Shropshire Associates LLC

ESBE / SBE Certified

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September 3, 2020

Mr. Mayer Deutsch
NE Willingboro, LLC
873 Route 45, Suite 101
New City, New York 19056

(via email: mayer@northempirellc.com)

Re: **Traffic Analysis Letter**
Amazon Short-Term Trailer Storage Facility
Block 2, Lot 7.02
Route 130 Northbound and Sunset Road (CR 634)
Willingboro Township, Burlington County, NJ
SA Project No. 20161

Dear Mayer:

In response to your request, Shropshire Associates, LLC has prepared this Traffic Analysis letter to support the site plan application to Willingboro Township and Burlington County, as needed, for the above referenced site. The proposal is for the redevelopment of the existing Grand Marketplace shopping center facility site to convert the existing front surface parking area into a short-term trailer storage facility for Amazon. The existing property contains a 231,000-square foot (SF) former shopping center development with associated surface parking area along the Route 130 frontage. Access to the site is currently provided via the following driveways.

- Two (2) right-in/right-out only driveways along northbound Route 130 that are under the jurisdiction of the New Jersey Department of Transportation (NJDOT)

- Two (2) full-movement driveways and one (1) right-in/right-out only driveway along westbound Sunset Road (CR 634) that are under the jurisdiction of Burlington County

The proposal is for the conversion of the existing surface parking area between the former retail building and Route 130 to provide short-term trailer storage for Amazon facilities in the vicinity of the site. Based upon the latest site plan information, it is anticipated that this area can conservatively stage approximately 190 trailers with the associated on-site circulation and parking for employees/security as needed. Access will continue to be provided via the existing Route 130 and Sunset Road site driveways. The only modification will be the provision of gates at all major access locations and fencing around the short-term storage area for security purposes.

Existing Conditions

A field reconnaissance was conducted in the vicinity of the site to determine the features of the adjacent roadway network within the study area. A description of the roadways and intersections are provided below.

Along the site's frontage, **Route 130** is a six-lane median-divided roadway that is classified as an Urban Principal Arterial and is under the jurisdiction of the NJDOT. Route 130 has an approximate cartway width of 94' with 12' lanes and 10' shoulders in each direction. Route 130 has a posted speed limit of 50 MPH and for the purpose of this analysis is assumed to extend in a general north-south direction.

Sunset Road (CR 634) is a two-lane undivided roadway that is classified as an Urban Minor Arterial and under the jurisdiction of Burlington County. Sunset Road has an approximate cartway width of 40' with 12' lanes and varying shoulders widths in each direction. Sunset Road has a posted speed limit of 40 MPH and for the purpose of this analysis is assumed to extend in a general east-west direction.

South of the site, **Route 130 & Cooper Street-Charleston Road (CR 630)** is controlled by a three-phase actuated traffic signal with 70, 100, and 105-second background cycle lengths. The northbound and southbound Route 130 approaches each consist of three (3) through lanes, with no turns permitted from northbound and southbound Route 130 at the intersection. Turning movements from northbound and southbound Route 130 must utilize existing nearside jughandle ramps for access to Cooper Street (southbound ramp) or Charleston Road (northbound ramp). The eastbound Cooper Street and westbound Charleston Road approaches each consist of an exclusive left-turn lane and a shared through/right-turn lane.

Operation Analysis

As indicated above, the proposal is for the redevelopment of the existing Grand Marketplace off-street parking area to create a short-term trailer storage facility for nearby Amazon facilities. Specifically, based upon information provided by the Applicant, this storage facility will be utilized as overflow trailer storage for the existing Amazon distribution facility on Cedar Lane in Florence Township, Burlington County. This existing facility is located approximately 8.0 miles north of the Grand Marketplace in Willingboro Township.

Travel between the existing Amazon site in Willingboro Township and the proposed short-term trailer storage facility will be done via northbound and southbound Route 130. Based upon our experience, the travel path will be the following.

