
Traffic Impact & Access Study

Proposed Drive-In Bank Relocation Project

**562 Main Street
(Route 117)
Bolton, MA**

Proponent
**Wachusett Realty, LLC
Bolton, MA**

DJK Dermot J. Kelly Associates, Inc.
Traffic/Transportation Planning

6 Cameron Road
Andover, MA 01810
Office: 978-664-2205

TRAFFIC IMPACT AND ACCESS STUDY

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Proponent

**Wachusett Realty, LLC
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July 24, 2014

Revised August 20, 2014

Prepared by

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EXECUTIVE SUMMARY

Dermot J. Kelly Associates, Inc. (DJK) has conducted a Traffic Impact and Access Study (TIAS) for the proposed relocation of the existing Clinton Savings Bank from the north side of Main Street to the South side of Main Street at 562 Main Street (Route 117) in Bolton, Massachusetts. The project site is located west of the Route 117/I-495 interchange. This report identifies existing traffic operation parameters on the adjacent roadway system, evaluates the anticipated traffic volume increases as a result of the proposed project, and analyzes the site-generated traffic-related impacts.

Clinton Savings Bank is proposing to relocate its existing operation and construct a new 2,040 square foot (SF) retail Bank building with three Drive-through lanes. Currently, there is an existing residential structure located on site which will be demolished. Access/egress to/from the site would occur via a one-way driveway pair with the entrance driveway located along the western portion of the site and the exit driveway located along the eastern portion of the site.

STUDY AREA

The study area encompasses the intersection of Main Street and the existing driveway serving the existing Clinton Savings Bank and the new driveways serving the proposed relocated bank.

EXISTING CONDITIONS

Analysis of the June 2014 weekday traffic counts indicates that approximately 22,529 vpd (vehicles per day) were observed travelling along Main Street adjacent to the site. During the weekday morning and evening peak travel demand periods, which generally occur between 7:00 and 9:00 AM and between 4:00 and 6:00 PM, an average of 1,596 vph (vehicles per hour) were observed during the morning peak hour and 1,716 vph during the evening peak hour.

On Saturday, 20,059 vpd were observed along Main Street adjacent to the site with 1,508 vph observed during the midday peak hour.

SITE-GENERATED TRAFFIC VOLUMES

It is anticipated that the proposed relocation project would relocate approximately an average of 302 vehicle-trips per weekday from the existing driveway on the north side of Main Street to the new driveways along the south side of Main Street. ***Essentially, no new traffic is anticipated to be generated to the Main Street corridor as a result of the proposed relocation project since the proposed project includes the relocation of the existing Clinton Savings Bank from the north side of Main Street to the south side of Main Street.*** This daily volume would be split evenly with 151 vehicle-trips entering and 151 vehicle-trips exiting the site over the course of the entire 24-hour day. During the weekday morning peak hour, the project would relocate 25 vehicles-trips per hour (vph), 14 vph entering and 11 vph exiting the site. During the weekday evening peak hour, it is anticipated that the relocation project would relocate an average of 50 vph, 25 vph entering and 25 vph exiting the site during the peak 60-minute period. The remaining vehicle-trips would occur over the course of the day.

LEVEL OF SERVICE CAPACITY ANALYSIS

Unsignalized intersection Level of Service (LOS) capacity analysis was performed for the study area intersections. The capacity analysis is summarized below by location.

Main Street at Existing Driveway (and Exit Driveway)

Left turns into the existing driveway along Main Street will remain at LOS A with or without the proposed relocation project. The exiting left turns onto Main Street will remain at a calculated LOS F conditions with or without the proposed relocation project. However, since there is an existing traffic signal located immediately east of the project site, gaps in the normal traffic flow are created that would reduce the calculated delay for the left turns onto Main Street and improve the resulting LOS.

Main Street at the Entrance Driveway

Left turns into the relocated Bank driveway will operate at LOS A with the proposed relocation project.

MITIGATION MEASURES

The final phase of the analysis process is to identify the mitigation measures necessary to minimize the traffic-related impacts of the project on the adjacent transportation system. *The proponent has committed to implement all mitigation measures listed below, assuming all permits and approvals are obtained to construct the proposed project as well as all necessary permits and approvals to implement such mitigation, if required, and the project proponent proceeding to construction of the project:*

- Egress movements from the Proposed Exit Drive are suggested to be placed under Stop sign control with a painted stop line. Additionally, "ONEWAY" and "DO NOT ENTER" signs should be appropriately placed at the intersection. The internal parking aisles are suggested to be appropriately signed for one-way traffic circulation and supplemented with

one-way pavement marking arrows. It is recommended that the Drive-Through circulation lanes be one way, counterclockwise around the building to maximize onsite queuing.

- It is suggested that the Proposed Site Drives on Main Street consist of a minimum 20-foot wide cross section with 5- to 30-foot corner radius.
- To enhance the overall sight distance at the intersection of the proposed Exit Driveway with Main Street, it is recommended that roadside vegetation and topographic ground elevations adjacent to the egress driveway and across the project parcel frontage be maintained such that sufficient safety sight lines are provided in both directions throughout the life of the project. This triangular area across the project parcel frontage should extend 20 feet back from the existing edge of the roadway (representing an existing vehicle) and extend 360 feet along Main Street representing an approaching vehicle. It should be noted that the 20-foot distance into the Site Drive exceeds the normal position of a driver's eye, which is generally 8 feet or less from the front of the vehicle. Furthermore, the 360 feet along Main Street represent adequate sight distance for a speed of 45 mph.

SUMMARY/CONCLUSION

Essentially, no new traffic is anticipated to be generated to the Main Street corridor as a result of the proposed relocation project, since the proposed project includes the relocation of the existing Clinton Savings Bank from the north side of Main Street to the south side of Main Street. The replacement traffic, which would be generated by the land use that would occupy the current Clinton Savings Bank floor space, would be insignificant given the small amount of floor space involved. To account for this replacement traffic for analysis purposes, the existing Clinton Savings Bank traffic was not subtracted from the Existing, No Build and Build traffic volume conditions. Since the replacement land use has not been identified, there is no other more accurate way to account for the replacement land use.

EXISTING CONDITIONS

FIELD SURVEY

A comprehensive field inventory of the adjacent roadway system was conducted during June 2014. The field inventory included collection of existing roadway geometrics and traffic volumes data for the roadways in the vicinity of the site. Traffic volumes were measured by means of automatic traffic recorder (ATR) counts and substantiated by manual intersection turning-movement and vehicle-classification counts (TMC).

GEOMETRICS

Main Street

Main Street adjacent to the site is marked for two travel lanes, one lane for each direction of travel. Access to and egress from several adjacent highway commercial/retail and residential land uses are provided along Main Street. Traffic flow along Main Street is controlled by two traffic signals located east of the site at the I-495 interchange.

TRAFFIC VOLUMES

Existing traffic volumes were recorded mechanically by an Automatic Traffic Recorder (ATR) over a 72-hour period during Thursday, Friday and Saturday June 19, 20 and 21, 2014. A Manual Turning Movement Count (TMC) was also conducted at the Main Street/Existing Clinton Savings Bank intersection during the morning and evening peak hours on Thursday, June 19, 2014. The actual traffic volume data is reproduced in the appendix of this report.

The ATR traffic volumes were reviewed to determine average daily and peak-hour traffic volumes along Main Street adjacent to the site. Table 1 summarizes the 2014 ATR traffic-volume data collected for this study. Analysis of the June 2014 weekday traffic counts indicates

that approximately 22,509 vpd (vehicles per day) were observed along Main Street adjacent to the site. During the weekday morning and evening peak travel demand periods, which generally occur between 7:00 and 9:00 AM and between 4:00 and 6:00 PM, an average of 1,596 vph (vehicles per hour) were observed during the morning peak hour and 1,716 vph during the evening peak hour.

The Saturday traffic counts indicate a daily volume of 20,059 vpd and a midday peak hour count on 1,508 vph.

Figure 1 graphically presents the results of the traffic volume inventory for the existing weekday morning and evening peak hours.

**TABLE 1
EXISTING TRAFFIC VOLUME SUMMARY**

Location/ Time Period	Daily Traffic (24 hour) (vpd)^a	Peak Hour	Peak-Hour Traffic Volume (vph)^b
<i>Main Street adjacent to the Site:</i>			
Thursday 6/19/14	22,256	7:45-8:45 AM 3:15-4:15 PM	1,567 1,703
Friday 6/20/14	22,802	6:45-7:45 AM 4:15-5:15 PM	1,625 1,728
Average Weekday	22,529	Morning Evening	1,596 1,716
Saturday 6/21/14	20,059	12:00-1:00 PM	1,508

^a Vehicles per day.

^b Vehicles per hour.

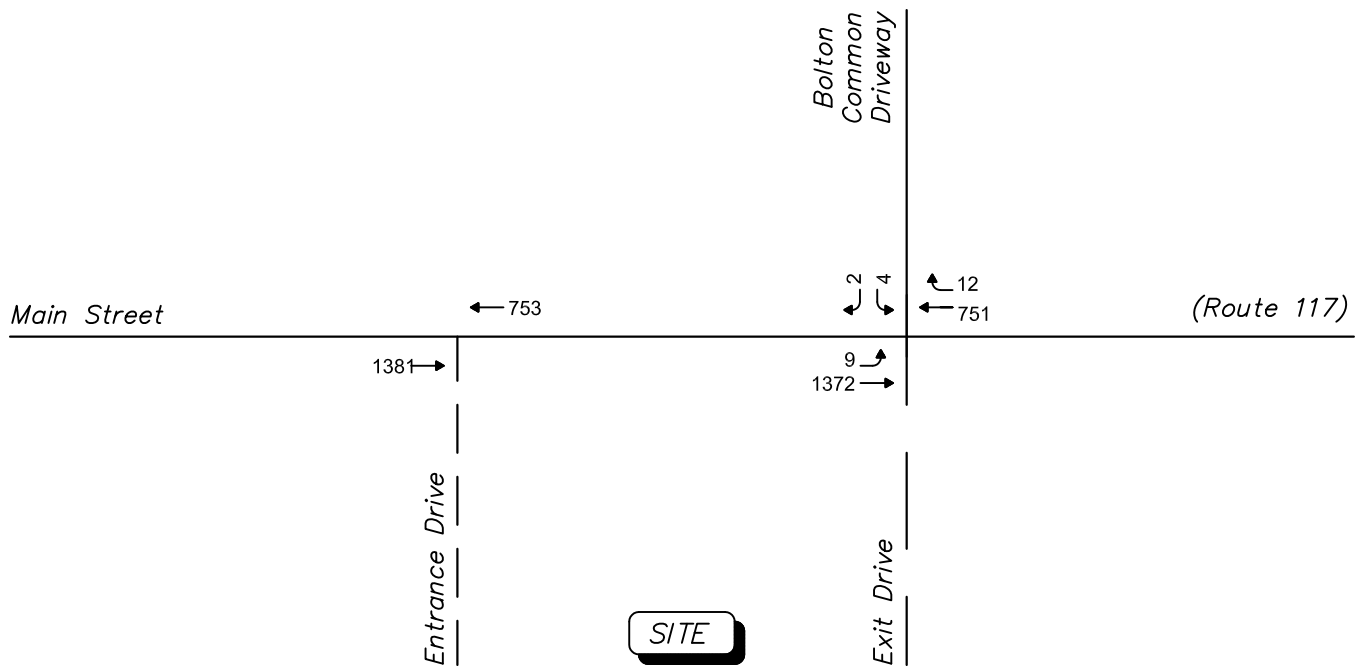
VEHICLE SPEEDS

Speed measurements were taken by a standard traffic engineering procedure called the "floating car method." Vehicle speeds were measured by means of an observation car traveling through the study area at a speed consistent with the flow of traffic on the roadways.

