



Ron Müller & Associates
Traffic Engineering and Consulting Services

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Ref.: 15039

October 6, 2015

Mr. Levon Semerjian
Atlantic Subaru
124 Waterhouse Rd
Bourne, MA 02532

Reg.: Atlantic Subaru Expansion
Bourne, Massachusetts

Dear Levon:

Ron Müller & Associates (RMA) has evaluated the potential traffic impacts of an expansion of the existing Subaru dealership located at 124 Waterhouse Road in Bourne, Massachusetts. Based on our discussions and review of the plans, we understand that the additional space is not intended to generate more business, but is needed to better accommodate the existing level of business at the site and provide a more comfortable environment for customers as well as new features, such as a drive-in service department. The existing dealership is 12,640 square feet in size. As proposed, a new parking field for display vehicles is proposed to be constructed on an adjacent lot and the existing building will be expanded by 8,493 square feet to accommodate a drive-in service area, a new customer lounge, and an expanded service department.

To determine the level of traffic currently generated at the site, peak period turning movement counts were conducted at the Atlantic Subaru driveway intersection with Waterhouse Road. These counts were conducted on Thursday October 1, 2015 from 4:00 to 6:00 PM and on Saturday October 3, 2015 from 11:00 AM to 2:00 PM. These hours represent the critical time periods when the adjacent street carries the greatest volume of traffic and an automobile dealership typically generates the highest traffic volumes. The results of the traffic counts are summarized in Table 1 and the count data are attached to this letter.

Table 1
Trip Generation Comparison

Time Period	Existing Atlantic Subaru ^a	Proposed Dealership based on ITE ^b	Potential Change in Traffic ^c
Weekday PM Peak Hour			
Enter	27	26	-1
<u>Exit</u>	<u>39</u>	<u>38</u>	<u>-1</u>
Total	66	64	-2
Saturday Peak Hour			
Enter	36	43	+7
<u>Exit</u>	<u>37</u>	<u>43</u>	<u>+6</u>
Total	73	86	+13

^a Based on traffic counts conducted October 1 and 3, 2015.

^b ITE Land Use Code 841 (Automobile Sales) for 21,213 square feet.

^c ITE trip generation for proposed dealership less traffic counts at existing dealership.

As shown in this table, the existing dealership is generating 66 vehicle trips (27 entering and 39 exiting) during the weekday PM peak hour (one hour between 4:00 and 6:00 PM). On a Saturday, the dealership is currently generating 73 vehicle trips (36 entering and 37 exiting) during the midday peak hour (one hour between 11:00 AM and 2:00 PM).

The Institute of Transportation Engineers (ITE) *Trip Generation Manual*¹ is typically used to estimate the increase in traffic from new or expanded development projects. ITE Land Use Code 841 (Automobile Sales) trip-generation rates were therefore applied to the proposed square footage of the dealership and the resulting trips are also shown in Table 1. The ITE trip-generation worksheet is attached to this letter for reference.

As shown, the existing dealership is generating traffic nearly identical to the nationally-accepted trip generation rates applied to the proposed square footage of the building. This appears to support your argument that your current operation has outgrown the size of the existing building and the additional space will simply better accommodate your current level of business. Using the ITE trip generation estimates, the existing dealership would not generate any additional traffic during the weekday PM peak hour. During the Saturday peak hour, there could be an increase of 13 vehicle trips (7 entering and 6 exiting). Once distributed onto the adjacent roadways, this additional traffic would not have any material impact on traffic operations.

¹ *Trip Generation Manual, 9th Edition*; Institute of Transportation Engineers; Washington, DC; 2012.

Mr. Levon Semerjian
October 6, 2015
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Please feel free to contact me should you have any questions regarding this trip-generation assessment.

