

STAFF REPORT

Rezoning #19CZ22 Wolfe Properties PUD

June 16, 2020 Town Council Meeting



All property owners within three hundred (300) feet of this rezoning have been notified per UDO Sec. 2.2.11 *Public Notification*.

BACKGROUND INFORMATION:

Location: 1405, 1409, 1209, & 1401 Wimberly Road and 1012 & 1000 Double Helix Road
Applicant/Owner: Josh Swindell, Envision Homes, LLC/Tony Streeter & Timothy V. Karr, Billy Ray Wolfe, Sarah W. Ronk, Willie T. Jr and Donna G. Wolfe, William D. II and Gaile E. Bunce, and John Terry Paton.

PROJECT DESCRIPTION:

Acreage: 43.52 ± acres
PINs: 0722595328, 0722598851, 0723406397, 0723504154, 0723508938, & 0723601654
Current Zoning: Wake County R-80W & Rural Residential (RR)
Proposed Zoning: Planned Unit Development-Conditional Zoning (PUD-CZ)
2045 Land Use Map: Low Density Residential
Town Limits: Outside ETJ; a portion of PIN 0722598851 is within the ETJ

Adjacent Zoning & Land Uses:

	Zoning	Land Use
North:	Wake County R-80W	Single-family Residential; Vacant ; Future Town Park
South:	Wake County R-80W; Rural Residential (RR)	Wimberly Road; Single-family Residential; Cary/Apex Water Treatment Facility
East:	Planned Unit Development-Conditional Zoning (PUD-CZ #16CZ30)	Single-family Residential (The Preserve at White Oak Creek)
West:	Wake County R-80W	Wimberly Road and Single-family Residential

Existing Conditions:

The subject properties are located north and east of Wimberly Road. Several of the properties contain residential structures, but are otherwise wooded. Hickory Hill Lane and Double Helix Road (private drives) transverse the site north from Wimberly Road. A Colonial Pipeline easement bisects the property northwest to southeast.

Neighborhood Meeting:

The applicant conducted a neighborhood meeting on October 1, 2019. The neighborhood meeting report is attached.

2045 LAND USE MAP:

The 2045 Land Use Map identifies the properties subject to this rezoning as Low Density Residential. The proposed rezoning to Planned Unit Development-Conditional Zoning is consistent with that land use classification.

WCPSS COORDINATION:

This rezoning was submitted prior to the agreement with the Wake County Public School System to provide a Letter of Impact for rezonings allowing residential development.



PROPOSED ZONING CONDITIONS:

Limitation of Uses:

The Rezoned Lands may be used for, and only for, the uses listed immediately below. The permitted uses are subject to the limitations and regulations stated in the UDO and any additional limitations or regulations stated below. For convenience, some relevant sections of the UDO may be referenced; such references do not imply that other sections of the UDO do not apply.

Permitted Uses and Limitations:

1. Residential:
Single family (Minimum Lot Size = 6,000 sf)
Townhouse (Minimum Width = 20')
Accessory apartment
2. Utilities:
Utility, Minor
3. Recreational Uses:
Greenway
Park, active
Park, passive
Recreational facility, private
4. Government Services – Limited to Parcel #1 as shown on the PUD Plan

Permitted Design Controls:

1. **Maximum Density**
Maximum residential density for the project is 3.0 units per gross acre.
Maximum number of units is 130.
2. **Maximum Height of the Buildings**
Single-family residential – 42', 2-stories
Townhouse - 50', 3-stories
3. **Minimum Building Setbacks**
Single-family Residential, detached
From Buffer or RCA – 10'
Front Yard – 10' Minimum
Side Yard – 5' Minimum (no aggregate)
Corner Side yard – 10' Minimum
Rear Yard – 10' Minimum
Driveways from Back of Sidewalk to Garage – 20' (12' minimum width)

Townhouse
From Buffer or RCA – 10'
Front Yard – 10' Minimum
Side Yard (end units) – 5' Minimum
Rear Yard – 10' Minimum
From Public Right-of-Way to Garage – 18' Minimum where no sidewalk is present
From Public Right-of-Way to Garage – 20' Minimum where sidewalk is present

STAFF REPORT

Rezoning #19CZ22 Wolfe Properties PUD

June 16, 2020 Town Council Meeting



Building Side to Side – 10'
Building Side to Rear – 30'
Building Rear to Rear – 40'

Non-residential uses:

Front Yard – 10' Minimum
Side – 8' Minimum
Corner – 15' Minimum
Rear Yard – 25' Minimum
Parking from Buffer – 5'
Building from Buffer/RCA – 10'

4. **Percentage of Built Upon Area**

The UDO allows for a maximum 70 percent (70%) of built upon area in a PUD project and the Wolfe Properties PUD will not exceed that amount.

5. **Perimeter Buffers**

Perimeter Buffers:	Required	Proposed
Western property boundary (abutting Wimberly Rd)	30' Type B (undisturbed) 50' Type B (disturbed)	30' Type B (undisturbed) 50' Type B (disturbed)
Western property boundary (abutting PINs 0722592506, 0722498843, 0723514178)	20' Type B	20' Type B
Eastern property boundary	10' Type B	20' Type B
Southern property boundary (along Wimberly Road)	30' Type B (undisturbed) 50' Type B (disturbed)	30' Type B (undisturbed) 50' Type B (disturbed)
Southern property boundary (abutting PINs 0722592506, 0722498843)	20' Type B	20' Type B
Northern property boundary (abutting PIN 0723517896)	20' Type B	100' No Clear Cut Buffer (deed restriction)
Northern property boundary (abutting Town property and PIN 0723-40-3729)	20' Type B	10' Type B 20' Type A (if Government Services are proposed)

- *If Parcel 1 (as identified on the PUD Layout) is combined with parcels to the north, then no buffer shall be required for PINs 0723-40-3739, 6796, and 0723-41-6124.*

The PD plans show buffers around the site to provide visual breaks between uses and public roads. We are proposing a 30' Type B buffer along Wimberly Road assuming the buffer is undisturbed. If the buffer is disturbed it shall be increased to a 50' Type B buffer. The perimeter buffers have been shown to be a 20' Type B buffer with the exception of property that abuts Town property; this shall be 10' Type B buffer. If Government Services are proposed, the buffers shall be a Type A. A 100' no clear cut buffer is a deed restriction buffer along the property line that abuts property with PIN: 0723-51-7896. The only disturbance permitted within this buffer shall be a driveway to serve the referenced PIN and the installation of a fence within the buffer near the common property line. Such fence shall not be chain link.



6. **Percentage of Resource Conservation Area**

The PUD is providing at least 25% of the total area for Resource Conservation Area (RCA) and landscape buffers. For this project that will equate to 10.88 acres of required RCA area. If the single-family lots are mass graded, then the project shall dedicate an additional 5% RCA. This project proposes to dedicate 10.90 acres and will increase that area if mass graded.

Existing deciduous trees greater than 18" in diameter that are removed by site development shall be replaced by planting a 1.5" caliper native tree from the Town of Apex Design and Development Manual either on-site or at an alternative site location approved by Town Planning Staff, above and beyond standard UDO requirements.

7. **Stormwater Management**

Wolfe Properties PUD will meet all applicable requirements and standards as described in UDO Section 6.1. This project will meet all stormwater reduction requirements including limiting the post-development stormwater flows to not exceed the pre-development stormwater runoff for the 1 year and 10 year storm events. This project will commit to providing attenuation for the 2 year and 25 year storms as well.

Wolfe Properties PUD will use approved devices to control the stormwater sediment runoff. These devices may include wet detention basins, constructed wetlands, bioretention areas, sand filters or any other approved stormwater control measure. Stormwater control devices shall be landscaped and constructed to be an amenity to the development and shall blend into the surroundings.

Architectural Standards:

Single-Family Detached Residential Standards

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. Garage doors must contain windows, decorative details or carriage-style adornments.
3. House entrances for homes with front facing single-car garages must have a covered porch/stoop area leading to the front door.
4. The garage cannot protrude more than one foot out from the front façade or front porch unless it is a side entry garage.
5. The visible side of a home on a corner lot facing the public street shall contain at least 2 decorative elements such as, but not limited to, the following elements:

• Windows	• Decorative shake
• Bay window	• Decorative air vents on gable
• Recessed window	• Decorative gable
• Decorative window	• Decorative cornice
• Trim around the windows	• Column
• Wrap around porch or side porch	• Portico
• Two or more building materials	• Balcony
• Decorative brick/stone	• Dormer
• Decorative trim	
6. All windows on a side elevation shall have decorative trim, shutters, or shall be a bay window.
7. Front porches, when provided, shall be at least six-feet (6') deep.
8. A varied color palette shall be utilized on homes throughout the subdivision to include a minimum of three color families for siding and shall include varied trim, shutter, and accent colors complimenting the siding color.



9. Eaves shall project at least 12 inches from the wall of the structure.
10. House entrances may be placed at finished grade or a raised floor with crawl space.
11. The roof shall be pitched at 5:12 or greater for 75% of the building designs.
12. A minimum of 50% of all single family homes will be restricted to have a master bedroom located on the first floor of the building. However, up to 50% of the homes shall be permitted to have a master bedroom not on the first floor. These units shall be identified on the final plat.

Townhouse Standards

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. There shall be one roof element such as a gable or dormer on each unit.
3. Garage doors must contain windows, decorative details or carriage-style adornments.
4. House entrances for homes with front facing single-car garages must have a covered porch/stoop area leading to the front door.
5. The garage cannot protrude more than one foot out from the front façade or front.
6. All exterior windows shall have decorative trim on all four sides.
7. On corner lots, the side elevation facing the public street shall contain at least two decorative elements such as but not limited to:
 - Trim around the windows
 - Two or more building materials
 - Decorative brick/stone
 - Side Entry

Non-residential Use Standards

1. EIFS or synthetic stucco shall not be used in the first four feet above grade.
2. The building exterior shall have more than one (1) material color.
3. The building shall have more than one parapet height.
4. The following exterior materials shall not be permitted: vinyl siding, metal walls, and painted, smooth-faced concrete block (decorative blocks are acceptable).

Economy Housing:

Where economy housing is housing that can be purchased by a household that earns approximately the median household income for Apex, Wolfe Properties PUD will address economy housing by providing a minimum of 10% of the total number of units of the development, as determined at the Master Subdivision phase. The townhouse units shall have a minimum width of 18' and maximum width of 20' with no garages and allowable parking in compliance with Section 8.3, however they shall adhere to all other setback and architectural conditions set forth in the PUD Plan.

Pedestrian Connectivity:

All internal public streets will have sidewalks on both sides of the street. Bicycle and pedestrian improvements associated with subdivision plans for any development made pursuant to this plan shall comply with the adopted Comprehensive Transportation Plan.

Public Facilities:

As shown on the PUD Utility Plan, the sanitary sewer connection will connect to an existing sewer manhole and line near the northern end of Double Helix Road. Water distribution service will be provided to this project by eight-inch waterline connection to the existing twelve-inch waterline along Wimberly Road.

**PARKS, RECREATION, AND CULTURAL RESOURCES ADVISORY COMMISSION:**

The Parks, Recreation, and Cultural Resources Advisory Commission heard this item at their February 26, 2020 meeting and unanimously recommended a land dedication in the location provided in the PUD Plan, located contiguous to the southern boundary of the future park property along the frontage of Wimberly Road to comply with Sec. 14.1.3 *Standards of Dedication*. The total acreage to be dedicated will be determined by the total unit count at the time of Master Subdivision Plan approval. They also recommended the reservation of a Public Greenway Easement along one of the Utility Easement corridors to provide access to the Park for the Wolfe Properties PUD as well as the Preserve at White Oak Creek with the location being determined at the time the Master Subdivision Plan approval.

Potential Public Safety Station #6

1. Zoning condition for environmental assessment: A Phase I environmental assessment will be completed on the property to be dedicated to the Town and provided to the Town prior to construction plan approval.
2. Zoning Condition for land dedication: If the Town of Apex determines that it wants the land dedication for the purposes of a public safety station versus park land, the land dedication will occur by January 31, 2021 or prior to construction plan approval of Public Safety Station #6 (PSS #6), whichever comes later. If the land will be used for park purposes, the timing specified in the UDO will be followed.
3. Zoning Condition for road improvements: If the Town of Apex determines that it wants the land dedication for the purposes of a public safety station versus park land, road improvements for the collector street will be completed from Wimberly Road to just past the planned public safety station driveway no later than February 28, 2022 or prior to the certificate of occupancy, whichever comes later. If the land will be used for park purposes, the timing specified in the UDO will be followed.
4. Zoning condition for If the Town of Apex determines that it wants the land dedication for the purposes of a public safety station versus park land, a temporary driveway permit signed by NCDOT will suffice for Construction Drawing approval, provided the final driveway permit application has been submitted to NCDOT; any changes from the temporary driveway permit to the final driveway permit will be the responsibility of the developer, and this shall in no way release the developer from all other applicable requirements prior to Construction Drawing approval.
5. In the event the Town has not provided notice to the applicant of the decision to use the land for PSS #6 by August 3, 2020, the developer will be given an additional amount of time, equivalent to the length of time the Town's decision is delayed beyond August 3, 2020, to complete all conditions.

APEX TRANSPORTATION PLAN/ACCESS and CIRCULATION:

The proposed PUD is consistent with the Apex Transportation Plan. The proposed PUD provides a minor collector street through the site that will stub to the north for future extension, as shown on the Thoroughfare and Collector Street Plan.

A TIA was submitted in compliance with UDO Section 13.19. The project offers, subject to NCDOT review and approval the following off-site roadway improvements:

1. Green Level West and Wimberly Road Intersection: The developer shall construct a northbound taper right turn lane on Wimberly Road with 50-foot of full width deceleration and a 100-foot taper prior to the first plat. Construction of curb and gutter will be limited to only along the 50-foot deceleration along the sidewalk and storm drainage structures will only be placed in areas as necessary to continue existing drainage patterns and not restrict existing structures.

STAFF REPORT

Rezoning #19CZ22 Wolfe Properties PUD

June 16, 2020 Town Council Meeting



2. Wimberly Road and Jenks Road Intersection: The developer shall construct a southbound taper right turn lane on Wimberly Road with 50-foot of full width deceleration and a 100-foot taper prior to the first plat. No curb & gutter will be installed. Vegetated conveyances will be utilized to stay consistent with current conditions and no upgrades to existing storm drainage infrastructure.

PLANNING STAFF RECOMMENDATION:

Planning staff recommends approval of #19CZ22 Wolfe Properties PUD with the conditions as offered by the applicant.

PLANNING BOARD RECOMMENDATION:

The Planning Board heard this item at their June 8, 2020 meeting and unanimously recommended approval of the rezoning with the additional conditions offered by the applicant.

ANALYSIS STATEMENT OF THE REASONABLENESS OF THE PROPOSED REZONING:

This Statement will address consistency with the Town's comprehensive and other applicable plans, reasonableness, and effect on public interest:

Approval of the rezoning is reasonable because the proposed Planned Unit Development-Conditional Zoning district is consistent with the Low Density Residential land use classification on the 2045 Land Use Map.

The proposed rezoning is reasonable and in the public interest because it will allow for additional land for a future public park and development of single-family residential uses that will be compatible with the single-family uses to the north, south, and east. The proposed rezoning will also maintain the character and appearance of the area.

PLANNED UNIT DEVELOPMENT DISTRICT AND CONDITIONAL ZONING STANDARDS:

Standards

In return for greater flexibility in site design requirements, Planned Development (PD) Districts are expected to deliver exceptional quality community designs that preserve critical environmental resources; provide high quality community amenities; incorporate creative design in the layout of buildings, Resource Conservation Area and circulation; ensure compatibility with surrounding land uses and neighborhood character; provide high quality architecture; and provide greater efficiency in the layout and provision of roads, utilities, and other infrastructure. The Planned Development (PD) Districts shall not be used as a means of circumventing the Town's adopted land development regulations for routine developments.

1) *Planned Unit Development (PUD-CZ) District*

In approving a Planned Development (PD) Zoning District designation for a PUD-CZ, the Town Council shall find the PUD-CZ district designation and PD Plan for PUD-CZ demonstrates compliance with the following standards:

a) *Development parameters*

- (i) The uses proposed to be developed in the PD Plan for PUD-CZ are those uses permitted in Sec. 4.2.2 *Use Table*.
- (ii) The uses proposed in the PD Plan for PUD-CZ can be entirely residential, entirely non-residential, or a mix of residential and non-residential uses, provided a minimum percentage



of non-residential land area is included in certain mixed use areas as specified on the 2045 Land Use Map. The location of uses proposed by the PUD-CZ must be shown in the PD Plan with a maximum density for each type of residential use and a maximum square footage for each type of non-residential use.

- (iii) The dimensional standards in Sec. 5.1.3 *Table of Intensity and Dimensional Standards, Planned Development Districts* may be varied in the PD Plan for PUD-CZ. The PUD-CZ shall demonstrate compliance with all other dimensional standards of the UDO, North Carolina Building Code, and North Carolina Fire Code.
 - (iv) The development proposed in the PD Plan for PUD-CZ encourages cluster and compact development to the greatest extent possible that is interrelated and linked by pedestrian ways, bikeways and other transportation systems. At a minimum, the PD Plan must show sidewalk improvements as required by the Apex Transportation Plan and the *Town of Apex Standard Specifications and Standard Details*, and greenway improvements as required by the Town of Apex Parks, Recreation, Greenways, and Open Space Plan and the Apex Transportation Plan. In addition, sidewalks shall be provided on both sides of all streets for single-family detached homes.
 - v) The design of development in the PD Plan for PUD-CZ results in land use patterns that promote and expand opportunities for walkability, connectivity, public transportation, and an efficient compact network of streets. Cul-de-sacs shall be avoided unless the design of the subdivision and the existing or proposed street system in the surrounding area indicate that a through street is not essential in the location of the proposed cul-de-sac, or where sensitive environmental areas such as streams, floodplains, and wetlands would be substantially disturbed by making road connections.
 - (vi) The development proposed in the PD Plan for PUD-CZ is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties.
 - (vii) The development proposed in the PD Plan for PUD-CZ has architectural and design standards that are exceptional and provide higher quality than routine developments. All residential uses proposed in a PD Plan for PUD-CZ shall provide architectural elevations representative of the residential structures to be built to ensure the Standards of this Section are met.
- b) *Off-street parking and loading.* The PD Plan for PUD-CZ shall demonstrate compliance with the standards of Sec. 8.3 *Off-Street Parking and Loading*, except that variations from these standards may be permitted if a comprehensive parking and loading plan for the PUD-CZ is submitted as part of the PD Plan that is determined to be suitable for the PUD-CZ, and generally consistent with the intent and purpose of the off-street parking and loading standards.
 - c) *RCA.* The PD Plan for PUD-CZ shall demonstrate compliance with Sec. 8.1.2 *Resource Conservation Area*, except that the percentage of RCA required under Sec. 8.1.2 may be reduced by the Town Council by no more than two percent (2%) provided that:
 - (i) The PD Plan for PUD-CZ includes a non-residential component; or



- (ii) The PD Plan for PUD-CZ has an overall density of 6 residential units per acre or more.
- d) *Landscaping.* The PD Plan for PUD-CZ shall demonstrate compliance with the standards of Sec. 8.2 *Landscaping, Buffering and Screening*, except that variations from these standards may be permitted where it is demonstrated that the proposed landscaping sufficiently buffers uses from each other, ensures compatibility with land uses on surrounding properties, creates attractive streetscapes and parking areas and is consistent with the character of the area. In no case shall a buffer be less than one half of the width required by Sec. 8.2 or 10 feet in width, whichever is greater.
- e) *Signs.* Signage in the PD Plan for PUD-CZ shall demonstrate compliance with Sec. 8.7 *Signs*, except that the standards can be varied if a master signage plan is submitted for review and approval concurrent with the PD plan and is determined by the Town Council to be suitable for the PUD-CZ and generally consistent with the intent and purpose of the sign standards of the UDO. The master signage plan shall have design standards that are exceptional and provide for higher quality signs than those in routine developments and shall comply with Sec. 8.7.2 *Prohibited Signs*.
- f) *Public facilities.* The improvements standards and guarantees applicable to the public facilities that will serve the site shall comply with Article 7: *Subdivision* and Article 14: *Parks, Recreation, Greenways, and Open Space*.
 - (i) The PD Plan for PUD-CZ demonstrates a safe and adequate on-site transportation circulation system. The on-site transportation circulation system shall be integrated with the off-site transportation circulation system of the Town. The PD Plan for PUD-CZ shall be consistent with the Apex Transportation Plan and the *Town of Apex Standard Specifications and Standard Details* and show required right-of-way widths and road sections. A Traffic Impact Analysis (TIA) shall be required per Sec. 13.19.
 - (ii) The PD Plan for PUD-CZ demonstrates a safe and adequate on-site system of potable water and wastewater lines that can accommodate the proposed development, and are efficiently integrated into off-site potable water and wastewater public improvement plans. The PD Plan shall include a proposed water and wastewater plan.
 - (iii) Adequate off-site facilities for potable water supply, sewage disposal, solid waste disposal, electrical supply, fire protection and roads shall be planned and programmed for the development proposed in the PD Plan for PUD-CZ, and the development is conveniently located in relation to schools and police protection services.
 - (iv) The PD Plan shall demonstrate compliance with the parks and recreation requirements of Sec. Article 14: *Parks, Recreation, Greenways, and Open Space* and Sec. 7.3.1 *Privately-owned Play Lawns* if there is a residential component in the PUD-CZ.
- g) *Natural resource and environmental protection.* The PD Plan for PUD-CZ demonstrates compliance with the current regulatory standards of this Ordinance related to natural resource and environmental protection in Sec. 6.1 *Watershed Protection Overlay District*, Sec. 6.2 *Flood Damage Prevention Overlay District*, and Sec. 8.1 *Resource Conservation*.



- h) *Storm water management.* The PD Plan shall demonstrate that the post-development rate of on-site storm water discharge from the entire site shall not exceed pre-development levels in accordance with Sec. 6.1.7 of the UDO.
- i) *Phasing.* The PD Plan for PUD-CZ shall include a phasing plan for the development. If development of the PUD-CZ is proposed to occur in more than one phase, then guarantees shall be provided that project improvements and amenities that are necessary and desirable for residents of the project, or that are of benefit to the Town, are constructed with the first phase of the project, or, if this is not possible, then as early in the project as is technically feasible.
- j) *Consistency with 2045 Land Use Map.* The PD Plan for PUD-CZ demonstrates consistency with the goals and policies established in the Town's 2045 Land Use.
- k) *Complies with the UDO.* The PD Plan for PUD-CZ demonstrates compliance with all other relevant portions of the UDO.

CONDITIONAL ZONING STANDARDS:

The Town Council shall find the Planned Unit Development-Conditional Zoning (PUD-CZ) designation demonstrates compliance with the following standards. 2.3.3.F:

Legislative Considerations

The applicant shall propose site-specific standards and conditions that take into account the following considerations, which are considerations that are relevant to the legislative determination of whether or not the proposed conditional zoning district rezoning request is in the public interest. These considerations do not exclude the legislative consideration of any other factor that is relevant to the public interest.

- 1) *Consistency with 2045 Land Use Map.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and consistency with the purposes, goals, objectives, and policies of the 2045 Land Use Map.
- 2) *Compatibility.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and compatibility with the character of surrounding land uses.
- 3) *Zoning district supplemental standards.* The proposed Conditional Zoning (CZ) District use's compliance with Sec 4.4 *Supplemental Standards*, if applicable.
- 4) *Design minimizes adverse impact.* The design of the proposed Conditional Zoning (CZ) District use's minimization of adverse effects, including visual impact of the proposed use on adjacent lands; and avoidance of significant adverse impacts on surrounding lands regarding trash, traffic, service delivery, parking and loading, odors, noise, glare, and vibration and not create a nuisance.
- 5) *Design minimizes environmental impact.* The proposed Conditional Zoning District use's minimization of environmental impacts and protection from significant deterioration of water and air resources, wildlife habitat, scenic resources, and other natural resources.

STAFF REPORT

Rezoning #19CZ22 Wolfe Properties PUD

June 16, 2020 Town Council Meeting



6) *Impact on public facilities.* The proposed Conditional Zoning (CZ) District use's avoidance of having adverse impacts on public facilities and services, including roads, potable water and wastewater facilities, parks, schools, police, fire and EMS facilities.

7) *Health, safety, and welfare.* The proposed Conditional Zoning (CZ) District use's effect on the health, safety, or welfare of the residents of the Town or its ETJ.

8) *Detrimental to adjacent properties.* Whether the proposed Conditional Zoning (CZ) District use is substantially detrimental to adjacent properties.

9) *Not constitute nuisance or hazard.* Whether the proposed Conditional Zoning (CZ) District use constitutes a nuisance or hazard due to traffic impact or noise, or because of the number of persons who will be using the Conditional Zoning (CZ) District use.

10) *Other relevant standards of this Ordinance.* Whether the proposed Conditional Zoning (CZ) District use complies with all standards imposed on it by all other applicable provisions of this Ordinance for use, layout, and general development characteristics.



March 13, 2019

Tommy Pate, P.E.
Mott MacDonald
7621 Purfoy Road, Suite 115
Fuquay-Varina, NC 27526

Subject: **Staff summary and comments for the Wolfe Properties PUD TIA, 11/22/2019**

Mr. Pate:

Please review the following summary of my comments and recommendations. You may schedule a meeting with me and your client to discuss at your convenience.

Study Area

The TIA studied access to the proposed development at the following two intersections:

- Wimberly Road and Site Access 1
- Wimberly Road and Site Access 2

The intersections of Jenks Road and Wimberly Road as well as the intersection of Green Level West Road and Wimberly Road were also studied in the TIA.

Trip Generation

The proposed development is expected to consist of 70 single-family homes and 50 townhome units. It's projected to generate approximately 19 new trips entering and 60 new trips exiting the site during the weekday A.M. peak hour and 65 new trips entering and 39 new trips exiting the site during the weekday P.M. peak hour. The proposed development is projected to generate a total of 1,086 new trips on the adjacent roadway network.

Background traffic

Background traffic consists of 2% annual background traffic growth compounded to build out year 2025, and the following approved developments:

- Lake Castleberry (40% built, 60% development traffic)
- The Preserve at White Oak Creek (75% built, 25% development traffic)
- Westford Residential (50% built, 50% development traffic)
- Westford Commercial
- Weddington

Trip Distribution and Assignment

The trip distribution to and from the development was assumed to be as follows:

- 20% to/from the east via Jenks Road
- 65% to/from the west via Jenks Road
- 10% to/from the east via Green Level West Road
- 5% to/from the west via Green Level West Road

Traffic Capacity Analysis and Recommendations

Level of Service (LOS) is a grade of A through F assigned to an intersection, approach, or movement to describe how well or how poorly it operates. LOS A through D is considered acceptable for peak hour operation. LOS E or F describes potentially unacceptable operation and developers may be required to mitigate their anticipated traffic impact to improve LOS based on the Apex Unified Development Ordinance (UDO).

Tables 1 through 4 describe the levels of service (LOS) for the scenarios analyzed in the TIA. "NA" is shown when the scenario does not apply. The scenarios are as follows:

- **Existing 2019** - Existing year 2019 traffic.
- **No Build 2025** – Projected year (2025) with background growth, approved development traffic from others, and committed transportation improvements by others where applicable.
- **Build 2025** – Projected year (2025) with background traffic, background improvements, and site build-out including recommended improvements where applicable.

Wimberly Road and Site Access 1 (unsignalized)

Table 1. A.M. / P.M. Unsignalized Peak Hour Levels of Service Wimberly Road and Site Access 1	
	Build 2025
<u>Overall</u>	<u>NA</u>
<i>Westbound (Site Drive 1)</i>	<i>A / A²</i>
<i>Northbound (Wimberly Road)</i>	NA
<i>Southbound (Wimberly Road)</i>	<i>A / A¹</i>

1. Level of service for left turn movement on free-flowing approach.
2. Level of service for stop-controlled minor street approach.

TIA recommendations:

- The TIA recommends construction of a full movement westbound approach with a single lane of ingress and a single lane of egress. Based on traffic volumes, a southbound left turn lane is not warranted per NCDOT's *Warrants for Left and Right Turn Lanes* or recommended on Wimberly Road.

Apex staff recommendations:

- Apex staff concur with the recommendation. Based on the analysis, all approaches are projected to operate at LOS A in the Build condition.

Wimberly Road and Site Access 2 (unsignalized)

Table 2. A.M. / P.M. Unsignalized Peak Hour Levels of Service Wimberly Road and Site Access 2	
	Build 2025
<u>Overall</u>	<u>NA</u>
<i>Westbound (Site Access 2)</i>	<i>A / B²</i>
<i>Northbound (Wimberly Road)</i>	NA
<i>Southbound (Wimberly Road)</i>	<i>A / A¹</i>

1. Level of service for left turn movement on free-flowing approach.
2. Level of service for stop-controlled minor street approach.

TIA recommendations:

- The TIA recommends construction of a full movement westbound approach with a single lane of ingress and a single lane of egress. Based on traffic volumes, a southbound left turn lane is not warranted per NCDOT's *Warrants for Left and Right Turn Lanes* or recommended on Wimberly Road.

Apex staff recommendations:

- Apex staff concurs with the recommendation. Based on the analysis, all approaches are projected to operate at LOS B or better in the Build condition.

Jenks Road and Wimberly Road (unsignalized)

Table 3. A.M. / P.M. Unsignalized Peak Hour Levels of Service Jenks Road and Wimberly Road/Westford Street B			
	Existing 2019	No Build 2025	Build 2025
<u>Overall</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
<i>Eastbound (Jenks Road)</i>	<i>A / A¹</i>	<i>A / A¹</i>	<i>A / A¹</i>
<i>Westbound (Jenks Road)</i>	<i>A / A¹</i>	<i>A / A¹</i>	<i>A / A¹</i>
<i>Northbound (Westford Street B)</i>	<i>A / B²</i>	<i>B / B²</i>	<i>B / C²</i>
<i>Southbound (Wimberly Road)</i>	<i>B / B²</i>	<i>B / B²</i>	<i>B / C²</i>

1. Level of service for left turn movement on free-flowing approach.
2. Level of service for stop-controlled minor street approach.

TIA recommendations:

- The TIA does not recommend any improvements at this intersection. Analysis results indicated both minor street approaches to operate at LOS C or better during both A.M. and P.M. peak hours with 95th percentile queues to be less than 50 feet in length.

Apex staff recommendations:

- Based on NCDOT's *Warrants for Left and Right Turn Lanes*, the southbound approach of Wimberly Road warrants a right turn lane with 50 feet of full width deceleration and a 100-foot taper. Apex staff recommends construction of the right turn lane, subject to NCDOT review and approval.

Green Level West Road and Wimberly Road (unsignalized)

Table 4. A.M. / P.M. Unsignalized Peak Hour Levels of Service Green Level West Road and Wimberly Road			
	Existing 2019	No Build 2025	Build 2025
<u>Overall</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
<i>Eastbound (Green Level West Road)</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
<i>Westbound (Green Level West Road)</i>	<i>A / A¹</i>	<i>A / A¹</i>	<i>A / A¹</i>
<i>Northbound (Wimberly Road)</i>	<i>A / B²</i>	<i>B / B²</i>	<i>B / B²</i>

1. Level of service for left turn movement on free-flowing approach.
2. Level of service for stop-controlled minor street approach.

