



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE

GOVERNOR

EUGENE A. CONTI, JR.

SECRETARY

February 3, 2011

To: Lyle Overcash, P.E.
Martin Alexiou Bryson, Inc.
4000 Westchase Boulevard, Suite 530
Raleigh, N.C 27607

Subject: Proposed Active Adult Community Traffic Impact Analysis Review (Revised)

The proposed Active Adult Community development site, developed by Pulte Homes, is located on SR 1906 (Leesville Road) northeast of US 70 spanning the territories of Durham County, Wake County, Durham City and Raleigh, North Carolina. According to the TIA, the proposed development will consist of up to 1,275 senior housing units consisting of 1020 detached units and 255 attached units. These units have a projected construction rate of 200 units per year. The anticipated build-out year is 2017 with an analysis year of 2018. The site is projected to generate an unadjusted volume of 4,786 daily trips with 238 A.M. peak hour site trips and 301 P.M. peak hour site trips. The development also proposes three (3) site accesses points with two (2) on SR 1906 (Leesville Road) located in Durham County and one (1) located on SR 2028 (T.W. Alexander Drive) in Wake County.

The TIA analyzed the following nine (9) intersections, of which three (3) are located in Wake County ***

- US 70 (Glenwood Avenue) and SR 2028 (T.W. Alexander Drive) – Signalized ***
- ACC Boulevard and Brier Creek Parkway – Signalized ***
- SR 1906 (Leesville Road) and SR 1908 (Doc Nichols Road) – Unsignalized
- SR 1906 (Leesville Road) and SR 1901 (Carpenter Pond Road) - Unsignalized
- SR 1905 (Olive Branch Road) and SR 1901 (Carpenter Pond Road) – Unsignalized
- SR 1905 (Olive Branch Road) and SR 1908 (Doc Nichols Road) – Unsignalized
- SR 2028 (T.W. Alexander Road) and Approved Development Driveway / Site Access #1 – Unsignalized ***
- SR 1906 (Leesville Road) and Approved Future Development/Site Access #2 – Unsignalized
- SR 1906 (Leesville Road) and Site Access #3 – Unsignalized

Approved Surrounding Developments

1. Doc Nichols Residential Development Phases 1 and 2

This project is defined as approved and is located on the northeast quadrant of the SR 1906 (Leesville Road) and SR 1908 (Doc Nichols) intersection. The TIA states that the development is to consist of 1,050 single family units and 150 townhomes anticipated for 2013.

2. **Eagles Mart Development**

The proposed Eagles Mart is located in the southeast quadrant of US 70 and SR 1906 (Leesville Road) intersection in Durham, NC. The TIA states that the development is to consist of a 3,552 square foot convenience mart with 18 fueling positions and a 1,368 square foot automated car wash facility anticipated for 2011.

3. **Alexander Place Phases 13 - 17**

This development is located in the City of Raleigh jurisdictional boundaries. Due to the relatively low traffic volumes, the traffic generated by these two developments is included in the background conditions.

TIP Roadway Improvement Projects Relevant to Proposed Development

- **NCDOT TIP #U-4720** proposes improvements along US 70 between SR 1919 (Lynn Road) and the Proposed Northern Durham Parkway.
- **NCDOT TIP #U-4721 “Northern Durham Parkway”**– proposes a new urban freeway facility on a new location from I-540 to US 501 (Roxboro Road).

Trip Generation and Distribution

- 10% to/from the west via SR 1906 (Leesville Road)
- 6% to/from the southeast via SR 1906 (Leesville Road)
- 6% to/from the north via SR 1905 (Olive Branch Road)
- 4% to/from the east via SR 1901 (Carpenter Pond Road)
- 12% to/from the southwest via Brier Creek Parkway
- 12% to/from the west via SR 2028 (T.W. Alexander Drive)
- 1% to/from the northwest via US 70 (Glenwood Avenue)
- 45% to/from the southeast via US 70 (Glenwood Avenue)
- 4% to/from the south via ACC Boulevard

Capacity Analysis for Existing and Future Conditions

- Existing (2010) Condition
- Projected (2018) No-Build Condition (Existing Condition + 1% Background growth + Approved Developments)
- Projected (2018) Build Condition (Projected No-Build Condition+ Site)
- Projected (2018) Build Condition Improved (Projected Build Condition + Improvements)

Summary of Road Improvements

The Department has reviewed the preliminary site plan and Traffic Impact Analysis (TIA) for the Active Adult Community Development prepared by Martin Alexiou Bryson, Inc. (Sealed and dated November 9, 2010). In order to accommodate the site-generated traffic safely and efficiently, while also attempting to protect the functional integrity and operational capacity of the adjacent roadway facilities, we require the following improvements and/or restrictions related to this development. Any additional changes to the site plan must be submitted in writing to the District Office.

