TRAFFIC IMPACT AND ACCESS STUDY

Warehouse 38

Glastonbury, Connecticut

PREPARED FOR

JS Advisors, LLC
90 Miles Drive
Wallingford, Connecticut, 06492
203-871-7347

PREPARED BY

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Wethersfield, CT 06109
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September 10, 2021

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Introduction

Vanasse Hangen Brustlin, Inc. (VHB) has been retained by JS Advisors, LLC to complete a traffic impact and access study (TIAS) for the proposed development of the warehouse located at 38 Hubbard Street, Glastonbury, Connecticut.

The site was previously approved for a 31-unit residential apartment building, and the developer is proposing to develop a 31 unit condominium building.

This TIAS quantifies existing and future transportation conditions and identifies possible traffic impacts of the proposed project.

1.1 Project Description

The site is located at 38 Hubbard Street in Glastonbury, Connecticut. The existing site consists of a warehouse with negligible traffic. Under this project, a 31 unit condominium building would be developed on the site with access to Hubbard Street via the existing driveway.

The main driveway for the existing site is located 515 feet east of Main Street on Hubbard Street. This driveway will be used as a full access driveway, and there are no proposed changes to the driveway under this project.

The proposed site plan is included in the Appendix.

1.2 Summary of Findings

The transportation impacts of the project were examined during the study area's weekday morning and afternoon peak hours at the intersection of Hubbard Street at the Site

Driveway. An analysis of 2021 existing conditions for the warehouse driveway was not conducted because this intersection is assumed to be operating with negligible volumes. It is assumed that existing traffic is flowing in the area of the site driveway with no delay. A build condition for 2021 was developed to evaluate transportation conditions with the project constructed. The following are key findings of the TIAS:

- The project is anticipated to generate 18 total trips (5 entering and 13 exiting) during the morning peak hour and 21 total trips (12 entering and 9 exiting) during the afternoon peak hour.
- The study intersection will operate at LOS A during the build morning and afternoon peak hours.
- The additional traffic generated by the proposed condominium building is not expected to have a significant impact on surrounding traffic operating conditions.

1.3 Study Methodology

The intersection of Hubbard Street at the Site Driveway was selected by the project study team as the basis of the study. This TIAS evaluates existing conditions at this study area intersection and quantifies the potential traffic impacts of the proposed project.

The TIAS examines existing conditions, representing the study area at the time of this study, and future build conditions, representing the study area if the project is constructed as proposed.

The TIAS has been prepared in accordance with the requirements of the Town of Glastonbury and the Office of State Traffic Administration (OSTA).

Finally, traffic that will be generated by the proposed project is calculated and added to the existing conditions to determine the build conditions. Traffic analyses are conducted to compare existing and future roadway capacities and demands. These analyses are used as the basis for determining potential project impacts.

2

2021 Existing Conditions

Evaluation of the transportation impacts associated with the redevelopment of the existing warehouse requires an understanding of the existing transportation system in the project study area. The 2021 existing conditions evaluation consisted of an inventory of intersection traffic control, roadway geometry, traffic volumes, and recent vehicle crash history in the study area. Each of these elements is described in detail below.

2.1 Study Area

2.1.1 Roadways

Hubbard Street between Main Street and Route 17 is an east-west collector roadway. It provides one travel lane per direction. Sidewalks are provided along the north side of the roadway. The posted speed limit along the roadway is 30 mph. The roadway varies between 28 and 30 feet wide. The land use along the road is majority residential with two driveways for a cemetery and the warehouse at 38 Hubbard Street. Hubbard Street provides access to Main Street and downtown Glastonbury as well as Route 17 which connects the area to other major routes throughout Connecticut.

0 200 400 Feet

Site and Study Intersection Location **Figure 1**

Proposed Warehouse 38
38 Hubbard Street, Glastonbury, CT

2.2 Crash History and Analysis

To identify potential vehicle crash trends and/or roadway deficiencies within the project study area, VHB conducted a review of the Connecticut Crash Data Repository (CTCDR) developed by UConn for the most recent three years of crash data collection (January 2018 – December 2020). To be reported, $1000 of property damage or an injury must have occurred.

No crashes were reported at the existing site driveway in the study area. However, it is worth noting that the intersection 500 feet to the west, Main Street at Hubbard Street, had 5 reported crashed in the most recent 3 years.

2.3 Site Access and Parking

The proposed site will provide vehicular access via one site driveway on Hubbard Street as shown on the site plan in the Appendix. This driveway is existing. The full access driveway is located 515 feet east of Main Street and provides access to parking for the site. The site will provide 50 parking spaces.

Based on the speeds recorded from the ATRs, the 85th percentile speeds were 37 mph eastbound and 36 mph westbound. Connecticut Department of Transportation requires 401 feet of Intersection Site Distance for speeds of 36 mph and 412 feet for speeds of 37 mph. Conservatively, 415 feet of sight distance should be available in each direction from the site driveways. Intersection sight distances were observed for the existing site driveways on Hubbard Street. Based on the results of this investigation, adequate intersection sight distance is available at the site driveway. Results of the sight distance investigation are summarized in Table 1

Table 1 Intersection Sight Distances

	Available Sight Distance			Meets Standard	
Location	Left	Right	Minimum	Left	Right
Site Driveway	>415''	>415'	415'	**Yes**	**Yes**

Source: Vanasse Hangen Brustlin, Inc.

2.4 Traffic Count Data

To assess current traffic conditions along the roadways serving the project study area, an automatic traffic recorder (ATR) was used to collect traffic volumes along Hubbard Street near the Site Driveway. The ATR recorded volumes and speeds for more than 48 hours including all of Wednesday, September 8, 2021 and Thursday, September 9, 2021.

Results of the ATR counts indicate Average Daily Traffic (ADT) of 3,190 vehicles per day. This is consistent with the previously conducted traffic study. During the AM peak hour, approximately 121 vehicles per hour (vph) are travelling eastbound while 128 vph are travelling westbound. During the PM peak hour, 136 vph travel eastbound and 145 vph travel westbound.

The 2021 existing conditions traffic volumes are shown in Figures 2 and the ATR counts are shown in the Appendix.

3

2021 Build Conditions

The transportation impacts of the project were evaluated for 2021. Due to this short timeframe, no further background growth was applied to the 2021 existing traffic volumes noted in the previous section to develop a future "No-Build" condition. The traffic volumes projected to be generated by the 38 Hubbard Street development were added to the existing traffic volume networks to forecast 2021 Build Conditions, as described in the following sections. The 2021 Build Conditions were then compared to the existing conditions to evaluate the transportation impacts of the project.

3.1 2021 Build Conditions

The 2021 build conditions represent traffic conditions when the Warehouse 38 development is fully open and operational. The 2021 build conditions traffic volumes include the existing conditions volumes plus the vehicle trips anticipated to be generated by the project.

3.1.1 Site-Generated Traffic

The vehicle trips the project is expected to generate were calculated based on trip generation rates provided in the ITE Trip Generation manual, 10th edition. The rate at which any development generates traffic is dependent upon a number of factors such as size, location, and concentration of surrounding developments. Land Use Code (LUC) 220 for Multifamily Housing (Low-Rise) was selected as the most conservative methodology for similar developments. The trip generation associated with the proposed development program is shown in Table 2.

Table 2 Trip Generation Summary

Time Period	Total Build Trips[1]
Morning Peak Hour (vph)	
Enter	*5*
Exit	*13*
Total	***18***
Afternoon Peak Hour (vph)	
Enter	*12*
Exit	*9*
Total	***21***

Source: Institute of Transportation Engineers, Trip Generation, 10th Edition
vpd = vehicles per day, vph = vehicles per hour
1 ITE Land Use Code 220 Multifamily Housing (Low-Rise), 31 Units

3.1.2 Trip Distribution and Assignment

Trip generation was calculated for the entire proposed facility. There is a negligible amount of trips existing site trips, so it was assumed that all trips are new trips impacting the study area roadways. The net addition of proposed site-generated trips is 18 total trips (5 entering and 13 exiting) during the morning peak hour and 21 total trips (12 entering and 9 exiting) during the evening peak hour. The ITE trip generation is included in the Appendix.

It was conservatively assumed that the transportation mode share for all trips to and from the site would be by automobile. The directional distribution of the vehicular traffic approaching and departing the site is a function of population densities, the location of employment, existing travel patterns, and the efficiency of the existing roadway system. Anticipated trip distribution patterns were based on the existing distribution of vehicle traffic on Hubbard Street from the 2021 ATR counts.

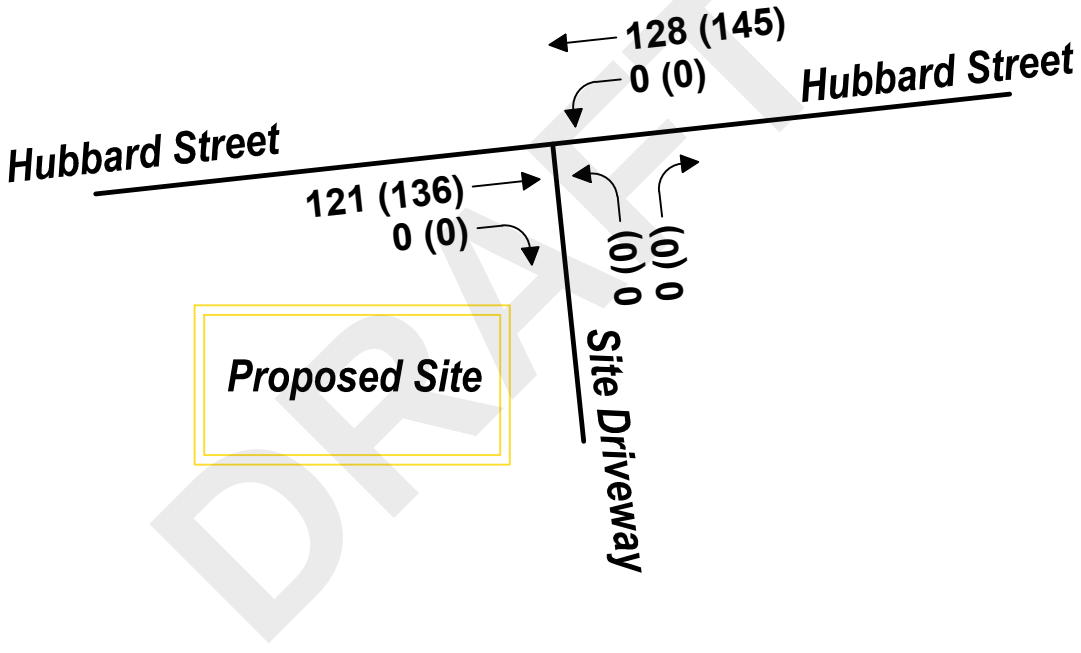
The results of the evaluation are shown in Table 3.

Table 3 Trip Distribution

Traffic Entering/Leaving via	Portion of Project-Generated Traffic
Hubbard Street West	50%
Hubbard Street East	50%

Source: ATR Counts

The resulting site-generated trips are depicted in Figure 3. These site-generated trips were then added to the 2021 existing conditions traffic volumes to develop the 2021 build conditions traffic volumes, presented in Figure 4.

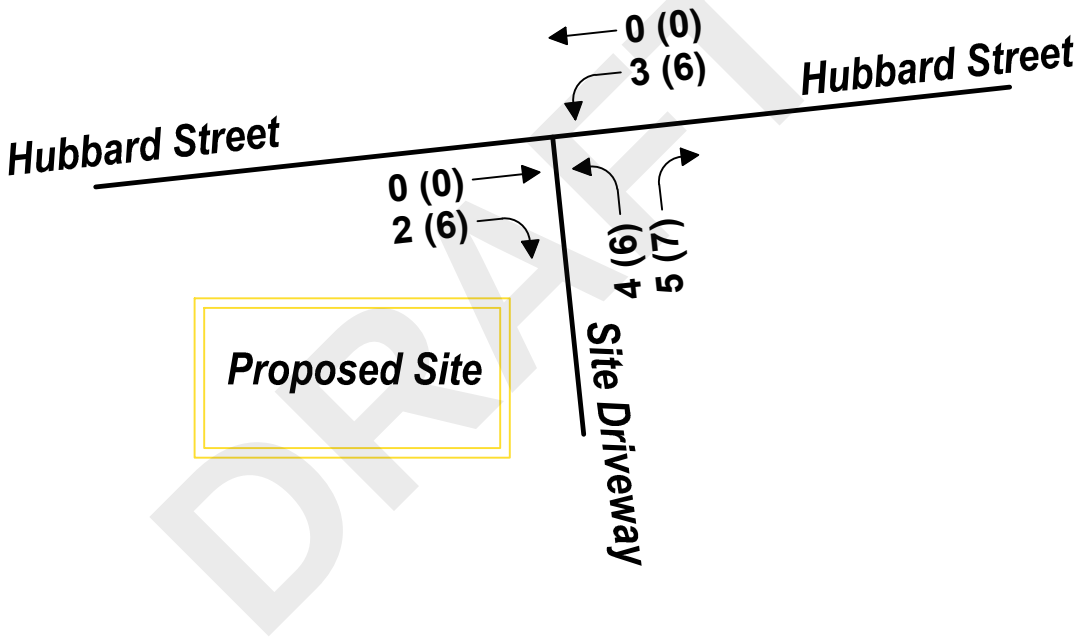


\# Weekday Morning Peak Hour
(#) Weekday Evening Peak Hour

Not to Scale

2021 Existing Conditions
Peak Hour Traffic Volumes
Proposed Warehouse 38
38 Hubbard Street, Glastonbury, CT

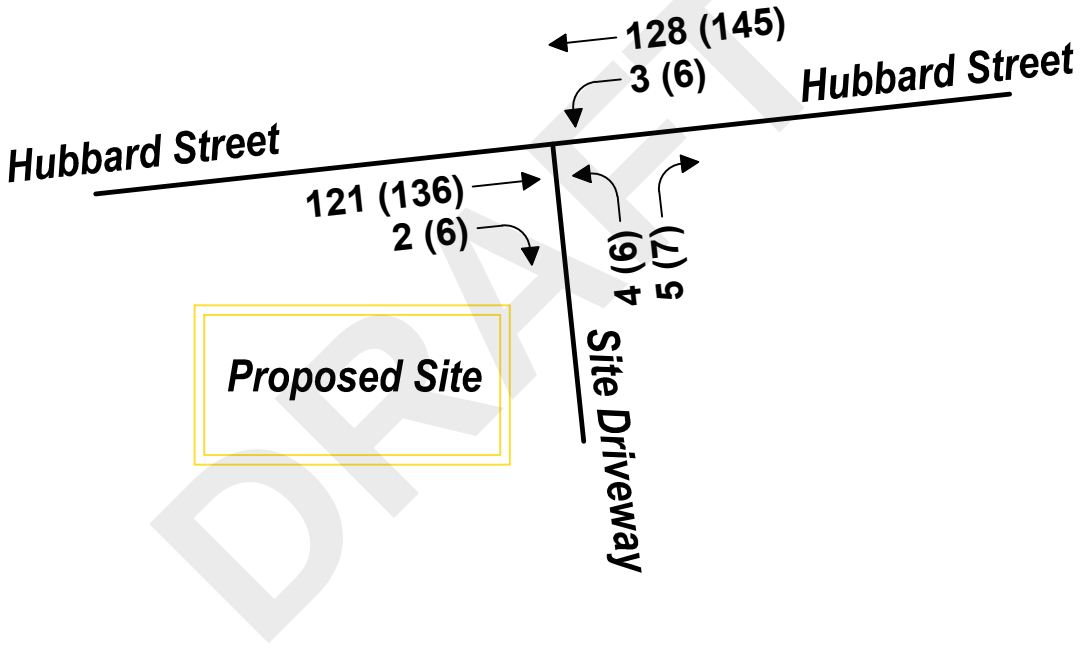
Figure 2



\# Weekday Morning Peak Hour
(#) Weekday Evening Peak Hour

Site-Generated Trips
Peak Hour Traffic Volumes
Proposed Warehouse 38
38 Hubbard Street, Glastonbury, CT

Figure 3



\# Weekday Morning Peak Hour
(#) Weekday Evening Peak Hour

Not to Scale

2021 Build Conditions
Peak Hour Traffic Volumes
Proposed Warehouse 38
38 Hubbard Street, Glastonbury, CT

Figure 4

4

Traffic Operations Analysis

To assess the quality of traffic operations within the study area, intersection capacity analyses was conducted for the 2021 build conditions. Capacity analyses provide an indication of the adequacy of the roadway facilities to serve the anticipated traffic demands.