TIA recommendations:

- The TIA does not recommend any improvements at this intersection. Analysis results indicated the minor street approach to operate at LOS B or better during both A.M. and P.M. peak hours with 95th percentile queues to be less than 50 feet in length.

Apex staff recommendations:

- Based on NCDOT's *Warrants for Left and Right Turn Lanes*, the northbound approach of Wimberly Road warrants a right turn lane with 50 feet of full width deceleration and a 100-foot taper. Apex staff recommends construction of the right turn lane, subject to NCDOT review and approval.

Please coordinate with the NCDOT District Engineer's Office concerning recommended improvements. Town staff will be available for meetings with NCDOT staff to discuss improvements on state maintained roadways as needed. All recommendations are subject to review by Town Council prior to approval.

Sincerely,

A handwritten signature in cursive script, appearing to read "Serge Grebenschikov".

Serge Grebenschikov
Traffic Engineer
919-372-7448

Rezoning #19CZ22

DOUBLE HELIX RD

HICKORY HILL LN

SECLUDED ACRES RD

*The Preserve at
White Oak Creek*

*Cary/Apex
Water Treatment
Facility*

WIMBERLY RD

WHITE OAK POND RD

VINE POND CT

SIDEWINDER CT

GOODWIN RD

October, 2019
May 2019 Aerial Photography
Prepared by: Town of Apex Planning Department



This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Submittal Date: _____
 Check # _____

Project Name:	Wolfe Properties PUD
Address(es):	1405, 1409, 1209, 1401 Wimberly Road and 1012 & 1000 Double Helix Road
PIN(s)	0722595328, 0722598851, 0723406397, 0723504154, 0723508938, and 0723601654

Acreage: 43.39 ac

Current Zoning: R-80W Low Density & Rural Residential (RR) Proposed Zoning: PUD-CZ

Current 2045 LUM Designation: Low Density Residential

Requested 2045 LUM Designation: _____
See next page for LUM amendment

Area classified as mixed use: Acreage:

Area proposed as non-residential development: Acreage:

Percent of mixed use area proposed as non-residential: Percent:

Name:	Envision Homes, LLC - Josh Swindell				
Address:	441 Six Forks Road, Suite 106-117				
City:	Raleigh	State:	NC	Zip:	27609
Phone:	919-389-7595	E-mail:	josh@envisionhomesnc.com		

Name: See Attached

Address: _____

City: _____ State: NC Zip: _____

Phone: _____ E-mail: _____

Name:	Envision Homes, LLC - Josh Swindell				
Address:	441 Six Forks Road, Suite 106-117				
City:	Raleigh	State:	NC	Zip:	27609
Phone:	919-389-7595	E-mail:	josh@envisionhomesnc.com		

Other contacts: _____

PLANNED UNIT DEVELOPMENT APPLICATION

Application #: 19CZ22

Submittal Date: 10/2/2019

2045 LAND USE MAP AMENDMENT (if applicable)

The applicant does hereby respectfully request the Town Council amend the 2045 Land Use Map. In support of this request, the following facts are shown:

The area sought to be amended on the 2045 Land Use Map is located at:

Current 2045 Land Use Classification: _____

Proposed 2045 Land Use Classification: _____

What conditions justify the passage of the amendment to the 2045 Land Use Map? Discuss the existing use classifications of the subject area in addition to the adjacent land use classifications.

CERTIFIED LIST OF NEIGHBORING PROPERTY OWNERSApplication #: 19CZ22Submittal Date: 10/2/2019

Provide a certified list of property owners subject to this application and all property owners within 300' of the subject property and HOA Contacts.

	Owner's Name	PIN
1.	see attached list	
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

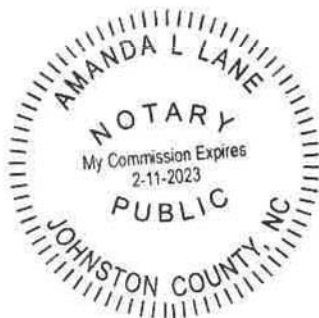
I, Wendy Loeffler, certify that this is an accurate listing of all property owners and property owners within 300' of the subject property.

Date: 10/1/19By: Wendy Loeffler

COUNTY OF WAKE STATE OF NORTH CAROLINA

Sworn and subscribed before me, Amanda L. Lane, a Notary Public for the above State and County, on this the 1st day of October, 2019.

SEAL



Amanda L. Lane
Notary Public
Amanda L. Lane
Print Name

My Commission Expires: 2/11/2023

PIN	Owner	Mail Address 1	Mail Address 2	Mail Address 3
722484517	CARY TOWN OF APEX TOWN OF	PO BOX 8005	CARY NC 27512-8005	
722492593	OTTAWAY, DANNY LEE OTTAWAY,	10401 CHAPEL HILL RD	MORRISVILLE NC 27560-8710	
722498843	OTTAWAY, DANNY L OTTAWAY,	C/O TRUSS BUILDERS	10401 CHAPEL HILL RD	MORRISVILLE NC 27560-8710
722585884	CARY TOWN OF	PO BOX 8005	CARY NC 27512-8005	
722592506	BOWLES, WILLIAM S	1325 WIMBERLY RD	APEX NC 27523-6773	
722595328	KARR, TONY STREETER, TIMOTHY V	3800 SARATOGA DR	RALEIGH NC 27604-3445	
722598851	WOLFE, BILLY RAY	1409 WIMBERLY RD	APEX NC 27523-6767	
722681610	POOLE, TERRY D	1440 WIMBERLY RD	APEX NC 27523-9660	
722681879	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
722682925	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
722683832	MUDIVARTHY, SAINANDAN	2649 RAMBLING CREEK RD	APEX NC 27523-7806	
722689944	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
722692062	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
722692098	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
722692653	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
722693134	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
722693260	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
723318165	SMITH, JAMES M	1125 WIMBERLY RD	APEX NC 27523-9679	
723400229	VANDE, BERG BRUCE ALAN VANDE,	1204 WIMBERLY RD	APEX NC 27523-6770	
723403739	SMITH, JAMES M SMITH, LOUANN J	1125 WIMBERLY RD	APEX NC 27523-9679	
723406397	RONK, SARAH W	1209 WIMBERLY RD	APEX NC 27523-6771	
723406796	APEX TOWN OF	STEVEN ADAMS	PO BOX 250	APEX NC 27502-0250
723416124	TOWN OF APEX	PO BOX 250	APEX NC 27502-0250	
723419356	TOWN OF APEX	PO BOX 250	APEX NC 27502-0250	
723504154	WOLFE, WILLIE T JR WOLFE,	1401 WIMBERLY RD	APEX NC 27523-6767	
723508938	BUNCE, WILLIAM D II BUNCE, GAIL	7617 SNAFFLEBIT LN	APEX NC 27502-3975	
723514178	TOWN OF APEX	PO BOX 250	APEX NC 27502-0250	
723517896	ROSS, JEFFREY A ROSS, LISA L	1104 DOUBLE HELIX RD	APEX NC 27523-6750	
723601654	PATON, JOHN TERRY	1000 DOUBLE HELIX RD	APEX NC 27523-6735	
723604250	GUPTA, SANJEEV GUPTA, REKHA	2713 TUNSTALL GROVE DR	APEX NC 27523-8038	
723604354	WOO, HYUN J LEE, DAVID W	2712 TUNSTALL GROVE DR	APEX NC 27523-8038	
723604570	ENGLISH, JON	2609 SUNNYBROOK FARM DR	APEX NC 27523-8037	
723604640	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	

723604780	SCHROEDER, JEFFREY THOMAS	2604 SUNNYBROOK FARM DR	APEX NC 27523-8037	
723604881	POTYANDY, MICHAEL OONWALA,	558 WHITE OAK POND RD	APEX NC 27523-8035	
723604981	SEDDON, WENDY DAWN SEDDON,	554 WHITE OAK POND RD	APEX NC 27523-8035	
723605145	SATPATHY, CHANDAN	2709 TUNSTALL GROVE DR	APEX NC 27523-8038	
723605348	REYNA, ERIN MARIE REYNA,	2708 TUNSTALL GROVE DR	APEX NC 27523-8038	
723605590	ARRANAGU, ESWAR BABU	2605 SUNNYBROOK FARM DR	APEX NC 27523-8037	
723605783	INMAN, NICHOLAS GRANT INMAN,	2600 SUNNYBROOK FARM DR	APEX NC 27523-8037	
723606076	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
723606173	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
723606270	WONG, SAMUEL J WONG, ASHLEY	600 WHITE OAK POND RD	APEX NC 27523-8036	
723606337	LAUB, KHRISTOPHER BERNARD	2704 TUNSTALL GROVE DR	APEX NC 27523-8038	
723606574	BANDA, SANDEEP SINGIREDDY,	2601 SUNNYBROOK FARM DR	APEX NC 27523-8037	
723607985	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	
723614091	MACK, RONALD WILLIAM MACK,	550 WHITE OAK POND RD	APEX NC 27523-8035	
723616735	TAYLOR MORRISON OF CAROLINAS	15501 WESTON PKWY STE 100	CARY NC 27513-8636	

PIN	Owner	Mail Address 1	Mail Address 2	Deed Book	Deed Page	Deed Acres
722592506	BOWLES, WILLIAM S	1325 WIMBERLY RD	APEX NC 27523-6773	14272	1283	2.80
722595328	KARR, TONY STREETER, TIMOTHY V	3800 SARATOGA DR	RALEIGH NC 27604-3445	13792	2642	2.75
723406397	RONK, SARAH W	1209 WIMBERLY RD	APEX NC 27523-6771	7489	860	7.12
723504154	WOLFE, WILLIE T JR WOLFE, DONNA G	1401 WIMBERLY RD	APEX NC 27523-6767	9075	2649	9.02
723508938	BUNCE, WILLIAM D II BUNCE, GAIL E	7617 SNAFFLEBIT LN	APEX NC 27502-3975	9896	658	7.00
723601654	PATON, JOHN TERRY	1000 DOUBLE HELIX RD	APEX NC 27523-6735	15672	2496	8.23

DEVELOPMENT NAME APPROVAL APPLICATION

Application #: 19CZ22

Submittal Date: 10/2/2019

Fee for Initial Submittal: No Charge

Fee for Name Change after Approval: \$500*

Purpose

To provide a consistent and clearly stated procedure for the naming of subdivisions and/or developments and entrance roadways (in conjunction with *Town of Apex Address Policy*) so as to allow developers to define and associate the theme or aesthetics of their project(s) while maintaining the Town's commitment to preserving the quality of life and safety for all residents of Apex proper and extraterritorial jurisdiction.

Guidelines

- ✓ The subdivision/development name shall not duplicate, resemble, or present confusion with an existing subdivision/development within Apex corporate limits or extraterritorial jurisdiction except for the extension of an existing subdivision/development of similar or same name that shares a continuous roadway.
- ✓ The subdivision/development name shall not resemble an existing street name within Apex corporate limits or extraterritorial jurisdiction unless the roadway is a part of the subdivision/development or provides access to the main entrance.
- ✓ The entrance roadway of a proposed subdivision/development shall contain the name of the subdivision/development where this name does not conflict with the Town of Apex *Road Name Approval Application* and *Town of Apex Address Policy* guidelines.
- ✓ The name "Apex" shall be excluded from any new subdivision/development name.
- ✓ Descriptive words that are commonly used by existing developments will be scrutinized more seriously in order to limit confusion and encourage distinctiveness. A list of commonly used descriptive words in Apex's jurisdiction is found below.
- ✓ The proposed subdivision/development name must be requested, reviewed and approved during preliminary review by the Town.
- ✓ A \$500.00 fee will be assessed to the developer if a subdivision/development name change is requested after official submittal of the project to the Town.*

*The imposed fee offsets the cost of administrative changes required to alleviate any confusion for the applicant, Planning staff, other Town departments, decision-making bodies, concerned utility companies and other interested parties. There is no charge for the initial name submittal.

Existing Development Titles, Recurring

	Residential	Non-Residential
10 or more	Creek, Farm(s), Village(s),	Center/Centre
6 to 9	Crossing(s), Park, Ridge, Wood(s)	Commons, Park
3 to 5	Acres, Estates, Glen(s), Green*, Hills	Crossing(s), Plaza, Station, Village(s)

*excludes names with Green Level

DEVELOPMENT NAME APPROVAL APPLICATION

Application #: 19CZ22

Submittal Date: 10/2/2019

Proposed Subdivision/Development Information

Description of location: Northwest corner of Wimberly Road and Hickory Hill Lane

Nearest intersecting roads: Wimberly Road and Hickory Hill Lane

Wake County PIN(s): 0722595328, 0722598851, 0723406397, 0723504154, 0723508938 and 0723601654

Township: White Oak

Contact Information (as appropriate)

Contact person: Andrew Petty, PE - The Curry Engineering Group, PLLC

Phone number: 919-552-0849

Fax number:

Address: 205 S Fuquay Avenue, Fuquay Varina, NC 27526

E-mail address: andy@curryeng.com

Owner: Josh Swindell - Envision Homes, LLC

Phone number: 919-389-7595

Fax number:

Address: 4441 Six Forks Road, Suite 106-117, Raleigh, NC 27609

E-mail address: josh@envisionhomesnc.com

Proposed Subdivision/Development Name1st Choice:2nd Choice (Optional):**Town of Apex Staff Approval:**

Town of Apex Planning Department Staff

Date

STREET NAME APPROVAL APPLICATION

Application #: 19CZ22

Submittal Date: 10/2/2019

Wake County Approval Date: _____

Guidelines:

- No names duplicating or sounding similar to existing road names
- Avoid difficult to pronounce names
- No individuals' names
- Avoid proper names of a business, e.g. Hannaford Drive
- Limit names to 14 characters in length
- No directionals, e.g. North, South, East, West
- No punctuation marks, e.g. periods, hyphens, apostrophes, etc.
- Avoid using double suffixes, e.g. Deer Path Lane
- All names must have an acceptable suffix, e.g. Street, Court, Lane, Path, etc.
- Use only suffixes which are Town of Apex approved
- Town of Apex has the right to deny any street name that is determined to be inappropriate

Information:

Description of location: Northwest corner of Wimberly Road and Hickory Hill Lane

Nearest intersecting roads: Wimberly Road and Hickory Hill Lane

Wake County PIN(s): 0722595328, 0722598851, 0723406397, 0723504154, 0723508938 and 0723601654

Township: White Oak

Contact information (as appropriate)

Contact person: Andrew Petty, PE - The Curry Engineering Group, PLLC

Phone number: 919-552-0849

Fax number: _____

Address: 205 S Fuquay Avenue, Fuquay Varina, NC 27526

E-mail address: andy@curryeng.com

Owner: Josh Swindell - Envision Homes, LLC

Phone number: 919-389-7595

Fax number: _____

Address: 4441 Six Forks Road, Suite 106-117, Raleigh, NC 27609

E-mail address: josh@envisionhomesnc.com

STREET NAME APPROVAL APPLICATION

Application #: 19CZ22

Submittal Date: 10/2/2019

of roads to be named: _____

Please submit twice as many road names as needed, with preferred names listed first. Proposed road names should be written exactly as one would want them to appear. Town of Apex Planning Department staff will send all approved street names to the Wake County GIS Department for county approval. Please allow several weeks for approval. Upon approval Wake County GIS – Street Addressing will inform you of the approved street names.

Example: Road Name Suffix

Hunter Street

1 _____	11 _____
2 _____	12 _____
3 _____	13 _____
4 _____	14 _____
5 _____	15 _____
6 _____	16 _____
7 _____	17 _____
8 _____	18 _____
9 _____	19 _____
10 _____	20 _____

TOWN OF APEX STAFF APPROVAL

Town of Apex Staff Approval

Date

WAKE COUNTY STAFF APPROVAL:

GIS certifies that _____ names indicated by checkmark ☒ are approved.
Please disregard all other names.

Comments:

Wake County GIS Staff Approval

Date

TOWN OF APEX UTILITIES OFFER AND AGREEMENT

Application #: _____ Submittal Date: _____

Town of Apex
73 Hunter Street
P.O. Box 250 Apex, NC 27502
919-249-3400

WAKE COUNTY, NORTH CAROLINA CUSTOMER SELECTION AGREEMENT

Wolfe Properties PUD

(the "Premises")

The Town of Apex offers to provide you with electric utilities on the terms described in this Offer & Agreement. If you accept the Town's offer, please fill in the blanks on this form and sign and we will have an Agreement once signed by the Town.

Envision Homes, LLC, the undersigned customer ("Customer") hereby irrevocably chooses and selects the Town of Apex (the "Town") as the permanent electric supplier for the Premises. Permanent service to the Premises will be preceded by temporary service if needed.

The sale, delivery, and use of electric power by Customer at the Premises shall be subject to, and in accordance with, all the terms and conditions of the Town's service regulations, policies, procedures and the Code of Ordinances of the Town.

Customer understands that the Town, based upon this Agreement, will take action and expend funds to provide the requested service. By signing this Agreement the undersigned signifies that he or she has the authority to select the electric service provider, for both permanent and temporary power, for the Premises identified above.

Any additional terms and conditions to this Agreement are attached as Appendix 1. If no appendix is attached this Agreement constitutes the entire agreement of the parties.

Acceptance of this Agreement by the Town constitutes a binding contract to purchase and sell electric power.

Please note that under North Carolina General Statute §160A-332, you may be entitled to choose another electric supplier for the Premises.

Upon acceptance of this Agreement, the Town of Apex Electric Utilities Division will be pleased to provide electric service to the Premises and looks forward to working with you and the owner(s).

ACCEPTED:

CUSTOMER: Envision Homes, LLC

TOWN OF APEX

BY: Jay Z. Michael
Authorized Agent

BY: _____
Authorized Agent

DATE: 12.4.19

DATE: _____

AGENT AUTHORIZATION FORM

Application #: 19CZ22

Submittal Date: 10/2/2019

Billy Ray Wolfe

is the owner* of the property for which the attached

application is being submitted:

- ☐ Land Use Amendment
- ☒ Rezoning: For Conditional Zoning and Planned Development rezoning applications, this authorization includes express consent to zoning conditions that are agreed to by the Agent which will apply if the application is approved.
- ☐ Site Plan
- ☒ Subdivision
- ☐ Variance
- ☐ Other: _____

The property address is: 1409 Wimberly Road

The agent for this project is: _____

☐ I am the owner of the property and will be acting as my own agent

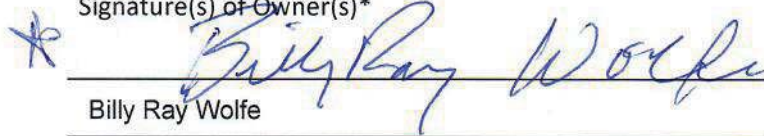
Agent Name: Envision Homes, LLC

Address: 441 Six Forks Road, Suite 106-117, Raleigh, NC 27609

Telephone Number: 919-3897595

E-Mail Address: josh@envisionhomesnc.com

Signature(s) of Owner(s)*


Billy Ray Wolfe

Type or print name

9-23-19
Date

Type or print name

Date

Attach additional sheets if there are additional owners.

*Owner of record as shown on the latest equalized assessment rolls of Wake County. An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this authorization.

Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this application and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the application and any related documents. If electronic signatures are used the application shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

AGENT AUTHORIZATION FORMApplication #: 19CZ22Submittal Date: 10/2/2019

John Terry Paton is the owner* of the property for which the attached application is being submitted:

- ☐ Land Use Amendment
- ☒ Rezoning: For Conditional Zoning and Planned Development rezoning applications, this authorization includes express consent to zoning conditions that are agreed to by the Agent which will apply if the application is approved.
- ☐ Site Plan
- ☒ Subdivision
- ☐ Variance
- ☐ Other: _____

The property address is: 1000 Double Helix Road

The agent for this project is: _____

☐ I am the owner of the property and will be acting as my own agent


Agent Name: Envision Homes, LLC

Address: 4441 Six Forks Road, Suite 106-117, Raleigh, NC 27609

Telephone Number: 919-389-7595

E-Mail Address: josh@envisionhomesnc.com

Signature(s) of Owner(s)*

DocuSigned by:


310A10B427964DF
John Terry Paton

9/23/2019

Type or print name

Date

Type or print name

Date

Attach additional sheets if there are additional owners.

*Owner of record as shown on the latest equalized assessment rolls of Wake County. An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this authorization.

Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this application and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the application and any related documents. If electronic signatures are used the application shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

AGENT AUTHORIZATION FORMApplication #: 19CZ22Submittal Date: 10/2/2019

Tony Karr and Timothy V. Streeter is the owner* of the property for which the attached application is being submitted:

- ☐ Land Use Amendment
- ☒ Rezoning: For Conditional Zoning and Planned Development rezoning applications, this authorization includes express consent to zoning conditions that are agreed to by the Agent which will apply if the application is approved.
- ☐ Site Plan
- ☒ Subdivision
- ☐ Variance
- ☐ Other: _____

The property address is: 1405 Wimberly Road

The agent for this project is: _____

☐ I am the owner of the property and will be acting as my own agent

Agent Name: Envision Homes, LLC

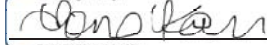
Address: 4441 Six Forks Road, Suite 106-117, Raleigh, NC 27609

Telephone Number: 919-389-7595

E-Mail Address: josh@envisionhomesnc.com

Signature(s) of Owner(s)*

DocuSigned by:



F991F47BA48C457...

Tony Karr

9/23/2019

Type or print name

Date

DocuSigned by:



090A8ED8183E475...

Timothy V. Streeter

9/23/2019

Type or print name

Date

Attach additional sheets if there are additional owners.

*Owner of record as shown on the latest equalized assessment rolls of Wake County. An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this authorization.

Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this application and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the application and any related documents. If electronic signatures are used the application shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

AGENT AUTHORIZATION FORM

Application #: 19CZ22

Submittal Date: 10/2/2019

Sarah W. Ronk

is the owner* of the property for which the attached

application is being submitted:

- ☐ Land Use Amendment
- ☒ Rezoning: For Conditional Zoning and Planned Development rezoning applications, this authorization includes express consent to zoning conditions that are agreed to by the Agent which will apply if the application is approved.
- ☐ Site Plan
- ☒ Subdivision
- ☐ Variance
- ☐ Other: _____

The property address is: 1209 Wimberly Road

The agent for this project is: _____

☐ I am the owner of the property and will be acting as my own agent

Agent Name: Envision Homes, LLC

Address: 4441 Six Forks Road, Suite 106-117, Raleigh, NC 27609

Telephone Number: 919-389-7595

E-Mail Address: josh@envisionhomesnc.com

Signature(s) of Owner(s)*

Sarah W. Ronk

Sarah W. Ronk

Type or print name

Sept 23, 2019

Date

Type or print name

Date

Attach additional sheets if there are additional owners.

*Owner of record as shown on the latest equalized assessment rolls of Wake County. An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this authorization.

Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this application and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the application and any related documents. If electronic signatures are used the application shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

AFFIDAVIT OF OWNERSHIP


Application #: _____

Submittal Date: _____

The undersigned, Tony Karr and Timothy V. Streeter (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

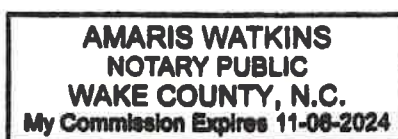
1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 1405 Wimberly Road and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").
2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.
3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 7/15/2009, and recorded in the Wake County Register of Deeds Office on 12/14/2009, in Book 013792 Page 02642.
4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 1405 Wimberly Road, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 1405 Wimberly Road, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 22nd day of November, 2019.

 (seal)
(AW) Amaris Watkins Tony Karr
Type or print name

STATE OF NORTH CAROLINA
COUNTY OF Wake

I, the undersigned, a Notary Public in and for the County of Wake, hereby certify that Tony Karr, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's Tony Karr, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.



[NOTARY SEAL]

Amaris Watkins
Notary Public
State of North Carolina
My Commission Expires: 11-06-2024

AFFIDAVIT OF OWNERSHIP

Application #:

Submittal Date:

The undersigned, Sarah W. Ronk (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

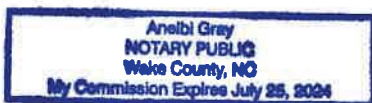
1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 1209 Wimberly Road and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").
2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.
3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 5/30/1997 and recorded in the Wake County Register of Deeds Office on 5/30/1997, in Book 007489 Page 00860.
4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 1209 Wimberly Road, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 1209 Wimberly Road, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 22nd day of November, 2019.

Sarah W. Ronk (seal)
Sarah W. Ronk
Type or print name

STATE OF NORTH CAROLINA
COUNTY OF Wake

I, the undersigned, a Notary Public in and for the County of Wake, hereby certify that Sarah Wolfe Ronk, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's NC ID, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.



[NOTARY SEAL]

Anetbi Gray
Notary Public
State of North Carolina
My Commission Expires: 07/25/2024

AFFIDAVIT OF OWNERSHIP

Application #: _____

Submittal Date: _____

The undersigned, Willie T. Wolfe, Jr and Donna G. Wolfe (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 1401 Wimberly Road and legally described in Exhibit "A" attached hereto and incorporated herein (the "Property").
2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.
3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 8/24/2001, and recorded in the Wake County Register of Deeds Office on 9/14/2001, in Book 009075 Page 02649.
4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 1401 Wimberly Road, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 1401 Wimberly Road, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 15 day of November, 2014.

Willie T. Wolfe Jr. Donna G. Wolfe (seal)
Willie T. Wolfe Jr. Donna G. Wolfe
Type or print name

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I, the undersigned, a Notary Public in and for the County of Wake, hereby certify that Willie T. Wolfe Jr. and Donna G. Wolfe Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's NC Driver's Licenses, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.



Deanne M. Warren
Notary Public
State of North Carolina
My Commission Expires: 01/06/2024

AFFIDAVIT OF OWNERSHIP

Application #:

Submittal Date:

The undersigned, Tony Karr and Timothy V. Streeter (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 1405 Wimberly Road and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").
2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.
3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 7/15/2009, and recorded in the Wake County Register of Deeds Office on 12/14/2009, in Book 013792 Page 02642.
4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 1405 Wimberly Road, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 1405 Wimberly Road, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 15th day of Nov, 2019.

Timothy V. Streeter (seal)
Timothy V. Streeter
Type or print name

STATE OF NORTH CAROLINA

COUNTY OF Wake

I, the undersigned, a Notary Public in and for the County of Wake, hereby certify that Timothy V. Streeter, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's Timothy V. Streeter, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.



Manisha Gamage
Notary Public
State of North Carolina
My Commission Expires: 05-03-2021

AFFIDAVIT OF OWNERSHIP

Application #: _____

Submittal Date: _____

The undersigned, John Terry Paton (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 1000 Double Helix Road and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").
2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.
3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 5/29/2014, and recorded in the Wake County Register of Deeds Office on 5/29/2014, in Book 015672 Page 02496.
4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 1000 Double Helix Rd, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 1000 Double Helix Rd, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

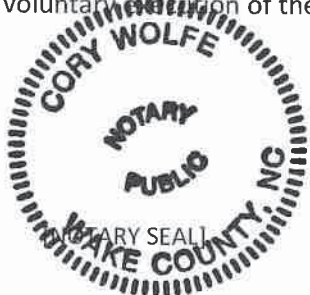
This the 12th day of November, 2019.

 (seal)
John Terry Paton
Type or print name

STATE OF NORTH CAROLINA

COUNTY OF Wake

I, the undersigned, a Notary Public in and for the County of Wake, hereby certify that John T. Paton, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's NC Owner's License, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.




Notary Public
State of North Carolina
My Commission Expires: September 30th, 2023

AFFIDAVIT OF OWNERSHIP

Application #: _____

Submittal Date: _____

The undersigned, Billy Ray Wolfe (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 1409 Wimberly Road and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").
2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.
3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 1/1/1997, and recorded in the Wake County Register of Deeds Office on 1/10/1997, in Book 007294 Page 00114.
4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 1409 Wimberly Road, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 1409 Wimberly Road, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 19 day of November, 2019.

Billy Ray Wolfe (seal)
Billy Ray Wolfe
Type or print name

STATE OF NORTH CAROLINA

COUNTY OF Wake

I, the undersigned, a Notary Public in and for the County of Wake, hereby certify that Billy Ray Wolfe, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's N.C. Driver's License, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.

[NOTARY SEAL]



Karen W. Watkins
Notary Public
State of North Carolina
My Commission Expires: 9/21/2021

AFFIDAVIT OF OWNERSHIP

Application #: _____

Submittal Date: _____

The undersigned, William D. Bunce II and Gail E. Bunce (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 1012 Double Helix Road and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").
2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.
3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 2/3/2003 and recorded in the Wake County Register of Deeds Office on 2/5/2003, in Book 009896 Page 00658.
4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 1012 Double Helix Rd, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 1012 Double Helix Rd, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 18th day of November, 2019.

[Signature] Gail E. Bunce (seal)

William D. Bunce II GAIL E. BUNCE
Type or print name

STATE OF NORTH CAROLINA

COUNTY OF Wake

I, the undersigned, a Notary Public in and for the County of Wake, NC, hereby certify that William D. Bunce II and Gail E. Bunce, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's (Personally Know), personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.

Jennifer W. Palermo
Notary Public
Wake County, North Carolina

[NOTARY SEAL]

[Signature]
Notary Public
State of North Carolina
My Commission Expires: October 25, 2020

Application #:

Submittal Date:

Insert legal description below.**1209 Wimberly Road**

BEGINNING at a point on the north-eastern right-of-way margin of Wimberly Road, said point having North Carolina State Plane Coordinates of North: 730,593.08 and East 2,024,286.65; thence from said beginning point, the following calls:

- S 86°11'46" E a distance of 182.99' to a point;
- S 85°45'45" E a distance of 769.81' to a point;
- S 01°58'45" W a distance of 328.13' to a point;
- S 89°21'41" W a distance of 740.23' to a point;
- N 28°28'40" W a distance of 63.48' to a point;
- a curve turning to the right with an arc length of 307.65', with a radius of 3895.50', with a chord bearing of N 26°12'54" W, with a chord length of 307.57' to a point;
- N 23°57'09" W a distance of 80.40' to the Point of Beginning.

The above described tract containing 309,217 square feet (7.099 acres)

AFFIDAVIT OF OWNERSHIP: EXHIBIT A – LEGAL DESCRIPTION

Application #:

Submittal Date:

Insert legal description below.

1401 Wimberly Road

BEGINNING at an existing iron pipe having North Carolina State Plane Coordinates of North: 730,196.13 and East 2,025,225.6; thence from said beginning point, the following calls:

- N 01°58'45" E a distance of 328.13' to a point;
- S 85°45'45" E a distance of 349.08' to a point;
- S 85°46'48" E a distance of 99.95' to a point;
- S 00°17'40" W a distance of 355.27' to a point;
- S 03°11'05" W a distance of 537.08' to a point;
- S 89°38'42" W a distance of 291.42' to a point;
- N 00°34'26" W a distance of 130.32' to a point;
- S 89°41'26" W a distance of 150.96' to a point;
- N 01°58'45" E a distance of 469.32' to the Point of Beginning.

