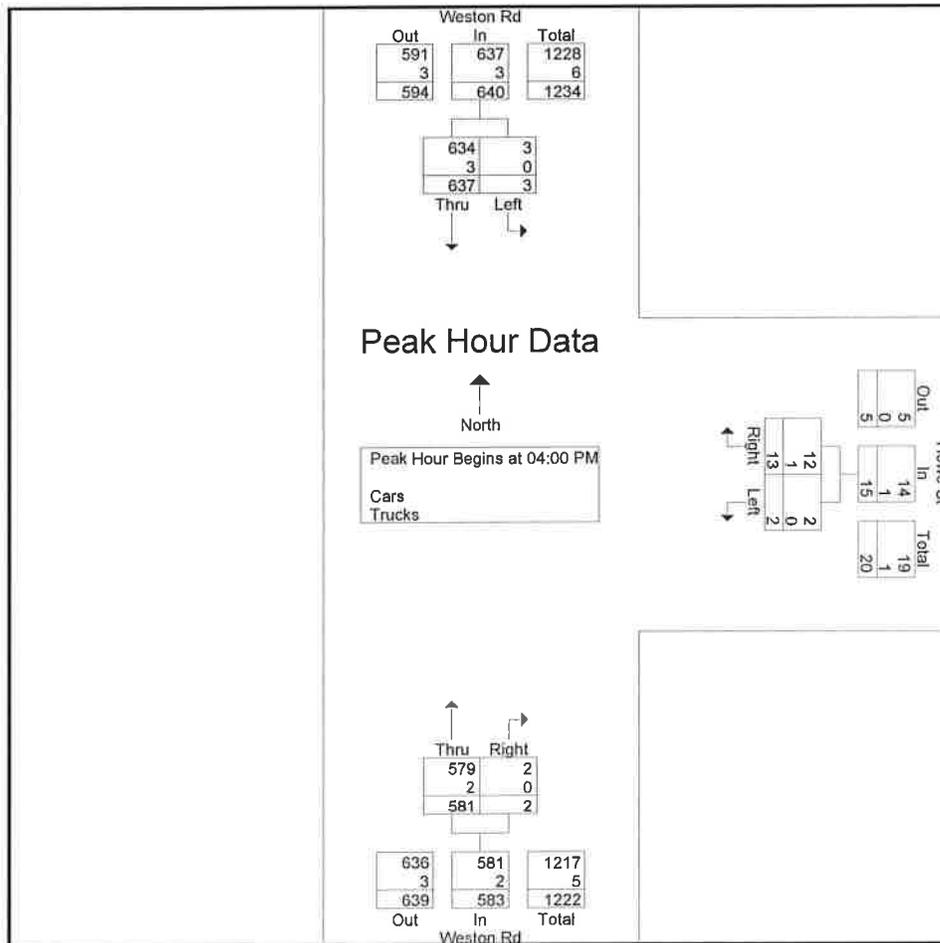
Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Howe Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740001
 Site Code : 77740001
 Start Date : 1/24/2018
 Page No : 2

Start Time	Weston Rd From North			Howe St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	159	162	0	7	7	135	0	135	304
04:15 PM	0	147	147	1	1	2	140	0	140	289
04:30 PM	0	168	168	0	2	2	167	2	169	339
04:45 PM	0	163	163	1	3	4	139	0	139	306
Total Volume	3	637	640	2	13	15	581	2	583	1238
% App. Total	0.5	99.5		13.3	86.7		99.7	0.3		
PHF	.250	.948	.952	.500	.464	.536	.870	.250	.862	.913
Cars	3	634	637	2	12	14	579	2	581	1232
% Cars	100	99.5	99.5	100	92.3	93.3	99.7	100	99.7	99.5
Trucks	0	3	3	0	1	1	2	0	2	6
% Trucks	0	0.5	0.5	0	7.7	6.7	0.3	0	0.3	0.5



Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Howe Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740001
 Site Code : 77740001
 Start Date : 1/24/2018
 Page No : 4

Groups Printed- Cars

Start Time	Weston Rd From North		Howe St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	3	158	0	7	133	0	301
04:15 PM	0	146	1	1	140	0	288
04:30 PM	0	167	0	2	167	2	338
04:45 PM	0	163	1	2	139	0	305
Total	3	634	2	12	579	2	1232
05:00 PM	2	137	0	2	153	0	294
05:15 PM	1	132	0	5	139	1	278
05:30 PM	0	154	0	2	124	0	280
05:45 PM	4	141	0	3	139	0	287
Total	7	564	0	12	555	1	1139
Grand Total	10	1198	2	24	1134	3	2371
Apprch %	0.8	99.2	7.7	92.3	99.7	0.3	
Total %	0.4	50.5	0.1	1	47.8	0.1	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 7

Groups Printed- Trucks

Start Time	Weston Rd From North		Howe St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	0	1	0	0	2	0	3
04:15 PM	0	1	0	0	0	0	1
04:30 PM	0	1	0	0	0	0	1
04:45 PM	0	0	0	1	0	0	1
Total	0	3	0	1	2	0	6
05:00 PM	0	1	0	0	0	0	1
05:15 PM	0	0	0	0	1	0	1
05:30 PM	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0
Total	0	1	0	0	2	0	3
Grand Total	0	4	0	1	4	0	9
Apprch %	0	100	0	100	100	0	
Total %	0	44.4	0	11.1	44.4	0	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 10

Groups Printed- Bikes Peds

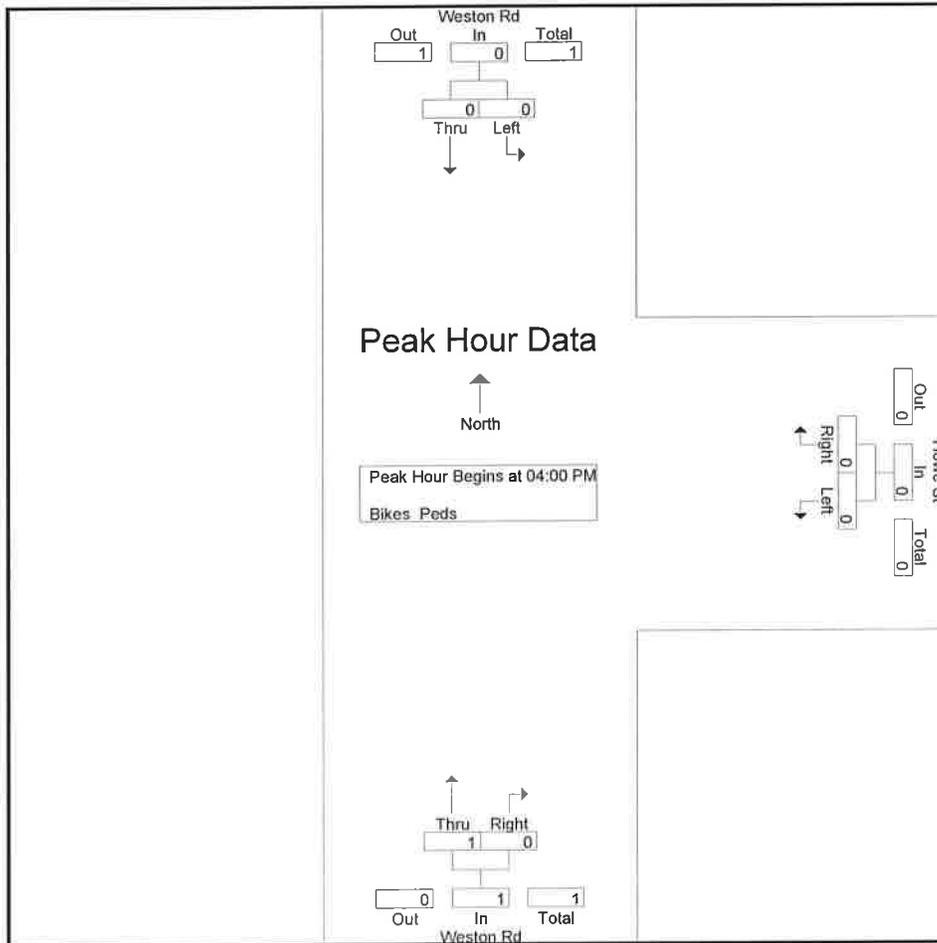
Start Time	Weston Rd From North			Howe St From East			Weston Rd From South			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	1	0	0	4	1	0	0	5	1	6
04:30 PM	0	0	0	0	0	1	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	1	0	0	6	1	0	0	7	1	8
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	2	0	0	0	2	0	2
05:45 PM	0	0	0	0	0	2	0	0	0	2	0	2
Total	0	0	0	0	0	4	0	0	0	4	0	4
Grand Total	0	0	1	0	0	10	1	0	0	11	1	12
Apprch %	0	0		0	0		100	0				
Total %	0	0		0	0		100	0		91.7	8.3	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Howe Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740001
Site Code : 77740001
Start Date : 1/24/2018
Page No : 11

Start Time	Weston Rd From North			Howe St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250



Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 1

Groups Printed- Cars - Trucks

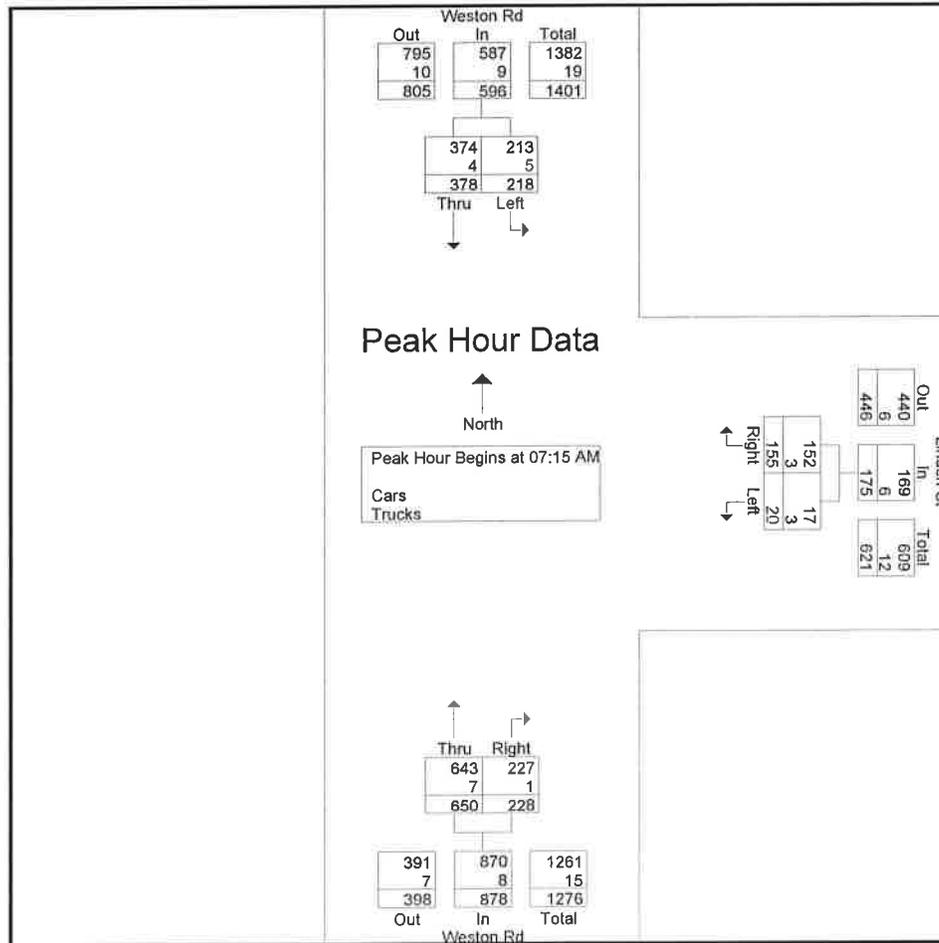
Start Time	Weston Rd From North		Linden St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	42	73	1	22	127	34	299
07:15 AM	71	93	2	29	167	48	410
07:30 AM	48	83	6	48	189	55	429
07:45 AM	45	115	6	53	156	54	429
Total	206	364	15	152	639	191	1567
08:00 AM	54	87	6	25	138	71	381
08:15 AM	45	102	5	28	148	53	381
08:30 AM	39	131	11	42	126	64	413
08:45 AM	46	115	7	33	113	55	369
Total	184	435	29	128	525	243	1544
Grand Total	390	799	44	280	1164	434	3111
Apprch %	32.8	67.2	13.6	86.4	72.8	27.2	
Total %	12.5	25.7	1.4	9	37.4	14	
Cars	381	793	41	276	1153	432	3076
% Cars	97.7	99.2	93.2	98.6	99.1	99.5	98.9
Trucks	9	6	3	4	11	2	35
% Trucks	2.3	0.8	6.8	1.4	0.9	0.5	1.1

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 2

Start Time	Weston Rd From North			Linden St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	71	93	164	2	29	31	167	48	215	410
07:30 AM	48	83	131	6	48	54	189	55	244	429
07:45 AM	45	115	160	6	53	59	156	54	210	429
08:00 AM	54	87	141	6	25	31	138	71	209	381
Total Volume	218	378	596	20	155	175	650	228	878	1649
% App. Total	36.6	63.4		11.4	88.6		74	26		
PHF	.768	.822	.909	.833	.731	.742	.860	.803	.900	.961
Cars	213	374	587	17	152	169	643	227	870	1626
% Cars	97.7	98.9	98.5	85.0	98.1	96.6	98.9	99.6	99.1	98.6
Trucks	5	4	9	3	3	6	7	1	8	23
% Trucks	2.3	1.1	1.5	15.0	1.9	3.4	1.1	0.4	0.9	1.4



Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 4

Groups Printed- Cars

Start Time	Weston Rd From North		Linden St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	41	73	1	21	126	34	296
07:15 AM	68	93	2	29	166	48	406
07:30 AM	47	81	4	48	186	55	421
07:45 AM	45	113	5	51	155	53	422
Total	201	360	12	149	633	190	1545
08:00 AM	53	87	6	24	136	71	377
08:15 AM	44	101	5	28	148	53	379
08:30 AM	39	131	11	42	125	64	412
08:45 AM	44	114	7	33	111	54	363
Total	180	433	29	127	520	242	1531
Grand Total	381	793	41	276	1153	432	3076
Apprch %	32.5	67.5	12.9	87.1	72.7	27.3	
Total %	12.4	25.8	1.3	9	37.5	14	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 7

Groups Printed- Trucks

Start Time	Weston Rd From North		Linden St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	1	0	0	1	1	0	3
07:15 AM	3	0	0	0	1	0	4
07:30 AM	1	2	2	0	3	0	8
07:45 AM	0	2	1	2	1	1	7
Total	5	4	3	3	6	1	22
08:00 AM	1	0	0	1	2	0	4
08:15 AM	1	1	0	0	0	0	2
08:30 AM	0	0	0	0	1	0	1
08:45 AM	2	1	0	0	2	1	6
Total	4	2	0	1	5	1	13
Grand Total	9	6	3	4	11	2	35
Apprch %	60	40	42.9	57.1	84.6	15.4	
Total %	25.7	17.1	8.6	11.4	31.4	5.7	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 10

Groups Printed- Bikes Peds

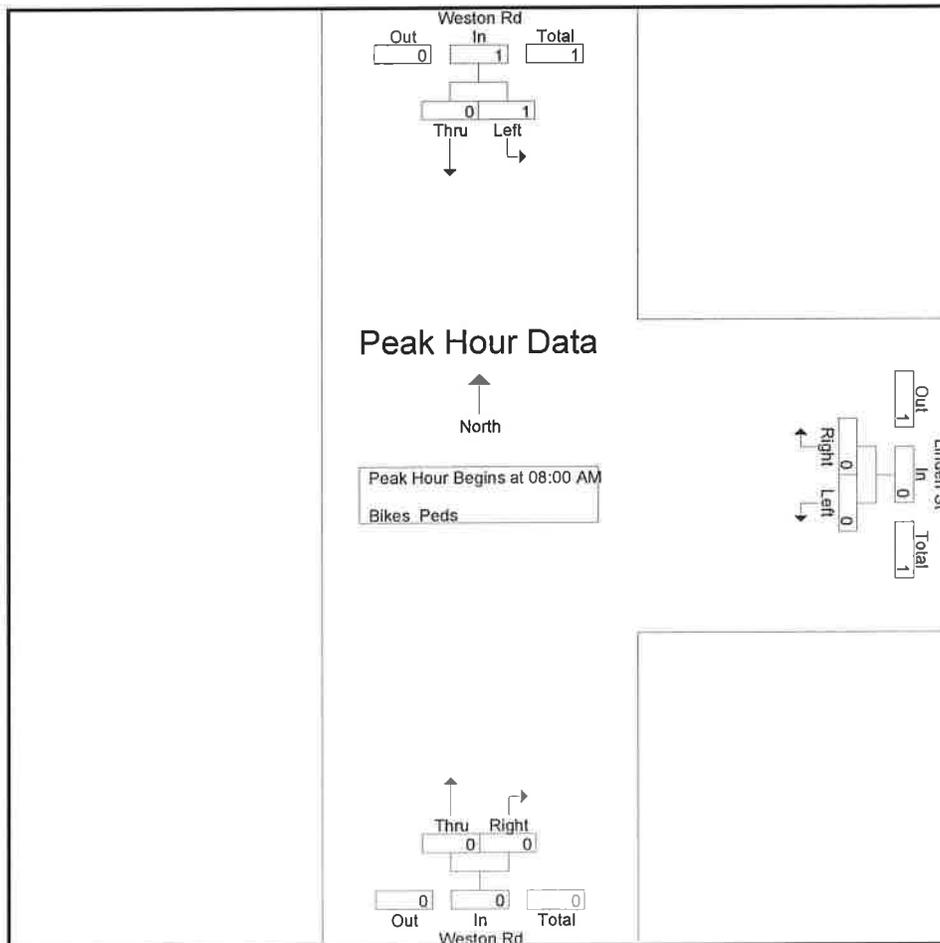
Start Time	Weston Rd From North			Linden St From East			Weston Rd From South			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	0	0	2	0	0	0	3	0	3
07:30 AM	0	0	0	0	0	1	0	0	0	1	0	1
07:45 AM	0	0	1	0	0	1	0	0	0	2	0	2
Total	0	0	2	0	0	4	0	0	0	6	0	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	1	0	0	0	1	0	1
08:45 AM	1	0	0	0	0	2	0	0	0	2	1	3
Total	1	0	0	0	0	3	0	0	0	3	1	4
Grand Total	1	0	2	0	0	7	0	0	0	9	1	10
Approch %	100	0		0	0		0	0				
Total %	100	0		0	0		0	0		90	10	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 11

Start Time	Weston Rd From North			Linden St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	1	0	0	0	0	0	0	1
Total Volume	1	0	1	0	0	0	0	0	0	1
% App. Total	100	0		0	0		0	0		
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250



Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Weston Rd From North		Linden St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	33	121	14	61	70	17	316
04:15 PM	28	113	30	74	64	10	319
04:30 PM	26	143	23	87	81	15	375
04:45 PM	30	131	34	67	74	24	360
Total	117	508	101	289	289	66	1370
05:00 PM	26	111	38	58	95	18	346
05:15 PM	24	115	36	70	72	21	338
05:30 PM	22	129	29	56	69	16	321
05:45 PM	23	121	34	68	71	13	330
Total	95	476	137	252	307	68	1335
Grand Total	212	984	238	541	596	134	2705
Apprch %	17.7	82.3	30.6	69.4	81.6	18.4	
Total %	7.8	36.4	8.8	20	22	5	
Cars	212	981	238	540	593	134	2698
% Cars	100	99.7	100	99.8	99.5	100	99.7
Trucks	0	3	0	1	3	0	7
% Trucks	0	0.3	0	0.2	0.5	0	0.3

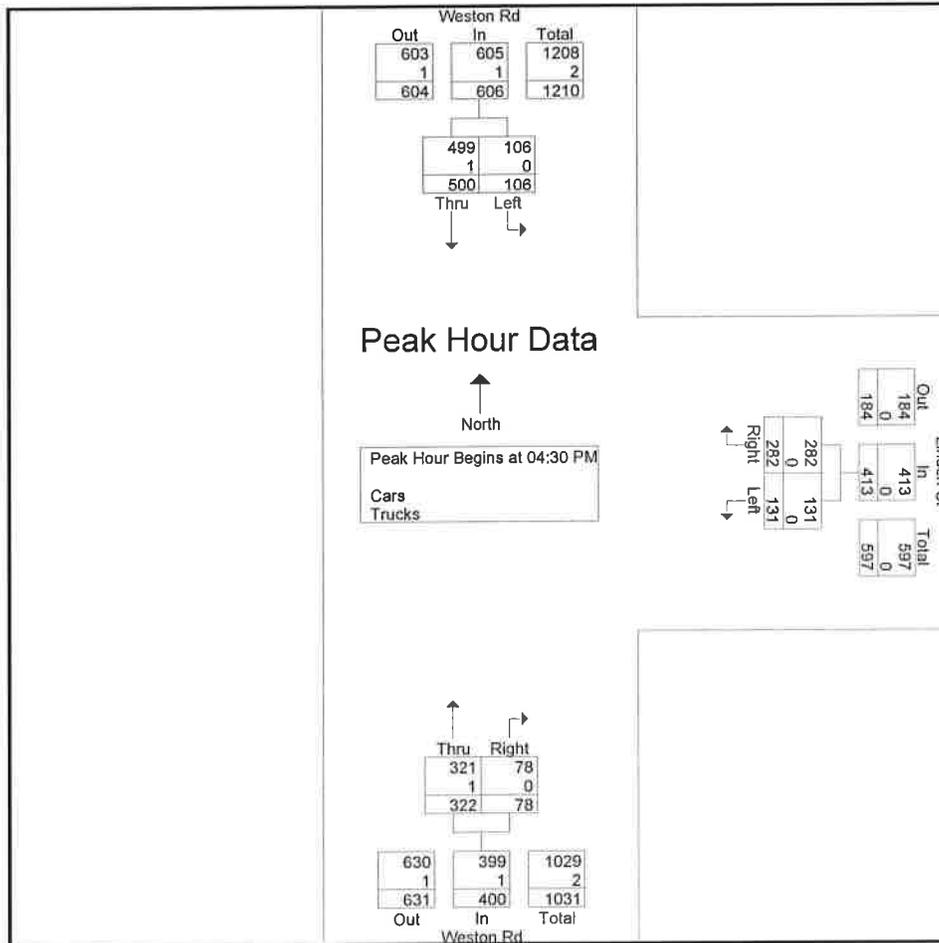
Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Linden Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740002
 Site Code : 77740002
 Start Date : 1/24/2018
 Page No : 2

Start Time	Weston Rd From North			Linden St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	26	143	169	23	87	110	81	15	96	375
04:45 PM	30	131	161	34	67	101	74	24	98	360
05:00 PM	26	111	137	38	58	96	95	18	113	346
05:15 PM	24	115	139	36	70	106	72	21	93	338
Total Volume	106	500	606	131	282	413	322	78	400	1419
% App. Total	17.5	82.5		31.7	68.3		80.5	19.5		
PHF	.883	.874	.896	.862	.810	.939	.847	.813	.885	.946
Cars	106	499	605	131	282	413	321	78	399	1417
% Cars	100	99.8	99.8	100	100	100	99.7	100	99.8	99.9
Trucks	0	1	1	0	0	0	1	0	1	2
% Trucks	0	0.2	0.2	0	0	0	0.3	0	0.3	0.1



Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 4

Groups Printed- Cars

Start Time	Weston Rd From North		Linden St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	33	120	14	61	68	17	313
04:15 PM	28	112	30	74	64	10	318
04:30 PM	26	142	23	87	81	15	374
04:45 PM	30	131	34	67	74	24	360
Total	117	505	101	289	287	66	1365
05:00 PM	26	111	38	58	95	18	346
05:15 PM	24	115	36	70	71	21	337
05:30 PM	22	129	29	55	69	16	320
05:45 PM	23	121	34	68	71	13	330
Total	95	476	137	251	306	68	1333
Grand Total	212	981	238	540	593	134	2698
Apprch %	17.8	82.2	30.6	69.4	81.6	18.4	
Total %	7.9	36.4	8.8	20	22	5	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 7

Groups Printed- Trucks

Start Time	Weston Rd From North		Linden St From East		Weston Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	0	1	0	0	2	0	3
04:15 PM	0	1	0	0	0	0	1
04:30 PM	0	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0
Total	0	3	0	0	2	0	5
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	0	1
05:30 PM	0	0	0	1	0	0	1
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	2
Grand Total	0	3	0	1	3	0	7
Apprch %	0	100	0	100	100	0	
Total %	0	42.9	0	14.3	42.9	0	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 10

Groups Printed- Bikes Peds

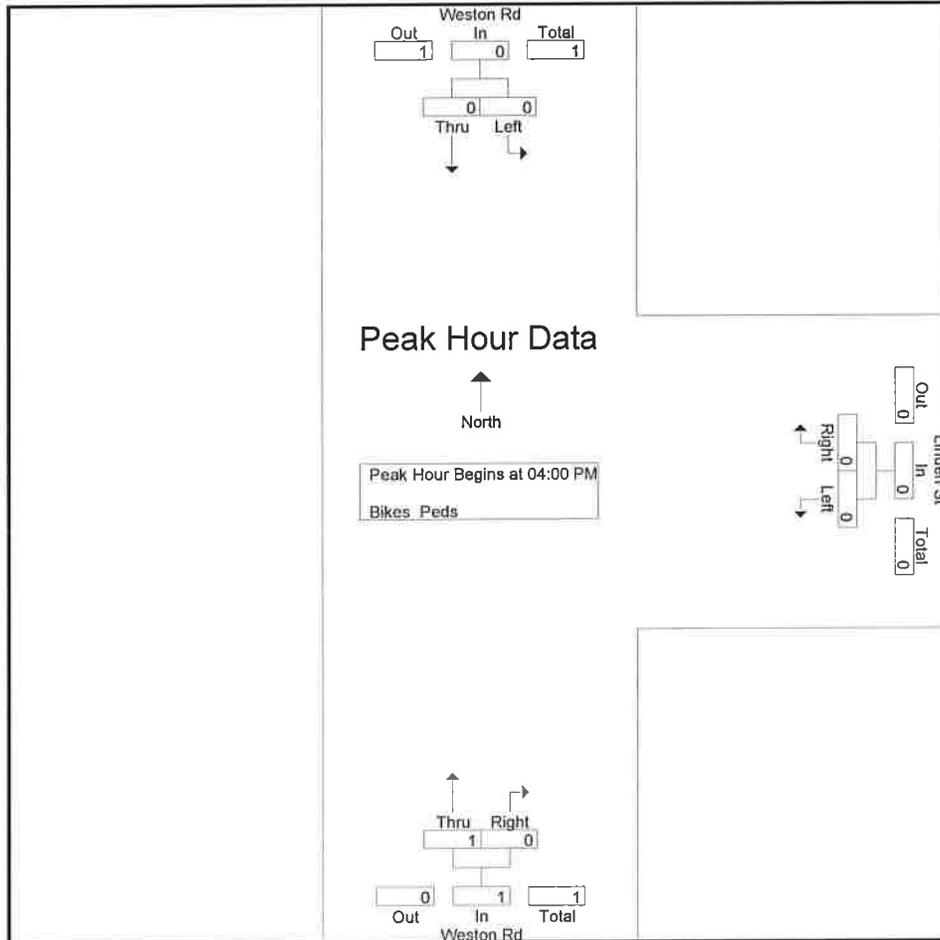
Start Time	Weston Rd From North			Linden St From East			Weston Rd From South			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
04:00 PM	0	0	1	0	0	1	0	0	1	3	0	3
04:15 PM	0	0	0	0	0	4	1	0	0	4	1	5
04:30 PM	0	0	0	0	0	1	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	6	1	0	1	8	1	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	2	0	0	0	2	0	2
05:45 PM	0	0	1	0	0	1	0	0	0	2	0	2
Total	0	0	1	0	0	3	0	0	0	4	0	4
Grand Total	0	0	2	0	0	9	1	0	1	12	1	13
Apprch %	0	0		0	0		100	0				
Total %	0	0		0	0		100	0		92.3	7.7	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Linden Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740002
Site Code : 77740002
Start Date : 1/24/2018
Page No : 11

Start Time	Weston Rd From North			Linden St From East			Weston Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250



Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Central Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740003
 Site Code : 77740003
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West			Int. Total
	Left	Thru	Right										
07:00 AM	38	24	10	2	35	23	6	70	1	64	129	10	412
07:15 AM	52	40	11	2	45	30	1	107	3	73	130	19	513
07:30 AM	32	43	17	2	51	39	3	120	1	83	145	12	548
07:45 AM	41	64	21	3	55	35	9	86	3	82	149	20	568
Total	163	171	59	9	186	127	19	383	8	302	553	61	2041
08:00 AM	40	44	18	4	42	27	5	97	5	87	112	13	494
08:15 AM	40	52	16	3	70	23	6	85	4	90	112	13	514
08:30 AM	41	63	35	3	67	20	6	100	3	69	113	17	537
08:45 AM	36	53	29	2	61	36	13	65	2	61	118	17	493
Total	157	212	98	12	240	106	30	347	14	307	455	60	2038
Grand Total	320	383	157	21	426	233	49	730	22	609	1008	121	4079
Approch %	37.2	44.5	18.3	3.1	62.6	34.3	6.1	91.1	2.7	35	58	7	
Total %	7.8	9.4	3.8	0.5	10.4	5.7	1.2	17.9	0.5	14.9	24.7	3	
Cars	315	381	152	20	411	228	48	727	20	607	998	117	4024
% Cars	98.4	99.5	96.8	95.2	96.5	97.9	98	99.6	90.9	99.7	99	96.7	98.7
Trucks	5	2	5	1	15	5	1	3	2	2	10	4	55
% Trucks	1.6	0.5	3.2	4.8	3.5	2.1	2	0.4	9.1	0.3	1	3.3	1.3

Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street : Central Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740003
 Site Code : 77740003
 Start Date : 1/24/2018
 Page No : 2