4.1 Method

In accordance with OSTA requirements, the evaluation criteria used to analyze signalized intersections in this study are based on the *Highway Capacity Manual (HCM) 2000*[1]. As the *HCM* indicates, intersection traffic operations are influenced by several factors: the type of traffic control, traffic demand, lane use configurations, lane widths, turning restrictions, roadway grade, and for signalized intersections, signal phasing and timings. The following are some of the parameters used to assess quality of traffic operations.

- Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure of a number of factors including roadway geometrics, speed, travel delay and freedom to maneuver. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level-of-service designations range from A to F, with LOS A representing the least congested operating conditions and LOS F representing the most congested conditions. It is important to note that intersections during peak traffic conditions are not necessarily expected to operate at LOS A; an intersection operating at LOS A during

[1] *Highway Capacity Manual,* Transportation Research Board, Washington, DC (2000).

typical peak conditions may suggest that the roadway is over-designed with too much capacity.

- Delay is a complex measure that depends upon a number of variables such as quality of signal progression, cycle length, allocation of green time, and volume-to-capacity (v/c) ratio. Of all the factors cited, v/c ratios have the least effect on delay. Thus, for any given v/c ratio, a range of delay values (and, therefore, levels of service) may result. Conversely, for a given level of service, the v/c ratio may lie anywhere within a broad range. Comparison of intersection capacity results therefore requires that in addition to the LOS, the other measures of effectiveness (MOEs) also be considered.

Synchro 10 Software was used to model the study intersections based on the parameters described. Synchro is widely used by traffic engineering professionals and is an approved analysis software by OSTA. It is consistent with *HCM 2000* and *HCM 6th Edition* which provide sufficient basis for the discussion of traffic operations of signalized and unsignalized intersections, respectively.

4.2 Unsignalized Intersection Capacity Analysis

Table 4 presents a summary of the capacity analyses for the signalized study intersection. The Synchro analysis reports are included in the Appendix.

The results indicate that Hubbard Street at the Site Driveway maintains the highest and most desirable overall LOS A during the weekday morning and afternoon peak hours for 2021 Build Conditions. Therefore, the proposed project does not significantly negatively impact operations.

Table 4 Unsignalized Intersection Capacity Analysis Summary

Location	Peak Hour	Approach	2021 Build Conditions				
			v/c	Del	LOS	Q50	Q95
Hubbard Street at Site Driveway	AM	EB	0.08	0.0	A	--	--
		WB	0.00	0.2	A	--	--
		NB	0.02	9.5	A	0	1
		Overall	0.08	0.6	**A**	--	--
	PM	EB	0.09	0.0	A	--	--
		WB	0.00	0.4	A	--	--
		NB	0.01	9.7	A	0	1
		Overall	0.09	0.4	**A**	--	--

Source: VHB, Inc. using Synchro 10 software.
1 volume-to-capacity ratio
2 delay, in seconds
3 level of service
4 50th percentile queue length, in feet
5 95th percentile queue length, in feet
EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; R = right; T = through, L= left

It should be noted that the delays reported in the table above represent the average delays experienced over a one-hour period during the weekday morning and afternoon peaks. Therefore, the actual delays experienced by motorists entering or exiting the site may vary from the delays reported above.

5

Conclusion

This document has outlined the anticipated transportation impacts of the proposed Warehouse 38 development at 38 Hubbard Street, Glastonbury, Connecticut.

The traffic generated by the proposed site will not adversely impact operations at the study intersection. The projected site traffic will increase delays and queues however not significantly. The overall LOS from existing conditions to build conditions is maintained at LOS A.

Materials supporting the findings within this document are included in the attached Appendix.

Appendix

Trip Generation

Capacity Analysis Reports

Automatic Traffic Recorder Data

Site Plans

Trip Generation

Multifamily Housing (Low-Rise)
(220)

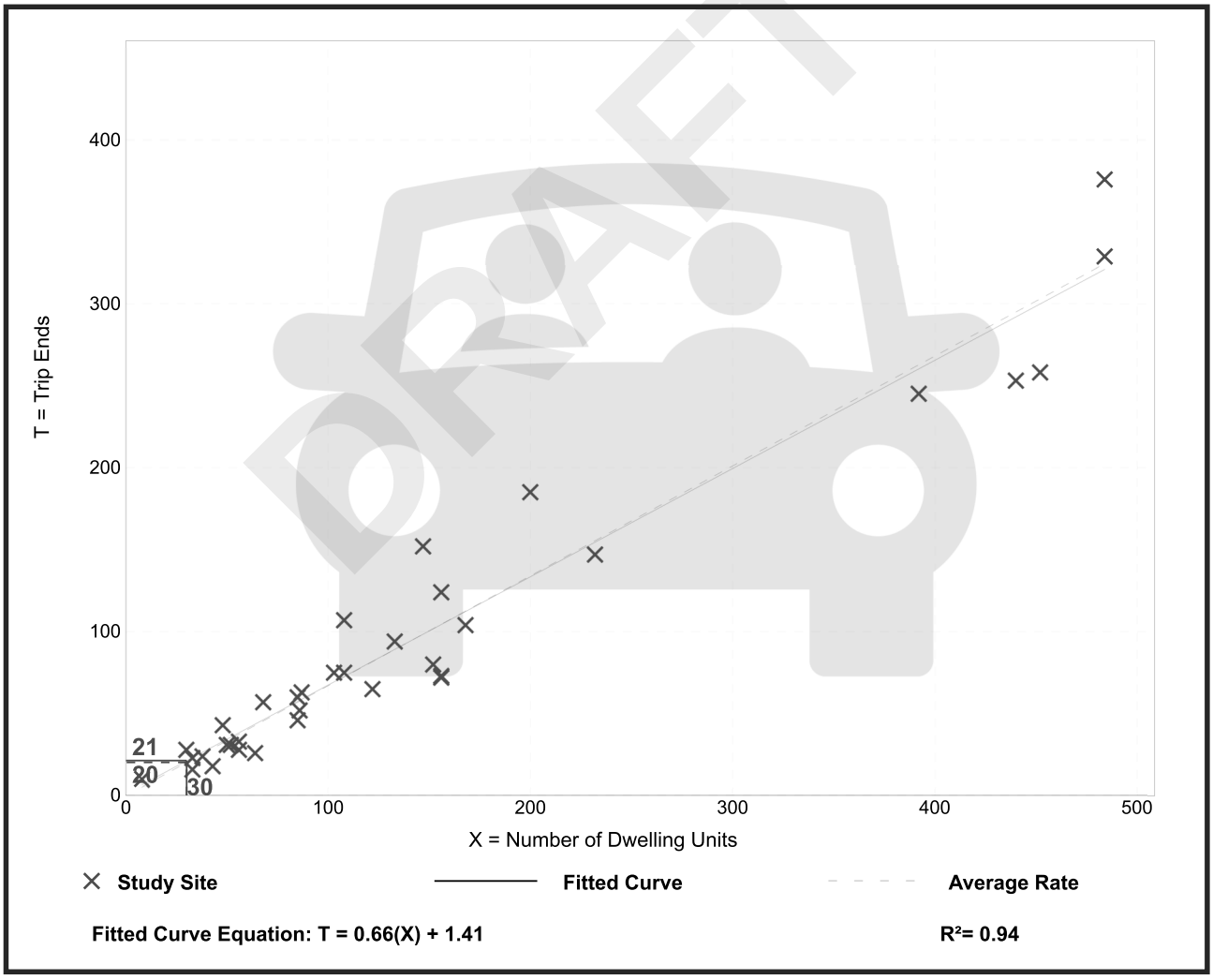
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 35
Avg. Num. of Dwelling Units: 146
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.67	0.41 - 1.25	0.14

Data Plot and Equation



Multifamily Housing (Low-Rise)
(220)

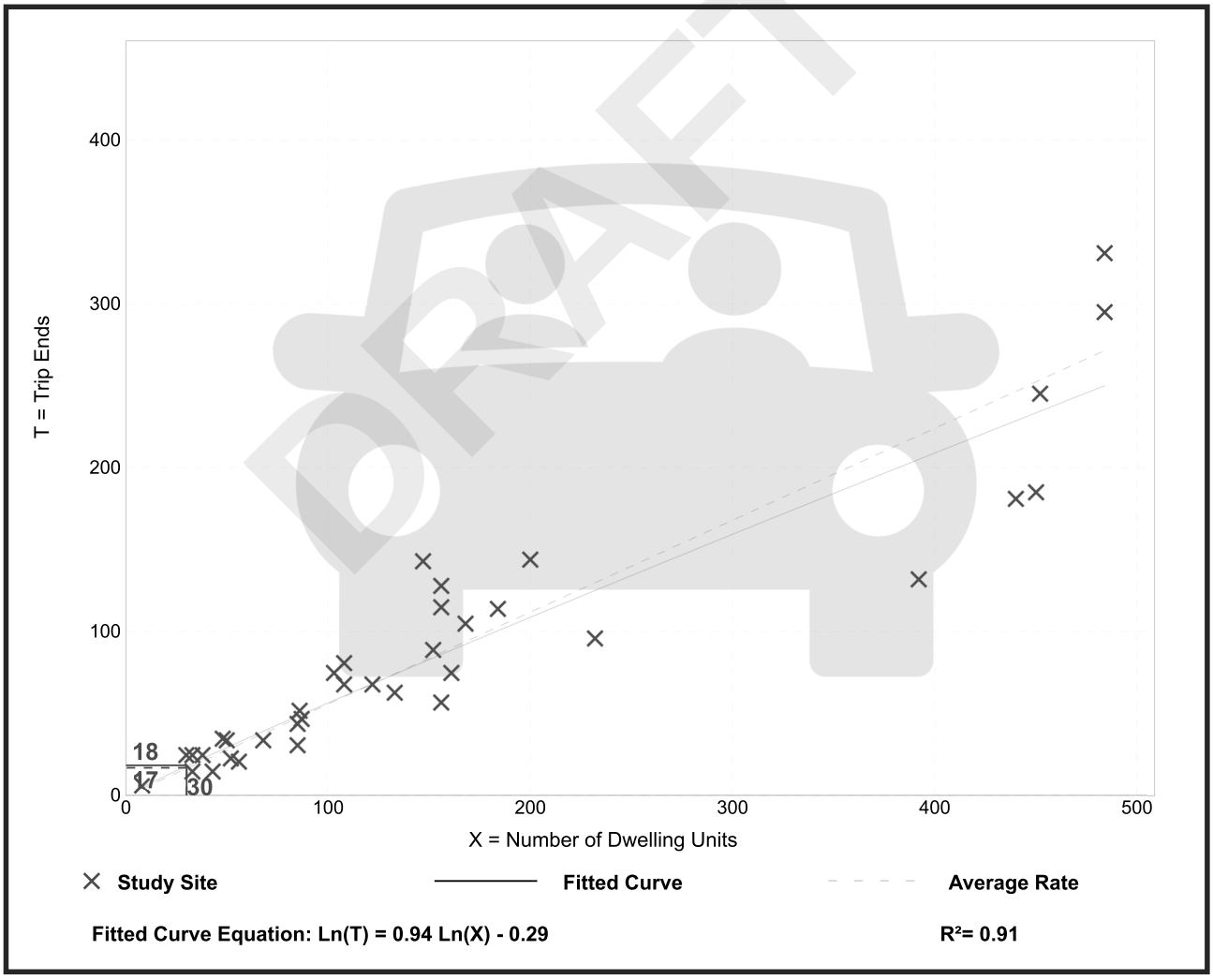
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 36
Avg. Num. of Dwelling Units: 161
Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.34 - 0.97	0.15

Data Plot and Equation



Capacity Analysis Reports

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	136	6	6	145	4	5
Future Volume (Veh/h)	136	6	6	145	4	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	148	7	7	158	4	5
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			155		324	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			155		324	152
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	99
cM capacity (veh/h)			1425		667	895

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	155	165	9
Volume Left	0	7	4
Volume Right	7	0	5
cSH	1700	1425	777
Volume to Capacity	0.09	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.4	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		22.5%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	121	2	3	128	6	7
Future Volume (Veh/h)	121	2	3	128	6	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	2	3	139	7	8
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			134		278	133
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			134		278	133
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	99
cM capacity (veh/h)			1451		710	916

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	134	142	15
Volume Left	0	3	7
Volume Right	2	0	8
cSH	1700	1451	807
Volume to Capacity	0.08	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.2	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.5
Approach LOS			A

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		19.1%	ICU Level of Service
Analysis Period (min)		15	

Automatic Traffic Recorder Data

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Start	06-Sep-21		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Eastbound	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou
12:00 AM	*	*	*	*	2	6	1	2	2	2	*	*	*	*	2	3
01:00	*	*	*	*	1	4	2	3	0	2	*	*	*	*	1	3
02:00	*	*	*	*	1	0	0	0	1	1	*	*	*	*	1	0
03:00	*	*	*	*	0	1	0	1	1	3	*	*	*	*	0	2
04:00	*	*	*	*	2	2	1	2	2	1	*	*	*	*	2	2
05:00	*	*	*	*	8	4	8	8	7	2	*	*	*	*	8	5
06:00	*	*	*	*	34	23	30	20	35	24	*	*	*	*	33	22
07:00	*	*	*	*	**125**	**126**	**120**	**123**	**119**	**135**	*	*	*	*	**121**	**128**
08:00	*	*	*	*	81	97	75	92	89	83	*	*	*	*	82	91
09:00	*	*	*	*	82	95	96	93	*	*	*	*	*	*	89	94
10:00	*	*	*	*	112	110	71	76	*	*	*	*	*	*	92	93
11:00	*	*	*	*	81	98	69	84	*	*	*	*	*	*	75	91
12:00 PM	*	*	8	7	111	130	98	113	*	*	*	*	*	*	72	83
01:00	*	*	109	91	108	124	95	112	*	*	*	*	*	*	104	109
02:00	*	*	122	116	123	156	121	**149**	*	*	*	*	*	*	122	140
03:00	*	*	119	116	142	**175**	98	119	*	*	*	*	*	*	120	137
04:00	*	*	**131**	132	**165**	157	111	105	*	*	*	*	*	*	**136**	131
05:00	*	*	121	**134**	154	173	**125**	127	*	*	*	*	*	*	133	**145**
06:00	*	*	100	79	141	151	121	96	*	*	*	*	*	*	121	109
07:00	*	*	80	83	83	87	54	67	*	*	*	*	*	*	72	79
08:00	*	*	37	41	65	67	50	60	*	*	*	*	*	*	51	56
09:00	*	*	17	20	22	23	17	31	*	*	*	*	*	*	19	25
10:00	*	*	14	17	18	16	6	17	*	*	*	*	*	*	13	17
11:00	*	*	3	6	7	6	7	5	*	*	*	*	*	*	6	6
Lane	0	0	861	842	1668	1831	1376	1505	256	253	0	0	0	0	1475	1571
Day	0		1703		3499		2881		509		0		0		3046	
AM Peak	-	-	-	-	07:00	07:00	07:00	07:00	07:00	07:00	-	-	-	-	07:00	07:00
Vol.	-	-	-	-	125	126	120	123	119	135	-	-	-	-	121	128
PM Peak	-	-	16:00	17:00	16:00	15:00	17:00	14:00	-	-	-	-	-	-	16:00	17:00
Vol.	-	-	131	134	165	175	125	149	-	-	-	-	-	-	136	145

