



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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September 26, 2014

ORANGE COUNTY

Kumar Nepalli
Traffic Engineering Program Manager
Town of Chapel Hill
405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514

Subject: Proposed Obey Creek Mixed-Use Development
Located on US 15-501 South near Southern Village
Review of Traffic Impact Study, Technical Memorandum #2

Dear Mr. Nepalli,

Per your request, NCDOT Division and Congestion Management Unit staff have reviewed the Traffic Impact Study Technical Memorandum #2, (TIA) prepared by HNTB and the preliminary concept site plan enclosed therein. Based on the submitted information and upon conferring with Town staff, we offer the following comments relevant to the impacts to the State maintained highway system.

General:

The site is located on US 15-501 South directly across from the existing Southern Village development. As analyzed, the multi-use site consists of a 404,525 SF shopping center, 226,250 SF of general office space, a 48,000 SF recreation center, a 300 room hotel, 300 attached senior housing units, 100 condominium/townhome units, and 300 apartments. Upon planned build out in 2022, the site is expected to generate approximately 25,000 raw daily trips with applicable adjustments for internal capture, pass-by, diverted link, and transit and bicycle/pedestrian reductions. The site concept plan proposes five access points on US 15-501 consisting of addition of a fourth leg of the existing signalized intersection at US-15-501 and Market Street and a new full movement signalized median break on US 15-501 at the existing access to the transit park and ride lot. Three additional

restricted right-in/right-out accesses to US-15-501 are proposed along the site frontage. A proposed pedestrian overpass spanning US-15-501 and connecting the site to the existing transit park and ride facility is located to the north of proposed access #3.

The development is within the study area of an NCDOT corridor study. The scope of the study is to assess the ability of current infrastructure to accommodate anticipated future growth and evaluate potential for future installation of “super streets” along the US 15-501 corridor from NC 54 (Fordham Boulevard) in Chapel Hill to US 64 in Pittsboro for study years 2013 and 2040. The study is currently underway with final recommendations expected later in 2014. The development also lies within the study area of the Chapel Hill Transit North-South Corridor Study. The scope of this study includes assessment of existing conditions and recommendations for enhancements to meet projected need on the transit corridor. This study is scheduled for completion in Fall 2015. Information for the Obey Creek development has been provided to the study consultants for their use and consideration.

US 15-501 is designated as a strategic highway corridor. Routes with this designation are considered critical to statewide and regional mobility and connectivity and are subject to specific access management guidelines based on the corridor designation. US 15-501 is designated as a Boulevard with partial control of access. Development access is typically limited to no more than that justified to meet the access needs of the property in order to minimize impacts to traffic operations and preserve public safety.

Site Access and Required Improvements:

Proposed US-15-501 and Site Access #1 Intersection:

NCDOT concurs with the study recommendations to eliminate this access due to proximity to the Dogwood Acres Drive signalized intersection and the existing U-turn bulb out.

Proposed US-15-501 and Site Access #2 Intersection:

NCDOT is agreeable to connection of the proposed restricted right-in/right-out access subject to:

- Construction of an exclusive northbound right turn lane with 150' of full storage and appropriate deceleration taper on US 15-501.
- Construction of a single ingress lane and a single right turn-only egress lane with a minimum of 100' of full storage on the site access.
- Provision of a minimum of 150' of protected internal driveway stem length prohibiting all turning and parking maneuvers on the site access.

- Closure or relocation of the proposed frontage road connection beyond the limits of the internal protected stem.

Proposed US-15-501 and Site Access #3/Transit Park and Ride Intersection:

Because of the specific guidelines relative to this Strategic Highway Corridor as well as analysis results in the study, NCDOT cannot support a new full-movement access on US 15-501 as proposed, due to insufficient spacing relative to existing median crossings and the anticipated negative impacts on traffic operation on the corridor. Subject to the conditions listed below, NCDOT is agreeable to a connection served by a directional median crossover at this location. This configuration provides for direct left turns from US-15-501 to both the proposed new access and the transit park and ride lot while restricting left turn and through movements from the side streets.

- Construction of an exclusive southbound left turn lane with 350' of full storage and appropriate deceleration taper on US 15-501
- Construction of an exclusive northbound left turn lane with 200' of full storage and appropriate deceleration taper on US 15-501.
- Construction of an exclusive northbound right turn lane with 150' of full storage and appropriate deceleration taper on US 15-501.
- Construction of a single ingress lane and a single right turn-only egress lane with a minimum of 300' of full storage on the site access.
- Provision of a minimum of 300' of protected internal driveway stem length prohibiting all turning and parking maneuvers on the site access.
- Closure or relocation of the proposed frontage road connection beyond the limits of the internal protected stem.
- Monitor intersection for signal warrants and install traffic signal when warranted.

The project traffic consultant is currently performing additional analysis including traffic warrant evaluation for review by NCDOT and Town staff.

