

TECHNICAL MEMORANDUM

TO: Israel Lopez, Managing Director of Development
The Gutierrez Company
200 Wheeler Road
Wilmington, Massachusetts 01803

DATE: March 12, 2018



FROM: Elizabeth Oltman, P.E., Senior Traffic Engineer
CIVIL
Elena (Elena) Aung, E.I.T., Project Traffic Engineer

PROJECT NO.: T0718.01

Stone Ridge Development (EOEEA #14127) Phase I – Milford, Massachusetts
Traffic Impact Memorandum

INTRODUCTION

TEC, Inc. (TEC) has been retained by The Gutierrez Company (the "Applicant" or "Proponent") to prepare a Traffic Impact Memorandum to evaluate and document the impacts of additional traffic volumes to be generated by a proposed 272-unit residential development, as proposed under Massachusetts General Laws (M.G.L.) Chapter 40-B regulations, to be included as part of the Stone Ridge Development (EOEEA #14127). The development is proposed along Deer Street, adjacent to the west side of Cedar Street, north of I-495 in Milford, Massachusetts. The project is part of the permitted Stone Ridge Development that received a Section 61 Finding from the Massachusetts Department of Transportation (MassDOT), following statewide review as part of the Massachusetts Environmental Policy Act (MEPA) process, on March 6, 2009.

The proponent is seeking to alter the original building program for the Stone Ridge Development site. As modified, the proposed project will be developed under M.G.L. Chapter 40-B Regulations and will consist of the construction of 272 residential apartments with 75 percent set for market rate and 25 percent affordable. The proponent has noted that the proposed apartments will replace 160,000 SF of office space previously permitted on the site. The site is currently under development with a 63,000 SF Restaurant Depot, which replaced approximately 80,000 SF of office space within the original building program. This development plan as proposed will leave approximately 385,000 SF of office space to be built under the originally permitted program.

The MassDOT Section 61 Finding defines the proposed Phases of the project and the transportation impacts and mitigation measures associated with each Phase. Phase I is defined as the development of up to 150,000 SF of office. Phase II is defined as the development of up to 340,000 SF of office. The 272-unit residential development is proposed to displace 160,000 SF of office space on the project site. This memorandum documents an evaluation of the apartment units in comparison to Phase I traffic impacts, as stated within the Section 61 Finding. This memorandum further documents whether the 272-unit residential development triggers the Phase II traffic impacts.

The Section 61 Finding indicates the following Phase I improvements:

- *"Prior to Phase I occupancy, the proponent will widen the Route 85 northbound approach to provide an exclusive left turn lane and a through lane [Cedar Street (Route 85) and Deer Street]. The Deer Street approach will be designed to provide exclusive left turn lane and an exclusive right turn lane."*
 - **The 100% Design for this improvement has been approved by MassDOT.**
- *"Prior to any site occupancy of each phase of development, the Proponent will investigate and implement signal timing changes at this intersection [Cedar Street / Interstate 495 Northbound (I-495 NB) Ramps]..."*

The Section 61 Finding indicates the following Phase II improvements:

- *"Prior to the site occupancy associated with Phase II of the project, the proponent will reconstruct the geometry of this intersection [Cedar Street (Route 85) / Interstate 495 Southbound Ramps] to create a roundabout..."*
- *"Prior to any site occupancy of each phase of development, the Proponent will investigate and implement signal timing changes at this intersection [Cedar Street / Interstate 495 Northbound (I-495 NB) Ramps]..."*

This memorandum identifies an absence of need for traffic signal timing changes at the intersection of Cedar Street (Route 85) / I-495 NB Ramps at this time and that the traffic generated by the site with the development of the Restaurant Depot and the apartment units is less than the peak hour volumes associated with the Phase I development of the site as recorded within the MassDOT Section 61 Finding. The Proponent recognizes that further evaluation of the traffic impacts and potential signal timing improvements will be conducted before full occupancy of subsequent phases.

TEC has evaluated the traffic operations for the Cedar Street / I-495 NB Ramps and the Cedar Street / Deer Street intersections under existing and future conditions. The evaluation examines traffic operations under existing conditions (2017), as well as a seven-year horizon (2024) for traffic volume projections, which includes an evaluation of future year conditions (with the proposed project).

EXISTING CONDITIONS

A field inventory of existing traffic conditions at the study area intersection was conducted during site visits by TEC, Inc. staff in June 2017. The field investigations consisted of land survey, existing roadway geometrics, study area safety characteristics, and intersection operating characteristics.

Intersections

Cedar Street (Route 85) / I-495 Northbound Ramps

The I-495 Interchange Exit 20 - Northbound Ramps intersect Cedar Street to form a four-legged, three-phase signalized intersection. Cedar Street, signed as State Route 85, is a north-south urban minor arterial roadway north of I-495 and an urban principal arterial roadway south of I-495. Cedar Street between the pair of I-495 ramps is maintained by MassDOT; otherwise the corridor is under the jurisdiction of the Town of Milford.

The Cedar Street northbound approach consists of an exclusive left turn lane and a through lane. The Cedar Street southbound approach consists of a through lane and a shared through/right turn lane with a channelized ramp under free-flow conditions for right turn vehicles. Directional flow along Cedar Street is separated by a marked centerline. The I-495 NB off-ramp (westbound approach) consists of two left turn lanes and a channelized right turn lane under yield control. Sidewalks are provided along the west side of Cedar Street at the intersection as part of the Upper Charles Trail. Crosswalks are present across the I-495 NB on-ramps (eastbound leg). There are no formal bicycle accommodations provided as part of the traffic signal; but the Upper Charles Trail crosses the I-495 NB on-ramps on the west side of Cedar Street.

Cedar Street (Route 85) / Deer Street

The Stone Ridge Development is to be accessed by the unsignalized intersection of Deer Street with Cedar Street (Route 85). The 100% Design submittal for this intersection is under MassDOT review. The Cedar Street northbound approach will consist of an exclusive left turn lane and a through lane. The Cedar Street southbound approach will consist of a shared through/right turn lane. The eastbound Deer Street approach will consist of an exclusive left turn lane and an exclusive right turn lane. The eastbound Deer Street approach is proposed to operate under STOP-sign control through Phase III of the Stone Ridge Development.

Existing Traffic Volumes

Turning Movement Counts (TMCs)

To establish existing traffic volume conditions, manual TMCs were conducted at the intersection of Cedar Street / I-495 NB Ramps on Wednesday, May 24, 2017 during a typical weekday morning (7:00 AM – 9:00 AM) and weekday evening (4:00 PM – 6:00 PM) peak periods. Area schools were in regular session during the time of the traffic counts. A detailed summary of the TMCs, partitioned into 15-minute intervals, is provided within Attachment A.

Automatic Traffic Recorder Counts

Automatic Traffic Recorder (ATR) counts were conducted on Cedar Street north of the I-495 NB Ramps, Cedar Street south of the I-495 NB Ramps, and I-495 NB off-ramp east of Cedar Street from Wednesday, May 24, 2017 through Thursday, May 25, 2017 for a continuous 48-hour period. A summary of the weekday ATR traffic data is presented in Table 1. A detailed summary of the ATR data, partitioned into 60-minute intervals, is provided within Attachment B.

Table 1 – Existing Weekday Traffic Volume Summary

Location	Weekday Traffic Volume ^(a)	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume ^(b)	K Factor ^(c)	Directional Distribution ^(d)	Traffic Volume	K Factor	Directional Distribution
Cedar Street (north of I-495 NB Ramps)	10,980	964	8.8%	68.6% SB	1,032	9.4%	62.1% NB
Cedar Street (between I-495 NB and SB Ramps)	18,060	1,284	7.1%	68.5% NB	1,476	8.2%	55.6% SB
I-495 NB off-ramp (east of Cedar Street)	5,690	695	12.2%	100.0% WB	502	8.8%	100.0% WB

^a Daily traffic expressed in vehicles per day

^b Hourly traffic expressed in vehicles per hour

^c Percent of daily traffic volumes which occurs during the peak hour

^d Percent of peak hour volume in the predominant direction of travel

Seasonal Adjustment

In accordance with MassDOT standards, traffic volumes are typically adjusted to average-month conditions. To evaluate the potential for seasonal fluctuation of traffic volumes on roadways near the study area intersections, TEC reviewed historic traffic volume counts collected by MassDOT at permanent counts stations along Interstate 495 in Milford^{1,2}. These published values indicated that weekday traffic volumes in May are 3.2 percent higher than average-month conditions. Therefore, the May 2017 traffic volumes were left unadjusted to reflect a conservative analysis scenario. The compiled seasonal adjustment data is provided in Attachment C. The resulting 2017 Existing Conditions traffic volumes are shown graphically in Figure 1.

Crash History Analysis

Crash data for the Cedar Street / I-495 NB Ramps intersection were compiled and analyzed for the most recent consecutive five-year period (2010 - 2014) on file with MassDOT crash records. The motor vehicle crash data was reviewed to determine crash trends in the study area.

Crash Rate Worksheets

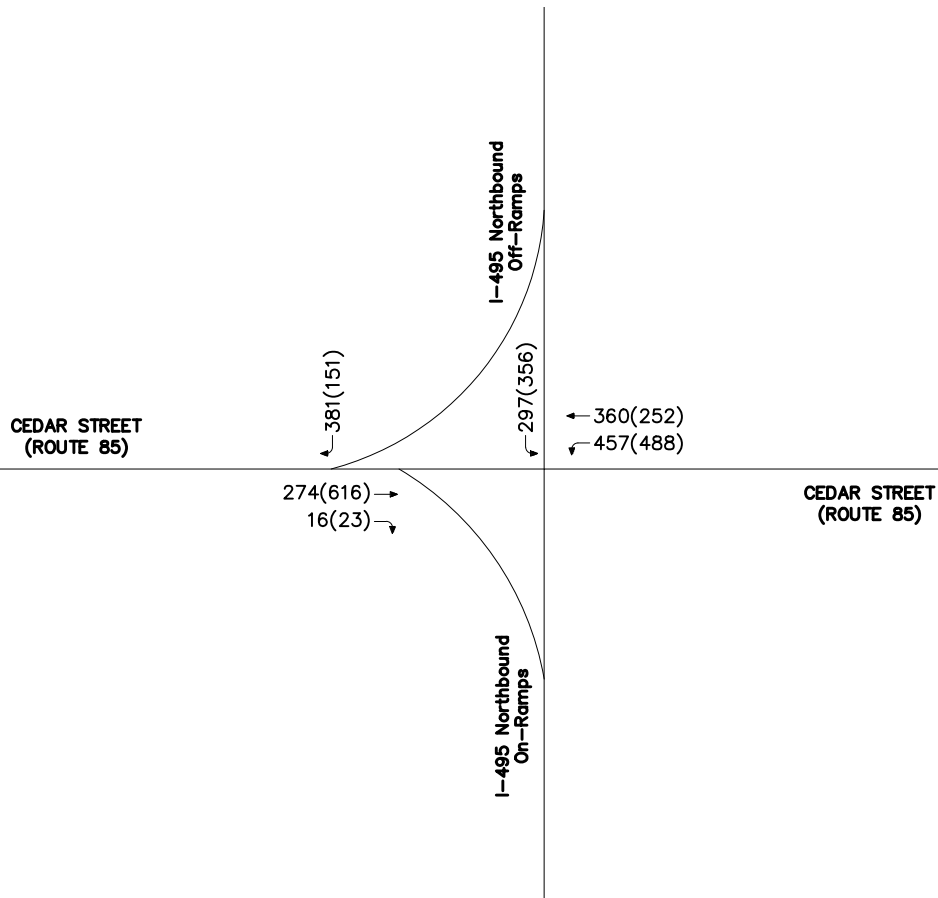
In addition to examining the number of crashes at the study area intersections, a crash rate was calculated to compare the occurrence of crashes to the volume of traffic passing through the study area intersections. The crash rate per million entering vehicles (MEV) was calculated using the weekday evening peak hour volumes from the TMCs, a calculated K-factor obtained from ATR counts, and the total years of analyzed crash data. The crash rate at the study area intersection was compared to the statewide and district-wide averages published by MassDOT in February 2016 to determine the significance of the crash occurrence. The statewide average rate for signalized intersections is 0.77 crashes per MEV and The District 4 average rate for signalized intersections is 0.90.

¹ MassDOT Permanent Count Station 3180 – Milford – Interstate 495 – At Medway Town Line

² MassDOT Permanent Count Station 3321 – Milford – Interstate 495 – South of Route 85



Not to Scale



XXX(XXX) = WEEKDAY MORNING PEAK HOUR(WEEKDAY EVENING PEAK HOUR)



TEC, Inc.
65 Glenn Street | 169 Ocean Blvd, Unit 101
Lawrence, MA 01843 | Hampton, NH 03842
(978) 794.1792 | (603) 601.8154
www.TheEngineeringCorp.com

Figure 1

2017 Existing Conditions
Weekday Morning, and
Weekday Evening
Peak Hour Traffic Volumes

Crash data and crash rate calculations can be found in Attachment D.

Crash Data Summary

The I-495 Interchange Exit 20 is designated as a Highway Safety Improvement Program (HSIP) eligible location. MassDOT's crash data does not clearly decipher between crashes that occurred at the surface intersections of the I-495 NB ramps with Cedar Street versus crashes that may have occurred along Cedar Street, at the I-495 SB ramps or on I-495 near the interchange. Most of the reported crashes likely occurred on the Interstate near the interchange or on the ramps. There were a total of eighty-one (81) reported collisions at the Cedar Street (Route 85) / I-495 Interchange and sixteen (16) reported collisions that could be identified at the junction between Cedar Street (Route 85) / I-495 NB off-ramp which represents approximately three (3) crashes per year over the five-year study period. Per direct phone conversations by TEC with MassDOT District 3's Traffic Engineering Section, a full and detailed analysis of crash reports at the HSIP-eligible intersection would not be required as the improvements to the intersection as defined by the Stone Ridge Development's Section 61 Finding are limited to traffic signal timing only.

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2024, which reflects a seven-year planning horizon; which includes all existing traffic, new traffic resulting from background growth, and traffic from specific development by others in the vicinity. Anticipated site generated traffic volumes for the proposed Stone Ridge Development were superimposed upon the traffic networks to reflect the "Build" conditions with the proposed project.

Background Traffic Growth

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

An alternative procedure identifies the location and type of planned development, estimates the traffic to be generated, and assigns it to the area roadway network. This procedure produces a more realistic estimate of growth for local traffic. However, 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.

General Background Growth

Traffic volume data compiled by MassDOT at permanent count stations in the area were reviewed to determine traffic growth trends. Traffic volumes at four (4) locations along Cedar Street and Interstate 495 Northbound ramps in Milford^{3,4,5,6} were examined. Based on the MassDOT traffic volume data, traffic volumes in the area have been increasing at an average rate of 0.61 percent per year since 2006. To provide a conservative analysis scenario, a 1.0 percent per year compounded annual background traffic growth rate was used to account for potential future traffic growth external to the study area and any presently unforeseen development. Count station data has been included in Attachment E.

Specific Developments by Others

TEC coordinated with the Town of Milford Planning Department to identify nearby private / public development projects in the vicinity of the study area that were either in the planning process or were approved by the Planning Board at the time of the traffic volume counts. Based on these discussions, the Town of Milford identified one (1) project that is anticipated to contribute to traffic volumes to the study area. The subject site is currently being developed with a Restaurant Depot. For analysis purposes, this project is included as a "Specific Development by Others."

- *#111 Cedar Street (Route 85) Gas Station and Convenience Store Development* – The project, currently in the planning process, consists of constructing a 3,565 square foot (SF) convenience store and a 1,435 SF coffee shop with a drive-through. A traffic study for this project was completed by McMahon Associates⁷ in January 2017. The site-generated trips for the development were estimated based on standard trip rates published in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 9th Edition* for Land Use Code (LUC) 853 – Convenience Market with Gasoline Pumps and LUC 937 – Coffee/Donut Shop with Drive-Through Window. Vehicle trips were distributed along the roadway network based on the trip distribution provided in the associated traffic study.
- *Restaurant Depot* - The site generated traffic volumes for the 63,000 SF Restaurant Depot were estimated based on empirical data obtained from a 2016 Trip Generation Study by VHB⁸ of three Restaurant Depot facilities in Bethlehem, PA, Andover, MA, and Chicopee, MA. Vehicle trips were distributed along the roadway network based on the trip distribution provided in the associated traffic study prepared by TEC, dated July 19, 2017⁹.

³ MassDOT Permanent Count Station 3217 – Milford – Cedar Street – West of Hamilton Street

⁴ MassDOT Permanent Count Station 3248 – Milford – Cedar Street – At Hopkinton Town Line

⁵ MassDOT Permanent Count Station R13063 – Milford – I-495 – Exit 20 Route 85

⁶ MassDOT Permanent Count Station R13064 – Milford – I-495 – Route 85 On-ramp

⁷ *Traffic Impact Study - Gas Station and Convenience Store Development – 111 Cedar Street, Milford, Massachusetts*; McMahon Associates; January 2017.

⁸ *Trip Generation Memorandum – Restaurant Depot – Stone Ridge, Milford, Massachusetts*; VHB; June 2016.

⁹ *Traffic Impact Memorandum – Stone Ridge Development Phase 1*; TEC; July 19, 2017.

The resulting "Specific Development by Others" traffic volumes for the weekday morning, and weekday evening peak hours are illustrated in Figure 2. Detailed trip generation and distribution information for the specific development projects are provided in Attachment F.

Stone Ridge Development Site Generated Traffic

The proposed Stone Ridge Development (EOEEA #14127) consists of a maximum of 625,000 SF of office space in four (4) buildings as identified in the Traffic Impact and Access Study (TIAS) prepared by VHB, Inc. and submitted to the MEPA office in January 2008. This memorandum looks at the traffic signal timing changes and off-site improvements associated with Phase I of the Stone Ridge Development only.

The site generated traffic volumes for the previously approved 63,000 SF Restaurant Depot were obtained from empirical data found within a 2016 Trip Generation Study by VHB¹⁰ and within a 2017 Traffic Impact Memorandum by TEC¹¹.

It is currently proposed to develop the site with 272 apartment units in addition to the approved Restaurant Depot. The site generated traffic volumes for the apartments were estimated based upon standard trip equations published in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 9th Edition* for Land Use Code (LUC 220) – Apartment.

The data in Table 2 below provides a summary of the trip generation associated with Stone Ridge Development Phase I of as defined within the MassDOT Section 61 finding (150,000 SF office), the anticipated Restaurant Depot trips and the trips anticipated to be generated by the 272 apartment units. The detailed trip generation calculation worksheets are provided in Attachment G.

Table 2 – Stone Ridge Development Site Generated Trip Summary

<u>Time Period</u>	Phase I 150,000 SF Office (previously approved) ^a	Restaurant Depot	272 Apartments (ITE LUC 220)	Total Modified Development (RD + Apts)
<i>Weekday Daily</i>	1,825	290	1,772	2,062
<i>Weekday Morning</i>				
IN	228	36	28	64
OUT	31	36	110	146
TOTAL	259	73	138	210
<i>Weekday Evening</i>				
IN	42	31	109	140
OUT	205	31	59	90
TOTAL	247	62	168	230

^a Based on 150,000 SF Office – LUC 710 – *Trip Generation, 7th Edition* (Edition used during original permitting)

¹⁰ *Trip Generation Memorandum – Restaurant Depot – Stone Ridge, Milford, Massachusetts*; VHB; June 2016.

¹¹ *Traffic Impact Memorandum – Stone Ridge Development Phase I, Milford, Massachusetts*; TEC, July 19, 2017.

A review of Table 2 above indicates that the addition of the trips generated by the 272 apartments to the trips generated by Restaurant Depot remains less than the originally permitted Phase I traffic volumes during the weekday morning and evening peak hours. The daily trips generated by the Restaurant Depot and the apartments are approximately 12% higher than the originally permitted Phase 1 daily trips.

The Phases detailed within the Section 61 Findings are linked to a specific development size in order to determine whether additional improvements are required to mitigate the traffic anticipated to be generated by the Stone Ridge Development. The capacity analyses that are critical in determining the operational impact of the site traffic are calculated during the weekday morning and evening peak commuter hours. TEC maintains that the proposed apartment units, along with the Restaurant Depot trips, remain below the Phase I Office peak hour traffic volumes approved within the Section 61 Findings. Therefore, any mitigation required subsequent to Phase I is not warranted at this time.

Trip Distribution

The distribution of site generated traffic volumes was calculated based upon 2000 U.S. Census Journey-to-Work data for population within the municipalities surrounding the site, location and distance to competing opportunities, vehicle travel time, and total distance from the proposed site. The resulting weekday morning and weekday evening site generated traffic volume networks are presented in Figure 2.

2024 Future Year Traffic Volumes

The 2024 Future Year Condition traffic volumes were obtained by applying a 1.0 percent compounded annual growth rate to the 2017 Base Year Condition traffic volumes over the 7-year horizon period and adding traffic to be generated by specific developments by others and the 250 apartment units. The resulting 2024 Future Year Condition traffic volume network is presented in Figure 3.

