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**TOWN OF SOUTHBOROUGH  
DEPARTMENT OF PUBLIC WORKS**

**Tel: 508-485-1210  
Fax: 508-229-4444**

**147 Cordaville Road  
Southborough, MA 01772**



**DATE: October 3, 2019**

**MEMORANDUM**

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**TO: Southborough Board of Selectmen  
CC: Mark Purple, Town Administrator  
FROM: Karen Galligan, DPW Superintendent  
SUBJECT: Pine Hill Road Traffic Summary and work update**

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Attached is VHB's, the Town's roadway and traffic engineering firm, Traffic Review Memo of the traffic data collected from Pine Hill and Parmenter Roads. The counts were collected on Wednesday and Thursday, September 11<sup>th</sup> and 12<sup>th</sup>, respectively.

The counts were conducted specifically to determine if the intersection meets the warrants for a three-way stop at the intersection and to determine the level of truck traffic. VHB was asked to summarize the data for these issues, no further recommendations were requested as this was not a full Safety Study. You will see in the report that, although the traffic volume has increased since the 2015 Safety Study, the intersection still does not warrant a three way stop.

The Police Chief reviewed the accident reports for Pine Hill Road from 1/1/2016 to 8/30/2019. There was a total of 23 accidents on the road, 17 were one car accidents, 3 were 2 car accidents on Pine Hill Road, and 3 were 2 car accidents at the Pine Hill and Parmenter Roads intersection.

Based on the accident information from the Police Chief the DPW will be replacing all of the signs along Pine Hill and Parmenter Roads, as well as adding prismatic reflectors on utility poles, and possibly on trees, along the S-curve between 64 and 85 Pine Hill Road.

Since the previous meeting with the Selectmen, the DPW has ordered the driver feedback signs and contracted an installer, these will be installed as soon as possible after the signs are received. The DPW has also contacted the roadway striping contractor to paint a double yellow centerline the full length of Pine Hill Road and the full length of Parmenter Road. We do not have a date for this work yet. We have inventoried and ordered the new street signs and prismatic reflectors; these will be installed after receipt of the materials. Brush cutting along the roadside has been completed. Although brush cutting was done along the entire roadway, extra attention was given to areas where pedestrians can stand while traffic is passing. Unfortunately, the presence of stone walls has made locating other areas to level off in order to create a new area of refuge, an exercise in futility. Therefore, the DPW will work to improve the ones that currently exist.



Memorandum

To: Ms. Karen Galligan
Highway Superintendent
Town of Southborough

Date: October 3, 2019

Project #: 14715.00

From: Gregory Russell, P.E.
Project Manager

Re: Pine Hill Road & Parmenter Road Traffic Review

At the request of the Town of Southborough, VHB has conducted a review of existing traffic patterns at the intersection of Pine Hill Road and Parmenter Road in Southborough, Massachusetts. The following provides a summary of the existing traffic conditions surrounding the intersection.

Existing Traffic Volumes

To help identify the existing traffic patterns at the intersection of Parmenter Road and Pine Hill Road VHB conducted Turning Movement Counts (TMCs) for a period of eight (8) hours on Wednesday, September 11, 2019. In addition to TMCs, 48-hour automatic traffic recorder (ATR) counts were conducted, which included the same day as the TMCs. The ATRs collected traffic volumes, vehicle classifications and vehicle speeds. Table 1 below provides a summary of the data.

Table 1: ATR Summary

Table with 8 columns: Location, Daily Weekday, Weekday Morning Volume, K Factor, Dir Dist, Weekday Evening Volume, K Factor, Dir Dist. Rows include Parmenter Road and Pine Hill Road at various locations.

Source: Based on automatic traffic recorder (ATR) counts conducted on September 11 and 12, 2019

- a average daily traffic (ADT) volume expressed in vehicles per day
b peak period traffic volumes expressed in vehicles per hour
c percent of daily traffic that occurs during the peak period
d directional distribution of peak period traffic
1 AM Peak Hour - 7:15 to 8:15AM, PM Peak Hour - 5:00 to 6:00PM
2 AM Peak Hour - 7:15 to 8:15AM, PM Peak Hour - 5:00 to 6:00PM
3 AM Peak Hour - 7:30 to 8:30AM, PM Peak Hour - 4:45 to 5:45PM

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

As can be seen in Table 1, the data indicates that the traffic on both Parmenter Road and Pine Hill Road are highly directional, with the majority of traffic heading east and south, respectively, during the morning commuter peak hour and the opposite occurring in the evening. The commuter nature of the roadway is also reflected in the high K-factor, which is defined as the percent of daily traffic occurring during a specific hour. A typical K-factor could be observed at 8% to 10%. Both roadways are classified as urban collectors, meaning their primary function is to collect local traffic from smaller developed areas, such as residential neighborhoods, to provide access to higher class roadways, such as Route 20 and Route 30, which are urban arterials. Parmenter Road east and Pine Hill Road south carry similar traffic

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volumes, while Parmenter Road west was observed with the highest volumes. It should be noted that the volumes observed on Parmenter Road east of Pine Hill Road were approximately the same as those observed in 2015 as part of a previous study. The 85<sup>th</sup> percentile speeds for vehicles entering the intersection from each Parmenter Road leg was observed to be between 32 MPH and 34 MPH. The speeds on Pine Hill Road were observed to be 33 MPH in the northbound direction (i.e. approaching the intersection) and 34 MPH in the southbound direction (i.e. departing the intersection).

### Multi-Way STOP Control Evaluation

At the Town's request, VHB conducted a warrant analysis for the implementation of multi-way STOP control at the intersection. The methodology used to evaluate the use of a multi-way stop is based on the criteria set in the Manual on Uniform Traffic Control Devices (MUTCD). MUTCD is used to establish traffic control measures in a municipality. Section 2B.07.04 of the MUTCD provides four criteria (A, B, C, D) to consider for a multiway STOP sign installation. These criteria consider; crash history, volumes of vehicles, bicycles and pedestrians, volumes and intersection delay with the current street directionality. The following is a summary for each of the criteria:

- › Criteria A (Interim measure) – A multiway STOP can be used as an interim measure while arrangements are being made for the installation of a warranted traffic control signal.
- › Criteria B (Crash History) – A 12-month crash history with five or more reported crashes that are susceptible to correction by a multiway STOP installation (Includes left-turn, right-turn and right-angle collision).
- › Criteria C (Minimum Volumes) – The following conditions must be met:
  - C1 -Total of both **Major Street** approaches averaging at least 300 vehicles per hour for any 8 hours, and;
  - C2 -Total of the **Minor Street** approach(es) averaging at least 200 units per hour (combined total vehicular, pedestrian, and bicycle volumes) for the same 8 hours of the day with an average delay of at least 30 seconds during the highest traffic volume hour.
  - C3-If the 85<sup>th</sup>-percentile approach speed exceeds 40 mph, the minimum vehicular volumes warrants are 70 percent of the values provided in items 1 and 2.
- › Criteria D (80 Percent of All Thresholds) – 80 percent of **All** minimum thresholds from Criteria B, Criteria C1 and Criteria C2 are satisfied.

As can be seen in Table 2 (next page), the intersection does not currently meet any of the criteria noted above for multiway stop control.



Table 2: Multiway Stop Criteria Summary

	<b>Criteria A: Interim measure</b>	<b>Criteria B: Crash History</b>	<b>Criteria C1 &amp; C2: Major (C1) &amp; Minor (C2) Street Volumes</b>	<b>Criteria C3: 70% of volume Thresholds</b>	<b>Criteria D: 80% of All Thresholds</b>
<b>Threshold or Requirement</b>	Proposed Traffic Signal	5 Crashes over 12 months	Criteria C1: Average 300 vph <sup>2</sup> over any 8 hours <b>And</b> Criteria C2: Average 200 uph <sup>3</sup> over same 8 hours	85 <sup>th</sup> Speed > 40 mph <b>And</b> Criteria C1: 210 vph <b>And</b> Criteria C2: 140 uph	Criteria B: 4 Crashes <b>And</b> Criteria C1: 240 vph <b>And</b> Criteria C2: 160 uph
<b>Observed</b>	No Traffic Signal Present, Volumes don't warrant signalization	2 Crashes <sup>1</sup>	Criteria C1: Average 313 vph over 8 hours is met <b>And</b> Criteria C2: Average 130 uph over 8 hours is not met.	85 <sup>th</sup> Speed: 34 MPH (average for all streets, range 28 to 32 MPH) <b>And</b> Criteria C1: 313 vph <b>And</b> Criteria C2: 130 uph	Criteria B: 2 Crashes <b>And</b> Criteria C1: 313 vph <b>And</b> Criteria C2: 130 uph
<b>Criteria Met?</b>	No	No	No	No	No

Source Based on Criteria established in the Manual on Uniform Traffic Control Devices (MUTCD), 2009.  
 1. Based on available crash data from MassDOT's crash portal. Town data provided similar crash data statistics.  
 2. Vehicles per hour  
 3. Units per hour (vehicles, pedestrians and bicycles)

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## Memorandum

### Conclusions and Recommendations

Based on the available traffic data, the intersection of Parmenter Road and Pine Hill Road does not warrant implementation of multi-way STOP control, which is consistent with the conclusions of a previous study issued in 2015. In addition to the information provided above with respect to traffic volumes, the following data was also collected:

- Observed truck traffic (3 axles or more) totaled approximately 1% of all traffic during the days data was collected for all streets.
- Observed 85<sup>th</sup>-percentile vehicle speeds for each street were as follows:
  - Parmenter Road east: observed 32 MPH westbound and 36 MPH eastbound, Posted Speed Limit 25MPH
  - Parmenter Road west: observed 39 MPH westbound and 33 MPH eastbound, Posted Speed Limit 25 MPH
  - Pine Hill Road observed 33 MPH northbound and 34 MPH southbound, Posted Speed Limit 30 MPH

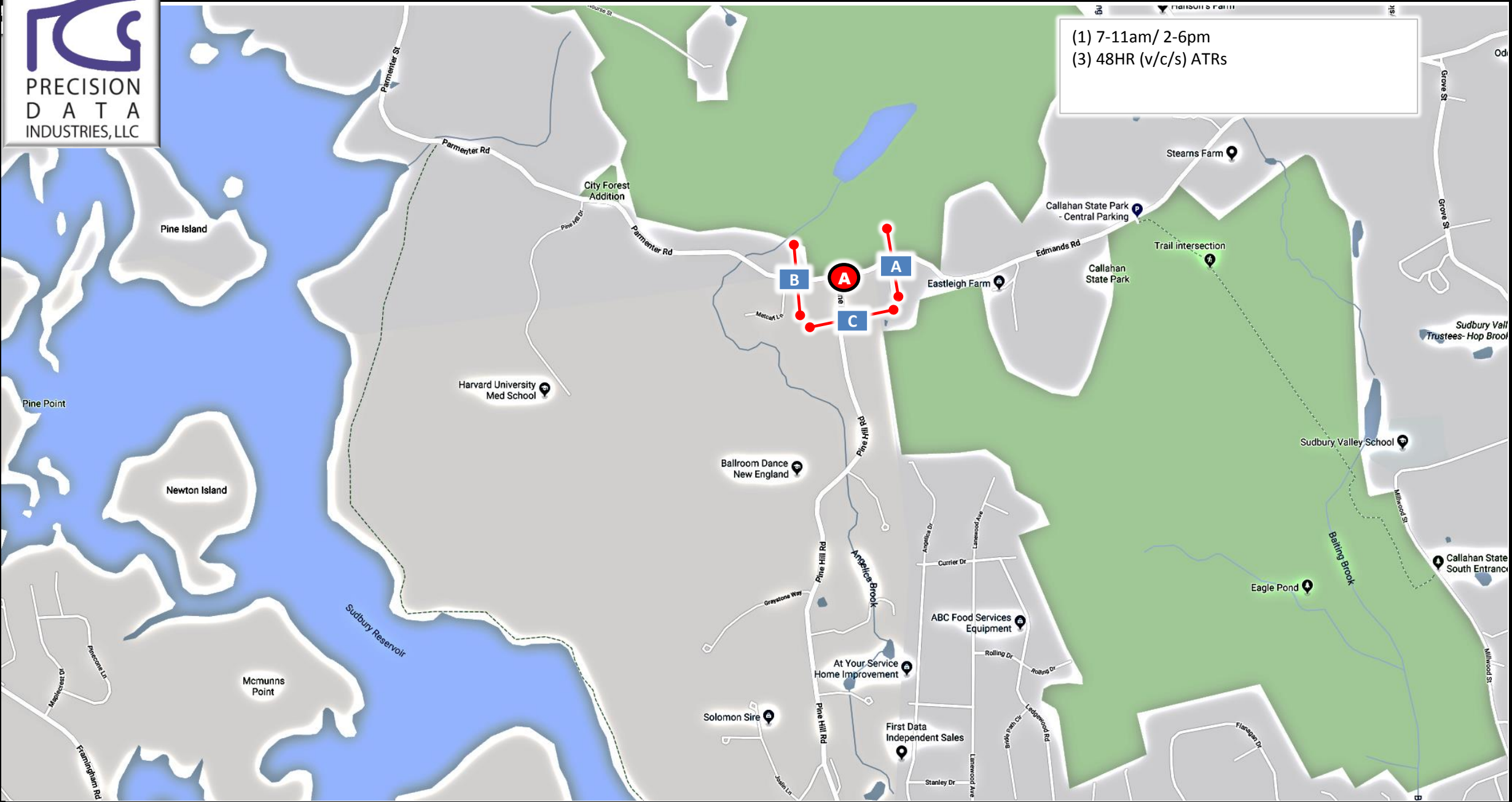
It should be noted that several of the recommendations of the 2015 study have been implemented including the clearing of brush and removal of trees surrounding the intersection. It is recommended that traffic volumes, vehicle-crashes (at the intersection), and speeds on Pine Hill Road continue to be monitored in the future, particularly if any developments are constructed in the surrounding area that contribute additional commuter traffic to Pine Hill Road and its intersection with Parmenter Road. If future conditions result in multiway stop control criteria being met, the Town can re-evaluate the option of implementing a multiway stop at that time. If vehicle speeds remain a concern in the future, the Town could consider implementing traffic calming measures along Pine Hill Road and potentially working with the adjacent communities of Marlborough and Framingham to identify ways to control speeds on Parmenter Road, given the proximity of the intersection to the respective Town Lines.