Proposed US 15-501 and Access #4/Market Street Intersection:

NCDOT is agreeable to connection of a fourth leg at this intersection subject to the following improvements necessary to retain acceptable intersection operation:

- Construction of dual exclusive southbound left turn lanes, each with 350' of full storage and appropriate tapers on US 15-501.

- Construction of a second exclusive westbound left turn lane with appropriate tapers on Market Street.
- Construction of an exclusive northbound right turn lane with 150' of full storage and appropriate deceleration taper on US 15-501.
- Construction of dual ingress lanes and four egress lanes consisting of dual exclusive left turn lanes, an exclusive through lane, and an exclusive right turn lane, each with 350' of full storage on the site access.
- Provision of a minimum 350' protected internal driveway stem length prohibiting all turning and parking maneuvers on the site access.
- Closure or relocation of the proposed frontage road connection beyond the limits of the internal protected stem.
- Modification of existing signal to accommodate the new intersection geometry.

Proposed US 15-501 and Site Access #5 Intersection:

NCDOT is agreeable to the proposed connection subject to:

- Construction of an exclusive northbound right turn lane with 150' of full storage and appropriate deceleration taper on US 15-501.
- Construction of a single ingress lane and a single right turn-only egress lane with minimum of 100' full storage on the site access.
- Provision of a minimum 100' protected internal driveway stem length prohibiting all turning and parking maneuvers on the site access.

US 15-501 and Culbreth Road/Mt. Carmel Church Road Intersection:

In consideration of existing geometric and right of way constraints at this location, NCDOT concurs with the TIA recommendation to reconfigure the westbound Mount Carmel Church Road approach to provide dual exclusive right turn lanes and a combination through/left turn lane and optimize signal timing as a feasible approach to enhance existing operation and mitigate anticipated impacts of site traffic at this intersection.

- As a condition of the pending driveway permit, the applicant shall reconfigure the intersection geometry as recommended and modify and optimize existing signal as needed to accommodate the new configuration.

NC 86 (Columbia Street)/NC 54 (Fordham Boulevard) Interchange:

NCDOT concurs with the TIA recommendations as follows:

- Create NC 54 By-pass westbound loop off ramp with free-flow southbound traffic at the bridge.
- Reconfigure existing intersection for longer northbound left turn lane.
- Create existing westbound off-ramp stop controlled right-turn movement.
- Provide single southbound through lane and right turn lane.
- Modify and optimize signal.
 - As a condition of the pending driveway permit, the applicant shall explore constructability of the above modifications and submit design concepts for NCDOT and Town review. If determined to be feasible the applicant shall construct the modifications to mitigate anticipated impacts.
 - If these modifications are determined to not be feasible at this time, the applicant shall extend storage lengths on the existing eastbound and westbound interchange off-ramps to accommodate anticipated queuing.

Internal Intersections and Circulation:

The study and conceptual site plan do not provide detailed information or analysis of internal traffic circulation and intersection operation. Additional site plan detail and evaluation is necessary to ensure appropriate internal circulation so as to avoid unacceptable operational and safety impacts on the adjacent road network.

Multi-modal Enhancements:

The study indicates that the site is expected to generate approximately 2565 daily transit trips and 259 daily bicycle/pedestrian trips. The concept plan indicates a proposed pedestrian overpass spanning US-15-501. No additional detail for the bridge or other multi-modal infrastructure is provided.

NCDOT is agreeable to installation of appropriate multi-modal infrastructure deemed to be necessary for this development. Though the TIA does not provide specific recommendations, any stipulated multi-modal enhancements including but not limited to sidewalk, bike lanes, bus pull offs, lighting, landscaping etc. on State maintained routes are subject to NCDOT design and encroachment requirements.

Installation of the proposed pedestrian overpass is subject to the requirements of North Carolina General Statute 136-18(37).

Cross-Access Connectivity:

Provision of cross access with the adjacent properties is encouraged to accommodate internal connectivity and improve distribution of existing and future traffic volumes on the adjacent public road network. There appear to be opportunities for future connections to the site backage road to properties to the north, south and east.

General Requirements:

It is necessary to obtain an approved driveway permit and/or encroachment agreement(s) prior to performing work on the NCDOT right of way. As a condition of the permit, the permittee shall be responsible for design and construction of the above stipulated improvements in accordance with NCDOT requirements. An approved permit will be issued upon receipt of approved roadway and signal construction plans, inspection fee, and any necessary performance and indemnity bonds.

The applicant shall dedicate any additional right of way necessary to accommodate the required road improvements or future improvements as stipulated.

Intersection radii and geometry shall be designed to accommodate turning movements of the largest anticipated vehicle.

All pavement markings shall be long life thermoplastic. Pavement markers shall be installed if they previously existed on the roadway.

The permittee shall be responsible for the installation and relocation of any additional highway signs that may be necessary due to these improvements and shall comply with the requirements of the MUTCD.

Feel free to contact me if you have any questions.

Sincerely,


C. N. Edwards Jr., PE
District Engineer

Cc: J. M. Mills, PE, Division Engineer
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