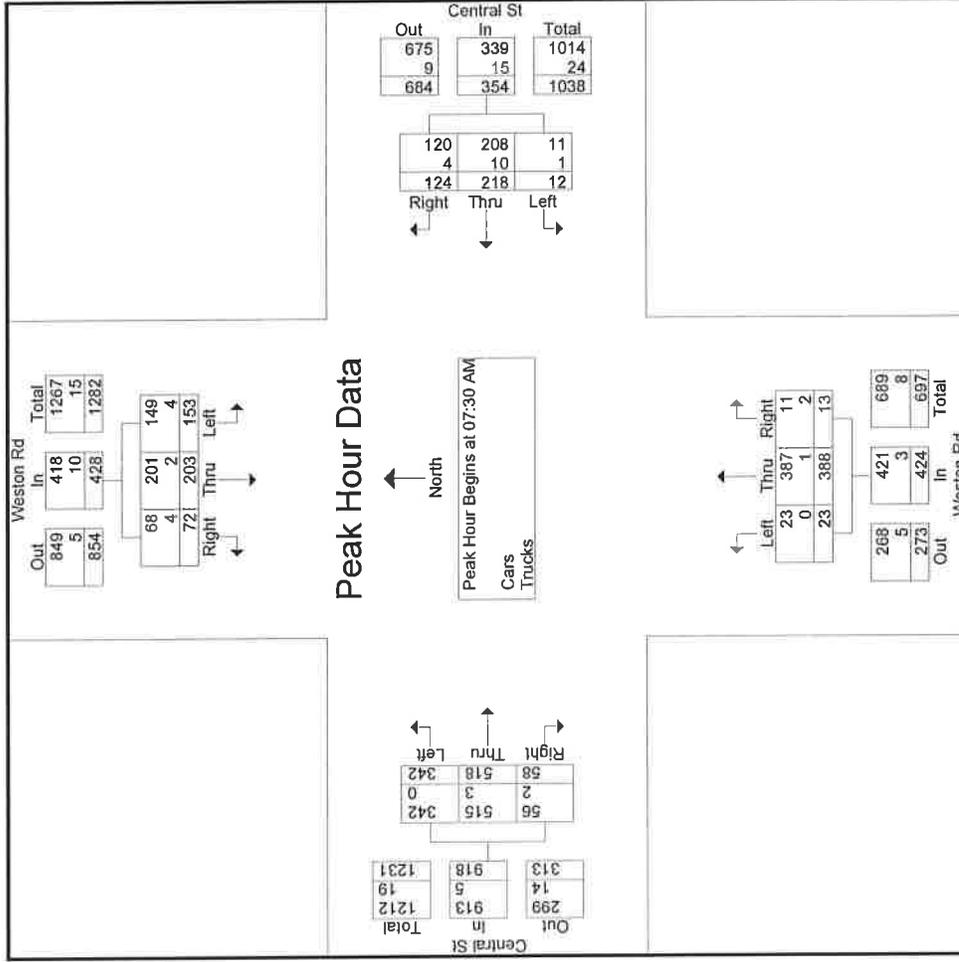
Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West			Int. Total				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
07:30 AM	32	43	17	92	2	51	39	92	3	120	1	124	83	145	12	240	548
07:45 AM	41	64	21	126	3	55	35	93	9	86	3	98	82	149	20	251	568
08:00 AM	40	44	18	102	4	42	27	73	5	97	5	107	87	112	13	212	494
08:15 AM	40	52	16	108	3	70	23	96	6	85	4	95	90	112	13	215	514
Total Volume	153	203	72	428	12	218	124	354	23	388	13	424	342	518	58	918	2124
% App. Total	35.7	47.4	16.8		3.4	61.6	35		5.4	91.5	3.1		37.3	56.4	6.3		
PHF	.933	.793	.857	.849	.750	.779	.795	.922	.639	.808	.650	.855	.950	.869	.725	.914	.935
Cars	149	201	68	418	11	208	120	339	23	387	11	421	342	515	56	913	2091
% Cars	97.4	99.0	94.4	97.7	91.7	95.4	96.8	95.8	100	99.7	84.6	99.3	100	99.4	96.6	99.5	98.4
Trucks	4	2	4	10	1	10	4	15	0	1	2	3	0	3	2	5	33
% Trucks	2.6	1.0	5.6	2.3	8.3	4.6	3.2	4.2	0	0.3	15.4	0.7	0	0.6	3.4	0.5	1.6

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Central Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740003
Site Code : 77740003
Start Date : 1/24/2018
Page No : 3



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

Peak Hour for Each Approach Begins at:

	07:45 AM			08:00 AM			07:15 AM			07:15 AM						
+0 mins.	41	64	21	126	4	42	27	73	1	107	3	111	73	130	19	222
+15 mins.	40	44	18	102	3	70	23	96	3	120	1	124	83	145	12	240
+30 mins.	40	52	16	108	3	67	20	90	9	86	3	98	82	149	20	251
+45 mins.	41	63	35	139	2	61	36	99	5	97	5	107	87	112	13	212
Total Volume	162	223	90	475	12	240	106	358	18	410	12	440	325	536	64	925
% App. Total	34.1	46.9	18.9		3.4	67	29.6		4.1	93.2	2.7		35.1	57.9	6.9	

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Central Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740003
Site Code : 77740003
Start Date : 1/24/2018
Page No : 5

Groups Printed- Cars

Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	37	24	9	2	34	23	6	70	1	64	126	8	404
07:15 AM	52	40	11	2	43	30	1	107	3	72	128	19	508
07:30 AM	31	42	15	2	47	37	3	120	1	83	143	12	536
07:45 AM	40	63	19	3	53	34	9	86	3	82	149	20	561
Total	160	169	54	9	177	124	19	383	8	301	546	59	2009
08:00 AM	39	44	18	4	39	26	5	96	4	87	111	11	484
08:15 AM	39	52	16	2	69	23	6	85	3	90	112	13	510
08:30 AM	41	63	35	3	65	19	6	99	3	69	111	17	531
08:45 AM	36	53	29	2	61	36	12	64	2	60	118	17	490
Total	155	212	98	11	234	104	29	344	12	306	452	58	2015
Grand Total	315	381	152	20	411	228	48	727	20	607	998	117	4024
Apprch %	37.1	44.9	17.9	3	62.4	34.6	6	91.4	2.5	35.2	58	6.8	
Total %	7.8	9.5	3.8	0.5	10.2	5.7	1.2	18.1	0.5	15.1	24.8	2.9	

Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Central Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740003
 Site Code : 77740003
 Start Date : 1/24/2018
 Page No : 9

Groups Printed- Trucks

Start Time	Weston Rd From North		Central St From East		Weston Rd From South		Central St From West		Int. Total
	Left	Right	Left	Right	Left	Right	Left	Right	
07:00 AM	1	1	0	0	0	0	0	3	8
07:15 AM	0	0	0	0	0	0	1	2	5
07:30 AM	1	2	0	2	0	0	0	2	12
07:45 AM	1	2	0	1	0	0	0	0	7
Total	3	5	0	3	0	0	1	7	32
08:00 AM	1	0	0	1	0	1	0	1	10
08:15 AM	1	0	1	0	0	1	0	0	4
08:30 AM	0	0	0	1	0	1	0	2	6
08:45 AM	0	0	0	0	1	1	1	0	3
Total	2	0	1	2	1	3	1	3	23
Grand Total	5	2	1	5	1	3	2	10	55
Apprch %	41.7	16.7	4.8	23.8	16.7	5.5	33.3	62.5	25
Total %	9.1	3.6	1.8	9.1	1.8	5.5	3.6	18.2	7.3

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Central Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740003
Site Code : 77740003
Start Date : 1/24/2018
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Start Time	Groups Printed- Bikes Peds															
	Weston Rd From North				Central St From East				Weston Rd From South				Central St From West			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
07:15 AM	0	0	0	1	0	0	0	1	0	0	0	5	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
Total	0	0	0	1	0	0	0	2	0	0	0	13	0	0	0	1
08:00 AM	0	0	0	1	1	0	0	2	0	0	0	8	0	1	0	0
08:15 AM	0	0	0	0	0	0	0	1	0	0	0	12	0	1	0	0
08:30 AM	0	0	0	1	0	1	0	2	0	0	0	4	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	2	0	0	0	6	0	0	0	0
Total	0	0	0	2	1	1	0	7	0	0	0	30	0	2	0	1
Grand Total	0	0	0	3	1	1	0	9	0	0	0	43	0	2	0	2
Apprch %	0	0	0	0	50	50	0	0	0	0	0	0	0	100	0	0
Total %	0	0	0	0	25	25	0	0	0	0	0	0	0	50	0	0
													93.4			6.6

Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Central Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740003
 Site Code : 77740003
 Start Date : 1/24/2018
 Page No : 14

Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West			Int. Total
	Left	Right	App. Total										
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	1	0	1	0	0	0	0	1	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
08:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	1
Total Volume	0	0	0	1	1	2	0	0	0	0	2	0	4
% App. Total	0	0	0	50	50	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.250	.250	.500	.000	.000	.000	.000	.500	.000	.500

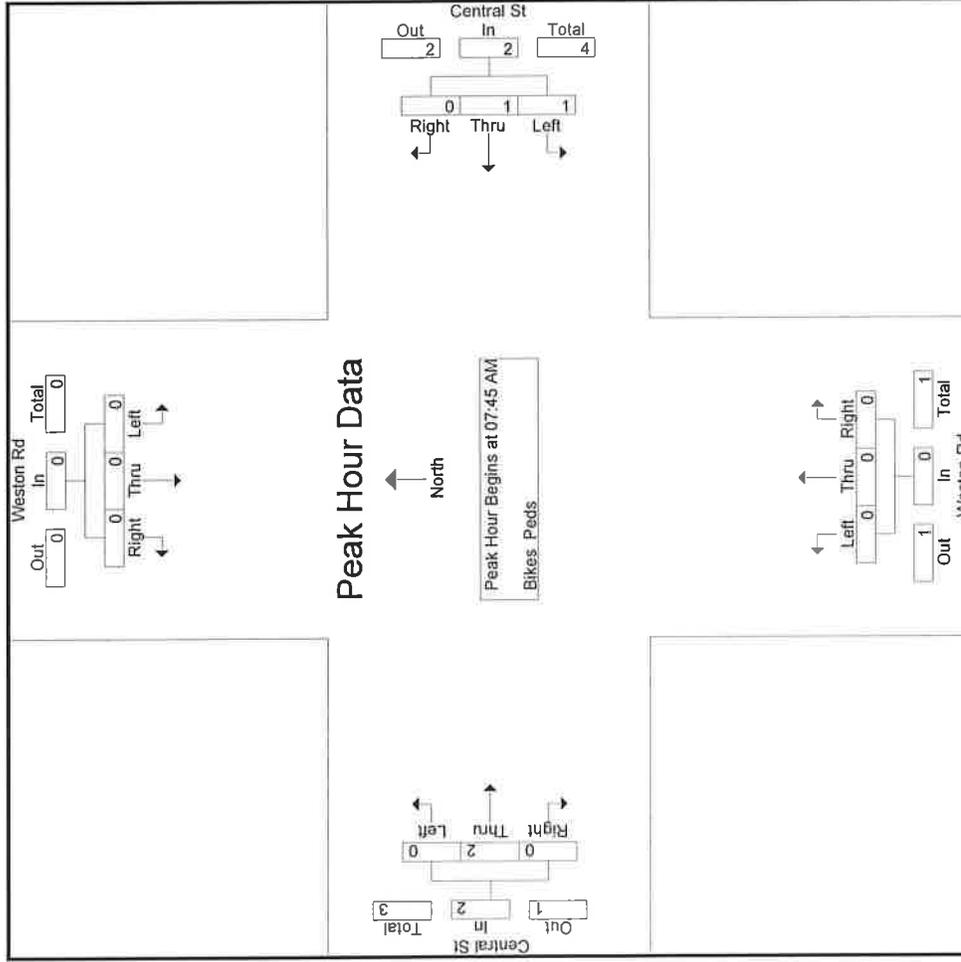
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45 AM

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street : Central Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740003
Site Code : 77740003
Start Date : 1/24/2018
Page No : 15



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

Peak Hour for Each Approach Begins at:

	07:00 AM	07:45 AM	07:00 AM	07:30 AM
+0 mins.	0	0	0	0
+15 mins.	0	0	1	0
+30 mins.	0	0	0	0
+45 mins.	0	0	0	0
Total Volume	0	0	1	0
% App. Total	0	0	50	0

Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Central Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740003
 Site Code : 77740003
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West			Int. Total
	Left	Thru	Right										
04:00 PM	26	80	41	3	79	18	15	41	5	28	58	8	402
04:15 PM	23	62	53	4	105	19	30	31	1	24	54	22	428
04:30 PM	28	78	56	1	87	29	11	35	0	34	46	13	418
04:45 PM	15	64	85	4	93	16	29	46	1	35	56	14	458
Total	92	284	235	12	364	82	85	153	7	121	214	57	1706
05:00 PM	16	63	59	3	85	21	19	48	1	42	51	16	424
05:15 PM	13	62	52	5	101	22	20	37	1	27	71	17	428
05:30 PM	20	68	60	4	86	17	16	37	2	25	61	12	408
05:45 PM	30	51	74	3	102	23	22	37	1	19	55	12	429
Total	79	244	245	15	374	83	77	159	5	113	238	57	1689
Grand Total	171	528	480	27	738	165	162	312	12	234	452	114	3395
Approch %	14.5	44.8	40.7	2.9	79.4	17.7	33.3	64.2	2.5	29.2	56.5	14.2	
Total %	5	15.6	14.1	0.8	21.7	4.9	4.8	9.2	0.4	6.9	13.3	3.4	
Cars	168	527	479	27	736	164	160	312	11	233	449	114	3380
% Cars	98.2	99.8	99.8	100	99.7	99.4	98.8	100	91.7	99.6	99.3	100	99.6
Trucks	3	1	1	0	2	1	2	0	1	1	3	0	15
% Trucks	1.8	0.2	0.2	0	0.3	0.6	1.2	0	8.3	0.4	0.7	0	0.4

Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Central Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740003
 Site Code : 77740003
 Start Date : 1/24/2018
 Page No : 2

Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West							
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total				
04:15 PM	23	62	53	138	4	105	19	128	30	31	1	62	24	54	22	100	428
04:30 PM	28	78	56	162	1	87	29	117	11	35	0	46	34	46	13	93	418
04:45 PM	15	64	85	164	4	93	16	113	29	46	1	76	35	56	14	105	458
05:00 PM	16	63	59	138	3	85	21	109	19	48	1	68	42	51	16	109	424
Total Volume	82	267	253	602	12	370	85	467	89	160	3	252	135	207	65	407	1728
% App. Total	13.6	44.4	42		2.6	79.2	18.2		35.3	63.5	1.2		33.2	50.9	16		
PHF	.732	.856	.744	.918	.750	.881	.733	.912	.742	.833	.750	.829	.804	.924	.739	.933	.943
Cars	80	266	253	599	12	368	85	465	88	160	3	251	135	206	65	406	1721
% Cars	97.6	99.6	100	99.5	100	99.5	100	99.6	98.9	100	100	99.6	100	99.5	100	99.8	99.6
Trucks	2	1	0	3	0	2	0	2	1	0	0	1	0	1	0	1	7
% Trucks	2.4	0.4	0	0.5	0	0.5	0	0.4	1.1	0	0	0.4	0	0.5	0	0.2	0.4

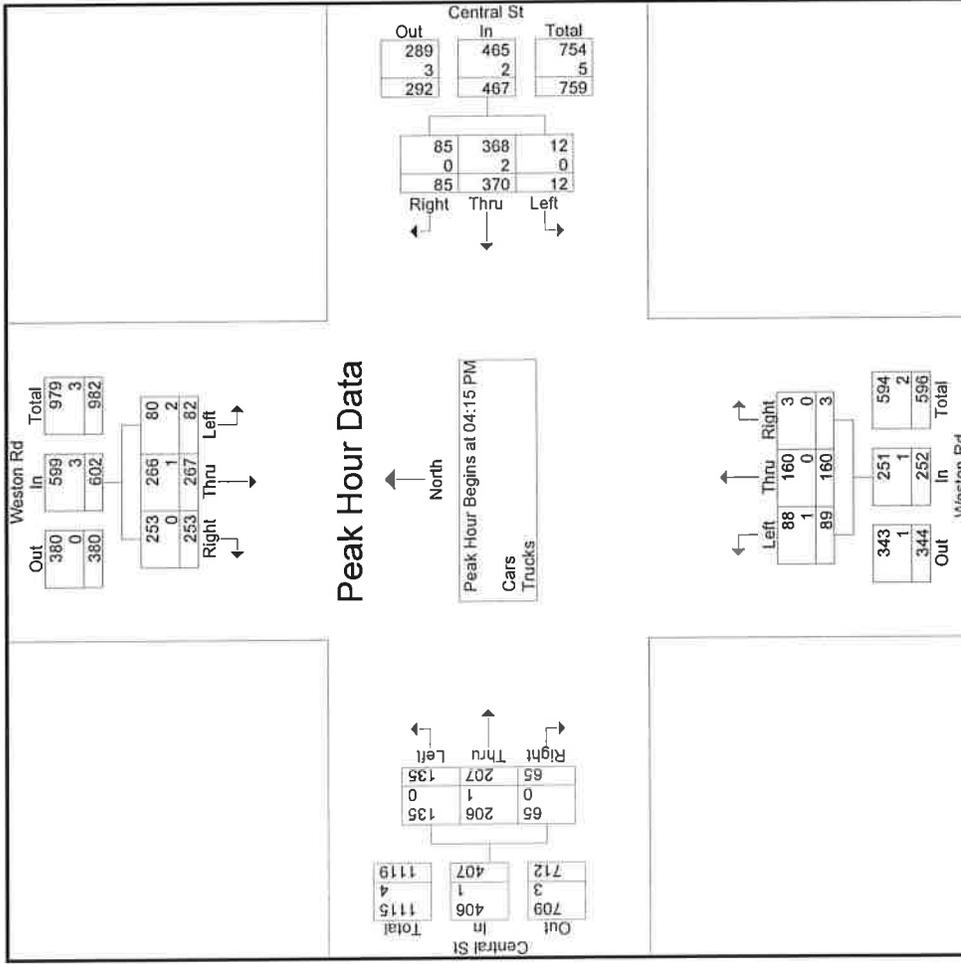
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:15 PM

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Central Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740003
Site Code : 77740003
Start Date : 1/24/2018
Page No : 3



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:45 PM			04:45 PM						
+0 mins.	26	80	41	147	41	147	21	109	29	46	1	76	35	56	14	105
+15 mins.	23	62	53	138	53	138	22	128	19	48	1	68	42	51	16	109
+30 mins.	28	78	56	162	56	162	17	107	20	37	1	58	27	71	17	115
+45 mins.	15	64	85	164	85	164	23	128	16	37	2	55	25	61	12	98
Total Volume	92	284	235	611	235	611	83	472	84	168	5	257	129	239	59	427
% App. Total	15.1	46.5	38.5	3.2	79.2	17.6	32.7	65.4	1.9	30.2	56	13.8				

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street: Central Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740003
Site Code : 77740003
Start Date : 1/24/2018
Page No : 5

Groups Printed- Cars

Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	25	80	40	3	79	17	14	41	5	27	58	8	397
04:15 PM	22	62	53	4	104	19	30	31	1	24	53	22	425
04:30 PM	28	77	56	1	86	29	11	35	0	34	46	13	416
04:45 PM	15	64	85	4	93	16	28	46	1	35	56	14	457
Total	90	283	234	12	362	81	83	153	7	120	213	57	1695
05:00 PM	15	63	59	3	85	21	19	48	1	42	51	16	423
05:15 PM	13	62	52	5	101	22	20	37	0	27	69	17	425
05:30 PM	20	68	60	4	86	17	16	37	2	25	61	12	408
05:45 PM	30	51	74	3	102	23	22	37	1	19	55	12	429
Total	78	244	245	15	374	83	77	159	4	113	236	57	1685
Grand Total	168	527	479	27	736	164	160	312	11	233	449	114	3380
Approch %	14.3	44.9	40.8	2.9	79.4	17.7	33.1	64.6	2.3	29.3	56.4	14.3	
Total %	5	15.6	14.2	0.8	21.8	4.9	4.7	9.2	0.3	6.9	13.3	3.4	

Accurate Counts

978-664-2565

N/S Street : Weston Road
 E/W Street: Central Street
 City/State : Wellesley, MA
 Weather : Clear

File Name : 77740003
 Site Code : 77740003
 Start Date : 1/24/2018
 Page No : 9

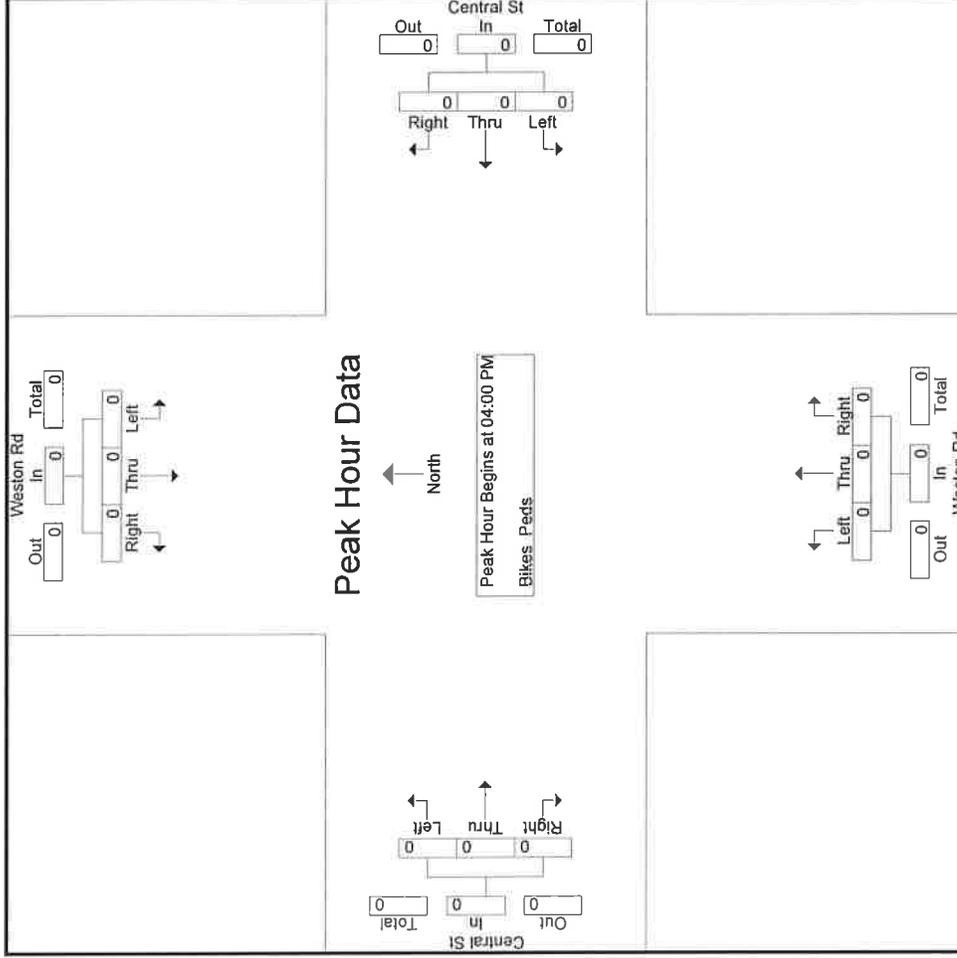
Groups Printed- Trucks

Start Time	Weston Rd From North			Central St From East			Weston Rd From South			Central St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	1	0	1	0	0	1	1	0	0	0	0	0	5
04:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	3
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	2	1	1	0	2	1	2	0	0	1	1	0	11
05:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	1	0	2	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	0	0	1	0	2	0	4
Grand Total	3	1	1	0	2	1	2	0	1	1	3	0	15
Approch %	60	20	20	0	66.7	33.3	66.7	0	33.3	25	75	0	0
Total %	20	6.7	6.7	0	13.3	6.7	13.3	0	6.7	6.7	20	0	0

Accurate Counts
978-664-2565

N/S Street : Weston Road
E/W Street : Central Street
City/State : Wellesley, MA
Weather : Clear

File Name : 77740003
Site Code : 77740003
Start Date : 1/24/2018
Page No : 15



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0

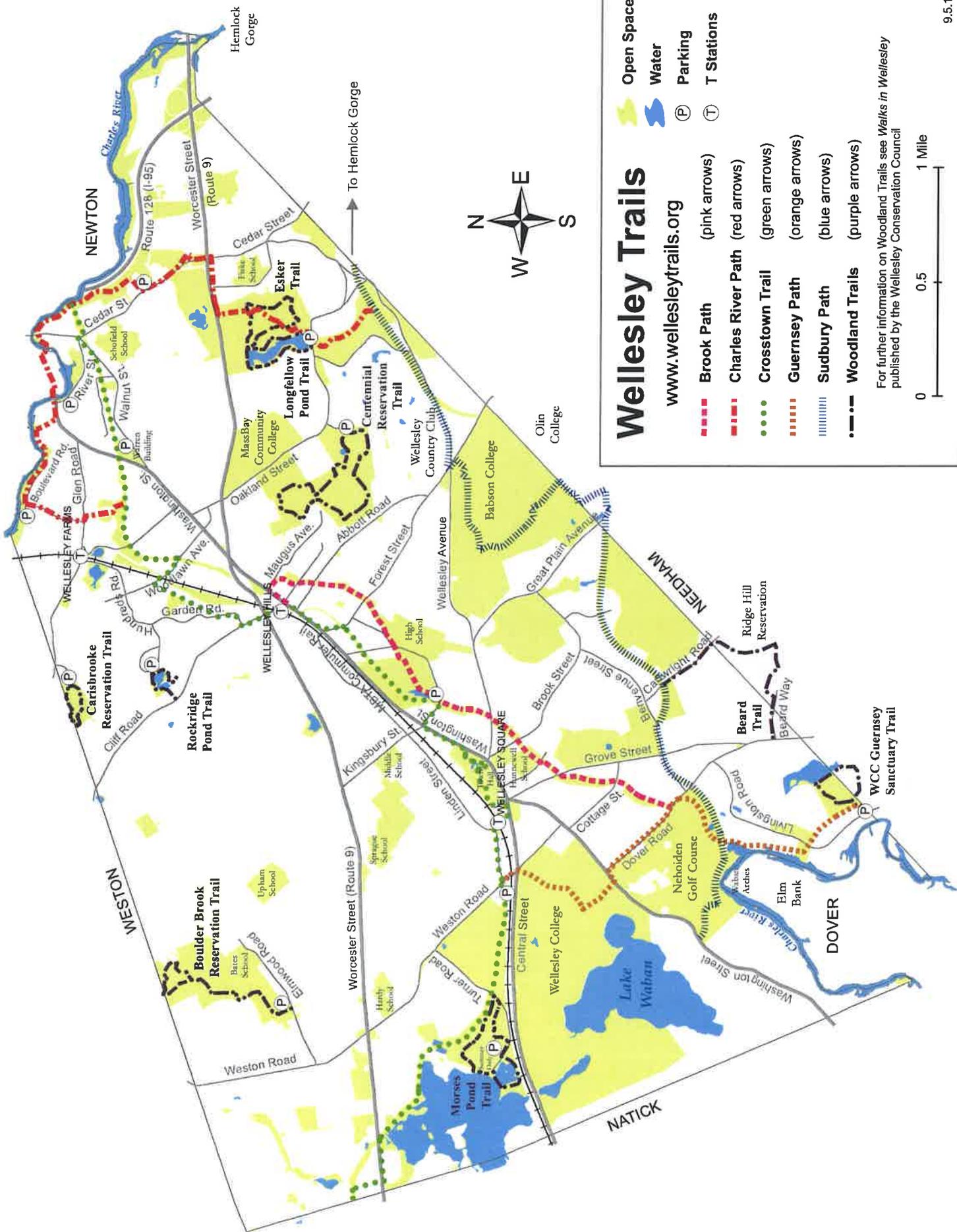
SEASONAL ADJUSTMENT DATA

Massachusetts Highway Department

32: Monthly Hourly Volume for January 2016

Location ID:	32																								TOTAL	
	MIDDLESEX																									
	1																									
	YANKEE DIVISION HIGHWAY																									
County:	U1-Boston																									
Functional Class	U1-Boston																									
Location:	Growth Factor Group:																									
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	
1	2573	3162	2690	2587	2720	2859	2387	2065	2691	4011	5531	6983	7207	7262	7231	7170	6816	7129	6162	4845	3424	2800	2040	2313	104658	
2	1980	1864	2054	931	980	2264	2475	2934	3971	5712	7415	8755	9076	9557	9642	9586	9064	8520	7353	5757	4502	3836	2391	2707	123526	
3	2278	1977	2413	1449	882	1174	1959	1992	3032	4638	6388	7865	9205	8222	7782	7718	7982	7627	6204	4586	3738	2573	1740	1753	105177	
4	1309	953	856	1154	1949	4489	7019	10033	11908	10300	8140	7600	7828	8024	9891	11238	11540	12586	10479	6222	3837	2427	1804	1403	152989	
5																										
6	1057	685	387	354	767	3023	6566	11920	11540	10811	9476	8788	8878	9220	10828	11823	11550	12563	11246	5936	3737	3057	2892	2132	159236	
7	1662	1146	1125	1542	4176	7100	11802	11738	11692	9213	9043	9053	9318	11380	12100	11712	12513	9862	5079	3693	3163	3027	1988	165263		
8	1565	1139	1003	1080	1846	3765	6647	11852	12492	10700	9351	9187	9297	10043	11875	12106	11693	12414	8504	5826	4038	4185	3735	2993	167336	
9	2435	2115	3069	3136	2506	2922	3321	4674	6040	7371	8134	9189	10074	9788	9773	9833	9476	9310	7564	4701	3945	4891	4442	3346	142055	
10	3330	2503	2796	2741	2380	2506	3477	3291	3381	5016	6114	7362	8059	8184	7258	7834	7499	6784	5657	4276	3678	3545	5526	4036	117233	
11	3615	2911	2000	2955	2392	5307	7866	12821	11963	10902	8484	8185	8428	8473	10608	11668	11642	12350	10750	6612	3423	3077	2438	1904	170774	
12	1588	1607	699	740	1507	3824	6279	12589	12158	11114	9173	8571	8773	9367	10947	12304	12390	12147	7971	4409	4125	3508	3035	2469	161294	
13	2122	1997	1362	1076	1870	3643	6368	9461	11420	11305	9263	8545	8890	9061	10998	11810	11677	11823	6564	4858	3597	3503	2644	1873	155730	
14	1404	952	891	801	1404	3746	6414	7822	11807	11580	9589	9081	9108	9771	11662	12132	11749	10486	6853	5327	4226	3615	2795	2010	155225	
15	1563	1148	1952	2275	1520	3844	6621	9683	12454	10254	9437	9561	9943	10465	12490	11945	11409	11116	7523	6681	5442	5079	4446	3425	170276	
16	2251	2806	3359	3119	2742	3103	3171	3551	5081	6405	7705	8751	9775	9400	9192	9634	8077	5959	4427	3704	5058	5246	4323	2716	129555	
17	2709	2176	1974	1768	912	1003	1856	2446	3669	5627	7332	8983	9583	9386	9060	9199	8591	7762	5404	4111	4365	3810	3034	2702	117402	
18	1715	1439	1012	1063	1499	3307	5269	5824	6959	8025	8208	8733	9307	9303	10864	11167	10800	9390	5077	3918	2983	2577	1921	1996	132356	
19	1319	752	563	644	1240	3580	6437	8530	11959	11543	9487	8641	8959	9009	10978	11674	11459	9601	6452	4682	3474	3220	2124	1986	148313	
20	1203	869	560	608	1253	3639	6102	9021	12284	11686	9457	8815	9086	9373	11379	12252	10978	9855	6812	5340	4533	3998	3054	2342	154499	
21	1482	935	1171	1878	1651	3969	6539	10823	10905	12202	9423	9156	9164	9503	10770	11568	11999	11403	7171	5257	4489	4029	2766	2381	160634	
22	1872	1238	834	792	1258	3678	6405	12894	12325	10496	9175	9267	9758	10288	12410	12211	12009	9698	7045	5743	4443	3933	3601	2883	164256	
23	2104	1604	2209	1393	936	1529	2411	3660	5420	6606	7039	7896	8242	8076	7947	6672	5517	5398	4106	3704	2772	2732	2309	2131	102413	
24	1386	1581	764	560	577	677	1062	1750	2834	4194	5548	7059	8056	8581	9294	6692	5044	4017	4794	3654	3197	2447	1891	89923		
25	1149	894	950	2365	1562	4067	6830	12650	11814	10868	9156	7988	8081	8273	10543	11518	11626	12307	6384	5030	3961	3400	2632	2088	156136	
26	1584	1060	2219	1688	1746	4317	6876	12703	12030	11716	9036	8333	8707	8672	9906	10882	11265	10542	10477	5459	5167	5157	3467	2833	165842	
27	2981	2795	1169	1235	1926	4580	7620	11189	12416	10579	9463	8647	8908	8998	11247	11751	10895	11984	10874	5439	3985	3526	2851	2125	167183	
28	1293	828	720	627	1107	3631	6884	13011	12077	11721	9479	8946	8881	9059	11291	11886	10981	12388	10847	5903	4296	3551	3099	2169	164675	
29	1567	1133	831	988	1439	4145	6823	10851	12194	10561	9213	9124	9866	10362	12447	12157	11088	11832	10566	6219	3816	3604	3411	2829	167066	
30	2154	1422	1076	799	791	1623	2298	4642	6371	7490	8658	9700	10140	9920	9931	10213	9829	9489	8263	5245	3652	3912	3635	3184	134437	
31	2490	1739	1249	922	725	1133	1777	2459	3833	5617	7120	8653	9354	9869	9994	9924	9557	9104	7642	5661	4089	4160	3905	2421	123397	
																										150864.3
																										Average =
																										Yearly Average = 165476
																										165476/150864 = 1.097

CROSTOWN TRAIL MAP



Wellesley Trails

www.wellesleytrails.org

- Brook Path (pink arrows)
- Charles River Path (red arrows)
- Crosstown Trail (green arrows)
- Guernsey Path (orange arrows)
- Sudbury Path (blue arrows)
- Woodland Trails (purple arrows)

- Open Space
- Water
- P Parking
- T T Stations

For further information on Woodland Trails see *Walks in Wellesley* published by the Wellesley Conservation Council



Beard Trail. A pleasant trail through the woods between Beard Way and Cartwright Rd. Connects with Ridge Hill Reservation in Needham. **Length:** 1.1 mi. **Markers:** purple arrows. **Access:** Beard Way at Grove St; Cartwright Rd at Beebe Meadow.

