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EXHIBIT 19

FUSS & O'NEILL

March 5, 2020

RECEIVED

MAR - 6 2020

Planning Board
Grafton, MA

Peter DeCaro, CEO
Resinate
120 Gilboa Street
Douglas, MA 01516

Re: Traffic Review Letter
Cannabis Dispensary
135 Westboro Road, Grafton, MA
Fuss & O'Neill Reference No. 20170003.T10

Dear Mr. DeCaro:

Resinate proposes to remodel a portion of the existing mixed-use building at 135 Westboro Road in Grafton, Massachusetts and convert its use to an adult use cannabis dispensary. The proposed dispensary will occupy 3,884 square feet and is expected to open in 2020.

Fuss & O'Neill has been retained to study the impact of the proposed development on traffic conditions throughout the adjacent roadway network. This letter has been prepared to document the findings of the study and is being submitted to the Town of Grafton in support of the project's land use applications. This letter is intended to supplement the traffic analysis previously submitted by the applicant.

Existing Conditions

The existing property is situated on approximately 1.08 acres of land north of Route 30 (Westboro Road). Four existing driveways provide access to the parcel from Westboro Road, one access drive on the eastern property boundary, two central driveways that are understood to be entrance only based on the faded pavement markings, and an exit only driveway on the western property boundary. The parcel is bounded by the Massachusetts Bay Transportation Authority (MBTA) Commuter Rail Worcester Line to the north, commercial and residential property to the east, the residences to the west and undeveloped land to the south. This area is located in the Office/Light Industrial zone.

The site is located approximately one-half mile east of the Commuter Rail Grafton Station, located north of the intersection of Westboro Road and Pine Street.

The intersection of Route 30 (Westboro Road) and Institute Road was reviewed for this study. It is an unsignalized "T" shaped intersection with Institute Road providing the northbound approach

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and Westboro Road providing the eastbound and westbound approaches. Each of these three approaches provide one combined lane of travel with no turning restrictions. No dedicated pedestrian or bicycle facilities are provided.

Traffic Volumes and Speeds

The greatest potential for traffic impact on the roadway network by the proposed development will occur during the morning and afternoon peak hours, the periods when commuter related trips are at their highest levels; as well as the midday on Saturday, when the dispensary is expected to generate the most trips.

In order to determine the traffic impact of the proposed development on adjacent street traffic, representatives of Fuss & O'Neill, Inc. conducted peak hour turning movement counts (TMCs) on Thursday, February 27, 2020 and Saturday, February 29, 2020, as well as 72-hour traffic volume and speed counts with automatic traffic recorder (ATR) road tubes over that period. These peak hours were subsequently analyzed for impacts. Existing traffic volumes are depicted in Figure 1 of the attached traffic volume figures. Copies of the TMC and ATR data are also included as an attachment to this letter.

According to Massachusetts Department of Transportation (MassDOT) standards, traffic volume data must be reviewed to account for seasonal fluctuation. MassDOT traffic count data indicates that the traffic volumes during the month of February are approximately seven percent lower than the yearly average, and as such the counts were grown by seven percent in order to adjust for seasonal growth. Additionally, upon review of MassDOT historic count data within the vicinity of the proposed site, the counts were again grown to a design year of 2027 at a rate of 1.0 percent per year. The 2027 No-Build volumes are depicted in the attached Figure 2.

Based on the data gathered by the ATR road tubes, the 85th percentile speed on Westboro Road was recorded at 39 miles per hour westbound and 41 miles per hour eastbound. Based on the data gathered, the average 24-hour traffic volume on this roadway (total for both directions) was recorded to be 4,768 vehicles, with the average weekday traffic volume of 5,393 vehicles.

Trip Distribution

The distribution of traffic entering and exiting the proposed site was applied to the road network based on the existing regional traffic distributions and the layout of the adjacent roadway network. During the peak hours, the following arrival distributions of traffic are anticipated:

- 50 percent from Westboro Road west of the site
- 30 percent from Westboro Road east of the site

- 20 percent from Institute Road south of the site

A regional arrival/departure distribution for the new site generated traffic traveling to and from the project site is depicted in Figure 3 of the attached traffic volume figures.

Trip Generation

The expected site generated traffic for the morning and afternoon peak hours was derived from the Traffic Impact Statement for this site authored by Land Planning, Inc. (LPI), dated December 16, 2019. The expected site generated traffic for the Saturday peak hour was calculated using existing empirical data from the Institute of Transportation Engineers (ITE) publication Trip Generation, 10th edition, 2017. This publication is an industry-accepted resource for determining trip generation.

The proposed dispensary is projected to occupy 3,884 square feet of the existing building. According to the LPI study, this space was formerly occupied by Anzio's pizza shop as well as a portion of Pecorino Artisanal Cheeses and Fine Wine. Pecorino currently occupies 4,029 square feet and is proposed occupy 3,201 square feet with the development of the dispensary.

Land Use Code (LUC) 882, "Marijuana Dispensary" was used for the analysis. This LUC is expected to provide a conservative estimate of the number of trips generated by this facility. Based on approximately 3,884 square feet, ITE Trip Generation indicates that the facility is expected to generate a total of 41 vehicle trips (23 entering, 18 exiting) during the morning peak hour, 84 vehicle trips (42 entering, 42 exiting) during the afternoon peak hour, and 141 vehicle trips (70 entering, 71 exiting) during the Saturday midday peak hour. This is an increase of 35 vehicle trips during the morning peak hour, 41 vehicle trips during the afternoon peak hour, and 37 vehicle trips during the Saturday midday peak hour.

LUC 820, "Shopping Center" was used for the analysis of Pecorino. Based on the change in square footage, ITE Trip Generation indicates that the facility is not expected to see a change in the morning peak hour volumes, and a decrease of three and eight trips during the afternoon and Saturday midday peak hours, respectively.

Considering the building development as a whole, with the opening of the proposed dispensary, traffic volumes are expected to increase by a total of 35 vehicles trips (19 entering, 16 exiting) during the morning peak hour, 38 vehicle trips (17 entering, 21 exiting) during the afternoon peak hour, and 29 vehicle trips (9 entering, 20 exiting) during the Saturday midday peak hour. The expected increase in site generated traffic volumes has been added to the No-Build volumes to yield the 2027 Build volumes as depicted in Figures 4 and 5 of the attached traffic volume figures. A summary of the trip generation calculations has been included as an attachment to this letter.

The morning and afternoon peak hour TMCs indicate that the volume at the study intersection appears to be largely commuter based with an origin/destination of the Grafton commuter rail station. During the morning peak hour, the eastbound through and northbound right turn movements make up approximately 72 percent of the overall volume in the intersection. Similarly in the afternoon peak hour, the westbound approach carries approximately 74 percent of the overall volume at the intersection.

Based on this observation, it is expected that not all vehicles visiting the dispensary will be new to the roadway network and would typically be considered "pass-by" trips. Businesses that rely on pass-by trips typically generate a portion of their traffic volumes by appealing to the existing traffic already using the roadway network. The proposed traffic which enters and exits the proposed site not as a primary origin or destination, but as an intermediate stop in a trip made for some other purpose is defined as a pass-by trip. ITE provides guidance on pass-by percentages for various land uses including drive through coffee shops and gas stations, but does not yet include marijuana dispensaries, so a reduction in the trip generation calculation has not been applied.

Sight Distance Analysis

The site plan for the development proposes to consolidate the four existing access driveways into two. A full access is proposed in the west and an entrance only is proposed in the east. Signage will be installed on site to provide clear instructions to all drivers.

Intersection sight distances were calculated at the proposed site driveway in accordance with criteria set forth in the 2006 Massachusetts Highway Department Project Development & Design Guide (PDDG). This sight distance is measured from a point 15 feet back from the edge of travel-way at a height of 3.5 feet, the standard height of a driver's eye.

The 85th percentile speed on Westboro Road was recorded at 39 miles per hour westbound and 41 miles per hour eastbound. In accordance with criteria set forth in the 2006 PDDG, 434 feet of intersection sight distance is required for a passenger car looking to the left and 456 is required for a passenger car looking to the right from the site driveway when approaching a two-lane roadway.

At the site driveway, intersection sight distance extends approximately 850 feet looking right (west) and approximately 385 feet looking left (east). For drivers looking right out of the site driveway, the sight distance triangle is not obstructed and does not encroach upon abutting landowner property. For drivers looking left out of the site driveway, the sight distance triangle is limited by abutting property.

Stopping sight distances were also calculated at the proposed site driveway in accordance with the 2006 PDDG. For vehicles traveling westbound, with an 85th percentile speed of 39 miles per hour and an approximate grade of three percent, 268 feet of stopping sight distance is required. For vehicles traveling eastbound, with an 85th percentile speed of 41 miles per hour with a continuous grade of approximately three percent, 288 feet of stopping sight distance is required.

The stopping sight distance for vehicles traveling westbound approaching the site driveway were measured to be approximately 365 feet. For vehicles traveling eastbound, stopping sight distance exceeds 800 feet. The stopping sight distances exceed the minimum required according to MassDOT criteria.

Additionally, the configuration of the site maximizes the amount of sight distance looking left (east) where the sight distance is constrained by aligning the exit driveway as far west as possible.

Intersection Capacity Analysis

Capacity analyses for the unsignalized intersections was conducted using Synchro Professional Software, version 10.0.

In discussing intersection capacity analyses results, the term level of service (LOS) is used to describe the operating condition of the intersection.

LOS is a measure of the delay experienced by stopped vehicles at an intersection. LOS is rated on a scale from A to F, with A describing a condition of very low delay (less than 10 seconds per vehicle), and F describing a condition where delays will exceed 50 seconds per vehicle. The definition for LOS, as well as the methodology for conducting unsignalized intersection capacity analyses, are taken from the "Highway Capacity Manual 6th Edition" published by the Transportation Research Board.

In discussing stop controlled unsignalized intersection capacity analyses, LOS is used to provide a description of the delay and operational characteristics of the turns from the minor street (stop sign controlled) to the major street, and turns from the major street to the minor street. Through vehicles are not delayed by the minor street and do not experience delay, therefore they are not rated with a level of service.

Using the above referenced methodologies, weekday morning, afternoon and Saturday midday peak hour capacity analyses were conducted at the intersection of Westboro Road and Institute Road as well as at Westboro Road and the site driveway. At the intersection of Westboro Road and Institute Road, the increase in delay will be negligible as a result of the expected trip generation and each

approach is expected to operate efficiently at LOS A or B during the morning, afternoon, and peak hours. A summary of the results is included in Table 1 below.

Table 1 – Critical Movement Average Delay per Vehicle

Stop Controlled Intersections (Critical Movements)	2027 Morning Peak Hour		2027 Afternoon Peak Hour		2027 Saturday Peak Hour	
	No-Build	Build	No-Build	Build	No-Build	Build
Westboro Road at Institute Road						
Westbound Left Turn	8.0 sec	8.0 sec	7.9 sec	8.0 sec	7.6 sec	7.6 sec
Northbound Approach	11.5 sec	11.7 sec	11.8 sec	11.9 sec	9.8 sec	9.9 sec

Also analyzed was the stop controlled site driveway egress onto Westboro Road. The driveway exiting the site is expected to operate efficiently at LOS B or better during all Build conditions. Copies of the Synchro analysis reports have been included as an attachment to this letter.

Crash Analysis

Crash data was gathered from the Massachusetts Department of Transportation (MassDOT) Interactive Mapping Portal and Crash Tracking (IMPACT) system for Westboro Road in the vicinity of the site driveway. The records were gathered for the most recent three years of available data, 2014 through 2016. Zero crashes were identified during the study period within 1,000 feet of the proposed development.

Conclusions

The purpose of preparing a traffic impact study is to identify the impact of the proposed development's site generated traffic. The study efforts have indicated that the proposed facility will generate an increase in traffic volumes by a total of 35 vehicles trips (19 entering, 16 exiting) during the morning peak hour, 38 vehicle trips (17 entering, 21 exiting) during the afternoon peak hour, and 29 vehicle trips (9 entering, 20 exiting) during the Saturday midday peak hour.

The 85th percentile speed on Westboro Road was recorded at 39 miles per hour westbound and 41 miles per hour eastbound. Based on the data gathered, the average 24-hour traffic volume on this roadway (total for both directions) was recorded to be 4,768 vehicles, with the average weekday traffic volume of 5,393 vehicles.

The capacity analysis revealed that the unsignalized intersection of Westboro Road and Institute Road, as well as the intersection of Westboro Road and the site driveway, operate efficiently at LOS B or better during all three peak hours of the Build condition.

A review of crash data provided by the MassDOT IMPACT system indicated that no crashes occurred within the study area during the study period of 2014 through 2016.

The stopping sight distance for vehicles on Westboro Road is adequate to safely navigate vehicles egressing the site, and dedicated egress driveway is located in an optimal location. We recommend that the arrows depicting the direction of flow at the three site driveways be repainted in order to better enforce the directional flow of vehicles into and out of the site.

Based on the results of the foregoing analysis, it is the professional opinion of Fuss & O'Neill, Inc. that the proposed development will not have a significant impact to traffic operations within the study area.

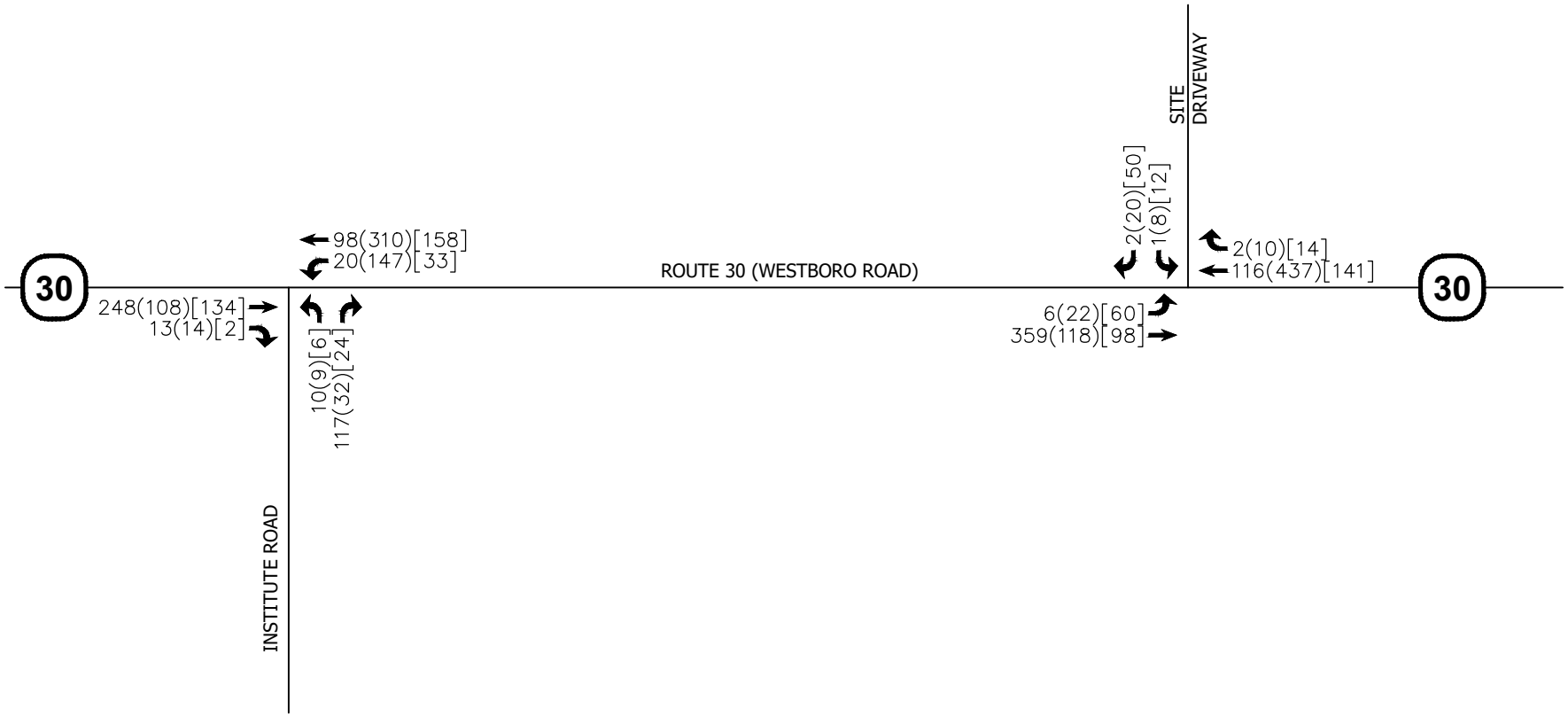
We trust that this information will be sufficient for your review; however, if you should require additional information or have any questions, please contact me.

Sincerely,

Katherine Patch, EIT
Transportation Engineer

Matthew W. Skelly, PE, PTOE
Project Manager

Enclosures: Traffic Volume Figures
Trip Generation Calculation Sheet
TMC & ATR Data Worksheets
Synchro Analysis Reports



XXX(XXX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [SATURDAY MIDDAY PEAK HOUR]

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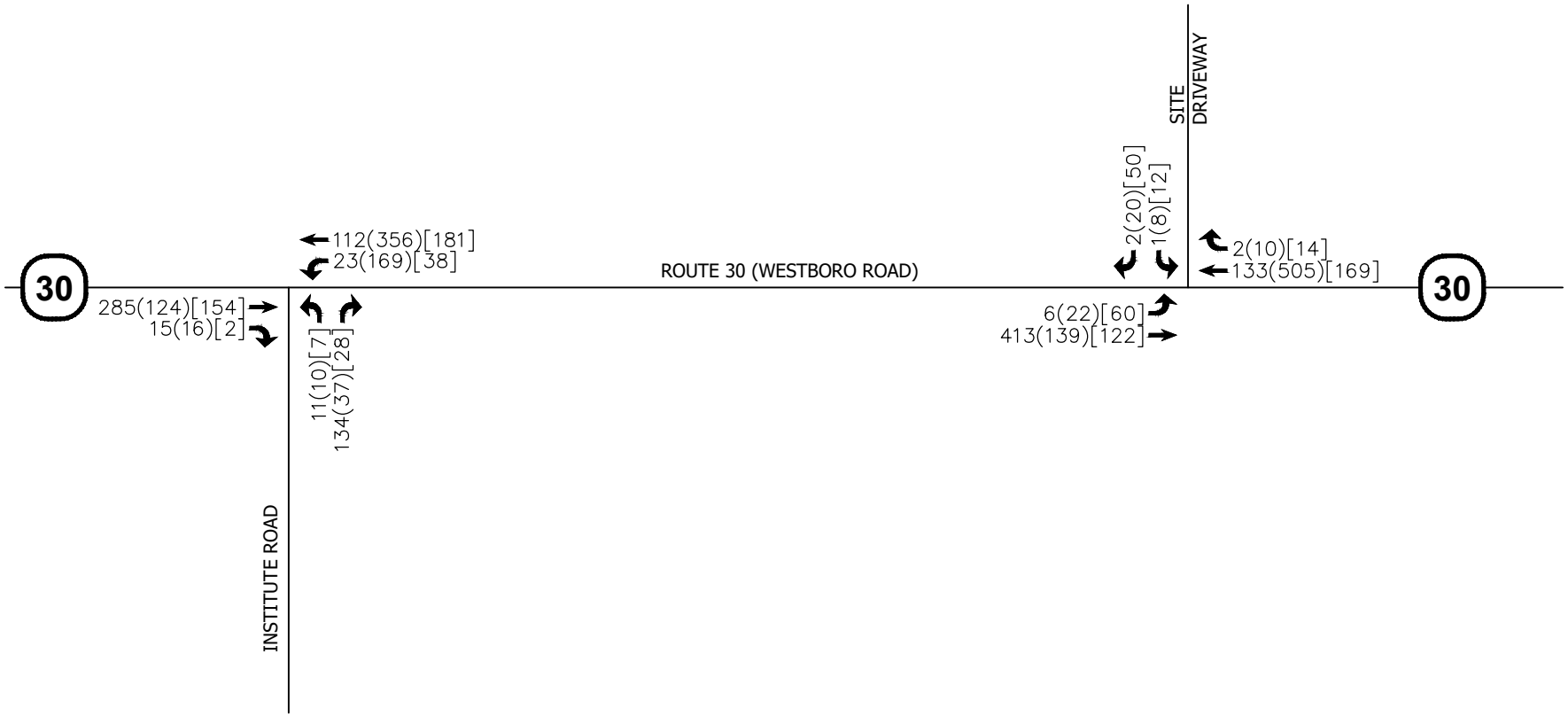
FIGURE 1: 2020 EXISTING TRAFFIC VOLUMES

PROJ. NO: 20170003.T10 | 135 WESTBORO ROAD, GRAFTON | MARCH 2020

File Path: J:\DWG\P20170003\T10\Civil\Traffic Figures\20170003.T10_TVF01.dwg Layout: FIG 1 - EXC Plotted: Thu, March 05, 2020 - 6:23 PM User: KATHERINE PATCH



XXX(XXX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [SATURDAY MIDDAY PEAK HOUR]

