



Z-17-02-004

City of Greensboro Planning Department Zoning Staff Report and Plan Amendment Evaluation

Zoning Commission Hearing Date: February 20, 2017

GENERAL INFORMATION

APPLICANT	Marc Isaacson on behalf of Cheryl Denise Pegram, Emily Subotnik and Lorquest Properties, LLC
HEARING TYPE	Rezoning Request
REQUEST	Rezone from R-3 (Residential Single-Family) to PUD (Planned Unit Development)
CONDITIONS	<ol style="list-style-type: none">1. Uses for Lot A, containing 15.8 acres, as shown on the approved PUD Concept Plan dated January 11, 2017 shall be limited to a maximum of 284 residential units.2. Uses for Lot B, containing 3.9 acres, as shown on the approved PUD Concept Plan dated January 11, 2017 shall be limited to all uses permitted in the Commercial High (C-H) district, excluding residential uses and the total square footage shall be limited to a maximum of 34,200 square feet.
LOCATION	690 & 696 Brigham Road
PARCEL ID NUMBER(S)	7816417180 & 7816408687
PUBLIC NOTIFICATION	The notification area for this public hearing was 600 feet (Chapter 30-4-1.4 of the Land Development Ordinance requires notification of the owner of that parcel of land and the owners of all parcels of land adjoining and contiguous to that parcel of land as shown on the County tax listing). 17 notices were mailed to those property owners in the mailing area.
TRACT SIZE	19.7 Acres
TOPOGRAPHY	Primarily flat
VEGETATION	Undeveloped
<u>SITE DATA</u>	
Existing Use	Undeveloped

	Adjacent Zoning	Adjacent Land Uses
N	R-3 (Residential Single-Family)	Single-family dwellings
E	BP (Business Park)	NC-68 Right-of-way
W	R-3 (Residential Single-Family)	Single-family dwellings and undeveloped
	CD-BP (Conditional District-Business Park)	Industrial shell buildings
S	R-3 (Residential Single-family)	Undeveloped

Zoning History

Case #	Date	Request Summary
N/A	N/A	The subject property is currently zoned R-3 (Residential Single-Family) and has been since the adoption of the Land Development Ordinance (LDO) in July 2010. Prior to the adoption of the LDO, the property was zoned RS-40 (Residential Single-Family).

ZONING DISTRICT STANDARDS

District Summary *

Zoning District Designation:	Existing (R-3)	Requested (PUD)
Max. Density:	3.0 units per gross acre	N/A.
Typical Uses	Primarily intended to accommodate low density residential single family dwellings.	Conditioned to allow 284 residential units on Lot A and C-H district uses, excluding residential uses, with a maximum square footage of 34,200 sq. ft. on Lot B.

**These regulations may not reflect all requirements for all situations; see the City of Greensboro Land Development Ordinance for all applicable regulations for site requirements for this zoning district.*

SPECIAL INFORMATION

Overlay District Ordinance/Historic Preservation: The subject site is located within the NC 68 Scenic Corridor Overlay District. Consult the Scenic Corridor Overlay Districts Design Manual for detailed applicable requirements and design guidelines for screening, signage, fuel pumps and awnings, architecture, and other elements.

Environmental/Soils

Water Supply Watershed If site drains to the East, site will drain to Greensboro Watersupply Watershed WS-III, Brush Creek sub-basin. If site drains to the West, site will drain to Upper Randleman Lake Watersupply Watershed, East Fork Deep River sub-basin. Maximum High Density for both watersupply watersheds is 70% with sewer and Low Density development is 24%. Site must meet current watersupply watershed requirements, water quality and water quantity control must be addressed.

Floodplains <800FT

Streams N/A

Other: Site is located within the 5 statute mile radius of the Greensboro PTI Airport. BMP's that hold a normal pool elevated are not encouraged.

Utilities (Availability)

Contact Kenny Treadway at 336-373-2897 for a water and sewer feasibility to determine availability.

