



MEMO

To: Margita Batistic, P.E., New Milford Borough Engineer
From: Gary M. Ascolese, P.E., Traffic Engineer *GMA*
Date: July 25, 2017
Subject: New Milford, Site Plan Access and Traffic Report Review
NMES-696

I have reviewed a Circulation and Open Space Plan labeled C-03A, prepared by Michael E. Dipple, P.E. of L2A Land Design and dated March 30, 2017, and revised to July 13, 2017. I also reviewed the Traffic Impact Analysis for the site that was prepared in a report conducted by Dolan and Dean and dated July 5, 2017. I have the following comments:

Site Review

1. The site is located in an area surrounded by level, rural and residential, collector roadways with 25 MPH speed limits on all four sides. The roadways to the north, east and west are two way, single lane roadways with widths of 24 to 30 feet, and the road to the south is a single lane road with angle parking on the north side that operates in an eastbound direction. Traffic signals are located on the northeast and southeast corners of the site. The northerly intersection at River Road and Main Street has a fixed time traffic signal operated by the Borough of New Milford.

The southerly intersection at River Road and Milford Avenue / John D. Cecchino Drive has a traffic signal that is an actuated, presence camera equipped device maintained by the County of Bergen. River Road is the main phase at the River Road and Milford Avenue / John D. Cecchino Drive intersection. Pedestrian signals are provided at both existing traffic signals. Due to the age of these traffic signals, it is doubtful they presently possess the additional phase equipment or extra field wiring to be capable of being upgraded with left turn phases if the need arises.

2. There are four driveways proposed to provide access to the site, which will consist of a large supermarket and a drive through bank. These driveways are to operate as follows:
 - a. The north driveway is located on Main St. at the intersection of Washington Avenue, a residential street located west of River Road. The plan indicates a proposal to widen Main St. at this intersection to provide for opposing left turn lanes in the east and west direction. This driveway is indicated to provide access to passenger cars and to provide exit relief for tractor trailers and delivery vehicles leaving the 8 proposed loading docks. It is indicated to operate as a STOP sign controlled intersection.

- b. The easterly – north driveway is proposed to be a one way westbound access driveway for passenger vehicles leading to the front door area of the supermarket. It is located on River Road at a new T-type intersection, midway between the Main St intersection and the Demarest Avenue intersection.
- c. The easterly – south driveway is located opposite Demarest Avenue and forms a four-way intersection, with the driveway access providing one way operation westbound. It provides entrance access to the bank on the south side of the driveway and to the south side of the supermarket. This driveway continues westerly and intersects with Madison Avenue.
- d. The continuation of the easterly - south driveway intersects Madison Avenue at a horizontal curve in the alignment of Madison Avenue on the west side of the site. The plan shows the westbound lanes to consist of two exiting lanes and have a single lane entrance for passenger vehicles and for truck deliveries. The widths of these lanes are not indicated on the plan. This intersection is proposed to operate as a STOP sign controlled intersection. Madison Avenue also extends southeasterly and eventually intersects with River Road 1000 feet to the south of the Milford Avenue / John D. Cecchino Drive intersection.

No physical improvements to the width of Madison Avenue are indicated at this intersection. The horizontal curve may make the exiting sight distance restrictive because of the horizontal alignment change if someone is waiting to turn left out of the driveway.