- Trailers Arriving from Florence Township
    - Travel southbound on Route 130, entering at its signalized intersection with Cedar Lane in Florence Township
    - Turn around using the existing jughandle ramp and signalized Route 130/Cooper Street intersection approximately 0.3 miles south of the site
    - Enter from northbound Route 130 via the existing Grand Marketplace southern right-in/right-out only driveway
- Trailers Departing to Florence Township
    - Exit to northbound Route 130 via the existing Grand Marketplace right-in/right-out only driveways

- Travel northbound on Route 130, exiting at its intersection with Cedar Lane in Florence Township via an existing jughandle ramping system

Therefore, all activity associated with trailers arriving and departing the proposed short-term trailer storage facility will be via the existing Route 130 right-in/right-out only driveways and not via the existing driveways to/from Sunset Road. In addition, it should be noted that no tractor storage will be done at the Willingboro site. The tractors will return to the Florence Township facility and will not remain on-site other than to drop-off or pickup the trailers that are stored.

Traffic Analysis

Based upon information provided by the Applicant and their experience managing other similar short-term trailer storage facilities, the trailer traffic to/from the site will be throughout the day and not concentrated during specific times. Typically, with a new or proposed development, the analysis will include a trip generation of the anticipated site traffic during peak hour conditions. However, because of the unique nature of the proposed use being a short-term trailer storage facility for a specific user, an alternative analysis of the potential traffic has been prepared.

As this is a unique use, an analysis of another existing Amazon short-term trailer storage facility has been done by our office. This analysis included traffic counts at the existing facility located on River Road in Burlington Township, Burlington County, NJ. The traffic count data collection included two (2) full days counting all inbound and outbound movements at the existing driveway to River Road using an automatic traffic recorder (ATR) with radar capabilities. Copies of the collected data is attached for your review.

Based upon the collected ATR driveway volume data at the existing facility, the existing short-term parking facility in Burlington Township has inbound/outbound movements throughout the day, with slight concentrations occurring between 7am and 9am, and then again between 10am and noon. Overall, the collected ATR data shows that the maximum vehicular activity levels of this existing short-term trailer storage facility occurred between 10am and 11am and was a total of 40 combined inbound and outbound movements. This peak hour represented approximately 18% of the total daily activity at the existing facility. In fact, the five (5) most active hours through the day are indicated below. Activity during these five (5) hours represents 56% of the total daily activity. The maximum activity level during the rest of the day was less than 10 trips per hour.

- 7:00 AM to 8:00 AM – 27 total trips
- 8:00 AM to 9:00 AM – 19 total trips
- 10:00 AM to 11:00 AM – 40 total trips
- 11:00 AM to 12:00 PM – 26 total trips
- 4:00 PM to 5:00 PM – 13 total trips

From a traffic perspective, the traffic associated with the proposed short-term trailer storage facility will be complimentary when compared to existing peak hour volumes on northbound Route 130. Based upon October 2019 ATR data for northbound and southbound Route 130 in the vicinity of the proposed site, maximum volume for northbound Route 130 occurs from 5:00 PM to 6:00 PM, with a total of 1,593 vehicles per hour.

When compared to the northbound peak hour volumes on Route 130 between 10:00 AM and 12:00 PM, the peak times of the existing Amazon short-term trailer storage facility, the maximum peak hour volume is approximately 32% greater than the roadway volumes during the anticipated peak hours of the proposed facility. As indicated by our study of the Burlington Township site, typical peaks occur at 10:00 AM and 11:00 AM. During these hours, traffic volumes on northbound Route 130 are 1,085 and 1,082 vehicle per hour, respectively.

Operational Analysis

In order to ensure safe and efficient access to/from the adjacent roadway network for the proposed short-term trailer storage facility, an operational analysis was done of the primary Route 130 northbound right-in/right-out site driveway. The analysis was done using the latest Synchro software and based upon the following conservative assumptions.

- Northbound Route 130 volumes were estimated by taking the peak hour of the roadway based upon the October 2019 data, which occurs from 5:00 PM to 6:00 PM. In addition, a 1.00% annual background growth rate was applied to project a 2021 future condition.