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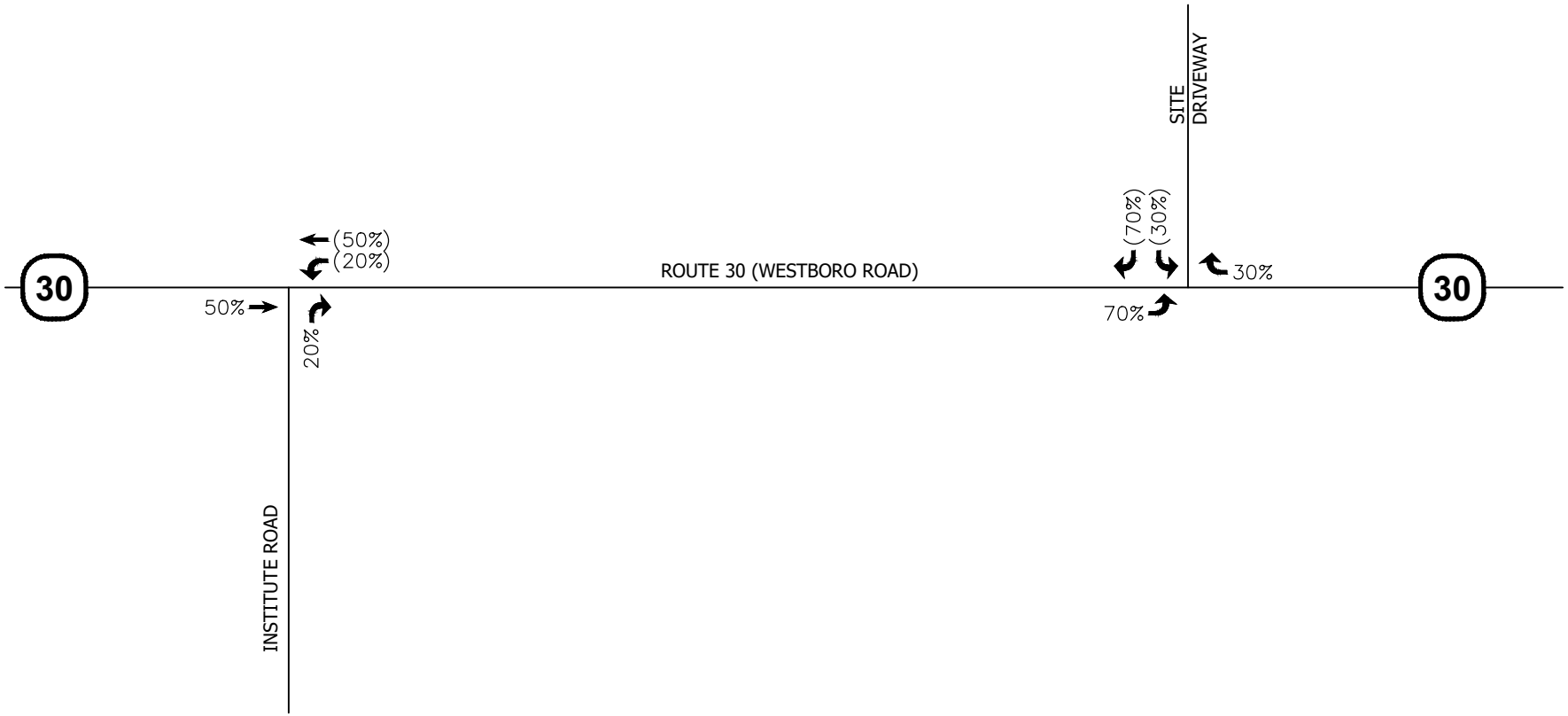
FIGURE 2: 2027 NO BUILD CONDITION TRAFFIC VOLUMES

PROJ. NO: 20170003.T10 | 135 WESTBORO ROAD, GRAFTON | MARCH 2020

File Path: J:\DWG\P2017\0003\T10\Civil\Traffic Figures\20170003.T10_TVF01.dwg Layout: FIG 2 - NO BUILD Plotted: Thu, March 05, 2020 - 6:23 PM User: KATHERINE PATCH



XXX(XXX) = ENTERING TRAFFIC (EXITING TRAFFIC)

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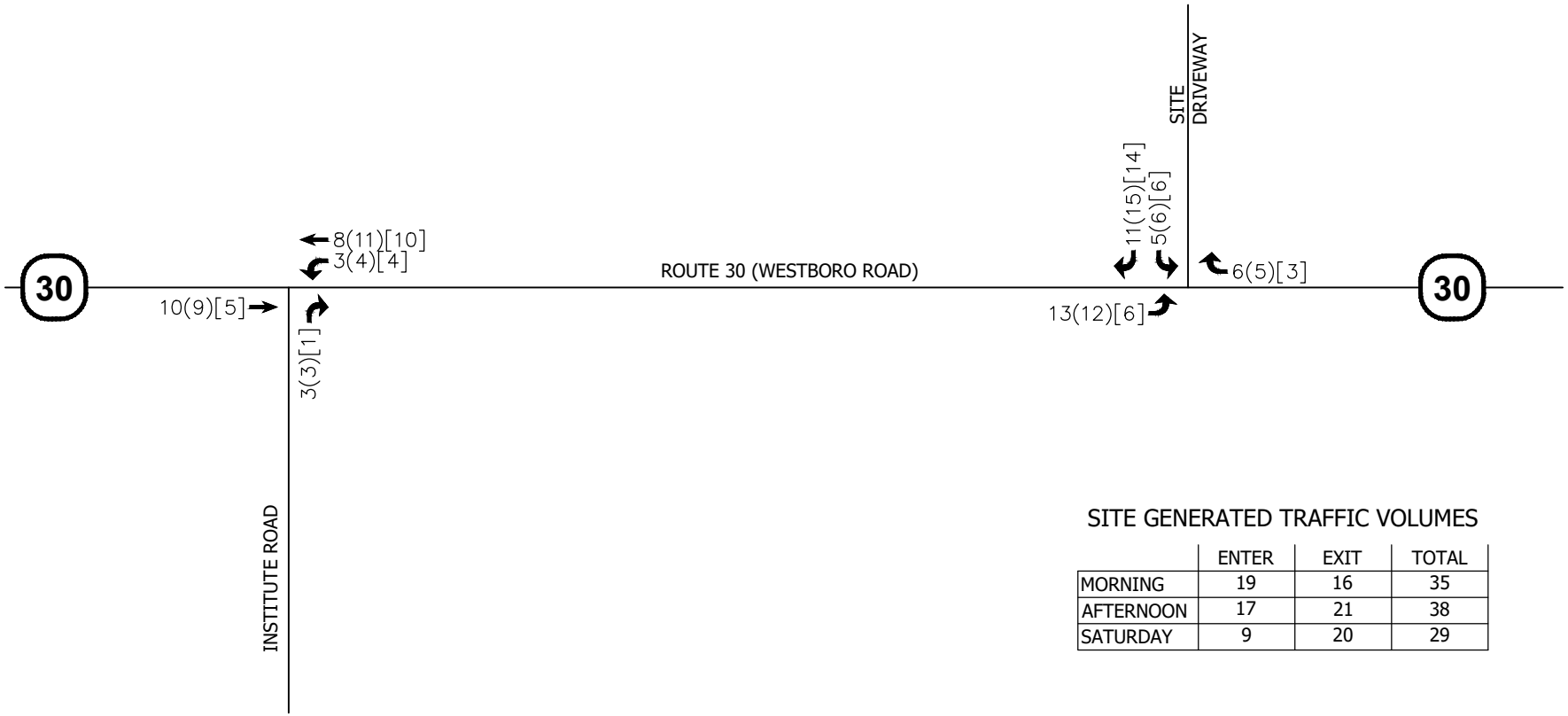
FIGURE 3: TRIP DISTRIBUTION

PROJ. NO: 20170003.T10 | 135 WESTBORO ROAD, GRAFTON | MARCH 2020

File Path: J:\DWG\P2017\0003\T10\Civil\Traffic Figures\20170003.T10_TVF01.dwg Layout: FIG 3 - TRIP DIST Plotted: Thu, March 05, 2020 - 6:23 PM User: KATHERINE PATCH



SITE GENERATED TRAFFIC VOLUMES

	ENTER	EXIT	TOTAL
MORNING	19	16	35
AFTERNOON	17	21	38
SATURDAY	9	20	29

XXX(XXX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [SATURDAY MIDDAY PEAK HOUR]

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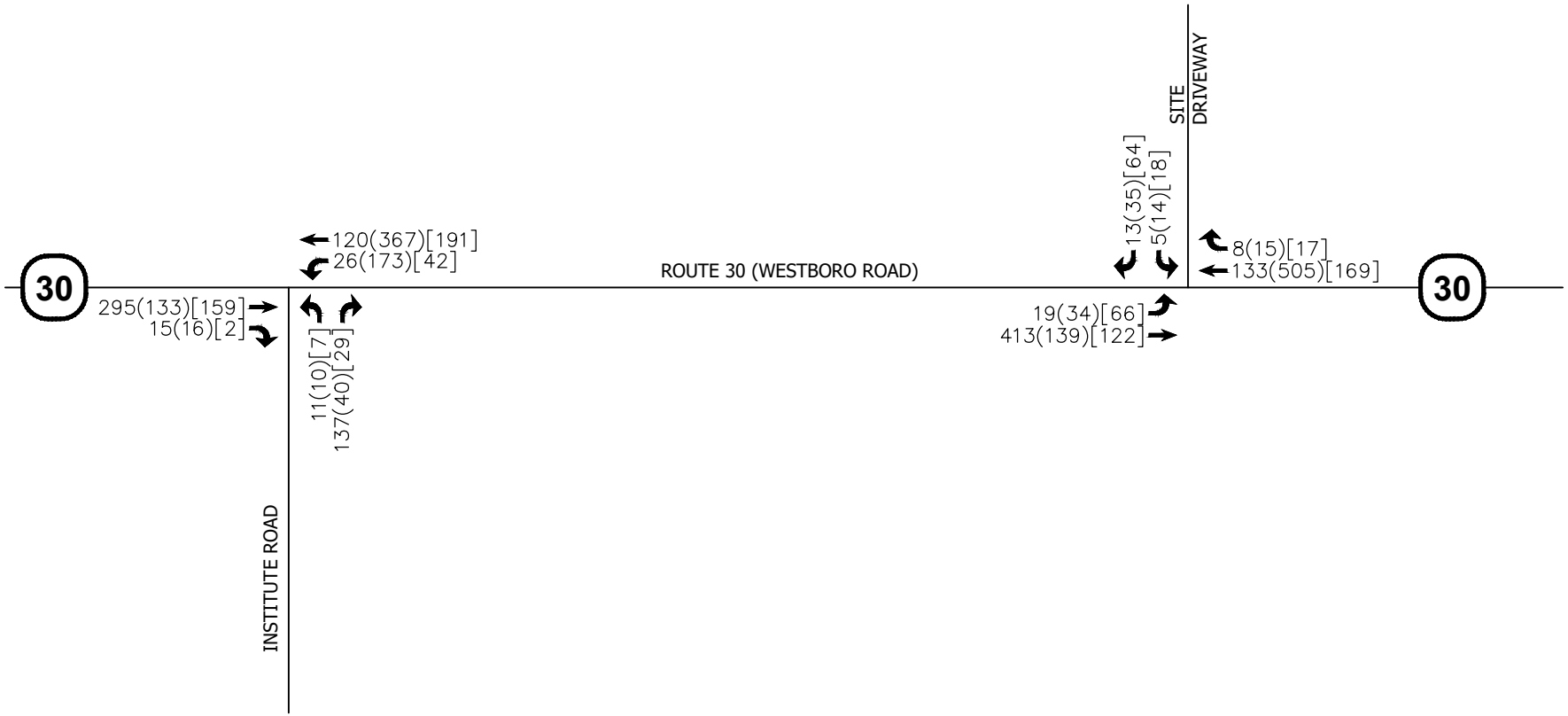
FIGURE 4: TRIP GENERATION

PROJ. NO: 20170003.T10 | 135 WESTBORO ROAD, GRAFTON | MARCH 2020

File Path: J:\DWG\P20170003\T10\Civil\Traffic Figures\20170003.T10_TVF01.dwg Layout: FIG 4 - TRIP GEN Plotted: Thu, March 05, 2020 - 6:23 PM User: KATHERINE PATCH



XXX(XXX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [SATURDAY MIDDAY PEAK HOUR]

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FIGURE 5: BUILD CONDITION TRAFFIC VOLUMES

PROJ. NO: 20170003.T10 | 135 WESTBORO ROAD, GRAFTON | MARCH 2020

File Path: J:\DWG\P2017\0003\T10\Civil\Traffic Figures\20170003.T10_TVF01.dwg Layout: FIG 5 - BUILD Plotted: Thu, March 05, 2020 - 6:23 PM User: KATHERINE PATCH

Existing Anzino's	3,056 SF		
LUC 930			
	Entering	Exiting	Total
Weekday	482	482	964
AM	4	2	6
PM	24	19	43
Saturday	57	47	104

Proposed Dispensary	3,884 SF		
LUC 882			
	Entering	Exiting	Total
Weekday	491	491	982
AM	23	18	41
PM	42	42	84
Saturday	70	71	141

Existing Pecorino	4,029 SF		
LUC 820			
	Entering	Exiting	Total
Weekday	76	76	152
AM	2	1	3
PM	7	8	15
Saturday	25	24	49

Existing Pecorino	3,201 SF		
LUC 820			
	Entering	Exiting	Total
Weekday	60	60	120
AM	2	1	3
PM	6	6	12
Saturday	21	20	41

Existing Pretzel	3,383 SF		
LUC 140			
	Entering	Exiting	Total
Weekday	7	7	14
AM	2	0	2
PM	1	2	3
Saturday	2	1	3

Existing Pretzel	3,383 SF		
LUC 140			
	Entering	Exiting	Total
Weekday	7	7	14
AM	2	0	2
PM	1	2	3
Saturday	2	1	3

Existing Totals			
	Entering	Exiting	Total
Weekday	565	565	1130
AM	8	3	11
PM	32	29	61
Saturday	84	72	156

Proposed Totals			
	Entering	Exiting	Total
Weekday	558	558	1116
AM	27	19	46
PM	49	50	99
Saturday	93	92	185

Difference			
	Entering	Exiting	Total
Weekday	-7	-7	-14
AM	19	16	35
PM	17	21	38
Saturday	9	20	29

Note: AM/PM trip generation taken from LPI's Traffic Impact Statement, dated December 16, 2019; Saturday calculated based on ITE Trip Gen Manual, 10th ed.

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 1

Groups Printed- Cars - Trucks

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	5	23	1	29	56	4	118
07:15 AM	6	16	3	28	78	3	134
07:30 AM	6	27	1	28	54	3	119
07:45 AM	3	32	5	32	60	3	135
Total	20	98	10	117	248	13	506
08:00 AM	4	23	2	21	63	1	114
08:15 AM	4	15	4	14	47	3	87
08:30 AM	5	19	4	14	35	8	85
08:45 AM	4	23	2	14	41	4	88
Total	17	80	12	63	186	16	374
Grand Total	37	178	22	180	434	29	880
Apprch %	17.2	82.8	10.9	89.1	93.7	6.3	
Total %	4.2	20.2	2.5	20.5	49.3	3.3	
Cars	37	174	20	180	429	27	867
% Cars	100	97.8	90.9	100	98.8	93.1	98.5
Trucks	0	4	2	0	5	2	13
% Trucks	0	2.2	9.1	0	1.2	6.9	1.5

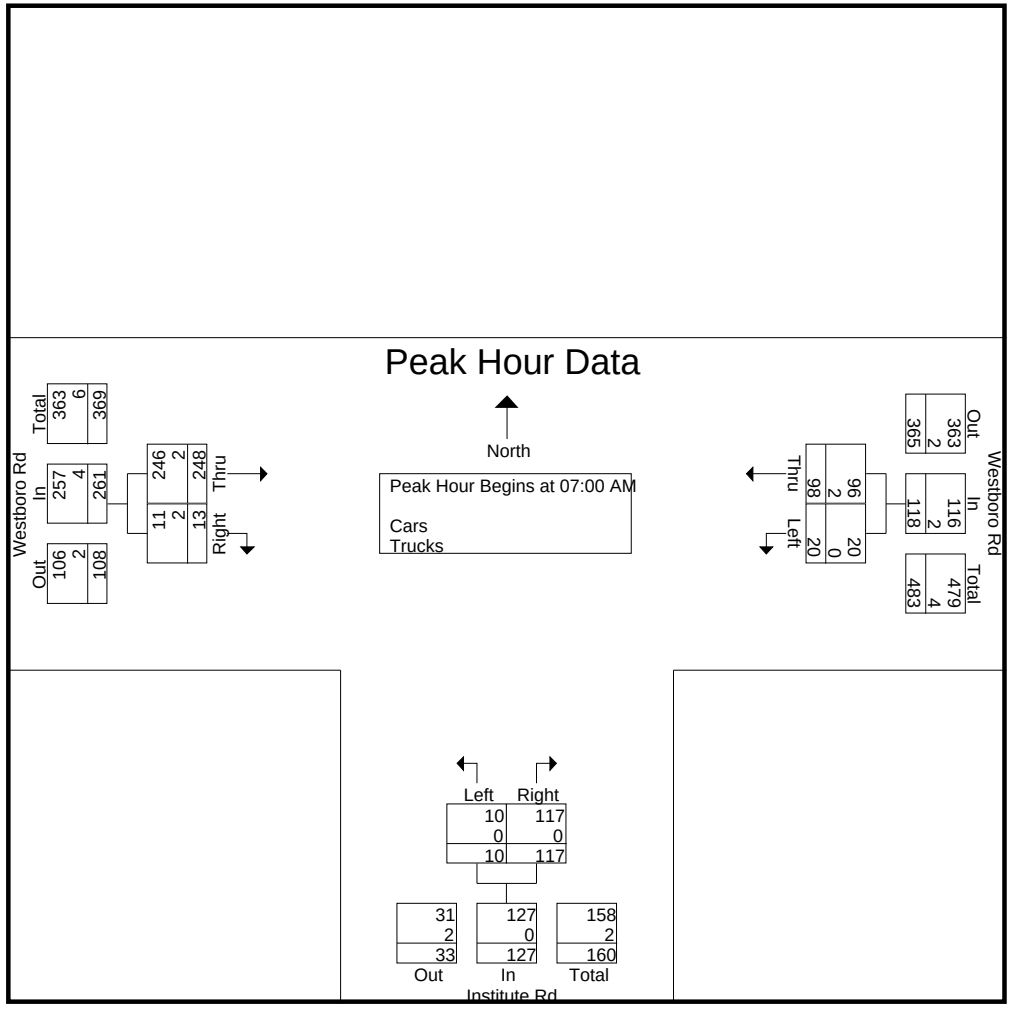
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	5	23	28	1	29	30	56	**4**	60	118
07:15 AM	**6**	16	22	3	28	31	**78**	3	**81**	134
07:30 AM	6	27	33	1	28	29	54	3	57	119
07:45 AM	3	**32**	**35**	**5**	**32**	**37**	60	3	63	**135**
Total Volume	20	98	118	10	117	127	248	13	261	506
% App. Total	16.9	83.1		7.9	92.1		95	5		
PHF	.833	.766	.843	.500	.914	.858	.795	.813	.806	.937
Cars	20	96	116	10	117	127	246	11	257	500
% Cars	100	98.0	98.3	100	100	100	99.2	84.6	98.5	98.8
Trucks	0	2	2	0	0	0	2	2	4	6
% Trucks	0	2.0	1.7	0	0	0	0.8	15.4	1.5	1.2

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 2



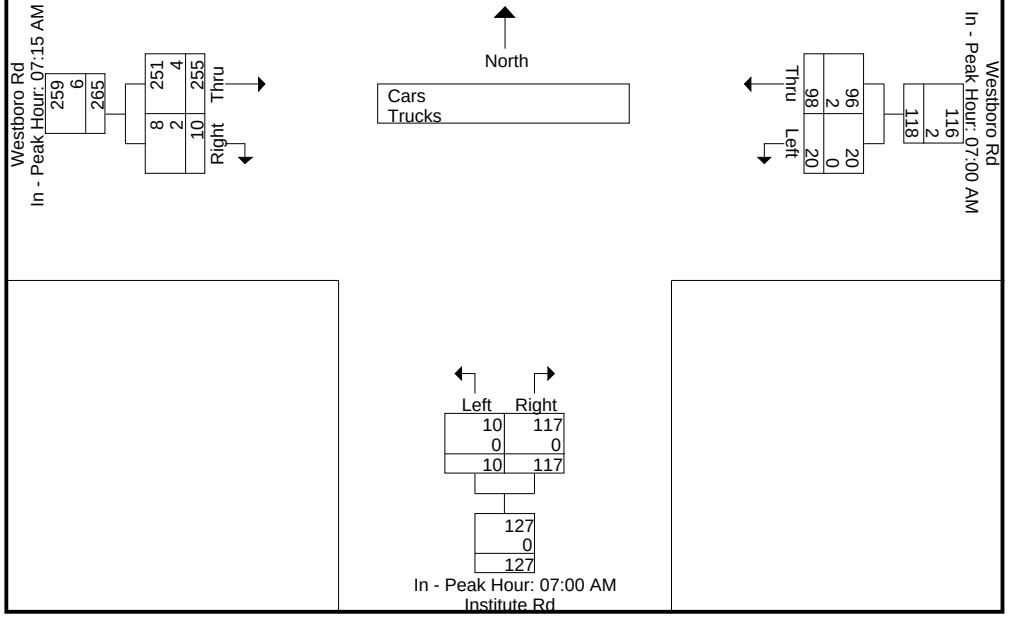
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:15 AM		
+0 mins.	5	23	28	1	29	30	**78**	**3**	**81**
+15 mins.	**6**	16	22	3	28	31	54	3	57
+30 mins.	6	27	33	1	28	29	60	3	63
+45 mins.	3	**32**	**35**	**5**	**32**	**37**	63	1	64
Total Volume	20	98	118	10	117	127	255	10	265
% App. Total	16.9	83.1		7.9	92.1		96.2	3.8	
PHF	.833	.766	.843	.500	.914	.858	.817	.833	.818
Cars	20	96	116	10	117	127	251	8	259
% Cars	100	98	98.3	100	100	100	98.4	80	97.7
Trucks	0	2	2	0	0	0	4	2	6