- e. Truck traffic is proposed to only enter the site from the Madison Avenue driveway, and travel east through the site, and exit onto Main Street. It should be realized there is no effective means of restricting or enforcing truck traffic deliveries to supermarket complexes, since many of the ancillary deliveries, such as dairy, soda, bread, etc., are made by other distributors and do not fall under the control of the supermarket chain.
- 3. The site plans submittal have not provided truck turning templates for the tractor trailers making deliveries to the 8 loading docks shown on the site plan. A circulation plan is provided that indicates the use of 25 foot radii on the corners and 10 and 12 foot wide entering lanes, but the use of these constricted geometric designs demonstrates that tractor trailer access and turning clearances have not yet been analyzed and adequately provided for in the site plan design.
 - 4. Exiting traffic will have a considerable impact at the STOP sign controlled intersection of Madison Avenue and Main Street, northwest of the site. This intersection is just beyond the jurisdictional control the County of Bergen, since the County's jurisdiction of Madison Avenue in New Milford ends at the Oradell corporate line located in the middle of the Madison Avenue Bridge, about 85 feet south of the stop bar on Madison Avenue. Madison Avenue in Oradell is not a County road, nor are Main St or New Milford Avenue. If some sort of traffic relief or additional order of traffic control is needed at this intersection, it would be entirely up to New Milford and Oradell to arrange for it, perhaps without any assistance from the County of Bergen.

5. The traffic generated along John D. Cecchino Drive may significantly increase as supermarket customers destined to areas east of the site will most likely pass through this roadway to gain access to the signalized intersection at River Road and Milford Avenue to continue east. The operation of the 67 angled parking spaces with limited backing room may make the safe operation of this defacto parking area difficult to police and result in an operational problem.

Traffic Report Review

The traffic impact analysis submitted by Dolan and Dean presents a report with conclusions that the proposed application will produce traffic that appears to be within the capabilities of the roadway network surrounding the site, and "the signalized intersections impacted by the site generated traffic will experience minor increases in delay." I have concerns with these conclusions.

The trip generation methods proposed by Dolan and Dean were taken from the ITE Trip Generation Manual, 9th Edition, and represent an average trip generation rate of **9.48 trip ends per 1,000 square feet of gross floor space** I determined this rate, which was not provided in the report, from the 668 trips mentioned on page 5 of the report. ($9.48 \times 70.5K \text{ Square Feet} = 668 \text{ trip ends}$). There is no factory of safety or growth assumed in this calculation, it merely follows the average given in the Manual.

The rate that this projection is based upon comes from a chart in the ITE Manual on page 1647, which I have provided a copy. As you can see, the chart shows a wide range

of values for trip end generation for various size stores, based upon various studies that have been done nationally. The explanation on the top of the chart indicates the rates can have a **variation of 3.53 to 20.29 trips per 1,000 square feet.**, with a standard deviation of 4.81. This would indicate that the 9.48 average rate is not an exact calculation, and indicated that there could be considerably more trips ends generated by a successful supermarket. The "Xs" on the graph show the actual values of each study conducted. ***The chart illustrates two examples of two 65,000 square foot stores, one generating almost 1,300 trips and another at 1,000 trips in the PM peak hour, or twice as many as what have been projected for this application.*** There appears to be no margin of safety in the trip generation numbers provided in the report. These additional volumes could have a detrimental effect on the surrounding streets and intersections, making it difficult for motorists and pedestrians to navigate.

The addition trips generated by a very successful store would increase the traffic demands of the surrounding intersections, all of them with their limited approach widths, and may led to degradation of their levels of service, primarily during peak hours. Based upon the extremely successful Inserra shopping centers within Bergen County, with the capability of generating considerable more traffic than the volumes proposed in the ITE Trip Generation Manual, the analysis should be repeated with a trip generation rate for a store with considerably more success than the averages mention in the manual.

Supermarket (850)