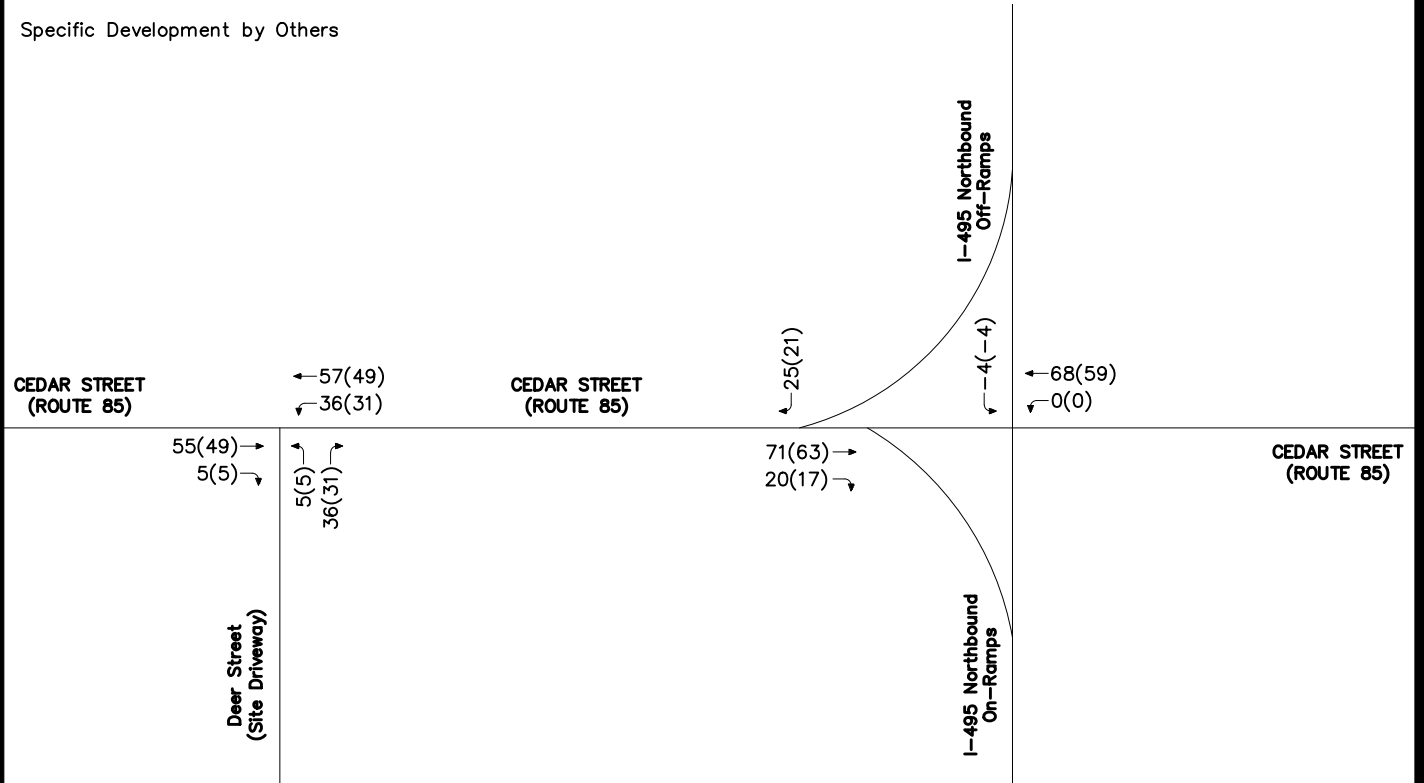


Not to Scale

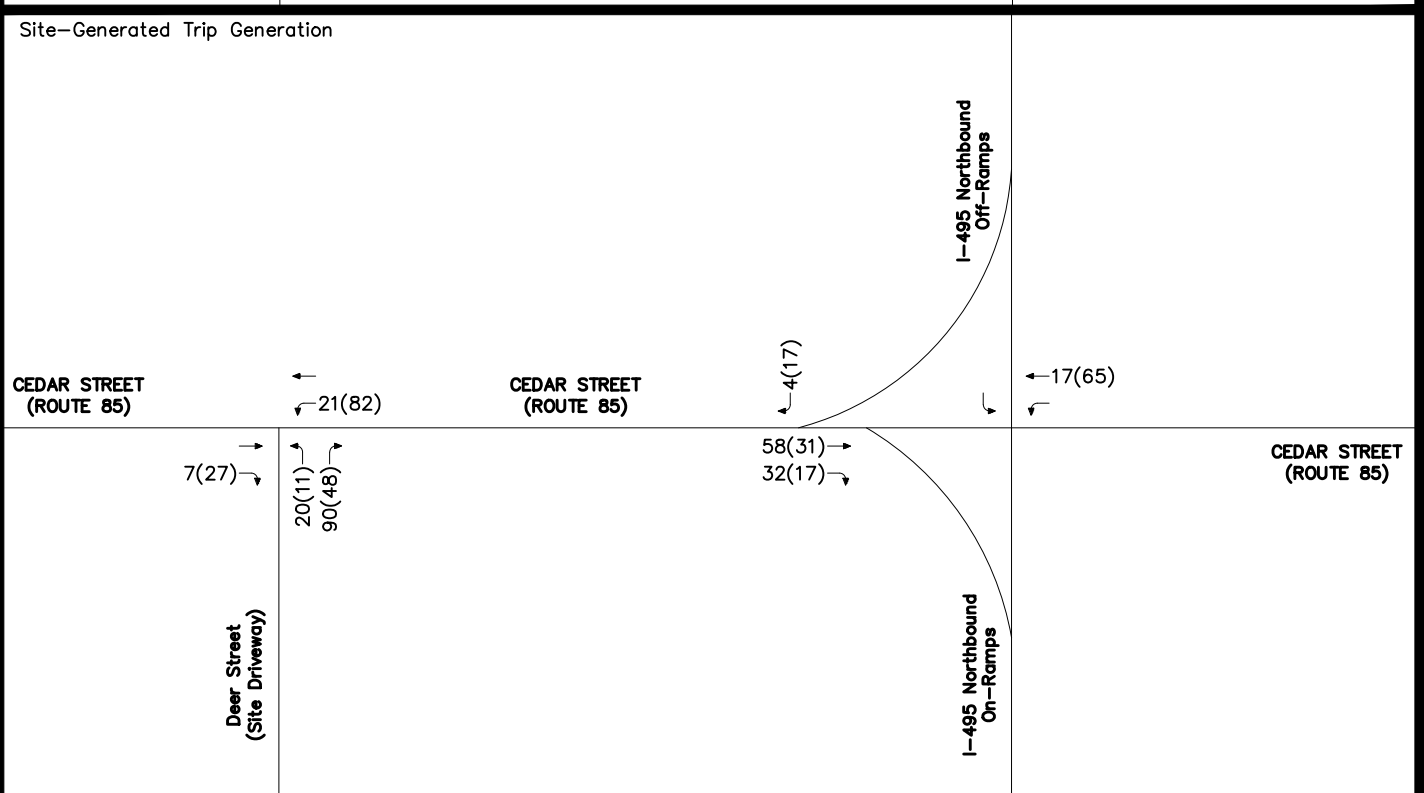
40B Residential Project - Milford, Massachusetts

Traffic Impact Memorandum

Specific Development by Others



Site-Generated Trip Generation



XXX(XXX) = WEEKDAY MORNING PEAK HOUR(WEEKDAY EVENING PEAK HOUR)



TEC, Inc.
 65 Glenn Street | 169 Ocean Blvd, Unit 101
 Lawrence, MA 01843 | Hampton, NH 03842
 (978) 794.1792 | (603) 601.8154
 www.TheEngineeringCorp.com

Figure 2

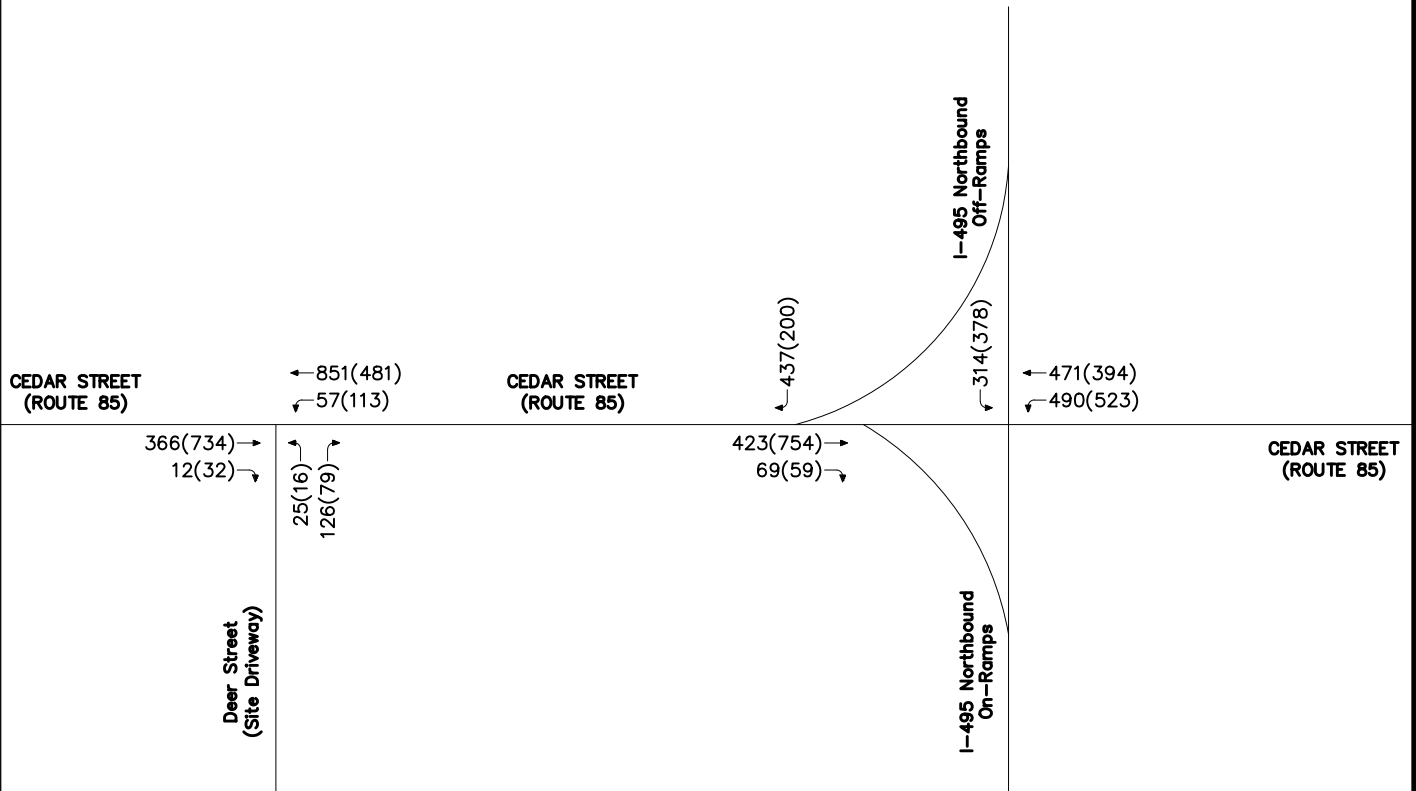
Specific Development by Others and
 Site-Generated Trip Generation
 Weekday Morning, and
 Weekday Evening
 Peak Hour Traffic Volumes

C:\Users\leaung\appdata\local\temp\AcPublish_1948\T0718.01_Traffic Networks.dwg 1/10/2018 2:31:21 PM



Not to Scale

40B Residential Project - Milford, Massachusetts
Traffic Impact Memorandum



XXX(XXX) = WEEKDAY MORNING PEAK HOUR(WEEKDAY EVENING PEAK HOUR)



TEC, Inc.
65 Glenn Street | 169 Ocean Blvd, Unit 101
Lawrence, MA 01843 | Hampton, NH 03842
(978) 794.1792 | (603) 601.8154
www.TheEngineeringCorp.com

Figure 3

2024 Future Year Conditions
Weekday Morning, and
Weekday Evening
Peak Hour Traffic Volumes

TRAFFIC OPERATIONS ANALYSIS

To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under 2017 Existing Conditions and 2024 Future Year Conditions with Existing Timings. Synchro 9.0 software was used to perform the analysis.

Parameters for Traffic Impact Analysis

The levels of service of unsignalized intersections are determined by application of a procedure described in the *HCM 2010*. Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition.

Table 3 summarizes the relationship between level of service and average control delay for unsignalized intersections.

Table 3 – Level of Service Criteria for Unsignalized Intersections^(a)

Level of Service	Average Control Delay (seconds per vehicle)	Description
A	≤10.0	LOS A represents a condition with little or no control delay to minor street traffic.
B	10.1 to 15.0	LOS B represents a condition with short control delays to minor street traffic.
C	15.1 to 25.0	LOS C represents a condition with average control delays to minor street traffic.
D	25.1 to 35.0	LOS D represents a condition with long control delays to minor street traffic.
E	35.1 to 50.0	LOS E represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
F	>50.0	LOS F represents a condition where minor street demand volume exceeds capacity of an approach lane, with excessive control delays resulting.

^a Source: *Highway Capacity Manual 2010*; Transportation Research Board; Washington D.C.; 2010

Signalized Intersections

LOS for signalized intersections is calculated using the operational analysis methodology of the *Highway Capacity Manual (HCM) 2010*. This method assesses the effects of signal type, timing, phasing, progression; vehicle mix; and geometrics on delay. LOS designations are based on the criterion of control or signal delay per vehicle. Control or signal delay can be related to driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay. Table 4 summarizes the relationship between LOS and control delay. The tabulated control delay criterion may be applied in assigning LOS designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 4 – Level of Service Criteria for Signalized Intersections ^(a)

Level of Service ($v/c \leq 1.0$)	Level of Service ($v/c > 1.0$)	Average Control Delay (seconds per vehicle)	Description
A	F	≤ 10.0	LOS A describes operations with very low control delay; most vehicles do not stop at all.
B	F	10.1 to 20.0	LOS B describes operations with relatively low control delay. However, more vehicles stop than LOS A.
C	F	20.1 to 35.0	LOS C describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	F	35.1 to 55.0	LOS D describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable, whereby motorists are not able to get through the signal on one cycle.
E	F	55.1 to 80.0	LOS E describes operations with high control delay values. Individual cycle failures are frequent occurrences.
F	F	> 80.0	LOS F describes operations with high control delay values that often occur with over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

^a Source: *Highway Capacity Manual 2010*; Transportation Research Board; Washington D.C.; 2010

Intersection Capacity and Queue Analysis Results

Capacity and queue analyses were conducted for the 2017 Existing Conditions and the 2024 Future Year Conditions with Existing Timings for the study intersection. The results of the intersection capacity and queue analyses are summarized in Table 5 and Table 6. The capacity analysis worksheets are provided in Attachment H.

Table 5 – Intersection Capacity and Queue Analysis Summary

Intersection / Lane Group	2017 Existing				2024 Build with Existing Timings			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d	V/C	Delay	LOS	Queue
Cedar Street (Route 85) / I-495 NB Ramps								
<i>Weekday Morning Peak Period</i>								
I-495 NB Off-ramp WBL	0.50	17.5	B	41/89	0.53	19.1	B	52/121
I-495 NB Off-ramp WBR	0.00	0.0	A	<25/<25	0.00	0.0	A	<25/<25
Cedar Street NBL	0.64	7.9	A	74/155	0.73	8.9	A	89/221
Cedar Street NBT	0.38	5.9	A	63/128	0.48	6.4	A	96/193
Cedar Street SB Approach	0.37	14.5	B	44/93	0.52	15.9	B	84/180
Overall Intersection	0.57	10.8	B	-	0.51	11.8	B	-
<i>Weekday Evening Peak Period</i>								
I-495 NB Off-ramp WBL	0.61	20.7	C	58/131	0.66	24.0	C	87/147
I-495 NB Off-ramp WBR	0.00	0.0	A	<25/<25	0.00	0.0	A	<25/<25
Cedar Street NBL	0.77	9.4	A	94/219	0.86	12.2	B	172/371
Cedar Street NBT	0.24	5.0	A	41/73	0.35	5.4	A	76/117
Cedar Street SB Approach	0.64	15.5	B	108/200	0.68	16.5	B	185/261
Overall Intersection	0.49	13.3	B	-	0.56	14.6	B	-

^a Volume-to-capacity ratio^b Delay expressed in seconds per vehicle (average)^c Level of service^d 50th/95th Percentile Queue for signalized intersections**Table 6 – Intersection Capacity and Queue Analysis Summary**

Intersection / Lane Group	2024 No Build				2024 Build			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d	V/C	Delay	LOS	Queue
Cedar Street (Route 85) / Deer Street								
<i>Weekday Morning Peak Period</i>								
Cedar Street NBL	0.03	8.2	A	<25	0.05	8.3	A	<25
Deer Street EBL	0.04	29.9	D	<25	0.26	37.7	E	25
Deer Street EBR	0.06	10.9	B	<25	0.21	12.0	B	<25
<i>Weekday Evening Peak Period</i>								
Cedar Street NBL	0.04	9.5	A	<25	0.15	10.2	B	<25
Deer Street EBL	0.04	29.6	D	<25	0.17	46.9	E	<25
Deer Street EBR	0.09	15.2	C	<25	0.23	17.2	C	<25

^a Volume-to-capacity ratio^b Delay expressed in seconds per vehicle (average)^c Level of service^d 95th Percentile Queue for unsignalized intersections

Under 2024 Future Year Conditions, all movements at the intersection of Cedar Street / I-495 NB Ramps are anticipated to operate at acceptable levels of service (LOS C or better) during the weekday morning and evening peak periods. V/C ratios are expected to be well below 1.00, indicating that there will be adequate capacity to accommodate the anticipated traffic through the intersection. Overall, operations at the intersection are not anticipated to be noticeably impacted by the development of the apartment units as part of Phase I.

Under 2024 Future Year Conditions, the intersection of Cedar Street / Deer Street continues to operate with acceptable levels of service (LOS E or better) during the weekday morning and

evening peak periods with the intersection remaining unsignalized. The V/C ratios are expected to be well below 1.00, indicating that there will be adequate capacity to accommodate the anticipated traffic through the intersection. The projected queue lengths for the left turn entering the site and the left and right turns exiting the site are less than one vehicle during the peak hours. Overall, operations at the intersection are not projected to be significantly impacted by the development of the apartment units as part of Phase I.

CONCLUSIONS

With the proposed change in a portion of the project from 150,000 SF of office space to 272 residential apartment units, there will be a net reduction of traffic to and from the site. The 272 apartment units are within the threshold of the Project's original Phase I, which MEPA and MassDOT define with a ceiling up to 150,000 SF of office on site. The total traffic generated by the development of the site with the Restaurant Depot building and the apartment units remains less than the originally permitted Phase I office traffic.

TEC has examined the potential traffic impact at the intersections of Cedar Street (Route 85) / I-495 NB Ramps and Cedar Street / Deer Street associated with the proposed 272 apartment units to be constructed. Based on the traffic impact evaluation, operations at the intersections are not expected to be significantly impacted by the development of the 272 apartment units. Therefore, the Proponent is not proposing modifications to the traffic signal timings at the intersection of Cedar Street / I-495 NB Ramps during the current phase or signalization of the intersection of Cedar Street / Deer Street. The Proponent recognizes that further evaluation of the traffic impacts will be conducted before full occupancy of subsequent phases and traffic signal timing improvements implemented if necessary.

Attachment A

Turning Movement Counts (TMCs)

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars, Heavy Vehicles, and Buses (Combined)

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	6	47	0	0	53	56	0	39	0	95	0	98	154	0	252	0	0	0	0	0	400
7:15 AM	4	49	0	0	53	66	0	54	0	120	0	82	169	0	251	0	0	0	0	0	424
7:30 AM	4	60	0	0	64	91	0	61	0	152	0	89	142	0	231	0	0	0	0	0	447
7:45 AM	3	66	0	0	69	77	0	66	0	143	0	87	96	0	183	0	0	0	0	0	395
Total	17	222	0	0	239	290	0	220	0	510	0	356	561	0	917	0	0	0	0	0	1666
8:00 AM	3	74	0	0	77	116	0	78	0	194	0	86	119	0	205	0	0	0	0	0	476
8:15 AM	6	74	0	0	80	97	0	92	0	189	0	98	100	0	198	0	0	0	0	0	467
8:30 AM	4	68	0	0	72	93	0	100	0	193	0	54	92	0	146	0	0	0	0	0	411
8:45 AM	7	63	0	0	70	52	0	69	0	121	0	69	98	0	167	0	0	0	0	0	358
Total	20	279	0	0	299	358	0	339	0	697	0	307	409	0	716	0	0	0	0	0	1712
Grand Total	37	501	0	0	538	648	0	559	0	1207	0	663	970	0	1633	0	0	0	0	0	3378
Approach %	6.9	93.1	0.0	0.0		53.7	0.0	46.3	0.0		0.0	40.6	59.4	0.0		0.0	0.0	0.0	0.0		
Total %	1.1	14.8	0.0	0.0	15.9	19.2	0.0	16.5	0.0	35.7	0.0	19.6	28.7	0.0	48.3	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1311					0					1060					1007					3378
Cars	35	486	0	0	521	636	0	540	0	1176	0	645	921	0	1566	0	0	0	0	0	3263
% Cars	94.6	97.0	0.0	0.0	96.8	98.1	0.0	96.6	0.0	97.4	0.0	97.3	94.9	0.0	95.9	0.0	0.0	0.0	0.0	0.0	96.6
Exiting Leg Total	1281					0					1026					956					3263
Heavy Vehicles	2	14	0	0	16	11	0	19	0	30	0	16	49	0	65	0	0	0	0	0	111
% Heavy Vehicles	5.4	2.8	0.0	0.0	3.0	1.7	0.0	3.4	0.0	2.5	0.0	2.4	5.1	0.0	4.0	0.0	0.0	0.0	0.0	0.0	3.3
Exiting Leg Total	27					0					33					51					111
Buses	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	4
% Buses	0.0	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Exiting Leg Total	3					0					1					0					4

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

7:30 AM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	4	60	0	0	64	91	0	61	0	152	0	89	142	0	231	0	0	0	0	0	447
7:45 AM	3	66	0	0	69	77	0	66	0	143	0	87	96	0	183	0	0	0	0	0	395
8:00 AM	3	74	0	0	77	116	0	78	0	194	0	86	119	0	205	0	0	0	0	0	476
8:15 AM	6	74	0	0	80	97	0	92	0	189	0	98	100	0	198	0	0	0	0	0	467
Total Volume	16	274	0	0	290	381	0	297	0	678	0	360	457	0	817	0	0	0	0	0	1785
% Approach Total	5.5	94.5	0.0	0.0		56.2	0.0	43.8	0.0		0.0	44.1	55.9	0.0		0.0	0.0	0.0	0.0		
PHF	0.667	0.926	0.000	0.000	0.906	0.821	0.000	0.807	0.000	0.874	0.000	0.918	0.805	0.000	0.884	0.000	0.000	0.000	0.000	0.000	0.938
Cars	15	266	0	0	281	373	0	288	0	661	0	350	433	0	783	0	0	0	0	0	1725
Cars %	93.8	97.1	0.0	0.0	96.9	97.9	0.0	97.0	0.0	97.5	0.0	97.2	94.7	0.0	95.8	0.0	0.0	0.0	0.0	0.0	96.6
Heavy Vehicles	1	8	0	0	9	7	0	9	0	16	0	9	24	0	33	0	0	0	0	0	58
Heavy Vehicles %	6.3	2.9	0.0	0.0	3.1	1.8	0.0	3.0	0.0	2.4	0.0	2.5	5.3	0.0	4.0	0.0	0.0	0.0	0.0	0.0	3.2
Buses	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
Buses %	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Cars Enter Leg	15	266	0	0	281	373	0	288	0	661	0	350	433	0	783	0	0	0	0	0	1725
Heavy Enter Leg	1	8	0	0	9	7	0	9	0	16	0	9	24	0	33	0	0	0	0	0	58
Bus Enter Leg	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
Total Entering Leg	16	274	0	0	290	381	0	297	0	678	0	360	457	0	817	0	0	0	0	0	1785
Cars Exiting Leg	723					0					554					448					1725
Heavy Exiting Leg	16					0					17					25					58
Buses Exiting Leg	2					0					0					0					2
Total Exiting Leg	741					0					571					473					1785

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	6	44	0	0	50	54	0	37	0	91	0	95	152	0	247	0	0	0	0	0	388
7:15 AM	4	48	0	0	52	66	0	51	0	117	0	79	160	0	239	0	0	0	0	0	408
7:30 AM	4	59	0	0	63	89	0	61	0	150	0	86	136	0	222	0	0	0	0	0	435
7:45 AM	3	65	0	0	68	76	0	62	0	138	0	84	87	0	171	0	0	0	0	0	377
Total	17	216	0	0	233	285	0	211	0	496	0	344	535	0	879	0	0	0	0	0	1608
8:00 AM	2	72	0	0	74	112	0	76	0	188	0	85	113	0	198	0	0	0	0	0	460
8:15 AM	6	70	0	0	76	96	0	89	0	185	0	95	97	0	192	0	0	0	0	0	453
8:30 AM	3	65	0	0	68	91	0	97	0	188	0	53	87	0	140	0	0	0	0	0	396
8:45 AM	7	63	0	0	70	52	0	67	0	119	0	68	89	0	157	0	0	0	0	0	346
Total	18	270	0	0	288	351	0	329	0	680	0	301	386	0	687	0	0	0	0	0	1655
Grand Total	35	486	0	0	521	636	0	540	0	1176	0	645	921	0	1566	0	0	0	0	0	3263
Approach %	6.7	93.3	0.0	0.0		54.1	0.0	45.9	0.0		0.0	41.2	58.8	0.0		0.0	0.0	0.0	0.0		
Total %	1.1	14.9	0.0	0.0	16.0	19.5	0.0	16.5	0.0	36.0	0.0	19.8	28.2	0.0	48.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1281					0					1026					956					3263