Accurate Counts
978-664-2565

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 4

Groups Printed- Cars

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	5	22	1	29	56	4	117
07:15 AM	6	16	3	28	76	1	130
07:30 AM	6	26	1	28	54	3	118
07:45 AM	3	32	5	32	60	3	135
Total	20	96	10	117	246	11	500
08:00 AM	4	23	2	21	61	1	112
08:15 AM	4	14	4	14	47	3	86
08:30 AM	5	18	3	14	35	8	83
08:45 AM	4	23	1	14	40	4	86
Total	17	78	10	63	183	16	367
Grand Total	37	174	20	180	429	27	867
Apprch %	17.5	82.5	10	90	94.1	5.9	
Total %	4.3	20.1	2.3	20.8	49.5	3.1	

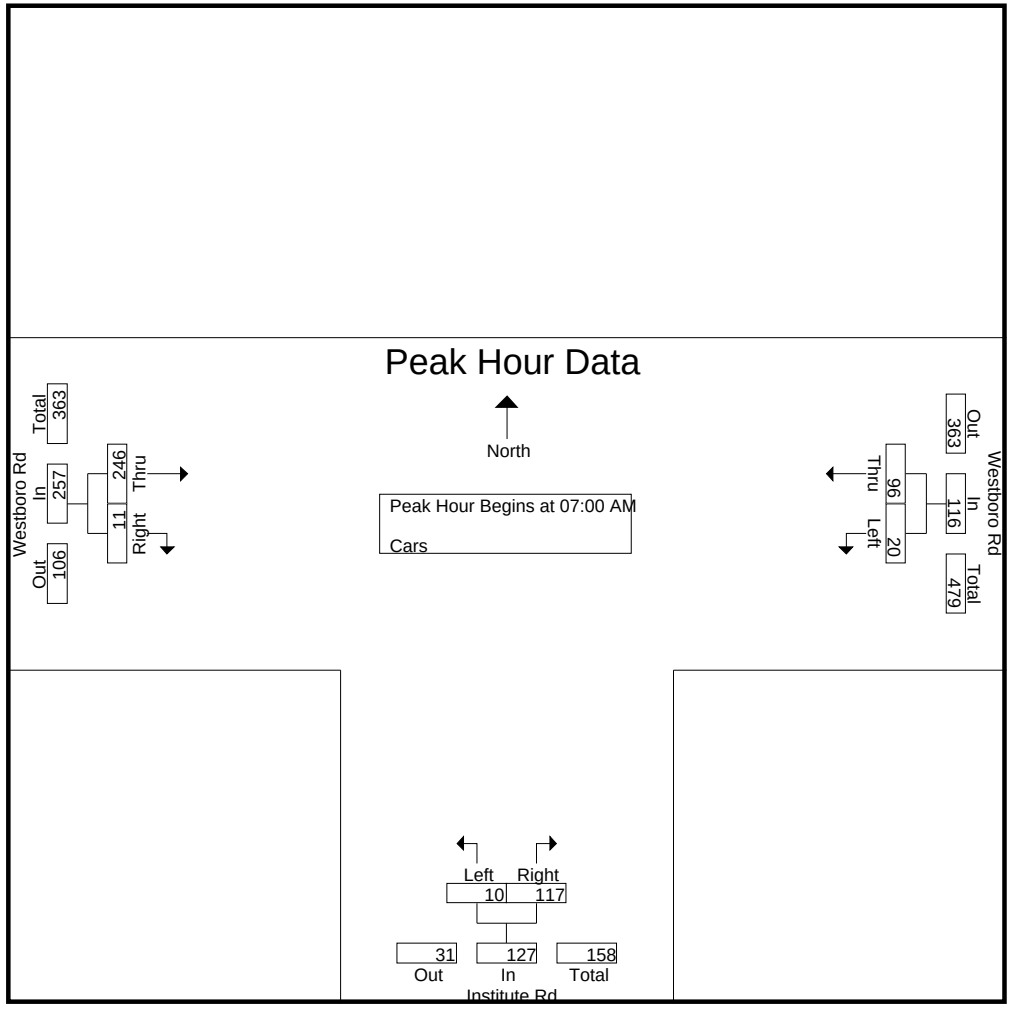
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	5	22	27	1	29	30	56	**4**	60	117
07:15 AM	**6**	16	22	3	28	31	**76**	1	**77**	130
07:30 AM	6	26	32	1	28	29	54	3	57	118
07:45 AM	3	**32**	**35**	**5**	**32**	**37**	60	3	63	**135**
Total Volume	20	96	116	10	117	127	246	11	257	500
% App. Total	17.2	82.8		7.9	92.1		95.7	4.3		
PHF	.833	.750	.829	.500	.914	.858	.809	.688	.834	.926

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 5



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

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:15 AM		
+0 mins.	5	22	27	1	29	30	**76**	1	**77**
+15 mins.	**6**	16	22	3	28	31	54	**3**	57
+30 mins.	6	26	32	1	28	29	60	3	63
+45 mins.	3	**32**	**35**	**5**	**32**	**37**	61	1	62
Total Volume	20	96	116	10	117	127	251	8	259
% App. Total	17.2	82.8		7.9	92.1		96.9	3.1	
PHF	.833	.750	.829	.500	.914	.858	.826	.667	.841

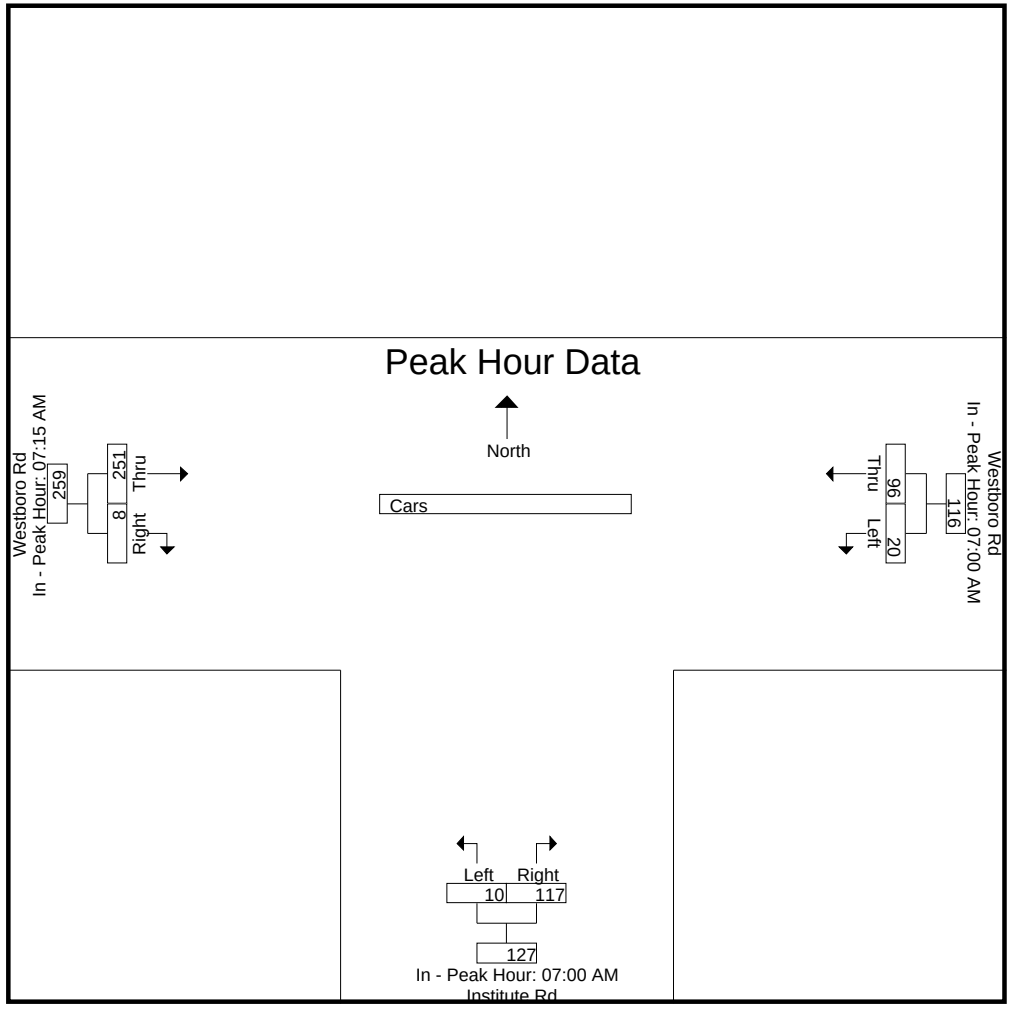
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 6

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 7

Groups Printed- Trucks

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	1	0	0	0	0	1
07:15 AM	0	0	0	0	2	2	4
07:30 AM	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0
Total	0	2	0	0	2	2	6
08:00 AM	0	0	0	0	2	0	2
08:15 AM	0	1	0	0	0	0	1
08:30 AM	0	1	1	0	0	0	2
08:45 AM	0	0	1	0	1	0	2
Total	0	2	2	0	3	0	7
Grand Total	0	4	2	0	5	2	13
Apprch %	0	100	100	0	71.4	28.6	
Total %	0	30.8	15.4	0	38.5	15.4	

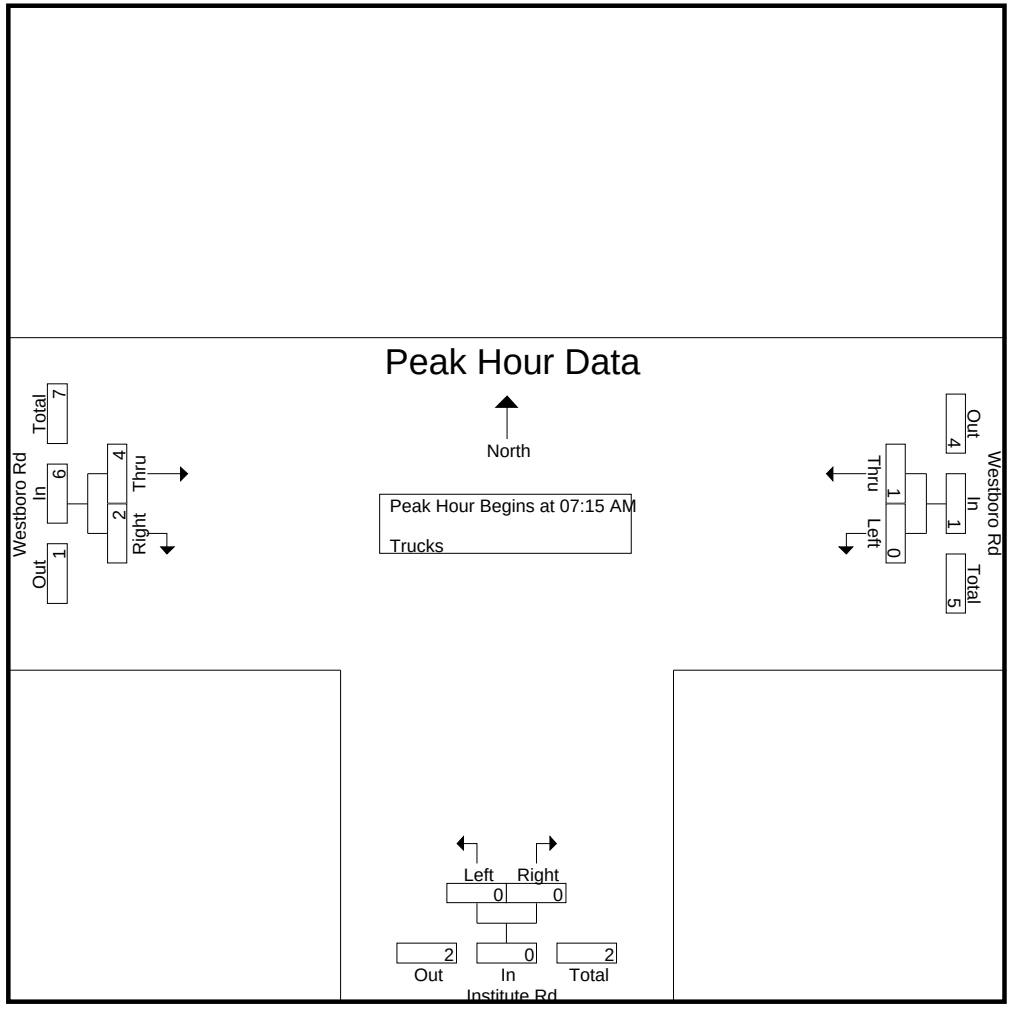
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	**2**	**2**	**4**	**4**
07:30 AM	0	**1**	**1**	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	2	0	2	2
Total Volume	0	1	1	0	0	0	4	2	6	7
% App. Total	0	100		0	0		66.7	33.3		
PHF	.000	.250	.250	.000	.000	.000	.500	.250	.375	.438

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 8



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

Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:15 AM		
+0 mins.	0	**1**	**1**	0	0	0	**2**	**2**	**4**
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	1	**1**	0	**1**	0	0	0
+45 mins.	0	0	0	1	0	1	2	0	2
Total Volume	0	2	2	2	0	2	4	2	6
% App. Total	0	100		100	0		66.7	33.3	
PHF	.000	.500	.500	.500	.000	.500	.500	.250	.375

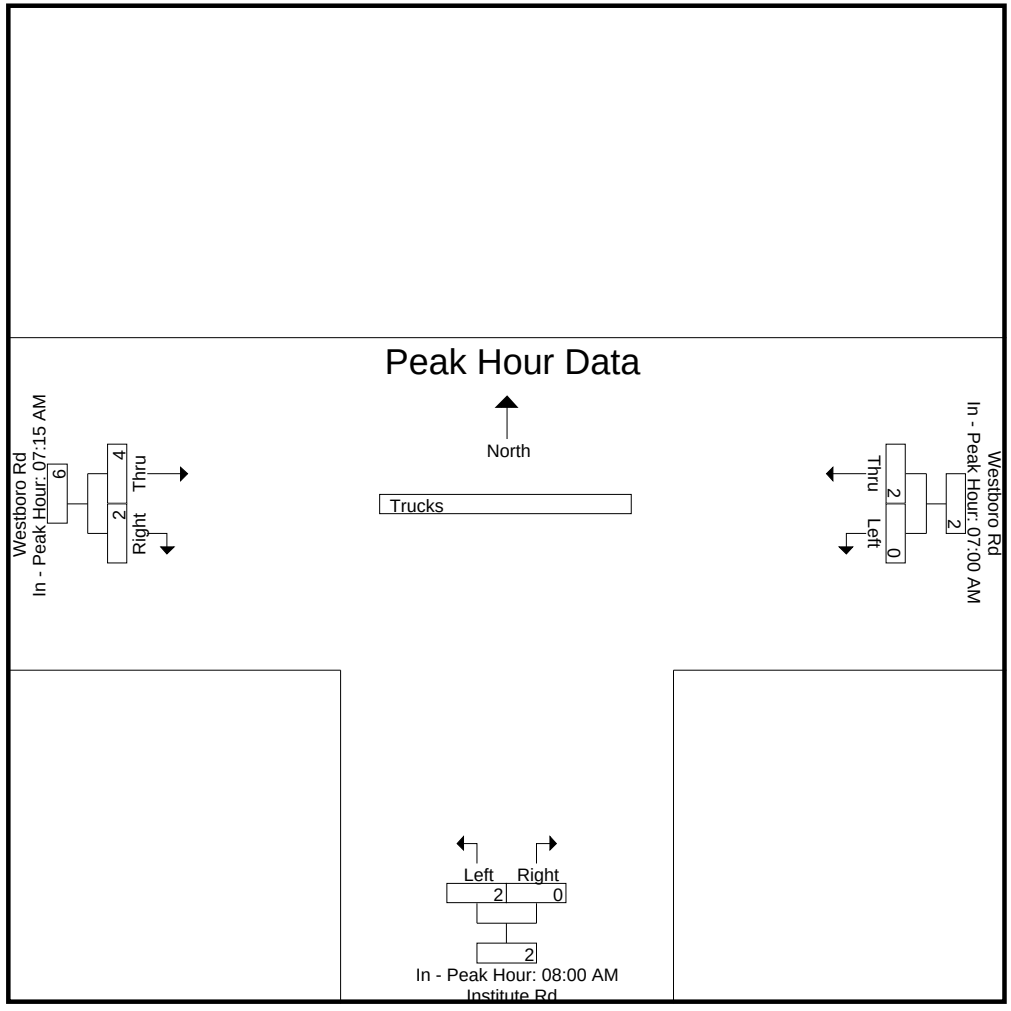
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 9

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 10

Groups Printed- Bikes Peds

	Westboro Rd From East			Institute Rd From South			Westboro Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	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
08:00 AM	0	0	1	0	0	0	0	0	0	1	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	0	0	0	1	0	1
Grand Total	0	0	1	0	0	0	0	0	0	1	0	1
Apprch %	0	0		0	0		0	0				
Total %										100	0	

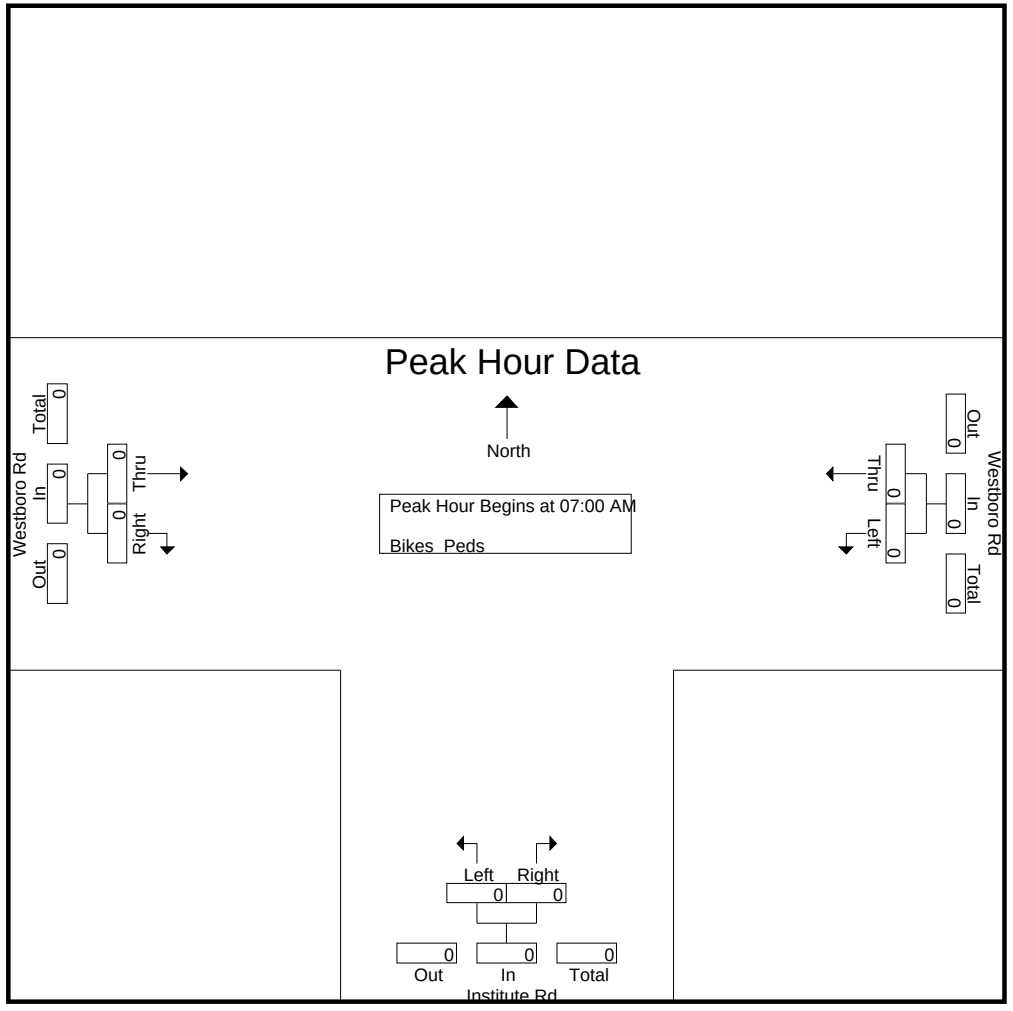
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM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

