



## MEMORANDUM

To: Gary Spangler, NCDOT Division 12, District 1 Supervisor  
Dave Pettine, AICP, Town of Cramerton

From: Amy Massey, PE, Kimley-Horn and Associates, Inc.

Date: March 23, 2018

Subject: ***Riverside Traffic Impact Analysis Addendum  
Traffic Mitigation***

The purpose of this memo is to document required transportation improvements as a result of the Traffic Impact Analysis (TIA) and subsequent North Carolina Department of Transportation (NCDOT), Town of Cramerton, and Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) staff review for the Riverside development located in Cramerton, North Carolina. The TIA was prepared by Kimley-Horn and Associates, Inc. (6-29-17).

Build-out of the Riverside development is anticipated to be complete in 2023, with anticipated project phasing and associated developer improvements outlined below.

1. Construct the residential development south of Lake Wylie Road and the following improvements.
  - a. S New Hope Road at Union New Hope Road:
    - i. Install a traffic signal at the intersection.
    - ii. Construct a northbound left-turn lane along S New Hope Road with 200 feet of storage and appropriate taper.
    - iii. Construct a southbound right-turn lane with 100 feet and appropriate taper.
  - b. S New Hope Road at Lake Wylie Road:
    - i. Install a traffic signal when warrants are met.
    - ii. Construct a westbound left-turn lane along Lake Wylie Road with 250 feet of storage and appropriate taper.
    - iii. Construct a northbound right-turn lane along S New Hope Road with 150 feet of storage and appropriate taper.
    - iv. Construct a southbound left-turn lane along S New Hope Road with 475 feet of storage and appropriate taper.
  - c. Lake Wylie Road at Access 2 - Construct a three-legged roundabout with the following configuration:
    - i. Single-lane southbound approach, with an internal protected stem (IPS) length of 150 feet.
    - ii. Single-lane eastbound and westbound approaches.
    - iii. [Northbound approach/Access C (commercial) and eastbound right-turn lane to be constructed in Phase 3.]
  - d. Lake Wylie Road and Access D- Construct the intersection with a concrete center island and the following configuration:

- i. Single-lane northbound and southbound approaches with IPSs 100 feet.
    - ii. Yield control and appropriate signage on all four approaches.
  - e. Improve Lake Wylie Road to include minimum 10-foot-wide lane widths, center median, curb and gutter, 5-foot planting strips, and 5-foot sidewalks. NCDOT will continue to maintain Lake Wylie Road.
- 2. Construct the residential development north of Lake Wylie Road and the following improvements.
  - a. Construct Access 2 (two-lane roadway) between Lake Wylie Road and North Lake Wylie Road, and Armstrong Ford Road. Note that Harrison Drive/Oak Street will be relocated east of its existing Armstrong Ford intersection to serve as Access 2. (This will be performed via encroachment permit.) NCDOT will continue to maintain the relocated section of roadway between Armstrong Ford Road and North Lake Wylie Road as well as North Lake Wylie Road. Other than these roadway sections and Lake Wylie Road, the remaining neighborhood streets will be maintained by the Town.
  - b. Armstrong Ford Road and Access 2:
    - i. Install a traffic signal when warrants are met.
    - ii. Construct the northbound approach of Access 2 to consist of an exclusive left-turn lane with 125 feet of storage and an exclusive right-turn lane. An IPS of 275 feet is required on the northbound approach.
    - iii. Construct a westbound left-turn lane along Armstrong Ford Road with 325 feet of storage and appropriate taper.
  - c. Construct the westbound approach of Access A at Access 2 with single-lane approaches and stop-control on the westbound approach.
  - d. North Lake Wylie Road and Access 2- Construct single-lane northbound and southbound approaches on Access 2 and stop-control on the westbound approach of North Lake Wylie Road.
  - e. North Lake Wylie Road and Access B- Construct single-lane northbound and southbound approaches on Access B, each with an IPS of 100 feet.
- 3. Construct the commercial portion of the development and the following improvements.
  - a. Construct the stop-controlled eastbound approach of Access A (commercial) at Access 2 with a single-lane approach aligned with the westbound approach of Access A (residential).
  - b. S New Hope Road at Access 3:
    - i. Construct the westbound approach of Access 3 to consist of an exclusive left-turn lane and an exclusive right-turn lane with 100 feet of storage. An internal protected stem of 175 feet is required on the westbound approach.
    - ii. Construct a northbound right-turn lane along S New Hope Road with 100 feet of storage and appropriate taper.
    - iii. Construct a southbound left-turn lane along S New Hope Road with 150 feet of storage and appropriate taper.
    - iv. The distance between Access 3 and Lake Wylie Road should be maximized.
  - c. Lake Wylie Road at Access C
    - i. Construct an eastbound right-turn lane on Lake Wylie Road at the roundabout with 100 feet of storage and appropriate taper.

- ii. Construct a single-lane northbound approach on Access C with an IPS of 175 feet.
- 4. Reserve 180 feet of right-of-way for the Catawba Crossing project on the alignment approved by GCLMPO.
- 5. NCDOT State Transportation Improvement Program (STIP) project U-5821 is currently funded to widen S New Hope Road to a four-lane divided section between Titman Road and Union New Hope Road with expected construction in FY 2021-2022. This improvement was not considered in the TIA, as it was previously identified in the STIP as widening to a three-lane section. As such, the intersection improvements outlined above in items 1-3 above and a-e below will be coordinated with NCDOT, and some of the improvements may be completed in partnership with NCDOT. The following improvements are called for at the S New Hope Road/Armstrong Ford Road intersection:
  - a. Construct a northbound right-turn lane with 150 feet of storage.
  - b. Construct dual westbound left-turn lanes with 475 feet of storage each and appropriate taper.
  - c. Extend the westbound right-turn lane to provide 350 feet of storage and appropriate taper.
  - d. Extend the southbound left-turn lane to provide 500 feet of storage and appropriate taper.
  - e. Construct an additional southbound receiving lane on S New Hope Road between Armstrong Ford Road and Union New Hope Road, to drop into the southbound right-turn lane at Union New Hope Road.
- 6. If additional traffic analysis becomes necessary in the future due to development changes/updates, then the build-out scenario may be reviewed against a background scenario that considers the updated U-5821 improvement in place.

The timing of specific improvements will be coordinated with NCDOT. Note that there will be no improvements or reservation relative to the Carolina Thread Trail project.

We appreciate the opportunity to be of service. Please contact me if you have any questions.