Comb. Total	0	1703	3499	2881	509	0	0	3046

ADT ADT 3,190 AADT 3,190

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Eastbound

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	Pace Speed	Number in Pace
09/07/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	0	0	1	6	1	0	0	0	0	0	0	0	0	0	8	25-34	7
13:00	0	**3**	6	27	45	25	3	0	0	0	0	0	0	0	109	26-35	72
14:00	0	0	**10**	**37**	48	22	5	0	0	0	0	0	0	0	122	26-35	85
15:00	0	0	2	34	44	38	1	0	0	0	0	0	0	0	119	31-40	82
16:00	0	2	8	29	50	**40**	1	**1**	0	0	0	0	0	0	**131**	31-40	90
17:00	**2**	2	8	27	**51**	24	**6**	1	0	0	0	0	0	0	121	26-35	78
18:00	0	1	8	21	47	18	5	0	0	0	0	0	0	0	100	26-35	68
19:00	0	1	5	21	41	9	3	0	0	0	0	0	0	0	80	26-35	62
20:00	0	0	5	16	13	2	1	0	0	0	0	0	0	0	37	26-35	29
21:00	0	0	1	5	6	5	0	0	0	0	0	0	0	0	17	26-35	11
22:00	0	2	0	0	6	5	1	0	0	0	0	0	0	0	14	31-40	11
23:00	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3	39-48	2
Total	2	11	54	223	353	188	27	3	0	0	0	0	0	0	861		
Percent	0.2%	1.3%	6.3%	25.9%	41.0%	21.8%	3.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak																	
Vol.																	
PM Peak	17:00	13:00	14:00	14:00	17:00	16:00	17:00	16:00							16:00		
Vol.	2	3	10	37	51	40	6	1							131		

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Eastbound

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	Pace Speed	Number in Pace
09/08/21	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	19-28	1
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29-38	2
05:00	0	1	0	2	3	2	0	0	0	0	0	0	0	0	8	31-40	5
06:00	0	0	1	6	17	8	1	**1**	0	0	0	0	0	0	34	30-39	25
07:00	0	0	5	20	**66**	**25**	**9**	0	0	0	0	0	0	0	**125**	31-40	91
08:00	0	0	3	22	29	24	3	0	0	0	0	0	0	0	81	30-39	53
09:00	0	1	4	27	34	13	3	0	0	0	0	0	0	0	82	26-35	61
10:00	0	**2**	**13**	**36**	40	18	3	0	0	0	0	0	0	0	112	26-35	76
11:00	**1**	1	10	27	27	11	4	0	0	0	0	0	0	0	81	26-35	54
12 PM	0	0	6	23	46	30	5	**1**	0	0	0	0	0	0	111	31-40	76
13:00	0	2	10	31	38	24	2	1	0	0	0	0	0	0	108	26-35	69
14:00	0	1	**11**	38	40	27	6	0	0	0	0	0	0	0	123	26-35	78
15:00	0	1	11	**41**	49	**36**	3	1	0	0	0	0	0	0	142	26-35	90
16:00	**1**	0	3	37	**78**	36	**9**	1	0	0	0	0	0	0	**165**	26-35	115
17:00	0	**3**	5	34	75	31	6	0	0	0	0	0	0	0	154	26-35	109
18:00	0	1	8	27	62	33	9	1	0	0	0	0	0	0	141	31-40	95
19:00	0	1	10	18	31	17	6	0	0	0	0	0	0	0	83	26-35	49
20:00	0	0	4	18	27	13	3	0	0	0	0	0	0	0	65	26-35	45
21:00	0	1	3	6	10	1	1	0	0	0	0	0	0	0	22	26-35	16
22:00	0	0	0	7	7	3	0	1	0	0	0	0	0	0	18	26-35	14
23:00	0	1	0	1	4	0	0	1	0	0	0	0	0	0	7	26-35	5
Total	2	16	108	422	685	354	73	8	0	0	0	0	0	0	1668		
Percent	0.1%	1.0%	6.5%	25.3%	41.1%	21.2%	4.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	10:00	10:00	10:00	07:00	07:00	07:00	06:00							07:00		
Vol.	1	2	13	36	66	25	9	1							125		
PM Peak	16:00	17:00	14:00	15:00	16:00	15:00	16:00	12:00							16:00		
Vol.	1	3	11	41	78	36	9	1							165		

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Eastbound

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	Pace Speed	Number in Pace
09/09/21	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
01:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-33	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	29-38	1
05:00	0	1	0	2	3	1	1	0	0	0	0	0	0	0	8	26-35	5
06:00	0	0	1	10	12	5	2	0	0	0	0	0	0	0	30	26-35	22
07:00	0	0	**6**	**27**	**59**	**24**	4	0	0	0	0	0	0	0	**120**	26-35	86
08:00	0	**2**	6	21	27	17	1	**1**	0	0	0	0	0	0	75	26-35	48
09:00	0	0	3	23	45	18	**7**	0	0	0	0	0	0	0	96	26-35	68
10:00	0	2	5	17	35	11	1	0	0	0	0	0	0	0	71	26-35	52
11:00	0	0	3	20	27	14	5	0	0	0	0	0	0	0	69	26-35	47
12 PM	0	2	4	26	41	21	4	0	0	0	0	0	0	0	98	26-35	67
13:00	**5**	4	11	23	31	17	4	0	0	0	0	0	0	0	95	26-35	54
14:00	0	4	**20**	**44**	38	13	2	0	0	0	0	0	0	0	121	26-35	82
15:00	0	**5**	15	40	28	9	1	0	0	0	0	0	0	0	98	26-35	68
16:00	0	1	8	24	**54**	23	1	0	0	0	0	0	0	0	111	26-35	78
17:00	0	1	5	34	51	31	1	**2**	0	0	0	0	0	0	**125**	26-35	85
18:00	0	0	4	19	54	**36**	**7**	1	0	0	0	0	0	0	121	31-40	90
19:00	0	0	3	16	23	9	2	1	0	0	0	0	0	0	54	26-35	39
20:00	0	1	3	18	18	9	1	0	0	0	0	0	0	0	50	26-35	36
21:00	0	1	0	4	9	2	1	0	0	0	0	0	0	0	17	26-35	13
22:00	0	0	1	1	3	1	0	0	0	0	0	0	0	0	6	31-40	4
23:00	0	1	0	1	3	1	0	1	0	0	0	0	0	0	7	31-40	4
Total	5	25	98	371	563	263	45	6	0	0	0	0	0	0	1376		
Percent	0.4%	1.8%	7.1%	27.0%	40.9%	19.1%	3.3%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		08:00	07:00	07:00	07:00	07:00	09:00	08:00							07:00		
Vol.		2	6	27	59	24	7	1							120		
PM Peak	13:00	15:00	14:00	14:00	16:00	18:00	18:00	17:00							17:00		
Vol.	5	5	20	44	54	36	7	2							125		

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Eastbound

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	Pace Speed	Number in Pace
09/10/21	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29-38	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
04:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	19-28	1
05:00	0	0	0	1	4	1	1	0	0	0	0	0	0	0	7	29-38	5
06:00	0	**1**	1	4	21	6	2	0	0	0	0	0	0	0	35	30-39	27
07:00	0	0	**14**	19	**60**	**24**	1	**1**	0	0	0	0	0	0	**119**	31-40	84
08:00	0	0	11	**23**	37	15	**3**	0	0	0	0	0	0	0	89	26-35	60
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	0	1	26	48	125	48	7	1	0	0	0	0	0	0	256		
Percent	0.0%	0.4%	10.2%	18.8%	48.8%	18.8%	2.7%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		06:00	07:00	08:00	07:00	07:00	08:00	07:00							07:00		
Vol.		1	14	23	60	24	3	1							119		
PM Peak Vol.																	
Total	9	53	286	1064	1726	853	152	18	0	0	0	0	0	0	4161		
Percent	0.2%	1.3%	6.9%	25.6%	41.5%	20.5%	3.7%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	26 MPH
50th Percentile :	31 MPH
85th Percentile :	37 MPH
95th Percentile :	39 MPH

Stats

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	2790
Percent in Pace :	67.1%
Number of Vehicles > 35 MPH :	1023
Percent of Vehicles > 35 MPH :	24.6%
Mean Speed(Average) :	32 MPH

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Westbound

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	Pace Speed	Number in Pace
09/07/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	0	0	1	4	2	0	0	0	0	0	0	0	0	0	7	24-33	6
13:00	**3**	0	3	**34**	35	13	3	0	0	0	0	0	0	0	91	26-35	69
14:00	0	0	5	24	53	27	**7**	0	0	0	0	0	0	0	116	31-40	80
15:00	0	0	**7**	26	48	30	4	**1**	0	0	0	0	0	0	116	31-40	78
16:00	0	**1**	6	30	57	**37**	1	0	0	0	0	0	0	0	132	31-40	94
17:00	0	1	3	27	**63**	36	4	0	0	0	0	0	0	0	**134**	31-40	99
18:00	0	0	4	18	41	14	2	0	0	0	0	0	0	0	79	26-35	59
19:00	0	1	1	17	40	21	2	1	0	0	0	0	0	0	83	31-40	61
20:00	0	0	1	11	23	6	0	0	0	0	0	0	0	0	41	26-35	34
21:00	0	0	3	4	8	5	0	0	0	0	0	0	0	0	20	29-38	13
22:00	0	0	1	1	10	4	1	0	0	0	0	0	0	0	17	31-40	14
23:00	0	0	0	0	2	3	1	0	0	0	0	0	0	0	6	31-40	5
Total	3	3	35	196	382	196	25	2	0	0	0	0	0	0	842		
Percent	0.4%	0.4%	4.2%	23.3%	45.4%	23.3%	3.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	13:00 3	16:00 1	15:00 7	13:00 34	17:00 63	16:00 37	14:00 7	15:00 1							17:00 134		

38 Hubbard Street
Glastonbury, Connecticut

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Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Westbound

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	Pace Speed	Number in Pace
09/08/21	0	0	0	0	2	3	1	0	0	0	0	0	0	0	6	31-40	5
01:00	0	0	0	1	2	0	1	0	0	0	0	0	0	0	4	25-34	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	9-18	1
05:00	0	0	0	1	3	0	0	0	0	0	0	0	0	0	4	26-35	4
06:00	0	1	1	4	13	2	2	0	0	0	0	0	0	0	23	26-35	17
07:00	0	2	11	**41**	45	**26**	1	0	0	0	0	0	0	0	**126**	26-35	86
08:00	**1**	3	5	24	42	21	1	0	0	0	0	0	0	0	97	26-35	66
09:00	1	3	7	20	44	16	**4**	0	0	0	0	0	0	0	95	26-35	64
10:00	1	2	**15**	33	**46**	13	0	0	0	0	0	0	0	0	110	26-35	79
11:00	1	**8**	8	26	41	10	2	**2**	0	0	0	0	0	0	98	26-35	67
12 PM	2	2	6	33	54	25	**6**	**2**	0	0	0	0	0	0	130	26-35	87
13:00	0	0	4	37	58	23	2	0	0	0	0	0	0	0	124	26-35	95
14:00	2	1	6	**49**	74	21	3	0	0	0	0	0	0	0	156	26-35	123
15:00	0	2	7	44	82	32	5	2	**1**	0	0	0	0	0	**175**	26-35	126
16:00	**4**	2	**9**	29	76	32	5	0	0	0	0	0	0	0	157	31-40	108
17:00	1	1	4	37	**87**	**42**	1	0	0	0	0	0	0	0	173	31-40	129
18:00	0	**3**	3	30	83	26	5	1	0	0	0	0	0	0	151	26-35	113
19:00	0	0	4	26	35	16	6	0	0	0	0	0	0	0	87	26-35	61
20:00	0	1	2	18	26	20	0	0	0	0	0	0	0	0	67	30-39	46
21:00	0	0	0	3	11	9	0	0	0	0	0	0	0	0	23	31-40	20
22:00	0	0	1	3	7	3	2	0	0	0	0	0	0	0	16	31-40	10
23:00	0	0	0	0	2	3	1	0	0	0	0	0	0	0	6	31-40	5
Total	13	32	93	461	833	343	48	7	1	0	0	0	0	0	1831		
Percent	0.7%	1.7%	5.1%	25.2%	45.5%	18.7%	2.6%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	10:00	07:00	10:00	07:00	09:00	11:00							07:00		
Vol.	1	8	15	41	46	26	4	2							126		
PM Peak	16:00	18:00	16:00	14:00	17:00	17:00	12:00	12:00	15:00						15:00		
Vol.	4	3	9	49	87	42	6	2	1						175		

38 Hubbard Street
Glastonbury, Connecticut

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Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Westbound

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	Pace Speed	Number in Pace
09/09/21	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	34-43	2
01:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	30-39	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	34-43	1
04:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	19-28	1
05:00	0	0	0	1	5	1	1	0	0	0	0	0	0	0	8	29-38	6
06:00	0	1	0	4	11	3	1	0	0	0	0	0	0	0	20	26-35	15
07:00	0	**2**	7	**41**	**53**	14	5	**1**	0	0	0	0	0	0	**123**	26-35	94
08:00	0	2	**10**	29	36	11	4	0	0	0	0	0	0	0	92	26-35	65
09:00	1	1	7	19	38	**22**	5	0	0	0	0	0	0	0	93	31-40	60
10:00	**2**	1	3	21	31	14	3	1	0	0	0	0	0	0	76	26-35	52
11:00	0	2	6	18	31	20	**6**	1	0	0	0	0	0	0	84	31-40	51
12 PM	0	2	7	19	61	20	3	0	**1**	0	0	0	0	0	113	31-40	81
13:00	1	1	11	35	38	19	**6**	1	0	0	0	0	0	0	112	26-35	73
14:00	**4**	**4**	**26**	**67**	30	13	5	0	0	0	0	0	0	0	**149**	26-35	97
15:00	0	3	21	56	32	6	1	0	0	0	0	0	0	0	119	26-35	88
16:00	1	2	11	30	45	11	4	1	0	0	0	0	0	0	105	26-35	75
17:00	1	1	9	24	**62**	23	6	1	0	0	0	0	0	0	127	26-35	86
18:00	0	0	2	17	41	**31**	3	**2**	0	0	0	0	0	0	96	31-40	72
19:00	0	0	5	21	29	9	2	1	0	0	0	0	0	0	67	26-35	50
20:00	0	0	3	17	26	11	2	1	0	0	0	0	0	0	60	26-35	43
21:00	0	0	0	8	19	1	2	1	0	0	0	0	0	0	31	26-35	27
22:00	0	0	0	3	9	4	0	1	0	0	0	0	0	0	17	29-38	13
23:00	0	0	0	1	2	1	0	1	0	0	0	0	0	0	5	31-40	3
Total	10	22	128	432	600	238	61	13	1	0	0	0	0	0	1505		
Percent	0.7%	1.5%	8.5%	28.7%	39.9%	15.8%	4.1%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	07:00	08:00	07:00	07:00	09:00	11:00	07:00							07:00		
Vol.	2	2	10	41	53	22	6	1							123		
PM Peak	14:00	14:00	14:00	14:00	17:00	18:00	13:00	18:00	12:00						14:00		
Vol.	4	4	26	67	62	31	6	2	1						149		