Boulder Brook Reservation Trail. Traverses a delightful variety of meadows, woods, streams, and craggy ledges. After crossing the meadow, the trail splits for a loop over Rocky Ledges (caution: steep drop-offs). **Length:** 1.6 mi, round trip. **Elevation gain:** 140 ft. **Markers:** purple arrows. **Access:** Kelly Memorial Park parking lot on Elmwood Rd.

Biking Path. A favorite trail for walking, jogging, and biking. Runs along Fuller and Caroline Brooks from Dover Rd at Nehoiden Golf Course to Maugus Ave across from the Wellesley Hills clock tower. **Length:** 2.3 mi. **Markers:** pink arrows. **Access:** State St parking lot; any street crossing along route.

Carisbrooke Reservation Trail. Explore rocky outcrops along Cold Stream Brook in the northern part of Town. Woodsy loop trail goes past Covati Pond. **Length:** 0.5 mi, round trip. **Markers:** purple arrows. **Access:** end of Glen Brook Rd at Weston town line.

Centennial Reservation Trail. Take a loop trail through woods and meadows to the top of Maugus Hill for a view of the Blue Hill. Trail goes past Bezanson Pond. **Length:** 1.7 mi, round trip. **Elevation gain:** 200 ft. **Markers:** purple arrows. **Access:** entrance road off Oakland St to parking lot.

Charles River Path. Great hike for scenic variety. Northern half goes along the Charles River, and southern half goes through the Town Forest. **Length:** 3.2 mi. **Markers:** red arrows. **Access:** parking area off Boulevard Rd; Washington St at the Charles River in Lower Falls; Ouellet Playground on Cedar St; Longfellow Pond parking lot on Oakland St.

Crosstown Trail. Walk the Cochituate Aqueduct from Natick near Rt 9 to the Charles River near Cedar St. Eastern and western sections follow wooded aqueduct path. Middle section, Weston Rd to Woodlawn Ave in Wellesley Hills, follows mainly roads with sections through parks and playing fields. **Length:** 6.0 mi. **Markers:** green arrows. **Access:** Weston Rd trail parking area; any street crossing along route.

Esker Trail. Scenic woods loop trail runs along a high glacial esker in the Town Forest. Trail leaves the Charles River Path 0.1 mi from start at Longfellow Pond. **Length:** 0.8 mi, round trip. **Elevation gain:** 80 ft. **Markers:** purple arrows. **Access:** Longfellow Pond parking lot on Oakland St.

Guernsey Path. An enjoyable walk along the Charles River, under the Waban Arches to the Nehoiden Golf Course and through Wellesley College. **Length:** 2.2 mi. **Markers:** orange arrows. **Access:** Winding River Rd parking area.

Longfellow Pond Trail. A popular loop trail around Longfellow Pond. Explore the pond ecology and other trails in the Town Forest. **Length:** 0.8 mi, round trip. **Markers:** purple arrows. **Access:** Longfellow Pond parking lot on Oakland St.

Morses Pond Trail. A lovely loop walk along the Morses Pond shoreline and through pine woods. **Length:** 1.2 mi, round trip. **Markers:** purple arrows. **Access:** entrance to the Town Beach on Turner Rd.

Rockridge Pond Trail. Short, pretty walk on a trail around part of this picturesque pond connecting Rockridge and Cliff Rds. **Length:** 0.4 mi. **Markers:** purple arrows. **Access:** Hundreds Cir parking area.

Sudbury Path. Follow the Sudbury Aqueduct from Needham to Wellesley College. Eastern section goes through the Town Forest and Babson College. Western section runs through Beebe Meadow and across the Waban Arches. **Length:** 4.6 mi. **Markers:** blue arrows. **Access:** any street crossing along route.

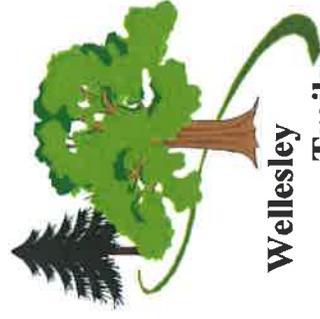
WCC Guernsey Sanctuary Trail. A pleasant loop trail to Sabrina Lake. Explore this diverse woodland with streams, ponds, wetlands and a vernal pool. **Length:** 0.6 mi, round trip. **Markers:** purple arrows. **Access:** Winding River Rd parking area.

Trail Use Guidelines

- No motorized vehicles, littering, dumping, camping, fires, smoking, or alcoholic beverages.
- Stay on mowed trails. Fields are full of poison ivy.
- Do not feed, approach or touch wildlife, including waterfowl.
- Use protection against ticks and mosquito bites.
- Abide by town's restriction of no more than 2 dogs per person or 3 dogs with a permit.
- Pick up after your dog and properly dispose of the waste. Thanks!

More Information

Get detailed trail descriptions and maps online at www.wellesleytrails.org. Brochures are available at the Natural Resources Commission office in Town Hall. See the book *Walks in Wellesley*, published by the Wellesley Conservation Council. Contact us at trails@wellesleyma.gov for questions or to report trail problems.



**Wellesley
Trails**

Trails Map

*Explore and enjoy 26 miles of
trails in town conservation
lands and along
interconnecting paths.*

Natural Resources Commission
Wellesley Trails Committee
wellesleytrails.org

PUBLIC TRANSPORTATION SCHEDULES

Stations > Wellesley Square

Wellesley Square Zone 3

1 Grove St Wellesley, MA 02482-7714 [Get directions](#) →



Station Info	Departures
--------------	------------

 **Track Change:** Please board all peak outbound Worcester Line trains on the inbound platforms at... +1 more  **VIEW**

Parking

Parking Spaces: 224

Accessible Spaces: 2

Parking Rate: \$4.50 daily.

Residents - \$3.00 with Resident

[Parking Debit Card.](#)

Managed by: City of Wellesley

[View City of Wellesley's](#)

[Website](#) →

Note: City of Wellesley is responsible for parking lot snow removal, maintenance and fee collection. Please contact MBTA Customer Service regarding station and platform snow removal, cleanliness and maintenance issues.

Accessibility

Wellesley Square is not an accessible station.

Fares

Commuter Rail Fares

Zone 3 One Way 

CharlieTicket or Cash

\$7.50

Zone 3 Monthly Pass   

CharlieTicket

\$244.25

[View Commuter Rail Zone 3 fares list](#) →

Nearby MBTA fare retail sales locations

Needham Junction Ice Cream

40 Junction St

3.4 mi

Star Market

2040 Commonwealth Ave
Newton, MA

4.3 mi

FRAMINGHAM/WORCESTER LINE effective November 20, 2017

Trains in shaded columns will NOT OPERATE when the Framingham/Worcester Authority is operating on a REDUCED SCHEDULE

Massachusetts Bay Transportation Authority **MBTA** Commuter Rail is operating on a REDUCED SCHEDULE

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Monday to Friday

Inbound to Boston

STATION	500	502	582	504	584	506	586	508	588	510	552	590	PM
8 Worcester	6:45	5:15	6:22	6:35	6:57	7:24	8:00						1506
8 Grafton	6:58	5:28	6:03	6:35	7:10	7:37							1512
7 Westborough	7:11	5:41	6:16	6:48	7:23	7:50							1518
6 Southborough	7:24	5:54	6:29	7:01	7:36	8:03							1524
5 Framingham	7:37	6:07	6:42	7:14	7:49	8:16							1530
4 West Natick	7:50	6:20	6:55	7:27	8:02	8:29							1536
4 Natick Center	8:03	6:33	7:08	7:40	8:15	8:42							1542
3 Wellesley Square	8:16	6:46	7:21	7:53	8:28	8:55							1548
3 Wellesley Hills	8:29	6:59	7:34	8:06	8:41	9:08							1554
3 Wellesley Farms	8:42	7:12	7:47	8:19	8:54	9:21							16:00
2 Auburndale	8:55	7:25	8:00	8:32	9:07	9:34							16:06
2 West Newton	9:08	7:38	8:13	8:45	9:20	9:47							16:12
1 Newtonville	9:21	7:51	8:26	8:58	9:33	10:00							16:18
1A Back Bay	9:34	8:04	8:39	9:11	9:46	10:13							16:24
1A South Station	9:47	8:17	8:52	9:24	9:59	10:26							16:30

Outbound from Boston

STATION	1501	1503	1505	1507	1509	1511	1513	1515	1517	1519	1521	1523	1525	1527	1529	1531	1533	1535	1537
1A South Station	6:45	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30
1A Back Bay	6:58	8:28	8:43	8:58	9:13	9:28	9:43	9:58	10:13	10:28	10:43	10:58	11:13	11:28	11:43	11:58	12:13	12:28	12:43
1A Yawkey	7:11	8:41	8:56	9:11	9:26	9:41	9:56	10:11	10:26	10:41	10:56	11:11	11:26	11:41	11:56	12:11	12:26	12:41	12:56
1A Boston Landing	7:24	8:54	9:09	9:24	9:39	9:54	10:09	10:24	10:39	10:54	11:09	11:24	11:39	11:54	12:09	12:24	12:39	12:54	13:09
1 Newtonville	7:37	9:07	9:22	9:37	9:52	10:07	10:22	10:37	10:52	11:07	11:22	11:37	11:52	12:07	12:22	12:37	12:52	13:07	13:22
2 West Newton	7:50	9:20	9:35	9:50	10:05	10:20	10:35	10:50	11:05	11:20	11:35	11:50	12:05	12:20	12:35	12:50	13:05	13:20	13:35
2 Auburndale	8:03	9:33	9:48	10:03	10:18	10:33	10:48	11:03	11:18	11:33	11:48	12:03	12:18	12:33	12:48	13:03	13:18	13:33	13:48
3 Wellesley Farms	8:16	9:46	10:01	10:16	10:31	10:46	11:01	11:16	11:31	11:46	12:01	12:16	12:31	12:46	13:01	13:16	13:31	13:46	14:01
3 Wellesley Hills	8:29	9:59	10:14	10:29	10:44	10:59	11:14	11:29	11:44	11:59	12:14	12:29	12:44	12:59	13:14	13:29	13:44	13:59	14:14
3 Wellesley Square	8:42	10:12	10:27	10:42	10:57	11:12	11:27	11:42	11:57	12:12	12:27	12:42	12:57	13:12	13:27	13:42	13:57	14:12	14:27
4 Natick Center	8:55	10:25	10:40	10:55	11:10	11:25	11:40	11:55	12:10	12:25	12:40	12:55	13:10	13:25	13:40	13:55	14:10	14:25	14:40
5 Framingham	9:08	10:38	10:53	11:08	11:23	11:38	11:53	12:08	12:23	12:38	12:53	13:08	13:23	13:38	13:53	14:08	14:23	14:38	14:53
6 Ashland	9:21	10:51	11:06	11:21	11:36	11:51	12:06	12:21	12:36	12:51	13:06	13:21	13:36	13:51	14:06	14:21	14:36	14:51	15:06
7 Westborough	9:34	11:04	11:19	11:34	11:49	12:04	12:19	12:34	12:49	13:04	13:19	13:34	13:49	14:04	14:19	14:34	14:49	15:04	15:19
8 Grafton	9:47	11:17	11:32	11:47	12:02	12:17	12:32	12:47	13:02	13:17	13:32	13:47	14:02	14:17	14:32	14:47	15:02	15:17	15:32
8 Worcester	10:00	11:30	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45

Saturday & Sunday

Inbound to Boston

STATION	1500	1502	1504	1506	1508	1510	1512	1514	1516
8 Worcester	7:00	8:50	10:50	12:50	2:30	4:30	6:30	8:30	10:30
8 Grafton	7:13	9:03	11:03	13:03	2:43	4:43	6:43	8:43	10:43
7 Westborough	7:26	9:16	11:16	13:16	2:56	4:56	6:56	8:56	10:56
6 Southborough	7:39	9:29	11:29	13:29	3:09	5:09	7:09	9:09	11:09
5 Framingham	7:52	9:42	11:42	13:42	3:22	5:22	7:22	9:22	11:22
4 West Natick	8:05	9:55	11:55	13:55	3:35	5:35	7:35	9:35	11:35
4 Natick Center	8:18	10:08	12:08	14:08	3:48	5:48	7:48	9:48	11:48
3 Wellesley Square	8:31	10:21	12:21	14:21	3:58	5:58	7:58	9:58	11:58
3 Wellesley Hills	8:44	10:34	12:34	14:34	4:08	6:08	8:08	10:08	12:08
3 Wellesley Farms	8:57	10:47	12:47	14:47	4:18	6:18	8:18	10:18	12:18
2 Auburndale	9:10	11:00	13:00	15:00	4:28	6:28	8:28	10:28	12:28
2 West Newton	9:23	11:13	13:13	15:13	4:38	6:38	8:38	10:38	12:38
1 Newtonville	9:36	11:26	13:26	15:26	4:48	6:48	8:48	10:48	12:48
1A Back Bay	9:49	11:39	13:39	15:39	4:58	6:58	8:58	10:58	12:58
1A South Station	10:02	11:52	13:52	15:52	5:08	7:08	9:08	11:08	13:08

Outbound from Boston

STATION	1501	1503	1505	1507	1509	1511	1513	1515	1517
1A South Station	6:40	8:40	10:40	12:40	2:20	4:20	6:20	8:20	10:40
1A Back Bay	6:53	8:53	10:53	12:53	2:33	4:33	6:33	8:33	10:53
1A Yawkey	7:06	9:06	11:06	13:06	2:43	4:43	6:43	8:43	11:06
1A Boston Landing	7:19	9:19	11:19	13:19	2:53	4:53	6:53	8:53	11:19
1 Newtonville	7:32	9:32	11:32	13:32	3:03	5:03	7:03	9:03	11:32
2 West Newton	7:45	9:45	11:45	13:45	3:13	5:13	7:13	9:13	11:45
2 Auburndale	7:58	9:58	11:58	13:58	3:23	5:23	7:23	9:23	11:58
3 Wellesley Farms	8:11	10:11	12:11	14:11	3:33	5:33	7:33	9:33	12:11
3 Wellesley Hills	8:24	10:24	12:24	14:24	3:43	5:43	7:43	9:43	12:24
3 Wellesley Square	8:37	10:37	12:37	14:37	3:53	5:53	7:53	9:53	12:37
4 Natick Center	8:50	10:50	12:50	14:50	4:03	6:03	8:03	10:03	12:50
5 Framingham	9:03	11:03	13:03	15:03	4:13	6:13	8:13	10:13	13:03
6 Ashland	9:16	11:16	13:16	15:16	4:23	6:23	8:23	10:23	13:16
7 Westborough	9:29	11:29							

ROUTE 8: Wellesley



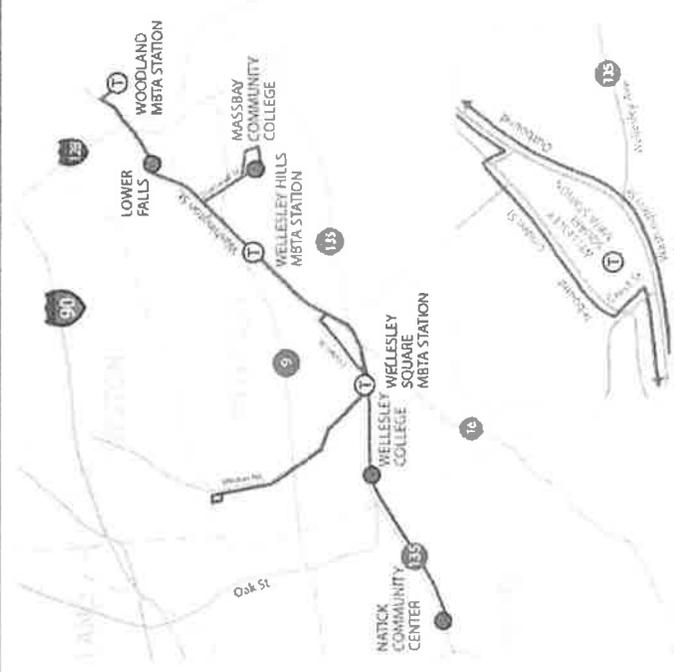
Cash Fare Information

Adult fare: \$1.50 / \$1.25 with a Charlie Card
 Student fare: \$1.00 with valid Student ID.
 Children under 6 ride free when accompanied by an adult.
 Children under 12 may not ride unaccompanied.
 Elderly (65 years of age or older) - \$0.75 with photo ID indicating date of birth or a MWRTA senior TAP Pass or \$0.70 with a Charlie Card

Transfer/Connections

Transfer coupons are available on all buses and are good for transfers within the MWRTA system only. Transfers are not compatible within the MBTA system. Riders wishing to transfer, (free of charge), from one route to another (in the same direction), must ask the driver for a transfer coupon and present it to the next driver within 90 minutes. Riders can access MBTA Commuter Rail Service in Downtown Framingham, at the West Natick Commuter Rail Station, Downtown Natick as well as Wellesley Square and Wellesley Hills. For MBTA schedule and service information call 617.222.3200.

Route 8 (Monday-Friday Service)



Effective Summer 2016

Schedule Times

Scheduled times are only approximate; please wait for the MWRTA ten minutes in advance of scheduled times to assure not missing the bus.

The MWRTA uses the Flag Down System which allows buses to stop anywhere along their routes to pick up passengers, where it is safe to do so. Passengers can hail MWRTA buses by waving.

No service provided on the following Holidays:

- New Year's Day
- Patriot's Day
- Memorial Day
- Independence Day
- Thanksgiving Day
- Christmas Day

Please visit our website: www.mwrta.com
 MWRTA Customer Service: (508) 935-2222

Follow Us: @mwrta



MetroWest Regional Transit Authority
 Public Transportation System

VEHICLE TRAVEL SPEED DATA

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SPD1

NB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
01/23/18	0	0	0	0	0	0	0	0	1	0	2	1	0	2		6
01:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0		2
02:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0		1
03:00	0	0	0	0	0	0	0	0	0	1	1	1	2	0		5
04:00	1	0	0	0	0	0	1	2	3	5	1	2	0	0		15
05:00	1	0	0	0	0	0	0	1	4	11	20	7	3	1		48
06:00	7	0	0	0	1	1	1	8	59	104	73	33	12	2		301
07:00	65	1	0	11	36	36	39	43	165	188	94	22	3	0		703
08:00	61	0	0	0	2	5	19	59	118	197	119	35	6	2		623
09:00	27	0	0	0	0	2	15	23	110	150	113	47	8	1		496
10:00	19	0	0	0	0	0	2	15	68	133	123	29	8	1		398
11:00	31	0	0	0	0	4	6	32	104	129	97	25	6	0		434
12 PM	20	0	0	0	0	0	0	14	65	137	142	57	7	4		446
13:00	22	0	0	0	0	1	5	16	70	138	130	49	8	1		440
14:00	14	0	0	0	0	2	2	20	80	163	137	50	10	1		479
15:00	26	0	0	2	2	3	17	24	84	194	130	43	8	0		533
16:00	51	0	0	0	0	1	2	35	97	197	136	41	6	0		566
17:00	40	0	0	0	0	0	11	45	143	178	110	28	3	0		558
18:00	25	0	0	0	0	2	4	16	104	158	85	33	9	3		439
19:00	13	0	0	0	0	2	8	10	65	105	84	35	6	0		328
20:00	1	0	0	0	0	0	1	11	54	97	65	33	7	1		270
21:00	1	0	0	0	0	1	1	4	24	47	36	30	4	3		151
22:00	0	0	0	0	0	0	0	3	13	17	19	7	4	2		65
23:00	0	0	0	0	0	0	0	2	4	2	1	7	4	1		21
Total	425	1	0	13	41	60	134	384	1435	2353	1718	615	124	25		7328

Daily

- 15th Percentile : 24 MPH
- 50th Percentile : 28 MPH
- 85th Percentile : 32 MPH
- 95th Percentile : 34 MPH

Mean Speed(Average) : 28 MPH

10 MPH Pace Speed : 25-34 MPH

Number in Pace : 5711

Percent In Pace : 77.9%

Number of Vehicles > 30 MPH : 2482

Percent of Vehicles > 30 MPH : 33.9%

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SPD1

NB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total
	3	6	9	12	15	18	21	24	27	30	33	36	39	999	
01/24/18	0	0	0	0	0	0	0	0	0	4	5	3	1	1	14
01:00	0	0	0	0	0	1	0	0	0	1	0	0	0	1	3
02:00	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
03:00	0	0	0	0	0	0	0	0	2	1	0	1	0	1	5
04:00	1	0	0	0	0	0	0	0	1	0	3	0	1	0	6
05:00	1	0	0	0	0	0	2	3	13	17	9	10	4	0	59
06:00	9	0	0	0	0	1	1	7	50	87	76	22	8	2	263
07:00	70	0	2	2	7	5	14	50	178	247	135	41	4	1	756
08:00	71	0	0	1	4	2	6	49	146	192	117	35	11	2	636
09:00	27	0	0	0	0	1	9	22	54	156	156	71	18	3	517
10:00	21	0	0	0	0	0	12	38	57	149	122	69	13	3	484
11:00	29	0	0	0	0	0	4	27	69	165	146	71	18	5	534
12 PM	20	0	0	0	0	1	2	14	68	143	127	78	16	0	469
13:00	32	0	0	1	0	3	1	18	63	120	147	83	19	6	493
14:00	47	0	0	0	0	2	5	25	69	171	146	69	12	5	551
15:00	54	0	0	0	1	1	7	22	81	204	146	63	15	0	594
16:00	56	0	1	0	0	4	10	17	84	185	143	51	16	2	569
17:00	33	0	0	0	0	0	8	36	128	175	121	42	4	0	547
18:00	20	0	0	0	0	3	1	30	86	142	92	31	9	4	418
19:00	11	0	0	0	0	0	5	12	42	135	96	38	13	2	352
20:00	3	0	0	0	0	0	0	8	43	80	67	37	11	2	251
21:00	0	0	0	0	0	2	0	7	19	52	72	23	8	1	184
22:00	0	0	0	0	0	0	0	0	8	23	23	19	1	2	76
23:00	0	0	0	0	0	0	0	1	3	7	11	4	0	2	28
Total	505	0	3	4	12	26	87	386	1264	2457	1960	860	202	45	7811

Daily
 15th Percentile : 24 MPH
 50th Percentile : 28 MPH
 85th Percentile : 32 MPH
 95th Percentile : 35 MPH

 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 5968
 Percent in Pace : 76.4%
 Number of Vehicles > 30 MPH : 3067
 Percent of Vehicles > 30 MPH : 39.3%

Grand Total	930	1	3	17	53	86	221	770	2699	4810	3678	1475	326	70	15139
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Overall
 15th Percentile : 24 MPH
 50th Percentile : 28 MPH
 85th Percentile : 32 MPH
 95th Percentile : 35 MPH

 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 11679
 Percent in Pace : 77.1%
 Number of Vehicles > 30 MPH : 5549
 Percent of Vehicles > 30 MPH : 36.7%

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SPD1

SB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
01/23/18	0	0	0	0	0	0	0	0	0	0	4	4	1	4		13
01:00	0	0	0	0	0	0	0	0	0	0	1	2	0	1		4
02:00	0	0	0	0	0	0	0	0	0	1	1	0	1	1		4
03:00	0	0	0	0	0	0	0	0	0	0	0	0	1	1		2
04:00	0	0	0	0	0	0	1	1	1	3	2	3	4	3		18
05:00	1	0	0	0	0	0	0	0	0	3	13	14	11	13		55
06:00	6	0	0	0	0	1	0	4	21	42	52	53	12	9		200
07:00	70	3	6	7	12	22	36	47	85	89	114	47	13	1		552
08:00	98	4	16	17	16	15	17	41	95	157	104	45	9	3		637
09:00	28	0	0	0	0	0	2	2	23	96	153	89	26	8		427
10:00	24	0	0	0	0	0	1	4	28	83	122	81	24	10		377
11:00	35	0	0	0	0	0	0	0	14	64	130	131	44	18		438
12 PM	21	0	3	1	0	3	2	1	18	50	123	115	58	23		416
13:00	20	0	0	0	0	0	0	3	19	66	114	104	46	24		398
14:00	21	0	0	0	0	0	1	5	25	50	126	100	51	22		401
15:00	39	2	2	11	8	3	4	13	45	111	184	135	36	9		602
16:00	37	0	1	0	0	0	5	12	33	115	183	103	37	8		534
17:00	31	0	0	0	0	1	14	28	76	160	161	57	13	4		545
18:00	25	0	0	0	0	2	4	20	76	157	147	67	17	7		522
19:00	9	0	0	0	0	0	0	6	8	43	77	73	43	13		272
20:00	2	0	0	0	0	0	0	1	7	30	63	41	14	13		171
21:00	5	0	0	0	0	1	0	0	2	8	21	22	20	10		89
22:00	0	0	0	0	0	0	0	0	2	6	11	11	6	6		42
23:00	0	0	0	0	0	0	0	0	0	2	5	7	5	2		21
Total	472	9	28	36	36	48	87	188	576	1336	1911	1304	492	213		6736

Daily

- 15th Percentile : 24 MPH
- 50th Percentile : 30 MPH
- 85th Percentile : 34 MPH
- 95th Percentile : 37 MPH

Mean Speed(Average) : 29 MPH

10 MPH Pace Speed : 27-36 MPH

Number in Pace : 4743

Percent in Pace : 70.4%

Number of Vehicles > 30 MPH : 3920

Percent of Vehicles > 30 MPH : 58.2%

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SPD1

SB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
01/24/18	0	0	0	0	0	0	0	0	0	2	2	4	1	2	2	11
01:00	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
02:00	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	1	1	1	1	0	1	5	5
04:00	0	0	0	0	0	1	0	0	1	0	6	6	2	0	16	16
05:00	0	0	0	0	0	0	1	1	2	5	11	22	12	10	64	64
06:00	7	0	0	0	0	0	3	2	17	45	73	34	17	2	200	200
07:00	100	10	15	15	22	19	38	62	56	129	81	44	10	2	603	603
08:00	109	5	12	15	18	20	35	57	87	111	93	56	21	5	644	644
09:00	32	0	0	0	1	0	2	12	25	98	183	111	39	15	518	518
10:00	20	0	2	3	1	6	9	10	19	56	119	127	45	12	429	429
11:00	26	0	0	0	0	1	1	8	38	127	156	103	43	13	516	516
12 PM	15	0	0	0	0	0	1	15	46	78	142	111	46	12	466	466
13:00	23	0	0	2	0	3	5	7	27	82	157	126	45	15	492	492
14:00	45	0	0	1	1	5	14	34	76	157	192	107	23	11	666	666
15:00	64	1	4	7	9	22	23	48	76	147	187	67	26	5	666	666
16:00	57	0	0	0	4	2	8	20	72	173	193	81	32	5	647	647
17:00	52	4	5	16	23	24	28	40	82	141	99	47	10	6	577	577
18:00	21	0	0	0	0	0	3	25	75	165	180	71	13	3	556	556
19:00	11	0	0	0	0	0	3	4	20	79	90	81	32	11	331	331
20:00	6	0	0	0	0	0	1	0	14	22	62	34	17	6	162	162
21:00	1	0	0	0	0	0	0	1	3	17	28	21	19	9	99	99
22:00	0	0	0	0	0	0	0	1	2	3	14	19	17	12	68	68
23:00	0	0	0	0	0	0	0	1	0	0	3	7	4	3	18	18
Total	589	20	38	59	79	103	175	349	739	1639	2053	1281	474	160	7758	