- Inbound and outbound site driveway volumes were estimated based upon the data collected at the existing Burlington Township facility. The peak hour of the collected data was utilized, which occurs from 10:00 AM to 11:00 AM. In addition, a 2.5 multiplier was applied to the collected data to provide for a conservative "worst-case" analysis of the potential peak hour activity of the proposed development.

- It was assumed that all inbound/outbound movements at the proposed short-term trailer storage facility would occur at only one (1) of the existing Route 130 northbound right-in/right-out driveways to be as conservative as possible. In reality, there are two (2) points of access along Route 130 that can be utilized for inbound and outbound movements.

- All inbound and outbound site driveway movements in the analysis are assumed to be 100% tractor-trailer vehicles. In reality, some of the movements will most likely be tractors only as they will be used for pick-ups and drop-offs, and there may also be some employee vehicles.

The anticipated Route 130 and site driveway volumes based upon the conservative assumptions detailed above are shown in attached Figure 1, along with the anticipated levels of service during the peak hour conditions. As indicated in Figure 1, based upon this conservative "worst-case" scenario analysis, the outbound stop-controlled site driveway movements will operate at a LOS D during the peak hour conditions. Anticipated delays for outbound turning movements will be approximately 30 seconds and maximum on-site queues will be one (1) vehicle, which can be safely accommodated. It should be noted that per the current NJDOT Access Code guidelines, a LOS D for a driveway along a State Highway is acceptable.

On-Site Circulation Evaluation

Based upon our review of the current Site Plan prepared by SR3 Engineers, LLC, access to/from the proposed short-term trailer storage facility will be safe and efficient, and the anticipated design vehicles will be able to safely circulate throughout the site based upon the following observations.

- Gates have been provided in the proposed fencing surrounding the storage area to provide access to/from the site as needed via all existing site driveways on Route 130 and Sunset Road.

- As indicated above, nearly all of the trips to/from the site will be via the southern Route 130 site driveway location, which includes a potential security house at this gate location, and has been designed to allow inbound vehicles to safely queue and stack when arriving at the site.

- On-site circulation will be accommodated in the primary parking areas with 70' wide drive aisles which can safely facilitate the movement of tractor-trailer vehicles as well as permit the associated parking movements necessary during drop-off and pick-ups.

- Additional on-site screening and protection is being proposed in several critical areas to ensure that circulating vehicles do not damage or impact existing vital structures such as hydrants and lighting standards.

- Access between Sunset Road and the adjacent senior housing development will continue to be maintained as it is today.

Conclusion

Therefore, from a traffic perspective it is anticipated that the proposed short-term trailer storage facility will have a minimal impact on the adjacent roadway network based on the following:

- The proposed site is located along northbound Route 130. Based upon information provided by the Applicant, the facility will be a short-term storage facility for trailer overflow from the existing Amazon facility on Cedar Lane in Florence Township. Therefore, arrivals and departures will be via the existing Route 130 right-in/right-out only driveways. These existing driveways are designed to accommodate the movements of tractor-trailer vehicles. In addition, Route 130 is classified as an Urban Principal Arterial roadway and designed to accommodate large vehicle and tractor-trailer type traffic.

- No tractor-trailer movements between the Florence Township facility and the proposed short-term storage facility are anticipated via the existing Sunset Road site driveways. All site traffic activity will be via the Route 130 right-in/right-out only site driveways.

- Based upon the collected ATR driveway volume data at the existing short-term trailer storage facility in Burlington Township, the existing facility has inbound/outbound movements throughout the day. Slight concentrations of activity occur between 7am

and 9am, and then again between 10am and noon. Overall, the collected driveway data shows that the maximum vehicular activity levels of the existing short-term trailer storage facility occurred between 10am and 11am and was a total of 40 combined inbound and outbound movements.

- Based upon the collected driveway volume data at the existing Burlington Township facility, the majority of the daily driveway activity (56%) occurred during five (5) hours, all between 7:00 AM and 5:00 PM. Limited driveway activity occurred during the other non-peak hours and overnight.

