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MEMORANDUM

TO: Mr. Giorgio Petruzziello
Petruzziello Properties

FROM: Kenneth P. Cram, P.E.
CC:
DATE: December 11, 2017
RE: Redevelopment of Islington Center
Washington Street, Westwood, MA

This preliminary traffic impact memorandum has been prepared to assess the traffic impact associated with the Redevelopment of Islington Center in Westwood, Massachusetts. This assessment has reviewed available traffic volume data, developed trip generation projections and prepared a preliminary assessment of the potential project's impacts at the intersection of the Washington Street, East Street and School Street.

PROJECT DESCRIPTION

The Project is described below and is in response to the "Request for Proposal for the Redevelopment of Islington Center" (RFP # ECON-16-R-003) issued by the Islington Task Force in May 2016. Petruzziello Properties (Applicant) submitted a formal response on June 21, 2016. The proposal was further refined and modified through numerous hearings held by the Islington Task Force and Board of Selectmen. Specifically, Applicant proposes:

East Street Side of Washington Street

1. Applicant will acquire 280 Washington Street (Library/Wentworth Hall), 288 Washington Street (church/Community Center), and approximately 3,200 square feet (sf) of the East Street Parcel, from the Town of Westwood.

2. The church/Community Center building will be demolished and the library/Wentworth Hall building will be relocated by the Town to the west side of Washington Street on a portion of the lot which will include the municipal parking lot (described further below).

3. On the corner of Washington Street and East Street, Applicant will construct a new 55,000 sf mixed-use building. This building will contain approximately 13,000 sf of first floor commercial space and eighteen (18) two-bedroom condominium units on two upper floors. Included in the 55,000 sf is a 16,000 sf underground parking lot containing thirty-six (36) parking spaces for the condominium units.

4. Applicant will renovate the existing 16,380 gsf/8,750 nsf commercial building at 266-278 Washington Street for continued use as a commercial building. This renovation will include renovating and converting 4,000 sf of the basement (currently used as storage by CVS) for occupancy by the MMO Day Care.

5. The above referenced mixed use building and the building at 266-278 Washington Street will be located on a single lot (to be owned by the Applicant) with an area of approximately 69,120 square feet of land and with approximately 368 feet of frontage on Washington Street and 174 feet of frontage on East Street. There will be a total of 92 parking spaces on this lot (inclusive of 36 parking spaces under the mixed use building). In addition, six (6) new parking spaces will be added to Washington Street (to augment the existing six (6) parking spaces).

School Street Side of Washington Street

6. Applicant will acquire 277-283 Washington Street (the existing municipal parking lot).

7. Applicant will demolish the existing commercial buildings at 291 Washington Street and at 9 School Street, and demolish the existing single-family home at 277A Washington Street.

8. On the corner of Washington Street and School Street, Applicant will construct a new 13,074 gsf CVS building. This building will also include a 1,712 gsf mezzanine that will be used for storage. No drive-through window is proposed.

9. Applicant will renovate and relocate the Blue Hart Tavern on Applicant owned property to the north of the new municipal parking lot.

10. The new CVS building and the Blue Hart Tavern will be located on a single lot with a lot area of 57,107 square feet of land and with 297 feet of frontage on Washington Street and 194 feet of frontage on School Street. There will be a total of 47 parking spaces in this lot. In addition, seven (7) new parking spaces will be added to Washington Street.

11. Applicant will replace the municipal parking lot with a new municipal parking lot with the same number (30) of parking spaces. This will be on a lot owned by the Town of Westwood. The library/Wentworth Hall will be relocated (by the Town) onto the Washington Street side of this Town owned lot. This lot will have an area of 17,619 square feet of land and 108 feet of frontage on Washington Street.

12. Applicant will convey to the Town vacant "open space" to west of the project area. This lot will have an area of 10,082 square feet of land.

Figure 1 shows the site in relation to the roadway network.

Figure 1
Site Location Map

EXISTING CONDITIONS

Geometrics

Primary study area roadways are described below.

Roadways

Washington Street (Route 1A) Washington Street is an Urban Minor Arterial roadway extending in a generally north/south direction. The roadway is primarily under the jurisdiction of the Massachusetts Department of Transportation (MassDOT). However, within the study area, Washington Street is under the jurisdiction of the Town of Westwood. Washington Street provides two travel lanes in each direction separated by a double-yellow centerline. Additional turn lanes are provided at key intersections. Land use along Washington Street in the study area is a mix of retail and commercial properties. Sidewalks are provided on the both sides of Washington Street.

East Street East Street is an Urban Minor Arterial roadway extending in a generally east /west direction. The roadway is primarily under the jurisdiction of the Town of Westwood. East Street provides one travel lane in each direction separated by a double-yellow centerline. Additional turn lanes are provided at key intersections. Land use along East Street in the study area is a mix of retail, recreational and residential properties. A sidewalk is provided on the north side of East Street.

School Street School Street is a local street extending in an east/west direction south of the site. School Street is under the Town of Westwood jurisdiction. School Street provides one travel lane per direction, separated by a double yellow centerline. Sidewalks are provided along both sides of the road in the vicinity of the site. Land use along School Street is a mix of retail/commercial uses near Washington Street and residential homes west of the site.

Intersections

Washington Street, East Street and School Street This signalized intersection is under the jurisdiction of the Town of Westwood. Washington Street forms the north and south legs of the intersection and East Street forms the east leg and School Street forms the west leg. A driveway to the Westwood Fire Department Islington Station is located in the southeast quadrant of the intersection. The Washington Street approaches each consist of two lanes permitting left or right turns. The westbound East Street approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The eastbound School Street approach consists of a single lane approach permitting all movements. Parking is permitted along the west side of Washington Street south of the intersection and along the east side of Washington Street north of the intersection. Sidewalks are present on all approaches to the intersection. Crosswalks are provided across all approaches of the intersection with push button pedestrian actuation. Land use at the intersection consists of a mix of retail/commercial uses and the Westwood Fire Station.

Traffic Volumes

Existing Traffic Volumes

Peak-period turning movement counts were conducted on Thursday, October 15, 2015 during the weekday morning and evening peak periods (7:00 to 9:00 AM and 4:00 to 6:00 PM) and on Saturday October 17, 2015 (10:30 AM to 1:30 PM) as part of the redevelopment of 301-323 Washington Street. These counts included the intersection of Washington Street, East Street and School Street.

Daily traffic counts were conducted on Washington Street and School for a two day period using automatic traffic recorders (ATR).

Analysis of the peak-period traffic counts indicated that the weekday morning commuter peak hour generally occurs between 7:15 AM and 8:15 AM and the weekday evening commuter peak generally hour occurs between 5:00 and 6:00 PM. The Saturday midday peak hour generally occurs between 12:30 and 1:30 PM. The traffic count worksheets are provided in the Appendix.

Seasonal Adjustment

The traffic-volume data gathered as part of this study was collected during the month of October 2015. Data from the MassDOT was reviewed to determine the monthly variations of the traffic volumes. The traffic data showed October volumes to be slightly higher than average month conditions. Therefore, to be conservative, the October traffic volumes were not adjusted and were used to represent average month conditions. The seasonal worksheets are provided in the Appendix.

2017 Baseline Existing Traffic Volumes

To develop the 2017 baseline (existing traffic volumes), the 2015 existing traffic volumes were increased by a compounded growth rate of four (4.0) percent[1]. The 2017 existing weekday daily and peak-hour traffic volumes for average-month conditions are summarized below in Table 1. The 2017 Baseline weekday morning, weekday evening and Saturday midday peak hour traffic flow networks are shown graphically on Figure 2.

TABLE 1
EXISTING WEEKDAY TRAFFIC-VOLUME SUMMARY[a]

Location	Daily Traffic Volume[b]	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume[c]	K Factor[d]	Directional Distribution[e]	Traffic Volume	K Factor	Directional Distribution
Washington Street, south of East Street	25,300	2,261	8.9	70.1% NB	2,473	9.8	58.6% SB
School Street, east of Washington Street	4,330	453	10.5	75.3% EB	430	9.9	55.8% WB

[a]Two-way traffic volume.
[b]Daily traffic expressed in vehicles per day.
[c]Expressed in vehicles per hour.
[d]Percent of daily traffic volumes which occurs during the peak hour.
[e]Percent of peak-hour volume in the predominant direction of travel.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound.

[1] Per Town of Westwood regulations.

Weekday Morning Peak Hour

Weekday Evening Peak Hour

Saturday Midday Peak Hour

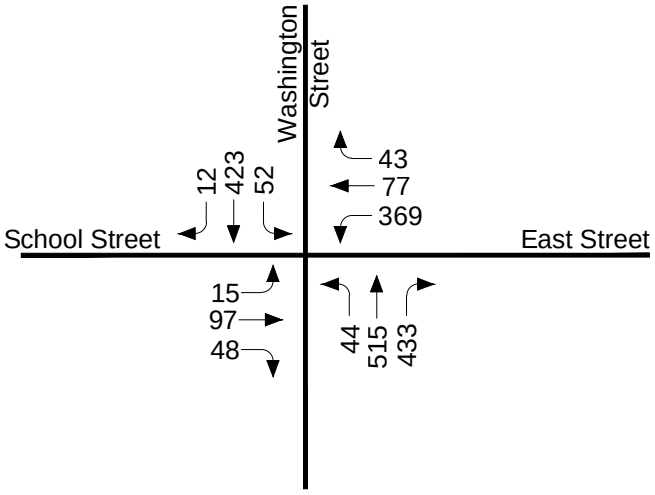

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Figure 2

2017 Baseline
Peak Hour Traffic Volumes

Washington Street, south of School Street carries approximately 25,300 vehicles per day (vpd). During the weekday morning peak hour, approximately 2,261vehicles per hour (vph) were recorded on Washington Street and during the weekday evening peak hour, 2,473 vph were recorded.

School Street, west of Washington Street carries approximately 4,330 vpd. During the weekday morning peak hour, approximately 453 vph were recorded on Washington Street and during the weekday evening peak hour, 430 vph were recorded.

Crash Experience

Motor vehicle crash data for the study area intersections and roadways were obtained from MassDOT for 2011 through 2015, the most recent five-year period for which data is available. The motor vehicle crash data was reviewed to determine crash trends in the study area. Thirty (30) crashes were reported during the five year interval as summarized in Table 2. Most of the crashes, thirteen (13), were rear-end crashes, which is typical at signalized intersections. No fatalities were reported. Based on MassDOT data, the calculated crash rate is lower than the District 6 crash rate. The crash data is included in the Appendix.

TABLE 2
WASHINGTON STREET, EAST STREET AND SCHOOLSTREET
MOTOR VEHICLE CRASH DATA SUMMARY[a]

Scenario	Crash Data
Year:	
2011	4
2012	4
2013	10
2014	6
2015	6
Total	30
Average[b]	6.0
Crash Rate[c]	0.55
Significant[d]	No
Type:	
Angle	5
Rear-End	13
Sideswipe Same Direction	7
Sideswipe Opposite Direction	4
Head On	1
Single Vehicle Crash	0
Total	30
Time of Day:	
Weekday (7:00 to 9:00 AM)	2
Weekday (4:00 to 6:00 PM)	7
Remainder of Day	21
Total	30
Pavement Conditions:	
Dry	28
Wet	2
Unknown	0
Total	30
Severity:	
Property Damage Only	29
Personal Injury	1
Fatal Accident	0
Total	30

[a]Source: MassDOT Safety Management/Traffic Operations Unit records, 2011 through 2015.
[b]Average crashes over three-year period.
[c]Crash rate per million entering vehicles (mev).
[d]Signalized intersections are significant if rate >0.70 crashes per million vehicles, and unsignalized intersections are significant if rate >0.53 crashes per million vehicles.

FUTURE CONDITIONS

Future No-Build Conditions

Traffic growth on area roadways is a function of the expected land development in the immediate area as well as 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 produces a more realistic estimate of growth for local traffic. However, the drawback of this procedure is that the potential growth in population and development external to the study area would not be accounted for in the traffic projections.

To provide a conservative analysis framework, both procedures were used.

Background Traffic Growth

Traffic-volume data compiled by MassDOT from permanent count stations and historic traffic counts in the area were reviewed in order to determine traffic growth trends. Based on a review of this data, it was determined that traffic volumes within the study area have shown little growth or generally decreased over the past several years.

However, in order to conform to Town of Westwood Planning Board's *Rules and Regulations*, a four percent (4%) annual background growth rate was used to develop the future traffic volume baseline projections. This four percent (4%) annual background growth rate is significantly higher than the actual growth that the roadways and intersections have experienced recently. The four percent (4%) annual background growth rate is not likely to be realized and the future traffic volume projections presented in the final study will be very conservative and represent a "worst case" scenario.

Specific Development by Others

Traffic volumes generated by the specific local developments by others were included in the 2024 No-Build condition. The Town of Westwood was contacted to identify specific planned developments. Based on these discussions, there are four projects that could impact future volumes. This is an assisted living facility on Clapboardtree Street in Norwood, MA, Upland Woods in Norwood, MA, the redevelopment of 1000 Washington Street in Westwood, MA and the redevelopment of 301-323 Washington Street in Westwood, MA Traffic volume projections were obtained from the traffic data submitted as part of each project's application and are included in the Appendix.

No-Build Condition Traffic Volumes

The 2022 No-Build weekday morning, weekday evening and Saturday midday peak-hour traffic volumes were

developed by applying a compounded four (4.0) percent annual growth rate to the 2017 Baseline peak-hour traffic volumes and adding traffic from the identified background project. Figure 3 shows the projected 2024 No-Build peak hour traffic volumes for the weekday morning, weekday evening and Saturday midday peak-hours.

Site Traffic Generation

In order to develop the traffic characteristics of the proposed development, available trip-generation statistics published by the Institute of Transportation Engineers (ITE)[2] was researched along with projected site operations. The project consists of the redevelopment of the east and west sides of Washington Street north of East Street and School Street. A number of existing uses will remain, but be relocated, along with new residential condominiums and commercial space.

Trip generation data for Land Use Codes (LUC) 210 - Single-Family Detached Housing, LUC 220 - Multifamily Housing (Low-Rise), LUC 565 - Day Care, LUC 590 – Library, LUC 710 General Office Building, LUC 820 – Shopping Center and LUC 932 – High Turnover (Sit-Down) Restaurant were reviewed. The projected trip generation for the existing uses is summarized in Table 3.

For the redeveloped condition of Islington Village, the projected trip generation for the proposed uses is summarized in Table 4.

[2] *Trip Generation*, Tenth Edition; Institute of Transportation Engineers; Washington, DC; 2017.

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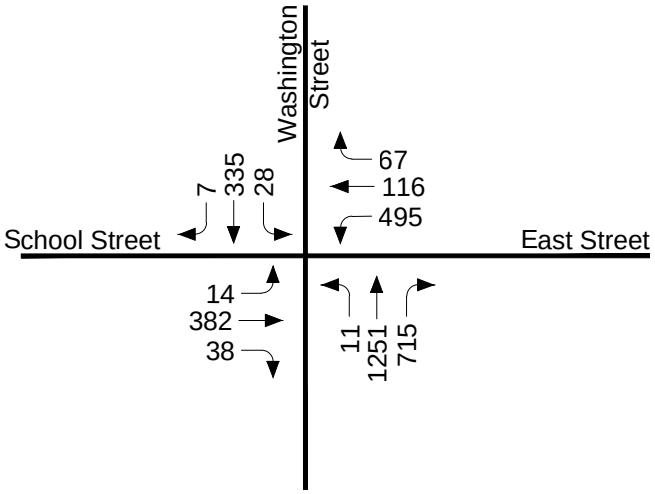
TABLE 3
EXISTING TRIP-GENERATION SUMMARY

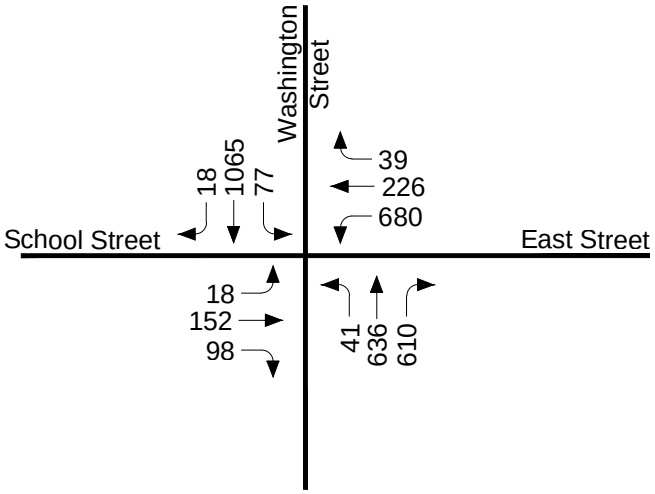
	Community Center/ MMO[a]	268-278 Washington Street[b]	9 School Street[c]	277A Washington Street[d]	Library[e]	291 Washington Street[f]	Total
Daily	190	710	56	10	140	184	1,290
Weekday Morning Peak Hour:							
Entering	23	15	1	0	1	11	51
Exiting	21	8	0	1	1	5	36
Total	44	23	1	1	2	16	87
Weekday Evening Peak Hour:							
Entering	21	30	3	1	8	1	64
Exiting	23	38	3	0	8	3	75
Total	44	68	6	1	16	4	139
Saturday	24	1,102	70	10	158	186	1,550
Saturday Midday Peak Hour:							
Entering	3	42	4	1	13	6	69
Exiting	4	43	3	0	12	4	66
Total	7	85	7	1	25	10	135

[a]Based on ITE LUC 565, Day Care; 4,000 sf. No trips calculated for the Community Center (No applicable ITE land use code).
[b]Based on ITE LUC 820 – Shopping Center for the Cleaner (1,040 sf) and ITE LUC 880 Pharmacy Without Drive-Through for the CVS (7,510 sf).
[c]Based on ITE LUC 820 – Shopping Center for the existing tailor shop (1,505 sf).
[d]Based on ITE LUC 210 – Single-Family Detached Housing; 1 DU.
[e]Based on ITE LUC 590 – Library (1,962 sf).
[f]Based on ITE LUC 820 – Shopping Center for the barber shop (600 sf), ITE LUC 932 High-Turnover (Sit-Down) Restaurant for the café (1,250 sf) and ITE LUC 710 for the second floor office space (2,163 sf).

Weekday Morning Peak Hour



Weekday Evening Peak Hour



Saturday Midday Peak Hour

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Figure 3

2024 No-Build
Peak Hour Traffic Volumes

TABLE 4
PROPOSED TRIP-GENERATION SUMMARY

	Mixed-Use Building[a]	268-278 Washington Street[b]	New CVS[c]	Blue Hart Tavern Re-Use[d]	Library[e]	Total
Daily	586	520	1,308	44	140	2,598
Weekday Morning Peak Hour:						
Entering	9	28	28	1	1	67
Exiting	12	24	15	0	1	52
Total	21	52	43	1	2	119
Weekday Evening Peak Hour:						
Entering	32	37	56	3	8	136
Exiting	31	40	70	2	8	151
Total	63	77	126	5	16	287
Saturday	746	428	2,074	50	158	3,456
Saturday Midday Peak Hour:						
Entering	37	23	77	2	13	152
Exiting	35	23	81	3	12	154
Total	72	46	158	5	25	306

[a]Based on ITE LUC 220, Multifamily Housing (Low-Rise, 18 units) and ITE LUC 820 – Shopping Center (13 ksf).
[b]Based on ITE LUC 820 – Shopping Center for the commercial component (8,750 sf) and ITE LUC 565 for the Day Care (4,000 sf).
[c]Based on ITE LUC 880 – Pharmacy without Drive-Through Window (14,786 sf).
[d]Based on ITE LUC 220 – Multifamily Housing (Low-Rise, 1 unit) and ITE LUC 820 – Shopping Center (932 ksf).
[e]Based on ITE LUC 590 – Library (1,962 sf).

Table 5 compares the existing and proposed generation.

TABLE 5
PROPOSED TRIP-GENERATION SUMMARY

	Existing Conditions[a]	Proposed Conditions[b]	Net Change
Daily	1,290	2,598	1,308
Weekday Morning Peak Hour:			
Entering	51	67	16
Exiting	36	52	16
Total	87	119	32
Weekday Evening Peak Hour:			
Entering	64	136	72
Exiting	75	151	76
Total	139	287	148
Saturday	1,550	3,456	1,906
Saturday Midday Peak Hour:			
Entering	69	152	83
Exiting	66	154	88
Total	135	306	171

Included in the Appendix are the trip generation worksheets.

Not all of the trips expected to be generated by the proposed development will represent new trips on the study area roadway system. According to the ITE Trip Generation Handbook, a portion of the retail trips can be considered pass-by trips. That is, they are not considered primary trips of site generated traffic, but consist of vehicles passing by the site on their way to another destination. For mixed-use developments, the ITE Trip Generation Handbook estimates that on average, pass-by trips can account for approximately 26 to 34 percent of the peak hour trip generation. Table 6 summarizes the net new trips when accounting for pass-by trips.

TABLE 6
PROPOSED NET NEW TRIP-GENERATION SUMMARY[a]

	Existing Conditions[a]	Proposed Conditions[b]	Net Change
Daily	1,112	2,066	954
Weekday Morning Peak Hour:			
Entering	48	59	11
Exiting	33	44	11
Total	81	103	22
Weekday Evening Peak Hour:			
Entering	53	100	47
Exiting	64	115	51
Total	117	215	98
Saturday	1,274	2,688	1,414
Saturday Midday Peak Hour:			
Entering	59	118	59
Exiting	56	120	64
Total	115	238	123

[a]Accounting for pass-by trips.

As shown in Table 6, it is expected that the proposed redevelopment will generate approximately 954 new vehicle trips on an average weekday (477 vehicles entering and 477 vehicles exiting). During the weekday morning peak hour, 22 new vehicle trips (11 vehicles entering and 51 vehicles exiting) are anticipated and during the weekday evening peak hour, 98 new vehicle trips (47 vehicles entering and 11 vehicles exiting) are anticipated. During the Saturday midday peak hour, 123 new vehicle trips (59 vehicles entering and 64 vehicles exiting) are anticipated. This is approximately equivalent to one additional vehicle per minute during the peak hours.

Trip Distribution

The directional distribution of the site-generated traffic was based on existing travel patterns to/from East Main Street and flows on East Main Street. This pattern is summarized in Table 7.

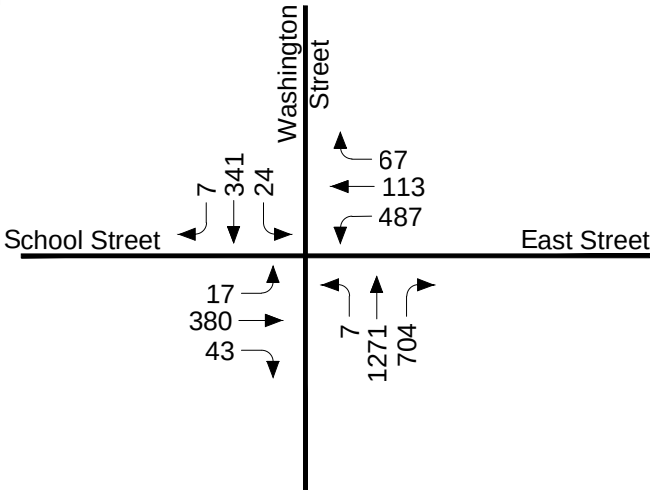
TABLE 7
PROPOSED TRIP DISTRIBUTION

Route	Direction	Percent of Residential Trips	Percent of Commercial Trips
Washington Street	North	49	22
Washington Street	South	15	46
East Street	East	36	23
School Street	West	0	9
TOTAL		100	100

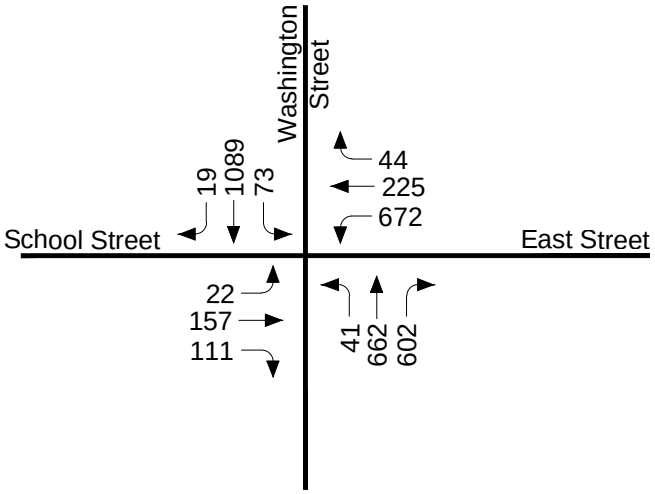
Future Build Conditions

The trips generated by the existing uses were removed from the network or re-assigned as appropriate. Trips for the new project components were then added to the No-Build traffic volumes in accordance with the projected trip distribution and analyzed. The site-generated traffic was distributed within the study area according to the percentages summarized in Table 7. The site generated volumes were superimposed onto the projected No-Build traffic volumes to represent the 2024 Build traffic-volume conditions. These volumes, shown on Figure 4, were used as the basis for all analyses as well as to identify potential mitigation measures to ameliorate the project's impacts.

Weekday Morning Peak Hour



Weekday Evening Peak Hour



Saturday Midday Peak Hour

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Figure 4

2024 Build
Peak Hour Traffic Volumes

Capacity Analysis Results

To assess intersection operations, capacity analyses were conducted for Existing, No-Build, and Build traffic-volume conditions. Capacity analyses provide an indication of how well the study area intersections serve existing and projected traffic volumes. Vehicle queue analyses provide a secondary measure of the operational characteristics of an intersection or section of roadway under study in terms of lane use and demand. The level-of-service definitions are contained in the Appendix.

Level-of-service analyses were conducted for both average and peak month conditions for 2017 Existing, 2024 No-Build and 2024 Build conditions for the intersections within the study area. The results of the unsignalized capacity analyses are summarized in Table 8. Detailed analysis sheets are presented in the Appendix.

Under 2017 baseline weekday morning peak hour conditions, this signalized intersection currently is modeled to operate at level of service (LOS) F and at LOS E during the weekday evening peak hour. During the Saturday midday peak hour, this signalized intersection is modeled to operate at LOS C. These results generally confirm existing peak hour observations. During the morning peak hour, long queues were observed on Washington Street northbound and during the evening peak hour long vehicle queues were observed on Washington Street southbound.