The above described tract containing 392,670 square feet (9.014 acres)

Application #:

Submittal Date:

Insert legal description below.**1405 Wimberly Road**

BEGINNING at a point on the north-eastern right-of-way margin of Wimberly Road, said point having North Carolina State Plane Coordinates of North: 729,291.13 and East 2,025,364.73; thence from said beginning point, the following calls:

- N 00°34'26" W a distance of 306.48' to a point;
- N 89°38'42" E a distance of 291.42' to a point;
- S 00°12'43" E a distance of 516.89' to a point;
- A curve turning to the right with an arc length of 162.31', with a radius of 4171.73', with a chord bearing of N 54°51'15" W, with a chord length of 162.30' to a point;
- N 54°07'46" W a distance of 77.08' to a point;
- N 53°37'44" W a distance of 118.09' to a point;
- N 00°34'26" W a distance of 306.48' to the Point of Beginning.

The above described tract containing 119,882 square feet (2.752 acres)

Application #:

Submittal Date:

Insert legal description below.**1409 Wimberly Road**

BEGINNING at a point on the north-eastern right-of-way margin of Wimberly Road, said point having North Carolina State Plane Coordinates of North: 728,871.53 and East 2,026,004.45; thence from said beginning point, the following calls:

- N 62°13'45" W a distance of 45.22' to a point;
- A curve turning to the right with an arc length of 363.19', with a radius of 4171.73', with a chord bearing of N 58°27'47" W, with a chord length of 363.07' to a point;
- N 00°12'43" W a distance of 516.89' to a point;
- N 03°11'05" E a distance of 537.08' to a point;
- N 89°00'32" E a distance of 296.40' to a point;
- S 06°41'35" E a distance of 419.20' to a point;
- S 01°35'27" W a distance of 853.23' to a point;
- N 62°13'45" W a distance of 45.22' to the Point of Beginning.

The above described tract containing 410,586 square feet (9.426 acres)

Application #:

Submittal Date:

Insert legal description below.**1000 Double Helix Road**

BEGINNING at an existing iron pipe having North Carolina State Plane Coordinates of North: 730,146.11 and East 2,026,310.56; thence from said beginning point, the following calls:

- S 89°04'35" W a distance of 331.33' to a point;
- S 89°00'32" W a distance of 296.40' to a point;
- N 00°17'40" E a distance of 160.60' to a point;
- N 58°39'41" E a distance of 373.67' to a point;
- N 04°43'53" W a distance of 584.42' to a point;
- S 83°51'56" E a distance of 49.88' to a point;
- S 65°54'24" E a distance of 85.43' to a point;
- N 41°41'56" E a distance of 69.17' to a point;
- S 32°39'55" E a distance of 219.03' to a point;
- S 50°46'48" E a distance of 91.31' to a point;
- S 00°32'58" W a distance of 696.25' to the Point of Beginning.

The above described tract containing 358,904 square feet (8.239 acres)

Application #:

Submittal Date:

Insert legal description below.**1012 Double Helix Road**

BEGINNING at an existing iron pipe having North Carolina State Plane Coordinates of North: 731,418.45 and East 2,025,687.51; thence from said beginning point, the following calls:

- S 67°39'28" E a distance of 247.90' to a point;
- S 49°40'39" E a distance of 166.19' to a point;
- S 32°39'55" E a distance of 157.06' to a point;
- S 41°41'56" W a distance of 69.17' to a point;
- N 65°54'24" W a distance of 85.43' to a point;
- N 83°51'56" W a distance of 49.88' to a point;
- S 04°43'53" E a distance of 584.42' to a point;
- S 58°39'41" W a distance of 373.67' to a point;
- N 00°17'40" E a distance of 194.66' to a point;
- N 00°10'17" E a distance of 927.55' to the Point of Beginning;

The above described tract containing 304,410 square feet (6.988 acres)

NOTICE OF NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

September 4, 2019

Date

Dear Neighbor:

You are invited to a neighborhood meeting to review and discuss the development proposal at

1405, 1409, 1209 & 1401 Wimberly Rd and 1012 & 1000 Double Helix Dr

Address(es)

0722595328, 0722598851, 0723406397, 0723504154,

0723508938 &

PIN(s)

0723601654

in accordance with the Town of Apex Neighborhood Meeting procedures. This meeting is intended to be a way for the applicant to discuss the project and review the proposed plans with adjacent neighbors and neighborhood organizations before the submittal of an application to the Town. This provides neighbors an opportunity to raise questions and discuss any concerns about the impacts of the project before it is officially submitted. Once an application has been submitted to the Town, it may be tracked using the [Interactive Development Map](#) or the [Apex Development Report](#) located on the Town of Apex website at www.apexnc.org.

A Neighborhood Meeting is required because this project includes (check all that apply):

Application Type	Approving Authority
<input checked="" type="checkbox"/> Rezoning (including Planned Unit Development)	Town Council
<input type="checkbox"/> Major Site Plan	Town Council (QJPH*)
<input type="checkbox"/> Special Use Permit	Town Council (QJPH*)
<input checked="" type="checkbox"/> Residential Master Subdivision Plan (excludes exempt subdivisions)	Technical Review Committee (staff)

*Quasi-Judicial Public Hearing: The Town Council cannot discuss the project prior to the public hearing.

The following is a description of the proposal (also see attached map(s) and/or plan sheet(s)):

120 units - 70 single family detached and 50 townhomes. Town of Apex owned land attached for future park is shown for reference only. The park is NOT part of this Rezoning or Master Subdivision Plan

Estimated submittal date: October 1, 2019

MEETING INFORMATION:

Property Owner(s) name(s):	Tony Karr, Timothy Streeter, Billy Ray Wolfe, Sarah Ronk, Wm & Gail Bunce,
Applicant(s):	Envision Homes, LLC ^{Willie & Donna Wolfe and John Paton}
Contact information (email/phone):	Josh Swindell - Josh@envisionhomesnc.com, 919-389-7595
Meeting Address:	Coldwell Banker Office 2nd Fl Conference Rm, 100 Connemara Rd, Cary
Date of meeting**:	Monday, September 16, 2019
Time of meeting**:	6:00 - 8:00 pm

MEETING AGENDA TIMES:

Welcome: 6:00 pm Project Presentation: 6:15 pm Question & Answer: 6:30 pm

**Meetings shall occur between 5:00 p.m.-9:00 p.m. on a Monday through Thursday (excluding Town recognized holidays). If you have questions about the general process for this application, please contact the Planning Department at 919-249-3426. You may also find information about the Apex Planning Department and on-going planning efforts at <http://www.apexnc.org/180/Planning>.

PROJECT CONTACT INFORMATION

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Development Contacts:

Project Name: Wolfe Properties PUD Zoning: PUD-CZ

Location: 1405, 1409, 1209 & 1401 Wimberly Rd and 1012 & 1000 Double Helix Drive

Property PIN(s): See attached Sheet Acreage/Square Feet: 43.39

Property Owner: See attached Sheet

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

Developer: Envision Homes, LLC

Address: 4441 Six Forks Road Suite 106-117

City: Raleigh State: NC Zip: 27609

Phone: 919-389-7595 Fax: _____ Email: josh@envisionhomesnc.com

Engineer: The Curry Engineering Group, PLLC

Address: 205 S. Fuquay Avenue

City: Fuquay-Varina State: NC Zip: 27526

Phone: 919-552-0849 Fax: _____ Email: andy@curryeng.com

Builder (if known): TBD

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Please note that Town staff will not have complete information about a proposed development until the application is submitted for review. If you have a question about Town development standards and how they relate to the proposed development, please contact the appropriate staff person listed below.

Town of Apex Department Contacts

Planning Department Main Number (Provide development name or location to be routed to correct planner)	(919) 249-3426
Parks, Recreation & Cultural Resources Department Angela Reincke, Parks Planner	(919) 249-7468
Public Works - Transportation Russell Dalton, Senior Transportation Engineer	(919) 249-3358
Water Resources Department Mike Deaton, Stormwater & Utility Engineering Manager Stan Fortier, Senior Engineer (Sedimentation & Erosion Control)	(919) 249-3413 (919) 249-1166
Electric Utilities Division Rodney Smith, Electric Technical Services Manager	(919) 249-3342

PIN	Owner	Mail Address 1	Mail Address 2	Site Address
0722595328	KARR, TONY STREETER, TIMOTHY V	3800 SARATOGA DR	RALEIGH NC 27604-3445	1405 WIMBERLY RD
0722598851	WOLFE, BILLY RAY	1409 WIMBERLY RD	APEX NC 27523-6767	1409 WIMBERLY RD
0723406397	RONK, SARAH W	1209 WIMBERLY RD	APEX NC 27523-6771	1209 WIMBERLY RD
0723504154	WOLFE, WILLIE T JR WOLFE, DONNA G	1401 WIMBERLY RD	APEX NC 27523-6767	1401 WIMBERLY RD
0723508938	BUNCE, WILLIAM D II BUNCE, GAIL E	7617 SNAFFLEBIT LN	APEX NC 27502-3975	1012 DOUBLE HELIX RD
0723601654	PATON, JOHN TERRY	1000 DOUBLE HELIX RD	APEX NC 27523-6735	1000 DOUBLE HELIX RD

NEIGHBORHOOD MEETING SIGN-IN SHEET

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.


Meeting Address: Coldwell Banker Office 2nd Fl Conference Rm, 100 Connemara Rd, Cary

Date of meeting: September 16, 2019 Time of meeting: 6 PM

Property Owner(s) name(s): See attached in packet

Applicant(s): Envision Homes, LLC

Please print your name below, state your address and/or affiliation with a neighborhood group, and provide your phone number and email address. Providing your name below does not represent support or opposition to the project; it is for documentation purposes only.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	Andy Petty / Curry Engineering	205 S. Fuquay Avenue Fuquay-Varina, NC 27526	919-552-0849	andy@curryeng.com	
2.	<u>Joe Barker / EH</u>	<u>4700 Falls of Neuse Rd Raleigh, NC</u>			
3.	<u>Jennifer Mack</u>	<u>550 White Oak Road Apex</u>			
4.	<u>Josh Swindell</u>	<u>4700 Falls of Neuse Rd. Raleigh, NC</u>			
5.	<u>John Hton</u>	<u>1000 Double Helix Rd Apex NC</u>			
6.	<u>Billy & Alexia Wolfe</u>	<u>1409 Wimberly Rd. Apex NC 27523</u>			
7.	<u>Erik Sullivan</u>	<u>5529 Sunlight Dr.</u>			
8.	<u>Lisa Ross</u>	<u>1104 Double Helix Rd</u>			
9.	<u>Jeffrey Ross</u>	<u>1104 Double Helix Rd</u>			
10.	<u>Lorna Wolfe</u>	<u>1401 Wimberly Rd</u>			
11.	<u>Dean Burke</u>	<u>1012 Double Helix</u>			
12.					
13.					
14.					

Use additional sheets, if necessary.

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Property Owner(s) name(s): See attached

Applicant(s): Envision Homes

Contact information (email/phone): Josh Swindell - josh@envisionhomesnc.com

Meeting Address: 100 Connemara Drive, Cary, NC

Date of meeting: 9/16/19

Time of meeting: 6 PM

Please summarize the questions/comments and your response from the Neighborhood Meeting in the spaces below (attach additional sheets, if necessary). Please state if/how the project has been modified in response to any concerns. The response should not be "Noted" or "No Response". There has to be documentation of what consideration the neighbor's concern was given and justification for why no change was deemed warranted.

Question/Concern #1:

Property is currently county zoned R-80W - Are you matching density and impervious for R-80W?

Neighbor stated adjacent development matched R-40 for density.

Applicant's Response:

No we are not matching density or impervious limitations for R-80W because we will now be
in the Town of Apex, not under the county's UDO. We will have to meet all stormwater
regulations set forth in the Town of Apex, not the county.

Question/Concern #2:

What are you doing for existing culverts to protect them from being blown out?

Applicant's Response:

We will address culvert sizes during the construcion drawings phase of the project but the
project will have to comply with the Town of Apex standards.

Question/Concern #3:

Density for Townhomes versus single family

Applicant's Response:

The overall project density is limited to 3 DU/A. Its not specific by use.

Question/Concern #4:

How does the access easement to the north remain?

Applicant's Response:

We will have to have our attorney review the easement language for the access easement
however, an easement will still be provided to a public right of way so that there is still a public
access easement to the existing properties.

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Property Owner(s) name(s): _____

Applicant(s): _____

Contact information (email/phone): _____

Meeting Address: _____

Date of meeting: _____ Time of meeting: _____

Please summarize the questions/comments and your response from the Neighborhood Meeting in the spaces below (attach additional sheets, if necessary). Please state if/how the project has been modified in response to any concerns. The response should not be "Noted" or "No Response". There has to be documentation of what consideration the neighbor's concern was given and justification for why no change was deemed warranted.

Question/Concern #1:

There is a deed restriction requiring a 100' undisturbed no clear cutting buffer as part of the Bunce property.
Why is that not shown on the plans? Neighbor provided deed to applicant.

Applicant's Response:

We were not aware of this deed restriction. We will have our attorney review the document for validity.
If it is determined this is a legal deed restriction on the property the buffer will be honored.

Question/Concern #2:

How are the existing mailboxes for existing homes being handled?

Applicant's Response:

We will coordinate with the USPS but they will be relocated to the nearest public right of way

Question/Concern #3:

Will there be a privacy fence put up? Concern for trespassing

Applicant's Response:

This will be determined at the building and construction level. Typically we do not put up privacy fences unless
strictly required or requested by the home buyer.

Question/Concern #4:

Will we be notified for Planning Board and Town Council Meetings?

Applicant's Response:

Yes. Notices will come from the Town of Apex, not the developer for rezoning. Master Subdivision is
staff approval only.

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Property Owner(s) name(s): _____

Applicant(s): _____

Contact information (email/phone): _____

Meeting Address: _____

Date of meeting: _____ Time of meeting: _____

Please summarize the questions/comments and your response from the Neighborhood Meeting in the spaces below (attach additional sheets, if necessary). Please state if/how the project has been modified in response to any concerns. The response should not be "Noted" or "No Response". There has to be documentation of what consideration the neighbor's concern was given and justification for why no change was deemed warranted.

Question/Concern #1:

Do you know the location of the fire station as part of the TOA Park Project?

Applicant's Response:

No we do not know that location.

Question/Concern #2:

Applicant's Response:

Question/Concern #3:

Applicant's Response:

Question/Concern #4:

Applicant's Response:

AFFIDAVIT OF CONDUCTING A NEIGHBORHOOD MEETING, SIGN-IN SHEET AND ISSUES/RESPONSES SUBMITTAL

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

I, Wendy Loeffler, do hereby declare as follows:
Print Name

1. I have conducted a Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Master Subdivision Plan, or Special Use Permit in accordance with UDO Sec. 2.2.7 *Neighborhood Meeting*.
2. The meeting invitations were mailed to the Apex Planning Department, all property owners within 300 feet of the subject property and any neighborhood association that represents citizens in the area via first class mail a minimum of 10 days in advance of the Neighborhood Meeting.
3. The meeting was conducted at Coldwell Banker, 100 Connemara Rd, Cary (location/address) on September 16, 2019 (date) from 6:00 pm (start time) to 8:00 pm (end time).
4. I have included the mailing list, meeting invitation, sign-in sheet, issue/response summary, and zoning map/reduced plans with the application.
5. I have prepared these materials in good faith and to the best of my ability.

10/1/19

Date

By: Wendy Loeffler

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Amanda L Lane, a Notary Public for the above State and County, on this the 1 day of October, 2019.

SEAL



Amanda L Lane
Notary Public
Amanda L Lane
Print Name

My Commission Expires: 2/11/2023

WOLF PROPERTIES PUD REZONING & MASTER SUBDIVISION NEIGHBORHOOD MEETING PACKET

Meeting Location – 100 Connemara Drive, 2nd Floor Conference Room
Cary, NC 27519

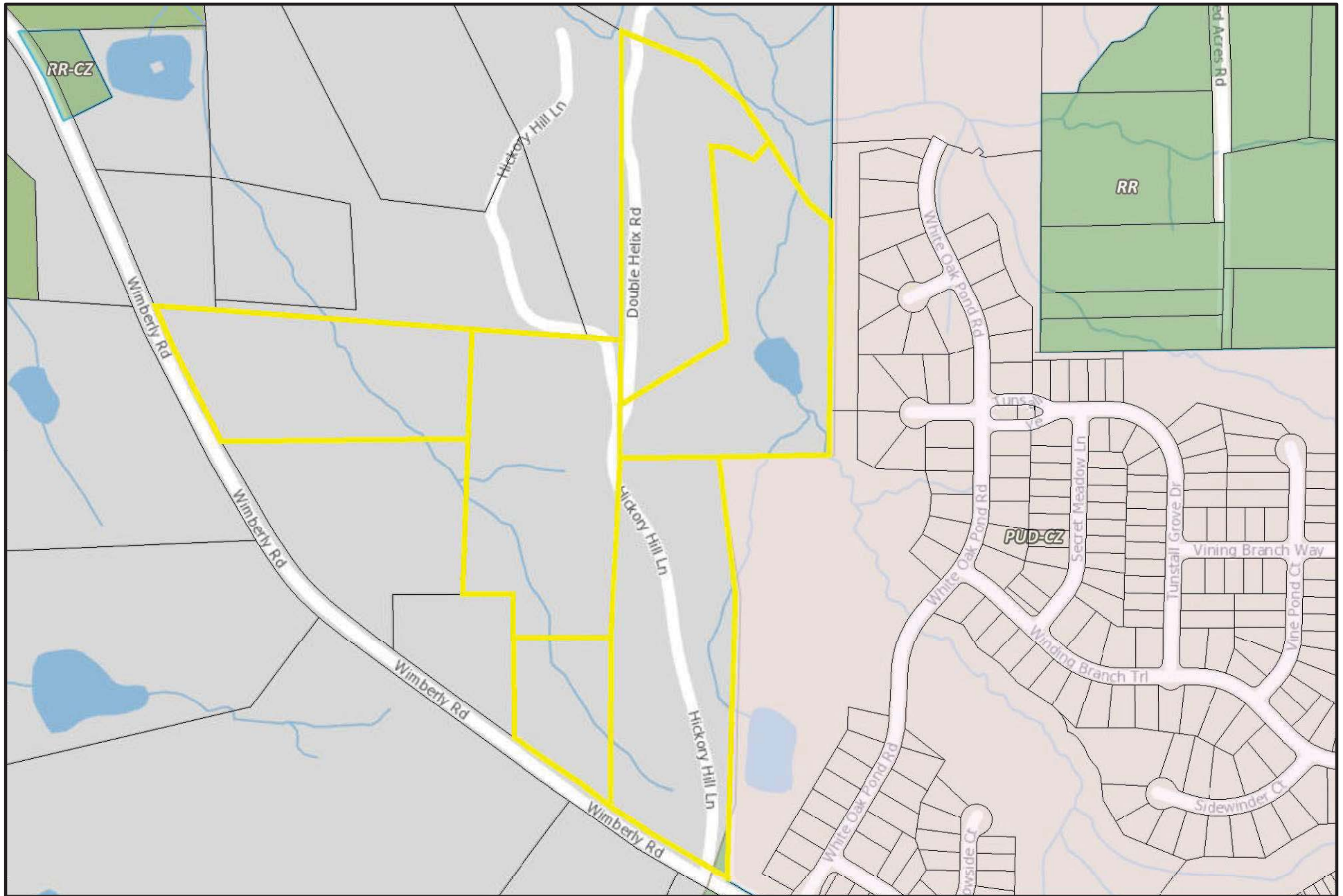
Meeting Date – Monday September 16, 2019

Packet Information

1. Vicinity Map
2. Existing Zoning & Land Use Map
3. Proposed Subdivision Layout
4. Project Contact Information Sheet
5. Common Construction Issues & Who to Call Sheet

Contact Information

Andrew Petty, PE
Vice President / Senior Engineer
Curry Engineering Group
205 S. Fuquay Avenue
Fuquay-Varina, NC 27526
919.552.0849
andy@curryeng.com



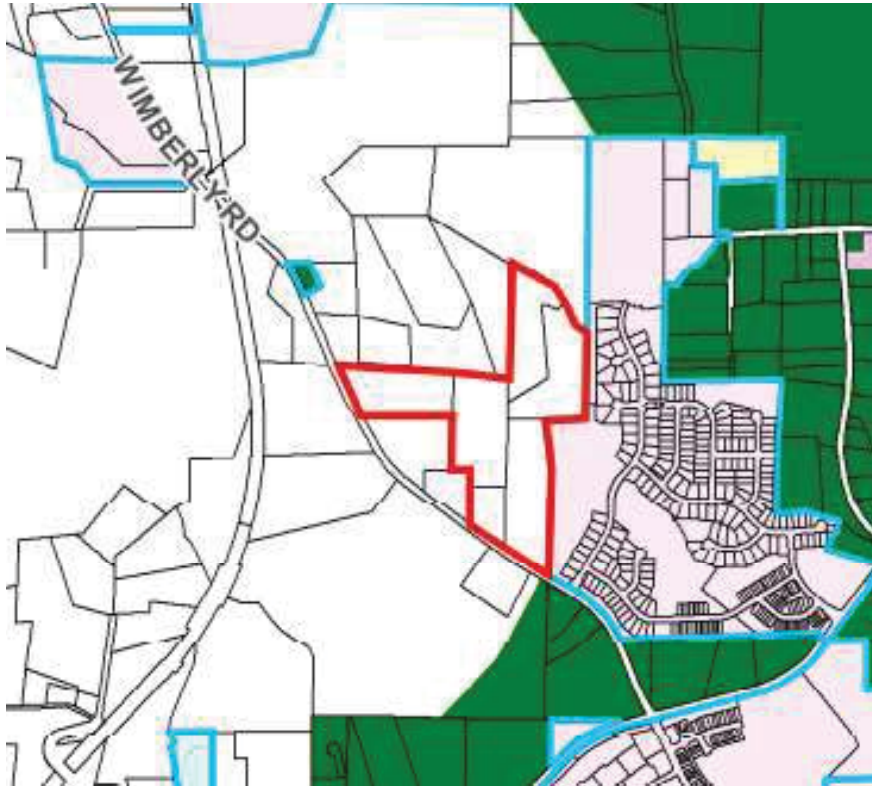
Wolfe Properties PUD



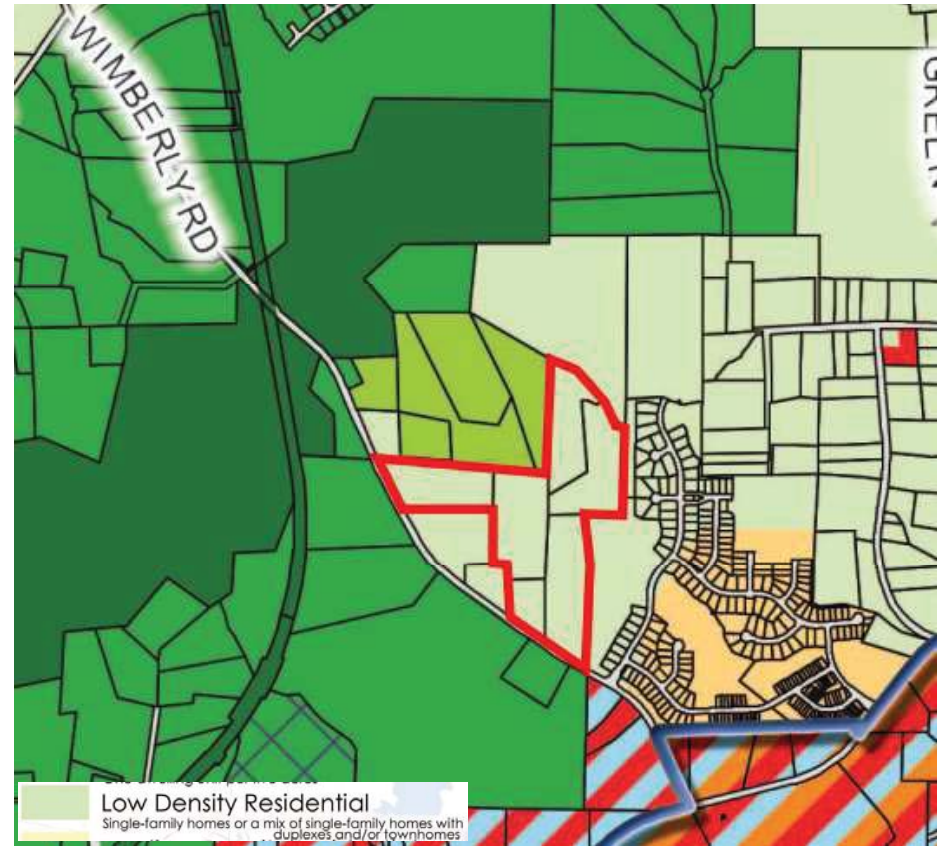
0 215 430 860 ft
1 inch = 400 feet

Disclaimer

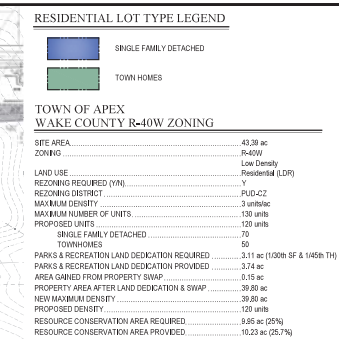
iMaps makes every effort to produce and publish the most current and accurate information possible. However, the maps are produced for information purposes, and are **NOT** surveys. No warranties, expressed or implied, are provided for the data therein, its use, or its interpretation.



Zoning Map - Wake County Zoned R-80W



2045 Land Use Plan - Low Density Residential



APEX, NORTH CAROLINA
SINGLE FAMILY DETACHED & TOWN HOME SITES

PROJECT CONTACT INFORMATION

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Development Contacts:

Project Name: Wolfe Properties PUD Zoning: PUD-CZ

Location: 1405, 1409, 1209 & 1401 Wimberly Rd and 1012 & 1000 Double Helix Drive

Property PIN(s): See attached Sheet Acreage/Square Feet: 43.39

Property Owner: See attached Sheet

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

Developer: Envision Homes, LLC

Address: 4441 Six Forks Road Suite 106-117

City: Raleigh State: NC Zip: 27609

Phone: 919-389-7595 Fax: _____ Email: josh@envisionhomesnc.com

Engineer: The Curry Engineering Group, PLLC

Address: 205 S. Fuquay Avenue

City: Fuquay-Varina State: NC Zip: 27526

Phone: 919-552-0849 Fax: _____ Email: andy@curryeng.com

Builder (if known): TBD

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Please note that Town staff will not have complete information about a proposed development until the application is submitted for review. If you have a question about Town development standards and how they relate to the proposed development, please contact the appropriate staff person listed below.

Town of Apex Department Contacts

Planning Department Main Number (Provide development name or location to be routed to correct planner)	(919) 249-3426
Parks, Recreation & Cultural Resources Department Angela Reincke, Parks Planner	(919) 249-7468
Public Works - Transportation Russell Dalton, Senior Transportation Engineer	(919) 249-3358
Water Resources Department Mike Deaton, Stormwater & Utility Engineering Manager Stan Fortier, Senior Engineer (Sedimentation & Erosion Control)	(919) 249-3413 (919) 249-1166
Electric Utilities Division Rodney Smith, Electric Technical Services Manager	(919) 249-3342

Prepared for:

ENVISION HOMES, LLC

4441 Six Forks Road

Suite 106-117

Raleigh, NC 27609

PD PLAN

Wolfe Properties PUD

A PLANNED UNIT DEVELOPMENT

Town of Apex, North Carolina

October 1, 2019

Revised December 6, 2019

Revised February 14, 2020

Revised March 13, 2020

Revised May 6, 2020

FINAL VERSION – June 10, 2020



Prepared by:

Andrew Petty, PE

The Curry Engineering Group, PLLC

PO Box 2018

205 S. Fuquay Avenue

Fuquay-Varina, NC 27526

(919)552-0849

TABLE OF CONTENTS

	Page
1.0 Table of Contents	2
2.0 Vicinity Map	3
3.0 Project Data.	4
4.0 Purpose Statement.	5
5.0 Permitted Uses	6
6.0 Design Controls	7
7.0 Architectural Standards	8
8.0 Parking and Loading	10
9.0 Signs.	10
10.0 Natural Resources and Environment Data	10
11.0 Stormwater Management	10
12.0 Parks and Recreation	10
13.0 Public Facilities	11
14.0 Phasing	11
15.0 Consistency	11
16.0 Compliance with the UDO	11
17.0 Land Use Notes	11



2.0 Vicinity Map

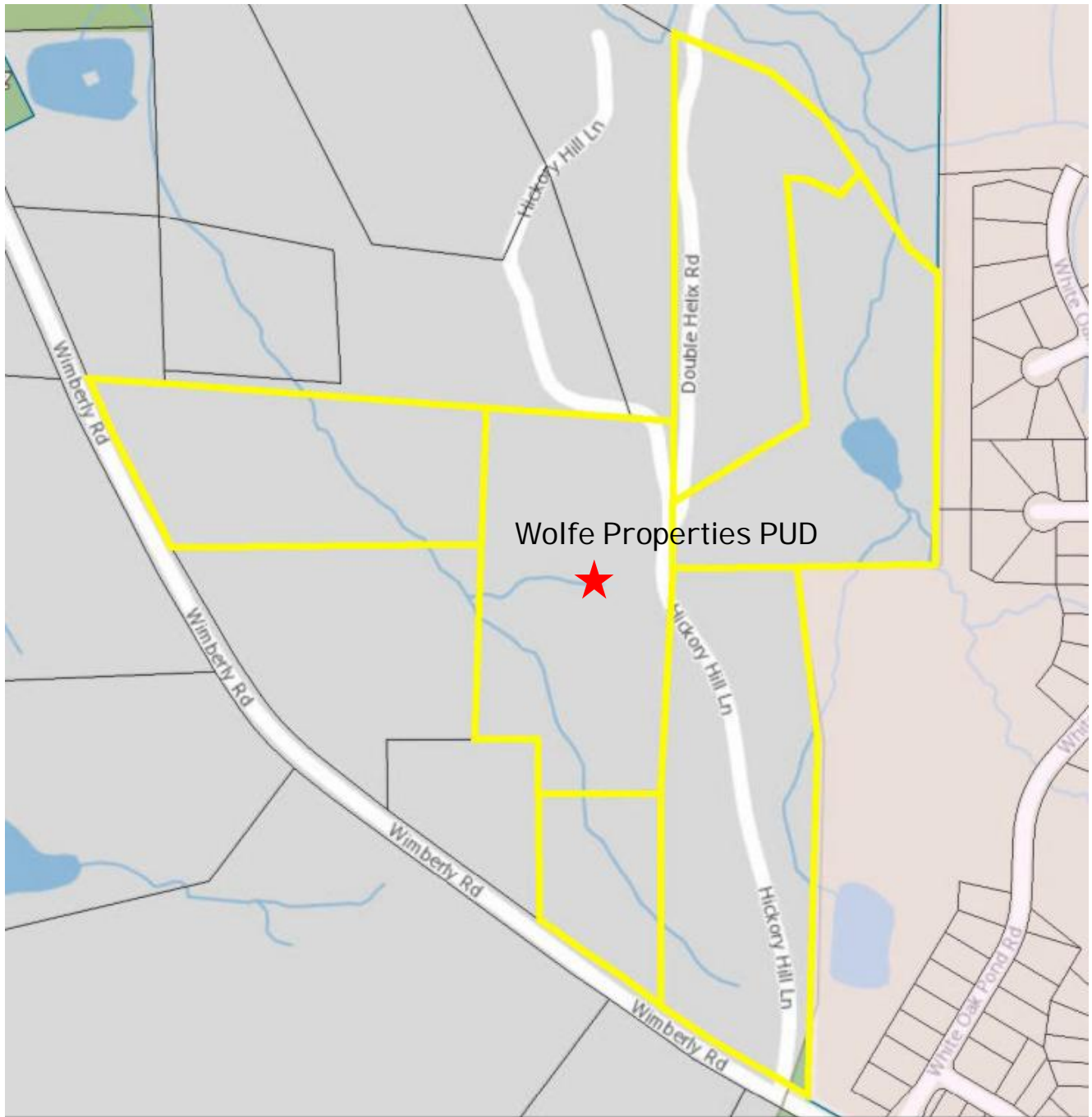


Figure 1 - Vicinity Map – Courtesy of Wake County iMaps 2019

3.0 Project Data

3.1 Project Name: Wolfe Properties PUD

3.2 Owner/Developer: Envision Homes, LLC
4441 Six Forks Road, Suite 106-117
Raleigh, NC 27609
(919) 389-7595

3.3 Prepared By: The Curry Engineering Group, PLLC
205 S Fuquay Avenue
Fuquay-Varina, NC 27526
(919) 552-0849

3.4 Designated Single Point of Contact: Andrew Petty, PE
The Curry Engineering Group, PLLC

3.5 Current and Proposed Zoning of the Property:

Current Zoning: County R-80 W & Town of Apex RR
Proposed Zoning: PUD-CZ

3.6 Current and Proposed Land Uses:

Current: Residential, Vacant
Proposed: Residential

3.7 Current and Proposed 2045 Land Use Designation:

Current: Low Density Residential
Proposed: Low Density Residential

4.0 Purpose Statement

Wolfe Properties PUD is a proposed residential project to be developed under the Town of Apex ordinance as a Planned Unit Development (PUD). The project contains six parcels under contract by Envision Homes, LLC. The project is located along Wimberly Road and adjacent to the Preserve at White Oak development. These parcels are all designated as Low Density Residential on the 2045 Land Use Map.

