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February 8, 2021

Mr. Michael Theokas  
Administrator/Acting Director of Community Development  
Office of Community Development  
Township of Bordentown  
1 Municipal Drive  
Bordentown, New Jersey 08505

Re: Amazon.com Services, L.L.C./Old York Road Business Park  
Amended Preliminary & Final Major Site Plan Approval w/ Use Variance Application  
Comment Review Letter No. 2  
PB#2020-08  
Block 137.02, Lots:1 and 11.03  
Bordentown Township, Burlington County, New Jersey

Dear Mr. Theokas:

I am in receipt of the following information for review pertaining to an Application for Amended Preliminary and Final Major Site Plan approval with a use variance application for an Amazon “Last Mile” delivery station to be located in a recently constructed one-story building along Old York Road (County Road 660):

- One set of Amended Preliminary and Final Major Site Plans (32 sheets) prepared by Maser Consulting with some plans dated October 28, 2020, Sheets 23,25,26,27 and 40 all bearing a latest revision date of January 15, 2021 and Sheets 1, 4, 5, and 6 all bearing a latest revision date of February 1, 2021.
- One copy of a Transmittal/Response Letter prepared by Maser Consulting dated February 1, 2021
- One copy of a Parking Evaluation (4 sheets) prepared by Langan Engineering and Environmental Services dated January 29, 2021

The development proposal calls for an existing 434,250 ft<sup>2</sup> g.f.a. (gross floor area) warehouse to be used as an Amazon “Last Mile” delivery facility. The existing building footprint will be retained as is. Cosmetic-type changes will be made to both the inside and outside of the building.

Under this proposal, the actual warehouse space will be 423,550 ft<sup>2</sup> g.f.a. with office space of 10,700 ft<sup>2</sup> g.f.a. The major internal difference is that a significant part of the building will now be used for the interior parking and loading of delivery vans.

On the outside of the building, much of the originally approved truck and truck trailer parking will be converted to parking for delivery vans and passenger cars.

The internal circulation patterns of the site will be modified to accommodate the usage of delivery vans and passenger cars.

The two-existing two-way, full-movement site access points along Old York Road will be retained and used as constructed. (It is noted that only the westerly site access will be used by the Amazon operation. The easterly site access will be used by traffic associated with Building 2).

The site is located in the REO (Research, Engineering and Office) Zoning District. The proposed use of this site as a delivery station is not permitted within this Zone. Therefore, a Use Variance is required.

I have completed my review of the above-referenced information and offer the following comments for the Board's consideration:

### Traffic Evaluation

1. The proposed warehouse will consist of 434,250 ft<sup>2</sup> g.f.a. This floor area is broken down into 423,550 ft<sup>2</sup> g.f.a. of warehouse space, and 10,700 ft<sup>2</sup> g.f.a. for office space. The applicant is to indicate how the size of the overall facility (434,250 ft<sup>2</sup>) and its individual components compares with the overall size and individual components of similar Amazon short-haul delivery facilities. What would be the upper and lower limits for the size of these facilities?

#### Satisfied

*The requested information was provided by way of testimony from the applicant and its professionals.*

2. Of the 423,550 ft<sup>2</sup> of warehouse "space", how much of the interior space will be devoted to actual warehouse operations and how much will be devoted to van parking and van loading operations?

#### Satisfied

*Approximately 50% of the interior space will be devoted to van parking. The remaining 50% will be utilized for actual delivery station operations such as van loading, inventory processing and distribution and office space.*

3. The following comments pertain to the Existing Traffic Volumes section found on page 3 of the Traffic Evaluation:
  - It is agreed that traffic volume data collection under existing conditions would not be appropriate.
  - The traffic volume data used in this Traffic Evaluation was based on the data obtained from a Traffic Impact Study (dated December 6, 2017) prepared for the original warehouse development proposal (Old York Business Park), which is acceptable.

This data base was thoroughly analyzed, confirmed, and accepted. There is no reason to believe that traffic volumes have undergone any appreciable increase into and through this area of Old York Road over the past few years.

*No further comment required.*

4. Within the Trip Generation section of the Traffic Evaluation, five shifts are shown by timeline and number of employees for each shift. A total of 146 employees is projected over the five shifts (designated as "core" employees), not all of which would be on-site at any one time.

There is also a reference made to a “limited amount of other people inside the building doing small tasks such as equipment maintenance or janitorial services”. An estimate is to be provided of the number of employees comprising this element as well as the maximum number of employees on-site at any one time and the time frame when this maximum loading could occur for these employees.

This information is to be provided for both yearly non-peak and peak operating time periods.

There are also two categories of “delivery drivers”. Approximately 155 delivery van drivers (designated as Delivery Service Partners or DSP’s) will enter and leave the site between 9:00 AM and 11:30 AM during standard operating times. During peak operating times, this number could triple.