Daily
 15th Percentile : 21 MPH
 50th Percentile : 30 MPH
 85th Percentile : 34 MPH
 95th Percentile : 36 MPH
 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 5219
 Percent in Pace : 67.3%
 Number of Vehicles > 30 MPH : 3968
 Percent of Vehicles > 30 MPH : 51.1%

Grand Total	1061	29	66	95	115	151	262	537	1315	2975	3964	2585	966	373	14494
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Overall
 15th Percentile : 22 MPH
 50th Percentile : 30 MPH
 85th Percentile : 34 MPH
 95th Percentile : 36 MPH
 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 9962
 Percent in Pace : 68.7%
 Number of Vehicles > 30 MPH : 7888
 Percent of Vehicles > 30 MPH : 54.4%

Accurate Counts
978-664-2565

Location : Weston Road
Location : South of Howe Street
City/State: Wellesley, MA

7774SPD1

NB, SB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
01/23/18	0	0	0	0	0	0	0	0	1	0	6	5	1	6	19	
01:00	0	0	0	0	0	0	0	0	0	2	1	2	0	1	6	
02:00	0	0	0	0	0	0	0	1	0	1	1	0	1	1	5	
03:00	0	0	0	0	0	0	0	0	0	1	1	1	3	1	7	
04:00	1	0	0	0	0	0	2	3	4	8	3	5	4	3	33	
05:00	2	0	0	0	0	0	0	1	4	14	33	21	14	14	103	
06:00	13	0	0	0	1	2	1	12	80	146	125	86	24	11	501	
07:00	135	4	6	18	48	58	75	90	250	277	208	69	16	1	1255	
08:00	159	4	16	17	18	20	36	100	213	354	223	80	15	5	1260	
09:00	55	0	0	0	0	2	17	25	133	246	266	136	34	9	923	
10:00	43	0	0	0	0	0	3	19	96	216	245	110	32	11	775	
11:00	66	0	0	0	0	4	6	32	118	193	227	156	50	18	870	
12 PM	41	0	3	1	0	3	2	15	81	187	265	172	65	27	862	
13:00	42	0	0	0	0	1	5	19	89	204	244	153	54	25	836	
14:00	35	0	0	0	0	2	3	25	105	213	263	150	61	23	880	
15:00	65	2	2	13	10	6	21	37	129	305	314	178	44	9	1135	
16:00	88	0	1	0	0	1	7	47	130	312	319	144	43	8	1100	
17:00	71	0	0	0	0	1	25	73	219	338	271	85	16	4	1103	
18:00	50	0	0	0	0	4	8	36	180	315	232	100	26	10	961	
19:00	22	0	0	0	0	2	8	16	73	148	161	108	49	13	600	
20:00	3	0	0	0	0	0	1	12	61	127	128	74	21	14	441	
21:00	6	0	0	0	0	2	1	4	26	55	57	52	24	13	240	
22:00	0	0	0	0	0	0	0	3	15	23	30	18	10	8	107	
23:00	0	0	0	0	0	0	0	2	4	4	6	14	9	3	42	
Total	897	10	28	49	77	108	221	572	2011	3689	3629	1919	616	238	14064	

Daily
 15th Percentile : 24 MPH
 50th Percentile : 29 MPH
 85th Percentile : 33 MPH
 95th Percentile : 35 MPH

 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 9969
 Percent in Pace : 70.9%
 Number of Vehicles > 30 MPH : 6402
 Percent of Vehicles > 30 MPH : 45.5%

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SPD1

NB, SB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
01/24/18	0	0	0	0	0	0	0	0	0	6	7	7	2	3		25
01:00	0	0	0	0	0	1	0	0	0	2	0	1	0	1		5
02:00	0	0	0	0	0	0	0	1	0	1	1	1	0	0		4
03:00	0	0	0	0	0	0	0	0	3	2	1	2	0	2		10
04:00	1	0	0	0	0	1	0	0	2	0	9	6	3	0		22
05:00	1	0	0	0	0	0	3	4	15	22	20	32	16	10		123
06:00	16	0	0	0	0	1	4	9	67	132	149	56	25	4		463
07:00	170	10	17	17	29	24	52	112	234	376	216	85	14	3		1359
08:00	180	5	12	16	22	22	41	106	233	303	210	91	32	7		1280
09:00	59	0	0	0	1	1	11	34	79	254	339	182	57	18		1035
10:00	41	0	2	3	1	6	21	48	76	205	241	196	58	15		913
11:00	55	0	0	0	0	1	5	35	107	292	302	174	61	18		1050
12 PM	35	0	0	0	0	1	3	29	114	221	269	189	62	12		935
13:00	55	0	0	3	0	6	6	25	90	202	304	209	64	21		985
14:00	92	0	0	1	1	7	19	59	145	328	338	176	35	16		1217
15:00	118	1	4	7	10	23	30	70	157	351	313	130	41	5		1260
16:00	113	0	1	0	4	6	18	37	156	358	336	132	48	7		1216
17:00	85	4	5	16	23	24	36	76	210	316	220	89	14	6		1124
18:00	41	0	0	0	0	3	4	55	161	307	272	102	22	7		974
19:00	22	0	0	0	0	0	8	16	62	214	186	117	45	13		683
20:00	9	0	0	0	0	0	1	8	57	102	129	71	26	8		413
21:00	1	0	0	0	0	2	0	8	22	69	100	44	27	10		283
22:00	0	0	0	0	0	0	0	1	10	26	37	38	18	14		144
23:00	0	0	0	0	0	0	0	2	3	7	14	11	4	5		46
Total	1094	20	41	63	91	129	262	735	2003	4096	4013	2141	676	205	15569	

Daily
 15th Percentile : 23 MPH
 50th Percentile : 29 MPH
 85th Percentile : 33 MPH
 95th Percentile : 35 MPH
 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 10918
 Percent in Pace : 70.1%
 Number of Vehicles > 30 MPH : 7035
 Percent of Vehicles > 30 MPH : 45.2%

Grand Total	1991	30	69	112	168	237	483	1307	4014	7785	7642	4060	1292	443	29633
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Overall
 15th Percentile : 23 MPH
 50th Percentile : 29 MPH
 85th Percentile : 33 MPH
 95th Percentile : 35 MPH
 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 20825
 Percent in Pace : 70.3%
 Number of Vehicles > 30 MPH : 13437
 Percent of Vehicles > 30 MPH : 45.3%

MASSDOT CRASH RATE WORKSHEETS

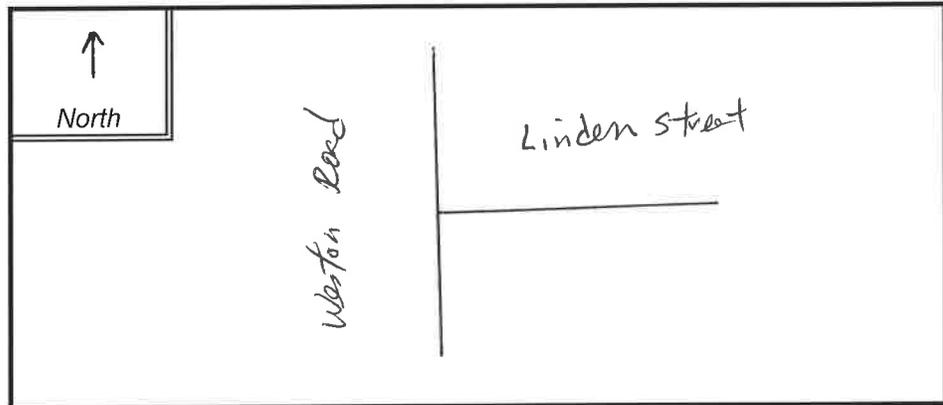
INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Wellesley COUNT DATE : Jan-18
 DISTRICT : 6 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Weston Road
 MINOR STREET(S) : Linden Street

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



PEAK HOUR VOLUMES

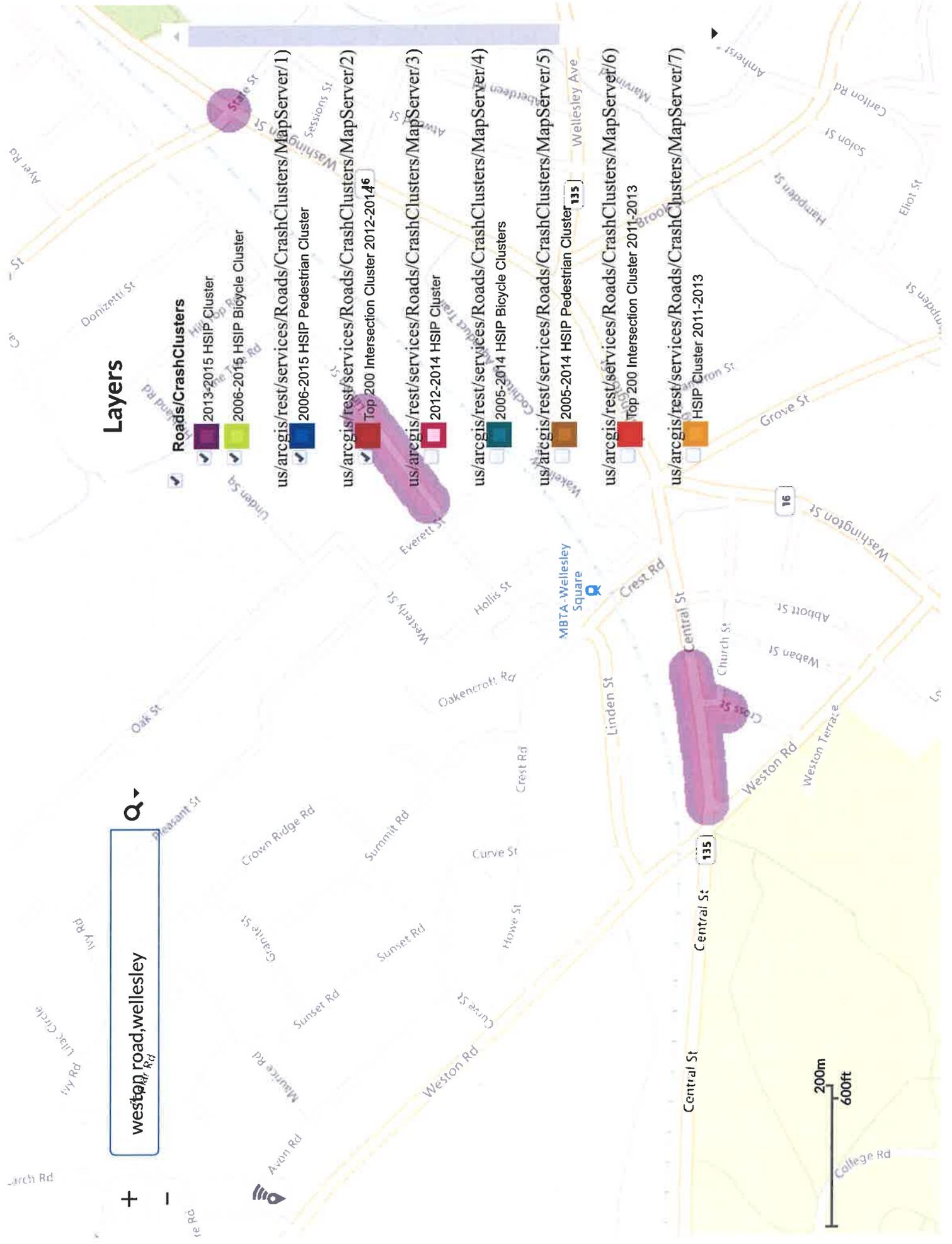
APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :		453	439	665		1,557

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

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

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

Comments : Above MassDOT District 6 crash rate
 Project Title & Date: Proposed Residential Development February 2018



Layers

Roads/CrashClusters

2013-2015 HSIP Cluster

2006-2015 HSIP Bicycle Cluster

us/arcgis/rest/services/Roads/CrashClusters/MapServer/1)

2006-2015 HSIP Pedestrian Cluster

us/arcgis/rest/services/Roads/CrashClusters/MapServer/2)

Top 200 Intersection Cluster 2012-2014⁶

us/arcgis/rest/services/Roads/CrashClusters/MapServer/3)

2012-2014 HSIP Cluster

us/arcgis/rest/services/Roads/CrashClusters/MapServer/4)

2005-2014 HSIP Bicycle Clusters

us/arcgis/rest/services/Roads/CrashClusters/MapServer/5)

2005-2014 HSIP Pedestrian Cluster **135**

us/arcgis/rest/services/Roads/CrashClusters/MapServer/6)

Top 200 Intersection Cluster 2011-2013

us/arcgis/rest/services/Roads/CrashClusters/MapServer/7)

HSIP Cluster 2011-2013

weston road, wellesley



GENERAL BACKGROUND TRAFFIC GROWTH

General Background Traffic Growth - Daily Traffic Volumes

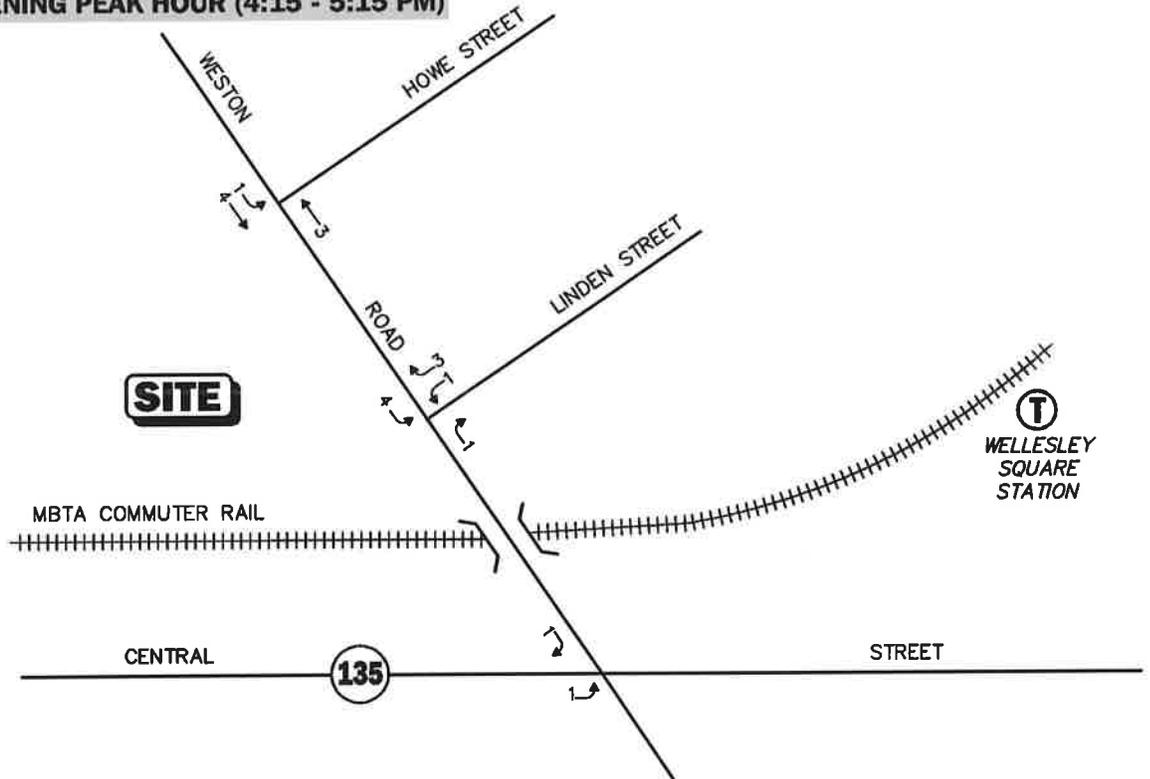
CITY/TOWN	ROUTE/STREET	LOCATION	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average Annual
Wesston	I-95	South of Route 20 (Sta. 32)	169,066	166,700	165,404				154,800	163,302	165,552	156,519	165,476	-0.26%

BACKGROUND DEVELOPMENT TRAFFIC-VOLUME NETWORKS

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



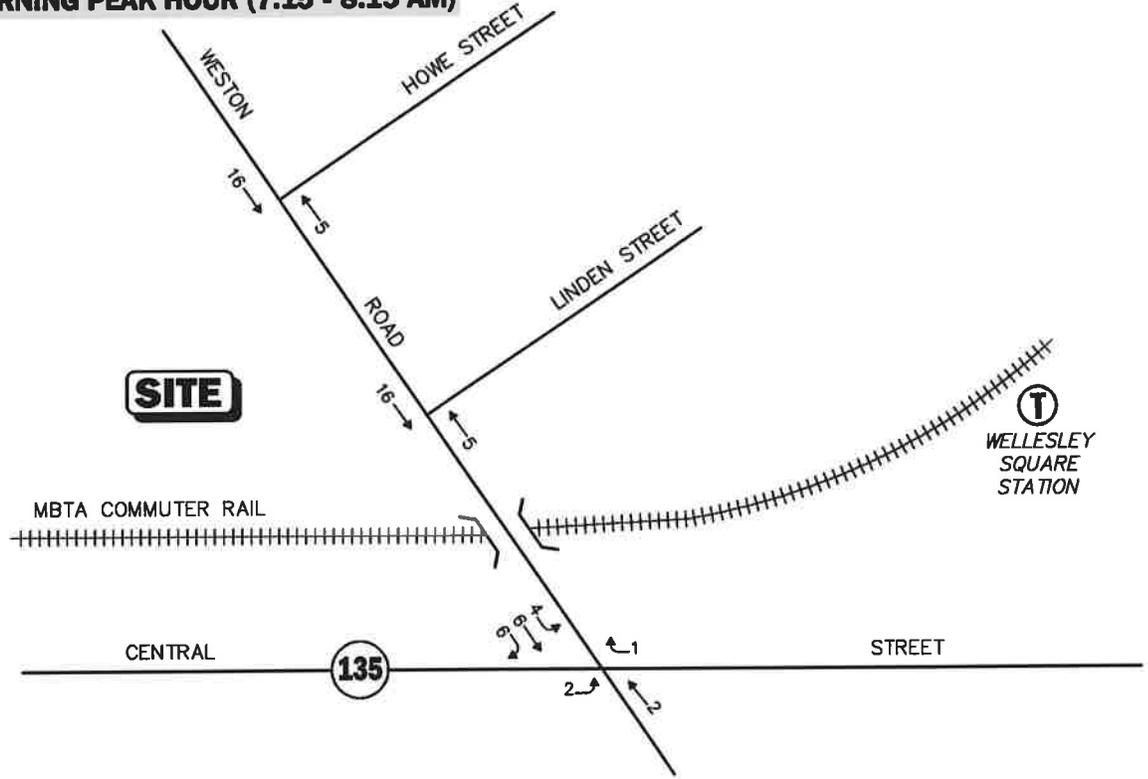
North arrow icon
Not To Scale



Figure A-1

Wellesley Crossing
Peak Hour Traffic Volumes

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



 Not To Scale



Figure A-2

**Proposed Sports Complex
Peak Hour Traffic Volumes**

TRIP-GENERATION CALCULATIONS

Multifamily Housing (Mid-Rise) (221)

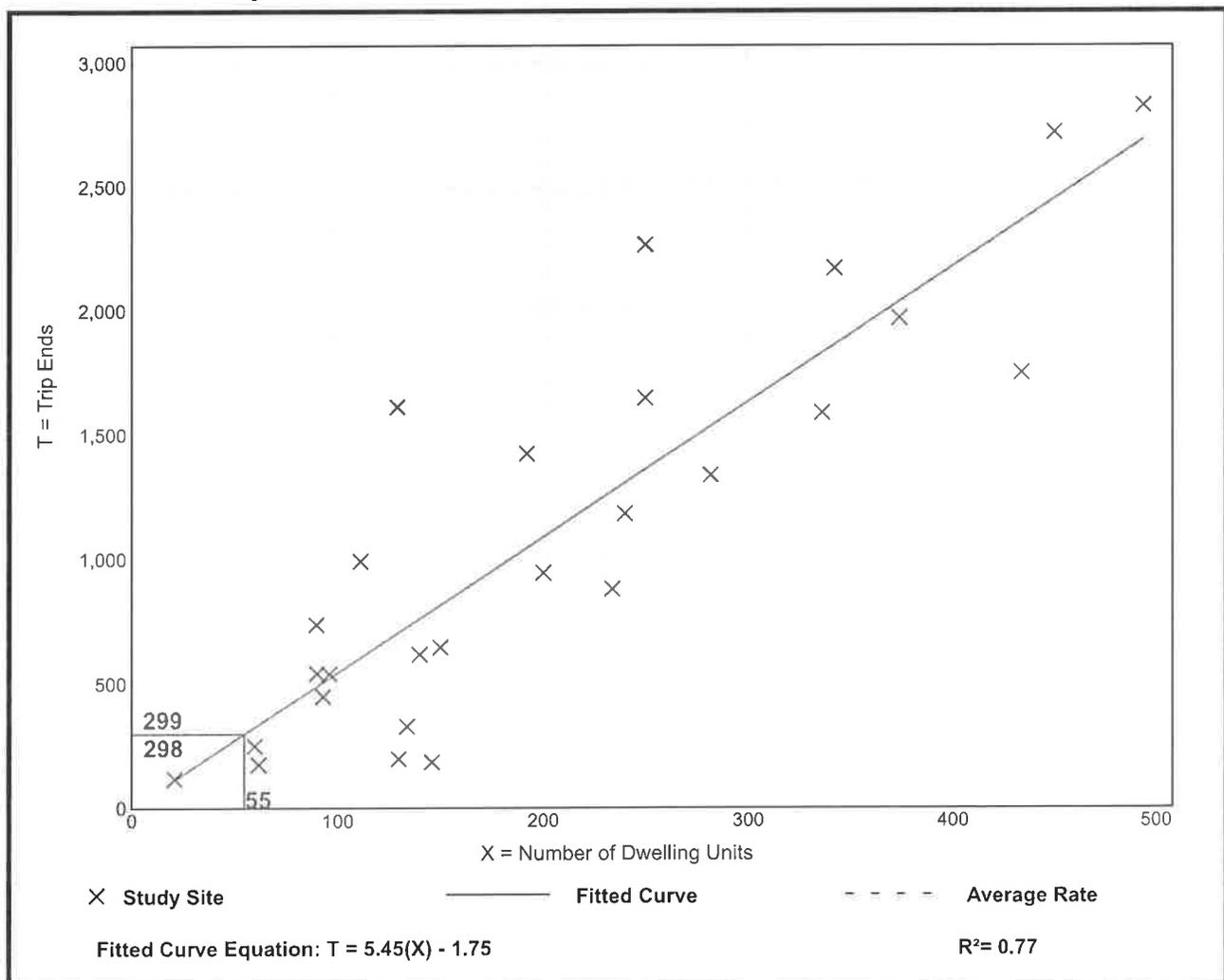
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.44	1.27 - 12.50	2.03

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 53

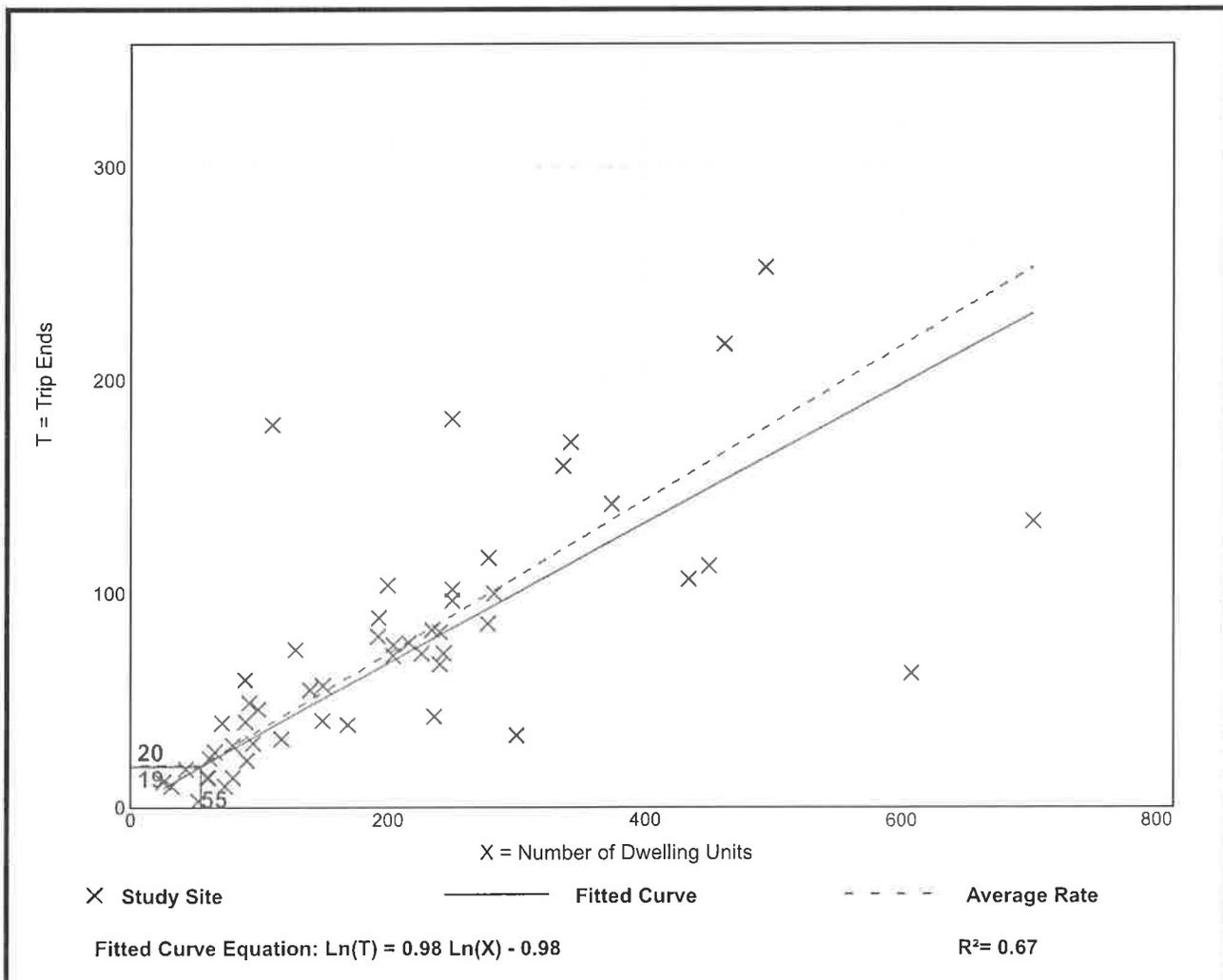
Avg. Num. of Dwelling Units: 207

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.06 - 1.61	0.19

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units

**On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 60

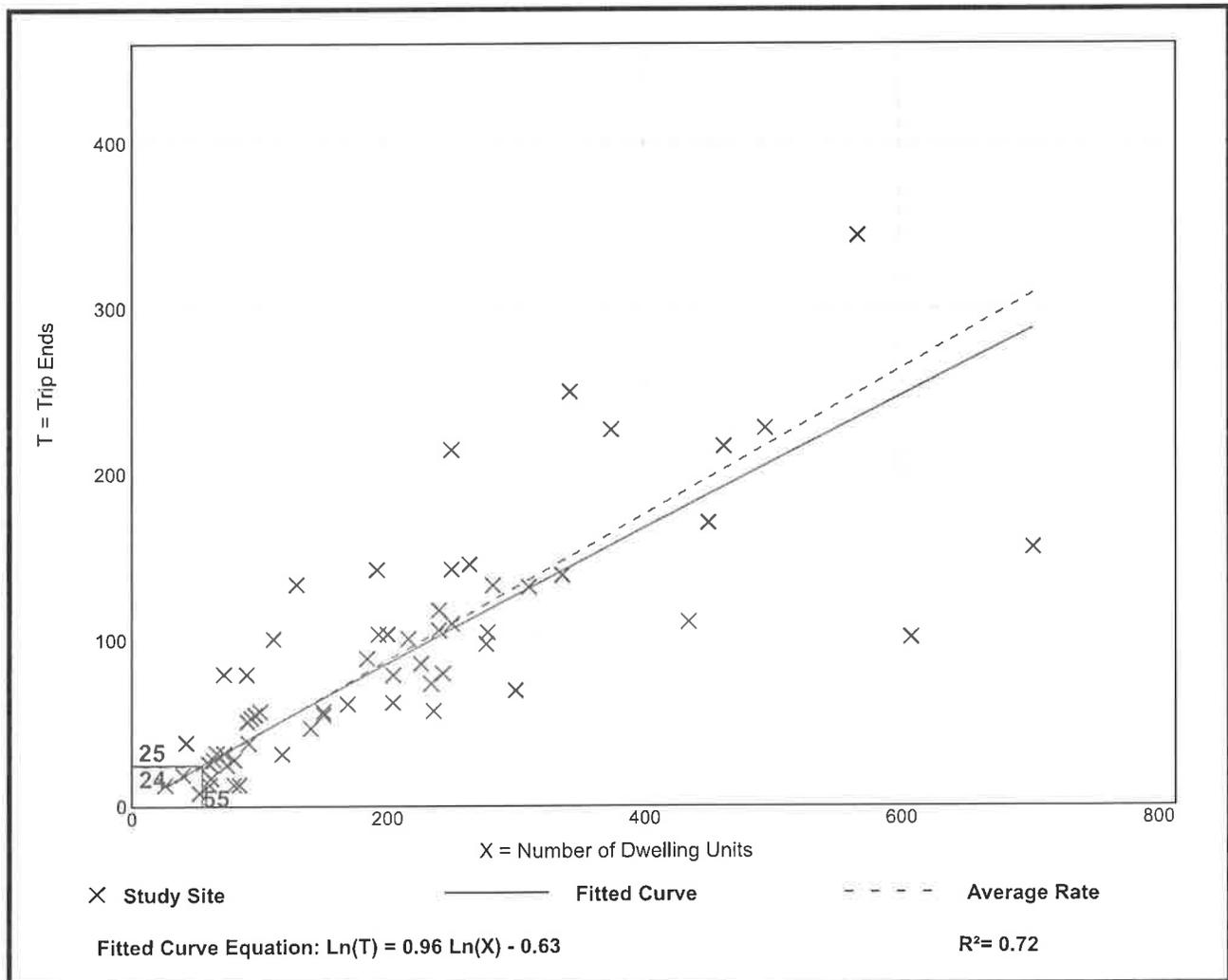
Avg. Num. of Dwelling Units: 208

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.11	0.19

Data Plot and Equation



MODE OF TRANSPORTATION FOR THE TOWN OF WELLESLEY

MEANS OF TRANSPORTATION TO WORK
 Universe: Workers 16 years and over
 2011-2015 American Community Survey 5-Year Estimates

Tell us what you think. Provide feedback to help make American Community Survey data more useful for you.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Versions of this table are available for the following years:	1 - 21 of 21	Wellesley town, Norfolk County, Massachusetts	
		Estimate	Margin of Error
2015		Total:	12,244 +/-387
2014		Car, truck, or van:	8,024 +/-398
2013		Drove alone	7,433 +/-363
2012		Carpooled:	591 +/-156
2011		In 2-person carpool	422 +/-123
2010		In 3-person carpool	71 +/-45
2009		In 4-person carpool	31 +/-21
		In 5- or 6-person carpool	41 +/-32
		In 7-or-more-person carpool	26 +/-24
		Public transportation (excluding taxicab):	1,331 +/-173
		Bus or trolley bus	116 +/-81
		Streetcar or trolley car (carro publico in Puerto Rico)	43 +/-26
		Subway or elevated	216 +/-75
		Railroad	956 +/-162
		Ferryboat	0 +/-22
		Taxicab	11 +/-13
		Motorcycle	5 +/-9
		Bicycle	82 +/-57
		Walked	1,607 +/-279
		Other means	94 +/-44
		Worked at home	1,090 +/-164

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

Explanation of Symbols:

An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.