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Site Code:
Station ID: 5460

Latitude: 0' 0.0000 Undefined

Westbound

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	Pace Speed	Number in Pace
09/10/21	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	34-43	2
01:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-33	2
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
03:00	0	0	1	0	1	1	0	0	0	0	0	0	0	0	3	29-38	2
04:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
05:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29-38	2
06:00	0	0	1	5	11	4	3	0	0	0	0	0	0	0	24	26-35	16
07:00	0	1	**4**	**43**	**67**	**18**	2	0	0	0	0	0	0	0	**135**	26-35	110
08:00	**1**	**2**	4	23	34	15	**4**	0	0	0	0	0	0	0	83	26-35	57
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1	3	11	73	115	40	10	0	0	0	0	0	0	0	253		
Percent	0.4%	1.2%	4.3%	28.9%	45.5%	15.8%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	07:00	07:00	07:00	07:00	08:00								07:00		
Vol.	1	2	4	43	67	18	4								135		
PM Peak																	
Vol.																	
Total	27	60	267	1162	1930	817	144	22	2	0	0	0	0	0	4431		
Percent	0.6%	1.4%	6.0%	26.2%	43.6%	18.4%	3.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	26 MPH
50th Percentile :	31 MPH
85th Percentile :	36 MPH
95th Percentile :	39 MPH

Stats

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	3092
Percent in Pace :	69.8%
Number of Vehicles > 35 MPH :	985
Percent of Vehicles > 35 MPH :	22.2%
Mean Speed(Average) :	32 MPH

Site Plans

Robert V. Baltramaitis, P.E.
27 Tammy Hill Road
Wallingford, Connecticut 06492
(203) 915-8301
baltro@aol.com

January 10, 2014

Attorney Meghan V. Alter
Alter & Pearson, LLC
701 Hebron Avenue
Glastonbury, Connecticut 06033-6620

RE: Traffic Investigation Report
Building Conversion to Residential
#38 Hubbard Street
Glastonbury, Connecticut

Dear Attorney Alter:

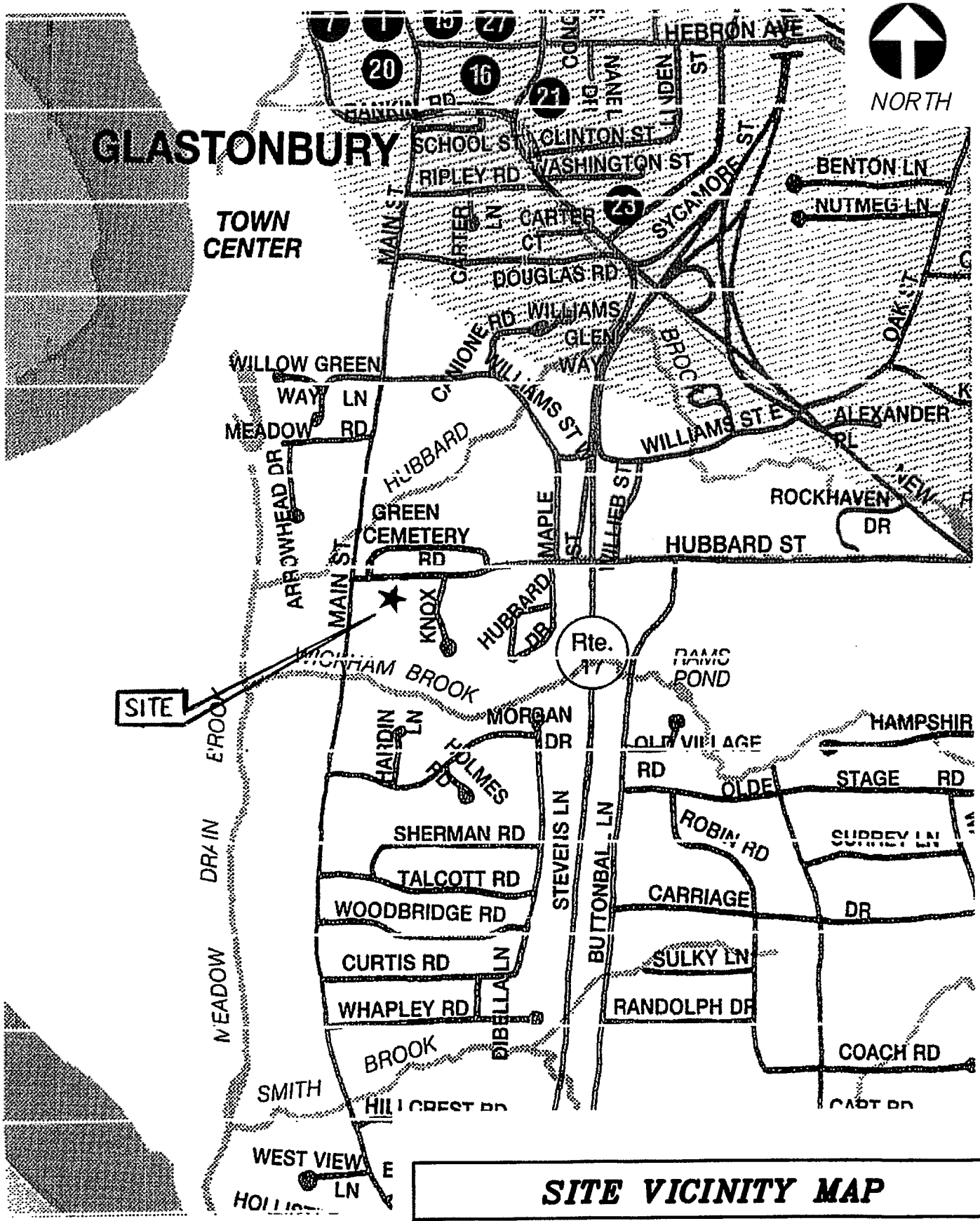
Pursuant to your request, I have investigated the possible traffic impacts associated with the conversion of an existing warehouse building at #38 Hubbard Street in Glastonbury, Connecticut to a residential use. To take a conservative approach to this investigation, it is assumed that 50 (fifty) residential units can be developed. The proposed re-development will have access directly to Hubbard Street via an existing driveway. This report summarizes the findings and makes recommendations to promote safe and efficient operation with full development of this project.

Site Environs

The subject property is located on the south side of Hubbard Street approximately 550 feet east of Main Street in Glastonbury, Connecticut and is shown graphically in *Figure 1*.

Hubbard Street is an east-west collector roadway and intersects with Main Street to the west and New London Turnpike to the east. East of the site, Route 17 (Glastonbury Expressway) is grade separated but shares limited access with Hubbard Street. In the site vicinity, Hubbard Street is developed as primarily residential with Glastonbury High School located east of Route 17. Along the site frontage, Hubbard Street is a two-lane bi-directional (one lane per direction) roadway marked with a Solid Double Yellow Line which represents a no-passing zone. The posted speed limit along Hubbard Street is 30 miles per hour.

This section of Hubbard Street provides pedestrian friendly amenities including public sidewalks on the north side of the roadway and a mid-block pedestrian crossing east of the site. On-street parking is prohibited on both sides of the roadway. This section of Hubbard Street has public transit available as it is located on CT Transit Route 95 (Glastonbury-Hartford line).



SITE VICINITY MAP

38 HUBBARD STREET
GLASTONBURY, CONNECTICUT

DRAWN BY: R.V.B.	1"=1,000'±	DATE: 1/10/14	SHEET: Fig. 1

Existing Traffic Volumes

An automatic traffic recorder (ATR) machine was placed along Hubbard Street at the site frontage to record traffic characteristics for typical weekday periods. The data includes traffic volumes, vehicle classifications and speed information by direction. The results of that effort indicate that Hubbard Street in the site vicinity has an Average Daily Traffic Volume (ADT) of 3,229 vehicles per day. During the AM peak hour, approximately 120 vehicles per hour (vph) are eastbound while 160 vph are westbound. During the PM peak hour, 152 vph are eastbound while 161 vph are westbound. The results are summarized on *Appendix Sheet A-1* and the 2014 Existing Volumes are depicted in *Figure 2.*

Accident History

Accident data was requested from the Glastonbury Police Department for Hubbard Street from the intersection with Main Street easterly to the intersection with Route 17. The data obtained was that available from the Departments records for the latest 3-year reporting period and included accident reports and incident reports from 2011, 2012 and 2013.

For the three year period, there were 7 (seven) motor vehicle accidents in the study area. All accidents were minor in nature and typical for un-signalized T-intersections. The accident data is attached as *Appendix Sheets A-2 thru A-8* and is summarized in the table below:

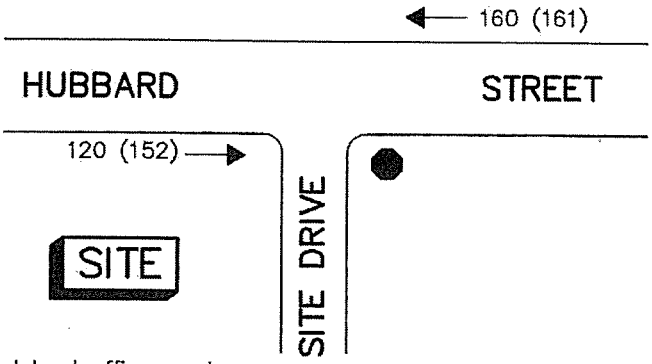
Location	2011	2012	2013
Main Street at Hubbard Street	WB vs. WB Rear End NB vs. NB Sideswipe SB vs. Fixed Object	0	NB vs. WB Angle
Driveway to 86 Hubbard Street	EB bicycles vs. Car	0	0
Hubbard Street at Rt 17 Off-Ramp	SB vs. EB Angle	0	SB vs. Fixed Object

The accident data does not suggest there are traffic hazards in the area nor is there an abnormal frequency of occurrences.

Background Traffic

Background traffic is defined as the existing traffic projected out to the year of project completion without the project being developed. While the complete build out of residential developments is market dependent, the year 2015 has been selected as the anticipated year of complete project build out. The 2014 Existing Volumes were projected out for one year at an average growth rate of 2% per year which is typical of most Connecticut roadways.

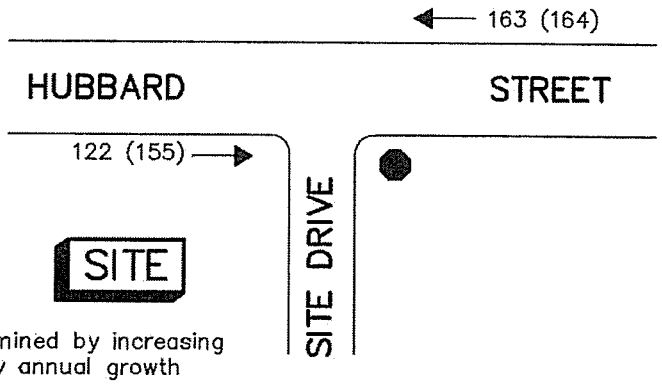
Also included in background traffic is traffic anticipated to be generated by other developments in the area which are approved but not yet constructed. The State of Connecticut Department of



NOTES:

Existing volumes determined by traffic count program conducted by Connecticut Counts LLC during December 2013.

2014 EXISTING VOLUMES



NOTES:

Backgound volumes determined by increasing 2014 Exisating volumes by annual growth rate of 2% per year for one year.

2015 BACKGROUND VOLUMES

LEGEND:

XXX – Weekday AM Peak Hour
(XXX) – Weekday PM Peak Hour
● – STOP Sign Controlled Intersection

EXISTING AND BACKGROUND TRAFFIC VOLUMES

38 HUBBARD STREET
GLASTONBURY, CONNECTICUT

DRAWN BY: R.V.B.	SCALE: N.T.S.	DATE: 1/10/14	SHEET: Fig. 2

Transportation and the Glastonbury Planning Department were contacted to determine if there were any proposed development or roadway improvement projects which may affect this study. Based on these discussions, no significant developments are proposed which would impact the background traffic volumes. The Background Traffic Volumes are also depicted in *Figure 2.*

Full Development Traffic Volumes

Normally, estimates of the amount of site generated traffic by a proposed development are determined using Trip Generation, 8th edition, published by the Institute of Transportation Engineers (ITE). This publication is a compilation of trip generation data for various land uses that provides information on anticipated traffic relative to the size of the development, number of units, number of employees or other quantitative measure.

In the case of residential developments, the quantitative measure is the number of residential units. Trip Generation gives statistical data for various types of residential developments. The most applicable is "Apartment" (Land Use Code 220). Based on the ITE data, this development is anticipated to generate 30 and 45 new trips during the AM and PM peak hours, respectively.

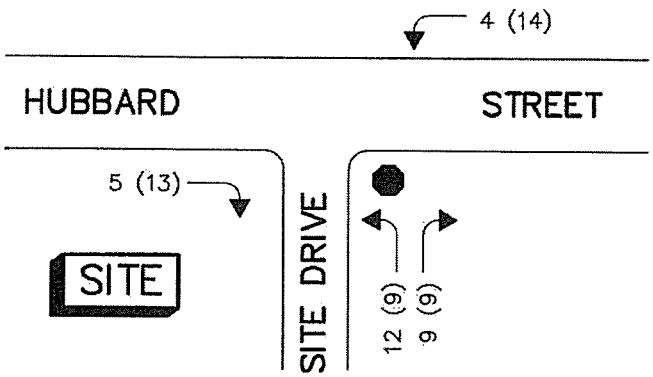
Trip distribution is the directional orientation of the new site traffic. Trip Generation suggests that during the AM peak period, 71% of the new site traffic is outbound, while 29% is inbound. Conversely, during the PM peak hour, 61% of the new site traffic is inbound, while only 39% is outbound. The ITE data is included on *Appendix Sheets B-1 and B-2.*

The site generated traffic by orientation can be summarized as follows:

	50-Residential Units		
	entering	exiting	TOTAL
Weekday AM Peak Hour	9	21	30
Weekday PM Peak Hour	27	18	45

To project the full development traffic volumes, all site traffic was assigned to the roadway network and then split by direction onto Hubbard Street based on existing travel patterns. Simply put, the proportion of existing eastbound and westbound traffic was determined for each peak hour and assumed to represent the directional split of the new site traffic.

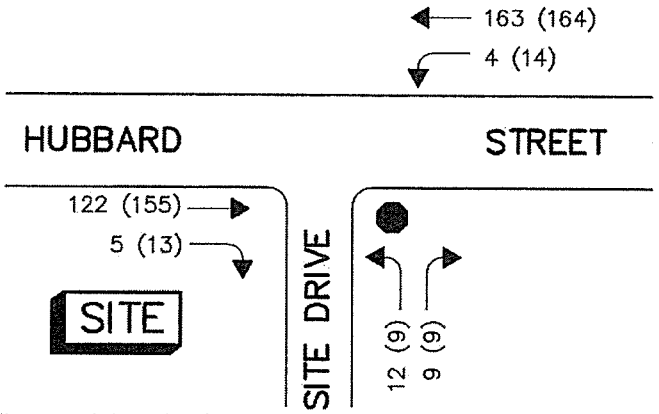
The anticipated site traffic was added to the Background Traffic Volumes to determine the 2015 Full Development Traffic Volumes. Site Generated Traffic Volumes and the 2015 Full Development Traffic Volumes are depicted on *Figure 3.*



NOTES:

Site generated traffic volumes determined from ITE's Trip Generation, 8th Edition.

SITE GENERATED VOLUMES



NOTES:

Full development traffic volumes determined by superimposing site generated volumes onto 2015 Background volumes.