US 70 (Glenwood Avenue) and SR 2028 (T.W. Alexander Drive) Intersection ***

Due to the anticipated impacts from additional traffic volumes, signal modification may be required to accommodate the revised intersection geometry.

Southbound US 70 (Glenwood Avenue)

Restripe this approach to provide an additional through lane with a minimum of 500 feet storage and appropriate taper while maintaining a minimum of 100 feet for the exclusive right turn lane and appropriate taper.

ACC Boulevard and Brier Creek Parkway Intersection ***

No future improvements are necessary at this intersection at this time to mitigate site-generated traffic.

SR 1906 (Leesville Road) and SR 1908 (Doc Nichols Road) Intersection

It should be noted that if the proposed improvements are not provided by the other developers, then this developer should be responsible for the improvements. These improvements are listed as follows:

Due to the anticipated impacts that additional traffic volumes associated with this development on other adjacent intersections within the area, this intersection may require signal installation to accommodate additional traffic volume.

Eastbound SR 1906 (Leesville Road)

- Construct an exclusive left-turn lane with a minimum of 300 feet storage and appropriate taper.

Southbound SR 1908 (Doc Nichols Road)

- Construct an exclusive left-turn lane with a minimum of 150 feet storage and appropriate taper.

The following recommendations are based on these improvements.

No future improvements are necessary at this intersection at this time to mitigate site-generated traffic.

SR 1906 (Leesville Road) and SR 1901 (Carpenter Pond Road) Intersection

No future improvements are necessary at this intersection at this time to mitigate site-generated traffic.

SR 1905 (Olive Branch Road) and SR 1901 (Carpenter Pond Road) Intersection

No future improvements are necessary at this intersection at this time to mitigate site-generated traffic.

SR 1905 (Olive Branch Road) and SR 1908 (Doc Nichols Road) Intersection

It should be noted that if the proposed improvements are not provided by the other developers, then this developer should be responsible for the improvements. These improvements are listed as follows:

Southbound SR 1905 (Olive Branch Road)

- Construct an exclusive right-turn lane with a minimum of 125 feet storage and appropriate taper.

The following recommendations are based on these improvements.

No future improvements are necessary at this intersection at this time to mitigate site-generated traffic.

SR 2028 (T.W.Alexander Road) and Approved Development Driveway/Site Access #1 Intersection

Northbound Approved Development Access

- Restripe this approach to provide a shared left/ through/ right-turn lane.

Southbound Site Access #1

- Construct a three (3) lane cross-section consisting of one (1) ingress and two (2) egress lanes consisting of an exclusive left-turn lane and shared through/right-turn lane. A minimum of 100 feet internal protected storage should be provided.

SR 1906 (Leesville Road) and Approved Future Development/Site Access #2 Intersection

The TIA illustrates the proposed development site access #2 to align with a future approved development driveway. The development should coordinate efforts with the future approved development to ensure appropriate cross access connectivity.

Southbound SR 1908 (Doc Nichols Road)

- Restripe this approach to provide a shared through/ right-turn lane.

Northbound Site Access #2

- Construct a three (3) lane cross-section consisting of one (1) ingress and two (2) egress lanes consisting of an exclusive left-turn lane and shared through/right-turn lane. A minimum of 100 feet internal protected storage should be provided.

Westbound SR 1906 (Leesville Road)

- Construct an exclusive left-turn lane with a minimum of 100 feet storage and appropriate taper.

SR 1906 (Leesville Road) and Site Access #3 Intersection

Westbound SR 1906 (Leesville Road)

- Construct an exclusive left-turn lane with a minimum of 100 feet storage and appropriate taper.

Southbound Proposed Driveway #3

- Construct a two (2) lane cross-section consisting of one (1) ingress and one (1) egress lane consisting of a shared through/right-turn lane. A minimum of 100 feet internal protected storage should be provided.