An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.

An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.

An '****' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.

An '(X)' means that the estimate is not applicable or not available.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2011-2015 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; In certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

JOURNEY TO WORK TRIP DISTRIBUTION

Proposed Residential Development- Wellesley, MA

Residence	Workplace	Weston Road (North)	Weston Road (South)	Central Street (East)	Central Street (West)	Linden Street (East)
Massachusetts	Wellesley town	235	942	1884	1177	471
Massachusetts	Boston city	1974				219
Massachusetts	Cambridge city	554				62
Massachusetts	Newton city	237		119		118
Massachusetts	Needham town		69	207		
Massachusetts	Waltham city	199				66
Massachusetts	Framingham town	60			178	
Massachusetts	Brookline town	168				56
Massachusetts	Weston town	167				56
Massachusetts	Natick town	50			149	
Massachusetts	Marlborough city	128				
Massachusetts	Westwood town	105		105		
Massachusetts	Worcester city	101				
Massachusetts	Braintree Town city	99				
Massachusetts	Weymouth Town city	84				
Massachusetts	Watertown Town city	77	58			19
Massachusetts	Norwood town	64		64		
Massachusetts	Lexington town	60				
Massachusetts	Billerica town	55				
Massachusetts	Lowell city	54				
Massachusetts	Quincy city	54				
Massachusetts	Foxborough town	52		52		
Massachusetts	Dedham town	50	13	37		
Massachusetts	Franklin Town city	49		49		
		10,449	4,337	2,517	1,504	1,067

SAY

42% 10% 24% 14% 10%

40% 10% 25% 15% 10%

CAPACITY ANALYSIS WORKSHEETS

Weston Road at Central Street

Weston Road at Linden Street

Weston Road at Howe Street

Weston Road at the Project Site Driveway

Weston Road at Central Street

1: Weston Road & Central Street
2018 Existing Wkdy AM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	387	568	64	13	239	140	25	439	14	168	223	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1788	0	0	3159	0	0	2002	1404	0	1896	0
Flt Permitted	0.327				0.869			0.960			0.428	
Satd. Flow (perm)	601	1788	0	0	2751	0	0	1927	1404	0	826	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									123		10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	3%	5%	5%	3%	0%	1%	15%	3%	1%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	412	672	0	0	417	0	0	494	15	0	500	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	16.0	51.0		35.0	35.0		36.0	36.0	36.0	13.0	49.0	
Total Split (%)	13.9%	44.3%		30.4%	30.4%		31.3%	31.3%	31.3%	11.3%	42.6%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	
Act Effect Green (s)	42.0	42.0			25.8			45.6	45.6		45.6	
Actuated g/C Ratio	0.42	0.42			0.26			0.46	0.46		0.46	
v/c Ratio	1.04	0.89			0.58			0.56	0.02		1.30	
Control Delay	82.4	41.8			35.8			24.8	0.1		177.9	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	82.4	41.8			35.8			24.8	0.1		177.9	
LOS	F	D			D			C	A		F	
Approach Delay		57.2			35.8			24.0			177.9	
Approach LOS		E			D			C			F	
Queue Length 50th (ft)	176	352			113			221	0		~408	
Queue Length 95th (ft)	#575	#740			202			438	0		#759	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	395	861			873			888	713		386	

1: Weston Road & Central Street
 2018 Existing Wkdy AM Peak Hour

2/1/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	13%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2018 Existing Wkdy AM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	1.04	0.78			0.48			0.56	0.02		1.30	

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 98.9
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.30
 Intersection Signal Delay: 71.0
 Intersection Capacity Utilization 108.9%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service G

- Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Weston Road & Central Street

13 s	36 s	51 s	15 s
49 s	16 s	35 s	

1: Weston Road & Central Street
2018 Existing Wkdy PM Peak Hour

2/1/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	227	71	13	406	98	98	185	3	94	308	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1771	0	0	3362	0	0	1985	1615	0	1893	0
Flt Permitted	0.193				0.943			0.553			0.856	
Satd. Flow (perm)	354	1771	0	0	3174	0	0	1117	1615	0	1632	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									142		41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	0%	0%	2%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	317	0	0	550	0	0	301	3	0	738	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	16.0	44.0		28.0	28.0		28.0	28.0	28.0	13.0	41.0	
Total Split (%)	16.0%	44.0%		28.0%	28.0%		28.0%	28.0%	28.0%	13.0%	41.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	
Act Effct Green (s)	34.6	34.6			19.5			38.0	38.0		38.0	
Actuated g/C Ratio	0.40	0.40			0.22			0.44	0.44		0.44	
v/c Ratio	0.53	0.45			0.77			0.62	0.00		1.01	
Control Delay	25.4	23.0			41.1			30.3	0.0		62.1	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	25.4	23.0			41.1			30.3	0.0		62.1	
LOS	C	C			D			C	A		E	
Approach Delay		23.8			41.1			30.0			62.1	
Approach LOS		C			D			C			E	
Queue Length 50th (ft)	50	105			133			108	0		330	
Queue Length 95th (ft)	124	236			242			#310	0		#819	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	336	834			897			486	784		734	

1: Weston Road & Central Street
 2018 Existing Wkdy PM Peak Hour

2/1/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	15%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2018 Existing Wkdy PM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.49	0.38			0.61			0.62	0.00		1.01	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 87.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 42.9
 Intersection LOS: D
 Intersection Capacity Utilization 98.7%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston Road & Central Street

13 s	28 s	44 s	15 s
41 s	16 s	28 s	

1: Weston Road & Central Street
2025 No-Build Wkdy AM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	418	609	69	14	256	151	27	473	15	184	245	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1788	0	0	3159	0	0	2002	1404	0	1895	0
Flt Permitted	0.329				0.847			0.958			0.350	
Satd. Flow (perm)	604	1788	0	0	2681	0	0	1923	1404	0	675	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									123			11
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	3%	5%	5%	3%	0%	1%	15%	3%	1%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	445	721	0	0	448	0	0	532	16	0	555	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	16.0	51.0		35.0	35.0		36.0	36.0	36.0	13.0	49.0	
Total Split (%)	13.9%	44.3%		30.4%	30.4%		31.3%	31.3%	31.3%	11.3%	42.6%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	46.6	46.6			30.5			45.2	45.2		45.2	
Actuated g/C Ratio	0.45	0.45			0.30			0.44	0.44		0.44	
v/c Ratio	1.10	0.89			0.56			0.63	0.02		1.84	
Control Delay	98.9	42.1			35.0			28.0	0.1		413.7	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	98.9	42.1			35.0			28.0	0.1		413.7	
LOS	F	D			C			C	A		F	
Approach Delay		63.7			35.0			27.2			413.7	
Approach LOS		E			C			C			F	
Queue Length 50th (ft)	~215	395			123			250	0		~536	
Queue Length 95th (ft)	#632	#823			220			482	0		#708	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	406	818			809			843	684		302	

1: Weston Road & Central Street
 2025 No-Build Wkdy AM Peak Hour

2/1/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	13%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2025 No-Build Wkdy AM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	1.10	0.88			0.55			0.63	0.02		1.84	

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 103.2
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.84
 Intersection Signal Delay: 123.1
 Intersection Capacity Utilization: 117.0%
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston Road & Central Street

13 s	36 s	51 s	15 s
49 s	16 s	35 s	

1: Weston Road & Central Street
2025 No-Build Wkdy PM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	243	76	14	435	108	105	204	3	104	335	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1771	0	0	3359	0	0	1985	1615	0	1893	0
Flt Permitted	0.171				0.942			0.513			0.790	
Satd. Flow (perm)	314	1771	0	0	3167	0	0	1036	1615	0	1506	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									142		41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	0%	0%	2%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	340	0	0	593	0	0	329	3	0	805	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	16.0	44.0		28.0	28.0		28.0	28.0	28.0	13.0	41.0	
Total Split (%)	16.0%	44.0%		28.0%	28.0%		28.0%	28.0%	28.0%	13.0%	41.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	
Act Effct Green (s)	35.8	35.8			20.5			37.8	37.8		37.8	
Actuated g/C Ratio	0.41	0.41			0.23			0.43	0.43		0.43	
v/c Ratio	0.60	0.47			0.81			0.74	0.00		1.21	
Control Delay	27.7	23.3			43.0			37.5	0.0		131.6	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	27.7	23.3			43.0			37.5	0.0		131.6	
LOS	C	C			D			D	A		F	
Approach Delay		24.8			43.0			37.2			131.6	
Approach LOS		C			D			D			F	
Queue Length 50th (ft)	56	114			146			132	0		~485	
Queue Length 95th (ft)	137	255			#271			#376	0		#952	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	326	820			880			443	773		668	

1: Weston Road & Central Street
 2025 No-Build Wkdy PM Peak Hour

2/1/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	15%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2025 No-Build Wkdy PM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.57	0.41			0.67			0.74	0.00		1.21	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 88.3

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 69.6

Intersection LOS: E

Intersection Capacity Utilization 106.0%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston Road & Central Street

13 s	28 s	44 s	15 s
41 s	16 s	28 s	

1: Weston Road & Central Street
2025 Build Wkdy AM Peak Hour

2/1/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	419	609	69	14	256	152	27	473	15	187	246	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1788	0	0	3159	0	0	2002	1404	0	1895	0
Flt Permitted	0.329				0.847			0.958			0.350	
Satd. Flow (perm)	604	1788	0	0	2681	0	0	1923	1404	0	675	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									123			11
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	3%	5%	5%	3%	0%	1%	15%	3%	1%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	446	721	0	0	449	0	0	532	16	0	561	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	16.0	51.0		35.0	35.0		36.0	36.0	36.0	13.0	49.0	
Total Split (%)	13.9%	44.3%		30.4%	30.4%		31.3%	31.3%	31.3%	11.3%	42.6%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	
Act Effct Green (s)	46.6	46.6			30.5			45.2	45.2		45.2	
Actuated g/C Ratio	0.45	0.45			0.30			0.44	0.44		0.44	
v/c Ratio	1.10	0.89			0.57			0.63	0.02		1.86	
Control Delay	99.7	42.1			35.0			28.0	0.1		422.4	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	99.7	42.1			35.0			28.0	0.1		422.4	
LOS	F	D			C			C	A		F	
Approach Delay		64.1			35.0			27.2			422.4	
Approach LOS		E			C			C			F	
Queue Length 50th (ft)	~216	395			124			250	0		~544	
Queue Length 95th (ft)	#633	#823			220			482	0		#720	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	406	818			809			843	684		302	

1: Weston Road & Central Street
 2025 Build Wkdy AM Peak Hour

2/1/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	13%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2025 Build Wkdy AM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	1.10	0.88			0.56			0.63	0.02		1.86	

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 103.2
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.86
 Intersection Signal Delay: 125.6
 Intersection Capacity Utilization 117.3%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Weston Road & Central Street

13 s	36 s	51 s	15 s
49 s	16 s	35 s	

1: Weston Road & Central Street
2025 Build Wkdy PM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	243	76	14	435	111	105	205	3	106	336	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1771	0	0	3356	0	0	1985	1615	0	1892	0
Flt Permitted	0.170				0.942			0.513			0.783	
Satd. Flow (perm)	312	1771	0	0	3164	0	0	1036	1615	0	1492	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									142		41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	0%	0%	2%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	340	0	0	596	0	0	330	3	0	809	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	16.0	44.0		28.0	28.0		28.0	28.0	28.0	13.0	41.0	
Total Split (%)	16.0%	44.0%		28.0%	28.0%		28.0%	28.0%	28.0%	13.0%	41.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	
Act Effct Green (s)	35.9	35.9			20.5			37.8	37.8		37.8	
Actuated g/C Ratio	0.41	0.41			0.23			0.43	0.43		0.43	
v/c Ratio	0.60	0.47			0.81			0.74	0.00		1.22	
Control Delay	27.9	23.2			43.2			37.8	0.0		139.2	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	27.9	23.2			43.2			37.8	0.0		139.2	
LOS	C	C			D			D	A		F	
Approach Delay		24.9			43.2			37.4			139.2	
Approach LOS		C			D			D			F	
Queue Length 50th (ft)	57	114			147			133	0		~494	
Queue Length 95th (ft)	#140	255			#281			#376	0		#962	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	325	819			878			443	772		662	

1: Weston Road & Central Street
 2025 Build Wkdy PM Peak Hour

2/1/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	15%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2025 Build Wkdy PM Peak Hour

2/1/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.58	0.42			0.68			0.74	0.00		1.22	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 88.4
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.22
 Intersection Signal Delay: 72.4 Intersection LOS: E
 Intersection Capacity Utilization: 106.4% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston Road & Central Street

p1	p2	p4	p9
13 s	28 s	44 s	15 s
p6	p7	p8	
41 s	16 s	28 s	

1: Weston Road & Central Street
2025 Build Wkdy AM Peak Hour w/Mitigation

2/5/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	419	609	69	14	256	152	27	473	15	187	246	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1788	0	0	3159	0	0	2002	1404	0	1895	0
Flt Permitted	0.262				0.823			0.957			0.372	
Satd. Flow (perm)	481	1788	0	0	2605	0	0	1921	1404	0	717	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									123		11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	3%	5%	5%	3%	0%	1%	15%	3%	1%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	446	721	0	0	449	0	0	532	16	0	561	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	22.0	49.0		27.0	27.0		38.0	38.0	38.0	13.0	51.0	
Total Split (%)	19.1%	42.6%		23.5%	23.5%		33.0%	33.0%	33.0%	11.3%	44.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	
Act Effect Green (s)	45.2	45.2			23.1			47.2	47.2		47.2	
Actuated g/C Ratio	0.44	0.44			0.22			0.45	0.45		0.45	
v/c Ratio	1.04	0.93			0.77			0.61	0.02		1.69	
Control Delay	79.9	48.0			49.1			26.2	0.1		348.4	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	79.9	48.0			49.1			26.2	0.1		348.4	
LOS	E	D			D			C	A		F	
Approach Delay		60.2			49.1			25.5			348.4	
Approach LOS		E			D			C			F	
Queue Length 50th (ft)	~206	411			141			240	0		~522	
Queue Length 95th (ft)	#533	#847			#273			469	0		#890	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	429	778			580			873	706		331	

1: Weston Road & Central Street
 2025 Build Wkdy AM Peak Hour w/Mitigation

2/5/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	13%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2025 Build Wkdy AM Peak Hour w/Mitigation

2/5/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	1.04	0.93			0.77			0.61	0.02		1.69	

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 103.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.69
 Intersection Signal Delay: 110.7 Intersection LOS: F
 Intersection Capacity Utilization 117.3% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Weston Road & Central Street

ϕ1	ϕ2	ϕ4	ϕ9
13 s	38 s	49 s	15 s
ϕ6	ϕ7	ϕ8	
51 s	22 s	27 s	

1: Weston Road & Central Street
 2025 Build Wkdy PM Peak Hour w/Mitigation

2/5/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	243	76	14	435	111	105	205	3	106	336	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	14	12	12	14	12
Storage Length (ft)	325		0	60		0	0		50	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1745	1771	0	0	3356	0	0	1985	1615	0	1892	0
Flt Permitted	0.169				0.942			0.544			0.822	
Satd. Flow (perm)	310	1771	0	0	3164	0	0	1099	1615	0	1567	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									142			44
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		517			546			394			501	
Travel Time (s)		11.8			12.4			9.0			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	1%	0%	0%	2%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	340	0	0	596	0	0	330	3	0	809	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0	20.0	8.0	20.0	
Total Split (s)	12.0	40.0		28.0	28.0		32.0	32.0	32.0	13.0	45.0	
Total Split (%)	12.0%	40.0%		28.0%	28.0%		32.0%	32.0%	32.0%	13.0%	45.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	None	None	None	None	
Act Effct Green (s)	32.9	32.9			20.7			41.7	41.7		41.7	
Actuated g/C Ratio	0.37	0.37			0.23			0.47	0.47		0.47	
v/c Ratio	0.77	0.52			0.81			0.64	0.00		1.07	
Control Delay	45.5	27.0			43.5			28.9	0.0		79.1	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	45.5	27.0			43.5			28.9	0.0		79.1	
LOS	D	C			D			C	A		E	
Approach Delay		33.6			43.5			28.6			79.1	
Approach LOS		C			D			C			E	
Queue Length 50th (ft)	63	126			147			116	0		~394	
Queue Length 95th (ft)	#187	272			#281			#331	0		#898	
Internal Link Dist (ft)		437			466			314			421	
Turn Bay Length (ft)	325								50			
Base Capacity (vph)	244	726			865			513	830		755	

1: Weston Road & Central Street
 2025 Build Wkdy PM Peak Hour w/Mitigation

2/5/2018

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	15%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	

1: Weston Road & Central Street
 2025 Build Wkdy PM Peak Hour w/Mitigation

2/5/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.77	0.47			0.69			0.64	0.00		1.07	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 89.3
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 51.7
 Intersection Capacity Utilization 106.4%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service G

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Weston Road & Central Street

13 s	32 s	40 s	15 s
45 s	12 s	28 s	

Weston Road at Linden Street

2: Weston Road & Linden Street
 2018 Existing Wkdy AM Peak Hour

2/1/2018

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑			↓
Volume (vph)	22	170	716	250	239	448
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	12	12	15
Storage Length (ft)	0	110		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1465	1531	1941	0	0	2027
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1465	1531	1941	0	0	2027
Link Speed (mph)	30		30			30
Link Distance (ft)	321		501			822
Travel Time (s)	7.3		11.4			18.7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	2%	1%	0%	2%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	177	1006	0	0	716
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	103.0%
Analysis Period (min)	15
	ICU Level of Service G

2: Weston Road & Linden Street
2018 Existing Wkdy AM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	22	170	716	250	239	448
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	110	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	2	1	0	2	1
Mvmt Flow	23	177	746	260	249	467

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1841	876	0	0	1006	0
Stage 1	876	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Critical Hdwy	6.55	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	77	348	-	-	689	-
Stage 1	387	-	-	-	-	-
Stage 2	350	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	39	348	-	-	689	-
Mov Cap-2 Maneuver	39	-	-	-	-	-
Stage 1	387	-	-	-	-	-
Stage 2	179	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44	0	4.6
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	39	348	689	-
HCM Lane V/C Ratio	-	-	0.588	0.509	0.361	-
HCM Control Delay (s)	-	-	186.2	25.6	13.2	0
HCM Lane LOS	-	-	F	D	B	A
HCM 95th %tile Q(veh)	-	-	2.1	2.8	1.6	-

2: Weston Road & Linden Street
 2018 Existing Wkdy PM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	144	309	353	86	116	549
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	12	12	15
Storage Length (ft)	0	110		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1685	1561	1972	0	0	2071
Flt Permitted	0.950					0.991
Satd. Flow (perm)	1685	1561	1972	0	0	2071
Link Speed (mph)	30		30			30
Link Distance (ft)	321		501			822
Travel Time (s)	7.3		11.4			18.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	325	463	0	0	700
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

2: Weston Road & Linden Street
2018 Existing Wkdy PM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 13.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	144	309	353	86	116	549
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	110	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	152	325	372	91	122	578

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1239	417	0	0	462	0
Stage 1	417	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	196	640	-	-	1110	-
Stage 1	669	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	164	640	-	-	1110	-
Mov Cap-2 Maneuver	164	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	365	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	45.1		0		1.5
HCM LOS	E				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	164	640	1110	-
HCM Lane V/C Ratio	-	-	0.924	0.508	0.11	-
HCM Control Delay (s)	-	-	107	16.3	8.6	0
HCM Lane LOS	-	-	F	C	A	A
HCM 95th %tile Q(veh)	-	-	6.8	2.9	0.4	-

2: Weston Road & Linden Street
 2025 No-Build Wkdy AM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	25	186	773	269	257	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	12	12	15
Storage Length (ft)	0	110		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1465	1531	1941	0	0	2027
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1465	1531	1941	0	0	2027
Link Speed (mph)	30		30			30
Link Distance (ft)	321		501			822
Travel Time (s)	7.3		11.4			18.7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	2%	1%	0%	2%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	194	1085	0	0	785
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 110.7% ICU Level of Service H
 Analysis Period (min) 15

2: Weston Road & Linden Street
2025 No-Build Wkdy AM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 10.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	25	186	773	269	257	496
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	110	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	2	1	0	2	1
Mvmt Flow	26	194	805	280	268	517

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1997	945	0	0	1085	0
Stage 1	945	-	-	-	-	-
Stage 2	1052	-	-	-	-	-
Critical Hdwy	6.55	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	61	318	-	-	643	-
Stage 1	358	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 25	318	-	-	643	-
Mov Cap-2 Maneuver	~ 25	-	-	-	-	-
Stage 1	358	-	-	-	-	-
Stage 2	132	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	78.2	0	5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	25	318	643	-
HCM Lane V/C Ratio	-	-	1.042	0.609	0.416	-
HCM Control Delay (s)	-	-	\$ 418.4	32.5	14.5	0
HCM Lane LOS	-	-	F	D	B	A
HCM 95th %tile Q(veh)	-	-	3.2	3.8	2	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

2: Weston Road & Linden Street
 2025 No-Build Wkdy PM Peak Hour

2/1/2018

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑	↗	↘	↓
Volume (vph)	155	334	393	93	128	602
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	12	12	15
Storage Length (ft)	0	110		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1685	1561	1974	0	0	2071
Flt Permitted	0.950					0.991
Satd. Flow (perm)	1685	1561	1974	0	0	2071
Link Speed (mph)	30		30			30
Link Distance (ft)	321		501			822
Travel Time (s)	7.3		11.4			18.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	352	512	0	0	769
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 83.7% ICU Level of Service E
 Analysis Period (min) 15

2: Weston Road & Linden Street
 2025 No-Build Wkdy PM Peak Hour

2/1/2018

Intersection	
Int Delay, s/veh	24.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	155	334	393	93	128	602
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	110	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	352	414	98	135	634

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1366	463	0	0	512	0
Stage 1	463	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	164	603	-	-	1064	-
Stage 1	638	-	-	-	-	-
Stage 2	399	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	~ 132	603	-	-	1064	-
Mov Cap-2 Maneuver	~ 132	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	321	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	82.6	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	132	603	1064	-
HCM Lane V/C Ratio	-	-	1.236	0.583	0.127	-
HCM Control Delay (s)	-	-	219.5	19	8.9	0
HCM Lane LOS	-	-	F	C	A	A
HCM 95th %tile Q(veh)	-	-	10	3.7	0.4	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

2: Weston Road & Linden Street
 2025 Build Wkdy AM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	25	186	775	269	258	502
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	12	12	15
Storage Length (ft)	0	110		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1465	1531	1941	0	0	2027
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1465	1531	1941	0	0	2027
Link Speed (mph)	30		30			30
Link Distance (ft)	321		501			244
Travel Time (s)	7.3		11.4			5.5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	2%	1%	0%	2%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	194	1087	0	0	792
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 111.2% ICU Level of Service H
 Analysis Period (min) 15

2: Weston Road & Linden Street
2025 Build Wkdy AM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 10.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	25	186	775	269	258	502
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	110	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	2	1	0	2	1
Mvmt Flow	26	194	807	280	269	523

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	2007	947	0	0	1088	0
Stage 1	947	-	-	-	-	-
Stage 2	1060	-	-	-	-	-
Critical Hdwy	6.55	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	60	317	-	-	641	-
Stage 1	357	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 25	317	-	-	641	-
Mov Cap-2 Maneuver	~ 25	-	-	-	-	-
Stage 1	357	-	-	-	-	-
Stage 2	129	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	78.4	0	5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	25	317	641	-
HCM Lane V/C Ratio	-	-	1.042	0.611	0.419	-
HCM Control Delay (s)	-	-	\$ 418.4	32.7	14.6	0
HCM Lane LOS	-	-	F	D	B	A
HCM 95th %tile Q(veh)	-	-	3.2	3.8	2.1	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

2: Weston Road & Linden Street
 2025 Build Wkdy PM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	155	335	399	93	129	606
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	12	12	15
Storage Length (ft)	0	110		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1685	1561	1974	0	0	2071
Flt Permitted	0.950					0.991
Satd. Flow (perm)	1685	1561	1974	0	0	2071
Link Speed (mph)	30		30			30
Link Distance (ft)	321		501			244
Travel Time (s)	7.3		11.4			5.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	353	518	0	0	774
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	84.3%
Analysis Period (min)	15
	ICU Level of Service E

2: Weston Road & Linden Street
 2025 Build Wkdy PM Peak Hour

2/1/2018

Intersection	
Int Delay, s/veh	25.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	155	335	399	93	129	606
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	110	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	353	420	98	136	638

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1378	469	0	0	518	0
Stage 1	469	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 161	598	-	-	1058	-
Stage 1	634	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 129	598	-	-	1058	-
Mov Cap-2 Maneuver	~ 129	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	317	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	86.6		0		1.6
HCM LOS	F				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	129	598	1058	-
HCM Lane V/C Ratio	-	-	1.265	0.59	0.128	-
HCM Control Delay (s)	-	-	231.9	19.3	8.9	0
HCM Lane LOS	-	-	F	C	A	A
HCM 95th %tile Q(veh)	-	-	10.2	3.8	0.4	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Weston Road at Howe Street

3: Weston Road & Howe Street
 2018 Existing Wkdy AM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	10	886	0	34	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1506	0	1881	0	0	1861
Flt Permitted	0.996					0.998
Satd. Flow (perm)	1506	0	1881	0	0	1861
Link Speed (mph)	30		30			30
Link Distance (ft)	330		822			167
Travel Time (s)	7.5		18.7			3.8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	11%	1%	0%	0%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	943	0	0	743
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

3: Weston Road & Howe Street
2018 Existing Wkdy AM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	10	886	0	34	665
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	11	1	0	0	2
Mvmt Flow	1	11	943	0	36	707

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1723	943	0	0	943	0
Stage 1	943	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Critical Hdwy	6.4	6.31	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	99	306	-	-	736	-
Stage 1	382	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	91	306	-	-	736	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	382	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	252	736
HCM Lane V/C Ratio	-	-	0.046	0.049
HCM Control Delay (s)	-	-	20	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0.2

3: Weston Road & Howe Street
 2018 Existing Wkdy PM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	14	660	2	3	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1554	0	1900	0	0	1881
Flt Permitted	0.994					
Satd. Flow (perm)	1554	0	1900	0	0	1881
Link Speed (mph)	30		30			30
Link Distance (ft)	330		822			167
Travel Time (s)	7.5		18.7			3.8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	8%	0%	0%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	727	0	0	771
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.2% ICU Level of Service A

Analysis Period (min) 15

3: Weston Road & Howe Street
2018 Existing Wkdy PM Peak Hour

2/1/2018

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	14	660	2	3	699
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	8	0	0	0	1
Mvmt Flow	2	15	725	2	3	768

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1501	726	0	0	727	0
Stage 1	726	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	136	415	-	-	886	-
Stage 1	483	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	135	415	-	-	886	-
Mov Cap-2 Maneuver	135	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	16.5		0		0
HCM LOS	C				

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 330	886	-
HCM Lane V/C Ratio	-	- 0.053	0.004	-
HCM Control Delay (s)	-	- 16.5	9.1	0
HCM Lane LOS	-	- C	A	A
HCM 95th %tile Q(veh)	-	- 0.2	0	-

3: Weston Road & Howe Street
 2025 No-Build Wkdy AM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	12	959	0	36	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1502	0	1881	0	0	1861
Flt Permitted	0.996					0.998
Satd. Flow (perm)	1502	0	1881	0	0	1861
Link Speed (mph)	30		30			30
Link Distance (ft)	330		822			167
Travel Time (s)	7.5		18.7			3.8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	11%	1%	0%	0%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	1020	0	0	815
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	77.7%
Analysis Period (min)	15
	ICU Level of Service D