2015 FULL BUILD VOLUMES

LEGEND:

XXX – Weekday AM Peak Hour
(XXX) – Weekday PM Peak Hour
● – STOP Sign Controlled Intersection

SITE GENERATED AND FULL BUILD TRAFFIC VOLUMES			
38 HUBBARD STREET GLASTONBURY, CONNECTICUT			
DRAWN BY: R.V.B.	SCALE: N.T.S.	DATE: 1/10/14	SHEET: Fig. 3

Operations Analyses

Operation of unsignalized intersections is evaluated in terms of Level-of-Service (LOS) and is defined in terms of average control delay. For two-way stop sign controlled intersections, LOS is determined for each minor street movement and not the intersection as a whole. This is because the major street movement usually does not have a stop control and is not subject to significant delays. LOS is rated on a scale from A to F, with LOS A representing an intersection with minimum average control delay and LOS F indicating a complete breakdown of intersection operation. LOS evaluation criteria is summarized below:

Level of Service Criteria Unsignalized Intersections	
Level of Service	Delay Range (seconds/ vehicle)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

The methodology for calculating the average control delay and determining the LOS is taken from the "Highway Capacity Manual", published by the Transportation Research Board. It is this document which is the most widely accepted method by transportation and planning professionals for determining intersection operation.

LOS and intersection capacity analyses were conducted for the intersection of Hubbard Street at the site driveway for both AM and PM peak hours given the full development traffic volumes. The LOS results are summarized in the table below:

	AM Peak	**PM Peak**
Hubbard Street at Site Drive (average side street delay)	A (9.9 seconds)	B (10.2 seconds)

As summarized above, with the conversion of the existing building at 38 Hubbard Street to house 50 residential units, the site driveway intersection with Hubbard Street will operate at excellent levels of service, even during peak hours.

LOS/ intersection capacity calculations are included as *Appendix Sheets B-3 and B-4.*

Intersection Sight Distance

When considering safety at an intersection, it is important to look at the available Intersection Sight Distance (ISD). ISD is the length of roadway that a driver turning onto that roadway can see to recognize an approaching vehicle. The ConnDOT Guidelines for Highway Design, revised 2003, gives guidelines for measuring the available ISD as well as design standards for ISD's to provide for safe entrance to the roadway. These standards are based on the 85th percentile speeds for the major roadway. The 85th percentile speed is the speed at which 85 percent of the vehicles are traveling at or below and 15 percent are traveling higher than.

A spot speed study was conducted along Hubbard Street along the site frontage to determine the speed characteristics of the vehicles passing the site. The data collected by the ATR statistically determined the 85th percentile speeds in each direction. Based on that data, the 85th percentile speeds are 36 mph in the eastbound direction and 40 mph in the westbound direction. The corresponding ConnDOT recommended ISD's are 401 feet and 445 feet to the left and right, respectively.

Sight lines were assessed in the field using parameters set forth by the AASHTO Green Book and the aforementioned ConnDOT Guidelines. Sight lines were measured in each direction from the center of the proposed egress lane from a 15-foot setback from the edge of travelway and assuming a height of driver's eye of 42 inches (3.5 feet) at each end. The ConnDOT recommended ISD's were achieved in each direction.

Data on the 85th percentile speed data and an excerpt from the ConnDOT Guidelines are contained on *Appendix Sheets C-1, C-2 and C-3*. The ISD's are depicted in the *Figures 4 and 5* below, and shown in plan view on *Figure 6*.

Figure 4 – Available Intersection Sight Distance looking to the left from the site driveway.

Figure 5 – Available Intersection Sight Distance looking to the right from the site driveway.

100 0 50 100 150 200

INTERSECTION SIGHT LINES

38 HUBBARD STREET
GLASTONBURY, CONNECTICUT

DRAWN BY: R.V.B.	1"=100'	DATE: 1/10/14	SHEET: Fig. 6

Conclusions and Recommendations

Based on the findings herein, the conversion of the existing building at 38 Hubbard Street to house 50 residential units will have no significant impact to the adjacent roadway network. Additionally, the adjacent roadway network is adequate to accommodate the minimal volume of anticipated site traffic. The site driveway will operate at excellent levels of service even during peak commuter times and excellent intersection sight distances will be provided. Acceptable operation and safety is promoted with implementation of the following recommendations:

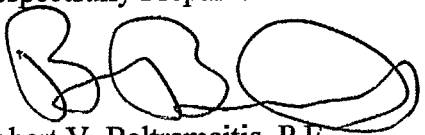
1. The site driveway shall have the proper signing and pavement markings for a "STOP" control condition installed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) and as approved by the Town of Glastonbury Legal Traffic Authority.

2. The site driveway should have sufficient width to accommodate ingress and egress traffic. A pavement width of 22-feet is recommended to provide two 11-foot wide lanes.

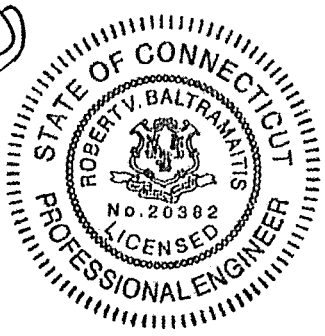
3. The intersection sight lines from the site driveway should be re-assessed during the Spring when tree foliage is full. The developer may need to trim vegetation within the public right-of-way to maintain the sight lines.

Thank you for the opportunity to review these issues associated with this development. In the meantime, if you have any questions, please feel free to contact me at (203) 915-8301.

Respectfully Prepared and Submitted,



Robert V. Baltramaitis, P.E.
CT Lic. # 20,382



APPENDIX

Traffic Investigation Report

38 Hubbard Street
Glastonbury, Connecticut

A-1	Automatic Traffic Recorder (ATR) Volume Data
A-2 thru A-8	Motor Vehicle Collision Diagrams
B-1	ITE Trip Generation Data (AM Peak Hour)
B-2	ITE Trip Generation Data (PM Peak Hour)
B-3	AM Peak Hour Site Driveway LOS Analysis
B-4	PM Peak Hour Site Driveway LOS Analysis
C-1 and C-2	ATR Speed Data
C-3	ConnDOT Intersection Sight Line Criteria

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3202
Station ID:

Latitude: 0' 0.000 Undefined

Start	09-Dec-13		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Eastbound	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou
12:00 AM	*	*	*	*	*	*	4	1	1	4	*	*	*	*	2	2
01:00	*	*	*	*	*	*	0	2	2	5	*	*	*	*	1	4
02:00	*	*	*	*	*	*	2	2	1	1	*	*	*	*	2	2
03:00	*	*	*	*	*	*	1	0	1	2	*	*	*	*	1	1
04:00	*	*	*	*	*	*	5	1	7	3	*	*	*	*	6	2
05:00	*	*	*	*	*	*	8	4	8	6	*	*	*	*	8	5
06:00	*	*	*	*	*	*	46	48	53	45	*	*	*	*	50	46
07:00	*	*	*	*	*	*	**122**	**166**	**117**	**153**	*	*	*	*	**120**	**160**
08:00	*	*	*	*	*	*	81	123	83	103	*	*	*	*	82	113
09:00	*	*	*	*	*	*	74	83	68	99	*	*	*	*	71	91
10:00	*	*	*	*	*	*	72	66	*	*	*	*	*	*	72	66
11:00	*	*	*	*	*	*	77	98	*	*	*	*	*	*	77	98
12:00 PM	*	*	*	*	88	98	88	103	*	*	*	*	*	*	88	100
01:00	*	*	*	*	119	105	104	88	*	*	*	*	*	*	112	96
02:00	*	*	*	*	138	**188**	104	134	*	*	*	*	*	*	121	**161**
03:00	*	*	*	*	110	124	108	133	*	*	*	*	*	*	109	128
04:00	*	*	*	*	**162**	143	**141**	**173**	*	*	*	*	*	*	**152**	158
05:00	*	*	*	*	130	133	137	151	*	*	*	*	*	*	134	142
06:00	*	*	*	*	115	101	130	103	*	*	*	*	*	*	122	102
07:00	*	*	*	*	71	82	128	100	*	*	*	*	*	*	100	91
08:00	*	*	*	*	65	58	61	45	*	*	*	*	*	*	63	52
09:00	*	*	*	*	31	30	31	44	*	*	*	*	*	*	31	37
10:00	*	*	*	*	10	12	13	13	*	*	*	*	*	*	12	12
11:00	*	*	*	*	10	2	5	6	*	*	*	*	*	*	8	4
Lane	0	0	0	0	1049	1076	1542	1687	341	421	0	0	0	0	1544	1673
Day	0		0		2125		3229		762		0		0		3217	
AM Peak							07:00	07:00	07:00	07:00					07:00	07:00
Vol.							122	166	117	153					120	160
PM Peak					16:00	14:00	16:00	16:00							16:00	14:00
Vol.					162	188	141	173							152	161

Comb. Total	0	0	2125	3229	762	0	0	3217

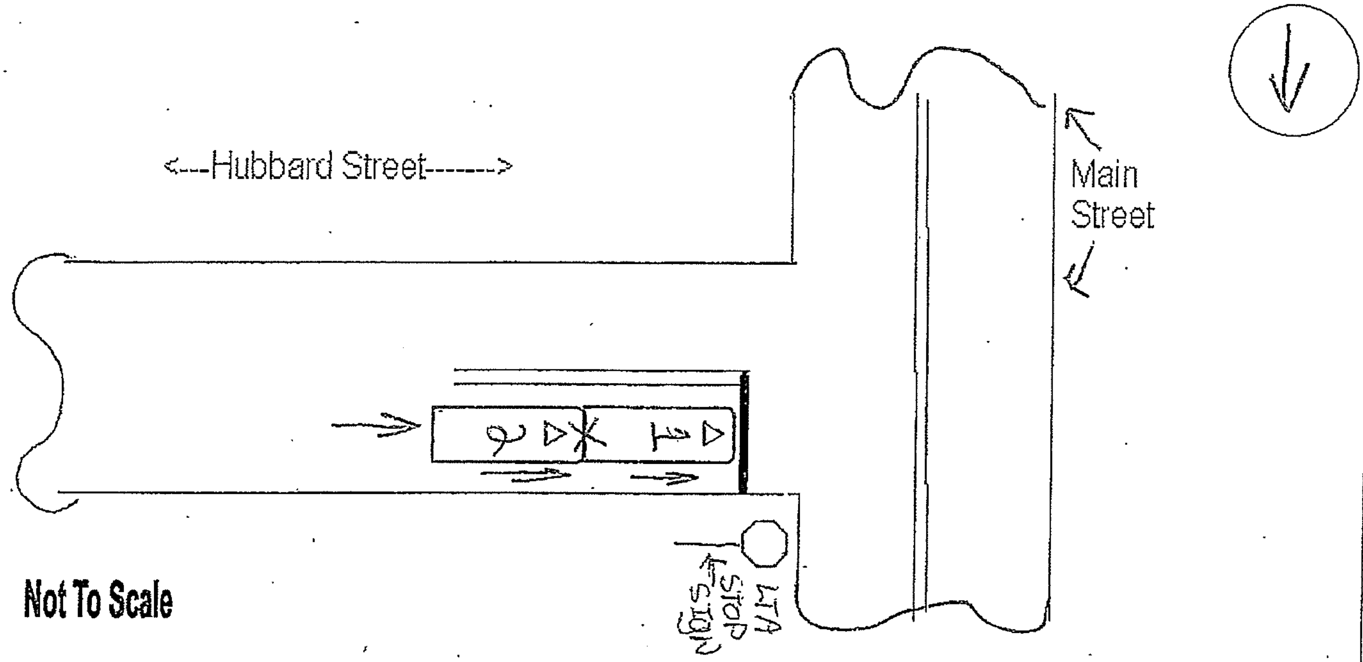
ADT ADT 3,229 AADT 3,229

A-1

RE 12 – 12

Police Case Number
11-003667

ACCIDENT DIAGRAM | INDICATE NORTH



TRAFFIC UNIT # 1 TRAVELING	TRAFFIC UNIT # 2 TRAVELING
☐N ☐S ☐E ☒W ON Hubbard Street	☐N ☐S ☐E ☒W on Hubbard Street

Vehicle #1 was traveling westbound on Hubbard Street. Vehicle #2 was also traveling westbound on Hubbard Street, behind Vehicle #1. Vehicle #1 stopped at the stop sign, which is located at the intersection Hubbard Street and Main Street. Vehicle #2 stopped behind Vehicle #1. Vehicle #1 moved forward a little and stopped. Vehicle #2 struck Vehicle #1 in the rear end.

No injuries reported.

Measurements were not taken due to the vehicles being moved off to the side of the roadway.

DAMAGE TO PROPERTY OTHER THAN INVOLVED MOTOR VEHICLES

1. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

2. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

RANK AND SIGNATURE OF INVESTIGATING OFFICER	OFFICER ID #	POLICE AGENCY IDENTIFICATION	REPORT DATE	CASE STATUS	SUPERVISOR
[signature] 352	352	GLASTONBURY 054	03/29/11	OPEN ☐ CLOSED ☒	[signature] 386

A-2 RE 12 – 13

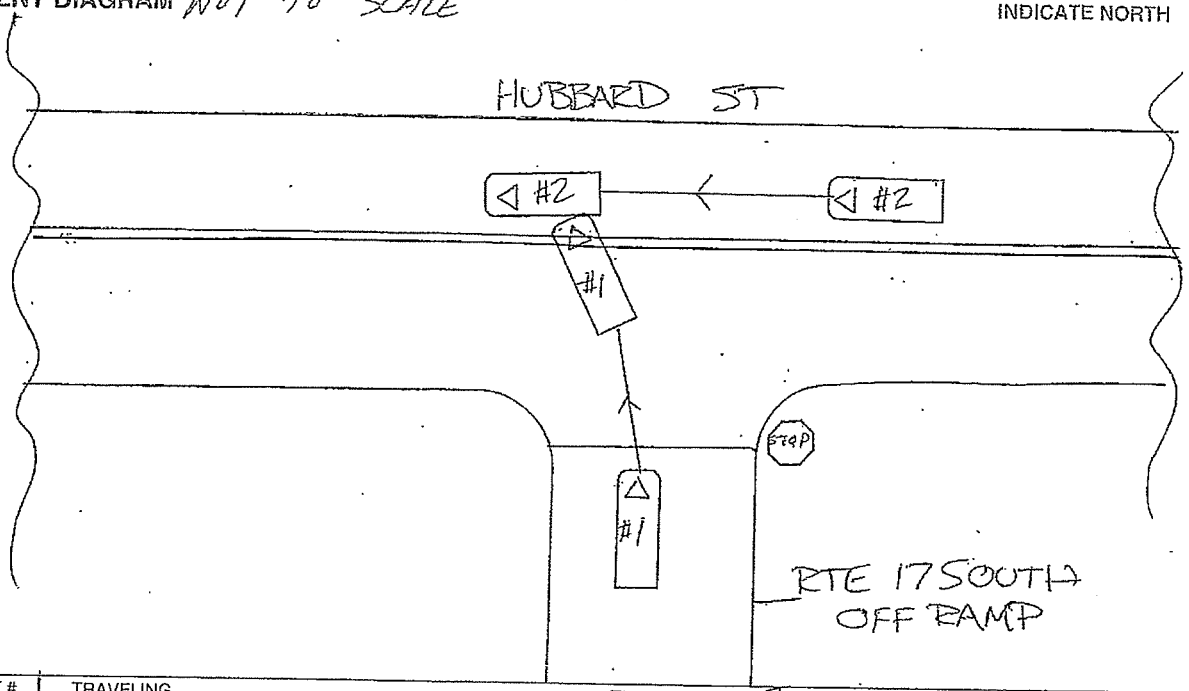
FORM PR-1

Page # 2 of 2

Police Case Number 13-958

ACCIDENT DIAGRAM NOT TO SCALE

INDICATE NORTH



TRAFFIC UNIT # 1 TRAVELING
☐N ☑S ☐E ☐W ON HUBBARD ST

TRAFFIC UNIT # 2 TRAVELING
☐N ☐S ☑E ☐W ON HUBBARD ST

VEHICLE #1 EXITED THE RTE 17 SOUTH OFF RAMP AND STRUCK VEHICLE #2.

