



To: Mr. Nasser Rahimzadeh

From: Jonathan Guy, P.E., PTOE

Date: March 1, 2022

RE: Harper Road Residential Development TIA Review

At the request of the Village of Clemmons, Kimley-Horn has conducted a review of the traffic impact analysis (TIA) prepared for the Harper Road Residential Development, dated March 1, 2022. The proposed development is located within a currently vacant parcel adjacent to Lismore Street and Michelle Drive in Clemmons, NC and will consist of up to 77 single-family detached dwelling units. Based on the conceptual site plan dated January 18, 2022, access to the development is proposed via three driveways on Michelle Drive, Lismore Street, and Dunmore Lane.

The analyses contained with the sealed TIA were reviewed for conformance with the traffic impact analysis guidelines presented within the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*, NCDOT *Congestion Management Capacity Analysis Guidelines*, and Village of Clemmons *Unified Development Ordinance*. This memo outlines our technical review of the TIA and corresponding recommendations.

TECHNICAL REVIEW COMMENTS

Kimley-Horn provided interim review comments on the proposed trip distribution and assignment developed for the subject TIA in February 2022. Based on our review of the TIA as submitted, these comments have been adequately addressed. The following additional observations are offered and should be addressed as appropriate prior to approval.

- **Minor Text Edits**
 - On Page i of the Executive summary:
 - The word “the” should be added after “traffic impacts of” in the first sentence.
 - The Development Description appears incomplete. Add additional supporting text or remove the “T” after the end of the first sentence.
 - The subheading “Trip Generaiton Summary” should be replaced with “Trip Generation Summary”.
 - On Page 4, the word “of” should be added after “consist” in the first sentence.
 - On Page 11 (and page i of the Executive Summary), the first sentence should be revised for clarity such that:
 - The phrase “onteh” reads “on the”
 - The word “and” is replaced with “are” after “...2024 build-out traffic conditions”
 - The word “listed” is replaced with “list”

- The TIA states that the development will be constructed by 2024 and notes that a “build-out plus one year” analysis was performed for the year 2024. Consider rephrasing to avoid confusion, as the expected opening year and analysis year are the same.
- **Technical Considerations**
 - In Table 3.1, the total number of exiting trips during the AM peak hour is shown as 43, but a check against the ITE *Trip Generation Manual* fitted curve equation suggests that this total should be 44 trips. *This calculation difference may be attributed to rounding and has a negligible impact on the findings of the TIA.*
 - In Section 5.2, a 2.0% per year growth rate seems aggressive relative to NCDOT historic annual average daily traffic (AADT) data but provides a conservative estimate of future traffic volumes.
 - The posted speed limit on North Lakeshore Drive is 25 miles per hour (mph), but the Synchro files are coded with a speed limit of 35 mph. *This minor coding change would be unlikely to significantly impact capacity analysis results at the study intersection.*
 - Figure 4, Figure 6, and Figure 8 all show turning movement volumes of less than 4 vehicles per hour at one or more study intersections. Consider revising the figures to match the volumes utilized in the Synchro analysis per NCDOT standards.
 - In Figure 7, imbalances are shown on Glengariff Road between Peace Haven Road and Lismore Street (+/- 1 vehicle) and on Lismore Street between Glengariff Road and Dunmore Lane (+/- 1 vehicle). *These imbalances are unlikely to significantly impact the capacity analysis results.*
 - In Figure 8, the through volumes on Dunmore Lane seem unreasonably high based on the number of surrounding single-family homes. These traffic volumes should be checked for accuracy, and their source should be provided within the report text.
 - At the intersection of Glengariff Road with Peace Haven Road, the southbound through volume was coded as 2 vehicles per hour in the Build Synchro file (AM peak hour). Consider revising the analysis for conformance with NCDOT guidelines. *This minor coding change would be unlikely to significantly impact capacity analysis results at the study intersection.*
 - When opening the Synchro files, the background image does not load because the source file is located on Davenport’s server. Consider providing this background image along with the Synchro files for the Village’s and NCDOT’s records.
 - Auxiliary turn lane warrants were reviewed for the intersections of Lasater Road with Rossmore Road and Peace Haven Road with Glengariff Road (per sheets in the Appendix), but these intersections are not mentioned in Section 7.0 of the report.
 - These two intersections should be added to the summary list in Section 7.0.
 - Based on the turn lane warrant analysis sheets included in the Appendix, a left-turn lane is warranted at the intersection of Lasater Road with Rossmore Road. Justification should be provided within the report text supporting the recommendation to not construct a southbound left-turn lane at this intersection.

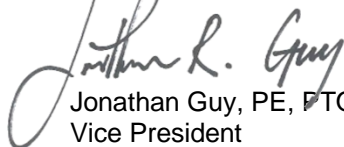
CONCLUSIONS

Based on a technical review of the TIA report as submitted, the study provides a reasonable assessment of the potential traffic impacts associated with the proposed development. All elements of the analysis are generally in conformance with guidelines prescribed by the Village of Clemmons and NCDOT.

However, the auxiliary turn lane warrant analysis conducted as part of the study suggests that a southbound left-turn lane is warranted at the intersection of Lasater Road with Rossmore Road. Justification supporting the recommendation to not construct a left-turn lane at this intersection should be provided within the report text. Other minor text edits and revisions to the report figures noted herein should be addressed as appropriate as part of a revised TIA submission.

Please contact me at (704) 488-3055 or jonathan.guy@kimley-horn.com should you have any questions regarding this analysis.

Sincerely,



Jonathan L. Guy
Jonathan Guy, PE, PTOE
Vice President