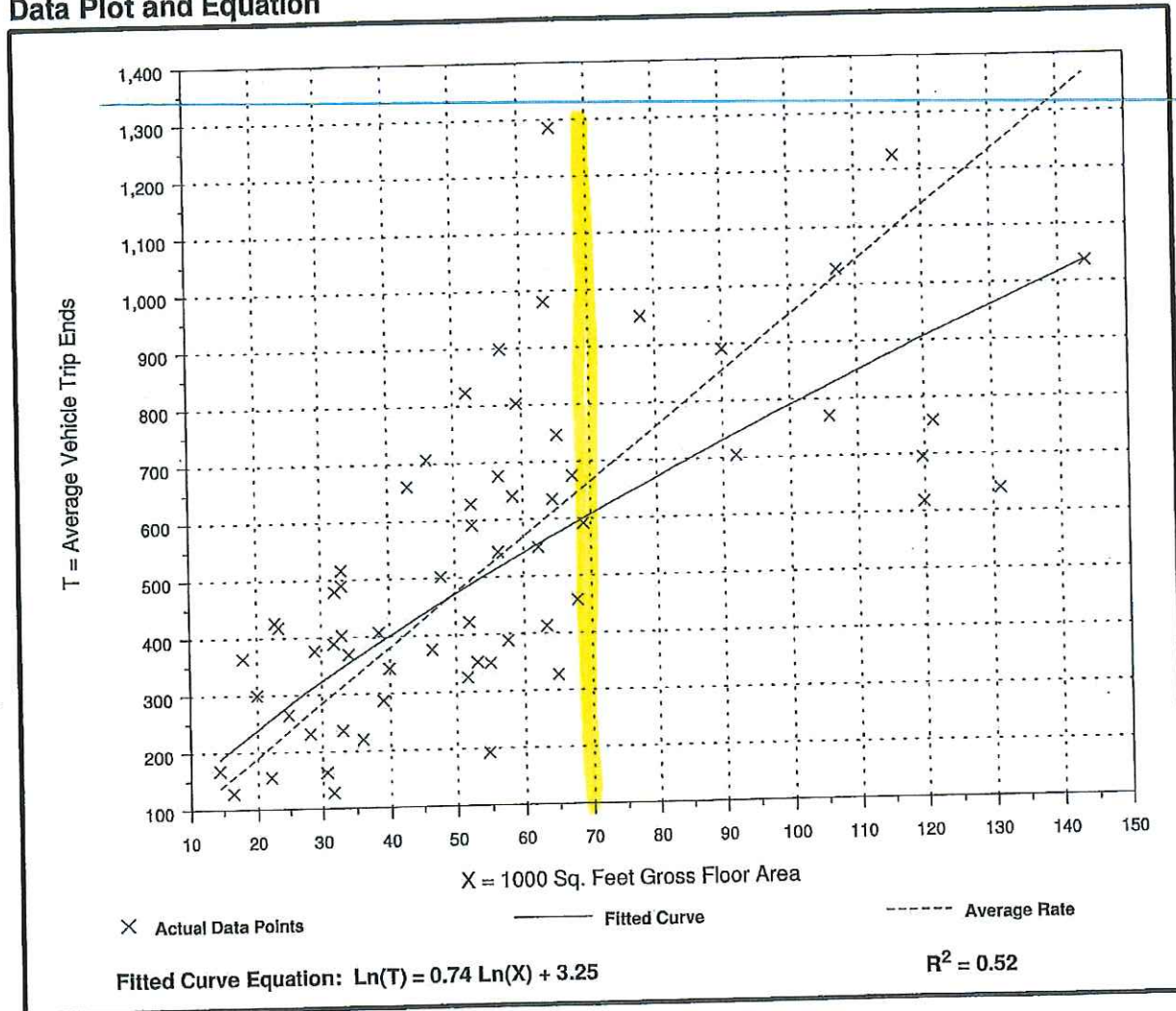
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 62
 Average 1000 Sq. Feet GFA: 56
 Directional Distribution: 51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
9.48	3.53 - 20.29	4.81

Data Plot and Equation



Supermarket (850)