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 11



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

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

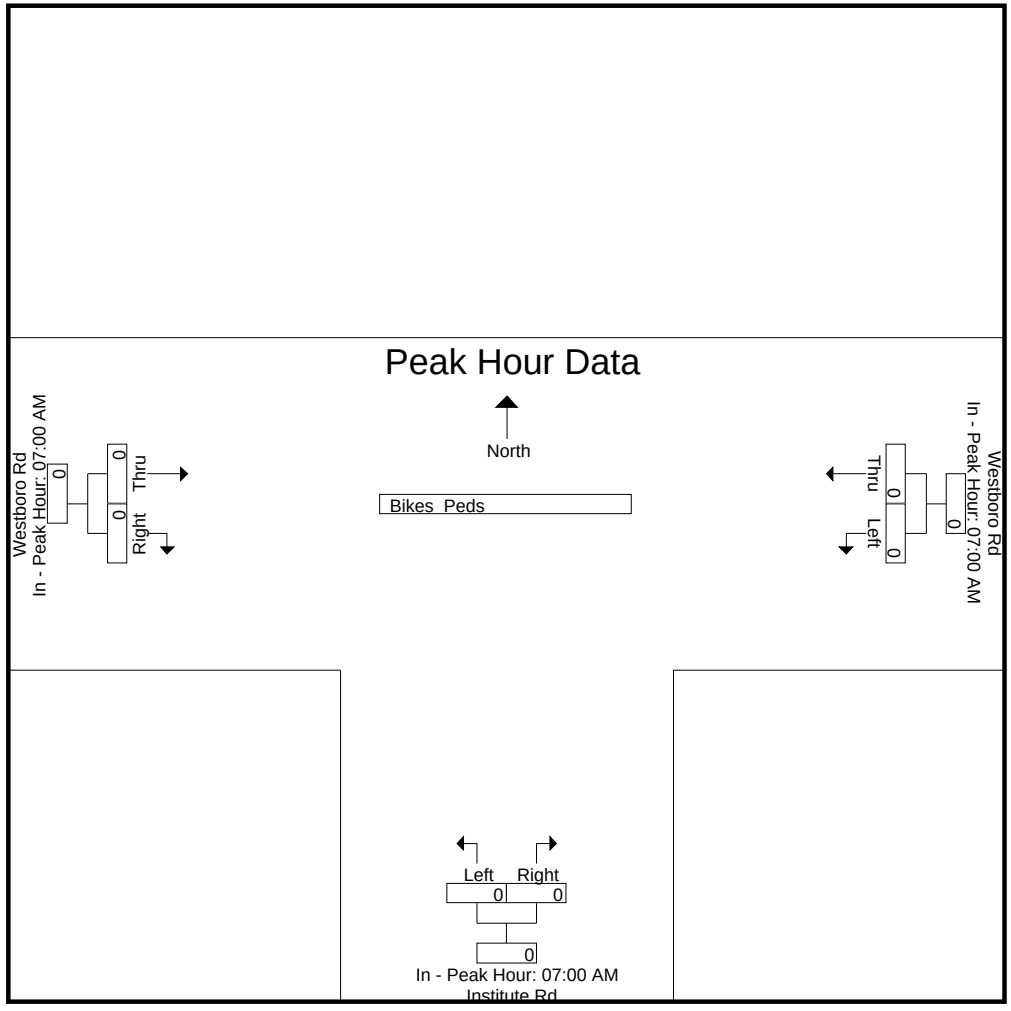
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 12

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 1

Groups Printed- Cars - Trucks

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	22	62	3	5	19	1	112
04:15 PM	38	74	2	3	24	4	145
04:30 PM	34	77	2	11	29	2	155
04:45 PM	45	87	0	4	33	3	172
Total	139	300	7	23	105	10	584
05:00 PM	34	62	5	9	26	4	140
05:15 PM	34	84	2	8	20	5	153
05:30 PM	32	83	1	6	29	2	153
05:45 PM	20	58	0	5	34	1	118
Total	120	287	8	28	109	12	564
Grand Total	259	587	15	51	214	22	1148
Apprch %	30.6	69.4	22.7	77.3	90.7	9.3	
Total %	22.6	51.1	1.3	4.4	18.6	1.9	
Cars	259	584	15	51	210	22	1141
% Cars	100	99.5	100	100	98.1	100	99.4
Trucks	0	3	0	0	4	0	7
% Trucks	0	0.5	0	0	1.9	0	0.6

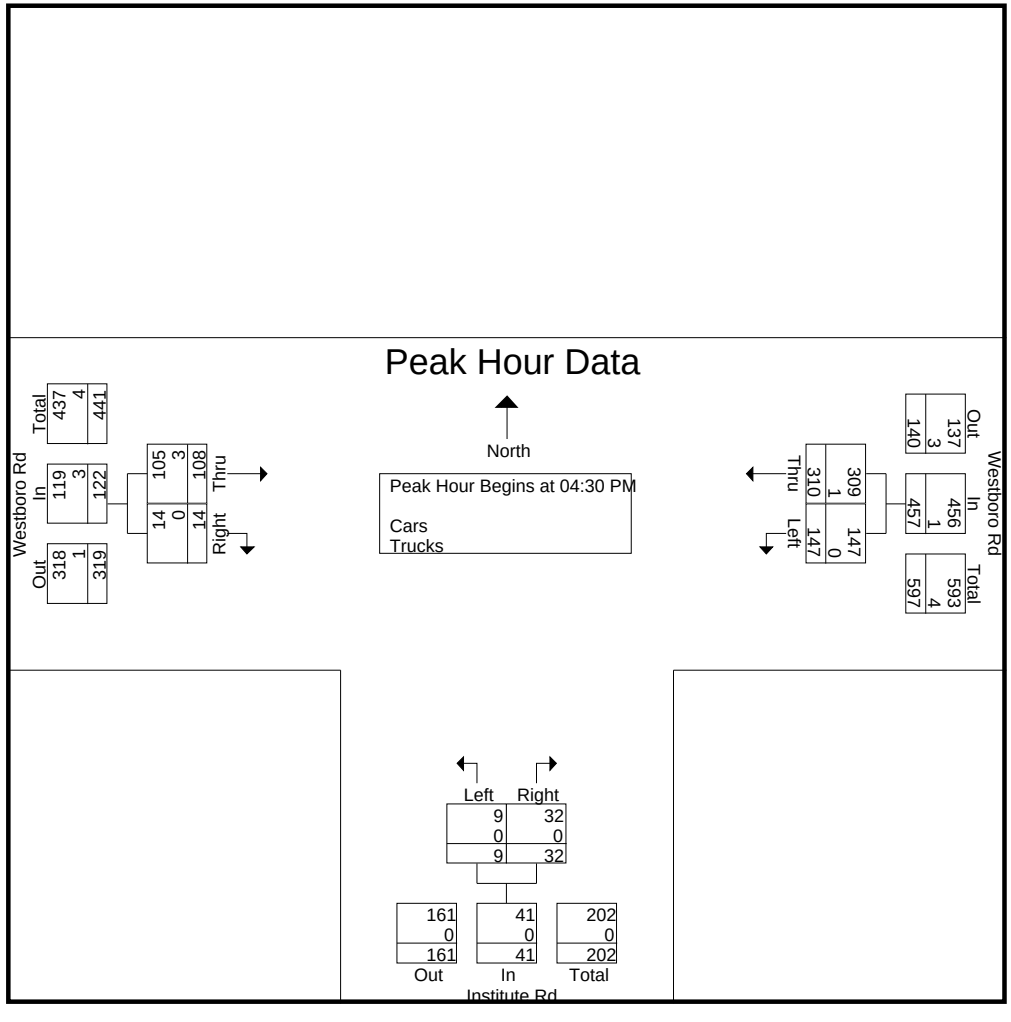
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	34	77	111	2	**11**	13	29	2	31	155
04:45 PM	**45**	**87**	**132**	0	4	4	**33**	3	**36**	**172**
05:00 PM	34	62	96	**5**	9	**14**	26	4	30	140
05:15 PM	34	84	118	2	8	10	20	**5**	25	153
Total Volume	147	310	457	9	32	41	108	14	122	620
% App. Total	32.2	67.8		22	78		88.5	11.5		
PHF	.817	.891	.866	.450	.727	.732	.818	.700	.847	.901
Cars	147	309	456	9	32	41	105	14	119	616
% Cars	100	99.7	99.8	100	100	100	97.2	100	97.5	99.4
Trucks	0	1	1	0	0	0	3	0	3	4
% Trucks	0	0.3	0.2	0	0	0	2.8	0	2.5	0.6

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 2



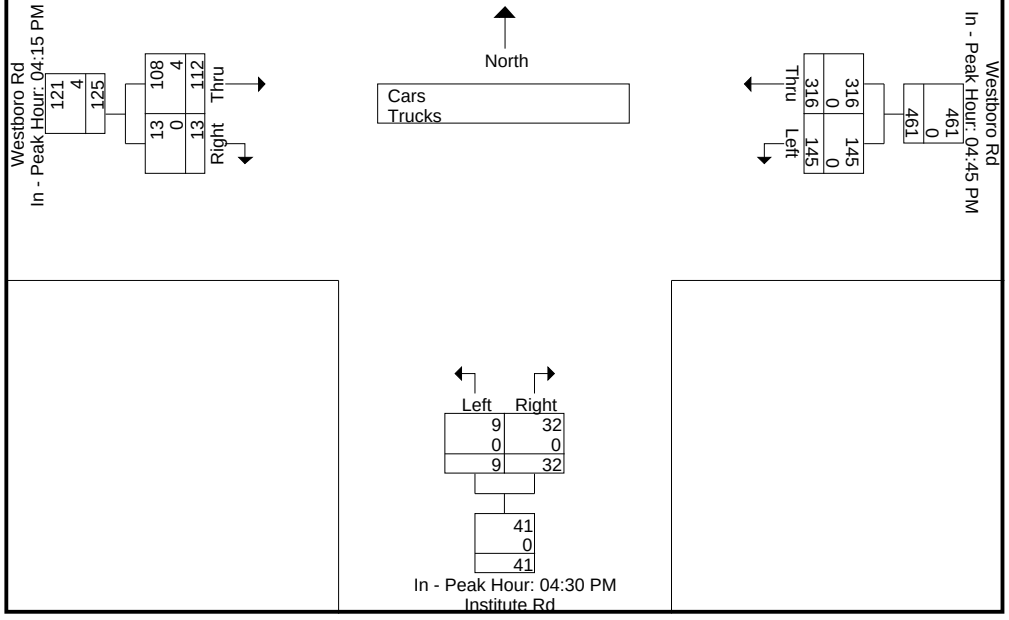
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:30 PM			04:15 PM		
+0 mins.	**45**	**87**	**132**	2	**11**	13	24	**4**	28
+15 mins.	34	62	96	0	4	4	29	2	31
+30 mins.	34	84	118	**5**	9	**14**	**33**	3	**36**
+45 mins.	32	83	115	2	8	10	26	4	30
Total Volume	145	316	461	9	32	41	112	13	125
% App. Total	31.5	68.5		22	78		89.6	10.4	
PHF	.806	.908	.873	.450	.727	.732	.848	.813	.868
Cars	145	316	461	9	32	41	108	13	121
% Cars	100	100	100	100	100	100	96.4	100	96.8
Trucks	0	0	0	0	0	0	4	0	4

Accurate Counts
978-664-2565

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 4

Groups Printed- Cars

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	22	62	3	5	19	1	112
04:15 PM	38	72	2	3	23	4	142
04:30 PM	34	76	2	11	28	2	153
04:45 PM	45	87	0	4	32	3	171
Total	139	297	7	23	102	10	578
05:00 PM	34	62	5	9	25	4	139
05:15 PM	34	84	2	8	20	5	153
05:30 PM	32	83	1	6	29	2	153
05:45 PM	20	58	0	5	34	1	118
Total	120	287	8	28	108	12	563
Grand Total	259	584	15	51	210	22	1141
Apprch %	30.7	69.3	22.7	77.3	90.5	9.5	
Total %	22.7	51.2	1.3	4.5	18.4	1.9	

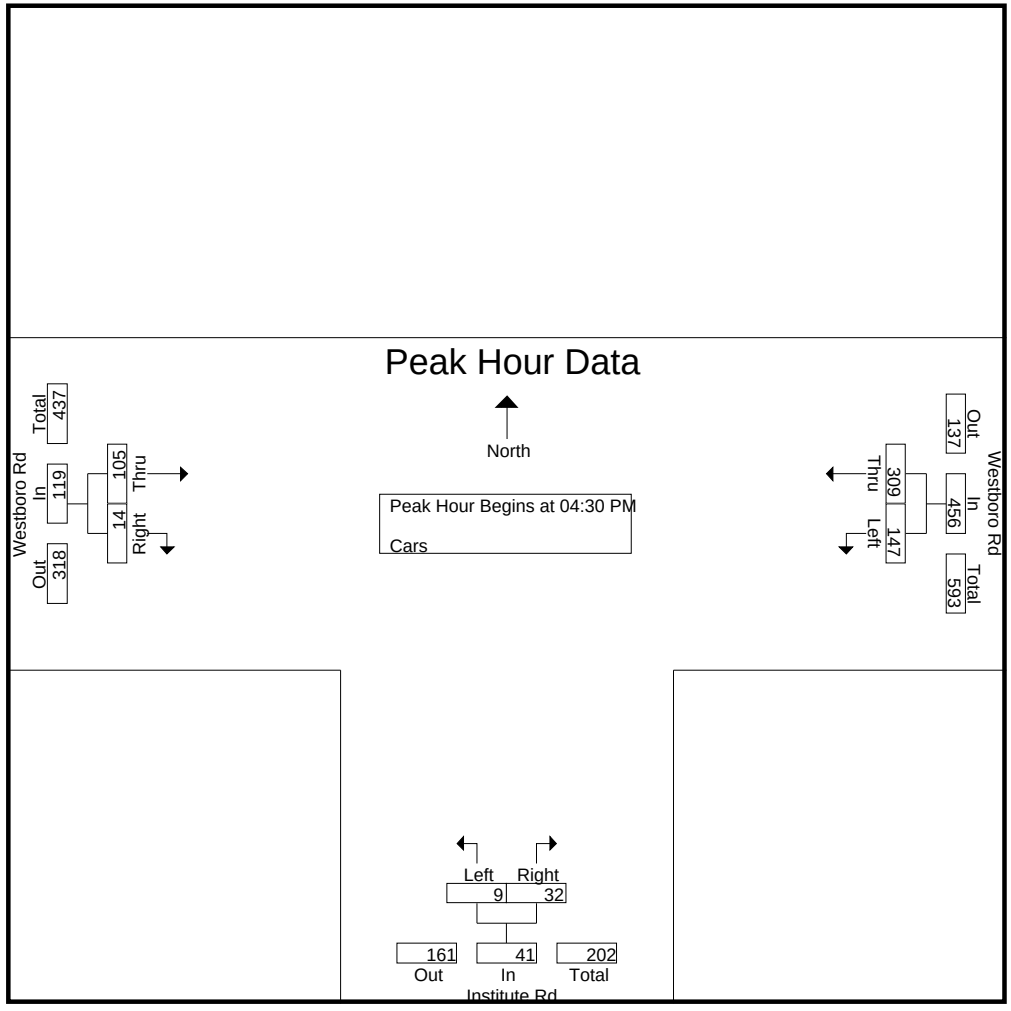
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	34	76	110	2	**11**	13	28	2	30	153
04:45 PM	**45**	**87**	**132**	0	4	4	**32**	3	**35**	**171**
05:00 PM	34	62	96	**5**	9	**14**	25	4	29	139
05:15 PM	34	84	118	2	8	10	20	**5**	25	153
Total Volume	147	309	456	9	32	41	105	14	119	616
% App. Total	32.2	67.8		22	78		88.2	11.8		
PHF	.817	.888	.864	.450	.727	.732	.820	.700	.850	.901

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 5



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

Peak Hour for Each Approach Begins at:

	04:45 PM			04:30 PM			04:15 PM		
+0 mins.	**45**	**87**	**132**	2	**11**	13	23	**4**	27
+15 mins.	34	62	96	0	4	4	28	2	30
+30 mins.	34	84	118	**5**	9	**14**	**32**	3	**35**
+45 mins.	32	83	115	2	8	10	25	4	29
Total Volume	145	316	461	9	32	41	108	13	121
% App. Total	31.5	68.5		22	78		89.3	10.7	
PHF	.806	.908	.873	.450	.727	.732	.844	.813	.864

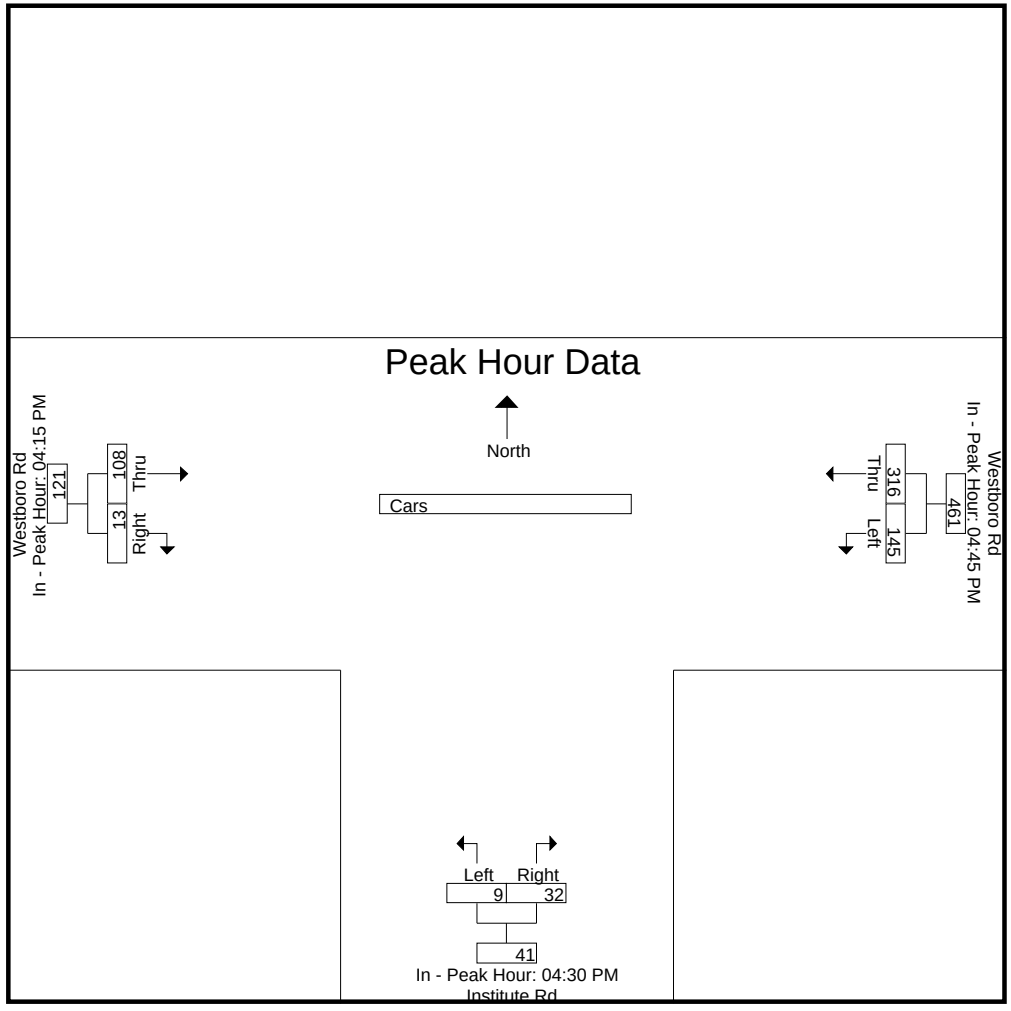
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 6

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 7

Groups Printed- Trucks

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	2	0	0	1	0	3
04:30 PM	0	1	0	0	1	0	2
04:45 PM	0	0	0	0	1	0	1
Total	0	3	0	0	3	0	6
05:00 PM	0	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1
Grand Total	0	3	0	0	4	0	7
Apprch %	0	100	0	0	100	0	
Total %	0	42.9	0	0	57.1	0	