# Location Map: 197172 Southborough, MA

Precision Data Industries, LLC 46 Morton Street, Framingham, MA 01702 ph: 508-875-0100 email: [datarequests@pdillc.com](mailto:datarequests@pdillc.com)

(1) 7-11am/ 2-6pm  
(3) 48HR (v/c/s) ATRs



<b>Client:</b> VHB	<b>Engineer:</b> G. Russell	<b>Site Code:</b> 14715.00	<b>Date:</b> Wed 9/11 thru Thurs 9/12/2019	<b>PDI Job #</b> 197172	<b>City, State:</b> Southborough, MA
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PDI File #: **197172 A**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **7:00 AM**  
 End Time: **11:00 AM**  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	5	17	0	22	9	6	0	15	30	67	0	97	134
7:15 AM	3	18	0	21	2	8	0	10	34	86	0	120	151
7:30 AM	8	15	0	23	14	12	0	26	50	92	0	142	191
7:45 AM	12	25	0	37	13	4	0	17	52	71	0	123	177
<b>Total</b>	<b>28</b>	<b>75</b>	<b>0</b>	<b>103</b>	<b>38</b>	<b>30</b>	<b>0</b>	<b>68</b>	<b>166</b>	<b>316</b>	<b>0</b>	<b>482</b>	<b>653</b>
8:00 AM	7	22	0	29	9	9	0	18	51	68	0	119	166
8:15 AM	11	21	0	32	14	15	0	29	35	50	0	85	146
8:30 AM	10	24	0	34	10	14	0	24	40	73	0	113	171
8:45 AM	11	20	0	31	11	11	0	22	34	48	0	82	135
<b>Total</b>	<b>39</b>	<b>87</b>	<b>0</b>	<b>126</b>	<b>44</b>	<b>49</b>	<b>0</b>	<b>93</b>	<b>160</b>	<b>239</b>	<b>0</b>	<b>399</b>	<b>618</b>
9:00 AM	6	17	0	23	17	9	0	26	22	33	0	55	104
9:15 AM	11	8	0	19	11	12	0	23	19	19	0	38	80
9:30 AM	4	8	0	12	5	15	0	20	17	13	0	30	62
9:45 AM	7	9	0	16	6	9	0	15	14	15	0	29	60
<b>Total</b>	<b>28</b>	<b>42</b>	<b>0</b>	<b>70</b>	<b>39</b>	<b>45</b>	<b>0</b>	<b>84</b>	<b>72</b>	<b>80</b>	<b>0</b>	<b>152</b>	<b>306</b>
10:00 AM	8	6	0	14	6	9	0	15	14	13	0	27	56
10:15 AM	9	7	0	16	2	8	0	10	14	9	0	23	49
10:30 AM	5	6	0	11	4	9	0	13	17	10	0	27	51
10:45 AM	11	2	0	13	4	10	0	14	11	11	0	22	49
<b>Total</b>	<b>33</b>	<b>21</b>	<b>0</b>	<b>54</b>	<b>16</b>	<b>36</b>	<b>0</b>	<b>52</b>	<b>56</b>	<b>43</b>	<b>0</b>	<b>99</b>	<b>205</b>
<b>Grand Total</b>	<b>128</b>	<b>225</b>	<b>0</b>	<b>353</b>	<b>137</b>	<b>160</b>	<b>0</b>	<b>297</b>	<b>454</b>	<b>678</b>	<b>0</b>	<b>1132</b>	<b>1782</b>
Approach %	36.3	63.7	0.0		46.1	53.9	0.0		40.1	59.9	0.0		
Total %	7.2	12.6	0.0	19.8	7.7	9.0	0.0	16.7	25.5	38.0	0.0	63.5	
<b>Exiting Leg Total</b>				<b>815</b>				<b>679</b>				<b>288</b>	<b>1782</b>
Cars	125	219	0	344	131	152	0	283	444	674	0	1118	1745
% Cars	97.7	97.3	0.0	97.5	95.6	95.0	0.0	95.3	97.8	99.4	0.0	98.8	97.9
<b>Exiting Leg Total</b>				<b>805</b>				<b>663</b>				<b>277</b>	<b>1745</b>
Heavy Vehicles	3	6	0	9	6	8	0	14	10	4	0	14	37
% Heavy Vehicles	2.3	2.7	0.0	2.5	4.4	5.0	0.0	4.7	2.2	0.6	0.0	1.2	2.1
<b>Exiting Leg Total</b>				<b>10</b>				<b>16</b>				<b>11</b>	<b>37</b>

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:15 AM	3	18	0	21	2	8	0	10	34	86	0	120	151
7:30 AM	8	15	0	23	14	12	0	26	50	92	0	142	191
7:45 AM	12	25	0	37	13	4	0	17	52	71	0	123	177
8:00 AM	7	22	0	29	9	9	0	18	51	68	0	119	166
<b>Total Volume</b>	<b>30</b>	<b>80</b>	<b>0</b>	<b>110</b>	<b>38</b>	<b>33</b>	<b>0</b>	<b>71</b>	<b>187</b>	<b>317</b>	<b>0</b>	<b>504</b>	<b>685</b>
% Approach Total	27.3	72.7	0.0		53.5	46.5	0.0		37.1	62.9	0.0		
PHF	0.625	0.800	0.000	0.743	0.679	0.688	0.000	0.683	0.899	0.861	0.000	0.887	0.897
Cars	30	79	0	109	37	31	0	68	183	314	0	497	674
Cars %	100.0	98.8	0.0	99.1	97.4	93.9	0.0	95.8	97.9	99.1	0.0	98.6	98.4
Heavy Vehicles	0	1	0	1	1	2	0	3	4	3	0	7	11
Heavy Vehicles %	0.0	1.3	0.0	0.9	2.6	6.1	0.0	4.2	2.1	0.9	0.0	1.4	1.6
Cars Enter Leg	30	79	0	109	37	31	0	68	183	314	0	497	674
Heavy Enter Leg	0	1	0	1	1	2	0	3	4	3	0	7	11
<b>Total Entering Leg</b>	<b>30</b>	<b>80</b>	<b>0</b>	<b>110</b>	<b>38</b>	<b>33</b>	<b>0</b>	<b>71</b>	<b>187</b>	<b>317</b>	<b>0</b>	<b>504</b>	<b>685</b>
Cars Exiting Leg				351				262				61	674
Heavy Exiting Leg				4				5				2	11
<b>Total Exiting Leg</b>				<b>355</b>				<b>267</b>				<b>63</b>	<b>685</b>



PDI File #: **197172 A**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **7:00 AM**  
 End Time: **11:00 AM**  
 Class:



**Cars**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	5	16	0	21	8	5	0	13	30	67	0	97	131
7:15 AM	3	18	0	21	2	6	0	8	32	86	0	118	147
7:30 AM	8	15	0	23	14	12	0	26	49	90	0	139	188
7:45 AM	12	25	0	37	12	4	0	16	52	71	0	123	176
Total	28	74	0	102	36	27	0	63	163	314	0	477	642
8:00 AM	7	21	0	28	9	9	0	18	50	67	0	117	163
8:15 AM	11	20	0	31	12	14	0	26	34	50	0	84	141
8:30 AM	10	24	0	34	9	14	0	23	40	73	0	113	170
8:45 AM	11	20	0	31	11	10	0	21	33	48	0	81	133
Total	39	85	0	124	41	47	0	88	157	238	0	395	607
9:00 AM	6	16	0	22	17	8	0	25	21	33	0	54	101
9:15 AM	11	7	0	18	11	12	0	23	19	19	0	38	79
9:30 AM	4	8	0	12	5	15	0	20	17	13	0	30	62
9:45 AM	7	9	0	16	6	8	0	14	14	15	0	29	59
Total	28	40	0	68	39	43	0	82	71	80	0	151	301
10:00 AM	8	6	0	14	6	9	0	15	14	13	0	27	56
10:15 AM	8	6	0	14	2	8	0	10	14	9	0	23	47
10:30 AM	5	6	0	11	4	8	0	12	14	10	0	24	47
10:45 AM	9	2	0	11	3	10	0	13	11	10	0	21	45
Total	30	20	0	50	15	35	0	50	53	42	0	95	195
Grand Total	125	219	0	344	131	152	0	283	444	674	0	1118	1745
Approach %	36.3	63.7	0.0		46.3	53.7	0.0		39.7	60.3	0.0		
Total %	7.2	12.6	0.0	19.7	7.5	8.7	0.0	16.2	25.4	38.6	0.0	64.1	
Exiting Leg Total				805				663				277	1745

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

7:15 AM	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:15 AM	3	18	0	21	2	6	0	8	32	86	0	118	147
7:30 AM	8	15	0	23	14	12	0	26	49	90	0	139	188
7:45 AM	12	25	0	37	12	4	0	16	52	71	0	123	176
8:00 AM	7	21	0	28	9	9	0	18	50	67	0	117	163
Total Volume	30	79	0	109	37	31	0	68	183	314	0	497	674
% Approach Total	27.5	72.5	0.0		54.4	45.6	0.0		36.8	63.2	0.0		
PHF	0.625	0.790	0.000	0.736	0.661	0.646	0.000	0.654	0.880	0.872	0.000	0.894	0.896
Entering Leg	30	79	0	109	37	31	0	68	183	314	0	497	674
Exiting Leg				351				262				61	674
Total				460				330				558	1348



PDI File #: **197172 A**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **7:00 AM**  
 End Time: **11:00 AM**  
 Class:



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

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	1	0	1	1	1	0	2	0	0	0	0	3
7:15 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
7:30 AM	0	0	0	0	0	0	0	0	1	2	0	3	3
7:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total	0	1	0	1	2	3	0	5	3	2	0	5	11
8:00 AM	0	1	0	1	0	0	0	0	1	1	0	2	3
8:15 AM	0	1	0	1	2	1	0	3	1	0	0	1	5
8:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	0	2	0	2	3	2	0	5	3	1	0	4	11
9:00 AM	0	1	0	1	0	1	0	1	1	0	0	1	3
9:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	2	0	2	0	2	0	2	1	0	0	1	5
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	1	1	0	2	0	0	0	0	0	0	0	0	2
10:30 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
10:45 AM	2	0	0	2	1	0	0	1	0	1	0	1	4
Total	3	1	0	4	1	1	0	2	3	1	0	4	10
Grand Total	3	6	0	9	6	8	0	14	10	4	0	14	37
Approach %	33.3	66.7	0.0		42.9	57.1	0.0		71.4	28.6	0.0		
Total %	8.1	16.2	0.0	24.3	16.2	21.6	0.0	37.8	27.0	10.8	0.0	37.8	
Exiting Leg Total				10				16				11	37
Buses	1	0	0	1	3	2	0	5	2	0	0	2	8
% Buses	33.3	0.0	0.0	11.1	50.0	25.0	0.0	35.7	20.0	0.0	0.0	14.3	21.6
Exiting Leg Total				3				2				3	8
Single-Unit Trucks	2	6	0	8	2	6	0	8	8	1	0	9	25
% Single-Unit	66.7	100.0	0.0	88.9	33.3	75.0	0.0	57.1	80.0	25.0	0.0	64.3	67.6
Exiting Leg Total				3				14				8	25
Articulated Trucks	0	0	0	0	1	0	0	1	0	3	0	3	4
% Articulated	0.0	0.0	0.0	0.0	16.7	0.0	0.0	7.1	0.0	75.0	0.0	21.4	10.8
Exiting Leg Total				4				0				0	4

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	0	1	2	0	3	3
7:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
8:00 AM	0	1	0	1	0	0	0	0	1	1	0	2	3
8:15 AM	0	1	0	1	2	1	0	3	1	0	0	1	5
Total Volume	0	2	0	2	3	1	0	4	3	3	0	6	12
% Approach Total	0.0	100.0	0.0		75.0	25.0	0.0		50.0	50.0	0.0		
PHF	0.000	0.500	0.000	0.500	0.375	0.250	0.000	0.333	0.750	0.375	0.000	0.500	0.600
Buses	0	0	0	0	2	1	0	3	2	0	0	2	5
Buses %	0.0	0.0	0.0	0.0	66.7	100.0	0.0	75.0	66.7	0.0	0.0	33.3	41.7
Single-Unit Trucks	0	2	0	2	0	0	0	0	1	1	0	2	4
Single-Unit %	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	33.3	33.3	0.0	33.3	33.3
Articulated Trucks	0	0	0	0	1	0	0	1	0	2	0	2	3
Articulated %	0.0	0.0	0.0	0.0	33.3	0.0	0.0	25.0	0.0	66.7	0.0	33.3	25.0
Buses	0	0	0	0	2	1	0	3	2	0	0	2	5
Single-Unit Trucks	0	2	0	2	0	0	0	0	1	1	0	2	4
Articulated Trucks	0	0	0	0	1	0	0	1	0	2	0	2	3
Total Entering Leg	0	2	0	2	3	1	0	4	3	3	0	6	12

PDI File #: **197172 A**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **7:00 AM**  
 End Time: **11:00 AM**



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

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

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
Buses				2				2				1	5
Single-Unit Trucks				1				3				0	4
Articulated Trucks				3				0				0	3
Total Exiting Leg				6				5				1	12

PDI File #: **197172 A**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **7:00 AM**  
 End Time: **11:00 AM**  
 Class:



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

**Buses**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	2	1	0	0	1	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	2	1	0	3	1	0	0	1	4
8:30 AM	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
Total	0	0	0	0	2	1	0	3	1	0	0	1	4
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	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
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	1	3	2	0	5	2	0	0	2	8
Approach %	100.0	0.0	0.0		60.0	40.0	0.0		100.0	0.0	0.0		
Total %	12.5	0.0	0.0	12.5	37.5	25.0	0.0	62.5	25.0	0.0	0.0	25.0	
Exiting Leg Total	3				2				3				8

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

7:30 AM	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45 AM	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
8:15 AM	0	0	0	0	2	1	0	3	1	0	0	1	4
Total Volume	0	0	0	0	2	1	0	3	2	0	0	2	5
% Approach Total	0.0	0.0	0.0		66.7	33.3	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.250	0.500	0.000	0.000	0.500	0.313
Entering Leg	0	0	0	0	2	1	0	3	2	0	0	2	5
Exiting Leg	2				2				1				5
Total	2				5				3				10

PDI File #: **197172 A**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **7:00 AM**  
 End Time: **11:00 AM**  
 Class:



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

**Single-Unit Trucks**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	1	0	1	0	1	0	1	0	0	0	0	2
7:15 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
7:30 AM	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
Total	0	1	0	1	0	2	0	2	2	0	0	2	5
8:00 AM	0	1	0	1	0	0	0	0	1	1	0	2	3
8:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	0	2	0	2	1	1	0	2	2	1	0	3	7
9:00 AM	0	1	0	1	0	1	0	1	1	0	0	1	3
9:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	2	0	2	0	2	0	2	1	0	0	1	5
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
10:30 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
10:45 AM	2	0	0	2	1	0	0	1	0	0	0	0	3
Total	2	1	0	3	1	1	0	2	3	0	0	3	8
Grand Total	2	6	0	8	2	6	0	8	8	1	0	9	25
Approach %	25.0	75.0	0.0		25.0	75.0	0.0		88.9	11.1	0.0		
Total %	8.0	24.0	0.0	32.0	8.0	24.0	0.0	32.0	32.0	4.0	0.0	36.0	
Exiting Leg Total	3				14				8				25

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

10:00 AM	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
10:30 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
10:45 AM	2	0	0	2	1	0	0	1	0	0	0	0	3
Total Volume	2	1	0	3	1	1	0	2	3	0	0	3	8
% Approach Total	66.7	33.3	0.0		50.0	50.0	0.0		100.0	0.0	0.0		
PHF	0.250	0.250	0.000	0.375	0.250	0.250	0.000	0.500	0.250	0.000	0.000	0.250	0.500
Entering Leg	2	1	0	3	1	1	0	2	3	0	0	3	8
Exiting Leg	1				4				3				8
Total	4				6				6				16

PDI File #: **197172 A**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **7:00 AM**  
 End Time: **11:00 AM**  
 Class:



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

**Articulated Trucks**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	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
7:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
7:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	2	0	2	3
8:00 AM	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
8:30 AM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	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
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	1	0	0	1	0	3	0	3	4
Approach %	0.0	0.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0		
Total %	0.0	0.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0	75.0	0.0	75.0	
Exiting Leg Total	4				0				0				4

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	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
7:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
7:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	1	0	0	1	0	2	0	2	3
% Approach Total	0.0	0.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.375
Entering Leg	0	0	0	0	1	0	0	1	0	2	0	2	3
Exiting Leg	3				0				0				3
Total	3				1				2				6

PDI File #: 197172 A  
 Location: S: Pine Hill Road  
 Location: E: Parmenter Road W: Parmenter Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell  
 Site Code: 14715.00  
 Count Date: Wednesday, September 11, 2019  
 Start Time: 7:00 AM  
 End Time: 11:00 AM  
 Class:



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

**Bicycles (on Roadway and Crosswalks)**

	Parmenter Road						Pine Hill Road						Parmenter Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	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
7:15 AM	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	1	0	0	0	0	1	1
7:45 AM	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	1	0	0	0	0	1	1
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	2
Total	0	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	2
9:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
9:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	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
Grand Total	0	3	0	0	0	3	0	0	0	0	1	1	1	0	0	0	0	1	5
Approach %	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	100.0		100.0	0.0	0.0	0.0	0.0		
Total %	0.0	60.0	0.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0	0.0	20.0	
Exiting Leg Total	0						5						0						5

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

8:30 AM	Parmenter Road						Pine Hill Road						Parmenter Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	2
9:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
9:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	3	0	0	0	3	0	0	0	0	1	1	0	0	0	0	0	0	4
% 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		
PHF	0.000	0.750	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	3	0	0	0	3	0	0	0	0	1	1	0	0	0	0	0	0	4
Exiting Leg	0						4						0						4
Total	3						5						0						8

PDI File #: 197172 A  
 Location: S: Pine Hill Road  
 Location: E: Parmenter Road W: Parmenter Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell  
 Site Code: 14715.00  
 Count Date: Wednesday, September 11, 2019  
 Start Time: 7:00 AM  
 End Time: 11:00 AM  
 Class:



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

	Parmenter Road						Pine Hill Road						Parmenter Road						Total	
	from East						from South						from West							
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	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
7:15 AM	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
7:45 AM	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
8:00 AM	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
8:30 AM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	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
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	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
Exiting Leg Total	0						0						0						0	

Peak Hour Analysis from 07:00 AM to 11:00 AM begins at:

	Parmenter Road						Pine Hill Road						Parmenter Road						Total	
	from East						from South						from West							
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	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
7:15 AM	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
7:45 AM	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	0	0	0	0	0	0	0	0	0	0	0	0	0
% 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
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
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0	
Total	0						0						0						0	



PDI File #: **197172 AA**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **2:00 PM**  
 End Time: **6:00 PM**  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
2:00 PM	15	8	0	23	6	5	0	11	23	8	0	31	65
2:15 PM	12	8	0	20	7	14	0	21	8	12	0	20	61
2:30 PM	22	10	0	32	10	16	0	26	12	11	0	23	81
2:45 PM	16	9	0	25	5	20	0	25	13	10	0	23	73
<b>Total</b>	<b>65</b>	<b>35</b>	<b>0</b>	<b>100</b>	<b>28</b>	<b>55</b>	<b>0</b>	<b>83</b>	<b>56</b>	<b>41</b>	<b>0</b>	<b>97</b>	<b>280</b>
3:00 PM	18	7	0	25	7	18	0	25	12	8	0	20	70
3:15 PM	39	11	0	50	14	12	0	26	7	8	0	15	91
3:30 PM	20	9	0	29	11	28	0	39	17	16	0	33	101
3:45 PM	30	6	0	36	11	12	0	23	19	9	0	28	87
<b>Total</b>	<b>107</b>	<b>33</b>	<b>0</b>	<b>140</b>	<b>43</b>	<b>70</b>	<b>0</b>	<b>113</b>	<b>55</b>	<b>41</b>	<b>0</b>	<b>96</b>	<b>349</b>
4:00 PM	23	9	0	32	9	33	0	42	11	20	0	31	105
4:15 PM	33	12	0	45	11	42	0	53	20	14	0	34	132
4:30 PM	35	13	0	48	20	23	0	43	20	19	0	39	130
4:45 PM	48	12	0	60	11	38	1	50	11	15	0	26	136
<b>Total</b>	<b>139</b>	<b>46</b>	<b>0</b>	<b>185</b>	<b>51</b>	<b>136</b>	<b>1</b>	<b>188</b>	<b>62</b>	<b>68</b>	<b>0</b>	<b>130</b>	<b>503</b>
5:00 PM	50	14	0	64	20	42	0	62	18	23	0	41	167
5:15 PM	52	12	0	64	40	39	0	79	14	17	0	31	174
5:30 PM	58	8	0	66	27	33	0	60	16	19	0	35	161
5:45 PM	46	5	0	51	23	31	0	54	22	17	0	39	144
<b>Total</b>	<b>206</b>	<b>39</b>	<b>0</b>	<b>245</b>	<b>110</b>	<b>145</b>	<b>0</b>	<b>255</b>	<b>70</b>	<b>76</b>	<b>0</b>	<b>146</b>	<b>646</b>
Grand Total	517	153	0	670	232	406	1	639	243	226	0	469	1778
Approach %	77.2	22.8	0.0		36.3	63.5	0.2		51.8	48.2	0.0		
Total %	29.1	8.6	0.0	37.7	13.0	22.8	0.1	35.9	13.7	12.7	0.0	26.4	
Exiting Leg Total				458				397				923	1778
Cars	510	142	0	652	227	397	1	625	238	223	0	461	1738
% Cars	98.6	92.8	0.0	97.3	97.8	97.8	100.0	97.8	97.9	98.7	0.0	98.3	97.8
Exiting Leg Total				450				381				907	1738
Heavy Vehicles	7	11	0	18	5	9	0	14	5	3	0	8	40
% Heavy Vehicles	1.4	7.2	0.0	2.7	2.2	2.2	0.0	2.2	2.1	1.3	0.0	1.7	2.2
Exiting Leg Total				8				16				16	40

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

5:00 PM	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	50	14	0	64	20	42	0	62	18	23	0	41	167
5:15 PM	52	12	0	64	40	39	0	79	14	17	0	31	174
5:30 PM	58	8	0	66	27	33	0	60	16	19	0	35	161
5:45 PM	46	5	0	51	23	31	0	54	22	17	0	39	144
<b>Total Volume</b>	<b>206</b>	<b>39</b>	<b>0</b>	<b>245</b>	<b>110</b>	<b>145</b>	<b>0</b>	<b>255</b>	<b>70</b>	<b>76</b>	<b>0</b>	<b>146</b>	<b>646</b>
% Approach Total	84.1	15.9	0.0		43.1	56.9	0.0		47.9	52.1	0.0		
PHF	0.888	0.696	0.000	0.928	0.688	0.863	0.000	0.807	0.795	0.826	0.000	0.890	0.928
Cars	205	39	0	244	110	144	0	254	69	74	0	143	641
Cars %	99.5	100.0	0.0	99.6	100.0	99.3	0.0	99.6	98.6	97.4	0.0	97.9	99.2
Heavy Vehicles	1	0	0	1	0	1	0	1	1	2	0	3	5
Heavy Vehicles %	0.5	0.0	0.0	0.4	0.0	0.7	0.0	0.4	1.4	2.6	0.0	2.1	0.8
Cars Enter Leg	205	39	0	244	110	144	0	254	69	74	0	143	641
Heavy Enter Leg	1	0	0	1	0	1	0	1	1	2	0	3	5
<b>Total Entering Leg</b>	<b>206</b>	<b>39</b>	<b>0</b>	<b>245</b>	<b>110</b>	<b>145</b>	<b>0</b>	<b>255</b>	<b>70</b>	<b>76</b>	<b>0</b>	<b>146</b>	<b>646</b>
Cars Exiting Leg				184				108				349	641
Heavy Exiting Leg				2				1				2	5
<b>Total Exiting Leg</b>				<b>186</b>				<b>109</b>				<b>351</b>	<b>646</b>

PDI File #: **197172 AA**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **2:00 PM**  
 End Time: **6:00 PM**  
 Class:



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

**Cars**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
2:00 PM	15	7	0	22	6	5	0	11	23	8	0	31	64
2:15 PM	12	6	0	18	5	14	0	19	7	12	0	19	56
2:30 PM	19	8	0	27	10	16	0	26	12	11	0	23	76
2:45 PM	16	9	0	25	5	20	0	25	13	10	0	23	73
Total	62	30	0	92	26	55	0	81	55	41	0	96	269
3:00 PM	18	7	0	25	7	17	0	24	11	8	0	19	68
3:15 PM	39	10	0	49	14	12	0	26	7	8	0	15	90
3:30 PM	20	9	0	29	11	25	0	36	16	15	0	31	96
3:45 PM	29	6	0	35	10	12	0	22	19	9	0	28	85
Total	106	32	0	138	42	66	0	108	53	40	0	93	339
4:00 PM	23	7	0	30	9	33	0	42	11	20	0	31	103
4:15 PM	31	10	0	41	11	39	0	50	19	14	0	33	124
4:30 PM	35	13	0	48	18	23	0	41	20	19	0	39	128
4:45 PM	48	11	0	59	11	37	1	49	11	15	0	26	134
Total	137	41	0	178	49	132	1	182	61	68	0	129	489
5:00 PM	49	14	0	63	20	42	0	62	17	21	0	38	163
5:15 PM	52	12	0	64	40	39	0	79	14	17	0	31	174
5:30 PM	58	8	0	66	27	33	0	60	16	19	0	35	161
5:45 PM	46	5	0	51	23	30	0	53	22	17	0	39	143
Total	205	39	0	244	110	144	0	254	69	74	0	143	641
Grand Total	510	142	0	652	227	397	1	625	238	223	0	461	1738
Approach %	78.2	21.8	0.0		36.3	63.5	0.2		51.6	48.4	0.0		
Total %	29.3	8.2	0.0	37.5	13.1	22.8	0.1	36.0	13.7	12.8	0.0	26.5	
Exiting Leg Total				450				381				907	1738

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

5:00 PM	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	49	14	0	63	20	42	0	62	17	21	0	38	163
5:15 PM	52	12	0	64	40	39	0	79	14	17	0	31	174
5:30 PM	58	8	0	66	27	33	0	60	16	19	0	35	161
5:45 PM	46	5	0	51	23	30	0	53	22	17	0	39	143
Total Volume	205	39	0	244	110	144	0	254	69	74	0	143	641
% Approach Total	84.0	16.0	0.0		43.3	56.7	0.0		48.3	51.7	0.0		
PHF	0.884	0.696	0.000	0.924	0.688	0.857	0.000	0.804	0.784	0.881	0.000	0.917	0.921
Entering Leg	205	39	0	244	110	144	0	254	69	74	0	143	641
Exiting Leg				184				108				349	641
Total				428				362				492	1282

PDI File #: **197172 AA**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **2:00 PM**  
 End Time: **6:00 PM**



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

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
2:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
2:15 PM	0	2	0	2	2	0	0	2	1	0	0	1	5
2:30 PM	3	2	0	5	0	0	0	0	0	0	0	0	5
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	5	0	8	2	0	0	2	1	0	0	1	11
3:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
3:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	3	0	3	1	1	0	2	5
3:45 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
Total	1	1	0	2	1	4	0	5	2	1	0	3	10
4:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	2	2	0	4	0	3	0	3	1	0	0	1	8
4:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
4:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	2
Total	2	5	0	7	2	4	0	6	1	0	0	1	14
5:00 PM	1	0	0	1	0	0	0	0	1	2	0	3	4
5:15 PM	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
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	0	0	1	0	1	0	1	1	2	0	3	5
Grand Total	7	11	0	18	5	9	0	14	5	3	0	8	40
Approach %	38.9	61.1	0.0		35.7	64.3	0.0		62.5	37.5	0.0		
Total %	17.5	27.5	0.0	45.0	12.5	22.5	0.0	35.0	12.5	7.5	0.0	20.0	
Exiting Leg Total	8				16				16				40
Buses	1	3	0	4	1	2	0	3	3	1	0	4	11
% Buses	14.3	27.3	0.0	22.2	20.0	22.2	0.0	21.4	60.0	33.3	0.0	50.0	27.5
Exiting Leg Total	2				6				3				11
Single-Unit Trucks	6	8	0	14	2	6	0	8	2	2	0	4	26
% Single-Unit	85.7	72.7	0.0	77.8	40.0	66.7	0.0	57.1	40.0	66.7	0.0	50.0	65.0
Exiting Leg Total	4				10				12				26
Articulated Trucks	0	0	0	0	2	1	0	3	0	0	0	0	3
% Articulated	0.0	0.0	0.0	0.0	40.0	11.1	0.0	21.4	0.0	0.0	0.0	0.0	7.5
Exiting Leg Total	2				0				1				3

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:30 PM	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
3:30 PM	0	0	0	0	0	3	0	3	1	1	0	2	5
3:45 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
4:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	2	2	0	4	0	3	0	3	1	0	0	1	8
Total Volume	3	4	0	7	1	6	0	7	2	1	0	3	17
% Approach Total	42.9	57.1	0.0		14.3	85.7	0.0		66.7	33.3	0.0		
PHF	0.375	0.500	0.000	0.438	0.250	0.500	0.000	0.583	0.500	0.250	0.000	0.375	0.531
Buses	1	1	0	2	0	1	0	1	1	0	0	1	4
Buses %	33.3	25.0	0.0	28.6	0.0	16.7	0.0	14.3	50.0	0.0	0.0	33.3	23.5
Single-Unit Trucks	2	3	0	5	0	4	0	4	1	1	0	2	11
Single-Unit %	66.7	75.0	0.0	71.4	0.0	66.7	0.0	57.1	50.0	100.0	0.0	66.7	64.7
Articulated Trucks	0	0	0	0	1	1	0	2	0	0	0	0	2
Articulated %	0.0	0.0	0.0	0.0	100.0	16.7	0.0	28.6	0.0	0.0	0.0	0.0	11.8
Buses	1	1	0	2	0	1	0	1	1	0	0	1	4
Single-Unit Trucks	2	3	0	5	0	4	0	4	1	1	0	2	11
Articulated Trucks	0	0	0	0	1	1	0	2	0	0	0	0	2
Total Entering Leg	3	4	0	7	1	6	0	7	2	1	0	3	17

PDI File #: **197172 AA**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **2:00 PM**  
 End Time: **6:00 PM**



PRECISION  
 D A T A  
 INDUSTRIES, LLC

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

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

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
Buses				0				2				2	4
Single-Unit Trucks				1				4				6	11
Articulated Trucks				1				0				1	2
<b>Total Exiting Leg</b>				<b>2</b>				<b>6</b>				<b>9</b>	<b>17</b>

PDI File #: **197172 AA**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **2:00 PM**  
 End Time: **6:00 PM**  
 Class:



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

**Buses**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1
2:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	1	0	0	1	2
3:00 PM	0	0	0	0	0	1	0	1	1	1	0	0	1	2
3:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	1	0	1	1	1	0	0	1	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	2	0	2	2	2	0	0	2	5
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	1	0	2	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	1	0	0	1	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	2	1	0	0	1	1	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:15 PM	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
5:45 PM	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	1	0	1	1
Grand Total	1	3	0	4	1	2	0	3	3	3	1	0	4	11
Approach %	25.0	75.0	0.0		33.3	66.7	0.0		75.0	25.0	0.0			
Total %	9.1	27.3	0.0	36.4	9.1	18.2	0.0	27.3	27.3	9.1	0.0		36.4	
Exiting Leg Total	2				6				3				11	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:45 PM	Parmenter Road				Pine Hill Road				Parmenter Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	2	2
3:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	1
3:30 PM	0	0	0	0	0	1	0	1	1	1	0	1	2	2
Total Volume	0	1	0	1	0	2	0	2	2	2	0	2	5	5
% Approach Total	0.0	100.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0			
PHF	0.000	0.250	0.000	0.250	0.000	0.500	0.000	0.500	0.500	0.000	0.000	0.500	0.625	0.625
Entering Leg	0	1	0	1	0	2	0	2	2	0	0	2	5	5
Exiting Leg	0				3				2				5	
Total	1				5				4				10	

PDI File #: **197172 AA**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **2:00 PM**  
 End Time: **6:00 PM**  
 Class:



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

**Single-Unit Trucks**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
2:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
2:15 PM	0	2	0	2	2	0	0	2	0	0	0	0	0	4
2:30 PM	3	1	0	4	0	0	0	0	0	0	0	0	0	4
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	4	0	7	2	0	0	2	0	0	0	0	0	9
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	2	0	2	0	1	0	1	1	3
3:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	2	0	2	0	1	0	1	1	4
4:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	2
4:15 PM	1	1	0	2	0	2	0	2	1	0	0	1	1	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	2
Total	1	4	0	5	0	3	0	3	1	0	0	1	1	9
5:00 PM	1	0	0	1	0	0	0	0	1	1	0	2	2	3
5:15 PM	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
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	1	0	0	1	0	1	0	1	1	1	0	2	2	4
Grand Total	6	8	0	14	2	6	0	8	2	2	0	4	4	26
Approach %	42.9	57.1	0.0		25.0	75.0	0.0		50.0	50.0	0.0			
Total %	23.1	30.8	0.0	53.8	7.7	23.1	0.0	30.8	7.7	7.7	0.0	15.4		
Exiting Leg Total	4				10				12				26	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
3:30 PM	0	0	0	0	0	2	0	2	0	1	0	1	3
3:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	1	1	0	2	0	2	0	2	1	0	0	1	5
Total Volume	2	3	0	5	0	4	0	4	1	1	0	2	11
% Approach Total	40.0	60.0	0.0		0.0	100.0	0.0		50.0	50.0	0.0		
PHF	0.500	0.375	0.000	0.625	0.000	0.500	0.000	0.500	0.250	0.250	0.000	0.500	0.550
Entering Leg	2	3	0	5	0	4	0	4	1	1	0	2	11
Exiting Leg	1				4				6				11
Total	6				8				8				22

PDI File #: **197172 AA**  
 Location: **S: Pine Hill Road**  
 Location: **E: Parmenter Road W: Parmenter Road**  
 City, State: **Southborough, MA**  
 Client: **VHB/ G. Russell**  
 Site Code: **14715.00**  
 Count Date: **Wednesday, September 11, 2019**  
 Start Time: **2:00 PM**  
 End Time: **6:00 PM**  
 Class:



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

**Articulated Trucks**

	Parmenter Road				Pine Hill Road				Parmenter Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	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
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	2	0	0	0	0	0	2
5:00 PM	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
5:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	2	1	0	3	0	0	0	0	0	3
Approach %	0.0	0.0	0.0		66.7	33.3	0.0		0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	66.7	33.3	0.0	100.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	2				0				1				3	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Parmenter Road				Pine Hill Road				Parmenter Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
3:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
4:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	2	1	0	3	0	0	0	0	3
% Approach Total	0.0	0.0	0.0		66.7	33.3	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.750	0.000	0.000	0.000	0.000	0.750
Entering Leg	0				2				0				3
Exiting Leg	2				0				1				3
Total	2				3				1				6



PDI File #: 197172 AA  
 Location: S: Pine Hill Road  
 Location: E: Parmenter Road W: Parmenter Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell  
 Site Code: 14715.00  
 Count Date: Wednesday, September 11, 2019  
 Start Time: 2:00 PM  
 End Time: 6:00 PM  
 Class:



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

**Bicycles (on Roadway and Crosswalks)**

	Parmenter Road						Pine Hill Road						Parmenter Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	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
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
4:00 PM	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
4:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	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
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
5:45 PM	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	1	0	0	0	0	1	1
Grand Total	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	2
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0
Exiting Leg Total	1						1						0						2

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Parmenter Road						Pine Hill Road						Parmenter Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	1	0	0	0	0	1	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	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
Exiting Leg	1						0						0						1
Total	1						1						0						2

PDI File #: 197172 AA  
 Location: S: Pine Hill Road  
 Location: E: Parmenter Road W: Parmenter Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell  
 Site Code: 14715.00  
 Count Date: Wednesday, September 11, 2019  
 Start Time: 2:00 PM  
 End Time: 6:00 PM  
 Class:



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

**Pedestrians**

	Parmenter Road						Pine Hill Road						Parmenter Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	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	1	0	1	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	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
4:00 PM	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
4:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	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
5:30 PM	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	1	1	2	0	0	0	1	0	1	3
Total	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	1	0	1	3
Grand Total	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	1	0	1	4
Approach %	0	0	0	0	0	0	0	0	0	66.667	33.333		0	0	0	100	0		
Total %	0	0	0	0	0	0	0	0	0	50	25	75	0	0	0	25	0	25	
Exiting Leg Total	0						3						1						4

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Parmenter Road						Pine Hill Road						Parmenter Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
5:00 PM	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
5:30 PM	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	1	1	2	0	0	0	1	0	1	3
Total Volume	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	1	0	1	3
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	1	0	1	3
Exiting Leg	0						2						1						3
Total	0						4						2						6

Parmenter Road  
 east of Pine Hill Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell



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

197172 A Volume  
 Site Code: 14715.00  
 Date Start: 09/11/19  
 Date End: 09/12/19

Start Time	EB		WB		Combin ed		09/11/19 Wed							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	1	10	2	20	3	30								
12:15	0	15	1	13	1	28								
12:30	1	24	0	13	1	37								
12:45	0	2	11	60	0	3	21	67	5	32	127			
01:00	0	12	1	17	1	29								
01:15	1	18	0	13	1	31								
01:30	0	15	1	16	1	31								
01:45	1	2	9	54	0	2	19	65	1	28	119			
02:00	0	13	0	23	0	36								
02:15	0	20	1	20	1	40								
02:30	1	19	0	31	1	50								
02:45	1	2	16	68	0	1	25	99	1	41	167			
03:00	1	15	0	28	1	43								
03:15	0	22	1	49	1	71								
03:30	2	28	1	30	3	58								
03:45	0	3	19	84	0	2	36	143	0	5	55	227		
04:00	2	29	0	32	2	61								
04:15	1	25	2	45	3	70								
04:30	1	39	0	46	1	85								
04:45	1	5	28	121	3	5	60	183	4	10	88	304		
05:00	0	41	1	64	1	105								
05:15	4	56	3	64	7	120								
05:30	10	47	2	68	12	115								
05:45	9	23	37	181	5	11	52	248	14	34	89	429		
06:00	20	27	4	41	24	68								
06:15	38	22	6	51	44	73								
06:30	55	23	3	53	58	76								
06:45	73	186	17	89	15	28	26	171	88	214	43	260		
07:00	74	9	22	21	96	30								
07:15	89	14	20	19	109	33								
07:30	109	8	24	19	133	27								
07:45	83	355	14	45	38	104	14	73	121	459	28	118		
08:00	76	3	30	11	106	14								
08:15	65	7	31	9	96	16								
08:30	84	11	34	9	118	20								
08:45	58	283	5	26	29	124	5	34	87	407	10	60		
09:00	50	10	24	7	74	17								
09:15	30	8	19	9	49	17								
09:30	18	2	12	9	30	11								
09:45	22	120	4	24	15	70	5	30	37	190	9	54		
10:00	17	4	15	4	32	8								
10:15	13	4	16	5	29	9								
10:30	14	4	11	2	25	6								
10:45	16	60	1	13	12	54	2	13	28	114	3	26		
11:00	15	3	12	2	27	5								
11:15	20	1	17	4	37	5								
11:30	18	1	19	1	37	2								
11:45	15	68	1	6	10	58	2	9	25	126	3	15		
Total	1109	771	462	1135	1571	1906								
Percent	70.6%	40.5%	29.4%	59.5%										
Day Total		1880		1597		3477								
Peak	07:15	-	05:00	-	07:45	-	04:45	-	07:15	-	05:00	-	-	-
Vol.	357	-	181	-	133	-	256	-	469	-	429	-	-	-
P.H.F.	0.819	-	0.808	-	0.875	-	0.941	-	0.882	-	0.894	-	-	-

Parmenter Road  
east of Pine Hill Road  
City, State: Southborough, MA  
Client: VHB/ G. Russell



PRECISION  
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197172 A Volume  
Site Code: 14715.00  
Date Start: 09/11/19  
Date End: 09/12/19

Start Time	EB		WB		Combin ed		09/12/19 Thu							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	0	20	0	18	0	38								
12:15	1	16	1	22	2	38								
12:30	0	19	0	22	0	41								
12:45	1	11	66	0	1	13	75	3	24	141				
01:00	0	16	0	9	0	25								
01:15	0	17	2	22	2	39								
01:30	0	10	0	16	0	26								
01:45	0	15	58	0	2	17	64	0	2	32	122			
02:00	0	18	0	19	0	37								
02:15	0	19	0	28	0	47								
02:30	0	26	0	23	0	49								
02:45	2	17	80	0	0	44	114	2	2	61	194			
03:00	2	14	0	19	2	33								
03:15	0	23	1	29	1	52								
03:30	2	23	1	29	3	52								
03:45	1	16	76	0	2	45	122	1	7	61	198			
04:00	1	25	0	43	1	68								
04:15	0	34	1	62	1	96								
04:30	1	39	2	52	3	91								
04:45	0	30	128	1	4	68	225	1	6	98	353			
05:00	0	39	0	51	0	90								
05:15	3	49	0	64	3	113								
05:30	8	43	3	69	11	112								
05:45	13	24	32	163	4	7	53	237	17	31	85	400		
06:00	18	29	2	46	20	75								
06:15	44	14	7	42	51	56								
06:30	54	14	5	32	59	46								
06:45	64	180	17	74	13	27	29	149	77	207	46	223		
07:00	66	12	14	22	80	34								
07:15	84	10	27	24	111	34								
07:30	79	7	33	17	112	24								
07:45	82	311	4	33	30	104	11	74	112	415	15	107		
08:00	95	15	32	11	127	26								
08:15	70	6	38	9	108	15								
08:30	91	5	24	6	115	11								
08:45	53	309	5	31	32	126	5	31	85	435	10	62		
09:00	43	4	34	10	77	14								
09:15	23	0	25	6	48	6								
09:30	22	3	24	7	46	10								
09:45	13	101	3	10	14	97	5	28	27	198	8	38		
10:00	9	3	8	2	17	5								
10:15	20	4	9	12	29	16								
10:30	15	4	11	3	26	7								
10:45	21	65	5	16	17	45	2	19	38	110	7	35		
11:00	20	1	10	3	30	4								
11:15	13	2	11	4	24	6								
11:30	19	3	11	4	30	7								
11:45	11	63	0	6	14	46	0	11	25	109	0	17		
Total	1064	741	461	1149	1525	1890								
Percent	69.8%	39.2%	30.2%	60.8%										
Day Total		1805		1610		3415								
Peak	07:15	-	05:00	-	07:30	-	04:45	-	07:15	-	04:45	-	-	-
Vol.	340	-	163	-	133	-	252	-	462	-	413	-	-	-
P.H.F.	0.895	-	0.832	-	0.875	-	0.913	-	0.909	-	0.914	-	-	-

Parmenter Road  
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 Office: 508-875-0100 Fax: 508-875-0118  
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197172 A Class  
 Site Code: 14715.00  
 Date Start: 11-Sep-19  
 Date End: 12-Sep-19

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/11/1														
9	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	1	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	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
05:00	0	20	3	0	0	0	0	0	0	0	0	0	0	23
06:00	4	115	46	1	20	0	0	0	0	0	0	0	0	186
07:00	0	248	79	1	22	0	0	5	0	0	0	0	0	355
08:00	0	220	49	2	12	0	0	0	0	0	0	0	0	283
09:00	1	74	27	0	18	0	0	0	0	0	0	0	0	120
10:00	0	39	14	0	6	0	0	1	0	0	0	0	0	60
11:00	1	45	12	0	7	1	0	2	0	0	0	0	0	68
12 PM	0	42	14	1	3	0	0	0	0	0	0	0	0	60
13:00	0	34	14	0	4	1	0	1	0	0	0	0	0	54
14:00	0	47	16	0	5	0	0	0	0	0	0	0	0	68
15:00	0	59	20	0	5	0	0	0	0	0	0	0	0	84
16:00	1	82	26	0	11	0	0	1	0	0	0	0	0	121
17:00	2	118	50	0	11	0	0	0	0	0	0	0	0	181
18:00	0	61	22	0	6	0	0	0	0	0	0	0	0	89
19:00	0	33	10	0	2	0	0	0	0	0	0	0	0	45
20:00	1	18	5	0	2	0	0	0	0	0	0	0	0	26
21:00	0	19	4	0	1	0	0	0	0	0	0	0	0	24
22:00	0	7	5	0	1	0	0	0	0	0	0	0	0	13
23:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
Total	10	1298	418	5	137	2	0	10	0	0	0	0	0	1880
Percent	0.5%	69.0%	22.2%	0.3%	7.3%	0.1%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	07:00	07:00	08:00	07:00	11:00		07:00						07:00
Vol.	4	248	79	2	22	1		5						355
PM Peak	17:00	17:00	17:00	12:00	16:00	13:00		13:00						17:00
Vol.	2	118	50	1	11	1		1						181

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EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/1														
9	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
04:00	0	0	0	0	2	0	0	0	0	0	0	0	0	2
05:00	0	16	8	0	0	0	0	0	0	0	0	0	0	24
06:00	1	119	40	1	19	0	0	0	0	0	0	0	0	180
07:00	0	222	68	1	18	1	0	1	0	0	0	0	0	311
08:00	0	226	61	1	19	1	0	1	0	0	0	0	0	309
09:00	0	70	20	0	11	0	0	0	0	0	0	0	0	101
10:00	0	39	17	0	8	0	0	1	0	0	0	0	0	65
11:00	0	45	14	0	4	0	0	0	0	0	0	0	0	63
12 PM	0	41	15	1	9	0	0	0	0	0	0	0	0	66
13:00	0	41	9	1	7	0	0	0	0	0	0	0	0	58
14:00	0	51	22	1	5	0	0	1	0	0	0	0	0	80
15:00	0	45	24	0	7	0	0	0	0	0	0	0	0	76
16:00	0	86	32	0	10	0	0	0	0	0	0	0	0	128
17:00	0	102	51	0	10	0	0	0	0	0	0	0	0	163
18:00	1	41	26	0	6	0	0	0	0	0	0	0	0	74
19:00	1	23	6	0	3	0	0	0	0	0	0	0	0	33
20:00	0	19	9	0	3	0	0	0	0	0	0	0	0	31
21:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
22:00	0	13	2	0	1	0	0	0	0	0	0	0	0	16
23:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
Total	3	1218	430	6	142	2	0	4	0	0	0	0	0	1805
Percent	0.2%	67.5%	23.8%	0.3%	7.9%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	08:00	07:00	06:00	06:00	07:00		07:00						07:00
Vol.	1	226	68	1	19	1		1						311
PM Peak	18:00	17:00	17:00	12:00	16:00			14:00						17:00
Vol.	1	102	51	1	10			1						163



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Parmenter Road  
east of Pine Hill Road  
City, State: Southborough, MA  
Client: VHB/ G. Russell