Under future 2022 No-Build conditions, this intersection is projected to conservatively operate at LOS F during the weekday morning and weekday evening peak hours and at LOS E during the Saturday midday peak hour. Under 2022 Build conditions, with the project, the intersection is projected to conservatively operate at LOS F during the weekday morning, weekday evening Saturday midday peak hours.

As a result of the additional traffic generation being relatively low, it is not expected that the project will not have a significant impact on intersection operations in the study area. This is evidenced by the relative small delay increases that are projected during the weekday morning and evening peak hours form No-Build to Build conditions.

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TABLE 9
SIGNALIZED LEVEL-OF-SERVICE ANALYSIS SUMMARY
WASHINGTON STREET, EAST STREET AND SCHOOL STREET

Signalized Intersection/	2017 Existing			2024 No-Build			2024 Build		
Peak Hour/Lane Group	V/C[a]	Delay[b]	LOS[c]	V/C	Delay	LOS	V/C	Delay	LOS
Weekday Morning									
Eastbound Lt/Th/Rt	0.88	54.4	D	1.17	135.8	F	1.19	143.1	F
Westbound Lt	0.82	29.3	C	1.01	64.2	F	0.99	59.5	E
Westbound Th/Rt	0.20	14.4	B	0.24	14.6	B	0.24	14.6	B
Northbound Lt/Th	1.15	109.7	F	1.42	224.0	F	1.42	225.0	F
Northbound Th/Rt	1.30	175.4	F	1.68	342.1	F	1.69	342.8	F
Southbound Lt/Th	0.61	38.3	D	0.75	49.2	D	0.67	38.3	D
Southbound Th/Rt	0.32	19.3	B	0.42	21.4	C	0.40	21.0	C
Overall	**--**	**95.1**	**F**	**--**	**191.0**	**F**	**--**	**191.9**	**F**
Weekday Evening									
Eastbound Lt/Th/RT	0.69	38.4	D	0.81	47.2	D	0.86	53.9	D
Westbound Lt	0.91	41.3	D	1.25	151.2	F	1.28	160.9	F
Westbound Th/Rt	0.29	15.8	B	0.32	15.4	B	0.33	15.3	B
Northbound Lt/Th	0.97	52.8	D	2.50	715.7	F	2.52	728.3	F
Northbound Th/Rt	0.88	38.2	D	1.25	151.4	F	1.28	166.4	F
Southbound Lt/Th	1.35	200.5	F	3.10	987.0	F	3.03	956.6	F
Southbound Th/Rt	0.73	26.9	C	1.04	72.2	F	1.06	78.0	F
Overall	**--**	**61.8**	**E**	**--**	**326.9**	**F**	**--**	**330.3**	**F**
Saturday Midday									
Eastbound Lt/Th/RT	0.63	37.5	D	0.72	40.0	D	0.75	42.4	D
Westbound Lt	0.71	24.8	C	0.93	45.9	D	0.95	50.0	D
Westbound Th/Rt	0.19	15.5	B	0.21	14.9	B	0.23	14.8	B
Northbound Lt/Th	0.69	22.7	C	1.05	76.5	F	1.15	112.7	F
Northbound Th/Rt	0.72	25.2	C	0.99	57.2	E	1.03	70.4	F
Southbound Lt/Th	0.56	22.5	C	1.48	268.2	F	1.80	411.3	F
Southbound Th/Rt	0.39	16.7	B	0.56	21.9	C	0.61	24.0	C
Overall	**--**	**23.5**	**C**	**--**	**70.4**	**E**	**--**	**94.0**	**F**

[a]Maximum volume-to-capacity ratio.
[b]Delay in seconds per vehicle.
[c]Level of service.
Lt = Left; Th = Through; Rt = Right.

CONCLUSION AND RECOMMENDATIONS

Bayside has examined the potential traffic impacts associated with the proposed redevelopment of Islington Village at the intersection of Washington Street, East Street and School Street. The proponent has made a commitment to implement the mitigation measures listed below.

At the new driveways that will serve the new uses in Islington Village, the driveways should permit entering movements from both directions on Washington Street and East Street. The new CVS driveway to School Street will be an exit only driveway. Clear sight lines along street frontage should be maintained. Crosswalks and ADA compliant pedestrian ramps should be provided across the site driveways.

Transportation Demand Management

Transportation Demand Management (TDM) is the application of strategies and policies to reduce travel demand (specifically that of single-occupancy private vehicles), or to redistribute this demand in space or in time. TDM measures will be implemented in an effort to reduce the overall number of vehicle trips to the Project. The following measures will be implemented:

- Assign an on-site Transportation Coordinator (TC) to coordinate TDM strategies and be a resource for the tenants and employees of the project and within Islington Village,

- The TC will post information regarding public transportation services, maps, schedules and fares in common areas within the project,

- Provide residents information relative to available public transportation services, bicycle and walking alternatives, and commuter options (MassRIDES and the NuRide program which rewards individuals that choose to walk, bicycle, carpool, vanpool or that use public transportation to travel to and from work),

- Incorporate a mail drop within the residential building at a central location, and

- Provide adequate bicycle parking both for residents and guests. Residents parking needs to be long-term such as bicycle lockers, or secured bicycle racks within a garage. Provide educational information that encourage cycling as a healthy living lifestyle and environment friendly mode of transportation in homeowners association or tenant newsletters/bulletins. Include information on bicycle commuting events and services offered by the Town.

- The project proponent will explore the potential to provide one parking space reserved for Zipcar (Zipcar is a nationwide car-sharing service which is also used extensively in the Boston metropolitan area) or other similar ride-share program. This will encourage people who do not own a vehicle to use the service and be rewarded with a parking spot when they come back to the site. This benefit should also be included in rental agreements, as well as the TC's weekly e-mail.

Conclusion

Preliminary review of the proposed project and the access plan shows that in relation to roadway capacity, traffic safety, and traffic impacts upon the surrounding roadway network, the proposed project will meet safety standards and have a minimal impact on existing traffic conditions. Safe and efficient access can be provided to the residents of the proposed project and to the motoring public in the area.

BAYSIDE ENGINEERING

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APPENDIX

TRAFFIC VOLUME COUNT DATA

SEASONAL ADJUSTMENT WORKSHEETS

MOTOR VEHICLE CRASH DATA

TRIP GENERATION DATA

CAPACITY ANALYSIS METHODOLGY

CAPACITY ANALYSIS WORKSHEETS

BAYSIDE ENGINEERING

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BAYSIDE ENGINEERING

TRAFFIC VOLUME COUNT DATA

BAYSIDE ENGINEERING

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School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 A Class
Site Code: 2152086
Date Start: 14-Oct-15

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/14/1														
5	0	5	1	0	0	0	0	0	0	0	0	0	0	6
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
06:00	1	28	11	1	3	1	0	0	0	0	0	0	0	45
07:00	0	75	18	4	1	0	0	0	0	0	0	0	0	98
08:00	1	67	23	2	6	0	0	0	0	0	0	0	0	99
09:00	0	47	16	0	6	0	0	0	0	0	0	0	0	69
10:00	0	54	17	0	3	0	0	0	0	0	0	0	0	74
11:00	2	87	34	1	7	1	0	0	0	0	0	0	0	132
12 PM	0	89	23	2	1	0	0	1	0	0	0	0	0	116
13:00	2	96	22	4	10	1	0	0	0	0	0	0	0	135
14:00	3	81	29	0	4	2	0	0	0	0	0	0	0	119
15:00	1	99	34	0	4	0	0	1	0	0	0	0	0	139
16:00	2	147	31	0	5	1	0	0	0	0	0	0	0	186
17:00	0	199	31	0	7	1	0	0	0	0	0	0	0	238
18:00	1	191	27	0	3	0	0	0	0	0	0	0	0	222
19:00	1	86	24	0	2	0	0	0	0	0	0	0	0	113
20:00	0	48	13	0	3	0	0	0	0	0	0	0	0	64
21:00	0	30	11	0	2	0	0	0	0	0	0	0	0	43
22:00	0	14	7	0	0	0	0	0	0	0	0	0	0	21
23:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
Total	14	1454	374	14	68	7	0	2	0	0	0	0	0	1933
Percent	0.7%	75.2%	19.3%	0.7%	3.5%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	11:00	07:00	11:00	06:00								11:00
Vol.	2	87	34	4	7	1								132
PM Peak	14:00	17:00	15:00	13:00	13:00	14:00		12:00						17:00
Vol.	3	199	34	4	10	2		1						238

School Street
west of Washington Street (Route 1A)
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10/15/1														
5	0	3	2	0	0	0	0	0	0	0	0	0	0	5
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
06:00	0	27	10	1	2	0	0	1	0	0	0	0	0	41
07:00	0	79	21	5	6	0	0	0	0	0	0	0	0	111
08:00	0	55	23	2	5	2	0	0	1	0	0	0	0	88
09:00	0	48	14	0	2	0	0	0	0	0	0	0	0	64
10:00	0	58	15	1	3	0	0	1	0	0	0	0	0	78
11:00	0	71	24	0	6	0	0	1	0	0	0	0	0	102
12 PM	0	60	12	1	3	0	0	0	0	0	0	0	0	76
13:00	2	74	25	0	3	0	0	0	0	0	0	0	0	104
14:00	0	95	25	6	2	1	0	0	0	0	0	0	0	129
15:00	0	123	21	2	7	1	0	0	0	0	0	0	0	154
16:00	1	147	33	1	2	1	0	0	0	0	0	0	0	185
17:00	1	215	32	0	4	2	0	1	0	0	0	0	0	255
18:00	0	172	30	0	4	0	0	0	0	0	0	0	0	206
19:00	0	90	25	0	1	0	0	0	0	0	0	0	0	116
20:00	0	70	12	0	1	0	0	0	0	0	0	0	0	83
21:00	0	47	10	0	0	0	0	0	0	0	0	0	0	57
22:00	0	21	7	0	0	0	0	0	0	0	0	0	0	28
23:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
Total	4	1476	342	19	52	7	0	4	1	0	0	0	0	1905
Percent	0.2%	77.5%	18.0%	1.0%	2.7%	0.4%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak		07:00	11:00	07:00	07:00	08:00		06:00	08:00					07:00
Vol.		79	24	5	6	2		1	1					111
PM Peak	13:00	17:00	16:00	14:00	15:00	17:00		17:00						17:00
Vol.	2	215	33	6	7	2		1						255
Total		2930	716	33	120	14	0	6	1	0	0	0	0	3838

School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

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154702 A Class
Site Code: 2152086
Date Start: 14-Oct-15

EB

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10/14/1														
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	12	4	0	2	0	0	0	1	0	0	0	0	19
06:00	0	101	20	3	7	0	0	0	0	0	0	0	0	131
07:00	0	257	34	1	5	0	0	0	0	0	0	0	0	297
08:00	1	231	38	2	10	0	0	1	0	0	0	0	0	283
09:00	0	85	15	0	5	0	0	1	0	0	0	0	0	106
10:00	0	62	15	0	3	0	0	0	0	0	0	0	0	80
11:00	0	93	21	2	2	0	0	0	0	0	0	0	0	118
12 PM	0	94	19	5	3	0	0	0	0	0	0	0	0	121
13:00	0	98	15	3	3	0	0	0	0	0	0	0	0	119
14:00	1	64	30	1	4	0	0	0	0	0	0	0	0	100
15:00	0	95	22	0	5	1	0	0	0	0	0	0	0	123
16:00	0	113	24	0	3	0	0	0	0	0	0	0	0	140
17:00	2	119	26	0	5	0	0	0	0	0	0	0	0	152
18:00	0	111	21	0	3	0	0	0	0	0	0	0	0	135
19:00	0	48	21	0	1	0	0	0	0	0	0	0	0	70
20:00	0	25	5	0	2	0	0	0	0	0	0	0	0	32
21:00	0	30	3	0	2	0	0	0	0	0	0	0	0	35
22:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	4	1661	335	17	65	1	0	2	1	0	0	0	0	2086
Percent	0.2%	79.6%	16.1%	0.8%	3.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	08:00	06:00	08:00			08:00	05:00					07:00
Vol.	1	257	38	3	10			1	1					297
PM Peak	17:00	17:00	14:00	12:00	15:00	15:00								17:00
Vol.	2	119	30	5	5	1								152

School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION DATA INDUSTRIES, LLC
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154702 A Class
Site Code: 2152086
Date Start: 14-Oct-15

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/15/1														
5	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	1	3	1	0	2	0	0	0	0	0	0	0	0	7
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
05:00	0	28	5	0	1	0	0	0	0	0	0	0	0	34
06:00	0	86	19	4	7	0	0	0	0	0	0	0	0	116
07:00	1	265	35	5	5	0	0	0	0	0	0	0	0	311
08:00	0	226	36	3	5	0	0	1	0	0	0	0	0	271
09:00	0	98	18	0	5	0	0	1	0	0	0	0	0	122
10:00	0	64	15	0	5	0	0	0	0	0	0	0	0	84
11:00	0	68	17	0	2	0	0	0	0	0	0	0	0	87
12 PM	0	70	13	1	4	0	0	0	0	0	0	0	0	88
13:00	0	56	17	0	2	0	0	0	0	0	0	0	0	75
14:00	0	109	14	8	4	0	0	0	0	0	0	0	0	135
15:00	2	121	24	2	3	0	0	0	0	0	0	0	0	152
16:00	0	120	35	0	3	0	0	0	0	0	0	0	0	158
17:00	1	133	17	0	3	1	0	0	0	0	0	0	0	155
18:00	0	95	13	1	4	0	0	0	0	0	0	0	0	113
19:00	0	63	17	0	2	0	0	0	0	0	0	0	0	82
20:00	0	37	16	0	0	0	0	0	0	0	0	0	0	53
21:00	0	23	3	0	0	0	0	0	0	0	0	0	0	26
22:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Total	5	1687	315	24	58	1	0	2	0	0	0	0	0	2092
Percent	0.2%	80.6%	15.1%	1.1%	2.8%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	02:00	07:00	08:00	07:00	06:00			08:00						07:00
Vol.	1	265	36	5	7			1						311
PM Peak	15:00	17:00	16:00	14:00	12:00	17:00								16:00
Vol.	2	133	35	8	4	1								158
Total		3348	650	41	123	2	0	4	1	0	0	0	0	4178

School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
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Email: datarequests@pdillc.com

154702 A Speed
Site Code: 2152086
Date Start: 14-Oct-15

WB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/14/ 15	0	0	0	4	2	0	0	0	0	0	0	0	0	6	31	29
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1	23	22
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1	23	22
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
05:00	0	0	1	1	1	0	0	0	0	0	0	0	0	3	31	27
06:00	**3**	**4**	9	19	10	0	0	0	0	0	0	0	0	45	30	25
07:00	0	4	23	**47**	**22**	**2**	0	0	0	0	0	0	0	98	31	27
08:00	0	4	**33**	44	16	2	0	0	0	0	0	0	0	**99**	29	26
09:00	0	2	11	37	18	1	0	0	0	0	0	0	0	69	31	27
10:00	0	1	17	38	17	1	0	0	0	0	0	0	0	74	31	27
11:00	0	5	32	**75**	18	**2**	0	0	0	0	0	0	0	132	29	26
12 PM	2	6	41	48	**19**	0	0	0	0	0	0	0	0	116	29	25
13:00	**5**	**12**	**58**	47	12	1	0	0	0	0	0	0	0	**135**	28	24
14:00	3	6	40	51	18	1	0	0	0	0	0	0	0	119	29	25
15:00	3	5	37	66	27	**1**	0	0	0	0	0	0	0	139	30	26
16:00	2	6	56	94	28	0	0	0	0	0	0	0	0	186	29	26
17:00	**4**	**13**	**85**	**108**	27	1	0	0	0	0	0	0	0	**238**	28	25
18:00	1	5	74	104	**37**	1	0	0	0	0	0	0	0	222	29	26
19:00	0	3	30	69	11	0	0	0	0	0	0	0	0	113	28	26
20:00	0	2	7	38	17	0	0	0	0	0	0	0	0	64	31	27
21:00	0	0	10	24	8	1	0	0	0	0	0	0	0	43	30	27
22:00	0	1	4	12	4	0	0	0	0	0	0	0	0	21	30	27
23:00	0	0	0	5	3	0	0	0	0	0	0	0	0	8	32	29
Total	23	79	570	932	315	14	0	0	0	0	0	0	0	1933		
%	1.2%	4.1%	29.5%	48.2%	16.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	06:00	08:00	07:00	07:00	07:00								08:00		
Vol.	3	4	33	47	22	2								99		
Midday Peak	13:00	13:00	13:00	11:00	12:00	11:00								13:00		
Vol.	5	12	58	75	19	2								135		
PM Peak	17:00	17:00	17:00	17:00	18:00	15:00								17:00		
Vol.	4	13	85	108	37	1								238		

% iles		
15th Percentile :	20	MPH
50th Percentile :	25	MPH
85th Percentile :	29	MPH
95th Percentile :	32	MPH

Stats		
10 MPH Pace Speed :	20-29	MPH
Number in Pace :	1502	
Percent in Pace :	77.7%	
Number of Vehicles > 25 MPH :	1075	
Percent of Vehicles > 25 MPH :	55.6%	
Mean Speed(Average) :	26	MPH

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Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/15/ 15	0	0	0	3	2	0	0	0	0	0	0	0	0	5	32	29
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
02:00	0	0	0	2	0	**1**	0	0	0	0	0	0	0	3	36	30
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
05:00	**1**	0	0	0	2	0	0	0	0	0	0	0	0	3	32	24
06:00	0	2	6	25	8	0	0	0	0	0	0	0	0	41	30	27
07:00	1	**5**	**31**	50	**23**	0	**1**	0	0	0	0	0	0	**111**	30	26
08:00	0	3	20	**54**	10	1	0	0	0	0	0	0	0	88	28	26
09:00	0	1	13	43	6	1	0	0	0	0	0	0	0	64	28	26
10:00	0	3	16	42	17	0	0	0	0	0	0	0	0	78	30	27
11:00	0	7	33	44	18	0	0	0	0	0	0	0	0	102	29	26
12 PM	**1**	1	10	48	15	**1**	0	0	0	0	0	0	0	76	30	27
13:00	0	1	**36**	46	**21**	0	0	0	0	0	0	0	0	104	30	26
14:00	1	**8**	31	**71**	17	1	0	0	0	0	0	0	0	**129**	28	26
15:00	3	5	45	70	**29**	2	0	0	0	0	0	0	0	154	30	26
16:00	3	4	50	99	26	**3**	0	0	0	0	0	0	0	185	29	26
17:00	**8**	**14**	**95**	**123**	15	0	0	0	0	0	0	0	0	**255**	28	24
18:00	2	6	74	102	20	2	0	0	0	0	0	0	0	206	28	25
19:00	1	1	31	74	8	1	0	0	0	0	0	0	0	116	28	26
20:00	0	1	20	43	18	1	0	0	0	0	0	0	0	83	30	27
21:00	0	2	17	27	11	0	0	0	0	0	0	0	0	57	30	26
22:00	0	1	5	15	6	1	0	0	0	0	0	0	0	28	31	27
23:00	0	0	0	9	4	2	0	0	0	0	0	0	0	15	33	30
Total	21	65	533	992	276	17	1	0	0	0	0	0	0	1905		
%	1.1%	3.4%	28.0%	52.1%	14.5%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	05:00	07:00	07:00	08:00	07:00	02:00	07:00							07:00		
Vol.	1	5	31	54	23	1	1							111		
Midday Peak	12:00	14:00	13:00	14:00	13:00	12:00								14:00		
Vol.	1	8	36	71	21	1								129		
PM Peak	17:00	17:00	17:00	17:00	15:00	16:00								17:00		
Vol.	8	14	95	123	29	3								255		

% iles	
15th Percentile :	20 MPH
50th Percentile :	25 MPH
85th Percentile :	29 MPH
95th Percentile :	32 MPH

Stats	
10 MPH Pace Speed :	20-29 MPH
Number in Pace :	1525
Percent in Pace :	80.1%
Number of Vehicles > 25 MPH :	1088
Percent of Vehicles > 25 MPH :	57.1%
Mean Speed(Average) :	26 MPH

School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 A Speed
Site Code: 2152086
Date Start: 14-Oct-15

EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/14/ 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	1	1	2	0	0	0	0	0	0	0	0	0	4	27	23
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2	27	25
04:00	0	0	2	1	1	0	0	0	0	0	0	0	0	4	31	26
05:00	0	0	2	14	3	0	0	0	0	0	0	0	0	19	29	27
06:00	2	18	59	43	9	0	0	0	0	0	0	0	0	131	27	23
07:00	34	**69**	121	62	10	**1**	0	0	0	0	0	0	0	**297**	26	21
08:00	**41**	50	**123**	**64**	4	0	**1**	0	0	0	0	0	0	283	26	20
09:00	2	4	42	45	**13**	0	0	0	0	0	0	0	0	106	28	25
10:00	0	4	30	39	7	0	0	0	0	0	0	0	0	80	28	25
11:00	3	3	53	**53**	5	**1**	0	0	0	0	0	0	0	118	27	24
12 PM	7	**18**	57	34	5	0	0	0	0	0	0	0	0	**121**	27	22
13:00	**9**	12	**58**	37	3	0	0	0	0	0	0	0	0	119	26	22
14:00	2	10	45	36	**7**	0	0	0	0	0	0	0	0	100	27	24
15:00	**2**	9	66	44	2	0	0	0	0	0	0	0	0	123	27	23
16:00	0	7	68	**59**	**5**	**1**	0	0	0	0	0	0	0	140	27	24
17:00	1	12	**85**	50	4	0	0	0	0	0	0	0	0	**152**	27	23
18:00	1	**15**	69	47	3	0	0	0	0	0	0	0	0	135	27	23
19:00	0	2	40	27	1	0	0	0	0	0	0	0	0	70	27	24
20:00	0	1	8	19	4	0	0	0	0	0	0	0	0	32	28	26
21:00	0	0	14	17	4	0	0	0	0	0	0	0	0	35	28	26
22:00	0	1	6	3	1	1	0	0	0	0	0	0	0	12	29	25
23:00	0	0	0	2	1	0	0	0	0	0	0	0	0	3	31	29
Total	104	236	950	699	92	4	1	0	0	0	0	0	0	2086		
%	5.0%	11.3%	45.5%	33.5%	4.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	08:00	08:00	09:00	07:00	08:00							07:00		
Vol.	41	69	123	64	13	1	1							297		
Midday Peak	13:00	12:00	13:00	11:00	14:00	11:00								12:00		
Vol.	9	18	58	53	7	1								121		
PM Peak	15:00	18:00	17:00	16:00	16:00	16:00								17:00		
Vol.	2	15	85	59	5	1								152		

% iles	
15th Percentile :	18 MPH
50th Percentile :	22 MPH
85th Percentile :	27 MPH
95th Percentile :	28 MPH

Stats	
10 MPH Pace Speed :	20-29 MPH
Number in Pace :	1649
Percent in Pace :	79.1%
Number of Vehicles > 25 MPH :	656
Percent of Vehicles > 25 MPH :	31.5%
Mean Speed(Average) :	23 MPH

School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

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

154702 A Speed
Site Code: 2152086
Date Start: 14-Oct-15

EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/15/ 15	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	2	0	0	5	0	0	0	0	0	0	0	0	0	7	27	21
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	1	0	1	0	0	0	0	0	0	0	0	2	32	27
05:00	0	0	8	18	5	**3**	0	0	0	0	0	0	0	34	31	27
06:00	1	11	43	52	7	2	0	0	0	0	0	0	0	116	28	25
07:00	**56**	**94**	**117**	41	3	0	0	0	0	0	0	0	0	**311**	23	19
08:00	54	41	113	54	8	1	0	0	0	0	0	0	0	271	26	20
09:00	0	4	48	**60**	**10**	0	0	0	0	0	0	0	0	122	28	25
10:00	0	4	40	33	6	1	0	0	0	0	0	0	0	84	28	25
11:00	1	2	41	40	3	0	0	0	0	0	0	0	0	87	27	24
12 PM	0	**6**	46	30	6	0	0	0	0	0	0	0	0	88	27	24
13:00	0	3	30	34	**8**	0	0	0	0	0	0	0	0	75	28	25
14:00	**5**	6	**64**	**54**	6	0	0	0	0	0	0	0	0	**135**	27	24
15:00	2	13	77	55	5	0	0	0	0	0	0	0	0	152	27	24
16:00	2	8	**89**	**57**	2	0	0	0	0	0	0	0	0	**158**	27	23
17:00	**5**	**18**	83	47	2	0	0	0	0	0	0	0	0	155	26	23
18:00	1	3	59	44	**6**	0	0	0	0	0	0	0	0	113	27	24
19:00	0	1	34	42	5	0	0	0	0	0	0	0	0	82	28	25
20:00	1	3	19	25	5	0	0	0	0	0	0	0	0	53	28	25
21:00	0	1	9	14	2	0	0	0	0	0	0	0	0	26	28	25
22:00	0	0	5	7	0	0	0	0	0	0	0	0	0	12	27	25
23:00	0	0	2	5	1	0	0	0	0	0	0	0	0	8	28	26
Total	130	218	928	718	91	7	0	0	0	0	0	0	0	2092		
%	6.2%	10.4%	44.4%	34.3%	4.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	09:00	09:00	05:00								07:00		
Vol.	56	94	117	60	10	3								311		
Midday Peak	14:00	12:00	14:00	14:00	13:00									14:00		
Vol.	5	6	64	54	8									135		
PM Peak	17:00	17:00	16:00	16:00	18:00									16:00		
Vol.	5	18	89	57	6									158		

% iles	
15th Percentile :	18 MPH
50th Percentile :	22 MPH
85th Percentile :	27 MPH
95th Percentile :	28 MPH

Stats	
10 MPH Pace Speed :	20-29 MPH
Number in Pace :	1646
Percent in Pace :	78.7%
Number of Vehicles > 25 MPH :	672
Percent of Vehicles > 25 MPH :	32.1%
Mean Speed(Average) :	23 MPH