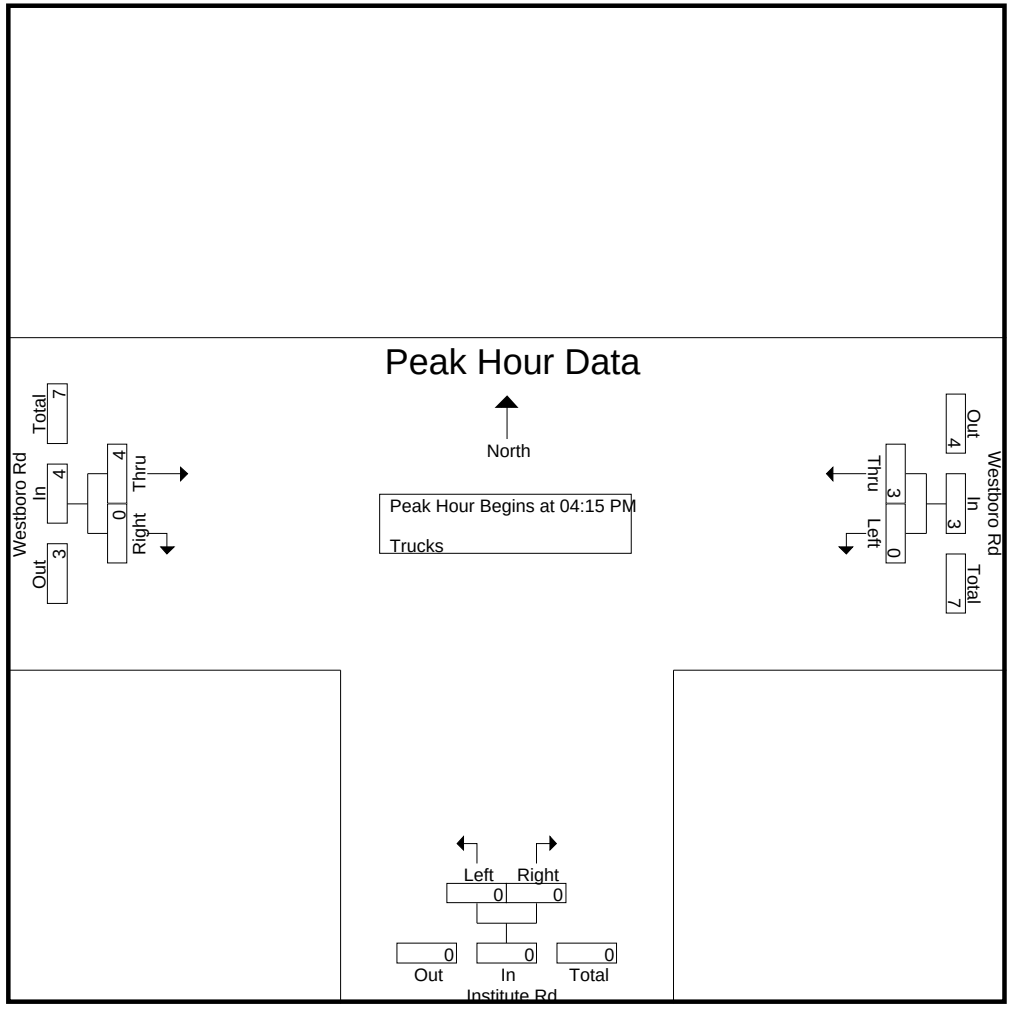
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	**2**	**2**	0	0	0	**1**	0	**1**	**3**
04:30 PM	0	1	1	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	3	3	0	0	0	4	0	4	7
% App. Total	0	100		0	0		100	0		
PHF	.000	.375	.375	.000	.000	.000	1.00	.000	1.00	.583

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 8



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

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:15 PM		
+0 mins.	0	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	**2**	**2**	0	0	0	1	0	1
+30 mins.	0	1	1	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	1	0	1
Total Volume	0	3	3	0	0	0	4	0	4
% App. Total	0	100		0	0		100	0	
PHF	.000	.375	.375	.000	.000	.000	1.000	.000	1.000

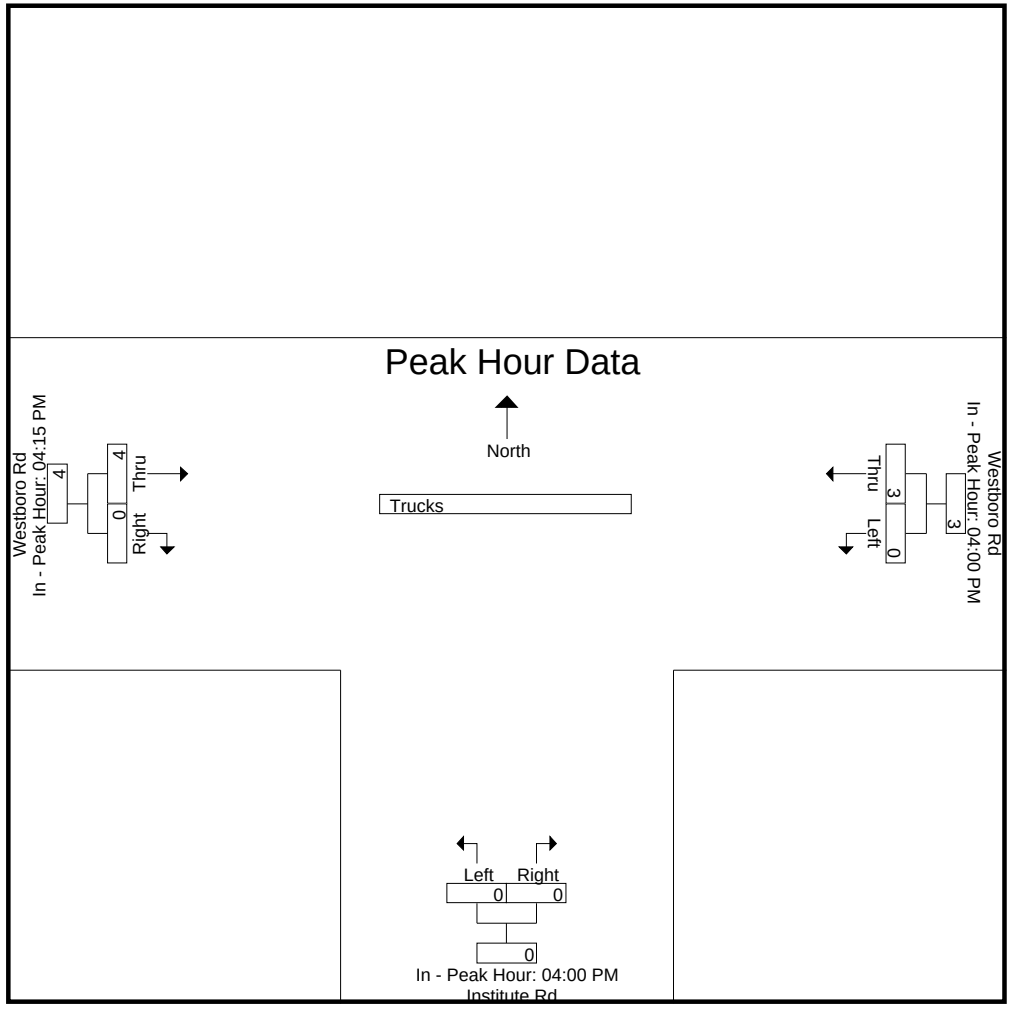
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 9

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 10

Groups Printed- Bikes Peds

	Westboro Rd From East			Institute Rd From South			Westboro Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	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
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0				
Total %										0	0	

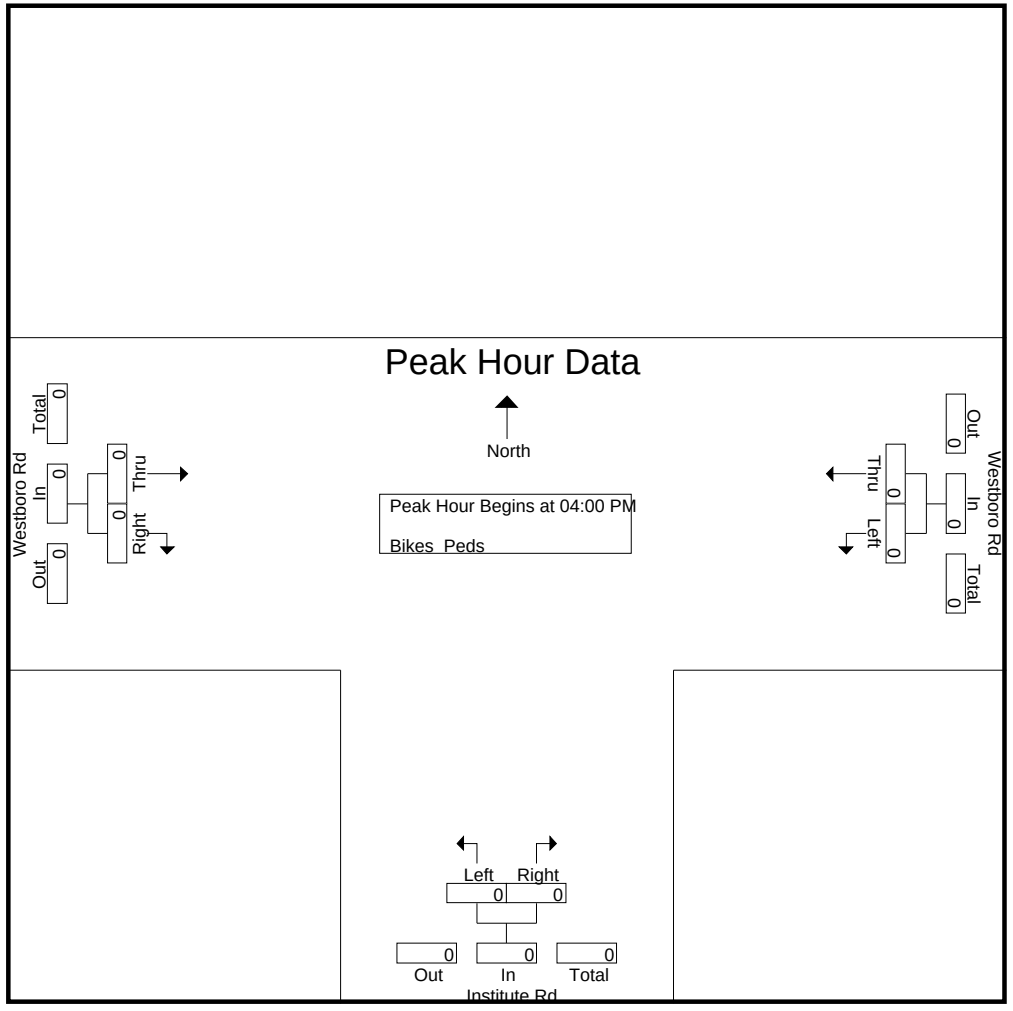
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM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

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 11



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

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

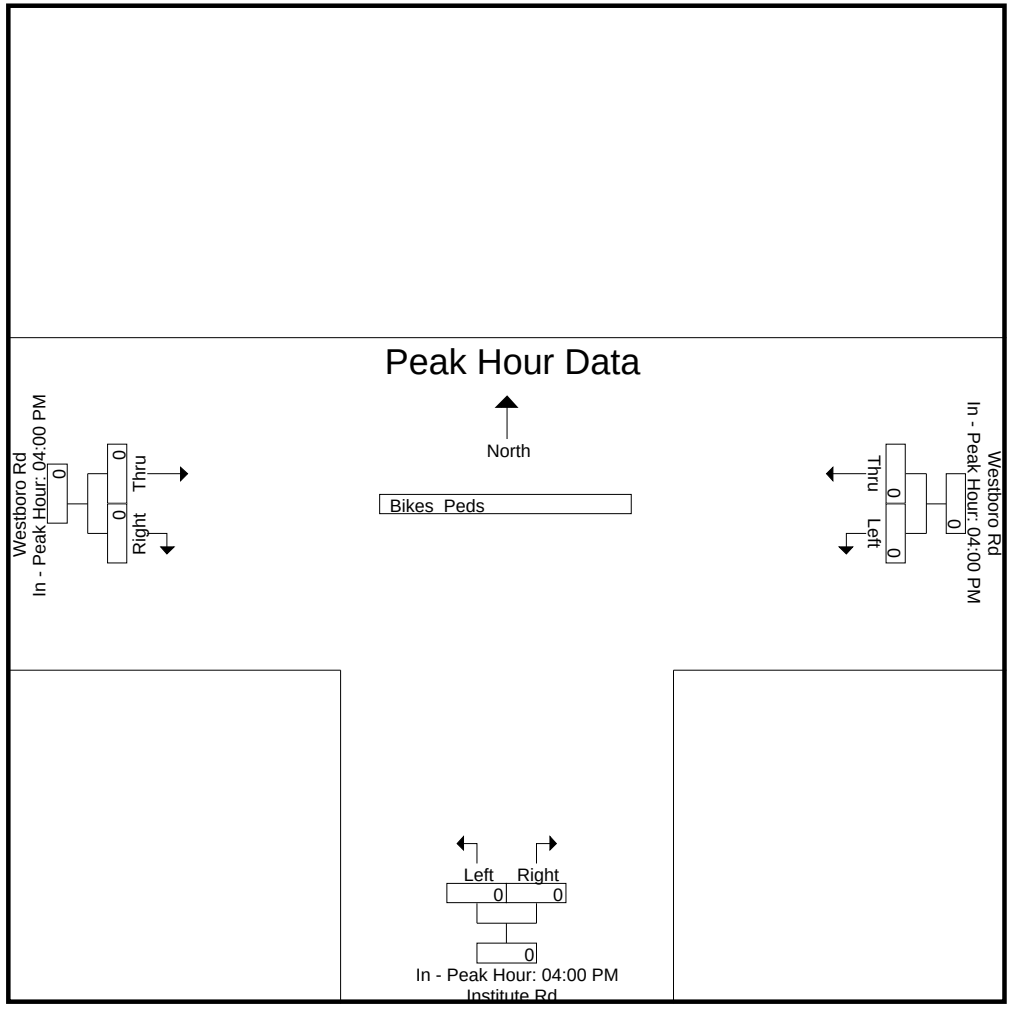
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Rain

File Name : 19000301
Site Code : 19000301
Start Date : 2/27/2020
Page No : 12

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 1

Groups Printed- Cars - Trucks

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	7	21	0	7	26	0	61
11:15 AM	8	29	0	7	27	1	72
11:30 AM	4	30	2	6	14	1	57
11:45 AM	10	28	1	8	37	0	84
Total	29	108	3	28	104	2	274
12:00 PM	5	46	1	8	24	0	84
12:15 PM	9	42	2	4	38	1	96
12:30 PM	9	42	2	4	35	1	93
12:45 PM	8	30	0	8	32	0	78
Total	31	160	5	24	129	2	351
01:00 PM	12	32	0	11	26	2	83
01:15 PM	5	19	1	10	26	1	62
01:30 PM	6	30	0	10	23	5	74
01:45 PM	7	33	0	7	28	0	75
Total	30	114	1	38	103	8	294
Grand Total	90	382	9	90	336	12	919
Apprch %	19.1	80.9	9.1	90.9	96.6	3.4	
Total %	9.8	41.6	1	9.8	36.6	1.3	
Cars	90	382	9	90	336	12	919
% Cars	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0

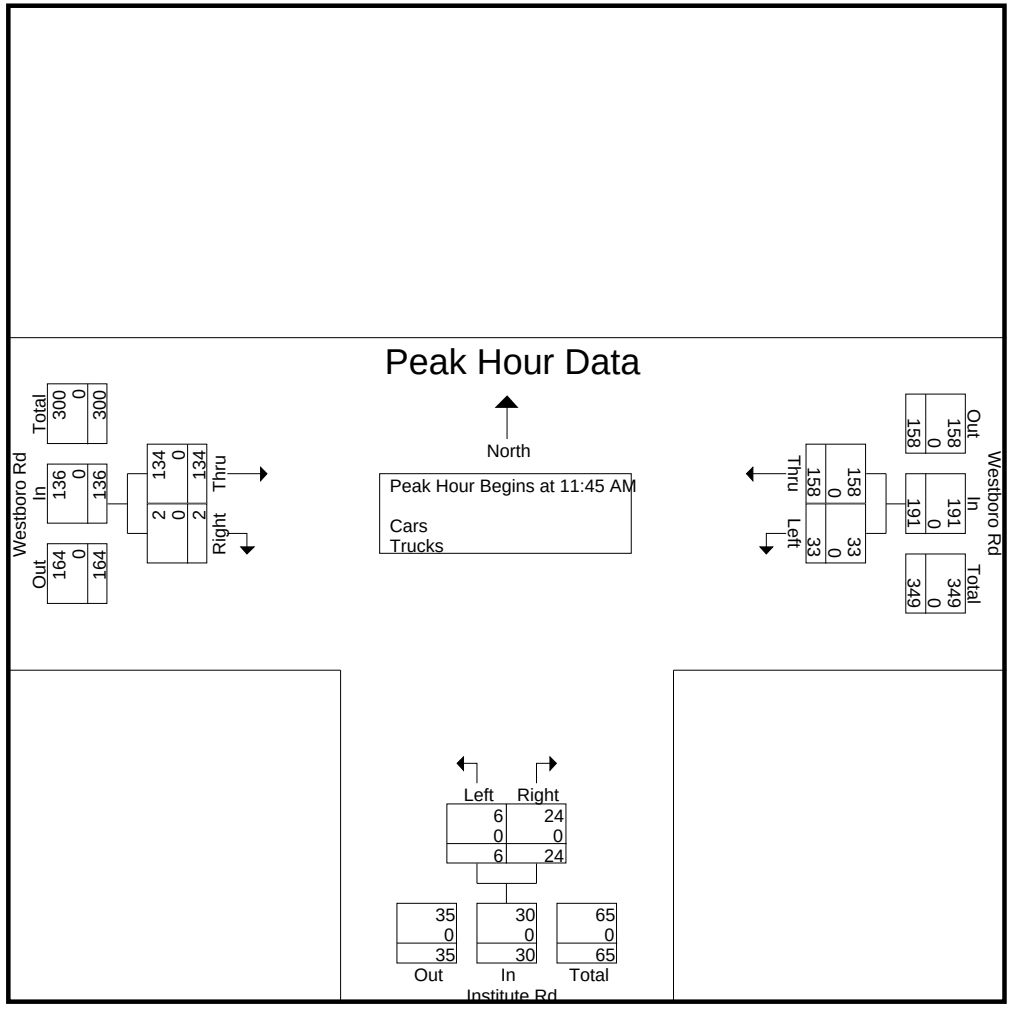
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:45 AM										
11:45 AM	**10**	28	38	1	**8**	**9**	37	0	37	84
12:00 PM	5	**46**	**51**	1	8	9	24	0	24	84
12:15 PM	9	42	51	**2**	4	6	**38**	**1**	**39**	**96**
12:30 PM	9	42	51	2	4	6	35	1	36	93
Total Volume	33	158	191	6	24	30	134	2	136	357
% App. Total	17.3	82.7		20	80		98.5	1.5		
PHF	.825	.859	.936	.750	.750	.833	.882	.500	.872	.930
Cars	33	158	191	6	24	30	134	2	136	357
% Cars	100	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 2



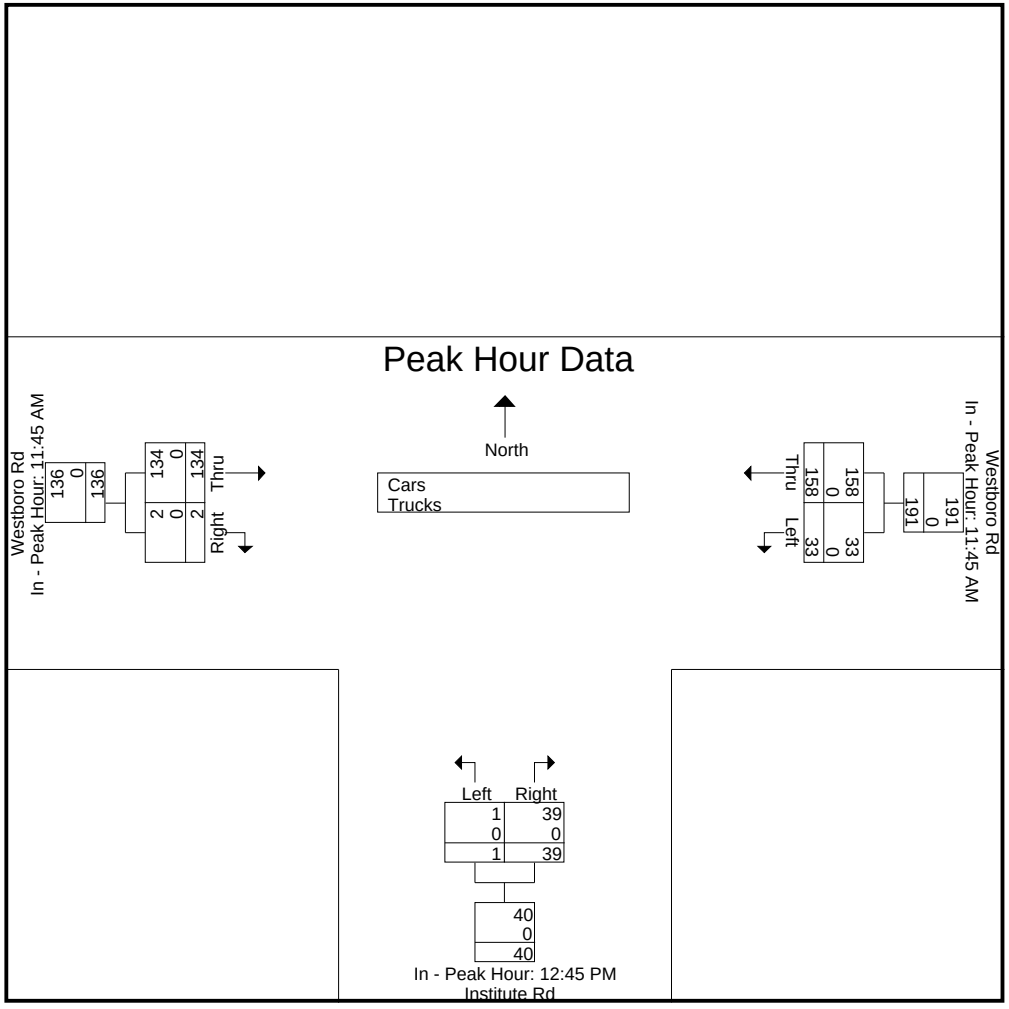
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:45 AM			12:45 PM			11:45 AM		
+0 mins.	**10**	28	38	0	8	8	37	0	37
+15 mins.	5	**46**	**51**	0	**11**	**11**	24	0	24
+30 mins.	9	42	51	**1**	10	11	**38**	**1**	**39**
+45 mins.	9	42	51	0	10	10	35	1	36
Total Volume	33	158	191	1	39	40	134	2	136
% App. Total	17.3	82.7		2.5	97.5		98.5	1.5	
PHF	.825	.859	.936	.250	.886	.909	.882	.500	.872
Cars	33	158	191	1	39	40	134	2	136
% Cars	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0