197172 A Class  
Site Code: 14715.00  
Date Start: 11-Sep-19  
Date End: 12-Sep-19

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/11/1														
9	0	2	1	0	0	0	0	0	0	0	0	0	0	3
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
05:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
06:00	0	25	3	0	0	0	0	0	0	0	0	0	0	28
07:00	0	89	12	0	3	0	0	0	0	0	0	0	0	104
08:00	0	111	10	0	3	0	0	0	0	0	0	0	0	124
09:00	0	63	6	1	0	0	0	0	0	0	0	0	0	70
10:00	0	45	4	0	5	0	0	0	0	0	0	0	0	54
11:00	1	46	8	0	3	0	0	0	0	0	0	0	0	58
12 PM	0	54	7	0	6	0	0	0	0	0	0	0	0	67
13:00	0	53	9	0	2	1	0	0	0	0	0	0	0	65
14:00	0	79	14	1	3	2	0	0	0	0	0	0	0	99
15:00	1	112	25	0	5	0	0	0	0	0	0	0	0	143
16:00	1	153	23	1	5	0	0	0	0	0	0	0	0	183
17:00	1	217	24	0	6	0	0	0	0	0	0	0	0	248
18:00	3	133	27	0	8	0	0	0	0	0	0	0	0	171
19:00	3	58	10	0	2	0	0	0	0	0	0	0	0	73
20:00	0	32	2	0	0	0	0	0	0	0	0	0	0	34
21:00	0	29	1	0	0	0	0	0	0	0	0	0	0	30
22:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
23:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
Total	10	1335	195	3	51	3	0	0	0	0	0	0	0	1597
Percent	0.6%	83.6%	12.2%	0.2%	3.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	11:00	08:00	07:00	09:00	10:00									08:00
PM Peak Vol.	18:00	17:00	18:00	14:00	18:00	14:00								17:00
	3	217	27	1	8	2								248





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197172 A Class  
Site Code: 14715.00  
Date Start: 11-Sep-19  
Date End: 12-Sep-19

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/1														
9	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	1	0	2	0	0	0	0	0	0	0	0	4
05:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
06:00	0	20	5	0	2	0	0	0	0	0	0	0	0	27
07:00	0	89	11	0	3	1	0	0	0	0	0	0	0	104
08:00	1	113	9	1	2	0	0	0	0	0	0	0	0	126
09:00	0	82	13	0	2	0	0	0	0	0	0	0	0	97
10:00	0	35	9	1	0	0	0	0	0	0	0	0	0	45
11:00	0	34	10	0	1	1	0	0	0	0	0	0	0	46
12 PM	0	62	10	0	3	0	0	0	0	0	0	0	0	75
13:00	0	50	12	0	2	0	0	0	0	0	0	0	0	64
14:00	0	87	19	2	5	1	0	0	0	0	0	0	0	114
15:00	0	104	12	0	4	0	0	2	0	0	0	0	0	122
16:00	0	186	32	0	7	0	0	0	0	0	0	0	0	225
17:00	1	202	27	1	6	0	0	0	0	0	0	0	0	237
18:00	1	121	23	0	4	0	0	0	0	0	0	0	0	149
19:00	0	64	8	0	2	0	0	0	0	0	0	0	0	74
20:00	0	28	2	0	1	0	0	0	0	0	0	0	0	31
21:00	0	26	2	0	0	0	0	0	0	0	0	0	0	28
22:00	0	15	2	0	2	0	0	0	0	0	0	0	0	19
23:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
Total	3	1340	209	5	48	3	0	2	0	0	0	0	0	1610
Percent	0.2%	83.2%	13.0%	0.3%	3.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	09:00	08:00	07:00	07:00								08:00
Vol.	1	113	13	1	3	1								126
PM Peak	17:00	17:00	16:00	14:00	16:00	14:00		15:00						17:00
Vol.	1	202	32	2	7	1		2						237



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197172 A Speed  
Site Code: 14715.00  
Date Start: 11-Sep-19  
Date End: 12-Sep-19

EB

Start Time	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 Perce	Avera (Mean	
09/11/																													
19	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	42	40	
01:00	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	42	35	
02:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	52	45	
03:00	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	41	39	
04:00	0	0	1	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	40	35	
05:00	0	0	3	3	7	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	38	33	
06:00	0	0	9	45	66	59	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186	37	32	
07:00	0	1	21	46	188	86	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	355	36	32	
08:00	0	0	12	48	131	83	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	36	33	
09:00	0	1	15	27	51	24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	35	31	
10:00	0	1	7	17	26	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	34	30	
11:00	0	0	8	25	28	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	33	30	
12 PM	0	1	11	15	17	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	36	30	
13:00	0	1	8	11	19	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	36	31	
14:00	1	1	6	12	23	22	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	37	32	
15:00	0	0	12	29	33	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	33	30	
16:00	0	1	12	50	43	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	33	29	
17:00	0	0	23	86	50	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181	33	29	
18:00	0	1	5	23	39	17	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	36	31	
19:00	0	1	6	11	20	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	34	30	
20:00	0	0	3	3	12	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	38	33	
21:00	0	0	3	4	10	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	36	31	
22:00	0	0	0	4	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	34	31	
23:00	0	0	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	34	30	
Total	1	9	166	461	773	410	52	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1880			
%	0.1%	0.5%	8.8%	24.5%	41.1%	21.8%	2.8%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak		07:00	07:00	08:00	07:00	07:00	07:00	05:00	02:00																		07:00		
Vol.		1	21	48	188	86	13	1	1																		355		
PM Peak	14:00	12:00	17:00	17:00	17:00	14:00	17:00	14:00																			17:00		
Vol.	1	1	23	86	50	22	3	1																			181		

Stats  
15th Percentile : 25 MPH  
50th Percentile : 30 MPH  
85th Percentile : 36 MPH  
95th Percentile : 38 MPH

Mean Speed(Average) : 31 MPH  
10 MPH Pace Speed : 25-34 MPH  
Number in Pace : 1234  
Percent in Pace : 65.6%  
Number of Vehicles > 30 MPH : 1088  
Percent of Vehicles > 30 MPH : 57.9%



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

Parmenter Road  
east of Pine Hill Road  
City, State: Southborough, MA  
Client: VHB/ G. Russell

197172 A Speed  
Site Code: 14715.00  
Date Start: 11-Sep-19  
Date End: 12-Sep-19

EB

Start Time	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 Perce	Avera (Mean
09/12/19	0	0	0	1	1	0	0	0	0	0	0	0	0	2	32	30
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	1	1	0	0	0	0	0	0	2	42	40
03:00	0	0	0	0	1	1	3	0	0	0	0	0	0	5	42	39
04:00	0	0	0	1	0	1	0	0	0	0	0	0	0	2	37	32
05:00	0	0	2	3	8	9	2	0	0	0	0	0	0	24	38	33
06:00	0	1	7	26	71	67	6	2	0	0	0	0	0	180	37	33
07:00	0	3	7	49	167	75	10	0	0	0	0	0	0	311	36	32
08:00	0	1	11	55	159	73	9	1	0	0	0	0	0	309	36	32
09:00	0	1	14	20	41	20	4	1	0	0	0	0	0	101	36	31
10:00	0	0	13	19	15	13	5	0	0	0	0	0	0	65	37	30
11:00	0	0	9	24	19	9	1	1	0	0	0	0	0	63	34	30
12 PM	0	1	11	15	20	17	1	1	0	0	0	0	0	66	36	31
13:00	0	0	9	23	14	9	3	0	0	0	0	0	0	58	35	30
14:00	0	1	10	26	26	12	4	1	0	0	0	0	0	80	36	30
15:00	0	1	10	24	27	12	2	0	0	0	0	0	0	76	35	30
16:00	0	2	14	43	53	9	6	1	0	0	0	0	0	128	33	30
17:00	0	0	19	76	41	24	2	1	0	0	0	0	0	163	34	29
18:00	0	0	6	28	21	17	2	0	0	0	0	0	0	74	36	31
19:00	0	1	1	16	12	2	1	0	0	0	0	0	0	33	33	29
20:00	0	0	5	15	8	2	1	0	0	0	0	0	0	31	32	29
21:00	0	0	1	1	7	0	1	0	0	0	0	0	0	10	33	32
22:00	0	0	1	3	3	6	2	0	1	0	0	0	0	16	40	35
23:00	0	0	0	1	3	1	1	0	0	0	0	0	0	6	39	34
Total	0	12	150	469	717	380	67	9	1	0	0	0	0	1805		
%	0.0%	0.7%	8.3%	26.0%	39.7%	21.1%	3.7%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak		07:00	09:00	08:00	07:00	07:00	07:00	06:00						07:00		
Vol.		3	14	55	167	75	10	2						311		
PM Peak		16:00	17:00	17:00	16:00	17:00	16:00	12:00	22:00					17:00		
Vol.		2	19	76	53	24	6	1	1					163		

Stats  
15th Percentile : 25 MPH  
50th Percentile : 30 MPH  
85th Percentile : 36 MPH  
95th Percentile : 38 MPH

Mean Speed(Average) : 31 MPH  
10 MPH Pace Speed : 25-34 MPH  
Number in Pace : 1186  
Percent in Pace : 65.7%  
Number of Vehicles > 30 MPH : 1031  
Percent of Vehicles > 30 MPH : 57.1%

Parmenter Road  
east of Pine Hill Road  
City, State: Southborough, MA  
Client: VHB/ G. Russell



PRECISION  
D A T A  
INDUSTRIES, LLC

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197172 A Speed  
Site Code: 14715.00  
Date Start: 11-Sep-19  
Date End: 12-Sep-19

WB

Start Time	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 Perce	Avera (Mean
09/11/19	0	0	1	0	2	0	0	0	0	0	0	0	0	3	32	29
01:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2	32	30
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
03:00	0	0	0	1	0	0	1	0	0	0	0	0	0	2	42	35
04:00	0	0	2	0	0	3	0	0	0	0	0	0	0	5	37	31
05:00	0	0	4	3	3	1	0	0	0	0	0	0	0	11	32	27
06:00	0	0	10	12	5	1	0	0	0	0	0	0	0	28	30	26
07:00	0	5	26	50	22	1	0	0	0	0	0	0	0	104	30	26
08:00	0	4	29	64	19	8	0	0	0	0	0	0	0	124	31	27
09:00	0	0	10	32	21	7	0	0	0	0	0	0	0	70	33	29
10:00	0	1	11	27	11	4	0	0	0	0	0	0	0	54	32	28
11:00	0	1	11	25	18	3	0	0	0	0	0	0	0	58	32	28
12 PM	0	1	12	37	14	3	0	0	0	0	0	0	0	67	31	27
13:00	0	0	10	32	15	7	1	0	0	0	0	0	0	65	33	29
14:00	0	4	13	40	36	6	0	0	0	0	0	0	0	99	32	28
15:00	0	0	13	51	63	16	0	0	0	0	0	0	0	143	33	30
16:00	2	6	27	56	72	20	0	0	0	0	0	0	0	183	33	29
17:00	0	1	26	110	97	14	0	0	0	0	0	0	0	248	32	29
18:00	0	1	12	92	62	4	0	0	0	0	0	0	0	171	32	29
19:00	0	0	9	33	20	9	1	0	1	0	0	0	0	73	34	30
20:00	1	1	5	13	11	2	1	0	0	0	0	0	0	34	33	28
21:00	0	0	1	12	13	4	0	0	0	0	0	0	0	30	33	30
22:00	0	0	1	6	2	2	2	0	0	0	0	0	0	13	39	31
23:00	0	1	2	1	4	1	0	0	0	0	0	0	0	9	33	28
Total	3	26	235	699	511	116	6	0	1	0	0	0	0	1597		
%	0.2%	1.6%	14.7%	43.8%	32.0%	7.3%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak		07:00	08:00	08:00	07:00	08:00	03:00								08:00	
Vol.		5	29	64	22	8	1								124	
PM Peak	16:00	16:00	16:00	17:00	17:00	16:00	22:00		19:00						17:00	
Vol.	2	6	27	110	97	20	2		1						248	

Stats  
15th Percentile : 23 MPH  
50th Percentile : 27 MPH  
85th Percentile : 32 MPH  
95th Percentile : 35 MPH

Mean Speed(Average) : 28 MPH  
10 MPH Pace Speed : 25-34 MPH  
Number in Pace : 1210  
Percent in Pace : 75.8%  
Number of Vehicles > 30 MPH : 532  
Percent of Vehicles > 30 MPH : 33.3%



PRECISION  
D A T A  
INDUSTRIES, LLC

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Parmenter Road  
east of Pine Hill Road  
City, State: Southborough, MA  
Client: VHB/ G. Russell

197172 A Speed  
Site Code: 14715.00  
Date Start: 11-Sep-19  
Date End: 12-Sep-19

WB

Start Time	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 Perce	Avera (Mean	
09/12/19	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	33	32		
01:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	32	27		
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*		
03:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	32	30		
04:00	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	41	37		
05:00	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	28	28		
06:00	0	0	4	14	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	32	28		
07:00	1	5	23	52	19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	30	27		
08:00	<b>5</b>	<b>12</b>	<b>37</b>	<b>53</b>	16	1	<b>2</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>126</b>	29	25		
09:00	0	3	14	46	<b>29</b>	<b>5</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	32	28		
10:00	0	0	6	22	14	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	32	29		
11:00	0	1	3	26	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	32	29		
12 PM	0	0	15	34	24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	32	28		
13:00	0	3	10	20	27	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	32	28		
14:00	0	5	22	52	29	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	32	27		
15:00	0	1	13	40	60	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122	33	30		
16:00	<b>3</b>	5	18	89	<b>102</b>	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225	32	29		
17:00	0	<b>8</b>	<b>27</b>	<b>96</b>	89	<b>17</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>237</b>	32	29		
18:00	0	0	8	59	66	13	<b>3</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	33	30		
19:00	0	1	10	34	18	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	33	29		
20:00	0	0	5	15	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	33	29		
21:00	0	0	4	11	12	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	32	29		
22:00	0	0	3	4	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	33	30		
23:00	0	2	1	2	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	34	28		
Total	9	46	224	676	552	94	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1610				
%	0.6%	2.9%	13.9%	42.0%	34.3%	5.8%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	08:00	08:00	08:00	08:00	09:00	09:00	08:00																			08:00			
Vol.	5	12	37	53	29	5	2																			126			
PM Peak	16:00	17:00	17:00	17:00	16:00	17:00	18:00																				17:00		
Vol.	3	8	27	96	102	17	3																			237			

Stats

15th Percentile : 23 MPH  
50th Percentile : 27 MPH  
85th Percentile : 32 MPH  
95th Percentile : 35 MPH

Mean Speed(Average) : 28 MPH  
10 MPH Pace Speed : 25-34 MPH  
Number in Pace : 1228  
Percent in Pace : 76.3%  
Number of Vehicles > 30 MPH : 545  
Percent of Vehicles > 30 MPH : 33.8%

10 Parmenter Road  
 west of Pine Hill Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell



PRECISION  
 D A T A  
 INDUSTRIES, LLC

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197172 B Volume  
 Site Code: 14715.00  
 Date Start: 09/11/19  
 Date End: 09/12/19