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

7:30 AM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	4	59	0	0	63	89	0	61	0	150	0	86	136	0	222	0	0	0	0	0	435
7:45 AM	3	65	0	0	68	76	0	62	0	138	0	84	87	0	171	0	0	0	0	0	377
8:00 AM	2	72	0	0	74	112	0	76	0	188	0	85	113	0	198	0	0	0	0	0	460
8:15 AM	6	70	0	0	76	96	0	89	0	185	0	95	97	0	192	0	0	0	0	0	453
Total Volume	15	266	0	0	281	373	0	288	0	661	0	350	433	0	783	0	0	0	0	0	1725
% Approach Total	5.3	94.7	0.0	0.0		56.4	0.0	43.6	0.0		0.0	44.7	55.3	0.0		0.0	0.0	0.0	0.0		
PHF	0.625	0.924	0.000	0.000	0.924	0.833	0.000	0.809	0.000	0.879	0.000	0.921	0.796	0.000	0.882	0.000	0.000	0.000	0.000	0.000	0.938
Entering Leg	15	266	0	0	281	373	0	288	0	661	0	350	433	0	783	0	0	0	0	0	1725
Exiting Leg	723					0					554					448					1725
Total	1004					661					1337					448					3450

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Heavy Vehicles

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	2	0	0	2	2	0	2	0	4	0	2	2	0	4	0	0	0	0	0	10
7:15 AM	0	1	0	0	1	0	0	3	0	3	0	3	9	0	12	0	0	0	0	0	16
7:30 AM	0	1	0	0	1	2	0	0	0	2	0	3	6	0	9	0	0	0	0	0	12
7:45 AM	0	1	0	0	1	1	0	4	0	5	0	3	9	0	12	0	0	0	0	0	18
Total	0	5	0	0	5	5	0	9	0	14	0	11	26	0	37	0	0	0	0	0	56
8:00 AM	1	2	0	0	3	3	0	2	0	5	0	1	6	0	7	0	0	0	0	0	15
8:15 AM	0	4	0	0	4	1	0	3	0	4	0	2	3	0	5	0	0	0	0	0	13
8:30 AM	1	3	0	0	4	2	0	3	0	5	0	1	5	0	6	0	0	0	0	0	15
8:45 AM	0	0	0	0	0	0	0	2	0	2	0	1	9	0	10	0	0	0	0	0	12
Total	2	9	0	0	11	6	0	10	0	16	0	5	23	0	28	0	0	0	0	0	55
Grand Total	2	14	0	0	16	11	0	19	0	30	0	16	49	0	65	0	0	0	0	0	111
Approach %	12.5	87.5	0.0	0.0		36.7	0.0	63.3	0.0		0.0	24.6	75.4	0.0		0.0	0.0	0.0	0.0		
Total %	1.8	12.6	0.0	0.0	14.4	9.9	0.0	17.1	0.0	27.0	0.0	14.4	44.1	0.0	58.6	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	27					0					33					51					111

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

7:15 AM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:15 AM	0	1	0	0	1	0	0	3	0	3	0	3	9	0	12	0	0	0	0	0	16
7:30 AM	0	1	0	0	1	2	0	0	0	2	0	3	6	0	9	0	0	0	0	0	12
7:45 AM	0	1	0	0	1	1	0	4	0	5	0	3	9	0	12	0	0	0	0	0	18
8:00 AM	1	2	0	0	3	3	0	2	0	5	0	1	6	0	7	0	0	0	0	0	15
Total Volume	1	5	0	0	6	6	0	9	0	15	0	10	30	0	40	0	0	0	0	0	61
% Approach Total	16.7	83.3	0.0	0.0		40.0	0.0	60.0	0.0		0.0	25.0	75.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.250	0.625	0.000	0.000	0.500	0.500	0.000	0.563	0.000	0.750	0.000	0.833	0.833	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.847
Entering Leg	1	5	0	0	6	6	0	9	0	15	0	10	30	0	40	0	0	0	0	0	61
Exiting Leg	16					0					14					31					61
Total	22					15					54					31					122

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	2
8:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
Grand Total	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	4
Approach %	0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	25.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	3					0					1					0					4

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

7:00 AM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Exiting Leg	1					0					1					0					2
Total	2					0					2					0					4

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp							Total
	North							East							South							West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	6
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	100.0	
Exiting Leg Total	0							0							0							6							6

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

7:15 AM	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp							
	North							East							South							West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	4
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.500	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	4
Exiting Leg	0							0							0							4							4
Total	0							0							0							8							8

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp							Total
	North							East							South							West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	33.3	66.7		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	66.7	100.0	
Exiting Leg Total	0							0							0							3							3

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

7:00 AM	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp							Total
	North							East							South							West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	33.3	66.7		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.500	0.375	0.375
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
Exiting Leg	0							0							0							3							3
Total	0							0							0							6							6

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Cars, Heavy Vehicles, and Buses (Combined)

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	7	99	0	0	106	33	0	77	0	110	0	65	129	0	194	0	0	0	0	0	410
4:15 PM	5	154	0	0	159	35	0	69	0	104	0	49	137	0	186	0	0	0	0	0	449
4:30 PM	7	130	0	0	137	38	0	82	0	120	0	58	115	0	173	0	0	0	0	0	430
4:45 PM	5	134	0	0	139	28	0	80	0	108	0	52	122	0	174	0	0	0	0	0	421
Total	24	517	0	0	541	134	0	308	0	442	0	224	503	0	727	0	0	0	0	0	1710
5:00 PM	3	136	0	0	139	37	0	90	0	127	0	67	145	0	212	0	0	0	0	0	478
5:15 PM	9	154	0	0	163	31	0	83	0	114	0	67	146	0	213	0	0	0	0	0	490
5:30 PM	5	165	0	0	170	35	0	96	0	131	0	56	107	0	163	0	0	0	0	0	464
5:45 PM	6	161	0	0	167	48	0	87	0	135	0	62	90	0	152	0	0	0	0	0	454
Total	23	616	0	0	639	151	0	356	0	507	0	252	488	0	740	0	0	0	0	0	1886
Grand Total	47	1133	0	0	1180	285	0	664	0	949	0	476	991	0	1467	0	0	0	0	0	3596
Approach %	4.0	96.0	0.0	0.0		30.0	0.0	70.0	0.0		0.0	32.4	67.6	0.0		0.0	0.0	0.0	0.0		
Total %	1.3	31.5	0.0	0.0	32.8	7.9	0.0	18.5	0.0	26.4	0.0	13.2	27.6	0.0	40.8	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	761					0					1797					1038					3596
Cars	47	1122	0	0	1169	285	0	647	0	932	0	473	951	0	1424	0	0	0	0	0	3525
% Cars	100.0	99.0	0.0	0.0	99.1	100.0	0.0	97.4	0.0	98.2	0.0	99.4	96.0	0.0	97.1	0.0	0.0	0.0	0.0	0.0	98.0
Exiting Leg Total	758					0					1769					998					3525
Heavy Vehicles	0	11	0	0	11	0	0	16	0	16	0	3	40	0	43	0	0	0	0	0	70
% Heavy Vehicles	0.0	1.0	0.0	0.0	0.9	0.0	0.0	2.4	0.0	1.7	0.0	0.6	4.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	1.9
Exiting Leg Total	3					0					27					40					70
Buses	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0					0					1					0					1

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

5:00 PM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
5:00 PM	3	136	0	0	139	37	0	90	0	127	0	67	145	0	212	0	0	0	0	0	478
5:15 PM	9	154	0	0	163	31	0	83	0	114	0	67	146	0	213	0	0	0	0	0	490
5:30 PM	5	165	0	0	170	35	0	96	0	131	0	56	107	0	163	0	0	0	0	0	464
5:45 PM	6	161	0	0	167	48	0	87	0	135	0	62	90	0	152	0	0	0	0	0	454
Total Volume	23	616	0	0	639	151	0	356	0	507	0	252	488	0	740	0	0	0	0	0	1886
% Approach Total	3.6	96.4	0.0	0.0		29.8	0.0	70.2	0.0		0.0	34.1	65.9	0.0		0.0	0.0	0.0	0.0		
PHF	0.639	0.933	0.000	0.000	0.940	0.786	0.000	0.927	0.000	0.939	0.000	0.940	0.836	0.000	0.869	0.000	0.000	0.000	0.000	0.000	0.962
Cars	23	612	0	0	635	151	0	351	0	502	0	252	472	0	724	0	0	0	0	0	1861
Cars %	100.0	99.4	0.0	0.0	99.4	100.0	0.0	98.6	0.0	99.0	0.0	100.0	96.7	0.0	97.8	0.0	0.0	0.0	0.0	0.0	98.7
Heavy Vehicles	0	4	0	0	4	0	0	5	0	5	0	0	16	0	16	0	0	0	0	0	25
Heavy Vehicles %	0.0	0.6	0.0	0.0	0.6	0.0	0.0	1.4	0.0	1.0	0.0	0.0	3.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	1.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cars Enter Leg	23	612	0	0	635	151	0	351	0	502	0	252	472	0	724	0	0	0	0	0	1861
Heavy Enter Leg	0	4	0	0	4	0	0	5	0	5	0	0	16	0	16	0	0	0	0	0	25
Bus Enter Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	23	616	0	0	639	151	0	356	0	507	0	252	488	0	740	0	0	0	0	0	1886
Cars Exiting Leg	403					0					963					495					1861
Heavy Exiting Leg	0					0					9					16					25
Buses Exiting Leg	0					0					0					0					0
Total Exiting Leg	403					0					972					511					1886

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	7	97	0	0	104	33	0	71	0	104	0	65	121	0	186	0	0	0	0	0	394
4:15 PM	5	153	0	0	158	35	0	68	0	103	0	49	129	0	178	0	0	0	0	0	439
4:30 PM	7	126	0	0	133	38	0	80	0	118	0	55	110	0	165	0	0	0	0	0	416
4:45 PM	5	134	0	0	139	28	0	77	0	105	0	52	119	0	171	0	0	0	0	0	415
Total	24	510	0	0	534	134	0	296	0	430	0	221	479	0	700	0	0	0	0	0	1664
5:00 PM	3	134	0	0	137	37	0	88	0	125	0	67	144	0	211	0	0	0	0	0	473
5:15 PM	9	154	0	0	163	31	0	80	0	111	0	67	141	0	208	0	0	0	0	0	482
5:30 PM	5	165	0	0	170	35	0	96	0	131	0	56	101	0	157	0	0	0	0	0	458
5:45 PM	6	159	0	0	165	48	0	87	0	135	0	62	86	0	148	0	0	0	0	0	448
Total	23	612	0	0	635	151	0	351	0	502	0	252	472	0	724	0	0	0	0	0	1861
Grand Total	47	1122	0	0	1169	285	0	647	0	932	0	473	951	0	1424	0	0	0	0	0	3525
Approach %	4.0	96.0	0.0	0.0		30.6	0.0	69.4	0.0		0.0	33.2	66.8	0.0		0.0	0.0	0.0	0.0		
Total %	1.3	31.8	0.0	0.0	33.2	8.1	0.0	18.4	0.0	26.4	0.0	13.4	27.0	0.0	40.4	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	758					0					1769					998					3525

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

5:00 PM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
5:00 PM	3	134	0	0	137	37	0	88	0	125	0	67	144	0	211	0	0	0	0	0	473
5:15 PM	9	154	0	0	163	31	0	80	0	111	0	67	141	0	208	0	0	0	0	0	482
5:30 PM	5	165	0	0	170	35	0	96	0	131	0	56	101	0	157	0	0	0	0	0	458
5:45 PM	6	159	0	0	165	48	0	87	0	135	0	62	86	0	148	0	0	0	0	0	448
Total Volume	23	612	0	0	635	151	0	351	0	502	0	252	472	0	724	0	0	0	0	0	1861
% Approach Total	3.6	96.4	0.0	0.0		30.1	0.0	69.9	0.0		0.0	34.8	65.2	0.0		0.0	0.0	0.0	0.0		
PHF	0.639	0.927	0.000	0.000	0.934	0.786	0.000	0.914	0.000	0.930	0.000	0.940	0.819	0.000	0.858	0.000	0.000	0.000	0.000	0.000	0.965
Entering Leg	23	612	0	0	635	151	0	351	0	502	0	252	472	0	724	0	0	0	0	0	1861
Exiting Leg	403					0					963					495					1861
Total	1038					502					1687					495					3722

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Heavy Vehicles

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	0	2	0	0	2	0	0	5	0	5	0	0	8	0	8	0	0	0	0	0	15
4:15 PM	0	1	0	0	1	0	0	1	0	1	0	0	8	0	8	0	0	0	0	0	10
4:30 PM	0	4	0	0	4	0	0	2	0	2	0	3	5	0	8	0	0	0	0	0	14
4:45 PM	0	0	0	0	0	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0	6
Total	0	7	0	0	7	0	0	11	0	11	0	3	24	0	27	0	0	0	0	0	45
5:00 PM	0	2	0	0	2	0	0	2	0	2	0	0	1	0	1	0	0	0	0	0	5
5:15 PM	0	0	0	0	0	0	0	3	0	3	0	0	5	0	5	0	0	0	0	0	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	0	0	0	0	6
5:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	6
Total	0	4	0	0	4	0	0	5	0	5	0	0	16	0	16	0	0	0	0	0	25
Grand Total	0	11	0	0	11	0	0	16	0	16	0	3	40	0	43	0	0	0	0	0	70
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	7.0	93.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	15.7	0.0	0.0	15.7	0.0	0.0	22.9	0.0	22.9	0.0	4.3	57.1	0.0	61.4	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	3					0					27					40					70

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

4:00 PM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	0	2	0	0	2	0	0	5	0	5	0	0	8	0	8	0	0	0	0	0	15
4:15 PM	0	1	0	0	1	0	0	1	0	1	0	0	8	0	8	0	0	0	0	0	10
4:30 PM	0	4	0	0	4	0	0	2	0	2	0	3	5	0	8	0	0	0	0	0	14
4:45 PM	0	0	0	0	0	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0	6
Total Volume	0	7	0	0	7	0	0	11	0	11	0	3	24	0	27	0	0	0	0	0	45
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	11.1	88.9	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.438	0.000	0.000	0.438	0.000	0.000	0.550	0.000	0.550	0.000	0.250	0.750	0.000	0.844	0.000	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	7	0	0	7	0	0	11	0	11	0	3	24	0	27	0	0	0	0	0	45
Exiting Leg	3					0					18					24					45
Total	10					11					45					24					90

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Buses

	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0					0					1					0					1

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

4:00 PM	Cedar Street (Route 85)					I-495 SB Offramp					Cedar Street (Route 85)					I-495 SB Onramp					Total
	North					East					South					West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg	0					0					1					0					1
Total	0					1					1					0					2

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp							Total	
	North							East							South							West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	4	0	4	5
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	5	0	5	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	6	6
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	7	4	11	12
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	63.6	36.4			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	58.3	33.3	91.7	
Exiting Leg Total	1							0							0							11							12	

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

4:30 PM	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp									
	North							East							South							West									
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	4	0	4	5	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3		
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	6	2	8	9
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	25.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.375	0.250	0.500	0.450	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	6	2	8	9
Exiting Leg	1							0							0							8							9		
Total	1							0							1							16							18		

PDI File #: **175696 A**
 Location: **N: Cedar Street (Route 85) S: Cedar Street (Route 85)**
 Location: **E: I-495 SB Offramp W: I-495 SB Onramp**
 City, State: **Milford, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **T0718**
 Count Date: **Wednesday, May 24, 2017**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Pedestrians

	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp							Total
	North							East							South							West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	5	5
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9	11	11
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	12	17	17
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	29.4	70.6		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.4	70.6	100.0	
Exiting Leg Total	0							0							0							17							17

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

4:45 PM	Cedar Street (Route 85)							I-495 SB Offramp							Cedar Street (Route 85)							I-495 SB Onramp							Total
	North							East							South							West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	5	5
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	12	12
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	16.7	83.3		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.625	0.600	0.600
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	12	12
Exiting Leg	0							0							0							12							12
Total	0							0							0							24							24

Attachment B

Automatic Traffic Recorder (ATR) Counts



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 A Class
Site Code: T0718

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
05/24/1														
7	0	15	3	0	0	1	0	0	0	0	0	0	0	19
01:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	5	2	0	2	0	0	0	0	0	0	0	0	9
04:00	1	9	2	1	1	0	0	0	0	0	0	0	0	14
05:00	0	80	22	0	3	0	0	0	1	0	0	0	0	106
06:00	4	331	136	3	36	3	0	1	2	0	0	0	0	516
07:00	1	486	125	3	22	3	1	2	1	0	0	0	0	644
08:00	1	512	123	1	20	1	1	1	1	0	0	0	0	661
09:00	2	222	73	1	14	6	2	1	0	0	0	0	0	321
10:00	0	184	51	1	24	1	1	0	1	0	0	0	0	263
11:00	2	185	51	2	10	8	1	1	0	0	0	0	0	260
12 PM	0	198	57	2	17	2	0	0	0	0	0	0	0	276
13:00	4	210	58	1	15	3	0	1	0	0	0	0	0	292
14:00	3	226	71	4	9	2	0	1	1	0	0	0	0	317
15:00	4	240	70	1	16	1	0	0	2	0	0	0	0	334
16:00	1	276	66	0	7	0	0	1	1	0	0	0	0	352
17:00	4	311	66	0	9	0	0	0	1	0	0	0	0	391
18:00	2	226	52	0	7	1	0	1	0	0	0	0	0	289
19:00	0	196	36	1	7	1	0	0	0	0	0	0	0	241
20:00	0	129	39	0	2	0	0	0	0	0	0	0	0	170
21:00	1	102	18	1	1	0	0	0	0	0	0	0	0	123
22:00	0	94	17	0	2	0	0	0	0	0	0	0	0	113
23:00	0	66	12	0	1	0	0	0	0	0	0	0	0	79
Total	30	4315	1151	22	225	33	6	10	11	0	0	0	0	5803
Percent	0.5%	74.4%	19.8%	0.4%	3.9%	0.6%	0.1%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	08:00	06:00	06:00	06:00	11:00	09:00	07:00	06:00					08:00
Vol.	4	512	136	3	36	8	2	2	2					661
PM Peak	13:00	17:00	14:00	14:00	12:00	13:00		13:00	15:00					17:00
Vol.	4	311	71	4	17	3		1	2					391



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 A Class
Site Code: T0718

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
05/25/1														
7	0	7	1	0	0	3	0	0	0	0	0	0	0	11
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
04:00	0	17	1	0	0	0	0	0	0	0	0	0	0	18
05:00	2	75	20	0	10	0	0	1	0	0	0	0	0	108
06:00	1	330	108	4	27	1	0	2	1	0	0	0	0	474
07:00	2	537	130	3	20	2	1	3	2	0	0	0	0	700
08:00	5	493	120	5	27	4	1	0	3	1	0	0	0	659
09:00	1	188	56	1	10	3	1	1	1	0	0	0	0	262
10:00	4	159	61	0	13	2	0	2	2	0	0	0	0	243
11:00	3	190	45	1	19	0	0	0	1	0	0	0	0	259
12 PM	1	190	48	1	21	2	0	2	0	0	0	0	0	265
13:00	2	209	76	0	14	1	1	0	2	0	0	0	0	305
14:00	3	207	47	4	15	1	0	0	3	0	0	0	0	280
15:00	0	220	51	4	12	1	0	0	3	0	0	0	0	291
16:00	0	280	58	0	9	0	0	1	0	0	0	0	0	348
17:00	1	294	74	1	10	2	0	0	0	0	0	0	0	382
18:00	1	209	34	1	7	0	0	0	0	0	0	0	0	252
19:00	0	182	34	0	3	0	0	0	0	0	0	0	0	219
20:00	0	148	24	0	3	0	0	1	0	0	0	0	0	176
21:00	0	100	19	0	5	1	0	0	0	0	0	0	0	125
22:00	0	47	5	0	0	0	0	0	0	0	0	0	0	52
23:00	0	23	4	0	0	0	0	0	0	0	0	0	0	27
Total	26	4113	1018	25	225	23	4	13	18	1	0	0	0	5466
Percent	0.5%	75.2%	18.6%	0.5%	4.1%	0.4%	0.1%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	08:00	06:00	08:00	07:00	07:00	08:00	08:00				07:00
Vol.	5	537	130	5	27	4	1	3	3	1				700
PM Peak	14:00	17:00	13:00	14:00	12:00	12:00	13:00	12:00	14:00					17:00
Vol.	3	294	76	4	21	2	1	2	3					382



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 A Class
Site Code: T0718

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
05/24/1														
7	0	9	2	0	0	0	0	0	0	0	0	0	0	11
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
04:00	0	12	2	0	0	0	0	0	1	0	0	0	0	15
05:00	0	45	12	1	0	1	0	0	0	0	0	0	0	59
06:00	1	104	27	0	3	2	0	0	0	0	0	0	0	137
07:00	0	193	41	1	2	2	0	0	0	0	0	0	0	239
08:00	2	253	34	0	5	7	0	0	2	0	0	0	0	303
09:00	1	190	36	3	10	5	0	0	1	0	0	0	0	246
10:00	1	180	46	2	5	3	0	1	1	0	0	0	0	239
11:00	1	210	44	1	4	2	0	1	1	0	0	0	0	264
12 PM	2	211	51	1	9	4	0	1	0	0	0	0	0	279
13:00	4	234	35	2	9	1	0	1	1	0	0	0	0	287
14:00	4	303	61	3	4	0	0	0	1	0	0	0	0	376
15:00	6	362	104	2	19	2	0	0	3	0	0	0	0	498
16:00	3	447	84	0	5	1	0	1	2	0	0	0	0	543
17:00	2	551	79	1	6	2	0	0	0	0	0	0	0	641
18:00	2	327	63	0	6	0	0	3	0	0	0	0	0	401
19:00	1	203	35	0	7	0	0	0	0	0	0	0	0	246
20:00	2	152	21	0	0	0	0	0	0	0	0	0	0	175
21:00	0	87	11	0	3	0	0	0	0	0	0	0	0	101
22:00	1	47	13	0	0	0	0	0	0	0	0	0	0	61
23:00	0	35	4	0	1	0	0	0	0	0	0	0	0	40
Total	33	4167	807	17	98	32	0	8	13	0	0	0	0	5175
Percent	0.6%	80.5%	15.6%	0.3%	1.9%	0.6%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	10:00	09:00	09:00	08:00		10:00	08:00					08:00
Vol.	2	253	46	3	10	7		1	2					303
PM Peak	15:00	17:00	15:00	14:00	15:00	12:00		18:00	15:00					17:00
Vol.	6	551	104	3	19	4		3	3					641



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 A Class
Site Code: T0718

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
05/25/1														
7	0	9	2	0	0	0	0	0	0	0	0	0	0	11
01:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
05:00	0	29	17	1	1	1	0	0	1	0	0	0	0	50
06:00	1	88	31	0	2	0	0	1	0	0	0	0	0	123
07:00	1	192	31	1	5	2	0	1	1	0	0	0	0	234
08:00	2	228	33	4	7	3	0	1	4	0	0	0	0	282
09:00	1	207	34	1	7	2	0	2	3	1	0	0	0	258
10:00	0	216	43	1	9	0	2	0	0	0	0	0	0	271
11:00	1	207	39	1	5	2	0	1	4	0	0	0	0	260
12 PM	0	232	50	0	5	2	0	0	3	0	0	0	0	292
13:00	2	220	45	2	8	3	0	1	3	0	0	0	0	284
14:00	1	266	90	4	12	0	0	0	0	0	0	0	0	373
15:00	1	377	77	6	18	2	0	0	1	0	0	0	0	482
16:00	0	500	85	1	12	2	0	2	0	0	0	0	0	602
17:00	1	529	66	1	8	2	0	2	0	0	0	0	0	609
18:00	0	358	50	1	3	0	0	0	0	0	0	0	0	412
19:00	1	181	20	2	1	0	0	0	0	0	0	0	0	205
20:00	0	114	8	0	3	1	0	0	0	0	0	0	0	126
21:00	0	79	14	0	0	0	0	0	0	0	0	0	0	93
22:00	0	46	3	0	0	0	0	0	0	0	0	0	0	49
23:00	0	27	0	1	1	0	0	0	0	0	0	0	0	29
Total	12	4119	743	27	107	22	2	11	20	1	0	0	0	5064
Percent	0.2%	81.3%	14.7%	0.5%	2.1%	0.4%	0.0%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	10:00	08:00	10:00	08:00	10:00	09:00	08:00	09:00				08:00
Vol.	2	228	43	4	9	3	2	2	4	1				282
PM Peak	13:00	17:00	14:00	15:00	15:00	13:00		16:00	12:00					17:00
Vol.	2	529	90	6	18	3		2	3					609