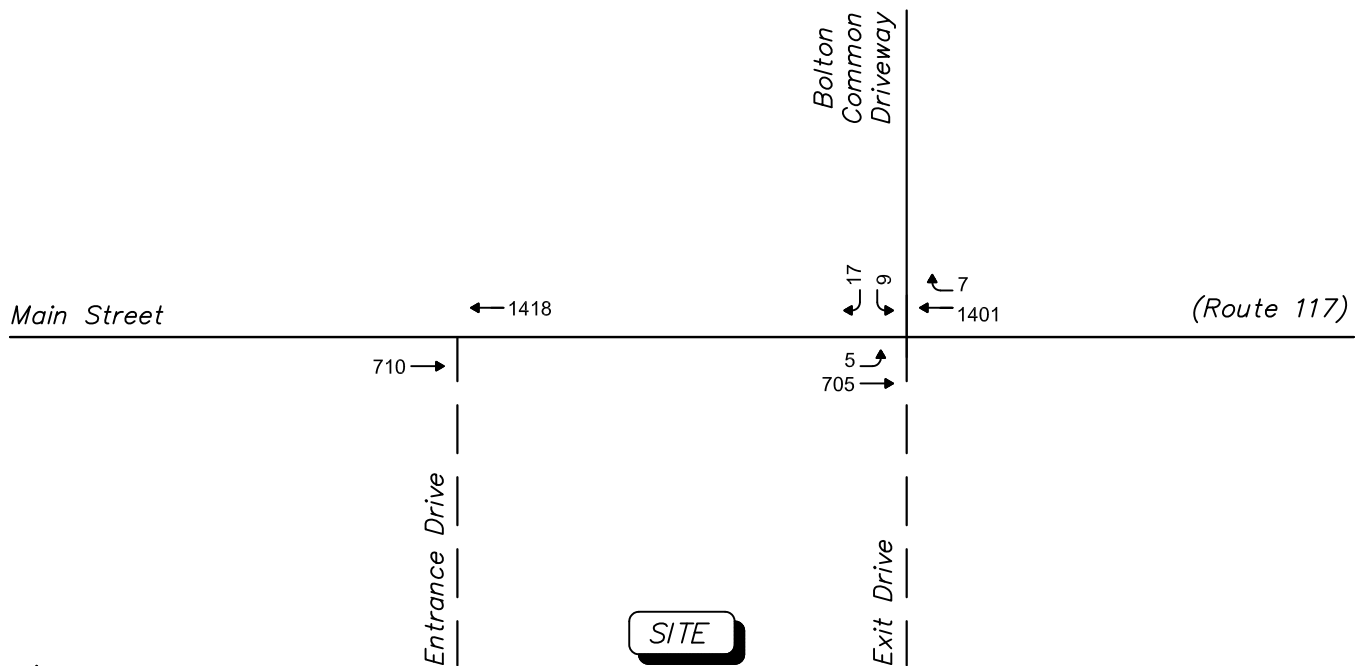
Limited numbers of these observations were made over the field inventory period along Main Street adjacent to the Proposed Project Site Driveways. The limited numbers of speed observations were obtained to gain a meaningful value of an average and typical vehicle traveling through the area. The results of the speed measurements are summarized in Table 2. As shown, the average speed varied along Main Street with speeds recorded in the range of 35 to 45 mph in both the westbound and eastbound directions. The posted speed limit is 40 mph.

Figure 1: 2014 Existing
Peak Hour Traffic Volumes

Weekday Morning Peak Hour



Weekday Evening Peak Hour



Schematic

Neg. = Negligible

**TABLE 2
OBSERVED VEHICLE SUMMARY**

Location/ Direction of Travel	Posted Speed Limit (mph)^a	Observed Travel Speed (mph)
<i>Main Street adjacent to the Proposed Site Drives:</i>		
Northbound	40	35 to 45
Southbound	40	35 to 45

^amph = miles per hour.

Spot speeds were also recorded by an automatic traffic recorder (ATR) placed along Main Street over a 48-hour period. The results of the speed measurements are summarized in Table 3. As shown, the mean speed along Main Street westbound varied between 34 and 35 mph. The 85th percentile speed was recorded at 41 mph. Eastbound the mean speed varied between 34 and 37 mph with the 85th percentile speed recorded at 42 mph. The pace speed was 33 to 34 mph for the westbound and 34 to 44 mph for the eastbound direction. The actual vehicle speed data is reproduced in the appendix of this report.

**TABLE 3
SPOT SPEED OBSERVATION SUMMARY**

Location/ Direction of Travel	Posted Speed Limit (mph)^a	Mean Speed (mph)	85th Percentile Speed (mph)	10 mph Pace Speed	Total Number of Observations
<i>Main Street adjacent to the Proposed Site Drive:</i>					
Westbound					
Thursday, 6/19/14	40	34	41	33-42	11,149
Friday, 6/20/14	40	35	41	33-42	<u>11,593</u>
Total	--	--	--	--	22,742
Eastbound					
Thursday, 6/19/14	40	34	42	34-43	11,107
Friday, 6/20/14	40	37	42	35-44	<u>11,209</u>
Total	--	--	--	--	22,316

^amph = miles per hour.

FUTURE TRAFFIC VOLUME CONDITIONS

This section of the report determines the traffic-related impacts of the proposed project on the study area roadway system under future traffic volume conditions.

To be consistent with the Commonwealth of Massachusetts Executive Office of Environmental Affairs and the Executive Office of Transportation and Construction Guidelines for EIR/EIS Traffic Impact Assessment, future conditions were projected to cover a seven-year planning horizon. To determine the impact of site-generated traffic volumes on the roadway network under future conditions, the existing traffic volumes in the study area were projected to the year 2021, at which time the proposed development is expected to be completed and well under operation for several years. Traffic volumes on the roadway network at that time will include all existing traffic, background traffic growth, and site-generated traffic volumes from the proposed development project.

BACKGROUND TRAFFIC GROWTH

Traffic growth on area roadways is a function of the expected land development in the immediate area as well as the surrounding region. Several methods can be used to estimate this growth. A procedure frequently employed is to identify the location and type of new developments planned to occur during the designated planning horizon, estimate the traffic to be generated and assign it to the area roadway network. This method usually produces a realistic estimate of growth for local traffic.

The Town of Bolton was consulted during the preparation of this Study to identify existing and projected development projects anticipated to generate a significant amount of traffic by the year 2021. Based on this information and other background information, existing traffic volumes were increased to account for two other development projects, an assisted living facility to be located at 582 Main Street and a 42 unit residential development project to be located of Main

Street at Sugar Road. Background traffic was also increased an additional 1.0% per year for 7 years (7.2% total) to account for background traffic growth that may occur up through 2021.

Figure 2 graphically presents the 2021 No Build weekday morning and evening peak-hour traffic volumes.

SITE-GENERATED TRAFFIC VOLUMES

Trip generation rates for retail Bank land uses are published by the Institute of Transportation Engineers (ITE) in *Trip Generation*¹. The ITE average trip generation rates were applied to the proposed development project with the vehicle trips summarized below in Table 4.

**TABLE 4
VEHICLE TRIP GENERATION SUMMARY**

Time Period/ Direction of Travel	Vehicle-Trips Based On 2,040 SF Of Retail Bank Space ^a
<i>Weekday Morning Peak Hour</i>	
Entering (vph) ~	14
<u>Exiting (vph)</u>	<u>11</u>
Total (vph)	25
<i>Weekday Evening Peak Hour</i>	
Entering (vph)	25
<u>Exiting (vph)</u>	<u>25</u>
Total (vph)	50
<i>Weekday Daily Traffic:</i>	
Entering (vpd) ~	151
<u>Exiting (vpd)</u>	<u>151</u>
Total (vpd)	302

^a Source: Institute of Transportation Engineers (ITE), *Trip Generation*, Ninth Edition, 2012. Land Use Code 912, Drive-In Bank Average Trip Rates.

^b Vehicle-trips per hour.

^c Vehicle-trips per day.

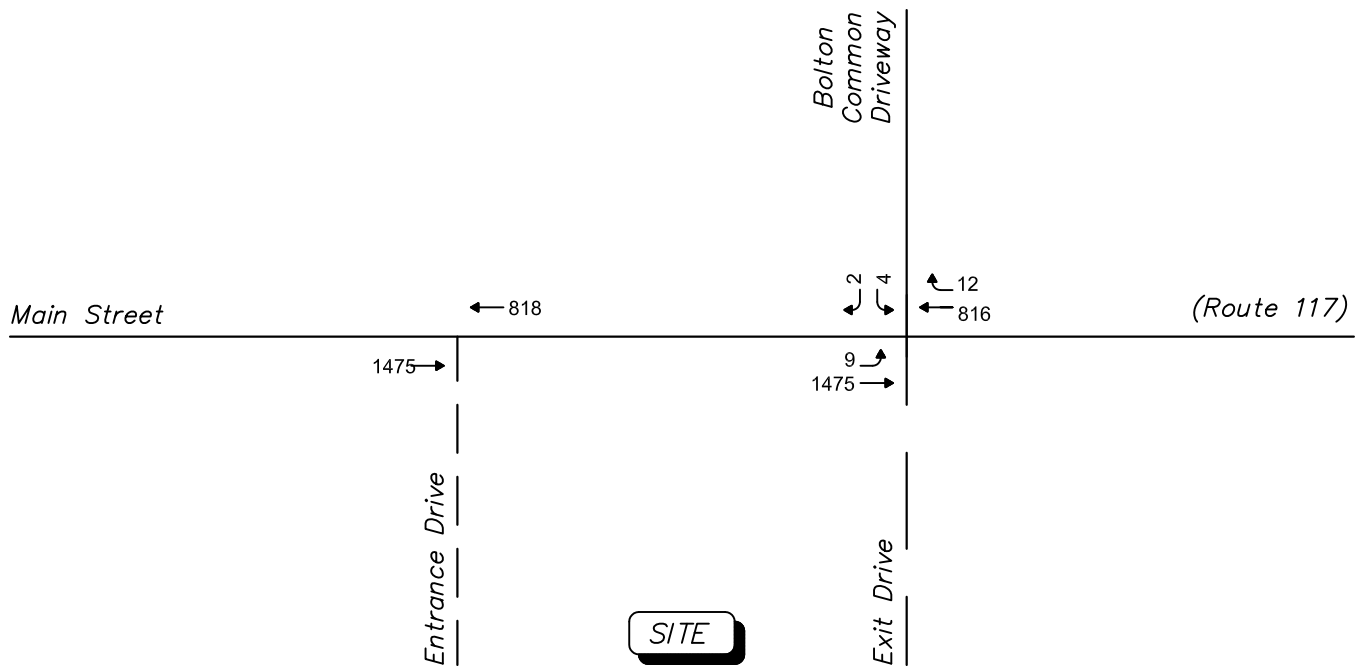
TRAFFIC DISTRIBUTION/ASSIGNMENT

Directional distribution of generated trips to and from the proposed development is based on existing travel patterns observed along Main Street which in turn is a function of existing shopping opportunities and population densities and areas of employment. Accordingly, the directional split of the new trips originating from, or destined to, the development are summarized below in Table 5.