Airport Overlay District & Noise Cone

n/a

Landscaping & Tree Conservation Requirements

Landscaping:

Street Yards:

- Adjacent NC Hwy 68: The site is within the NC Highway 68 Scenic Corridor Overlay District. For parcels fronting NC Hwy 68, street yards shall have an average of 30' in width, with a minimum width of 20', and have a planting rate of four canopy trees, four understory trees, and 34 shrubs per 100 linear feet.
- Adjacent Brigham Rd.: The required street planting yard must have a minimum width of 10 feet (as measured from the outside edge of the right-of-way or the back of the sidewalk, whichever is further from the street centerline) and include at least 2 canopy trees and 17 shrubs per 100 linear feet of required street planting yard, not including allowed driveways.

Buffer Yards:

- Lot A: Adjacent to single family residential: Type C buffer yard, with an average width of 15', a minimum width of 10', and a planting rate of 2 canopy trees, 3 understory trees, & 17 shrubs per 100 linear feet.
- Lot B: Adjacent to multi-family residential: Type B buffer yard, with an average width of 25', a minimum width of 20', and a planting rate of 3 canopy trees, 5 understory trees, and 25 shrubs per 100 l.f.
- Lots A and B: Adjacent to vacant property: Vehicular Use Area buffer yard (see below) between any parking lot or drive aisle and the adjacent property line.

Parking Lots:

- When a parking lot or other vehicular use area abuts a vacant site or a site with the same land use classification as the subject site, a planting yard with a minimum width of 5 feet must be provided between the parking lot/vehicular use area and the abutting (interior) property line. This required planting area must be landscaped with at least 2 understory trees and 18 evergreen shrubs per 100 linear feet.
- If a lot adjacent to NC Hwy 68 has a parking lot located between the right-of-way and the principal building line, the parking lot shall be screened at a height of four and one-half feet with landscaping, berms, solid fencing, masonry walls, or any combination thereof.

- Trees for required parking spaces: 1 canopy tree per 12 spaces, in islands or medians within the parking lot area.

Tree Conservation: For 19.7 acres, 10% of parcel size in critical root zone to be dedicated for Tree Conservation.

Transportation

Street Classification: Brigham Road – Collector Street.
NC 68 – Freeway.

Site Access: All access(s) must be designed and constructed to the City of Greensboro standards.

Traffic Counts: None Available.

Trip Generation: 24 Hour = 5,226, AM Peak Hour = 224, PM Peak Hour = 466.

Sidewalks: Sidewalks are a requirement of the Development Ordinance. 5' sidewalk with a 5' grass strip is required along both sides of thoroughfares. 5' sidewalk with a 3' grass strip is required along one side (at a minimum, collectors may require sidewalk on both sides) of all other street types. Sidewalk does not exist along the frontage of this property.

Transit in Vicinity: No.

Traffic Impact Study: Yes, required per TIS Ordinance. Please see the end of this staff report for the Executive Summary of the TIS.

Street Connectivity: N/A.

Other: N/A.

IMPACT/POLICY ANALYSIS

Land Use Compatibility

The proposed **PUD (Planned Unit Development)** zoning would allow land uses that are compatible with the general character of the area.

Connections 2025 Comprehensive Plan Policies

The Future Land Use Map of the Western Area Plan designates this location as **Employment Area**. The requested **PUD (Planned Unit Development)** zoning district is generally consistent with the **Employment Area** future land use designation.

Connections 2025 Written Policies

Land Use Goal 4.1 – Growth Strategy: Promote sound investment in Greensboro's urban areas, including Center City, commercial and industrial areas, and neighborhoods.

Policy 4A: Remove present impediments to infill and investment in urban areas.

Policy 4B: Target capital investments to leverage private investment in urban areas.

Policy 4C: Promote new patterns and intensities of use to increase economic competitiveness and enhance quality of life in urban areas.

Policy 4D: Identify potential opportunities and selectively target, plan and promote development/reuse initiatives.

Community Character, Goal 5.2 – Man-Made Environment: Preserve and enhance the character and visual quality of Greensboro’s built environment, including historic resources, private developments, and public landscapes.