Between 4:00 PM and 5:30 PM, approximately 44 personal vehicle drivers (designated as “flex” drivers) will enter and leave the site during standard operation hours. During peak operations, 47 flex drivers will be used. (The applicant is to confirm that this is a total of 47 “flex” drivers and not in addition to).

In order to gage the truck traffic associated with the site, verification of the numbers given in Table 5, Truck Generation Comparisons is to be given in terms of number of trucks or number of trips.

These two major elements (cars and trucks) will make up the trip generation component for the traffic flows into and out of the site.

Satisfied

*The requested information was provided by way of parking utilization rates throughout the day for non-peak and peak operating times. Additional discussion regarding this aspect of the site’s overall operations will be provided later in this report.*

*In particular, the “flex” driver component will vary very little between off-peak (44 drivers) and peak (47 drivers) operating times.*

*Also, the truck data which is provided is given in “trips”.*

5. In Table 3, Trip Generation Estimates, Table 4, Trip Generation Comparison, and Table 5, Truck Generation Comparison, of the Traffic Evaluation, information is provided regarding estimates of the site traffic to be generated during the typical weekday morning and afternoon peak hours as well as the site peak hour (10:00 AM to 11:00 AM), and the difference in site traffic projections between the proposed Amazon delivery station and the previously approved warehouse. The trip projections for the previously approved warehouse were based on the use of an appropriate ITE Land Use Code for a warehouse.

A comparison of the three tables shows that, generally, there would be less traffic generated by the proposed delivery station for the two weekday peak hours than for the approved warehouse. Truck traffic would be less for the delivery station than for the approved warehouse. A comparison of daily site truck traffic flows has also been provided for the two uses.

The Traffic Engineer is to provide information as to how the site traffic projections for the delivery station were developed. A reference is made in the Trip Generation section of the Traffic Evaluation that the trip generation projections for the site were derived from “tenant-provided trip projections”.

Information is to be provided regarding how the data was developed which is to include the number of sites in the database, the geographical locations of these sites, and over what period of time this data was compiled.

Satisfied

*The trip generation projections for the site indicate that for non-peak operating times, less traffic would be generated by the delivery station than for a warehouse operation during the AM and PM peak hours of a weekday. For peak operating times, the delivery station traffic would be larger than a warehouse's traffic during the weekday AM and PM peak hours as well as for a "daily traffic" basis.*

*Regarding truck traffic, universally, the delivery station's truck traffic would be significantly less for any parameter than a more standard truck-based warehouse operation.*

6. Considering the delivery activity generated by a delivery station, a relationship is to be developed between the delivery activity and the number of trucks required to support this activity on a daily basis. Testimony and/or data is to be provided regarding the relationship between 199 daily delivery vehicles (i.e., vans/personal vehicles) and the number of trucks required to support this volume of delivery vehicles. Are there any times/conditions when the vans could make multiple daily trips from/to the site?

What makes a "last mile" delivery operation less truck intensive in light of what appears to be a robust point-to-point delivery operation?

What controls the amount of material that can be processed at this site? A comment is made in the Traffic Evaluation (page 3) that ... "The delivery station's finite operating capacity dictates those trip projections". This comment is to be explained in terms of the operational characteristics and capabilities of the site.

Satisfied

*A delivery station's process is driven by a finite operating capacity. The mechanical aspects of procuring inventory from where it is stored, moving this inventory to the van loading area, and then loading the vans requires a finite amount of time to prepare a wave of 48 vans to leave the site. Given these limitations, it can be determined how many parcels can be processed in any given time period (i.e. one hour, one day) which gives rise to the number of trucks required to support the delivery station's daily output.*

7. Trip distribution information is provided in Table 6 of the Traffic Evaluation. An explanation is to be provided regarding the assumptions made to arrive at the assumed distribution. Of particular interest is the difference in the arrival/departure distributions for Rising Sun Road and Old York Road (East) in terms of why the arrival distribution is different from the departure distribution for these two roadways.

What are the destination points for site traffic with an Old York Road (West) orientation?

Open

*An explanation regarding the two referenced trip distributions is to be provided.*

8. The assumed distribution is based on four destinations, East Windsor, Shamong, Pemberton, and Jackson/Howell. How were these destinations determined? Could new destinations be established based on demand considerations which could effect the trip distribution?

Satisfied

*Testimony was provided by the applicant and its traffic engineer indicating that the four destinations were based on distance and driving time. Destinations could vary and travel routes altered as the demand demographics change.*

9. An analysis is to be provided for the intersection of Rising Sun Road and Connector Road/Advantage Court. Much of the site traffic will pass through this intersection.

