



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

March 10, 2014

Mr. Andrew S. Topp, P.E.  
VHB Engineering NC, P.C.  
4000 Westchase Boulevard, Suite 530  
Raleigh, NC 27607

**Subject:** Erwin Terrace Phase IV TIA

The proposed expansion will include an additional 50,000 square-feet of retail, 325,000 square-feet of office and 225 apartment units. The development is expected to generate an additional 6,418 trips per day, with 577 a.m. peak-hour trips (418 entering and 159 exiting) and 710 p.m. peak-hour trips (249 entering and 461 exiting).

Site access will be provided via the existing site driveway connections to Lambeth Circle and LaSalle Street. The expected build-out year is 2017, and the TIA analysis year is 2018. The Erwin Terrace TIA was prepared by VHB Engineering NC, P.C. in November 2013.

**The TIA analyzed the following intersections:**

- Hillsborough Road and LaSalle Street;
- LaSalle Street and Campus Walk Avenue;
- LaSalle Street and Lambeth Circle (Site Driveway);
- Cameron Boulevard (NC 751) and Erwin Road;
- Erwin Road and Morreene Road / Towerview Drive;
- Erwin Road and Lambeth Circle (Site Driveway);
- Erwin Road and LaSalle Street; and
- Erwin Road and Douglas Street / Research Drive.

**Approved Surrounding Developments**

- Duke Medical Pavilion (Hospital Addition)
- Duke University Vivarium Facility
- Duke Eye Clinic Expansion
- Duke Dining / Events Pavilion
- Duke School of Nursing Expansion
- Durham Place Apartments
- Duke Environment Hall (LSRC Annex)

### **TIP Roadway Improvement Projects Relevant to Proposed Development**

- None in the area

### **Trip Generation and Distribution**

The assignment of site traffic on the study area roadway network was based on the following trip distribution percentages:

The trips will be distributed as follows:

- 2% to/from the North via LaSalle Street;
- 10% to/from the West via Hillsborough Road;
- 5% to/from the East via Hillsborough Road;
- 3% to/from the West via Campus Walk Drive;
- 1% to/from the North via Douglas Street;
- 2% to/from the South via Research Drive;
- 32% to/from the East via Erwin Road;
- 5% to/from the South via LaSalle Street;
- 8% to/from the West via Morreene Road;
- 2% to/from the East via Towerview Drive;
- 20% to/from the West via Cameron Blvd (NC 751) and
- 10% to/from the East via Cameron Blvd (NC 751)

### **Capacity Analysis for Existing and Future Conditions**

- Existing (2013) conditions;
- No-Build (2018) conditions (2013 Existing + Background growth traffic); and
- Build (2018) conditions (2013 Existing + Background growth traffic + Site traffic).

### **Summary of Road Improvements**

The Department has reviewed the preliminary site plan and Traffic Impact Analysis (TIA) for Erwin Terrace Phase IV development prepared by VHB Engineering NC, P.C., (Sealed and dated 11/11/13). 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 recommend 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.

#### **LaSalle Street and Lambeth Circle (Site Driveway)**

- Construct the eastbound approach to provide two egress lanes (an exclusive left-turn lane with 150 feet of storage and appropriate tapers and a shared through/right-turn lane).

#### **Erwin Road (SR 1320) at Lambeth Circle (Site Driveway)**

- Construct the southbound approach to provide two egress lanes (an exclusive left-turn lane with a minimum of 100 feet of storage plus appropriate tapers and an exclusive right-turn lane).

**Erwin Road (SR 1320) at Cameron Blvd. (NC 751)**

- On Erwin Road, restripe the southbound center lane designation from an exclusive left turn to a combo left/right turn lane. Final lane configuration shall consist of an exclusive right turn lane, combo left/right turn lane and an exclusive left turn lane. Additional signage to prohibit southbound right turns on red (center lane) and signal modifications will be required.

**Hillsborough Road and LaSalle Street**

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

**LaSalle Street and Campus Walk Avenue**

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

**Erwin Road and Morreene Road / Towerview Drive**

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

**Erwin Road and LaSalle Street**

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

**Erwin Road and Douglas Street / Research Drive**

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

**General**

The future Durham-Orange Light Rail Transit Project shall be accommodated.

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.

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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 would be required for driveway access on Erwin Road (SR 1320). If we can provide further assistance, please contact me at (919) 220-4750.

Sincerely,

A handwritten signature in black ink that reads "Mike Goodwin". The signature is written in a cursive style with a horizontal line at the end.

Mike Goodwin  
Assistant District Engineer

Attachment  
cc: Mr. H. Wesley Parham, P.E.

MKG

**Attachment**  
(For Erwin Terrace Phase IV 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. Any additional development, either within this site or adjacent to this site, that intends on using the developments access will require an updated driveway permit and re-evaluation of geometric and traffic control needs

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.

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.

Where possible, opposite side driveways should be aligned to prevent the operational and safety problems caused by offset driveways.