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 A Speed
Site Code: T0718

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
05/24/ 17	0	0	0	1	2	5	7	4	0	0	0	0	0	19	45	40
01:00	0	0	1	0	0	4	6	1	1	0	0	0	0	13	44	40
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	2	3	2	1	0	0	0	0	9	48	42
04:00	0	0	0	0	0	2	5	4	3	0	0	0	0	14	50	45
05:00	0	0	0	0	4	32	47	19	3	0	1	0	0	106	45	41
06:00	0	0	3	18	38	159	231	58	7	2	0	0	0	516	43	40
07:00	0	0	0	15	70	274	229	51	5	0	0	0	0	644	43	39
08:00	0	0	3	13	56	292	219	67	10	1	0	0	0	661	43	39
09:00	0	0	3	12	49	99	109	43	6	0	0	0	0	321	44	39
10:00	0	0	3	10	14	116	94	22	3	0	1	0	0	263	43	39
11:00	0	2	2	14	32	84	98	26	1	1	0	0	0	260	43	39
12 PM	0	0	2	9	31	96	104	28	5	1	0	0	0	276	43	39
13:00	1	3	1	8	38	106	103	25	5	1	1	0	0	292	43	39
14:00	0	0	2	10	24	123	112	37	6	3	0	0	0	317	43	40
15:00	3	1	2	5	30	112	144	33	3	1	0	0	0	334	43	39
16:00	0	1	2	7	33	134	130	41	4	0	0	0	0	352	43	39
17:00	0	0	2	5	30	145	148	53	7	0	1	0	0	391	44	40
18:00	0	0	0	4	22	100	121	38	2	2	0	0	0	289	43	40
19:00	0	0	0	2	14	75	101	43	5	1	0	0	0	241	45	41
20:00	0	0	0	2	14	76	58	16	4	0	0	0	0	170	43	39
21:00	0	0	1	0	9	48	49	15	0	0	1	0	0	123	43	40
22:00	0	0	0	1	5	46	47	12	2	0	0	0	0	113	43	40
23:00	0	0	0	0	5	35	34	5	0	0	0	0	0	79	42	39
Total	4	7	27	136	521	2165	2199	643	83	13	5	0	0	5803		
%	0.1%	0.1%	0.5%	2.3%	9.0%	37.3%	37.9%	11.1%	1.4%	0.2%	0.1%	0.0%	0.0%			
AM Peak		11:00	06:00	06:00	07:00	08:00	06:00	08:00	08:00	06:00	05:00			08:00		
Vol.		2	3	18	70	292	231	67	10	2	1			661		
PM Peak	15:00	13:00	12:00	14:00	13:00	17:00	17:00	17:00	17:00	14:00	13:00			17:00		
Vol.	3	3	2	10	38	145	148	53	7	3	1			391		

Stats

15th Percentile : 34 MPH
50th Percentile : 39 MPH
85th Percentile : 43 MPH
95th Percentile : 47 MPH

Mean Speed(Average) : 39 MPH
10 MPH Pace Speed : 35-44 MPH
Number in Pace : 4364
Percent in Pace : 75.2%
Number of Vehicles > 40 MPH : 2503
Percent of Vehicles > 40 MPH : 43.1%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 A Speed
Site Code: T0718

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
05/25/ 17	0	0	0	0	1	4	4	1	0	0	0	1	0	11	45	42
01:00	0	0	0	0	0	1	0	0	1	0	0	0	0	2	52	45
02:00	0	0	0	1	0	1	0	0	0	0	0	0	0	2	37	32
03:00	0	0	0	0	0	2	2	1	1	0	0	0	0	6	49	43
04:00	0	0	0	0	1	2	7	7	1	0	0	0	0	18	47	43
05:00	0	0	2	0	2	37	43	17	7	0	0	0	0	108	46	41
06:00	0	0	0	9	38	155	215	50	7	0	0	0	0	474	43	40
07:00	1	6	3	22	68	288	264	43	4	1	0	0	0	700	42	39
08:00	0	0	12	34	104	282	196	28	2	1	0	0	0	659	42	37
09:00	0	0	3	5	19	110	92	29	3	0	1	0	0	262	43	39
10:00	0	0	6	17	26	82	80	28	3	1	0	0	0	243	43	38
11:00	0	1	7	6	29	99	84	27	5	1	0	0	0	259	43	39
12 PM	0	0	0	4	32	109	80	36	4	0	0	0	0	265	44	39
13:00	1	0	1	21	44	108	102	25	3	0	0	0	0	305	43	38
14:00	0	0	2	23	18	107	99	27	4	0	0	0	0	280	43	39
15:00	0	0	3	10	29	108	103	36	2	0	0	0	0	291	43	39
16:00	0	0	0	7	25	138	142	33	3	0	0	0	0	348	43	40
17:00	0	0	0	6	33	139	162	39	3	0	0	0	0	382	43	40
18:00	0	0	1	3	16	95	105	29	3	0	0	0	0	252	43	40
19:00	0	0	2	4	9	76	95	28	5	0	0	0	0	219	44	40
20:00	0	0	0	1	19	84	60	12	0	0	0	0	0	176	42	39
21:00	0	0	1	0	9	64	48	2	0	1	0	0	0	125	42	39
22:00	0	0	1	1	1	22	20	6	1	0	0	0	0	52	43	40
23:00	0	0	0	1	4	9	9	2	1	1	0	0	0	27	43	40
Total	2	7	44	175	527	2122	2012	506	63	6	1	1	0	5466		
%	0.0%	0.1%	0.8%	3.2%	9.6%	38.8%	36.8%	9.3%	1.2%	0.1%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	08:00	08:00	08:00	07:00	07:00	06:00	05:00	07:00	09:00	00:00		07:00		
Vol.	1	6	12	34	104	288	264	50	7	1	1	1		700		
PM Peak	13:00		15:00	14:00	13:00	17:00	17:00	17:00	19:00	21:00				17:00		
Vol.	1		3	23	44	139	162	39	5	1				382		

Stats

15th Percentile : 34 MPH
50th Percentile : 38 MPH
85th Percentile : 43 MPH
95th Percentile : 47 MPH

Mean Speed(Average) : 39 MPH
10 MPH Pace Speed : 35-44 MPH
Number in Pace : 4134
Percent in Pace : 75.6%
Number of Vehicles > 40 MPH : 2187
Percent of Vehicles > 40 MPH : 40.0%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 A Speed
Site Code: T0718

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
05/24/ 17	0	0	0	0	3	4	3	1	0	0	0	0	0	11	42	38
01:00	0	0	0	0	0	3	3	0	0	0	0	0	0	6	42	40
02:00	0	0	0	0	0	2	0	0	1	0	0	0	0	3	51	42
03:00	0	0	0	0	0	2	2	1	0	0	0	0	0	5	45	41
04:00	0	0	0	0	0	8	3	3	1	0	0	0	0	15	46	41
05:00	0	0	0	0	2	18	30	6	2	1	0	0	0	59	44	41
06:00	0	0	0	2	10	56	58	10	1	0	0	0	0	137	43	39
07:00	0	0	1	3	32	119	69	14	1	0	0	0	0	239	42	38
08:00	0	0	2	21	78	129	68	3	2	0	0	0	0	303	41	36
09:00	0	0	1	13	33	128	61	9	1	0	0	0	0	246	41	37
10:00	0	0	1	2	38	121	62	15	0	0	0	0	0	239	42	38
11:00	0	0	0	8	57	110	83	6	0	0	0	0	0	264	41	37
12 PM	0	0	3	20	66	130	51	9	0	0	0	0	0	279	40	36
13:00	1	5	6	6	51	140	65	12	1	0	0	0	0	287	41	37
14:00	0	2	1	9	51	196	110	7	0	0	0	0	0	376	41	38
15:00	1	5	16	19	106	230	115	5	1	0	0	0	0	498	41	36
16:00	0	0	4	26	139	277	92	5	0	0	0	0	0	543	39	36
17:00	3	8	15	78	211	251	71	4	0	0	0	0	0	641	38	34
18:00	0	0	4	17	86	206	79	9	0	0	0	0	0	401	40	37
19:00	0	0	1	4	29	128	71	13	0	0	0	0	0	246	42	38
20:00	0	0	0	5	31	101	33	4	0	1	0	0	0	175	40	37
21:00	0	0	1	3	25	50	19	3	0	0	0	0	0	101	40	37
22:00	0	0	0	1	6	33	20	1	0	0	0	0	0	61	41	38
23:00	0	0	0	0	7	13	13	7	0	0	0	0	0	40	44	39
Total %	5 0.1%	20 0.4%	56 1.1%	237 4.6%	1061 20.5%	2455 47.4%	1181 22.8%	147 2.8%	11 0.2%	2 0.0%	0 0.0%	0 0.0%	0 0.0%	5175		
AM Peak			08:00	08:00	08:00	08:00	11:00	10:00	05:00	05:00				08:00		
Vol.			2	21	78	129	83	15	2	1				303		
PM Peak	17:00	17:00	15:00	17:00	17:00	16:00	15:00	19:00	13:00	20:00				17:00		
Vol.	3	8	16	78	211	277	115	13	1	1				641		

Stats

15th Percentile : 31 MPH
50th Percentile : 36 MPH
85th Percentile : 41 MPH
95th Percentile : 43 MPH

Mean Speed(Average) : 37 MPH
10 MPH Pace Speed : 35-44 MPH
Number in Pace : 3636
Percent in Pace : 70.3%
Number of Vehicles > 40 MPH : 1105
Percent of Vehicles > 40 MPH : 21.3%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 A Speed
Site Code: T0718

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
05/25/ 17	0	0	0	0	1	3	6	1	0	0	0	0	0	11	43	40
01:00	0	0	0	0	0	1	0	3	1	0	0	0	0	5	50	46
02:00	0	0	0	0	1	3	1	1	0	0	0	0	0	6	44	39
03:00	0	0	0	0	0	2	1	0	0	0	0	0	0	3	41	39
04:00	0	0	0	0	0	1	3	1	0	0	0	0	0	5	45	42
05:00	0	0	0	0	2	10	25	12	1	0	0	0	0	50	46	42
06:00	0	0	0	4	4	42	60	13	0	0	0	0	0	123	43	40
07:00	0	0	0	7	47	117	54	8	0	1	0	0	0	234	41	37
08:00	0	0	0	9	55	169	45	4	0	0	0	0	0	282	39	37
09:00	0	0	1	14	55	132	53	3	0	0	0	0	0	258	40	36
10:00	0	0	5	10	58	133	54	10	1	0	0	0	0	271	41	37
11:00	1	5	7	9	54	138	36	9	1	0	0	0	0	260	39	36
12 PM	0	0	0	14	67	140	62	8	1	0	0	0	0	292	41	37
13:00	0	0	2	6	50	144	73	9	0	0	0	0	0	284	41	37
14:00	0	0	2	16	75	196	79	4	0	0	1	0	0	373	40	37
15:00	0	0	5	16	126	250	82	3	0	0	0	0	0	482	39	36
16:00	0	0	6	35	216	251	88	5	1	0	0	0	0	602	39	35
17:00	0	0	10	56	205	257	77	3	1	0	0	0	0	609	38	35
18:00	0	0	0	8	90	229	80	5	0	0	0	0	0	412	40	37
19:00	1	2	4	9	43	82	57	7	0	0	0	0	0	205	41	37
20:00	0	0	4	0	22	62	31	6	1	0	0	0	0	126	42	37
21:00	0	0	0	1	19	53	17	3	0	0	0	0	0	93	40	37
22:00	0	0	0	0	12	23	14	0	0	0	0	0	0	49	41	37
23:00	0	0	1	3	4	13	6	2	0	0	0	0	0	29	42	36
Total %	2 0.0%	7 0.1%	47 0.9%	217 4.3%	1206 23.8%	2451 48.4%	1004 19.8%	120 2.4%	8 0.2%	1 0.0%	1 0.0%	0 0.0%	0 0.0%	5064		
AM Peak	11:00	11:00	11:00	09:00	10:00	08:00	06:00	06:00	01:00	07:00				08:00		
Vol.	1	5	7	14	58	169	60	13	1	1				282		
PM Peak	19:00	19:00	17:00	17:00	16:00	17:00	16:00	13:00	12:00		14:00			17:00		
Vol.	1	2	10	56	216	257	88	9	1		1			609		

Stats

15th Percentile : 31 MPH
50th Percentile : 36 MPH
85th Percentile : 40 MPH
95th Percentile : 43 MPH

Mean Speed(Average) : 36 MPH
10 MPH Pace Speed : 30-39 MPH
Number in Pace : 3657
Percent in Pace : 72.2%
Number of Vehicles > 40 MPH : 933
Percent of Vehicles > 40 MPH : 18.4%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio

175696 A Volume
Site Code: T0718

Start	SB		NB		Combin		5/24/201	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	7	Wed
12:00	8	77	4	56	12	133		
12:15	3	60	2	83	5	143		
12:30	5	72	1	68	6	140		
12:45	3	67	4	72	7	139	555	
01:00	4	82	0	68	4	150		
01:15	3	72	4	80	7	152		
01:30	2	68	0	75	2	143		
01:45	4	70	2	64	6	134	579	
02:00	0	74	1	89	1	163		
02:15	0	81	2	85	2	166		
02:30	0	73	0	107	0	180		
02:45	0	89	0	95	0	184	693	
03:00	1	86	0	117	1	203		
03:15	4	83	0	115	4	198		
03:30	4	76	5	117	9	193		
03:45	0	89	0	149	0	238	832	
04:00	1	96	2	113	3	209		
04:15	1	80	1	154	2	234		
04:30	6	93	6	146	12	239		
04:45	6	83	6	130	12	213	895	
05:00	11	98	4	146	15	244		
05:15	21	96	15	152	36	248		
05:30	37	89	16	170	53	259		
05:45	37	108	24	173	61	281	1032	
06:00	65	94	24	134	89	228		
06:15	102	76	36	116	138	192		
06:30	170	54	38	82	208	136		
06:45	179	65	39	69	218	134	690	
07:00	156	75	53	76	209	151		
07:15	145	64	51	52	196	116		
07:30	179	62	68	61	247	123		
07:45	164	40	67	57	231	97	487	
08:00	197	45	89	40	286	85		
08:15	195	36	68	50	263	86		
08:30	149	42	73	51	222	93		
08:45	120	47	73	34	193	81	345	
09:00	107	33	69	29	176	62		
09:15	80	32	60	20	140	52		
09:30	68	34	61	20	129	54		
09:45	66	24	56	32	122	56	224	
10:00	66	32	44	25	110	57		
10:15	64	22	58	11	122	33		
10:30	64	36	71	9	135	45		
10:45	69	23	66	16	135	39	174	
11:00	61	54	45	10	106	64		
11:15	52	18	79	18	131	36		
11:30	72	4	72	5	144	9		
11:45	75	3	68	7	143	10	119	
Total	2826	2977	1527	3648	4353	6625		
Percent	64.9%	44.9%	35.1%	55.1%				
Day Total		5803		5175		10978		
Peak	07:30	-	05:00	-	08:00	-	05:00	-
Vol.	735	-	391	-	303	-	641	-
P.H.F.	0.933	-	0.905	-	0.851	-	0.926	-



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
north of I-495 SB Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio

175696 A Volume
Site Code: T0718

Start	SB		NB		Combin		5/25/201	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	7	Thu
12:00	0	80	7	69	7	149		
12:15	4	57	1	86	5	143		
12:30	4	59	3	72	7	131		
12:45	3	69	0	65	3	134	557	
01:00	0	92	0	67	0	159		
01:15	2	66	3	75	5	141		
01:30	0	67	1	78	1	145		
01:45	0	80	1	64	1	144	589	
02:00	0	75	3	89	3	164		
02:15	2	73	2	84	4	157		
02:30	0	66	0	95	0	161		
02:45	0	66	1	105	1	171	653	
03:00	0	58	0	84	0	142		
03:15	1	77	1	115	2	192		
03:30	3	65	0	111	3	176		
03:45	2	91	2	172	4	263	773	
04:00	0	84	2	137	2	221		
04:15	2	73	0	150	2	223		
04:30	8	98	1	168	9	266		
04:45	8	93	2	147	10	240	950	
05:00	10	97	3	171	13	268		
05:15	17	107	12	157	29	264		
05:30	43	88	15	147	58	235		
05:45	38	90	20	134	58	224	991	
06:00	63	68	27	108	90	176		
06:15	124	65	34	111	158	176		
06:30	131	67	31	89	162	156		
06:45	156	52	31	104	187	156	664	
07:00	135	59	49	51	184	110		
07:15	171	57	58	61	229	118		
07:30	202	54	49	62	251	116		
07:45	192	49	78	31	270	80	424	
08:00	147	50	78	36	225	86		
08:15	198	51	77	39	275	90		
08:30	168	42	75	26	243	68		
08:45	146	33	52	25	198	58	302	
09:00	74	39	71	27	145	66		
09:15	75	20	62	25	137	45		
09:30	64	40	62	17	126	57		
09:45	49	26	63	24	112	50	218	
10:00	66	15	62	13	128	28		
10:15	59	14	80	16	139	30		
10:30	62	11	66	11	128	22		
10:45	56	12	63	9	119	21	101	
11:00	52	6	65	14	117	20		
11:15	64	12	60	9	124	21		
11:30	79	7	58	4	137	11		
11:45	64	2	77	2	141	4	56	
Total	2744	2722	1508	3556	4252	6278		
Percent	64.5%	43.4%	35.5%	56.6%				
Day Total		5466		5064		10530		
Peak	07:30	-	04:30	-	07:30	-	04:30	-
Vol.	739	-	395	-	1021	-	1038	-
P.H.F.	0.915	-	0.923	-	0.928	-	0.968	-



Page 1

175696 B Class
Site Code: T0715

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/24/17														
7:00	49	1	0	0	0	0	0	0	0	0	0	0	0	50
01:00	30	0	0	0	0	0	0	0	0	0	0	0	0	30
02:00	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	6	1	0	0	0	0	0	0	0	0	0	0	0	7
04:00	13	0	3	0	0	0	0	0	0	0	0	0	0	16
05:00	70	1	3	0	0	0	0	0	0	0	0	0	0	74
06:00	278	17	5	0	0	0	0	0	0	0	0	0	0	300
07:00	492	10	3	0	0	0	0	0	0	0	0	0	0	505
08:00	677	11	7	0	0	0	0	0	0	0	0	0	0	695
09:00	278	10	1	0	0	0	0	0	0	0	0	0	0	289
10:00	209	3	3	0	0	0	0	0	0	0	0	0	0	215
11:00	187	9	5	0	0	0	0	0	0	0	0	0	0	201
12 PM	225	9	2	0	0	0	0	0	0	0	0	0	0	236
13:00	255	7	5	0	0	0	0	0	0	0	0	0	0	267
14:00	272	4	4	0	0	0	0	0	0	0	0	0	0	280
15:00	340	13	5	0	0	0	0	0	0	0	0	0	0	358
16:00	425	7	2	0	0	0	0	0	0	0	0	0	0	434
17:00	497	5	0	0	0	0	0	0	0	0	0	0	0	502
18:00	351	6	1	0	0	0	0	0	0	0	0	0	0	358
19:00	260	1	0	0	0	0	0	0	0	0	0	0	0	261
20:00	202	1	1	0	0	0	0	0	0	0	0	0	0	204
21:00	149	0	0	0	0	0	0	0	0	0	0	0	0	149
22:00	164	0	0	0	0	0	0	0	0	0	0	0	0	164
23:00	91	0	0	0	0	0	0	0	0	0	0	0	0	91
Total	5523	116	50	0	0	0	0	0	0	0	0	0	0	5689
Percent	97.1%	2.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	06:00	08:00											08:00
Vol.	677	17	7											695
PM Peak	17:00	15:00	13:00											17:00
Vol.	497	13	5											502



Page 2

175696 B Class
Site Code: T0715

Start Time	Cars	Medium Heavy	Large Heavy											Total
05/25/17														
7:00	26	2	1	0	0	0	0	0	0	0	0	0	0	29
01:00	5	0	0	0	0	0	0	0	0	0	0	0	0	5
02:00	7	0	1	0	0	0	0	0	0	0	0	0	0	8
03:00	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	15	0	0	0	0	0	0	0	0	0	0	0	0	15
05:00	69	3	4	0	0	0	0	0	0	0	0	0	0	76
06:00	260	10	2	0	0	0	0	0	0	0	0	0	0	272
07:00	482	7	4	0	0	0	0	0	0	0	0	0	0	493
08:00	602	10	7	0	0	0	0	0	0	0	0	0	0	619
09:00	235	10	4	0	0	0	0	0	0	0	0	0	0	249
10:00	169	11	3	0	0	0	0	0	0	0	0	0	0	183
11:00	226	7	4	0	0	0	0	0	0	0	0	0	0	237
12 PM	230	13	3	0	0	0	0	0	0	0	0	0	0	246
13:00	236	7	5	0	0	0	0	0	0	0	0	0	0	248
14:00	302	6	6	0	0	0	0	0	0	0	0	0	0	314
15:00	337	12	6	0	0	0	0	0	0	0	0	0	0	355
16:00	386	4	1	0	0	0	0	0	0	0	0	0	0	391
17:00	469	5	1	0	0	0	0	0	0	0	0	0	0	475
18:00	333	4	0	0	0	0	0	0	0	0	0	0	0	337
19:00	255	2	0	0	0	0	0	0	0	0	0	0	0	257
20:00	180	2	0	0	0	0	0	0	0	0	0	0	0	182
21:00	146	0	0	0	0	0	0	0	0	0	0	0	0	146
22:00	86	0	0	0	0	0	0	0	0	0	0	0	0	86
23:00	46	0	0	0	0	0	0	0	0	0	0	0	0	46
Total	5104	115	52	0	0	0	0	0	0	0	0	0	0	5271
Percent	96.8%	2.2%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	10:00	08:00											08:00
Vol.	602	11	7											619
PM Peak	17:00	12:00	14:00											17:00
Vol.	469	13	6											475



Start		WB												Wed
Time	A.M.		P.M.										5/24/201	7
12:00	20		52											
12:15	11		58											
12:30	13		71											
12:45	6	50	55	236										
01:00	10		67											
01:15	6		47											
01:30	10		71											
01:45	4	30	82	267										
02:00	1		61											
02:15	0		69											
02:30	0		70											
02:45	2	3	80	280										
03:00	2		73											
03:15	1		88											
03:30	2		95											
03:45	2	7	102	358										
04:00	1		104											
04:15	2		105											
04:30	8		114											
04:45	5	16	111	434										
05:00	8		123											
05:15	16		121											
05:30	26		128											
05:45	24	74	130	502										
06:00	38		112											
06:15	65		86											
06:30	88		81											
06:45	109	300	79	358										
07:00	89		72											
07:15	123		70											
07:30	149		64											
07:45	144	505	55	261										
08:00	203		59											
08:15	183		47											
08:30	188		62											
08:45	121	695	36	204										
09:00	103		45											
09:15	70		34											
09:30	62		37											
09:45	54	289	33	149										
10:00	60		43											
10:15	49		36											
10:30	44		52											
10:45	62	215	33	164										
11:00	41		54											
11:15	52		17											
11:30	54		10											
11:45	54	201	10	91										
Total	2385		3304											
Percent			100.0 %		0.0%		0.0%							
Day Total		5689												
Peak	07:45	-	05:00	-	-	-	-	-	-	-	-	-	-	-
Vol.	718	-	502	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.884		0.965											