Start Time	EB		WB		Combin ed		09/11/19 Wed							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	2	15	4	21	6	36								
12:15	0	25	5	28	5	53								
12:30	4	28	0	20	4	48								
12:45	0	6 27	95	0	9 28	97	0 15 55 192							
01:00	2	19	3	22	5	41								
01:15	0	30	1	23	1	53								
01:30	1	27	1	23	2	50								
01:45	1	4 20	96	1	6 28	96	2 10 48 192							
02:00	0	30	1	22	1	52								
02:15	0	20	0	24	0	44								
02:30	1	23	0	39	1	62								
02:45	1	2 21	94	0	1 38	123	1 3 59 217							
03:00	3	22	0	38	3	60								
03:15	2	16	2	50	4	66								
03:30	2	33	2	49	4	82								
03:45	1	8 25	96	1	5 42	179	2 13 67 275							
04:00	2	31	0	52	2	83								
04:15	3	34	2	76	5	110								
04:30	3	36	0	57	3	93								
04:45	1	9 24	125	2	4 84	269	3 13 108 394							
05:00	5	42	1	89	6	131								
05:15	12	28	2	90	14	118								
05:30	24	36	3	91	27	127								
05:45	23	64 40	146	4	10 82	352	27 74 122 498							
06:00	37	35	4	53	41	88								
06:15	52	21	4	57	56	78								
06:30	72	23	11	69	83	92								
06:45	85	246 18	97	16	35 50	229	101 281 68 326							
07:00	98	28	10	30	108	58								
07:15	120	24	10	29	130	53								
07:30	141	14	23	35	164	49								
07:45	122	481 21	87	15	58 27	121	137 539 48 208							
08:00	119	13	17	27	136	40								
08:15	82	14	26	18	108	32								
08:30	116	16	24	22	140	38								
08:45	83	400 5	48	21	88 10	77	104 488 15 125							
09:00	55	9	15	17	70	26								
09:15	37	8	23	23	60	31								
09:30	29	6	20	15	49	21								
09:45	28	149 6	29	16	74 11	66	44 223 17 95							
10:00	26	4	12	7	38	11								
10:15	24	4	19	10	43	14								
10:30	27	5	13	7	40	12								
10:45	22	99 3	16	19	63 10	34	41 162 13 50							
11:00	22	4	19	6	41	10								
11:15	19	2	17	7	36	9								
11:30	22	2	30	5	52	7								
11:45	30	93 1	9	18	84 2	20	48 177 3 29							
Total	1561	938	437	1663	1998	2601								
Percent	78.1%	36.1%	21.9%	63.9%										
Day Total		2499		2100		4599								
Peak	07:15	-	05:00	-	08:00	-	04:45	-	07:15	-	05:00	-	-	-
Vol.	502	-	146	-	88	-	354	-	567	-	498	-	-	-
P.H.F.	0.890	-	0.869	-	0.846	-	0.973	-	0.864	-	0.950	-	-	-

10 Parmenter Road  
west of Pine Hill Road  
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197172 B Volume  
Site Code: 14715.00  
Date Start: 09/11/19  
Date End: 09/12/19

Start Time	EB		WB		Combin ed		09/12/19 Thu							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	0	33	2	15	2	48								
12:15	1	27	6	25	7	52								
12:30	0	30	2	34	2	64								
12:45	3	29	119	1	11	22	96	15	51	215				
01:00	1	18	1	24	2	42								
01:15	1	19	3	38	4	57								
01:30	1	25	1	26	2	51								
01:45	0	3	25	87	1	6	17	105	1	9	42	192		
02:00	0	18	1	31	1	49								
02:15	0	35	1	37	1	72								
02:30	1	29	2	24	3	53								
02:45	2	3	29	111	1	5	49	141	3	8	78	252		
03:00	3	18	0	28	3	46								
03:15	1	20	4	41	5	61								
03:30	2	30	1	47	3	77								
03:45	2	8	26	94	0	5	50	166	2	13	76	260		
04:00	1	25	0	61	1	86								
04:15	2	34	1	80	3	114								
04:30	2	33	3	63	5	96								
04:45	1	6	33	125	0	4	98	302	1	10	131	427		
05:00	3	36	0	84	3	120								
05:15	10	35	1	107	11	142								
05:30	23	34	5	82	28	116								
05:45	31	67	23	128	5	11	72	345	36	78	95	473		
06:00	30	33	4	65	34	98								
06:15	63	22	7	60	70	82								
06:30	71	22	7	50	78	72								
06:45	90	254	22	99	13	31	51	226	103	285	73	325		
07:00	83	14	6	35	89	49								
07:15	115	22	17	48	132	70								
07:30	129	12	22	21	151	33								
07:45	125	452	4	52	20	65	23	127	145	517	27	179		
08:00	143	19	22	27	165	46								
08:15	74	12	32	17	106	29								
08:30	117	8	16	15	133	23								
08:45	92	426	7	46	19	89	19	78	111	515	26	124		
09:00	47	8	18	14	65	22								
09:15	36	5	19	13	55	18								
09:30	34	5	26	16	60	21								
09:45	22	139	5	23	15	78	18	61	37	217	23	84		
10:00	24	9	18	8	42	17								
10:15	18	5	18	17	36	22								
10:30	18	4	15	11	33	15								
10:45	24	84	8	26	20	71	5	41	44	155	13	67		
11:00	24	2	20	4	44	6								
11:15	18	7	21	7	39	14								
11:30	21	3	18	4	39	7								
11:45	13	76	0	12	22	81	0	15	35	157	0	27		
Total	1522	922	457	1703	1979	2625								
Percent	76.9%	35.1%	23.1%	64.9%										
Day Total		2444		2160		4604								
Peak Vol.	07:15	-	04:45	-	07:30	-	04:45	-	07:15	-	04:45	-	-	-
P.H.F.	0.895	-	0.958	-	0.750	-	0.867	-	0.898	-	0.896	-	-	-



10 Parmenter Road  
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PRECISION  
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 Email: datarequests@pdillc.com

197172 B Class  
 Site Code: 14715.00  
 Date Start: 11-Sep-19  
 Date End: 12-Sep-19

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/11/1														
9	0	6	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
04:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
05:00	1	54	6	0	2	0	0	1	0	0	0	0	0	64
06:00	4	179	54	1	7	1	0	0	0	0	0	0	0	246
07:00	0	417	60	0	4	0	0	0	0	0	0	0	0	481
08:00	2	362	30	1	4	0	0	1	0	0	0	0	0	400
09:00	0	127	17	0	3	2	0	0	0	0	0	0	0	149
10:00	1	82	12	0	3	0	0	1	0	0	0	0	0	99
11:00	1	73	12	0	4	2	0	1	0	0	0	0	0	93
12 PM	0	77	11	0	4	1	0	2	0	0	0	0	0	95
13:00	0	80	12	0	3	0	0	1	0	0	0	0	0	96
14:00	1	81	7	1	4	0	0	0	0	0	0	0	0	94
15:00	1	79	14	1	1	0	0	0	0	0	0	0	0	96
16:00	1	107	16	1	0	0	0	0	0	0	0	0	0	125
17:00	1	129	13	0	3	0	0	0	0	0	0	0	0	146
18:00	1	86	10	0	0	0	0	0	0	0	0	0	0	97
19:00	1	74	9	1	2	0	0	0	0	0	0	0	0	87
20:00	1	41	5	1	0	0	0	0	0	0	0	0	0	48
21:00	0	27	2	0	0	0	0	0	0	0	0	0	0	29
22:00	0	13	2	0	1	0	0	0	0	0	0	0	0	16
23:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
Total	16	2122	296	7	45	6	0	7	0	0	0	0	0	2499
Percent	0.6%	84.9%	11.8%	0.3%	1.8%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	07:00	07:00	06:00	06:00	09:00		05:00						07:00
Vol.	4	417	60	1	7	2		1						481
PM Peak	14:00	17:00	16:00	14:00	12:00	12:00		12:00						17:00
Vol.	1	129	16	1	4	1		2						146

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EB

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09/12/1														
9	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
04:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
05:00	1	53	12	0	1	0	0	0	0	0	0	0	0	67
06:00	1	202	45	1	5	0	0	0	0	0	0	0	0	254
07:00	1	397	49	0	3	1	0	1	0	0	0	0	0	452
08:00	0	386	34	1	3	1	0	1	0	0	0	0	0	426
09:00	0	125	11	0	2	1	0	0	0	0	0	0	0	139
10:00	0	76	7	0	0	0	0	1	0	0	0	0	0	84
11:00	0	65	9	2	0	0	0	0	0	0	0	0	0	76
12 PM	0	101	16	1	0	1	0	0	0	0	0	0	0	119
13:00	0	66	14	0	6	1	0	0	0	0	0	0	0	87
14:00	0	95	14	1	0	1	0	0	0	0	0	0	0	111
15:00	0	69	20	1	4	0	0	0	0	0	0	0	0	94
16:00	2	102	17	1	3	0	0	0	0	0	0	0	0	125
17:00	0	112	15	0	1	0	0	0	0	0	0	0	0	128
18:00	0	82	15	0	2	0	0	0	0	0	0	0	0	99
19:00	2	46	4	0	0	0	0	0	0	0	0	0	0	52
20:00	0	38	7	0	1	0	0	0	0	0	0	0	0	46
21:00	0	20	3	0	0	0	0	0	0	0	0	0	0	23
22:00	0	24	0	0	2	0	0	0	0	0	0	0	0	26
23:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
Total	7	2091	295	8	34	6	0	3	0	0	0	0	0	2444
Percent	0.3%	85.6%	12.1%	0.3%	1.4%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	07:00	07:00	11:00	06:00	07:00		07:00						07:00
Vol.	1	397	49	2	5	1		1						452
PM Peak	16:00	17:00	15:00	12:00	13:00	12:00								17:00
Vol.	2	112	20	1	6	1								128

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WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/11/1														
9	0	7	1	0	1	0	0	0	0	0	0	0	0	9
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	6	4	0	0	0	0	0	0	0	0	0	0	10
06:00	0	27	5	0	2	1	0	0	0	0	0	0	0	35
07:00	0	41	14	0	3	0	0	0	0	0	0	0	0	58
08:00	1	69	15	0	3	0	0	0	0	0	0	0	0	88
09:00	0	52	15	0	6	1	0	0	0	0	0	0	0	74
10:00	0	48	7	0	7	0	0	1	0	0	0	0	0	63
11:00	1	64	13	0	4	0	0	2	0	0	0	0	0	84
12 PM	0	67	18	0	9	1	0	2	0	0	0	0	0	97
13:00	1	80	13	0	1	1	0	0	0	0	0	0	0	96
14:00	1	98	17	0	7	0	0	0	0	0	0	0	0	123
15:00	1	138	27	2	10	1	0	0	0	0	0	0	0	179
16:00	3	208	42	0	14	0	0	1	1	0	0	0	0	269
17:00	2	282	40	0	26	0	0	2	0	0	0	0	0	352
18:00	1	172	37	0	19	0	0	0	0	0	0	0	0	229
19:00	3	100	11	1	6	0	0	0	0	0	0	0	0	121
20:00	0	61	15	0	1	0	0	0	0	0	0	0	0	77
21:00	1	60	3	0	2	0	0	0	0	0	0	0	0	66
22:00	0	32	2	0	0	0	0	0	0	0	0	0	0	34
23:00	0	17	3	0	0	0	0	0	0	0	0	0	0	20
Total	15	1644	303	3	121	5	0	8	1	0	0	0	0	2100
Percent	0.7%	78.3%	14.4%	0.1%	5.8%	0.2%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00		10:00	06:00		11:00						08:00
Vol.	1	69	15		7	1		2						88
PM Peak	16:00	17:00	16:00	15:00	17:00	12:00		12:00	16:00					17:00
Vol.	3	282	42	2	26	1		2	1					352

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197172 B Class  
 Site Code: 14715.00  
 Date Start: 11-Sep-19  
 Date End: 12-Sep-19

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/1														
9	0	9	0	0	2	0	0	0	0	0	0	0	0	11
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
03:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
04:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
05:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
06:00	0	24	4	0	3	0	0	0	0	0	0	0	0	31
07:00	1	49	10	2	3	0	0	0	0	0	0	0	0	65
08:00	1	71	12	3	2	0	0	0	0	0	0	0	0	89
09:00	0	57	14	0	7	0	0	0	0	0	0	0	0	78
10:00	0	56	11	0	4	0	0	0	0	0	0	0	0	71
11:00	0	61	10	2	8	0	0	0	0	0	0	0	0	81
12 PM	0	77	11	1	7	0	0	0	0	0	0	0	0	96
13:00	0	79	19	0	7	0	0	0	0	0	0	0	0	105
14:00	0	111	22	0	6	1	1	0	0	0	0	0	0	141
15:00	0	127	27	0	10	0	0	2	0	0	0	0	0	166
16:00	2	239	45	1	14	0	0	1	0	0	0	0	0	302
17:00	0	284	37	0	24	0	0	0	0	0	0	0	0	345
18:00	0	179	32	0	15	0	0	0	0	0	0	0	0	226
19:00	1	101	17	1	7	0	0	0	0	0	0	0	0	127
20:00	0	60	15	0	3	0	0	0	0	0	0	0	0	78
21:00	0	57	4	0	0	0	0	0	0	0	0	0	0	61
22:00	0	35	4	0	2	0	0	0	0	0	0	0	0	41
23:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
Total	5	1712	303	10	125	1	1	3	0	0	0	0	0	2160
Percent	0.2%	79.3%	14.0%	0.5%	5.8%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	09:00	08:00	11:00									08:00
Vol.	1	71	14	3	8									89
PM Peak	16:00	17:00	16:00	12:00	17:00	14:00	14:00	15:00						17:00
Vol.	2	284	45	1	24	1	1	2						345

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197172 b speed  
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 Date Start: 11-Sep-19  
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EB

Start Time	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 Perce	Avera (Mean		
09/11/																														
19	0	0	0	0	3	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	39	31		
01:00	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	36	33		
02:00	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	47	40		
03:00	0	0	1	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	33	31		
04:00	0	0	1	2	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	38	33		
05:00	0	0	5	12	38	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	33	31		
06:00	0	0	8	45	135	53	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	246	35	32		
07:00	0	2	21	110	275	69	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	481	34	31		
08:00	1	1	9	76	242	66	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	400	34	32		
09:00	2	1	7	25	70	38	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	36	32		
10:00	1	0	3	25	38	30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	36	32		
11:00	0	0	8	25	49	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	33	30		
12 PM	1	1	3	30	40	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	35	31		
13:00	1	1	5	18	46	22	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	36	32		
14:00	0	0	1	12	48	28	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	37	33		
15:00	1	2	8	17	46	17	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	36	31		
16:00	0	0	3	27	75	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	125	34	31		
17:00	1	0	0	36	77	28	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146	35	32		
18:00	0	0	3	20	47	25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	36	32		
19:00	0	1	4	27	38	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	35	31		
20:00	0	0	5	16	16	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	36	31		
21:00	0	1	0	10	16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	33	30		
22:00	0	0	0	4	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	35	32		
23:00	0	0	0	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	35	31		
Total	8	10	95	545	1321	467	46	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2499					
%	0.3%	0.4%	3.8%	21.8%	52.9%	18.7%	1.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
AM Peak	09:00	07:00	07:00	07:00	07:00	07:00	06:00	02:00																		07:00				
Vol.	2	2	21	110	275	69	5	1																		481				
PM Peak	12:00	15:00	15:00	17:00	17:00	14:00	14:00	14:00																		16:00	17:00			
Vol.	1	2	8	36	77	28	4	1																		1	146			

Stats  
 15th Percentile : 26 MPH  
 50th Percentile : 31 MPH  
 85th Percentile : 35 MPH  
 95th Percentile : 38 MPH

Mean Speed(Average) : 32 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 1866  
 Percent in Pace : 74.7%  
 Number of Vehicles > 30 MPH : 1577  
 Percent of Vehicles > 30 MPH : 63.1%

10 Parmenter Road  
 west of Pine Hill Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell



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

197172 b speed  
 Site Code: 14715.00  
 Date Start: 11-Sep-19  
 Date End: 12-Sep-19