School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

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

154702 A Volume
Site Code: 2152086
Date Start: 14-Oct-15

Start	WB				EB				Combined				14-Oct-15
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Wed
12:00	1		29		0		24		1		53		
12:15	2		24		0		29		2		53		
12:30	1		33		0		26		1		59		
12:45	2	6	30	116	0	0	42	121	2	6	72	237	
01:00	0		28		1		44		1		72		
01:15	1		36		2		34		3		70		
01:30	0		40		0		20		0		60		
01:45	0	1	31	135	1	4	21	119	1	5	52	254	
02:00	1		29		0		23		1		52		
02:15	0		38		0		22		0		60		
02:30	0		26		0		25		0		51		
02:45	0	1	26	119	0	0	30	100	0	1	56	219	
03:00	0		38		1		36		1		74		
03:15	0		36		0		33		0		69		
03:30	0		38		1		28		1		66		
03:45	0	0	27	139	0	2	26	123	0	2	53	262	
04:00	1		51		0		25		1		76		
04:15	0		50		0		40		0		90		
04:30	0		45		2		38		2		83		
04:45	0	1	40	186	2	4	37	140	2	5	77	326	
05:00	1		56		4		36		5		92		
05:15	0		56		5		42		5		98		
05:30	0		60		7		41		7		101		
05:45	2	3	66	238	3	19	33	152	5	22	99	390	
06:00	2		45		11		32		13		77		
06:15	6		71		23		32		29		103		
06:30	10		54		35		38		45		92		
06:45	27	45	52	222	62	131	33	135	89	176	85	357	
07:00	33		38		76		27		109		65		
07:15	28		32		62		16		90		48		
07:30	24		28		87		13		111		41		
07:45	13	98	15	113	72	297	14	70	85	395	29	183	
08:00	36		20		81		7		117		27		
08:15	23		14		80		10		103		24		
08:30	22		16		58		6		80		22		
08:45	18	99	14	64	64	283	9	32	82	382	23	96	
09:00	18		15		35		19		53		34		
09:15	20		9		27		9		47		18		
09:30	13		8		26		4		39		12		
09:45	18	69	11	43	18	106	3	35	36	175	14	78	
10:00	12		12		21		5		33		17		
10:15	17		2		18		4		35		6		
10:30	22		4		17		1		39		5		
10:45	23	74	3	21	24	80	2	12	47	154	5	33	
11:00	20		5		23		2		43		7		
11:15	44		2		28		0		72		2		
11:30	37		0		38		0		75		0		
11:45	31	132	1	8	29	118	1	3	60	250	2	11	
Total	529		1404		1044		1042		1573		2446		
Percent	33.6%		57.4%		66.4%		42.6%						
Day Total		1933				2086				4019			
Peak	11:00	-	05:30	-	07:30	-	04:45	-	07:30	-	05:00	-	- -
Vol.	132	-	242	-	320	-	156	-	416	-	390	-	- -
P.H.F.	0.750		0.852		0.920		0.929		0.889		0.965		

School Street
west of Washington Street (Route 1A)
City, State: Westwood, MA
Client: Bayside/ K. Cram

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

154702 A Volume
Site Code: 2152086
Date Start: 14-Oct-15

Start	WB				EB				Combined				15-Oct-15
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Thu
12:00	3		18		0		26		3		44		
12:15	1		22		1		20		2		42		
12:30	1		16		0		14		1		30		
12:45	0	5	20	76	0	1	28	88	0	6	48	164	
01:00	1		38		0		11		1		49		
01:15	0		17		0		25		0		42		
01:30	0		21		0		20		0		41		
01:45	0	1	28	104	0	0	19	75	0	1	47	179	
02:00	2		22		3		26		5		48		
02:15	1		43		0		33		1		76		
02:30	0		29		1		37		1		66		
02:45	0	3	35	129	3	7	39	135	3	10	74	264	
03:00	0		37		0		30		0		67		
03:15	0		41		0		42		0		83		
03:30	0		40		0		40		0		80		
03:45	0	0	36	154	0	0	40	152	0	0	76	306	
04:00	1		43		0		40		1		83		
04:15	0		46		0		41		0		87		
04:30	0		47		2		41		2		88		
04:45	0	1	49	185	0	2	36	158	0	3	85	343	
05:00	0		64		2		43		2		107		
05:15	1		72		5		47		6		119		
05:30	1		47		16		36		17		83		
05:45	1	3	72	255	11	34	29	155	12	37	101	410	
06:00	1		41		12		24		13		65		
06:15	7		77		22		32		29		109		
06:30	13		51		36		36		49		87		
06:45	20	41	37	206	46	116	21	113	66	157	58	319	
07:00	32		31		76		24		108		55		
07:15	34		31		68		25		102		56		
07:30	21		33		77		23		98		56		
07:45	24	111	21	116	90	311	10	82	114	422	31	198	
08:00	21		30		80		8		101		38		
08:15	19		23		73		14		92		37		
08:30	22		16		54		12		76		28		
08:45	26	88	14	83	64	271	19	53	90	359	33	136	
09:00	23		15		35		6		58		21		
09:15	18		14		38		8		56		22		
09:30	10		16		31		7		41		23		
09:45	13	64	12	57	18	122	5	26	31	186	17	83	
10:00	11		4		20		6		31		10		
10:15	14		12		22		2		36		14		
10:30	21		5		14		2		35		7		
10:45	32	78	7	28	28	84	2	12	60	162	9	40	
11:00	22		5		24		2		46		7		
11:15	22		2		26		3		48		5		
11:30	28		5		20		1		48		6		
11:45	30	102	3	15	17	87	2	8	47	189	5	23	
Total	497		1408		1035		1057		1532		2465		
Percent	32.4%		57.1%		67.6%		42.9%						
Day Total		1905				2092				3997			
Peak	07:00	-	05:00	-	07:30	-	04:30	-	07:00	-	05:00	-	-	-
Vol.	111	-	255	-	320	-	167	-	422	-	410	-	-	-
P.H.F.	0.816		0.885		0.889		0.888		0.925		0.861			

Washington Street (Route 1A) NB
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B NB Class
Site Code: 2152086
Date Start: 14-Oct-15

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/14/1														
5	0	27	4	1	3	0	0	0	0	0	0	0	0	35
01:00	0	11	0	1	0	0	0	0	0	0	0	0	0	12
02:00	0	13	1	0	0	0	0	0	1	0	0	0	0	15
03:00	0	18	7	0	2	0	0	0	0	0	0	0	0	27
04:00	0	35	18	0	5	1	0	0	0	0	0	0	0	59
05:00	1	148	45	0	12	0	0	1	0	0	0	0	0	207
06:00	3	829	126	6	27	5	0	7	1	0	0	0	0	1004
07:00	17	954	123	3	18	4	0	6	0	1	2	0	1	1129
08:00	10	950	128	8	16	2	0	4	1	2	0	1	1	1123
09:00	4	712	100	2	24	5	1	12	0	0	0	1	0	861
10:00	3	518	98	3	26	2	0	2	1	2	0	0	0	655
11:00	0	486	102	6	19	3	0	6	0	1	0	0	0	623
12 PM	3	544	87	2	22	2	0	7	1	3	1	0	0	672
13:00	4	656	96	4	21	4	0	9	1	1	0	1	0	797
14:00	3	528	97	5	20	2	1	6	0	1	0	1	0	664
15:00	6	523	106	3	21	2	0	10	0	0	0	0	0	671
16:00	0	585	96	1	14	0	0	9	0	2	0	0	0	707
17:00	5	657	92	6	11	0	0	7	0	0	0	0	0	778
18:00	3	460	63	3	6	1	0	6	1	1	0	1	0	545
19:00	1	382	44	4	6	1	0	0	0	0	0	0	0	438
20:00	2	303	45	2	3	0	0	1	0	0	0	0	0	356
21:00	0	223	22	1	3	0	0	0	0	0	0	0	0	249
22:00	1	114	23	1	5	0	0	0	0	0	0	0	0	144
23:00	0	80	3	1	0	0	0	0	0	0	0	0	0	84
Total	66	9756	1526	63	284	34	2	93	7	14	3	5	2	11855
Percent	0.6%	82.3%	12.9%	0.5%	2.4%	0.3%	0.0%	0.8%	0.1%	0.1%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	08:00	06:00	06:00	09:00	09:00	02:00	08:00	07:00	08:00	07:00	07:00
Vol.	17	954	128	8	27	5	1	12	1	2	2	1	1	1129
PM Peak	15:00	17:00	15:00	17:00	12:00	13:00	14:00	15:00	12:00	12:00	12:00	13:00		13:00
Vol.	6	657	106	6	22	4	1	10	1	3	1	1		797

Washington Street (Route 1A) NB
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B NB Class
Site Code: 2152086
Date Start: 14-Oct-15

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/15/1														
5	1	34	5	1	0	1	0	0	0	0	0	0	0	42
01:00	0	14	0	1	1	0	0	0	0	0	0	0	0	16
02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	17	5	0	0	0	0	0	0	0	0	0	0	22
04:00	0	44	16	0	7	0	0	0	0	0	0	0	0	67
05:00	0	161	50	0	11	0	0	1	0	0	0	0	0	223
06:00	3	867	138	3	27	3	0	7	0	1	0	0	0	1049
07:00	6	1003	117	6	24	3	0	6	0	1	1	0	0	1167
08:00	7	928	101	7	23	5	0	9	0	0	1	0	1	1082
09:00	3	640	122	3	22	2	0	6	1	1	0	0	0	800
10:00	1	495	98	5	19	0	2	4	3	0	0	0	0	627
11:00	5	491	95	6	14	3	0	6	1	0	0	0	0	621
12 PM	1	545	103	6	20	2	0	6	0	0	0	0	0	683
13:00	7	601	94	3	24	1	0	9	0	2	0	0	0	741
14:00	4	568	91	5	13	4	1	5	1	2	0	1	0	695
15:00	1	636	89	6	28	0	0	4	0	0	0	0	0	764
16:00	3	558	74	5	16	0	0	6	0	1	0	0	0	663
17:00	2	692	79	2	8	0	0	4	0	0	0	0	1	788
18:00	0	549	61	4	8	0	0	2	0	0	0	0	0	624
19:00	3	357	48	4	6	1	0	2	0	0	0	0	0	421
20:00	0	369	58	2	6	0	0	0	0	0	0	0	0	435
21:00	0	205	21	1	5	0	0	1	0	0	0	0	0	233
22:00	0	160	18	1	1	0	0	0	0	0	0	0	0	180
23:00	1	97	9	1	2	0	0	0	0	0	0	0	0	110
Total	48	10037	1492	72	285	25	3	78	6	8	2	1	2	12059
Percent	0.4%	83.2%	12.4%	0.6%	2.4%	0.2%	0.0%	0.6%	0.0%	0.1%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	06:00	08:00	06:00	08:00	10:00	08:00	10:00	06:00	07:00		08:00	07:00
Vol.	7	1003	138	7	27	5	2	9	3	1	1		1	1167
PM Peak	13:00	17:00	12:00	12:00	15:00	14:00	14:00	13:00	14:00	13:00		14:00	17:00	17:00
Vol.	7	692	103	6	28	4	1	9	1	2		1	1	788
Total		19793	3018	135	569	59	5	171	13	22	5	6	4	23914

Washington Street (Route 1A) NB
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B NB Speed
Site Code: 2152086
Date Start: 14-Oct-15

NB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/14/ 15	0	0	0	5	13	12	5	0	0	0	0	0	0	35	38	34
01:00	0	0	2	3	3	2	2	0	0	0	0	0	0	12	39	32
02:00	0	0	0	2	7	3	3	0	0	0	0	0	0	15	40	34
03:00	0	0	1	2	9	10	5	0	0	0	0	0	0	27	39	35
04:00	0	0	0	4	14	23	14	3	**1**	0	0	0	0	59	42	37
05:00	0	0	0	14	82	74	**32**	**4**	0	**1**	0	0	0	207	39	35
06:00	22	89	240	263	**268**	**97**	24	0	1	0	0	0	0	1004	33	27
07:00	**114**	**164**	**471**	228	118	29	4	1	0	0	0	0	0	**1129**	28	22
08:00	65	159	396	**301**	154	36	11	1	0	0	0	0	0	1123	30	24
09:00	27	64	184	238	231	97	19	1	0	0	0	0	0	861	33	27
10:00	1	19	83	193	232	108	18	1	0	0	0	0	0	655	35	30
11:00	0	15	75	217	**211**	**87**	**17**	**1**	0	0	0	0	0	623	34	30
12 PM	15	31	138	**267**	181	37	2	1	0	0	0	0	0	672	32	27
13:00	**24**	**82**	**229**	261	162	35	4	0	0	0	0	0	0	**797**	31	25
14:00	2	23	101	267	206	57	8	0	0	0	0	0	0	664	33	28
15:00	3	14	**154**	239	186	62	10	**3**	0	0	0	0	0	671	33	28
16:00	5	18	146	**283**	195	56	4	0	0	0	0	0	0	707	32	28
17:00	**23**	**47**	150	254	**236**	59	8	1	0	0	0	0	0	**778**	32	27
18:00	3	5	60	218	188	60	10	1	0	0	0	0	0	545	33	29
19:00	0	1	21	160	186	62	8	0	0	0	0	0	0	438	34	31
20:00	0	0	15	101	141	**68**	**27**	3	**1**	0	0	0	0	356	37	32
21:00	0	1	10	67	107	46	17	1	0	0	0	0	0	249	36	32
22:00	0	0	6	24	46	56	9	2	1	0	0	0	0	144	38	34
23:00	0	0	1	10	41	21	10	1	0	0	0	0	0	84	38	34
Total	304	732	2483	3621	3217	1197	271	25	4	1	0	0	0	11855		
%	2.6%	6.2%	20.9%	30.5%	27.1%	10.1%	2.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	08:00	06:00	06:00	05:00	05:00	04:00	05:00				07:00		
Vol.	114	164	471	301	268	97	32	4	1	1				1129		
Midday Peak	13:00	13:00	13:00	12:00	11:00	11:00	11:00	11:00						13:00		
Vol.	24	82	229	267	211	87	17	1						797		
PM Peak	17:00	17:00	15:00	16:00	17:00	20:00	20:00	15:00	20:00					17:00		
Vol.	23	47	154	283	236	68	27	3	1					778		

% iles

15th Percentile :	20 MPH
50th Percentile :	27 MPH
85th Percentile :	33 MPH
95th Percentile :	37 MPH

Stats

10 MPH Pace Speed :	25-34 MPH
Number in Pace :	6838
Percent in Pace :	57.7%
Number of Vehicles > 30 MPH :	4072
Percent of Vehicles > 30 MPH :	34.3%
Mean Speed(Average) :	28 MPH

Washington Street (Route 1A) NB
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B NB Speed
Site Code: 2152086
Date Start: 14-Oct-15

NB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/15/ 15	0	2	1	4	16	14	5	0	0	0	0	0	0	42	38	33
01:00	0	0	0	3	7	3	2	0	**1**	0	0	0	0	16	40	35
02:00	0	0	0	0	4	1	1	0	0	0	0	0	0	6	39	34
03:00	1	0	1	2	9	6	3	0	0	0	0	0	0	22	38	33
04:00	0	0	2	5	20	33	6	0	1	0	0	0	0	67	38	35
05:00	0	0	1	14	100	78	22	**7**	1	0	0	0	0	223	38	35
06:00	28	94	265	234	**286**	123	18	1	0	0	0	0	0	1049	33	27
07:00	**69**	**173**	**472**	**297**	114	39	3	0	0	0	0	0	0	**1167**	28	23
08:00	58	142	370	262	190	52	6	2	0	0	0	0	0	1082	31	24
09:00	5	17	93	242	268	**149**	**25**	1	0	0	0	0	0	800	35	30
10:00	0	14	46	164	241	139	18	5	0	0	0	0	0	627	36	31
11:00	1	10	80	227	219	63	**19**	**2**	0	0	0	0	0	621	33	29
12 PM	0	13	62	258	**267**	73	8	2	0	0	0	0	0	683	33	30
13:00	**4**	**23**	**124**	272	233	**76**	7	2	0	0	0	0	0	**741**	33	29
14:00	4	21	82	**297**	204	76	11	0	0	0	0	0	0	695	33	29
15:00	8	**30**	148	285	**230**	50	12	0	**1**	0	0	0	0	764	32	28
16:00	3	21	84	231	221	**87**	13	2	1	0	0	0	0	663	34	29
17:00	**9**	26	**162**	**313**	223	44	10	1	0	0	0	0	0	**788**	32	28
18:00	4	20	107	264	187	39	2	1	0	0	0	0	0	624	32	28
19:00	0	1	37	150	155	75	2	1	0	0	0	0	0	421	34	30
20:00	0	1	17	143	175	76	**21**	2	0	0	0	0	0	435	36	31
21:00	0	0	6	44	113	59	10	1	0	0	0	0	0	233	36	33
22:00	0	0	6	39	82	43	6	**3**	1	0	0	0	0	180	37	32
23:00	0	0	1	14	53	29	11	2	0	0	0	0	0	110	38	34
Total	194	608	2167	3764	3617	1427	241	35	6	0	0	0	0	12059		
%	1.6%	5.0%	18.0%	31.2%	30.0%	11.8%	2.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	07:00	06:00	09:00	09:00	05:00	01:00					07:00		
Vol.	69	173	472	297	286	149	25	7	1					1167		
Midday Peak	13:00	13:00	13:00	14:00	12:00	13:00	11:00	11:00						13:00		
Vol.	4	23	124	297	267	76	19	2						741		
PM Peak	17:00	15:00	17:00	17:00	15:00	16:00	20:00	22:00	15:00					17:00		
Vol.	9	30	162	313	230	87	21	3	1					788		

% iles

15th Percentile :	21 MPH
50th Percentile :	28 MPH
85th Percentile :	33 MPH
95th Percentile :	37 MPH

Stats

10 MPH Pace Speed :	25-34 MPH
Number in Pace :	7381
Percent in Pace :	61.2%
Number of Vehicles > 30 MPH :	4603
Percent of Vehicles > 30 MPH :	38.2%
Mean Speed(Average) :	28 MPH

Washington Street (Route 1A) NB
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B NB Volume
Site Code: 2152086
Date Start: 14-Oct-15

Start Time	A.M.	NB	P.M.												Wed 14-Oct-15
12:00	10		153												
12:15	9		167												
12:30	9		152												
12:45	7	35	200	672											
01:00	2		232												
01:15	5		226												
01:30	2		186												
01:45	3	12	153	797											
02:00	4		159												
02:15	5		148												
02:30	2		183												
02:45	4	15	174	664											
03:00	4		160												
03:15	7		177												
03:30	8		172												
03:45	8	27	162	671											
04:00	9		161												
04:15	9		196												
04:30	16		154												
04:45	25	59	196	707											
05:00	26		197												
05:15	42		203												
05:30	51		200												
05:45	88	207	178	778											
06:00	156		128												
06:15	242		140												
06:30	287		139												
06:45	319	1004	138	545											
07:00	286		113												
07:15	294		124												
07:30	274		116												
07:45	275	1129	85	438											
08:00	275		88												
08:15	267		88												
08:30	310		104												
08:45	271	1123	76	356											
09:00	239		91												
09:15	216		61												
09:30	217		46												
09:45	189	861	51	249											
10:00	169		46												
10:15	162		45												
10:30	165		27												
10:45	159	655	26	144											
11:00	133		23												
11:15	147		27												
11:30	161		22												
11:45	182	623	12	84											
Total	5750		6105												
Percent			100.0%		0.0%		0.0%								
Day Total		11855													
Peak	06:30	-	00:45	-	-	-	-	-	-	-	-	-	-	-	
Vol.	1186	-	844	-	-	-	-	-	-	-	-	-	-	-	
P.H.F.	0.929		0.909												

Washington Street (Route 1A) NB
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B NB Volume
Site Code: 2152086
Date Start: 14-Oct-15

Start Time	A.M.	NB	P.M.												Thu 15-Oct-15
12:00	18		149												
12:15	8		151												
12:30	8		168												
12:45	8	42	215	683											
01:00	4		227												
01:15	5		176												
01:30	4		160												
01:45	3	16	178	741											
02:00	0		162												
02:15	0		177												
02:30	2		181												
02:45	4	6	175	695											
03:00	4		221												
03:15	6		168												
03:30	6		180												
03:45	6	22	195	764											
04:00	9		170												
04:15	11		161												
04:30	16		173												
04:45	31	67	159	663											
05:00	36		191												
05:15	44		246												
05:30	56		181												
05:45	87	223	170	788											
06:00	157		153												
06:15	243		185												
06:30	315		158												
06:45	334	1049	128	624											
07:00	289		127												
07:15	312		103												
07:30	268		104												
07:45	298	1167	87	421											
08:00	276		110												
08:15	270		117												
08:30	292		122												
08:45	244	1082	86	435											
09:00	207		62												
09:15	211		62												
09:30	211		49												
09:45	171	800	60	233											
10:00	180		56												
10:15	132		53												
10:30	152		39												
10:45	163	627	32	180											
11:00	136		37												
11:15	147		36												
11:30	161		22												
11:45	177	621	15	110											
Total	5722		6337												
Percent			100.0%		0.0%		0.0%								
Day Total		12059													
Peak	06:30	-	05:00	-	-	-	-	-	-	-	-	-	-	-	
Vol.	1250	-	788	-	-	-	-	-	-	-	-	-	-	-	
P.H.F.	0.936		0.801												

Washington Street (Route 1A)
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B SB Class
Site Code: 2152086
Date Start: 14-Oct-15

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/14/1														
5	0	55	12	1	2	0	0	0	0	0	0	0	0	70
01:00	0	16	5	0	0	0	0	0	0	0	0	0	0	21
02:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
03:00	0	10	1	0	1	1	0	0	0	0	0	0	0	13
04:00	0	16	2	0	0	0	0	0	0	0	0	0	0	18
05:00	0	66	7	2	2	0	0	0	0	0	0	0	0	77
06:00	0	261	30	2	8	1	0	1	1	0	0	0	0	304
07:00	2	434	68	7	13	0	0	2	0	0	1	0	0	527
08:00	0	456	100	7	27	1	0	1	0	0	0	0	0	592
09:00	0	481	82	4	18	0	0	3	0	0	0	0	0	588
10:00	1	456	52	3	13	2	0	2	0	0	0	0	0	529
11:00	1	496	77	4	18	1	0	3	0	0	0	0	0	600
12 PM	2	599	99	3	19	1	0	6	0	0	0	0	0	729
13:00	4	575	97	7	16	2	0	2	0	0	1	0	0	704
14:00	1	620	100	9	17	2	0	0	1	0	0	0	0	750
15:00	2	711	136	5	27	3	0	3	0	0	0	0	0	887
16:00	6	846	134	3	23	1	0	5	1	1	0	0	0	1020
17:00	13	1055	159	3	16	3	0	3	0	0	0	0	0	1252
18:00	7	913	126	2	10	0	0	7	0	1	0	0	0	1066
19:00	0	487	70	5	10	1	0	3	0	0	0	0	0	576
20:00	1	337	32	1	6	0	0	3	0	0	0	0	0	380
21:00	1	262	30	2	4	0	0	0	0	0	0	0	0	299
22:00	0	162	8	1	3	0	0	1	0	0	0	0	0	175
23:00	1	100	13	1	1	0	0	0	0	0	0	0	0	116
Total	42	9428	1441	72	254	19	0	45	3	2	2	0	0	11308
Percent	0.4%	83.4%	12.7%	0.6%	2.2%	0.2%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	08:00	07:00	08:00	10:00		09:00	06:00		07:00			11:00
Vol.	2	496	100	7	27	2		3	1		1			600
PM Peak	17:00	17:00	17:00	14:00	15:00	15:00		18:00	14:00	16:00	13:00			17:00
Vol.	13	1055	159	9	27	3		7	1	1	1			1252

Washington Street (Route 1A)
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B SB Class
Site Code: 2152086
Date Start: 14-Oct-15

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/15/1														
5	0	74	2	1	0	0	0	0	0	0	0	0	0	77
01:00	0	21	3	0	1	0	0	0	0	0	0	0	0	25
02:00	0	17	4	1	1	0	0	0	0	0	0	0	0	23
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
04:00	0	10	3	0	2	0	0	1	0	0	0	0	0	16
05:00	0	61	12	2	4	0	0	0	0	0	0	0	0	79
06:00	1	277	49	3	13	0	0	0	0	0	0	0	0	343
07:00	3	398	82	10	10	1	0	5	0	1	0	0	0	510
08:00	1	492	94	8	12	0	1	2	2	0	0	0	0	612
09:00	1	411	111	6	20	1	0	3	0	0	0	0	0	553
10:00	2	394	76	4	14	2	0	1	1	0	0	0	0	494
11:00	3	466	76	2	24	2	0	5	2	0	0	0	0	580
12 PM	1	524	92	3	10	2	0	2	0	0	0	0	1	635
13:00	5	547	96	3	16	2	1	4	1	0	0	0	0	675
14:00	3	630	107	6	11	3	0	1	0	0	2	0	0	763
15:00	5	758	137	14	23	1	1	8	0	0	1	0	0	948
16:00	9	943	156	1	14	5	0	5	0	0	1	0	0	1134
17:00	6	1042	129	2	17	3	0	11	2	0	0	0	0	1212
18:00	13	945	91	4	10	1	0	1	0	1	0	0	0	1066
19:00	1	568	67	3	13	0	0	2	0	0	2	0	0	656
20:00	1	389	60	1	6	0	0	1	0	0	0	0	0	458
21:00	0	289	16	1	2	0	0	0	0	0	0	0	0	308
22:00	0	188	22	3	1	0	0	0	0	0	0	0	0	214
23:00	0	126	9	2	1	0	0	0	0	0	0	0	0	138
Total	55	9575	1496	80	225	23	3	52	8	2	6	0	1	11526
Percent	0.5%	83.1%	13.0%	0.7%	2.0%	0.2%	0.0%	0.5%	0.1%	0.0%	0.1%	0.0%	0.0%	
AM Peak	07:00	08:00	09:00	07:00	11:00	10:00	08:00	07:00	08:00	07:00				08:00
Vol.	3	492	111	10	24	2	1	5	2	1				612
PM Peak	18:00	17:00	16:00	15:00	15:00	16:00	13:00	17:00	17:00	18:00	14:00		12:00	17:00
Vol.	13	1042	156	14	23	5	1	11	2	1	2		1	1212
Total		19003	2937	152	479	42	3	97	11	4	8	0	1	22834

Washington Street (Route 1A)
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B SB Speed
Site Code: 2152086
Date Start: 14-Oct-15

