

MEMORANDUM

Ref: 1598A

To: Scott Mitchell
Tropic Star Development, LLC

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Car Service Building
Durham, New Hampshire

Date: February 25, 2015

As requested, our office has conducted a trip generation analysis for the proposed 3-bay car service facility on NH108 in Durham, New Hampshire. This analysis is based on the standard trip generation rates published by the Institute of Transportation Engineers (ITE)¹ for Automobile Care Centers using the “gross floor area” and “service stalls” as the independent variable. We have also analyzed the trip generating characteristics of the former Cumberland Farms site. Table 1 summarizes the results. The calculation sheets are attached.

Table 1	Trip Generation Summary / Comparison					
	Former Use ¹			Proposed 3 Bay Car Service Facility ²		
	Gross Floor Area Method	Vehicle Fueling Position Method	Driveway Count - 2004 ³	Gross Floor Area Method	Service Stall Method	
Weekday Total	Entering 723 veh	1,085 veh	NA	NA	NA	
	Exiting <u>723 veh</u>	<u>1,085 veh</u>	NA	NA	NA	
	Total 1,446 trips	2,170 trips	NA	NA	NA	
Weekday AM Peak Hour	Entering 35 veh	33 veh	22 veh	4 veh	3 veh	
	Exiting <u>35 veh</u>	<u>33 veh</u>	<u>28 veh</u>	<u>2 veh</u>	<u>2 veh</u>	
	Total 70 trips	66 trips	50 trips	6 trips	5 trips	
Weekday PM Peak Hour	Entering 44 veh	38 veh	25 veh	4 veh	4 veh	
	Exiting <u>43 veh</u>	<u>38 veh</u>	<u>24 veh</u>	<u>4 veh</u>	<u>3 veh</u>	
	Total 87 trips	76 trips	49 trips	8 trips	7 trips	

¹Cumberland Farms with 1711/- sf and 4 vehicle fueling positions (Land Use Code 853 - Convenience Market with Gasoline Pumps)

²Car Service Building with 2,450 sf and 3 service stalls (Land Use Code 942 - Automobile Care Center)

³Traffic Impact & Site Access Study - Proposed Gas Station/Convenience Store/Donut Shop" dated March 2005 by Pernaw & Company, Inc. for Courthouse Ventures, LLC

The proposed use clearly generates fewer vehicle-trips than the former Cumberland Farms store.

¹ Institute of Transportation Engineers, *Trip Generation*, 9th edition (Washington, D.C., 2012).

Trip Generation Summary

Alternative: Former Use - GFA Method
 Phase:
 Project: 1598A

Open Date: 2/25/2015
 Analysis Date: 2/25/2015

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
853	CON/MARKETGAS 1		723	723	1446		35	35	70		44	43	87
	1.71 Gross Floor Area 1000 SF												
	Unadjusted Volume		723	723	1446		35	35	70		44	43	87
	Internal Capture Trips		0	0	0		0	0	0		0	0	0
	Pass-By Trips		0	0	0		0	0	0		0	0	0
	Volume Added to Adjacent Streets		723	723	1446		35	35	70		44	43	87

Total Weekday Average Daily Trips Internal Capture = 0 Percent
 Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
 Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Trip Generation Summary

Alternative: Former Use - VFP Method
 Phase:
 Project: 1598A

Open Date: 2/25/2015
 Analysis Date: 2/25/2015

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
853	CONVMARKETGAS 2		1085	1085	2170		33	33	66		38	38	76
	4 Vehicle Fueling Positions												
	Unadjusted Volume		1085	1085	2170		33	33	66		38	38	76
	Internal Capture Trips		0	0	0		0	0	0		0	0	0
	Pass-By Trips		0	0	0		21	21	42		25	25	50
	Volume Added to Adjacent Streets		1085	1085	2170		12	12	24		13	13	26

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Trip Generation Summary

Alternative: Proposed Use - GFA Method
 Phase:
 Project: 1598A

Open Date: 2/25/2015
 Analysis Date: 2/25/2015

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic		
		* Enter	Exit	Total	* Enter	Exit	Total	* Enter	Exit	Total
942	AUTOCARE 1				4	2	6	4	4	8
	2.45 Occupied Gross Leasable Area 1000									
	Unadjusted Volume	0	0	0	4	2	6	4	4	8
	Internal Capture Trips	0	0	0	0	0	0	0	0	0
	Pass-By Trips	0	0	0	0	0	0	0	0	0
	Volume Added to Adjacent Streets	0	0	0	4	2	6	4	4	8

Total Weekday Average Daily Trips Internal Capture = 0 Percent
 Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
 Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Trip Generation Summary

Alternative: Proposed Use - Service Stall Method

Phase:

Open Date: 2/25/2015

Project: 1598A

Analysis Date: 2/25/2015

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		* Enter	Exit	Total	* Enter	Exit	Total	* Enter	Exit	Total			
942	AUTCOCARE 2												
	3 Service Stalls	0	0	0	3	2	5	4	3	7			
	Unadjusted Volume	0	0	0	3	2	5	4	3	7			
	Internal Capture Trips	0	0	0	0	0	0	0	0	0			
	Pass-By Trips	0	0	0	0	0	0	0	0	0			
	Volume Added to Adjacent Streets	0	0	0	3	2	5	4	3	7			

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