Accurate Counts
978-664-2565

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 4

Groups Printed- Cars

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	7	21	0	7	26	0	61
11:15 AM	8	29	0	7	27	1	72
11:30 AM	4	30	2	6	14	1	57
11:45 AM	10	28	1	8	37	0	84
Total	29	108	3	28	104	2	274
12:00 PM	5	46	1	8	24	0	84
12:15 PM	9	42	2	4	38	1	96
12:30 PM	9	42	2	4	35	1	93
12:45 PM	8	30	0	8	32	0	78
Total	31	160	5	24	129	2	351
01:00 PM	12	32	0	11	26	2	83
01:15 PM	5	19	1	10	26	1	62
01:30 PM	6	30	0	10	23	5	74
01:45 PM	7	33	0	7	28	0	75
Total	30	114	1	38	103	8	294
Grand Total	90	382	9	90	336	12	919
Apprch %	19.1	80.9	9.1	90.9	96.6	3.4	
Total %	9.8	41.6	1	9.8	36.6	1.3	

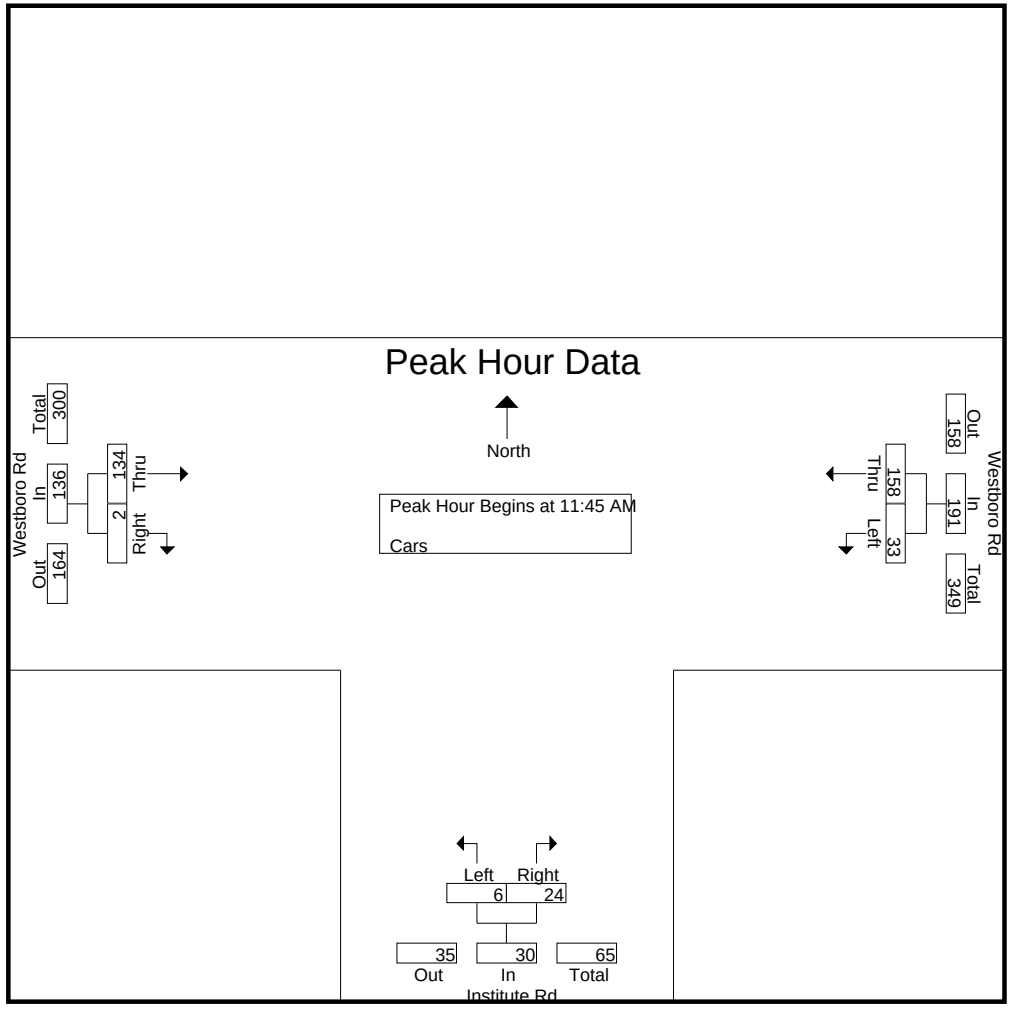
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:45 AM										
11:45 AM	**10**	28	38	1	**8**	**9**	37	0	37	84
12:00 PM	5	**46**	**51**	1	8	9	24	0	24	84
12:15 PM	9	42	51	**2**	4	6	**38**	**1**	**39**	**96**
12:30 PM	9	42	51	2	4	6	35	1	36	93
Total Volume	33	158	191	6	24	30	134	2	136	357
% App. Total	17.3	82.7		20	80		98.5	1.5		
PHF	.825	.859	.936	.750	.750	.833	.882	.500	.872	.930

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 5



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:45 AM			12:45 PM			11:45 AM		
+0 mins.	**10**	28	38	0	8	8	37	0	37
+15 mins.	5	**46**	**51**	0	**11**	**11**	24	0	24
+30 mins.	9	42	51	**1**	10	11	**38**	**1**	**39**
+45 mins.	9	42	51	0	10	10	35	1	36
Total Volume	33	158	191	1	39	40	134	2	136
% App. Total	17.3	82.7		2.5	97.5		98.5	1.5	
PHF	.825	.859	.936	.250	.886	.909	.882	.500	.872

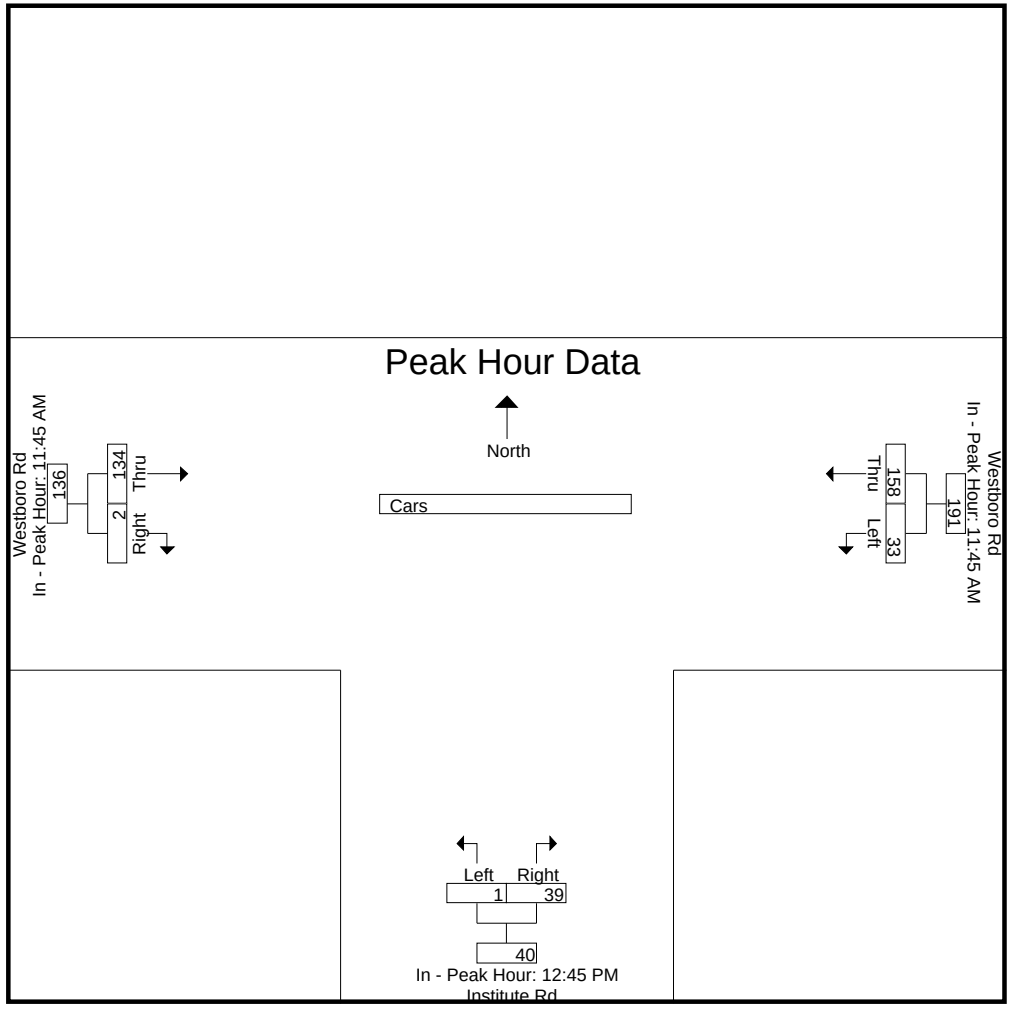
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 6

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 7

Groups Printed- Trucks

	Westboro Rd From East		Institute Rd From South		Westboro Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	
Total %							

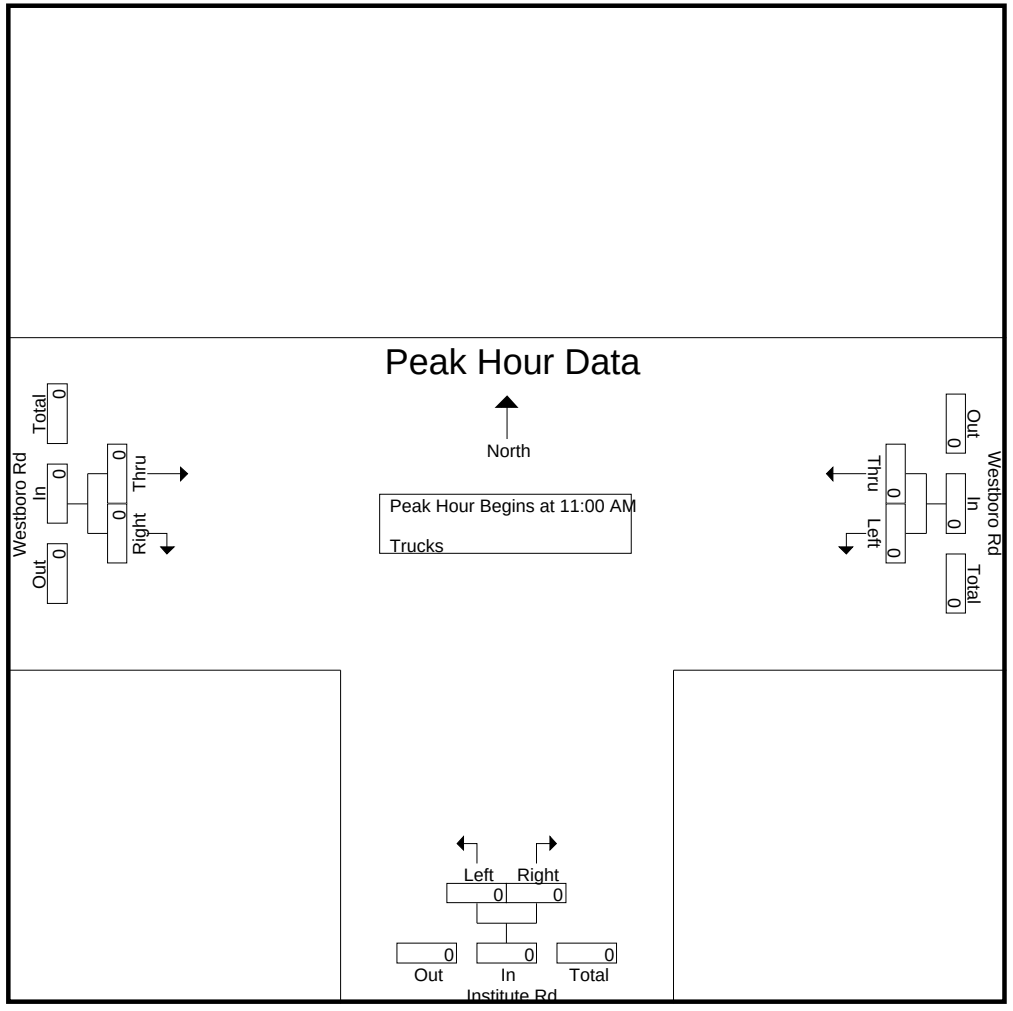
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 8



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

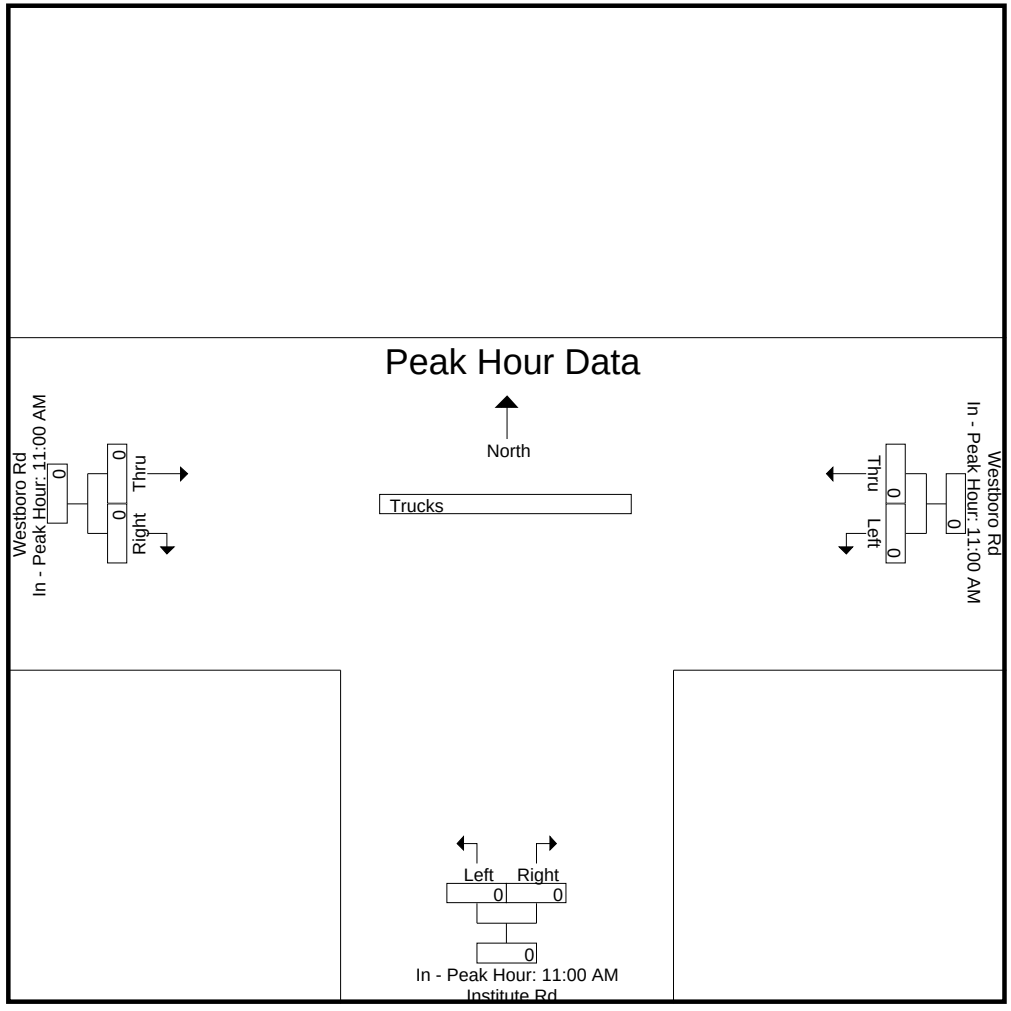
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 9

Peak Hour Data



Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 10

Groups Printed- Bikes Peds

	Westboro Rd From East			Institute Rd From South			Westboro Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0				
Total %										0	0	

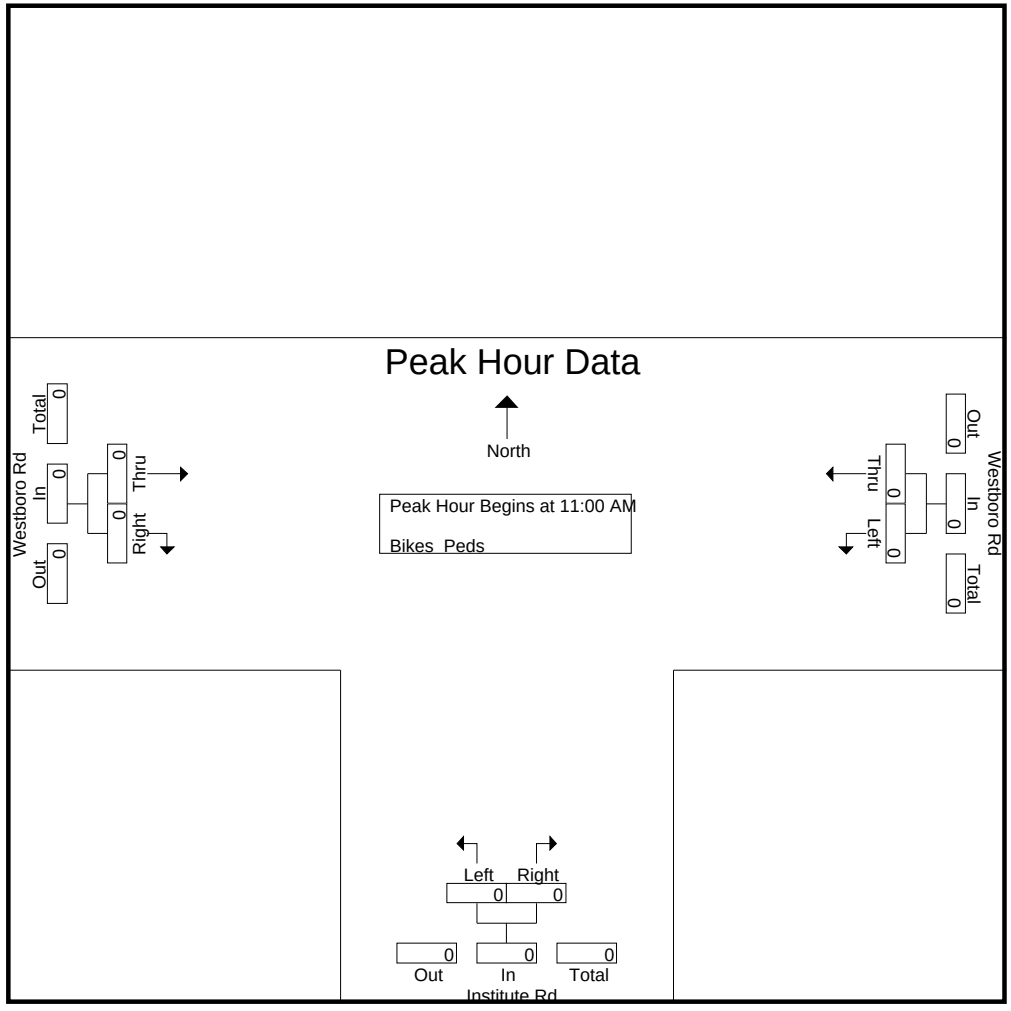
	Westboro Rd From East			Institute Rd From South			Westboro Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 11



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

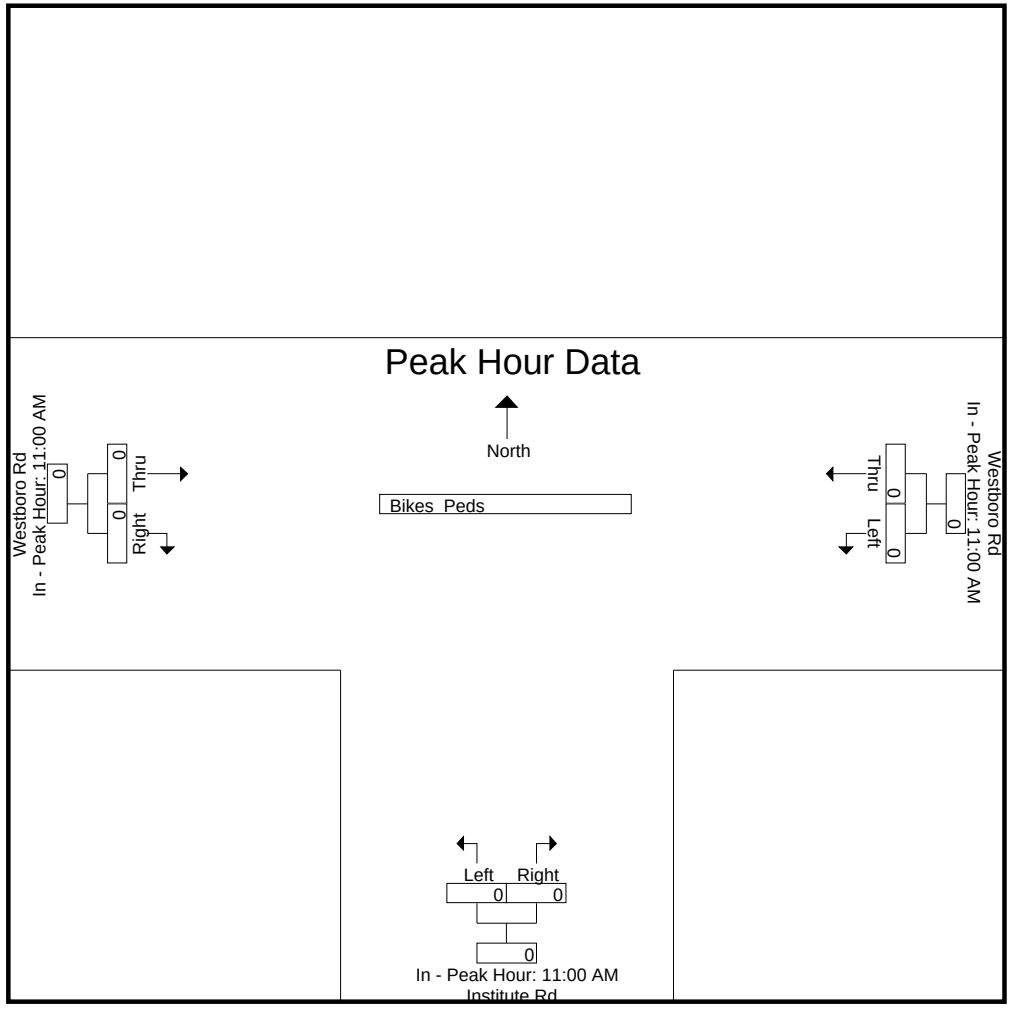
Accurate Counts

978-664-2565

N/S Street : Institute Road
E/W Street : Westboro Road
City/State : North Grafton, MA
Weather : Clear