Sincerely,

Ron Müller & Associates



Ronald Müller, P.E.
Principal

Attachments

Ron Müller & Associates

Traffic Engineering and Consulting Services
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PM Peak Turning Movement Count

Intersection: Waterhouse Road at Atlantic Subaru Driveway

Date: 10/1/2015

Counted By: RR

Weather: Cloudy

Time	Atlantic Subaru Drive		Waterhouse Road Northbound		Waterhouse Road Southbound		Total	Cumulative
	Left Out	Right Out	Left In	Thru	Thru	Right In		
4:00 - 4:15	2	1	2	23	29	3	60	
4:15 - 4:30	4	2	2	27	31	2	68	
4:30 - 4:45	5	3	3	28	38	3	80	
4:45 - 5:00	6	4	6	30	34	3	83	291
5:00 - 5:15	7	5	4	39	64	3	122	353
5:15 - 5:30	6	3	3	44	35	2	93	378
5:30 - 5:45	4	2	3	23	31	2	65	363
5:45 - 6:00	2	1	2	19	23	1	48	328
Peak Hour	24	15	16	141	171	11		

Atlantic Subaru Driveway:
 In 27
Out 39
 Total 66

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Sat Peak Turning Movement Count

Intersection: Waterhouse Road at Atlantic Subaru Driveway

Date: 10/3/2015

Counted By: EG

Weather: Cloudy

Time	Atlantic Subaru Drive		Waterhouse Road Northbound		Waterhouse Road Southbound		Total	Cumulative
	Left Out	Right Out	Left In	Thru	Thru	Right In		
11:00 - 11:15	6	7	8	23	16	2	62	
11:15 - 11:30	3	4	3	17	18	2	47	
11:30 - 11:45	4	5	6	16	21	3	55	
11:45 - 12:00	5	4	5	15	18	3	50	214
12:00 - 12:15	3	4	2	13	19	4	45	197
12:15 - 12:30	4	5	3	14	27	3	56	206
12:30 - 12:45	3	2	4	16	22	2	49	200
12:45 - 1:00	5	4	9	18	31	2	69	219
1:00 - 1:15	4	5	5	17	20	5	56	230
1:15 - 1:30	5	5	4	16	19	5	54	228
1:30 - 1:45	7	2	3	15	30	3	60	239
1:45 - 2:00	5	2	2	11	15	3	38	208
Peak Hour	21	16	21	66	100	15		

Atlantic Subaru Driveway:
 In 36
 Out 37
 Total 73

Institute of Transportation Engineers (ITE); 9th Edition
Land Use Code (LUC) 841 - Automobile Sales

Average Vehicle Trips Ends vs: 1,000 Gross Square Feet of Floor Area
Independent Variable (X): 21.133

AVERAGE WEEKDAY DAILY

$$T = 32.30 * (X)$$

$$T = 682.60$$

T = 680 vehicle trips
with 50% (340 vpd) entering and 50% (340 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 1.92 * (X)$$

$$T = 40.58$$

T = 41 vehicle trips
with 74% (30 vph) entering and 26% (11 vph) exiting.

WEEKDAY PM PEAK HOUR OF ADJACENT STREET TR. (Store size 10-88 ksf) WEEKDAY PM PEAK HOUR AVG. RATE

$$T = 1.91 (X) + 23.74$$

$$T = 64.10$$

T = 64 vehicle trips
with 40% (26 vph) entering and 60% (38 vph) exiting.

$$T = 2.62 * (X)$$

$$T = 55.4$$

$$T = 55$$

with 22 vph entering and 33 vph exiting

AVERAGE SATURDAY DAILY

$$T = 29.74 * (X)$$

$$T = 628.50$$

T = 630 vehicle trips
with 50% (315 vpd) entering and 50% (315 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATION (Store size 16 - 33 ksf)

$$T = 8.56 (X) - 95.28$$

$$T = 85.62$$

T = 86 vehicle trips
with 50% (43 vph) entering and 50% (43 vph) exiting.

SATURDAY PEAK HOUR AVG. RATE

$$T = 4.02 * (X)$$

$$T = 85$$

$$T = 85$$

with 43 vph entering and 42 vph exiting