OPERATOR #1 STATED HE DID NOT SEE VEHICLE #2 APPROACHING.

OPERATOR #2 STATED HE WAS TRAVELLING DOWN THE ROAD AND WAS STRUCK BY VEHICLE #1.

BOTH VEHICLES WERE MOVED PRIOR TO POLICE ARRIVAL; NO MEASUREMENTS WERE TAKEN. -END-

OTHER THAN INVOLVED VEHICLES

1. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

2. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

A-3

NK AND SIGNATURE OF INVESTIGATING OFFICER	OFFICER ID#	POLICE AGENCY IDENTIFICATION	REPORT DATE	CASE STATUS OPEN ☐ CLOSED ☒	SUPERVISOR
O.I.C	396	054	1/18/13		KMT/3

RE 12 – 14

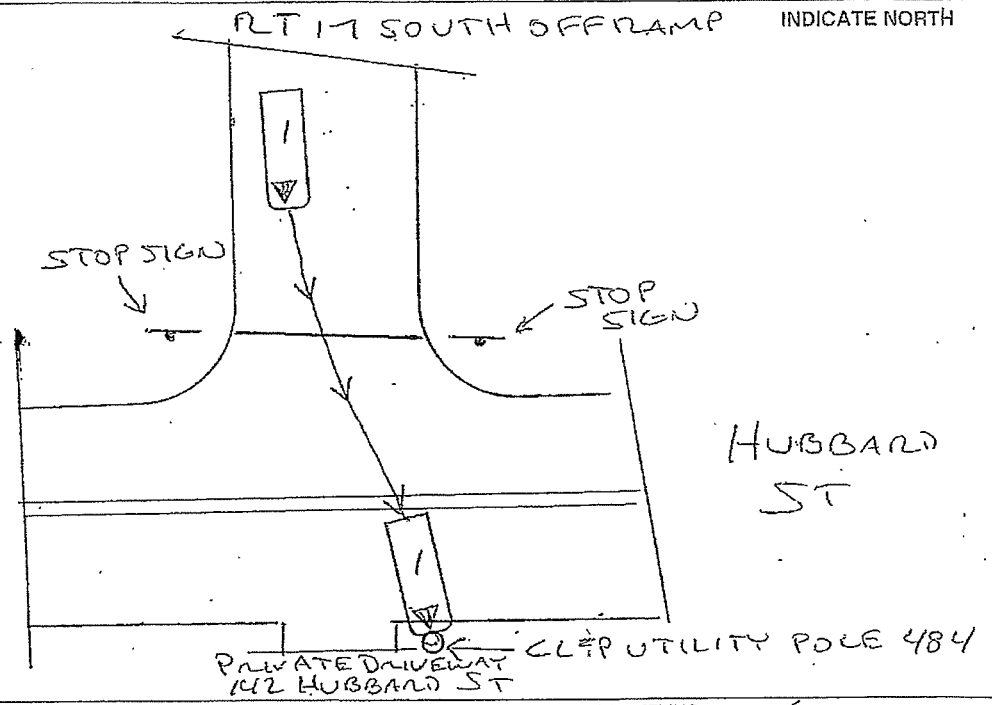
FORM PR-1

NOT TO SCALE

Page # 2 of 2

Police Case Number 13-7280

ACCIDENT DIAGRAM



TRAFFIC UNIT # 1	TRAVELING	TRAFFIC UNIT #	TRAVELING
☐N ☒S ☐E ☐W ON	RT 17 OFF RAMP	☐N ☐S ☐E ☐W ON	

OP#1 (HOROWITZ) WAS TRAVELING S/B ALONG THE RT 17 OFF RAMP, WHICH TERMINATES AT ITS INTERSECTION WITH HUBBARD ST. DUE TO HIS ALCOHOL INTOXICATION, HOROWITZ FAILED TO STOP FOR THE CLEARLY POSTED STOP SIGNS AT THE END OF THE RAMP. HOROWITZ CONTINUED STRAIGHT ACROSS THE INTERSECTION. VEH#1 (VW) WENT OFF THE ROADWAY COLLIDING HEAD-ON INTO CL&P UTILITY POLE 484, WHICH WAS THE AREA OF IMPACT. INVESTIGATION REVEALED THAT OP#1 WAS DUI AND WAS ARRESTED. HOROWITZ WAS PROCESSED AT THE POLICE STATION AND RELEASED ON BOND.

CL&P WAS NOTIFIED OF DAMAGE AND RESPONDED.

DAMAGE TO PROPERTY OTHER THAN INVOLVED VEHICLES

1. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE
WOODEN UTILITY POLE BROKEN IN HALF

NAME AND ADDRESS OF PROPERTY OWNER
CL&P, 107 SELDON ST, BERLIN CT 06037

2. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

A-4

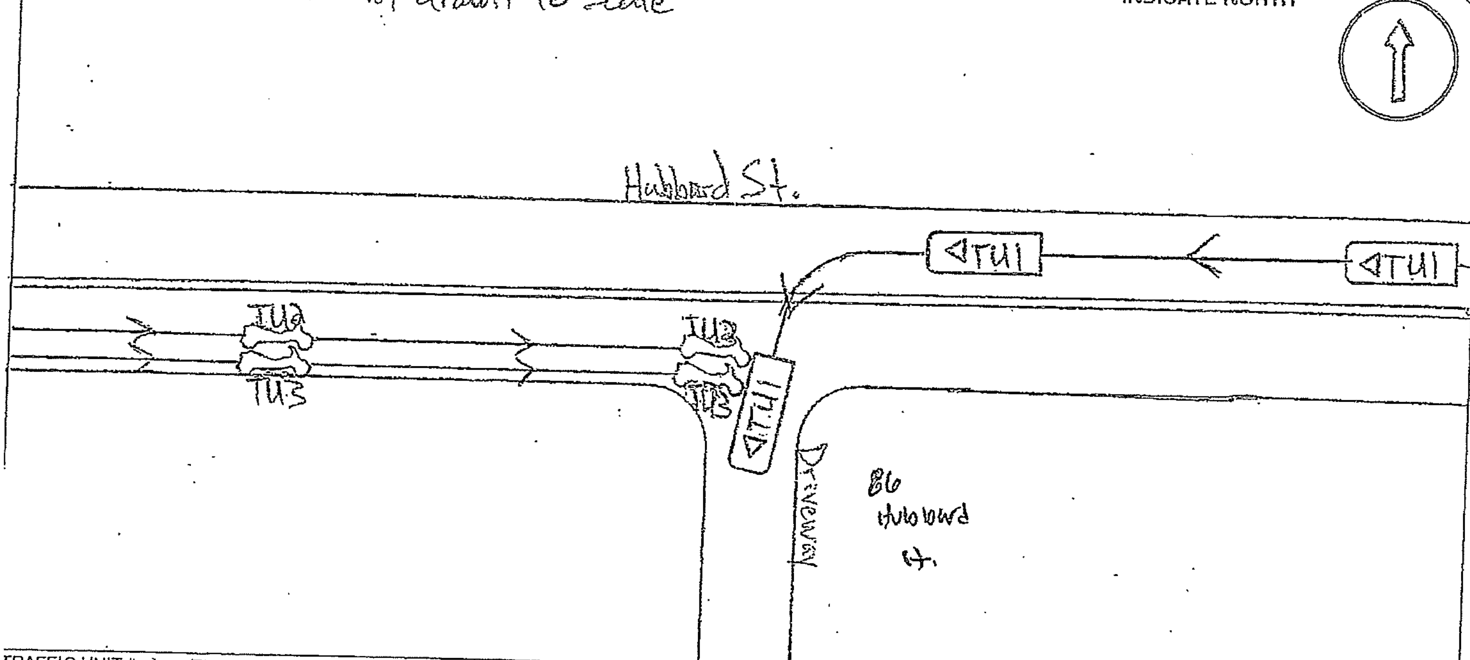
RANK AND SIGNATURE OF INVESTIGATING OFFICER	OFFICER ID#	POLICE AGENCY IDENTIFICATION	REPORT DATE	CASE STATUS OPEN ☐ CLOSED ☑	SUPERVISOR
PO KLAFTER	357	GLASTONBURY	5/18/13		348

FORM PR-1

Police Case Number 13-13766

ACCIDENT DIAGRAM * Not drawn to scale

INDICATE NORTH



TRAFFIC UNIT # 1 TRAVELING ☐N ☐S ☐E ☒W ON Hubbard St.

TRAFFIC UNIT # 2+3 TRAVELING ☐N ☐S ☒E ☐W ON Hubbard St.

Traffic Units 2 and 3 (bicyclists) were travelling east on Hubbard St. Traffic Unit 1 turned left in front of them. Traffic Units 2 and 3 subsequently ran into Traffic Unit 1, striking it on the left side.

The operator of Traffic Unit 1 stated the sun was shining in her eyes as she was driving west on Hubbard St. She stated she was unable to see Traffic Units 2 and 3 as they drove east on Hubbard St. Traffic Unit 1 turned left into a driveway in front of Traffic Units 2 and 3 and was struck by them.

The operator of Traffic Unit 2 had a bump and scratch on her leg, but refused medical attention.

All Traffic Units were moved prior to police arrival, so no measurements could be taken.

OTHER THAN INVOLVED VEHICLES

1. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

2. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

A-5

RANK AND SIGNATURE OF INVESTIGATING OFFICER	OFFICER ID#	POLICE AGENCY IDENTIFICATION	REPORT DATE	CASE STATUS	SUPERVISOR
[signature] 407	407	Glastonbury 054	9/20/13	OPEN ☐ CLOSED ☒	[signature]

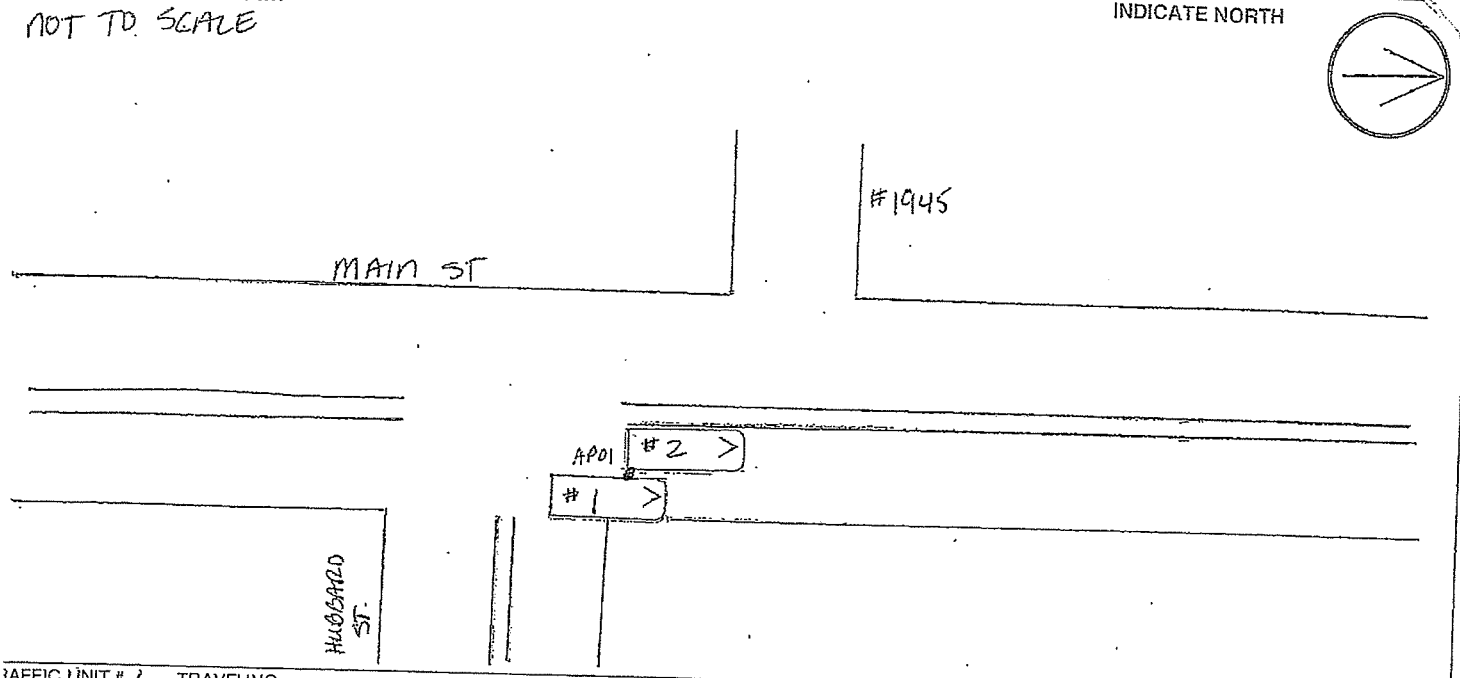
FORM PR-1

Page # 2 of 2

Police Case Number
11-14709

ACCIDENT DIAGRAM
NOT TO SCALE

INDICATE NORTH



TRAFFIC UNIT # 1 TRAVELING
☐N ☐S ☐E ☐W ON MAIN ST

TRAFFIC UNIT # 2 TRAVELING
☒N ☐S ☐E ☐W ON MAIN ST.

Vehicle #2 was traveling north on Main St. Vehicle #1 was following behind Vehicle #2, also traveling north on Main St. Operator #2 stated he had stopped to make a left-hand turn into the driveway of #1945 Main St. Operator #1 attempted to pass Vehicle #2 on the right. The driver's side mirror on Vehicle #1 struck the passenger-side taillight of Vehicle #2. Operator #1 stated that the accident was her fault and that she had been distracted by some tree work on the side of the road. Both vehicles were moved to the side of the road prior to police arrival.