The proposal to rezone this property to PUD-CZ is in keeping with the town's objectives to create high quality developments with a small town feel. This development will be a pedestrian friendly community with sidewalks along both sides of the internal public streets and sidewalk stubs to the future Town of Apex Park. The project will cluster small lots and multi-family dwelling units near the future town park to create a community feel and ensure the future park is an amenity to the community. This development will enhance the value of the surrounding properties by providing quality residential development for the areas as a mixed residential development.

5.0 Permitted Uses

The Town of Apex UDO allows a mixture of uses in the PUD zoning district and the owners have chosen to further restrict the allowable uses as listed below:

Residential Uses

Single family (Minimum Lot Size = 6,000 sf)

Townhome (Minimum Width = 20')

Accessory Apartment

Utilities

Utility, minor

Recreational Uses

Greenway

Park, active

Park, passive

Recreational facility, private

Government Services – Limited to Parcel #1 and #2 as shown on the PUD Plan.

6.0 Design Controls

6.1 Maximum Densities

Maximum residential density for the project is 3.0 units per gross acre or a maximum of 130 units. The total gross acreage for the property is 43.52. This development proposes 130 units.

6.2 Proposed Maximum Height of the Buildings and Number of Stories

Single Family Maximum Height – 42'	Single Family Maximum Stories – 2
Townhouses – Maximum Height – 50'	Townhouses Maximum Stories – 3

6.3 Proposed Minimum Building Setbacks

Residential Single Family Detached

From Buffer or RCA – 10'
Front Yard – 10' Minimum
Side Yard – 5' Minimum (no aggregate)
Corner Side Yard – 10' Minimum
Rear Yard – 10' Minimum
Driveways from Back of Sidewalk to Garage – 20' (12' minimum width)

Townhouses

From Buffer or RCA – 10'
Front Yard – 10' Minimum
Side Yard (end units) – 5' Minimum
Rear Yard – 5' Minimum
From Public Right-of-Way to Garage – 18' Minimum where no sidewalk is present
From Public Right-of-Way to Garage – 20' Minimum where sidewalk is present
Building Side to Side – 10'
Building Side to Rear – 30'
Building Rear to Rear – 40'

6.4 Percentage of Built upon Area

The UDO allows for a maximum 70 percent of built upon area in PUD project and the Wolfe Properties PUD will not exceed that amount.

6.5 Perimeter Buffers

The PD plans show buffers around the site to provide visual breaks between uses and public roads. We are proposing a 30' Type B buffer along Wimberly Road assuming the buffer is under disturbed. If the buffer is disturbed it shall be increased to a 50' Type B buffer. The perimeter buffers have been shown to be a 20' Type B buffer with the exception of property that abuts Town property; this shall be 10' Type B buffer. If Government Services are proposed, the buffers shall be a Type A. A 100' no clear cut buffer is a deed restriction buffer along the

property line that abuts property with PIN: 0723-51-7896. The only disturbance permitted within this buffer shall be a driveway to serve the referenced PIN and the installation of a fence within the buffer near the common property line. Such fence shall not be chain link.

6.6 Economy Housing Condition

Where economy housing is housing that can be purchased by a household that earns approximately the median household income for Apex, Wolfe Properties PUD will address economy housing by providing a minimum of 10% of the total number of units of the development, as determined at the master subdivision phase. The townhouse units shall have a minimum width of 18' and a maximum width of 20' with no garages and allowable parking in compliance with Section 8.3 however they shall adhere to all other setback and architectural conditions set forth in the PUD plan.

7.0 Architectural Standards

7.1 Single Family Detached Residential Standards

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. Garage doors must contain windows, decorative details or carriage-style adornments.
3. House entrances for homes with front facing single-car garages must have a covered porch/stoop area leading to the front door.
4. The garage cannot protrude more than one foot out from the front façade or front porch unless it is a side entry garage.
5. The visible side of a home on a corner lot facing the public street shall contain at least 2 decorative elements such as, but not limited to, the following elements.
 - Windows
 - Bay Window
 - Recessed Window
 - Decorative Window
 - Trim around the Windows
 - Wrap around porch or Side Porch
 - Two or More Building Materials
 - Decorative Brick/Stone
 - Decorative Trim
 - Decorative Shake
 - Decorative Air Vents on Gable
 - Decorative Gable
 - Decorative Cornice
 - Column
 - Portico
 - Balcony
 - Dormer

6. All windows on a side elevation shall have decorative trim, shutters or shall be a bay window.
7. Front porches, when provided, shall be at least six-feet (6') deep.
8. A varied color palette shall be utilized on homes throughout the subdivision to include a minimum of three color families for siding and shall include varied trim, shutter, and accent colors complimenting the siding color.
9. Eaves shall project at least 12 inches from the wall of the structure.
10. The roof shall be pitched at 5:12 or greater for 75% of the building designs. These lots will be identified on the Master Subdivision Plan
11. A minimum of 50% of all single family homes will be restricted to have a master bedroom located on the first floor of the building. However, up to 50% of the homes shall be permitted to have a master bedroom not on the first floor. These units shall be identified on the final plat.

7.2 Residential Townhome Standards

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. There shall be one roof element such as a gable or dormer on each unit.
3. Garage doors must contain windows, decorative details or carriage-style adornments.
4. House entrances for units with front facing single-car garages must have a covered porch/stoop area leading to the front door.
5. The garage cannot protrude more than one foot out from the front façade or front porch.
6. All exterior windows shall have decorative trim on all four sides.
7. On corner lots, the side elevation facing the public street shall contain at least two decorative elements such as but not limited to:
 - Trim around windows
 - Two or more building materials
 - Decorative brick/stone
 - Side Entry

7.3 Non-Residential Use Standards

1. EIFS or synthetic stucco shall not be used in the first four feet above grade.
2. The building exterior shall have more than one (1) material color.
3. The building shall have more than one parapet height.

4. The following exterior materials shall not be permitted: vinyl siding, metal walls, and painted, smooth-faced concrete block (decorative blocks are acceptable).

8.0 Parking and Loading

Parking and loading requirements for the residential areas shall conform to the parking standards listed in the Town of Apex UDO Section 8.3.

9.0 Signs

Signage for this project will comply with UDO section 8.7. The developer shall submit a master sign plan that shows signage locations and details of signage patterns throughout the development.

10.0 Natural Resource and Environmental Data

- 10.1 This project is located in the Jordan Lake drainage basin which is in the Cape Fear Basin. This project currently falls just outside the primary watershed protection overlay district as shown on the Town of Apex watershed maps; however once annexed it will be in the primary watershed protection overlay district.
- 10.2 There is no FEMA mapped floodplain on the site as shown on FEMA FIRM Map Number 3720072300 or 3720072201, dated May 2, 2006.
- 10.3 There are no known historic structures on this project.
- 10.4 The PUD is required to provide at least 25% of the total area for Resource Conservation Area and landscape buffers. If the residential single family lots are mass graded, then the project shall dedicate an additional 5% RCA. For this project that will equate to 10.88 acres of required RCA area. This project proposes to dedicate 10.90 acres and will increase that area if mass graded.
- 10.5 Existing deciduous trees greater than 18" in diameter that are removed by site development shall be replaced by planting a 1.5" caliper native tree from the Town of Apex Design and Development Manual either on-site or at an alternative site location approved by Town Planning Staff.

11.0 Stormwater Management

Wolfe Properties PUD will meet all applicable requirements and standards as described in section 6.1 of the Apex UDO. This project will meet all stormwater reduction requirements including limiting the post-development stormwater flows to not exceed the pre-development stormwater runoff for the 1 year and 10 year storm events. This project will commit to providing attenuation for the 2 year and 25 year storms as well.

Wolfe Properties PUD will use approved devices to control the stormwater sediment runoff. These devices may include wet detention basins, constructed wetlands, bioretention areas, sand filters or any other approved stormwater control measure. Stormwater control devices shall be landscaped and constructed to be an amenity to the development and shall blend into the surroundings.

12.0 Parks and Recreation

The Wolfe Properties PUD was reviewed by the Parks, Recreation and Cultural Resources Advisory Commission on February 26th, 2020 and they unanimously recommended a land dedication in the location provided in the PUD Plan, located contiguous to the southern boundary of the future park property along the frontage of Wimberly Road to comply with Sec 14.1.3 Standards of Dedication. The total acreage to be dedicated will be determined by the total unit count at the time of Master Subdivision Plan approval. They also recommended the reservation of a Public Greenway Easement along one of the Utility Easement corridors to provide access to the Park for the Wolfe Properties PUD as well as the Preserve at White Oak Creek with the location being determined at the time the Master Subdivision Plan approval.

Additionally, to assist the Town of Apex with future plans, the project offers the following conditions:

1. Zoning condition for environmental assessment: A Phase I environmental assessment will be completed on the property to be dedicated to the Town and provided to the Town prior to construction plan approval.
2. Zoning condition for land dedication: If the Town of Apex determines that it wants the land dedication for the purposes of a public safety station versus park land, the land dedication will occur by January 31, 2021 or prior to construction plan approval of Public Safety Station #6 (PSS #6), whichever comes later. If the land will be used for park purposes, the timing specified in the UDO will be followed.
3. Zoning condition for road improvements: If the Town of Apex determines that it wants the land dedication for the purposes of a public safety station versus park land, road improvements for the collector street will be completed from Wimberly Road to just past the planned public safety station driveway no later than February 28, 2022 or prior to the certificate of occupancy, whichever comes later. If the land will be used for park purposes, the timing specified in the UDO will be followed.
4. Zoning condition for timing of CD approval: If the Town of Apex determines that it wants the land dedication for the purposes of a public safety station versus park land, a temporary driveway permit signed by NCDOT will suffice for Construction Drawing approval, provided the final driveway permit application has been submitted to NCDOT; any changes from the temporary driveway permit to the final driveway permit will be the responsibility of the developer, and this shall in no way release the developer from all other applicable requirements prior to Construction Drawing approval."

5. In the event the Town has not provided notice to the applicant of the decision to use the land for PSS #6 by August 3, 2020, the developer will be given an additional amount of time, equivalent to the length of time the Town's decision is delayed beyond August 3, 2020, to complete all conditions.

13.0 Public Facilities

All internal public streets will have sidewalks on both sides of the street. Roadway improvements will be required along Wimberly Road and these improvements will be coordinated with the Town of Apex and NCDOT. The roadway widening along Wimberly Road shall be based on the Town of Apex's thoroughfare plan. The project will provide a minor collector street through the subdivision that will stub to north for future extension as shown on the town's thoroughfare plan. Bicycle and pedestrian improvements associated with subdivision plans for any development to be made pursuant to this amendment to the Official Zoning District Map shall comply with the adopted Comprehensive Transportation Plan in effect at the time of subdivision plan approval as provided for in the UDO.

In compliance with the Town of Apex's UDO Section 13.19.4, the project offers, subject to NCDOT review and approval the following off-site roadway improvements:

1. Green Level West and Wimberly Road Intersection: The developer shall construct a northbound taper right turn lane on Wimberly Road with 50-foot of full width deceleration and a 100-foot taper prior to the first plat. Construction of curb and gutter will be limited to only along the 50-foot deceleration along the sidewalk and storm drainage structures will only be placed in areas as necessary to continue existing drainage patterns and not restrict existing structures.
2. Wimberly Road and Jenks Road Intersection: The developer shall construct a southbound taper right turn lane on Wimberly Road with 50-foot of full width deceleration and a 100-foot taper prior to the first plat. No curb & gutter will be installed. Vegetated conveyances will be utilized to stay consistent with current conditions and no upgrades to existing storm drainage infrastructure.

As shown on the PUD Utility Plan, the sanitary sewer connection will connect to an existing sewer manhole and line near the northern end of Double Helix Road. Water distribution service will be provided to this project by eight inch waterline connection to the existing twelve inch waterline along Wimberly Road.

14.0 Phasing

The project shall be developed in multiple phases and construction would likely start in 2020.

15.0 Consistency with Land Use Plan

The Town of Apex 2045 Land Use Map currently designates these parcels as Low Density Residential. We believe this PUD is appropriate for the area and is consistent with the current intent of the Town Council.

16.0 Compliance with the UDO

The proposed plans for Wolfe Properties PUD are in compliance with the standards and allowances provided in the current approved version of the Town of Apex Unified Development Ordinance. Any variance from UDO requirements has been noted in this plan.

17.0 Land Use Notes

- 17.1 This project will require the formation of a Homeowners Association which will handle the maintenance of common areas, buffers, RCA, stormwater devices, etc.
- 17.2 Any existing houses on the properties will be either moved or removed from the site.

END OF REPORT

RESIDENTIAL LOT TYPE LEGEND

50' WIDE SINGLE FAMILY LOTS	COMMON AREAS HOA
TOWNHOME LOTS	LAND DEDICATED TO TOWN OF APEX
WETLANDS	PONDS & SCM

TOWN OF APEX
WAKE COUNTY R-40W ZONING

SITE AREA	43.52 ac
ZONING	R-40W
LAND USE	Low Density Residential (LDR)
REZONING REQUIRED (Y/N)	Y
REZONING DISTRICT	PUD-CZ
MAXIMUM DENSITY	3 units/ac
MAXIMUM NUMBER OF UNITS	130 units
PROPOSED UNITS	121 units
SINGLE FAMILY DETACHED	55
TOWNHOMES	66
PARKS & RECREATION LAND DEDICATION REQUIRED	3.30 ac (1/30th SF & 1/45th TH)
PARKS & RECREATION LAND DEDICATION PROVIDED	3.37 ac
PROPOSED DENSITY	2.78 units/ac
RESOURCE CONSERVATION AREA REQUIRED	9.95 ac (25%)
RESOURCE CONSERVATION AREA PROVIDED	11.82 ac (27.2%)

End of Subdivision Road stubbing to the proeprty line of Tract 1

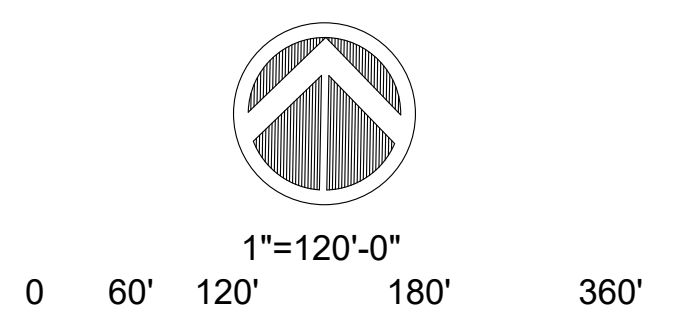
Grantee to allow Grantor within this area to stub the subdivision road

Tract 2

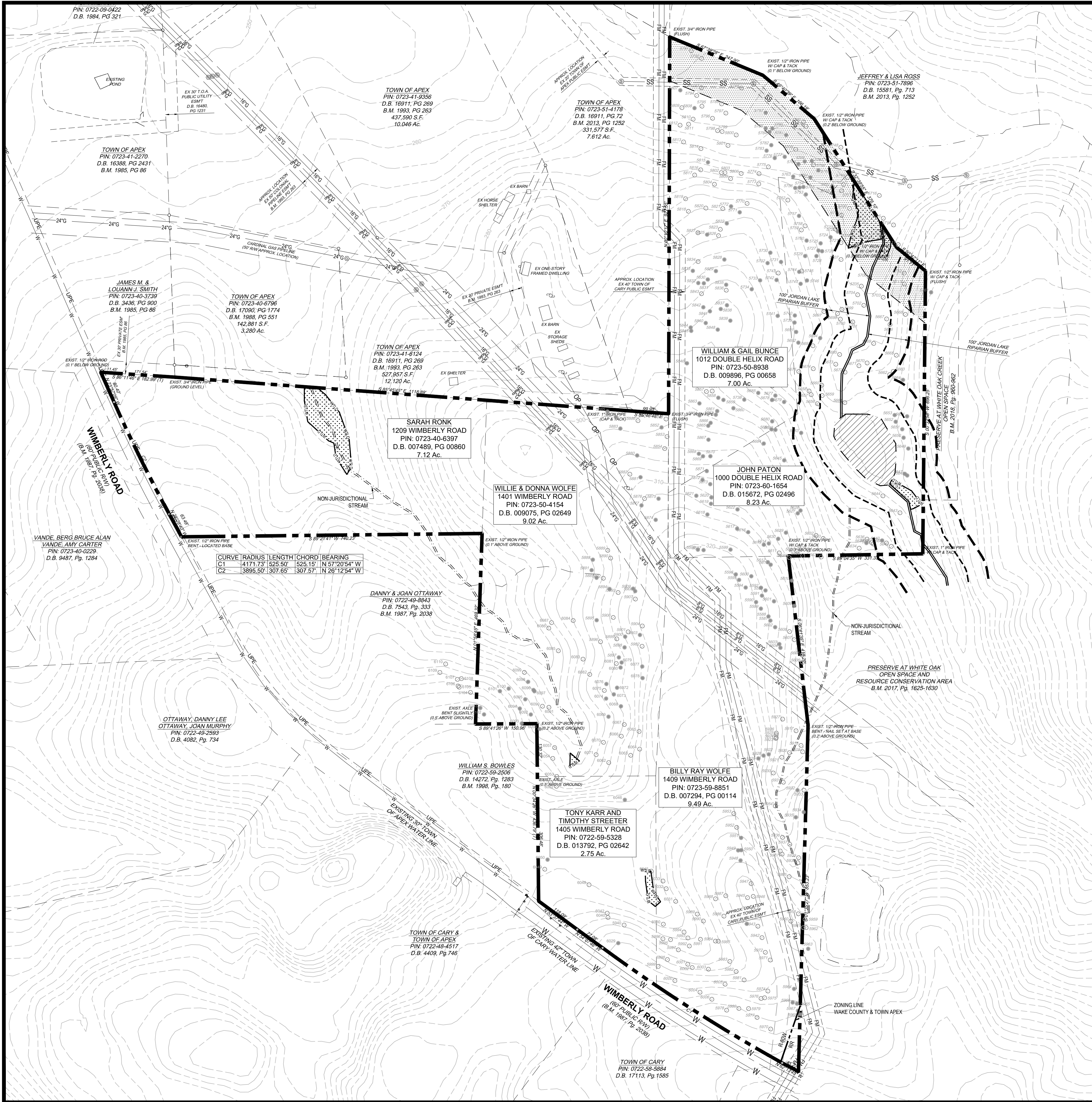
EXHIBIT "B"

WOLFE PROPERTIES PUD

APEX, NORTH CAROLINA
SINGLE FAMILY DETACHED & TOWN HOME SITES



Z:\PROJECTS\EQ\DEVELOPMENT\2021\2021-02-10\WIMBERLY\ZONING\PD\PLANS\SHIFTS\EXISTING CONDITIONS PLAN.DWG
PLOTED: 05/02/2021 11:42 AM



Surveyor:

Taylor Land Consultants
5448 Apex Peakway
Apex, NC 27502
919.801.1104 (o)
919.337.7998 (m)
Contact: Jeremy Taylor, PLS

GENERAL NOTES:

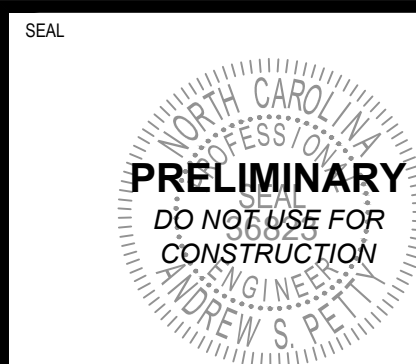
- THIS PLAN IS NOT INTENDED FOR PLATTING OR RECORDATION. THE INTENT OF THIS PLAN IS TO ILLUSTRATE THE EXISTING FEATURES, STRUCTURES AND TOPOGRAPHY OF THE PROPERTY. TOPOGRAPHY SHOWN ON THIS IS PLAN IS PER WAKE COUNTY GIS - FOR PRELIMINARY USE ONLY.
- THE INFORMATION SHOWN ON THIS PLAN WAS PROVIDED AND DEVELOPED BY OTHERS. CURRY ENGINEERING DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION. THE INFORMATION SHOWN REPRESENTS A FIELD SURVEY CONDUCTED SEPTEMBER 2019.
NOTED:
 - MISCLOSURE WAS DISTRIBUTED BY THE COMPASS METHOD. THE DISTANCES ON THIS MAP ARE ADJUSTED HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED. ALL AREA CALCULATED BY COORDINATE COMPUTATION.
 - THIS PLAN HAS BEEN PREPARED FOR LAYOUT AND PERMITTING PURPOSES ONLY.
 - ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
 - PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
 - THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE COMMITMENT.
- EXISTING CONDITIONS SHOWN DOES NOT CERTIFY TO THE EXISTENCE OR NON-EXISTENCE OF UNDERGROUND UTILITIES THAT MAY OR MAY NOT BE PRESENT ON SITE. CONTRACTOR TO FIELD VERIFY AND LOCATE ALL UNDERGROUND UTILITIES PRIOR TO START OF EXCAVATION.
- PROPERTY IS LOCATED WITHIN THE PRIMARY WATERSHED OVERLAY DISTRICT.
- PROPERTIES ARE NOT LOCATED IN A HISTORIC DISTRICT NOR CONTAIN ANY HISTORIC STRUCTURES PER THE "WAKE COUNTY INVENTORY OF HISTORIC STRUCTURES - APEX JURISDICTION."
- FOR SURFACE WATER INFORMATION, REFER TO APEX STREAM BUFFER DETERMINATION LETTER APEX #19-004

TOWN REQUIRED PUD NOTES:

- PROTECTION FENCING MUST BE PLACED AWAY FROM ANY SAVED TREE ONE FOOT FOR EACH INCH OF TREE CALIPER. PROTECTION FENCING MUST BE PLACED AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RESOURCE CONSERVATION AREA, SUCH AS BUT NOT LIMITED TO HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS. PROTECTION FENCING MUST BE PLACED ALONG THE OUTSIDE LINE OF THE 100-YEAR FLOODPLAIN, AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER. ADDITIONAL PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER; SUCH AREAS MAY INCLUDE BUT ARE NOT LIMITED TO COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC.).
- SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS BUT NOT LIMITED TO PLAY FIELDS AND GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
- ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.
- NO SIGNS ARE APPROVED AS PART OF A PUD-CZ PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED.



SCALE: 1 IN = 120 FT
SCALE IN FEET
HORIZONTAL



WOLFE PROPERTIES PUD - PD PLANS EXISTING CONDITIONS PLAN

208 S. Tryon Avenue
Fayetteville, NC 27504
T: (919) 552-0849
F: (919) 552-0843

Curry
ENGINEERING

NC LIC. NO. P-4798

C-01

Z:\PROJECTS\EQ\DEVELOPMENT\2024\02\WOLFE\PLANS\DWG\FLSC-02 TREE SURVEY.DWG
PLOTED: 05/20/2024 11:43 AM

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5595	PINE 23.5
5651	OAK 21.5
5587	PINE 19
5652	PINE 21
5588	PINE 22
5589	PINE 21
5590	PINE 24
5591	PINE 19.5
5592	PINE 19.5
5593	PINE 19
5594	PINE 20.5
5596	PINE 20.5
5597	PINE 21
5598	PINE 21
5599	PINE 21
5600	PINE 21
5601	PINE 21
5602	PINE 19
5603	PINE 19
5604	PINE 18

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5605	OAK 21.5
5606	OAK 21.5
5607	MAP 23
5608	OAK 22
5609	PINE 21
5610	PINE 21.5
5611	POP 18
5612	PINE 19
5613	PINE 19.5
5614	PINE 21
5615	PINE 20
5616	PINE 19
5617	PINE 19
5618	PINE 19
5619	PINE 19
5620	PINE 18
5621	PINE 19
5622	PINE 24
5623	OAK 24
5624	OAK 24

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5625	OAK 21
5626	POP 27.5
5627	PINE 29
5628	PINE 20
5629	PINE 19
5630	PINE 20
5631	OAK 21
5632	OAK 27
5633	OAK 21
5634	POP 31
5636	POP 19.5
5637	PINE 18.5
5638	MAP 22
5639	OAK 18
5640	PINE 24.5
5641	MAP 18
5642	MAP 22
5643	MAP 20
5644	MAP 21.5
5645	PINE 27

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5646	MAP 20
5647	PINE 21
5648	PINE 26.5
5649	PINE 24
5650	PINE 24
5653	PINE 21
5654	PINE 18
5656	OAK 26
5657	OAK 21.5
5658	OAK 20
5659	OAK 21.5
5660	POP 21.5
5661	MAP 21.5
5662	MAP 18
5663	OAK 19
5664	PINE 18.5
5665	OAK 19
5666	MAP 19
5667	MAP 18.5
5668	POP 20.5

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5669	OAK 19
5670	MAP 22
5671	POP 18
5672	OAK 24.5
5673	POP 24
5674	GUM 22
5675	OAK 20
5676	OAK 19
5677	PINE 19
5678	PINE 18
5679	PINE 19
5680	PINE 19
5681	PINE 19
5682	PINE 18
5683	PINE 20
5684	PINE 19
5685	PINE 23.5
5686	OAK 19
5687	POP TWIN 19
5688	PINE 23

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5689	PINE 19.5
5690	OAK 20
5691	PINE 20
5692	PINE 19
5693	OAK 24.5
5694	PINE 18.5
5695	POP 24
5696	OAK 22
5698	POP 19
5699	POP 22
5700	POP 23
5701	OAK 27
5702	MAP 25
5703	POP 18.5
5704	OAK 25/PIN
5705	POP 18.5
5706	POP 19
5707	OAK 22.5
5708	POP 22
5709	POP 21.5

DANNY & JOAN OTTAWAY
PIN: 0722-49-8543
D.B. 7543, Pg. 333
B.M. 1987, Pg. 2038

WILLIAM S. BOWLES
PIN: 0722-59-2506
D.B. 14272, Pg. 1283
B.M. 1998, Pg. 180

TOWN OF CARY &
TOWN OF APEX
PIN: 0722-48-4517
D.B. 4409, Pg. 746

TOWN OF CARY
PIN: 0722-58-3884
D.B. 17113, Pg. 1585

Surveyor:

Taylor Land Consultants
5448 Apex Peakway
Apex, NC 27502
919.801.1104 (o)
919.337.7998 (m)
Contact: Jeremy Taylor, PLS

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5710	MAP 18.5
5711	OAK 26.5
5712	OAK 19.5
5713	OAK 20.5
5714	POP 18.5
5715	OAK 18.5/PIN
5716	GUM 27.5
5717	DT 27
5718	PINE 21
5719	OAK 23.5
5720	POP 20
5721	POP 19
5722	PINE 21
5723	OAK 22
5724	PINE 27
5725	PINE 19.5
5726	PINE 18.5
5727	PINE 18
5728	PINE 21.5
5729	PINE 20.5

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5770	OAK 19
5771	PINE 20.5
5772	PINE 20
5773	POP 22.5
5774	OAK 19.5
5775	OAK 18.5/TWIN
5776	PINE 20.5
5777	PINE 21
5778	POP 22
5779	OAK 19
5780	POP 20
5781	PINE 18
5782	PINE 22
5783	PINE 21
5784	PINE 20
5785	PINE 23
5786	PINE 21
5787	PINE 22
5788	OAK 19
5789	OAK 25.5

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5832	PINE 18
5833	PINE 21
5834	OAK 18.5
5835	PINE 18
5836	OAK 19
5837	PINE 19
5838	PINE 18
5839	PINE 18.5
5840	PINE 19
5841	PINE 20
5842	PINE 19.5
5843	OAK 20
5844	PINE 19
5845	PINE 21
5846	PINE 27
5848	PINE 25
5849	OAK 18/TWIN
5850	MAP 21.5
5851	GUM 23
5852	PINE 20

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5895	PINE 18.5
5896	OAK 18.5
5897	PINE 18.5
5898	PINE 18
5899	MAP 20.5
5900	PINE 21.5
5901	OAK 20.5
5902	OAK 22.5
5903	PINE 20
5904	DT 21
5906	OAK 18
5907	OAK 19
5908	PINE 22
5909	PINE 20.5

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5730	PINE 22.5
5731	PINE 20
5732	PINE 18
5733	PINE 18
5734	PINE 18
5735	PINE 18
5736	PINE 18
5737	PINE 19
5738	PINE 18
5739	PINE 19
5740	PINE 19
5741	PINE 18.5
5742	PINE 18
5743	OAK 19.5
5744	PINE 22
5745	POP 18
5746	PINE 21
5747	PINE 20
5748	POP 22
5749	POP 18