3: Weston Road & Howe Street
 2025 No-Build Wkdy AM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	12	959	0	36	730
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	11	1	0	0	2
Mvmt Flow	1	13	1020	0	38	777

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1873	1020	0
Stage 1	1020	-	-
Stage 2	853	-	-
Critical Hdwy	6.4	6.31	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.399	2.2
Pot Cap-1 Maneuver	80	276	688
Stage 1	351	-	-
Stage 2	421	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	72	276	688
Mov Cap-2 Maneuver	72	-	-
Stage 1	351	-	-
Stage 2	380	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.9	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	227	688
HCM Lane V/C Ratio	-	-	0.061	0.056
HCM Control Delay (s)	-	-	21.9	10.5
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.2	0.2

3: Weston Road & Howe Street
 2025 No-Build Wkdy PM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	15	726	2	4	766
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1552	0	1900	0	0	1881
Flt Permitted	0.994					
Satd. Flow (perm)	1552	0	1900	0	0	1881
Link Speed (mph)	30		30			30
Link Distance (ft)	330		822			167
Travel Time (s)	7.5		18.7			3.8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	8%	0%	0%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	800	0	0	846
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 53.5% ICU Level of Service A

Analysis Period (min) 15

3: Weston Road & Howe Street
 2025 No-Build Wkdy PM Peak Hour

2/1/2018

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	15	726	2	4	766
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	8	0	0	0	1
Mvmt Flow	2	16	798	2	4	842

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1650	799	0	0	800	0
Stage 1	799	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	110	376	-	-	832	-
Stage 1	446	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	109	376	-	-	832	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	18.2		0		0
HCM LOS	C				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	292	832	-
HCM Lane V/C Ratio	-	-	0.064	0.005	-
HCM Control Delay (s)	-	-	18.2	9.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

3: Weston Road & Howe Street
2025 Build Wkdy AM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	12	964	0	36	732
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1502	0	1881	0	0	1861
Flt Permitted	0.996					0.998
Satd. Flow (perm)	1502	0	1881	0	0	1861
Link Speed (mph)	30		30			30
Link Distance (ft)	330		579			167
Travel Time (s)	7.5		13.2			3.8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	11%	1%	0%	0%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	1026	0	0	817
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 77.8% ICU Level of Service D
 Analysis Period (min) 15

3: Weston Road & Howe Street
2025 Build Wkdy AM Peak Hour

2/1/2018

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	12	964	0	36	732
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	11	1	0	0	2
Mvmt Flow	1	13	1026	0	38	779

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1881	1026	0	0	1026	0
Stage 1	1026	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Critical Hdwy	6.4	6.31	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	79	274	-	-	685	-
Stage 1	349	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	71	274	-	-	685	-
Mov Cap-2 Maneuver	71	-	-	-	-	-
Stage 1	349	-	-	-	-	-
Stage 2	379	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	225	685
HCM Lane V/C Ratio	-	-	0.061	0.056
HCM Control Delay (s)	-	-	22	10.6
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.2	0.2

3: Weston Road & Howe Street
2025 Build Wkdy PM Peak Hour

2/1/2018

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	15	729	2	4	771
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1552	0	1900	0	0	1881
Flt Permitted	0.994					
Satd. Flow (perm)	1552	0	1900	0	0	1881
Link Speed (mph)	30		30			30
Link Distance (ft)	330		579			167
Travel Time (s)	7.5		13.2			3.8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	8%	0%	0%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	803	0	0	851
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 53.8%

ICU Level of Service A

Analysis Period (min) 15

3: Weston Road & Howe Street
2025 Build Wkdy PM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	15	729	2	4	771
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	8	0	0	0	1
Mvmt Flow	2	16	801	2	4	847

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1658	802	0	0	803	0
Stage 1	802	-	-	-	-	-
Stage 2	856	-	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	109	375	-	-	830	-
Stage 1	445	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	108	375	-	-	830	-
Mov Cap-2 Maneuver	108	-	-	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	416	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	18.2		0		0
HCM LOS	C				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	291	830	-
HCM Lane V/C Ratio	-	-	0.064	0.005	-
HCM Control Delay (s)	-	-	18.2	9.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Weston Road at the Project Site Driveway

4: Weston Road & Site Driveway
 2025 Build Wkdy AM Peak Hour

2/1/2018

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	5	7	2	964	731	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1676	0	0	1863	1863	0
Flt Permitted	0.981					
Satd. Flow (perm)	1676	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	171			244	579	
Travel Time (s)	3.9			5.5	13.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	1050	797	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

4: Weston Road & Site Driveway
2025 Build Wkdy AM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	5	7	2	964	731	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	8	2	1048	795	2

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1848	796	797 0
Stage 1	796	-	- -
Stage 2	1052	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	82	387	825 -
Stage 1	444	-	- -
Stage 2	336	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	82	387	825 -
Mov Cap-2 Maneuver	82	-	- -
Stage 1	444	-	- -
Stage 2	334	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	30.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	825	-	152	-	-
HCM Lane V/C Ratio	0.003	-	0.086	-	-
HCM Control Delay (s)	9.4	0	30.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

4: Weston Road & Site Drive
 2025 Build Wkdy PM Peak Hour

2/1/2018

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	3	5	7	728	768	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1676	0	0	1861	1861	0
Flt Permitted	0.982			0.999		
Satd. Flow (perm)	1676	0	0	1861	1861	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	223			244	579	
Travel Time (s)	5.1			5.5	13.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	0	799	840	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 53.9%

ICU Level of Service A

Analysis Period (min) 15

4: Weston Road & Site Drive
2025 Build Wkdy PM Peak Hour

2/1/2018

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	3	5	7	728	768	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	5	8	791	835	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1645	838	840
Stage 1	838	-	-
Stage 2	807	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	109	366	795
Stage 1	424	-	-
Stage 2	439	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	107	366	795
Mov Cap-2 Maneuver	107	-	-
Stage 1	424	-	-
Stage 2	431	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	795	-	192	-	-
HCM Lane V/C Ratio	0.01	-	0.045	-	-
HCM Control Delay (s)	9.6	0	24.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

OCTOBER 4, 2018 TRANSPORTATION PEER REVIEW COMMENTARY



October 4, 2018

Ref: 14363.00

Mr. Richard Seegal, Chair
Zoning Board of Appeals
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

Re: Transportation Peer Review Commentary
Wellesley Park
148 Weston Road
Wellesley, Massachusetts

Dear Mr. Seegal and members of the Zoning Board of Appeals:

VHB/Vanasse Hangen Brustlin, Inc. (VHB) has performed a technical 'peer' review of the Traffic Impact and Access Study and associated site plans for the proposed residential development to be located at 148 Weston Road in Wellesley, Massachusetts. The project known as the "Wellesley Park" as proposed is a development of 55 apartment units being serviced by 67 parking spaces on a site located off of Weston Road (the "Project"). As part of this review effort, VHB reviewed the following documents:

Traffic Impact Assessment "Wellesley Park, 148 Weston Road, Delanson Circle, Wellesley Massachusetts; dated February 2018 and prepared by Vanasse & Associates, Inc.

"148 Weston Road, Wellesley, MA 02482 Planning Board Submission"; dated February 15, 2018 prepared by EMBARC Architects, Mckenzie Engineering Group, and Verant Landscape Architecture.

VHB also visited the project site on September 24, 2018 and to review and observe the traffic conditions in and around the project site and to verify and compare the results presented in the report with what was occurring in the field.

Preface

For the purposes of this review, it was assumed that the project meets the eligibility criteria for a comprehensive permit and VHB therefore does not provide commentary on this subject matter. VHB does not offer commentary on the actual site plan, other than how it relates to transportation-related issues. It is assumed that another firm and/or Town staff will focus on reviewing the application for typical site/civil engineering purposed (utilities, drainage and grading, environmental, etc.). The focus of this review is

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exclusively on the engineering and technical merits of the traffic study as well as the driveway and roadway plans submitted in support of the Comprehensive Permit application.

Review of the Transportation Information

In general, the traffic report and supporting plans have been prepared in a professional manner that is generally consistent with standard engineering practices. As part of this effort, VHB has conducted a detailed, point-by-point evaluation of the study and its supporting documentation. It is our professional opinion that the information contained in the report is both technically accurate and portrays the likely impacts of the project on the surrounding roadway system.

VHB has identified additional informational needs that focus on the existing conditions, the proposed parking for the Project, and its commitments. The expectation is that these requests will provide the opportunity to clarify inconsistencies, provide additional insight, and/or address technical issues raised during the course of this review. The applicant should be prepared to address, discuss, and/or respond to these topics as they all have to do with either public safety and/or site design considerations.

Detailed Discussion of Findings on the Traffic Study

The following comments are provided to the Board for their consideration as they relate to the Applicants Traffic Study. This evaluation follows the headings of each of the chapters in the Study for clarity.

VHB offers technical comments after each section and, if additional information is needed or requested, the comment may also include **bold text** stating why and what information would be helpful to the Board.

1.0 Introduction

As noted in the Traffic Study, the currently vacant site will be developed to include 55 residential apartment units and will provide 67 parking spaces, 60 of which will be located under the apartment building and six will be located in the open air on the access driveway. This results in a parking ratio of 1.22 spaces/unit. The Study notes that this ratio complies with Section XXI (Off-Street Parking) of the Town of Wellesley's Zoning By-Law. Access to the 60-underground parking space garage will be provided from the Site Driveway, off of Weston Road.

The Study identified some intersections that would likely be impacted by the project. VHB has reviewed these locations and the distribution of Project-related traffic on the roadway network. Given the projected volumes expected to be generated by the development and the likely distribution of traffic onto the surrounding roadways, it is VHB's opinion the study area selected appears to be reasonable and within industry standards. Note that any changes to site access may result in this assumption being revisited.

Lastly, the study methodology notes that the project's traffic study was performed in accordance with MassDOT standards, the Town of Wellesley's PSI standards, and within the standards of the normal Traffic



Engineering and Transportation Planning profession. VHB concurs that the study was done in a professional manner and is consistent with these guidelines.

Comment #1 (PARKING): *The site is located in the Single Residence 15 (SR15) zoning district.*

The Town's Zoning By-Law Section XXI (Off-Street Parking) does not specifically state parking ratios for Apartment uses in this district. In fact, Apartment uses are not allowed in these districts. Therefore, the Applicant's claim that the Project complies with the Town's zoning By-Laws is inaccurate.

For apartment uses, parking is defined in the following districts in the By Laws as follows:

- *Business A or Industrial A District: 1 space/unit for Apartment Houses.*
- *Limited Apartment District: 1.5 spaces/dwelling unit of two bedrooms or less and two parking spaces for each dwelling unit providing three bedrooms or more;*
- *Linden Street Corridor Overlay District: 2.5 spaces per one, two, or three-bedroom unit.*

While the 1.22 space/unit ratio meets the zoning in Business A and Industrial A, it does not meet the By-Law for the other apartment-based codes.

It has been VHB's experience that parking ratios of about 1.4-1.5 spaces per unit are the minimum for a suburban residential apartment complex such as this one. Parking on relatively isolated sites that don't have nearby off-street parking availability needs to account for residents, visitors, and deliveries. If it is the Applicant's intent to use a rate as low as 1.22 spaces/unit, they should provide detailed information on their parking plan and provide justification on where such a low of a rate has been used in a suburban environment successfully. Failure to provide adequate parking on a site such as this one could have spill over impacts into the surrounding neighborhoods.

2.0 Existing Conditions

For the most part, the applicant describes the existing roadway and intersections accurately in its narrative.

Comment #2 (EXISTING CONDITIONS): *Weston Road is described as being under Town jurisdiction within the study area; however, there is a small section of the roadway, over the MBTA tracks that is under MassDOT jurisdiction.*

The peak hour and daily traffic volumes collected at the study area intersections appear to be done in an acceptable manner. The volume (both pedestrian and vehicular) and speed data provided in the study's appendix is consistent with the traffic networks provided in the report and those generally observed by VHB staff during their site visit.



Comment #3 (EXISTING CONDITIONS): Table 2 lists the peak hours as 8:00 – 9:00 AM and 4:15 – 5:15 PM, and indicates that the volumes came from Figure 3: 2018 Existing Peak Hour Traffic Volumes. However, the morning peak hour listed in Figure 3 is 7:15 – 8:15 AM. Please confirm which hour was used for the weekday morning peak hour volumes.

Comment #4 (TRAFFIC VOLUMES): Because the proposed residential development is likely to generate traffic during weekends at a similar rate as on weekdays; coupled with the fact that the area surrounding the development is heavily influenced by the retail developments along Linden Street, the applicant should provide some basic information demonstrating that the weekend conditions experience less traffic (or is comparable) to the weekday conditions.

The Pedestrian and Bicycle Facilities section details the results of the field inventory conducted and the pedestrian and bicycle volumes collected as part of the TMC. The description and supporting Figures are consistent with inventory conducted by VHB staff during their site visit.

The Public Transportation section discusses the various transit options near the project site. This includes routes for both the MBTA Commuter Rail via the Worcester/Framingham line as well as Route #8 of the MWRTA. The area appears to be well served by transit options (which is discussed later in the trip generation section). The applicant should note that the MWRTA bus line #8 no longer travels along Weston Street, serving only Route 16 on the other side of the train tracks with a planned stop at the intersection of Central Street and Cross Street.

The Motor Vehicle Crash Data section provides information on the crash history of the various area locations selected for study. Two study area intersections experience crash rates higher than the District 6 average (Weston Road at Linden Street and Weston Road at Central Street). Central street, to the east of Weston Road, is included as part of a high crash cluster for 2013-2015. There was a fatal collision at the intersection of Weston Road at Linden Street involving a truck that struck a bicyclist along Weston Road. The applicant makes a commitment to fund and facilitate Roadside Safety Audits at both of these locations.

3.0 Future Conditions

The Study uses a seven-year traffic projection horizon, which is typical for a development of this type and is consistent with MassDOT traffic impact assessment guidelines.

The 2025 No Build traffic conditions were developed by assigning the background traffic growth a 1% rate per year (essentially 7% over the course of the seven-year period) and considers the transportation impacts of two potential developments near the project:

- Sports Complex located at 900 Worcester Road in Wellesley (130,000 sf sports center with fields, ice rinks, and pool services along with a health club component)
- Wellesley Crossing, located at 8 Delanson Circle in Wellesley (90-unit residential development)



Based on feedback from the Town of Wellesley, there are no other projects in the vicinity of the Site that have open applications with the Town.

The study goes on to note that based on feedback from the Town of Wellesley and MassDOT, there are no specific roadway projects that will be taking place in the Study Area over the course of the next seven years which might impact roadway capacity/operations.

The traffic study determined project-related trips using procedures consistent with Institute of Transportation Engineers (ITE) guidelines. The study also considers the impact of the various transit services and a robust ped/bike environment in the immediate vicinity of the Project site. In summary, the project would be expected to generate approximately 300 daily, 20 morning peak hour, and 25 evening peak hour unadjusted vehicle trips using the ITE's Trip Generation¹.

When taking into account transit (10%), bike/ped (10%), and vehicle occupancy (1.13 passengers/automobile) adjustments, the site is expected to generate 240 automobile daily trips, 16 morning automobile trips, and 20 evening peak hour automobile trips. Table 5 of the Traffic Study highlights this information in tabular form.

Trip Distribution was developed using journey-to-work data and was refined based on observations of traffic during the commuter peak hours. Figure 7 of the Traffic Study reflects the results of this evaluation.

***Comment #5** VHB concurs with the manner in which all the above data is presented. The information is consistent with the recommended practices of the ITE and the resulting ped, bike, and automobile trips all appear to be accurately presented.*

4.0 Intersection Capacity Analysis

Utilizing the observed roadway geometry, the traffic volumes – both existing and projected – and the appropriate traffic control at each location; the Study analyzed the impacts of the Project at each of the study area intersections. The Study utilizes the most appropriate version of the highway capacity software and presents an accurate description of the Level of Service terms.

In reviewing the operational analysis, the following information was presented:

- **Weston Road at Central Street (Signalized):** Under 2025 Build conditions (with the addition of Project-related traffic), traffic operations are expected to remain at LOS F during the morning peak hour and LOS E during the evening peak hour. The results indicate that there will be minor increased in delays (less than one second) over the 2025 No-Build conditions (without the addition of Project-related traffic) for the majority of the movements. The southbound Weston Road approach is expected to experience an increase of 9 seconds of delay during the morning peak hour and 8 seconds of delay during the evening peak hour. The Proponent is proposing improvement to this location to mitigate the impacts.

¹ *Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington DC; 2017



- **Weston Road at Linden Street (unsignalized):** This unsignalized T-intersection has traditionally been operationally challenged from a congestion perspective. Impacts are minimal at this location, with 10 or less project-related trips being added during either of the commuter peak hours. Under 2025 Build conditions (with the addition of Project-related traffic), left-turn movements from Linden Street operate at LOS F with only minor increases in delays (less than one second) over the 2025 No-Build conditions (without the addition of Project-related traffic).
- **Weston Road at Howe Street (unsignalized):** Under 2025 Build conditions (with the addition of Project-related traffic), all movements will operate at LOS C or better with minor decreases in delays when compared to the 2025 No-Build conditions (without the addition of Project-related traffic).
- **Weston Road at the Project Site Driveway (unsignalized):** Under 2025 Build conditions (with the addition of Project-related traffic), the Project Site Driveways is expected to operate at LOS D during the morning peak hour and LOS C during the evening peak hour.

In addition to level of service result, the Tables 9 and 10 of the report documents the expected (calculated) vehicle queuing at each of the study area intersections. VHB observed typical vehicle delays and queuing and visually confirmed that the existing information contained within the study is accurately representative of the actual conditions in the field.

While we are generally in agreement with the methodology that was used to develop the analysis, we have the following comments.

Comment #6 (TRAFFIC OPERATIONS): *At the intersection of Weston Road and Central Street, the northbound Weston Road right-turn is under STOP control; however, in the analysis, this movement is modeled as a permissive movement under the control of the signal. Please confirm that modeling this movement as signalized instead of free does not significantly change the analysis results.*

Comment #7 (TRAFFIC OPERATIONS): *The intersection of Weston Road at Linden Road is unsignalized with flashing lights until the pedestrian phase is activated and all vehicular movements are stopped. The intersection was analyzed as a standard unsignalized intersection. While the operational analysis appears to be reflective of the operations, it would be helpful if the Applicant could provide some insight on the impact of the project of additional pedestrian calls and their impact on the signal operations.*

5.0 Sight Distance Evaluation

Table 11 from the Traffic Study presents the sight distance information for the proposed driveway along Weston Road. The text notes that the sight distance exceeds the recommended minimum AASHTO sight distances for a 35mph speed along Weston Road for the Stopping Sight Distance measurements. The



Intersection Sight Distance is met looking to the north from the Project Site Driveway; however, vegetation would need to be trimmed back to meet sight distance minimums looking to the south. both the Intersection and Stopping Sight Distance measurements. The Proponent has recommended that this vegetation, within the public right of way, should be trimmed to provide the required sight lines. VHB confirmed these distances appear accurate, and agrees with the recommendation to trim back existing vegetation.

Comment #8 (SIGHT DISTANCE): *We are in general agreement with the methodology that was used to develop the analysis and the findings. The applicant should illustrate sight triangle areas for the Project site driveway on the Site Plans along with a note to indicate: "Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow windrows located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."*

6.0 Conclusions & Recommendations

VHB has reviewed the traffic study's conclusions and generally agree with the six conclusion points raised in the beginning of this section. Moreover, VHB generally concurs that the project in-and-of itself will not likely result in a significant impact (increase) on motorist delays or vehicle queuing.

The Study makes a number of recommendations with respect to Project Access, Off-Site locations, and with respect to Traffic Demand Management as well. VHB has reviewed all the Project recommendations and offers the following commentary:

Project Access

There are 11 bulleted recommendations presented in this section of the Traffic Study. VHB agrees with each of the recommendations and notes the following:

- The first bullet notes that "the Project site driveway should be a minimum of 18-feet wide and a maximum of 24-feet wide". *VHB notes that the site plans show a 24-foot wide driveway.*
- The fourth bullet notes that "all signs and pavement markings to be installed within the Project site shall conform to the applicable standards of the Manual of Uniform Traffic Controls (MUTCD)". *VHB notes that the site plans do not have a similar note.*

Comment #9 (SIGNAGE): *The Applicant should add a similar note to the site plans that all signs and pavements markings within the Site should conform to the MUTCD.*

- The fifth bullet notes that "consideration should be given to installing a sidewalk along the Project site frontage on Weston Road and extending to the crosswalk at Linden Street". *VHB notes that the site plans do not show a sidewalk in this location.*



Comment #10 (SIDEWALKS): *Given the general pedestrian nature of a residential project such as the one being proposed; coupled with the applicant's assumption that at least 10 percent of the project's impacts will be pedestrian in nature, the Applicant should evaluate and provide a sidewalk connection from within the site to the surrounding pedestrian network. There is currently no proposed pedestrian connection from the Site to existing public pedestrian infrastructure illustrated on the site plans. The applicant should also commit to the design, permitting, and construction of the pedestrian connection to the greater existing network.*

- The seventh bullet notes that "a school bus waiting area should be provided at an appropriate location..."

Comment #11 (PICK UP/DROP OFF LOCATIONS): *The Applicant should provide an update to the Board on the discussions with the Town's School Department on the placement of a school bus and other transit services such as the RIDE, Council on Aging, and paratransit operators. Care should be given to identifying locations where a stopped vehicle will not negatively influence traffic flow along Weston Road.*

- The final bullet notes the consideration of electric vehicle charging stations within the parking facility.

Comment #12 (ELECTRIC VEHICLE CHARGING STATION): *The Applicant should provide an update to the Board on the number and location of any electric vehicle charging stations within the garage.*

Off-Site

There are two intersections where recommendations are noted. The applicant has committed/recommended the following at each of these locations:

- Weston Road at Linden Street – The applicant will "facilitate the completion of a Road Safety Audit (RSA) in order to identify improvement strategies for this intersection".
- **Comment #13 (WESTON ROAD and LINDEN STREET):** *At the conclusion of the Road Safety Audit (RSA), the Applicant should identify what, if any, identified safety issues may be impacted and/or exacerbated by the development of the proposed Project and incorporate the recommended solutions into the design of this intersections operations. Given the severity of the safety issues at this location and the fatality that occurred, the RSA should have a specific focus on the pedestrian and bicyclist infrastructure at this location as well as the more traditional vehicular environment as well.*
- Weston Road at Central Street – The applicant will "facilitate the completion of a Road Safety Audit (RSA) in order to identify improvement strategies for this intersection". Additionally, the applicant will design and implement an optimal traffic signal timing plan to improve operations.



Comment #14 (WESTON ROAD and CENTRAL STREET SIGNAL IMPROVEMENTS) : During the design of the traffic signal timing plan for the intersection of Weston Road at Central Street, the applicant should confirm that existing pedestrian and vehicular clearance times are adequate and conform to current MUTCD standards, and update if necessary.

Transportation Demand Management

The Study outlines a number of Transportation Demand Management (TDM) measures that should be implemented, including the following:

- The owner of the property should become a member of MassRIDES;
- Post information regarding public transportation services in a central location and made available to interested residents;
- Distribute a "welcome packet" of information to new residents outlining the available transportation services in the area;
- Link the site to the public pedestrian network surrounding the site;
- Provide a secure mail-drop area in a central location; and
- Provide secure bicycle parking consisting of exterior convenient bicycle parking and weather protected bicycle parking in a secure area of the building.

Comment #15 (TDM RECOMMENDATIONS): There are a number of recommendations in the TDM section (and throughout the Study in general). Should the Board elect to consider applying conditions to the Project's approval, the recommendations outlined within the TDM section (and elsewhere) should be memorialized.

VHB is in general agreement with the commitments that were outlined in the Traffic Study. In reviewing the recommendations and comparing them with the site plans, VHB would suggest the following actions also be considered:

- ***Comment #16 (BICYCLE PARKING ACCESS): The architectural plans illustrate bicycle parking in the southern corners of the parking garage. The Applicant should identify how bicyclists will access these spaces from the outside and how visitors to the facility will utilize this secured parking area. If visitors/guests cannot access these spaces, then public bike storage should be provided outside the garage area for these users.***



COMMENTS ON THE SITE PLAN

In reviewing the site plan from a transportation and circulation perspective, VHB offers the following comments (note: specific issues relating to site/civil engineering aspect of the plan review are not directly covered as part of this effort):

- **Comment #17:** As noted previously in Comment #1, the applicant should demonstrate how the parking rate of 1.22 spaces per unit is reasonable for this specific suburban location and what, if any, parking management plans would be implemented to assure that the requested number of spaces is sufficient to accommodate project parking demands. Parking demand should account for resident and visitor parking needs. Parking demand information for comparable project sites that are in similar suburban locations would also be helpful.
- **Comment #18:** Additional detail should be provided as it relates to the underground parking structure, providing a turning radius graphic for vehicles entering, exiting and maneuvering through the garage. Spaces at the end of the underground parking line should demonstrate how a driver would be able to access and egress from these spaces.
- **Comment #19:** The Applicant should describe the intent and usage of the "amenity" building located along the site frontage with Weston Road. If it has the potential to generate traffic and/or parking from off-site users, a narrative of how this would be utilized would also be helpful.
- **Comment #20:** The Applicant should provide a Vehicle Tracking© (or a similar analysis technique) for delivery vehicles which demonstrates how loading truck movements through the site can be managed without impacting parking and/or other static objects within the site. Turning radius for delivery trucks should be noted and the Applicant should present a detailed move-in management plan so that multiple trucks don't arrive at the same time for the move-in areas (if limited by space).
- **Comment #21:** The Applicant should provide information on how and where refuse/garbage pickup for the Apartment units will take place. A Vehicle Tracking© (or similar) turning radius assessment for refuse/garbage trucks should be identified on the plan.
- **Comment #22:** The Applicant should coordinate with the Town of Wellesley Fire Department for sign requirements for fire lanes within the site and their comfort level with an ability to respond to an event at this site. The Applicant should present information from the Fire Department noting that they've reviewed the access needs for the facility and that fire apparatus can effectively handle a response to the facility from a turning radius and building access perspective. This should also include a Vehicle Tracking© (or similar) turning radius assessment to indicate that the Town of Wellesley fire apparatus can circulate freely through the site in the event of an emergency. This turning assessment should be provided to the Board and to the appropriate Fire Department staff for review.
- **Comment #23:** A narrative as to how the Applicant intends to stage the construction of the facility in the residential neighborhood with limited on-street parking should be considered. Given

Mr. Richard Seegal, Chair
Ref: 13810.00
October 4, 2018
Page 11



the limited available roadways surrounding the site, staging of equipment and employees will be challenging. Where will the contractors park and where/how will deliveries be made as the site without disrupting the overall flow of traffic along Weston Road would be helpful to understand.

Please call if you have any questions or require additional information on any of the requests or comments noted above. Once responses to the initial comments noted above have been received and reviewed, VHB will respond to this information as appropriate. VHB will also suggest potential conditions that the Board may want to consider in their review and deliberations as they relate to transportation elements of the proposed project.

I will be available at the next Zoning Board of Appeals hearing to discuss in greater detail these findings if needed. The applicant should be prepared to address as many of these comments as reasonably possible at the upcoming Zoning Board of Appeals hearing and incorporate them into revised traffic and site plan based on the outcome of the meeting.

Sincerely,

Vanasse Hangen Brustlin, Inc.

A handwritten signature in black ink, appearing to read "Robert L Nagi", written over a horizontal line.

Robert L Nagi, PE

Principal

cc: Michael Zehner, Town of Wellesley
Meghan Jop, Town of Wellesley

OCTOBER 9, 2018 RESPONSE TO TRANSPORTATION PEER REVIEW COMMENTARY

Ref: 7774

October 9, 2018

Mr. Richard L. Seegel, Chair
Zoning Board of Appeals
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

Re: Response to Transportation Peer Review Commentary
Wellesley Park – 148 Weston Road
Wellesley, Massachusetts

Dear Chairman Seegel and Members of the Zoning Board of Appeals:

Vanasse & Associates, Inc. (VAI) is providing responses to the comments that were raised in the October 4, 2018 letter prepared by VHB on behalf of the Zoning Board of Appeals in reference to their review of the February 2018 *Transportation Impact Assessment* (the “February 2018 TIA”) prepared by VAI in support of the proposed Wellesley Park residential development to be located at 148 Weston Road in Wellesley, Massachusetts (hereafter referred to as the “Project”). Responses to the comments pertaining to the Site Plans will be provided by others under separate cover. Listed below are the comments that were identified in the subject letter pertaining to the February 2018 TIA that required a response followed by the requested information.

1.0 Introduction

Comment #1 (PARKING): *The site is located in the Single Residence 15 (SR15) zoning district.*

The Town's Zoning By-Law Section XXI (Off-Street Parking) does not specifically state parking ratios for Apartment uses in this district. In fact, Apartment uses are not allowed in these districts. Therefore, the Applicant's claim that the Project complies with the Town's zoning By-Laws is inaccurate.

For apartment uses, parking is defined in the following districts in the By Laws as follows:

- *Business A or Industrial A District: 1 space/unit for Apartment Houses.*
- *Limited Apartment District: 1.5 spaces/dwelling unit of two bedrooms or less and two parking spaces for each dwelling unit providing three bedrooms or more;*
- *Linden Street Corridor Overlay District: 2.5 spaces per one, two, or three-bedroom unit.*

While the 1.22 space/unit ratio meets the zoning in Business A and Industrial A, it does not meet the By-Law for the other apartment-based codes.

It has been VHBs experience that parking ratios of about 1.4-1.5 spaces per unit are the minimum for a suburban residential apartment complex such as this one. Parking on relatively isolated sites that don't have nearby off-street parking availability needs to account for residents, visitors, and deliveries. If it is

the Applicants intent to use a rate as low as 1.22 spaces/unit, they should provide detailed information on their parking plan and provide justification on where such a low of a rate has been used in a suburban environment successfully. Failure to provide adequate parking on a site such as this one could have spill over impacts into the surrounding neighborhoods.

Response: VAI did not state that the parking ratio that is to be provided for the Project complies with the Town Zoning By-Laws; this statement appears to be a carry-over comment from the Wellesley Square project. That being said, the Applicant is in the process of reviewing opportunities to increase the parking supply for the Project to achieve a parking ratio of 1.5 spaces per unit.

