

March 9, 2023

William Cluck, Esquire
587 Showers Street
Harrisburg, PA 17104

RE: **Trip Generation analysis, PDC Northeast LPIV, LLC, Mt. Joy Township**

Per your request, I have reviewed the Trip Generation report and additional information listed below, provided by your office, regarding the Special Exception application for PDC Northeast LPIV, LLC, located at 2843 Mount Pleasant Road, Mount Joy Township, Lancaster County, Pennsylvania and offer the following findings and opinions.

SUBMITTED MATERIAL

1. Mount Joy Township, Zoning Hearing Board, January 17, 2023, Applicant Exhibits A-1 through A-13
2. PDC Northeast LPIV, LLC Zoning Hearing Board Application, December 7, 2022
3. PDC Northeast LPIV, Zoning Hearing Board Application Traffic Evaluation, December 22, 2022
4. Mount Joy Township, Zoning Board, Transcript Excerpt for PDC Northeast LPIV, LLC, January 17, 2023
5. Mount Joy Township, Zoning Board, Transcript Excerpt for PDC Northeast LPIV, LLC, February 15, 2023
6. Minutes of a Special Meeting of The Mount Joy Township Zoning Hearing Board, Wednesday, February 15, 2023, 2023-03-03 DRAFT

EXAMINATION

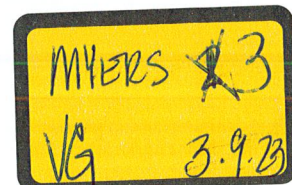
An examination of the property located at 2843 Mount Pleasant Road, Mount Joy Township and the surrounding neighborhood and roadways was conducted on March 9, 2023.

BASIS OF OPINIONS

Analysis

The Trip Generation report prepared by Traffic Planning and Design, dated December 22, 2022, utilized ITE Land Use Code 150, Warehousing, to generate the trips for the proposed 1,006,880 SF facility. The ITE Trip Generation Manual (10th Edition, September 2017) defines a 'warehouse' as follows:

A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas. High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related uses.



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It is noted that the data for the generation of trips for LU 150 in the ITE Trip Generation Manual (11th Edition) is based on 31 studies, for all vehicles on a weekday, with an average size of 292,000 SF or 29% of the size of the proposed warehouse. The largest size warehouse that comprises the data set was 560,000 SF or 56% of the size of the proposed warehouse.

According to the reviewed testimony from the second night of testimony (February 15, 2023), the proposed warehouse was characterized as a cross-dock facility [pages 15,23-25]. Cross dock facilities are generally associated with types of facilities where storage of materials is less important than within a strict warehouse which exist primarily for storage. A cross dock transfer is typically unnecessary in a traditional warehouse. The Trip Generation Manual provides additional definition for such related facilities, as noted in the warehouse definition above including: “*High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), and high-cube parcel hub warehouse (Land Use 156).*”

The reviewed testimony from the second night of testimony (February 15, 2023), contained testimony that the proposed warehouse would *not* be a fulfillment center [pages 16-17]. An Amazon warehouse would be an example of a fulfillment center. Under the Municipalities Planning Code, as part of a Zoning and/or Special Exception process, the municipality may impose any reasonable conditions to the approval. Accordingly, consistent with the testimony, Mt. Joy Township should impose a condition that stipulates that the proposed facility will not be used as a Fulfillment Center which is defined by ITE as “*storage and direct distribution of e-commerce product to end users*”.

In the reviewed testimony from the second night of testimony (February 15, 2023), the applicant refused to answer the question as to whether the proposed facility would be used as a “*Hi-Q Fulfillment Center*” [page17]. Nonetheless, the ITE Trip Generation Manual (11th Edition, defined a High-cube transload and short-term storage warehouse (Land Use 154) as follows:

A high-cube warehouse (HCW) is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. A typical HCW has a high level of on-site automation and logistics management. The automation and logistics enable highly-efficient processing of goods through the HCW. A high-cube warehouse can be free-standing or located in an industrial park.

The HCWs included in this land use include transload and short-term storage facilities. A transload facility has the primary function of consolidation and distribution of pallet loads (or larger) for manufacturers, wholesalers, or retailers. A transload facility typically has little storage duration, high throughput, and its operations are high efficiency. A short-term HCW is a distribution facility often with custom/special features built into the structure for the movement of large volumes of freight with only short-term storage of products.

Some limited assembly and repackaging may occur within the facility.

A high-cube warehouse may contain a mezzanine. In a HCW setting, a mezzanine is a freestanding, semi-permanent structure that is commonly supported by structural steel columns and that is lined with racks or shelves. The gross floor area (GFA) values for the study sites in the database for this land use

do NOT include the floor area of the mezzanine. The GFA values represent only the permanent ground-floor square footage.