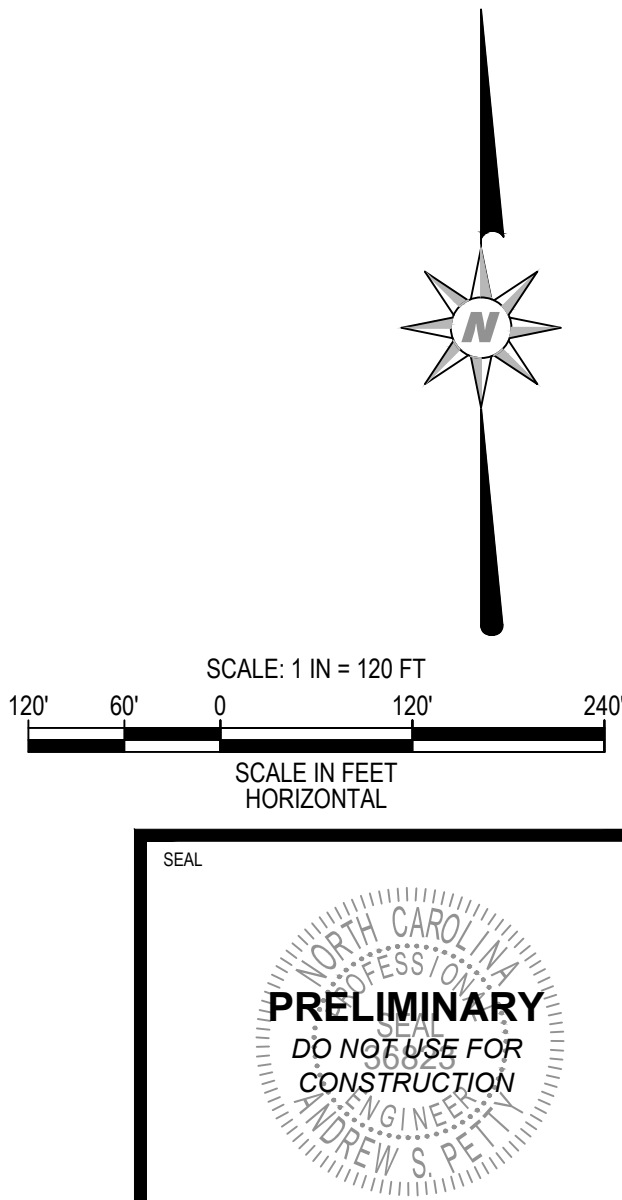
TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5791	POP 20
5792	OAK 20.5
5793	DT 23
5794	OAK 18
5795	OAK 20.5
5796	OAK 18
5797	OAK 19.5
5798	OAK 20.5
5799	OAK 19
5800	POP 21
5801	OAK 18.5
5802	DT 21/TWIN
5803	OAK 18
5804	OAK 21
5805	MAP 19
5806	OAK 25/TWIN
5807	PINE 18
5808	PINE 20.5
5809	OAK 24
5810	OAK 19

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5853	OAK 22
5854	GUM 18
5855	OAK 18.5
5856	OAK 21
5857	OAK 18.5/PIN
5858	PINE 18
5859	PINE 21
5860	PINE 20
5861	PINE 21
5862	PINE 19.5
5863	PINE 20
5864	PINE 20
5865	PINE 20
5866	PINE 20
5867	PINE 18
5868	PINE 18.5
5869	PINE 19
5870	PINE 19
5871	PINE 24
5872	PINE 19

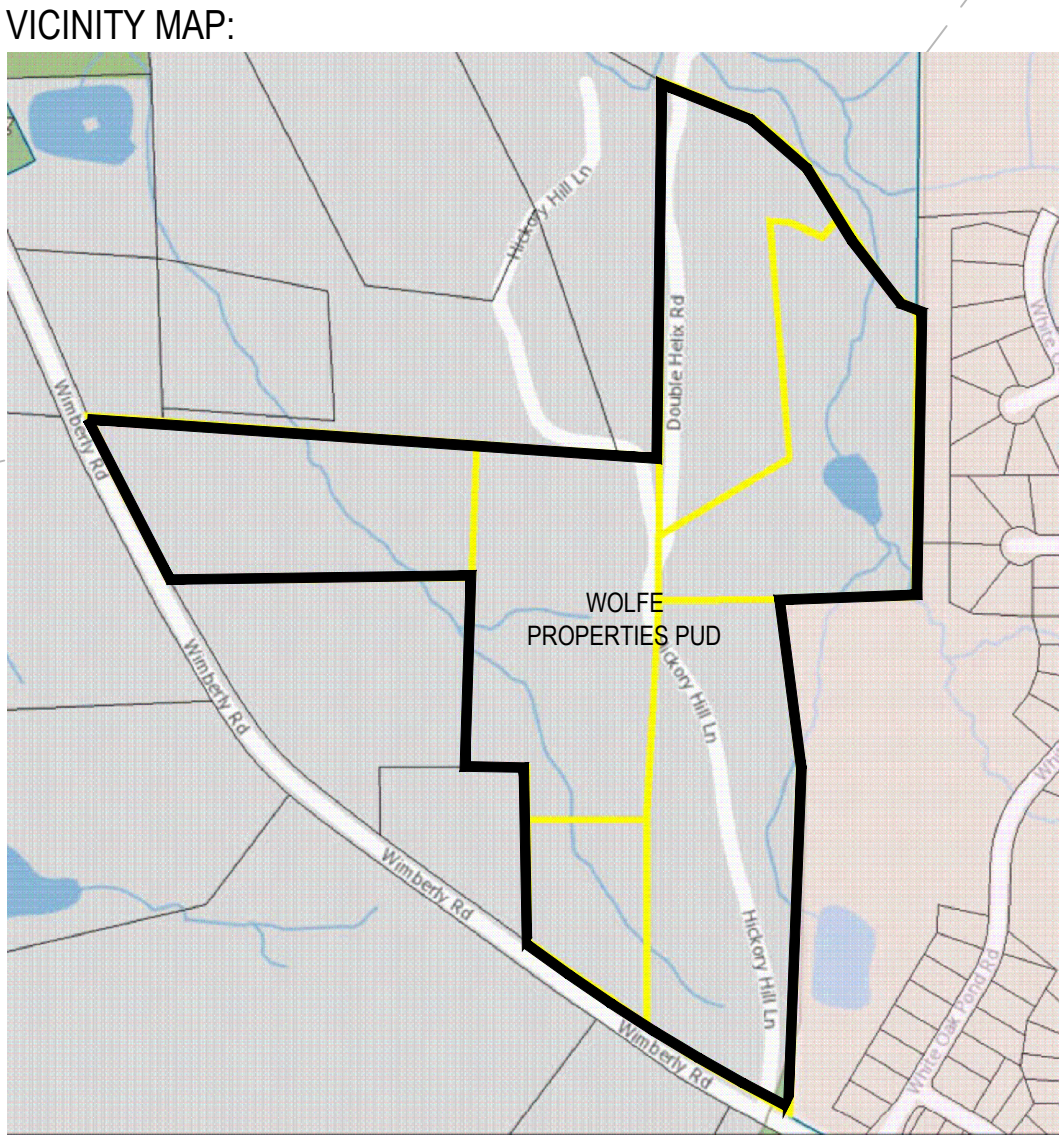
TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5750	OAK 29.5/TWIN
5751	OAK 18
5752	POP 20
5753	PINE 26
5754	PINE 20.5
5755	PINE 19
5756	PINE 18
5757	PINE 23
5758	OAK 19
5759	POP 20
5760	PINE 20
5761	PINE 19
5762	OAK 18
5763	PINE 18.5
5764	PINE 22.5
5765	PINE 19.5
5766	POP 18
5767	PINE 20
5768	PINE 21.5
5769	PINE 20

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5811	OAK 19.5
5812	OAK 22.5
5813	OAK 19.5
5814	OAK 24
5815	PINE 19
5816	OAK 22
5817	OAK 18.5
5818	OAK 19.5
5819	OAK 19
5820	OAK 19
5821	POP 18
5822	PINE 19
5823	POP 22
5825	PINE 21
5826	POP 20.5
5827	OAK 22.5
5828	PINE 18.5
5829	PINE 18.5
5830	PINE 19
5831	PINE 19

TREE SUMMARY TABLE	
POINT #	DESCRIPTION (TYPE - DBH INCH)
5873	PINE 18
5874	PINE 25
5875	PINE 19.5
5876	OAK 27.5
5877	PINE 19.5
5880	PINE 23
5881	PINE 20.5
5882	OAK 24.5
5883	PINE 19
5884	PINE 20
5885	PINE 25
5886	OAK 22.5
5887	PINE 23
5888	PINE 20.5
5889	OAK 23.5
5890	OAK 23.5
5891	PINE 18.5
5892	OAK 18
5893	OAK 18
5894	PINE 21



WOLFE PROPERTIES PUD - PD PLANS TREE SURVEY



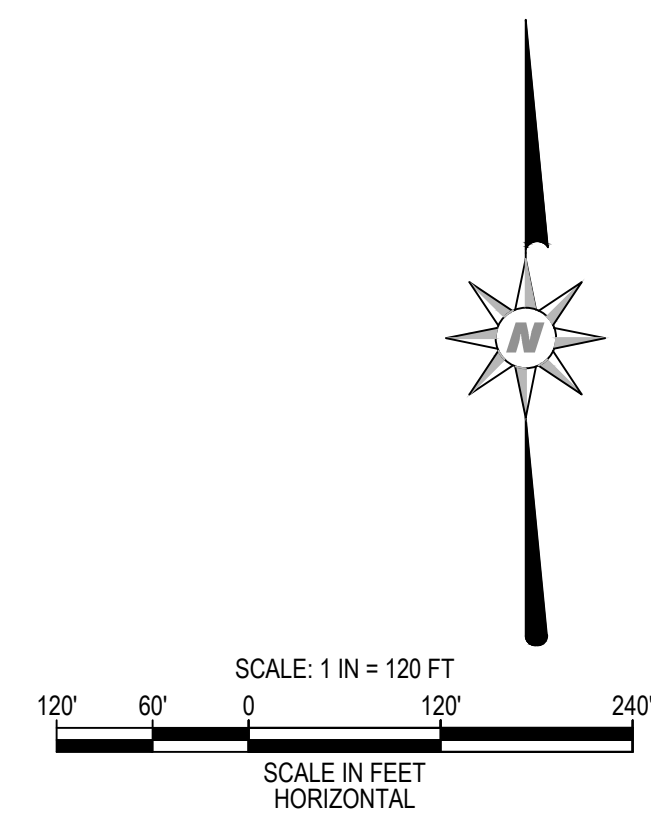
IN COMPLIANCE WITH THE TOWN OF APEX'S UDO SECTION 13.19.4, THE PROJECT OFFERS, SUBJECT TO NCDOT REVIEW AND APPROVAL THE FOLLOWING OFF-SITE ROADWAY IMPROVEMENTS:

1. GREEN LEVEL WEST AND WIMBERLY ROAD INTERSECTION: THE DEVELOPER SHALL CONSTRUCT A NORTHBOUND TAPER RIGHT TURN LANE ON WIMBERLY ROAD WITH 50-FOOT OF FULL WIDTH DECELERATION AND A 100-FOOT TAPER PRIOR TO THE FIRST PLAT. CONSTRUCTION OF CURB AND GUTTER WILL BE LIMITED TO ONLY ALONG THE 50-FOOT DECELERATION ALONG THE SIDEWALK AND STORM DRAINAGE STRUCTURES WILL ONLY BE PLACED IN AREAS AS NECESSARY TO CONTINUE EXISTING DRAINAGE PATTERNS AND NOT RESTRICT EXISTING STRUCTURES.
2. WIMBERLY ROAD AND JENKS ROAD INTERSECTION: THE DEVELOPER SHALL CONSTRUCT A SOUTHBOUND TAPER RIGHT TURN LANE ON WIMBERLY ROAD WITH 50-FOOT OF FULL WIDTH DECELERATION AND A 100-FOOT TAPER PRIOR TO THE FIRST PLAT. NO CURB & GUTTER WILL BE INSTALLED. VEGETATED CONVEYANCES WILL BE UTILIZED TO STAY CONSISTENT WITH CURRENT CONDITIONS AND NO UPGRADES TO EXISTING STORM DRAINAGE INFRASTRUCTURE.

1. THIS PLAN IS NOT INTENDED FOR PLATTING OR RECORDATION. THE INTENT OF THIS PLAN IS TO ILLUSTRATE THE EXISTING FEATURES, STRUCTURES AND TOPOGRAPHY OF THE PROPERTY. TOPOGRAPHY SHOWN ON THIS IS PLAN IS PER WAKE COUNTY GIS - FOR PRELIMINARY USE ONLY.
2. THE INFORMATION SHOWN ON THIS PLAN WAS PROVIDED AND DEVELOPED BY OTHERS. CURRY ENGINEERING DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION. THE INFORMATION SHOWN REPRESENTS A FIELD SURVEY CONDUCTED SEPTEMBER 2019.
3. THE ENGINEER UNDERSTANDS THE SURVEY INFORMATION PROVIDED TO MEET THE FOLLOWING CRITERIA:
 - MISCLOSURE WAS DISTRIBUTED BY THE COMPASS METHOD. THE DISTANCES ON THIS MAP ARE ADJUSTED HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED. ALL AREA CALCULATED BY COORDINATE COMPUTATION.
 - THIS PLAN HAS BEEN PREPARED FOR LAYOUT AND PERMITTING PURPOSES ONLY.
 - ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
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5. PROPERTY IS LOCATED WITHIN THE PRIMARY WATERSHED OVERLAY DISTRICT.
6. PROPERTIES ARE NOT LOCATED IN A HISTORIC DISTRICT NOR CONTAIN ANY HISTORIC STRUCTURES PER THE "WAKE COUNTY INVENTORY OF HISTORIC STRUCTURES - APEX JURISDICTION."

1. PROTECTION FENCING MUST BE PLACED AWAY FROM ANY SAVED TREE ONE FOOT FOR EACH INCH OF TREE CALIPER. PROTECTION FENCING MUST BE PLACED AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RESOURCE CONSERVATION AREA, SUCH AS BUT NOT LIMITED TO HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS. PROTECTION FENCING MUST BE PLACED ALONG THE OUTSIDE LINE OF THE 100-YEAR FLOODPLAIN, AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER. ADDITIONAL PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER, SUCH AREAS MAY INCLUDE BUT ARE NOT LIMITED TO COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC.).
2. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO PLAY FIELDS AND GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
3. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.
4. NO SIGNS ARE APPROVED AS PART OF A PUD-CZ PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED.

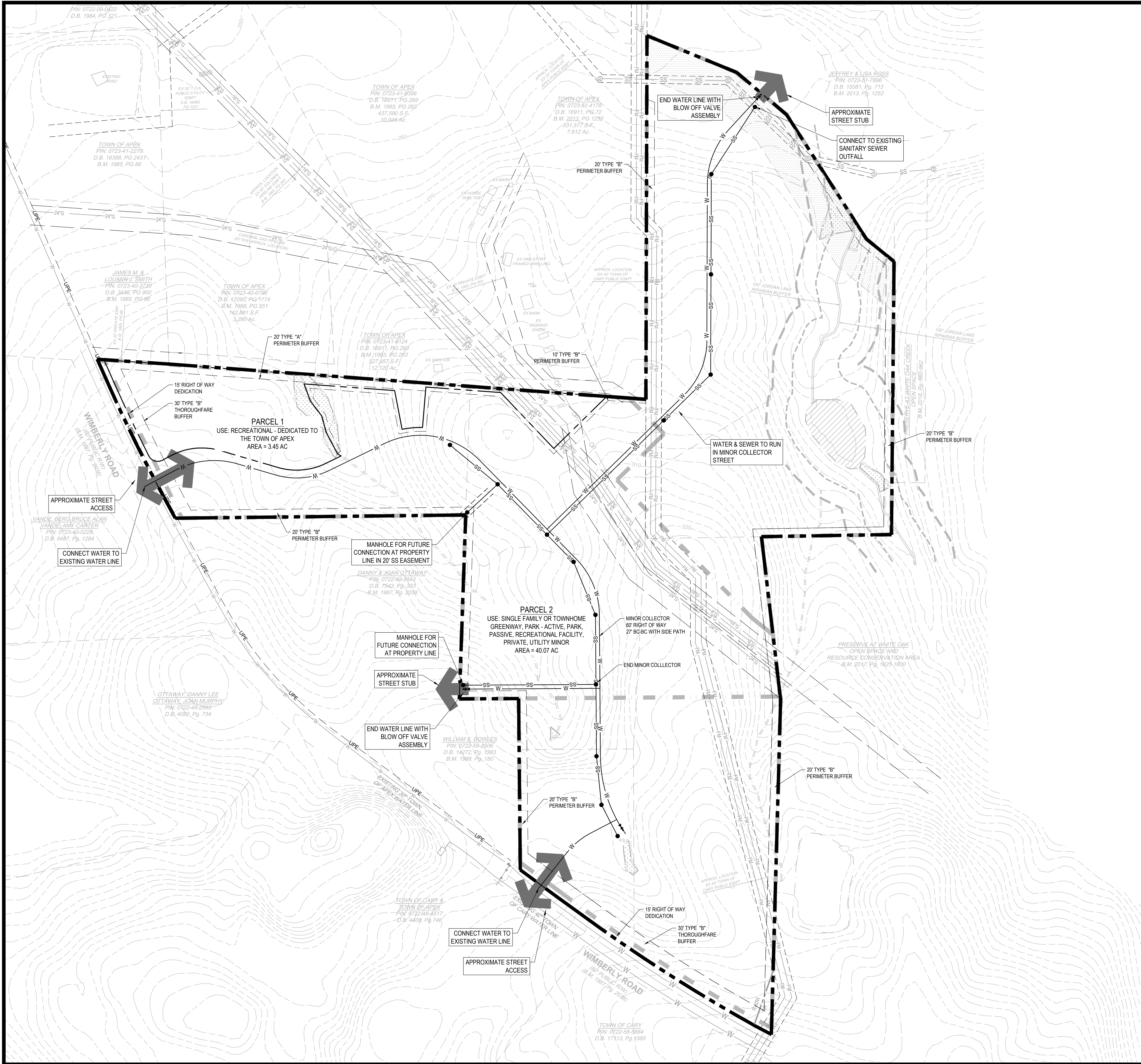
DEVELOPMENT NAME	WOLFE PROPERTY PUD
PROPERTY ADDRESS	SEE EXISTING CONDITIONS PLAN
PUD TOTAL AREA	43.52 ACRES
PUBLIC ROAD R/W DEDICATION (WIMBERLY ROAD)	0.42 AC
WAKE COUNTY PINS	SEE EXISTING CONDITIONS PLAN
CURRENT ZONING	R-80W (COUNTY) & RR (TOWN)
PROPOSED ZONING	PLANNED UNIT DEVELOPMENT (PUD-CZ)
RCA/BUFFER AREA	
REQUIRED	10.88 AC (25%)
RCA PROPOSED	10.90 AC (25%)
CURRENT 2045 LUM DESIGNATION	LOW DENSITY RESIDENTIAL
PROPOSED 2045 LUM DESIGNATION	LOW DENSITY RESIDENTIAL
PROPOSED MAXIMUM BUILDING HEIGHT	42 FEET - SF
	50 FEET - TH
PROPOSED TOWNHOME NUMBER OF STORIES	3
PROPOSED RESIDENTIAL DENSITY	3 UNITS/ACRE
PROPOSED PARKING REQUIREMENTS	2 SPACES PER UNIT PLUS GUEST PARKING AT 1SPACE/4 UNITS
WATERSHED DISTRICT	PRIMARY WATERSHED PROTECTION OVERLAY DISTRICT CAPE FEAR
<u>PROPOSED MINIMUM BUILDING SETBACKS</u>	
SINGLE FAMILY DETACHED	
FRONT BUFFER OR RCA - 10'	
FRONT YARD - 10' MINIMUM	
SIDE YARD - 5' MINIMUM (NO AGGREGATE)	
CORNER SIDE YARD - 10' MINIMUM	
REAR YARD - 10' MINIMUM	
DRIVEWAYS FROM BACK OF SIDEWALK TO GARAGE - 20' MIN.	



SEAL

PRELIMINARY
DO NOT USE FOR
CONSTRUCTION

Z:\PROJECTS\EQUALIZER\2019\02\10\WIMBERLY\ZONING\PLANS\SHRNET\FILESC05 UTILITY PLAN.DWG
PLOTTED: 6/10/2020 11:00 AM



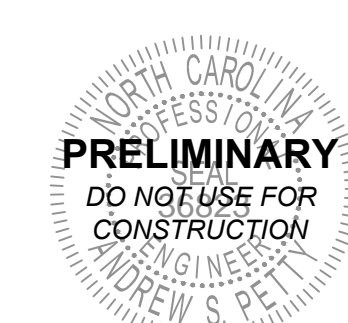
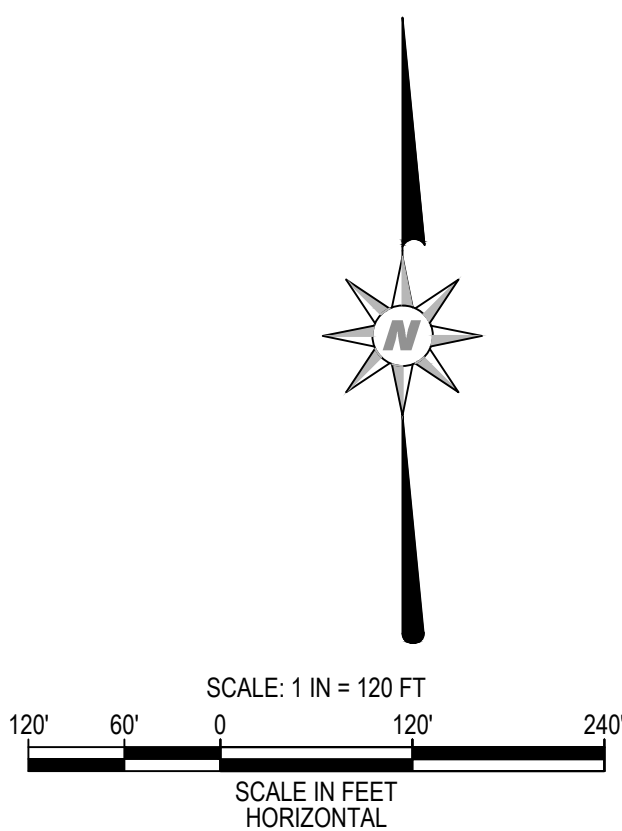
GENERAL NOTES:

PLANNING NOTES:

1. THE PARCEL AREAS AND RCA AREAS ARE APPROXIMATE AND MAY CHANGE AT THE TIME OF MASTER SUBDIVISION PLAN APPROVALS.
2. THE LOCATION AND ALIGNMENT OF THE MINOR RESIDENTIAL STREET SHOWN HEREON ARE PRELIMINARY AND MAY CHANGE AT THE TIME OF MASTER PLAN APPROVAL.
3. THE MAINTENANCE OF RCA, COMMON AREAS AND THE STORMWATER DEVICES SHALL BE MANAGED BY THE OWNER/DEVELOPER OF EACH PARCEL.
4. THE MINOR RESIDENTIAL STREET SHALL HAVE SIDEWALK ON ONE SIDE OF THE STREET INTERNAL PUBLIC STREET CONNECTIONS TO THE MINOR RESIDENTIAL STREET SHALL MEET TOWN OF APEX STANDARDS AND SPECIFICATIONS.
5. THE FUTURE LOCATIONS FOR WATER AND SEWER MAINS ARE APPROXIMATE AND SHALL BE DESCRIBED IN MORE DETAIL AT THE TIME OF MASTER PLANS. THESE UTILITY LOCATIONS ARE ILLUSTRATIVE TO SHOW CONNECTIONS AND SIZING.
6. CONSTRUCTION VEHICLE PARKING SHALL BE LIMITED TO ONE SIDE OF THE ROAD (OPPOSITE OF FIRE HYDRANTS). SIGNS INDICATING "NO CONSTRUCTION VEHICLES THIS SIDE OF STREET" IN ENGLISH AND SPANISH.
7. ONCE THE FIRST LIFT OF ASPHALT IS PASSABLE BY VEHICLES, TEMPORARY STREET SIGNS ARE REQUIRED.
8. INSTALLATION OF SILT FENCE SHALL MAINTAIN 3' OF CLEARANCE AROUND FIRE HYDRANTS.
9. TOWN OF APEX ELECTRIC UTILITIES CONTACT IS RODNEY SMITH AT 919-249-3342.

TOWN REQUIRED PUD NOTES:

1. PROTECTION FENCING MUST BE PLACED AWAY FROM ANY SAVED TREE ONE FOOT FOR EACH INCH OF TREE CALIPER. PROTECTION FENCING MUST BE PLACED AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RESOURCE CONSERVATION AREA, SUCH AS BUT NOT LIMITED TO HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS. PROTECTION FENCING MUST BE PLACED ALONG THE OUTSIDE LINE OF THE 100-YEAR FLOODPLAIN, AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER. ADDITIONAL PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER. SUCH AREAS MAY INCLUDE BUT ARE NOT LIMITED TO COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC.).
2. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS BUT NOT LIMITED TO PLAY FIELDS AND GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
3. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.
4. NO SIGNS ARE APPROVED AS PART OF A PUD-CZ PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED.



WOLFE PROPERTIES PUD - PD PLANS UTILITY PLAN

Curry
ENGINEERING

C-05

208 S. Tipton Avenue
Fayetteville, NC 27808
T: (919) 862-0849
F: (919) 862-0843

REVISIONS

NO.	DATE	DESCRIPTION
1	10/20/2019	ISSUED FOR PERMIT

DATE: OCTOBER 1, 2019
FILE NO: 2019-021

HORIZ. SCALE: 1" = 120'
VERT. SCALE: 1" = 10'
SHEET SIZE: 24" x 36"



Cottage 2 Story

Wimberly Road

12.03.19

ENVISION HOMES
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Farmhouse 2 Story

Wemberly Road

12.03.19

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Euro Two Story

Wimberly Road

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Rustic Farmhouse 1 1/2 Story

Wimberly Road

12.03.19

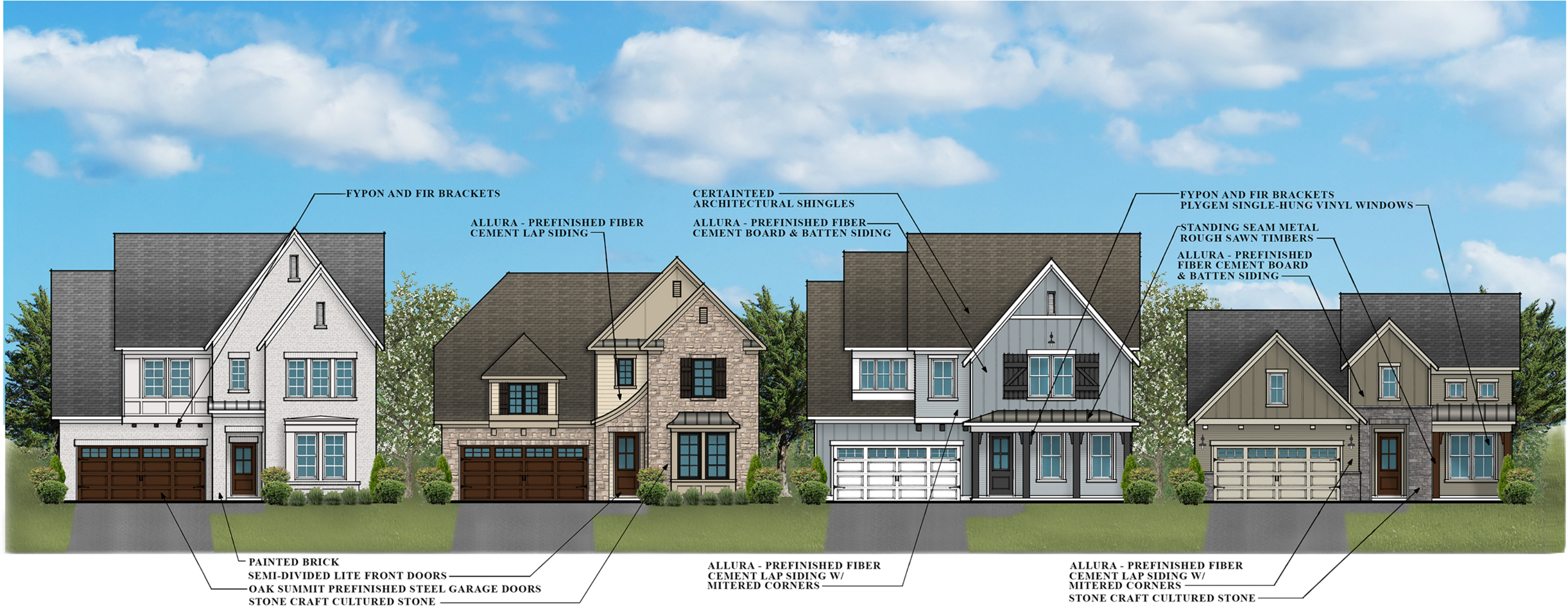
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Wolfe Properties PUD

Traffic Impact Analysis

November 2019

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Wolfe Properties PUD

Traffic Impact Analysis

November 2019



11/22/2019

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description

Document reference: 501379362-003

Information class: Standard

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Contents

Executive Summary	1
Project Location and Description	1
Background Information	1
Background (2025) Analysis	1
Trip Generation	2
Findings	2
Wimberly Road and Green Level West Road	2
Wimberly Road and Jenks Road	2
Wimberly Road and Access #1	2
Wimberly Road and Access #2	2
1 Introduction	7
2 Existing (2019) Conditions	8
2.1 Existing Roadways	8
2.1.1 Wimberly Road (SR 1603)	8
2.1.2 Green Level West Road (SR 1605)	8
2.1.3 Jenks Road (SR 1601)	8
2.2 Existing Intersections	8
2.3 Turning Movement Counts	9
2.4 Level of Service Criteria	9
2.5 Existing (2019) Level of Service Analysis	9
3 Background (2025) Conditions	11
3.1 Background Growth and Development	11
3.1.1 Tunstall Property (Preserve at White Oak Creek)	11
3.1.2 Westford	12
3.1.3 Council-Smith (Weddington Smith Roberts PUD)	12
3.1.4 Lake Castleberry	13
3.2 Level of Service Analysis	13
4 Build (2025) Conditions	15
4.1 Trip Generation and Distribution	15
4.2 Level of Service Analysis	15
5 Conclusions	17

Wimberly Road and Green Level West Road	17
Wimberly Road and Jenks Road	17
Wimberly Road and Access #1	17
Wimberly Road and Access #2	17

Appendices

- A. Figures
- B. Count Data
- C. Existing (2019) Analyses
- D. Background Projects
- E. Background (2025) Analyses
- F. Build (2025) Analyses

Executive Summary

Project Location and Description

A residential development consisting of 70 single-family homes and 50 townhomes is being proposed on the east side of Wimberly Road, between Green Level West Road and Jenks Road, in Apex, NC. Per the site plan, the proposed development will provide two full accesses along Wimberly Road. The northern driveway (Access #1) is approximately 0.9 miles south of Castleberry Road, while the southern driveway (Access #2) is approximately 0.4 miles north of Jenks Road. The development is anticipated to be fully constructed by 2025. **Figure ES-1** shows the study area, while the site plan is provided in **Figure ES-2**.