- From a traffic perspective, the traffic associated with the proposed short-term trailer storage facility will be complimentary when compared to traffic volumes on northbound Route 130. When comparing the existing peak hour volumes of northbound Route 130 to the peak times of the existing Amazon short-term trailer storage facility, traffic on Route 130 during its peak hour is approximately 32% greater than during the peak hour of the proposed facility.

- Based upon our conservative "worst-case" scenario analysis of the future Route 130 and site driveway volumes described above, the outbound stop-controlled site driveway movements will operate at a LOS D during peak hour conditions. Anticipated delays for outbound turning movements are approximately 30 seconds and maximum on-site queues will be one (1) vehicle, which can be safely accommodated.

- Based upon our review of the current Site Plan prepared by SR3 Engineers, LLC, access to/from the proposed short-term trailer storage facility will be safe and efficient, and the anticipated design vehicles will be able to safely circulate throughout the site.

Should you have any questions or require additional information, please feel free to contact us.

Sincerely,
Shropshire Associates LLC

Nathan B. Mosley, P.E., C.M.E.
Professional Engineer
N.J. License No. #48698
NBM/jab
Attachments

cc: Clint Allen (25 copies via Hand Delivery and email: callen@archerlaw.com)
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Sam Renauro (via email: srenauro@sr3engineers.com)
Walt Sittner (via email: wsittner@sr3engineers.com)

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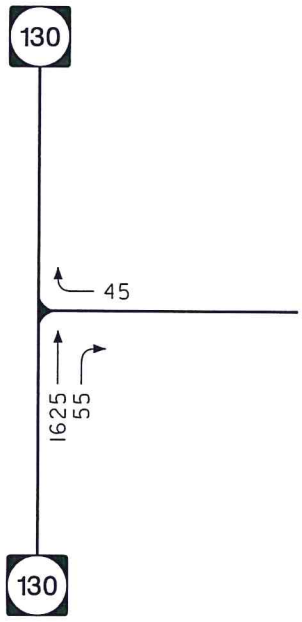
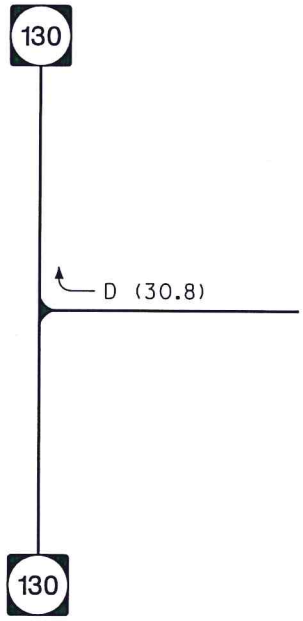
FIGURE 1

N

BUILD VOLUMES



BUILD LEVELS OF SERVICE



Short-Term Trailer Storage

Willingboro Township, Burlington County, New Jersey
September 2020

SA Project No. 20161

Amazon Truck Parking Driveway
River Road
Burlington Township/Burlington County/New Jer

Shropshire Associates LLC
277 Whitehorse Pike, Suite 203
Atco, NJ 08004

Site Code:

Station ID:
Location 1:
Location 2:
Latitude: 0.000000
Longitude: 0.000000

File Name: 20161 - Amazon Driveway
Date Printed: 9/2/2020
Start Date: 8/31/2020
End Date: 9/2/2020
GPS Accuracy: 0ft
Location Verified: No

8/31/2020 Time	Inbound, Lane 1	Outbound, Lane 2	Total
12:00 AM	*	*	0
1:00	*	*	0
2:00	*	*	0
3:00	*	*	0
4:00	*	*	0
5:00	*	*	0
6:00	*	*	0
7:00	*	*	0
8:00	*	*	0
9:00	*	*	0
10:00	9	5	14
11:00	6	6	12
12:00 PM	6	10	16
1:00	5	7	12
2:00	2	6	8
3:00	5	5	10
4:00	6	0	6
5:00	3	1	4
6:00	0	0	0
7:00	0	0	0
8:00	0	3	3
9:00	3	3	6
10:00	0	0	0
11:00	0	0	0
Total	45	46	91
Percent	49.5%	50.5%	
AM Peak	10:00	12:00 PM	12:00 PM
Volume	9	10	16
PM Peak	12:00 PM	12:00 PM	12:00 PM
Volume	6	10	16