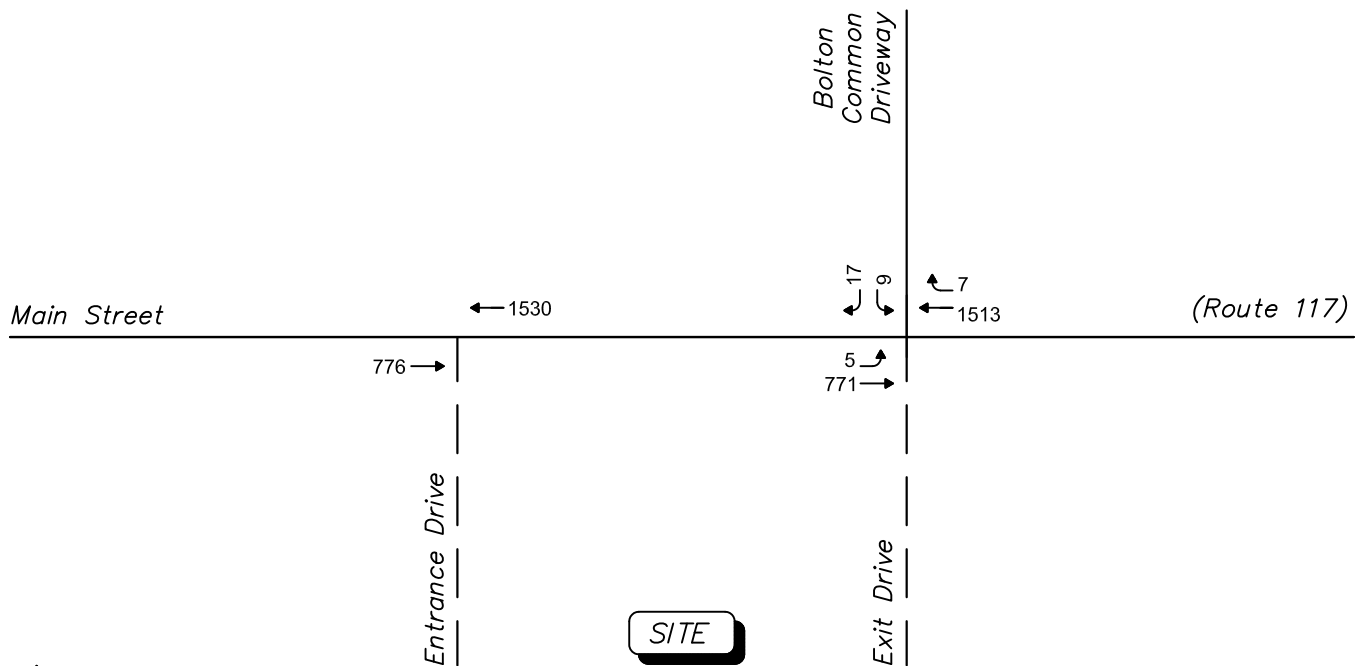
¹ *Trip Generation, Ninth Edition*, Institute of Transportation Engineers; Washington, D.C. (2012).

Figure 2: 2021 No Build
Peak Hour Traffic Volumes

Weekday Morning Peak Hour



Weekday Evening Peak Hour



Schematic

Neg. = Negligible

TABLE 5
PROJECT-GENERATED VEHICLE-TRIP ASSIGNMENT

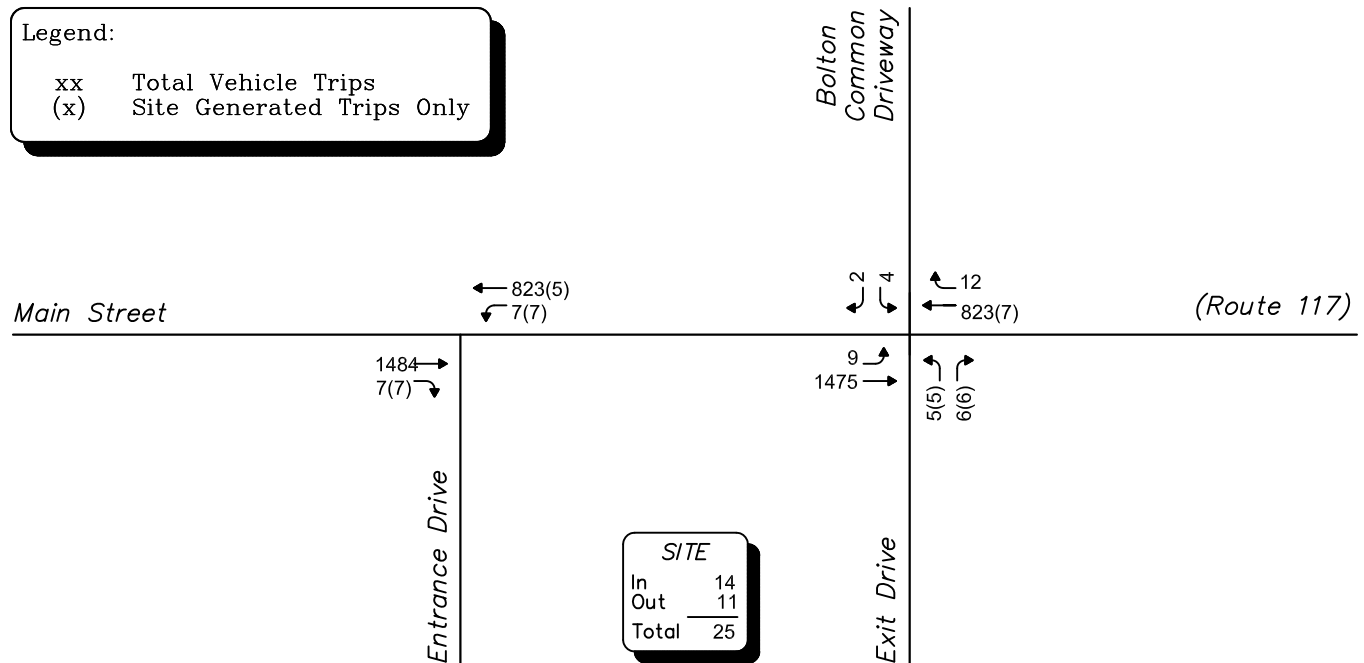
Approach/Departure Routing	Percent of Total
• Main Street to/from the West	50%
• Main Street to/from the East	<u>50%</u>
TOTAL	100%

2021 TRAFFIC VOLUME CONDITIONS

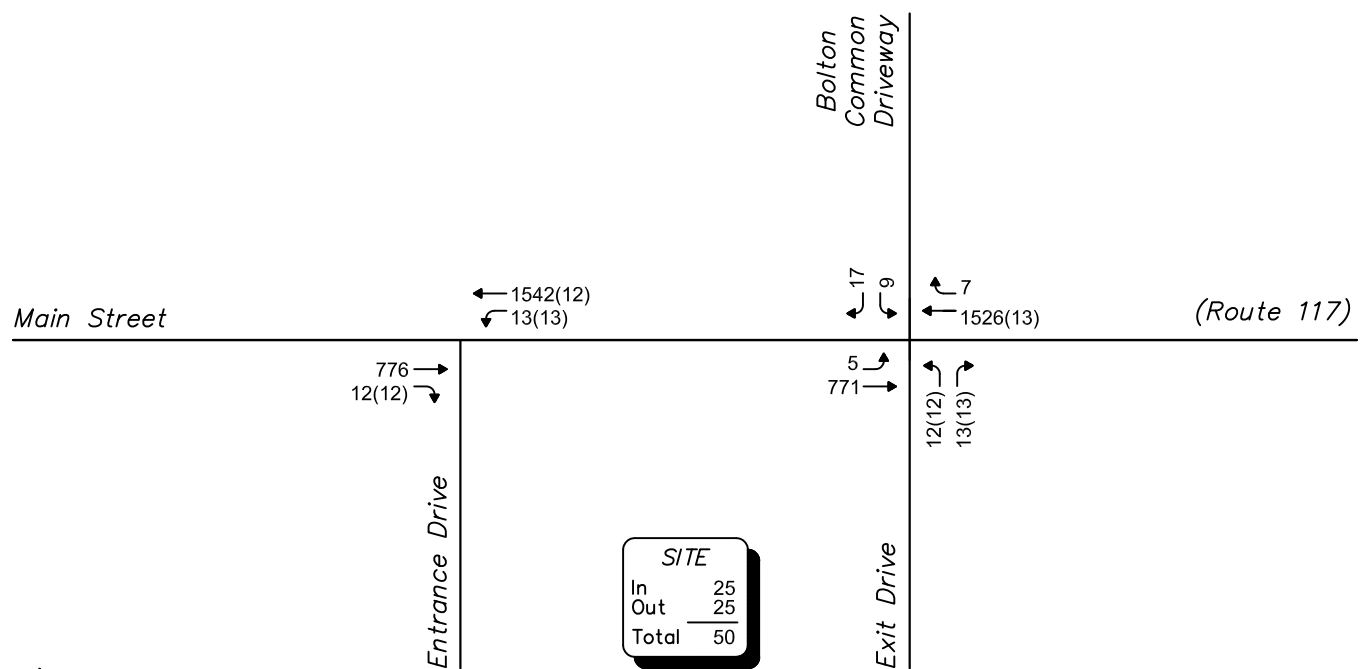
The 2021 traffic volume conditions were developed from the traffic-volume data collected specifically for this study. Traffic-volume data collected for this study area was summarized to produce a composite picture of the existing peak-hour traffic-volume conditions. The Build, with-development, traffic volumes include the existing peak hour traffic volumes, plus background traffic growth, plus the site generated peak hour traffic volumes. Figure 3 graphically presents the 2021 Build weekday morning and evening peak-hour traffic volume networks.

Figure 3: 2021 Build
Peak Hour Traffic Volumes

Weekday Morning Peak Hour



Weekday Evening Peak Hour



Schematic

Neg. = Negligible

LEVEL OF SERVICE CAPACITY ANALYSIS

To assess quality of flow along the study area roadways and intersections, an Intersection Level of Service Capacity Analysis was conducted under the following analysis conditions:

- 2014 Existing Traffic Volume Conditions
- 2021 No Build Traffic Volume Conditions
- 2021 Build Traffic Volume Conditions

The Capacity Analysis will provide an indication of how well the roadway facilities serve the traffic demands placed upon them.

METHODOLOGY

Level of Service

The primary result of capacity analysis is the assignment of level of service to traffic facilities under various traffic flow conditions.² The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

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

² *Highway Capacity Manual*, Transportation Research Board, Washington, DC, 2010.

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

Unsignalized Intersections

The levels of service for unsignalized intersections are determined by application of a procedure described in the 2010 *Highway Capacity Manual*.³ The procedure accounts for lane configuration on the minor and major approaches, conflicting traffic stream volumes, and type of intersection control (STOP versus YIELD). First, potential capacity is calculated based on the number of lanes, traffic volume data, critical gap and follow-up times. The delay is then calculated based on the relationship between flow rate and capacity of the movement. Table 6 summarizes the relationship between level of service and expected delay to minor street traffic.

**TABLE 6
LEVEL-OF-SERVICE CRITERIA
FOR UNSIGNALIZED INTERSECTIONS^a**

Level of Service	Average Control Delay (Seconds/Vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

^a Source: *Highway Capacity Manual*, Transportation Research Board, Washington, DC, 2010.

³ *Highway Capacity Manual*, Transportation Research Board, Washington, DC, 2010.

TRAFFIC ANALYSIS RESULTS

Capacity analyses have been conducted at the study area intersections. Results of these analyses are tabulated below by intersection in Table 7.

**TABLE 7
UNSIGNALIZED INTERSECTION LEVEL-OF- SERVICE SUMMARY**

Location/Peak Hour/ Turning Movement	<u>2014 Existing</u> ACD/Volume- Capacity Ratio/LOS ^a	<u>2021 No-Build</u> ACD/Volume to Capacity Ratio/LOS	<u>2021 Build</u> ACD/Volume to Capacity Ratio/LOS
<i>Main Street at the Existing Driveway and Proposed Exit Driveway:</i>			
<i><u>Weekday Morning Peak Hour</u></i>			
Eastbound Left Turns	1.3/0.01/A	3.9/0.01/A	3.9/0.01/A
Westbound Left Turns	--/--	--/--	--/--
Northbound Movements	--/--	--/--	>50/0.39/F
Southbound Movement	>50/0.13/F	>50/0.17/F	>50/0.29/F
<i><u>Weekday Evening Peak Hour</u></i>			
Eastbound Left Turns	0.3/0.01/A	0.4/0.01/A	0.4/0.01/A
Westbound Left Turns	--/--	--/--	--/--
Northbound Movements	--/--	--/--	>50/0.66/F
Southbound Movement	>50/0.30/F	>50/0.37/F	>50/0.56/F
<i>Main Street at the Proposed Entrance Driveway:</i>			
<i><u>Weekday Morning Peak Hour</u></i>			
Westbound Left Turns	--/--	--/--	0.7/0.02/A
<i><u>Weekday Evening Peak Hour</u></i>			
Westbound Left Turns	--/--	--/--	2.4/0.02/A

^a Level of service.