Policy 5E: Improve the aesthetic quality of publicly owned and maintained landscapes.

Policy 5F: Implement and improve design standards governing the appearance of development from public roadways.

Housing and Neighborhoods, Goal 6: Meet the needs of present and future Greensboro citizens for a choice of decent, affordable housing in stable, livable neighborhoods that offer security, quality of life, and the necessary array of services and facilities.

Policy 6C: Promote the diversification of new housing stock to meet the needs of all citizens for suitable, affordable housing.

Economic Development, Goal 7: Promote a healthy, diversified economy with a strong tax base and opportunities for employment, entrepreneurship and for-profit and non-profit economic development for all segments of the community, including under-served areas such as East Greensboro.

Policy 7A: Target city investment and regulatory policies for economic development.

Policy 7C: Ensure that city land use policies and regulations allow for an adequate supply of land to accommodate economic development.

Transportation, Goal 8: Develop and maintain a safe, efficient, and environmentally sound transportation system that provides convenient choices for accessing destinations throughout Greensboro and the Triad, including a range of well-integrated transit, pedestrian, and bicycle linkages.

Policy 8A: Maintain a roadway network that safely and efficiently accommodates vehicular traffic while supporting other community objectives defined in the Comprehensive Plan.

Connections 2025 Map Policies

Employment Area: A significant portion of the Western Area is designated as an area for employment uses. The majority of the demand for industrial and office land projected in the Market Analysis will be absorbed in the footprint of the Employment Area.

While the Western Area is a preferred residential destination it is also an employer’s location of choice due to the existing and planned highway infrastructure, rail and air access and proximity to a large skilled workforce. Preservation and preparation of lands contiguous to existing industrial is critical to ensuring that the Western Area continues to grow as an employment center. In addition, quality-of-life factors, such as walkability and access to amenities, are increasingly important to employer location decisions. While the Western Area has great access and infrastructure, additional improvements are needed to ensure continued employment growth in the area.

The employment area will grow through a combination of expansion of existing businesses, redevelopment, infill and new development projects. As noted in the Market Analysis, there will be significant demand for land for both office and industrial use over the next twenty years. While some of the 767,000 square feet of office demanded in the area will be met by development within the West Market Village Center and to a lesser extent the Campus Village Center, the majority will occur in the main employment areas noted on the plan. The

type of office uses projected for the area include strong growth in the services, retail trade and F.I.R.E. (financial, insurance and real estate) sectors.

Industrial forecasts suggests that there will be demand for nearly two million square feet of industrial space through 2030. Growth in the construction and information technology industries will drive most of this demand.

The Western Area is also a prime location for employers to look for assemblages of land to accommodate a large footprint facility. Similar to the FedEx Ground Facility in the neighboring Triad Business Park, the Western Area has the potential to attract an employer of similar size if contiguous industrial lands are preserved for future employment use. Ensuring a “drop-in” ready site is available in the Western Area will significantly contribute to the economic vitality of the area.

In order to accommodate this growth a strong network of streets are needed to promote connectivity internal and external to the area. Consideration of future connections and improvements, such as the Pegg-Thatcher connector and extension of Bryan Boulevard will be reviewed to determine their feasibility and benefits to the suggested future land use pattern. Future streets employ a context sensitive design to ensure the roads meet safety, mobility and aesthetic requirements.

Pedestrian infrastructure such as sidewalks and crosswalks create places where employees can exercise on breaks or walk to the West Market Street Village for lunch. Street lighting and wayfinding systems provide additional safety and convenience for both day and night shift employees.

CONFORMITY WITH OTHER PLANS

City Plans

Sustainability Action Plan

Element 1) Transportation and Land Use:

Policy 1) Encourage increased density, a mix of land uses and more integrated links between transportation and land use through changes to Greensboro’s Comprehensive Plan, Development Ordinance and other related plans.