EB

Start Time	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 Perce	Avera (Mean
09/12/19	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	37	33	
01:00	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	36	32	
02:00	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	46	35	
03:00	0	0	1	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	36	32	
04:00	0	1	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	34	29	
05:00	0	0	4	13	35	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	35	32	
06:00	1	0	14	38	142	56	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254	35	32	
07:00	1	2	32	137	227	50	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	452	33	30	
08:00	5	7	20	143	211	37	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	426	33	30	
09:00	1	0	3	28	77	27	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139	35	32	
10:00	0	0	0	16	51	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	35	32	
11:00	1	0	2	13	51	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	76	33	31	
12 PM	0	1	4	25	62	26	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	35	32	
13:00	1	0	6	20	34	20	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	37	32	
14:00	0	0	6	20	62	18	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	35	32	
15:00	2	2	1	16	47	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	36	32	
16:00	3	0	8	25	46	42	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	36	32	
17:00	0	1	1	16	76	27	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	36	33	
18:00	0	0	1	21	51	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	36	32	
19:00	0	0	4	11	23	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	36	32	
20:00	0	0	2	12	24	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	34	31	
21:00	0	0	2	6	9	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	36	31	
22:00	0	0	1	7	10	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	38	33	
23:00	0	0	0	4	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	33	31	
Total	15	14	113	574	1256	418	46	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2444			
%	0.6%	0.6%	4.6%	23.5%	51.4%	17.1%	1.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	08:00	08:00	07:00	08:00	07:00	06:00	06:00	02:00																	11:00	07:00		
Vol.	5	7	32	143	227	56	3	1																1	452			
PM Peak	16:00	15:00	16:00	12:00	17:00	16:00	17:00	12:00																		17:00		
Vol.	3	2	8	25	76	42	6	1																		128		

Stats

15th Percentile : 25 MPH  
 50th Percentile : 31 MPH  
 85th Percentile : 35 MPH  
 95th Percentile : 38 MPH

Mean Speed(Average) : 31 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 1830  
 Percent in Pace : 74.9%  
 Number of Vehicles > 30 MPH : 1477  
 Percent of Vehicles > 30 MPH : 60.4%

10 Parmenter Road  
 west of Pine Hill Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell



PRECISION  
 D A T A  
 INDUSTRIES, LLC

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197172 b speed  
 Site Code: 14715.00  
 Date Start: 11-Sep-19  
 Date End: 12-Sep-19

WB

Start Time	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 Perce	Avera (Mean	
09/11/																													
19	0	0	0	0	2	2	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	40	35	
01:00	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	42	39	
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	33	32	
03:00	0	0	0	2	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	45	35	
04:00	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	42	38	
05:00	0	0	0	0	2	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	38	37	
06:00	0	0	0	1	13	14	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	40	36	
07:00	0	0	3	1	18	28	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	38	35	
08:00	0	0	1	6	30	31	17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	41	36	
09:00	0	0	2	4	21	33	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	40	36	
10:00	0	1	2	2	24	27	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	38	35	
11:00	0	0	1	9	34	33	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	38	34	
12 PM	1	0	2	2	37	45	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	38	35	
13:00	0	0	2	5	33	38	15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	40	36	
14:00	0	1	2	4	37	62	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123	38	35	
15:00	0	2	3	9	41	85	32	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	179	40	36	
16:00	0	0	0	3	64	155	45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269	39	37	
17:00	0	0	0	10	76	212	52	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	352	39	36	
18:00	0	0	7	18	58	115	30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229	38	35	
19:00	3	0	2	12	38	48	13	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	38	34	
20:00	0	1	2	5	20	38	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	38	35	
21:00	0	0	0	1	19	27	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	41	37	
22:00	0	0	0	1	4	17	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	42	38	
23:00	0	0	0	1	8	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	41	36	
Total	4	5	29	98	582	1029	304	44	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2100			
%	0.2%	0.2%	1.4%	4.7%	27.7%	49.0%	14.5%	2.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak		10:00	07:00	11:00	11:00	09:00	08:00	11:00	06:00																		08:00		
Vol.		1	3	9	34	33	17	5	1																		88		
PM Peak	19:00	15:00	18:00	18:00	17:00	17:00	17:00	15:00	13:00	19:00																	17:00		
Vol.	3	2	7	18	76	212	52	6	1	1																	352		

Stats  
 15th Percentile : 30 MPH  
 50th Percentile : 35 MPH  
 85th Percentile : 39 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 36 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 1611  
 Percent in Pace : 76.7%  
 Number of Vehicles > 30 MPH : 1848  
 Percent of Vehicles > 30 MPH : 88.0%



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

10 Parmenter Road  
west of Pine Hill Road  
City, State: Southborough, MA  
Client: VHB/ G. Russell

197172 b speed  
Site Code: 14715.00  
Date Start: 11-Sep-19  
Date End: 12-Sep-19

WB

Start Time	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 Perce	Avera (Mean	
09/12/																													
19	0	0	0	0	1	2	6	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	11	45	38	
01:00	0	0	0	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	39	35	
02:00	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	37	34	
03:00	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	40	33	
04:00	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	42	38	
05:00	0	0	0	3	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	37	33	
06:00	0	0	0	1	11	16	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	38	36	
07:00	0	0	4	9	25	22	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	37	33	
08:00	0	0	1	6	39	37	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	38	34	
09:00	0	0	2	3	26	33	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	39	36	
10:00	0	0	1	5	30	26	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	38	35	
11:00	1	0	3	5	23	34	14	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	40	35	
12 PM	0	0	1	7	35	43	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	38	35	
13:00	0	1	4	10	30	48	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105	38	35	
14:00	0	0	3	8	36	73	16	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141	38	36	
15:00	0	0	2	10	32	92	26	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	166	39	36	
16:00	0	1	0	14	71	171	44	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	302	38	36	
17:00	0	0	2	7	74	199	58	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	345	39	37	
18:00	0	0	0	12	54	114	37	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	226	40	37	
19:00	1	1	2	10	46	48	15	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	38	35	
20:00	0	0	1	4	31	30	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	39	35	
21:00	0	0	1	5	13	29	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	40	36	
22:00	0	0	0	0	10	19	9	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	42	38	
23:00	0	0	0	0	4	8	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	42	37	
Total	2	3	27	123	600	1061	293	43	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2160			
%	0.1%	0.1%	1.3%	5.7%	27.8%	49.1%	13.6%	2.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	11:00		07:00	07:00	08:00	08:00	11:00	10:00	11:00	00:00																08:00			
Vol.	1		4	9	39	37	14	2	1	1																89			
PM Peak	19:00	13:00	13:00	16:00	17:00	17:00	17:00	18:00	18:00																	17:00			
Vol.	1	1	4	14	74	199	58	6	3																	345			

Stats  
 15th Percentile : 30 MPH  
 50th Percentile : 35 MPH  
 85th Percentile : 39 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 36 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 1661  
 Percent in Pace : 76.9%  
 Number of Vehicles > 30 MPH : 1885  
 Percent of Vehicles > 30 MPH : 87.3%



112 Pine Hill Road  
 south of Parmenter Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell



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

197172 C Volume  
 Site Code: 14715.00  
 Date Start: 09/11/19  
 Date End: 09/12/19

Start Time	NB		SB		Combin ed		09/11/19 Wed
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	3	19	2	22	5	41	
12:15	4	24	0	19	4	43	
12:30	0	25	3	21	3	46	
12:45	0	7 21	89	0 5 27	89	0 12 48	178
01:00	2	16	2	15	4	31	
01:15	2	19	0	28	2	47	
01:30	0	19	1	24	1	43	
01:45	1	5 19	73	0 3 19	86	1 8 38	159
02:00	1	11	0	32	1	43	
02:15	0	20	1	14	1	34	
02:30	0	28	0	23	0	51	
02:45	0	1 25	84	0 1 19	88	0 2 44	172
03:00	0	25	2	21	2	46	
03:15	1	26	2	19	3	45	
03:30	1	40	0	28	1	68	
03:45	1	3 23	114	1 5 23	91	2 8 46	205
04:00	0	42	0	22	0	64	
04:15	0	53	2	31	2	84	
04:30	0	44	2	32	2	76	
04:45	1	1 49	188	2 6 22	107	3 7 71	295
05:00	1	65	6	32	7	97	
05:15	2	74	10	27	12	101	
05:30	6	64	20	26	26	90	
05:45	2	11 51	254	15 51 28	113	17 62 79	367
06:00	5	35	21	28	26	63	
06:15	8	23	25	24	33	47	
06:30	13	37	24	14	37	51	
06:45	25	51 36	131	34 104 15	81	59 155 51	212
07:00	14	9	46	19	60	28	
07:15	11	22	55	22	66	44	
07:30	26	23	62	16	88	39	
07:45	17	68 21	75	74 237 10	67	91 305 31	142
08:00	18	16	77	12	95	28	
08:15	29	11	56	11	85	22	
08:30	24	19	67	9	91	28	
08:45	23	94 11	57	50 250 5	37	73 344 16	94
09:00	25	15	45	4	70	19	
09:15	24	15	25	2	49	17	
09:30	20	12	26	7	46	19	
09:45	15	84 8	50	22 118 6	19	37 202 14	69
10:00	14	12	23	5	37	17	
10:15	9	5	21	4	30	9	
10:30	12	7	22	3	34	10	
10:45	14	49 8	32	13 79 2	14	27 128 10	46
11:00	17	7	18	4	35	11	
11:15	15	6	15	3	30	9	
11:30	20	3	15	1	35	4	
11:45	21	73 2	18	26 74 2	10	47 147 4	28
Total	447	1165	933	802	1380	1967	
Percent	32.4%	59.2%	67.6%	40.8%			
Day Total		1612		1735		3347	
Peak Vol.	08:15 101	- 254	- 274	- 117	- 362	- 367	- - -
P.H.F.	0.871	0.858	0.890	0.914	0.953	0.908	

112 Pine Hill Road  
 south of Parmenter Road  
 City, State: Southborough, MA  
 Client: VHB/ G. Russell



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 INDUSTRIES, LLC

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 Office: 508-875-0100 Fax: 508-875-0118  
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197172 C Volume  
 Site Code: 14715.00  
 Date Start: 09/11/19  
 Date End: 09/12/19

Start Time	NB		SB		Combin ed		09/12/19 Thu							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	2	13	0	30	2	43								
12:15	6	15	1	24	7	39								
12:30	2	31	0	24	2	55								
12:45	1	17	76	2	3	33	111							
01:00	1	25	1	12	2	37								
01:15	1	32	1	18	2	50								
01:30	1	16	1	21	2	37								
01:45	1	14	87	0	3	21	72							
02:00	1	25	0	16	1	41								
02:15	1	22	0	27	1	49								
02:30	2	28	1	31	3	59								
02:45	1	5	28	103	0	1	38	112						
03:00	0	22	1	16	1	38								
03:15	3	34	1	17	4	51								
03:30	0	34	0	21	0	55								
03:45	0	3	30	120	1	3	33	87						
04:00	0	38	0	20	0	58								
04:15	0	49	2	34	2	83								
04:30	2	54	2	34	4	88								
04:45	0	2	53	194	2	6	29	117						
05:00	0	64	3	20	3	84								
05:15	1	84	7	27	8	111								
05:30	7	52	18	27	25	79								
05:45	5	13	47	247	23	51	24	98						
06:00	7	39	17	24	24	63								
06:15	9	29	29	23	38	52								
06:30	13	40	26	23	39	63								
06:45	13	42	33	141	40	112	20	90						
07:00	15	24	39	14	54	38								
07:15	9	32	53	18	62	50								
07:30	21	13	80	15	101	28								
07:45	26	71	16	85	77	249	6	53	103	320				
08:00	24	29	78	15	102	44								
08:15	27	12	49	10	76	22								
08:30	24	14	58	8	82	22								
08:45	21	96	17	72	67	252	6	39	88	348				
09:00	22	9	48	7	70	16								
09:15	12	9	27	6	39	15								
09:30	16	10	29	4	45	14								
09:45	16	66	18	46	20	124	6	23	36	190				
10:00	15	6	24	7	39	13								
10:15	23	10	13	6	36	16								
10:30	13	9	13	0	26	9								
10:45	18	69	5	30	16	66	5	18	34	135				
11:00	24	1	21	2	45	3								
11:15	19	5	15	7	34	12								
11:30	19	3	11	3	30	6								
11:45	19	81	0	9	11	58	0	12	30	139				
Total	463	1210	928	832	1391	2042								
Percent	33.3%	59.3%	66.7%	40.7%										
Day Total		1673		1760		3433								
Peak Vol.	07:45	-	04:30	-	07:15	-	03:45	-	07:30	-	04:30	-	-	-
P.H.F.	0.935	-	0.759	-	0.900	-	0.796	-	0.927	-	0.822	-	-	-

112 Pine Hill Road  
 south of Parmenter Road  
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 Client: VHB/ G. Russell



PRECISION  
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 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

197172 C Class  
 Site Code: 14715.00  
 Date Start: 11-Sep-19  
 Date End: 12-Sep-19

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/11/1														
9	0	6	1	0	0	0	0	0	0	0	0	0	0	7
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	1	6	4	0	0	0	0	0	0	0	0	0	0	11
06:00	0	38	8	1	3	1	0	0	0	0	0	0	0	51
07:00	0	47	19	2	0	0	0	0	0	0	0	0	0	68
08:00	1	70	17	2	3	0	0	1	0	0	0	0	0	94
09:00	2	53	16	0	12	1	0	0	0	0	0	0	0	84
10:00	0	39	6	0	3	0	0	1	0	0	0	0	0	49
11:00	0	57	13	0	2	0	0	1	0	0	0	0	0	73
12 PM	0	66	13	1	6	1	0	2	0	0	0	0	0	89
13:00	1	62	7	0	2	1	0	0	0	0	0	0	0	73
14:00	1	65	14	0	4	0	0	0	0	0	0	0	0	84
15:00	0	92	15	2	4	1	0	0	0	0	0	0	0	114
16:00	0	150	29	0	7	0	0	1	1	0	0	0	0	188
17:00	3	216	27	0	6	0	0	2	0	0	0	0	0	254
18:00	0	109	21	0	1	0	0	0	0	0	0	0	0	131
19:00	1	63	9	1	1	0	0	0	0	0	0	0	0	75
20:00	0	47	10	0	0	0	0	0	0	0	0	0	0	57
21:00	1	47	2	0	0	0	0	0	0	0	0	0	0	50
22:00	0	30	1	0	1	0	0	0	0	0	0	0	0	32
23:00	0	17	1	0	0	0	0	0	0	0	0	0	0	18
Total	11	1290	233	9	55	5	0	8	1	0	0	0	0	1612
Percent	0.7%	80.0%	14.5%	0.6%	3.4%	0.3%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	08:00	07:00	07:00	09:00	06:00		08:00						08:00
Vol.	2	70	19	2	12	1		1						94
PM Peak	17:00	17:00	16:00	15:00	16:00	12:00		12:00	16:00					17:00
Vol.	3	216	29	2	7	1		2	1					254

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09/12/1														
9	0	9	1	0	1	0	0	0	0	0	0	0	0	11
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
04:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
05:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
06:00	0	28	9	0	5	0	0	0	0	0	0	0	0	42
07:00	0	50	15	3	1	1	0	1	0	0	0	0	0	71
08:00	1	69	18	3	4	0	0	1	0	0	0	0	0	96
09:00	0	42	13	0	11	0	0	0	0	0	0	0	0	66
10:00	0	53	10	0	6	0	0	0	0	0	0	0	0	69
11:00	0	64	14	1	1	1	0	0	0	0	0	0	0	81
12 PM	0	60	10	2	4	0	0	0	0	0	0	0	0	76
13:00	0	63	19	1	4	0	0	0	0	0	0	0	0	87
14:00	0	80	19	0	3	0	1	0	0	0	0	0	0	103
15:00	1	92	23	0	4	0	0	0	0	0	0	0	0	120
16:00	0	164	24	1	4	0	0	1	0	0	0	0	0	194
17:00	0	211	31	0	4	1	0	0	0	0	0	0	0	247
18:00	1	118	19	0	2	1	0	0	0	0	0	0	0	141
19:00	1	70	11	1	2	0	0	0	0	0	0	0	0	85
20:00	0	58	14	0	0	0	0	0	0	0	0	0	0	72
21:00	0	44	2	0	0	0	0	0	0	0	0	0	0	46
22:00	0	26	4	0	0	0	0	0	0	0	0	0	0	30
23:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
Total	4	1330	262	12	57	4	1	3	0	0	0	0	0	1673
Percent	0.2%	79.5%	15.7%	0.7%	3.4%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	07:00	09:00	07:00		07:00						08:00
Vol.	1	69	18	3	11	1		1						96
PM Peak	15:00	17:00	17:00	12:00	12:00	17:00	14:00	16:00						17:00
Vol.	1	211	31	2	4	1	1	1						247