SB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/14/ 15	0	0	0	5	21	31	9	3	1	0	0	0	0	70	40	36
01:00	0	0	0	2	6	10	2	1	0	0	0	0	0	21	38	36
02:00	0	0	0	0	10	4	1	0	0	0	0	0	0	15	37	34
03:00	0	0	0	3	4	6	0	0	0	0	0	0	0	13	37	33
04:00	0	0	1	1	13	2	1	0	0	0	0	0	0	18	34	32
05:00	0	0	1	4	47	21	4	0	0	0	0	0	0	77	37	33
06:00	0	0	5	19	145	115	15	3	1	**1**	0	0	0	304	37	34
07:00	**8**	**7**	**36**	76	237	140	19	4	0	0	0	0	0	527	36	32
08:00	3	3	19	80	263	**172**	**38**	**10**	**4**	0	0	0	0	**592**	37	33
09:00	3	5	31	**110**	**314**	104	19	2	0	0	0	0	0	588	35	32
10:00	4	15	49	112	237	96	13	3	0	0	0	0	0	529	35	31
11:00	1	14	58	200	247	63	**15**	**2**	0	0	0	0	0	600	33	30
12 PM	**10**	**47**	**146**	**259**	200	53	12	2	0	0	0	0	0	729	32	27
13:00	8	32	100	237	240	**71**	13	2	**1**	0	0	0	0	704	33	29
14:00	10	37	108	242	**277**	63	12	1	0	0	0	0	0	**750**	33	28
15:00	42	58	171	268	253	82	12	1	0	0	0	0	0	887	33	27
16:00	**208**	**136**	**309**	185	140	35	6	1	0	0	0	0	0	1020	30	21
17:00	28	112	233	**372**	**378**	**112**	16	1	0	0	0	0	0	**1252**	33	27
18:00	33	61	204	320	336	98	12	2	0	0	0	0	0	1066	33	28
19:00	2	13	57	152	228	92	**29**	3	0	0	0	0	0	576	36	31
20:00	0	2	10	55	226	72	14	1	0	0	0	0	0	380	36	32
21:00	0	1	8	38	147	81	18	**6**	0	0	0	0	0	299	37	33
22:00	0	0	4	8	105	49	8	1	0	0	0	0	0	175	37	33
23:00	0	1	4	14	38	45	12	2	0	0	0	0	0	116	38	34
Total	360	544	1554	2762	4112	1617	300	51	7	1	0	0	0	11308		
%	3.2%	4.8%	13.7%	24.4%	36.4%	14.3%	2.7%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	09:00	09:00	08:00	08:00	08:00	08:00	06:00				08:00		
Vol.	8	7	36	110	314	172	38	10	4	1				592		
Midday Peak	12:00	12:00	12:00	12:00	14:00	13:00	11:00	11:00	13:00					14:00		
Vol.	10	47	146	259	277	71	15	2	1					750		
PM Peak	16:00	16:00	16:00	17:00	17:00	17:00	19:00	21:00						17:00		
Vol.	208	136	309	372	378	112	29	6						1252		

% iles

15th Percentile :	21 MPH
50th Percentile :	29 MPH
85th Percentile :	34 MPH
95th Percentile :	38 MPH

Stats

10 MPH Pace Speed :	25-34 MPH
Number in Pace :	6874
Percent in Pace :	60.8%
Number of Vehicles > 30 MPH :	5266
Percent of Vehicles > 30 MPH :	46.6%
Mean Speed(Average) :	29 MPH

Washington Street (Route 1A)
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
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Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

154702 B SB Speed
Site Code: 2152086
Date Start: 14-Oct-15

SB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/15/ 15	0	0	1	3	57	16	0	0	0	0	0	0	0	77	35	33
01:00	0	0	0	0	15	9	1	0	0	0	0	0	0	25	37	34
02:00	0	2	0	1	9	10	1	0	0	0	0	0	0	23	37	33
03:00	0	0	1	0	2	3	1	0	0	0	0	0	0	7	38	34
04:00	0	0	0	3	7	6	0	0	0	0	0	0	0	16	37	33
05:00	0	0	0	4	26	42	5	1	1	0	0	0	0	79	38	35
06:00	0	0	3	29	139	141	21	8	1	**1**	0	0	0	343	38	35
07:00	1	9	26	76	209	151	29	6	**3**	0	0	0	0	510	37	33
08:00	0	4	**29**	**127**	223	**172**	**46**	**11**	0	0	0	0	0	**612**	37	33
09:00	**2**	**11**	29	103	**228**	143	34	3	0	0	0	0	0	553	37	32
10:00	1	4	26	83	214	130	32	4	0	0	0	0	0	494	37	33
11:00	5	30	81	137	228	83	15	1	0	0	0	0	0	580	34	29
12 PM	8	25	109	204	209	73	7	0	0	0	0	0	0	635	33	28
13:00	7	35	108	193	221	**89**	16	**5**	**1**	0	0	0	0	675	34	29
14:00	**15**	**54**	**121**	**260**	**234**	61	**18**	0	0	0	0	0	0	**763**	33	28
15:00	33	75	183	265	268	**110**	13	1	0	0	0	0	0	948	33	27
16:00	48	119	258	274	**321**	100	13	1	0	0	0	0	0	1134	33	26
17:00	43	112	334	**393**	266	44	**16**	**4**	0	0	0	0	0	**1212**	31	26
18:00	**55**	**135**	**341**	330	164	33	8	0	0	0	0	0	0	1066	30	24
19:00	11	18	82	160	278	92	13	1	**1**	0	0	0	0	656	34	30
20:00	1	3	26	100	244	70	13	1	0	0	0	0	0	458	35	31
21:00	1	4	6	47	203	38	8	1	0	0	0	0	0	308	34	32
22:00	0	1	4	28	106	66	7	2	0	0	0	0	0	214	37	33
23:00	0	0	0	10	75	45	5	2	0	**1**	0	0	0	138	37	34
Total	231	641	1768	2830	3946	1727	322	52	7	2	0	0	0	11526		
%	2.0%	5.6%	15.3%	24.6%	34.2%	15.0%	2.8%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	09:00	08:00	08:00	09:00	08:00	08:00	08:00	07:00	06:00				08:00		
Vol.	2	11	29	127	228	172	46	11	3	1				612		
Midday Peak	14:00	14:00	14:00	14:00	14:00	13:00	14:00	13:00	13:00					14:00		
Vol.	15	54	121	260	234	89	18	5	1					763		
PM Peak	18:00	18:00	18:00	17:00	16:00	15:00	17:00	17:00	19:00	23:00				17:00		
Vol.	55	135	341	393	321	110	16	4	1	1				1212		

% iles	
15th Percentile :	21 MPH
50th Percentile :	29 MPH
85th Percentile :	35 MPH
95th Percentile :	38 MPH

Stats	
10 MPH Pace Speed :	25-34 MPH
Number in Pace :	6776
Percent in Pace :	58.8%
Number of Vehicles > 30 MPH :	5267
Percent of Vehicles > 30 MPH :	45.7%
Mean Speed(Average) :	29 MPH

Washington Street (Route 1A)
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
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154702 B SB Volume
Site Code: 2152086
Date Start: 14-Oct-15

Start Time	A.M.	SB	P.M.												Wed 14-Oct-15
12:00	20		169												
12:15	17		202												
12:30	23		169												
12:45	10	70	189	729											
01:00	6		159												
01:15	6		173												
01:30	4		181												
01:45	5	21	191	704											
02:00	2		181												
02:15	4		192												
02:30	5		185												
02:45	4	15	192	750											
03:00	1		183												
03:15	4		240												
03:30	3		221												
03:45	5	13	243	887											
04:00	4		228												
04:15	4		253												
04:30	2		287												
04:45	8	18	252	1020											
05:00	9		296												
05:15	17		299												
05:30	18		330												
05:45	33	77	327	1252											
06:00	49		300												
06:15	89		286												
06:30	92		264												
06:45	74	304	216	1066											
07:00	92		185												
07:15	112		152												
07:30	130		113												
07:45	193	527	126	576											
08:00	160		85												
08:15	140		113												
08:30	127		86												
08:45	165	592	96	380											
09:00	179		75												
09:15	149		90												
09:30	132		81												
09:45	128	588	53	299											
10:00	150		45												
10:15	133		43												
10:30	113		48												
10:45	133	529	39	175											
11:00	153		41												
11:15	144		33												
11:30	146		25												
11:45	157	600	17	116											
Total	3354		7954												
Percent			100.0%		0.0%		0.0%								
Day Total		11308													
Peak	08:45	-	05:15	-	-	-	-	-	-	-	-	-	-	-	
Vol.	625	-	1256	-	-	-	-	-	-	-	-	-	-	-	
P.H.F.	0.810		0.952												

Washington Street (Route 1A)
south of School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION
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154702 B SB Volume
Site Code: 2152086
Date Start: 14-Oct-15

Start Time	A.M.	SB	P.M.												Thu 15-Oct-15
12:00	24		149												
12:15	15		149												
12:30	20		166												
12:45	18	77	171	635											
01:00	11		152												
01:15	7		178												
01:30	4		165												
01:45	3	25	180	675											
02:00	5		199												
02:15	11		176												
02:30	5		195												
02:45	2	23	193	763											
03:00	2		215												
03:15	2		233												
03:30	1		253												
03:45	2	7	247	948											
04:00	2		264												
04:15	4		287												
04:30	3		302												
04:45	7	16	281	1134											
05:00	10		311												
05:15	15		299												
05:30	26		302												
05:45	28	79	300	1212											
06:00	56		296												
06:15	86		284												
06:30	95		240												
06:45	106	343	246	1066											
07:00	93		212												
07:15	117		164												
07:30	139		158												
07:45	161	510	122	656											
08:00	162		120												
08:15	149		113												
08:30	151		120												
08:45	150	612	105	458											
09:00	179		91												
09:15	137		80												
09:30	128		75												
09:45	109	553	62	308											
10:00	125		67												
10:15	123		51												
10:30	122		55												
10:45	124	494	41	214											
11:00	120		50												
11:15	146		41												
11:30	153		25												
11:45	161	580	22	138											
Total	3319		8207												
Percent			100.0%		0.0%		0.0%								
Day Total		11526													
Peak	08:15	-	05:00	-	-	-	-	-	-	-	-	-	-	-	
Vol.	629	-	1212	-	-	-	-	-	-	-	-	-	-	-	
P.H.F.	0.878		0.974												

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION DATA INDUSTRIES, LLC
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File Name : 154702 B
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	3	31	6	0	7	34	73	0	141	260	0	0	3	62	5	0	625
07:15 AM	3	55	3	0	13	28	77	0	145	254	3	0	4	61	4	0	650
07:30 AM	1	55	4	0	8	20	97	0	134	218	0	0	1	69	1	0	608
07:45 AM	1	64	5	0	16	21	100	0	109	226	1	0	5	77	4	0	629
Total	8	205	18	0	44	103	347	0	529	958	4	0	13	269	14	0	2512
08:00 AM	1	56	9	0	14	21	95	0	140	232	4	0	5	83	1	0	661
08:15 AM	0	58	5	0	20	14	83	0	116	210	6	0	3	63	5	0	583
08:30 AM	0	57	2	0	16	19	79	0	116	213	9	0	9	44	4	0	568
08:45 AM	1	67	6	0	21	19	97	0	103	155	7	0	10	50	6	0	542
Total	2	238	22	0	71	73	354	0	475	810	26	0	27	240	16	0	2354
Grand Total	10	443	40	0	115	176	701	0	1004	1768	30	0	40	509	30	0	4866
Apprch %	2	89.9	8.1	0	11.6	17.7	70.7	0	35.8	63.1	1.1	0	6.9	87.9	5.2	0	
Total %	0.2	9.1	0.8	0	2.4	3.6	14.4	0	20.6	36.3	0.6	0	0.8	10.5	0.6	0	
Cars	7	413	39	0	111	167	677	0	990	1695	28	0	37	496	27	0	4687
% Cars	70	93.2	97.5	0	96.5	94.9	96.6	0	98.6	95.9	93.3	0	92.5	97.4	90	0	96.3
Heavy Vehicles	3	30	1	0	4	9	24	0	14	73	2	0	3	13	3	0	179
% Heavy Vehicles	30	6.8	2.5	0	3.5	5.1	3.4	0	1.4	4.1	6.7	0	7.5	2.6	10	0	3.7

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. 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	3	55	3	0	61	13	28	77	0	118	145	254	3	0	402	4	61	4	0	69	650
07:30 AM	1	55	4	0	60	8	20	97	0	125	134	218	0	0	352	1	69	1	0	71	608
07:45 AM	1	64	5	0	70	16	21	100	0	137	109	226	1	0	336	5	77	4	0	86	629
08:00 AM	1	56	9	0	66	14	21	95	0	130	140	232	4	0	376	5	83	1	0	89	661
Total Volume	6	230	21	0	257	51	90	369	0	510	528	930	8	0	1466	15	290	10	0	315	2548
% App. Total	2.3	89.5	8.2	0		10	17.6	72.4	0		36	63.4	0.5	0		4.8	92.1	3.2	0		
PHF	.500	.898	.583	.000	.918	.797	.804	.923	.000	.931	.910	.915	.500	.000	.912	.750	.873	.625	.000	.885	.964
Cars	4	217	20	0	241	50	85	358	0	493	522	895	8	0	1425	13	282	9	0	304	2463
% Cars	66.7	94.3	95.2	0	93.8	98.0	94.4	97.0	0	96.7	98.9	96.2	100	0	97.2	86.7	97.2	90.0	0	96.5	96.7
Heavy Vehicles	2	13	1	0	16	1	5	11	0	17	6	35	0	0	41	2	8	1	0	11	85
% Heavy Vehicles	33.3	5.7	4.8	0	6.2	2.0	5.6	3.0	0	3.3	1.1	3.8	0	0	2.8	13.3	2.8	10.0	0	3.5	3.3

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION DATA INDUSTRIES, LLC
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File Name : 154702 B
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Cars

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	2	28	6	0	6	31	68	0	140	251	0	0	3	58	4	0	597
07:15 AM	2	50	3	0	13	27	72	0	144	243	3	0	2	59	4	0	622
07:30 AM	0	53	4	0	8	18	95	0	133	208	0	0	1	69	1	0	590
07:45 AM	1	62	5	0	15	20	97	0	107	219	1	0	5	74	3	0	609
Total	5	193	18	0	42	96	332	0	524	921	4	0	11	260	12	0	2418
08:00 AM	1	52	8	0	14	20	94	0	138	225	4	0	5	80	1	0	642
08:15 AM	0	57	5	0	19	14	81	0	116	198	4	0	2	63	5	0	564
08:30 AM	0	49	2	0	15	18	76	0	113	205	9	0	9	43	3	0	542
08:45 AM	1	62	6	0	21	19	94	0	99	146	7	0	10	50	6	0	521
Total	2	220	21	0	69	71	345	0	466	774	24	0	26	236	15	0	2269
Grand Total	7	413	39	0	111	167	677	0	990	1695	28	0	37	496	27	0	4687
Apprch %	1.5	90	8.5	0	11.6	17.5	70.9	0	36.5	62.5	1	0	6.6	88.6	4.8	0	
Total %	0.1	8.8	0.8	0	2.4	3.6	14.4	0	21.1	36.2	0.6	0	0.8	10.6	0.6	0	

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. 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	2	50	3	0	55	13	27	72	0	112	144	243	3	0	390	2	59	4	0	65	622
07:30 AM	0	53	4	0	57	8	18	95	0	121	133	208	0	0	341	1	69	1	0	71	590
07:45 AM	1	62	5	0	68	15	20	97	0	132	107	219	1	0	327	5	74	3	0	82	609
08:00 AM	1	52	8	0	61	14	20	94	0	128	138	225	4	0	367	5	80	1	0	86	642
Total Volume	4	217	20	0	241	50	85	358	0	493	522	895	8	0	1425	13	282	9	0	304	2463
% App. Total	1.7	90	8.3	0		10.1	17.2	72.6	0		36.6	62.8	0.6	0		4.3	92.8	3	0		
PHF	.500	.875	.625	.000	.886	.833	.787	.923	.000	.934	.906	.921	.500	.000	.913	.650	.881	.563	.000	.884	.959

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION DATA INDUSTRIES, LLC
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File Name : 154702 B
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	1	3	0	0	1	3	5	0	1	9	0	0	0	4	1	0	28
07:15 AM	1	5	0	0	0	1	5	0	1	11	0	0	2	2	0	0	28
07:30 AM	1	2	0	0	0	2	2	0	1	10	0	0	0	0	0	0	18
07:45 AM	0	2	0	0	1	1	3	0	2	7	0	0	0	3	1	0	20
Total	3	12	0	0	2	7	15	0	5	37	0	0	2	9	2	0	94
08:00 AM	0	4	1	0	0	1	1	0	2	7	0	0	0	3	0	0	19
08:15 AM	0	1	0	0	1	0	2	0	0	12	2	0	1	0	0	0	19
08:30 AM	0	8	0	0	1	1	3	0	3	8	0	0	0	1	1	0	26
08:45 AM	0	5	0	0	0	0	3	0	4	9	0	0	0	0	0	0	21
Total	0	18	1	0	2	2	9	0	9	36	2	0	1	4	1	0	85
Grand Total	3	30	1	0	4	9	24	0	14	73	2	0	3	13	3	0	179
Apprch %	8.8	88.2	2.9	0	10.8	24.3	64.9	0	15.7	82	2.2	0	15.8	68.4	15.8	0	
Total %	1.7	16.8	0.6	0	2.2	5	13.4	0	7.8	40.8	1.1	0	1.7	7.3	1.7	0	

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	1	3	0	0	4	1	3	5	0	9	1	9	0	0	10	0	4	1	0	5	28
07:15 AM	1	5	0	0	6	0	1	5	0	6	1	11	0	0	12	2	2	0	0	4	28
07:30 AM	1	2	0	0	3	0	2	2	0	4	1	10	0	0	11	0	0	0	0	0	18
07:45 AM	0	2	0	0	2	1	1	3	0	5	2	7	0	0	9	0	3	1	0	4	20
Total Volume	3	12	0	0	15	2	7	15	0	24	5	37	0	0	42	2	9	2	0	13	94
% App. Total	20	80	0	0		8.3	29.2	62.5	0		11.9	88.1	0	0		15.4	69.2	15.4	0		
PHF	.750	.600	.000	.000	.625	.500	.583	.750	.000	.667	.625	.841	.000	.000	.875	.250	.563	.500	.000	.650	.839

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION DATA INDUSTRIES, LLC
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File Name : 154702 B
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Peds and Bikes

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	Peds EB	Peds WB	Right	Thru	Left	Peds SB	Peds NB	Right	Thru	Left	Peds WB	Peds EB	Right	Thru	Left	Peds NB	Peds SB	Int. Total
07:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5
07:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	3
07:45 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	0	2	0	4	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	2	12
08:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	4
08:15 AM	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4
08:30 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	4
08:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5
Total	0	0	0	4	1	0	0	0	1	2	0	0	0	0	0	0	1	0	1	7	17
Grand Total	0	2	0	8	2	0	0	0	1	3	0	1	0	0	0	0	1	0	2	9	29
Apprch %	0	16.7	0	66.7	16.7	0	0	0	25	75	0	100	0	0	0	0	8.3	0	16.7	75	
Total %	0	6.9	0	27.6	6.9	0	0	0	3.4	10.3	0	3.4	0	0	0	0	3.4	0	6.9	31	

	Washington Street (Route 1A) From North						East Street From East						Washington Street (Route 1A) From South						School Street From West						
Start Time	Right	Thru	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Peds SB	Peds NB	App. Total	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. 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	1	0	1	0	0	0	0	0	0	0	1	0	0	2	3	4
08:15 AM	0	0	0	2	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	4
08:30 AM	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2	4
08:45 AM	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	5
Total Volume	0	0	0	4	1	5	0	0	0	1	2	3	0	0	0	0	0	0	0	1	0	1	7	9	17
% App. Total	0	0	0	80	20		0	0	0	33.3	66.7		0	0	0	0	0		0	11.1	0	11.1	77.8		
PHF	.000	.000	.000	.500	.250	.625	.000	.000	.000	.250	.500	.750	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.583	.750	.850

N/S: Washington Street (Route 1A)
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City, State: Westwood, MA
Client: Bayside/ K. Cram

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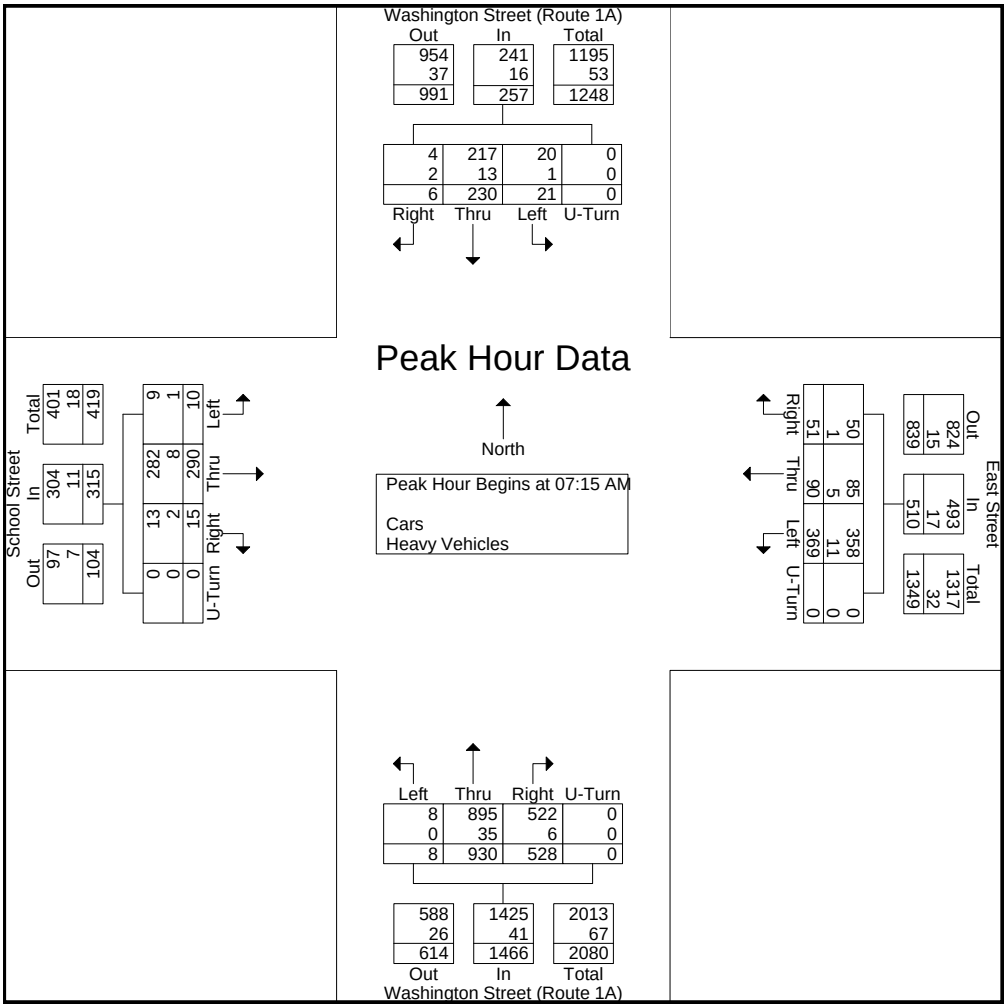
	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
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	3	55	3	0	61	13	28	77	0	118	145	254	3	0	402	4	61	4	0	69	650
07:30 AM	1	55	4	0	60	8	20	97	0	125	134	218	0	0	352	1	69	1	0	71	608
07:45 AM	1	64	5	0	70	16	21	100	0	137	109	226	1	0	336	5	77	4	0	86	629
08:00 AM	1	56	9	0	66	14	21	95	0	130	140	232	4	0	376	5	83	1	0	89	661
Total Volume	6	230	21	0	257	51	90	369	0	510	528	930	8	0	1466	15	290	10	0	315	2548
% App. Total	2.3	89.5	8.2	0		10	17.6	72.4	0		36	63.4	0.5	0		4.8	92.1	3.2	0		
PHF	.500	.898	.583	.000	.918	.797	.804	.923	.000	.931	.910	.915	.500	.000	.912	.750	.873	.625	.000	.885	.964
Cars	4	217	20	0	241	50	85	358	0	493	522	895	8	0	1425	13	282	9	0	304	2463
% Cars	66.7	94.3	95.2	0	93.8	98.0	94.4	97.0	0	96.7	98.9	96.2	100	0	97.2	86.7	97.2	90.0	0	96.5	96.7
Heavy Vehicles	2	13	1	0	16	1	5	11	0	17	6	35	0	0	41	2	8	1	0	11	85
% Heavy Vehicles	33.3	5.7	4.8	0	6.2	2.0	5.6	3.0	0	3.3	1.1	3.8	0	0	2.8	13.3	2.8	10.0	0	3.5	3.3



N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

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File Name : 154702 BB
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	194	12	0	12	31	109	0	90	100	10	0	15	26	2	0	602
04:15 PM	4	186	8	0	10	43	133	0	78	109	8	0	15	23	6	0	623
04:30 PM	3	184	13	0	7	36	132	0	92	112	10	0	7	32	2	0	630
04:45 PM	6	214	17	0	8	35	119	0	89	119	11	0	12	27	2	0	659
Total	14	778	50	0	37	145	493	0	349	440	39	0	49	108	12	0	2514
05:00 PM	3	177	13	0	7	54	126	0	132	103	6	0	12	30	1	0	664
05:15 PM	3	182	15	0	6	53	118	0	138	126	8	0	15	32	6	0	702
05:30 PM	2	222	13	0	9	35	130	0	93	116	6	0	12	25	2	0	665
05:45 PM	3	194	19	0	5	62	130	0	77	111	7	0	14	20	3	0	645
Total	11	775	60	0	27	204	504	0	440	456	27	0	53	107	12	0	2676
06:00 PM	1	221	8	0	7	31	117	0	86	112	5	0	4	20	3	0	615
06:15 PM	2	177	11	0	10	61	115	0	95	105	14	0	7	21	3	0	621
Grand Total	28	1951	129	0	81	441	1229	0	970	1113	85	0	113	256	30	0	6426
Apprch %	1.3	92.6	6.1	0	4.6	25.2	70.2	0	44.7	51.3	3.9	0	28.3	64.2	7.5	0	
Total %	0.4	30.4	2	0	1.3	6.9	19.1	0	15.1	17.3	1.3	0	1.8	4	0.5	0	
Cars	27	1924	128	0	81	440	1224	0	964	1097	85	0	111	254	29	0	6364
% Cars	96.4	98.6	99.2	0	100	99.8	99.6	0	99.4	98.6	100	0	98.2	99.2	96.7	0	99
Heavy Vehicles	1	27	1	0	0	1	5	0	6	16	0	0	2	2	1	0	62
% Heavy Vehicles	3.6	1.4	0.8	0	0	0.2	0.4	0	0.6	1.4	0	0	1.8	0.8	3.3	0	1