INVOLVED VEHICLES

1. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

2. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

A-6

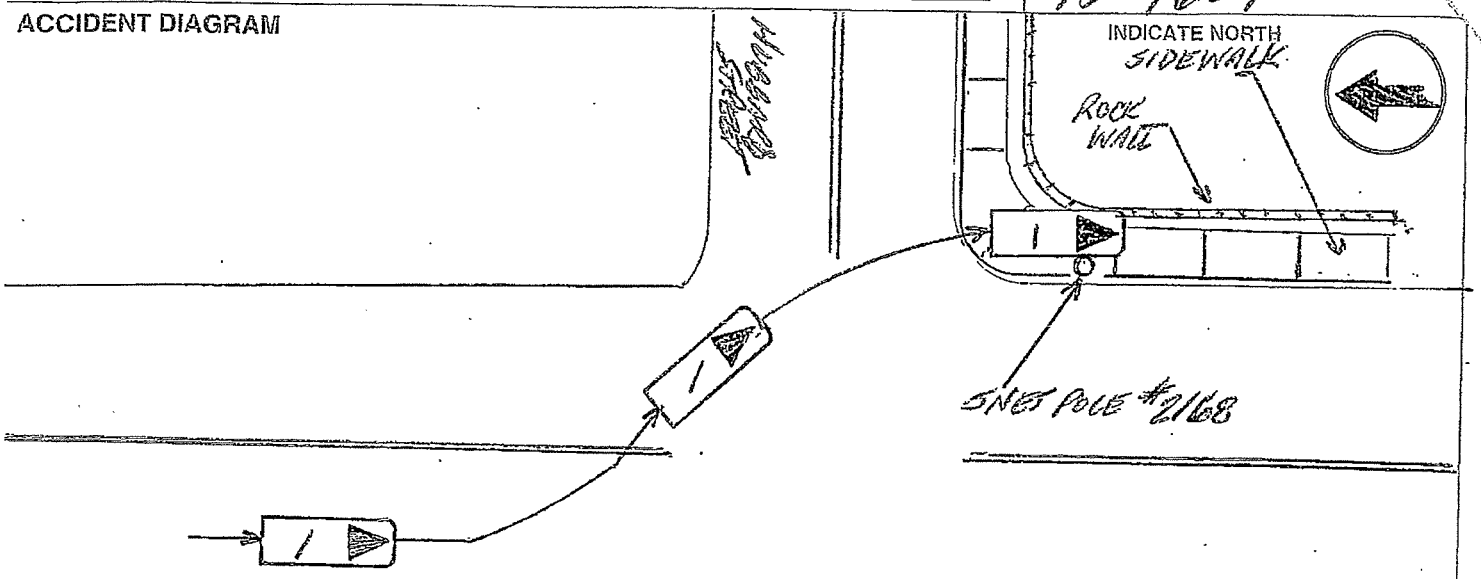
NAME AND SIGNATURE OF INVESTIGATING OFFICER	OFFICER ID#	POLICE AGENCY IDENTIFICATION	REPORT DATE	CASE STATUS OPEN ☐ CLOSED ☒	SUPERVISOR
[signature]	400	GLASTONBURY	11-13-11		

FORM PR-1

Page # 2 of 2

Police Case Number 13-1654

ACCIDENT DIAGRAM



NOT DRAWN TO SCALE

TRAFFIC UNIT # 1 TRAVELING
☒N ☐S ☐E ☐W ON MAIN STREET

TRAFFIC UNIT # --- TRAVELING
☐N ☐S ☐E ☐W ON ---

VEHICLE #1 WAS TRAVELING SOUTHBOUND ON MAIN STREET. VEHICLE #1 CROSSED THE CENTER DOUBLE YELLOW LINES AND STRUCK A S.N.E.T POLE #2168 AT THE INTERSECTION OF MAIN STREET AND HUBBARD STREET. VEHICLE #1 WAS STUCK BETWEEN A ROCK WALL AND THE S.N.E.T. POLE.

GVAA AND GPD ALSO ARRIVED AT THE SCENE. OPERATOR #1 STATED HE FELL ASLEEP WHILE DRIVING. OPERATOR #1 WAS TAKEN TO MANCHESTER HOSPITAL BY GVAA. DRIVER STATED HE WAS UNINJURED BUT STILL APPEARED SLIGHTLY CONFUSED.

I RETURNED OPERATOR #1 LICENSE TO DMV WITH A TEST LETTER FOR A MEDICAL EVALUATION.

INVOLVED VEHICLES

1. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE
8-10' GRANITE WALL

NAME AND ADDRESS OF PROPERTY OWNER
DENISE MULCAHY, 1936 MAIN ST, GLAST., CT 06033

2. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE
1 SNET POLE #2168

NAME AND ADDRESS OF PROPERTY OWNER
40 BRAINARD ROAD, HARTFORD CT.

A-7

NAME AND SIGNATURE OF INVESTIGATING OFFICER	OFFICER ID#	POLICE AGENCY IDENTIFICATION	REPORT DATE	CASE STATUS OPEN ☐ CLOSED ☒	SUPERVISOR
POE	326	GLASTONBURY	2/18/13		SGT. MCCARTHY

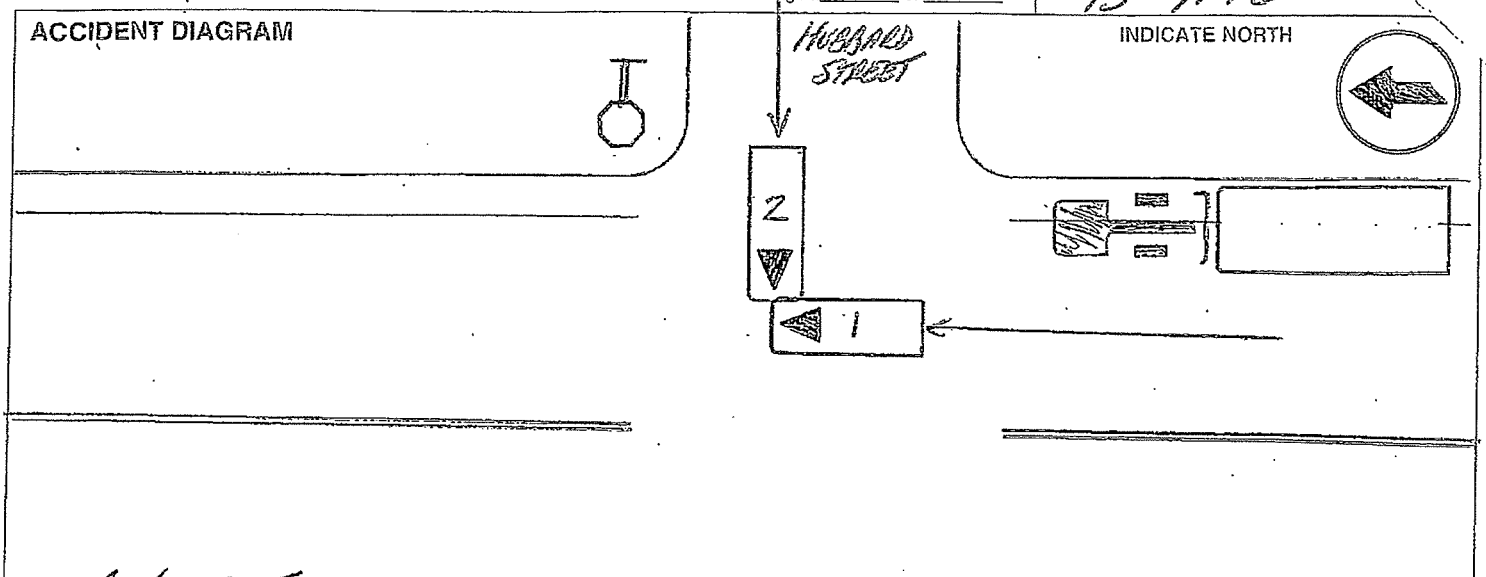
RE 12 – 18

FORM PR-1

Page # 2 of 2

Police Case Number
13-7176

ACCIDENT DIAGRAM



NOT DRAWN TO SCALE

TRAFFIC UNIT # 1 TRAVELING ☑N ☐S ☐E ☐W ON MAIN STREET

TRAFFIC UNIT # 2 TRAVELING ☐N ☐S ☐E ☑W ON HUBBARD STREET

VEHICLE #1 WAS TRAVELING NORTHBOUND ON MAIN STREET. VEHICLE #2 WAS TRAVELING WEST BOUND ON HUBBARD STREET AND STOPPED FOR THE STOP SIGN AT MAIN STREET.

VEHICLE #2 OPERATOR EXPLAINED SHE WAS ATTEMPTING TO MAKE A LEFT TURN ONTO MAIN STREET BUT WAS HAVING TROUBLE SEEING MAIN STREET TRAFFIC DUE TO AN NATIONWIDE MOVING TRUCK PARKED ON THE SIDE OF THE ROAD AT MAIN ST. AND HUBBARD STREET. VEHICLE #2 PULLED TOO FAR OUT AND VEHICLE #1 STRUCK VEHICLE #2.

VEHICLE #1 WAS MOVED PRIOR TO POLICE ARRIVAL.

MOVING TRUCK INFORMATION: NATIONSWIDE TRACTOR/TRAILER CT. APPT REG. 42722A. (VAN LINER INSURANCE # CMA 3239700-00) LAST OPERATED BY CT OP # 20646109.

I TOOK PHOTOGRAPHS OF THE ACCIDENT SCENE INCLUDING THE MOVING TRUCK.

DAMAGE TO PROPERTY OTHER THAN INVOLVED VEHICLES

1. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

2. DESCRIBE THE NATURE AND EXTENT OF PROPERTY DAMAGE

NAME AND ADDRESS OF PROPERTY OWNER

A-8

RANK AND SIGNATURE OF INVESTIGATING OFFICER	OFFICER ID#	POLICE AGENCY IDENTIFICATION	REPORT DATE	CASE STATUS OPEN ☐ CLOSED ☑	SUPERVISOR
PO II	326	GLASTONBURY	5/20/13		SMITH

RE 12 – 19

Apartment
(220)

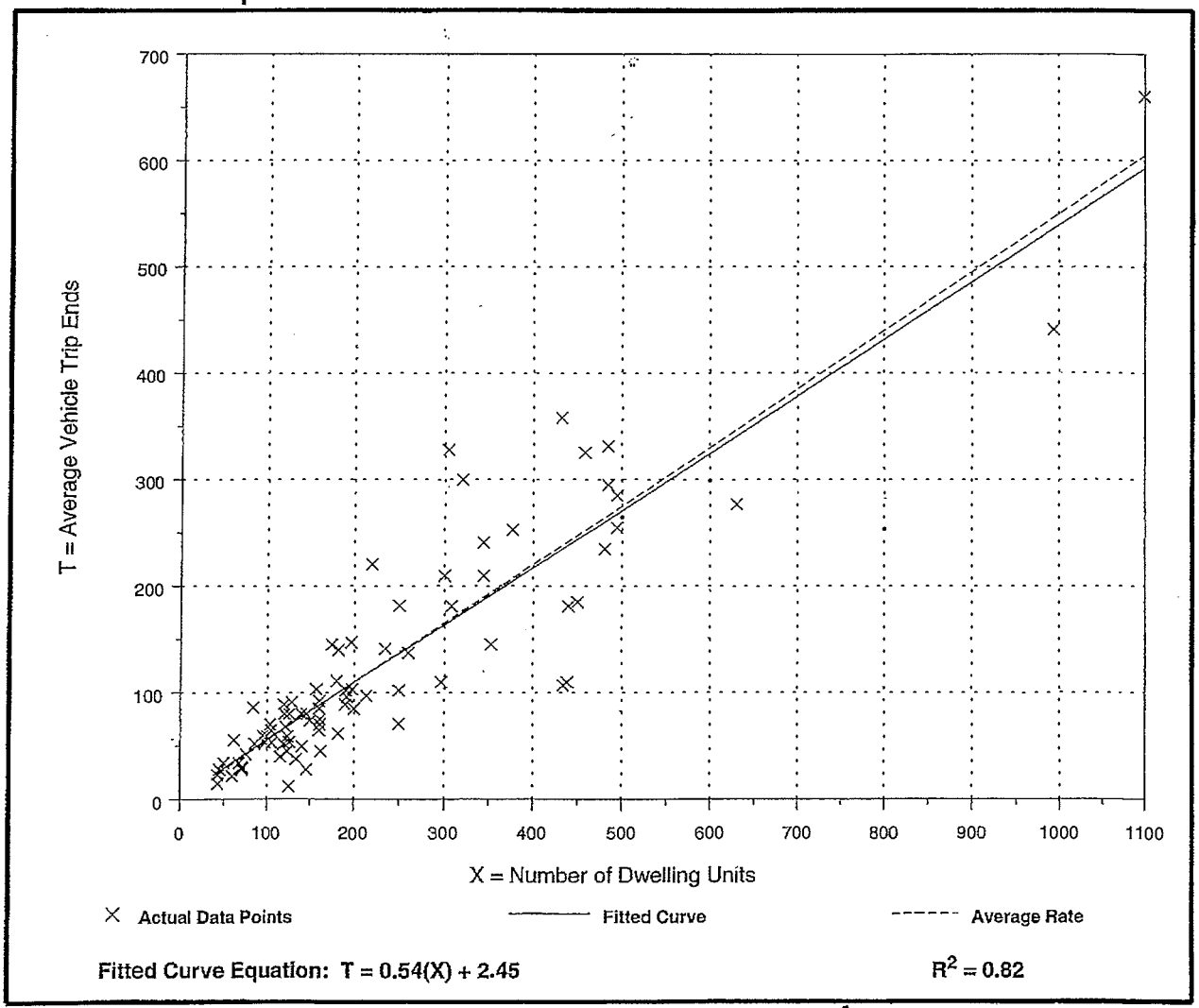
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
A.M. Peak Hour of Generator

Number of Studies: 83
Avg. Number of Dwelling Units: 230
Directional Distribution: 29% entering, 71% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.55	0.10 - 1.08	0.76

Data Plot and Equation



Fitted Curve Equation: T = 0.54(X) + 2.45 $R^2 = 0.82$

X=50 Apartments: T = 0.54(50) +2.45 = 29.45 = 30 trips (9 entering, 21 exiting)

Apartment
(220)

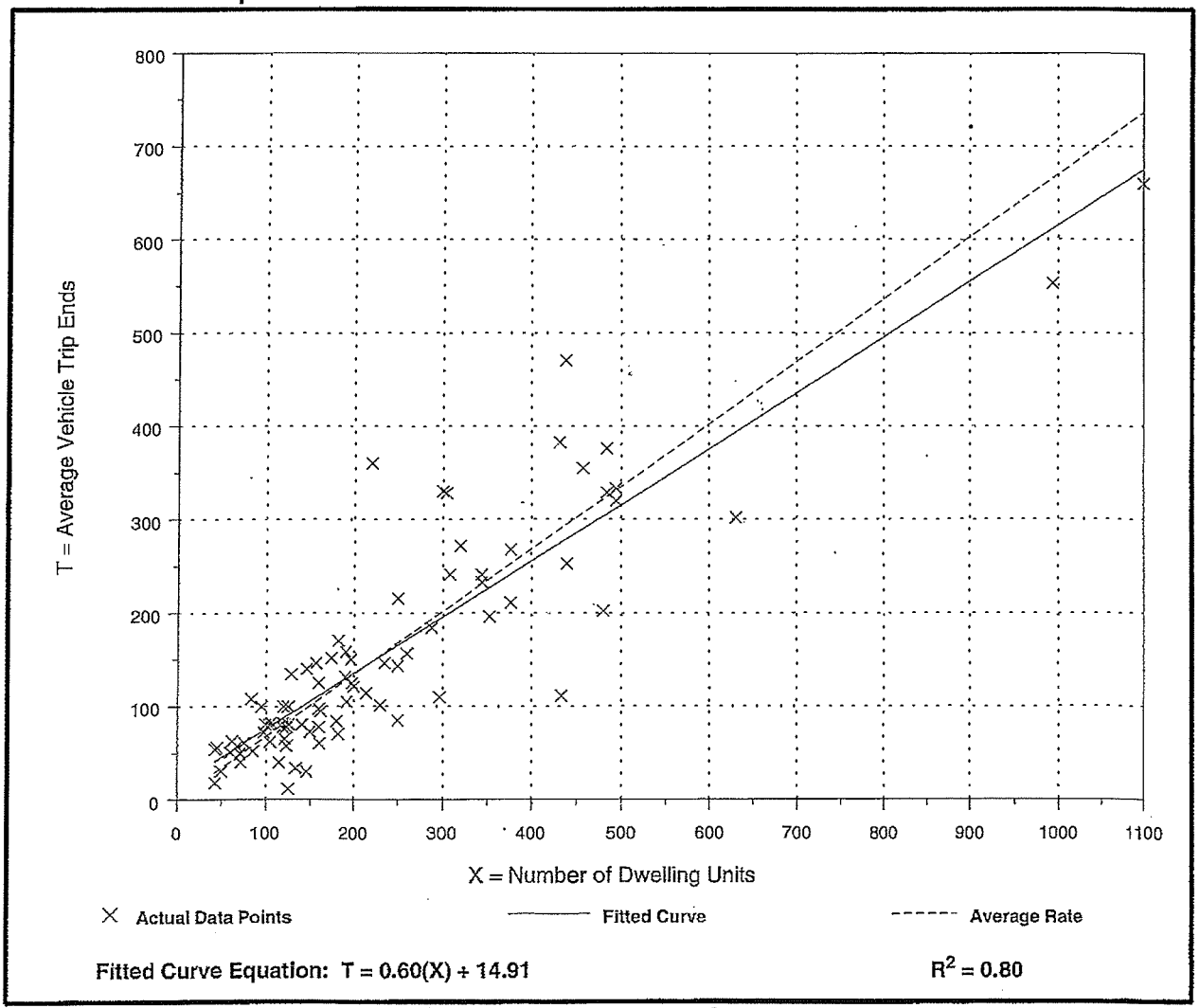
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
P.M. Peak Hour of Generator