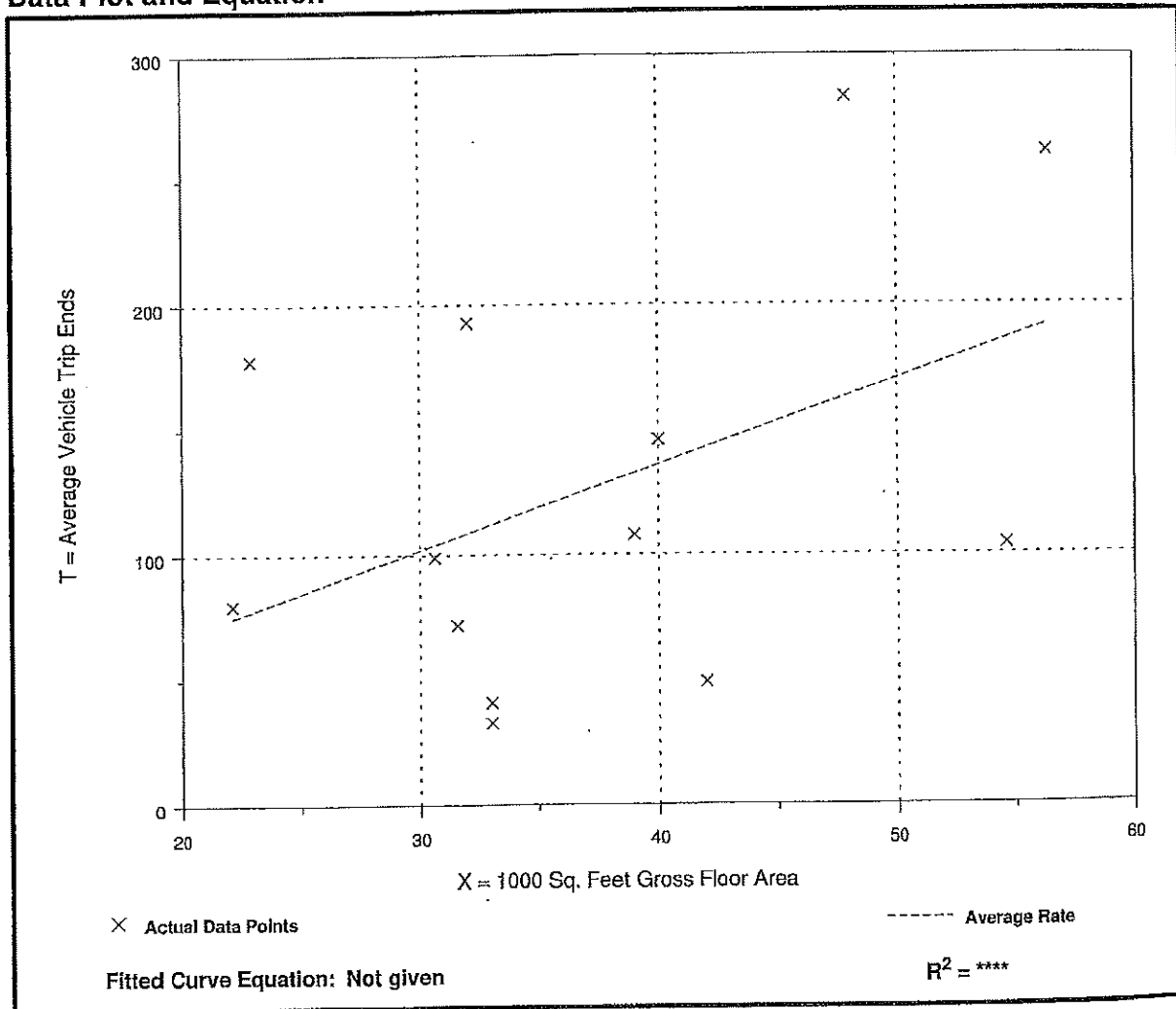
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.

Number of Studies: 13
 Average 1000 Sq. Feet GFA: 37
 Directional Distribution: 62% entering, 38% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.40	1.00 - 7.78	2.64

Data Plot and Equation



Supermarket (850)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Saturday,
Peak Hour of Generator

Number of Studies: 34
 Average 1000 Sq. Feet GFA: 67
 Directional Distribution: 51% entering, 49% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
10.65	5.78 - 22.60	4.88

Data Plot and Equation