Background Information

A scoping meeting was held between staff from Mott MacDonald, Curry Engineering, NCDOT and the Town of Apex at the NCDOT District Office in Wake County on September 13, 2019 to discuss the proposed development. It was agreed that following existing and future intersections would be included in the study area:

- Wimberly Road (SR 1603) and Green Level West Road (SR 1605)
- Wimberly Road and Jenks Road (SR 1601)
- Wimberly Road and Access #1
- Wimberly Road and Access #2

Traffic analyses were performed for the study area intersections listed above for three scenarios, as follows:

- **Existing (2019)** – analyzes current conditions (traffic data from turning movement counts, aerial photography, site visit and existing traffic control information).
- **Background (2025)** – estimates future (2025) conditions based on an average annual growth rate (AAGR) of 2% and traffic from nearby developments that have not yet been fully constructed.
- **Build (2025)** – combines the anticipated traffic from the proposed development and the Background (2025) volumes

Background (2025) Analysis

To be consistent with TIAs that have previously been prepared in the area, future year traffic estimates were developed by applying an overall annual growth rate (AAGR) of 2% to the 2019 traffic volumes. In addition, site trips from the following developments were included in the Background (2025) scenario analysis:

- Tunstall Property (Preserve at White Oak Creek)
- Westford
- Council-Smith (Weddington Smith Roberts PUD)
- Lake Castleberry

Trip Generation

The development is proposed to consist of 70 single-family homes and 50 townhomes. Based on NCDOT guidance, the development is anticipated to generate 1,086 daily trips, 79 AM peak hour trips (19 entering, 60 exiting) and 104 PM peak hour trips (65 entering, 39 exiting).

Findings

As reported, the proposed development is not anticipated to significantly affect delay at the study area intersections. The following driveway configurations should be considered.

Wimberly Road and Green Level West Road

The analysis indicates that all movements are anticipated to operate at LOS B or better during the AM and PM peak hours. As a result, no improvements are recommended at this location.

Wimberly Road and Jenks Road

The analysis indicates that all movements are anticipated to operate at LOS C or better during the AM and PM peak hours. As a result, no improvements are recommended at this location.

Wimberly Road and Access #1

The analysis indicates that the westbound approach is projected to operate at LOS A during the AM and PM peak hours. The following driveway configuration should be considered:

- Construct the westbound Access #1 approach to provide one ingress lane and one egress lane.

Given the projected northbound right-turn and southbound left-turn volumes, as well as the AADT along Wimberly Road, no exclusive turn lanes are recommended. This is consistent with the Wimberly Road driveways for the nearby Lake Castleberry and Tunstall (The Preserve at White Oak) developments.

Wimberly Road and Access #2

The analysis indicates that the westbound approach is projected to operate at LOS A in the AM peak hour and LOS B in the PM peak hour. The following driveway configuration should be considered:

- Construct the eastbound Access #2 approach to provide one ingress lane and one egress lane.

Given the projected northbound right-turn and southbound left-turn volumes, as well as the AADT along Wimberly Road, no exclusive turn lanes are recommended. This is consistent with the Wimberly Road driveways for the nearby Lake Castleberry and Tunstall (The Preserve at White Oak) developments.

Table ES-1 provides a summary of the intersection levels of service across all scenarios and the proposed 2025 laneage is shown in **Figure ES-3**.

Table ES-1: Overall LOS Results

Intersection	Approach	Existing (2019)		Background (2025)		Build (2025)	
		AM	PM	AM	PM	AM	PM
Wimberly Road and Green Level West Road	Northbound Left/Right-Turn	A – 9.8	B – 10.5	B – 10.3	B – 11.4	B – 10.5	B – 11.6
	Westbound Left-Turn	A – 7.6	A – 7.7	A – 7.8	A – 7.9	A – 7.8	A – 7.9
Wimberly Road and Jenks Road	Northbound Thru/Left-Turn	B – 11.0	B – 11.9	B – 13.7	C – 17.3	B – 14.9	C – 21.0
	Northbound Right-Turn	A – 8.8	A – 8.9	A – 9.1	A – 9.3	A – 9.1	A – 9.3
	Eastbound Left-Turn	A – 7.5	A – 7.6	A – 7.6	A – 7.8	A – 7.7	A – 7.9
	Westbound Left-Turn	A – 7.4	A – 7.4	A – 7.5	A – 7.6	A – 7.5	A – 7.6
	Southbound Left/Thru/Right-Turn	B – 10.2	B – 10.7	B – 11.8	B – 14.3	B – 12.4	C – 16.7
Wimberly Road and Access #1	Westbound Left/Right-Turn	-	-	-	-	A – 9.4	A – 9.7
	Southbound Thru/Left-Turn	-	-	-	-	A – 7.4	A – 7.4
Wimberly Road and Access #2	Westbound Left/Right-Turn	-	-	-	-	A – 9.7	B – 10.2
	Southbound Thru/Left-Turn	-	-	-	-	A – 7.4	A – 7.5

LEGEND: LOS – Delay (seconds/vehicle)

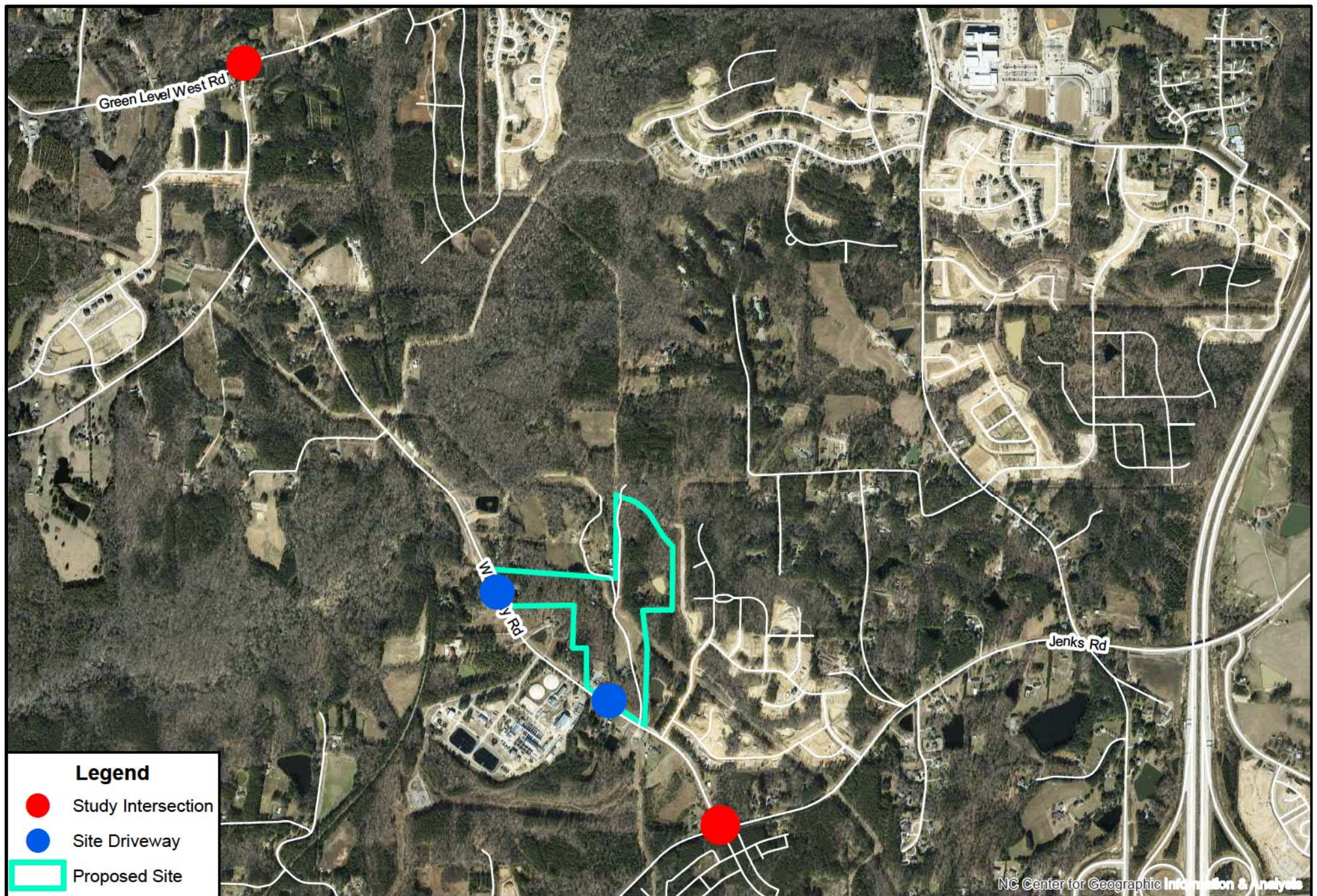
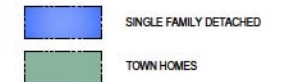


Figure ES-1: Vicinity Map

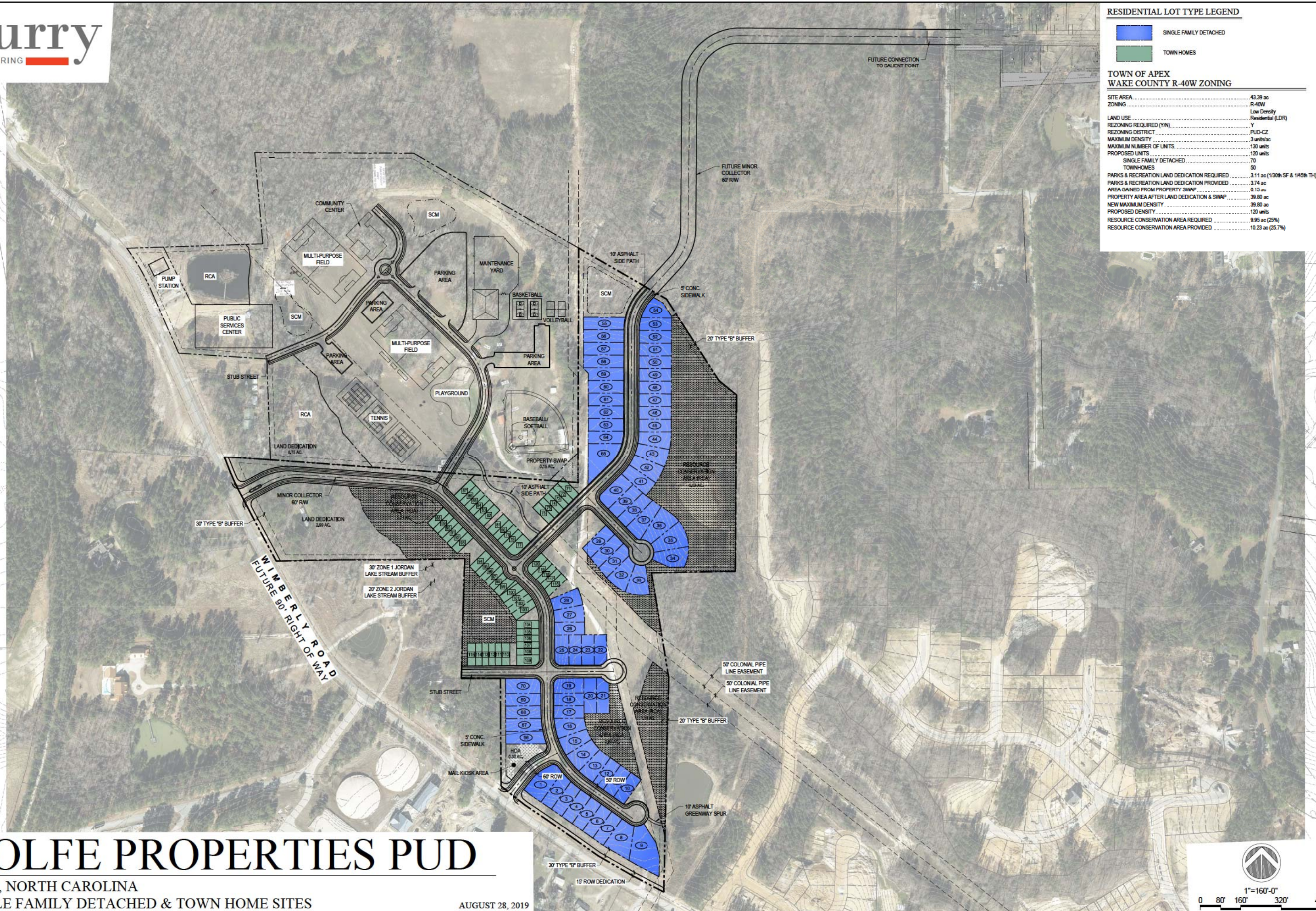
Wolfe Property PUD

RESIDENTIAL LOT TYPE LEGEND



**TOWN OF APEX
WAKE COUNTY R-40W ZONING**

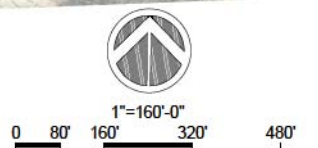
SITE AREA	43.39 ac
ZONING	R-40W
LAND USE	Low Density Residential (LDR)
REZONING REQUIRED (Y/N)	Y
REZONING DISTRICT	PUD-CZ
MAXIMUM DENSITY	3 units/ac
MAXIMUM NUMBER OF UNITS	130 units
PROPOSED UNITS	120 units
SINGLE FAMILY DETACHED	70
TOWNHOMES	50
PARKS & RECREATION LAND DEDICATION REQUIRED	3.11 ac (1/30th SF & 1/45th TH)
PARKS & RECREATION LAND DEDICATION PROVIDED	3.74 ac
AREA GAINED FROM PROPERTY SWAP	0.15 ac
PROPERTY AREA AFTER LAND DEDICATION & SWAP	39.80 ac
NEW MAXIMUM DENSITY	3 units/ac
PROPOSED DENSITY	120 units
RESOURCE CONSERVATION AREA REQUIRED	9.95 ac (25%)
RESOURCE CONSERVATION AREA PROVIDED	10.23 ac (25.7%)



WOLFE PROPERTIES PUD

APEX, NORTH CAROLINA
SINGLE FAMILY DETACHED & TOWN HOME SITES

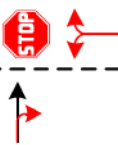
AUGUST 28, 2019



GREEN LEVEL WEST ROAD

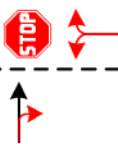
150'

SPEED
LIMIT
45



ACCESS #1

WIMBERLY ROAD



ACCESS #2

PROPOSED DEVELOPMENT

Single-Family Homes – 70 units

Townhomes – 50 units

SPEED
LIMIT
45

JENKS ROAD

SPEED
LIMIT
45



TWLT

TWLT
cont.*

WESTFORD

100'

Legend

→	Number of Lanes		Existing Stop Sign
XXX'	Storage Distance		Future Stop Sign
—	Existing Roadway		Speed Limit
- - -	Proposed Site Access		
→	Recommended Improvement		

*Currently striped as continuous along the frontage of the Westford development.

Wolfe Property PUD
Apex, NC

Figure ES-3
Future (2025) Laneage

M
MOTT
MACDONALD

1 Introduction

A residential development consisting of 70 single-family homes and 50 townhomes is being proposed on the east side of Wimberly Road, between Green Level West Road and Jenks Road, in Apex, NC. Per the site plan, the proposed development will provide two full accesses along Wimberly Road. The northern driveway (Access #1) is approximately 0.9 miles south of Castleberry Road, while the southern driveway (Access #2) is approximately 0.4 miles north of Jenks Road. The development is anticipated to be fully constructed by 2025. **Figure 1** shows the study area, while the site plan is provided in **Figure 2**. All figures are located in **Appendix A**.

A scoping meeting was held between staff from Mott MacDonald, Curry Engineering, NCDOT and the Town of Apex at the NCDOT District Office in Wake County on September 13, 2019 to discuss the proposed development. It was agreed that following existing and future intersections would be included in the study area:

- Wimberly Road (SR 1603) and Green Level West Road (SR 1605)
- Wimberly Road and Jenks Road (SR 1601)
- Wimberly Road and Access #1
- Wimberly Road and Access #2

2 Existing (2019) Conditions

2.1 Existing Roadways

This section describes the existing roadways within the study area.

2.1.1 Wimberly Road (SR 1603)

Wimberly Road is a local, two-lane roadway with a posted speed limit of 45 miles per hour (mph) that extends from Green Level West Road to Jenks Road. The land uses are primarily a mix residential and open space. The Cary-Apex Water Plant is located on the west side of Wimberly Road, adjacent to the proposed development. Per the NCDOT, the Average Annual Daily Traffic (AADT) along Wimberly Road in 2015 was 880 vehicles per day (vpd) north of Castleberry Road and 1,500 vpd north of Jenks Road.

There are plans to extend Wimberly Road as a four-lane, major thoroughfare from Green Level West Road to Morrisville Parkway. Per the Capital Area Metropolitan Planning Organization (CAMPO) 2045 Metropolitan Transportation Plan (MTP), the Project ID is A75c and the horizon year of the project is 2035. Given the horizon year, this project was not included in the Background (2025) analysis.

Additionally, Wimberly Road between Jenks Road and Green Level West Road is scheduled to be widened as part of Project ID A549 (horizon year 2045), which will upgrade Wimberly Road from a two-lane minor thoroughfare to a two-lane major thoroughfare.

2.1.2 Green Level West Road (SR 1605)

Green Level West Road is a two-lane roadway with a posted speed limit of 45 mph. It is a major collector that extends from Lewter Shop Road in Chatham County to NC 55 in Wake County. The land uses are a mix of commercial, residential and open space. Per the NCDOT, the AADT along Green Level West Road in 2017 was 1,900 vpd west of Wimberly Road.

2.1.3 Jenks Road (SR 1601)

Jenks Road is a local, two-lane roadway with a posted speed limit of 45 mph that extends from US 64 to NC 55. Within the study area, the land uses are a mix of residential and open space; however, there are some commercial uses at the US 64 and NC 55 intersections. No AADT information is available from the NCDOT along Jenks Road within the study area.

2.2 Existing Intersections

The following existing intersections were analyzed as part of this study:

- Wimberly Road and Green Level West Road
- Wimberly Road and Jenks Road

Intersection geometrics along with intersection operation controls are provided in **Figure 3**.

2.3 Turning Movement Counts

Turning movement counts were collected for the AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak hours by Quality Counts in October 2019 while local schools were in session. The count data is located in **Appendix B**. The volumes used in the Existing (2019) analyses are shown in **Figure 4**. **Table 1** shows the schedule for the turning movement data collection.

Table 1: Turning Movement Data Collection Schedule

Intersection	Time Period	Date
Wimberly Road and Green Level West Road	7:00 AM – 9:00 AM	Tuesday
	4:00 PM – 6:00 PM	October 22, 2019
Wimberly Road and Jenks Road	7:00 AM – 9:00 AM	Tuesday
	4:00 PM – 6:00 PM	October 22, 2019

2.4 Level of Service Criteria

Exhibit 19-8 in the Highway Capacity Manual 6th Edition provides the level of service (LOS) criteria for signalized intersections, while Exhibit 20-2 provides the level of service criteria for unsignalized intersections, as summarized in **Table 2**.

Table 2: Intersection Level of Service Criteria

Level of Service	Signalized Intersection	Unsignalized Intersection
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

Average Control Delay – seconds/vehicle

2.5 Existing (2019) Level of Service Analysis

The existing roadway network features and turning movement data were coded into *Synchro 10* and analyzed for the AM and PM peak hour conditions.

As shown in **Table 3** below, the stop-controlled and yield movements at both study area intersections are currently operating at LOS B or better during the AM and PM peak hours.

The Existing (2019) analysis results are located in **Appendix C**.

Table 3: Existing (2019) LOS Results

Intersection	Approach	Existing (2019)	
		AM	PM
Wimberly Road and Green Level West Road	Northbound Left/Right-Turn	A – 9.8	B – 10.5
	Westbound Left-Turn	A – 7.6	A – 7.7
Wimberly Road and Jenks Road	Northbound Thru/Left-Turn	B – 11.0	B – 11.9
	Northbound Right-Turn	A – 8.8	A – 8.9
	Eastbound Left-Turn	A – 7.5	A – 7.6
	Westbound Left-Turn	A – 7.4	A – 7.4
	Southbound Left/Thru/Right-Turn	B – 10.2	B – 10.7

LEGEND: LOS – Delay (seconds/vehicle)

3 Background (2025) Conditions

3.1 Background Growth and Development

To be consistent with TIAs that have previously been prepared in the area, an overall growth rate of 2% per year was applied to the existing year (2019) traffic volumes to determine the proposed traffic volumes in the build year (2025).

There are no North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) projects currently programmed in the area; however, there are several regional projects planned in the Capital Area Metropolitan Planning Organization (CAMPO) 2045 Metropolitan Transportation Plan (MTP) as shown in **Table 4**.

Table 4: 2045 CAMPO MTP

Project ID	Road	From	To	Proposed Improvement	Horizon Year
A75c	Wimberly Road	Morrisville Parkway	Green Level West Road	New Location	2035
A443a	Jenks Road	Wimberly Road	NC 55	Center Turn-Lane	2045
A443b	Jenks Road	Wimberly Road	US 64	Widening	2045
A549	Wimberly Road	Jenks Road	Green Level West Road	Widening	2045

Source: <http://ral.maps.arcgis.com/apps/webappviewer/index.html?id=a576ec0ce8a34d1991e3c383a285971e>

Based on discussions with NCDOT and Town of Apex staff, the following developments were included in the Background (2025) scenario analysis:

3.1.1 Tunstall Property (Preserve at White Oak Creek)

The Tunstall Property development will be located along Wimberly Road, north of Jenks Road. A sealed TIA was prepared by Kimley-Horn and Associates (KHA) in June 2013. Per the TIA, the development is proposed to be a residential development consisting of 250 single-family homes and 100 townhomes. As a result, the development is projected to generate 237 AM peak hour site trips (55 entering, 182 exiting) and 300 PM peak hour site trips (191 entering, 109 exiting). The build year for this development was anticipated to be 2017; however, it is currently not fully constructed. Per direction from the Town of Apex, the development was assumed to be 75% complete; therefore 25% of the projected site trips from the TIA were included in the background analysis. These trips were distributed to the study area roadways and intersections based on the patterns in the TIA.

The TIA indicated that the Westford development has already committed to laneage improvements at the Wimberly Road and Jenks Road intersection; therefore, no additional improvements were recommended. These improvements include:

- Construct an exclusive westbound left-turn lane along Jenks Road that provides 75 feet of storage (100 feet based on the Town's review and comments).
- Construct an exclusive eastbound left-turn lane along Jenks Road that provides 50 feet of storage (100 feet based on the Town's review and comments).

- Provide an exclusive left-turn and a shared through/right-turn lane on the Westford Drive approach.

The Town of Apex concurred with these recommendations in their Staff Review of the TIA submitted to the Apex Planning Board and Apex Town Council (dated December 9, 2013).

3.1.2 Westford

The Westford development will be located on the north side of US 64 and east of Jenks Road. A sealed TIA was prepared by Kimley-Horn and Associates (KHA) in December 2016. Per the TIA, the development is proposed to be a residential development consisting of 300 apartment units, 225 townhomes and 90 single-family homes. As a result, the development is projected to generate 4,188 daily trips, 323 AM peak hour site trips (65 entering, 258 exiting) and 396 PM peak hour site trips (257 entering, 139 exiting).

An addendum to the TIA was prepared as a memorandum in June 2017. This included the addition of 100,000 square feet of general retail space. After internal capture and pass-by rates were applied, the development is anticipated to generate 7,420 daily trips, 479 AM peak hour site trips (162 entering, 317 exiting) and 609 PM peak hour site trips (347 entering, 262 exiting). The build year for this development was anticipated to be 2019; however, it is currently not fully constructed. Per direction from the Town of Apex, the residential portion of this development was assumed to be 50% built out; therefore 50% of the residential site trips and 100% of the commercial site trips projected in the TIA were included in the background analysis. These trips were distributed to the study area roadways and intersections based on the patterns in the TIA.

The TIA recommended improvements at the Jenks Road and Wimberly Road/Street B intersection, as follows:

- Construct an exclusive westbound left-turn lane along Jenks Road that provides 50 feet of storage.
- Construct an exclusive eastbound left-turn lane along Jenks Road that provides 50 feet of storage.

The Town of Apex concurred with these recommendations in their Staff Summary and Comments to KHA on March 2, 2017; however, they indicated that the minimum lengths should include 100 feet of taper and 50 feet of full width deceleration in addition to the storage proposed in the TIA.

3.1.3 Council-Smith (Weddington Smith Roberts PUD)

The Council-Smith development will be located on a parcel of land on the south side of Green Level West Road, directly across from White Oak Church Road. A sealed TIA was prepared by VHB Engineering NC, PC (VHB) in September 2015. Per the TIA, the development is proposed to be a residential development consisting of 200 single-family homes. As a result, the development is projected to generate 1,987 daily site trips, 150 AM peak hour site trips (38 entering, 112 exiting) and 196 PM peak hour site trips (123 entering, 73 exiting). The build year for this development was anticipated to be 2021; however, there are currently no occupied units, so 100% of the projected site trips were included in the background analysis. These trips were distributed to the study area roadways and intersections based on the patterns in the TIA.

The TIA indicated that the Lake Castleberry development has already committed to laneage improvements at the Wimberly Road and Green Level West Road intersection; therefore, no additional improvements were recommended. These improvements include:

- Construct an exclusive westbound left-turn lane along Green Level West Road that provides 100 feet of storage.

The Town of Apex concurred with these recommendations in their Staff Summary and Comments to VHB on September 25, 2015.

3.1.4 Lake Castleberry

The Lake Castleberry development will be located west of Wimberly Road, between Green Level West Road and Castleberry Road. A sealed TIA was prepared by VHB Engineering NC, PC (VHB) in January 2014. Per the TIA, the development is proposed to be a residential development consisting of 172 single-family homes. As a result, the development is projected to generate 1,730 daily site trips, 130 AM peak hour site trips (33 entering, 97 exiting) and 171 PM peak hour site trips (108 entering, 63 exiting). The build year for this development was anticipated to be 2018; however, it is currently not fully constructed. Per direction from the Town of Apex, the development is assumed to be 40% complete; therefore, 60% of the projected site trips in the TIA were included in the background analysis. These trips were distributed to the study area roadways and intersections based on the patterns in the TIA.

The TIA indicated that the Westford development has already committed to laneage improvements at the Wimberly Road and Jenks Road intersection; therefore, no additional improvements were recommended. These improvements include:

- Construct an exclusive westbound left-turn lane along Jenks Road that provides 75 feet of storage (100 feet based on the Town's review and comments).
- Construct an exclusive eastbound left-turn lane along Jenks Road that provides 50 feet of storage (100 feet based on the Town's review and comments).
- Provide an exclusive left-turn and a shared through/right-turn lane on the Westford Drive approach.

Additionally, the TIA recommended the following improvements at the Wimberly Road and Green Level West Road intersection:

- Construct an exclusive westbound left-turn lane along Green Level West Road that provides 100 feet of storage.

The Town of Apex concurred with these recommendations in their Staff Comments to VHB on February 11, 2014.

Information pertaining to the CAMPO 2045 MTP projects and the approved developments projects included in the Background (2025) scenario analysis is located in **Appendix D**. The Background (2025) traffic volumes are shown in **Figure 5**.

3.2 Level of Service Analysis

Level of service analyses were conducted for all of the study area intersections for the Background (2025) AM and PM peak hours. The volumes used in the Background (2025) analysis are shown in **Figure 5** and the summary level of service results are shown in **Table 5**.

As shown in **Table 5**, the stop-controlled and yield movements at both study area intersections are currently operating at LOS C or better during the AM and PM peak hours.

The Background (2025) analysis results are located in **Appendix E**.

Table 5: Background (2025) LOS Results

Intersection	Approach	Background (2025)	
		AM	PM
Wimberly Road and Green Level West Road	Northbound Left/Right-Turn	B – 10.3	B – 11.4
	Westbound Left-Turn	A – 7.8	A – 7.9
Wimberly Road and Jenks Road	Northbound Thru/Left-Turn	B – 13.7	C – 17.3
	Northbound Right-Turn	A – 9.1	A – 9.3
	Eastbound Left-Turn	A – 7.6	A – 7.8
	Westbound Left-Turn	A – 7.5	A – 7.6
	Southbound Left/Thru/Right-Turn	B – 11.8	B – 14.3

LEGEND: LOS – Delay (seconds/vehicle)

4 Build (2025) Conditions

As previously described, a residential development consisting of 70 single-family homes and 50 townhomes is being proposed on the east side of Wimberly Road, between Green Level West Road and Jenks Road, in Apex, NC. Per the site plan, the proposed development will provide two full accesses along Wimberly Road. The northern driveway (Access #1) is approximately 0.9 miles south of Castleberry Road, while the southern driveway (Access #2) is approximately 0.4 miles north of Jenks Road. The development is anticipated to be fully constructed by 2025.

4.1 Trip Generation and Distribution

Trip generation was estimated based on the *ITE Trip Generation Manual, 10th Edition* and NCDOT Congestion Management guidelines. As shown in **Table 6**, the development is anticipated to generate 1,086 daily trips, 79 AM peak hour trips (19 entering, 60 exiting) and 104 PM peak hour trips (65 entering, 39 exiting).

Table 6: Trip Generation Results

Land Use (ITE Land Use Code)	Units	Daily	AM Peak		PM Peak	
			Enter	Exit	Enter	Exit
Single Family Detached (210)	70	749	13	41	45	27
Townhomes (220)	50	337	6	19	20	12
Total	120	1,086	19	60	65	39

Source: *ITE Trip Generation Manual, 10th Edition*

Most of the projected site trips are anticipated travel west along Jenks Road to US 64. The site trip distribution percentages for the proposed development are shown in **Figure 6**, with the resulting site trips shown in **Figure 7**.

4.2 Level of Service Analysis

The Build (2025) scenario consists of the Background (2025) traffic as discussed previously with the addition of site generated trips from the proposed development. The volumes that are used in the Build (2025) analysis are shown in **Figure 8**. The laneage and traffic control used for the Build (2025) scenario is based on the existing conditions shown in **Figure 3**. The summary level of service results are shown in **Table 7**.

As shown in **Table 7**, the stop-controlled and yield movements at both study area intersections are currently operating at LOS C or better during the AM and PM peak hours.