Element 2) Green Jobs and Buildings:

Policy 3) Develop a coordinated City program to provide technical support, energy audits and education and outreach to increase energy efficiency and conservation in commercial and residential buildings.

Policy 4) Use a combination of code changes, incentives, partnerships and education to promote green building in Greensboro.

Policy 6) Promote more efficient use of water through education, partnerships and pilot projects.

Element 3) Waste Reduction and Recycling:

Policy 7) Employ a combination of expanded recycling infrastructure, regulations and incentives to increase Greensboro’s solid waste diversion and recycling rates.

Element 6) Education and Outreach:

Policy 11) Provide technical support, awards and recognition to individuals and organizations furthering Greensboro’s energy and sustainability efforts.

Western Area Plan**Employment Area (EA) Recommendations**

- Recommendation EA-1)** Preserve and market sites for economic development within the Employment Area.
- Recommendation EA-2)** Market the Western Area as logistics hub.
- Recommendation EA-3)** Support efforts to attract aviation-related industry.
- Recommendation EA-4)** Improve the local transportation network within the Employment Area.

Transportation Recommendations

- Recommendation T-1)** Integrate the Western Area Land Use and Infrastructure Plan into the Long Range Transportation Plan.
- Recommendation T-2)** Conduct a detailed analysis of any additional proposed major roads and road widenings beyond the current construction program.
- Recommendation T-3)** Enhance the internal network of streets.
- Recommendation T-4)** Encourage transportation improvements that will respect and support the rural ambiance and character of the Western Area.
- Recommendation T-5)** Support plans for transit along West Market Street.
- Recommendation T-6)** Develop and implement ongoing, coordinated regional congestion management and operations processes (including Intelligent Transportation System elements and Transportation Demand Management strategies) to maximize the efficient use of existing and planned infrastructure.
- Recommendation T-7)** Maintain close coordination with the planning activities of the Piedmont Triad International Airport Authority for the airport and ancillary development.

Gateways & Corridors Recommendations

- Recommendation GC-1)** Create a southern gateway into the Western Area.
- Recommendation GC-2)** Enhance the appearance of West Market Street.
- Recommendation GC-3)** Preserve and enhance the appearance and operation of NC 68 north of Pleasant Ridge Road.

Utilities Recommendations

- Recommendation U-1)** Support water extension into Service Area C.
- Recommendation U-2)** Upgrade water pumps due to challenges in peak periods.
- Recommendation U-3)** Delay sewer service to basin north of West Market Street and west of Pleasant Ridge Road (Service Area C) to preserve rural and agricultural character.
- Recommendation U-4)** Encourage coordination among neighboring jurisdictions in the timing and provision of infrastructure.
- Recommendation U-5)** Work closely with Guilford County, High Point and Kernersville to track infrastructure upgrades, existing and proposed distribution lines and available capacities for water and wastewater facilities.

Governance Recommendations

- Recommendation G-1)** Work closely and cooperatively with the municipalities in and jurisdictions of Guilford and Forsyth Counties so that development can be guided towards areas planned for urban and suburban development and away from areas with valued environmental or rural qualities.
- Recommendation G-3)** Establish a Western Area Plan community support committee to shepherd the Western Area Plan through the adoption process at both the City and County level.

Recommendation G-4) Continually engage surrounding jurisdictions discussions of growth and development.

Cultural & Historic Resources Recommendations

Recommendation CHR-1) Raise awareness of existing historic and cultural resources and encourage the preservation of such resources that contribute to the character of the area.

Recommendation CHR-2) Consider creating a Preservation Plan for the Western Area that takes into consideration the important cultural and environmental resources worthy of preservation.

Other Plans

n/a

STAFF ANALYSIS AND RECOMMENDATION

Community Outreach

Applicant is strongly encouraged to discuss this proposed rezoning and development with owners of surrounding properties.

Staff Analysis

The 19.7-acre subject property is currently undeveloped. North of the request are single-family dwellings and undeveloped property (zoned R-3). East of the request is NC-68 right-of-way. South of the request is undeveloped (zoned R-3). West of the request is a combination of single-family dwellings, undeveloped property and industrial flex space (zoned R-3 and CD-BP).