File Name : 190003S1
Site Code : 19000301
Start Date : 2/29/2020
Page No : 12

Peak Hour Data



Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003VL

Start	2/27/2020	WB		Hour Totals		EB		Hour Totals		Combined Totals	
Time	Thu	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	45			1	24				
12:15		3	26			1	31				
12:30		1	28			3	37				
12:45		6	21	15	120	1	35	6	127	21	247
01:00		1	34			0	37				
01:15		2	28			3	28				
01:30		0	32			0	28				
01:45		0	35	3	129	0	30	3	123	6	252
02:00		2	35			2	31				
02:15		0	45			3	34				
02:30		2	37			1	33				
02:45		1	41	5	158	4	41	10	139	15	297
03:00		0	51			0	36				
03:15		0	85			2	37				
03:30		2	80			5	41				
03:45		0	79	2	295	2	30	9	144	11	439
04:00		0	78			3	25				
04:15		1	107			5	26				
04:30		2	118			4	38				
04:45		1	126	4	429	13	39	25	128	29	557
05:00		2	93			11	35				
05:15		3	118			32	29				
05:30		8	122			21	30				
05:45		6	79	19	412	49	42	113	136	132	548
06:00		9	64			29	28				
06:15		6	52			94	27				
06:30		18	95			74	36				
06:45		12	41	45	252	124	25	321	116	366	368
07:00		28	66			102	24				
07:15		22	26			88	24				
07:30		30	39			95	13				
07:45		33	13	113	144	91	12	376	73	489	217
08:00		27	31			92	12				
08:15		24	27			76	17				
08:30		25	17			61	7				
08:45		33	22	109	97	60	17	289	53	398	150
09:00		22	27			42	9				
09:15		11	10			36	6				
09:30		10	4			38	5				
09:45		14	10	57	51	38	10	154	30	211	81
10:00		21	12			25	2				
10:15		24	5			22	4				
10:30		25	5			24	6				
10:45		21	9	91	31	26	4	97	16	188	47
11:00		30	11			14	6				
11:15		29	4			29	8				
11:30		17	3			33	11				
11:45		36	7	112	25	30	1	106	26	218	51
Total		575	2143			1509	1111			2084	3254
Percent		21.2%	78.8%			57.6%	42.4%			39.0%	61.0%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003VL

Start	2/28/2020	WB		Hour Totals		EB		Hour Totals		Combined Totals	
Time	Fri	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	37			3	34				
12:15		1	43			3	24				
12:30		5	46			1	39				
12:45		3	47	13	173	2	45	9	142	22	315
01:00		3	30			1	37				
01:15		1	43			1	24				
01:30		0	39			2	35				
01:45		0	52	4	164	0	23	4	119	8	283
02:00		2	43			0	22				
02:15		0	46			5	37				
02:30		1	52			4	31				
02:45		2	70	5	211	5	38	14	128	19	339
03:00		3	60			2	32				
03:15		1	85			0	46				
03:30		1	72			2	40				
03:45		2	75	7	292	1	37	5	155	12	447
04:00		0	96			5	38				
04:15		1	100			4	40				
04:30		1	97			10	35				
04:45		0	101	2	394	8	40	27	153	29	547
05:00		0	113			9	33				
05:15		3	98			20	37				
05:30		7	80			24	38				
05:45		5	103	15	394	43	32	96	140	111	534
06:00		9	81			33	24				
06:15		8	73			71	24				
06:30		11	44			76	22				
06:45		14	63	42	261	92	15	272	85	314	346
07:00		19	32			93	21				
07:15		28	31			76	23				
07:30		28	24			84	16				
07:45		22	29	97	116	122	20	375	80	472	196
08:00		21	31			91	14				
08:15		32	23			68	7				
08:30		25	14			62	7				
08:45		33	12	111	80	67	8	288	36	399	116
09:00		13	21			58	15				
09:15		19	24			34	11				
09:30		13	14			22	12				
09:45		28	14	73	73	30	8	144	46	217	119
10:00		24	9			21	6				
10:15		30	11			33	3				
10:30		34	7			33	5				
10:45		28	11	116	38	25	5	112	19	228	57
11:00		24	13			32	5				
11:15		39	8			32	13				
11:30		36	2			26	16				
11:45		26	7	125	30	38	1	128	35	253	65
Total		610	2226			1474	1138			2084	3364
Percent		21.5%	78.5%			56.4%	43.6%			38.3%	61.7%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003VL

Start Time	2/29/2020 Sat	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		8	46			1	33				
12:15		4	51			1	40				
12:30		6	49			2	42				
12:45		4	40	22	186	3	41	7	156	29	342
01:00		3	40			1	31				
01:15		1	28			1	39				
01:30		0	33			4	39				
01:45		3	40	7	141	1	34	7	143	14	284
02:00		1	47			2	25				
02:15		1	37			1	29				
02:30		1	32			1	27				
02:45		2	29	5	145	3	28	7	109	12	254
03:00		2	47			0	25				
03:15		0	40			0	40				
03:30		0	38			0	33				
03:45		1	37	3	162	1	38	1	136	4	298
04:00		0	53			1	25				
04:15		2	44			0	23				
04:30		0	37			3	29				
04:45		1	31	3	165	2	41	6	118	9	283
05:00		0	28			3	21				
05:15		2	29			2	26				
05:30		1	38			3	26				
05:45		0	39	3	134	4	25	12	98	15	232
06:00		5	34			3	23				
06:15		6	26			11	17				
06:30		4	20			15	28				
06:45		2	22	17	102	25	24	54	92	71	194
07:00		5	16			17	17				
07:15		9	30			20	9				
07:30		10	13			19	12				
07:45		17	23	41	82	20	18	76	56	117	138
08:00		17	22			18	12				
08:15		20	18			26	11				
08:30		26	17			27	8				
08:45		18	17	81	74	46	8	117	39	198	113
09:00		22	14			22	12				
09:15		15	9			34	8				
09:30		28	9			32	8				
09:45		23	11	88	43	38	10	126	38	214	81
10:00		27	18			27	5				
10:15		31	6			37	6				
10:30		29	7			31	7				
10:45		41	9	128	40	31	6	126	24	254	64
11:00		27	7			24	3				
11:15		34	8			38	9				
11:30		31	7			22	4				
11:45		37	6	129	28	37	5	121	21	250	49
Total		527	1302			660	1030			1187	2332
Percent		28.8%	71.2%			39.1%	60.9%			33.7%	66.3%
Grand Total		1712	5671			3643	3279			5355	8950
Percent		23.2%	76.8%			52.6%	47.4%			37.4%	62.6%

ADT ADT 4,768 AADT 4,768

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003VL

Start	2/24/2020		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
12:00 AM	*	*	*	*	*	*	15	6	13	9	22	7	*	*	17	7
01:00	*	*	*	*	*	*	3	3	4	4	7	7	*	*	5	5
02:00	*	*	*	*	*	*	5	10	5	14	5	7	*	*	5	10
03:00	*	*	*	*	*	*	2	9	7	5	3	1	*	*	4	5
04:00	*	*	*	*	*	*	4	25	2	27	3	6	*	*	3	19
05:00	*	*	*	*	*	*	19	113	15	96	3	12	*	*	12	74
06:00	*	*	*	*	*	*	45	321	42	272	17	54	*	*	35	216
07:00	*	*	*	*	*	*	**113**	**376**	97	**375**	41	76	*	*	84	**276**
08:00	*	*	*	*	*	*	109	289	111	288	81	117	*	*	100	231
09:00	*	*	*	*	*	*	57	154	73	144	88	**126**	*	*	73	141
10:00	*	*	*	*	*	*	91	97	116	112	128	126	*	*	112	112
11:00	*	*	*	*	*	*	112	106	**125**	128	**129**	121	*	*	**122**	118
12:00 PM	*	*	*	*	*	*	120	127	173	142	**186**	**156**	*	*	160	142
01:00	*	*	*	*	*	*	129	123	164	119	141	143	*	*	145	128
02:00	*	*	*	*	*	*	158	139	211	128	145	109	*	*	171	125
03:00	*	*	*	*	*	*	295	**144**	292	**155**	162	136	*	*	250	**145**
04:00	*	*	*	*	*	*	**429**	128	**394**	153	165	118	*	*	**329**	133
05:00	*	*	*	*	*	*	412	136	394	140	134	98	*	*	313	125
06:00	*	*	*	*	*	*	252	116	261	85	102	92	*	*	205	98
07:00	*	*	*	*	*	*	144	73	116	80	82	56	*	*	114	70
08:00	*	*	*	*	*	*	97	53	80	36	74	39	*	*	84	43
09:00	*	*	*	*	*	*	51	30	73	46	43	38	*	*	56	38
10:00	*	*	*	*	*	*	31	16	38	19	40	24	*	*	36	20
11:00	*	*	*	*	*	*	25	26	30	35	28	21	*	*	28	27
Lane	0	0	0	0	0	0	2718	2620	2836	2612	1829	1690	0	0	2463	2308
Day	0		0		0		5338		5448		3519		0		4771	
AM Peak	-	-	-	-	-	-	07:00	07:00	11:00	07:00	11:00	09:00	-	-	11:00	07:00
Vol.	-	-	-	-	-	-	113	376	125	375	129	126	-	-	122	276
PM Peak	-	-	-	-	-	-	16:00	15:00	16:00	15:00	12:00	12:00	-	-	16:00	15:00
Vol.	-	-	-	-	-	-	429	144	394	155	186	156	-	-	329	145

Comb. Total	0	0	0	5338	5448	3519	0	4771

ADT	ADT 4,768	AADT 4,768

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

WB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/27/20	0	0	0	2	5	5	3	0	0	0	0	0	0	0	15
01:00	0	0	0	0	2	1	0	0	0	0	0	0	0	0	3
02:00	0	0	0	1	2	2	0	0	0	0	0	0	0	0	5
03:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
04:00	0	0	0	1	1	1	1	0	0	0	0	0	0	0	4
05:00	0	0	0	4	8	6	1	0	0	0	0	0	0	0	19
06:00	0	0	0	9	17	17	2	0	0	0	0	0	0	0	45
07:00	0	0	0	12	44	49	8	0	0	0	0	0	0	0	113
08:00	0	0	0	4	33	52	18	2	0	0	0	0	0	0	109
09:00	0	0	1	4	12	27	13	0	0	0	0	0	0	0	57
10:00	0	0	0	5	29	42	14	1	0	0	0	0	0	0	91
11:00	0	0	1	2	44	47	17	1	0	0	0	0	0	0	112
12 PM	0	0	0	6	34	65	15	0	0	0	0	0	0	0	120
13:00	0	0	2	3	37	57	25	5	0	0	0	0	0	0	129
14:00	0	0	0	15	56	66	19	2	0	0	0	0	0	0	158
15:00	0	0	3	6	98	147	38	2	1	0	0	0	0	0	295
16:00	0	0	0	12	169	204	40	4	0	0	0	0	0	0	429
17:00	0	0	0	16	144	211	38	2	1	0	0	0	0	0	412
18:00	0	0	1	12	113	107	17	2	0	0	0	0	0	0	252
19:00	0	0	0	15	59	57	13	0	0	0	0	0	0	0	144
20:00	0	0	0	8	37	38	11	3	0	0	0	0	0	0	97
21:00	0	0	1	3	17	21	7	2	0	0	0	0	0	0	51
22:00	0	1	0	0	15	9	5	1	0	0	0	0	0	0	31
23:00	0	0	0	3	11	10	1	0	0	0	0	0	0	0	25
Total	0	2	9	143	987	1242	306	27	2	0	0	0	0	0	2718

Daily

15th Percentile :	31 MPH
50th Percentile :	35 MPH
85th Percentile :	39 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	36 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	2229
Percent in Pace :	82.0%
Number of Vehicles > 35 MPH :	1577
Percent of Vehicles > 35 MPH :	58.0%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

WB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/28/20	0	0	0	1	5	3	2	1	1	0	0	0	0	0	13
01:00	0	0	0	0	1	2	1	0	0	0	0	0	0	0	4
02:00	0	0	0	1	2	1	0	0	0	1	0	0	0	0	5
03:00	0	0	0	1	3	2	1	0	0	0	0	0	0	0	7
04:00	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
05:00	0	0	1	2	7	4	1	0	0	0	0	0	0	0	15
06:00	0	0	0	2	12	26	2	0	0	0	0	0	0	0	42
07:00	0	0	2	7	20	50	17	1	0	0	0	0	0	0	97
08:00	0	0	0	13	24	54	19	1	0	0	0	0	0	0	111
09:00	0	0	1	2	24	38	7	1	0	0	0	0	0	0	73
10:00	0	1	1	9	32	54	18	1	0	0	0	0	0	0	116
11:00	0	0	1	10	30	58	24	2	0	0	0	0	0	0	125
12 PM	0	0	9	4	58	69	32	1	0	0	0	0	0	0	173
13:00	0	0	0	4	48	76	34	0	2	0	0	0	0	0	164
14:00	0	0	0	5	57	122	24	3	0	0	0	0	0	0	211
15:00	0	0	1	14	110	115	47	5	0	0	0	0	0	0	292
16:00	0	0	0	27	113	211	39	4	0	0	0	0	0	0	394
17:00	0	0	0	20	154	178	37	5	0	0	0	0	0	0	394
18:00	0	0	4	16	107	112	22	0	0	0	0	0	0	0	261
19:00	0	0	3	10	49	42	10	2	0	0	0	0	0	0	116
20:00	0	0	0	6	37	26	7	2	2	0	0	0	0	0	80
21:00	0	0	0	9	24	35	3	2	0	0	0	0	0	0	73
22:00	0	0	0	2	17	15	2	1	1	0	0	0	0	0	38
23:00	0	0	0	0	8	19	3	0	0	0	0	0	0	0	30
Total	0	1	23	165	942	1313	353	32	6	1	0	0	0	0	2836

Daily

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	39 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	36 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	2255
Percent in Pace :	79.5%
Number of Vehicles > 35 MPH :	1705
Percent of Vehicles > 35 MPH :	60.1%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

WB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/29/20	0	0	0	3	4	10	2	2	0	1	0	0	0	0	22
01:00	0	0	0	3	0	4	0	0	0	0	0	0	0	0	7
02:00	0	0	0	2	0	3	0	0	0	0	0	0	0	0	5
03:00	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
04:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3
05:00	0	0	0	0	0	1	2	0	0	0	0	0	0	0	3
06:00	0	0	0	1	5	7	3	1	0	0	0	0	0	0	17
07:00	0	0	0	0	6	22	10	2	1	0	0	0	0	0	41
08:00	0	0	0	3	8	46	23	1	0	0	0	0	0	0	81
09:00	0	0	0	2	28	40	17	1	0	0	0	0	0	0	88
10:00	0	0	0	1	35	73	18	1	0	0	0	0	0	0	128
11:00	0	0	0	6	33	81	8	1	0	0	0	0	0	0	129
12 PM	0	0	0	9	55	86	34	2	0	0	0	0	0	0	186
13:00	0	0	0	4	25	77	30	4	1	0	0	0	0	0	141
14:00	0	0	0	9	35	75	23	3	0	0	0	0	0	0	145
15:00	0	0	1	2	57	79	23	0	0	0	0	0	0	0	162
16:00	0	0	1	8	47	81	26	1	1	0	0	0	0	0	165
17:00	0	0	2	10	44	64	13	1	0	0	0	0	0	0	134
18:00	0	0	0	2	43	49	8	0	0	0	0	0	0	0	102
19:00	0	0	2	9	26	33	10	1	1	0	0	0	0	0	82
20:00	0	0	0	3	27	33	9	2	0	0	0	0	0	0	74
21:00	0	0	1	4	15	18	5	0	0	0	0	0	0	0	43
22:00	0	0	1	1	16	14	8	0	0	0	0	0	0	0	40
23:00	0	0	1	2	7	11	6	1	0	0	0	0	0	0	28
Total	0	0	9	84	518	910	279	24	4	1	0	0	0	0	1829

Daily

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	40 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	37 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	1428
Percent in Pace :	78.1%
Number of Vehicles > 35 MPH :	1218
Percent of Vehicles > 35 MPH :	66.6%

Grand Total	0	3	41	392	2447	3465	938	83	12	2	0	0	0	0	7383

Overall

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	39 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	36 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	5912
Percent in Pace :	80.1%
Number of Vehicles > 35 MPH :	4500
Percent of Vehicles > 35 MPH :	61.0%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/27/20	0	0	1	2	1	2	0	0	0	0	0	0	0	0	6
01:00	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3
02:00	0	0	0	1	4	4	1	0	0	0	0	0	0	0	10
03:00	0	0	0	3	3	3	0	0	0	0	0	0	0	0	9
04:00	0	0	1	4	7	8	5	0	0	0	0	0	0	0	25
05:00	0	0	4	9	56	39	5	0	0	0	0	0	0	0	113
06:00	0	0	0	18	153	133	15	2	0	0	0	0	0	0	321
07:00	0	0	4	25	107	185	54	1	0	0	0	0	0	0	376
08:00	0	0	0	11	68	160	44	6	0	0	0	0	0	0	289
09:00	0	0	1	8	38	73	26	6	2	0	0	0	0	0	154
10:00	0	0	2	8	33	39	15	0	0	0	0	0	0	0	97
11:00	0	0	1	5	28	51	21	0	0	0	0	0	0	0	106
12 PM	0	0	0	7	35	56	28	0	1	0	0	0	0	0	127
13:00	0	0	0	5	26	70	20	2	0	0	0	0	0	0	123
14:00	0	0	0	4	29	82	20	4	0	0	0	0	0	0	139
15:00	0	0	2	4	36	63	36	3	0	0	0	0	0	0	144
16:00	0	0	0	7	32	60	25	4	0	0	0	0	0	0	128
17:00	0	0	0	5	40	68	22	1	0	0	0	0	0	0	136
18:00	0	0	0	9	35	60	12	0	0	0	0	0	0	0	116
19:00	0	0	1	7	27	29	7	1	0	0	1	0	0	0	73
20:00	0	0	0	7	15	26	3	2	0	0	0	0	0	0	53
21:00	0	0	0	0	11	13	5	1	0	0	0	0	0	0	30
22:00	0	0	0	0	7	6	2	0	1	0	0	0	0	0	16
23:00	0	0	0	1	5	13	5	2	0	0	0	0	0	0	26
Total	0	0	17	151	797	1244	371	35	4	0	1	0	0	0	2620

Daily

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	40 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	37 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	2041
Percent in Pace :	77.9%
Number of Vehicles > 35 MPH :	1655
Percent of Vehicles > 35 MPH :	63.2%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/28/20	0	0	0	0	3	5	1	0	0	0	0	0	0	0	9
01:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	4
02:00	0	0	0	0	3	8	3	0	0	0	0	0	0	0	14
03:00	0	0	0	0	1	3	1	0	0	0	0	0	0	0	5
04:00	0	0	0	2	9	10	4	2	0	0	0	0	0	0	27
05:00	0	0	0	5	32	46	11	1	1	0	0	0	0	0	96
06:00	0	0	0	6	63	153	46	4	0	0	0	0	0	0	272
07:00	0	0	1	6	79	197	85	7	0	0	0	0	0	0	375
08:00	0	0	0	6	59	145	70	8	0	0	0	0	0	0	288
09:00	0	0	3	13	35	67	22	3	1	0	0	0	0	0	144
10:00	0	2	1	5	33	50	19	2	0	0	0	0	0	0	112
11:00	0	0	0	8	27	65	26	2	0	0	0	0	0	0	128
12 PM	0	0	2	2	34	77	26	1	0	0	0	0	0	0	142
13:00	0	0	0	4	19	69	24	3	0	0	0	0	0	0	119
14:00	0	0	0	0	35	66	25	2	0	0	0	0	0	0	128
15:00	0	0	0	4	41	70	38	2	0	0	0	0	0	0	155
16:00	0	0	0	3	23	85	38	4	0	0	0	0	0	0	153
17:00	0	0	0	5	36	66	32	1	0	0	0	0	0	0	140
18:00	0	0	0	7	29	39	9	1	0	0	0	0	0	0	85
19:00	0	0	0	5	34	30	11	0	0	0	0	0	0	0	80
20:00	0	0	0	2	12	15	7	0	0	0	0	0	0	0	36
21:00	0	0	1	0	10	23	10	2	0	0	0	0	0	0	46
22:00	0	0	0	2	4	11	2	0	0	0	0	0	0	0	19
23:00	0	0	0	6	4	14	8	2	1	0	0	0	0	0	35
Total	0	2	8	92	626	1316	518	47	3	0	0	0	0	0	2612

