



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Date: February 12, 2016
(revised)

To: Paul Starratt, P.E.
Town of Westford
28 North Street
Westford, MA 01886

From: Robert E. Duval, P.E.

Re: **Study Area Roadway Scoping Letter – Proposed Restaurant**
66 Boston Road, Westford, MA
TFM Project No. 31578.00

TFMoran has prepared this Study Area Roadway Scoping Letter to evaluate the subject property as a proposed restaurant use for traffic scoping analysis.

The site is located at 66 Boston Road in Westford and is about a quarter mile from I-495 (1/8 mile from the SB off ramp). The previous uses include a farm stand business; however, it is currently abandoned and scattered with debris and vacant buildings and greenhouses.

To the north of the site, Boston Road enters areas of low density suburban residential development. To the south, past the I-495 ramps, Boston Road ends at the intersection of Route 110 (Littleton Road) and Carlisle Road in a densely developed commercial area. See the locus map on the next page.

PROPOSAL

Our client is proposing to construct a “Farm to Table” Quality Restaurant and Function Hall at 66 Boston Road. The restaurant will have 180 seats with a 25 seat bar and a 15 seat raw bar; the function hall will have about 50-85 seats. The maximum seating capacity for the facility will be 305 seats with a total of 25 employees. The project will also have an agricultural component, including a new greenhouse, vegetable garden, and fruit tree garden to grow food for the restaurant.

Two access drives are proposed on the site, one will provide access to the parking lot for restaurant/function hall use and the other will be used for the agricultural uses and for loading.

TRIP GENERATION

To estimate trips resulting from this development, we used ITE (9th Edition) Land Use Code (LUC) 931 “Quality Restaurant” for the proposed restaurant, based on 180 seats. We used the same LUC 931 for the 85 seat function hall, since ITE does not include a separate code for that use.

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We believe the LUC 931 code is conservative (predicts more trips than likely) for a function hall on the weekday peak hours, as most functions are held on weekends and outside normal weekday pm peak hours. It is assumed that the ancillary farm use will not generate any additional trips above the previous site uses. Table 1 below shows trip generation based on these uses:

Table 1 - Trip Generation by Land Use

Land Use	In	Out	Total
Proposed 180 Seat Quality Restaurant (LUC 931)			
Weekday PM Peak Hour Adjacent Street	38	19	57
Saturday Midday Peak Hour	43	30	73
Proposed 85 Seat Function Hall (LUC 931)			
Weekday PM Peak Hour Adjacent Street	18	4	22
Saturday Midday Peak Hour	22	6	28
Total Trips			
Weekday PM Peak Hour Adjacent Street	56	23	79
Saturday Midday Peak Hour	65	36	101

AERIAL LOCUS MAP



TRIP DISTRIBUTION

Based on the location of the property relative to the interstate highway and the dense residential area, we expect that the trip distribution associated with this redevelopment would be approximately 60% to/from the south (I-495 and commercial zone) and 40% to/from the north (residential areas). Table 2 summarizes trip distribution patterns.

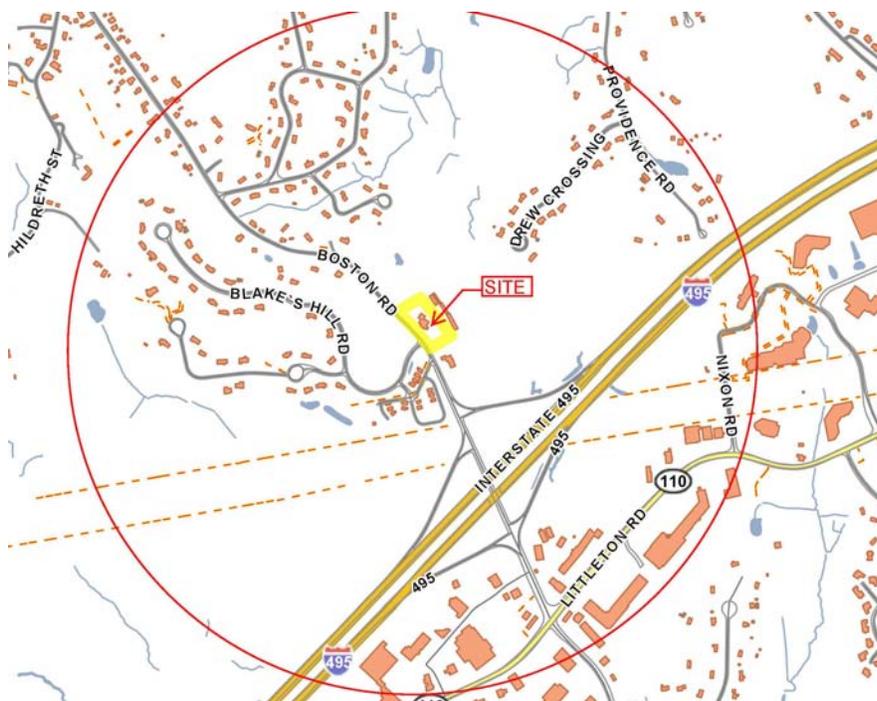
Table 2 - Trip Distribution

Land Use	From South (60%)	From North (40%)	To South (60%)	To North (40%)	Total
Proposed Restaurant/Function Hall					
Weekday PM Peak Hour Adjacent Street	34	22	14	9	79
Saturday Midday Peak Hour	39	26	22	14	101

STUDY AREA BOUNDARIES

The map below shows a circle with a 3000' radius to display the extents of the project study area. The area circled includes the following intersections:

- Boston Road & Crown Road
- Boston Road & Blake Hill Road
- Boston Road & Joe's Way
- Boston Road & I-495 SB off-ramps
- Boston Road & I-495 SB on-ramps
- Boston Road & I-495 NB on/off ramps
- Boston Road & Cornerstone Square
- Boston Road & Littleton Road (Route 110)



The closest location of Turning Movement Counts conducted by Massachusetts Highway is at the Intersection of Boston Road & the I-495 NB ramps. The Mass DOT data tables are attached. During the peak PM hour (5p-6p) on a Tuesday, there were 2734 vehicles counted. The proposed trips for the restaurant/function hall would be 48 trips to/from the south during the PM peak hour, which is only a 2% increase in traffic overall. There is no Saturday peak hour TMC data available; however, there is Sunday data that can be used (conservatively) to represent Saturday peak travel. During the midday peak hour on Sunday (12p-1p), there were 1824 vehicles counted. The proposed Saturday volume of the restaurant/function hall adds 61 trips to/from the south, which is only a 3% increase in overall traffic volume.

Given these percentages, and a basic pro-rata distribution of new trips, it is unlikely that any individual lane or side street within the study area will see a 10% increase. To the north, the 31 pm/40 Saturday trips will draw from several miles westward on Boston Road, and only a small fraction will originate within 3000' of the site. Therefore, we do not expect a 10% increase at any point north of the site.

Based on the foregoing, we find that the traffic analysis can be limited to the site driveways only.

In the traffic study itself, we will be sure to address actual impacts to the highway ramps & signals, interaction with the proposed fire station driveway, and the effect of left and right turns into the site including turn lane warrant analyses as well as accident history, LOS analyses, and other standard TIAS items.

Please let us know if you need any further information prior to setting up a scoping meeting for the proposed site. We look forward to meeting with you.

TFMORAN, INC.



Robert E. Duval, P.E.
Chief Engineer

Location Info		Count Data Info	
Location ID	238781	Start Date	TUESDAY 8/1/2006
Type	I-SECTION	End Date	8/2/2006
Functional Class	4	Start Time	10:00 PM
Located On	BOSTON ROAD	End Time	10:00 PM
Between	AND RAMP-RT 495 NB TO BOSTON RD	Direction	2-WAY
Direction	2-WAY	Notes	
Community	WESTFORD	Count Source	
MPO_ID		File Name	
HPMS ID		Weather	
Agency	Massachusetts Highway Department	Study	MassHighway Special Counts
		Owner	mhd

Interval: 15 mins					
Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	62	61	44	32	199
01:00 - 02:00	34	17	21	22	94
02:00 - 03:00	30	27	16	15	88
03:00 - 04:00	9	10	11	23	53
04:00 - 05:00	22	38	52	67	179
05:00 - 06:00	44	71	137	212	464
06:00 - 07:00	230	279	344	415	1268
07:00 - 08:00	435	459	557	648	2099
08:00 - 09:00	599	618	691	671	2579
09:00 - 10:00	589	555	492	476	2112
10:00 - 11:00	438	442	390	386	1656
11:00 - 12:00	363	379	446	469	1657
12:00 - 13:00	469	477	471	465	1882
13:00 - 14:00	433	453	423	423	1732
14:00 - 15:00	460	433	500	481	1874
15:00 - 16:00	506	494	520	527	2047
16:00 - 17:00	483	521	560	575	2139
17:00 - 18:00	672	675	705	682	2734
18:00 - 19:00	656	539	522	417	2134
19:00 - 20:00	441	411	348	342	1542
20:00 - 21:00	286	252	319	230	1087
21:00 - 22:00	223	216	191	179	809
22:00 - 23:00	148	157	125	114	544
23:00 - 24:00	93	97	102	86	378
TOTAL					31350

Location Info					Count Data Info	
Location ID	238781				Start Date	SUNDAY 7/30/2006
Type	I-SECTION				End Date	7/31/2006
Functional Class					Start Time	10:00 PM
Located On	BOSTON ROAD				End Time	10:00 PM
Between	AND RAMP-RT 495 NB TO BOSTON RD				Direction	2-WAY
Direction	2-WAY				Notes	
Community	WESTFORD				Count Source	
MPO_ID					File Name	
HPMS ID					Weather	
Agency	Massachusetts Highway Department				Study	MassHighway Special Counts
					Owner	mhd
Interval: 15 mins						
Time	15 Min				Hourly Count	
	1st	2nd	3rd	4th		
00:00 - 01:00	41	48	34	34	157	
01:00 - 02:00	39	21	26	14	100	
02:00 - 03:00	16	20	5	15	56	
03:00 - 04:00	1	22	13	20	56	
04:00 - 05:00	29	21	42	42	134	
05:00 - 06:00	60	73	113	193	439	
06:00 - 07:00	231	274	353	412	1270	
07:00 - 08:00	421	451	509	602	1983	
08:00 - 09:00	538	641	598	608	2385	
09:00 - 10:00	555	527	474	485	2041	
10:00 - 11:00	382	423	378	442	1625	
11:00 - 12:00	389	386	413	440	1628	
12:00 - 13:00	450	442	467	465	1824	
13:00 - 14:00	503	442	419	483	1847	
14:00 - 15:00	434	418	472	466	1790	
15:00 - 16:00	498	502	554	531	2085	
16:00 - 17:00	548	574	606	624	2352	
17:00 - 18:00	672	708	738	672	2790	
18:00 - 19:00	634	563	443	403	2043	
19:00 - 20:00	423	369	302	340	1434	
20:00 - 21:00	348	285	306	255	1194	
21:00 - 22:00	204	160	172	154	690	
22:00 - 23:00	159	125	97	93	474	
23:00 - 24:00	90	67	84	78	319	
TOTAL					30716	