The Western Area Plan’s Future Land Use map designates this area as Employment Area, which is where the majority of the demand projected in the Market Analysis for new industrial and office land will be concentrated. Within the broader description of the Employment Area description are recommendations for the inclusion of service uses and some residential to support the new and expanding industrial, warehouses and office uses.

The proposed PUD zoning request, as conditioned, ensures a non-residential service component in addition to the proposed residential dwellings. This non-residential component can serve both the existing and planned industrial/office uses in the broader area and the immediately adjacent residences. The request, as conditioned, allows uses to compliment and support both existing and anticipated industrial/office development while also providing a good transition in the immediate term between existing single-family dwellings located north and south of the request and industrial operations to the west. The request as submitted supports the Comprehensive Plan’s Reinvestment/Infill goal to promote sound investment in Greensboro’s urban areas and the Housing and Neighborhoods goal to meet the needs of present and future Greensboro citizens for a choice of decent, affordable housing in stable, livable neighborhoods that offer security, quality of life, and the necessary array of services and facilities.

This request is consistent with the intent and purpose of the zoning code, the Comprehensive Plan (Connections 2025) and is generally compatible with the existing development and trend in the surrounding area.

Staff Recommendation

Staff recommends **approval** of the requested **PUD** (Planned Unit Development) zoning district.

Additional Information

Brigham Road Development - Transportation Impact Analysis

Greensboro, NC

Prepared for Combs Custom Homes

Original: October 14, 2016

Revised: January 5, 2017

Executive Summary

The proposed Brigham Road Residential Development is located on the east side of the Brigham Road between West Market Street and Pleasant Ridge Road in Greensboro, North Carolina. As planned, this development will be a mixed use development to be built out in two phases. Phase 1 will consist of 284 apartments with a build-out date of 2019. Phase 2 is planned to consist 34,200 square feet of retail space. Phase 2 has a proposed build-out date of 2020.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic. The following intersections were included in the study:

- Pleasant Ridge Road at Brigham Road
- Pleasant Ridge Road at NC 68
- West Market Street at Camco Manufacturing Driveway/U-Turn location
- West Market Street at Brigham Road
- West Market Street at NC 68 Southbound Ramps
- West Market Street at NC 68 Northbound Ramps
- Brigham Road at Site Access 1
- Brigham Road at Site Access 2
- Brigham Road at Site Access 3

The study intersections were analyzed during the AM peak (7:00 – 9:00 AM) and PM peak (4:00 – 6:00 PM) for the following conditions:

- 2016 Existing Conditions
- 2020 Future No Build Conditions
- 2020 Phase 1 (Residential Only) Future Build Conditions
- 2021 Phase 2/ Full Build Future Conditions (With Commercial)

The Greensboro Department of Transportation (GDOT) and the North Carolina Department of Transportation (NCDOT) were contacted to obtain background information and to ascertain the elements to be covered in this Transportation Impact Analysis (TIA). Information regarding the property was provided by the developer, Combs Custom Homes.

Discussion of Results – 2020 Phase 1 (Residential)

Signal timing was optimized for the analysis of 2020 future no build and build conditions in order to reflect future volumes. The following section discusses level of service for each intersection.

Pleasant Ridge Road at Brigham Road

This unsignalized intersection currently operates at a LOS B during both the AM and PM peaks. LOS B in the AM and PM peaks is also anticipated in future no build conditions. With the addition of proposed site traffic, LOS B is expected in the AM peak and LOS C in the PM peak. No improvements are recommended.

Pleasant Ridge Road at NC 68

This signalized intersection currently operates at LOS D during the AM and PM peaks. With TIP I-5110/R-2413 A and B in place, this intersection will be modified and realigned to the north. In 2020 future no build conditions, a LOS D is anticipated during the AM peak with a LOS C in the PM peak. In 2020 future build conditions, with the addition of the Phase 1 site traffic, LOS D is expected in the AM peak and LOS C in the PM peak. No improvements are recommended.