Start	WB														Thu	
Time	A.M.		P.M.													5/25/201
																7
12:00	5		60													
12:15	7		47													
12:30	11		69													
12:45	6	29	70	246												
01:00	2		59													
01:15	0		70													
01:30	2		62													
01:45	1	5	57	248												
02:00	0		75													
02:15	2		70													
02:30	4		86													
02:45	2	8	83	314												
03:00	0		80													
03:15	0		83													
03:30	1		93													
03:45	1	2	99	355												
04:00	2		97													
04:15	3		83													
04:30	4		115													
04:45	6	15	96	391												
05:00	8		142													
05:15	15		130													
05:30	22		100													
05:45	31	76	103	475												
06:00	40		103													
06:15	62		80													
06:30	85		77													
06:45	85	272	77	337												
07:00	91		83													
07:15	127		59													
07:30	138		58													
07:45	137	493	57	257												
08:00	120		44													
08:15	193		48													
08:30	163		47													
08:45	143	619	43	182												
09:00	81		41													
09:15	71		31													
09:30	51		42													
09:45	46	249	32	146												
10:00	52		21													
10:15	41		31													
10:30	36		16													
10:45	54	183	18	86												
11:00	47		16													
11:15	61		11													
11:30	66		12													
11:45	63	237	7	46												
Total	2188		3083													
Percent			100.0 %	0.0%	0.0%											
Day Total		5271														
Peak	08:00	-	04:30	-	-	-	-	-	-	-	-	-	-	-	-	
Vol.	619	-	483	-	-	-	-	-	-	-	-	-	-	-	-	
P.H.F.	0.802		0.850													



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 C Class
Site Code: T0718

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
05/24/1														
7	1	46	4	0	3	1	0	0	1	0	0	0	0	56
01:00	1	21	2	1	0	1	0	1	1	0	0	0	0	28
02:00	3	7	6	3	2	4	0	1	1	0	0	0	0	27
03:00	0	21	8	2	1	0	0	1	3	0	0	0	0	36
04:00	2	58	22	1	3	2	0	0	3	0	0	0	0	91
05:00	4	267	111	3	17	6	1	3	10	0	0	0	0	422
06:00	11	573	246	6	49	8	0	6	1	0	0	0	0	900
07:00	6	669	156	11	23	8	1	1	3	0	1	0	0	879
08:00	9	530	96	5	18	4	1	3	4	1	0	0	1	672
09:00	3	415	135	7	23	11	2	5	4	0	0	0	0	605
10:00	8	393	97	7	29	10	2	3	3	0	0	0	0	552
11:00	11	408	96	4	23	15	0	1	7	0	0	0	0	565
12 PM	6	388	98	12	28	11	1	2	8	0	0	0	0	554
13:00	5	429	113	8	23	10	1	1	5	0	0	0	0	595
14:00	4	502	117	5	18	10	0	4	5	0	0	0	0	665
15:00	4	500	113	4	26	2	0	2	6	0	0	0	0	657
16:00	8	523	109	3	19	3	0	5	4	0	0	1	0	675
17:00	8	532	94	1	11	1	0	3	4	1	0	1	0	656
18:00	6	395	65	2	10	3	0	3	2	0	0	0	0	486
19:00	0	324	59	0	8	1	0	1	1	0	0	0	0	394
20:00	2	249	49	0	5	1	0	1	3	0	0	0	0	310
21:00	5	181	35	0	2	3	0	0	2	0	0	0	0	228
22:00	2	84	15	0	3	1	0	0	0	0	0	0	0	105
23:00	0	57	16	0	4	0	0	0	0	0	0	0	0	77
Total	109	7572	1862	85	348	116	9	47	81	2	1	2	1	10235
Percent	1.1%	74.0%	18.2%	0.8%	3.4%	1.1%	0.1%	0.5%	0.8%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	07:00	06:00	07:00	06:00	11:00	09:00	06:00	05:00	08:00	07:00		08:00	06:00
Vol.	11	669	246	11	49	15	2	6	10	1	1		1	900
PM Peak	16:00	17:00	14:00	12:00	12:00	12:00	12:00	16:00	12:00	17:00		16:00		16:00
Vol.	8	532	117	12	28	11	1	5	8	1		1		675



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 C Class
Site Code: T0718

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
05/25/1														
7	0	20	2	0	2	2	0	0	2	0	0	0	0	28
01:00	3	12	1	3	1	2	0	0	5	0	0	0	0	27
02:00	4	10	5	0	4	3	0	0	3	1	0	0	0	30
03:00	1	26	11	6	2	1	0	0	0	0	0	0	0	47
04:00	1	52	16	4	3	2	0	0	4	0	0	0	0	82
05:00	2	279	108	1	19	4	0	3	7	0	0	0	0	423
06:00	4	590	200	3	37	4	0	9	3	0	0	0	0	850
07:00	9	650	160	10	24	10	1	7	2	1	0	0	0	874
08:00	6	521	103	9	19	5	0	2	2	0	0	0	0	667
09:00	2	370	100	5	23	7	1	2	4	1	0	0	0	515
10:00	11	353	105	5	31	9	2	2	6	0	0	0	0	524
11:00	9	357	102	4	29	12	1	5	9	0	0	0	0	528
12 PM	9	373	93	8	27	10	0	2	7	0	0	0	0	529
13:00	8	422	120	2	26	11	0	4	8	1	0	0	0	602
14:00	4	446	102	4	22	6	0	3	3	0	0	0	0	590
15:00	9	509	122	5	28	8	0	0	3	0	0	0	0	684
16:00	7	532	77	1	11	7	0	1	5	0	0	0	0	641
17:00	5	522	85	1	14	2	1	0	0	0	0	0	0	630
18:00	2	384	65	2	7	0	0	2	0	0	0	0	0	462
19:00	2	274	58	1	5	1	0	1	4	0	0	0	0	346
20:00	2	245	46	1	5	2	0	2	1	0	0	0	0	304
21:00	1	171	30	0	7	2	0	0	0	0	0	0	0	211
22:00	2	73	22	0	1	2	0	0	0	0	0	0	0	100
23:00	0	65	11	4	0	0	0	0	2	0	0	0	0	82
Total	103	7256	1744	79	347	112	6	45	80	4	0	0	0	9776
Percent	1.1%	74.2%	17.8%	0.8%	3.5%	1.1%	0.1%	0.5%	0.8%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	07:00	06:00	07:00	06:00	11:00	10:00	06:00	11:00	02:00				07:00
Vol.	11	650	200	10	37	12	2	9	9	1				874
PM Peak	12:00	16:00	15:00	12:00	15:00	13:00	17:00	13:00	13:00	13:00				15:00
Vol.	9	532	122	8	28	11	1	4	8	1				684



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 C Class
Site Code: T0718

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
05/24/1														
7	0	39	7	0	1	0	0	0	0	0	0	0	0	47
01:00	0	27	2	0	0	0	0	0	0	0	0	0	0	29
02:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
04:00	3	21	4	0	0	3	0	0	0	0	0	0	0	31
05:00	0	61	19	2	0	0	0	0	3	0	0	0	0	85
06:00	2	156	50	1	7	2	0	0	1	0	0	0	0	219
07:00	4	329	59	3	4	4	0	2	0	0	0	0	0	405
08:00	10	470	71	1	10	2	0	1	0	1	0	0	0	566
09:00	2	293	81	3	16	4	0	1	1	0	0	0	0	401
10:00	6	255	73	1	8	5	0	5	1	0	0	0	0	354
11:00	7	271	54	4	12	5	0	2	1	0	0	0	0	356
12 PM	6	291	80	1	12	3	0	4	2	0	1	0	0	400
13:00	6	322	81	4	12	5	1	2	1	0	0	0	0	434
14:00	5	407	83	3	8	5	0	2	0	0	0	0	0	513
15:00	6	500	126	4	23	1	2	2	3	0	0	0	0	667
16:00	13	576	117	1	15	1	0	3	5	0	1	1	0	733
17:00	7	698	99	4	7	3	0	2	0	0	0	0	0	820
18:00	8	467	94	4	13	3	0	7	0	0	1	0	0	597
19:00	6	327	70	0	16	0	0	2	0	0	0	0	0	421
20:00	3	257	41	2	6	2	0	1	0	0	0	0	0	312
21:00	1	167	28	1	2	1	0	0	0	0	0	0	0	200
22:00	1	115	24	0	1	0	0	0	0	0	0	0	0	141
23:00	0	64	11	0	1	0	0	0	0	0	0	0	0	76
Total	96	6129	1275	39	174	49	3	36	18	1	3	1	0	7824
Percent	1.2%	78.3%	16.3%	0.5%	2.2%	0.6%	0.0%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	09:00	11:00	09:00	10:00		10:00	05:00	08:00				08:00
Vol.	10	470	81	4	16	5		5	3	1				566
PM Peak	16:00	17:00	15:00	13:00	15:00	13:00	15:00	18:00	16:00		12:00	16:00		17:00
Vol.	13	698	126	4	23	5	2	7	5		1	1		820



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 C Class
Site Code: T0718

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
05/25/1														
7	1	29	4	0	0	1	0	0	0	0	0	0	0	35
01:00	0	6	5	0	0	0	0	0	0	0	0	0	0	11
02:00	1	11	1	0	0	1	0	0	0	0	0	0	0	14
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	14	3	0	0	0	0	0	0	0	0	0	0	17
05:00	1	39	25	2	5	0	0	1	0	0	0	0	0	73
06:00	1	126	41	2	6	3	0	1	0	0	0	0	0	180
07:00	6	297	50	3	11	3	1	2	0	0	0	0	0	373
08:00	4	420	79	2	14	5	0	3	4	1	0	0	1	533
09:00	8	283	73	3	17	5	2	5	1	1	0	0	0	398
10:00	1	249	77	3	16	2	0	2	0	0	0	0	0	350
11:00	5	298	65	3	12	5	0	3	6	0	0	0	0	397
12 PM	2	319	74	0	13	4	1	4	3	0	0	0	0	420
13:00	4	313	80	1	12	3	0	4	5	0	0	0	0	422
14:00	1	383	121	1	19	2	0	5	1	0	0	0	0	533
15:00	10	483	87	7	23	4	2	2	2	0	0	0	0	620
16:00	4	645	82	1	16	3	0	1	0	0	0	0	0	752
17:00	6	650	80	0	10	1	0	5	2	0	0	0	0	754
18:00	4	494	80	2	10	3	0	2	0	0	0	0	0	595
19:00	2	290	48	3	7	0	0	1	1	0	0	0	0	352
20:00	1	205	34	0	4	0	1	1	0	0	0	0	0	246
21:00	0	165	22	0	2	0	1	1	0	0	0	0	0	191
22:00	0	96	16	0	1	0	0	0	0	0	0	0	0	113
23:00	0	59	8	0	1	0	0	0	0	0	0	0	0	68
Total	62	5878	1155	33	199	45	8	43	25	2	0	0	1	7451
Percent	0.8%	78.9%	15.5%	0.4%	2.7%	0.6%	0.1%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	08:00	08:00	07:00	09:00	08:00	09:00	09:00	11:00	08:00			08:00	08:00
Vol.	8	420	79	3	17	5	2	5	6	1			1	533
PM Peak	15:00	17:00	14:00	15:00	15:00	12:00	15:00	14:00	13:00					17:00
Vol.	10	650	121	7	23	4	2	5	5					754



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 C Speed
Site Code: T0718

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
05/24/ 17	0	0	0	1	6	11	25	11	2	0	0	0	0	56	46	41
01:00	0	0	0	2	5	8	10	2	1	0	0	0	0	28	43	38
02:00	0	0	0	2	6	6	9	4	0	0	0	0	0	27	43	38
03:00	0	0	0	1	5	16	9	4	0	1	0	0	0	36	43	39
04:00	0	0	0	0	4	22	37	23	5	0	0	0	0	91	47	42
05:00	0	0	2	3	11	96	202	93	11	4	0	0	0	422	46	42
06:00	6	4	5	17	95	292	345	117	15	3	1	0	0	900	44	39
07:00	0	2	2	15	101	333	320	92	12	2	0	0	0	879	43	39
08:00	0	0	3	9	75	226	269	74	12	4	0	0	0	672	43	40
09:00	0	0	1	7	68	219	218	83	9	0	0	0	0	605	44	40
10:00	0	0	2	8	58	208	228	45	2	1	0	0	0	552	43	39
11:00	31	27	40	60	67	137	156	39	7	1	0	0	0	565	42	34
12 PM	0	0	0	5	61	191	217	69	9	2	0	0	0	554	43	40
13:00	0	0	6	18	61	209	233	56	9	2	0	1	0	595	43	39
14:00	6	2	14	20	64	254	242	52	9	2	0	0	0	665	43	38
15:00	0	0	1	10	90	224	252	73	7	0	0	0	0	657	43	39
16:00	3	1	7	41	102	237	230	43	11	0	0	0	0	675	42	38
17:00	6	3	13	23	96	209	223	70	11	1	1	0	0	656	43	38
18:00	0	0	0	6	42	156	207	63	11	1	0	0	0	486	44	40
19:00	0	0	0	0	12	108	194	67	11	2	0	0	0	394	45	42
20:00	0	0	0	3	37	110	111	41	8	0	0	0	0	310	44	40
21:00	0	1	1	5	35	89	74	20	3	0	0	0	0	228	43	39
22:00	0	0	0	1	18	32	43	11	0	0	0	0	0	105	43	39
23:00	0	0	0	2	6	21	34	12	2	0	0	0	0	77	45	41
Total	52	40	97	259	1125	3414	3888	1164	167	26	2	1	0	10235		
%	0.5%	0.4%	0.9%	2.5%	11.0%	33.4%	38.0%	11.4%	1.6%	0.3%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	11:00	11:00	07:00	07:00	06:00	06:00	06:00	05:00	06:00			06:00		
Vol.	31	27	40	60	101	333	345	117	15	4	1			900		
PM Peak	14:00	17:00	14:00	16:00	16:00	14:00	15:00	15:00	16:00	12:00	17:00	13:00		16:00		
Vol.	6	3	14	41	102	254	252	73	11	2	1	1		675		

Stats

15th Percentile :	33 MPH
50th Percentile :	39 MPH
85th Percentile :	43 MPH
95th Percentile :	47 MPH
Mean Speed(Average) :	39 MPH
10 MPH Pace Speed :	35-44 MPH
Number in Pace :	7302
Percent in Pace :	71.3%
Number of Vehicles > 40 MPH :	4470
Percent of Vehicles > 40 MPH :	43.7%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
NB

175696 C Speed
Site Code: T0718

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
05/25/ 17	0	0	0	0	5	11	9	2	0	1	0	0	0	28	43	39
01:00	0	0	0	3	4	12	7	1	0	0	0	0	0	27	41	37
02:00	0	0	0	6	8	9	5	2	0	0	0	0	0	30	41	35
03:00	0	0	0	0	4	19	15	7	2	0	0	0	0	47	45	40
04:00	0	0	0	0	2	21	35	19	5	0	0	0	0	82	47	42
05:00	0	0	0	0	13	81	199	109	18	3	0	0	0	423	47	43
06:00	0	0	2	19	57	319	355	83	12	2	0	1	0	850	43	40
07:00	3	3	4	19	139	333	292	66	12	2	0	1	0	874	43	38
08:00	0	0	0	22	108	234	230	60	9	3	1	0	0	667	43	39
09:00	0	0	1	14	64	189	195	47	4	0	1	0	0	515	43	39
10:00	0	0	2	3	75	195	195	52	2	0	0	0	0	524	43	39
11:00	0	0	2	8	81	188	190	53	4	1	1	0	0	528	43	39
12 PM	0	0	0	15	50	208	190	60	4	2	0	0	0	529	43	39
13:00	0	4	8	14	78	233	206	54	5	0	0	0	0	602	43	39
14:00	0	0	0	6	70	243	214	47	8	2	0	0	0	590	43	39
15:00	5	10	32	42	97	231	211	52	4	0	0	0	0	684	42	37
16:00	1	0	4	26	113	234	209	48	5	1	0	0	0	641	42	38
17:00	16	11	41	44	82	199	194	40	1	1	1	0	0	630	42	36
18:00	0	0	0	9	31	156	191	62	12	1	0	0	0	462	44	40
19:00	0	0	2	3	27	102	150	55	5	2	0	0	0	346	44	41
20:00	0	1	0	13	34	120	103	31	2	0	0	0	0	304	43	39
21:00	0	0	1	3	37	89	64	13	4	0	0	0	0	211	42	38
22:00	0	0	0	0	13	39	35	11	2	0	0	0	0	100	43	40
23:00	0	0	0	0	5	33	30	12	2	0	0	0	0	82	44	40
Total	25	29	99	269	1197	3498	3524	986	122	21	4	2	0	9776		
%	0.3%	0.3%	1.0%	2.8%	12.2%	35.8%	36.0%	10.1%	1.2%	0.2%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	08:00	07:00	07:00	06:00	05:00	05:00	05:00	08:00	06:00		07:00		
Vol.	3	3	4	22	139	333	355	109	18	3	1	1		874		
PM Peak	17:00	17:00	17:00	17:00	16:00	14:00	14:00	18:00	18:00	12:00	17:00			15:00		
Vol.	16	11	41	44	113	243	214	62	12	2	1			684		

Stats

15th Percentile : 33 MPH
50th Percentile : 38 MPH
85th Percentile : 43 MPH
95th Percentile : 47 MPH

Mean Speed(Average) : 39 MPH
10 MPH Pace Speed : 35-44 MPH
Number in Pace : 7022
Percent in Pace : 71.8%
Number of Vehicles > 40 MPH : 3954
Percent of Vehicles > 40 MPH : 40.4%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 C Speed
Site Code: T0718

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
05/24/ 17	0	0	0	0	7	13	22	5	0	0	0	0	0	47	43	40
01:00	0	0	0	2	8	12	4	2	0	0	1	0	0	29	42	37
02:00	0	0	0	0	1	2	2	1	0	1	0	0	0	7	48	42
03:00	0	0	0	0	2	3	3	2	0	0	0	0	0	10	45	40
04:00	0	0	2	6	8	9	1	4	1	0	0	0	0	31	44	35
05:00	1	1	1	8	13	25	26	7	3	0	0	0	0	85	43	37
06:00	1	4	14	19	33	82	49	16	1	0	0	0	0	219	42	36
07:00	4	8	19	33	64	147	106	22	2	0	0	0	0	405	42	36
08:00	6	11	31	71	111	180	118	29	9	0	0	0	0	566	42	35
09:00	5	10	18	38	69	149	89	18	5	0	0	0	0	401	41	35
10:00	0	7	9	31	64	111	102	24	6	0	0	0	0	354	42	37
11:00	5	11	43	52	71	93	70	10	1	0	0	0	0	356	40	33
12 PM	5	6	19	41	82	141	90	14	1	1	0	0	0	400	41	35
13:00	6	4	17	36	77	156	112	21	4	1	0	0	0	434	42	36
14:00	7	10	21	52	99	196	98	26	4	0	0	0	0	513	41	35
15:00	26	30	35	79	120	227	127	19	3	1	0	0	0	667	40	33
16:00	26	38	47	85	155	242	119	18	3	0	0	0	0	733	40	33
17:00	60	44	85	126	227	185	79	13	1	0	0	0	0	820	38	30
18:00	7	22	42	79	149	177	92	25	3	1	0	0	0	597	40	34
19:00	0	2	11	36	70	145	121	30	5	0	0	1	0	421	42	37
20:00	0	2	9	22	47	124	79	26	1	2	0	0	0	312	42	37
21:00	0	0	4	14	38	89	40	10	4	1	0	0	0	200	42	37
22:00	0	0	1	11	22	59	39	6	3	0	0	0	0	141	42	37
23:00	0	0	0	5	10	22	27	11	1	0	0	0	0	76	44	39
Total	159	210	428	846	1547	2589	1615	359	61	8	1	1	0	7824		
%	2.0%	2.7%	5.5%	10.8%	19.8%	33.1%	20.6%	4.6%	0.8%	0.1%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	11:00	08:00	08:00	08:00	08:00	08:00	08:00	02:00	01:00			08:00		
Vol.	6	11	43	71	111	180	118	29	9	1	1			566		
PM Peak	17:00	17:00	17:00	17:00	17:00	16:00	15:00	19:00	19:00	20:00		19:00		17:00		
Vol.	60	44	85	126	227	242	127	30	5	2		1		820		

Stats

15th Percentile :	26 MPH
50th Percentile :	35 MPH
85th Percentile :	41 MPH
95th Percentile :	44 MPH
Mean Speed(Average) :	35 MPH
10 MPH Pace Speed :	35-44 MPH
Number in Pace :	4204
Percent in Pace :	53.7%
Number of Vehicles > 40 MPH :	1722
Percent of Vehicles > 40 MPH :	22.0%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio
SB

175696 C Speed
Site Code: T0718

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
05/25/ 17	0	0	0	2	6	16	7	4	0	0	0	0	0	35	43	38
01:00	0	0	0	0	4	3	2	1	1	0	0	0	0	11	45	38
02:00	0	0	0	2	1	7	2	2	0	0	0	0	0	14	43	37
03:00	0	0	0	1	0	2	0	1	0	0	0	0	0	4	46	37
04:00	0	0	0	1	2	6	5	2	1	0	0	0	0	17	45	39
05:00	0	0	1	8	10	22	22	7	2	1	0	0	0	73	43	38
06:00	1	3	8	17	23	51	58	16	3	0	0	0	0	180	43	37
07:00	8	9	24	47	57	119	85	22	2	0	0	0	0	373	42	35
08:00	5	13	16	53	120	202	96	19	8	1	0	0	0	533	41	35
09:00	3	8	35	41	89	141	60	18	3	0	0	0	0	398	40	34
10:00	6	15	20	30	69	119	74	13	4	0	0	0	0	350	41	35
11:00	6	7	20	45	83	136	84	15	1	0	0	0	0	397	41	35
12 PM	2	4	21	34	90	165	84	19	1	0	0	0	0	420	41	36
13:00	5	10	22	41	95	146	78	23	2	0	0	0	0	422	41	35
14:00	4	9	43	54	134	188	84	15	2	0	0	0	0	533	40	34
15:00	43	15	49	91	162	178	69	9	4	0	0	0	0	620	38	31
16:00	28	22	61	99	231	215	75	15	6	0	0	0	0	752	38	32
17:00	26	39	70	140	198	196	73	8	4	0	0	0	0	754	38	31
18:00	12	18	36	81	123	195	106	22	2	0	0	0	0	595	40	34
19:00	1	4	19	43	62	115	82	21	5	0	0	0	0	352	42	36
20:00	0	0	4	22	53	103	54	9	1	0	0	0	0	246	41	36
21:00	0	0	7	11	36	76	50	7	3	1	0	0	0	191	42	37
22:00	0	1	1	5	19	37	38	8	3	1	0	0	0	113	43	38
23:00	0	1	0	3	9	34	15	2	3	1	0	0	0	68	42	38
Total %	150 2.0%	178 2.4%	457 6.1%	871 11.7%	1676 22.5%	2472 33.2%	1303 17.5%	278 3.7%	61 0.8%	5 0.1%	0 0.0%	0 0.0%	0 0.0%	7451		
AM Peak	07:00	10:00	09:00	08:00	08:00	08:00	08:00	07:00	08:00	05:00				08:00		
Vol.	8	15	35	53	120	202	96	22	8	1				533		
PM Peak	15:00	17:00	17:00	17:00	16:00	16:00	18:00	13:00	16:00	21:00				17:00		
Vol.	43	39	70	140	231	215	106	23	6	1				754		

Stats

15th Percentile :	25 MPH
50th Percentile :	34 MPH
85th Percentile :	41 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	34 MPH
10 MPH Pace Speed :	30-39 MPH
Number in Pace :	4148
Percent in Pace :	55.7%
Number of Vehicles > 40 MPH :	1386
Percent of Vehicles > 40 MPH :	18.6%