^b Average Control Delay (seconds/vehicle).

APPENDICES

APPENDIX A - TRAFFIC VOLUME AND VEHICLE SPEED DATA

APPENDIX B - LEVEL OF SERVICE ANALYSIS

APPENDIX A - TRAFFIC VOLUME AND VEHICLE SPEED DATA



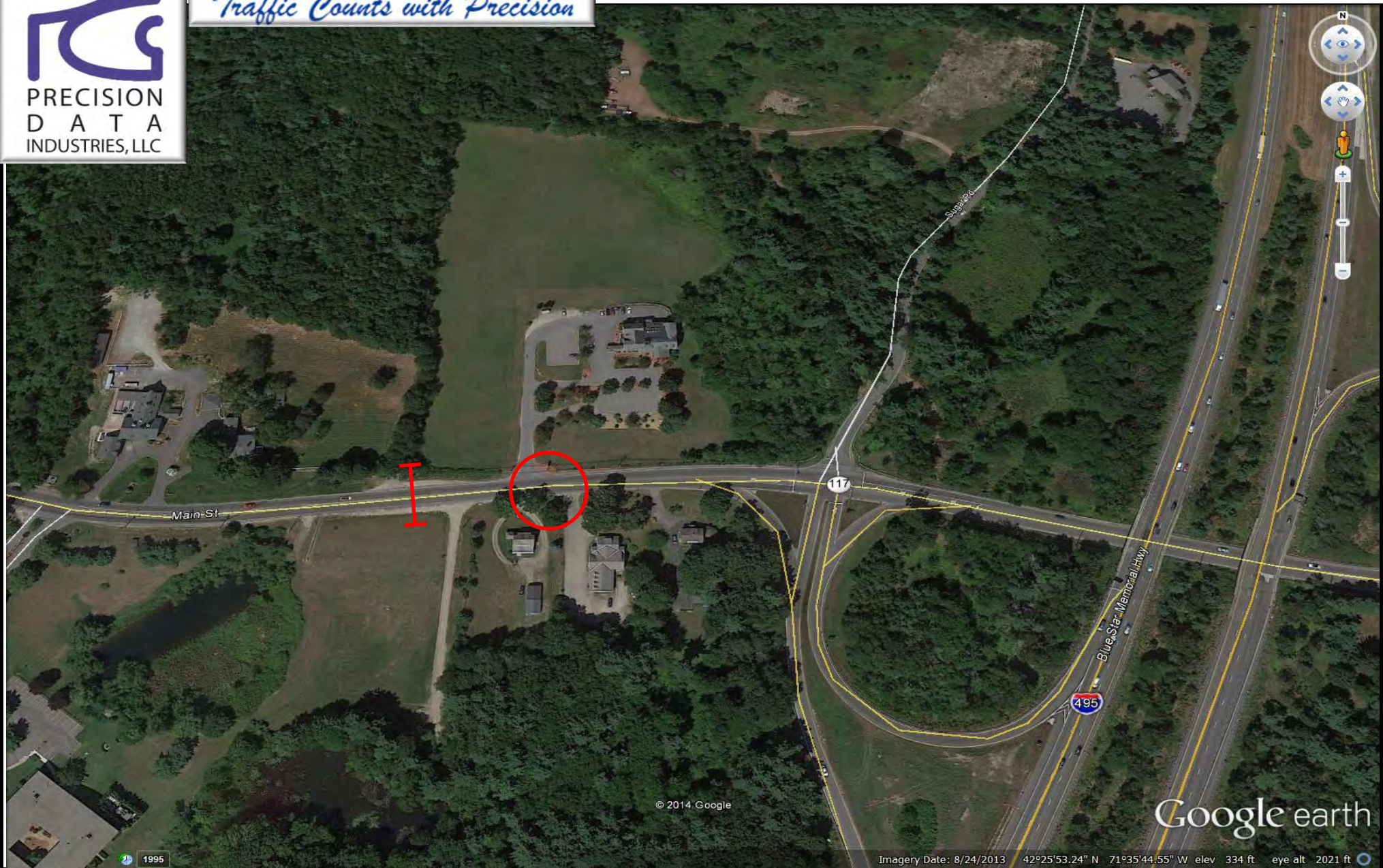
PRECISION
DATA
INDUSTRIES, LLC

PRECISION DATA INDUSTRIES, LLC

Office: 508.481.3999 Fax: 508.545.1234

Email: datarequests@pdillc.com

Traffic Counts with Precision



Client:

DJK

Engineer:

D. Kelly

Site Code:

848

Date:

Thurs 6/19 thru Sat 6/21/2014

PDI Job Number:

143952

City, State:

Bolton, MA

8/20/14, 21 of 49
848-TIS2 w-Appendix

Main Street (Route 117)
west of Clinton Savings Bank
City, State: Bolton, MA
Client: DJK/ D. Kelly



143952 A Volume
Site Code: 848

Start		WB		EB		Combin ed		19-Jun- 14 Thu	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.			
12:00	24	133	4	160	28	293			
12:15	25	167	12	163	37	330			
12:30	23	164	9	142	32	306			
12:45	10	82 151	615 6	31 141	606 16	113 292	1221		
01:00	19	130	4	173	23	303			
01:15	11	137	2	160	13	297			
01:30	5	133	2	163	7	296			
01:45	9	44 150	550 3	11 138	634 12	55 288	1184		
02:00	4	157	1	181	5	338			
02:15	6	179	7	151	13	330			
02:30	8	163	7	195	15	358			
02:45	2	20 217	716 5	20 177	704 7	40 394	1420		
03:00	3	203	9	167	12	370			
03:15	8	260	6	170	14	430			
03:30	6	240	14	182	20	422			
03:45	8	25 273	976 16	45 158	677 24	70 431	1653		
04:00	4	271	17	149	21	420			
04:15	11	204	25	70	36	274			
04:30	12	182	32	65	44	247			
04:45	14	41 216	873 49	123 69	353 63	164 285	1226		
05:00	15	233	70	87	85	320			
05:15	17	268	119	90	136	358			
05:30	32	276	170	118	202	394			
05:45	37	101 267	1044 225	584 140	435 262	685 407	1479		
06:00	51	288	272	134	323	422			
06:15	65	269	314	133	379	402			
06:30	62	241	267	115	329	356			
06:45	69	247 217	1015 282	1135 97	479 351	1382 314	1494		
07:00	76	210	285	97	361	307			
07:15	101	202	223	90	324	292			
07:30	83	178	230	119	313	297			
07:45	118	378 166	756 240	978 87	393 358	1356 253	1149		
08:00	147	136	240	108	387	244			
08:15	182	157	211	74	393	231			
08:30	180	128	249	90	429	218			
08:45	111	620 106	527 247	947 73	345 358	1567 179	872		
09:00	151	108	223	76	374	184			
09:15	142	120	222	73	364	193			
09:30	135	109	207	58	342	167			
09:45	115	543 89	426 200	852 54	261 315	1395 143	687		
10:00	117	81	198	49	315	130			
10:15	138	92	162	45	300	137			
10:30	111	77	173	45	284	122			
10:45	114	480 57	307 136	669 32	171 250	1149 89	478		
11:00	139	63	136	32	275	95			
11:15	152	48	128	22	280	70			
11:30	139	47	129	25	268	72			
11:45	137	567 38	196 165	558 17	96 302	1125 55	292		
Total	3148	8001	5953	5154	9101	13155			
Percent	34.6%	60.8%	65.4%	39.2%					
Day Total		11149		11107		22256			
Peak	07:45	- 05:30	- 06:15	- 02:30	- 07:45	- 03:15	- - -		
Vol.	627	- 1100	- 1148	- 709	- 1567	- 1703	- - -		
P.H.F.	0.861	0.955	0.914	0.909	0.913	0.988			

Main Street (Route 117)
west of Clinton Savings Bank
City, State: Bolton, MA
Client: DJK/ D. Kelly



143952 A Volume
Site Code: 848

Start	WB				EB				Combin ed		20-Jun- 14 Fri	
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
12:00	35		159		10		146		45		305	
12:15	25		162		13		157		38		319	
12:30	10		172		12		150		22		322	
12:45	20	90	171	664	7	42	172	625	27	132	343	1289
01:00	9		168		5		152		14		320	
01:15	11		163		9		165		20		328	
01:30	12		180		3		147		15		327	
01:45	10	42	181	692	2	19	161	625	12	61	342	1317
02:00	4		197		5		130		9		327	
02:15	3		216		2		145		5		361	
02:30	2		229		3		155		5		384	
02:45	7	16	252	894	9	19	178	608	16	35	430	1502
03:00	9		260		8		154		17		414	
03:15	3		242		3		154		6		396	
03:30	4		252		6		159		10		411	
03:45	12	28	223	977	13	30	83	550	25	58	306	1527
04:00	10		200		17		59		27		259	
04:15	11		325		26		145		37		470	
04:30	11		285		28		143		39		428	
04:45	12	44	288	1098	45	116	168	515	57	160	456	1613
05:00	16		268		72		106		88		374	
05:15	31		281		112		163		143		444	
05:30	30		194		177		72		207		266	
05:45	38	115	254	997	173	534	98	439	211	649	352	1436
06:00	46		291		252		124		298		415	
06:15	88		273		272		149		360		422	
06:30	75		227		333		153		408		380	
06:45	85	294	197	988	321	1178	109	535	406	1472	306	1523
07:00	94		175		274		122		368		297	
07:15	110		174		301		111		411		285	
07:30	157		155		283		94		440		249	
07:45	126	487	114	618	229	1087	146	473	355	1574	260	1091
08:00	118		112		238		117		356		229	
08:15	130		111		213		118		343		229	
08:30	109		118		203		76		312		194	
08:45	114	471	88	429	226	880	104	415	340	1351	192	844
09:00	115		98		159		71		274		169	
09:15	139		92		191		90		330		182	
09:30	136		96		167		72		303		168	
09:45	137	527	89	375	172	689	77	310	309	1216	166	685
10:00	125		91		169		39		294		130	
10:15	124		114		164		53		288		167	
10:30	117		73		171		53		288		126	
10:45	152	518	74	352	162	666	32	177	314	1184	106	529
11:00	151		67		146		38		297		105	
11:15	157		65		121		31		278		96	
11:30	169		60		143		32		312		92	
11:45	171	648	37	229	141	551	25	126	312	1199	62	355
Total	3280		8313		5811		5398		9091		13711	
Percent	36.1%		60.6%		63.9%		39.4%					
Day Total			11593				11209				22802	
Peak	11:00	-	04:15	-	06:30	-	02:45	-	06:45	-	04:15	-
Vol.	648	-	1166	-	1229	-	645	-	1625	-	1728	-
P.H.F.	0.947		0.897		0.923		0.906		0.923		0.919	

Main Street (Route 117)
west of Clinton Savings Bank
City, State: Bolton, MA
Client: DJK/ D. Kelly



