



TOWN OF CHAPEL HILL
Public Works Department

6850 Millhouse Road
Chapel Hill, NC 27516-8173

phone (919) 969-5100 fax (919) 969-2003
www.townofchapelhill.org

TO: Chuck Edwards, NCDOT Division 7 District Engineer
FROM: Kumar Neppalli, Traffic Engineering Manager
SUBJECT: Obey Creek Development Improvements – US 15-501
DATE: June 3, 2015

Please find below the Town staff's responses to NCDOT's recommended roadway stipulations listed in a letter dated May 25, 2015.

I appreciate your willingness to provide a written response by email prior to the Public Hearing on June 8, 2015.

Please let me know if you need additional information.

US-15-501 and Market Street/Proposed Obey Creek Access Intersection

- Construction of dual exclusive southbound left turn lanes, each with 300' of full storage and appropriate tapers on US 15-501.

Response: Obey Creek Applicant can accommodate this roadway stipulation, and would like to revisit and analyze the necessity of the second turn lane at the time of driveway permit application.

- Construction of a second exclusive eastbound left turn lane with 225' of full storage and appropriate tapers on existing Market Street

Response: We believe that the Obey Creek Applicant is not responsible for this roadway stipulation. Initial investigation revealed that the existing ROW is not enough to accommodate this stipulation and the Town requests that NCDOT consider removing this condition. Town will work with NCDOT to look other measures as the Park and Ride Lot development occurs.

- Provision of a minimum 250' protected internal stem length prohibiting parking and left turn maneuvers on existing Market Street and appropriate internal intersection configurations to avoid adverse impact to US 15-501.

Response: Town will work with NCDOT to implement this measure if feasible and as Park/Ride Lot development occurs.

- Closure or relocation of the proposed frontage street connection to beyond the limits of the protected internal stem length on existing Market Street.

Response: Town will work with NCDOT to implement this measure if feasible and as Park/Ride Lot development expansion occurs.

- Construction of an exclusive northbound right turn lane with 300' of full storage and appropriate deceleration taper on US 15-501.

Response: Obey Creek Applicant agreed to construct this roadway stipulation.

Construction of dual ingress lanes and three egress lanes consisting of an exclusive left turn lane, an exclusive through lane, and an exclusive right turn lane, each with 300' of full storage on the Obey Creek site access.

Response: Obey Creek Applicant agreed to construct this roadway stipulation with the exception of 300' of full storage on the Obey Creek site access. Obey Creek Developer and NCDOT agreed to review the internal storage requirement.

- Provision of a minimum 300' protected internal driveway stem length prohibiting all turning and parking maneuvers on the Obey Creek site access and appropriate internal intersection configuration to avoid adverse impact to US 15-501.

Response: Obey Creek Developer and NCDOT agreed to review the internal storage requirement and protected stem design configurations.

- Modification of existing traffic signal to accommodate the new intersection geometry with consideration of appropriate timing plans to maximize efficiency in both peak and off peak periods with preferential signal timing and progression provided to US 15-501.

Response: Obey Creek Applicant agreed to this stipulation.

US 15-501 and Sumac Road/Obey Creek Access Intersection:

- Construct dual exclusive southbound left turn lanes, each with 375' of full storage and appropriate tapers on US 15-501

Response: Obey Creek Applicant can accommodate this roadway stipulation, and would like to revisit and analyze the necessity of the second turn lane at the time of driveway permit application.

- Construct an exclusive northbound left turn lane with 400' of full storage and appropriate tapers on US 15-501.

Response: Obey Creek Applicant agreed to construct this roadway stipulation.

- Construct an exclusive northbound right turn lane with 300' of full storage and appropriate deceleration taper on US 15-501

Response: Obey Creek Applicant agreed to construct this roadway stipulation.

Provide a single ingress lane and three egress lanes consisting of an exclusive left turn lane, an exclusive through lane, and an exclusive right turn lane, each with 250' of full storage on existing Sumac Road.

Response: Town agreed to consider this stipulation and discuss with NCDOT as the Park and Ride Lot development expansion occurs.

- Provision of a minimum 250' protected internal driveway stem length prohibiting all turning and parking maneuvers on existing Sumac Road and appropriate internal intersection configuration to avoid adverse impact to US 15-501.

Response: Town and NCDOT agreed to review this stipulation as the Park and Ride Lot development expansion occurs.

- Closure or relocation of the proposed frontage street connection beyond the limits of the internal protected stem on existing Sumac Road.

Response: Town and NCDOT agreed to review this stipulation as the Park and Ride Lot development expansion occurs.

- Provide dual ingress lanes and three egress lanes consisting of an exclusive left turn lane, an exclusive through lane, and an exclusive right turn lane, each with 300' of full storage on the proposed Obey Creek Access.

