



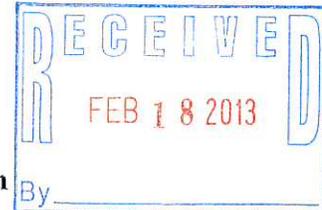
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

February 14, 2013

COUNTY: Wake
SUBJECT: TIA Review
Corners at Brier Creek Development
US 70 Highway at TW Alexander Drive Extension



Mr. H. Wesley Parham, PE
Assistant Director of Transportation
Department of Transportation, City of Durham
101 City Hall Plaza, 4th Floor
Durham, NC 27701

Dear Mr. Parham,

The Wake County District Office has completed a review of the comments and recommendations, pertaining to the Corners at Brier Creek development, provided by our Congestion Management Section. These comments result from review of a US 70/TW Alexander Drive Interchange Analysis dated December 2011, a Traffic Impact Analysis dated September 2012, and a Traffic Analysis Addendum for left-over access from US 70 dated December 2012 prepared by Kimley-Horn and Associates. District has worked closely with the developer, their consultant and the City of Raleigh in deriving the Quadrant Loop Interchange design being proposed. Based on our analysis of the site plan, and associated TIA documents, with consideration given to the impacts on the adjacent transportation facilities, we offer the following comments and requirements:

- The 1988 US 70 Corridor Plan identified Glenwood Avenue as a "Gateway Corridor" into Raleigh. The subsequent 1992 US 70 Corridor Study recommended overall improvements for Glenwood Avenue from the Durham County Line to Duraleigh Road. The focus of the study was on measures for controlling access and optimizing intersection efficiency to protect the traffic carrying capacity of the roadway. Study of the Quadrant Loop Interchange Design and the proposed left-over configuration show acceptable levels of service for the build out year and the 2035 design year. The proposed left-over can be removed once grade separation is achieved at TW Alexander Drive and therefore is consistent with relevant planning documents calling for US 70 to be converted to a freeway facility in the future. The proposed left-over is also consistent with the superstreet concept that traffic analysis was based upon for the U-2823 TIP Project involving the section of Glenwood Avenue from west of SR 1664 (Duraleigh Road) to west of SR 1837

(Westgate Road). District concurs with the recommendations and finds this design and proposed street network consistent with the concepts of the US 70 Corridor Study.

- The Transportation Element of the City of Raleigh's 2030 Comprehensive Transportation Plan desires to maintain Level of Service "E" or better on overall intersection operations at all times during peak hours. With the roadway improvements shown in the TIA, Level of Service "D" is achieved at the TW Alexander Drive/US 70 intersection, in both AM and PM peak hours, through the build-out year of 2017. Traffic operations remain at a level of service "D" in the 2035 design year, with conversion to a full grade separation, based upon the Quadrant Loop interchange design being proposed.
- The US 70/Brier Creek Mobility Fund Project (U-5518C) calls for conversion of the Brier Creek Parkway/US 70 intersection to an interchange. Design should occur within the next few years. Currently, right of way acquisition is slated for 2016 with construction slated for 2017. The Corners at Brier Creek project should not conflict with the U-5518C Project. The free-flow right-turn lane from northbound TW Alexander Drive to eastbound US 70 should complement operations of this future interchange. Projects U-5518A and U-5518B will look at future improvements to US 70 and the intersection of TW Alexander Drive/US 70 intersection. These projects are not funded and there is no design at this time.
- The recommended roadway improvements, identified in Congestion Management's review document, dated January 12, 2013 are attached. These recommendations result from review of the TIA and Addendum, prepared by Kimley-Horn and Associates. District Office has reviewed these comments and finds these roadway improvements adequate to mitigate the traffic impacts generated by the Corners at Brier Creek Development. In addition to the comments, the developer will at a minimum, be responsible for dedication of adequate right of way to provide for the future laneage identified in the 2035 analysis.

If you have any questions or need further assistance with this matter, please contact Bradley Kimbrell, or myself, at (919) 733-2814.

Sincerely

T.R. Elmore
District Engineer

TRE

Attachments

Cc: J. Wally Bowman, PE, Division Engineer (w/copy)

Doumit Ishak, Congestion Management Regional Engineer (w/copy)

Eric Lamb, PE, Manager, City of Raleigh Office of Transportation Planning (w/copy)

Ed Johnson, PE, Executive Director, N.C. Capital Area MPO (w/copy)

Recommendations

LEGEND

- ❶ Improvement by Developer. Congestion Management concurs with recommendation.
- ❷ Improvement by Developer. Additional or modified recommendation.
- ❸ Committed improvement by Del Web Development
- ❹ Committed improvement by Brier Creek Townes.
- ❺ Committed improvement by Brier Alexander Place.

Loop Road

Loop Road proposed as two-lanes eastbound and one-lane westbound. Loop Road is designed to serve as ramp to the future T.W. Alexander Drive interchange. The following recommendations are based on Loop Road being in place.

US 70 and Page Road Intersection

No improvements are recommended for site traffic.

US 70 and Loop Road Intersection

Restrict to Left-Over. ❶

- **WB US 70**
 - 100' Right-Turn Lane ❶
- **SB Loop Road**
 - Right-Turn Lane ❶
- **EB US 70**
 - 200' Left-Turn Lane ❶

US 70 and T.W. Alexander Drive Intersection

Poor LOS/excessive queuing is anticipated to persist after recommended developer mitigation.