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

143952 A Volume
Site Code: 848

Start		WB		EB		Combin ed		21-Jun- 14 Sat	
Time	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.		
12:00	49	197		19	180	68	377		
12:15	30	195		9	186	39	381		
12:30	24	183		10	177	34	360		
12:45	20	206	781	12	184	32	390	1508	
01:00	18	180		7	175	25	355		
01:15	15	193		6	169	21	362		
01:30	18	195		8	173	26	368		
01:45	7	189	757	9	193	16	382	1467	
02:00	10	196		7	172	17	368		
02:15	9	184		5	180	14	364		
02:30	8	167		6	190	14	357		
02:45	9	196	743	7	179	16	375	1464	
03:00	6	171		8	173	14	344		
03:15	7	175		7	174	14	349		
03:30	7	194		2	156	9	350		
03:45	9	186	726	8	157	17	343	1386	
04:00	4	160		6	177	10	337		
04:15	6	177		7	193	13	370		
04:30	11	175		19	184	30	359		
04:45	10	174	686	24	177	34	351	1417	
05:00	10	155		32	189	42	344		
05:15	10	174		33	217	43	391		
05:30	28	146		36	164	64	310		
05:45	20	130	605	52	163	72	293	1338	
06:00	36	114		56	138	92	252		
06:15	50	153		84	159	134	312		
06:30	56	123		103	109	159	232		
06:45	55	137	527	83	152	138	289	1085	
07:00	55	121		103	133	158	254		
07:15	105	112		84	118	189	230		
07:30	88	100		133	109	221	209		
07:45	113	118	451	122	100	235	218	911	
08:00	113	96		120	90	233	186		
08:15	130	103		151	87	281	190		
08:30	119	87		162	112	281	199		
08:45	127	91	377	135	88	262	179	754	
09:00	151	80		126	89	277	169		
09:15	146	102		122	82	268	184		
09:30	171	77		159	95	330	172		
09:45	195	96	355	162	87	353	183	708	
10:00	165	95		136	65	301	160		
10:15	180	82		162	59	342	141		
10:30	172	99		185	58	357	157		
10:45	194	68	344	151	54	236	122	580	
11:00	181	81		150	46	331	127		
11:15	160	74		184	38	344	112		
11:30	183	63		190	32	373	95		
11:45	162	57	275	172	24	140	81	415	
Total	3452	6627		3574	6406	7026	13033		
Percent	49.1%	50.8%		50.9%	49.2%				
Day Total		10079			9980		20059		
Peak	10:15	-	12:00	-	11:00	-	10:45	-	12:00
Vol.	727	-	781	-	696	-	1393	-	1508
P.H.F.	0.937		0.948		0.916		0.934		0.967

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143952 A Speed
Site Code: 848

WB

Start Time	14	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
	14	19	24	29	34	39	44	49	54	59	64	69	70 9999			
06/19/																
14	1	0	2	1	4	32	31	9	2	0	0	0	0	82	44	39
01:00	0	0	0	2	8	13	15	6	0	0	0	0	0	44	44	39
02:00	0	0	0	0	1	5	12	0	2	0	0	0	0	20	44	41
03:00	0	0	0	1	4	8	9	3	0	0	0	0	0	25	43	39
04:00	0	0	0	0	4	20	12	4	0	1	0	0	0	41	43	39
05:00	0	1	0	0	10	30	43	16	1	0	0	0	0	101	44	40
06:00	0	0	84	5	20	61	54	21	1	1	0	0	0	247	42	33
07:00	1	2	189	42	27	59	51	6	1	0	0	0	0	378	39	29
08:00	3	2	35	79	140	237	100	23	0	0	0	0	1	620	40	35
09:00	0	0	6	20	107	214	162	26	7	0	1	0	0	543	42	38
10:00	1	0	2	10	77	222	139	26	2	1	0	0	0	480	42	38
11:00	0	0	1	26	112	255	145	26	2	0	0	0	0	567	42	37
12 PM	0	0	14	26	141	271	136	26	1	0	0	0	0	615	41	37
13:00	0	0	0	17	106	255	140	30	2	0	0	0	0	550	42	38
14:00	0	0	8	37	176	321	153	19	2	0	0	0	0	716	41	36
15:00	0	15	50	109	246	395	140	20	1	0	0	0	0	976	39	34
16:00	149	154	208	70	111	129	46	5	0	0	1	0	0	873	34	21
17:00	111	131	156	95	234	246	62	8	1	0	0	0	0	1044	36	25
18:00	0	14	44	93	250	399	174	40	0	0	1	0	0	1015	40	35
19:00	0	4	4	20	159	325	216	26	1	1	0	0	0	756	42	37
20:00	0	0	2	16	92	237	157	22	1	0	0	0	0	527	42	38
21:00	0	0	1	3	65	230	110	17	0	0	0	0	0	426	41	38
22:00	0	0	0	7	44	120	104	27	3	2	0	0	0	307	43	39
23:00	0	0	0	2	19	68	89	17	0	1	0	0	0	196	43	40
Total	266	323	806	681	2157	4152	2300	423	30	7	3	0	1	11149		
%	2.4%	2.9%	7.2%	6.1%	19.3%	37.2%	20.6%	3.8%	0.3%	0.1%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	07:00	08:00	08:00	11:00	09:00	09:00	09:00	04:00	09:00		08:00	08:00		
Vol.	3	2	189	79	140	255	162	26	7	1	1		1	620		
PM Peak	16:00	16:00	16:00	15:00	18:00	18:00	19:00	18:00	22:00	22:00	16:00			17:00		
Vol.	149	154	208	109	250	399	216	40	3	2	1			1044		

Stats
15th Percentile : 23 MPH
50th Percentile : 35 MPH
85th Percentile : 41 MPH
95th Percentile : 44 MPH

Mean Speed(Average) : 34 MPH
10 MPH Pace Speed : 33-42 MPH
Number in Pace : 6201
Percent in Pace : 55.6%
Number of Vehicles > 35 MPH : 5692
Percent of Vehicles > 35 MPH : 51.1%

Main Street (Route 117)
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143952 A Speed
Site Code: 848

WB

Start Time	14	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
	14	19	24	29	34	39	44	49	54	59	64	69	9999			
06/20/																
14	0	0	0	1	6	38	32	10	2	1	0	0	0	90	44	40
01:00	0	0	0	1	3	13	17	7	1	0	0	0	0	42	45	40
02:00	0	0	0	0	2	5	8	1	0	0	0	0	0	16	43	40
03:00	0	0	0	2	1	10	12	3	0	0	0	0	0	28	43	39
04:00	0	0	0	1	5	13	22	2	1	0	0	0	0	44	43	40
05:00	0	0	0	0	14	39	46	14	2	0	0	0	0	115	44	40
06:00	1	0	22	17	48	110	83	11	2	0	0	0	0	294	42	36
07:00	0	1	19	26	62	204	146	27	2	0	0	0	0	487	42	37
08:00	0	2	16	17	65	168	158	42	3	0	0	0	0	471	43	38
09:00	0	1	0	31	80	214	159	39	3	0	0	0	0	527	42	38
10:00	1	0	5	21	85	209	165	30	1	1	0	0	0	518	42	38
11:00	0	0	4	21	143	267	185	24	3	1	0	0	0	648	42	37
12 PM	0	1	10	40	148	265	161	36	3	0	0	0	0	664	42	37
13:00	0	0	1	38	141	294	186	31	1	0	0	0	0	692	42	37
14:00	0	3	15	83	227	373	165	28	0	0	0	0	0	894	40	36
15:00	55	76	93	107	178	318	125	24	1	0	0	0	0	977	39	30
16:00	40	87	190	188	275	242	71	5	0	0	0	0	0	1098	36	28
17:00	91	104	145	143	195	240	66	10	2	0	0	1	0	997	37	26
18:00	2	12	40	97	255	385	176	21	0	0	0	0	0	988	40	35
19:00	0	0	0	6	111	300	181	19	1	0	0	0	0	618	41	38
20:00	0	0	0	15	63	168	155	24	3	0	1	0	0	429	42	38
21:00	0	0	0	3	50	179	111	28	4	0	0	0	0	375	43	39
22:00	0	0	0	5	33	139	144	28	3	0	0	0	0	352	43	39
23:00	0	1	0	3	31	99	75	16	4	0	0	0	0	229	43	39
Total	190	288	560	866	2221	4292	2649	480	42	3	1	1	0	11593		
%	1.6%	2.5%	4.8%	7.5%	19.2%	37.0%	22.9%	4.1%	0.4%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	08:00	06:00	09:00	11:00	11:00	11:00	08:00	08:00	00:00				11:00		
Vol.	1	2	22	31	143	267	185	42	3	1				648		
PM Peak	17:00	17:00	16:00	16:00	16:00	18:00	13:00	12:00	21:00		20:00	17:00		16:00		
Vol.	91	104	190	188	275	385	186	36	4		1	1		1098		

Stats

15th Percentile :	26 MPH
50th Percentile :	35 MPH
85th Percentile :	41 MPH
95th Percentile :	44 MPH

Mean Speed(Average) :	35 MPH
10 MPH Pace Speed :	33-42 MPH
Number in Pace :	6612
Percent in Pace :	57.0%
Number of Vehicles > 35 MPH :	6256
Percent of Vehicles > 35 MPH :	54.0%

Main Street (Route 117)
west of Clinton Savings Bank
City, State: Bolton, MA
Client: DJK/ D. Kelly



PRECISION
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143952 A Speed
Site Code: 848

WB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
06/21/14	1	1	0	6	27	44	33	10	0	1	0	0	0	123	42	37
01:00	0	0	0	0	6	24	22	6	0	0	0	0	0	58	43	39
02:00	0	0	0	0	2	11	14	6	2	1	0	0	0	36	47	42
03:00	0	0	0	1	1	11	14	2	0	0	0	0	0	29	43	40
04:00	0	0	0	0	2	16	9	2	2	0	0	0	0	31	44	40
05:00	0	0	1	1	4	17	28	15	2	0	0	0	0	68	46	41
06:00	0	1	0	1	18	61	74	34	7	1	0	0	0	197	45	41
07:00	0	0	0	1	14	139	159	43	5	0	0	0	0	361	44	40
08:00	0	0	1	6	47	195	195	41	3	1	0	0	0	489	43	39
09:00	0	0	2	19	107	274	215	41	5	0	0	0	0	663	42	38
10:00	0	1	3	21	148	367	150	18	2	1	0	0	0	711	41	37
11:00	0	0	5	24	143	323	164	25	2	0	0	0	0	686	41	37
12 PM	0	0	4	35	150	348	201	41	2	0	0	0	0	781	42	37
13:00	0	0	2	22	152	329	203	44	5	0	0	0	0	757	42	38
14:00	0	0	2	15	139	352	200	31	4	0	0	0	0	743	42	38
15:00	1	1	4	18	113	333	217	34	3	2	0	0	0	726	42	38
16:00	0	1	7	20	118	307	194	37	2	0	0	0	0	686	42	38
17:00	0	1	0	15	84	269	198	37	1	0	0	0	0	605	42	38
18:00	0	1	1	32	140	198	132	21	1	1	0	0	0	527	41	37
19:00	0	0	6	7	44	210	152	27	4	1	0	0	0	451	42	39
20:00	0	0	1	2	41	164	145	23	1	0	0	0	0	377	43	39
21:00	0	0	0	3	50	163	118	17	4	0	0	0	0	355	42	39
22:00	0	0	0	0	27	133	151	25	4	4	0	0	0	344	43	40
23:00	0	0	1	6	19	84	135	27	3	0	0	0	0	275	44	40
Total	2	7	40	255	1596	4372	3123	607	64	13	0	0	0	10079		
%	0.0%	0.1%	0.4%	2.5%	15.8%	43.4%	31.0%	6.0%	0.6%	0.1%	0.0%	0.0%	0.0%			
AM Peak	00:00	00:00	11:00	11:00	10:00	10:00	09:00	07:00	06:00	00:00				10:00		
Vol.	1	1	5	24	148	367	215	43	7	1				711		
PM Peak	15:00	15:00	16:00	12:00	13:00	14:00	15:00	13:00	13:00	22:00				12:00		
Vol.	1	1	7	35	152	352	217	44	5	4				781		

Stats

15th Percentile :	32 MPH
50th Percentile :	37 MPH
85th Percentile :	42 MPH
95th Percentile :	45 MPH

Mean Speed(Average) :	38 MPH
10 MPH Pace Speed :	34-43 MPH
Number in Pace :	6975
Percent in Pace :	69.2%
Number of Vehicles > 35 MPH :	7042
Percent of Vehicles > 35 MPH :	69.9%