Open

*The requested analysis is to be provided in terms of a traffic increase and impacts to the intersection's compacity and Levels of Service.*

10. What impact will "flex" drivers have on this site? Will they need parking and will they use van loading spaces?

If so, are these "numbers" included in the site's parking supply/loading area provisions?

Satisfied

*"Flex" drivers will have little impact on the site. They will make up the smallest component requiring parking provisions, which will be accommodated through their use of van loading spaces.*

11. Tables 7 and 8 show an Intersection Capacity Analysis Summary for Standard and Peak Period Operations. How do these analyses in terms of Level of Service and delay compare with the corresponding results for the previously approved warehouse?

Satisfied

*They compare favorably with the results generated by the previously approved warehouse. (Additional commentary will be provided later in this report).*

12. As a condition of Bordentown Township approval, assuming this project receives all the required approvals from Bordentown Township and Burlington County, is constructed and occupied, peak hour (during peak operating season) manual, turning movement traffic counts are to be conducted at the intersection of Rising Sun Road and Old York Road. This count data can then be analyzed to determine what, if any, traffic control revisions are required at this intersection (subject to the review and approval of Burlington County). These counts are to be done during the first "peak season" after the project receives a Certificate of Occupancy.

Open

*The applicant is to acknowledge its understanding and acceptance of this condition of approval.*

Site Plan

1. Provide Truck Turning Templates for the truck classes anticipated to come to this site, e.g., a typical Bordentown Township fire truck, a WB-67 tractor trailer, and a trash truck. These templates are to

depict vehicle access to/from the site, complete circulation through the site and access to/from a dumpster area and to/from a loading dock as appropriate. Access for a WB-67 truck to/from the loading dock closest to the proposed drive-in ramp is to be shown. Will a truck leaving this dock be able to maneuver around the proposed Jersey barrier if another WB-67 truck is to its left? The plan set I received did not contain any Truck Turning Exhibits or the Old York Road Roadway Improvements plan. It is requested that these sheets be included to provide a complete plan set. Also, the WB-67 and firetruck turning templates are to be provided to reflect the external changes to the site. Will access to/from the building be required for a fire truck in light of the internal vehicle parking and package processing which will occur therein?

Open

*The requested information regarding providing truck turning templates, an Old York Road Roadway Improvements Plan., and the need for an emergency vehicle to access the interior of the building is to be provided.*

2. A dumpster area was not located. Such a feature is to be shown and information is to be provided regarding trash pick-up provisions. Code Section 25.508B2 provides for this feature.

Open

*The requested information is to be provided.*

3. The Dimension Plan (Sheet 5 of 40) is to include labeling which identifies the various types and locations of site “parking”, i.e., for vans/van drivers, “flex” parking, passenger vehicle parking for associates, managers, support staff.

Open

*The requested information is to be provided. A “colored” rendering of the Dimension Plan showing the location of the various parking types would be helpful.*

4. A Parking Requirements block is to be provided which shows a summary of the site’s parking needs by type (i.e., van, “flex”, associates /managers, truck, etc.) for peak and non-peak operating conditions.

Partially Satisfied

*A Peak Season Parking Demand analysis has been provided. This analysis covers a 24-hour time period. The analysis shows the site’s various parking “categories” such as Delivery Service Partners (DSP) or van drivers, the vans themselves and associates.*

*The applicant is to indicate if the analysis accounts for “outliers” such as maintenance personnel and daily visitors. To what extent do visitors use the on-site parking provisions?*

5. Pursuant to the “employee” numbers provided in the Traffic Evaluation, 146 are “core” or “associate” employees. There will also be an unspecified number of maintenance/janitorial employees (to be estimated). There will also be a total of 199 van drivers (155) plus “flex” drivers (44). These above-referenced numbers reflect “standard” or “non-peak” operating conditions (February through October).

For “peak” period operations (November through January), the number of shift 1 workers could increase to 145. In addition, there could be 145 more workers on-site overnight. The number of “flex” drivers could increase to 47.

Also, during peak operations, an additional 304 van drivers could arrive to and depart from the site between 6:30AM and 12:30PM.

The applicant is to provide the required site parking supply to accommodate “standard” and “peak” operating conditions.

It is noted that from a parking count (verified) by the number of spaces depicted and referenced on the Dimension Plan (Sheet 5 of 40), there are a total of 441 spaces shown.

This number is to be reconciled with the personnel projections referenced in the Traffic Evaluation for “standard” and “peak” operations.