Number of Studies: 85
Avg. Number of Dwelling Units: 229
Directional Distribution: 61% entering, 39% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.67	0.10 - 1.64	0.85

Data Plot and Equation



Fitted Curve Equation: T = 0.60(X) + 14.91 $R^2 = 0.80$

X=50 Apartments: T= 0.6(50)+ 14.91 = 44.91 = 45 trips (27 entering, 18 exiting)

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RVB*	Intersection	*Hubbard at Site*
Agency/Co.	*RVB PE*	Jurisdiction	*Glastonbury, CT*
Date Performed	*1/14/2014*	Analysis Year	*2015 Full Build*
Analysis Time Period	*Weekday AM Peak*		

Project Description *38 Hubbard Street*

East/West Street: *Hubbard Street* | North/South Street: *Site Driveway*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*122*	*5*	*4*	*163*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate (veh/h)	*0*	*135*	*5*	*4*	*181*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*12*	*0*	*9*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate (veh/h)	*13*	*0*	*10*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
Volume, v (vph)		*4*		*23*				
Capacity, c_m (vph)		*1456*		*758*				
v/c ratio		*0.00*		*0.03*				
Queue length (95%)		*0.01*		*0.09*				
Control Delay (s/veh)		*7.5*		*9.9*				
LOS		*A*		*A*				
Approach delay (s/veh)	–	–	*9.9*					
Approach LOS	–	–	*A*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RVB*	Intersection	*Hubbard at Site*
Agency/Co.	*RVB PE*	Jurisdiction	*Glastonbury, CT*
Date Performed	*1/14/2014*	Analysis Year	*2015 Full Build*
Analysis Time Period	*Weekday PM Peak*		

Project Description *38 Hubbard Street*

East/West Street: *Hubbard Street* | North/South Street: *Site Driveway*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*155*	*13*	*14*	*164*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate (veh/h)	*0*	*172*	*14*	*15*	*182*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*9*	*0*	*9*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate (veh/h)	*10*	*0*	*10*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
Volume, v (vph)		*15*		*20*				
Capacity, c_m (vph)		*1401*		*717*				
v/c ratio		*0.01*		*0.03*				
Queue length (95%)		*0.03*		*0.09*				
Control Delay (s/veh)		*7.6*		*10.2*				
LOS		*A*		*B*				
Approach delay (s/veh)	--	--	*10.2*					
Approach LOS	--	--	*B*					

B-4

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3202
Station ID:

Eastbound — Latitude: 0' 0.000 Undefined

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	85th Percent	95th Percent
12/13/13	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	*	*
01:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	*	*
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	*	*
04:00	0	0	1	1	3	2	0	0	0	0	0	0	0	0	7	34	34
05:00	0	0	0	0	5	2	0	1	0	0	0	0	0	0	8	35	36
06:00	0	0	3	10	27	11	2	0	0	0	0	0	0	0	53	36	39
07:00	0	1	9	20	55	25	7	0	0	0	0	0	0	0	117	37	41
08:00	0	0	1	22	34	21	4	1	0	0	0	0	0	0	83	38	40
09:00	0	2	2	19	24	17	4	0	0	0	0	0	0	0	68	38	40
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	0	3	16	73	152	78	17	2	0	0	0	0	0	0	341		
Percent	0.0%	0.9%	4.7%	21.4%	44.6%	22.9%	5.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		09:00	07:00	08:00	07:00	07:00	07:00	05:00							07:00		
Vol.		2	9	22	55	25	7	1							117		
PM Peak Vol.																	
Total	7	29	183	750	1332	535	91	5	0	0	0	0	0	0	2932		
Percent	0.2%	1.0%	6.2%	25.6%	45.4%	18.2%	3.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	26 MPH
50th Percentile :	31 MPH
85th Percentile :	36 MPH
95th Percentile :	40 MPH

Stats	
10 MPH Pace Speed :	28-37 MPH
Number in Pace :	1982
Percent in Pace :	67.6%
Number of Vehicles > 25 MPH :	2627
Percent of Vehicles > 25 MPH :	89.6%
Mean Speed(Average) :	32 MPH

EB 85th %-ile = 36mph

C.1

RE 12 – 24

38 Hubbard Street
Glastonbury, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3202
Station ID:

Westbound

Latitude: 0' 0.000 Undefined

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	85th Percent	95th Percent
12/13/13	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	*	*
01:00	0	1	0	0	3	0	0	0	0	1	0	0	0	0	5	32	32
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	*	*
03:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	*	*
04:00	0	0	1	0	1	0	1	0	0	0	0	0	0	0	3	*	*
05:00	0	0	2	1	0	1	1	1	0	0	0	0	0	0	6	*	*
06:00	0	0	0	4	13	19	6	2	1	0	0	0	0	0	45	41	44
07:00	0	0	8	13	45	59	22	6	0	0	0	0	0	0	153	41	44
08:00	0	0	2	10	25	37	24	3	1	0	0	1	0	0	103	42	45
09:00	0	1	5	14	35	28	14	2	0	0	0	0	0	0	99	40	43
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1	2	19	42	127	144	68	14	2	1	0	1	0	0	421		
Percent	0.2%	0.5%	4.5%	10.0%	30.2%	34.2%	16.2%	3.3%	0.5%	0.2%	0.0%	0.2%	0.0%	0.0%			
AM Peak	00:00	01:00	07:00	09:00	07:00	07:00	08:00	07:00	06:00	01:00		08:00			07:00		
Vol.	1	1	8	14	45	59	24	6	1	1		1			153		
PM Peak Vol.																	
Total	3	16	95	376	1051	1123	440	65	13	1	0	1	0	0	3184		
Percent	0.1%	0.5%	3.0%	11.8%	33.0%	35.3%	13.8%	2.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%			

	15th Percentile :	29 MPH
	50th Percentile :	35 MPH
	85th Percentile :	40 MPH
	95th Percentile :	44 MPH
Stats	10 MPH Pace Speed :	31-40 MPH
	Number in Pace :	2004
	Percent in Pace :	62.9%
	Number of Vehicles > 25 MPH :	3026
	Percent of Vehicles > 25 MPH :	95.1%
	Mean Speed(Average) :	35 MPH

WB 85th %-ile = 40mph

C-2

RE 12 – 25

Design Speed (V_{major}) (mph)	ISD (ft)		
	Passenger Cars	Single-Unit Trucks	Tractor/Semitrailers
20	225	280	340
25	280	350	425
30	335	420	510
35	390	490	595
40	445	560	680
45	500	630	765
50	555	700	850
55	610	770	930
60	665	840	1015
65	720	910	1100
70	775	980	1185

Notes:

1. *These ISD values assume a left or right turn onto a 2-lane facility without a median.*
2. *These ISD values assume a minor road approach grade less than or equal to 3%.*

INTERSECTION SIGHT DISTANCES
(Two-Lane Highway or Street)

Figure 11-2C

Eastbound 85th %ile = 36 mph

ISD = $390 + \frac{1}{5}(445-390) = 401$ ~~feet~~

Westbound 85th %ile = 40 mph

ISD = 445 ~~feet~~

Hesketh

Civil & Traffic Engineers • Surveyors • Planners • Landscape Architects

F. A. Hesketh
& Associates, Inc.

May 6, 2014

Planning and Zoning Commission
City of Middletown
245 Dekoven Drive
Middletown, CT 06457

Attn: Chairman Daniel Russo

RE: **Proposed Text Change Amendment**
Middletown, CT
Our File: 14112

Dear Mr. Chairman:

Pursuant to the request of Glenn Russo of Landmark Investment Group, LLC, our office has completed a review of parking demand for multiple-family dwellings. Our review was undertaken to determine an appropriate parking ratio for multiple-family complexes within the City of Middletown, Connecticut. Our review included a review of the Institute of Transportation Engineers Parking Generation Report and parking counts conducted at similar local developments. This letter presents our findings.

ITE Parking Generation

The Institute of Transportation Engineers (ITE) has published a report entitled Parking Generation. The Third Edition was published in 2004. The report presents parking demand data as measured at existing land uses. Included in the database is Land Use: 221 – Low/Mid-Rise Apartment. The data for this category is broken down into suburban and urban locations. The suburban sites included observations at 19 developments with an average of 320 dwelling units per development. An average peak parking demand of 1.2 vehicles per unit was observed with an 85% demand of 1.46 vehicles per unit. The average parking supply ratio at the suburban sites was 0.9 parking spaces per bedroom. The peak parking demand occurred between the hours of 12:00 a.m. and 5:00 a.m. The urban sites included observations at 12 developments with an average of 165 dwelling units per development. An average peak parking demand of 1.0 vehicle per unit was observed with an 85% demand of 1.17 vehicles per unit. The average parking supply ratio at the urban sites was 0.8 spaces per bedroom. The peak parking demand occurred between the hours of 9:00 p.m. and 5:00 a.m. Copies of the data are included in the appendix.

6 Creamery Brook • East Granby, CT 06026

Tel 860.653.8000 • Fax 860.844.8600
www.fahesketh.com

Similar Local Developments

In order to verify the ITE data and to provide information on local developments our office conducted parking counts at two sites in the City of Middletown and two sites in the Town of Bloomfield, CT. Observations were conducted between the hours of 1:00 a.m. and 4:00 a.m. on Monday April 21 and Tuesday April 22, 2014. Counts were conducted at the following locations:

a) Knoll Crest, a 156 Unit Apartment Complex on George Street in Middletown
b) Woodgate, an 84 Unit Condominium Complex on Route 66 in Middletown
c) Beaman Brook, a 116 unit Apartment Complex located on Route 178 in Bloomfield
d) Wintonbury Place, a 76 unit Condominium Complex located on Route 178 in Bloomfield

Knoll Crest – Knoll Crest is located off of George Street in the City of Middletown. The development is an apartment complex with a mix of one and two bedroom units. There are 96 one bedroom units and 60 two bedroom units. The complex has a total of 232 striped spaces available. The development is currently under construction to add two additional buildings. No parking garages are provided on the site.

Woodgate- Is located on Route 66 at the Middletown/Middlefield Town Line. The development is a condominium complex with a total of 84 units. There are 12 one bedroom units and 72 two bedroom units. The development provides a total of 166 striped parking spaces. There are no parking garages provided on the site.

Beaman Brook- is located on Route 178 in Bloomfield. The development consists of a total of 116 two bedroom condominiums. There are a total of 225 striped parking spaces provided on site. No parking garages provided on the site.

Wintonbury Place - is located on Route 178 in Bloomfield. The development consists of a total of 56 two bedroom condominiums. There are a total of 225 striped parking spaces provided on site. No parking garages provided on the site.

Table 1 presents a summary of the observed parking count data. The number of vehicles on site was recorded during each visit. The Table indicates that the maximum observed parking demand at any of the four developments is 1.41 vehicles/unit at the Beaman Brook site. When the number of bedrooms is considered, the peak parking demand was observed at Knoll Crest, and is 0.94 vehicles per bedroom.

Conclusion

The ITE Parking Generation Report indicates a peak parking demand of 1.2 vehicles per dwelling unit for apartments. Our observations at four local developments indicates

an average parking demand of 1.28 vehicles per unit and 0.73 vehicles per bedroom. The peak observed parking demands were 1.41 vehicles per unit and 0.94 vehicles per bedroom. Based on this data it is our professional opinion that a reduction in the minimum parking ratio to 1.5 spaces per one and two bedroom dwelling units or a reduction to 1 space per bedroom is appropriate and will provide sufficient parking to accommodate the peak parking demand for multiple-family developments in The City of Middletown. In addition the reduction in impervious surfaces resulting from this change in regulation will serve to reduce the volume of potential runoff from impervious surfaces. Please see Table 2 which provides sample calculations comparing the potential runoff under the existing and proposed parking regulations.

We appreciate the opportunity to provide this information to you. If you require additional information regarding this application, please do not hesitate to contact our office.

Very truly yours,
F. A. Hesketh & Associates, Inc.

Scott F. Hesketh, P.E.
Traffic Engineer

cc: Mr. Glenn Russo
Atty. David Sherwood

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Table 1
Parking Lot usage Study
Middletown / Bloomfield Locations

Middletown Sites	No. of Units	No. of Bedrooms	8drms/unit	Spaces Provided			Parking Observations				Parking Usage	
				Spaces	Spaces/Unit	Spaces/Bdrm	Date	Day	Time	Vehicles Parked	Veh/Unit	Veh/Bdrm
Knoll Crest	156	216	1.38	312	2.00	1.44	21-Apr	Monday	1:52 AM	201	1.29	0.93
	156	216	1.38	312	2.00	1.44	22-Apr	Tuesday	1:25 AM	203	1.30	0.94
Woodgate	84	156	1.86	166	1.98	1.06	21-Apr	Monday	2:05 AM	107	1.27	0.69
	84	156	1.86	166	1.98	1.06	22-Apr	Tuesday	1:20 AM	103	1.23	0.66
Bloomfield Sites												
Beaman Brook	116	232	2.00	281	2.42	1.21	21-Apr	Monday	3:15 AM	164	1.41	0.71
	116	232	2.00	281	2.42	1.21	22-Apr	Tuesday	2:18 AM	149	1.28	0.64
Wintonbury Place	76	152	2.00	146	1.92	0.96	21-Apr	Monday	3:31 AM	90	1.18	0.59
	76	152	2.00	146	1.92	0.96	22-Apr	Tuesday	2:26 AM	88	1.16	0.58
Weighted Average			1.75		2.09	1.20					1.28	0.73

Table 2
Potential Runoff From Impervious Surfaces
Existing vs Proposed parking Regulations

Existing Parking Regulations

	1 bedroom	2 bedroom	Required Parking 1 Bdrm	2 Bdrm	Parking Spaces	Area/Space SQFT	Parking Area SQFT	Avg Rainfall FT	Runoff CF/Year	Runoff Gal / Year
200 Units	123	77	2	2	400	270	108000	4.17	450360	3366441
400 Units	246	154	2	2	800	270	216000	4.17	900720	6732882
600 Units	369	231	2	2	1200	270	324000	4.17	1351080	10099323

Proposed Parking Regulations

	1 bedroom	2 bedroom	Required Parking 1 Bdrm	2 Bdrm	Parking Spaces	Area/Space SQFT	Parking Area SQFT	Avg Rainfall FT	Runoff CF/Year	Runoff Gal / Year
200 Units	123	77	1.5	1.5	300	270	81000	4.17	337770	2524831
400 Units	246	154	1.5	1.5	600	270	162000	4.17	675540	5049662
600 Units	369	231	1.5	1.5	900	270	243000	4.17	1013310	7574492

Reduction in Runoff as a result of Text Change

	Existing		Proposed		Reduction In Run-Off 1 year		10 years		25 Years	
	CF/Year	Gal / Year	CF/Year	Gal / Year	CF	Gallons	CF	Gallons	CF	Gallons
200 Units	450,360	3,366,441	337,770	2,524,831	112,590	841,610	1,125,900	8,416,103	2,814,750	21,040,256
400 Units	900,720	6,732,882	675,540	5,049,662	225,180	1,683,221	2,251,800	16,832,205	5,629,500	42,080,513
600 Units	1,351,080	10,099,323	1,013,310	7,574,492	337,770	2,524,831	3,377,700	25,248,308	8,444,250	63,120,769