Amazon Truck Parking Driveway
River Road
Burlington Township/Burlington County/New Jer

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277 Whitehorse Pike, Suite 203
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Site Code:

Station ID:
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File Name: 20161 - Amazon Driveway
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Start Date: 8/31/2020
End Date: 9/2/2020
GPS Accuracy: 0ft
Location Verified: No

9/1/2020 Time	Inbound, Lane 1	Outbound, Lane 2	Total
12:00 AM	2	2	4
1:00	4	2	6
2:00	3	3	6
3:00	3	1	4
4:00	0	0	0
5:00	0	0	0
6:00	0	0	0
7:00	16	11	27
8:00	9	10	19
9:00	4	5	9
10:00	22	18	40
11:00	12	14	26
12:00 PM	2	7	9
1:00	1	1	2
2:00	5	3	8
3:00	3	4	7
4:00	4	9	13
5:00	3	3	6
6:00	6	1	7
7:00	5	1	6
8:00	7	2	9
9:00	5	1	6
10:00	1	0	1
11:00	9	1	10
Total	126	99	225
Percent	56.0%	44.0%	
AM Peak	10:00	10:00	10:00
Volume	22	18	40
PM Peak	11:00	4:00	4:00
Volume	9	9	13

Amazon Truck Parking Driveway
River Road
Burlington Township/Burlington County/New Jer

Shropshire Associates LLC
277 Whitehorse Pike, Suite 203
Atco, NJ 08004

Site Code:

Station ID:
Location 1:
Location 2:
Latitude: 0.000000
Longitude: 0.000000

File Name: 20161 - Amazon Driveway
Date Printed: 9/2/2020
Start Date: 8/31/2020
End Date: 9/2/2020
GPS Accuracy: 0ft
Location Verified: No

9/2/2020 Time	Inbound, Lane 1	Outbound, Lane 2	Total
12:00 AM	2	0	2
1:00	0	5	5
2:00	0	5	5
3:00	4	3	7
4:00	1	0	1
5:00	0	1	1
6:00	3	5	8
7:00	14	8	22
8:00	3	7	10
9:00	15	8	23
10:00	*	*	0
11:00	*	*	0
12:00 PM	*	*	0
1:00	*	*	0
2:00	*	*	0
3:00	*	*	0
4:00	*	*	0
5:00	*	*	0
6:00	*	*	0
7:00	*	*	0
8:00	*	*	0
9:00	*	*	0
10:00	*	*	0
11:00	*	*	0
Total	42	42	84
Percent	50.0%	50.0%	
AM Peak	9:00	7:00	9:00
Volume	15	8	23
PM Peak Volume	0	0	0
Grand Total	213	187	400
Percent	53.3%	46.8%	
ADT	N/A		

New Jersey Department of Transportation

Short-term Hourly Traffic Volume for 10/14/2019 to 10/18/2019

Site names: 7-4-201,US 130-43.34,00000130__
County: BURLINGTON
Funct Class: Urban Principal Arterial - Other
Location: Bet CO 630 Charlestown Road and CO 629 Levitt Parkway

Seasonal Factor Grp: rg3_3U
Daily Factor Grp: rg3_3U
Axle Factor Grp: rg3_3U
Growth Factor Grp: rg3_3U