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio

175696 C Volume
Site Code: T0718

Start	NB				SB				Combin ed		5/24/201 7 Wed	
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
12:00	13		149		18		83		31		232	
12:15	18		132		13		111		31		243	
12:30	16		131		10		104		26		235	
12:45	9	56	142	554	6	47	102	400	15	103	244	954
01:00	10		154		9		94		19		248	
01:15	3		141		7		105		10		246	
01:30	5		145		7		123		12		268	
01:45	10	28	155	595	6	29	112	434	16	57	267	1029
02:00	8		155		3		120		11		275	
02:15	4		165		2		112		6		277	
02:30	11		187		0		148		11		335	
02:45	4	27	158	665	2	7	133	513	6	34	291	1178
03:00	4		167		2		153		6		320	
03:15	8		149		0		157		8		306	
03:30	12		174		6		175		18		349	
03:45	12	36	167	657	2	10	182	667	14	46	349	1324
04:00	17		177		2		161		19		338	
04:15	11		179		2		179		13		358	
04:30	31		156		17		201		48		357	
04:45	32	91	163	675	10	31	192	733	42	122	355	1408
05:00	76		184		10		191		86		375	
05:15	90		195		18		190		108		385	
05:30	120		147		27		217		147		364	
05:45	136	422	130	656	30	85	222	820	166	507	352	1476
06:00	191		133		34		186		225		319	
06:15	229		134		60		166		289		300	
06:30	244		112		54		135		298		247	
06:45	236	900	107	486	71	219	110	597	307	1119	217	1083
07:00	244		119		84		136		328		255	
07:15	247		101		95		93		342		194	
07:30	219		92		113		99		332		191	
07:45	169	879	82	394	113	405	93	421	282	1284	175	815
08:00	191		91		137		77		328		168	
08:15	186		71		149		78		335		149	
08:30	142		82		157		101		299		183	
08:45	153	672	66	310	123	566	56	312	276	1238	122	622
09:00	156		65		119		52		275		117	
09:15	160		61		95		45		255		106	
09:30	163		57		99		50		262		107	
09:45	126	605	45	228	88	401	53	200	214	1006	98	428
10:00	152		41		79		47		231		88	
10:15	130		25		86		37		216		62	
10:30	136		19		93		28		229		47	
10:45	134	552	20	105	96	354	29	141	230	906	49	246
11:00	135		26		69		20		204		46	
11:15	135		19		108		24		243		43	
11:30	148		19		90		16		238		35	
11:45	147	565	13	77	89	356	16	76	236	921	29	153
Total	4833		5402		2510		5314		7343		10716	
Percent	65.8%		50.4%		34.2%		49.6%					
Day Total		10235			7824				18059			
Peak	06:30	-	04:30	-	08:00	-	05:00	-	06:45	-	04:45	-
Vol.	971	-	698	-	566	-	820	-	1309	-	1479	-
P.H.F.	0.983		0.895		0.901		0.923		0.957		0.960	



PRECISION
D A T A
INDUSTRIES, LLC

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

Cedar Street (Route 85)
between I-495 Ramps
City, State: Milford, MA
Client: TEC/S. Gregorio

175696 C Volume
Site Code: T0718

Start	NB		SB		Combin		5/25/201	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	7	Thu
12:00	10	142	11	99	21	241		
12:15	9	129	8	118	17	247		
12:30	5	126	11	99	16	225		
12:45	4	132	5	104	9	236	949	
01:00	5	166	3	95	8	261		
01:15	5	134	3	125	8	259		
01:30	10	136	3	112	13	248		
01:45	7	166	2	90	9	256	1024	
02:00	6	151	3	129	9	280		
02:15	7	131	3	116	10	247		
02:30	10	156	5	135	15	291		
02:45	7	152	3	153	10	305	1123	
03:00	7	180	0	130	7	310		
03:15	7	176	1	151	8	327		
03:30	13	175	0	136	13	311		
03:45	20	153	3	203	23	356	1304	
04:00	7	145	4	178	11	323		
04:15	13	164	3	183	16	347		
04:30	32	169	4	208	36	377		
04:45	30	163	6	183	36	346	1393	
05:00	62	179	6	202	68	381		
05:15	72	171	18	187	90	358		
05:30	140	143	16	188	156	331		
05:45	149	137	33	177	182	314	1384	
06:00	192	125	41	158	233	283		
06:15	195	108	47	156	242	264		
06:30	216	125	37	127	253	252		
06:45	247	104	55	154	302	258	1057	
07:00	222	81	72	101	294	182		
07:15	234	99	92	97	326	196		
07:30	235	95	97	89	332	184		
07:45	183	71	112	65	295	136	698	
08:00	176	86	127	62	303	148		
08:15	164	79	151	68	315	147		
08:30	171	71	130	56	301	127		
08:45	156	68	125	60	281	128	550	
09:00	140	62	117	47	257	109		
09:15	126	55	103	56	229	111		
09:30	128	56	92	42	220	98		
09:45	121	38	86	46	207	84	402	
10:00	156	29	88	27	244	56		
10:15	125	19	92	39	217	58		
10:30	124	25	85	25	209	50		
10:45	119	27	85	22	204	49	213	
11:00	131	31	105	27	236	58		
11:15	130	18	94	15	224	33		
11:30	142	21	86	18	228	39		
11:45	125	12	112	8	237	20	150	
Total	4595	5181	2385	5066	6980	10247		
Percent	65.8%	50.6%	34.2%	49.4%				
Day Total		9776		7451		17227		
Peak	06:45	-	03:00	-	08:00	-	04:30	-
Vol.	938	-	684	-	533	-	780	-
P.H.F.	0.949	-	0.950	-	0.882	-	0.938	-

Attachment C

Seasonal Adjustment Data

Seasonal Adjustment

Project: 40B Residential Project - Milford, Massachusetts
 Date: December 18, 2017
 Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.
 Source: MassDOT Count Station 3180, 3321

STATION 3180 - MILFORD - RTE.I-495 - AT MEDWAY T.L.

<u>YR</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>YEAR</u>	<u>Seasonal Adjustment</u>
05	67,586	71,945	74,150	79,123	84,600	90,062	88,165	91,494	83,189	79,428	78,746	75,126	80,301	-5.4%
06	72,492	71,145	76,347	78,305	80,480	85,728	84,957	89,595	83,740	80,518	79,468	76,386	79,930	-0.7%
07	70,749	70,432	73,596	76,751	85,024	88,000	88,401	91,080	83,309	82,221	77,941	72,362	79,989	-6.3%
08	69,200	68,456	76,000	75,934	79,352	81,166	84,701	86,189	78,778	79,645	73,861	70,747	77,002	-3.1%
09	65,444	69,136	69,739	76,913	78,876	80,700	84,000	86,829	83,273	79,419	75,486	73,169	76,915	-2.5%

Average Adj. = **-3.6%**

STATION 3321 - MILFORD - RTE.I-495 - SOUTH OF RTE.85

<u>YR</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>YEAR</u>	<u>Seasonal Adjustment</u>
05	63,647	69,649	72,283	76,663	80,532	87,979	85,721	88,833	81,027	77,254	76,581	72,092	77,688	-3.7%
06	68,701	69,280	74,389	76,102	78,455	83,475	82,655	87,391	81,824	78,669	77,086	73,341	77,614	-1.1%
07	69,030	68,645	71,874	74,854	80,389	84,913	83,619	88,500	81,651	80,475	76,056	68,793	77,400	-3.9%

Average Adj. = **-2.9%**

Overall Average = **-3.2%**

Assume 0.0% Seasonal Adjustment.

Attachment D

Crash Data

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
2603599	3/1/2010	2:10 PM	Daylight	Clear	Dry	1	V1:N	Property damage only (none injured)		Single vehicle crash	D1:(No improper driving)	V1:(Passenger car)	V1: Travelling straight ahead	V1:(Collision with curb),(Collision with overhead sign support)	RAMP-RT 495 NB TO RT 85 / CEDAR STREET Rte 85	
2604400	4/22/2010	11:50 PM	Dark - lighted roadway	Clear	Wet	2	V1:N / V2:S	Property damage only (none injured)		Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic),(Ran off road right),(Collision with ditch),(Collision with tree)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
2613999	6/16/2010	7:40 AM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)		Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Entering traffic lane / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP - RT 495 NB TO RT 85 / CEDAR STREET	
2831099	3/20/2011	2:12 PM	Daylight	Clear	Dry	2	V1:N / V2:W	Property damage only (none injured)		Angle	D1:(No improper driving) D2:(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 NB TO RT 85 / CEDAR STREET Rte 85 S	
2831275	5/3/2011	2:11 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Non-fatal injury	1	Rear-end	D1:(No improper driving) D2:(Followed too closely),(Other improper action)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 S	
2891155	1/7/2012	8:53 PM	Dark - lighted roadway	Cloudy	Dry	2	V1:N / V2:S	Non-fatal injury	3	Angle	D1:(No improper driving) D2:(Disregarded traffic signs, signals, road markings)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 N	RAMP-RT 85 TO RT 495 NB
3490103	6/24/2013	8:27 AM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)		Rear-end	D1:(No improper driving) D2:(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte SR85 / RAMP-RT 495 NB TO RT 85	
3490113	6/28/2013	6:12 PM	Daylight	Clear	Dry	2	V1:W / V2:E	Property damage only (none injured)		Angle	D1:(No improper driving) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 85 TO RT 495 NB / CEDAR STREET Rte SR85	
3580169	8/19/2013	8:23 AM	Daylight	Clear	Dry	2	V1:N / V2:S	Property damage only (none injured)		Angle	D1:(Unknown) D2:(Unknown)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3640951	10/7/2013	7:47 AM	Daylight	Cloudy	Wet	2	V1:E / V2:W	Non-fatal injury	1	Head-on	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3641084	10/23/2013	8:05 PM	Daylight	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)		Sideswipe, opposite direction	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3727676	1/18/2014	1:16 PM	Daylight	Cloudy/ Snow	Snow	2	V1:E / V2:E	Property damage only (none injured)		Rear-end	D1:(No improper driving) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3744314	2/7/2014	3:13 PM	Daylight	Clear	Dry	2	V1:E / V2:W	Non-fatal injury	1	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
3782618	3/18/2014	5:10 PM	Daylight	Clear	Dry	2	V1:S / V2:W	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3868791	6/30/2014	1:13 PM	Daylight	Clear	Dry	2	V1:E / V2:E	Non-fatal injury	1	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 E	RAMP-RT 85 TO RT 495 NB
3955087	9/18/2014	1:28 PM	Daylight	Cloudy	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Sideswipe, same direction		V1:(Tractor/semi-trailer) V2:(Passenger car)	V1: Travelling straight ahead / V2:Overtaking/passing	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 NB TO RT 85	

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Milford COUNT DATE : May-17

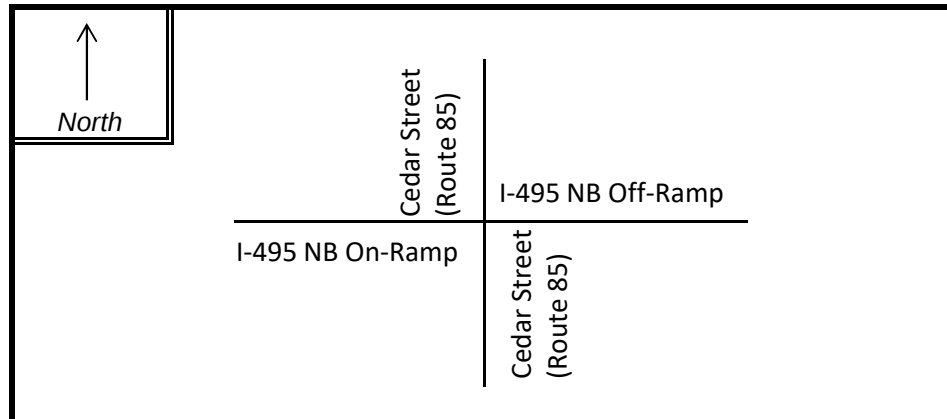
DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Cedar Street (Route 85)

MINOR STREET(S) : Interstate 495 Northbound (I-495 NB) Ramps

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :		678	817	290		1,785

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

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

CRASH RATE CALCULATION :

4.62

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

Comments : K value from ATR counts

Project Title & Date : T0718 - Stone Ridge Development Off-site Improvements 5-Jun-17

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
2602740	2/9/2010	5:15 PM	Dusk	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Sideswipe, same direction	D1:(Unknown) D2:(No improper driving)	V1:(Passenger car) V2:(Tractor/semi-trailer)	V1: Entering traffic lane / V2:Entering traffic lane	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR ST Rte 85 / Rte 495	
2603599	3/1/2010	2:10 PM	Daylight	Clear	Dry	1	V1:N	Property damage only (none injured)	0	Single vehicle crash	D1:(No improper driving)	V1:(Passenger car)	V1: Travelling straight ahead	V1:(Collision with curb),(Collision with overhead sign support)	RAMP-RT 495 NB TO RT 85 / CEDAR STREET Rte 85	
2603600	3/1/2010	6:30 PM	Dark - lighted roadway	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely),(Inattention)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85 / CEDAR STREET	
2604400	4/22/2010	11:50 PM	Dark - lighted roadway	Clear	Wet	2	V1:N / V2:S	Property damage only (none injured)	0	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic),(Ran off road right),(Collision with ditch),(Collision with tree)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
2613999	6/16/2010	7:40 AM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Entering traffic lane / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP - RT 495 NB TO RT 85 / CEDAR STREET	
2642150	8/21/2010	1:35 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Non-fatal injury	2	Angle	D1:(Failure to keep in proper lane or running off road) D2:(No improper driving)	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 N	Rte 85
2830341	10/8/2010	5:08 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Inattention) D2:(No improper driving)	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)	V1: Travelling straight ahead / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495 S	
2830343	10/8/2010	8:25 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Angle	D1:(Inattention) D2:(No improper driving)	V1:(Single-unit truck (2-axle, 6-tire)) V2:(Passenger car)	V1: Changing lanes / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495 N	
2830351	10/12/2010	2:39 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Non-fatal injury	1	Rear-end	D1:(No improper driving) D2:(Followed too closely),(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 S / CEDAR STREET Rte 85	
2830365	10/18/2010	7:26 PM	Dark - lighted roadway	Cloudy	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Head-on	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR ST Rte 85 N / Rte 495 N	
2726146	11/24/2010	2:20 PM	Daylight	Clear	Dry	2	V1:N / V2:8	Property damage only (none injured)	0	Angle	D1:() D2:()	V1:() V2:()	V1: Turning left / V2:Not reported	V1:(Collision with motor vehicle in traffic) V2:	CEDAR STREET Rte 85	RAMP - RT 495 NB TO RT 85 Rte 495
2830396	12/3/2010	5:34 PM	Dark - lighted roadway	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Made an improper turn)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
2830441	12/14/2010	4:54 PM	Dark - lighted roadway	Clear	Dry	2	V1:S / V2:S	Non-fatal injury	1	Rear-end	D1:(No improper driving) D2:(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	EXIT 20 I495 S B OFF RAMP Rte 495 S / CEDAR ST Rte 85 S	
2830494	12/28/2010	7:02 PM	Dark - lighted roadway	Clear	Dry	2	V1:N / V2:S	Property damage only (none injured)	0	Head-on	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Ran off road right),(Collision with curb),(Collision with ditch) V2:(Other non-collision)	CEDAR STREET Rte 85 S / Rte 495 S	
2830497	12/30/2010	7:48 AM	Daylight	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
2689516	1/10/2011	3:51 PM	Dark - lighted roadway	Clear	Dry	2	V1:S / V2:S	Non-fatal injury	1	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning right / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 S	RAMP-RT 495 SB TO RT 85
2830731	1/24/2011	7:56 AM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
2690469	1/28/2011	3:40 PM	Daylight	Not Reported	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Followed too closely) D2:(No improper driving)	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic),(Other) V2:(Collision with motor vehicle in traffic),(Other)	RAMP-RT 495 SB TO RT 85	CEDAR STREET
2830855	1/29/2011	12:05 PM	Daylight	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
2710849	2/17/2011	3:45 PM	Daylight	Clear	Wet	2	V1:N / V2:S	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Made an improper turn)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Backing / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 85 S	Rte 495
2831099	3/20/2011	2:12 PM	Daylight	Clear	Dry	2	V1:N / V2:W	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 NB TO RT 85 / CEDAR STREET Rte 85 S	
2831233	4/14/2011	8:22 PM	Dark - lighted roadway	Clear	Dry	1	V1:N	Property damage only (none injured)	0	Head-on	D1:(Operating vehicle in erratic, reckless, careless, negligent or aggressive manner)	V1:(Passenger car)	V1: Travelling straight ahead	V1:(Collision with highway traffic sign post)	Rte 495 N / CEDAR STREET	
2720457	4/17/2011	1:30 AM	Dark - roadway not lighted	Rain	Wet	1	V1:N	Non-fatal injury	1	Single vehicle crash	D1:()	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Travelling straight ahead	V1:(Ran off road left),(Collision with embankment)	Rte 495 N	Rte 85
2831275	5/3/2011	2:11 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Non-fatal injury	1	Rear-end	D1:(No improper driving) D2:(Followed too closely),(Other improper action)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 S	
2831350	5/30/2011	1:23 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Non-fatal injury	1	Angle	D1:(No improper driving) D2:(Made an improper turn),(Failure to keep in proper lane or running off road)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
2831394	6/15/2011	8:49 AM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495 N	
2830502	6/18/2011	2:49 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely),(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 S	CEDAR STREET Rte 85
2830503	6/18/2011	6:13 PM	Daylight	Clear	Dry		V1:N / V2:W 3 / V3:E	Non-fatal injury	4	Angle	D1:(Unknown) D2:(Unknown) D3:(No improper driving)	V1:(Passenger car) V2:(Passenger car) V3:(Passenger car)	V1: Turning left / V2:Travelling straight ahead / V3:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic) V3:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 / Rte 495 N	
2831411	6/18/2011	10:04 AM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR ST Rte 85 S / Rte 495	
2830531	6/21/2011	4:33 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Inattention) D2:(No improper driving)	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)	V1: Entering traffic lane / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495 S	
2753637	7/11/2011	8:12 AM	Daylight	Not Reported	Dry	2	V1:N / V2:N	Non-fatal injury	1	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Turning right / V2:Turning right	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 N	Rte 85
2830754	8/12/2011	7:14 PM	Dark - lighted roadway	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Inattention),(Followed too closely)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85	
2786530	9/8/2011	6:50 AM	Daylight	Rain	Wet	2	V1:8 / V2:S	Property damage only (none injured)	0	Angle	D1:(Driving too fast for conditions) D2:(No improper driving)	V1:(Passenger car) V2:(Truck/trailer)	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495	Rte 85
2770665	9/15/2011	1:27 PM	Daylight	Not Reported	Dry	2	V1:N / V2:N	Non-fatal injury	1	Angle	D1:(Physical impairment) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Entering traffic lane / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic),(Ran off road left),(Ran off road right) V2:(Collision with motor vehicle in traffic)	Rte 495 N	Rte 85
2830858	9/17/2011	8:43 PM	Dark - lighted roadway	Clear	Dry	2	V1:N / V2:S	Property damage only (none injured)	0	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495 N	
2830681	9/23/2011	6:25 PM	Dusk	Rain	Wet	3	V1:N / V2:N / V3:N	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(No improper driving) D3:(Other improper action)	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car) V3:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic / V3:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic) V3:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 N	

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
2830683	9/24/2011	2:34 PM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Other improper action)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85	CEDAR STREET
2830953	10/20/2011	5:07 PM	Daylight	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Other improper action)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Overtaking/passing	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET	RAMP-RT 85 TO RT 495 SB
2830964	10/24/2011	4:04 PM	Daylight	Clear	Dry	2	V1:S / V2:W	Non-fatal injury	1	Angle	D1:(Inattention),(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Making U-turn / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85	CEDAR STREET
3324318	11/4/2011	7:20 AM	Daylight	Clear	Dry	2	V1:N / V2:S	Property damage only (none injured)	0	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
3324542	11/12/2011	3:09 PM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely),(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 N / CEDAR STREET Rte 85 N	
2861477	12/14/2011	9:36 AM	Daylight	Clear	Dry	1	V1:N	Non-fatal injury	2	Sideswipe, same direction	D1:(No improper driving)	V1:(Passenger car)	V1: Travelling straight ahead	V1:(Collision with motor vehicle in traffic),(Ran off road left),(Ran off road right),(Collision with guardrail)	Rte 495 N	Rte 85
2843472	12/29/2011	10:34 AM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
2891155	1/7/2012	8:53 PM	Dark - lighted roadway	Cloudy	Dry	2	V1:N / V2:S	Non-fatal injury	3	Angle	D1:(No improper driving) D2:(Disregarded traffic signs, signals, road markings)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 N	RAMP-RT 85 TO RT 495 NB
2892035	1/17/2012	4:35 AM	Dark - roadway not lighted	Not Reported	Snow	1	V1:8	Non-fatal injury	1	Single vehicle crash	D1:(Driving too fast for conditions)	V1:(Passenger car)	V1: Travelling straight ahead	V1:(Collision with motor vehicle in traffic),(Collision with guardrail)	Rte 495 N	Rte 85
2892013	1/21/2012	1:10 PM	Daylight	Snow	Snow	1	V1:N	Property damage only (none injured)	0	Single vehicle crash	D1:(Unknown)	V1:(Passenger car)	V1: Travelling straight ahead	V1:(Collision with curb),(Collision with utility pole)	CEDAR STREET Rte 85 N	RAMP-RT 495 SB TO RT 85
2934755	2/15/2012	8:48 AM	Daylight	Cloudy	Wet	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 S / CEDAR STREET	
2933925	2/22/2012	5:13 PM	Daylight	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495 S	
3175594	4/3/2012	6:16 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end		V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85	