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	6	214	17	0	237	8	35	119	0	162	89	119	11	0	219	12	27	2	0	41	659
05:00 PM	3	177	13	0	193	7	54	126	0	187	132	103	6	0	241	12	30	1	0	43	664
05:15 PM	3	182	15	0	200	6	53	118	0	177	138	126	8	0	272	15	32	6	0	53	702
05:30 PM	2	222	13	0	237	9	35	130	0	174	93	116	6	0	215	12	25	2	0	39	665
Total Volume	14	795	58	0	867	30	177	493	0	700	452	464	31	0	947	51	114	11	0	176	2690
% App. Total	1.6	91.7	6.7	0		4.3	25.3	70.4	0		47.7	49	3.3	0		29	64.8	6.2	0		
PHF	.583	.895	.853	.000	.915	.833	.819	.948	.000	.936	.819	.921	.705	.000	.870	.850	.891	.458	.000	.830	.958
Cars	13	780	57	0	850	30	176	493	0	699	448	460	31	0	939	51	112	11	0	174	2662
% Cars	92.9	98.1	98.3	0	98.0	100	99.4	100	0	99.9	99.1	99.1	100	0	99.2	100	98.2	100	0	98.9	99.0
Heavy Vehicles	1	15	1	0	17	0	1	0	0	1	4	4	0	0	8	0	2	0	0	2	28
% Heavy Vehicles	7.1	1.9	1.7	0	2.0	0	0.6	0	0	0.1	0.9	0.9	0	0	0.8	0	1.8	0	0	1.1	1.0

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City, State: Westwood, MA
Client: Bayside/ K. Cram

File Name : 154702 BB
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Cars

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	192	12	0	12	31	107	0	90	96	10	0	14	26	2	0	593
04:15 PM	4	182	8	0	10	43	132	0	78	106	8	0	14	23	5	0	613
04:30 PM	3	181	13	0	7	36	131	0	90	110	10	0	7	32	2	0	622
04:45 PM	5	212	17	0	8	35	119	0	89	117	11	0	12	27	2	0	654
Total	13	767	50	0	37	145	489	0	347	429	39	0	47	108	11	0	2482
05:00 PM	3	173	13	0	7	54	126	0	130	103	6	0	12	30	1	0	658
05:15 PM	3	179	15	0	6	53	118	0	136	125	8	0	15	32	6	0	696
05:30 PM	2	216	12	0	9	34	130	0	93	115	6	0	12	23	2	0	654
05:45 PM	3	194	19	0	5	62	129	0	77	111	7	0	14	20	3	0	644
Total	11	762	59	0	27	203	503	0	436	454	27	0	53	105	12	0	2652
06:00 PM	1	219	8	0	7	31	117	0	86	109	5	0	4	20	3	0	610
06:15 PM	2	176	11	0	10	61	115	0	95	105	14	0	7	21	3	0	620
Grand Total	27	1924	128	0	81	440	1224	0	964	1097	85	0	111	254	29	0	6364
Apprch %	1.3	92.5	6.2	0	4.6	25.2	70.1	0	44.9	51.1	4	0	28.2	64.5	7.4	0	
Total %	0.4	30.2	2	0	1.3	6.9	19.2	0	15.1	17.2	1.3	0	1.7	4	0.5	0	

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	5	212	17	0	234	8	35	119	0	162	89	117	11	0	217	12	27	2	0	41	654
05:00 PM	3	173	13	0	189	7	54	126	0	187	130	103	6	0	239	12	30	1	0	43	658
05:15 PM	3	179	15	0	197	6	53	118	0	177	136	125	8	0	269	15	32	6	0	53	696
05:30 PM	2	216	12	0	230	9	34	130	0	173	93	115	6	0	214	12	23	2	0	37	654
Total Volume	13	780	57	0	850	30	176	493	0	699	448	460	31	0	939	51	112	11	0	174	2662
% App. Total	1.5	91.8	6.7	0		4.3	25.2	70.5	0		47.7	49	3.3	0		29.3	64.4	6.3	0		
PHF	.650	.903	.838	.000	.908	.833	.815	.948	.000	.934	.824	.920	.705	.000	.873	.850	.875	.458	.000	.821	.956

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Email: datarequests@pdillc.com

File Name : 154702 BB
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	2	0	0	0	0	2	0	0	4	0	0	1	0	0	0	9
04:15 PM	0	4	0	0	0	0	1	0	0	3	0	0	1	0	1	0	10
04:30 PM	0	3	0	0	0	0	1	0	2	2	0	0	0	0	0	0	8
04:45 PM	1	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
Total	1	11	0	0	0	0	4	0	2	11	0	0	2	0	1	0	32
05:00 PM	0	4	0	0	0	0	0	0	2	0	0	0	0	0	0	0	6
05:15 PM	0	3	0	0	0	0	0	0	2	1	0	0	0	0	0	0	6
05:30 PM	0	6	1	0	0	1	0	0	0	1	0	0	0	2	0	0	11
05:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	13	1	0	0	1	1	0	4	2	0	0	0	2	0	0	24
06:00 PM	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5
06:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	27	1	0	0	1	5	0	6	16	0	0	2	2	1	0	62
Apprch %	3.4	93.1	3.4	0	0	16.7	83.3	0	27.3	72.7	0	0	40	40	20	0	
Total %	1.6	43.5	1.6	0	0	1.6	8.1	0	9.7	25.8	0	0	3.2	3.2	1.6	0	

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	2	0	0	2	0	0	2	0	2	0	4	0	0	4	1	0	0	0	1	9
04:15 PM	0	4	0	0	4	0	0	1	0	1	0	3	0	0	3	1	0	1	0	2	10
04:30 PM	0	3	0	0	3	0	0	1	0	1	2	2	0	0	4	0	0	0	0	0	8
04:45 PM	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
Total Volume	1	11	0	0	12	0	0	4	0	4	2	11	0	0	13	2	0	1	0	3	32
% App. Total	8.3	91.7	0	0		0	0	100	0		15.4	84.6	0	0		66.7	0	33.3	0		
PHF	.250	.688	.000	.000	.750	.000	.000	.500	.000	.500	.250	.688	.000	.000	.813	.500	.000	.250	.000	.375	.800

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION DATA INDUSTRIES, LLC
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File Name : 154702 BB
Site Code : 2152086
Start Date : 10/15/2015
Page No : 1

Groups Printed- Peds and Bikes

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	Peds EB	Peds WB	Right	Thru	Left	Peds SB	Peds NB	Right	Thru	Left	Peds WB	Peds EB	Right	Thru	Left	Peds NB	Peds SB	Int. Total
04:00 PM	0	0	0	2	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	6
04:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
04:30 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	4
Total	0	1	0	2	0	0	0	0	3	4	0	1	0	0	1	0	0	0	2	0	14
05:00 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	4
05:15 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	3
05:30 PM	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	6
05:45 PM	0	1	0	1	0	0	0	0	2	2	0	0	0	1	0	0	0	0	0	0	7
Total	0	1	0	3	1	0	0	0	5	4	0	0	0	2	1	0	0	0	2	1	20
06:00 PM	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	5
06:15 PM	0	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	6
Grand Total	0	2	0	6	5	0	0	0	10	10	0	1	0	2	2	0	0	0	5	2	45
Apprch %	0	15.4	0	46.2	38.5	0	0	0	50	50	0	20	0	40	40	0	0	0	71.4	28.6	
Total %	0	4.4	0	13.3	11.1	0	0	0	22.2	22.2	0	2.2	0	4.4	4.4	0	0	0	11.1	4.4	

	Washington Street (Route 1A) From North						East Street From East						Washington Street (Route 1A) From South						School Street From West						
Start Time	Right	Thru	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Peds SB	Peds NB	App. Total	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 05:30 PM																									
05:30 PM	0	0	0	2	0	2	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	2	0	2	6
05:45 PM	0	1	0	1	0	2	0	0	0	2	2	4	0	0	0	1	0	1	0	0	0	0	0	0	7
06:00 PM	0	0	0	1	1	2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	5
06:15 PM	0	0	0	0	3	3	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	1	6
Total Volume	0	1	0	4	4	9	0	0	0	5	4	9	0	0	0	1	1	2	0	0	0	3	1	4	24
% App. Total	0	11.1	0	44.4	44.4		0	0	0	55.6	44.4		0	0	0	50	50		0	0	0	75	25		
PHF	.000	.250	.000	.500	.333	.750	.000	.000	.000	.625	.500	.563	.000	.000	.000	.250	.250	.500	.000	.000	.000	.375	.250	.500	.857

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

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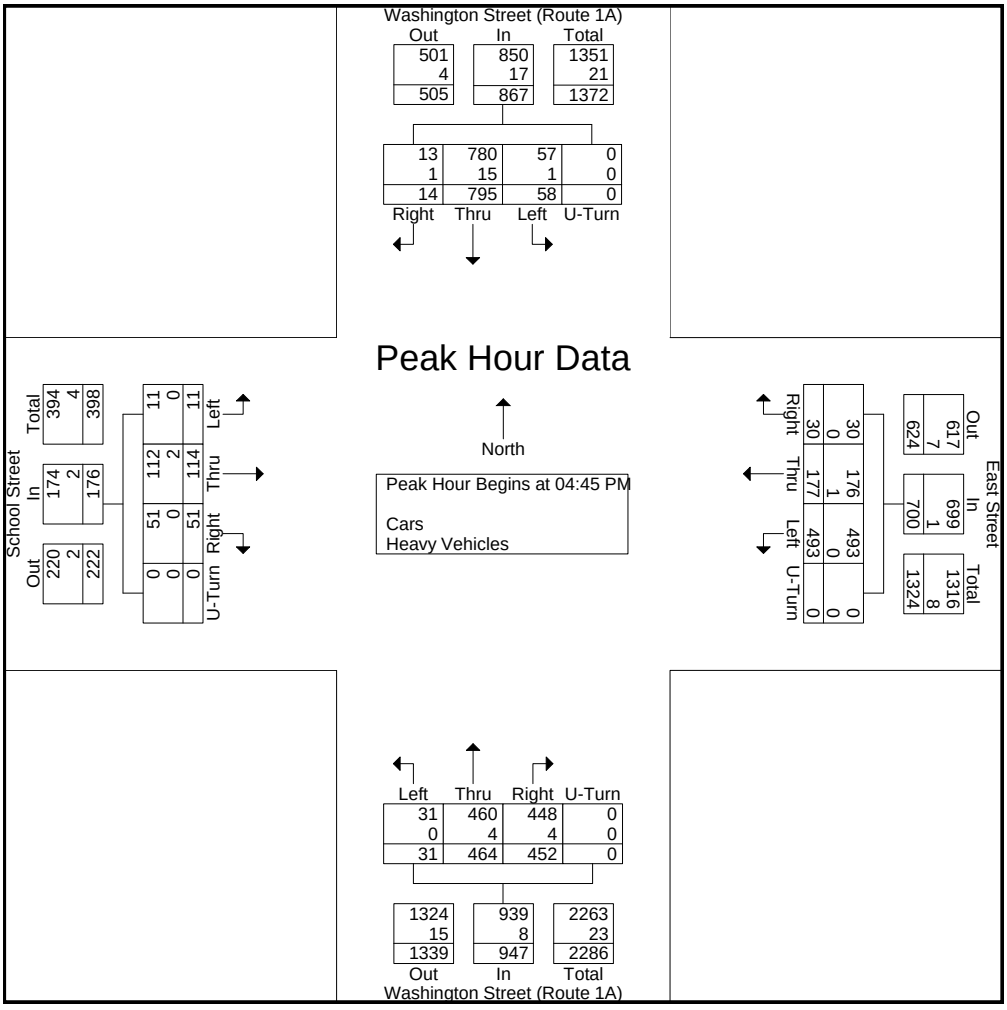
	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	6	214	17	0	237	8	35	119	0	162	89	119	11	0	219	12	27	2	0	41	659
05:00 PM	3	177	13	0	193	7	54	126	0	187	132	103	6	0	241	12	30	1	0	43	664
05:15 PM	3	182	15	0	200	6	53	118	0	177	138	126	8	0	272	15	32	6	0	53	702
05:30 PM	2	222	13	0	237	9	35	130	0	174	93	116	6	0	215	12	25	2	0	39	665
Total Volume	14	795	58	0	867	30	177	493	0	700	452	464	31	0	947	51	114	11	0	176	2690
% App. Total	1.6	91.7	6.7	0		4.3	25.3	70.4	0		47.7	49	3.3	0		29	64.8	6.2	0		
PHF	.583	.895	.853	.000	.915	.833	.819	.948	.000	.936	.819	.921	.705	.000	.870	.850	.891	.458	.000	.830	.958
Cars	13	780	57	0	850	30	176	493	0	699	448	460	31	0	939	51	112	11	0	174	2662
% Cars	92.9	98.1	98.3	0	98.0	100	99.4	100	0	99.9	99.1	99.1	100	0	99.2	100	98.2	100	0	98.9	99.0
Heavy Vehicles	1	15	1	0	17	0	1	0	0	1	4	4	0	0	8	0	2	0	0	2	28
% Heavy Vehicles	7.1	1.9	1.7	0	2.0	0	0.6	0	0	0.1	0.9	0.9	0	0	0.8	0	1.8	0	0	1.1	1.0



N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

PRECISION DATA INDUSTRIES, LLC
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File Name : 154702 BBB
Site Code : 2152086
Start Date : 10/17/2015
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
10:30 AM	2	79	8	0	6	18	58	0	83	84	2	0	5	19	1	0	365
10:45 AM	1	78	6	0	12	18	63	0	83	95	7	0	4	13	2	0	382
Total	3	157	14	0	18	36	121	0	166	179	9	0	9	32	3	0	747
11:00 AM	1	77	4	0	10	18	79	0	76	112	7	0	14	18	5	0	421
11:15 AM	5	80	17	0	7	24	79	0	104	111	8	0	13	28	6	0	482
11:30 AM	2	93	6	0	10	21	80	0	94	119	11	0	13	19	2	0	470
11:45 AM	8	105	7	0	10	15	82	0	86	118	8	0	10	21	5	0	475
Total	16	355	34	0	37	78	320	0	360	460	34	0	50	86	18	0	1848
12:00 PM	4	87	8	0	9	17	78	0	109	126	16	0	15	19	5	0	493
12:15 PM	2	92	12	0	10	12	79	0	100	123	6	0	11	19	1	0	467
12:30 PM	1	108	12	0	12	22	98	0	81	107	12	0	11	24	2	0	490
12:45 PM	4	94	16	0	9	20	86	0	110	130	7	0	7	28	6	0	517
Total	11	381	48	0	40	71	341	0	400	486	41	0	44	90	14	0	1967
01:00 PM	0	104	9	0	6	32	84	0	87	121	11	0	9	16	1	0	480
01:15 PM	1	94	7	0	7	14	85	0	97	132	8	0	9	17	3	0	474
Grand Total	31	1091	112	0	108	231	951	0	1110	1378	103	0	121	241	39	0	5516
Apprch %	2.5	88.4	9.1	0	8.4	17.9	73.7	0	42.8	53.2	4	0	30.2	60.1	9.7	0	
Total %	0.6	19.8	2	0	2	4.2	17.2	0	20.1	25	1.9	0	2.2	4.4	0.7	0	
Cars	31	1075	111	0	105	231	939	0	1099	1364	102	0	120	239	39	0	5455
% Cars	100	98.5	99.1	0	97.2	100	98.7	0	99	99	99	0	99.2	99.2	100	0	98.9
Heavy Vehicles	0	16	1	0	3	0	12	0	11	14	1	0	1	2	0	0	61
% Heavy Vehicles	0	1.5	0.9	0	2.8	0	1.3	0	1	1	1	0	0.8	0.8	0	0	1.1

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	4	87	8	0	99	9	17	78	0	104	109	126	16	0	251	15	19	5	0	39	493
12:15 PM	2	92	12	0	106	10	12	79	0	101	100	123	6	0	229	11	19	1	0	31	467
12:30 PM	1	108	12	0	121	12	22	98	0	132	81	107	12	0	200	11	24	2	0	37	490
12:45 PM	4	94	16	0	114	9	20	86	0	115	110	130	7	0	247	7	28	6	0	41	517
Total Volume	11	381	48	0	440	40	71	341	0	452	400	486	41	0	927	44	90	14	0	148	1967
% App. Total	2.5	86.6	10.9	0		8.8	15.7	75.4	0		43.1	52.4	4.4	0		29.7	60.8	9.5	0		
PHF	.688	.882	.750	.000	.909	.833	.807	.870	.000	.856	.909	.935	.641	.000	.923	.733	.804	.583	.000	.902	.951
Cars	11	372	47	0	430	38	71	340	0	449	395	480	41	0	916	43	89	14	0	146	1941
% Cars	100	97.6	97.9	0	97.7	95.0	100	99.7	0	99.3	98.8	98.8	100	0	98.8	97.7	98.9	100	0	98.6	98.7
Heavy Vehicles	0	9	1	0	10	2	0	1	0	3	5	6	0	0	11	1	1	0	0	2	26
% Heavy Vehicles	0	2.4	2.1	0	2.3	5.0	0	0.3	0	0.7	1.3	1.2	0	0	1.2	2.3	1.1	0	0	1.4	1.3

N/S: Washington Street (Route 1A)
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Groups Printed- Cars

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
10:30 AM	2	78	8	0	6	18	57	0	82	82	2	0	5	19	1	0	360
10:45 AM	1	78	6	0	12	18	61	0	83	94	7	0	4	13	2	0	379
Total	3	156	14	0	18	36	118	0	165	176	9	0	9	32	3	0	739
11:00 AM	1	75	4	0	9	18	79	0	75	110	7	0	14	18	5	0	415
11:15 AM	5	80	17	0	7	24	77	0	104	111	8	0	13	27	6	0	479
11:30 AM	2	93	6	0	10	21	79	0	93	117	11	0	13	19	2	0	466
11:45 AM	8	103	7	0	10	15	79	0	84	118	8	0	10	21	5	0	468
Total	16	351	34	0	36	78	314	0	356	456	34	0	50	85	18	0	1828
12:00 PM	4	84	7	0	9	17	78	0	106	125	16	0	15	19	5	0	485
12:15 PM	2	90	12	0	10	12	79	0	100	122	6	0	11	19	1	0	464
12:30 PM	1	106	12	0	11	22	97	0	80	105	12	0	11	24	2	0	483
12:45 PM	4	92	16	0	8	20	86	0	109	128	7	0	6	27	6	0	509
Total	11	372	47	0	38	71	340	0	395	480	41	0	43	89	14	0	1941
01:00 PM	0	102	9	0	6	32	83	0	87	121	11	0	9	16	1	0	477
01:15 PM	1	94	7	0	7	14	84	0	96	131	7	0	9	17	3	0	470
Grand Total	31	1075	111	0	105	231	939	0	1099	1364	102	0	120	239	39	0	5455
Apprch %	2.5	88.3	9.1	0	8.2	18.1	73.6	0	42.8	53.2	4	0	30.2	60.1	9.8	0	
Total %	0.6	19.7	2	0	1.9	4.2	17.2	0	20.1	25	1.9	0	2.2	4.4	0.7	0	

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	4	84	7	0	95	9	17	78	0	104	106	125	16	0	247	15	19	5	0	39	485
12:15 PM	2	90	12	0	104	10	12	79	0	101	100	122	6	0	228	11	19	1	0	31	464
12:30 PM	1	106	12	0	119	11	22	97	0	130	80	105	12	0	197	11	24	2	0	37	483
12:45 PM	4	92	16	0	112	8	20	86	0	114	109	128	7	0	244	6	27	6	0	39	509
Total Volume	11	372	47	0	430	38	71	340	0	449	395	480	41	0	916	43	89	14	0	146	1941
% App. Total	2.6	86.5	10.9	0		8.5	15.8	75.7	0		43.1	52.4	4.5	0		29.5	61	9.6	0		
PHF	.688	.877	.734	.000	.903	.864	.807	.876	.000	.863	.906	.938	.641	.000	.927	.717	.824	.583	.000	.936	.953

N/S: Washington Street (Route 1A)
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Groups Printed- Heavy Vehicles

	Washington Street (Route 1A) From North				East Street From East				Washington Street (Route 1A) From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
10:30 AM	0	1	0	0	0	0	1	0	1	2	0	0	0	0	0	0	5
10:45 AM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	3
Total	0	1	0	0	0	0	3	0	1	3	0	0	0	0	0	0	8
11:00 AM	0	2	0	0	1	0	0	0	1	2	0	0	0	0	0	0	6
11:15 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	3
11:30 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	4
11:45 AM	0	2	0	0	0	0	3	0	2	0	0	0	0	0	0	0	7
Total	0	4	0	0	1	0	6	0	4	4	0	0	0	1	0	0	20
12:00 PM	0	3	1	0	0	0	0	0	3	1	0	0	0	0	0	0	8
12:15 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
12:30 PM	0	2	0	0	1	0	1	0	1	2	0	0	0	0	0	0	7
12:45 PM	0	2	0	0	1	0	0	0	1	2	0	0	1	1	0	0	8
Total	0	9	1	0	2	0	1	0	5	6	0	0	1	1	0	0	26
01:00 PM	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3
01:15 PM	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	4
Grand Total	0	16	1	0	3	0	12	0	11	14	1	0	1	2	0	0	61
Apprch %	0	94.1	5.9	0	20	0	80	0	42.3	53.8	3.8	0	33.3	66.7	0	0	
Total %	0	26.2	1.6	0	4.9	0	19.7	0	18	23	1.6	0	1.6	3.3	0	0	

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	3	1	0	4	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	8
12:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
12:30 PM	0	2	0	0	2	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	7
12:45 PM	0	2	0	0	2	1	0	0	0	1	1	2	0	0	3	1	1	0	0	2	8
Total Volume	0	9	1	0	10	2	0	1	0	3	5	6	0	0	11	1	1	0	0	2	26
% App. Total	0	90	10	0		66.7	0	33.3	0		45.5	54.5	0	0		50	50	0	0		
PHF	.000	.750	.250	.000	.625	.500	.000	.250	.000	.375	.417	.750	.000	.000	.688	.250	.250	.000	.000	.250	.813

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

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

File Name : 154702 BBB
Site Code : 2152086
Start Date : 10/17/2015
Page No : 1

Groups Printed- Peds and Bikes

	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	Peds EB	Peds WB	Right	Thru	Left	Peds SB	Peds NB	Right	Thru	Left	Peds WB	Peds EB	Right	Thru	Left	Peds NB	Peds SB	Int. Total
10:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
10:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	3
11:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	0	6
11:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	4	7
Total	0	0	0	1	0	0	0	0	1	1	0	0	0	5	3	0	0	0	3	5	19
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0	8
12:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3
Total	0	1	0	0	1	0	0	0	0	1	0	1	0	4	1	0	0	0	4	2	15
01:00 PM	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	6
01:15 PM	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	2	3	9
Grand Total	0	1	0	3	4	0	0	0	3	3	0	1	0	10	5	0	0	0	10	12	52
Apprch %	0	12.5	0	37.5	50	0	0	0	50	50	0	6.2	0	62.5	31.2	0	0	0	45.5	54.5	
Total %	0	1.9	0	5.8	7.7	0	0	0	5.8	5.8	0	1.9	0	19.2	9.6	0	0	0	19.2	23.1	

	Washington Street (Route 1A) From North						East Street From East						Washington Street (Route 1A) From South						School Street From West						
Start Time	Right	Thru	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Peds SB	Peds NB	App. Total	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 01:15 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 11:30 AM																									
11:30 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	2	4
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	4	4	7
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1	2
12:15 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	3	0	3	8
Total Volume	0	1	0	1	1	3	0	0	0	0	0	0	0	0	0	6	2	8	0	0	0	4	6	10	21
% App. Total	0	33.3	0	33.3	33.3		0	0	0	0	0		0	0	0	75	25		0	0	0	40	60		
PHF	.000	.250	.000	.250	.250	.375	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.500	.667	.000	.000	.000	.333	.375	.625	.656

N/S: Washington Street (Route 1A)
E/W: East Street/ School Street
City, State: Westwood, MA
Client: Bayside/ K. Cram