General

Cross-access to adjacent properties is strongly encouraged to reduce repetitive trips and provide future alternative routes of ingress/egress.

Due to, but not limited to, the comments and recommendations from this review of the proposed developments, changes in the internal circulation may be necessary to ensure that driver confusion is minimized to the maximum extent possible.

Any signal revisions, modifications, or additions necessitated by the development should be coordinated with the Regional Traffic Engineer, the Division Traffic Engineer, the Signals and Geometrics Section and the City of Durham.

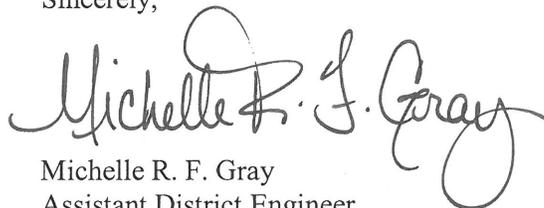
Any pavement marking revisions/modifications necessitated by the development should be the responsibility of the developer and coordinated with the Division Traffic Engineer.

Any roadway modifications or improvements necessitated by the development should be the responsibility of the developer unless otherwise noted.

Reference should also be made to the information included in the "General Recommendations Attachment."

NCDOT driveway permits will be required for driveway access onto SR 1906 (Leesville Road) and SR 2028 (T.W. Alexander Drive). Once the driveway permit has been approved and issued, a copy of the final driveway permit requirements should be forwarded to the office in which the permit was approved. If we can provide further assistance, please contact me at (919) 220-4750.

Sincerely,

A handwritten signature in black ink that reads "Michelle R. F. Gray". The signature is written in a cursive style with a large, looping "G" at the end.

Michelle R. F. Gray
Assistant District Engineer

Attachment

cc: Mr. Reid Elmore, NC DOT Division 5, District 1
Mr. H. Wesley Parham, P.E.
Mr. Bowman Kelly, PE, PTOE, City of Raleigh

General Recommendations Attachment
(For the Active Adult Community Development)

Adequate horizontal and vertical sight distances should be reserved at all proposed entrances. Foliage that interferes with sight distance should be cut back to protect lines of sight. The District Engineer should determine if all drainage facilities are adequate. Curb cuts and curb ramps should be constructed in conformance with the "*Guidelines for Curb Cuts and Ramps for Disabled Persons*," if applicable.

The developer may be required to obtain an approved encroachment agreement covering proposed work within the state right-of-way. If this is the case, the encroachment should be cross-referenced to this review.

All street and driveway entrances onto state system roadways should be controlled with appropriate traffic control devices, including but not limited to, stop, yield, directional, regulatory, and advisory signs and pavement markings. All traffic control devices shall conform to the requirements set forth in the Manual on Uniform Traffic Control Devices. Final pavement marking and signing plans should be submitted to the Division Traffic Engineer for approval prior to the installation of any signs and/or pavement markings.

Unless otherwise noted, a recommended width of 40 feet (curb face to curb face) should be used at each drive. It is also recommended that 40 feet (minimum) radii should be used at each drive to accommodate any service type vehicles or truck traffic that may visit the site.

If the developer anticipates adding or petitioning for addition to the state system, all roads/streets should be designed and constructed in conformance with the current North Carolina Department of Transportation design and construction guidelines.

All "outparcels" or "excluded areas" should be served internally with no additional access onto abutting roadways. The developer should convey this condition in any lease or sell agreements.

As required by the "*Policy on Street and Driveway Access to North Carolina Highways*," dated July 2003, the applicant is responsible for identifying all right-of-way and/or control-of-access limits and for including this information on all submittals. Failure to accurately disclose R/W and C/A limits could result in the denial or closure of access points.

Adequate right-of-way for widening and sight distance triangles should be reserved. Consideration should be given to the possible future need for signalization and associated span poles, controller and pad, and guy wires at the intersections along NC 98 (Wake Forest Highway) and SR 1906 (Leesville Road).

Any additional development, either within this site or adjacent to this site, that intends on using this development's access will require an updated driveway permit and re-evaluation of geometric and traffic control needs. Where possible, opposite side driveways should be aligned to prevent the operational and safety problems caused by offset driveways.

All widening should include appropriate transitional and deceleration tapers. Recommended turn lane and transitional treatments are shown on pages 78 and 79 of the "*Policy on Street and Driveway Access to North Carolina Highways*," dated July 2003.