



TRAFFIC PLANNING AND DESIGN, INC.

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December 22, 2022

Justin Evans, Manager/Zoning Officer
Mount Joy Township
8853 Elizabethtown Road
Elizabethtown PA, 17022

RE: Zoning Hearing Board Application Traffic Evaluation

PDC Northeast LPIV, LLC – Greiner Tract (2843 Mount Pleasant Road)

Mount Joy Township, Lancaster County, PA

TPD No. PANA.0001

Mr. Evans,

Traffic Planning and Design, Inc. (TPD) has completed a trip generation/zoning application traffic evaluation for the proposed PDC Northeast LPIV development located along Mount Pleasant Road (SR 4010) in Mount Joy Township, Lancaster County, PA. The proposed development is expected to consist of a 1,006,880 s.f. warehouse. Access for the development is proposed via two (2) full movement driveways to Mount Pleasant Road (SR 4010) with one access proposed directly opposite the proposed Steel Way extension as shown on the attached sketch plan.

The purpose of this evaluation is to calculate trip generation for the proposed development using typical trip generation methodologies and address pertinent traffic requirements within the zoning application.

TRIP GENERATION

Methodology

The trip generation equations for the proposed warehouse were obtained from the *Trip Generation Manual*, 11th Edition, an Institute of Transportation Engineers (ITE) Informational Report. The data are categorized by Land Use Codes, with total vehicular trips for a given land use estimated using an independent variable and statistically generated rates or equations.

For the proposed warehouse development, Land Use Code 150 (Warehousing) from the *Trip Generation Manual* was used to calculate the number of vehicular trips the development will generate during the following time periods: (1) average weekday; (2) weekday A.M. peak hour and (3) weekday P.M. peak hour.

Table 1 shows the trip generation equations and directional split for the analyzed time periods.

TABLE 1
ITE TRIP GENERATION DATA – TOTAL SITE TRIPS

Land Use	ITE #	Time Period	Average Rate	Directional Splits	
				Enter %	Exit %
Warehousing	150	Average Weekday	$T = 1.58 * (X) + 38.29$	50%	50%
		A.M. Peak Hour	$T = 0.12*(X) + 23.62$	77%	23%
		P.M. Peak Hour	$T = 0.12*(X) + 26.48$	28%	72%

T = number of site-generated trips

X = independent variable (1000 s.f. of gross floor area)

Truck Trips

The truck trip generation for the proposed warehouse development was calculated utilizing Land Use Code 150 from the Trip Generate Manual, 11th Edition. The truck traffic volumes were deducted from the total warehouse trip generation to yield the passenger car traffic volumes. The proposed truck trip generation rates for this analysis are summarized in **Table 2**.

TABLE 2
ITE TRUCK TRIP GENERATION RATES: WAREHOUSING

Land Use	ITE #	Time Period	Average Rate	Directional Splits	
				Enter %	Exit %
Warehousing	150	Average Weekday	$T = 0.60 * (X)$	50%	50%
		A.M. Peak Hour	$T = 0.02 * (X)$	52%	48%
		P.M. Peak Hour	$T = 0.03 * (X)$	52%	48%

T = number of site-generated truck trips

X = independent variable (1000 s.f. of gross floor area)

The calculated trip generation for the proposed development is shown in **Table 3**.

TABLE 3
TRIP GENERATION SUMMARY

Land Use	Time Period	Trips: Total			Trips: Trucks			Trips: Passenger Cars		
		Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit
2483 Mt. Pleasant Road (1,006,880 s.f.)	Average Weekday	1629	815	814	605	302	303	1024	513	511
	A.M. Peak Hour	144	111	33	20	10	10	124	101	23
	P.M. Peak Hour	147	41	106	30	16	14	117	25	92

As shown in **Table 3**, the proposed development is anticipated to result in **144 new trips** during the weekday A.M. peak hour and **147 new trips** during the weekday P.M. peak hour.

Mount Joy Township Zoning Application Traffic Requirements

The below is provided to address the traffic related sections of the zoning ordinance.

§135-383.B(2) Traffic and public services. The applicant shall establish by credible evidence that the proposed special exception shall be properly serviced by all existing public service systems. The peak traffic generated by the subject of the application shall be accommodated in a safe and efficient manner or improvements made in order to effect the same. Similar responsibilities shall be assumed with respect to other public service systems, including but not limited to police protection, fire protection, utilities, parks and recreation.

Based on the results of this evaluation, TPD offers the following:

- » The proposed warehouse is expected to generate 144 new weekday A.M. peak hour trips and 147 new weekday P.M. peak hour trips.
- » An extension of Steel Way is being provided to connect Cloverleaf Road (SR 4025) to Mt Pleasant Road (SR 4010). This improvement will reduce truck traffic at the intersection of Cloverleaf Road (SR 4025) to Mt Pleasant Road (SR 4010) which in existing conditions requires tight turning movements for trucks and occasionally forces trucks to extend into the oncoming lane to make the necessary turning movements. This improvement is being provided to reduce truck traffic at the Cloverleaf Road/Mt Pleasant Road intersection and provide for a safe and efficient route for existing and proposed truck traffic.
- » The existing intersection of Steel Way and Cloverleaf Road (SR 4025) is being widened and improved to accommodate larger truck traffic associated with this development as well as existing truck traffic currently using the roadway.
- » The driveways and internal circulation of the site will be designed to accommodate the necessary fire apparatus and/or largest public service vehicle. An emergency services truck turning template exhibit has been provided for reference.

In TPD's professional opinion, and for the purposes of this application, the proposed development can be served by the existing street network and associated roadway improvements and will not adversely impact the adjacent road system.

If you have any questions or require additional information, please call anytime.

Sincerely,

TRAFFIC PLANNING AND DESIGN, INC.



Jarred L. Neal, P.E.
Senior Project Manager
Jneal@TrafficPD.com

Attachments:
Attachment 1 – Sketch Plan

Attachment 2 – Truck Turning Template Exhibit