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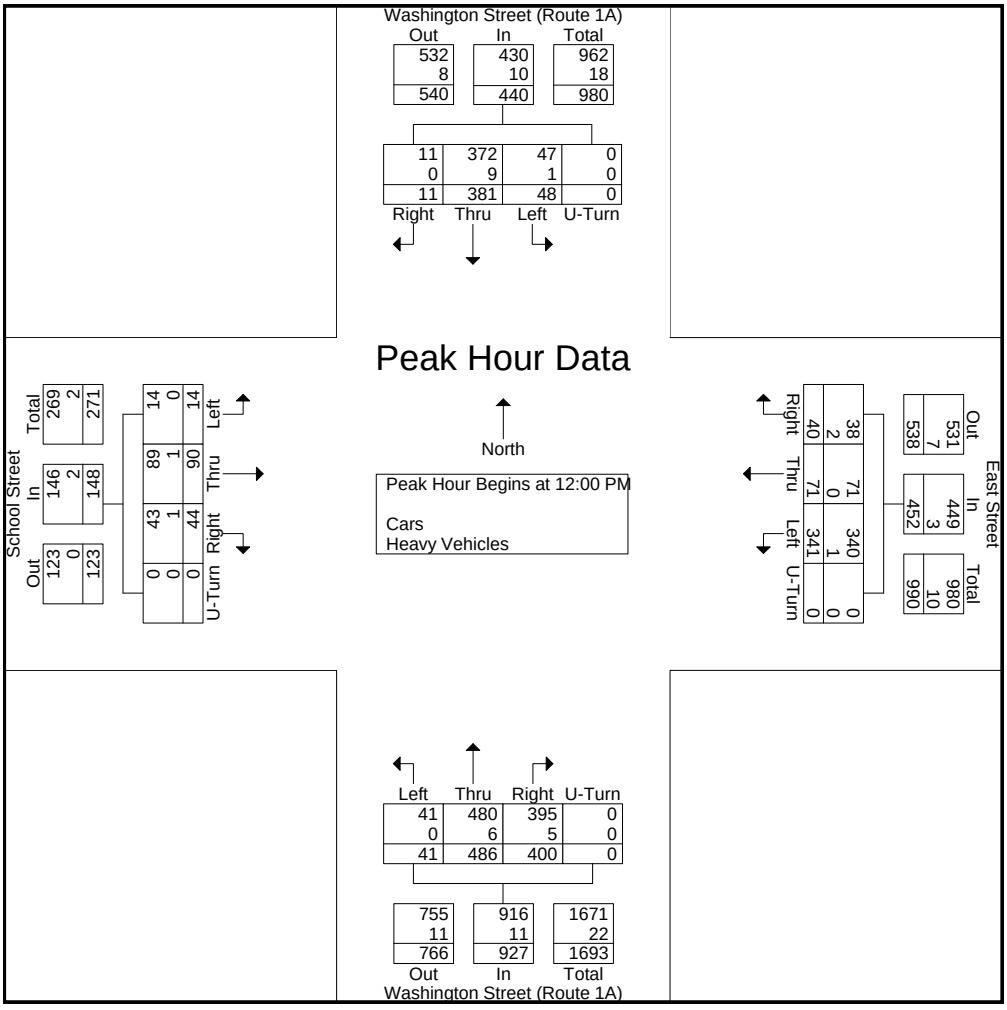
	Washington Street (Route 1A) From North					East Street From East					Washington Street (Route 1A) From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	4	87	8	0	99	9	17	78	0	104	109	126	16	0	251	15	19	5	0	39	493
12:15 PM	2	92	12	0	106	10	12	79	0	101	100	123	6	0	229	11	19	1	0	31	467
12:30 PM	1	108	12	0	121	12	22	98	0	132	81	107	12	0	200	11	24	2	0	37	490
12:45 PM	4	94	16	0	114	9	20	86	0	115	110	130	7	0	247	7	28	6	0	41	517
Total Volume	11	381	48	0	440	40	71	341	0	452	400	486	41	0	927	44	90	14	0	148	1967
% App. Total	2.5	86.6	10.9	0		8.8	15.7	75.4	0		43.1	52.4	4.4	0		29.7	60.8	9.5	0		
PHF	.688	.882	.750	.000	.909	.833	.807	.870	.000	.856	.909	.935	.641	.000	.923	.733	.804	.583	.000	.902	.951
Cars	11	372	47	0	430	38	71	340	0	449	395	480	41	0	916	43	89	14	0	146	1941
% Cars	100	97.6	97.9	0	97.7	95.0	100	99.7	0	99.3	98.8	98.8	100	0	98.8	97.7	98.9	100	0	98.6	98.7
Heavy Vehicles	0	9	1	0	10	2	0	1	0	3	5	6	0	0	11	1	1	0	0	2	26
% Heavy Vehicles	0	2.4	2.1	0	2.3	5.0	0	0.3	0	0.7	1.3	1.2	0	0	1.2	2.3	1.1	0	0	1.4	1.3



BAYSIDE ENGINEERING

SEASONAL ADJUSTMENT WORKSHEETS

BAYSIDE ENGINEERING

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SECTION I - CONTINUOUS COUNTING STATION MONTHLY AVERAGE DAILY TRAFFIC

STATION 415 - NEWTON - RTE.I-95 (128) - SOUTH OF RTE.I-90

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
06	126,000	126,906	136,149	136,322	140,602	142,863	135,563	142,863	140,973	*141,211*	138,206	133,710	136,781

STATION 650 - ATTLEBORO - RTE.I-95 - NORTH OF RTE.I-295

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
05	102,000	104,846	106,526	112,301	112,910	114,672	112,859	117,007	110,380	110,013	108,507	105,426	109,787
	0%	-2%	0%	-2%	-8%	-2%	-4%	-1%	2%	0%	1%	1%	-1%
06	101,976	102,689	106,896	110,011	103,394	112,383	108,797	115,442	112,309	110,367	110,106	105,979	108,362
	0%	0%	0%	-1%	9%	2%	2%	1%	0%	2%	-4%	-5%	0%
07	101,932	103,136	106,995	109,421	112,831	114,509	110,841	116,773	112,105	112,035	105,590	100,497	108,889
	-5%	-1%	-1%	-1%	-3%	-6%	-3%	-4%	-5%	-3%	-2%	-3%	-3%
08	97,248	102,043	105,609	108,785	109,148	108,118	107,032	111,575	106,844	108,990	103,445	97,125	105,497
	-10%	-3%	-3%	1%	1%	4%	4%	0%	2%	-1%	1%	2%	0%
09	87,099	99,462	102,620	109,991	110,370	112,000	111,000	111,112	109,390	107,494	104,099	99,543	105,348

STATION 4118 - LEXINGTON - RTE.I-95 - NORTH OF RTE. 2A

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
06	156,000	158,000	158,611	157,414	160,279	161,390	159,906	164,944	165,971	164,465	158,286	151,556	159,735
	-1%	-3%	-2%	-1%	1%	1%	-1%	1%	-4%	0%	-3%	-8%	-2%
07	155,113	153,838	155,532	155,246	162,424	163,391	158,026	165,812	159,259	164,227	154,304	138,731	157,159
	-4%	-5%	0%	2%	-2%	-2%	0%	-5%	-1%	-2%	-4%	0%	-2%
08	148,307	146,065	155,000	157,894	158,459	159,757	157,487	157,557	157,046	160,802	147,668	138,475	153,710
	-1%	1%	-5%	-1%	-2%	1%	0%	1%	-5%	-1%	1%	6%	0%
09	146,747	148,146	147,704	156,341	155,155	161,371	158,076	158,995	149,923	159,664	149,557	146,893	153,214

STATION 6189 - DEDHAM - RTE.I-95 (128) - NORTH OF RTE.109

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
05	138,000	132,174	136,654	142,226	145,240	152,638	138,350	146,758	142,964	139,299	131,242	132,683	139,852

1,364,480 1,348,968

October is 1.1 % above average

ITALICS = ESTIMATED DATA

MADT

BAYSIDE ENGINEERING

MOTOR VEHICLE CRASH DATA

BAYSIDE ENGINEERING

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Crash Number	Crash Date	Crash Time	Crash Severity	Maximum Injury Severity Reported	Number of NonFatal Injuries	Number of Fatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	First Harmful Event	First Harmful Event Location	Vehicle Configuration	Driver Contributing Codes	Road Surface	Ambient Light	Weather Condition	Street Number	Roadway	X	Y
2683444	1/15/2011	9:24 AM	Property damage only (none injured)	No injury	0	0	2	Angle	V1: Making U-turn / V2:Travelling straight ahead	V1:N / V2:N	Collision with motor vehicle in traffic	Roadway	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	D1:(Failed to yield right of way) D2:(No improper driving)	Wet	Daylight	Clear		WASHINGTON STREET / EAST STREET	225742.4614	885418.2366
2743266	7/13/2011	3:21 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, opposite direction	V1: Turning left / V2:Parked	V1:E / V2:8	Collision with parked motor vehicle	Outside roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Failure to keep in proper lane or running off road) D2:()	Dry	Daylight	Cloudy	278	WASHINGTON ST	225744.725	885432.1834
2759833	8/23/2011	4:17 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, same direction	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:N / V2:N	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Unknown) D2:(Unknown)	Dry	Daylight	Clear	278	WASHINGTON ST	225744.725	885432.1834
2765843	9/4/2011	6:40 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:N / V2:N	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	D1:(No improper driving) D2:(Followed too closely)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225742.4614	885418.2366
2869545	1/6/2012	5:07 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Turning right / V2:Travelling straight ahead	V1:E / V2:E	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(No improper driving) D2:(Inattention)	Dry	Dark - lighted roadway	Clear		WASHINGTON ST / SCHOOL ST	225742.4614	885418.2366
3008337	3/15/2012	12:39 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, same direction	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:W / V2:W	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Swerving or avoiding due to wind, slippery surface, vehicle, object, non-motorist in roadway, etc) D2:(No improper driving)	Dry	Daylight	Cloudy		WASHINGTON ST / EAST ST	225743.1152	885416.9996
3156345	6/26/2012	8:33 AM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Parked / V2:Parked	V1:E / V2:E	Collision with parked motor vehicle	Outside roadway	V1:(Passenger car) V2:(Passenger car)	D1:(No improper driving) D2:(No improper driving)	Dry	Daylight	Cloudy	278	WASHINGTON ST	225746.2722	885431.9529
3240141	7/26/2012	5:33 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Slowing or stopped in traffic / V2:Changing lanes	V1:S / V2:S	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(No improper driving) D2:(Made an improper turn)	Dry	Daylight	Clear		WASHINGTON ST / SCHOOL ST	225743.1152	885416.9996
3361023	2/7/2013	9:36 PM	Non-fatal injury	Non-fatal injury - Possible	2	0	2	Angle	V1: Travelling straight ahead / V2:Turning left	V1:S / V2:W	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Inattention) D2:(Failed to yield right of way)	Dry	Dark - lighted roadway	Clear		WASHINGTON ST / SCHOOL ST	225743.1152	885416.9996
3422478	5/6/2013	5:46 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Backing / V2:Turning left	V1:E / V2:W	Collision with motor vehicle in traffic	Outside roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Inattention) D2:(Inattention)	Dry	Daylight	Clear	280	WASHINGTON ST	225743.4646	885418.6545
3422633	5/1/2013	11:59 AM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, opposite direction	V1: Turning left / V2:Parked	V1:E / V2:W	Collision with parked motor vehicle	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Inattention) D2:()	Dry	Daylight	Clear	278	WASHINGTON ST	225746.2722	885431.9529
3422634	5/2/2013	3:39 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, same direction	V1: Travelling straight ahead / V2:Changing lanes	V1:W / V2:W	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(No improper driving) D2:(Inattention),(Failure to keep in proper lane or running off road)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225743.1152	885416.9996
3422636	5/5/2013	2:29 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, same direction	V1: Travelling straight ahead / V2:Changing lanes	V1:S / V2:S	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(No improper driving) D2:(Failed to yield right of way),(Visibility obstructed)	Dry	Daylight	Clear		WASHINGTON ST / SCHOOL ST	225743.1152	885416.9996
3452949	5/29/2013	10:33 AM	Property damage only (none injured)	No injury	0	0	2	Angle	V1: Turning left / V2:Parked	V1:E / V2:W	Collision with parked motor vehicle	Roadway	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	D1:(No improper driving) D2:()	Wet	Daylight	Cloudy	278	WASHINGTON ST	225746.2722	885431.9529
3452959	6/6/2013	6:22 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Backing / V2:Parked	V1:S / V2:N	Collision with parked motor vehicle	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Cloudy	278	WASHINGTON ST	225746.2722	885431.9529
3527648	6/21/2013	6:11 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:S / V2:S	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(No improper driving) D2:(Distracted),(Followed too closely)	Dry	Daylight	Clear		WASHINGTON ST / SCHOOL ST	225743.1152	885416.9996
3589145	9/5/2013	7:29 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, same direction	V1: Overtaking/passing / V2:Travelling straight ahead	V1:N / V2:N	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Single-unit truck (3-or-more axles))	D1:(Failed to yield right of way) D2:(No improper driving)	Dry	Dark - lighted roadway	Clear	278	WASHINGTON STREET	225746.2722	885431.9529
3645752	10/29/2013	12:15 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:W / V2:E	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	D1:(No improper driving) D2:(Inattention),(Followed too closely)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225743.1152	885416.9996

Crash Number	Crash Date	Crash Time	Crash Severity	Maximum Injury Severity Reported	Number of NonFatal Injuries	Number of Fatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	First Harmful Event	First Harmful Event Location	Vehicle Configuration	Driver Contributing Codes	Road Surface	Ambient Light	Weather Condition	Street Number	Roadway	X	Y
3737058	2/8/2014	2:52 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, same direction	V1: Other / V2:Parked	V1:E / V2:E	Collision with parked motor vehicle	Outside roadway	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	D1:(No improper driving) D2:(No improper driving)	Dry	Daylight	Clear	278	WASHINGTON ST	225746.2722	885431.9529
3788835	3/31/2014	3:15 PM	Property damage only (none injured)	No injury	0	0	2	Sideswipe, opposite direction	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:W / V2:S	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(No improper driving) D2:(Failed to yield right of way)	Dry	Daylight	Clear	278	WASHINGTON ST	225746.2722	885431.9529
3866734	5/30/2014	4:52 PM	Property damage only (none injured)	No injury	0	0	1	Sideswipe, same direction	V1: Travelling straight ahead	V1:N	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car)	D1:(No improper driving)	Dry	Daylight	Clear	278	WASHINGTON ST	225746.2722	885431.9529
3967692	9/25/2014	1:07 PM	Not Reported	Not reported	0	0	1	Sideswipe, opposite direction	V1: Parked	V1:E	Collision with parked motor vehicle	Outside roadway	V1:(Passenger car)	D1:()	Dry	Daylight	Clear	278	WASHINGTON ST	225746.2722	885431.9529
3967724	10/24/2014	6:17 PM	Property damage only (none injured)	No injury	0	0	2	Angle	V1: Turning left / V2:Travelling straight ahead	V1:E / V2:E	Collision with motor vehicle in traffic	Roadway	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	D1:(Made an improper turn) D2:(No improper driving)	Dry	Dark - lighted roadway	Cloudy	278	WASHINGTON ST	225746.2722	885431.9529
4001284	11/18/2014	8:57 AM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Turning right / V2:Slowing or stopped in traffic	V1:N / V2:N	Collision with motor vehicle in traffic	Roadway	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	D1:(Failure to keep in proper lane or running off road),(Failed to yield right of way) D2:(No improper driving)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225743.1152	885416.9996
4091084	4/16/2015	1:43 PM	Property damage only (none injured)	No injury	0	0	2	Angle	V1: Turning left / V2:Travelling straight ahead	V1:E / V2:N	Collision with motor vehicle in traffic	Roadway	V1:(Other) V2:(Passenger car)	D1:(Failed to yield right of way) D2:(No improper driving)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225743.1152	885416.9996
4091108	5/6/2015	5:24 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:W / V2:W	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Unknown) D2:(Unknown)	Dry	Daylight	Clear		EAST ST / WASHINGTON ST	225743.1152	885416.9996
4092825	6/23/2015	6:01 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Turning left / V2:Turning left	V1:S / V2:S	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225743.1152	885416.9996
4092842	7/6/2015	4:14 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Turning left / V2:Travelling straight ahead	V1:E / V2:S	Collision with motor vehicle in traffic	Roadway	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	D1:(No improper driving) D2:(Followed too closely)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225743.1152	885416.9996
4092893	8/27/2015	6:18 PM	Property damage only (none injured)	No injury	0	0	2	Head-on	V1: Turning left / V2:Travelling straight ahead	V1:W / V2:E	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Passenger car)	D1:(Failed to yield right of way) D2:(Swerving or avoiding due to wind, slippery surface, vehicle, object, non-motorist in roadway, etc)	Dry	Daylight	Clear		EAST ST / WASHINGTON ST	225743.1152	885416.9996
4092919	9/20/2015	12:51 PM	Property damage only (none injured)	No injury	0	0	2	Rear-end	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:N / V2:N	Collision with motor vehicle in traffic	Roadway	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	D1:(No improper driving) D2:(Inattention),(Followed too closely)	Dry	Daylight	Clear		WASHINGTON ST / EAST ST	225743.1152	885416.9996

SELECT [Crash Number], [Crash Date], [Crash Time], [Crash Hour], [City/Town], [Locality], [RPA Abbreviation], [MassHighway District], [Crash Severity], [Maximum Injury Severity Reported], [Number of NonFatal Injuries], [Number of Fatal Injuries], [Number of Vehicles], [Manner of Collision], [Vehicle Action Prior to Crash], [Vehicle Travel Directions], [First Harmful Event], [First Harmful Event Location], [Most

This query was also restricted by a

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Westwood, MA COUNT DATE : October 2015

DISTRICT : 6 UNSIGNALIZED : SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : East Street/School Street

INTERSECTION DIAGRAM (Label Approaches)

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	1,025	938	190	756		**2,909**

" K " FACTOR : **0.098** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **29,684**

TOTAL # OF CRASHES : 30 # OF YEARS : 5.0 AVERAGE # OF CRASHES PER YEAR (**A**) : **6.00**

CRASH RATE CALCULATION : **0.55** RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

BAYSIDE ENGINEERING

TRIP GENERATION DATA

BAYSIDE ENGINEERING

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Existing Day Care, Westwood, MA

Land Use Code (LUC) 565 - Day Care Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs.: 1,000 Square Feet Gross Floor Area
Independent Variable (X): 4.000 ksf

AVERAGE WEEKDAY DAILY

T = 47.62 * (X) 27 Studies, Avg size = 5 ksf
T = 47.62 * (4.000) R^2 = Not Given AR = 47.62
T = 190.48
T = 190 vehicle trips Using Avg Rate 190
with 50% (95 vph) entering and 50% (95 vph) exiting. (Avg Rate)
23.75 23.75

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 11.00 * (X) 89 Studies, Avg size = 5 ksf
T = 11.00 * (4.000) R^2 = Not Given AR = 11.00
T = 44.00
T = 44 vehicle trips Using Avg Rate 44
with 53% (23 vph) entering and 47% (21 vph) exiting. (Avg Rate)
5.75 5.25

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 11.73 * (X) 84 Studies, Avg size = 4 ksf
T = 11.73 * (4.000) R^2 = Not Given AR = 11.73
T = 46.92
T = 47 vehicle trips Using Avg Rate 47
with 53% (25 vph) entering and 47% (22 vph) exiting. (Avg Rate)
6.25 5.50

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 11.12 * (X) 90 Studies, Avg size = 5 ksf
T = 11.12 * (4.000) R^2 = Not Given AR = 11.12
T = 44.48
T = 44 vehicle trips Using Avg Rate 44
with 47% (21 vph) entering and 53% (23 vph) exiting. (Avg Rate)
5.25 5.75

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 11.82 * (X) 84 Studies, Avg size = 4 ksf
T = 11.82 * (4.000) R^2 = Not Given AR = 11.82
T = 47.28
T = 47 vehicle trips Using Avg Rate 47 trips/ksf)
with 47% (21 vph) entering and 53% (26 vph) exiting.
5.25 6.50

Existing Day Care, Westwood, MA

Land Use Code (LUC) 565 - Day Care Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs.: 1,000 Square Feet Gross Floor Area
Independent Variable (X): 4.000 ksf

SATURDAY DAILY

Limited Data
5 Studies, Avg size = 5 ksf
R^2 = Not Given AR = 6.22

T = 6.22 * (X)
T = 6.22 * (4.000)
T = 24.88
T = 24 vehicle trips Using Avg Rate 24
with 50% (12 vph) entering and 50% (12 vph) exiting. (Avg Rate)
3.00 3.00

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

Limited Data
5 Studies, Avg size = 5 ksf
R^2 = Not Given AR = 1.70

T = 1.70 * (X)
T = 1.70 * (4.000)
T = 6.80
T = 7 vehicle trips Using Avg Rate 7 trips/ksf)
with 63% (3 vph) entering and 37% (4 vph) exiting.
0.75 1.00

SUNDAY DAILY

Limited Data
5 Studies, Avg size = 5 ksf
R^2 = Not Given AR = 5.84

T = 5.84 * (X)
T = 5.84 * (4.000)
T = 23.36
T = 24 vehicle trips Using Avg Rate 24
with 50% (12 vph) entering and 50% (12 vph) exiting. (Avg Rate)
3.00 3.00

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

Limited Data
5 Studies, Avg size = 5 ksf
R^2 = Not Given AR = 1.75

T = 1.75 * (X)
T = 1.75 * (4.000)
T = 7.00
T = 7 vehicle trips Using Avg Rate 7 trips/ksf)
with 54% (4 vph) entering and 46% (3 vph) exiting.
1.00 0.75

Existing Retail, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 1.040 ksf

AVERAGE WEEKDAY DAILY

T = 37.75 147 Studies, Avg sf of GFA = 453 ksf
T = 37.75 * (1.040)
T = 39.26
T = 40 vehicle trips
with 50% (20 vpd) entering and 50% (20 vpd) exiting.
19.23 19.23

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X) 84 Studies, Avg sf of GFA = 351 ksf
T = 0.94 * (1.040)
T = 0.98
T = 1 vehicle trips
with 62% (1 vph) entering and 38% (0 vph) exiting.
0.60 0.37

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 * X 261 Studies, Avg sf of GFA = 327 ksf
T = 3.81 * (1.040)
T = 3.96
T = 4 vehicle trips
with 48% (2 vph) entering and 52% (2 vph) exiting.
1.85 2.00

SATURDAY DAILY

T = 46.12 * X 58 Studies, Avg sf of GFA = 602 ksf
T = 46.12 * (1.040)
T = 47.96
T = 48 vehicle trips
with 50% (24 vpd) entering and 50% (24 vpd) exiting.
23.08 23.08

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 * X 119 Studies, Avg sf of GFA = 416 ksf
T = 4.50 * (1.040)
T = 4.68
T = 5 vehicle trips
with 52% (3 vph) entering and 48% (2 vph) exiting.
2.34 2.16

Existing Retail, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 1.040 ksf

SUNDAY DAILY

T = 21.10 * X 30 Studies, Avg sf of GFA = 509 ksf
T = 21.10 * (1.040)
T = 21.94
T = 22 vehicle trips
with 50% (11 vpd) entering and 50% (11 vpd) exiting.
10.58 10.58

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 2.79 * X 24 Studies, Avg sf of GFA = 382 ksf
T = 2.79 * (1.040)
T = 2.90
T = 3 vehicle trips
with 49% (1 vph) entering and 51% (2 vph) exiting.
1.41 1.47

Existing Pharmacy, Westwood, MA

Land Use Code (LUC) 880 - Pharmacy/Drugstore without Drive-Through Window
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: 1000 Sq. Ft. GFA
Independent Variable (X): 7.510

AVERAGE WEEKDAY DAILY

Ln T = 0.99 Ln (X) + 4.51 — 6 Studies, Avg size = 11 ksf
Ln T = 0.99 Ln (7.510) + 4.51 — R^2 = 0.73 AR = 90.08
Ln T = 6.51
T = 669.19
T = 670 vehicle trips
with 50% (335 vph) entering and 50% (335 vph) exiting.
44.61 44.61

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 10.22 * (X) -75.70 — 7 Studies, Avg size = 10 ksf
T = 10.22 * (7.510) - 75.70 — R^2 = 0.89 AR = 2.94
T = 1.05
T = 1 vehicle trips Using Avg Rate 22
with 65% (1 vph) entering and 35% (0 vph) exiting. (Formula)
with 65% (14 vph) entering and 35% (8 vph) exiting. (Avg Rate)

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 12.04 * (X) -46.13 — 8 Studies, Avg size = 11 ksf
T = 12.04 * (7.510) - 46.13 — R^2 = 0.89 AR = 7.71
T = 44.29
T = 44 vehicle trips Using Avg Rate 58
with 50% (22 vph) entering and 50% (22 vph) exiting. (Formula)
with 50% (29 vph) entering and 50% (29 vph) exiting. (Avg Rate)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 8.51 * (X) — 13 Studies, Avg size = 11 ksf
T = 8.51 * (7.510) — R^2 = Not Given AR = 8.51
T = 63.91
T = 64 vehicle trips Using Avg Rate 64
with 49% (28 vph) entering and 51% (36 vph) exiting. (Avg Rate)
3.73 4.79

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 11.07 * (X) — 7 Studies, Avg size = 11 ksf
T = 11.07 * (7.510) — R^2 = Not Given AR = 11.07
T = 83.14
T = 83 vehicle trips Using Avg Rate 83
with 50% (42 vph) entering and 50% (41 vph) exiting. (Avg Rate)
5.59 5.46

Existing Pharmacy, Westwood, MA

Land Use Code (LUC) 880 - Pharmacy/Drugstore without Drive-Through Window
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: 1000 Sq. Ft. GFA
Independent Variable (X): 7.510

SATURDAY DAILY

No Data

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 10.68 * (X) 3 Studies, Avg size = 10 ksf
T = 10.68 * (7.510) R^2 = Not Given AR = 10.68
T = 80.21
T = 80 vehicle trips Using Avg Rate 80
with 49% (39 vph) entering and 51% (41 vph) exiting. (Avg Rate)
5.19 5.46

SUNDAY DAILY

No Data

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

No Data

Existing Tailor Shop, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 1.505 ksf

AVERAGE WEEKDAY DAILY

T = 37.75 147 Studies, Avg sf of GFA = 453 ksf
T = 37.75 * (1.505)
T = 56.81
T = 56 vehicle trips
with 50% (28 vpd) entering and 50% (28 vpd) exiting.
18.6 18.6

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X) 84 Studies, Avg sf of GFA = 351 ksf
T = 0.94 * (1.505)
T = 1.41
T = 1 vehicle trips
with 62% (1 vph) entering and 38% (0 vph) exiting.
0.41 0.25

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 * X 261 Studies, Avg sf of GFA = 327 ksf
T = 3.81 * (1.505)
T = 5.73
T = 6 vehicle trips
with 48% (3 vph) entering and 52% (3 vph) exiting.
1.91 2.07

SATURDAY DAILY

T = 46.12 * X 58 Studies, Avg sf of GFA = 602 ksf
T = 46.12 * (1.505)
T = 69.41
T = 70 vehicle trips
with 50% (35 vpd) entering and 50% (35 vpd) exiting.
23.26 23.26

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 * X 119 Studies, Avg sf of GFA = 416 ksf
T = 4.50 * (1.505)
T = 6.77
T = 7 vehicle trips
with 52% (4 vph) entering and 48% (3 vph) exiting.
2.34 2.16

Existing Tailor Shop, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 1.505 ksf

SUNDAY DAILY

T = 21.10 * X 30 Studies, Avg sf of GFA = 509 ksf
T = 21.10 * (1.505)
T = 31.76
T = 32 vehicle trips
with 50% (16 vpd) entering and 50% (16 vpd) exiting.
10.63 10.63

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 2.79 * X 24 Studies, Avg sf of GFA = 382 ksf
T = 2.79 * (1.505)
T = 4.20
T = 4 vehicle trips
with 49% (2 vph) entering and 51% (2 vph) exiting.
1.30 1.36

Existing Residential, Westwood, MA

Land Use Code (LUC) 210 - Single-Family Detached housing
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 1

AVERAGE WEEKDAY DAILY

T = 9.44 * (X) 159 Studies, Avg size = 264 DU
T = 9.44 * (1)
T = 9.44
T = 10 vehicle trips
with 50% (5 vph) entering and 50% (5 vph) exiting. (Avg Rate)
5.00 5.00

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.74 * (X) 173 Studies, Avg size = 219 DU
T = 0.74 * (1)
T = 0.74
T = 1 vehicle trips
with 25% (0 vph) entering and 75% (1 vph) exiting. (Avg Rate)
0.00 1.00

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 0.76 * (X) 157 Studies, Avg size = 231 DU
T = 0.76 * (1)
T = 0.76
T = 1 vehicle trips
with 26% (0 vph) entering and 74% (1 vph) exiting. (Avg Rate)
0.00 1.00

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.99 * X 190 Studies, Avg size = 242 DU
T = 0.99 * 1
T = 0.99
T = 1 vehicle trips
with 63% (1 vph) entering and 37% (0 vph) exiting.
1.00 0.00

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 1.00 * X 165Studies, Avg size = 217 DU
T = 1.00 * 0
T = 1.00
T = 1 vehicle trips
with 64% (1 vph) entering and 36% (0 vph) exiting.
1.00 0.00

Existing Residential, Westwood, MA

Land Use Code (LUC) 210 - Single-Family Detached housing
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 1

SATURDAY DAILY

T = 9.54 * X 52 Studies, Avg size = 207 DU
T = 9.54 * 1
T = 9.54
T = 10 vehicle trips
with 50% (5 vpd) entering and 50% (5 vpd) exiting.
5.00 5.00

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.93 * X 31 Studies, Avg size = 188 DU
T = 0.93 * 1
T = 0.93
T = 1 vehicle trips
with 54% (1 vph) entering and 46% (0 vph) exiting.
1.00 0.00

SUNDAY DAILY

T = 8.55 * X 51 Studies, Avg size = 209 DU
T = 8.55 * 1
T = 8.55
T = 8 vehicle trips
with 50% (4 vpd) entering and 50% (4 vpd) exiting.
4.00 4.00

SUNDAY PEAK HOUR OF GENERATOR

T = 0.85 * X 31 Studies, Avg size = 193 DU
T = 0.85 * 1
T = 0.85
T = 1 vehicle trips
with 53% (1 vph) entering and 47% (0 vph) exiting.