The newly constructed accesses along Wimberly Road are projected to operate acceptably in both the AM and PM peak hours, with the access approaches operating at LOS B or better and the southbound left-turn movements operating at LOS A in both the AM and PM peak hours.

The Build (2025) analysis results are located in **Appendix F**.

Table 7: Build (2025) LOS Results

Intersection	Approach	Build (2025)	
		PM	AM
Wimberly Road and Green Level West Road	Northbound Left/Right-Turn	B – 10.5	B – 11.6
	Westbound Left-Turn	A – 7.8	A – 7.9
Wimberly Road and Jenks Road	Northbound Thru/Left-Turn	B – 14.9	C – 21.0
	Northbound Right-Turn	A – 9.1	A – 9.3
	Eastbound Left-Turn	A – 7.7	A – 7.9
	Westbound Left-Turn	A – 7.5	A – 7.6
	Southbound Left/Thru/Right-Turn	B – 12.4	C – 16.7
	Westbound Left/Right-Turn	A – 9.4	A – 9.7
Wimberly Road and Access #1	Southbound Thru/Left-Turn	A – 7.4	A – 7.4
	Westbound Left/Right-Turn	A – 9.7	B – 10.2
Wimberly Road and Access #2	Southbound Thru/Left-Turn	A – 7.4	A – 7.5

LEGEND: LOS – Delay (seconds/vehicle)

5 Conclusions

As reported, the proposed development is not anticipated to significantly affect delay at the study area intersections. The following driveway configurations should be considered.

Wimberly Road and Green Level West Road

The analysis indicates that all movements are anticipated to operate at LOS B or better during the AM and PM peak hours. As a result, no improvements are recommended at this location.

Wimberly Road and Jenks Road

The analysis indicates that all movements are anticipated to operate at LOS C or better during the AM and PM peak hours. As a result, no improvements are recommended at this location.

Wimberly Road and Access #1

The analysis indicates that the westbound approach is projected to operate at LOS A during the AM and PM peak hours. The following driveway configuration should be considered:

- Construct the westbound Access #1 approach to provide one ingress lane and one egress lane.

Given the projected northbound right-turn and southbound left-turn volumes, as well as the AADT along Wimberly Road, no exclusive turn lanes are recommended. This is consistent with the Wimberly Road driveways for the nearby Lake Castleberry and Tunstall (The Preserve at White Oak) developments.

Wimberly Road and Access #2

The analysis indicates that the westbound approach is projected to operate at LOS A in the AM peak hour and LOS B in the PM peak hour. The following driveway configuration should be considered:

- Construct the eastbound Access #2 approach to provide one ingress lane and one egress lane.

Given the projected northbound right-turn and southbound left-turn volumes, as well as the AADT along Wimberly Road, no exclusive turn lanes are recommended. This is consistent with the Wimberly Road driveways for the nearby Lake Castleberry and Tunstall (The Preserve at White Oak) developments.

Table 8 provides a summary of the intersection levels of service across all scenarios and the proposed 2025 laneage is shown in **Figure 9**.

Table 8: Overall LOS Results

Intersection	Approach	Existing (2019)		Background (2025)		Build (2025)	
		AM	PM	AM	PM	AM	PM
Wimberly Road and Green Level West Road	Northbound Left/Right-Turn	A – 9.8	B – 10.5	B – 10.3	B – 11.4	B – 10.5	B – 11.6
	Westbound Left-Turn	A – 7.6	A – 7.7	A – 7.8	A – 7.9	A – 7.8	A – 7.9
Wimberly Road and Jenks Road	Northbound Thru/Left-Turn	B – 11.0	B – 11.9	B – 13.7	C – 17.3	B – 14.9	C – 21.0
	Northbound Right-Turn	A – 8.8	A – 8.9	A – 9.1	A – 9.3	A – 9.1	A – 9.3
	Eastbound Left-Turn	A – 7.5	A – 7.6	A – 7.6	A – 7.8	A – 7.7	A – 7.9
	Westbound Left-Turn	A – 7.4	A – 7.4	A – 7.5	A – 7.6	A – 7.5	A – 7.6
	Southbound Left/Thru/Right-Turn	B – 10.2	B – 10.7	B – 11.8	B – 14.3	B – 12.4	C – 16.7
Wimberly Road and Access #1	Westbound Left/Right-Turn	-	-	-	-	A – 9.4	A – 9.7
	Southbound Thru/Left-Turn	-	-	-	-	A – 7.4	A – 7.4
Wimberly Road and Access #2	Westbound Left/Right-Turn	-	-	-	-	A – 9.7	B – 10.2
	Southbound Thru/Left-Turn	-	-	-	-	A – 7.4	A – 7.5

LEGEND: LOS – Delay (seconds/vehicle)

Appendix A

Figures

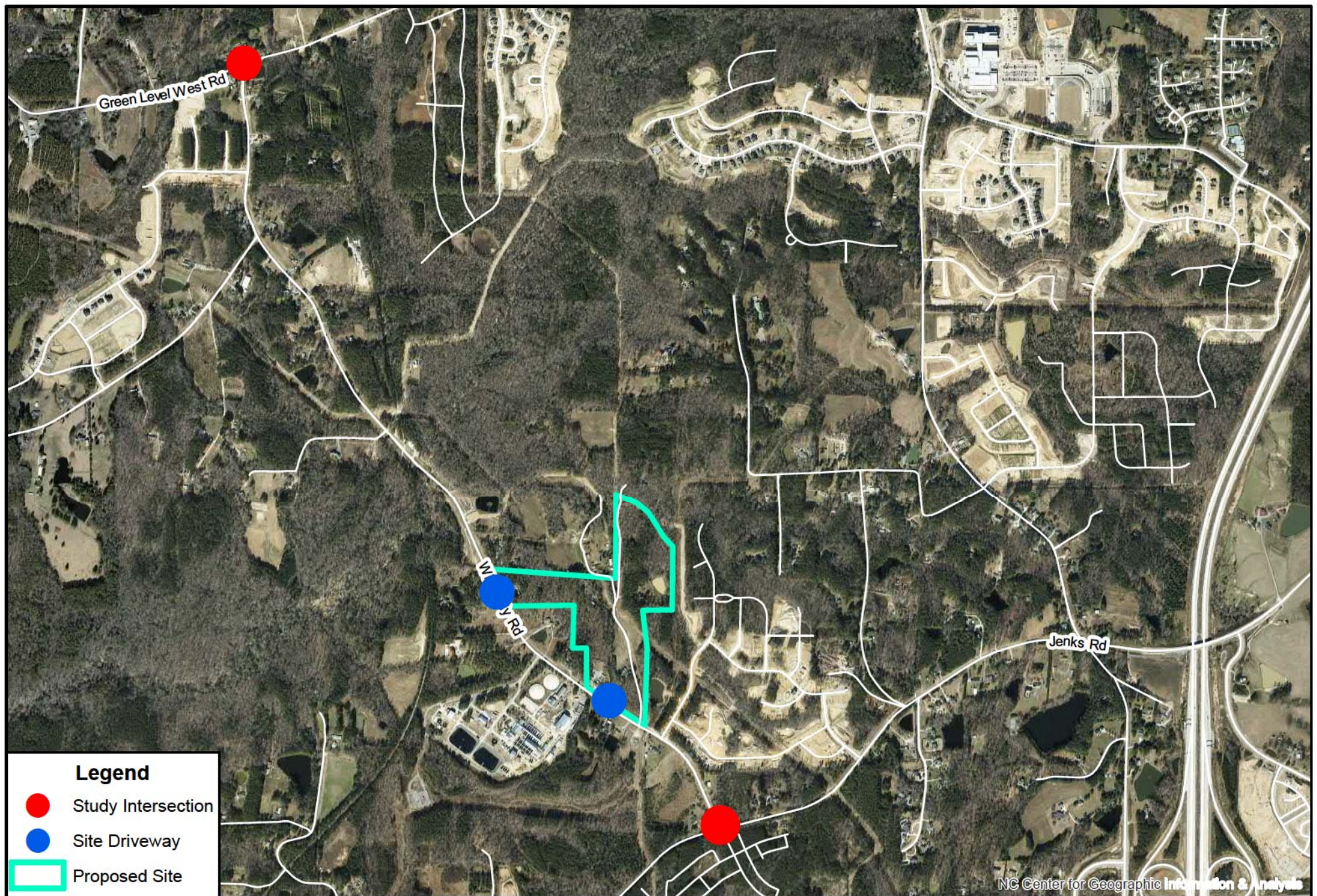
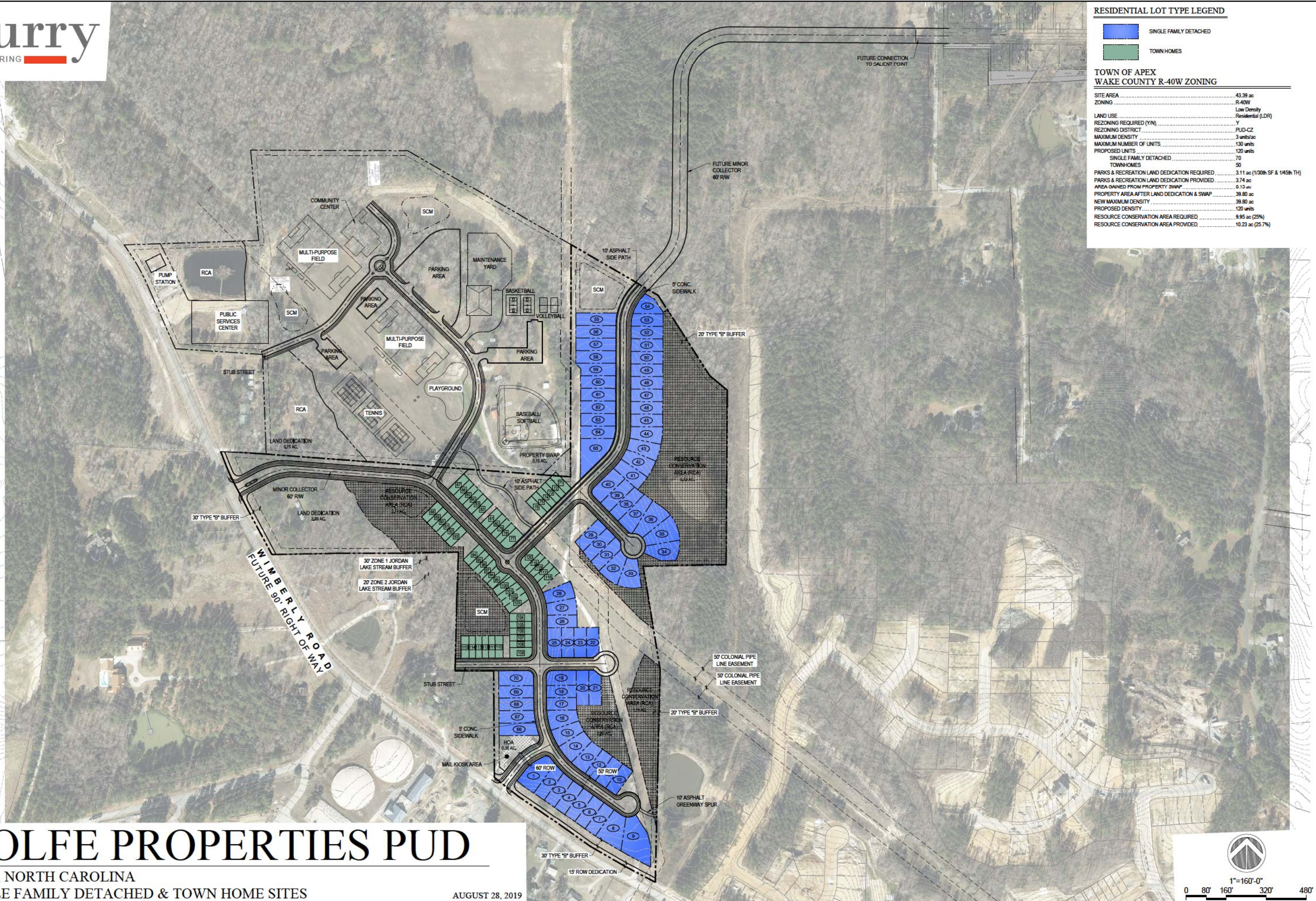


Figure 1: Vicinity Map

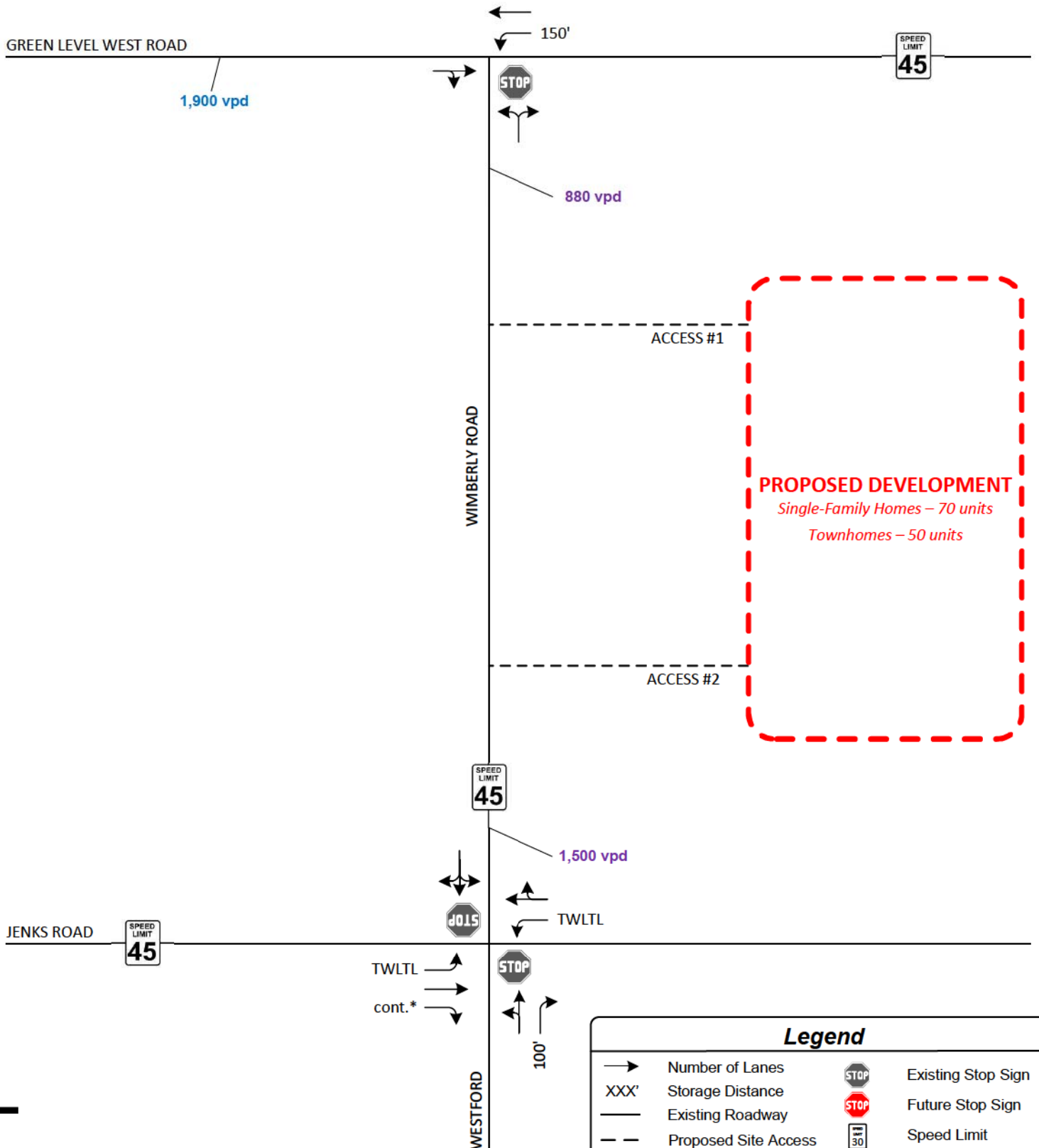
Wolfe Property PUD



WOLFE PROPERTIES PUD

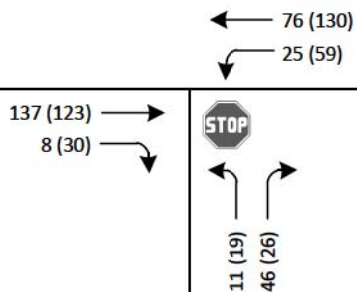
APEX, NORTH CAROLINA
SINGLE FAMILY DETACHED & TOWN HOME SITES

AUGUST 28, 2019



*Currently striped as continuous along the frontage of the Westford development.

GREEN LEVEL WEST ROAD



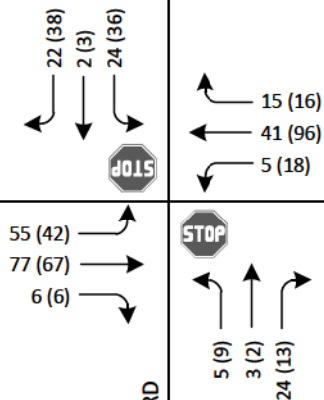
ACCESS #1

WIMBERLY ROAD

ACCESS #2

PROPOSED DEVELOPMENT
Single-Family Homes – 70 units
Townhomes – 50 units

JENKS ROAD

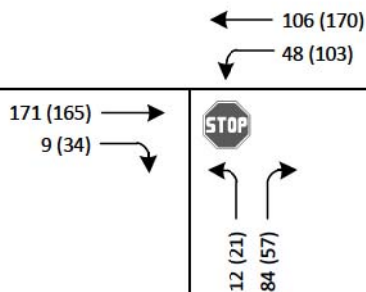


WESTFORD

Legend

- Number of Lanes
- Existing Roadway
- - Proposed Site Access
- XX (XX) AM (PM) Volumes
- Existing Stop Sign
- Future Stop Sign

GREEN LEVEL WEST ROAD



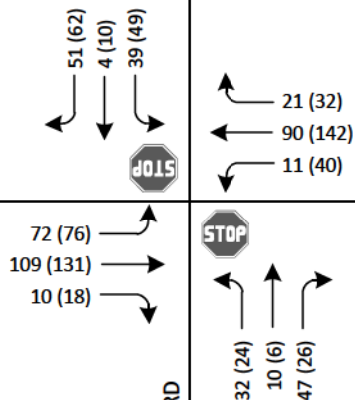
WIMBERLY ROAD

ACCESS #1

ACCESS #2

PROPOSED DEVELOPMENT
Single-Family Homes – 70 units
Townhomes – 50 units

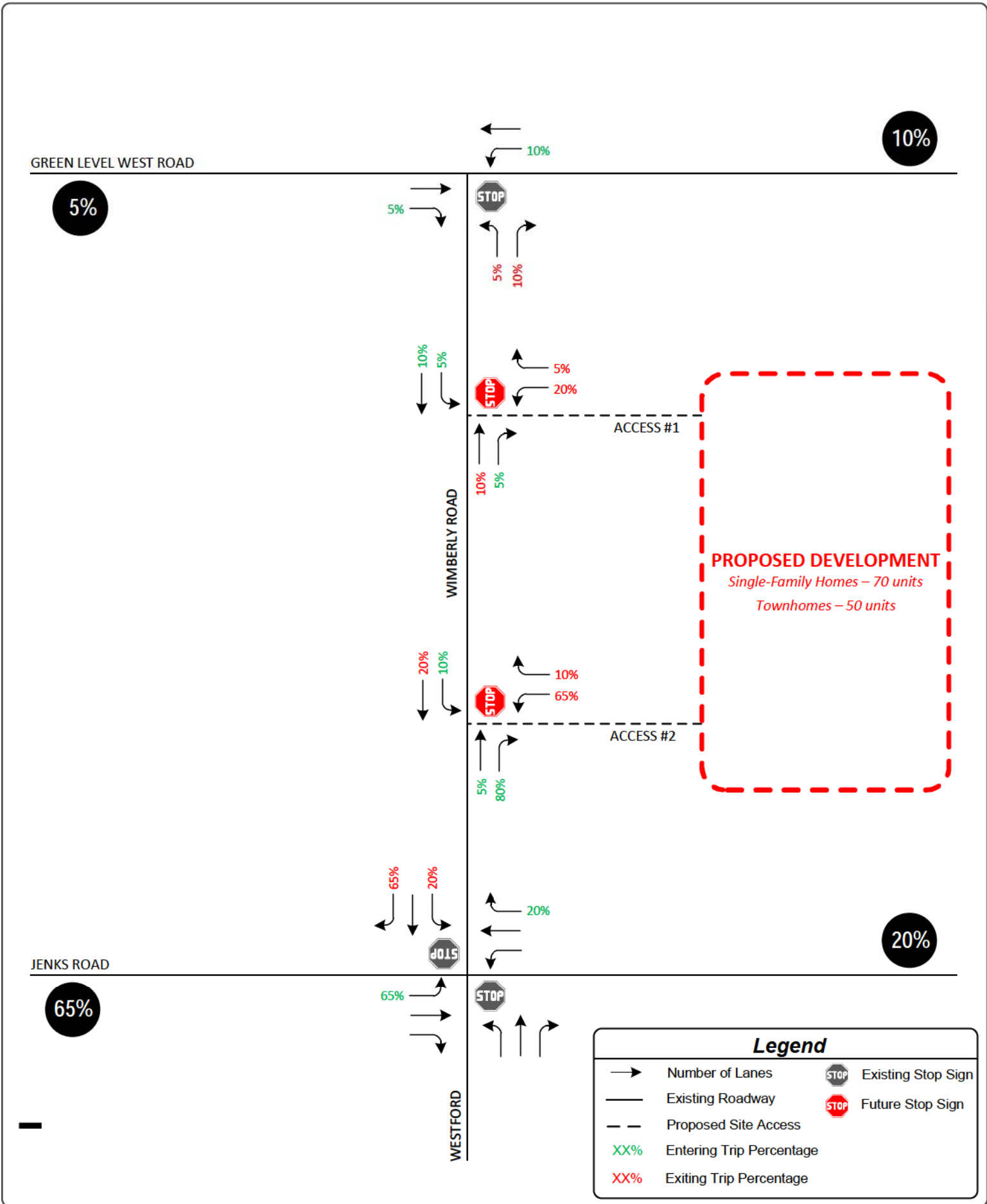
JENKS ROAD



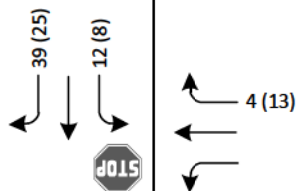
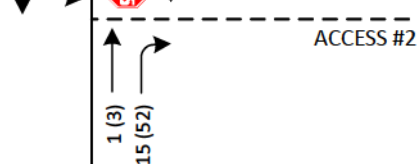
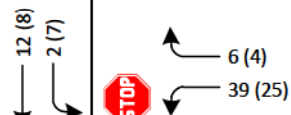
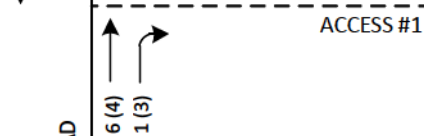
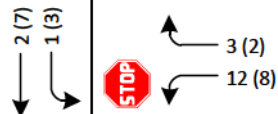
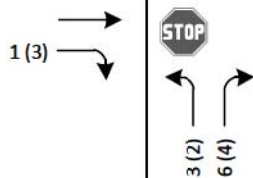
WESTFORD

Legend

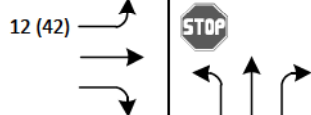
- Number of Lanes
- Existing Roadway
- - Proposed Site Access
- XX (XX) AM (PM) Volumes
- Existing Stop Sign
- Future Stop Sign



GREEN LEVEL WEST ROAD



JENKS ROAD



WIMBERLY ROAD

WESTFORD

PROPOSED DEVELOPMENT
Single-Family Homes – 70 units
Townhomes – 50 units

Legend

- Number of Lanes
- Existing Roadway
- - Proposed Site Access
- XX (XX) AM (PM) Volumes
- Existing Stop Sign
- Future Stop Sign

GREEN LEVEL WEST ROAD

106 (170)
50 (110)

171 (165)
10 (37)



15 (23)
90 (61)

64 (133)
1 (3)

WIMBERLY ROAD

3 (2)
12 (8)

88 (86)
1 (3)

ACCESS #1

74 (134)
2 (7)

6 (4)
39 (25)

83 (85)
15 (52)

ACCESS #2

90 (87)
4 (10)
51 (57)

25 (45)
90 (142)
11 (40)

JENKS ROAD



84 (118)
109 (131)
10 (18)



32 (24)
10 (6)
47 (26)

WESTFORD

PROPOSED DEVELOPMENT
Single-Family Homes – 70 units
Townhomes – 50 units

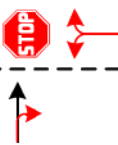
Legend

- Number of Lanes
- Existing Roadway
- - Proposed Site Access
- XX (XX) AM (PM) Volumes
- Existing Stop Sign
- Future Stop Sign

GREEN LEVEL WEST ROAD

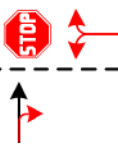
150'

SPEED
LIMIT
45



ACCESS #1

WIMBERLY ROAD



ACCESS #2

PROPOSED DEVELOPMENT

Single-Family Homes – 70 units

Townhomes – 50 units

SPEED
LIMIT
45

JENKS ROAD

SPEED
LIMIT
45



TWLT

TWLT

cont.*

100'

WESTFORD

Legend

→	Number of Lanes		Existing Stop Sign
XXX'	Storage Distance		Future Stop Sign
—	Existing Roadway		Speed Limit
- - -	Proposed Site Access		
→	Recommended Improvement		

*Currently striped as continuous along the frontage of the Westford development.

Wolfe Property PUD
Apex, NC

Figure 9
Future (2025) Laneage

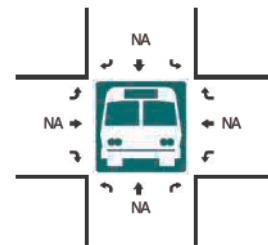
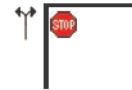
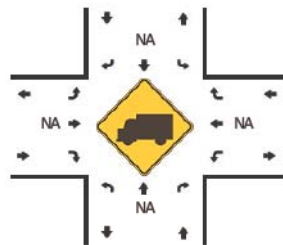
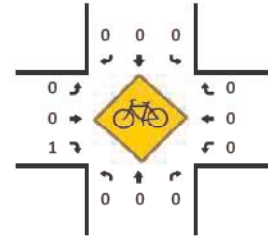
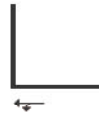
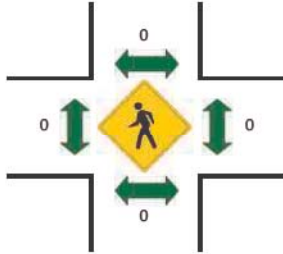
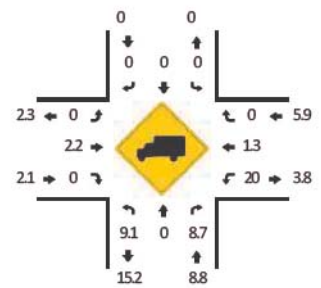
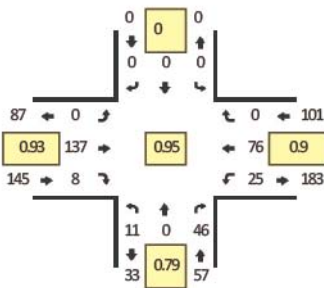
M
MOTT
MACDONALD

Appendix B Count Data

LOCATION: Wimberly Rd -- Green Level Rd
CITY/STATE: Wake, NC

QC JOB #: 15074701
DATE: Tue, Oct 22 2019

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	Wimberly Rd (Northbound)				Wimberly Rd (Southbound)				Green Level Rd (Eastbound)				Green Level Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	16	0	7	0	0	0	0	0	0	10	2	0	3	12	0	0	50	
7:15 AM	5	0	8	0	0	0	0	0	0	36	2	0	5	14	0	0	70	
7:30 AM	4	0	14	0	0	0	0	0	0	31	3	0	5	23	0	0	80	
7:45 AM	2	0	10	0	0	0	0	0	0	37	2	0	8	20	0	0	79	279
8:00 AM	0	0	14	0	0	0	0	0	0	33	1	0	7	19	0	0	74	303
8:15 AM	3	0	11	0	0	0	0	0	0	21	2	0	2	23	0	0	62	295
8:30 AM	2	0	9	0	0	0	0	0	0	31	1	0	4	23	0	0	70	285
8:45 AM	4	0	14	0	0	0	0	0	0	28	2	0	4	15	0	0	67	273
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	0	56	0	0	0	0	0	0	124	12	0	20	92	0	0	320	
Heavy Trucks	0	0	4	0	0	0	0	0	0	4	0	0	4	4	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

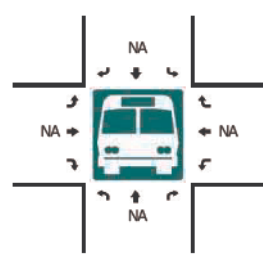
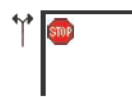
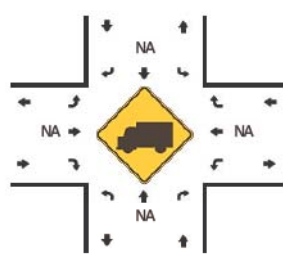
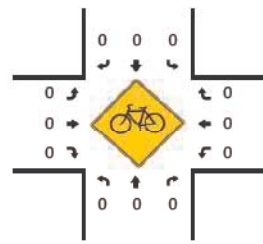
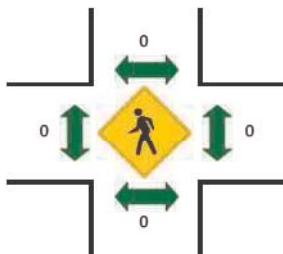
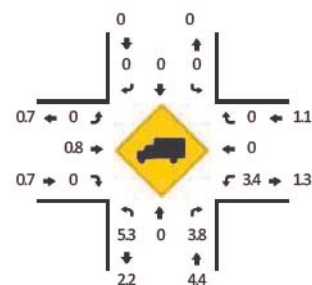
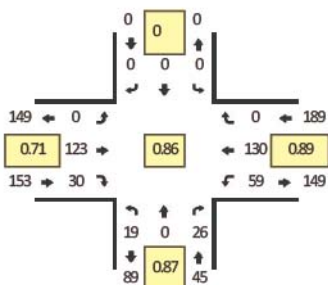
Report generated on 10/29/2019 10:54 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Wimberly Rd -- Green Level Rd
CITY/STATE: Wake, NC