Daily

15th Percentile :	32 MPH
50th Percentile :	37 MPH
85th Percentile :	41 MPH
95th Percentile :	44 MPH
Mean Speed(Average) :	38 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	1942
Percent in Pace :	74.3%
Number of Vehicles > 35 MPH :	1884
Percent of Vehicles > 35 MPH :	72.1%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/29/20	0	0	0	0	1	4	2	0	0	0	0	0	0	0	7
01:00	0	0	0	1	4	2	0	0	0	0	0	0	0	0	7
02:00	0	0	0	0	1	4	2	0	0	0	0	0	0	0	7
03:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	3	2	1	0	0	0	0	0	0	0	6
05:00	0	0	0	1	3	7	1	0	0	0	0	0	0	0	12
06:00	0	0	0	0	11	24	13	6	0	0	0	0	0	0	54
07:00	1	0	0	2	7	33	30	3	0	0	0	0	0	0	76
08:00	0	0	0	0	15	60	38	4	0	0	0	0	0	0	117
09:00	0	0	0	2	30	59	33	2	0	0	0	0	0	0	126
10:00	0	0	0	0	26	73	25	2	0	0	0	0	0	0	126
11:00	0	0	0	2	17	77	23	2	0	0	0	0	0	0	121
12 PM	0	0	0	4	21	94	34	2	1	0	0	0	0	0	156
13:00	0	0	0	8	34	71	23	7	0	0	0	0	0	0	143
14:00	0	0	0	2	17	57	30	2	1	0	0	0	0	0	109
15:00	0	0	0	0	33	65	32	6	0	0	0	0	0	0	136
16:00	0	0	0	4	20	68	21	5	0	0	0	0	0	0	118
17:00	0	0	0	3	24	52	18	0	1	0	0	0	0	0	98
18:00	0	0	1	6	25	47	12	1	0	0	0	0	0	0	92
19:00	0	0	1	3	16	26	9	1	0	0	0	0	0	0	56
20:00	0	0	0	2	15	17	4	1	0	0	0	0	0	0	39
21:00	0	0	0	1	17	16	3	1	0	0	0	0	0	0	38
22:00	0	0	0	1	10	10	2	1	0	0	0	0	0	0	24
23:00	0	1	0	1	5	10	2	2	0	0	0	0	0	0	21
Total	1	1	2	43	355	879	358	48	3	0	0	0	0	0	1690

Daily

15th Percentile :	32 MPH
50th Percentile :	37 MPH
85th Percentile :	42 MPH
95th Percentile :	44 MPH
Mean Speed(Average) :	38 MPH
10 MPH Pace Speed :	36-45 MPH
Number in Pace :	1237
Percent in Pace :	73.2%
Number of Vehicles > 35 MPH :	1288
Percent of Vehicles > 35 MPH :	76.2%

Grand Total	1	3	27	286	1778	3439	1247	130	10	0	1	0	0	0	6922

Overall

15th Percentile :	32 MPH
50th Percentile :	36 MPH
85th Percentile :	41 MPH
95th Percentile :	44 MPH
Mean Speed(Average) :	37 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	5217
Percent in Pace :	75.4%
Number of Vehicles > 35 MPH :	4827
Percent of Vehicles > 35 MPH :	69.7%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

WB, EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/27/20	0	0	1	4	6	7	3	0	0	0	0	0	0	0	21
01:00	0	0	0	1	3	2	0	0	0	0	0	0	0	0	6
02:00	0	0	0	2	6	6	1	0	0	0	0	0	0	0	15
03:00	0	1	0	3	3	4	0	0	0	0	0	0	0	0	11
04:00	0	0	1	5	8	9	6	0	0	0	0	0	0	0	29
05:00	0	0	4	13	64	45	6	0	0	0	0	0	0	0	132
06:00	0	0	0	27	170	150	17	2	0	0	0	0	0	0	366
07:00	0	0	4	37	151	234	62	1	0	0	0	0	0	0	489
08:00	0	0	0	15	101	212	62	8	0	0	0	0	0	0	398
09:00	0	0	2	12	50	100	39	6	2	0	0	0	0	0	211
10:00	0	0	2	13	62	81	29	1	0	0	0	0	0	0	188
11:00	0	0	2	7	72	98	38	1	0	0	0	0	0	0	218
12 PM	0	0	0	13	69	121	43	0	1	0	0	0	0	0	247
13:00	0	0	2	8	63	127	45	7	0	0	0	0	0	0	252
14:00	0	0	0	19	85	148	39	6	0	0	0	0	0	0	297
15:00	0	0	5	10	134	210	74	5	1	0	0	0	0	0	439
16:00	0	0	0	19	201	264	65	8	0	0	0	0	0	0	557
17:00	0	0	0	21	184	279	60	3	1	0	0	0	0	0	548
18:00	0	0	1	21	148	167	29	2	0	0	0	0	0	0	368
19:00	0	0	1	22	86	86	20	1	0	0	1	0	0	0	217
20:00	0	0	0	15	52	64	14	5	0	0	0	0	0	0	150
21:00	0	0	1	3	28	34	12	3	0	0	0	0	0	0	81
22:00	0	1	0	0	22	15	7	1	1	0	0	0	0	0	47
23:00	0	0	0	4	16	23	6	2	0	0	0	0	0	0	51
Total	0	2	26	294	1784	2486	677	62	6	0	1	0	0	0	5338

Daily

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	39 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	36 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	4270
Percent in Pace :	80.0%
Number of Vehicles > 35 MPH :	3232
Percent of Vehicles > 35 MPH :	60.5%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

WB, EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/28/20	0	0	0	1	8	8	3	1	1	0	0	0	0	0	22
01:00	0	0	0	1	2	4	1	0	0	0	0	0	0	0	8
02:00	0	0	0	1	5	9	3	0	0	1	0	0	0	0	19
03:00	0	0	0	1	4	5	2	0	0	0	0	0	0	0	12
04:00	0	0	0	2	9	11	5	2	0	0	0	0	0	0	29
05:00	0	0	1	7	39	50	12	1	1	0	0	0	0	0	111
06:00	0	0	0	8	75	179	48	4	0	0	0	0	0	0	314
07:00	0	0	3	13	99	247	102	8	0	0	0	0	0	0	472
08:00	0	0	0	19	83	199	89	9	0	0	0	0	0	0	399
09:00	0	0	4	15	59	105	29	4	1	0	0	0	0	0	217
10:00	0	3	2	14	65	104	37	3	0	0	0	0	0	0	228
11:00	0	0	1	18	57	123	50	4	0	0	0	0	0	0	253
12 PM	0	0	11	6	92	146	58	2	0	0	0	0	0	0	315
13:00	0	0	0	8	67	145	58	3	2	0	0	0	0	0	283
14:00	0	0	0	5	92	188	49	5	0	0	0	0	0	0	339
15:00	0	0	1	18	151	185	85	7	0	0	0	0	0	0	447
16:00	0	0	0	30	136	296	77	8	0	0	0	0	0	0	547
17:00	0	0	0	25	190	244	69	6	0	0	0	0	0	0	534
18:00	0	0	4	23	136	151	31	1	0	0	0	0	0	0	346
19:00	0	0	3	15	83	72	21	2	0	0	0	0	0	0	196
20:00	0	0	0	8	49	41	14	2	2	0	0	0	0	0	116
21:00	0	0	1	9	34	58	13	4	0	0	0	0	0	0	119
22:00	0	0	0	4	21	26	4	1	1	0	0	0	0	0	57
23:00	0	0	0	6	12	33	11	2	1	0	0	0	0	0	65
Total	0	3	31	257	1568	2629	871	79	9	1	0	0	0	0	5448

Daily

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	40 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	37 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	4197
Percent in Pace :	77.0%
Number of Vehicles > 35 MPH :	3589
Percent of Vehicles > 35 MPH :	65.9%

Accurate Counts
978-664-2565

Location : Westboro Road
Location : East of # 135
City/State: North Grafton, MA

190003SP

WB, EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
02/29/20	0	0	0	3	5	14	4	2	0	1	0	0	0	0	29
01:00	0	0	0	4	4	6	0	0	0	0	0	0	0	0	14
02:00	0	0	0	2	1	7	2	0	0	0	0	0	0	0	12
03:00	0	0	0	0	1	2	1	0	0	0	0	0	0	0	4
04:00	0	0	0	0	4	4	1	0	0	0	0	0	0	0	9
05:00	0	0	0	1	3	8	3	0	0	0	0	0	0	0	15
06:00	0	0	0	1	16	31	16	7	0	0	0	0	0	0	71
07:00	1	0	0	2	13	55	40	5	1	0	0	0	0	0	117
08:00	0	0	0	3	23	106	61	5	0	0	0	0	0	0	198
09:00	0	0	0	4	58	99	50	3	0	0	0	0	0	0	214
10:00	0	0	0	1	61	146	43	3	0	0	0	0	0	0	254
11:00	0	0	0	8	50	158	31	3	0	0	0	0	0	0	250
12 PM	0	0	0	13	76	180	68	4	1	0	0	0	0	0	342
13:00	0	0	0	12	59	148	53	11	1	0	0	0	0	0	284
14:00	0	0	0	11	52	132	53	5	1	0	0	0	0	0	254
15:00	0	0	1	2	90	144	55	6	0	0	0	0	0	0	298
16:00	0	0	1	12	67	149	47	6	1	0	0	0	0	0	283
17:00	0	0	2	13	68	116	31	1	1	0	0	0	0	0	232
18:00	0	0	1	8	68	96	20	1	0	0	0	0	0	0	194
19:00	0	0	3	12	42	59	19	2	1	0	0	0	0	0	138
20:00	0	0	0	5	42	50	13	3	0	0	0	0	0	0	113
21:00	0	0	1	5	32	34	8	1	0	0	0	0	0	0	81
22:00	0	0	1	2	26	24	10	1	0	0	0	0	0	0	64
23:00	0	1	1	3	12	21	8	3	0	0	0	0	0	0	49
Total	1	1	11	127	873	1789	637	72	7	1	0	0	0	0	3519

Daily

15th Percentile :	32 MPH
50th Percentile :	37 MPH
85th Percentile :	41 MPH
95th Percentile :	44 MPH
Mean Speed(Average) :	37 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	2662
Percent in Pace :	75.6%
Number of Vehicles > 35 MPH :	2506
Percent of Vehicles > 35 MPH :	71.2%

Grand Total	1	6	68	678	4225	6904	2185	213	22	2	1	0	0	0	14305

Overall

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	40 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	37 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	11129
Percent in Pace :	77.8%
Number of Vehicles > 35 MPH :	9327
Percent of Vehicles > 35 MPH :	65.2%

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	285	15	23	112	11	134
Future Volume (vph)	285	15	23	112	11	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.875	
Flt Protected				0.992	0.996	
Satd. Flow (prot)	1850	0	0	1848	1623	0
Flt Permitted				0.992	0.996	
Satd. Flow (perm)	1850	0	0	1848	1623	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	410			512	303	
Travel Time (s)	9.3			11.6	6.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	303	16	24	119	12	143
Shared Lane Traffic (%)						
Lane Group Flow (vph)	319	0	0	143	155	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 41.1%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	285	15	23	112	11	134
Future Vol, veh/h	285	15	23	112	11	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	303	16	24	119	12	143

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	319	0	478	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	167	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1241	-	546	729
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1241	-	535	729
Mov Cap-2 Maneuver	-	-	-	-	535	-
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	845	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	709	-	-	1241	-
HCM Lane V/C Ratio	0.218	-	-	0.02	-
HCM Control Delay (s)	11.5	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	413	133	2	1	2
Future Volume (vph)	6	413	133	2	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.910	
Flt Protected		0.999			0.984	
Satd. Flow (prot)	0	1861	1859	0	1668	0
Flt Permitted		0.999			0.984	
Satd. Flow (perm)	0	1861	1859	0	1668	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		512	246		187	
Travel Time (s)		11.6	5.6		4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	449	145	2	1	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	456	147	0	3	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 36.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	413	133	2	1	2
Future Vol, veh/h	6	413	133	2	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	449	145	2	1	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	147	0	-	0	609	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1435	-	-	-	458	901
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1435	-	-	-	455	901
Mov Cap-2 Maneuver	-	-	-	-	455	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	634	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1435	-	-	-	679
HCM Lane V/C Ratio	0.005	-	-	-	0.005
HCM Control Delay (s)	7.5	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	295	15	26	120	11	137
Future Volume (vph)	295	15	26	120	11	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.875	
Flt Protected				0.991	0.996	
Satd. Flow (prot)	1850	0	0	1846	1623	0
Flt Permitted				0.991	0.996	
Satd. Flow (perm)	1850	0	0	1846	1623	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	410			590	303	
Travel Time (s)	9.3			13.4	6.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	314	16	28	128	12	146
Shared Lane Traffic (%)						
Lane Group Flow (vph)	330	0	0	156	158	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	295	15	26	120	11	137
Future Vol, veh/h	295	15	26	120	11	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	314	16	28	128	12	146

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	330	0	506	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1229	-	526	719
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1229	-	513	719
Mov Cap-2 Maneuver	-	-	-	-	513	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	827	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	698	-	-	1229	-
HCM Lane V/C Ratio	0.226	-	-	0.023	-
HCM Control Delay (s)	11.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	413	133	8	5	13
Future Volume (vph)	19	413	133	8	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.901	
Flt Protected		0.998			0.987	
Satd. Flow (prot)	0	1859	1848	0	1657	0
Flt Permitted		0.998			0.987	
Satd. Flow (perm)	0	1859	1848	0	1657	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		590	233		198	
Travel Time (s)		13.4	5.3		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	449	145	9	5	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	470	154	0	19	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 43.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	413	133	8	5	13
Future Vol, veh/h	19	413	133	8	5	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	449	145	9	5	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	154	0	-	0	641	150
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	491	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1426	-	-	-	439	896
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1426	-	-	-	430	896
Mov Cap-2 Maneuver	-	-	-	-	430	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1426	-	-	-	689
HCM Lane V/C Ratio	0.014	-	-	-	0.028
HCM Control Delay (s)	7.6	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	124	16	169	356	10	37
Future Volume (vph)	124	16	169	356	10	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.894	
Flt Protected				0.984	0.990	
Satd. Flow (prot)	1833	0	0	1833	1649	0
Flt Permitted				0.984	0.990	
Satd. Flow (perm)	1833	0	0	1833	1649	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	410			542	303	
Travel Time (s)	9.3			12.3	6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	138	18	188	396	11	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	156	0	0	584	52	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	124	16	169	356	10	37
Future Vol, veh/h	124	16	169	356	10	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	18	188	396	11	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	156	0	919	147
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	772	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1424	-	301	900
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	456	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	250	900
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	379	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	579	-	-	1424	-
HCM Lane V/C Ratio	0.09	-	-	0.132	-
HCM Control Delay (s)	11.8	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.5	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	139	505	10	8	20
Future Volume (vph)	22	139	505	10	8	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.997		0.904	
Flt Protected		0.993			0.986	
Satd. Flow (prot)	0	1850	1857	0	1660	0
Flt Permitted		0.993			0.986	
Satd. Flow (perm)	0	1850	1857	0	1660	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		542	296		278	
Travel Time (s)		12.3	6.7		6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	151	549	11	9	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	175	560	0	31	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	139	505	10	8	20
Future Vol, veh/h	22	139	505	10	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	151	549	11	9	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	560	0	-	0	754	555
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1011	-	-	-	377	531
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1011	-	-	-	367	531
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1011	-	-	-	471
HCM Lane V/C Ratio	0.024	-	-	-	0.065
HCM Control Delay (s)	8.6	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	133	16	173	367	10	40
Future Volume (vph)	133	16	173	367	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.892	
Flt Protected				0.984	0.990	
Satd. Flow (prot)	1835	0	0	1833	1645	0
Flt Permitted				0.984	0.990	
Satd. Flow (perm)	1835	0	0	1833	1645	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	410			652	303	
Travel Time (s)	9.3			14.8	6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	148	18	192	408	11	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	166	0	0	600	55	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 50.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	133	16	173	367	10	40
Future Vol, veh/h	133	16	173	367	10	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	18	192	408	11	44

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	949	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	792	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1412	-	289	889
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	446	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	238	889
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	368	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	575	-	-	1412	-
HCM Lane V/C Ratio	0.097	-	-	0.136	-
HCM Control Delay (s)	11.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.5	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	139	505	15	14	35
Future Volume (vph)	34	139	505	15	14	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.903	
Flt Protected		0.990			0.986	
Satd. Flow (prot)	0	1844	1855	0	1659	0
Flt Permitted		0.990			0.986	
Satd. Flow (perm)	0	1844	1855	0	1659	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		652	414		232	
Travel Time (s)		14.8	9.4		5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	151	549	16	15	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	188	565	0	53	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	139	505	15	14	35
Future Vol, veh/h	34	139	505	15	14	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	151	549	16	15	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	565	0	-	0	782	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	225	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1007	-	-	-	363	530
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1007	-	-	-	348	530
Mov Cap-2 Maneuver	-	-	-	-	348	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1007	-	-	-	461
HCM Lane V/C Ratio	0.037	-	-	-	0.116
HCM Control Delay (s)	8.7	0	-	-	13.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	154	2	38	181	7	28
Future Volume (vph)	154	2	38	181	7	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.893	
Flt Protected				0.991	0.990	
Satd. Flow (prot)	1859	0	0	1846	1647	0
Flt Permitted				0.991	0.990	
Satd. Flow (perm)	1859	0	0	1846	1647	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	410			572	303	
Travel Time (s)	9.3			13.0	6.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	166	2	41	195	8	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	0	0	236	38	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 33.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	154	2	38	181	7	28
Future Vol, veh/h	154	2	38	181	7	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	2	41	195	8	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	168	0	444	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	277	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1410	-	571	877
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1410	-	552	877
Mov Cap-2 Maneuver	-	-	-	-	552	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	785	-	-	1410	-
HCM Lane V/C Ratio	0.048	-	-	0.029	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	60	122	169	14	12	50
Future Volume (vph)	60	122	169	14	12	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.891	
Flt Protected		0.984			0.990	
Satd. Flow (prot)	0	1833	1844	0	1643	0
Flt Permitted		0.984			0.990	
Satd. Flow (perm)	0	1833	1844	0	1643	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		572	354		204	
Travel Time (s)		13.0	8.0		4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	133	184	15	13	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	198	199	0	67	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	60	122	169	14	12	50
Future Vol, veh/h	60	122	169	14	12	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	133	184	15	13	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	199	0	-	0	455	192
Stage 1	-	-	-	-	192	-
Stage 2	-	-	-	-	263	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1373	-	-	-	563	850
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	781	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1373	-	-	-	534	850
Mov Cap-2 Maneuver	-	-	-	-	534	-
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	781	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1373	-	-	-	763
HCM Lane V/C Ratio	0.047	-	-	-	0.088
HCM Control Delay (s)	7.8	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	159	2	42	191	7	29
Future Volume (vph)	159	2	42	191	7	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.893	
Flt Protected				0.991	0.990	
Satd. Flow (prot)	1859	0	0	1846	1647	0
Flt Permitted				0.991	0.990	
Satd. Flow (perm)	1859	0	0	1846	1647	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	410			622	303	
Travel Time (s)	9.3			14.1	6.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	171	2	45	205	8	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	0	0	250	39	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	159	2	42	191	7	29
Future Vol, veh/h	159	2	42	191	7	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	2	45	205	8	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	173	0	467	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	295	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1404	-	554	872
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1404	-	534	872
Mov Cap-2 Maneuver	-	-	-	-	534	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	728	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	776	-	-	1404	-
HCM Lane V/C Ratio	0.05	-	-	0.032	-
HCM Control Delay (s)	9.9	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	122	169	17	18	64
Future Volume (vph)	66	122	169	17	18	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.988		0.895	
Flt Protected		0.983			0.989	
Satd. Flow (prot)	0	1831	1840	0	1649	0
Flt Permitted		0.983			0.989	
Satd. Flow (perm)	0	1831	1840	0	1649	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		622	365		251	
Travel Time (s)		14.1	8.3		5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	133	184	18	20	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	205	202	0	90	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	122	169	17	18	64
Future Vol, veh/h	66	122	169	17	18	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	133	184	18	20	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	202	0	-	0	470	193
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	277	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1370	-	-	-	552	849
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1370	-	-	-	521	849
Mov Cap-2 Maneuver	-	-	-	-	521	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	770	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1370	-	-	-	746
HCM Lane V/C Ratio	0.052	-	-	-	0.119
HCM Control Delay (s)	7.8	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4