Existing Library, Westwood, MA

Land Use Code (LUC) 590 - Library
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 1.962

AVERAGE WEEKDAY DAILY

Ln T = 0.99 Ln (X) + 4.28 — 6 Studies, Avg size = 16 ksf
Ln T = 0.99 Ln (1.962) + 4.28 — R^2 = 0.97 AR = 72.05
Ln T = 4.95
T = 140.78
T = 140 vehicle trips
with 50% (70 vph) entering and 50% (70 vph) exiting.
35.68 35.68

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 1.75 * (X) - 14.59 — 4 Studies, Avg size = 19 ksf
T = 1.75 * (1.962) - 14.59 — R^2 = 0.86 AR = 1.00
T = -72.27
T = -72 vehicle trips Using Avg Rate 2
with 71% (-51 vph) entering and 29% (-21 vph) exiting. (Formula)
with 71% (1 vph) entering and 29% (1 vph) exiting. (Avg Rate)

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 7.21 * (X) - 14.35 — 7 Studies, Avg size = 15 ksf
T = 7.21 * (1.962) - 14.35 — R^2 = 0.89 AR = 6.25
T = -0.20
T = 0 vehicle trips Using Avg Rate 12
with 49% (0 vph) entering and 51% (0 vph) exiting. (Formula)
with 49% (6 vph) entering and 51% (6 vph) exiting. (Avg Rate)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.33 * (X) - 17.13 — 9 Studies, Avg size = 15 ksf
T = 9.33 * (1.962) - 17.13 — R^2 =0.75 AR = 8.16
T = 1.18
T = 1 vehicle trips Using Avg Rate 16
with 48% (0 vph) entering and 52% (1 vph) exiting. (Formula)
with 48% (8 vph) entering and 52% (8 vph) exiting. (Avg Rate)
4.08 4.08

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 8.48 * (X) + 0.80 — 7 Studies, Avg size = 15 ksf
T = 8.48 * (1.962) + 0.80 — R^2 = 0.93 AR = 8.53
T = 17.44
T = 17 vehicle trips Using Avg Rate 17
with 52% (9 vph) entering and 48% (8 vph) exiting. (Formula)
with 52% (9 vph) entering and 48% (8 vph) exiting. (Avg Rate)
4.59 4.08

Existing Library, Westwood, MA

Land Use Code (LUC) 590 - Library
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 1.962

SATURDAY DAILY Limited Data
T = 80.09 * (X) 2 Studies, Avg size = 23 ksf
T = 80.09 * (1.962) R^2 = Not Given AR = 80.09
T = 157.14
T = 158 vehicle trips Using Avg Rate 157
with 50% (79 vph) entering and 50% (79 vph) exiting. (Avg Rate)
40.27 40.27

SATURDAY MIDDAY PEAK HOUR OF GENERATOR
T = 12.60 * (X) Limited Data
T = 12.60 * (1.962) 2 Studies, Avg size = 23 ksf
T = 24.72 R^2 = Not Given AR = 12.60.
T = 25 vehicle trips Using Avg Rate 25
with 53% (13 vph) entering and 47% (12 vph) exiting. (Avg Rate)
6.63 6.12

SUNDAY DAILY Limited Data
T = 42.09 * (X) 2 Studies, Avg size = 23 ksf
T = 42.09 * (1.962) R^2 = Not Given AR = 42.09
T = 82.58
T = 82 vehicle trips Using Avg Rate 82
with 50% (41 vph) entering and 50% (41 vph) exiting. (Avg Rate)
20.90 20.90

SUNDAY MIDDAY PEAK HOUR OF GENERATOR
T = 9.38 * (X) Limited Data
T = 9.38 * (2 Studies, Avg size = 23 ksf
T = 18.40 R^2 = Not Given AR = 9.38
T = 18 vehicle trips Using Avg Rate 18
with 53% (10 vph) entering and 47% (8 vph) exiting. (Avg Rate)
5.10 4.08

Existing Barber Shop, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 0.600 ksf

AVERAGE WEEKDAY DAILY

T = 37.75 147 Studies, Avg sf of GFA = 453 ksf
T = 37.75 * (0.600)
T = 22.65
T = 22 vehicle trips
with 50% (11 vpd) entering and 50% (11 vpd) exiting.
18.33 18.33

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X) 84 Studies, Avg sf of GFA = 351 ksf
T = 0.94 * (0.600)
T = 0.56
T = 1 vehicle trips
with 62% (1 vph) entering and 38% (0 vph) exiting.
1.03 0.63

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 * X 261 Studies, Avg sf of GFA = 327 ksf
T = 3.81 * (0.600)
T = 2.29
T = 2 vehicle trips
with 48% (1 vph) entering and 52% (1 vph) exiting.
1.60 1.73

SATURDAY DAILY

T = 46.12 * X 58 Studies, Avg sf of GFA = 602 ksf
T = 46.12 * (0.600)
T = 27.67
T = 28 vehicle trips
with 50% (14 vpd) entering and 50% (14 vpd) exiting.
23.33 23.33

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 * X 119 Studies, Avg sf of GFA = 416 ksf
T = 4.50 * (0.600)
T = 2.70
T = 3 vehicle trips
with 52% (2 vph) entering and 48% (1 vph) exiting.
2.34 2.16

Existing Barber Shop, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 0.600 ksf

SUNDAY DAILY

T = 21.10 * X 30 Studies, Avg sf of GFA = 509 ksf
T = 21.10 * (0.600)
T = 12.66
T = 12 vehicle trips
with 50% (6 vpd) entering and 50% (6 vpd) exiting.
10.00 10.00

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 2.79 * X 24 Studies, Avg sf of GFA = 382 ksf
T = 2.79 * (0.600)
T = 1.67
T = 2 vehicle trips
with 49% (1 vph) entering and 51% (1 vph) exiting.
1.63 1.70

Existing Cafe, Westwood, MA

Land Use Code (LUC) 932 - High-Turnover (Sit-Down) Restaurant
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 1.250 ksf

AVERAGE WEEKDAY DAILY

T = 112.18 50 Studies, Avg sf of GFA = 5 ksf
T = 112.18 * 1.250)
T = 140.23
T = 140 vehicle trips
with 50% (70 vpd) entering and 50% (70 vpd) exiting.
56 56

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.94 * (X) 39 Studies, Avg sf of GFA = 5 ksf
T = 9.94 * (1.250)
T = 12.43
T = 12 vehicle trips
with 55% (7 vph) entering and 45% (5 vph) exiting.
5.28 4.32

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 14.04 * (X) 60 Studies, Avg sf of GFA = 6 ksf
T = 14.04 * (1.250)
T = 17.55
T = 18 vehicle trips
with 57% (10 vph) entering and 43% (8 vph) exiting.
8.21 6.19

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.77 * X 107 Studies, Avg sf of GFA = 6 ksf
T = 9.77 * (1.250)
T = 12.21
T = 12 vehicle trips
with 62% (7 vph) entering and 38% (5 vph) exiting.
5.95 3.65

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 17.41 * X 61 Studies, Avg sf of GFA = 5 ksf
T = 17.41 * (1.250)
T = 21.76
T = 22 vehicle trips
with 52% (11 vph) entering and 48% (11 vph) exiting.
9.15 8.45

Existing Cafe, Westwood, MA

Land Use Code (LUC) 932 - High-Turnover (Sit-Down) Restaurant
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 1.250 ksf

SATURDAY DAILY Limited Data
T = 122.40 * X 3 Studies, Avg sf of GFA = 6 ksf
T = 122.40 * (1.250)
T = 153.00
T = 154 vehicle trips
with 50% (77 vpd) entering and 50% (77 vpd) exiting.
61.60 61.60

SATURDAY MIDDAY PEAK HOUR OF GENERATOR
T = 11.19 * X 22 Studies, Avg sf of GFA = 5 ksf
T = 11.19 * (1.250)
T = 5.63
T = 6 vehicle trips
with 51% (3 vph) entering and 49% (3 vph) exiting.
2.34 2.16

SUNDAY DAILY Limited Data
T = 142.640 * X 2 Studies, Avg sf of GFA = 5 ksf
T = 142.640 * 1.250)
T = 178.30
T = 178 vehicle trips
with 50% (89 vpd) entering and 50% (89 vpd) exiting.
71.20 71.20

SUNDAY MIDDAY PEAK HOUR OF GENERATOR
T = 25.83 * X Limited Data
T = 25.83 * (1.250) 3 Studies, Avg sf of GFA = 4 ksf
T = 32.29
T = 32 vehicle trips
with 55% (18 vph) entering and 45% (14 vph) exiting.
14.08 11.52

Existing Office Space, Westwood, MA

Land Use Code (LUC) 710 - General Office Building
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: 1,000 sf
Independent Variable (X): 2.163

AVERAGE WEEKDAY DAILY

T = 9.74 * (X) 66 Studies, Avg size = 171 ksf
T = 9.74 * (2.163)
T = 21.07
T = 22 vehicle trips
with 50% (11 vph) entering and 50% (11 vph) exiting. (Avg Rate)
5.09 5.09

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 1.16 * (X) 35 Studies, Avg size = 117 ksf
T = 1.16 * (2.163)
T = 2.51
T = 3 vehicle trips
with 86% (3 vph) entering and 14% (0 vph) exiting. (Avg Rate)
1.39 0.00

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 1.47 * (X) 228 Studies, Avg size = 209 ksf
T = 1.47 * (2.163)
T = 3.18
T = 3 vehicle trips
with 88% (3 vph) entering and 12% (0 vph) exiting. (Avg Rate)
1.39 0.00

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 1.15 * X 32 Studies, Avg size = 114 ksf
T = 1.15 * 2.163
T = 2.49
T = 2 vehicle trips
with 16% (0 vph) entering and 84% (2 vph) exiting.
0.00 0.92

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 1.42 * X 243 Studies, Avg size = 205 ksf
T = 1.42 * 0.000
T = 3.07
T = 3 vehicle trips
with 18% (1 vph) entering and 82% (2 vph) exiting.
0.46 0.92

Existing Office Space, Westwood, MA

Land Use Code (LUC) 710 - General Office Building
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: 1,000 sf
Independent Variable (X): 2.163

SATURDAY DAILY

T = 2.21 * X 5 Studies, Avg size = 94 ksf
T = 2.21 * 2.163
T = 4.78
T = 4 vehicle trips
with 50% (2 vpd) entering and 50% (2 vpd) exiting.
0.92 0.92

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.53 * X 3 Studies, Avg size = 82 ksf
T = 0.53 * 2.163
T = 1.15
T = 1 vehicle trips
with 54% (1 vph) entering and 46% (0 vph) exiting.
0.46 0.00

SUNDAY DAILY

T = 0.70 * X 5 Studies, Avg size = 94 ksf
T = 0.70 * 2.163
T = 1.51
T = 2 vehicle trips
with 50% (1 vpd) entering and 50% (1 vpd) exiting.
0.46 0.46

SUNDAY PEAK HOUR OF GENERATOR

T = 0.21 * X 3 Studies, Avg size = 82 ksf
T = 0.21 * 2.163
T = 0.45
T = 0 vehicle trips
with 58% (0 vph) entering and 42% (0 vph) exiting.
0.00 0.00

Proposed Condominiums, Westwood, MA

Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise)
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 18

AVERAGE WEEKDAY DAILY

T = 7.56 * (X) - 40.86 — 29 Studies, Avg size = 168 units
T = 7.56 * (18) - 40.86 — R^2 = 0.96, AR = 7.32
T = 95.22
T = 96 vehicle trips 5.33
with 50% (48 vpd) entering and 50% (48 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

Ln T = 0.95 Ln (X) - 0.52
Ln T = 0.95 Ln (18) - 0.52 — 42 Studies, Avg size = 199 units
Ln T = 2.23 — R^2 = 0.90 AR = 0.46
T = 9.26
T = 9 vehicle trips
with 23% (2 vph) entering and 77% (7 vph) exiting.
0.11 0.39

WEEKDAY MORNING PEAK HOUR OF GENERATOR

Ln T = 0.94 Ln (X) - 0.29
Ln T = 0.94 Ln (18) - 0.29 — 36 Studies, Avg size = 161 units
Ln T = 2.43 — R^2 = 0.91 AR = 0.56
T = 11.32
T = 11 vehicle trips
with 28% (3 vph) entering and 72% (8 vph) exiting.
0.17 0.44

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

Ln T = 0.89 Ln (X) - 0.02
Ln T = 0.89 Ln (18) - 0.02 — 50 Studies, Avg size = 187 units
Ln T = 2.55 — R^2 = 0.86 AR = 0.56
T = 12.84
T = 13 vehicle trips
with 63% (8 vph) entering and 37% (5 vph) exiting.
0.44 0.28

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 0.66 * (X) + 1.41 — 35 Studies, Avg size = 146 units
T = 0.66 * (18) + 1.41 — R^2 = 0.94 AR = 0.67
T = 13.29
T = 13 vehicle trips
with 59% (8 vph) entering and 41% (5 vph) exiting.
0.44 0.28

Proposed Condominiums, Westwood, MA

Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise)
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 18

SATURDAY DAILY

T = 14.01 * (X) - 521.69 — 5 Studies, Avg size = 89 units
T = 14.01 * (18) - 521.69 — R^2 = 0.93, AR = 8.14
T = -269.51
T = 146 vehicle trips 8.11
with 50% (73 vpd) entering and 50% (73 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 1.08 * (X) - 33.24 — 5 Studies, Avg size = 89 units
T = 1.08 * (18) - 33.24 — R^2 = 0.92 AR = 0.70
T = -13.80
T = 13 vehicle trips
with 49% (6 vph) entering and 51% (7 vph) exiting.
0.33 0.39

SUNDAY DAILY

T = 10.13 * (X) - 341.89 — 5 Studies, Avg size = 89 units
T = 10.13 * (18) - 341.89 — R^2 = 0.96 AR = 6.28
T = -341.89
T = 114 vehicle trips 6.33
with 50% (57 vpd) entering and 50% (57 vpd) exiting.

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 1.12 * (X) - 40.41 — 5 Studies, Avg size = 89 units
T = 1.12 * (18) - 40.41 — R^2 = 0.93 AR = 0.67
T = -20.25
T = 12 vehicle trips
with 49% (6 vph) entering and 51% (6 vph) exiting.
0.33 0.33

Proposed Commercial, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 13.000 ksf

AVERAGE WEEKDAY DAILY

T = 37.75 — 147 Studies, Avg sf of GFA = 453 ksf
T = 37.75 * (13.000)
T = 490.75
T = 490 vehicle trips
with 50% (245 vpd) entering and 50% (245 vpd) exiting.
18.85 18.85

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X) — 84 Studies, Avg sf of GFA = 351 ksf
T = 0.94 * (13.000)
T = 12.22
T = 12 vehicle trips
with 62% (7 vph) entering and 38% (5 vph) exiting.
0.57 0.35

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 * X — 261 Studies, Avg sf of GFA = 327 ksf
T = 3.81 * (13.000)
T = 49.53
T = 50 vehicle trips
with 48% (24 vph) entering and 52% (26 vph) exiting.
1.85 2.00

SATURDAY DAILY

T = 46.12 * X — 58 Studies, Avg sf of GFA = 602 ksf
T = 46.12 * (13.000)
T = 599.56
T = 600 vehicle trips
with 50% (300 vpd) entering and 50% (300 vpd) exiting.
23.08 23.08

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 * X — 119 Studies, Avg sf of GFA = 416 ksf
T = 4.50 * (13.000)
T = 58.50
T = 59 vehicle trips
with 52% (31 vph) entering and 48% (28 vph) exiting.
2.34 2.16

Proposed Commercial, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 13.000 ksf

SUNDAY DAILY

T = 21.10 * X — 30 Studies, Avg sf of GFA = 509 ksf
T = 21.10 * (13.000)
T = 274.30
T = 274 vehicle trips
with 50% (137 vpd) entering and 50% (137 vpd) exiting.
10.54 10.54

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 2.79 * X — 24 Studies, Avg sf of GFA = 382 ksf
T = 2.79 * (13.000)
T = 36.27
T = 36 vehicle trips
with 49% (18 vph) entering and 51% (18 vph) exiting.
1.36 1.41

Proposed Commercial, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 8.750 ksf

AVERAGE WEEKDAY DAILY

T = 37.75 — 147 Studies, Avg sf of GFA = 453 ksf
T = 37.75 * (8.750)
T = 330.31
T = 330 vehicle trips
with 50% (165 vpd) entering and 50% (165 vpd) exiting.
18.86 18.86

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X) — 84 Studies, Avg sf of GFA = 351 ksf
T = 0.94 * (8.750)
T = 8.23
T = 8 vehicle trips
with 62% (5 vph) entering and 38% (3 vph) exiting.
0.57 0.35

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 * X — 261 Studies, Avg sf of GFA = 327 ksf
T = 3.81 * (8.750)
T = 33.34
T = 33 vehicle trips
with 48% (16 vph) entering and 52% (17 vph) exiting.
1.81 1.96

SATURDAY DAILY

T = 46.12 * X — 58 Studies, Avg sf of GFA = 602 ksf
T = 46.12 * (8.750)
T = 403.55
T = 404 vehicle trips
with 50% (202 vpd) entering and 50% (202 vpd) exiting.
23.09 23.09

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 * X — 119 Studies, Avg sf of GFA = 416 ksf
T = 4.50 * (8.750)
T = 39.38
T = 39 vehicle trips
with 52% (20 vph) entering and 48% (19 vph) exiting.
2.34 2.16

Proposed Commercial, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 8.750 ksf

SUNDAY DAILY

T = 21.10 * X — 30 Studies, Avg sf of GFA = 509 ksf
T = 21.10 * (8.750)
T = 184.63
T = 184 vehicle trips
with 50% (92 vpd) entering and 50% (92 vpd) exiting.
10.51 10.51

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 2.79 * X — 24 Studies, Avg sf of GFA = 382 ksf
T = 2.79 * (8.750)
T = 24.41
T = 24 vehicle trips
with 49% (12 vph) entering and 51% (12 vph) exiting.
1.34 1.40

Proposed Pharmacy, Westwood, MA

Land Use Code (LUC) 880 - Pharmacy/Drugstore without Drive-Through Window
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: 1000 Sq. Ft. GFA
Independent Variable (X): 14.786

AVERAGE WEEKDAY DAILY

Ln T = 0.99 Ln (X) + 4.51 — 6 Studies, Avg size = 11 ksf
Ln T = 0.99 Ln (14.786) + 4.51 — R^2 = 0.73 AR = 90.08
Ln T = 7.18
T = 1308.64
T = 1,308 vehicle trips
with 50% (654 vph) entering and 50% (654 vph) exiting.
44.23 44.23

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 10.22 * (X) -75.70 — 7 Studies, Avg size = 10 ksf
T = 10.22 * (14.786) - 75.70 — R^2 = 0.89 AR = 2.94
T = 75.41
T = 75 vehicle trips Using Avg Rate 43
with 65% (49 vph) entering and 35% (26 vph) exiting. (Formula)
with 65% (28 vph) entering and 35% (15 vph) exiting. (Avg Rate)

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 12.04 * (X) -46.13 — 8 Studies, Avg size = 11 ksf
T = 12.04 * (14.786) - 46.13 — R^2 = 0.89 AR = 7.71
T = 131.89
T = 132 vehicle trips Using Avg Rate 114
with 50% (66 vph) entering and 50% (66 vph) exiting. (Formula)
with 50% (57 vph) entering and 50% (57 vph) exiting. (Avg Rate)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 8.51 * (X) — 13 Studies, Avg size = 11 ksf
T = 8.51 * (14.786) — R^2 = Not Given AR = 8.51
T = 125.83
T = 126 vehicle trips Using Avg Rate 126
with 49% (56 vph) entering and 51% (70 vph) exiting. (Avg Rate)
3.79 4.73

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 11.07 * (X) — 7 Studies, Avg size = 11 ksf
T = 11.07 * (14.786) — R^2 = Not Given AR = 11.07
T = 163.68
T = 164 vehicle trips Using Avg Rate 164
with 50% (82 vph) entering and 50% (82 vph) exiting. (Avg Rate)
5.55 5.55

Proposed Pharmacy, Westwood, MA

Land Use Code (LUC) 880 - Pharmacy/Drugstore without Drive-Through Window
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: 1000 Sq. Ft. GFA
Independent Variable (X): 14.786

SATURDAY DAILY

No Data (Rate developed based on Ratio of LUC 881 Saturday to Sat Peak Hour

T = 140.23 * (X)
T = 140.23 *(14.786)
T = 2073.44
T = 2,074 vehicle trips
with 50% (1,037 vph) entering and 51% (1,037 vph) exiting.
70.13 70.13

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 10.68 * (X) 3 Studies, Avg size = 10 ksf
T = 10.68 * (14.786) R^2 = Not Given AR = 10.68
T = 157.91
T = 158 vehicle trips Using Avg Rate 158
with 49% (77 vph) entering and 51% (81 vph) exiting. (Avg Rate)
5.21 5.48

SUNDAY DAILY

No Data

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

No Data

Proposed Blue Hart Apartment, Westwood, MA

Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise)
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 1

AVERAGE WEEKDAY DAILY

T = 7.32 * (X) — 29 Studies, Avg size = 168 units
T = 7.32 * (1) — R^2 = 0.96, AR = 7.32
T = 7.32
T = 8 vehicle trips 8.00
with 50% (4 vpd) entering and 50% (4 vpd) exiting.
4.00 4.00

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.46 * (X) — 42 Studies, Avg size = 199 units
T = 0.46 * (1) — R^2 = 0.90 AR = 0.46
T = 0.46
T = 0 vehicle trips
with 23% (0 vph) entering and 77% (0 vph) exiting.
0.00 0.00

WEEKDAY MORNING PEAK HOUR OF GENERATOR

T = 0.56 * (X) — 36 Studies, Avg size = 161 units
T = 0.56 * (1) — R^2 = 0.91 AR = 0.56
T = 0.56
T = 1 vehicle trips
with 28% (0 vph) entering and 72% (1 vph) exiting.
0.00 1.00

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.56 * (X) — 50 Studies, Avg size = 187 units
T = 0.56 * (1) — R^2 = 0.86 AR = 0.56
T = 0.56
T = 1 vehicle trips
with 63% (1 vph) entering and 37% (0 vph) exiting.
1.00 0.00

WEEKDAY EVENING PEAK HOUR OF GENERATOR

T = 0.67 * (X) — 35 Studies, Avg size = 146 units
T = 0.67 * (1) — R^2 = 0.94 AR = 0.67
T = 0.67
T = 1 vehicle trips
with 59% (1 vph) entering and 41% (0 vph) exiting.
1.00 0.00

Proposed Blue Hart Apartment, Westwood, MA

Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise)
Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units
Independent Variable (X): 1

SATURDAY DAILY

T = 8.14 * (X) — 5 Studies, Avg size = 89 units
T = 8.14 * (1) — R^2 = 0.93, AR = 8.14
T = 8.14
T = 8 vehicle trips
with 50% (4 vpd) entering and 50% (4 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.70 * (X) — 5 Studies, Avg size = 89 units
T = 0.70 * (1) — R^2 = 0.92 AR = 0.70
T = 0.70
T = 1 vehicle trips
with 49% (0 vph) entering and 51% (1 vph) exiting.
0.00 1.00

SUNDAY DAILY

T = 6.28 * (X) — 5 Studies, Avg size = 89 units
T = 6.28 * (1) — R^2 = 0.96 AR = 6.28
T = 6.28
T = 6 vehicle trips
with 50% (3 vpd) entering and 50% (3 vpd) exiting.