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EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
06/19/																
14	0	0	0	0	4	6	16	4	0	1	0	0	0	31	45	41
01:00	0	0	0	0	1	7	3	0	0	0	0	0	0	11	41	38
02:00	0	0	0	0	1	10	7	2	0	0	0	0	0	20	43	40
03:00	0	0	0	0	0	16	19	9	1	0	0	0	0	45	45	41
04:00	0	0	0	0	3	35	69	15	1	0	0	0	0	123	44	41
05:00	0	0	0	4	50	227	260	41	2	0	0	0	0	584	43	39
06:00	58	155	241	70	112	338	159	2	0	0	0	0	0	1135	38	27
07:00	92	221	339	169	95	56	6	0	0	0	0	0	0	978	28	21
08:00	16	53	109	113	230	315	106	5	0	0	0	0	0	947	38	31
09:00	3	7	11	46	115	272	254	107	32	4	1	0	0	852	44	39
10:00	0	1	6	16	58	302	242	43	1	0	0	0	0	669	42	39
11:00	3	4	8	28	79	228	187	18	2	1	0	0	0	558	42	37
12 PM	8	25	37	25	92	242	144	32	1	0	0	0	0	606	41	35
13:00	0	1	7	18	91	268	221	27	1	0	0	0	0	634	42	38
14:00	1	3	5	27	142	303	194	26	1	0	1	1	0	704	42	37
15:00	6	2	13	14	82	319	215	26	0	0	0	0	0	677	42	37
16:00	4	2	132	13	20	80	80	22	0	0	0	0	0	353	42	32
17:00	5	0	74	23	52	126	124	30	0	1	0	0	0	435	42	35
18:00	0	1	10	6	34	141	223	60	4	0	0	0	0	479	44	40
19:00	0	0	0	1	15	128	188	57	3	0	1	0	0	393	44	41
20:00	0	0	0	0	11	114	169	47	3	1	0	0	0	345	44	41
21:00	0	0	0	1	14	92	132	18	3	1	0	0	0	261	43	40
22:00	0	0	0	5	5	54	83	21	3	0	0	0	0	171	44	40
23:00	0	0	1	0	5	25	43	17	4	1	0	0	0	96	46	41
Total	196	475	993	579	1311	3704	3144	629	62	10	3	1	0	11107		
%	1.8%	4.3%	8.9%	5.2%	11.8%	33.3%	28.3%	5.7%	0.6%	0.1%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	07:00	08:00	06:00	05:00	09:00	09:00	09:00	09:00			06:00		
Vol.	92	221	339	169	230	338	260	107	32	4	1			1135		
PM Peak	12:00	12:00	16:00	14:00	14:00	15:00	18:00	18:00	18:00	17:00	14:00	14:00		14:00		
Vol.	8	25	132	27	142	319	223	60	4	1	1	1		704		

Stats

15th Percentile :	22 MPH
50th Percentile :	36 MPH
85th Percentile :	42 MPH
95th Percentile :	45 MPH

Mean Speed(Average) :	34 MPH
10 MPH Pace Speed :	34-43 MPH
Number in Pace :	6080
Percent in Pace :	54.7%
Number of Vehicles > 35 MPH :	6558
Percent of Vehicles > 35 MPH :	59.0%

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EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
06/20/																
14	0	0	0	0	2	6	21	13	0	0	0	0	0	42	46	42
01:00	0	0	0	0	2	5	9	3	0	0	0	0	0	19	44	40
02:00	0	0	0	0	0	1	13	3	2	0	0	0	0	19	47	44
03:00	0	0	0	0	2	9	10	7	2	0	0	0	0	30	47	42
04:00	0	0	0	0	0	24	62	25	3	2	0	0	0	116	46	43
05:00	0	0	0	0	14	122	310	82	5	1	0	0	0	534	45	41
06:00	9	18	133	194	233	369	206	15	1	0	0	0	0	1178	40	33
07:00	15	48	89	93	186	430	194	32	0	0	0	0	0	1087	40	33
08:00	15	10	35	56	144	337	250	32	0	0	1	0	0	880	41	36
09:00	0	0	4	16	85	294	247	41	2	0	0	0	0	689	42	38
10:00	4	2	5	39	90	301	188	35	1	0	1	0	0	666	42	37
11:00	0	0	0	2	49	201	258	39	1	1	0	0	0	551	43	40
12 PM	0	2	14	9	68	290	215	24	3	0	0	0	0	625	42	38
13:00	1	1	0	19	72	266	237	28	1	0	0	0	0	625	42	38
14:00	2	5	18	28	84	258	196	17	0	0	0	0	0	608	42	37
15:00	4	3	50	37	71	193	167	25	0	0	0	0	0	550	42	36
16:00	1	2	55	37	70	171	149	29	1	0	0	0	0	515	42	36
17:00	2	0	93	37	39	138	105	23	2	0	0	0	0	439	42	34
18:00	0	0	5	15	41	182	226	64	1	1	0	0	0	535	44	40
19:00	0	0	0	0	19	158	241	53	2	0	0	0	0	473	44	41
20:00	0	0	0	11	29	155	184	32	4	0	0	0	0	415	43	40
21:00	0	0	0	3	37	148	110	11	0	1	0	0	0	310	42	38
22:00	0	0	0	1	8	65	80	19	4	0	0	0	0	177	44	40
23:00	0	0	0	0	8	35	64	17	2	0	0	0	0	126	44	41
Total	53	91	501	597	1353	4158	3742	669	37	6	2	0	0	11209		
%	0.5%	0.8%	4.5%	5.3%	12.1%	37.1%	33.4%	6.0%	0.3%	0.1%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	06:00	06:00	06:00	07:00	05:00	05:00	05:00	04:00	08:00			06:00		
Vol.	15	48	133	194	233	430	310	82	5	2	1			1178		
PM Peak	15:00	14:00	17:00	15:00	14:00	12:00	19:00	18:00	20:00	18:00				12:00		
Vol.	4	5	93	37	84	290	241	64	4	1				625		

Stats

15th Percentile :	30 MPH
50th Percentile :	37 MPH
85th Percentile :	42 MPH
95th Percentile :	45 MPH

Mean Speed(Average) :	37 MPH
10 MPH Pace Speed :	35-44 MPH
Number in Pace :	7142
Percent in Pace :	63.7%
Number of Vehicles > 35 MPH :	7597
Percent of Vehicles > 35 MPH :	67.8%

Main Street (Route 117)
west of Clinton Savings Bank
City, State: Bolton, MA
Client: DJK/ D. Kelly



PRECISION
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143952 A Speed
Site Code: 848

EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
06/21/14	0	0	0	0	1	13	28	7	1	0	0	0	0	50	44	41
01:00	0	0	0	0	1	6	10	7	4	1	1	0	0	30	50	44
02:00	0	0	0	0	1	8	12	4	0	0	0	0	0	25	44	41
03:00	0	0	0	0	1	6	12	5	1	0	0	0	0	25	46	42
04:00	0	0	0	0	2	12	27	13	0	2	0	0	0	56	46	42
05:00	0	0	0	0	0	25	67	52	9	0	0	0	0	153	47	43
06:00	0	0	4	3	15	71	162	67	3	1	0	0	0	326	45	41
07:00	0	0	0	0	16	127	231	65	3	0	0	0	0	442	44	41
08:00	0	0	1	1	25	226	275	37	2	1	0	0	0	568	43	40
09:00	0	0	4	3	44	268	221	28	1	0	0	0	0	569	42	39
10:00	1	0	0	21	90	270	218	32	2	0	0	0	0	634	42	38
11:00	3	8	2	19	73	330	228	32	1	0	0	0	0	696	42	38
12 PM	0	0	3	8	64	325	295	31	1	0	0	0	0	727	42	39
13:00	0	0	4	12	80	314	272	26	2	0	0	0	0	710	42	39
14:00	1	3	3	21	59	317	278	37	2	0	0	0	0	721	42	39
15:00	0	0	3	12	66	294	241	41	3	0	0	0	0	660	43	39
16:00	0	0	0	5	65	283	327	49	2	0	0	0	0	731	43	39
17:00	0	0	1	2	48	330	303	47	2	0	0	0	0	733	43	39
18:00	0	0	4	19	86	212	200	34	3	0	0	0	0	558	42	38
19:00	0	0	1	0	16	150	229	61	3	0	0	0	0	460	44	41
20:00	0	0	0	0	15	155	180	25	0	1	0	1	0	377	43	40
21:00	0	0	0	1	28	176	127	17	3	1	0	0	0	353	42	39
22:00	0	0	0	1	12	94	106	19	3	1	0	0	0	236	43	40
23:00	0	0	0	0	3	45	68	19	3	2	0	0	0	140	45	41
Total	5	11	30	128	811	4057	4117	755	54	10	1	1	0	9980		
%	0.1%	0.1%	0.3%	1.3%	8.1%	40.7%	41.3%	7.6%	0.5%	0.1%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	06:00	10:00	10:00	11:00	08:00	06:00	05:00	04:00	01:00			11:00		
Vol.	3	8	4	21	90	330	275	67	9	2	1			696		
PM Peak	14:00	14:00	13:00	14:00	18:00	17:00	16:00	19:00	15:00	23:00		20:00		17:00		
Vol.	1	3	4	21	86	330	327	61	3	2		1		733		

Stats
15th Percentile : 34 MPH
50th Percentile : 38 MPH
85th Percentile : 43 MPH
95th Percentile : 46 MPH

Mean Speed(Average) : 39 MPH
10 MPH Pace Speed : 35-44 MPH
Number in Pace : 7375
Percent in Pace : 73.9%
Number of Vehicles > 35 MPH : 8058
Percent of Vehicles > 35 MPH : 80.7%



PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
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N/S: Clinton Savings Bank/ Driveway
E/W/SE: Main St (Rte 117)/ Animal Health
City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 A
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	0	2	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	364	0	0	500
07:15 AM	1	0	0	2	0	2	244	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	350	2	0	602
07:30 AM	0	0	0	0	0	3	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	314	4	0	496
07:45 AM	1	0	0	2	0	5	198	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	343	3	0	557
Total	2	0	0	4	0	12	751	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1371	9	0	2155
08:00 AM	3	0	0	2	0	2	175	0	2	0	0	1	1	0	0	0	0	0	0	0	0	1	251	6	0	444
08:15 AM	2	0	0	2	0	1	206	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	231	3	0	448
08:30 AM	3	0	0	5	0	4	191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264	1	0	468
08:45 AM	2	0	0	1	0	5	172	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	297	0	0	479
Total	10	0	0	10	0	12	744	0	3	0	1	2	2	0	0	0	0	0	0	0	0	2	1043	10	0	1839
Grand Total	12	0	0	14	0	24	1495	0	8	0	1	2	2	0	0	0	0	0	0	0	0	3	2414	19	0	3994
Apprch %	46.2	0	0	53.8	0	1.6	97.9	0	0.5	0	20	40	40	0	0	0	0	0	0	0	0	0.1	99.1	0.8	0	
Total %	0.3	0	0	0.4	0	0.6	37.4	0	0.2	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0.1	60.4	0.5	0	
Cars	11	0	0	14	0	23	1369	0	7	0	1	2	1	0	0	0	0	0	0	0	0	3	2304	19	0	3754
% Cars	91.7	0	0	100	0	95.8	91.6	0	87.5	0	100	100	50	0	0	0	0	0	0	0	0	100	95.4	100	0	94
Heavy Vehicles	1	0	0	0	0	1	126	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	110	0	0	240
% Heavy Vehicles	8.3	0	0	0	0	4.2	8.4	0	12.5	0	0	0	50	0	0	0	0	0	0	0	0	0	4.6	0	0	6

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	2	134	0	0	0	136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
07:15 AM	1	0	0	2	0	3	2	244	0	1	0	247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	602
07:30 AM	0	0	0	0	0	0	3	175	0	0	0	178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	496
07:45 AM	1	0	0	2	0	3	5	198	0	4	0	207	0	0	0	0	0	0	0	0	0	0	0	0	0	1	343	3	0	347	557
Total Volume	2	0	0	4	0	6	12	751	0	5	0	768	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1371	9	0	1381	2155
% App. Total	33.3	0	0	66.7	0		1.6	97.8	0	0.7	0		0	0	0	0	0		0	0	0	0	0		0	0.1	99.3	0.7	0		
PHF	.500	.000	.000	.500	.000	.500	.600	.769	.000	.313	.000	.777	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.942	.563	.000	.948	.895
Cars	1	0	0	4	0	5	11	694	0	5	0	710	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1322	9	0	1332	2047
% Cars	50.0	0	0	100	0	83.3	91.7	92.4	0	100	0	92.4	0	0	0	0	0	0	0	0	0	0	0	0	0	100	96.4	100	0	96.5	95.0
Heavy Vehicles	1	0	0	0	0	1	1	57	0	0	0	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	0	49	108
% Heavy Vehicles	50.0	0	0	0	0	16.7	8.3	7.6	0	0	0	7.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.6	0	0	3.5	5.0



