

SUMMARY MEMORANDUM

TO: Mr. Elliot Thayer
Thayer Engineering Company, Inc.
17 Hasson Street
Farmingdale, ME 04344-1613

DATE: April 19, 2016

RE: Trip Generation Analysis for Proposed J.S. McCarthy Printers Expansion in Augusta

Introduction

The purpose of this memorandum is to summarize trip generation analysis prepared for the existing J.S. McCarthy Printers facility and the currently proposed expansion at 15 Darin Drive in Augusta, Maine. The original facility, built in 1987, was approximately 52,811 square feet (S.F.) in size. Two expansions to the facility were completed in 2007 and 2011, totaling an additional 57,945 S.F. of space. This brings the current space for the facility to 110,756 S.F.

The facility is currently proposing to construct an additional 15,170 S.F. expansion. The new square footage will be made up of warehousing space and is expected add six (6) new employees to the facility in the short term. To be conservative, and to allow for growth, eight (8) new employees were assumed for analysis purposes.

Proposed Trip Generation

Trip generation for the proposed expansion was estimated using the Institute of Transportation Engineers (ITE) "Trip Generation, 7th Edition" report, the edition currently being used by MaineDOT for traffic permitting purposes. The 7th edition was used as opposed to the newer 9th edition because trip rates for warehousing in the 7th edition on a S.F. basis were higher. Land use code (LUC) 150 – Warehousing was used on the basis of 8 new employees and 15,170 S.F. The results are summarized in the following table:

<u>Time Period</u>	Proposed Trip Generation (one-way trip-ends)	
	<u>Employee</u>	<u>S.F.</u>
Weekday	32	76
AM Peak Hour – Adj. Street	4	7
Entering	3	6
Exiting	1	1

<u>Time Period</u>	<u>Employee</u>	<u>S.F.</u>
AM Peak Hour – Generator	4	9
Entering	2	5
Exiting	2	4
PM Peak Hour – Adj. Street	5	7
Entering	2	2
Exiting	3	5
PM Peak Hour – Generator	5	9
Entering	2	1
Exiting	3	8

As demonstrated above, the square footage basis results in a greater number of trips than the employee basis. To be conservative, the square footage basis was used for the remaining analysis. The proposed expansion will generate 9 new one-way trips during the AM peak hour (5 entering and 4 exiting) and 9 new trips during the PM peak hour (1 entering and 8 exiting). This minimal level of new traffic would not be expected to have any significant impact off-site on traffic operations. Typically, a project will not have a measurable impact unless it generates in excess of 25 new lane hour trips. The currently proposed J.S. McCarthy expansion is expected, at most, to have 8 new lane hour trips, which would occur during the PM peak hour.

Existing Trip Generation

In addition to the proposed trips for the expansion, Maine Traffic Resources (MTR) evaluated whether the entire facility has reached the 100-trip threshold warranting the need for a Traffic Movement Permit (TMP) from the Maine Department of Transportation (MaineDOT), given that the J.S. McCarthy building has not obtained a TMP. It is important to note that when the original facility was built in 1987 there were no specific regulations in regards to traffic permitting. As a result, any trips generated by the original building constructed in 1987 are grandfathered and do not contribute to total trip generation for traffic permitting purposes. As a result, the original 52,811 S.F. building is not included in the trip generation analysis for the evaluation of trips for TMP needs.

The number of trips that are expected to be generated by the 2007 and 2011 expansions was estimated using LUC 140 – Manufacturing on the basis of 57,945 S.F., the total square footage for the two expansions. The results are summarized in the following table:

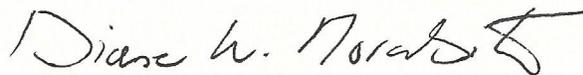
<u>Time Period</u>	Trip Generation for Previous Expansions
	<u>One-Way Trips</u>
Weekday	222

<u>Time Period</u>	<u>One-Way Trips</u>
AM Peak Hour – Adj. Street	43
Entering	33
Exiting	10
AM Peak Hour – Generator	45
Entering	31
Exiting	14
PM Peak Hour – Adj. Street	43
Entering	15
Exiting	28
PM Peak Hour – Generator	44
Entering	23
Exiting	21

As demonstrated above, the 2007 and 2011 expansions are expected to generate 45 one-way trips during the AM peak hour and 44 trips during the PM peak hour. Adding these trips to the currently proposed expansion trips brings the whole facility to 54 trips during the AM peak hour and 53 trips during the PM peak hour. These trip levels are well under the 100-trip threshold so a TMP should not be required. It is also important to note that Traffic Movement Permit rules are defined in terms of passenger car equivalents (pces). Each truck is equivalent to two passenger vehicles in terms of trips. Realistically, as a site made up of manufacturing and warehousing uses, it would be expected that some of the trips to and from the facility are trucks. Even allowing for a portion of the 54 AM and 53 PM peak hour trips to be trucks, the total estimated pces are still under the TMP threshold.

To summarize, given that the proposed warehouse addition will generate only 9 new trips during the AM peak hour and 9 new trips during the PM peak hour, it is my professional opinion that this expansion will have no impact on off-site traffic operations. In addition, since the combination of the trips from the 2007 and 2011 expansions along with currently proposed expansion remain well under the 100-trip threshold, during any peak hour period, a Traffic Movement Permit should not be required from the Maine Department of Transportation. As always, please do not hesitate to contact me if you or the City of Augusta has any questions or concerns regarding this analysis.

Sincerely,



Diane W. Morabito, P.E. PTOE
 President