The amount of office/employee welfare space that is provided within a HCW can be highly variable but is typically an insignificant portion of the overall building square footage. Within the trip generation database, common values are between 3,000 and 5,000 square feet for a Cold Storage HCW and between 5,000 and 10,000 square feet for Transload, Fulfillment Center, and Parcel Hub HCW (all of which are less than one percent of total GFA for a site). Therefore, for the trip generation data plots, any office space that is part of the normal operation of the warehouse is included in the total GFA.

Warehousing (Land Use 150), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related land uses.

The description for LU154 also included the following additional data:

The High-Cube Warehouse/Distribution Center-related land uses underwent specialized consideration through a commissioned study titled "High-Cube Warehouse Vehicle Trip Generation Analysis," published in October 2016. The results of this study are posted on the ITE website...

The ITE High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016) described the typical uses for warehouses as summarized in the following table.

	Standard Warehouse/ Storage	Transload Facility	Short-Term Storage	Proposed
Typical Functions	Products stored on-site typically for more than one month	Focus on consolidation and distribution of pallet loads (or larger) of manufacturers, wholesalers, or retailers; little storage duration; high throughput and high-efficiency	Focus on warehousing/ distribution with distribution space operated at high efficiency; often with custom/special features built into structure for movement of large volumes of freight	<i>Speculative per the testimony [2-15-23.18,35]</i>
Location	Typically in an industrial area within urban area or urban periphery	Typically in an area with convenient freeway access; often in rural or urban periphery area	Typically in an area with convenient freeway access	<i>Rural area with freeway access</i>
Loading Dock Location	Either on one side or on two adjacent sides	Minimum of two sides (adjacent or opposite); can be on four sides	On either one or two sides	<i>Two, opposite sides</i>
Number of Docks	Low number of dock positions to overall facility, 1:20,000 square feet or lower	Typical dock-high loading door ratio is 1:10,000 square feet; common range between 1:5,000 & 1:15,000 square feet	Typically, 1:10,000 square feet or lower	<i>Approximately 154 docks/1,006,880 SF = 1:6,500 SF</i>

In comparing the features of the proposed facility to the ITE criteria, it is evident that the proposed facility is best defined as a High-cube transload and short-term storage warehouse (Land Use 154) and not simply a ‘warehouse’ as proposed in the Trip Generation report. The ITE High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016) also noted that among the required information necessary for a proper analysis of the traffic impacts for a warehouse includes the NAICS Industrial Code and the “*Commodity type (retail, manufacturing, other)*”, neither of which were provided for the proposed facility.

With regards to LU154, high-cube transload and short-term storage warehouse, the ITE Trip Generation Manual (11th Edition) noted that the data is based on 91 studies, for all vehicles on a weekday, approximately three times the number of data points contained in LU150., warehousing. ITE Trip Generation Manual (11th Edition) also noted that the average study size was 798,000 SF, much closer in size to the proposed warehouse with the largest data point being almost 3,000,000 SF. LU154 is much more representative of the proposed warehouse than LU150.

Using the same 1,006,880 SF proposed building size as used in the Traffic Planning & Design analysis, trips were generated according to the ITE Trip Generation Manual (11th Edition) for LU154, as follows in the table below.

Land Use	Time Period	Total Trips	
		LU154	LU150
2483 Mt. Pleasant Road (1,006,880 SF)	Average Weekday	1410	1629
	AM Peak Hour	131	144
	PM Peak Hour	171	147

While the overall weekday traffic and morning peak hour traffic is less, the total trips during the PM Peak Hour exceed the total trips reported by Traffic Planning & Design.

The fourth warehouse type land use related to LU 150 is land use 156, High-cube parcel hub warehouse. There has been no information presented to date to indicate that the proposed facility could not be used as a parcel hub warehouse, which is defined by ITE as follows:

A high-cube warehouse (HCW) is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. A typical HCW has a high level of on-site automation and logistics management. The automation and logistics enable highly-efficient processing of goods through the HCW. A high-cube warehouse can be free-standing or located in an industrial park.

A high-cube parcel hub warehouses typically serves as a regional and local freight-forwarder facility for time sensitive shipments via airfreight and ground carriers. A site can also include truck maintenance, wash, or fueling facilities. Some limited assembly and repackaging may occur within the facility.

A high-cube warehouse may contain a mezzanine. In a HCW setting, a mezzanine is a freestanding, semi-permanent structure that is commonly supported by structural steel columns and that is lined with racks or shelves. The gross floor area (GFA) values for the study sites in the database for this land use do NOT include the floor area of the mezzanine. The GFA values represent only the permanent ground-floor square footage.

The amount of office/employee welfare space that is provided within a HCW can be highly variable but is typically an insignificant portion of the overall building square footage. Within the trip generation database, common values are between 3,000 and 5,000 square feet for a Cold Storage HCW and between 5,000 and 10,000 square feet for Transload, Fulfillment Center, and Parcel Hub HCW (all of which are less than one percent of total GFA for a site). Therefore, for the trip generation data plots, any office space that is part of the normal operation of the warehouse is included in the total GFA.