	Sun, Oct 13, 2019			Mon, Oct 14, 2019			Tue, Oct 15, 2019			Wed, Oct 16, 2019			Thu, Oct 17, 2019			Fri, Oct 18, 2019			Sat, Oct 19, 2019		
	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S
00:00							423	203	220	405	179	226	431	187	244	476	203	273			
01:00							243	118	125	234	117	117	253	125	128	303	183	120			
02:00							226	121	105	156	82	74	195	102	93	241	139	102			
03:00							224	127	97	232	125	107	211	107	104	210	105	105			
04:00							443	241	202	421	206	215	399	203	196	448	256	192			
05:00							964	513	451	987	511	476	956	515	441	906	483	423			
06:00							1,909	1,021	888	1,801	972	829	1,918	1,009	909	1,786	949	837			
07:00							2,682	1,408	1,274	2,644	1,443	1,201	2,651	1,447	1,204	2,517	1,353	1,164			
08:00							2,880	1,680	1,200	2,718	1,535	1,183	2,676	1,488	1,188	2,658	1,494	1,164			
09:00							2,130	1,208	922	2,109	1,133	976	2,155	1,189	966	2,243	1,240	1,003			
10:00							1,942	1,018	924	1,943	1,020	923	2,069	1,085	984	2,126	1,127	999			
11:00							2,073	1,072	1,001	2,103	1,096	1,007	2,192	1,082	1,110	2,306	1,246	1,060			
12:00				2,383	1,287	1,096	2,265	1,199	1,066	2,274	1,210	1,064	2,287	1,202	1,085						
13:00				2,297	1,167	1,130	2,286	1,217	1,069	2,199	1,100	1,099	2,373	1,259	1,114						
14:00				2,496	1,303	1,193	2,508	1,294	1,214	2,311	1,172	1,139	2,612	1,320	1,292						
15:00				2,881	1,513	1,368	3,029	1,536	1,493	2,799	1,421	1,378	3,100	1,542	1,558						
16:00				2,999	1,463	1,536	3,256	1,474	1,782	2,974	1,379	1,595	3,312	1,576	1,736						
17:00				3,216	1,533	1,683	3,471	1,566	1,905	3,005	1,306	1,699	3,358	1,593	1,765						
18:00				2,482	1,216	1,266	2,747	1,414	1,333	2,366	1,217	1,149	2,796	1,437	1,359						
19:00				1,871	1,007	864	2,088	1,107	981	1,636	866	770	2,032	1,095	937						
20:00				1,417	767	650	1,437	810	627	1,179	648	531	1,511	817	694						
21:00				1,070	618	452	1,007	587	420	1,028	578	450	1,136	638	498						
22:00				694	417	277	776	446	330	711	398	313	787	461	326						
23:00				510	262	248	506	261	245	523	274	249	567	285	282						
Total				24,316	12,553	11,763	41,515	21,641	19,874	38,758	19,988	18,770	41,977	21,764	20,213	16,220	8,778	7,442			
AM Peak Vol				0	0	0	3,021	1,740	1,355	2,832	1,612	1,247	2,854	1,587	1,275	2,728	1,531	1,218			
AM Peak Fct							.957	.95	.941	.965	.962	.974	.907	.872	.96	.937	.886	.979			
AM Peak Hr				0: 00	0: 00	0: 00	7: 45	7: 45	7: 15	7: 45	7: 45	7: 30	7: 15	7: 30	7: 15	7: 30	7: 45	7: 30			
PM Peak Vol				3,216	1,533	1,707	3,471	1,572	1,905	3,023	1,456	1,704	3,364	1,601	1,770	0	0	0			
PM Peak Fct				.923	.949	.906	.944	.938	.928	.953	.955	.903	.921	.899	.936						
PM Peak Hr				17: 00	17: 00	16: 30	17: 00	15: 15	16: 30	16: 30	15: 30	16: 30	16: 30	15: 15	16: 30	0: 00	0: 00	0: 00			
Seasonal Fct				.992	.992	.992	.992	.992	.992	.992	.992	.992	.992	.992	.992	.992	.992	.992			
Daily Fct				.996	.996	.996	.952	.952	.952	.950	.950	.950	.946	.946	.946	.901	.901	.901			
Axle Fct				.490	.490	.490	.490	.490	.490	.490	.490	.490	.490	.490	.490	.490	.490	.490			
Pulse Fct				2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000			

Created 11/15/2019 11:39 AM

ROAD AADT 37,599 NDIR AADT 18,035 PDIR AADT 19,564