

June 21, 2018

To: Priyatham Konda, P.E.

Subject: **16-REZ-15 North Harrison Avenue Hotels (16-TAR-411B)  
SimTraffic Simulation / Capacity Analysis Summary Letter**

Dear Mr. Konda,

It is our understanding that at the Town Council Public Hearing for rezoning case 16-REZ-15 (North Harrison Avenue Hotels) on February 22, 2018, several Council members requested additional information on the site traffic circulation, cross access to Arboretum and analysis of the proposed U-turn “bulb-out”. Ramey Kemp & Associates has completed additional analyses to provide the information requested by the Town Council. This letter provides a summary the following analyses completed for that purpose:

- i. SimTraffic simulation results at all the study intersections and cross access / site traffic circulation with The Arboretum,
- ii. Capacity analysis of the proposed U-turn “bulb-out” at the intersection of Harrison Avenue and Montibello Drive, and
- iii. Follow-up coordination with NCDOT

**SimTraffic Simulation:**

Cross-access between the proposed North Harrison Avenue Hotels (Hotels) and The Arboretum, as well as site traffic circulation through The Arboretum’s internal roadway network, was considered in the analysis of combined 2021 (or buildout) conditions. It should be noted that a portion of the exiting traffic from the proposed development is expected to use the cross-access connection to The Arboretum, utilize the traffic signal at the intersection of Weston Parkway and Renaissance Park Place / Harrison Oaks Boulevard, and exit The Arboretum onto Weston Parkway to reach its ultimate destination.

Under buildout conditions, the simulation indicated that the proposed cross-access, internal roadways and study intersections are expected to operate with delays and queuing similar to existing conditions (without Hotels) during the weekday AM and PM peak hours except for the following intersections:

- Weston Parkway and Arboretum Entrance (RIRO) and
- Weston Parkway and Renaissance Park Place / Harrison Oaks Boulevard.

Minor modifications to the analysis were made at the aforementioned intersections to allow these intersections to operate with minimal queuing and delays during the weekday peak hours, as expected for field conditions. A detailed explanation of these modifications and observations from the SimTraffic simulation is provided in the full analysis letter.

**Harrison Avenue and Montibello Drive U-turn Analysis:**

Capacity analysis completed using Synchro indicates that the southbound U-turn movement at the intersection of Harrison Avenue and Montibello Drive is expected to operate at LOS F during the weekday AM peak hour

and LOS C during the weekday PM peak hour under combined 2021(or buildout) conditions. While the southbound U-turn movement is expected to operate at LOS F during the weekday AM peak hour, a review of the SimTraffic simulation shows that the queue for the southbound U-turn movement is not expected to exceed 100 feet during the weekday AM and PM peak hours at this intersection under combined (2021) conditions. On the PDP, the applicant is proposing a 75’ turn lane and a 50’ taper. While a traffic signal would provide the necessary gaps in mainline traffic for the southbound U-turn movement as well as the eastbound minor-street (Montibello Drive) approach to operate at acceptable levels-of-service, this intersection is not expected to meet the necessary warrants for installation of a traffic signal during the weekday AM and PM peak hours under combined (2021) conditions.

**NCDOT Coordination Efforts:**

Town of Cary staff as well as the applicant’s traffic consultant (Kimley-Horn) have further discussed alternate access scenarios with NCDOT to potentially eliminate the southbound U-turns at Montibello Drive. This would only be feasible by allowing left-turns out of the Hotels’ entrance on Harrison Avenue, which is currently proposed as a right-in/right-out (RIRO) only movement. NCDOT has indicated significant safety concerns in allowing left-turns out of the Hotels entrance due to its proximity to, (i) the signalized intersection of Weston Parkway and Harrison Avenue, and (ii) Arboretum’s RIRO access on Harrison Avenue just north of the Hotels’ RIRO.

Based on the simulation and capacity analyses and discussions with NCDOT, the following improvements are recommended at the intersection of Harrison Avenue and Montibello Drive:

- An exclusive southbound U-turn lane be provided with a minimum of 100 feet of storage and U-turn bulb-out accommodation on the east side of the intersection
- Monitor the intersection for signalization prior to full build-out of the proposed development (2021). (The existing and projected side street volumes from Montibello Drive would likely not support a traffic signal.).

Please contact us with any questions or comments at (919) 872-5115.

Thank You,  
**Ramey Kemp & Associates, Inc.**



Joshua Reinke, P.E.  
Transportation Manager