The ITE High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016), noted that the typical configuration for these types of facilities is *cross-dock*, as described in the testimony with regards to the function of the proposed building. Using the same 1,006,880 SF proposed building size, trips were generated according to the ITE Trip Generation Manual (11th Edition) for LU156, as follows in the table below.

Land Use	Time Period	Total Trips		
		LU154	LU150	LU156
2483 Mt. Pleasant Road (1,006,880 SF)	Average Weekday	1410	1629	4662
	AM Peak Hour	131	144	886
	PM Peak Hour	171	147	715

The traffic resulting from a potential high-cube parcel hub warehouse, characterized as a cross-dock facility, is over 3 time greater than that attributable to a typical warehouse, as calculated within the Traffic Planning and Design analysis.

As presented, the Trip Generation report does not properly report the maximum number of trips that could be expected from this proposed use. Multiple times during the second hearing, the applicant characterized the proposed warehouse as ‘speculative’ [18,35]. As a speculative warehouse, with insufficient information provided as to its intended use, the Trip Generation report should, at the very least, document the maximum amount of vehicle traffic expected from the proposed use, otherwise, the Trip Generation report is deficient.

Conclusions

When considering Special Exceptions, such as the incident matter, §135-383 of the Mt. Joy Township Code offered the following.

The Board may grant approval of a special exception, provided that the applicant complies with the following standards for special exceptions and that the proposed special exception shall not be detrimental to the health, safety or welfare of the neighborhood. The burden of proof shall rest with the applicant.

With regards to traffic, the reviewed Trip Generation report submitted by the applicant does not provide sufficient information to determine whether the proposed use will be detrimental to the health, safety, or welfare of the neighborhood. §135-383 further offered the following:

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.

The Trip Generation report, in of itself, does not provide sufficient information to determine whether the peak traffic generated by the subject of the application can be accommodated in a safe and efficient manner. Further analysis, in the form of a traffic impact study, prepared by the applicant would be necessary to be able to satisfy the §135-383 requirements. While it understood that improvements have

been proposed by the applicant, whether these improvements will accommodate the peak traffic generated by the subject of the application a safe and efficient manner, can only be determined from a traffic impact study prepared by the applicant. Regarding traffic impact studies, §135-310 noted the following:

When a use is required to submit a traffic study under this chapter, the traffic study shall comply with Chapter 119, Subdivision and Land Development. If additional provisions for traffic studies are required for a particular use, compliance with such additional provisions shall be demonstrated at the time of submitting a zoning hearing application.

As the application is a special exception, which requires consideration as to whether the proposed use will be detrimental to the health, safety, or welfare of the neighborhood and whether the peak traffic generated by the subject of the application can be accommodated in a safe and efficient manner, in the absence of a traffic study, this cannot be determined. Therefore, a traffic impact study would be required to evaluate whether this application complies with the special exception requirements. Regarding traffic impact studies, §119-32 of the SALDO offered the following:

When required. Applications for all residential developments or subdivisions containing 20 or more dwelling units or residential lots and all nonresidential developments (with the exception of agricultural development) with buildings containing in excess of 1,000 square feet of usable space shall provide studies and reports in accordance with the requirements of this section.

As a non-residential development with a building more than 1,000 SF, the proposed use would require a traffic impact study under the Mt. Joy SALDO. It is also noted that under PennDOT's Policies and Procedures for Transportation Impact Studies (July 2017), a TIS is required when a *development is expected to generate 100 or more vehicle trips entering the development or 100 or more vehicle trips exiting the development*. According to the applicant's Trip Generation report, 111 vehicles will be entering the site during the morning peak hour and 106 vehicles will be exiting the site during the evening peak hour, thereby necessitating the preparation of a TIS.

OPINIONS

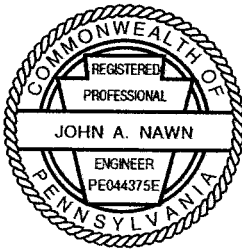
The following opinions are based upon a review of the materials, my examination, my education, and my experience, within a reasonable degree of engineering certainty:

- The applicant's Traffic Evaluation does not provide sufficient information to determine whether the proposed use will be detrimental to the health, safety, or welfare of the neighborhood in accordance §135-383 of the Mount Joy Township Code.
- The applicant's Traffic Evaluation does not provide sufficient information to determine whether the peak traffic generated by the subject of the application can be accommodated in a safe and efficient manner in accordance §135-383 of the Mount Joy Township Code.
- A full Traffic Impact Study, prepared in accordance with §119-32 of the Mount Joy Township Code, would be required to evaluate whether this application complies with the Special Exception

requirements of Mount Joy Township and determine whether the proposed use will be detrimental to the health, safety, or welfare of the neighborhood and whether the peak traffic generated by the subject of the application can be accommodated in a safe and efficient manner.

COMMENTS

This report may be supplemented if additional information becomes available.



Respectfully submitted,

By: *John A. Nawn*

John A. Nawn, P.E., PTOE