West Market Street at Camco Manufacturing Driveway/U-Turn location

In existing conditions, this unsignalized left-over intersection operates at LOS B in both the AM and PM peaks. In 2020 future no build conditions and build conditions, the level of service is expected to remain the same in both the AM and PM peaks. No improvements are recommended.

West Market Street at Brigham Road

This existing unsignalized intersection currently operates at LOS A during existing AM peak and LOS B during PM peak. In 2020 future no-build and build conditions, this is expected to remain unchanged. No improvements are recommended.

West Market Street at NC 68 Southbound Ramps

This signalized intersection currently operates at LOS B during the AM and PM peaks. In 2020 future no build conditions, LOS B is expected in the AM and PM peaks. With the addition of proposed site traffic, the level of service is expected to remain unchanged. No improvements are recommended.

West Market Street at NC 68 Northbound Ramps

In existing conditions, this signalized intersection operates at LOS B during the AM peak and LOS A during the PM peak. In 2020 future no build conditions, with the growth in background traffic, LOS B is anticipated in both the AM and PM peaks. The level of service is expected to remain unchanged in 2020 future build conditions. No improvements are recommended.

Brigham Road at Site Access 1

An access point is proposed on Brigham Road, referred to as Site Access 1. It is anticipated that this unsignalized intersection will operate at LOS A in build conditions. The need for auxiliary turn lanes for this intersection was evaluated based on GDOT Driveway Manual. Based on projected volumes, this

access did not warrant auxiliary turn lanes. The site access should be designed in accordance with GDOT standards. No improvements are recommended.

Brigham Road at Site Access 2

A full movement access is proposed on Brigham Road, referred to as Site Access 2. When the development is in place, this unsignalized intersection operates at LOS A in both the AM and PM peak hours. The need for auxiliary turn lanes for this intersection was evaluated based on GDOT Driveway Manual. Based on projected volumes, this access did not warrant auxiliary turn lanes. The site access should be designed in accordance with GDOT standards. No improvements are recommended.

Phase 1 Level of Service Summary

Table A summarizes the level of service analysis at the study intersections:

Table A - Level of Service Summary			
AM Peak	2016 Existing	2020 Future No Build	2020 Phase 1 Build
Pleasant Ridge Road at Brigham Road	B (11.4) SB Approach	B (11.8) SB Approach	B (12.7) SB Approach
Pleasant Ridge Road at NC 68	D (54.2)	D (37.0)	D (37.9)
West Market Street at Camco Manufacturing Driveway	B (10.6) NB Approach	B (10.8) NB Approach	B (10.8) NB Approach
West Market Street at Brigham Road	A (9.4) SB Approach	A (9.4) SB Approach	A (9.6) SB Approach
West Market Street at NC 68 Southbound Ramps	B (18.0)	B (18.4)	B (18.9)
West Market Street at NC 68 Northbound Ramps	B (11.1)	B (11.7)	B (12.2)
Brigham Road at Site Access 1			A (9.1) WB Approach
Brigham Road at Site Access 2			A (9.1) WB Approach
PM Peak	2016 Existing	2020 Future No Build	2020 Phase 1 Build
Pleasant Ridge Road at Brigham Road	B (13.5) NB Approach	B (14.3) NB Approach	C (15.6) NB Approach
Pleasant Ridge Road at NC 68	D (43.5)	C (31.1)	C (31.6)
West Market Street at Camco Manufacturing Driveway	B (10.7) NB Approach	B (11.0) NB Approach	B (11.0) NB Approach
West Market Street at Brigham Road	B (10.3) SB Approach	B (10.0) SB Approach	B (10.1) SB Approach
West Market Street at NC 68 Southbound Ramps	B (16.2)	B (18.4)	B (18.4)
West Market Street at NC 68 Northbound Ramps	A (8.1)	B (14.0)	B (14.4)
Brigham Road at Site Access 1			A (9.7) WB Approach
Brigham Road at Site Access 2			A (9.9) WB Approach
LOS (delay in seconds)			
Note for unsignalized conditions, LOS and delay indicates only minor street approach with longest delay			

Discussion of Results – 2021 Phase 2 (Full Build)

Pleasant Ridge Road at Brigham Road

In the 2021 Full Build conditions, with the additional growth in the background traffic and the addition of the Phase 2 site traffic, this intersection is expected to operate at a LOS B in the AM peak and a LOS C in the PM peak. No improvements are recommended.