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SB

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09/11/1														
9	0	4	1	0	0	0	0	0	0	0	0	0	0	5
01:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
04:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
05:00	1	40	7	0	2	0	0	1	0	0	0	0	0	51
06:00	0	65	32	1	5	1	0	0	1	0	0	0	0	104
07:00	0	194	35	1	7	0	0	0	0	0	0	0	0	237
08:00	1	216	25	0	7	0	0	1	0	0	0	0	0	250
09:00	0	97	16	1	3	1	0	0	0	0	0	0	0	118
10:00	0	70	4	0	5	0	0	0	0	0	0	0	0	79
11:00	0	51	17	0	5	0	0	1	0	0	0	0	0	74
12 PM	0	72	10	0	5	0	0	2	0	0	0	0	0	89
13:00	0	65	17	0	4	0	0	0	0	0	0	0	0	86
14:00	0	67	12	3	4	2	0	0	0	0	0	0	0	88
15:00	0	68	18	2	3	0	0	0	0	0	0	0	0	91
16:00	0	81	20	2	4	0	0	0	0	0	0	0	0	107
17:00	0	101	8	0	4	0	0	0	0	0	0	0	0	113
18:00	2	64	11	0	4	0	0	0	0	0	0	0	0	81
19:00	1	53	9	1	3	0	0	0	0	0	0	0	0	67
20:00	0	32	4	1	0	0	0	0	0	0	0	0	0	37
21:00	0	18	1	0	0	0	0	0	0	0	0	0	0	19
22:00	0	11	2	0	1	0	0	0	0	0	0	0	0	14
23:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
Total	5	1389	254	12	66	4	0	5	0	0	0	0	0	1735
Percent	0.3%	80.1%	14.6%	0.7%	3.8%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	08:00	07:00	06:00	07:00	06:00		05:00						08:00
Vol.	1	216	35	1	7	1		1						250
PM Peak	18:00	17:00	16:00	14:00	12:00	14:00		12:00						17:00
Vol.	2	101	20	3	5	2		2						113

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SB

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09/12/1														
9	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
05:00	1	36	13	0	1	0	0	0	0	0	0	0	0	51
06:00	0	78	28	1	5	0	0	0	0	0	0	0	0	112
07:00	1	204	37	1	5	1	0	0	0	0	0	0	0	249
08:00	0	216	29	1	4	0	0	2	0	0	0	0	0	252
09:00	0	100	20	0	4	0	0	0	0	0	0	0	0	124
10:00	0	52	13	1	0	0	0	0	0	0	0	0	0	66
11:00	0	43	11	1	2	1	0	0	0	0	0	0	0	58
12 PM	0	86	19	3	3	0	0	0	0	0	0	0	0	111
13:00	0	52	12	0	7	1	0	0	0	0	0	0	0	72
14:00	0	74	29	4	4	1	0	0	0	0	0	0	0	112
15:00	0	62	20	1	4	0	0	0	0	0	0	0	0	87
16:00	0	90	18	2	7	0	0	0	0	0	0	0	0	117
17:00	0	85	8	1	4	0	0	0	0	0	0	0	0	98
18:00	0	71	15	0	4	0	0	0	0	0	0	0	0	90
19:00	1	47	4	0	1	0	0	0	0	0	0	0	0	53
20:00	0	33	6	0	0	0	0	0	0	0	0	0	0	39
21:00	0	18	5	0	0	0	0	0	0	0	0	0	0	23
22:00	0	16	1	0	1	0	0	0	0	0	0	0	0	18
23:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
Total	3	1387	291	16	57	4	0	2	0	0	0	0	0	1760
Percent	0.2%	78.8%	16.5%	0.9%	3.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	08:00	07:00	06:00	06:00	07:00		08:00						08:00
Vol.	1	216	37	1	5	1		2						252
PM Peak	19:00	16:00	14:00	14:00	13:00	13:00								16:00
Vol.	1	90	29	4	7	1								117



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NB

Start Time	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 Perce	Avera (Mean		
09/11/																														
19	0	0	0	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	32	28		
01:00	0	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	37	33		
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	28	27		
03:00	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	31	29		
04:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	28	27		
05:00	0	0	0	1	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	29	27		
06:00	0	1	2	24	21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	32	29		
07:00	0	0	7	37	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	31	28		
08:00	0	<b>2</b>	<b>19</b>	<b>41</b>	<b>29</b>	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>94</b>	32	28			
09:00	0	0	9	40	29	<b>5</b>	<b>1</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	32	29		
10:00	0	0	7	19	18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	33	29		
11:00	<b>1</b>	1	12	34	19	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	32	28		
12 PM	<b>1</b>	7	11	37	28	2	<b>3</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	32	28		
13:00	0	2	7	32	21	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	34	29		
14:00	0	1	10	30	31	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	33	30		
15:00	0	5	<b>16</b>	46	38	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	32	28		
16:00	0	<b>9</b>	12	84	75	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	188	32	29		
17:00	0	1	14	<b>109</b>	<b>109</b>	<b>21</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>254</b>	33	30		
18:00	0	0	5	46	65	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131	33	30		
19:00	1	4	11	38	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	31	27		
20:00	0	1	5	28	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	32	29		
21:00	0	0	8	17	20	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	33	29		
22:00	0	0	2	8	15	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	35	31		
23:00	0	0	2	8	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	33	29		
Total	3	34	161	694	595	115	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1612				
%	0.2%	2.1%	10.0%	43.1%	36.9%	7.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	11:00	08:00	08:00	08:00	08:00	09:00	09:00																				08:00			
Vol.	1	2	19	41	29	5	1																				94			
PM Peak	12:00	16:00	15:00	17:00	17:00	17:00	12:00																					17:00		
Vol.	1	9	16	109	109	21	3																					254		

Stats

15th Percentile : 24 MPH  
 50th Percentile : 28 MPH  
 85th Percentile : 33 MPH  
 95th Percentile : 35 MPH

Mean Speed(Average) : 29 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 1289  
 Percent in Pace : 80.0%  
 Number of Vehicles > 30 MPH : 601  
 Percent of Vehicles > 30 MPH : 37.3%

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 City, State: Southborough, MA  
 Client: VHB/ G. Russell



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

197172 C Speed  
 Site Code: 14715.00  
 Date Start: 11-Sep-19  
 Date End: 12-Sep-19

NB

Start Time	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 Perce	Avera (Mean
09/12/19	0	0	3	2	1	5	0	0	0	0	0	0	0	11	37	31
01:00	0	0	0	0	2	1	1	0	0	0	0	0	0	4	41	36
02:00	0	0	0	2	3	0	0	0	0	0	0	0	0	5	32	30
03:00	0	0	2	1	0	0	0	0	0	0	0	0	0	3	26	24
04:00	0	0	0	0	2	0	0	0	0	0	0	0	0	2	33	32
05:00	0	0	3	4	5	1	0	0	0	0	0	0	0	13	33	29
06:00	0	0	3	19	15	5	0	0	0	0	0	0	0	42	33	30
07:00	0	2	11	29	26	2	1	0	0	0	0	0	0	71	32	28
08:00	0	5	11	48	30	2	0	0	0	0	0	0	0	96	31	28
09:00	0	0	8	40	16	2	0	0	0	0	0	0	0	66	31	28
10:00	1	0	6	33	27	2	0	0	0	0	0	0	0	69	32	29
11:00	0	2	9	38	25	7	0	0	0	0	0	0	0	81	32	29
12 PM	0	2	17	28	27	2	0	0	0	0	0	0	0	76	32	28
13:00	0	1	7	37	37	5	0	0	0	0	0	0	0	87	32	29
14:00	0	1	4	45	44	7	1	1	0	0	0	0	0	103	33	30
15:00	0	1	9	49	51	9	1	0	0	0	0	0	0	120	33	30
16:00	0	5	20	105	56	8	0	0	0	0	0	0	0	194	32	28
17:00	0	2	9	94	132	10	0	0	0	0	0	0	0	247	32	30
18:00	0	0	9	44	64	21	3	0	0	0	0	0	0	141	34	31
19:00	0	0	5	43	33	3	1	0	0	0	0	0	0	85	32	29
20:00	0	1	8	39	22	2	0	0	0	0	0	0	0	72	32	28
21:00	0	0	1	19	20	5	1	0	0	0	0	0	0	46	33	30
22:00	0	0	1	11	9	6	3	0	0	0	0	0	0	30	37	32
23:00	0	0	0	4	4	1	0	0	0	0	0	0	0	9	33	30
Total	1	22	146	734	651	106	12	1	0	0	0	0	0	1673		
%	0.1%	1.3%	8.7%	43.9%	38.9%	6.3%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	08:00	07:00	08:00	08:00	11:00	01:00							08:00		
Vol.	1	5	11	48	30	7	1							96		
PM Peak		16:00	16:00	16:00	17:00	18:00	18:00	14:00						17:00		
Vol.		5	20	105	132	21	3	1						247		

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

Mean Speed(Average) : 29 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 1385  
 Percent in Pace : 82.8%  
 Number of Vehicles > 30 MPH : 640  
 Percent of Vehicles > 30 MPH : 38.2%



112 Pine Hill Road  
 south of Parmenter Road  
 City, State: Southborough, MA  
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SB

Start Time	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 Perce	Avera (Mean
09/11/																
19	0	0	0	3	2	0	0	0	0	0	0	0	0	5	32	29
01:00	0	0	0	0	2	1	0	0	0	0	0	0	0	3	36	34
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1	33	32
03:00	1	0	0	1	3	0	0	0	0	0	0	0	0	5	32	26
04:00	0	0	0	1	3	2	0	0	0	0	0	0	0	6	36	33
05:00	0	0	0	16	26	7	2	0	0	0	0	0	0	51	34	32
06:00	0	0	3	26	57	17	1	0	0	0	0	0	0	104	34	31
07:00	<b>3</b>	<b>2</b>	<b>5</b>	<b>53</b>	<b>133</b>	<b>36</b>	<b>4</b>	<b>1</b>	0	0	0	0	0	237	34	31
08:00	1	1	2	53	<b>163</b>	27	3	0	0	0	0	0	0	<b>250</b>	33	31
09:00	0	0	<b>6</b>	42	51	17	2	0	0	0	0	0	0	118	34	31
10:00	0	1	4	25	34	12	3	0	0	0	0	0	0	79	35	31
11:00	0	0	6	27	30	11	0	0	0	0	0	0	0	74	33	30
12 PM	<b>1</b>	<b>1</b>	<b>9</b>	33	40	5	0	0	0	0	0	0	0	89	32	29
13:00	1	<b>2</b>	3	36	38	4	1	1	0	0	0	0	0	86	33	29
14:00	0	1	7	22	44	11	<b>3</b>	0	0	0	0	0	0	88	34	31
15:00	1	0	7	37	33	8	2	<b>3</b>	0	0	0	0	0	91	33	30
16:00	0	2	6	<b>52</b>	41	5	1	0	0	0	0	0	0	107	32	29
17:00	0	1	2	29	<b>64</b>	<b>17</b>	0	0	0	0	0	0	0	<b>113</b>	34	31
18:00	0	0	5	15	51	9	1	0	0	0	0	0	0	81	33	31
19:00	0	0	5	32	25	5	0	0	0	0	0	0	0	67	32	29
20:00	0	0	1	19	10	6	1	0	0	0	0	0	0	37	35	30
21:00	0	0	1	6	9	3	0	0	0	0	0	0	0	19	34	31
22:00	0	0	0	3	5	6	0	0	0	0	0	0	0	14	37	33
23:00	0	0	1	4	3	2	0	0	0	0	0	0	0	10	35	30
Total	8	11	73	535	868	211	24	5	0	0	0	0	0	1735		
%	0.5%	0.6%	4.2%	30.8%	50.0%	12.2%	1.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	09:00	07:00	08:00	07:00	07:00	07:00						08:00		
Vol.	3	2	6	53	163	36	4	1						250		
PM Peak	12:00	13:00	12:00	16:00	17:00	17:00	14:00	15:00						17:00		
Vol.	1	2	9	52	64	17	3	3						113		

Stats  
 15th Percentile : 25 MPH  
 50th Percentile : 30 MPH  
 85th Percentile : 33 MPH  
 95th Percentile : 37 MPH

Mean Speed(Average) : 31 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 1403  
 Percent in Pace : 80.9%  
 Number of Vehicles > 30 MPH : 934  
 Percent of Vehicles > 30 MPH : 53.9%

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Start Time	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 Perce	Avera (Mean
09/12/19	0	0	0	1	1	1	0	0	0	0	0	0	0	3	36	32
01:00	0	0	0	1	1	1	0	0	0	0	0	0	0	3	36	32
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
03:00	0	0	1	0	2	0	0	0	0	0	0	0	0	3	32	29
04:00	0	0	0	2	2	2	0	0	0	0	0	0	0	6	36	32
05:00	0	0	0	9	29	13	0	0	0	0	0	0	0	51	36	32
06:00	0	0	4	26	63	16	2	0	1	0	0	0	0	112	34	32
07:00	1	0	5	75	126	41	1	0	0	0	0	0	0	249	34	31
08:00	0	4	8	67	144	26	3	0	0	0	0	0	0	252	33	31
09:00	0	0	5	44	55	19	0	1	0	0	0	0	0	124	34	31
10:00	0	0	1	23	31	11	0	0	0	0	0	0	0	66	34	31
11:00	0	3	1	14	32	6	2	0	0	0	0	0	0	58	33	31
12 PM	0	1	3	35	55	14	3	0	0	0	0	0	0	111	34	31
13:00	0	0	3	26	28	13	2	0	0	0	0	0	0	72	35	31
14:00	0	0	2	43	50	15	2	0	0	0	0	0	0	112	34	31
15:00	0	1	4	30	42	10	0	0	0	0	0	0	0	87	33	30
16:00	0	0	5	27	63	22	0	0	0	0	0	0	0	117	35	31
17:00	0	0	6	26	53	9	3	1	0	0	0	0	0	98	33	31
18:00	0	0	1	24	47	16	1	1	0	0	0	0	0	90	35	32
19:00	0	0	2	16	26	7	1	1	0	0	0	0	0	53	34	31
20:00	0	0	1	19	10	7	1	1	0	0	0	0	0	39	36	31
21:00	0	1	1	6	9	5	1	0	0	0	0	0	0	23	36	31
22:00	0	0	0	6	5	6	1	0	0	0	0	0	0	18	37	33
23:00	0	0	2	4	4	1	0	1	0	0	0	0	0	12	34	30
Total	1	10	55	525	878	261	23	6	1	0	0	0	0	1760		
%	0.1%	0.6%	3.1%	29.8%	49.9%	14.8%	1.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	08:00	07:00	08:00	07:00	08:00	09:00	06:00					08:00		
Vol.	1	4	8	75	144	41	3	1	1					252		
PM Peak		12:00	17:00	14:00	16:00	16:00	12:00	17:00						16:00		
Vol.		1	6	43	63	22	3	1						117		

Stats  
 15th Percentile : 25 MPH  
 50th Percentile : 30 MPH  
 85th Percentile : 34 MPH  
 95th Percentile : 37 MPH

Mean Speed(Average) : 31 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 1403  
 Percent in Pace : 79.7%  
 Number of Vehicles > 30 MPH : 993  
 Percent of Vehicles > 30 MPH : 56.4%