PRECISION
D A T A
INDUSTRIES, LLC

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N/S: Clinton Savings Bank/ Driveway
E/W/SE: Main St (Rte 117)/ Animal Health
City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 A
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Groups Printed- Cars

	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	0	1	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	351	0	0	472
07:15 AM	0	0	0	2	0	2	226	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	341	2	0	574
07:30 AM	0	0	0	0	0	3	167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	4	0	474
07:45 AM	1	0	0	2	0	5	181	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	330	3	0	527
Total	1	0	0	4	0	11	694	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1322	9	0	2047
08:00 AM	3	0	0	2	0	2	164	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	237	6	0	418
08:15 AM	2	0	0	2	0	1	181	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	219	3	0	410
08:30 AM	3	0	0	5	0	4	172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251	1	0	436
08:45 AM	2	0	0	1	0	5	158	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	275	0	0	443
Total	10	0	0	10	0	12	675	0	2	0	1	2	1	0	0	0	0	0	0	0	0	2	982	10	0	1707
Grand Total	11	0	0	14	0	23	1369	0	7	0	1	2	1	0	0	0	0	0	0	0	0	3	2304	19	0	3754
Apprch %	44	0	0	56	0	1.6	97.9	0	0.5	0	25	50	25	0	0	0	0	0	0	0	0	0.1	99.1	0.8	0	
Total %	0.3	0	0	0.4	0	0.6	36.5	0	0.2	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	61.4	0.5	0	

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West							
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 07:00 AM																																
07:00 AM	0	0	0	0	0	0	1	120	0	0	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	351	0	0	351	472
07:15 AM	0	0	0	2	0	2	2	226	0	1	0	229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	341	2	0	343	574
07:30 AM	0	0	0	0	0	0	3	167	0	0	0	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	4	0	304	474	
07:45 AM	1	0	0	2	0	3	5	181	0	4	0	190	0	0	0	0	0	0	0	0	0	0	0	0	0	1	330	3	0	334	527	
Total Volume	1	0	0	4	0	5	11	694	0	5	0	710	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1322	9	0	1332	2047	
% App. Total	20	0	0	80	0		1.5	97.7	0	0.7	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0.1	99.2	0.7	0		
PHF	.250	.000	.000	.500	.000	.417	.550	.768	.000	.313	.000	.775	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.942	.563	.000	.949	.892	

Peak Hour for Entire Intersection Begins at 07:00 AM



PRECISION
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N/S: Clinton Savings Bank/ Driveway
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City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 A
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Groups Printed- Heavy Vehicles

	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total	
07:00 AM	0	0	0	0	0	1	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	28
07:15 AM	1	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	28	
07:30 AM	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	22	
07:45 AM	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	30	
Total	1	0	0	0	0	1	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	0	108	
08:00 AM	0	0	0	0	0	0	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	26	
08:15 AM	0	0	0	0	0	0	25	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	12	0	0	38	
08:30 AM	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	32	
08:45 AM	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	36	
Total	0	0	0	0	0	0	69	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	61	0	0	132	
Grand Total	1	0	0	0	0	1	126	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	110	0	0	240	
Apprch %	100	0	0	0	0	0.8	98.4	0	0.8	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0		
Total %	0.4	0	0	0	0	0.4	52.5	0	0.4	0	0	0	0.4	0	0	0	0	0	0	0	0	0	45.8	0	0		

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West							
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 08:00 AM																																
08:00 AM	0	0	0	0	0	0	0	11	0	1	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	14	26	
08:15 AM	0	0	0	0	0	0	0	25	0	0	0	25	0	0	1	0	0	1	0	0	0	0	0	0	0	0	12	0	0	12	38	
08:30 AM	0	0	0	0	0	0	0	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	32		
08:45 AM	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	22	36		
Total Volume	0	0	0	0	0	0	0	69	0	1	0	70	0	0	1	0	0	1	0	0	0	0	0	0	0	0	61	0	0	61	132	
% App. Total	0	0	0	0	0		0	98.6	0	1.4	0		0	0	100	0	0		0	0	0	0	0		0	0	100	0	0			
PHF	.000	.000	.000	.000	.000	.000	.000	.690	.000	.250	.000	.700	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.693	.000	.000	.693	.868		

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

Peak Hour for Entire Intersection Begins at 08:00 AM



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N/S: Clinton Savings Bank/ Driveway
E/W/SE: Main St (Rte 117)/ Animal Health
City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 A
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West					Int. Total
	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds	Right	Bear Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	0	33.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	0	0	

Start Time	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West						Int. Total
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	
% App. Total	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0		0	0	100	0	0			
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250	

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



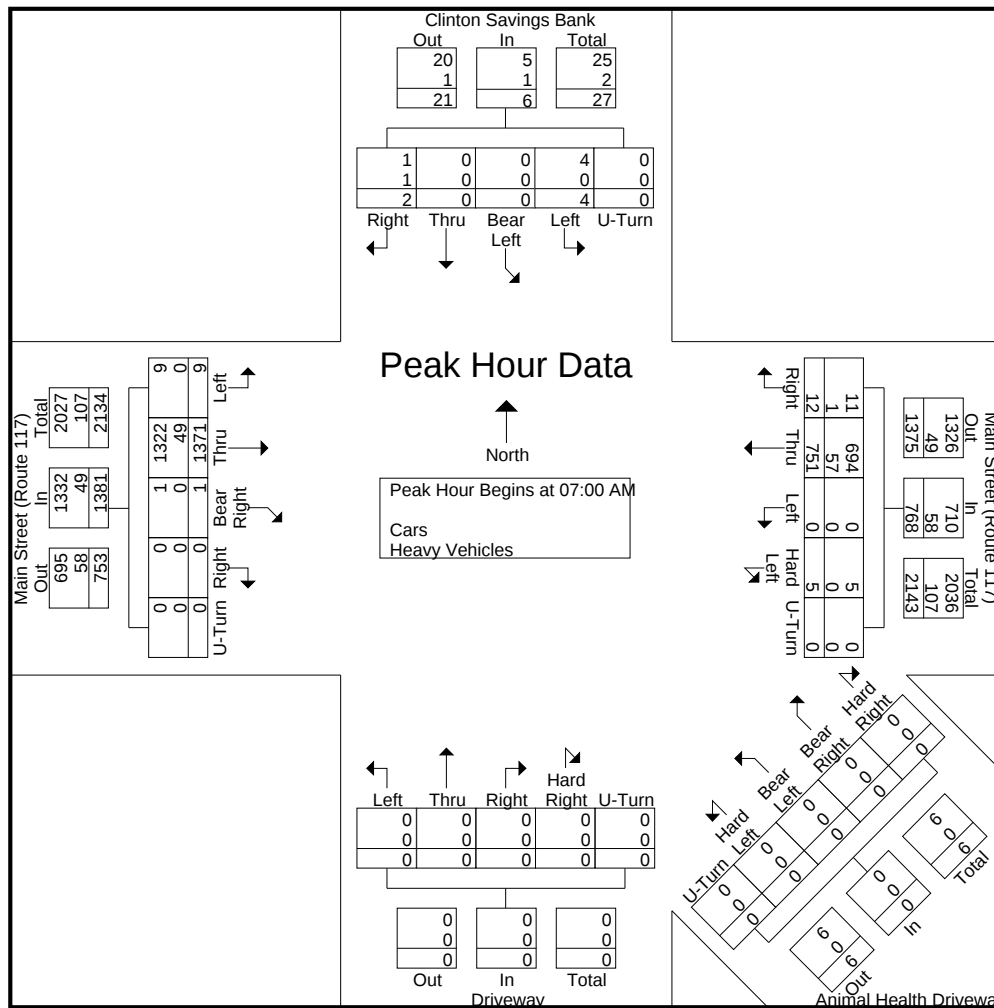
PRECISION
D A T A
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E/W/SE: Main St (Rte 117)/ Animal Health
City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 A
Site Code : 848
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Page No : 1

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West							
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 07:00 AM																																
07:00 AM	0	0	0	0	0	0	2	134	0	0	0	136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	364	500
07:15 AM	1	0	0	2	0	3	2	244	0	1	0	247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	350	2	0	352	602
07:30 AM	0	0	0	0	0	0	3	175	0	0	0	178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	314	4	0	318	496	
07:45 AM	1	0	0	2	0	3	5	198	0	4	0	207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	343	3	0	347	557
Total Volume	2	0	0	4	0	6	12	751	0	5	0	768	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1371	9	0	1381	2155
% App. Total	33.3	0	0	66.7	0		1.6	97.8	0	0.7	0		0	0	0	0	0	0		0	0	0	0	0		0	0.1	99.3	0.7	0		
PHF	.500	.000	.000	.500	.000	.500	.600	.769	.000	.313	.000	.777	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.942	.563	.000	.948	.895
Cars	1	0	0	4	0	5	11	694	0	5	0	710	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1322	9	0	1332	2047
% Cars	50.0	0	0	100	0	83.3	91.7	92.4	0	100	0	92.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	96.4	100	0	96.5	95.0
Heavy Vehicles	1	0	0	0	0	1	1	57	0	0	0	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	0	49	108
% Heavy Vehicles	50.0	0	0	0	0	16.7	8.3	7.6	0	0	0	7.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.6	0	0	3.5	5.0





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City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 AA
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
04:00 PM	7	0	0	5	0	5	315	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	179	4	0	519
04:15 PM	4	0	0	1	0	6	345	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	191	0	0	551
04:30 PM	6	0	0	2	0	3	349	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	181	0	0	542
04:45 PM	4	0	0	2	0	0	358	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	166	3	0	534
Total	21	0	0	10	0	14	1367	0	3	0	5	0	0	0	0	0	0	0	0	0	0	2	717	7	0	2146
05:00 PM	3	0	0	1	0	1	335	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	177	1	0	520
05:15 PM	4	0	0	4	0	3	359	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	181	1	0	553
05:30 PM	2	0	0	4	0	2	362	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	165	0	0	537
05:45 PM	0	0	0	1	0	3	283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152	2	0	441
Total	9	0	0	10	0	9	1339	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	675	4	0	2051
Grand Total	30	0	0	20	0	23	2706	0	5	0	8	0	0	0	0	0	0	0	0	0	0	2	1392	11	0	4197
Apprch %	60	0	0	40	0	0.8	99	0	0.2	0	100	0	0	0	0	0	0	0	0	0	0	0.1	99.1	0.8	0	
Total %	0.7	0	0	0.5	0	0.5	64.5	0	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0	0	33.2	0.3	0	
Cars	30	0	0	20	0	23	2652	0	5	0	8	0	0	0	0	0	0	0	0	0	0	2	1359	11	0	4110
% Cars	100	0	0	100	0	100	98	0	100	0	100	0	0	0	0	0	0	0	0	0	0	100	97.6	100	0	97.9
Heavy Vehicles	0	0	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	87
% Heavy Vehicles	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.4	0	0	2.1