Pleasant Ridge Road at NC 68

In the 2021 Full Build conditions, with the additional growth in the background traffic and the addition of the Phase 2 site traffic, this intersection is expected to operate at a LOS D in the AM peak and a LOS C in the PM peak. No improvements are recommended.

West Market Street at Camco Manufacturing Driveway/U-Turn location

In the 2021 Full Build conditions, with the additional growth in the background traffic and the addition of the Phase 2 site traffic, this intersection is expected to remain at a LOS B in both the AM and PM peaks. No improvements are recommended.

West Market Street at Brigham Road

In the 2021 Full Build conditions, with the additional growth in the background traffic and the addition of the Phase 2 site traffic, this intersection is expected to operate at a LOS A in the AM peak and a LOS B in the PM peak. No improvements are recommended.

West Market Street at NC 68 Southbound Ramps

In the 2021 Full Build conditions, with the additional growth in the background traffic and the addition of the Phase 2 site traffic, this intersection is expected to remain at a LOS B in both the AM and PM peaks. No improvements are recommended.

West Market Street at NC 68 Northbound Ramps

In the 2021 Full Build conditions, with the additional growth in the background traffic and the addition of the Phase 2 site traffic, this intersection is expected to remain at a LOS B in both the AM and PM peaks. No improvements are recommended.

Brigham Road at Site Access 1

This proposed access point on Brigham Road, referred to as Site Access 1, is anticipated to operate at a LOS A in the AM peak and a LOS B in the PM peak under the Full Build conditions. With the additional growth in the background traffic and the addition of the Phase 2 site traffic, the need for auxiliary turn lanes was checked again based on GDOT Driveway Manual. Based on the 2021 projected volumes, this access did not warrant auxiliary turn lanes. The site access should be designed in accordance with GDOT standards. No improvements are recommended.

Brigham Road at Site Access 2

Under the Full Build conditions, Site Access 2 is anticipated to operate at a LOS A in the AM peak and a LOS B in the PM peak. With the additional growth in the background traffic and the addition of the Phase 2 site traffic, the need for auxiliary turn lanes was checked again based on GDOT Driveway Manual. Based on the 2021 projected volumes, this access did not warrant auxiliary turn lanes. The site access should be designed in accordance with GDOT standards. No improvements are recommended.

Brigham Road at Site Access 3

This additional access point is proposed on Brigham Road for the commercial portion of the development. It is anticipated that this unsignalized intersection will operate at a LOS A in the AM peak and a LOS B in the PM peak in the Full Build conditions. The need for auxiliary turn lanes for this intersection was evaluated based on GDOT Driveway Manual. Based on projected volumes, this access did not warrant auxiliary turn lanes. The site access should be designed in accordance with GDOT standards. No improvements are recommended.

Proposed Site Access Throat Distances

The internal throat distances for the site accesses were reviewed using the GDOT Driveway Manual, which states that the distance from the adjacent street right of way to the near side of any internal service drive or parking aisle should be 25 feet, or greater than the expected inbound queue at the location. The expected inbound queue is calculated as the peak hour volume entering the site access multiplied by a factor of 0.833. Based on the number of vehicles entering Site Access 1 during the AM and PM peaks (14 and 55 vehicles, respectively), a throat distance of 50 feet will be required. For Site Access 2, with 14 vehicles entering in the AM peak and 54 vehicles entering in the PM peak, a throat distance of 50 feet will be required. For Site Access 3, with 49 vehicles entering in the AM peak and 138 vehicles entering in the PM peak, a throat distance of 115 feet will be required. The access points should be designed according to the GDOT Driveway Manual.