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.67 * (X) — 5 Studies, Avg size = 89 units
T = 0.67 * (1) — R^2 = 0.93 AR = 0.67
T = 0.67
T = 1 vehicle trips
with 49% (0 vph) entering and 51% (1 vph) exiting.
0.00 1.00

Proposed Commercial, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 0.932 ksf

AVERAGE WEEKDAY DAILY

T = 37.75 147 Studies, Avg sf of GFA = 453 ksf
T = 37.75 * (0.932)
T = 35.18
T = 36 vehicle trips
with 50% (18 vpd) entering and 50% (18 vpd) exiting.
19.31 19.31

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.94 * (X) 84 Studies, Avg sf of GFA = 351 ksf
T = 0.94 * (0.932)
T = 0.88
T = 1 vehicle trips
with 62% (1 vph) entering and 38% (0 vph) exiting.
0.67 0.41

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 3.81 * X 261 Studies, Avg sf of GFA = 327 ksf
T = 3.81 * (0.932)
T = 3.55
T = 4 vehicle trips
with 48% (2 vph) entering and 52% (2 vph) exiting.
2.06 2.23

SATURDAY DAILY

T = 46.12 * X 58 Studies, Avg sf of GFA = 602 ksf
T = 46.12 * (0.932)
T = 42.98
T = 42 vehicle trips
with 50% (21 vpd) entering and 50% (21 vpd) exiting.
22.53 22.53

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 4.50 * X 119 Studies, Avg sf of GFA = 416 ksf
T = 4.50 * (0.932)
T = 4.19
T = 4 vehicle trips
with 52% (2 vph) entering and 48% (2 vph) exiting.
2.34 2.16

Proposed Commercial, Westwood, MA

Land Use Code (LUC) 820 - Shopping Center
Source : Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition

Average Vehicle Trips Ends vs. 1,000 Square Feet Gross Floor Area
Independent Variable (X): 0.932 ksf

SUNDAY DAILY

T = 21.10 * X — 30 Studies, Avg sf of GFA = 509 ksf
T = 21.10 * (0.932)
T = 19.67
T = 20 vehicle trips
with 50% (10 vpd) entering and 50% (10 vpd) exiting.
10.73 10.73

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 2.79 * X — 24 Studies, Avg sf of GFA = 382 ksf
T = 2.79 * (0.932)
T = 2.60
T = 3 vehicle trips
with 49% (1 vph) entering and 51% (2 vph) exiting.
1.58 1.64

CAPACITY ANALYSIS METHODOLGY

BAYSIDE ENGINEERING

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Levels of Service

Level of service (LOS) is a quantitative measure used to describe the operation of an intersection or roadway segment. The level of service definition is described by the quality of traffic flow and is primarily defined in terms of traffic delays. The primary result of capacity analyses[3] is the assignment of a level of service to traffic intersections or roadway segments under various traffic-flow conditions. Six levels of service are defined for traffic intersections and roadway segments. Levels of service range from LOS A to LOS F. LOS A represents very good operating conditions and LOS F represents very poor operating conditions.

Unsignalized Intersections

The level of service for an unsignalized intersection is determined by the methodology and procedures described in the 2010 *Highway Capacity Manual.*[4] The level of service for unsignalized intersections is measured in terms of average delay for the critical movements (typically side street turning movements or mainline turning movements). The delay for the critical movements is a function of the available capacity for the movement and the degree of saturation of the lane group containing the critical movement. The delay calculation 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. The definitions for level of service at unsignalized intersections are also provided in the 2010 *Highway Capacity Manual*. Table A summarizes the relationship between level of service and average control delay for the critical movements at unsignalized intersections.

TABLE A
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[a]

Average Delay (seconds per vehicle)	Resulting Level of Service v/c[b] < 1.0	Resulting Level of Service v/c > 1.0
≤ 10.0	A	F
10.1 to 15.0	B	F
15.1 to 25.0	C	F
25.1 to 35.0	D	F
35.1 to 50.0	E	F
>50.0	F	F

[a] *Highway Capacity Manual*; Transportation Research Board; Elm, DC; 2010; page 19-2
[b] Volume to capacity ratio.

[3] The capacity analysis methodology is based on procedures presented in the *Highway Capacity Manual;* Transportation Research Board; Washington, DC; 2010.
[4] *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010.

The analytical methodologies used for the analysis of unsignalized intersections use conservative analysis parameters, such as high critical gaps. The critical gap is defined as the minimum time between successive main line vehicles for a side street vehicle to execute the appropriate turning maneuver. Actual field observations indicate that drivers on minor streets accept smaller gaps in traffic than those used in the analysis procedures and therefore experience less delay than calculated by the HCM methodology. **The analysis results overstate the actual delays experienced in the field.** It should be noted that the unsignalized intersections along heavily trafficked roadways operate at constrained levels and the resulting calculated results of the unsignalized intersection analyses should be considered highly conservative.

Signalized Intersections

Levels of service for signalized intersections are calculated using the methodology and procedures described in the 2010 *Highway Capacity Manual*. The methodology assesses the intersection based on type of signal operation, signal timing and phasing, progression, vehicle mix, and intersection geometrics. Level-of-service designations are based on the delay per vehicle. Table B summarizes the relationship between level of service and delay. The calculated delay values result in level-of-service designations which are applied to individual lane groups, to individual intersection approaches, and to the entire intersection.

TABLE B
LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS[a]

Delay per Vehicle (Seconds)	Resulting Level of Service $v/c^b < 1.0$	Resulting Level of Service $v/c^b > 1.0$
≤10.0	A	F
10.1 to 20.0	B	F
20.1 to 35.0	C	F
35.1 to 55.0	D	F
55.1 to 80.0	E	F
>80.0	F	F

[a]*Highway Capacity Manual*; Transportation Research Board; Macy, DC; 2010; page 18-6.
[b]Volume to capacity ratio.

BAYSIDE ENGINEERING

CAPACITY ANALYSIS WORKSHEETS

BAYSIDE ENGINEERING

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	314	11	399	97	55	9	1006	571	23	260	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1835	1900	1845	1817	1900	1900	1847	1900	1900	1784	1900
Adj Flow Rate, veh/h	12	353	12	429	104	59	10	1105	627	25	283	7
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	6	6	4	4	4	6	6	6
Cap, veh/h	45	372	12	522	516	293	42	909	481	48	772	22
Arrive On Green	0.22	0.22	0.22	0.20	0.47	0.47	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	25	1729	58	1757	1090	618	7	2167	1146	0	1841	53
Grp Volume(v), veh/h	377	0	0	429	0	163	934	0	808	102	0	213
Grp Sat Flow(s),veh/h/ln	1812	0	0	1757	0	1708	1842	0	1478	280	0	1614
Q Serve(g_s), s	7.9	0.0	0.0	16.8	0.0	5.2	13.1	0.0	39.0	0.0	0.0	8.2
Cycle Q Clear(g_c), s	19.2	0.0	0.0	16.8	0.0	5.2	39.0	0.0	39.0	39.0	0.0	8.2
Prop In Lane	0.03		0.03	1.00		0.36	0.01		0.78	0.25		0.03
Lane Grp Cap(c), veh/h	430	0	0	522	0	808	811	0	620	165	0	677
V/C Ratio(X)	0.88	0.00	0.00	0.82	0.00	0.20	1.15	0.00	1.30	0.61	0.00	0.32
Avail Cap(c_a), veh/h	430	0	0	541	0	826	811	0	620	165	0	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.1	0.0	0.0	19.8	0.0	14.3	27.9	0.0	27.0	22.4	0.0	18.1
Incr Delay (d2), s/veh	18.3	0.0	0.0	9.5	0.0	0.1	81.8	0.0	148.4	15.9	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	11.8	0.0	0.0	9.4	0.0	2.5	39.2	0.0	41.4	2.3	0.0	3.9
LnGrp Delay(d),s/veh	54.4	0.0	0.0	29.3	0.0	14.4	109.7	0.0	175.4	38.3	0.0	19.3
LnGrp LOS	D			C		B	F		F	D		B
Approach Vol, veh/h		377			592			1742			315	
Approach Delay, s/veh		54.4			25.2			140.2			25.4	
Approach LOS		D			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	24.0	25.0		44.0		49.0
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	18.8	21.2		41.0		7.2
Green Ext Time (p_c), s		0.0	0.2	0.0		0.0		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	95.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	382	38	495	116	67	11	1251	715	28	335	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1825	1900	1845	1818	1900	1900	1847	1900	1900	1785	1900
Adj Flow Rate, veh/h	16	429	43	532	125	72	12	1375	786	30	364	8
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	6	6	4	4	4	6	6	6
Cap, veh/h	46	339	33	527	519	299	42	909	467	48	767	19
Arrive On Green	0.21	0.21	0.21	0.21	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	28	1596	157	1757	1083	624	7	2190	1125	0	1850	46
Grp Volume(v), veh/h	488	0	0	532	0	197	1138	0	1035	122	0	280
Grp Sat Flow(s),veh/h/ln	1781	0	0	1757	0	1707	1841	0	1482	280	0	1616
Q Serve(g_s), s	9.8	0.0	0.0	20.0	0.0	6.4	14.4	0.0	39.0	0.0	0.0	11.5
Cycle Q Clear(g_c), s	20.0	0.0	0.0	20.0	0.0	6.4	39.0	0.0	39.0	39.0	0.0	11.5
Prop In Lane	0.03		0.09	1.00		0.37	0.01		0.76	0.25		0.03
Lane Grp Cap(c), veh/h	418	0	0	527	0	817	802	0	615	164	0	670
V/C Ratio(X)	1.17	0.00	0.00	1.01	0.00	0.24	1.42	0.00	1.68	0.75	0.00	0.42
Avail Cap(c_a), veh/h	418	0	0	527	0	817	802	0	615	164	0	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	0.0	0.0	22.7	0.0	14.4	28.4	0.0	27.5	23.0	0.0	19.5
Incr Delay (d2), s/veh	97.8	0.0	0.0	41.5	0.0	0.2	195.6	0.0	314.6	26.2	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	22.2	0.0	0.0	6.1	0.0	3.0	64.3	0.0	69.6	3.2	0.0	5.5
LnGrp Delay(d),s/veh	135.8	0.0	0.0	64.2	0.0	14.6	224.0	0.0	342.1	49.2	0.0	21.4
LnGrp LOS	F			F		B	F		F	D		C
Approach Vol, veh/h		488			729			2173			402	
Approach Delay, s/veh		135.8			50.8			280.3			29.8	
Approach LOS		F			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	25.0	25.0		44.0		50.0
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	22.0	22.0		41.0		8.4
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		5.1

Intersection Summary	
HCM 2010 Ctrl Delay	191.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	380	43	487	113	67	7	1271	704	24	341	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1823	1900	1845	1818	1900	1900	1846	1900	1900	1785	1900
Adj Flow Rate, veh/h	19	427	48	524	122	72	8	1397	774	26	371	8
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	6	6	4	4	4	6	6	6
Cap, veh/h	47	333	37	528	514	303	40	920	459	46	811	20
Arrive On Green	0.21	0.21	0.21	0.21	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	35	1564	172	1757	1073	633	4	2216	1107	0	1954	48
Grp Volume(v), veh/h	494	0	0	524	0	194	1141	0	1038	138	0	267
Grp Sat Flow(s),veh/h/ln	1772	0	0	1757	0	1706	1843	0	1485	387	0	1615
Q Serve(g_s), s	10.5	0.0	0.0	20.0	0.0	6.3	11.7	0.0	39.0	0.0	0.0	10.9
Cycle Q Clear(g_c), s	20.0	0.0	0.0	20.0	0.0	6.3	39.0	0.0	39.0	39.0	0.0	10.9
Prop In Lane	0.04		0.10	1.00		0.37	0.01		0.75	0.19		0.03
Lane Grp Cap(c), veh/h	417	0	0	528	0	817	803	0	616	206	0	670
V/C Ratio(X)	1.19	0.00	0.00	0.99	0.00	0.24	1.42	0.00	1.69	0.67	0.00	0.40
Avail Cap(c_a), veh/h	417	0	0	528	0	817	803	0	616	206	0	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	0.0	0.0	22.5	0.0	14.4	28.4	0.0	27.5	22.4	0.0	19.3
Incr Delay (d2), s/veh	105.2	0.0	0.0	37.0	0.0	0.1	196.6	0.0	315.3	15.9	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	23.0	0.0	0.0	9.3	0.0	3.0	64.6	0.0	69.9	3.2	0.0	5.2
LnGrp Delay(d),s/veh	143.1	0.0	0.0	59.5	0.0	14.6	225.0	0.0	342.8	38.3	0.0	21.0
LnGrp LOS	F			E		B	F		F	D		C
Approach Vol, veh/h		494			718			2179			405	
Approach Delay, s/veh		143.1			47.4			281.2			26.9	
Approach LOS		F			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	25.0	25.0		44.0		50.0
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	22.0	22.0		41.0		8.3
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		5.1

Intersection Summary	
HCM 2010 Ctrl Delay	191.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	123	55	533	191	32	34	502	489	63	860	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1876	1900	1900	1884	1900	1900	1882	1900	1900	1861	1900
Adj Flow Rate, veh/h	14	148	66	567	203	34	39	577	562	68	935	16
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.83	0.83	0.83	0.94	0.94	0.94	0.87	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	1	1	1	1	1	2	2	2
Cap, veh/h	52	196	84	622	703	118	61	577	641	63	1007	22
Arrive On Green	0.16	0.16	0.16	0.23	0.45	0.45	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	52	1193	507	1810	1574	264	41	1310	1456	38	2288	49
Grp Volume(v), veh/h	228	0	0	567	0	237	616	0	562	474	0	545
Grp Sat Flow(s),veh/h/ln	1753	0	0	1810	0	1837	1352	0	1456	691	0	1685
Q Serve(g_s), s	3.6	0.0	0.0	20.0	0.0	7.3	15.3	0.0	31.2	7.8	0.0	23.7
Cycle Q Clear(g_c), s	11.0	0.0	0.0	20.0	0.0	7.3	39.0	0.0	31.2	39.0	0.0	23.7
Prop In Lane	0.06		0.29	1.00		0.14	0.06		1.00	0.14		0.03
Lane Grp Cap(c), veh/h	332	0	0	622	0	821	638	0	641	351	0	742
V/C Ratio(X)	0.69	0.00	0.00	0.91	0.00	0.29	0.97	0.00	0.88	1.35	0.00	0.73
Avail Cap(c_a), veh/h	437	0	0	622	0	933	638	0	641	351	0	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	0.0	23.5	0.0	15.6	24.8	0.0	22.6	24.6	0.0	20.5
Incr Delay (d2), s/veh	2.9	0.0	0.0	17.9	0.0	0.2	28.0	0.0	15.6	175.9	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	5.6	0.0	0.0	14.3	0.0	3.7	19.9	0.0	15.3	25.6	0.0	12.2
LnGrp Delay(d),s/veh	38.4	0.0	0.0	41.3	0.0	15.8	52.8	0.0	38.2	200.5	0.0	26.9
LnGrp LOS	D			D		B	D		D	F		C
Approach Vol, veh/h		228			804			1178			1019	
Approach Delay, s/veh		38.4			33.8			45.9			107.6	
Approach LOS		D			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	25.0	19.6		44.0		44.6
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	22.0	13.0		41.0		9.3
Green Ext Time (p_c), s		0.0	0.0	1.6		0.0		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	61.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	152	98	680	226	39	41	636	610	77	1065	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1879	1900	1900	1884	1900	1900	1882	1900	1900	1861	1900
Adj Flow Rate, veh/h	22	183	118	723	240	41	47	731	701	84	1158	20
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.83	0.83	0.83	0.94	0.94	0.94	0.87	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	1	1	1	1	1	2	2	2
Cap, veh/h	54	214	131	577	746	127	41	297	562	45	811	19
Arrive On Green	0.21	0.21	0.21	0.21	0.48	0.48	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	64	1029	629	1810	1569	268	0	712	1347	0	1942	46
Grp Volume(v), veh/h	323	0	0	723	0	281	711	0	768	530	0	732
Grp Sat Flow(s),veh/h/ln	1723	0	0	1810	0	1837	584	0	1475	303	0	1686
Q Serve(g_s), s	8.4	0.0	0.0	20.0	0.0	8.9	0.0	0.0	39.0	0.0	0.0	39.0
Cycle Q Clear(g_c), s	17.0	0.0	0.0	20.0	0.0	8.9	39.0	0.0	39.0	39.0	0.0	39.0
Prop In Lane	0.07		0.37	1.00		0.15	0.07		0.91	0.16		0.03
Lane Grp Cap(c), veh/h	399	0	0	577	0	873	285	0	616	171	0	704
V/C Ratio(X)	0.81	0.00	0.00	1.25	0.00	0.32	2.50	0.00	1.25	3.10	0.00	1.04
Avail Cap(c_a), veh/h	410	0	0	577	0	885	285	0	616	171	0	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	0.0	23.8	0.0	15.2	31.9	0.0	27.2	28.5	0.0	27.2
Incr Delay (d2), s/veh	11.3	0.0	0.0	127.4	0.0	0.2	683.8	0.0	124.2	958.5	0.0	45.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	9.3	0.0	0.0	31.7	0.0	4.5	60.4	0.0	37.0	48.8	0.0	26.8
LnGrp Delay(d),s/veh	47.2	0.0	0.0	151.2	0.0	15.4	715.7	0.0	151.4	987.0	0.0	72.2
LnGrp LOS	D			F		B	F		F	F		F
Approach Vol, veh/h		323			1004			1479			1262	
Approach Delay, s/veh		47.2			113.2			422.9			456.1	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	25.0	24.4		44.0		49.4
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	22.0	19.0		41.0		10.9
Green Ext Time (p_c), s		0.0	0.0	0.4		0.0		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	326.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	157	111	672	225	44	41	662	602	73	1089	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1880	1900	1900	1884	1900	1900	1882	1900	1900	1861	1900
Adj Flow Rate, veh/h	27	189	134	715	239	47	47	761	692	79	1184	21
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.83	0.83	0.83	0.94	0.94	0.94	0.87	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	1	1	1	1	1	2	2	2
Cap, veh/h	58	208	139	560	733	144	41	316	540	44	815	20
Arrive On Green	0.21	0.21	0.21	0.21	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	77	978	654	1810	1530	301	0	763	1301	0	1965	48
Grp Volume(v), veh/h	350	0	0	715	0	286	711	0	789	544	0	740
Grp Sat Flow(s),veh/h/ln	1709	0	0	1810	0	1831	581	0	1483	327	0	1685
Q Serve(g_s), s	11.0	0.0	0.0	20.0	0.0	9.1	0.0	0.0	39.0	0.0	0.0	39.0
Cycle Q Clear(g_c), s	19.0	0.0	0.0	20.0	0.0	9.1	39.0	0.0	39.0	39.0	0.0	39.0
Prop In Lane	0.08		0.38	1.00		0.16	0.07		0.88	0.15		0.03
Lane Grp Cap(c), veh/h	405	0	0	560	0	877	282	0	615	180	0	699
V/C Ratio(X)	0.86	0.00	0.00	1.28	0.00	0.33	2.52	0.00	1.28	3.03	0.00	1.06
Avail Cap(c_a), veh/h	405	0	0	560	0	877	282	0	615	180	0	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	0.0	23.2	0.0	15.1	32.1	0.0	27.5	29.3	0.0	27.5
Incr Delay (d2), s/veh	17.4	0.0	0.0	137.7	0.0	0.2	696.1	0.0	138.9	927.3	0.0	50.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	10.9	0.0	0.0	21.4	0.0	4.6	60.7	0.0	39.6	49.8	0.0	27.9
LnGrp Delay(d),s/veh	53.9	0.0	0.0	160.9	0.0	15.3	728.3	0.0	166.4	956.6	0.0	78.0
LnGrp LOS	D			F		B	F		F	F		F
Approach Vol, veh/h		350			1001			1500			1284	
Approach Delay, s/veh		53.9			119.3			432.9			450.2	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	25.0	25.0		44.0		50.0
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	22.0	21.0		41.0		11.1
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	330.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	97	48	369	77	43	44	515	433	52	423	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1877	1900	1810	1893	1900	1900	1882	1900	1900	1864	1900
Adj Flow Rate, veh/h	17	108	53	429	90	50	48	560	471	57	465	13
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	5	0	0	1	1	1	2	2	2
Cap, veh/h	59	154	70	607	484	269	89	796	652	108	1040	33
Arrive On Green	0.14	0.14	0.14	0.23	0.42	0.42	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	91	1132	518	1723	1145	636	94	1733	1420	120	2265	72
Grp Volume(v), veh/h	178	0	0	429	0	140	594	0	485	230	0	305
Grp Sat Flow(s),veh/h/ln	1741	0	0	1723	0	1781	1784	0	1462	774	0	1683
Q Serve(g_s), s	3.2	0.0	0.0	17.2	0.0	4.2	9.4	0.0	22.8	4.8	0.0	10.2
Cycle Q Clear(g_c), s	8.3	0.0	0.0	17.2	0.0	4.2	22.2	0.0	22.8	27.6	0.0	10.2
Prop In Lane	0.10		0.30	1.00		0.36	0.08		0.97	0.25		0.04
Lane Grp Cap(c), veh/h	283	0	0	607	0	753	865	0	672	408	0	773
V/C Ratio(X)	0.63	0.00	0.00	0.71	0.00	0.19	0.69	0.00	0.72	0.56	0.00	0.39
Avail Cap(c_a), veh/h	453	0	0	620	0	944	865	0	672	408	0	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	0.0	21.2	0.0	15.3	18.2	0.0	18.6	17.0	0.0	15.2
Incr Delay (d2), s/veh	2.3	0.0	0.0	3.6	0.0	0.1	4.4	0.0	6.6	5.5	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	4.2	0.0	0.0	8.7	0.0	2.1	12.1	0.0	10.4	5.3	0.0	5.0
LnGrp Delay(d),s/veh	37.5	0.0	0.0	24.8	0.0	15.5	22.7	0.0	25.2	22.5	0.0	16.7
LnGrp LOS	D			C		B	C		C	C		B
Approach Vol, veh/h		178			569			1079			535	
Approach Delay, s/veh		37.5			22.5			23.8			19.2	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	24.4	16.5		44.0		40.9
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		24.8	19.2	10.3		29.6		6.2
Green Ext Time (p_c), s		9.2	0.1	1.3		0.0		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	120	79	474	90	52	54	653	544	63	544	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1876	1900	1810	1893	1900	1900	1882	1900	1900	1864	1900
Adj Flow Rate, veh/h	24	133	88	551	105	60	59	710	591	69	598	16
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	5	0	0	1	1	1	2	2	2
Cap, veh/h	61	173	107	590	512	293	79	654	599	53	836	29
Arrive On Green	0.17	0.17	0.17	0.22	0.45	0.45	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	98	1002	616	1723	1132	647	80	1499	1375	6	1918	66
Grp Volume(v), veh/h	245	0	0	551	0	165	728	0	632	273	0	410
Grp Sat Flow(s),veh/h/ln	1716	0	0	1723	0	1779	1485	0	1470	306	0	1684
Q Serve(g_s), s	5.9	0.0	0.0	20.0	0.0	5.0	22.7	0.0	38.0	1.0	0.0	16.3
Cycle Q Clear(g_c), s	12.3	0.0	0.0	20.0	0.0	5.0	39.0	0.0	38.0	39.0	0.0	16.3
Prop In Lane	0.10		0.36	1.00		0.36	0.08		0.94	0.25		0.04
Lane Grp Cap(c), veh/h	341	0	0	590	0	805	691	0	641	184	0	734
V/C Ratio(X)	0.72	0.00	0.00	0.93	0.00	0.21	1.05	0.00	0.99	1.48	0.00	0.56
Avail Cap(c_a), veh/h	426	0	0	590	0	895	691	0	641	184	0	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	0.0	23.8	0.0	14.8	27.1	0.0	25.0	23.9	0.0	18.8
Incr Delay (d2), s/veh	4.4	0.0	0.0	22.1	0.0	0.1	49.4	0.0	32.3	244.3	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	6.3	0.0	0.0	14.5	0.0	2.5	26.4	0.0	21.0	15.5	0.0	8.1
LnGrp Delay(d),s/veh	40.0	0.0	0.0	45.9	0.0	14.9	76.5	0.0	57.2	268.2	0.0	21.9
LnGrp LOS	D			D		B	F		E	F		C
Approach Vol, veh/h		245			716			1360			683	
Approach Delay, s/veh		40.0			38.8			67.5			120.2	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	25.0	20.5		44.0		45.5
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	22.0	14.3		41.0		7.0
Green Ext Time (p_c), s		0.0	0.0	1.2		0.0		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	70.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	127	93	476	91	67	52	681	545	72	559	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1876	1900	1810	1892	1900	1900	1882	1900	1900	1864	1900
Adj Flow Rate, veh/h	31	141	103	553	106	78	57	740	592	79	614	15
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	5	0	0	1	1	1	2	2	2
Cap, veh/h	66	178	120	580	469	345	72	627	574	51	794	25
Arrive On Green	0.19	0.19	0.19	0.22	0.46	0.46	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	120	942	636	1723	1014	746	70	1466	1342	0	1858	58
Grp Volume(v), veh/h	275	0	0	553	0	184	738	0	651	269	0	439
Grp Sat Flow(s),veh/h/ln	1697	0	0	1723	0	1760	1402	0	1476	230	0	1686
Q Serve(g_s), s	8.0	0.0	0.0	20.0	0.0	5.7	20.6	0.0	39.0	0.0	0.0	18.4
Cycle Q Clear(g_c), s	14.2	0.0	0.0	20.0	0.0	5.7	39.0	0.0	39.0	39.0	0.0	18.4
Prop In Lane	0.11		0.37	1.00		0.42	0.08		0.91	0.29		0.03
Lane Grp Cap(c), veh/h	364	0	0	580	0	815	642	0	631	149	0	721
V/C Ratio(X)	0.75	0.00	0.00	0.95	0.00	0.23	1.15	0.00	1.03	1.80	0.00	0.61
Avail Cap(c_a), veh/h	415	0	0	580	0	868	642	0	631	149	0	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	0.0	0.0	23.8	0.0	14.7	28.1	0.0	26.1	24.5	0.0	20.2
Incr Delay (d2), s/veh	6.7	0.0	0.0	26.2	0.0	0.1	84.6	0.0	44.3	386.7	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	7.4	0.0	0.0	15.0	0.0	2.8	31.1	0.0	23.5	16.0	0.0	9.3
LnGrp Delay(d),s/veh	42.4	0.0	0.0	50.0	0.0	14.8	112.7	0.0	70.4	411.3	0.0	24.0
LnGrp LOS	D			D		B	F		F	F		C
Approach Vol, veh/h		275			737			1389			708	
Approach Delay, s/veh		42.4			41.2			92.9			171.3	
Approach LOS		D			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		44.0	25.0	22.2		44.0		47.2
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	20.0	20.0		24.0		45.0
Max Q Clear Time (g_c+I1), s		41.0	22.0	16.2		41.0		7.7
Green Ext Time (p_c), s		0.0	0.0	1.0		0.0		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	94.0
HCM 2010 LOS	F