Response: Obey Creek Applicant agreed to construct this roadway stipulation. Obey Creek Developer and NCDOT agreed to review the internal storage requirement.

- Provision of a minimum of 300' of protected internal driveway stem length prohibiting all turning and parking maneuvers on the proposed Obey Creek Access.

Response: Obey Creek Developer and NCDOT agreed to review the internal storage requirement and protected stem design configurations.

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

Response: Obey Creek Applicant can accommodate this roadway stipulation, and would like to revisit and further analyze the design of the frontage road at the time of driveway permit application.

- Construct new traffic signal to accommodate the new intersection geometry with consideration of appropriate timing plans to maximize efficiency in both peak and off-peak periods with preferential signal timing and progression provided to US 15-501.

Response: Obey Creek Applicant agreed to this stipulation.

Dedication/Reservation by the Applicant:

The Department's consultant, Stantec, has recently completed a corridor traffic analysis report for US 15-501 from NC 54 to US 64. The purpose of the study was to evaluate the existing (2013) and future year (2040) operations in regards to the corridor's ability to accommodate anticipated future growth. The study evaluated both "superstreet" and improved traditional intersections. The study identified that, in the 2040 scenario, "superstreets" provided the best operation for both the main-line as well as side streets, but also indicated that main-line operation in the subject area could be expected to operate acceptably using traditional intersections with the addition of a third through lane on US 15-501 in both directions. In order to accommodate the identified improvements directly attributable to site traffic impacts and to provide for the anticipated future improvement necessary for acceptable operation in the long range planning period, the applicant shall:

- Dedicate any needed right of way to accommodate required road improvements listed above and also adjust site plan to reserve sufficient right of way along the project frontages to accommodate a future third through lane on both directions of US 15-501.

Response: Obey Creek Applicant agreed to reserve sufficient width along its property frontage to accommodate an additional future through lane. NCDOT has acknowledged that the requirement for dedicated right turn lanes into the Obey Creek would not be required if the additional through lanes are added in the future. The Town and/or other developer will work with NCDOT to reserve/dedicate the ROW required on west side of US 15-501 as future development occurs.

Alternative Improvements NC 86 (Columbia Street)/NC 54 (Fordham Blvd.) Interchange:

Upon further evaluation by the development team members, construction of the westbound loop ramp as recommended in the HNTB traffic analysis has been determined to be beyond the ability of the applicant due to identified substantial potential impacts to adjacent properties and right of way needs beyond his control. As such the loop project is best pursued through the State Transportation Improvement Program (STIP) process. Based on information provided in the HNTB traffic analysis, the development team members have identified extension of turn lane storage on the existing westbound off ramp as a feasible and reasonable alternative to address identified traffic queuing and operation issues in the short term.

- As a condition of the pending driveway permit, the applicant shall extend the existing dual left turn lane storage along the full extent of the existing westbound off ramp to accommodate queue lengths identified in the 2022 build scenario of the traffic study.

Response: The Town will extend the existing pavement markings to extend the queue length of the left turn lanes as feasible within the existing pavement. The Town staff will coordinate this work with NCDOT and we would like to complete this work in July, 2015. The draft TIP 2016-2025 included several improvements to the westbound ramp (U-5304-D/E) and the improvements are scheduled to be constructed in 2023. The Town and NCDOT will work at the June 16th project scoping meeting to finalize further details on this TIP project.

Previous Requirements and Conditions:

All other requirements and conditions included in my previous correspondence dated September 26, 2014 and listed below for ease of reference remain unchanged and applicable.

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.

Response: Obey Creek Applicant agreed to this stipulation.

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.

Response: Obey Creek Applicant agreed to this stipulation.

- 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.

Response: Obey Creek Applicant agreed to this stipulation.

- Provision of a minimum of 150' of protected internal driveway stem length prohibiting all turning and parking maneuvers on the site access.

Response: Obey Creek Applicant can accommodate this stipulation, and would like to revisit and further analyze the design of the frontage road at the time of driveway permit application.

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

- Response: Obey Creek Applicant can accommodate this stipulation, and would like to revisit and further analyze the design of the stem length at the time of driveway permit application.

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.

Response: Obey Creek Applicant agreed to this stipulation.

- Construction of a single ingress lane and a single right turn-only egress lane with minimum of 100' full storage on the site access.

Response: Obey Creek Applicant agreed to this stipulation.

- Provision of a minimum 100' protected internal driveway stem length prohibiting all turning and parking maneuvers on the site access.

Response: Obey Creek Applicant can accommodate this stipulation, and would like to revisit and further analyze the design of the stem length at the time of driveway permit application.

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.

Response: Obey Creek Applicant agreed to this stipulation.