

March 8, 2023

Henry Kent-Smith, Partner  
Fox Rothschild LLP  
Princeton Pike Corporate Center  
997 Lenox Drive  
Lawrenceville, NJ 08648-2311

Subject: Traffic Impact Analysis of Proposed QTS Data Center in in the Township of East Windsor, NJ

Dear Mr. Kent-Smith:

The purpose of this letter is to address the potential traffic impacts of the proposed Phase 2 data center to be built on a parcel of land at the south-west corner of Princeton Hightstown Road and the One Mile Road Exd in the Township of East Windsor. The project site today includes a large building with two ancillary buildings totaling a gross floor area of approximately 510,689 square feet and with approximately 709 parking spaces. The Applicant is in the process of removing 157,728 square feet of existing floor space as part of its Phase 1 facilities upgrade plan. Phase 1 will facilitate this Phase 2 application by allowing a reconfigured property access driveway from Princeton Hightstown Road (Route 571) and associated parking improvements. The present application involves data center upgrades to meet client demands. Upon completion of the proposed site improvements with this Phase 2 development, the site will contain 360,031 square feet of building area reducing the total building area by 150,658 square feet. The Phase 2 improvements will also reduce total parking from 709 existing parking stalls to 671 stalls. The Phase 2 project will reposition this property for future development of state of the art data center uses.

The property has a signalized access point off Princeton Hightstown Road (providing also access to the parcel on the north side of Princeton Hightstown Road) and by three access points along One Mile Road Exd. The access drives along One Mile Road Exd will either be closed or restricted for special or emergency access.

The figure on the next page shows the plan for the Phase 2 building.

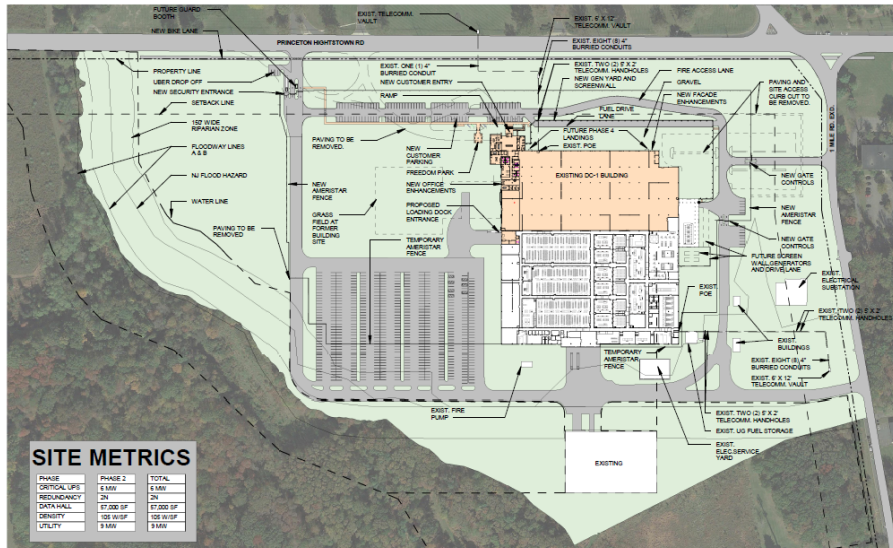
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Henry Kent-Smith,  
 March 8, 2023  
 Page 2



SITE FENCE/PARKING/BUILDING ENTRY/STRUCTURAL REINFORCEMENT/GEN YARD AND SCREENWALL



**QTS PJC1-DC1 - PHASE 2**

1 : 2500

**CORGAN**

**Traffic Generation**

The Institute of Transportation Engineers (ITE) provides traffic generation rates for data centers in its Trip Generation Manual (11<sup>th</sup> Edition 2021). These traffic generation rates are based on traffic counts undertaken at similar data centers located in Illinois and Virginia. The table on Page 3 summarizes the traffic generation estimate.

As can be seen this data center, like all other data centers, is a very low traffic generator. On average there would be 1 vehicle entering the site during the AM peak hour every 2 minutes and 44 seconds and 1 vehicle would exit the site during the PM peak hour with similar intervals.

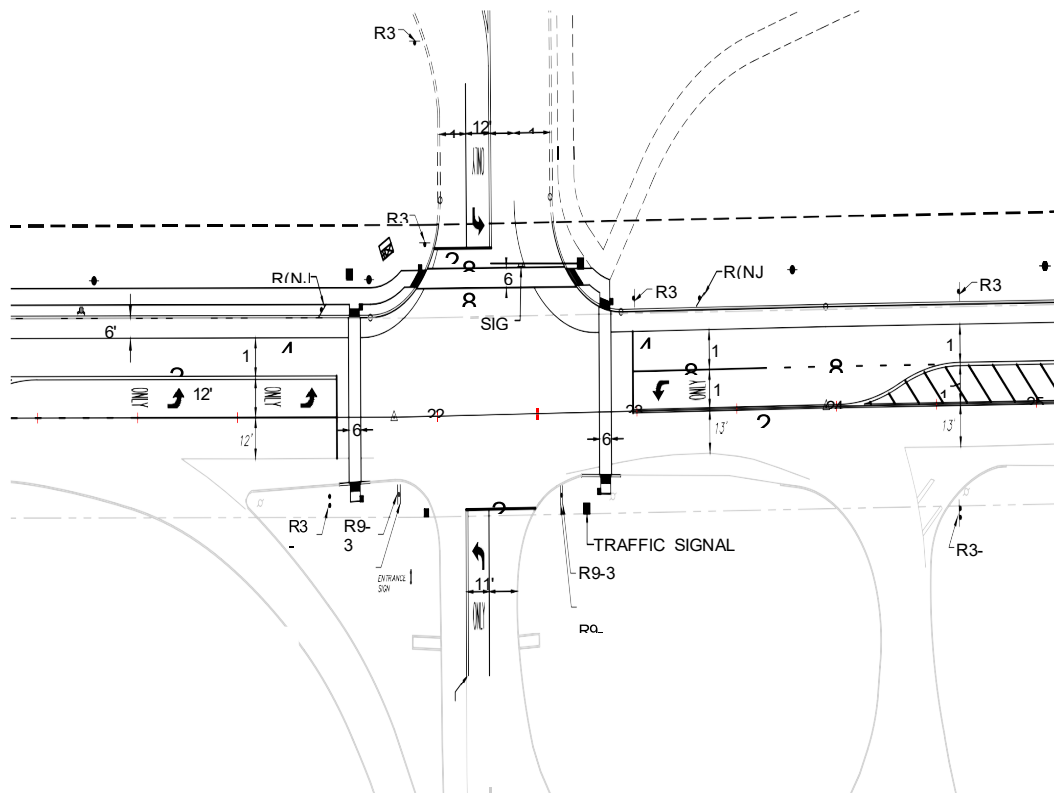
Henry Kent-Smith,  
 March 8, 2023  
 Page 3