Table B summarizes the level of service for the Level of Service for the study intersections under the Full Build conditions

Table B – 2021 Full Build Level of Service Summary				
AM Peak	2016 Existing	2020 Future No Build	2020 Phase 1 Build	2021 Full Build
Pleasant Ridge Road at Brigham Road	B (11.4) SB Approach	B (11.8) SB Approach	B (12.7) SB Approach	B (13.3) SB Approach
Pleasant Ridge Road at NC 68	D (54.2)	D (37.0)	D (37.9)	D (38.9)
West Market Street at Camco Manufacturing Driveway	B (10.6) NB Approach	B (10.8) NB Approach	B (10.8) NB Approach	B (10.9) NB Approach

West Market Street at Brigham Road	A (9.4) SB Approach	A (9.4) SB Approach	A (9.6) SB Approach	A (9.6) SB Approach
West Market Street at NC 68 Southbound Ramps	B (18.0)	B (18.4)	B (18.9)	B (19.1)
West Market Street at NC 68 Northbound Ramps	B (11.1)	B (11.7)	B (12.2)	B (12.2)
Brigham Road at Site Access 1			A (9.1) WB Approach	A (9.3) WB Approach
Brigham Road at Site Access 2			A (9.1) WB Approach	A (9.2) WB Approach
Brigham Road at Site Access 3				A (9.3) WB Approach
PM Peak	2016 Existing	2020 Future No Build	2020 Phase 1 Build	2021 Full Build
Pleasant Ridge Road at Brigham Road	B (13.5) NB Approach	B (14.3) NB Approach	C (15.6) NB Approach	C (19.3) NB Approach
Pleasant Ridge Road at NC 68	D (43.5)	C (31.1)	C (31.6)	C (32.8)
West Market Street at Camco Manufacturing Driveway	B (10.7) NB Approach	B (11.0) NB Approach	B (11.0) NB Approach	B (11.0) NB Approach
West Market Street at Brigham Road	B (10.3) SB Approach	B (10.0) SB Approach	B (10.1) SB Approach	B (10.1) SB Approach
West Market Street at NC 68 Southbound Ramps	B (16.2)	B (18.4)	B (18.4)	B (18.8)
West Market Street at NC 68 Northbound Ramps	A (8.1)	B (14.0)	B (14.4)	B (14.9)
Brigham Road at Site Access 1			A (9.7) WB Approach	B (10.5) WB Approach
Brigham Road at Site Access 2			A (9.9) WB Approach	B (10.5) WB Approach
Brigham Road at Site Access 3				B (12.5) WB Approach

LOS (delay in seconds)

Note for unsignalized conditions, LOS and delay indicates only minor street approach with longest delay

Summary and Conclusion

The proposed Brigham Road Residential Development is located on the east side of the Brigham Road between West Market Street and Pleasant Ridge Road in Greensboro, North Carolina. As planned, this development will be a mixed use development to be built out in two phases. Phase 1 will consist of 284 apartments with a build-out date of 2019. Phase 2 is planned to consist 34,200 square feet of retail space. Phase 2 has a proposed build-out date of 2020.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify any transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic.

Based on trip generation equations published in Trip Generation (Institute of Transportation Engineers, 9th Edition), Phase 1 of this development has a trip generation potential of 1,845 daily trips with 143 trips in the AM peak and 174 trips in the PM peak. At full build, the development has a trip generation potential of 5,226 total daily trips with 224 trips in the AM peak and 466 trips in the PM peak. With the effects of internal capture and pass-by trip reduction included, the trip generation potential is 220 net trips in the AM peak and 396 net trips in the PM peak.

In conclusion, this study has assessed the potential traffic impacts of this development and has determined that sufficient capacity exists on the adjacent roadway network to accommodate the expected site traffic along with the projected increase in background traffic under the future build conditions. All site access points should be designed and constructed in accordance with GDOT standards.