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	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	6	0	0	2	0	8	3	349	0	0	0	352	1	0	0	0	0	1	0	0	0	0	0	0	0	0	181	0	0	181	542
04:45 PM	4	0	0	2	0	6	0	358	0	0	0	358	1	0	0	0	0	1	0	0	0	0	0	0	0	0	166	3	0	169	534
05:00 PM	3	0	0	1	0	4	1	335	0	0	0	336	2	0	0	0	0	2	0	0	0	0	0	0	0	0	177	1	0	178	520
05:15 PM	4	0	0	4	0	8	3	359	0	1	0	363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181	1	0	182	553
Total Volume	17	0	0	9	0	26	7	1401	0	1	0	1409	4	0	0	0	0	4	0	0	0	0	0	0	0	0	705	5	0	710	2149
% App. Total	65.4	0	0	34.6	0		0.5	99.4	0	0.1	0		100	0	0	0	0		0	0	0	0	0		0	0	99.3	0.7	0		
PHF	.708	.000	.000	.563	.000	.813	.583	.976	.000	.250	.000	.970	.500	.000	.000	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.974	.417	.000	.975	.972
Cars	17	0	0	9	0	26	7	1378	0	1	0	1386	4	0	0	0	0	4	0	0	0	0	0	0	0	0	690	5	0	695	2111
% Cars	100	0	0	100	0	100	100	98.4	0	100	0	98.4	100	0	0	0	0	100	0	0	0	0	0	0	0	0	97.9	100	0	97.9	98.2
Heavy Vehicles	0	0	0	0	0	0	0	23	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	15	38
% Heavy Vehicles	0	0	0	0	0	0	0	1.6	0	0	0	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0	0	2.1	1.8



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N/S: Clinton Savings Bank/ Driveway
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City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 AA
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Groups Printed- Cars

	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
04:00 PM	7	0	0	5	0	5	300	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	168	4	0	493
04:15 PM	4	0	0	1	0	6	337	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	189	0	0	541
04:30 PM	6	0	0	2	0	3	342	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	175	0	0	529
04:45 PM	4	0	0	2	0	0	354	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	163	3	0	527
Total	21	0	0	10	0	14	1333	0	3	0	5	0	0	0	0	0	0	0	0	0	0	2	695	7	0	2090
05:00 PM	3	0	0	1	0	1	328	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	174	1	0	510
05:15 PM	4	0	0	4	0	3	354	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	178	1	0	545
05:30 PM	2	0	0	4	0	2	356	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	162	0	0	528
05:45 PM	0	0	0	1	0	3	281	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150	2	0	437
Total	9	0	0	10	0	9	1319	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	664	4	0	2020
Grand Total	30	0	0	20	0	23	2652	0	5	0	8	0	0	0	0	0	0	0	0	0	0	2	1359	11	0	4110
Apprch %	60	0	0	40	0	0.9	99	0	0.2	0	100	0	0	0	0	0	0	0	0	0	0	0.1	99.1	0.8	0	
Total %	0.7	0	0	0.5	0	0.6	64.5	0	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0	0	33.1	0.3	0	

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	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	6	0	0	2	0	8	3	342	0	0	0	345	1	0	0	0	0	1	0	0	0	0	0	0	0	0	175	0	0	175	529
04:45 PM	4	0	0	2	0	6	0	354	0	0	0	354	1	0	0	0	0	1	0	0	0	0	0	0	0	0	163	3	0	166	527
05:00 PM	3	0	0	1	0	4	1	328	0	0	0	329	2	0	0	0	0	2	0	0	0	0	0	0	0	0	174	1	0	175	510
05:15 PM	4	0	0	4	0	8	3	354	0	1	0	358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178	1	0	179	545
Total Volume	17	0	0	9	0	26	7	1378	0	1	0	1386	4	0	0	0	0	4	0	0	0	0	0	0	0	0	690	5	0	695	2111
% App. Total	65.4	0	0	34.6	0		0.5	99.4	0	0.1	0		100	0	0	0	0		0	0	0	0	0		0	0	99.3	0.7	0		
PHF	.708	.000	.000	.563	.000	.813	.583	.973	.000	.250	.000	.968	.500	.000	.000	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.969	.417	.000	.971	.968



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Groups Printed- Heavy Vehicles

	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total	
04:00 PM	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	26
04:15 PM	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	10	
04:30 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	13	
04:45 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	7	
Total	0	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	56	
05:00 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	10	
05:15 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	8	
05:30 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	9	
05:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4	
Total	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	31	
Grand Total	0	0	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	87	
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0		
Total %	0	0	0	0	0	0	62.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.9	0	0		

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West							
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	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	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	26
04:15 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	10
04:30 PM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	13	
04:45 PM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	7	
Total Volume	0	0	0	0	0	0	0	34	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	22	56	
% App. Total	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0			
PHF	.000	.000	.000	.000	.000	.000	.000	.567	.000	.000	.000	.567	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.000	.538		

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



PRECISION
D A T A
INDUSTRIES, LLC

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

N/S: Clinton Savings Bank/ Driveway
E/W/SE: Main St (Rte 117)/ Animal Health
City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 AA
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Groups Printed- Peds and Bicycles

	Clinton Savings Bank From North					Main Street (Route 117) From East					Animal Health Driveway From Southeast					Driveway From South					Main Street (Route 117) From West					
Start Time	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds	Right	Bear Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
04:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	0	66.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33.3	0	0	

	Clinton Savings Bank From North						Main Street (Route 117) From East						Animal Health Driveway From Southeast						Driveway From South						Main Street (Route 117) From West							
Start Time	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Int. Total	
Peak Hour Analysis for Entire Intersection Begins at 04:00 PM - Peak 1 of 1																																
04:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	
04:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total Volume	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	5	
% App. Total	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.750	.000	.000	.000	.750	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.625	

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

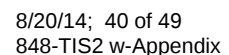
Peak Hour for Entire Intersection Begins at 04:00 PM



N/S: Clinton Savings Bank/ Driveway
E/W/SE: Main St (Rte 117)/ Animal Health
City, State: Bolton, MA
Client: DJK/ D. Kelly

File Name : 143952 AA
Site Code : 848
Start Date : 6/19/2014
Page No : 1

Peak Hour for Entire Intersection Begins at 04:30 PM



APPENDIX B – LEVEL OF SERVICE ANALYSIS

3: Main Street & Existing Driveway
2014 Existing Morning Traffic Volume Conditions

Dermot J. Kelly, PE, PTOE
DJK Associates, Inc.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	1372	751	12	4	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	1524	834	13	4	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	848				2386	841
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	848				2386	841
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				88	99
cM capacity (veh/h)	777				36	360
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	1534	848	7			
Volume Left	10	0	4			
Volume Right	0	13	2			
cSH	777	1700	52			
Volume to Capacity	0.01	0.50	0.13			
Queue Length 95th (ft)	1	0	10			
Control Delay (s)	1.3	0.0	84.6			
Lane LOS	A		F			
Approach Delay (s)	1.3	0.0	84.6			
Approach LOS			F			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			89.4%	ICU Level of Service	E	
Analysis Period (min)			15			

3: Main Street & Existing Driveway
2014 Existing Evening Traffic Volume Conditions

Dermot J. Kelly, PE, PTOE
DJK Associates, Inc.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	705	1401	7	9	17
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	727	1444	7	9	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1452				2185	1448
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1452				2185	1448
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				81	89
cM capacity (veh/h)	466				50	161
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	732	1452	27			
Volume Left	5	0	9			
Volume Right	0	7	18			
cSH	466	1700	91			
Volume to Capacity	0.01	0.85	0.30			
Queue Length 95th (ft)	1	0	28			
Control Delay (s)	0.3	0.0	60.5			
Lane LOS	A		F			
Approach Delay (s)	0.3	0.0	60.5			
Approach LOS			F			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		84.2%		ICU Level of Service	E	
Analysis Period (min)		15				

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	1475	816	12	4	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	1639	907	13	4	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	920				2572	913
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920				2572	913
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				84	99
cM capacity (veh/h)	730				27	327
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	1649	920	7			
Volume Left	10	0	4			
Volume Right	0	13	2			
cSH	730	1700	40			
Volume to Capacity	0.01	0.54	0.17			
Queue Length 95th (ft)	1	0	13			
Control Delay (s)	3.9	0.0	113.7			
Lane LOS	A		F			
Approach Delay (s)	3.9	0.0	113.7			
Approach LOS			F			
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization		94.8%		ICU Level of Service		F
Analysis Period (min)		15				

3: Main Street & Existing Driveway
2021 No Build Evening Traffic Volume Conditions

Dermot J. Kelly, PE, PTOE
DJK Associates, Inc.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	771	1513	7	9	17
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	795	1560	7	9	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1567				2369	1563
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1567				2369	1563
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				76	87
cM capacity (veh/h)	421				38	137
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	800	1567	27			
Volume Left	5	0	9			
Volume Right	0	7	18			
cSH	421	1700	72			
Volume to Capacity	0.01	0.92	0.37			
Queue Length 95th (ft)	1	0	35			
Control Delay (s)	0.4	0.0	81.8			
Lane LOS	A		F			
Approach Delay (s)	0.4	0.0	81.8			
Approach LOS			F			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			90.1%	ICU Level of Service	E	
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1484	7	7	823	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1649	8	8	914	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1657		2583	1653
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1657		2583	1653
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			394		27	119
Direction, Lane #	EB 1	WB 1				
Volume Total	1657	922				
Volume Left	0	8				
Volume Right	8	0				
cSH	1700	394				
Volume to Capacity	0.97	0.02				
Queue Length 95th (ft)	0	2				
Control Delay (s)	0.0	0.7				
Lane LOS		A				
Approach Delay (s)	0.0	0.7				
Approach LOS						
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			81.9%		ICU Level of Service	D
Analysis Period (min)			15			

3: Main Street & Existing Driveway
2021 Build Morning Traffic Volume Conditions

Dermot J. Kelly, PE, PTOE
DJK Associates, Inc.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	1475	0	0	823	12	5	0	6	4	0	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	1639	0	0	914	13	6	0	7	4	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	928			1639			2582	2587	1639	2587	2580	921
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	928			1639			2582	2587	1639	2587	2580	921
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			67	100	95	71	100	99
cM capacity (veh/h)	725			395			17	25	124	15	25	324
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1649	928	12	7								
Volume Left	10	0	6	4								
Volume Right	0	13	7	2								
cSH	725	1700	32	23								
Volume to Capacity	0.01	0.55	0.39	0.29								
Queue Length 95th (ft)	1	0	31	22								
Control Delay (s)	3.9	0.0	177.9	220.8								
Lane LOS	A		F	F								
Approach Delay (s)	3.9	0.0	177.9	220.8								
Approach LOS			F	F								
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			94.8%		ICU Level of Service				F			
Analysis Period (min)			15									

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	776	12	13	1542	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	800	12	13	1590	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			812		2423	806
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			812		2423	806
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			823		34	377
Direction, Lane #	EB 1	WB 1				
Volume Total	812	1603				
Volume Left	0	13				
Volume Right	12	0				
cSH	1700	823				
Volume to Capacity	0.48	0.02				
Queue Length 95th (ft)	0	1				
Control Delay (s)	0.0	2.4				
Lane LOS		A				
Approach Delay (s)	0.0	2.4				
Approach LOS						
Intersection Summary						
Average Delay		1.6				
Intersection Capacity Utilization		94.8%		ICU Level of Service	F	
Analysis Period (min)		15				

3: Main Street & Existing Driveway
2021 Build Evening Traffic Volume Conditions

Dermot J. Kelly, PE, PTOE
DJK Associates, Inc.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	771	0	0	1526	7	12	0	13	9	0	17
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	795	0	0	1573	7	12	0	13	9	0	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1580			795			2399	2386	795	2395	2382	1577
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1580			795			2399	2386	795	2395	2382	1577
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			38	100	97	57	100	87
cM capacity (veh/h)	408			827			20	34	388	22	34	133
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	800	1580	26	27								
Volume Left	5	0	12	9								
Volume Right	0	7	13	18								
cSH	408	1700	39	48								
Volume to Capacity	0.01	0.93	0.66	0.56								
Queue Length 95th (ft)	1	0	60	53								
Control Delay (s)	0.4	0.0	202.3	150.4								
Lane LOS	A		F	F								
Approach Delay (s)	0.4	0.0	202.3	150.4								
Approach LOS			F	F								
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			90.7%		ICU Level of Service				E			
Analysis Period (min)			15									