



CITY OF DURHAM | NORTH CAROLINA

Date: April 21, 2014

To: Amy Wolff, Durham City County Planning Department
From: Bill Judge P.E., City of Durham Department of Transportation
Subject: Hanover Pointe Sub-Area C (Z1400004) Traffic Impact Analysis

The City-County Unified Development Ordinance requires that a Traffic Impact Analysis (TIA) be prepared for development plan submittals estimated to generate 150 or more vehicle trips during the peak-hour. A TIA was previously prepared with the development plan (Z06-04) for the overall Hanover Pointe (formerly Ellington Place). Site plans for Hanover Point Sub-Area A and Sub-Area B on the east and west sides of N. Mineral Springs have been previously approved and are currently under construction. The proposed Hanover Pointe Sub-Area C development is located adjacent to the existing Aston Hall subdivision, north of Sherron Road and east of S. Mineral Springs Road.

The previous TIA assumed the completion of multiple roadway improvements at the intersection of Sherron Road and Ashton Glen proffered by the Brightleaf at the Park development. These improvements included an additional access point on the south side of Ashton Hall for access to the Brightleaf at the Park development which was subsequently denied by NCDOT. Additionally, the previous TIA assumed build-out of the Brightleaf at the Park development at a density higher than is now being constructed. The purpose of this analysis is to determine if the previously proffered roadway improvements at the intersection of Sherron Road and Ashton Glen, from the previous development plan (Z06-04), should be required of this development plan (Z1400014). The TIA was prepared by Ramey Kemp and Associates, Inc. in October 2013.

Study Area

The following intersection from the original TIA was included in the TIA:

- Sherron Road and Ashton Glen.

Traffic Data Collection

The a.m. and p.m. peak-hour intersection turning movement counts were taken between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. in September 2013.

Trip Generation

Site generated traffic was computed based on ITE's *Trip Generation Manual, 9th Edition, 2012*. The TIA used the following ITE trip generation use for the proposed development:

USE	SIZE	ITE CODE
Single-Family	38 units	210

The proposed uses would generate a total of 432 daily trips with 36 trips occurring during the a.m. peak-hour and 44 trips occurring during the p.m. peak-hour.

Trip Distribution and Assignment

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

- To/From the North via McLamb Drive: 10% of site trips;
- To/From the West via Sherron Road: 81% of site trips; and
- To/From the East via Sherron Road: 9% of site trips.

Approved Developments and Background Growth

Approved developments are defined as approved or pending, but not yet constructed, projects within the vicinity of the subject project. There are four (4) approved developments adjacent to the site.

- Hanover Point Sub-Area A (single-family development located on the west side of S. Mineral Springs Road, south of Pleasant Drive);
- Hanover Point Sub-Area B (townhome development located on the east side of S. Mineral Springs Road, south of Pleasant Drive);
- Ashton Hall (single-family development located on the north side of Sherron Road at Ashton Glen); and
- Brightleaf at the Park (single-family and townhome development on the south side of Sherron Road at Golden Belt Parkway).

TIP Roadway Improvements

There are no significant scheduled transportation improvement projects in the study area vicinity.

Capacity Analysis

Capacity analyses were performed using Synchro 7.0 for the a.m. and p.m. peak hours for the following scenarios:

- Existing (2013) conditions;
- No-Build (2016) conditions (2013 Existing + Background growth traffic); and
- Build (2016) conditions (2013 Existing + Background growth traffic + Site traffic).

This development is located within the Durham Comprehensive Plan Suburban Tier where the adopted Level of Service (LOS) standard is LOS D. The following table summarizes the average delay for the various LOS for unsignalized and signalized intersections:

	Signalized Intersections	Unsignalized Intersections
Level of Service	Average Vehicle Delay (Seconds)	Average Vehicle Delay (Seconds)
A	0-10	0-10
B	10-20	10-15
C	20-35	15-25
D	35-55	25-35
E	55-80	35-50
F	>80	>50

Sherron Road and Ashton Glen

The following table summarizes the Levels of Service at this existing unsignalized intersection:

Scenario	a.m. LOS (delay)	p.m. LOS (delay)
Existing (2013)	D* (31 seconds)	B* (14 seconds)
No-Build (2016)	F* (96 seconds)	C* (21 seconds)
Build (2016)	F* (128 seconds)	C* (22 seconds)

* Unsignalized operation, with LOS reported for the worst (SB) approach

With the existing intersection configuration, the intersection is expected to operate at an acceptable LOS C in the p.m. peak-hour and a LOS F in the a.m. peak-hour for the Build (2016) condition. Although a LOS F is undesirable at signalized intersections, a LOS F is typical at many unsignalized intersections and driveways during the peak hours as nearly all of the anticipated delay is confined to the side street approach. Given the projected traffic volumes, a traffic signal is not warranted for the Build condition. No improvements are recommended or required at this intersection.

The following improvements were previously required of this development, but are no longer needed to accommodate the proposed site traffic:

- Construct an additional eastbound through lane on Sherron Road at Ashton Glen;
- Construct an additional westbound through lane on Sherron Road at Ashton Glen; and
- Install a traffic signal at the intersection of Sherron Road and Ashton Glen.

Summary of Required Improvements:

No roadway improvements are proposed or required within the study area to accommodate the additional site traffic.