2.0 Existing Conditions

Comment #2 (EXISTING CONDITIONS): Weston Road is [described] as being under Town jurisdiction within the study area; however, there is a small section of the roadway, over the MBTA tracks that is under MassDOT jurisdiction.

Response: Comment noted.

Comment #3 (EXISTING CONDITIONS): Table 2 lists the peak hours as 8:00 – 9:00 AM and 4:15 – 5:15 PM, and indicates that the volumes came from Figure 3: 2018 Existing Peak Hour Traffic Volumes. However, the morning peak hour listed in Figure 3 is 7:15 – 8:15 AM. Please confirm which hour was used for the weekday morning peak hour volumes.

Response: The weekday morning peak-hour listed in Table 2 should be 7:15 – 8:15 AM.

Comment #4 (TRAFFIC VOLUMES): Because the proposed residential development is likely to generate traffic during weekends at a similar rate as on weekdays; coupled with the fact that the area surrounding the development is heavily influenced by the retail developments along Linden Street, the applicant should provide some basic information demonstrating that the weekend conditions experience less traffic (or is comparable) to the weekday conditions.

Response: The Applicant will be collecting traffic volume data along Weston Road on Thursday, October 11th through Sunday, October 14th, inclusive, and will provide the requested comparative analysis of weekday and weekend traffic volume conditions in a subsequent letter.

3.0 Future Conditions

Comment #5 VHB concurs with the manner in which all the above data is presented. The information is consistent with the recommended practices of the ITE and the resulting ped, bike, and automobile trips all appear to be accurately presented.

Response: No response required.

4.0 Intersection Capacity Analysis

Comment #6 (TRAFFIC OPERATIONS): *At the intersection of Weston Road and Central Street, the northbound Weston Road right-turn is under STOP control; however, in the analysis, this movement is modeled as a permissive movement under the control of the signal. Please confirm that modeling this movement as signalized instead of free does not significantly change the analysis results.*

Response: Given the short storage length that is available to access the right-turn movement on the Weston Road northbound approach and the predicted queuing in the adjacent left-turn/through lane, access to the right-turn lane is controlled by the operation of the traffic signal system. As such, the right-turn movement was modelled under traffic signal control. Placing the right-turn movement under “free” or stop control vs. traffic signal control would result in less delay for this movement than is actually experienced.

Comment #7 (TRAFFIC OPERATIONS): *The intersection of Weston Road at Linden [Street] is unsignalized with flashing lights until the pedestrian phase is activated and all vehicular movements are stopped. The intersection was analyzed as a standard unsignalized intersection. While the operational analysis appears to be reflective of the operations, it would be helpful if the Applicant could provide some insight on the impact of the project [on] additional pedestrian calls and their impact on the signal operations.*

Response: The Project is expected to produce three (3) transit trips and two (2) pedestrian/bicycle trips during the weekday morning peak-hour and three (3) transit trips and three (3) pedestrian/bicycle trips during the weekday evening peak-hour. Assuming that all of the transit trips begin as a pedestrian trip and that the transit users are destined to the Wellesley Square commuter rail station, the Project would produce six up to (6) new pedestrian trips crossing Weston Road at Linden Street over the course of the hour. It is unlikely that the additional pedestrian actuations that may occur as a result of the Project will materially impact traffic operations at the Weston Road/Linden Street intersection given: i) the small incremental increase in pedestrian trips that the Project represents; and ii) it is likely that a portion of the pedestrian activity that will be associated with the Project will occur coincidental with existing pedestrian activity at the intersection that is also destined to/from the Wellesley Square commuter rail station.

5.0 Sight Distance Evaluation

Comment #8 (SIGHT DISTANCE): *We are in general agreement with the methodology that was used to develop the analysis and the findings. The applicant should illustrate sight triangle areas for the Project site driveway on the Site Plans along with a note to indicate: "Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow windrows located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."*

Response: The sight triangle areas and the requested note will be added to the Site Plans.

6.0 Conclusions & Recommendations

Project Access

Comment #9 (SIGNAGE): *The Applicant should add a similar note to the site plans that all signs and [pavement] markings within the Site should conform to the MUTCD.*

Response: The requested note will be added to the Site Plans.

Comment #10 (SIDEWALKS): *Given the general pedestrian nature of a residential project such as the one being proposed; coupled with the applicant's assumption that at least 10 percent of the project's impacts will be pedestrian in nature, the Applicant should evaluate and provide a sidewalk connection from within the site to the surrounding pedestrian network. There is currently no proposed pedestrian connection from the Site to existing public pedestrian infrastructure illustrated on the site plans. The applicant should also commit to the design, permitting, and construction of the pedestrian connection to the greater existing network.*

Response: The Applicant has committed to the design and construction of a pedestrian connection (sidewalk) between the Project site and the existing crosswalk at the Weston Road/Linden Street intersection. This sidewalk connection will be added to the Site Plans. In addition, a connection to the Crosstown Trail which abuts the Project site to the south is also being developed.

Comment #11 (PICK UP/DROP OFF LOCATIONS): *The Applicant should provide an update to the Board on the discussions with the Town's School Department on the placement of a school bus and other transit services such as the RIDE, Council on Aging, and paratransit operators. Care should be given to identifying locations where a stopped vehicle will not negatively influence traffic flow along Weston Road.*

Response: It is expected that school buses will pick-up/discharge students curb-side along Weston Road as school buses do not typically enter private property. The Project site is designed to accommodate moving vehicles and trash/recycling trucks (as well as the Wellesley Fire Department design vehicle) and, as such, vans associated with The RIDE, the Council on Aging and paratransit operators will pick-up and discharge passengers from within the Project site.

Comment #12 (ELECTRIC VEHICLE CHARGING STATION): *The Applicant should provide an update to the Board on the number and location of any electric vehicle charging stations within the garage.*

Response: The number and location of the electric vehicle charging stations is being advanced as a part of the pending revisions to the Site Plans.

Off-Site

Comment #13 (WESTON ROAD and LINDEN STREET): At the conclusion of the Road Safety Audit (RSA), the Applicant should identify what, if any, identified safety issues may be impacted and/or exacerbated by the development of the proposed Project and incorporate the recommended solutions into the design of this intersections operations. Given the severity of the safety issues at this location and the fatality that occurred, the RSA should have a specific focus on the pedestrian and bicyclist infrastructure at this location as well as the more traditional vehicular environment as well.

Response: Pending the completion of the RSA, the Applicant will provide monies to the Town for use in implementing the short-term, low-cost safety improvements that are suggested for the intersection as a part of the RSA. The exact amount of the financial contribution will be determined in the context of the value of the overall mitigation program for the Project that will be discussed with the Town. The RSA will evaluate safety at the intersection for all roadway users (pedestrians, bicyclists, transit riders and motorists) and will provide suggestions for improvements to address identified deficiencies.

Comment #14 (WESTON ROAD and CENTRAL STREET SIGNAL IMPROVEMENTS) : During the design of the traffic signal timing plan for the intersection of Weston Road at Central Street, the applicant should confirm that existing pedestrian and vehicular clearance times are adequate and conform to current MUTCD standards, and update if necessary.

Response: The traffic signal timing improvements at the Weston Road/Central Street intersection will include an assessment of the existing “yellow” and “all-red” clearance intervals, as well as the pedestrian intervals, to ensure compliance with current standards.

Transportation Demand Management

Comment #15 (TDM RECOMMENDATIONS): There are a number of recommendations in the TDM section (and throughout the Study in general). Should the Board elect to consider applying conditions to the Project's approval, the recommendations outlined within the TDM section (and elsewhere) should be memorialized.

Response: The Applicant will accept a condition requiring advancement/implementation of the recommendations that are presented in the February 2018 TIA.

Comment #16 (BICYCLE PARKING ACCESS): The architectural plans illustrate bicycle parking in the southern corners of the parking garage. The Applicant should identify how bicyclists will access these spaces from the outside and how visitors to the facility will utilize this secured parking area. If visitors/guests cannot access these spaces, then public bike storage should be provided outside the garage area for these users.

Response: The number of bicycle parking spaces that are to be provided within the parking garage is being refined as a part of the revisions to the Site Plans. An exterior bicycle rack will be provided for visitors and will be added to the Site Plans.

Mr. Richard L. Seegel, Chair
Town of Wellesley Zoning Board of Appeals
October 9, 2018
Page 6 of 6

We trust that this information is responsive to the comments that were raised in the October 4, 2018 letter from VHB concerning their review of the February 2018 TIA prepared in support of the Project. If you should have any questions or would like to discuss our responses in more detail, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.

Handwritten signature of Jeffrey S. Dirk in black ink.

Jeffrey S. Dirk, P.E., PTOE, FITE
Principal

Professional Engineer in CT, MA, ME, NH, RI and VA

JSD/jsd

cc: R. Nagi, P.E. – VHB (via email)
V. Sheen, J. Parkes – Delanson Realty Partners (via email)
R. Engler – SEB, LLC (via email)
File

OCTOBER 18, 2018 SUPPLEMENT TO THE OCTOBER 9, 2018 RESPONSE TO
TRANSPORTATION PEER REVIEW COMMENTARY

Ref: 7774

October 18, 2018

Mr. Richard L. Seegel, Chair
Zoning Board of Appeals
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

Re: Response to Transportation Peer Review Commentary
Wellesley Park – 148 Weston Road
Wellesley, Massachusetts

Dear Chairman Seegel and Members of the Zoning Board of Appeals:

Vanasse & Associates, Inc. (VAI) is providing supplemental information in support of our October 9, 2018 response to the comments that were raised in the October 4, 2018 letter prepared by VHB on behalf of the Zoning Board of Appeals in reference to their review of the February 2018 *Transportation Impact Assessment* (the “February 2018 TIA”) prepared by VAI in support of the proposed Wellesley Park residential development to be located at 148 Weston Road in Wellesley, Massachusetts (hereafter referred to as the “Project”). Specifically, we are providing the comparative assessment of weekday and Saturday traffic volume data along Weston Road and Linden Street that was requested in the subject comment letter.

Supplemental automatic traffic recorder (ATR) counts were conducted on Weston Road in the vicinity of the Project site over a continuous 72-hour period from Thursday, October 11th through Saturday, October 13rd, 2018, inclusive, in order to provide a comparative assessment of weekday and Saturday traffic volumes along the Weston Road corridor. The October traffic volume data is presented in Table 1.

Table 1
WESTON ROAD - OCTOBER 2018 TRAFFIC VOLUMES

Location/Peak Hour	AWT ^a	Saturday ^b	VPH ^c	K Factor ^d	Directional Distribution ^e
<i>Weston Road, south of Howe Street</i>	15,243	15,150	--	--	--
Weekday Morning (7:15 – 8:15 AM)	--	--	1,312	8.6	57.9% NB
Weekday Evening (4:00 – 5:00 PM)	--	--	1,091	7.2	51.2% NB
Saturday Midday (11:30 AM – 12:30 PM)	--	--	1,281	8.5	57.8% NB

^aAverage weekday traffic in vehicles per day.

^bVehicles.

^cVehicles per hour.

^dPercent of daily traffic occurring during the peak hour.

^ePercent traveling in peak direction.

NB = eastbound; SB = westbound.

Mr. Richard L. Seegel, Chair
Town of Wellesley Zoning Board of Appeals
October 18, 2018
Page 2 of 2

As can be seen in Table 1, traffic volumes along Weston Road on weekday are approximately 6 percent higher than those on a Saturday, with weekday peak-hour traffic volumes found to be 2 percent higher during the morning peak-hour and 15 percent lower during the evening peak-hour. A review of weekday and Saturday traffic volumes along the Linden Street corridor documented in conjunction with the Wellesley Square project indicated that traffic volumes along Linden Street on weekday are approximately 22 percent higher than those on a Saturday, with weekday peak-hour traffic volumes found to be between 0.9 and 5.9 percent higher than those during the Saturday midday peak-hour.¹ As such and with consideration of the seasonality of the traffic count data, the weekday traffic volume conditions that were assessed in the February 2018 TIA are considered to be comparable to or higher than those that occur on a Saturday.

If you should have any questions or would like to discuss our assessment in more detail, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE, FITE
Principal

Professional Engineer in CT, MA, ME, NH, RI and VA

JSD/jsd

Attachments

cc: R. Nagi, P.E. – VHB (via email)
V. Sheen, J. Parkes – Delanson Realty Partners (via email)
R. Engler – SEB, LLC (via email)
File

¹*Response to Transportation Peer Review Commentary, Wellesley Square Residences – 8 Delanson Circle, Wellesley, Massachusetts; VAI; March 15, 2018.*

Accurate Counts

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

978-664-2565

7774VL01

Start Time	10/11/2018 Thu	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		9	123			4	140				
12:15		3	119			5	121				
12:30		4	133			6	112				
12:45		1	133	17	508	1	112	16	485	33	993
01:00		5	120			3	137				
01:15		2	121			0	115				
01:30		0	131			0	114				
01:45		1	104	8	476	1	133	4	499	12	975
02:00		0	99			4	112				
02:15		1	122			1	142				
02:30		0	134			1	133				
02:45		0	174	1	529	0	136	6	523	7	1052
03:00		1	124			0	159				
03:15		0	119			0	171				
03:30		1	136			0	164				
03:45		1	145	3	524	5	120	5	614	8	1138
04:00		2	167			1	146				
04:15		2	140			5	138				
04:30		4	127			2	133				
04:45		0	125	8	559	4	115	12	532	20	1091
05:00		0	128			6	108				
05:15		14	137			8	97				
05:30		8	153			17	108				
05:45		22	149	44	567	40	105	71	418	115	985
06:00		25	144			21	145				
06:15		60	89			41	118				
06:30		87	109			57	144				
06:45		114	121	286	463	107	128	226	535	512	998
07:00		148	105			115	124				
07:15		175	96			151	118				
07:30		202	98			125	79				
07:45		181	83	706	382	141	58	532	379	1238	761
08:00		202	75			135	64				
08:15		147	81			140	41				
08:30		139	62			152	34				
08:45		149	64	637	282	117	42	544	181	1181	463
09:00		153	73			139	41				
09:15		130	115			157	42				
09:30		139	59			135	19				
09:45		145	28	567	275	134	22	565	124	1132	399
10:00		110	26			126	21				
10:15		91	29			126	17				
10:30		129	20			118	15				
10:45		117	15	447	90	112	5	482	58	929	148
11:00		117	12			132	12				
11:15		140	13			99	9				
11:30		118	12			110	13				
11:45		127	15	502	52	114	10	455	44	957	96
Total		3226	4707			2918	4392			6144	9099
Percent		40.7%	59.3%			39.9%	60.1%			40.3%	59.7%

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774VL01

Start Time	10/12/2018 Fri	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	139			10	129				
12:15		10	155			6	124				
12:30		7	133			5	121				
12:45		5	118	32	545	2	146	23	520	55	1065
01:00		3	144			5	123				
01:15		5	148			3	125				
01:30		6	113			4	120				
01:45		3	148	17	553	3	138	15	506	32	1059
02:00		3	132			0	128				
02:15		3	128			2	146				
02:30		0	138			4	142				
02:45		2	139	8	537	0	120	6	536	14	1073
03:00		1	129			3	120				
03:15		2	129			0	130				
03:30		2	144			2	141				
03:45		1	151	6	553	3	87	8	478	14	1031
04:00		1	101			3	85				
04:15		2	121			5	78				
04:30		4	111			0	114				
04:45		1	151	8	484	5	120	13	397	21	881
05:00		9	141			6	96				
05:15		8	135			15	84				
05:30		15	150			30	121				
05:45		17	155	49	581	24	141	75	442	124	1023
06:00		25	146			21	129				
06:15		60	120			30	144				
06:30		80	123			63	134				
06:45		117	131	282	520	93	88	207	495	489	1015
07:00		135	109			118	103				
07:15		170	81			157	73				
07:30		210	104			142	88				
07:45		172	70	687	364	170	78	587	342	1274	706
08:00		162	68			155	56				
08:15		124	58			126	51				
08:30		143	61			172	43				
08:45		153	57	582	244	145	28	598	178	1180	422
09:00		138	46			119	33				
09:15		108	49			133	43				
09:30		135	45			135	37				
09:45		133	37	514	177	138	21	525	134	1039	311
10:00		101	32			125	32				
10:15		116	32			135	30				
10:30		114	26			116	20				
10:45		132	24	463	114	125	15	501	97	964	211
11:00		101	20			113	12				
11:15		109	13			137	9				
11:30		146	15			145	14				
11:45		154	7	510	55	138	14	533	49	1043	104
Total		3158	4727			3091	4174			6249	8901
Percent		40.1%	59.9%			42.5%	57.5%			41.2%	58.8%

Accurate Counts

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

978-664-2565

7774VL01

Start Time	10/13/2018 Sat	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		23	180			14	119				
12:15		7	199			8	128				
12:30		6	164			8	125				
12:45		7	133	43	676	7	166	37	538	80	1214
01:00		5	149			6	146				
01:15		2	168			2	118				
01:30		1	175			3	113				
01:45		3	146	11	638	1	159	12	536	23	1174
02:00		5	153			3	119				
02:15		6	152			2	127				
02:30		2	149			3	149				
02:45		2	131	15	585	1	157	9	552	24	1137
03:00		3	159			2	123				
03:15		0	151			2	146				
03:30		7	124			1	130				
03:45		2	132	12	566	1	147	6	546	18	1112
04:00		1	147			1	133				
04:15		1	144			2	119				
04:30		1	142			1	131				
04:45		2	158	5	591	5	101	9	484	14	1075
05:00		1	176			1	120				
05:15		2	145			3	131				
05:30		4	133			6	110				
05:45		3	117	10	571	4	102	14	463	24	1034
06:00		12	104			3	117				
06:15		9	122			18	105				
06:30		19	94			12	96				
06:45		11	83	51	403	35	97	68	415	119	818
07:00		27	84			38	75				
07:15		39	80			47	80				
07:30		45	51			58	60				
07:45		57	59	168	274	81	54	224	269	392	543
08:00		67	54			80	66				
08:15		81	65			104	45				
08:30		87	49			103	39				
08:45		81	53	316	221	150	56	437	206	753	427
09:00		105	53			129	43				
09:15		98	52			130	33				
09:30		98	43			145	31				
09:45		143	32	444	180	179	29	583	136	1027	316
10:00		133	41			146	28				
10:15		127	29			137	42				
10:30		156	36			147	27				
10:45		141	32	557	138	147	26	577	123	1134	261
11:00		137	18			153	22				
11:15		149	16			174	14				
11:30		179	16			135	19				
11:45		183	29	648	79	159	18	621	73	1269	152
Total		2280	4922			2597	4341			4877	9263
Percent		31.7%	68.3%			37.4%	62.6%			34.5%	65.5%

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774VL01

Start Time	10/14/2018 Sun	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		18	146			13	146				
12:15		14	163			5	159				
12:30		12	160			12	145				
12:45		6	139	50	608	11	127	41	577	91	1185
01:00		9	154			7	136				
01:15		4	146			6	133				
01:30		7	115			5	147				
01:45		6	128	26	543	8	163	26	579	52	1122
02:00		4	151			5	118				
02:15		2	139			3	137				
02:30		3	142			3	151				
02:45		2	162	11	594	4	161	15	567	26	1161
03:00		1	147			4	121				
03:15		4	156			1	169				
03:30		2	162			1	132				
03:45		2	109	9	574	1	118	7	540	16	1114
04:00		0	119			2	116				
04:15		2	99			3	129				
04:30		1	122			1	104				
04:45		0	151	3	491	4	138	10	487	13	978
05:00		0	165			3	138				
05:15		1	128			3	131				
05:30		3	101			1	85				
05:45		3	110	7	504	0	92	7	446	14	950
06:00		2	129			5	83				
06:15		5	94			5	77				
06:30		7	81			13	83				
06:45		10	82	24	386	21	89	44	332	68	718
07:00		14	72			19	63				
07:15		19	72			36	48				
07:30		19	52			24	52				
07:45		23	44	75	240	53	39	132	202	207	442
08:00		42	57			46	34				
08:15		47	46			51	32				
08:30		54	38			77	32				
08:45		54	37	197	178	105	24	279	122	476	300
09:00		76	26			79	21				
09:15		82	24			84	20				
09:30		90	23			69	15				
09:45		75	17	323	90	90	11	322	67	645	157
10:00		117	24			69	14				
10:15		88	9			98	20				
10:30		98	17			88	6				
10:45		110	5	413	55	112	11	367	51	780	106
11:00		100	11			140	13				
11:15		156	6			119	9				
11:30		128	17			112	11				
11:45		155	7	539	41	142	14	513	47	1052	88
Total		1677	4304			1763	4017			3440	8321
Percent		28.0%	72.0%			30.5%	69.5%			29.2%	70.8%
Grand Total		10341	18660			10369	16924			20710	35584
Percent		35.7%	64.3%			38.0%	62.0%			36.8%	63.2%

ADT ADT 14,074 AADT 14,074

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774VL01

Start Time	10/8/2018		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	*	*	*	*	17	16	32	23	43	37	50	41	36	29
01:00	*	*	*	*	*	*	8	4	17	15	11	12	26	26	16	14
02:00	*	*	*	*	*	*	1	6	8	6	15	9	11	15	9	9
03:00	*	*	*	*	*	*	3	5	6	8	12	6	9	7	8	6
04:00	*	*	*	*	*	*	8	12	8	13	5	9	3	10	6	11
05:00	*	*	*	*	*	*	44	71	49	75	10	14	7	7	28	42
06:00	*	*	*	*	*	*	286	226	282	207	51	68	24	44	161	136
07:00	*	*	*	*	*	*	706	532	687	587	168	224	75	132	409	369
08:00	*	*	*	*	*	*	637	544	582	598	316	437	197	279	433	464
09:00	*	*	*	*	*	*	567	565	514	525	444	583	323	322	462	499
10:00	*	*	*	*	*	*	447	482	463	501	557	577	413	367	470	482
11:00	*	*	*	*	*	*	502	455	510	533	648	621	539	513	550	530
12:00 PM	*	*	*	*	*	*	508	485	545	520	676	538	608	577	584	530
01:00	*	*	*	*	*	*	476	499	553	506	638	536	543	579	552	530
02:00	*	*	*	*	*	*	529	523	537	536	585	552	594	567	561	544
03:00	*	*	*	*	*	*	524	614	553	478	566	546	574	540	554	544
04:00	*	*	*	*	*	*	559	532	484	397	591	484	491	487	531	475
05:00	*	*	*	*	*	*	567	418	581	442	571	463	504	446	556	442
06:00	*	*	*	*	*	*	463	535	520	495	403	415	386	332	443	444
07:00	*	*	*	*	*	*	382	379	364	342	274	269	240	202	315	298
08:00	*	*	*	*	*	*	282	181	244	178	221	206	178	122	231	172
09:00	*	*	*	*	*	*	275	124	177	134	180	136	90	67	180	115
10:00	*	*	*	*	*	*	90	58	114	97	138	123	55	51	99	82
11:00	*	*	*	*	*	*	52	44	55	49	79	73	41	47	57	53
Lane	0	0	0	0	0	0	7933	7310	7885	7265	7202	6938	5981	5780	7251	6820
Day	0	0	0	0	0	0	15243	15243	15150	15150	14140	14140	11761	11761	14071	14071
AM Peak	-	-	-	-	-	-	07:00	09:00	07:00	08:00	11:00	11:00	11:00	11:00	11:00	11:00
Vol.	-	-	-	-	-	-	706	565	687	598	648	621	539	513	550	530
PM Peak	-	-	-	-	-	-	17:00	15:00	17:00	14:00	12:00	14:00	12:00	13:00	12:00	14:00
Vol.	-	-	-	-	-	-	567	614	581	536	676	552	608	579	584	544

Comb. Total	0	0	0	15243	15150	14140	11761	14071
ADT	ADT 14,074	AADT 14,074						

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SP01

NB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/11/18	0	0	0	0	0	0	0	0	2	2	3	5	2	3	17	35	37
01:00	0	0	0	0	0	0	0	0	1	3	0	1	1	2	8	36	38
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	*	*
03:00	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	37	38
04:00	0	0	0	0	0	0	0	0	0	1	1	2	2	2	8	37	38
05:00	0	0	0	0	0	0	0	1	2	3	12	17	7	2	44	36	38
06:00	0	0	0	1	0	2	3	3	25	75	106	48	18	5	286	34	36
07:00	0	0	0	0	0	2	18	57	133	211	189	84	11	1	706	32	35
08:00	0	0	0	0	8	9	27	64	133	203	134	48	6	5	637	32	34
09:00	0	0	0	1	2	2	7	31	79	166	171	83	22	3	567	33	35
10:00	0	0	0	0	0	0	4	17	43	128	147	73	32	3	447	34	36
11:00	0	0	0	0	1	1	5	18	72	156	145	81	18	5	502	33	35
12 PM	0	0	0	0	4	2	4	13	46	138	173	89	31	8	508	34	36
13:00	0	0	0	0	0	0	4	18	48	116	161	90	33	6	476	34	36
14:00	0	0	0	0	0	7	11	33	73	152	172	57	20	4	529	32	35
15:00	0	0	0	1	11	5	9	39	119	149	127	51	7	6	524	32	34
16:00	0	0	0	0	0	3	24	80	126	171	112	35	7	1	559	31	34
17:00	0	0	0	1	2	10	27	80	140	162	107	31	7	0	567	31	33
18:00	0	0	0	0	0	2	15	55	103	124	111	43	7	3	463	32	34
19:00	0	0	0	0	0	0	0	16	68	118	118	50	11	1	382	33	35
20:00	0	0	0	0	0	1	4	10	32	79	86	51	13	6	282	34	35
21:00	0	0	0	0	0	0	0	4	43	94	82	42	9	1	275	33	35
22:00	0	0	0	0	0	0	0	5	6	23	28	19	5	4	90	34	36
23:00	0	0	0	0	0	0	0	1	5	13	13	10	5	5	52	35	37
Total	0	0	0	4	28	46	162	545	1299	2288	2199	1010	275	77	7933		
Percent	0.0%	0.0%	0.0%	0.1%	0.4%	0.6%	2.0%	6.9%	16.4%	28.8%	27.7%	12.7%	3.5%	1.0%			
AM Peak				06:00	08:00	08:00	08:00	08:00	07:00	07:00	07:00	07:00	10:00	06:00	07:00		
Vol.				1	8	9	27	64	133	211	189	84	32	5	706		
PM Peak				15:00	15:00	17:00	17:00	16:00	17:00	16:00	12:00	13:00	13:00	12:00	17:00		
Vol.				1	11	10	27	80	140	171	173	90	33	8	567		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SP01

NB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/12/18	0	0	0	0	0	0	0	0	0	6	10	8	4	4	32	35	37
01:00	0	0	0	0	0	0	0	0	0	3	5	6	2	1	17	35	37
02:00	0	0	0	0	0	0	0	1	0	1	4	2	0	0	8	34	35
03:00	0	0	0	0	0	0	0	0	1	1	2	2	0	0	6	34	35
04:00	0	0	0	0	0	0	0	0	0	1	3	1	2	1	8	37	38
05:00	0	0	0	0	1	0	0	0	3	9	13	11	8	4	49	36	38
06:00	0	0	0	0	1	0	2	9	35	67	93	49	19	7	282	34	36
07:00	0	0	0	0	2	1	21	61	121	238	168	54	15	6	687	32	34
08:00	0	0	0	0	0	3	12	51	121	170	140	66	18	1	582	32	35
09:00	0	0	0	0	0	4	16	14	80	173	143	68	11	5	514	33	35
10:00	0	0	0	0	1	0	3	14	82	123	125	85	26	4	463	34	36
11:00	0	0	0	0	2	10	23	35	74	147	123	77	15	4	510	33	35
12 PM	0	0	0	0	0	1	1	28	76	158	179	74	26	2	545	33	35
13:00	0	0	0	0	0	0	3	8	64	158	178	113	24	5	553	34	35
14:00	0	0	0	1	3	7	16	39	70	154	159	68	15	5	537	33	35
15:00	0	0	0	0	0	2	20	95	144	156	92	32	8	4	553	31	34
16:00	0	0	0	1	6	2	14	63	120	138	97	37	6	0	484	32	34
17:00	0	0	0	0	2	9	21	68	147	164	119	41	10	0	581	32	34
18:00	0	0	0	0	0	1	5	27	98	173	145	53	13	5	520	32	35
19:00	0	0	0	0	0	1	2	12	52	112	115	53	13	4	364	33	35
20:00	0	0	0	0	0	0	0	3	34	77	72	35	21	2	244	34	37
21:00	0	0	0	0	0	0	0	1	13	53	65	31	10	4	177	34	36
22:00	0	0	0	0	0	0	0	3	9	29	39	19	8	7	114	34	36
23:00	0	0	0	0	0	1	0	0	4	16	15	12	3	4	55	34	36
Total	0	0	0	2	18	42	159	532	1348	2327	2104	997	277	79	7885		
Percent	0.0%	0.0%	0.0%	0.0%	0.2%	0.5%	2.0%	6.7%	17.1%	29.5%	26.7%	12.6%	3.5%	1.0%			
AM Peak					07:00	11:00	11:00	07:00	07:00	07:00	07:00	10:00	10:00	06:00	07:00		
Vol.					2	10	23	61	121	238	168	85	26	7	687		
PM Peak				14:00	16:00	17:00	17:00	15:00	17:00	18:00	12:00	13:00	12:00	22:00	17:00		
Vol.				1	6	9	21	95	147	173	179	113	26	7	581		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SP01