- **EB US 70**
 - Restripe to provide an additional Thru Lane with 500' of storage while maintaining 100' of storage for the Right-Turn Lane ❸
- **NB T.W. Alexander Drive**
 - Dual Thru Lanes (One existing) ❶
 - Free Flow Right-Turn Lane (1200' Receiving Lane) ❷
- **SB T.W. Alexander Drive**
 - Dual 325' (Each) Left-Turn Lanes (One existing) ❶

US 70 and Brier Creek Parkway Intersection

Poor LOS/excessive queuing is anticipated to persist at this location; however, no improvements are recommended for site traffic.

T.W. Alexander Drive and Tract 1 RIRO Driveway Intersection

Restrict to Right-In Right-Out. ①

- **SB Tract 1 RIRO Driveway**
 - Two-lane cross-section: one ingress, one egress ①
 - Egress: Right-Turn Lane ①
 - 100' Internal Protected Stem ②

Loop Road and 70 Vest Driveway Intersection

Restrict to Right-In Right-Out. ①

- **SB Loop Road**
 - 50' Right-Turn Lane ①
- **EB 70 Vest Driveway**
 - Two-lane cross-section: one ingress, one egress ①
 - Egress: Right-Turn Lane ①
 - 100' Internal Protected Stem ②
- **WB 70 Vest Driveway**
 - Two-lane cross-section: one ingress, one egress ①
 - Egress: Right-Turn Lane ①
 - 100' Internal Protected Stem ②

Loop Road and Connector Road Intersection

New Signal ①

- **SB Connector Road**
 - 150' Dual Left-Turn Lanes ①
 - Dual Receiving Lanes ①
 - 50' Right-Turn Lane ①
- **EB Loop Road**
 - 150' Dual Left-Turn Lanes (only one through lane) ①
- **WB Loop Road**
 - 100' Right-Turn Lane ①

Loop Road and Tract 1 RIRO Driveway/Tract 2 West RIRO Driveway Intersection

Restrict to Right-In Right-Out

- **SB Tract 2 West RIRO Driveway**
 - Two-lane cross-section: one ingress, one egress ①
 - Egress: Right-Turn Lane ①
 - 100' Internal Protected Stem ②
- **NB Tract 1 RIRO Driveway**
 - Two-lane cross-section: one ingress, one egress ①
 - Egress: Right-Turn Lane ①
 - 100' Internal Protected Stem ②

- **WB Loop Road**
 - 50' Right-Turn Lane ①

Loop Road and Tract 1 Driveway Intersection

New Signal. ① This intersection should be located a minimum of 700' from T.W. Alexander Drive.

- **EB Loop Road**
 - 100' Right-Turn Lane ①
- **WB Loop Road**
 - 175' Left-Turn Lane ①
- **NB Tract 1 Driveway**
 - Three-lane cross-section: one ingress, two egress ①
 - Egress: Left-Turn Lane, Right-Turn Lane ①
 - 100' Internal Protected Stem ②

Loop Road and Tract 2 East RIRO Driveway Intersection

Restrict to Right-In Right-Out

- **SB Tract 2 East RIRO Driveway**
 - Two-lane cross-section: one ingress, one egress ①
 - Egress: Right-Turn Lane ①
 - 100' Internal Protected Stem ②
- **WB Loop Road**
 - 50' Right-Turn Lane ①

T.W. Alexander Drive and Loop Road Intersection

New Signal. ①

- **SB T.W. Alexander Drive**
 - 50' Right-Turn Lane ①
- **EB Loop Road**
 - 100' Left-Turn Lane ①
 - Thru/Left-Turn Lane ①
 - Right-Turn Lane ①
- **WB Alexander Place Driveway**
 - Three-lane cross-section: one ingress, two egress ⑤
 - Egress: Left-Turn Lane, Thru/Right-Turn Lane ⑤

ACC Blvd. and Connector/Tract 3 Driveway Intersection

- **EB ACC Boulevard**
 - 50' Left-Turn Lane ①
- **WB ACC Boulevard**
 - 50' Left-Turn Lane ①
- **NB Connector**
 - 50' Left-Turn Lane ①
- **SB Tract 3 Driveway**
 - Three-lane cross-section: one ingress, two egress ①
 - Egress: 50' Left-Turn Lane, Thru/Right Lane ①

T.W. Alexander and ACC Blvd. Intersection

New Signal ④

- **SB T.W. Alexander Drive**
 - 250' Left-Turn Lane, Through Lane, Thru/Right Lane ④
- **NB T.W. Alexander Drive Extension**
 - Left-Turn Lane, Thru Lane, Thru/Right Lane ③
- **EB ACC Blvd**
 - 150' Left-Turn Lane, Thru/Right Lane ⑤

Andrews Chapel Road and Cozart Rd./Tract 3 Driveway Intersection

Single-Lane Roundabout ①

Andrews Chapel Road and Del Webb Arbors Dr. Intersection

- **SB Andrews Chapel Road**
 - 100' Left-Turn Lane ③
- **NB Andrews Chapel Road**
 - 100' Left-Turn Lane ④
- **WB Del Webb Arbors Drive**
 - 100' Left-Turn Lane ③
- **EB Del Webb Arbors Drive**
 - 100' Left-Turn Lane ③

Andrews Chapel Road and Leesville Road Intersection

No improvements are recommended for site traffic.

Carpenter Pond Road and Leesville Road Intersection

No improvements are recommended for site traffic.

The Corners at Brier Creek
Addendum
SC-2012-035

-  Existing Laneage
-  NCDOT Recommendation
-  Concurred Recommendation
-  Laneage Built By Others
-  Existing Signal
-  Proposed Signal
-  Signal Proposed By Others
- XXX Concurred Storage
- XXX NCDOT Recommended Storage
- <XXX> Distance Between Intersections
- IPS Internal Protected Stem
- All Distances in Feet
- Drawing Not to Scale