Partially Satisfied

*A review of the Peak Season Parking Demand analysis and the site’s parking provisions reveal the following:*

- a) *Exclusive of the truck loading docks parking (9 “berths”) there is a total of 773 spaces provided on-site, which includes 485 spaces outside of the building (van parking, associates’ parking, van staging area) and 288 spaces inside the building (van parking and van loading spaces).*
- b) *The site’s peak parking demand occurs between 9:00 AM and 11:00 AM when 709 “spaces” are projected to be occupied for each of the two hours.*
- c) *This parking usage (709 spaces), constitutes a parking occupancy of 92% (709/773)*
- d) *A “parking reserve” (or vacant spaces) of 8% or 64 spaces would result. Such a parking reserve is considered to be acceptable.*

*A review of the provided parking data, the usage characteristics of the various site parking components (i.e. associates, vans, van drivers) throughout the day, and the Peak Season Parking Demand analysis leads to the conclusion that the analysis provides a realistic site parking profile for the peak operating season of the proposed delivery station.*

*Having said this the following questions are posed:*

- *Since there are three major parking components associated with the site, associates, vans and van drivers, how is the parking usage for each of these three components controlled or regulated?*
  - *During the peak operating period, how may the site parking demand vary from day-to-day, and what may cause any variations (e.g. the influence of visitors)?*
6. In the southwest corner of this site, what is the purpose of the gate and Knox box? This feature appears to create two dead-end aisles and restrict through traffic to/from the two new drive-in doors in the southwest corner of the site. Dead-end aisles are not desirable, and every effort is to be made to eliminate them. Traffic access into and through this area of the site is to be explained.

Open

*Information needs to be provided to address this comment.*

7. There are a number of locations on the north side of the site where physical islands are to be considered. These features will protect the signs in high traffic areas, enhance traffic control and movements in those areas and serve as pedestrian refuge areas.

Open

*It is recommended that two additional physical island areas be provided in the northwest part of the site.*

*Will the drive-in ramps system on the northwest corner of the building create a dead-end aisle for traffic traveling long the concrete pad? If so, how will this condition be addressed?*

8. Information is to be provided regarding the operation of the “Hub” and where it is located. Is there a parking demand associated with this operation? There is a built-out area shown along the southerly parking/circulation aisle which is signed as a “drop-off/ pick-up” area. What is the purpose of this feature? Based on its location, if vehicles stop in this area it could effectively impede traffic flows through this area.

Partially Satisfied

*The “Hub” feature has been eliminated.*

*The operation of the “drop-off/pick-up” area is to be described. With what frequency could this area be used? What impact may it have on traffic flow through this area?*

9. In the northeast van parking area, there is a two-space parking module. The first of these two spaces extend out beyond the curb line thereby possibly interfering with a vehicle which has just passed through the gate and wants to turn left or right. Even the second of these two spaces has little buffer/offset from a vehicle turning right into this area.

Partially Satisfied

*This area has been redesigned to provide more protection between turning and parked vehicles. A turning template is to be provided for a van turning right into this parking area. A turning template is also to be provided for a van executing a right turn from the ramp on the northeast corner of the building into the adjacent access road.*

*Remove the “bump” in the curb along the right side of this access road.*

10. Along the north side of the building there is shown two, two-way aisles beside each other. Considering that the more southerly of these two will convey large truck traffic, it is recommended that Jersey barrier be used to separate these two, two-way traffic flows instead of striping.

Open

*Considering the type and volume of traffic to be conveyed throughout this area, a more positive form of traffic control is to be provided.*



11. It may be better to relocate the pedestrian crossing across the truck access route to the other side of the gate.

Open

*This comment is to be addressed. Why can't the pedestrian crossing be relocated to the other side of the gate?*

12. A 5' wide walking path is shown across the rear of the site. This path is to be protected by Jersey barrier. The material type of the barrier is to be defined. It is recommended that a more traditional treatment be provided for this walking path such as a sidewalk with curbing. What provisions are there for pedestrian movements between the building and the west end of the walking path?

Partially Satisfied

*The walking path along the north side of the site has been eliminated.*

*The site engineer indicated that a van driver entrance door will be added in the northwest van parking area. Is this location correct?*

13. The size of the building is 434,250 ft<sup>2</sup> g.f.a. with a total of 441 parking spaces. Based on a review of the potential employee population on-site particularly during a peak period, there could be a parking shortfall.

Assuming such a shortfall could occur, what steps would the applicant take to mitigate this condition? (In making provisions for a potential parking shortfall, in order to ensure an efficient parking search pattern, a 5%-10% parking surplus should be included).

Satisfied

*A parking demand/parking supply analysis has been submitted which shows that a total parking supply of 773 spaces will be provided, more than sufficient to meet the site's peak parking demand of 709 spaces.*

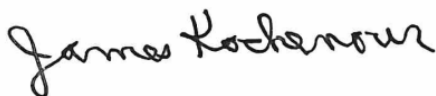
14. A review of the site signing package will be provided under a separate cover.

Partially Satisfied

*A written review of the site signage, striping, and markings package has been provided to the Township and the applicant. The comments contained therein are to be addressed by the applicant.*

This completes my comments at this time.

Very truly yours,



James Kochenour, PE  
Project Manager