NB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/13/18	0	0	0	0	0	0	0	1	4	6	13	7	7	5	43	36	38
01:00	0	0	0	0	0	0	0	0	0	2	4	5	0	0	11	35	35
02:00	0	0	0	0	0	0	0	0	1	1	7	2	1	3	15	34	37
03:00	0	0	0	0	0	1	0	0	2	1	6	1	0	1	12	32	34
04:00	0	0	0	0	0	0	0	0	0	1	0	0	3	1	5	38	38
05:00	0	0	0	0	0	0	0	0	1	1	5	1	1	1	10	34	37
06:00	0	0	0	0	1	0	0	2	3	6	14	15	5	5	51	35	37
07:00	0	0	0	0	0	0	0	4	17	39	51	33	17	7	168	35	37
08:00	0	0	0	0	1	0	0	9	24	73	100	83	17	9	316	34	36
09:00	0	0	0	0	0	0	0	10	55	120	139	85	23	12	444	34	36
10:00	0	0	0	0	0	1	7	20	72	173	164	88	24	8	557	34	35
11:00	0	0	0	0	7	7	10	18	64	218	216	79	23	6	648	33	35
12 PM	0	0	0	0	0	0	9	19	81	185	228	122	24	8	676	34	35
13:00	0	0	0	0	0	3	4	19	63	197	203	120	23	6	638	34	35
14:00	0	0	0	1	2	0	5	18	66	145	193	105	44	6	585	34	37
15:00	0	0	0	0	0	2	1	14	58	154	188	110	33	6	566	34	36
16:00	0	0	0	0	0	4	2	19	80	165	188	101	31	1	591	34	36
17:00	0	0	0	0	0	0	2	14	73	165	178	90	39	10	571	34	36
18:00	0	0	0	0	0	0	1	12	53	122	134	62	16	3	403	33	35
19:00	0	0	0	0	0	0	2	11	27	93	79	37	20	5	274	34	36
20:00	0	0	0	0	0	0	1	11	35	67	72	20	13	2	221	33	36
21:00	0	0	0	0	0	0	3	5	18	56	57	27	11	3	180	34	36
22:00	0	0	0	0	0	0	0	5	19	32	41	30	9	2	138	34	36
23:00	0	0	0	0	0	0	0	6	9	19	27	15	2	1	79	34	35
Total	0	0	0	1	11	18	47	217	825	2041	2307	1238	386	111	7202		
Percent	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.7%	3.0%	11.5%	28.3%	32.0%	17.2%	5.4%	1.5%			
AM Peak					11:00	11:00	11:00	10:00	10:00	11:00	11:00	10:00	10:00	09:00	11:00		
Vol.					7	7	10	20	72	218	216	88	24	12	648		
PM Peak			14:00	14:00	16:00	12:00	12:00	12:00	12:00	13:00	12:00	12:00	14:00	17:00	12:00		
Vol.			1	2	4	9	19	81	197	228	122	44	10	676			

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SP01

NB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/14/18	0	0	0	0	0	0	0	0	5	8	14	12	7	4	50	36	38
01:00	0	0	0	0	0	0	0	0	3	5	8	9	0	1	26	34	35
02:00	0	0	0	0	0	0	0	0	0	4	2	3	1	1	11	35	37
03:00	0	0	0	0	0	0	0	0	1	2	1	1	3	1	9	37	38
04:00	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	31	32
05:00	0	0	0	0	0	0	0	0	0	1	2	2	1	1	7	36	38
06:00	0	0	0	0	1	0	0	0	0	3	7	8	4	1	24	36	38
07:00	0	0	0	0	1	0	0	0	3	10	22	24	13	2	75	36	38
08:00	0	0	0	0	0	0	0	2	8	36	64	52	23	12	197	35	37
09:00	0	0	0	0	0	4	2	6	24	67	111	72	27	10	323	35	37
10:00	0	0	0	0	2	1	6	6	31	91	132	104	32	8	413	35	37
11:00	0	0	0	0	2	3	8	18	62	148	155	109	25	9	539	34	35
12 PM	0	0	0	1	0	0	3	21	96	182	195	83	22	5	608	33	35
13:00	0	0	0	0	1	6	15	50	87	167	143	56	16	2	543	32	35
14:00	0	0	0	1	2	1	7	14	55	172	219	95	19	9	594	33	35
15:00	0	0	0	1	3	24	24	39	52	169	152	81	26	3	574	33	35
16:00	0	0	0	0	1	1	2	14	63	116	148	109	30	7	491	34	36
17:00	0	0	0	0	1	1	3	9	46	146	142	119	29	8	504	34	36
18:00	0	0	0	0	1	0	1	9	40	138	123	54	19	1	386	33	35
19:00	0	0	0	0	0	0	0	3	20	72	98	40	6	1	240	33	35
20:00	0	0	0	0	0	0	0	2	17	54	51	37	14	3	178	35	37
21:00	0	0	0	0	0	0	0	3	6	19	24	25	10	3	90	35	37
22:00	0	0	0	0	0	0	0	0	3	10	25	10	6	1	55	35	37
23:00	0	0	0	0	0	0	0	2	4	8	10	8	5	4	41	35	37
Total	0	0	0	3	15	41	71	198	628	1628	1849	1113	338	97	5981		
Percent	0.0%	0.0%	0.0%	0.1%	0.3%	0.7%	1.2%	3.3%	10.5%	27.2%	30.9%	18.6%	5.7%	1.6%			
AM Peak					10:00	09:00	11:00	11:00	11:00	11:00	11:00	11:00	10:00	08:00	11:00		
Vol.					2	4	8	18	62	148	155	109	32	12	539		
PM Peak				12:00	15:00	15:00	15:00	13:00	12:00	12:00	14:00	17:00	16:00	14:00	12:00		
Vol.				1	3	24	24	50	96	182	219	119	30	9	608		
Grand Total	0	0	0	10	72	147	439	1492	4100	8284	8459	4358	1276	364	29001		
Percent	0.0%	0.0%	0.0%	0.0%	0.2%	0.5%	1.5%	5.1%	14.1%	28.6%	29.2%	15.0%	4.4%	1.3%			

15th Percentile : 25 MPH
 50th Percentile : 29 MPH
 85th Percentile : 33 MPH
 95th Percentile : 35 MPH

Statistics
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 22468
 Percent in Pace : 77.5%
 Number of Vehicles > 35 MPH : 3093
 Percent of Vehicles > 35 MPH : 10.7%
 Mean Speed(Average) : 30 MPH

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA
 SB

7774SP01

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/11/18	0	0	0	0	0	0	0	0	1	1	5	3	5	1	16	37	38
01:00	0	0	0	0	0	0	0	0	2	0	1	0	0	1	4	31	32
02:00	0	0	0	0	0	0	0	0	0	2	0	3	1	0	6	36	38
03:00	0	0	0	0	0	0	0	0	1	0	1	2	0	1	5	35	35
04:00	0	0	0	0	0	1	0	0	1	0	2	2	5	1	12	38	38
05:00	0	0	0	0	0	1	1	1	0	8	15	23	14	8	71	36	38
06:00	0	0	0	1	1	2	2	7	25	46	69	49	19	5	226	35	37
07:00	0	0	1	24	31	16	20	40	97	120	122	45	10	6	532	32	34
08:00	0	0	3	78	72	38	34	34	75	96	83	23	7	1	544	31	33
09:00	0	0	0	20	15	7	22	41	109	184	120	38	6	3	565	31	34
10:00	0	0	0	0	0	1	2	15	61	159	150	66	25	3	482	33	36
11:00	0	0	0	4	3	9	16	26	61	118	135	71	12	0	455	33	35
12 PM	0	0	0	6	4	7	8	27	74	150	129	54	26	0	485	33	36
13:00	0	0	0	0	1	4	11	17	72	150	158	55	24	7	499	33	35
14:00	0	0	0	2	3	5	14	14	58	160	170	70	22	5	523	33	35
15:00	0	0	3	88	78	76	77	76	86	70	47	13	0	0	614	28	31
16:00	0	0	8	126	149	111	81	44	11	1	1	0	0	0	532	20	23
17:00	0	0	15	156	141	69	25	6	6	0	0	0	0	0	418	16	19
18:00	0	0	2	102	155	126	64	34	31	13	2	3	3	0	535	21	26
19:00	0	0	0	0	0	0	0	6	32	102	139	72	22	6	379	34	36
20:00	0	0	0	0	0	0	0	6	14	25	67	46	20	3	181	35	37
21:00	0	0	0	0	0	0	0	2	7	22	29	38	20	6	124	36	38
22:00	0	0	0	0	0	0	0	1	0	6	13	23	9	6	58	36	38
23:00	0	0	0	0	0	0	0	1	4	5	7	13	5	9	44	35	37
Total	0	0	32	607	653	473	377	398	828	1438	1465	712	255	72	7310		
Percent	0.0%	0.0%	0.4%	8.3%	8.9%	6.5%	5.2%	5.4%	11.3%	19.7%	20.0%	9.7%	3.5%	1.0%			
AM Peak			08:00	08:00	08:00	08:00	08:00	09:00	09:00	09:00	10:00	11:00	10:00	05:00	09:00		
Vol.			3	78	72	38	34	41	109	184	150	71	25	8	565		
PM Peak			17:00	17:00	18:00	18:00	16:00	15:00	15:00	14:00	14:00	19:00	12:00	23:00	15:00		
Vol.			15	156	155	126	81	76	86	160	170	72	26	9	614		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA
 SB

7774SP01

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/12/18	0	0	0	0	0	0	0	1	1	1	4	5	3	8	23	36	38
01:00	0	0	0	0	0	0	0	0	1	3	2	2	1	6	15	35	37
02:00	0	0	0	0	0	0	0	0	0	1	1	0	2	2	6	38	38
03:00	0	0	0	0	0	0	0	0	0	0	3	1	1	3	8	36	38
04:00	0	0	0	0	1	0	0	0	1	0	3	2	3	3	13	37	38
05:00	0	0	0	0	0	0	2	0	2	9	17	20	18	7	75	37	38
06:00	0	0	0	0	0	0	1	3	17	37	75	51	18	5	207	35	37
07:00	0	0	1	10	19	26	35	44	135	162	115	33	6	1	587	31	33
08:00	0	0	2	51	56	60	69	72	100	93	61	30	4	0	598	30	33
09:00	0	0	0	0	1	7	10	30	66	140	157	84	27	3	525	34	36
10:00	0	0	0	5	10	8	15	31	61	140	136	73	19	3	501	33	35
11:00	0	0	1	15	20	18	24	42	72	138	130	56	13	4	533	32	35
12 PM	0	0	0	11	9	12	28	33	61	132	137	71	22	4	520	33	35
13:00	0	0	0	0	1	3	7	55	95	106	127	83	21	8	506	34	35
14:00	0	0	1	14	15	34	38	81	104	132	86	22	6	3	536	31	33
15:00	0	0	9	118	130	105	62	25	18	8	2	1	0	0	478	20	24
16:00	0	0	11	139	146	59	36	3	3	0	0	0	0	0	397	17	19
17:00	0	0	8	92	100	59	46	34	31	48	18	5	1	0	442	27	30
18:00	0	0	3	28	35	27	23	36	72	102	114	42	8	5	495	32	34
19:00	0	0	0	6	3	1	0	5	37	85	119	56	26	4	342	34	37
20:00	0	0	0	0	0	0	0	0	8	38	56	49	21	6	178	35	37
21:00	0	0	0	0	0	0	0	1	0	17	33	54	24	5	134	36	38
22:00	0	0	0	0	0	0	0	0	3	9	34	29	14	8	97	36	38
23:00	0	0	0	0	0	0	0	1	1	6	10	13	12	6	49	37	38
Total	0	0	36	489	546	419	396	497	889	1407	1440	782	270	94	7265		
Percent	0.0%	0.0%	0.5%	6.7%	7.5%	5.8%	5.5%	6.8%	12.2%	19.4%	19.8%	10.8%	3.7%	1.3%			
AM Peak			08:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	09:00	09:00	09:00	00:00	08:00		
Vol.			2	51	56	60	69	72	135	162	157	84	27	8	598		
PM Peak			16:00	16:00	16:00	15:00	15:00	14:00	14:00	12:00	12:00	13:00	19:00	13:00	14:00		
Vol.			11	139	146	105	62	81	104	132	137	83	26	8	536		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA
 SB

7774SP01

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/13/18	0	0	0	0	0	0	0	0	0	3	7	11	9	7	37	37	38
01:00	0	0	0	0	0	0	0	0	0	1	5	1	2	3	12	36	38
02:00	0	0	0	0	0	0	0	0	0	2	2	3	1	1	9	35	37
03:00	0	0	0	0	0	0	0	0	0	1	0	0	2	3	6	38	38
04:00	0	0	0	0	1	0	0	1	0	0	1	2	2	2	9	37	38
05:00	0	0	0	0	0	1	0	0	0	1	1	7	1	3	14	35	37
06:00	0	0	0	0	0	0	0	1	1	7	23	20	8	8	68	35	37
07:00	0	0	0	0	1	0	1	0	12	45	80	48	27	10	224	35	37
08:00	0	0	0	0	0	0	3	11	46	106	153	83	26	9	437	34	36
09:00	0	0	0	6	9	17	23	43	57	118	196	93	17	4	583	33	35
10:00	0	0	1	4	3	11	10	25	84	146	177	87	24	5	577	33	35
11:00	0	0	0	26	25	23	36	46	84	164	140	58	14	5	621	32	35
12 PM	0	0	1	3	3	2	5	16	45	129	166	116	38	14	538	34	36
13:00	0	0	1	22	18	24	28	37	59	99	131	86	24	7	536	34	35
14:00	0	0	0	1	3	14	20	25	64	125	177	87	19	17	552	33	35
15:00	0	0	0	0	1	1	4	12	51	170	173	100	27	7	546	34	36
16:00	0	0	0	0	4	4	16	14	40	123	160	82	31	10	484	34	36
17:00	0	0	0	0	0	0	0	10	50	115	171	87	24	6	463	34	36
18:00	0	0	0	0	0	0	0	2	27	96	158	90	33	9	415	35	37
19:00	0	0	0	0	0	2	2	1	8	63	93	68	26	6	269	35	37
20:00	0	0	0	0	0	1	8	5	7	38	69	47	25	6	206	35	37
21:00	0	0	0	0	0	0	1	0	2	19	45	41	21	7	136	36	38
22:00	0	0	0	0	0	0	0	0	0	14	42	38	18	11	123	36	38
23:00	0	0	0	0	0	0	1	2	8	5	16	13	21	7	73	37	38
Total	0	0	3	62	68	100	158	251	645	1590	2186	1268	440	167	6938		
Percent	0.0%	0.0%	0.0%	0.9%	1.0%	1.4%	2.3%	3.6%	9.3%	22.9%	31.5%	18.3%	6.3%	2.4%			
AM Peak			10:00	11:00	11:00	11:00	11:00	11:00	10:00	11:00	09:00	09:00	07:00	07:00	11:00		
Vol.			1	26	25	23	36	46	84	164	196	93	27	10	621		
PM Peak			12:00	13:00	13:00	13:00	13:00	13:00	14:00	15:00	14:00	12:00	12:00	14:00	14:00		
Vol.			1	22	18	24	28	37	64	170	177	116	38	17	552		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA
 SB

7774SP01

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/14/18	0	0	0	0	0	0	0	0	1	0	7	9	9	15	41	37	38
01:00	0	0	0	0	0	0	0	0	1	2	3	6	5	9	26	37	38
02:00	0	0	0	0	0	0	0	0	1	1	3	5	1	4	15	35	37
03:00	0	0	0	0	0	0	0	0	0	0	1	1	3	2	7	38	38
04:00	0	0	0	0	0	0	0	0	0	0	1	3	2	4	10	37	38
05:00	0	0	0	0	1	0	0	0	0	0	3	1	0	2	7	33	35
06:00	0	0	0	0	0	0	0	0	4	2	15	13	5	5	44	35	37
07:00	0	0	0	0	0	0	2	1	4	15	45	29	25	11	132	36	38
08:00	0	0	0	0	0	2	2	3	11	39	95	77	37	13	279	35	37
09:00	0	0	0	0	0	0	3	5	18	53	103	89	38	13	322	35	37
10:00	0	0	0	0	0	0	0	5	9	64	134	100	45	10	367	35	37
11:00	0	0	1	6	22	13	23	31	55	100	146	74	34	8	513	34	36
12 PM	0	0	0	5	19	26	30	56	97	138	125	60	16	5	577	32	35
13:00	0	0	3	46	60	40	39	45	68	119	119	30	7	3	579	31	33
14:00	0	0	1	8	13	24	24	41	69	133	141	92	18	3	567	33	35
15:00	0	0	5	39	39	23	33	42	47	104	104	72	20	12	540	33	35
16:00	0	0	0	0	2	4	13	26	62	110	133	104	27	6	487	34	36
17:00	0	0	0	7	5	2	3	4	29	111	157	86	32	10	446	34	36
18:00	0	0	0	0	0	0	2	3	18	68	124	79	31	7	332	35	37
19:00	0	0	0	1	0	0	0	4	10	31	72	52	27	5	202	35	37
20:00	0	0	0	0	0	0	0	0	3	16	27	46	23	7	122	36	38
21:00	0	0	0	0	0	0	0	0	2	10	19	17	14	5	67	37	38
22:00	0	0	0	0	0	0	1	0	1	2	14	10	12	11	51	37	38
23:00	0	0	0	0	0	0	0	0	0	3	13	12	11	8	47	37	38
Total	0	0	10	112	161	134	175	266	510	1121	1604	1067	442	178	5780		
Percent	0.0%	0.0%	0.2%	1.9%	2.8%	2.3%	3.0%	4.6%	8.8%	19.4%	27.8%	18.5%	7.6%	3.1%			
AM Peak			11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	10:00	10:00	00:00	11:00		
Vol.			1	6	22	13	23	31	55	100	146	100	45	15	513		
PM Peak			15:00	13:00	13:00	13:00	13:00	12:00	12:00	12:00	17:00	16:00	17:00	15:00	13:00		
Vol.			5	46	60	40	39	56	97	138	157	104	32	12	579		
Grand Total	0	0	81	1270	1428	1126	1106	1412	2872	5556	6695	3829	1407	511	27293		
Percent	0.0%	0.0%	0.3%	4.7%	5.2%	4.1%	4.1%	5.2%	10.5%	20.4%	24.5%	14.0%	5.2%	1.9%			

15th Percentile : 18 MPH
 50th Percentile : 29 MPH
 85th Percentile : 33 MPH
 95th Percentile : 36 MPH

Statistics
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 17037
 Percent in Pace : 62.4%
 Number of Vehicles > 35 MPH : 3194
 Percent of Vehicles > 35 MPH : 11.7%
 Mean Speed(Average) : 28 MPH

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA
 NB, SB

7774SP01

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/11/18	0	0	0	0	0	0	0	0	3	3	8	8	7	4	33	37	38
01:00	0	0	0	0	0	0	0	0	3	3	1	1	1	3	12	34	37
02:00	0	0	0	0	0	0	0	0	0	2	0	3	1	1	7	36	38
03:00	0	0	0	0	0	0	0	0	1	1	2	2	1	1	8	35	37
04:00	0	0	0	0	0	1	0	0	1	1	3	4	7	3	20	37	38
05:00	0	0	0	0	0	1	1	2	2	11	27	40	21	10	115	36	38
06:00	0	0	0	2	1	4	5	10	50	121	175	97	37	10	512	34	36
07:00	0	0	1	24	31	18	38	97	230	331	311	129	21	7	1238	32	35
08:00	0	0	3	78	80	47	61	98	208	299	217	71	13	6	1181	31	34
09:00	0	0	0	21	17	9	29	72	188	350	291	121	28	6	1132	32	35
10:00	0	0	0	0	0	1	6	32	104	287	297	139	57	6	929	34	36
11:00	0	0	0	4	4	10	21	44	133	274	280	152	30	5	957	33	35
12 PM	0	0	0	6	8	9	12	40	120	288	302	143	57	8	993	34	36
13:00	0	0	0	0	1	4	15	35	120	266	319	145	57	13	975	34	36
14:00	0	0	0	2	3	12	25	47	131	312	342	127	42	9	1052	33	35
15:00	0	0	3	89	89	81	86	115	205	219	174	64	7	6	1138	31	33
16:00	0	0	8	126	149	114	105	124	137	172	113	35	7	1	1091	29	32
17:00	0	0	15	157	143	79	52	86	146	162	107	31	7	0	985	29	32
18:00	0	0	2	102	155	128	79	89	134	137	113	46	10	3	998	30	33
19:00	0	0	0	0	0	0	0	22	100	220	257	122	33	7	761	34	35
20:00	0	0	0	0	0	1	4	16	46	104	153	97	33	9	463	34	36
21:00	0	0	0	0	0	0	0	6	50	116	111	80	29	7	399	34	36
22:00	0	0	0	0	0	0	0	6	6	29	41	42	14	10	148	35	37
23:00	0	0	0	0	0	0	0	2	9	18	20	23	10	14	96	35	37
Total	0	0	32	611	681	519	539	943	2127	3726	3664	1722	530	149	15243		
Percent	0.0%	0.0%	0.2%	4.0%	4.5%	3.4%	3.5%	6.2%	14.0%	24.4%	24.0%	11.3%	3.5%	1.0%			
AM Peak			08:00	08:00	08:00	08:00	08:00	08:00	07:00	09:00	07:00	11:00	10:00	05:00	07:00		
Vol.			3	78	80	47	61	98	230	350	311	152	57	10	1238		
PM Peak			17:00	17:00	18:00	18:00	16:00	16:00	15:00	14:00	14:00	13:00	12:00	23:00	15:00		
Vol.			15	157	155	128	105	124	205	312	342	145	57	14	1138		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA

7774SP01

NB, SB	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999		
10/12/18	0	0	0	0	0	0	0	1	1	7	14	13	7	12	55	36	38
01:00	0	0	0	0	0	0	0	0	1	6	7	8	3	7	32	35	37
02:00	0	0	0	0	0	0	0	1	0	2	5	2	2	2	14	36	38
03:00	0	0	0	0	0	0	0	0	1	1	5	3	1	3	14	35	37
04:00	0	0	0	0	1	0	0	0	1	1	6	3	5	4	21	37	38
05:00	0	0	0	0	1	0	2	0	5	18	30	31	26	11	124	37	38
06:00	0	0	0	0	1	0	3	12	52	104	168	100	37	12	489	34	37
07:00	0	0	1	10	21	27	56	105	256	400	283	87	21	7	1274	32	34
08:00	0	0	2	51	56	63	81	123	221	263	201	96	22	1	1180	32	34
09:00	0	0	0	0	1	11	26	44	146	313	300	152	38	8	1039	33	35
10:00	0	0	0	5	11	8	18	45	143	263	261	158	45	7	964	34	35
11:00	0	0	1	15	22	28	47	77	146	285	253	133	28	8	1043	33	35
12 PM	0	0	0	11	9	13	29	61	137	290	316	145	48	6	1065	33	35
13:00	0	0	0	0	1	3	10	63	159	264	305	196	45	13	1059	34	35
14:00	0	0	1	15	18	41	54	120	174	286	245	90	21	8	1073	32	34
15:00	0	0	9	118	130	107	82	120	162	164	94	33	8	4	1031	29	32
16:00	0	0	11	140	152	61	50	66	123	138	97	37	6	0	881	30	32
17:00	0	0	8	92	102	68	67	102	178	212	137	46	11	0	1023	30	33
18:00	0	0	3	28	35	28	28	63	170	275	259	95	21	10	1015	32	35
19:00	0	0	0	6	3	2	2	17	89	197	234	109	39	8	706	34	36
20:00	0	0	0	0	0	0	0	3	42	115	128	84	42	8	422	35	37
21:00	0	0	0	0	0	0	0	2	13	70	98	85	34	9	311	35	37
22:00	0	0	0	0	0	0	0	3	12	38	73	48	22	15	211	35	37
23:00	0	0	0	0	0	1	0	1	5	22	25	25	15	10	104	36	38
Total	0	0	36	491	564	461	555	1029	2237	3734	3544	1779	547	173	15150		
Percent	0.0%	0.0%	0.2%	3.2%	3.7%	3.0%	3.7%	6.8%	14.8%	24.6%	23.4%	11.7%	3.6%	1.1%			
AM Peak			08:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	09:00	10:00	10:00	00:00	07:00		
Vol.			2	51	56	63	81	123	256	400	300	158	45	12	1274		
PM Peak			16:00	16:00	16:00	15:00	15:00	14:00	17:00	12:00	12:00	13:00	12:00	22:00	14:00		
Vol.			11	140	152	107	82	120	178	290	316	196	48	15	1073		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA
 NB, SB

7774SP01

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/13/18	0	0	0	0	0	0	0	1	4	9	20	18	16	12	80	37	38
01:00	0	0	0	0	0	0	0	0	0	3	9	6	2	3	23	35	37
02:00	0	0	0	0	0	0	0	0	1	3	9	5	2	4	24	35	37
03:00	0	0	0	0	0	1	0	0	2	2	6	1	2	4	18	35	37
04:00	0	0	0	0	1	0	0	1	0	1	1	2	5	3	14	38	38
05:00	0	0	0	0	0	1	0	0	1	2	6	8	2	4	24	35	37
06:00	0	0	0	0	1	0	0	3	4	13	37	35	13	13	119	35	37
07:00	0	0	0	0	1	0	1	4	29	84	131	81	44	17	392	35	37
08:00	0	0	0	0	1	0	3	20	70	179	253	166	43	18	753	34	36
09:00	0	0	0	6	9	17	23	53	112	238	335	178	40	16	1027	34	35
10:00	0	0	1	4	3	12	17	45	156	319	341	175	48	13	1134	33	35
11:00	0	0	0	26	32	30	46	64	148	382	356	137	37	11	1269	32	35
12 PM	0	0	1	3	3	2	14	35	126	314	394	238	62	22	1214	34	36
13:00	0	0	1	22	18	27	32	56	122	296	334	206	47	13	1174	34	35
14:00	0	0	0	2	5	14	25	43	130	270	370	192	63	23	1137	34	36
15:00	0	0	0	0	1	3	5	26	109	324	361	210	60	13	1112	34	36
16:00	0	0	0	0	4	8	18	33	120	288	348	183	62	11	1075	34	36
17:00	0	0	0	0	0	0	2	24	123	280	349	177	63	16	1034	34	36
18:00	0	0	0	0	0	0	1	14	80	218	292	152	49	12	818	34	36
19:00	0	0	0	0	0	2	4	12	35	156	172	105	46	11	543	35	37
20:00	0	0	0	0	0	1	9	16	42	105	141	67	38	8	427	34	37
21:00	0	0	0	0	0	0	4	5	20	75	102	68	32	10	316	35	37
22:00	0	0	0	0	0	0	0	5	19	46	83	68	27	13	261	35	37
23:00	0	0	0	0	0	0	1	8	17	24	43	28	23	8	152	36	38
Total	0	0	3	63	79	118	205	468	1470	3631	4493	2506	826	278	14140		
Percent	0.0%	0.0%	0.0%	0.4%	0.6%	0.8%	1.4%	3.3%	10.4%	25.7%	31.8%	17.7%	5.8%	2.0%			
AM Peak			10:00	11:00	11:00	11:00	11:00	11:00	10:00	11:00	11:00	09:00	10:00	08:00	11:00		
Vol.			1	26	32	30	46	64	156	382	356	178	48	18	1269		
PM Peak			12:00	13:00	13:00	13:00	13:00	13:00	14:00	15:00	12:00	12:00	14:00	14:00	12:00		
Vol.			1	22	18	27	32	56	130	324	394	238	63	23	1214		

Accurate Counts

978-664-2565

Location : Weston Road
 Location : South of Howe Street
 City/State: Wellesley, MA
 NB, SB

7774SP01

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	Total	85th Percent	95th Percent
10/14/18	0	0	0	0	0	0	0	0	6	8	21	21	16	19	91	36	38
01:00	0	0	0	0	0	0	0	0	4	7	11	15	5	10	52	35	37
02:00	0	0	0	0	0	0	0	0	1	5	5	8	2	5	26	35	37
03:00	0	0	0	0	0	0	0	0	1	2	2	2	6	3	16	38	38
04:00	0	0	0	0	0	0	0	0	2	0	2	3	2	4	13	36	38
05:00	0	0	0	0	1	0	0	0	0	1	5	3	1	3	14	35	37
06:00	0	0	0	0	1	0	0	0	4	5	22	21	9	6	68	35	37
07:00	0	0	0	0	1	0	2	1	7	25	67	53	38	13	207	36	38
08:00	0	0	0	0	0	2	2	5	19	75	159	129	60	25	476	35	37
09:00	0	0	0	0	0	4	5	11	42	120	214	161	65	23	645	35	37
10:00	0	0	0	0	2	1	6	11	40	155	266	204	77	18	780	35	37
11:00	0	0	1	6	24	16	31	49	117	248	301	183	59	17	1052	34	36
12 PM	0	0	0	6	19	26	33	77	193	320	320	143	38	10	1185	33	35
13:00	0	0	3	46	61	46	54	95	155	286	262	86	23	5	1122	32	34
14:00	0	0	1	9	15	25	31	55	124	305	360	187	37	12	1161	33	35
15:00	0	0	5	40	42	47	57	81	99	273	256	153	46	15	1114	33	35
16:00	0	0	0	0	3	5	15	40	125	226	281	213	57	13	978	34	36
17:00	0	0	0	7	6	3	6	13	75	257	299	205	61	18	950	34	36
18:00	0	0	0	0	1	0	3	12	58	206	247	133	50	8	718	34	36
19:00	0	0	0	1	0	0	0	7	30	103	170	92	33	6	442	34	37
20:00	0	0	0	0	0	0	0	2	20	70	78	83	37	10	300	35	37
21:00	0	0	0	0	0	0	0	3	8	29	43	42	24	8	157	36	38
22:00	0	0	0	0	0	0	1	0	4	12	39	20	18	12	106	36	38
23:00	0	0	0	0	0	0	0	2	4	11	23	20	16	12	88	36	38
Total	0	0	10	115	176	175	246	464	1138	2749	3453	2180	780	275	11761		
Percent	0.0%	0.0%	0.1%	1.0%	1.5%	1.5%	2.1%	3.9%	9.7%	23.4%	29.4%	18.5%	6.6%	2.3%			
AM Peak			11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	10:00	10:00	08:00	11:00		
Vol.			1	6	24	16	31	49	117	248	301	204	77	25	1052		
PM Peak			15:00	13:00	13:00	15:00	15:00	13:00	12:00	12:00	14:00	16:00	17:00	17:00	12:00		
Vol.			5	46	61	47	57	95	193	320	360	213	61	18	1185		
Grand Total	0	0	81	1280	1500	1273	1545	2904	6972	13840	15154	8187	2683	875	56294		
Percent	0.0%	0.0%	0.1%	2.3%	2.7%	2.3%	2.7%	5.2%	12.4%	24.6%	26.9%	14.5%	4.8%	1.6%			

15th Percentile : 23 MPH
 50th Percentile : 29 MPH
 85th Percentile : 33 MPH
 95th Percentile : 35 MPH

Statistics
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 39505
 Percent in Pace : 70.2%
 Number of Vehicles > 35 MPH : 6287
 Percent of Vehicles > 35 MPH : 11.2%
 Mean Speed(Average) : 29 MPH