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
3057084	4/15/2012	12:04 PM	Daylight	Clear	Dry	2	V1:E / V2:E	Non-fatal injury	1	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
3156405	6/15/2012	6:47 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85	CEDAR STREET Rte 85 S
3223706	7/30/2012	12:43 PM	Daylight	Clear	Dry	1	V1:8	Not Reported	0	Sideswipe, same direction	D1:()	V1:(Passenger car)	V1: Parked	V1:(Collision with motor vehicle in traffic)	CEDAR ST Rte 85	
3265270	9/17/2012	5:52 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 S / Rte 85 S	
3265289	9/26/2012	5:01 PM	Daylight	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 S / Rte 495 N	
3323496	12/13/2012	6:18 PM	Dark - lighted roadway	Clear	Dry	2	V1:N / V2:S	Non-fatal injury	1	Angle	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 N / Rte 495	
3323529	12/22/2012	5:11 PM	Dark - lighted roadway	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Other improper action)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85	
3399722	4/4/2013	4:10 PM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Rear-end	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
3398974	4/15/2013	3:24 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 S / Rte 85 S	
3398985	4/26/2013	9:07 PM	Dark - lighted roadway	Clear	Dry	2	V1:W / V2:S	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Unknown)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
3490103	6/24/2013	8:27 AM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Inattention)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte SR85 / RAMP-RT 495 NB TO RT 85	
3490113	6/28/2013	6:12 PM	Daylight	Clear	Dry	2	V1:W / V2:E	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 85 TO RT 495 NB / CEDAR STREET Rte SR85	
3572797	7/23/2013	9:16 AM	Daylight	Cloudy/Rain	Wet	2	V1:S / V2:N	Property damage only (none injured)	0	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 SB	
3580169	8/19/2013	8:23 AM	Daylight	Clear	Dry	2	V1:N / V2:S	Property damage only (none injured)	0	Angle	D1:(Unknown) D2:(Unknown)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3601335	9/4/2013	6:44 AM	Daylight	Clear	Dry	2	V1:N / V2:S	Non-fatal injury	2	Angle	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
3601361	9/20/2013	7:38 AM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Unknown) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Travelling straight ahead / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85 / CEDAR STREET	
3640951	10/7/2013	7:47 AM	Daylight	Cloudy	Wet	2	V1:E / V2:W	Non-fatal injury	1	Head-on	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3641084	10/23/2013	8:05 PM	Daylight	Clear	Dry	2	V1:S / V2:N	Property damage only (none injured)	0	Sideswipe, opposite direction	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3727676	1/18/2014	1:16 PM	Daylight	Cloudy/Snow	Snow	2	V1:E / V2:E	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3744314	2/7/2014	3:13 PM	Daylight	Clear	Dry	2	V1:E / V2:W	Non-fatal injury	1	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3782618	3/18/2014	5:10 PM	Daylight	Clear	Dry	2	V1:S / V2:W	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Failed to yield right of way)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Turning left	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / RAMP-RT 85 TO RT 495 NB	
3795650	4/8/2014	2:39 PM	Daylight	Cloudy	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 S / CEDAR STREET	
3795664	4/20/2014	6:26 AM	Daylight	Clear	Dry	2	V1:N / V2:N	Property damage only (none injured)	0	Sideswipe, same direction	D1:(No improper driving) D2:(Failure to keep in proper lane or running off road),(Other improper action)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Overtaking/passing	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET / Rte 495	
3823167	5/8/2014	1:12 PM	Daylight	Clear	Dry	2	V1:S / V2:N	Non-fatal injury	1	Head-on	D1:(Inattention) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR ST	
3823047	5/30/2014	6:44 AM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(Glare) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Slowing or stopped in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85 / CEDAR STREET	
3868806	6/4/2014	6:03 AM	Daylight	Cloudy	Dry	2	V1:S / V2:N	Non-fatal injury	1	Angle	D1:(Made an improper turn) D2:(No improper driving)	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 495 / CEDAR STREET	
3878948	6/9/2014	1:02 PM	Daylight	Clear	Dry	2	V1:N / V2:W	Non-fatal injury	1	Angle	D1:(Failed to yield right of way) D2:(No improper driving)	V1:(Passenger car) V2:(Passenger car)	V1: Turning left / V2:Travelling straight ahead	V1:(Cross median or centerline),(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	Rte 85	Rte 495
3868772	6/22/2014	12:30 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Passenger car) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 S / Rte 495	

Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Vehicle Configuration	Vehicle Action Prior to Crash	Vehicle Sequence of Events	Roadway	Near Intersection Roadway
3868692	6/30/2014	9:21 AM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Single-unit truck (2-axle, 6-tire)) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	/ INTERSTATE 495 Rte 495 S	CEDAR STREET
3868791	6/30/2014	1:13 PM	Daylight	Clear	Dry	2	V1:E / V2:E	Non-fatal injury	1	Rear-end	D1:(No improper driving) D2:(Followed too closely)	V1:(Light truck(van, mini-van, panel, pickup, sport utility) with only four tires) V2:(Passenger car)	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	CEDAR STREET Rte 85 E	RAMP-RT 85 TO RT 495 NB
3888659	7/14/2014	8:00 AM	Daylight	Clear	Dry	1	V1:S	Non-fatal injury	1	Single vehicle crash	D1:(Other improper action)	V1:(Passenger car)	V1: Travelling straight ahead	V1:(Collision with motor vehicle in traffic)	INTERSTATE 495 Rte 495 S	CEDAR STREET
3990832	12/12/2014	12:42 PM	Daylight	Clear	Dry	2	V1:S / V2:S	Property damage only (none injured)	0	Angle	D1:(No improper driving) D2:(Failure to keep in proper lane or running off road)	V1:(Passenger car) V2:(Passenger car)	V1: Travelling straight ahead / V2:Changing lanes	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	RAMP-RT 495 SB TO RT 85	CEDAR STREET Rte 85 N

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Milford COUNT DATE : May-17

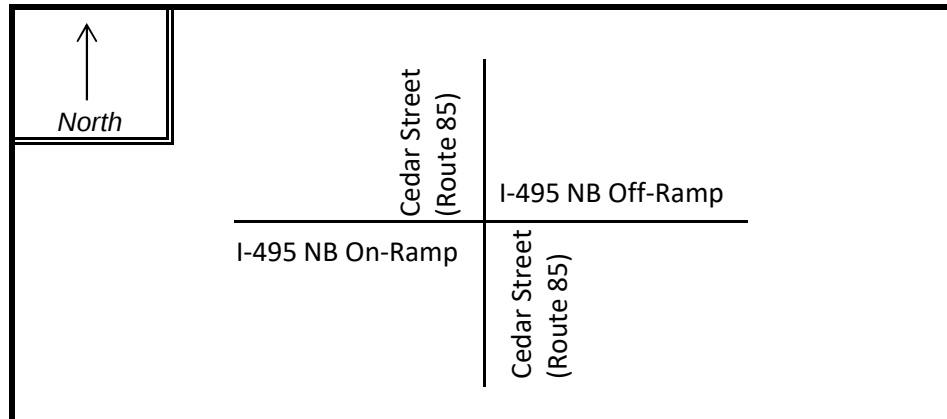
DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Cedar Street (Route 85)

MINOR STREET(S) : Interstate 495 Northbound (I-495 NB) Ramps

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :		678	817	290		1,785

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

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

CRASH RATE CALCULATION :

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

Comments : K value from ATR counts

Project Title & Date : T0718 - Stone Ridge Development Off-site Improvements 5-Jun-17

Attachment E

Ambient Growth Rate Data

Average Daily Traffic Summary Table

Project: 40B Residential Project - Milford, Massachusetts
 Date: December 18, 2017
 Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.
 Source: MassDOT Count Station 3217, 3248, R13063, R13064

STA.	TOWN	ROUTE/STREET	LOCATION	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Amb. Growth
3217	MILFORD	CEDAR STREET	WEST OF HAMILTON STREET	10,387	10,220	8,200	8,168	8,258	8745	8824	8795	8153	8243	8350	-1.91%
3248	MILFORD	CEDAR STREET	AT HOPKINTON TOWN LINE	8,273	8,500	8,287	8,440	8,300	8525	8622	8924	9201	9413	8633	0.49%
R13063	MILFORD	I-495	EXIT 20 ROUTE 85								4744	4796	4997	5022	1.93%
R13064	MILFORD	I-495	ROUTE 85 ON-RAMP								6120	6187	6447	6479	1.93%
															0.61%

Assume 1.00% Ambient Growth.

Attachment F

Specific Development by Others

C:\Users\leangl\appdata\local\temp\AcPublish_5064\T0718_TIA_Traffic Networks.dwg 7/6/2017 5:07:31 PM

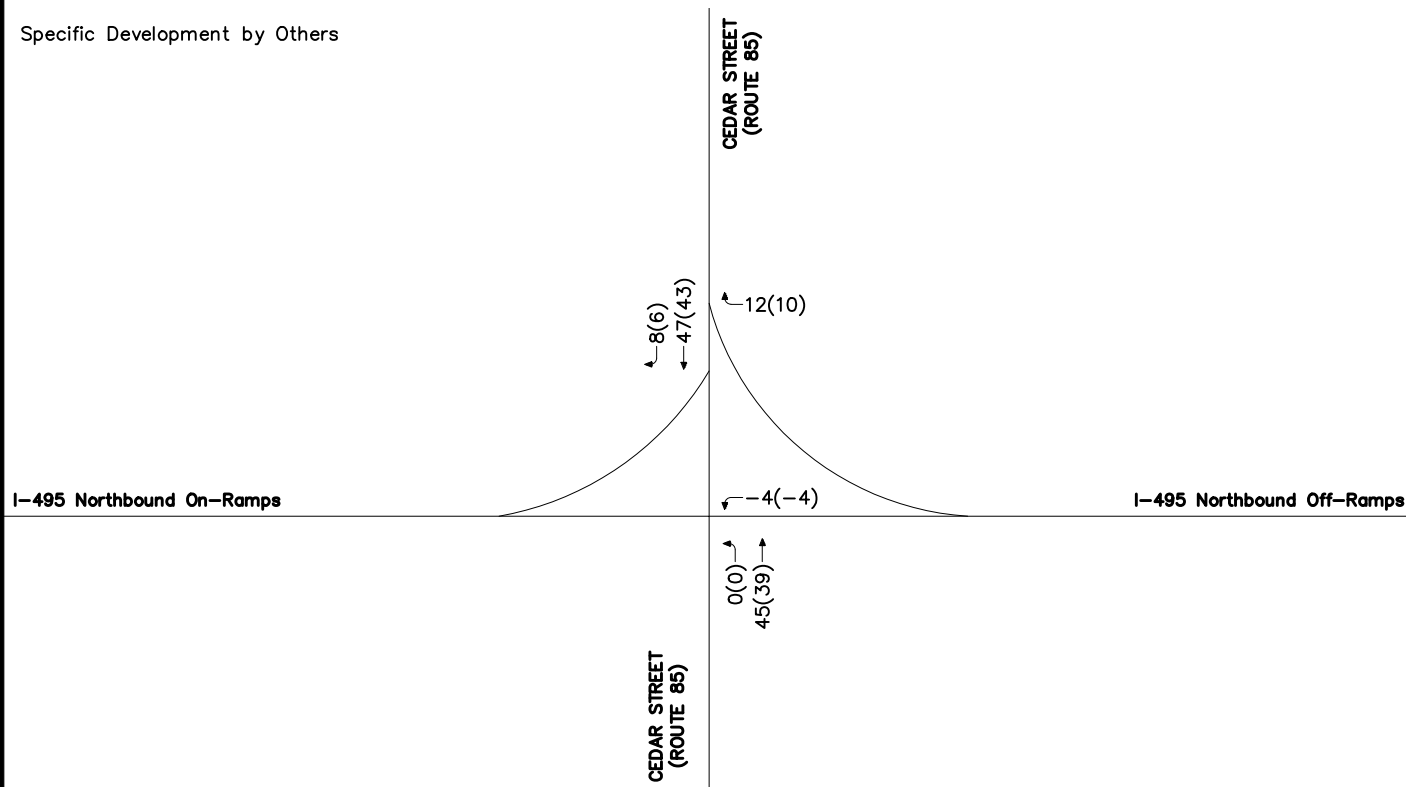


Not to Scale

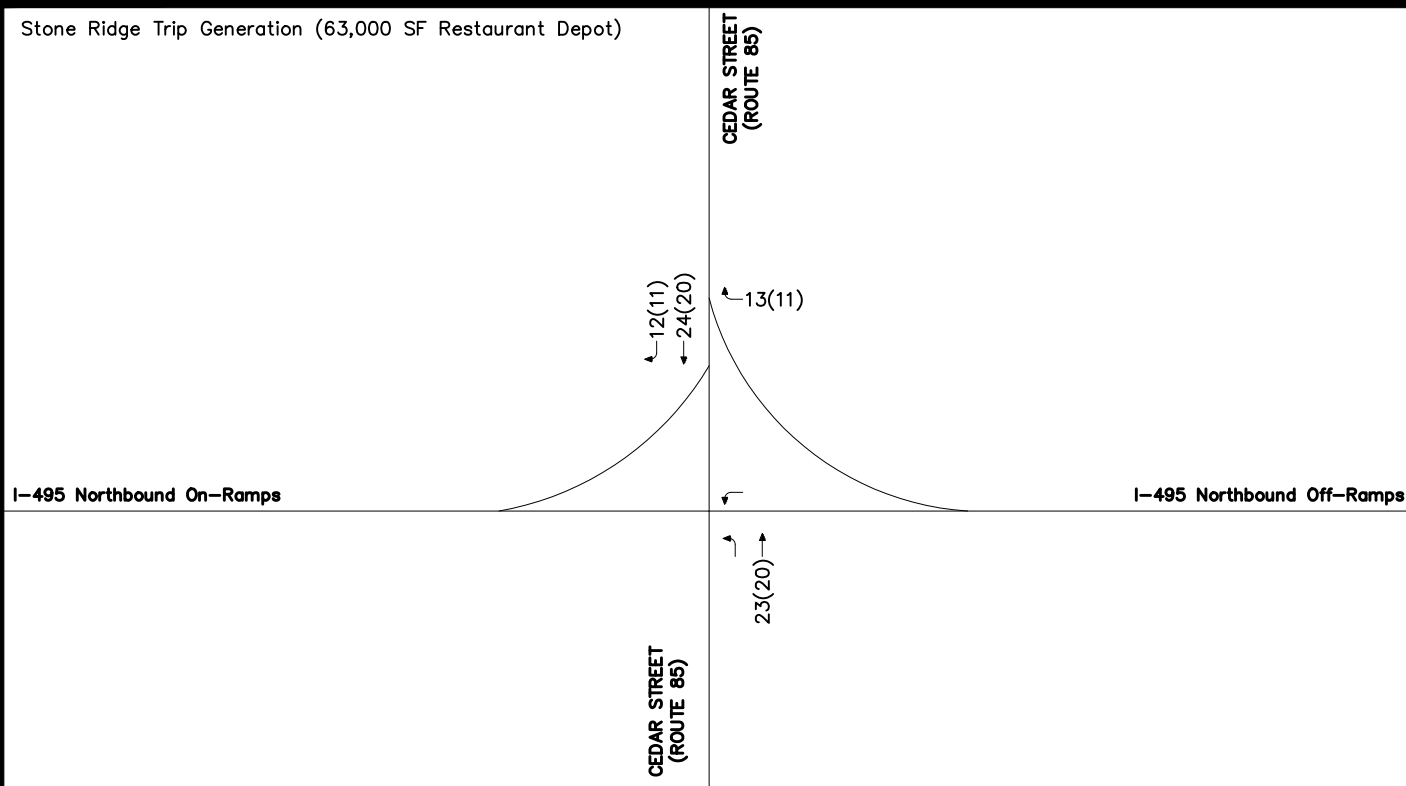
Cedar Street (Route 85) / I-495 Northbound Ramps - Milford, Massachusetts

Traffic Impact Memorandum

Specific Development by Others



Stone Ridge Trip Generation (63,000 SF Restaurant Depot)



XXX(XXX) = WEEKDAY MORNING PEAK HOUR(WEEKDAY EVENING PEAK HOUR)



TEC, Inc.
65 Glenn Street | 169 Ocean Blvd, Unit 101
Lawrence, MA 01843 | Hampton, NH 03842
(978) 794.1792 | (603) 601.8154
www.TheEngineeringCorp.com

Figure 2

Specific Development by Others and
Stone Ridge Development Phase 1
Weekday Morning, and
Weekday Evening
Peak Hour Traffic Volumes

Attachment G

Trip Generation

Trip Generation Estimate

Project: Stone Ridge Development
Date: December 18, 2017
Analyst: EMO
Source: Institute of Transportation Engineers - Trip Generation, 9th Edition

ITE Land Use Code (LUC): 220 Apartment

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 272
Curve Method: Fitted

AVERAGE WEEKDAY DAILY

$T = 6.06 * (X) + 123.56$
 $T = 6.06 * 272.00 + 123.56$
 $T = \boxed{1,772}$ vehicle trips
with 50% entering (886 vpd) and with 50% exiting (886 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 0.49 * (X) + 3.73$
 $T = 0.49 * 272.00 + 3.73$
 $T = \boxed{138}$ vehicle trips
with 20% entering (28 vpd) and with 80% exiting (110 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 0.55 * (X) + 17.65$
 $T = 0.55 * 272.00 + 17.65$
 $T = \boxed{168}$ vehicle trips
with 65% entering (109 vpd) and with 35% exiting (59 vpd)

AVERAGE SATURDAY DAILY

$T = 7.85 * (X) + -256.19$
 $T = 7.85 * 272.00 + -256.19$
 $T = \boxed{1,880}$ vehicle trips
with 50% entering (940 vpd) and with 50% exiting (940 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 0.41 * (X) + 19.23$
 $T = 0.41 * 272.00 + 19.23$
 $T = \boxed{130}$ vehicle trips
with 50% entering (65 vpd) and with 50% exiting (65 vpd)

AVERAGE SUNDAY DAILY

$T = 6.42 * (X) + -101.12$
 $T = 6.42 * 272.00 + -101.12$
 $T = \boxed{1,646}$ vehicle trips
with 50% entering (823 vpd) and with 50% exiting (823 vpd)

SUNDAY MIDDAY PEAK HOUR

$T = 0.00 * (X) + 0$
 $T = 0.00 * 272.00 + 0$
 $T = \boxed{-}$ vehicle trips
with 50% entering (- vpd) and with 50% exiting (- vpd)

Attachment H

Intersection Capacity and Queue Analyses

2017 Existing Conditions

Lanes, Volumes, Timings

2017 Existing Conditions

2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	297	0	381	457	360	0	0	274	16
Future Volume (vph)	0	0	0	297	0	381	457	360	0	0	274	16
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt						0.850					0.992	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	3400	0	1583	1719	1845	0	0	3471	0
Flt Permitted				0.950			0.445					
Satd. Flow (perm)	0	0	0	3400	0	1583	805	1845	0	0	3471	0
Satd. Flow (RTOR)						405					5	
Confl. Peds. (#/hr)			2									
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	0%	2%	5%	3%	0%	0%	3%	6%
Shared Lane Traffic (%)												
Turn Type				Prot		Free	pm+pt	NA			NA	
Protected Phases				4			1	6			2	
Permitted Phases						Free	6					
Detector Phase				4			1	6			2	
Switch Phase												
Minimum Initial (s)				6.0			6.0	10.0			10.0	
Minimum Split (s)				12.0			9.0	16.0			16.0	
Total Split (s)				41.0			38.0	79.0			41.0	
Total Split (%)				34.2%			31.7%	65.8%			34.2%	
Maximum Green (s)				35.0			35.0	73.0			35.0	
Yellow Time (s)				3.0			3.0	3.0			3.0	
All-Red Time (s)				3.0			0.0	3.0			3.0	
Lost Time Adjust (s)				0.0			0.0	0.0			0.0	
Total Lost Time (s)				6.0			3.0	6.0			6.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				5.0			2.0	2.0			2.0	
Recall Mode				None			None	Min			Min	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 54.3
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

 Ø1	 Ø2	 Ø4
38 s	41 s	41 s
 Ø6		
79 s		

Queues

2017 Existing Conditions

2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

Weekday Morning

					
Lane Group	WBL	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	316	405	486	383	308
v/c Ratio	0.39	0.26	0.67	0.39	0.43
Control Delay	19.8	0.4	11.7	8.9	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	0.4	11.7	8.9	22.1
Queue Length 50th (ft)	41	0	74	63	44
Queue Length 95th (ft)	89	0	155	128	93
Internal Link Dist (ft)				299	406
Turn Bay Length (ft)					
Base Capacity (vph)	2238	1583	1148	1845	2287
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.26	0.42	0.21	0.13
Intersection Summary					

HCM 2010 Signalized Intersection Summary

2017 Existing Conditions

2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	297	0	381	457	360	0	0	274	16
Future Volume (veh/h)	0	0	0	297	0	381	457	360	0	0	274	16
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1845	0	1863	1810	1845	0	0	1842	1900
Adj Flow Rate, veh/h				316	0	0	486	383	0	0	291	0
Adj No. of Lanes				2	0	1	1	1	0	0	2	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				3	0	2	5	3	0	0	3	3
Cap, veh/h				628	0	292	758	1003	0	0	792	0
Arrive On Green				0.18	0.00	0.00	0.25	0.54	0.00	0.00	0.23	0.00
Sat Flow, veh/h				3408	0	1583	1723	1845	0	0	3683	0
Grp Volume(v), veh/h				316	0	0	486	383	0	0	291	0
Grp Sat Flow(s),veh/h/ln				1704	0	1583	1723	1845	0	0	1750	0
Q Serve(g_s), s				3.7	0.0	0.0	8.3	5.3	0.0	0.0	3.1	0.0
Cycle Q Clear(g_c), s				3.7	0.0	0.0	8.3	5.3	0.0	0.0	3.1	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				628	0	292	758	1003	0	0	792	0
V/C Ratio(X)				0.50	0.00	0.00	0.64	0.38	0.00	0.00	0.37	0.00
Avail Cap(c_a), veh/h				2700	0	1255	1693	3048	0	0	2773	0
HCM Platoon Ratio				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	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				16.2	0.0	0.0	7.6	5.8	0.0	0.0	14.4	0.0
Incr Delay (d2), s/veh				1.3	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	0.0	3.9	2.7	0.0	0.0	1.5	0.0
LnGrp Delay(d),s/veh				17.5	0.0	0.0	7.9	5.9	0.0	0.0	14.5	0.0
LnGrp LOS				B			A	A			B	
Approach Vol, veh/h					316			869			291	
Approach Delay, s/veh					17.5			7.0			14.5	
Approach LOS					B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	14.0	16.0		14.1		30.0						
Change Period (Y+Rc), s	3.0	6.0		6.0		6.0						
Max Green Setting (Gmax), s	35.0	35.0		35.0		73.0						
Max Q Clear Time (g_c+l1), s	10.3	5.1		5.7		7.3						
Green Ext Time (p_c), s	0.8	3.0		2.6		3.1						
Intersection Summary												
HCM 2010 Ctrl Delay				10.8								
HCM 2010 LOS				B								

Lanes, Volumes, Timings

2017 Existing Conditions

2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	356	0	151	488	252	0	0	616	23
Future Volume (vph)	0	0	0	356	0	151	488	252	0	0	616	23
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt						0.850					0.995	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	3467	0	1615	1752	1900	0	0	3558	0
Flt Permitted				0.950			0.246					
Satd. Flow (perm)	0	0	0	3467	0	1615	454	1900	0	0	3558	0
Satd. Flow (RTOR)						157					5	
Confl. Peds. (#/hr)			11									
Confl. Bikes (#/hr)			6									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	3%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Turn Type				Prot		Free	pm+pt	NA			NA	
Protected Phases				4			1	6			2	
Permitted Phases						Free	6					
Detector Phase				4			1	6			2	
Switch Phase												
Minimum Initial (s)				6.0			6.0	10.0			10.0	
Minimum Split (s)				12.0			9.0	16.0			16.0	
Total Split (s)				21.0			28.0	64.0			36.0	
Total Split (%)				24.7%			32.9%	75.3%			42.4%	
Maximum Green (s)				15.0			25.0	58.0			30.0	
Yellow Time (s)				3.0			3.0	3.0			3.0	
All-Red Time (s)				3.0			0.0	3.0			3.0	
Lost Time Adjust (s)				0.0			0.0	0.0			0.0	
Total Lost Time (s)				6.0			3.0	6.0			6.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				5.0			2.0	2.0			2.0	
Recall Mode				None			None	Min			Min	

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 60.8

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

 Ø1	 Ø2	 Ø4
28 s	36 s	21 s
 Ø6		
64 s		

Queues

2017 Existing Conditions

2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

Weekday Evening

					
Lane Group	WBL	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	371	157	508	263	666
v/c Ratio	0.49	0.10	0.83	0.24	0.68
Control Delay	25.6	0.1	21.9	6.6	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	0.1	21.9	6.6	24.3
Queue Length 50th (ft)	58	0	94	41	108
Queue Length 95th (ft)	131	0	219	73	200
Internal Link Dist (ft)				299	406
Turn Bay Length (ft)					
Base Capacity (vph)	891	1615	841	1734	1831
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.10	0.60	0.15	0.36
Intersection Summary					

HCM 2010 Signalized Intersection Summary

2017 Existing Conditions

2: Cedar Street (Route 85) & I-495 Northbound On-Ramps/I-495 Northbound Off-ramps