<b>QTS East Windsor Phase 2 Data Center</b>				
<b>Traffic Generation Estimates</b>				
Floor Area of Data Center		360,031	SF	
Time Period		Traffic Generation Rate per 1000 SF	Vehicle Trips	
<b>AM Peak Hour</b>				
	Inbound	0.0605	<b>22</b>	
	Outbound	0.0495	<b>18</b>	
<b>PM Peak Hour</b>				
	Inbound	0.027	<b>10</b>	
	Outbound	0.063	<b>23</b>	
Source: ITE Trip Generation Manual (11th Edition, September 2021, land use 160)				

The signalized intersection on Princeton Hightstown Road has been rebuilt as part of the upgrade of this County road and as part of the Innovation Park project across the street from the QTS site. The far-side reverse jug-handle turn that existed for numerous years in the southeast quadrant of the intersection (on this project’s property) has been replaced with left-turn lanes in the median of Princeton Hightstown Road to provide protected left turns into Innovation Park and into the QTS site. Both driveways on either side of the Princeton Hightstown Road will have an exclusive left-turn lane and a combined right-turn/through lane for outbound movements. The figure on Page 4 is extracted from the Roadway Improvements Plan prepared for the Innovation Park at East Windsor and shows the current layout for the intersection that provides access to the QTS site.

To evaluate the impacts of the additional QTS vehicles we used the traffic count data and analyses that were performed for the Innovation Park and were submitted to us by Mercer County. The source for this analysis is the “Trip Generation Evaluation and Traffic Impact Analysis for Innovation Park at East Windsor” prepared by Dolan & Dean Consulting Engineers, LLC and dated December 23, 2019 (referred to as the D&D study). This traffic study relied on traffic count data collected in November 2019, prior to the COVID 19 pandemic. The AM and PM peak hours were determined to be between 7:45 and 8:45 AM and 4:45 and 5:45 PM. Note that the Innovation Park project has three driveways along Princeton Hightstown Road, whereas the QTS development has only one access point at the signalized intersection.

Henry Kent-Smith,  
March 8, 2023  
Page 4



Source: Traffic Signing and Striping Plans, Roadway Improvements for Innovation Park at East Windsor, County Route 571 (Princeton Hightstown Road), Maser Consulting P.A., 04/07/20

The D&D study projects that there will be 40 vehicles entering the Innovation Park Driveway during the AM peak hour, roughly twice as many as the number of vehicles entering the QTS site. During the PM peak hour there will be 28 vehicles leaving the Innovation Park site, compared to the 23 vehicles exiting the QTS site. It is expected that a large proportion of the traffic movements in and out of the QTS site will operate concurrently with the traffic movements in and out of the Innovation Park site and will therefore not have a significant impact on traffic operations along Princeton-Hightstown Road. For instance, in the AM peak hour the left turns into Innovation Park will operate concurrently with the left turns into QTS, as well as the left turns exiting the two sites during the PM peak hour. It is expected that the traffic signal phasing at this intersection will be set by the County such that these movements can occur in an efficient manner.

Henry Kent-Smith,  
March 8, 2023  
Page 5

The D&D study for the Innovation Park projects that the signalized intersection will operate at good levels of service (LOS) with the Innovation Park traffic: LOS A to B in the AM peak hour and LOS B to C in the PM peak hour. The addition of the QTS volumes will not change these levels of service to any noticeable degree since the QTS volumes are low and will operate largely concurrently with the Innovation Park movements.

Note that traffic levels of service are a common metric used to quantify traffic flow conditions. Levels of service range from A with the shortest delays to level of service F representing a grid lock condition. LOS D is generally considered an acceptable threshold condition for peak hours and LOS E is generally close to the intersection capacity.

## Conclusions

It is concluded that QTS data center Phase 2 will be a low traffic generator and that the reconstructed intersection of Princeton Hightstown Road/Innovation Park/QTS will accommodate the QTS traffic in a safe and efficient manner. The addition of the QTS vehicles will not affect traffic conditions to any noticeable degree. The site plan for the proposed Phase 2 QTS data center shows ample parking for the Phase 2 data center.

Please let us know if you have any questions.

Sincerely,



Georges Jacquemart, P.E., PP, AICP  
New Jersey Professional Engineer 24GE02843500  
Principal