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	356	0	151	488	252	0	0	616	23
Future Volume (veh/h)	0	0	0	356	0	151	488	252	0	0	616	23
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	0	1900	1845	1900	0	0	1882	1900
Adj Flow Rate, veh/h				371	0	0	508	262	0	0	642	0
Adj No. of Lanes				2	0	1	1	1	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				1	0	0	3	0	0	0	1	1
Cap, veh/h				605	0	281	659	1100	0	0	1007	0
Arrive On Green				0.17	0.00	0.00	0.24	0.58	0.00	0.00	0.28	0.00
Sat Flow, veh/h				3476	0	1615	1757	1900	0	0	3764	0
Grp Volume(v), veh/h				371	0	0	508	262	0	0	642	0
Grp Sat Flow(s),veh/h/ln				1738	0	1615	1757	1900	0	0	1788	0
Q Serve(g_s), s				4.8	0.0	0.0	8.7	3.3	0.0	0.0	7.6	0.0
Cycle Q Clear(g_c), s				4.8	0.0	0.0	8.7	3.3	0.0	0.0	7.6	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				605	0	281	659	1100	0	0	1007	0
V/C Ratio(X)				0.61	0.00	0.00	0.77	0.24	0.00	0.00	0.64	0.00
Avail Cap(c_a), veh/h				1073	0	499	1149	2268	0	0	2208	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				18.6	0.0	0.0	8.6	5.0	0.0	0.0	15.3	0.0
Incr Delay (d2), s/veh				2.2	0.0	0.0	0.7	0.0	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	0.0	4.2	1.7	0.0	0.0	3.8	0.0
LnGrp Delay(d),s/veh				20.7	0.0	0.0	9.4	5.0	0.0	0.0	15.5	0.0
LnGrp LOS				C			A	A			B	
Approach Vol, veh/h					371			770			642	
Approach Delay, s/veh					20.7			7.9			15.5	
Approach LOS					C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	14.4	19.7		14.4		34.1						
Change Period (Y+Rc), s	3.0	6.0		6.0		6.0						
Max Green Setting (Gmax), s	25.0	30.0		15.0		58.0						
Max Q Clear Time (g_c+l1), s	10.7	9.6		6.8		5.3						
Green Ext Time (p_c), s	0.7	4.0		1.7		4.5						
Intersection Summary												
HCM 2010 Ctrl Delay				13.3								
HCM 2010 LOS				B								

2024 No-Build Conditions

Lanes, Volumes, Timings
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 No-Build Conditions
Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	36	36	851	366	5
Future Volume (vph)	5	36	36	851	366	5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1863	1842	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1863	1842	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	2%	3%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Control Type: Unsignalized						

HCM 2010 TWSC
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 No-Build Conditions
Weekday Morning

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	36	36	851	366	5
Future Vol, veh/h	5	36	36	851	366	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	3	0
Mvmt Flow	5	39	39	925	398	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1404	401	403	0	-	0
Stage 1	401	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	155	653	1167	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	150	653	1167	-	-	-
Mov Cap-2 Maneuver	150	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	346	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1167	-	150	653	-	-
HCM Lane V/C Ratio	0.034	-	0.036	0.06	-	-
HCM Control Delay (s)	8.2	-	29.9	10.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Lanes, Volumes, Timings

2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 No-Build Conditions
Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	314	0	433	490	454	0	0	365	37
Future Volume (vph)	0	0	0	314	0	433	490	454	0	0	365	37
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt						0.850					0.986	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	3400	0	1583	1719	1845	0	0	3447	0
Flt Permitted				0.950			0.395					
Satd. Flow (perm)	0	0	0	3400	0	1583	715	1845	0	0	3447	0
Satd. Flow (RTOR)						461					9	
Confl. Peds. (#/hr)			2									
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	0%	2%	5%	3%	0%	0%	3%	6%
Shared Lane Traffic (%)												
Turn Type				Prot		Free	pm+pt	NA			NA	
Protected Phases				4			1	6			2	
Permitted Phases						Free	6					
Detector Phase				4			1	6			2	
Switch Phase												
Minimum Initial (s)				6.0			6.0	10.0			10.0	
Minimum Split (s)				12.0			9.0	16.0			16.0	
Total Split (s)				41.0			38.0	79.0			41.0	
Total Split (%)				34.2%			31.7%	65.8%			34.2%	
Maximum Green (s)				35.0			35.0	73.0			35.0	
Yellow Time (s)				3.0			3.0	3.0			3.0	
All-Red Time (s)				3.0			0.0	3.0			3.0	
Lost Time Adjust (s)				0.0			0.0	0.0			0.0	
Total Lost Time (s)				6.0			3.0	6.0			6.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				5.0			2.0	2.0			2.0	
Recall Mode				None			None	Min			Min	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 59.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Cedar Street (Route 85) & I-495 Northbound Ramps

 Ø1	 Ø2	 Ø4
38 s	41 s	41 s
 Ø6		
79 s		

Queues
2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 No-Build Conditions
Weekday Morning

					
Lane Group	WBL	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	334	461	521	483	427
v/c Ratio	0.41	0.29	0.74	0.48	0.55
Control Delay	22.0	0.5	14.0	10.0	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	0.5	14.0	10.0	24.2
Queue Length 50th (ft)	49	0	87	90	66
Queue Length 95th (ft)	106	0	186	182	137
Internal Link Dist (ft)				299	406
Turn Bay Length (ft)					
Base Capacity (vph)	2079	1583	1088	1819	2112
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.29	0.48	0.27	0.20
Intersection Summary					

HCM 2010 Signalized Intersection Summary

2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 No-Build Conditions
Weekday Morning

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	314	0	433	490	454	0	0	365	37
Future Volume (veh/h)	0	0	0	314	0	433	490	454	0	0	365	37
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1845	0	1863	1810	1845	0	0	1840	1900
Adj Flow Rate, veh/h				334	0	0	521	483	0	0	388	0
Adj No. of Lanes				2	0	1	1	1	0	0	2	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				3	0	2	5	3	0	0	3	3
Cap, veh/h				643	0	299	733	1022	0	0	792	0
Arrive On Green				0.19	0.00	0.00	0.26	0.55	0.00	0.00	0.23	0.00
Sat Flow, veh/h				3408	0	1583	1723	1845	0	0	3680	0
Grp Volume(v), veh/h				334	0	0	521	483	0	0	388	0
Grp Sat Flow(s),veh/h/ln				1704	0	1583	1723	1845	0	0	1748	0
Q Serve(g_s), s				4.1	0.0	0.0	9.4	7.4	0.0	0.0	4.5	0.0
Cycle Q Clear(g_c), s				4.1	0.0	0.0	9.4	7.4	0.0	0.0	4.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				643	0	299	733	1022	0	0	792	0
V/C Ratio(X)				0.52	0.00	0.00	0.71	0.47	0.00	0.00	0.49	0.00
Avail Cap(c_a), veh/h				2561	0	1190	1575	2891	0	0	2627	0
HCM Platoon Ratio				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	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				17.0	0.0	0.0	8.3	6.3	0.0	0.0	15.7	0.0
Incr Delay (d2), s/veh				1.4	0.0	0.0	0.5	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.0	0.0	0.0	4.4	3.7	0.0	0.0	2.2	0.0
LnGrp Delay(d),s/veh				18.4	0.0	0.0	8.7	6.4	0.0	0.0	15.8	0.0
LnGrp LOS				B			A	A			B	
Approach Vol, veh/h					334			1004			388	
Approach Delay, s/veh					18.4			7.6			15.8	
Approach LOS					B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.2	16.6		14.8		31.8						
Change Period (Y+Rc), s	3.0	6.0		6.0		6.0						
Max Green Setting (Gmax), s	35.0	35.0		35.0		73.0						
Max Q Clear Time (g_c+I1), s	11.4	6.5		6.1		9.4						
Green Ext Time (p_c), s	0.8	4.1		2.8		4.2						
Intersection Summary												
HCM 2010 Ctrl Delay				11.6								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 No-Build Conditions
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	31	31	481	734	5
Future Volume (vph)	5	31	31	481	734	5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1900	1879	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1900	1879	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Control Type: Unsignalized						

HCM 2010 TWSC
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 No-Build Conditions
Weekday Evening

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	31	31	481	734	5
Future Vol, veh/h	5	31	31	481	734	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	5	34	34	523	798	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1391	801	803	0	-	0
Stage 1	801	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	158	388	830	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	152	388	830	-	-	-
Mov Cap-2 Maneuver	152	-	-	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	535	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	830	-	152	388	-	-
HCM Lane V/C Ratio	0.041	-	0.036	0.087	-	-
HCM Control Delay (s)	9.5	-	29.6	15.2	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.3	-	-

Lanes, Volumes, Timings

2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 No-Build Conditions
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	378	0	183	523	329	0	0	723	42
Future Volume (vph)	0	0	0	378	0	183	523	329	0	0	723	42
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt						0.850					0.992	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	3467	0	1615	1752	1900	0	0	3548	0
Flt Permitted				0.950			0.182					
Satd. Flow (perm)	0	0	0	3467	0	1615	336	1900	0	0	3548	0
Satd. Flow (RTOR)						191					8	
Confl. Peds. (#/hr)			11									
Confl. Bikes (#/hr)			6									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	3%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Turn Type				Prot		Free	pm+pt	NA			NA	
Protected Phases				4			1	6			2	
Permitted Phases						Free	6					
Detector Phase				4			1	6			2	
Switch Phase												
Minimum Initial (s)				6.0			6.0	10.0			10.0	
Minimum Split (s)				12.0			9.0	16.0			16.0	
Total Split (s)				21.0			28.0	64.0			36.0	
Total Split (%)				24.7%			32.9%	75.3%			42.4%	
Maximum Green (s)				15.0			25.0	58.0			30.0	
Yellow Time (s)				3.0			3.0	3.0			3.0	
All-Red Time (s)				3.0			0.0	3.0			3.0	
Lost Time Adjust (s)				0.0			0.0	0.0			0.0	
Total Lost Time (s)				6.0			3.0	6.0			6.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				5.0			2.0	2.0			2.0	
Recall Mode				None			None	Min			Min	

Intersection Summary

Cycle Length: 85
Actuated Cycle Length: 69.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Cedar Street (Route 85) & I-495 Northbound Ramps

 Ø1	 Ø2	 Ø4
28 s	36 s	21 s
 Ø6		
64 s		

Queues
2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 No-Build Conditions
Weekday Evening

					
Lane Group	WBL	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	394	191	545	343	797
v/c Ratio	0.57	0.12	0.89	0.29	0.74
Control Delay	31.2	0.1	32.5	6.5	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	0.1	32.5	6.5	26.9
Queue Length 50th (ft)	82	0	158	61	166
Queue Length 95th (ft)	147	0	#354	96	243
Internal Link Dist (ft)				299	406
Turn Bay Length (ft)					
Base Capacity (vph)	778	1615	753	1573	1596
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.12	0.72	0.22	0.50

Intersection Summary

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

HCM 2010 Signalized Intersection Summary

2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 No-Build Conditions
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	378	0	183	523	329	0	0	723	42
Future Volume (veh/h)	0	0	0	378	0	183	523	329	0	0	723	42
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	0	1900	1845	1900	0	0	1882	1900
Adj Flow Rate, veh/h				394	0	0	545	343	0	0	753	0
Adj No. of Lanes				2	0	1	1	1	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				1	0	0	3	0	0	0	1	1
Cap, veh/h				603	0	280	640	1148	0	0	1113	0
Arrive On Green				0.17	0.00	0.00	0.24	0.60	0.00	0.00	0.31	0.00
Sat Flow, veh/h				3476	0	1615	1757	1900	0	0	3764	0
Grp Volume(v), veh/h				394	0	0	545	343	0	0	753	0
Grp Sat Flow(s),veh/h/ln				1738	0	1615	1757	1900	0	0	1788	0
Q Serve(g_s), s				5.7	0.0	0.0	10.1	4.7	0.0	0.0	9.9	0.0
Cycle Q Clear(g_c), s				5.7	0.0	0.0	10.1	4.7	0.0	0.0	9.9	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				603	0	280	640	1148	0	0	1113	0
V/C Ratio(X)				0.65	0.00	0.00	0.85	0.30	0.00	0.00	0.68	0.00
Avail Cap(c_a), veh/h				965	0	448	1035	2040	0	0	1986	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				20.8	0.0	0.0	9.4	5.2	0.0	0.0	16.2	0.0
Incr Delay (d2), s/veh				2.6	0.0	0.0	2.0	0.1	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	0.0	5.1	2.4	0.0	0.0	4.9	0.0
LnGrp Delay(d),s/veh				23.4	0.0	0.0	11.4	5.2	0.0	0.0	16.5	0.0
LnGrp LOS				C			B	A			B	
Approach Vol, veh/h					394			888			753	
Approach Delay, s/veh					23.4			9.0			16.5	
Approach LOS					C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.8	22.8		15.4		38.7						
Change Period (Y+Rc), s	3.0	6.0		6.0		6.0						
Max Green Setting (Gmax), s	25.0	30.0		15.0		58.0						
Max Q Clear Time (g_c+l1), s	12.1	11.9		7.7		6.7						
Green Ext Time (p_c), s	0.8	4.9		1.7		5.8						
Intersection Summary												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								

2024 Build Conditions

Lanes, Volumes, Timings
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 Build Conditions
Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	126	57	851	366	12
Future Volume (vph)	25	126	57	851	366	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1863	1839	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1863	1839	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	2%	3%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Control Type: Unsignalized						

HCM 2010 TWSC
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 Build Conditions
Weekday Morning

Intersection

Int Delay, s/veh 2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	126	57	851	366	12
Future Vol, veh/h	25	126	57	851	366	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	3	0
Mvmt Flow	27	137	62	925	398	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1453	404	411	0	-	0
Stage 1	404	-	-	-	-	-
Stage 2	1049	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	145	651	1159	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	137	651	1159	-	-	-
Mov Cap-2 Maneuver	137	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	322	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1159	-	137	651	-	-
HCM Lane V/C Ratio	0.053	-	0.198	0.21	-	-
HCM Control Delay (s)	8.3	-	37.7	12	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	0.8	-	-

Lanes, Volumes, Timings
2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 Build Conditions

Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	314	0	437	490	471	0	0	423	69
Future Volume (vph)	0	0	0	314	0	437	490	471	0	0	423	69
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt						0.850					0.979	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	3400	0	1583	1719	1845	0	0	3417	0
Flt Permitted				0.950			0.324					
Satd. Flow (perm)	0	0	0	3400	0	1583	586	1845	0	0	3417	0
Satd. Flow (RTOR)						465					15	
Confl. Peds. (#/hr)			2									
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	0%	2%	5%	3%	0%	0%	3%	6%
Shared Lane Traffic (%)												
Turn Type				Prot		Free	pm+pt	NA			NA	
Protected Phases				4			1	6			2	
Permitted Phases						Free	6					
Detector Phase				4			1	6			2	
Switch Phase												
Minimum Initial (s)				6.0			6.0	10.0			10.0	
Minimum Split (s)				12.0			9.0	16.0			16.0	
Total Split (s)				41.0			38.0	79.0			41.0	
Total Split (%)				34.2%			31.7%	65.8%			34.2%	
Maximum Green (s)				35.0			35.0	73.0			35.0	
Yellow Time (s)				3.0			3.0	3.0			3.0	
All-Red Time (s)				3.0			0.0	3.0			3.0	
Lost Time Adjust (s)				0.0			0.0	0.0			0.0	
Total Lost Time (s)				6.0			3.0	6.0			6.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				5.0			2.0	2.0			2.0	
Recall Mode				None			None	Min			Min	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 63.3
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Cedar Street (Route 85) & I-495 Northbound Ramps

 Ø1	 Ø2	 Ø4
38 s	41 s	41 s
 Ø6		
79 s		

Queues
2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 Build Conditions
Weekday Morning

					
Lane Group	WBL	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	334	465	521	501	523
v/c Ratio	0.42	0.29	0.78	0.48	0.61
Control Delay	24.3	0.5	17.0	9.8	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	0.5	17.0	9.8	25.1
Queue Length 50th (ft)	52	0	89	96	84
Queue Length 95th (ft)	121	0	222	193	181
Internal Link Dist (ft)				299	406
Turn Bay Length (ft)					
Base Capacity (vph)	1980	1583	1050	1780	1996
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.29	0.50	0.28	0.26
Intersection Summary					

HCM 2010 Signalized Intersection Summary

2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 Build Conditions
Weekday Morning

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	314	0	437	490	471	0	0	423	69
Future Volume (veh/h)	0	0	0	314	0	437	490	471	0	0	423	69
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1845	0	1863	1810	1845	0	0	1837	1900
Adj Flow Rate, veh/h				334	0	0	521	501	0	0	450	0
Adj No. of Lanes				2	0	1	1	1	0	0	2	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				3	0	2	5	3	0	0	3	3
Cap, veh/h				633	0	294	713	1042	0	0	861	0
Arrive On Green				0.19	0.00	0.00	0.26	0.56	0.00	0.00	0.25	0.00
Sat Flow, veh/h				3408	0	1583	1723	1845	0	0	3674	0
Grp Volume(v), veh/h				334	0	0	521	501	0	0	450	0
Grp Sat Flow(s),veh/h/ln				1704	0	1583	1723	1845	0	0	1745	0
Q Serve(g_s), s				4.3	0.0	0.0	9.5	7.8	0.0	0.0	5.4	0.0
Cycle Q Clear(g_c), s				4.3	0.0	0.0	9.5	7.8	0.0	0.0	5.4	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				633	0	294	713	1042	0	0	861	0
V/C Ratio(X)				0.53	0.00	0.00	0.73	0.48	0.00	0.00	0.52	0.00
Avail Cap(c_a), veh/h				2478	0	1151	1526	2798	0	0	2538	0
HCM Platoon Ratio				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	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				17.7	0.0	0.0	8.4	6.3	0.0	0.0	15.7	0.0
Incr Delay (d2), s/veh				1.5	0.0	0.0	0.5	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.0	4.4	3.9	0.0	0.0	2.6	0.0
LnGrp Delay(d),s/veh				19.1	0.0	0.0	8.9	6.4	0.0	0.0	15.9	0.0
LnGrp LOS				B			A	A			B	
Approach Vol, veh/h					334			1022			450	
Approach Delay, s/veh					19.1			7.7			15.9	
Approach LOS					B			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.3	17.9		14.9		33.2						
Change Period (Y+Rc), s	3.0	6.0		6.0		6.0						
Max Green Setting (Gmax), s	35.0	35.0		35.0		73.0						
Max Q Clear Time (g_c+I1), s	11.5	7.4		6.3		9.8						
Green Ext Time (p_c), s	0.8	4.5		2.8		4.7						
Intersection Summary												
HCM 2010 Ctrl Delay				11.8								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 Build Conditions
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	79	113	481	734	32
Future Volume (vph)	16	79	113	481	734	32
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	1900	1871	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	1805	1900	1871	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Control Type: Unsignalized						

HCM 2010 TWSC
1: Cedar Street (Route 85) & Deer Street (Site Driveway)

2024 Build Conditions
Weekday Evening

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	79	113	481	734	32
Future Vol, veh/h	16	79	113	481	734	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	17	86	123	523	798	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1583	815	833	0	-	0
Stage 1	815	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	121	381	809	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	103	381	809	-	-	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	391	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.2	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	809	-	103	381	-	-
HCM Lane V/C Ratio	0.152	-	0.169	0.225	-	-
HCM Control Delay (s)	10.2	-	46.9	17.2	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.6	0.9	-	-

Lanes, Volumes, Timings
2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 Build Conditions

Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	378	0	200	523	394	0	0	754	59
Future Volume (vph)	0	0	0	378	0	200	523	394	0	0	754	59
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt						0.850					0.989	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	3467	0	1615	1752	1900	0	0	3537	0
Flt Permitted				0.950			0.163					
Satd. Flow (perm)	0	0	0	3467	0	1615	301	1900	0	0	3537	0
Satd. Flow (RTOR)						208					10	
Confl. Peds. (#/hr)			11									
Confl. Bikes (#/hr)			6									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	3%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Turn Type				Prot		Free	pm+pt	NA			NA	
Protected Phases				4			1	6			2	
Permitted Phases						Free	6					
Detector Phase				4			1	6			2	
Switch Phase												
Minimum Initial (s)				6.0			6.0	10.0			10.0	
Minimum Split (s)				12.0			9.0	16.0			16.0	
Total Split (s)				21.0			28.0	64.0			36.0	
Total Split (%)				24.7%			32.9%	75.3%			42.4%	
Maximum Green (s)				15.0			25.0	58.0			30.0	
Yellow Time (s)				3.0			3.0	3.0			3.0	
All-Red Time (s)				3.0			0.0	3.0			3.0	
Lost Time Adjust (s)				0.0			0.0	0.0			0.0	
Total Lost Time (s)				6.0			3.0	6.0			6.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				5.0			2.0	2.0			2.0	
Recall Mode				None			None	Min			Min	

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 71.8

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Cedar Street (Route 85) & I-495 Northbound Ramps

 Ø1	 Ø2	 Ø4
28 s	36 s	21 s
 Ø6		
64 s		

Queues
2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 Build Conditions
Weekday Evening

					
Lane Group	WBL	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	394	208	545	410	846
v/c Ratio	0.59	0.13	0.90	0.34	0.76
Control Delay	32.4	0.2	35.4	6.8	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	0.2	35.4	6.8	27.5
Queue Length 50th (ft)	87	0	172	76	185
Queue Length 95th (ft)	147	0	#371	117	261
Internal Link Dist (ft)				299	406
Turn Bay Length (ft)					
Base Capacity (vph)	749	1615	726	1537	1535
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.13	0.75	0.27	0.55

Intersection Summary

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

HCM 2010 Signalized Intersection Summary

2: Cedar Street (Route 85) & I-495 Northbound Ramps

2024 Build Conditions
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	378	0	200	523	394	0	0	754	59
Future Volume (veh/h)	0	0	0	378	0	200	523	394	0	0	754	59
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	0	1900	1845	1900	0	0	1883	1900
Adj Flow Rate, veh/h				394	0	0	545	410	0	0	785	0
Adj No. of Lanes				2	0	1	1	1	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				1	0	0	3	0	0	0	1	1
Cap, veh/h				597	0	277	631	1161	0	0	1156	0
Arrive On Green				0.17	0.00	0.00	0.23	0.61	0.00	0.00	0.32	0.00
Sat Flow, veh/h				3476	0	1615	1757	1900	0	0	3765	0
Grp Volume(v), veh/h				394	0	0	545	410	0	0	785	0
Grp Sat Flow(s),veh/h/ln				1738	0	1615	1757	1900	0	0	1788	0
Q Serve(g_s), s				5.8	0.0	0.0	10.1	5.9	0.0	0.0	10.5	0.0
Cycle Q Clear(g_c), s				5.8	0.0	0.0	10.1	5.9	0.0	0.0	10.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				597	0	277	631	1161	0	0	1156	0
V/C Ratio(X)				0.66	0.00	0.00	0.86	0.35	0.00	0.00	0.68	0.00
Avail Cap(c_a), veh/h				944	0	439	1016	1995	0	0	1943	0
HCM Platoon Ratio				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	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				21.4	0.0	0.0	9.6	5.3	0.0	0.0	16.2	0.0
Incr Delay (d2), s/veh				2.7	0.0	0.0	2.6	0.1	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	0.0	5.3	3.1	0.0	0.0	5.2	0.0
LnGrp Delay(d),s/veh				24.0	0.0	0.0	12.2	5.4	0.0	0.0	16.5	0.0
LnGrp LOS				C			B	A			B	
Approach Vol, veh/h					394			955			785	
Approach Delay, s/veh					24.0			9.3			16.5	
Approach LOS					C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.9	23.8		15.5		39.7						
Change Period (Y+Rc), s	3.0	6.0		6.0		6.0						
Max Green Setting (Gmax), s	25.0	30.0		15.0		58.0						
Max Q Clear Time (g_c+l1), s	12.1	12.5		7.8		7.9						
Green Ext Time (p_c), s	0.8	5.3		1.7		6.5						
Intersection Summary												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								