QC JOB #: 15074702
DATE: Tue, Oct 22 2019

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



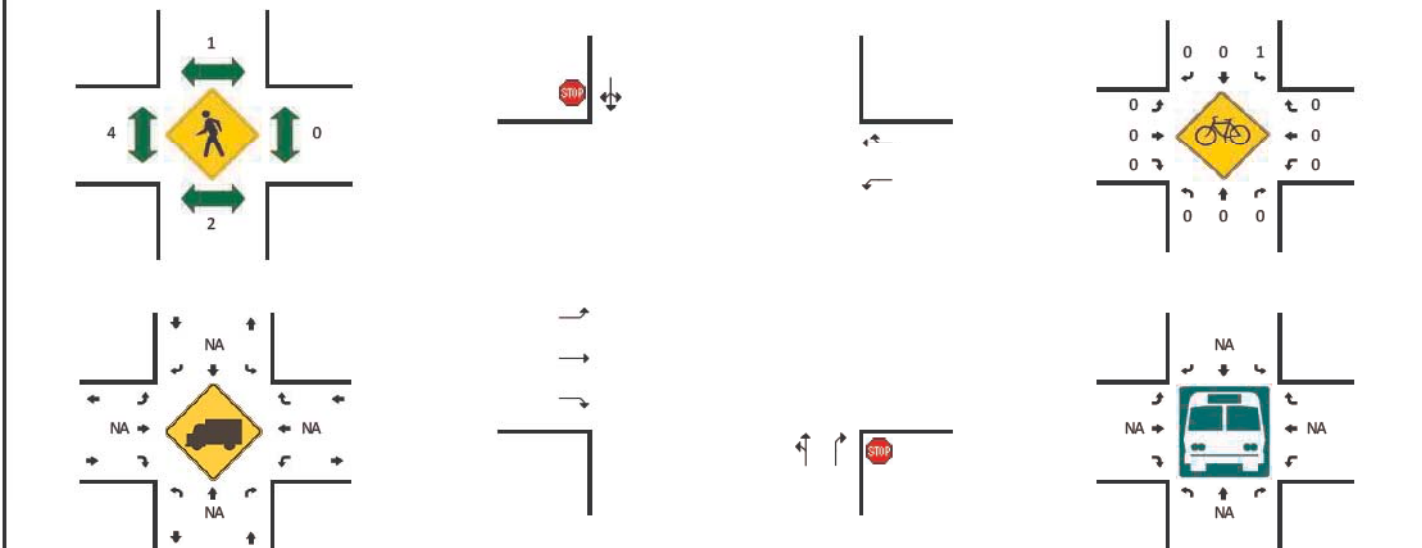
15-Min Count Period Beginning At	Wimberly Rd (Northbound)				Wimberly Rd (Southbound)				Green Level Rd (Eastbound)				Green Level Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	10	0	0	0	0	0	0	18	3	0	12	14	0	0	57	
4:15 PM	4	0	5	0	0	0	0	0	0	27	4	0	13	19	0	0	72	
4:30 PM	2	0	8	0	0	0	0	0	0	16	5	0	7	25	0	0	63	
4:45 PM	2	0	9	0	0	0	0	0	0	32	5	0	13	36	0	0	97	289
5:00 PM	3	0	8	0	0	0	0	0	0	23	7	0	16	37	0	0	94	326
5:15 PM	7	0	6	0	0	0	0	0	0	44	10	0	15	31	0	0	113	367
5:30 PM	7	0	3	0	0	0	0	0	0	24	8	0	15	26	0	0	83	387
5:45 PM	2	0	5	0	0	0	0	0	0	27	9	0	11	34	0	0	88	378
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	0	24	0	0	0	0	0	0	176	40	0	60	124	0	0	452	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Wimberly Rd -- Jenks Rd
CITY/STATE: Wake, NC

QC JOB #: 15074703
DATE: Tue, Oct 22 2019

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



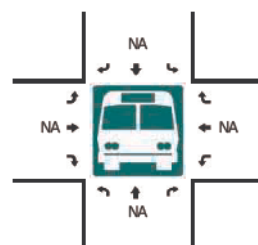
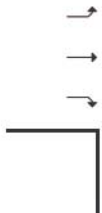
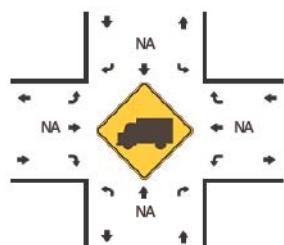
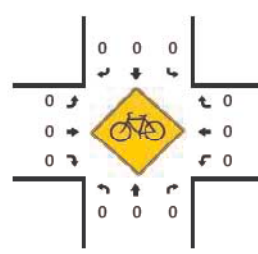
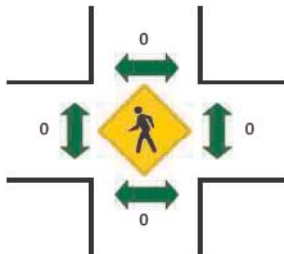
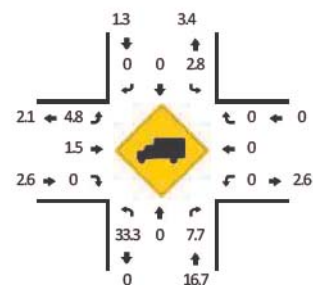
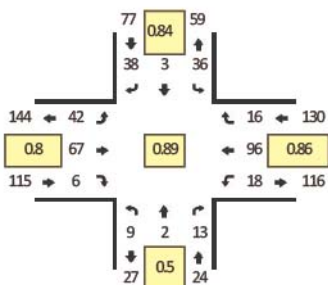
15-Min Count Period Beginning At	Wimberly Rd (Northbound)				Wimberly Rd (Southbound)				Jenks Rd (Eastbound)				Jenks Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	1	6	0	7	0	4	0	20	21	1	0	0	4	4	0	70	
7:15 AM	1	1	3	0	7	0	7	0	8	13	2	0	3	8	4	0	57	
7:30 AM	2	0	4	0	7	0	8	0	14	21	1	1	1	13	4	0	76	
7:45 AM	0	1	11	0	3	2	3	0	12	22	2	0	1	16	3	0	76	279
8:00 AM	0	1	3	0	4	0	3	0	10	23	2	0	2	9	5	0	62	271
8:15 AM	2	0	4	0	4	0	6	0	9	17	0	0	1	10	4	0	57	271
8:30 AM	0	0	3	0	5	0	2	0	15	16	1	0	1	11	4	0	58	253
8:45 AM	1	0	7	0	7	0	10	0	8	16	0	0	2	14	3	0	68	245
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	0	16	0	28	0	32	0	56	84	4	4	4	52	16	0	304	
Heavy Trucks	0	0	0		0	0	4		0	8	0		0	0	0		12	
Pedestrians	4				0				0	4			0	0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Wimberly Rd -- Jenks Rd
CITY/STATE: Wake, NC

QC JOB #: 15074704
DATE: Tue, Oct 22 2019

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM











15-Min Count Period Beginning At	Wimberly Rd (Northbound)				Wimberly Rd (Southbound)				Jenks Rd (Eastbound)				Jenks Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	1	2	0	5	2	5	0	11	11	1	0	3	16	2	0	61	
4:15 PM	0	1	4	0	5	0	7	0	8	13	0	0	3	20	4	0	65	
4:30 PM	0	1	3	0	7	0	8	0	7	13	0	0	3	15	3	0	60	
4:45 PM	1	0	3	0	11	2	6	0	11	10	2	0	1	13	4	0	64	250
5:00 PM	2	0	0	0	10	0	11	0	9	25	2	0	1	23	4	0	87	276
5:15 PM	4	0	8	0	5	1	10	0	10	19	2	0	8	26	4	0	97	308
5:30 PM	3	2	3	0	9	1	7	0	11	15	1	0	4	27	5	0	88	336
5:45 PM	0	0	2	0	12	1	10	0	11	8	1	1	5	20	3	0	74	346
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	0	32	0	20	4	40	0	40	76	8	0	32	104	16	0	388	
Heavy Trucks	4	0	4	0	0	0	0	0	8	4	0	0	0	0	0	0	20	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

Appendix C

Existing (2019) Analyses

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↓	↑	↓	
Traffic Vol, veh/h	137	8	25	76	11	46
Future Vol, veh/h	137	8	25	76	11	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	9	9
Mvmt Flow	152	9	28	84	12	51
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	161	0	297	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	140	-
Critical Hdwy	-	-	4.16	-	6.49	6.29
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.254	-	3.581	3.381
Pot Cap-1 Maneuver	-	-	1394	-	680	870
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	870	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1394	-	666	870
Mov Cap-2 Maneuver	-	-	-	-	666	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	853	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.9		9.8	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	821	-	-	1394	-	
HCM Lane V/C Ratio	0.077	-	-	0.02	-	
HCM Control Delay (s)	9.8	-	-	7.6	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	










Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	77	6	5	41	15	5	3	24	24	2	22
Future Vol, veh/h	55	77	6	5	41	15	5	3	24	24	2	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	0	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	6	6	6	4	4	4
Mvmt Flow	61	86	7	6	46	17	6	3	27	27	2	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	63	0	0	93	0	0	288	283	86	294	282	55
Stage 1	-	-	-	-	-	-	208	208	-	67	67	-
Stage 2	-	-	-	-	-	-	80	75	-	227	215	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.16	6.56	6.26	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.14	5.54	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.554	4.054	3.354	3.536	4.036	3.336
Pot Cap-1 Maneuver	1514	-	-	1501	-	-	656	619	962	654	623	1006
Stage 1	-	-	-	-	-	-	785	722	-	938	835	-
Stage 2	-	-	-	-	-	-	919	825	-	771	721	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1514	-	-	1501	-	-	617	592	962	612	596	1006
Mov Cap-2 Maneuver	-	-	-	-	-	-	617	592	-	612	596	-
Stage 1	-	-	-	-	-	-	754	693	-	900	832	-
Stage 2	-	-	-	-	-	-	891	822	-	716	692	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.6	9.4	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	607	962	1514	-	-	1501	-	-	745
HCM Lane V/C Ratio	0.015	0.028	0.04	-	-	0.004	-	-	0.072
HCM Control Delay (s)	11	8.8	7.5	-	-	7.4	-	-	10.2
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0.1	0.1	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↓	↑	↓	
Traffic Vol, veh/h	123	30	59	130	19	26
Future Vol, veh/h	123	30	59	130	19	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	137	33	66	144	21	29
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	170	0	430	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	276	-
Critical Hdwy	-	-	4.12	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.218	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1407	-	578	887
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1407	-	551	887
Mov Cap-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	730	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.4		10.5		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	705	-	-	1407	-	
HCM Lane V/C Ratio	0.071	-	-	0.047	-	
HCM Control Delay (s)	10.5	-	-	7.7	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	67	6	18	96	16	9	2	13	36	3	38
Future Vol, veh/h	42	67	6	18	96	16	9	2	13	36	3	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	0	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	2	2	2	17	17	17	3	3	3
Mvmt Flow	47	74	7	20	107	18	10	2	14	40	3	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	125	0	0	81	0	0	347	333	74	336	331	116
Stage 1	-	-	-	-	-	-	168	168	-	156	156	-
Stage 2	-	-	-	-	-	-	179	165	-	180	175	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.27	6.67	6.37	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.27	5.67	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.27	5.67	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.653	4.153	3.453	3.527	4.027	3.327
Pot Cap-1 Maneuver	1455	-	-	1517	-	-	580	563	947	616	587	934
Stage 1	-	-	-	-	-	-	800	732	-	844	767	-
Stage 2	-	-	-	-	-	-	789	734	-	819	752	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1455	-	-	1517	-	-	532	538	947	584	561	934
Mov Cap-2 Maneuver	-	-	-	-	-	-	532	538	-	584	561	-
Stage 1	-	-	-	-	-	-	774	709	-	817	757	-
Stage 2	-	-	-	-	-	-	740	724	-	778	728	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	1	10.3	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	533	947	1455	-	-	1517	-	-	715
HCM Lane V/C Ratio	0.023	0.015	0.032	-	-	0.013	-	-	0.12
HCM Control Delay (s)	11.9	8.9	7.6	-	-	7.4	-	-	10.7
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	0.1	-	-	0	-	-	0.4

Appendix D

Background Projects

Traffic Impact Analysis

Tunstall Property Apex, NC

Prepared for:

Raleigh Land Fund I, LLC

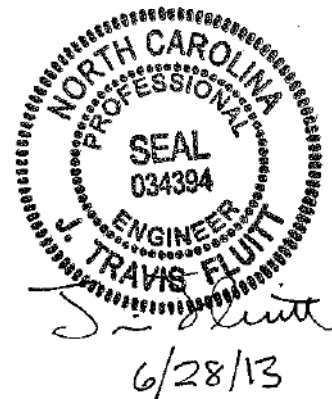
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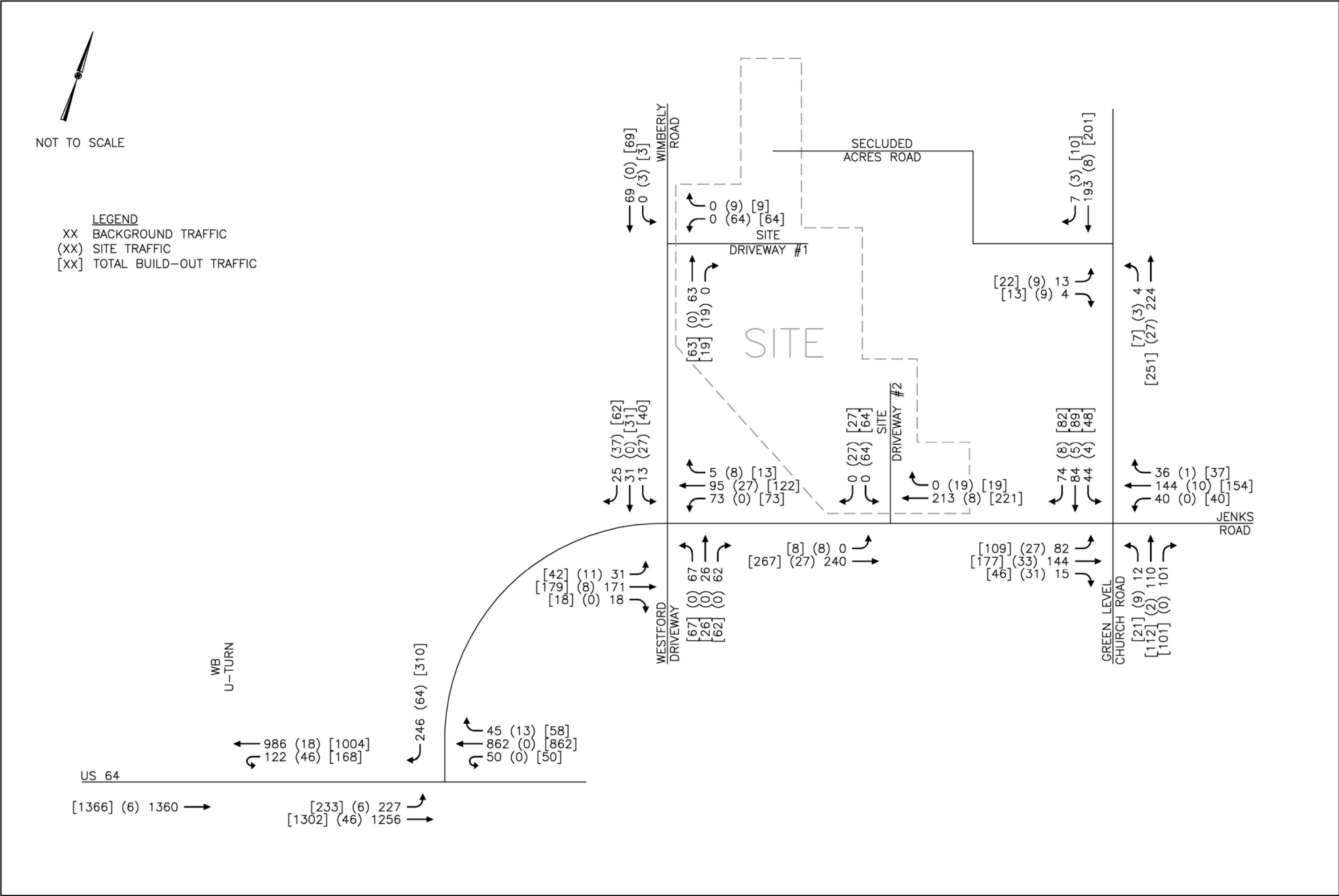
**Traffic Impact Analysis
for
Tunstall Property
Apex, North Carolina**

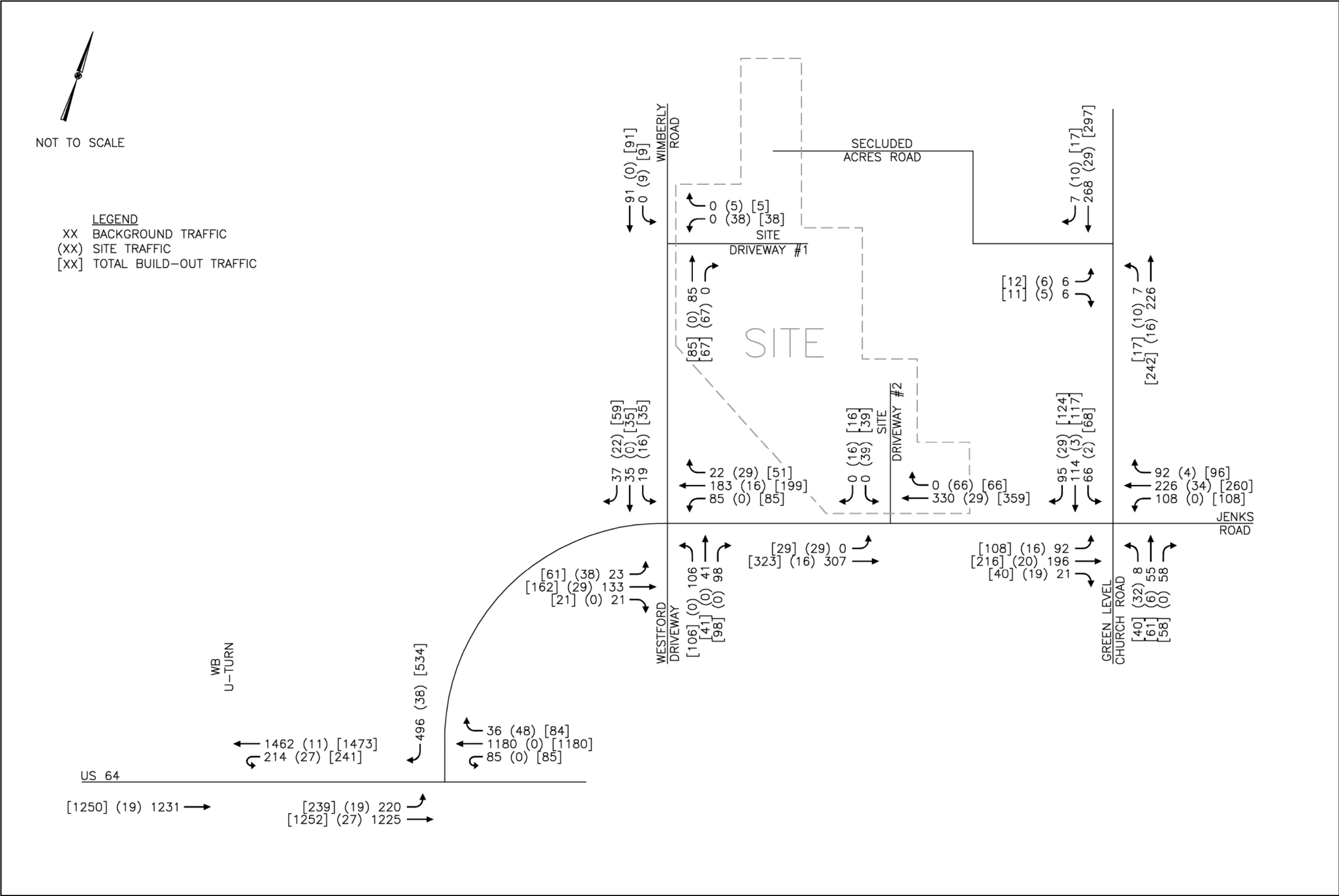
**Prepared for:
Raleigh Land Fund I, LLC
Raleigh, NC**

**Prepared By:
Kimley-Horn and Associates, Inc.
NC License # F-0102
3001 Weston Parkway
Cary, North Carolina 27513
(919) 677-2000**

**011657000
June 2013**







8.0 Conclusions and Recommendations

The following roadway improvements are committed to be performed by the Westford development:

US 64 & Jenks Road:

- Convert existing full-movement intersection to a modified “super street” design
- Construct a channelized island in the median of US 64 to prohibit left-turns from Jenks Road
- Restripe the existing southbound left-turn lane on Jenks Road to an exclusive right-turn lane
- Extend the existing southbound right-turn lane on Jenks Road to provide 200 feet of storage
- Install a traffic signal for the eastbound left-turn, the westbound through and right-turn, and the southbound right-turn
- Construct a downstream U-turn on US 64 with 125 feet of storage for the westbound U-turn lane

Jenks Road & Wimberly Road / Westford Driveway:

- Construct an exclusive westbound left-turn lane with 75 feet of storage on Jenks Road
- Construct an exclusive eastbound left-turn lane with 50 feet of storage on Jenks Road
- Provide an exclusive left-turn lane and a shared through-right lane on the Westford driveway

Jenks Road & Green Level Church Road:

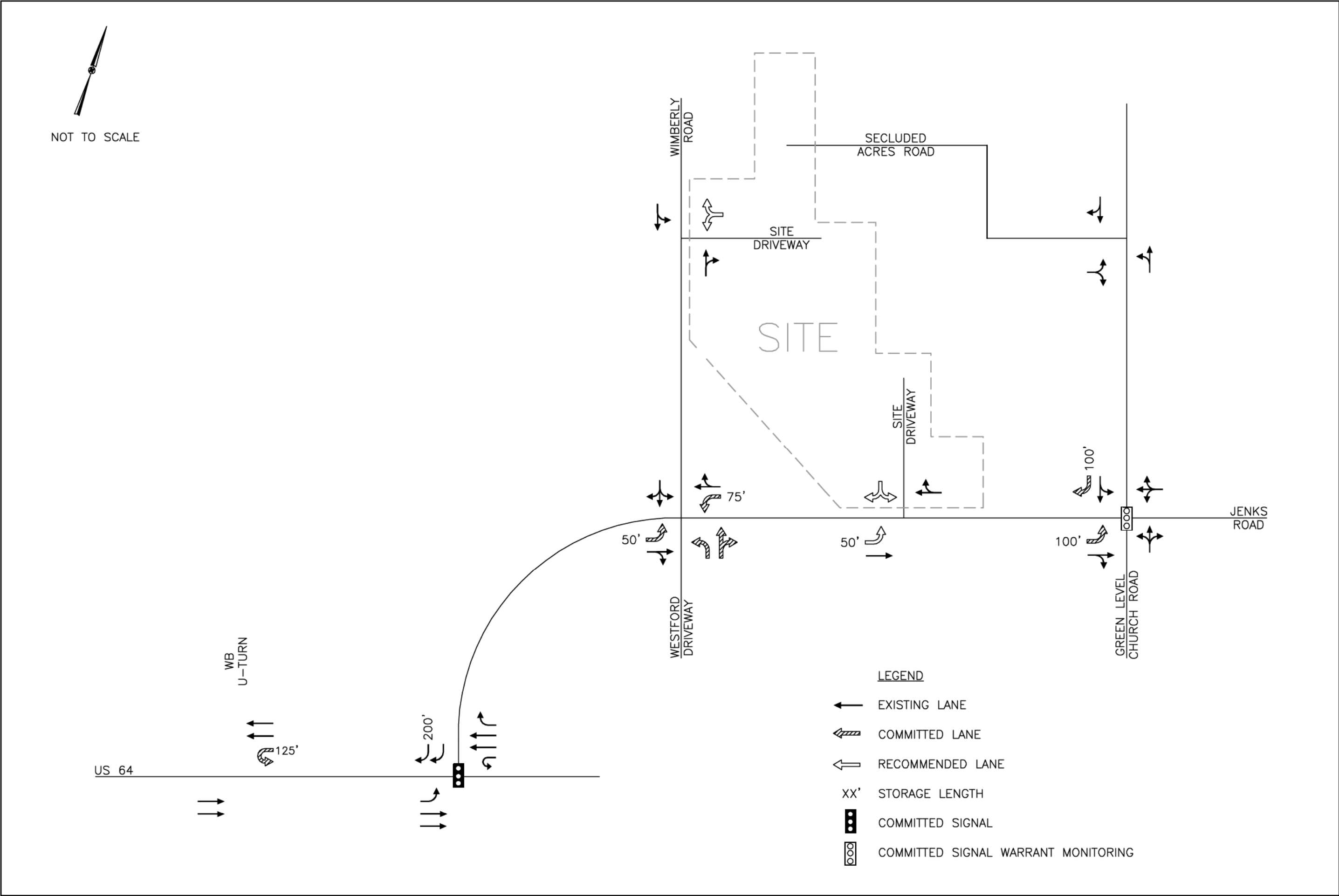
- Construct an exclusive eastbound left-turn lane with 100 feet of storage on Jenks Road
- Construct exclusive southbound right-turn lane with 100 feet of storage on Green Level Church Road
- Monitor intersection for traffic signal warrants and install a traffic signal if they are met

The following roadway improvement is recommended to accommodate required thoroughfare widening on Jenks Road:

Jenks Road at Site Driveway:

- Construct an exclusive eastbound left-turn lane with 50 feet of storage on Jenks Road

The analysis indicates that all intersections in the study area will operate at acceptable levels of service at project build-out with the exception of the intersection of Jenks Road at Green Level Church Road. At project build-out with the Westford development in place, the intersection is expected to operate at LOS E in the PM peak hour as a 4-way stop. However, Westford is committed to monitoring this intersection for MUTCD signal warrants and installing a signal when warrants are met. It should also be noted that without Westford the intersection is expected to operate at LOS B in the PM peak hour at project build-out. Therefore, no additional improvements are recommended at this intersection to accommodate projected site traffic. The recommended roadway laneage is shown on Figure 9.





Town of Apex

P. O. BOX 250
APEX, NORTH CAROLINA 27502

December 9, 2013

To: Apex Planning Board and Apex Town Council

Subject: Staff review of Tunstall Property TIA dated 6/28/2013 (The Preserve at White Oak Creek); updated traffic summary for final PUD plan

Study Area

- The PUD is located north and west of Jenks Road and Wimberly Road with frontage on both roadways.
- The existing stop controlled intersections studied include: US 64 at Jenks Road, Jenks Road at Wimberly Road, Green Level Church Road at Jenks Road, and Green Level Church Road at Secluded Acres Road.

Trip Generation

The TIA assumes 250 single family homes and 100 townhomes. The PUD is anticipated to generate 55 new inbound trips and 182 new outbound trips in the a.m. peak hour. It is anticipated to generate 191 new inbound trips and 109 new outbound trips in the p.m. peak hour. The PUD is anticipated to add 3,084 new trips to the adjacent roadway network on a typical weekday.

Site Access

- Site Driveway 1 provides access to Wimberly Road 1,100 feet north of Jenks Road as indicated in the PUD Plan.
- Site Driveway 2 provides access to Jenks Road 1,750 feet east of Wimberly Road as indicated in the PUD Plan.
- The site may eventually have access to Secluded Acres Road but would require extending that road west on land that is not currently dedicated as public right of way. The TIA analyzed traffic with and without that access. The subdivision would be limited to 300 units if only provided two points of access.

Traffic Capacity Analysis

Traffic was analyzed with and without development of the approved Westford project. The following table lists the overall levels of service reported for the signalized study intersection and any critical movements or stop controlled intersections operating worse than LOS D. Other movements experiencing LOS D or better for all conditions are included in the TIA but not in this summary table.

2013 Existing (2016 No-Build) [2016 Build]		
	Intersection Level of Service (A – F)	
Signalized Level of Service, US 64 at Jenks Rd	A.M. Peak Hour	P.M. Peak Hour
No-Build (with Westford PUD)	B	B
Build-out with proposed subdivision and Westford PUD*	B	B
Unsignalized (four-way stop) Level of Service, Green Level Church Rd at Jenks Rd		
No-Build (with Westford PUD)	B	C
Build-out with proposed subdivision and Westford PUD**	B	E

* Assumes committed improvements (including traffic signal) with Westford PUD. Moderate delays for stop-controlled operation result at build-out with no improvements if Westford is not developed at that time.

**LOS is the same with or without Secluded Acres Road access. Assumes committed improvements from Westford PUD (eastbound left turn and southbound right turn).

Recommendations

1. The TIA recommends no changes to US 64 at Jenks Road or US 64 westbound U-turn west of Jenks Road in addition to commitments made by Westford, showing that previously committed improvements will accommodate traffic from both developments upon build-out. Without development of Westford, no improvements are proposed. ***Apex staff concurs with no additional improvements for the intersections along US 64 as part of the proposed PUD.***

2. The TIA recommends no changes to Jenks Road at Wimberly Road in addition to commitments made by Westford, showing that previously committed improvements will accommodate traffic from both developments upon build-out. Without development of Westford, no improvements are proposed. ***Apex staff concurs with no additional improvements for Jenks Road at Wimberly Road proposed as part of the proposed PUD.***
3. The TIA recommends Wimberly Road at Site Driveway as a single lane exit with no exclusive turn lanes on Wimberly Road. ***Apex staff concurs with the recommendations for Wimberly Road at Site Driveway.***
4. The TIA recommends Site Driveway at Jenks Road as a single lane exit with a 50-foot exclusive left turn lane on Jenks Road. ***Apex staff concurs with the note included in the PUD plan providing for a minimum length of 150 feet of full width for the left turn lane proposed on Jenks Road as part of the proposed PUD and exclusive left and right lanes exiting the proposed Site Driveway.***
5. The TIA recommends no changes to Green Level Church Road at Jenks Road in addition to commitments made by Westford, showing that previously committed improvements will accommodate traffic from both developments upon build-out. Without development of Westford, no improvements are proposed. ***Apex staff concurs with the note included in the PUD plan providing for installation of a traffic signal if warranted at this location following a warrant study to be conducted following the 265th CO and no later than the 280th CO.***
6. The TIA recommends no changes to Green Level Church Road at Secluded Acres Road. ***Apex staff concurs with the note included in the PUD plan providing for a minimum length of 150 feet of full width for a left turn lane proposed on Green Level Church Road at Secluded Acres Road prior to public access being completed along Secluded Acres Road to the PUD.***

Please note that staff recommendations and proposed changes on state-maintained facilities are subject to approval by NCDOT. NCDOT maintains US 64, Wimberly Road, Jenks Road, Green Level Church Road, and Secluded Acres Road.

Sincerely,



Russell H. Dalton, PE
Transportation Engineer





Traffic Impact Analysis

Westford Apex, NC

Prepared for:

The Halle Companies

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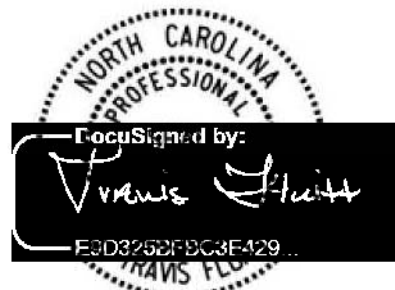
Kimley»Horn

**Traffic Impact Analysis
for
Westford
Apex, North Carolina**

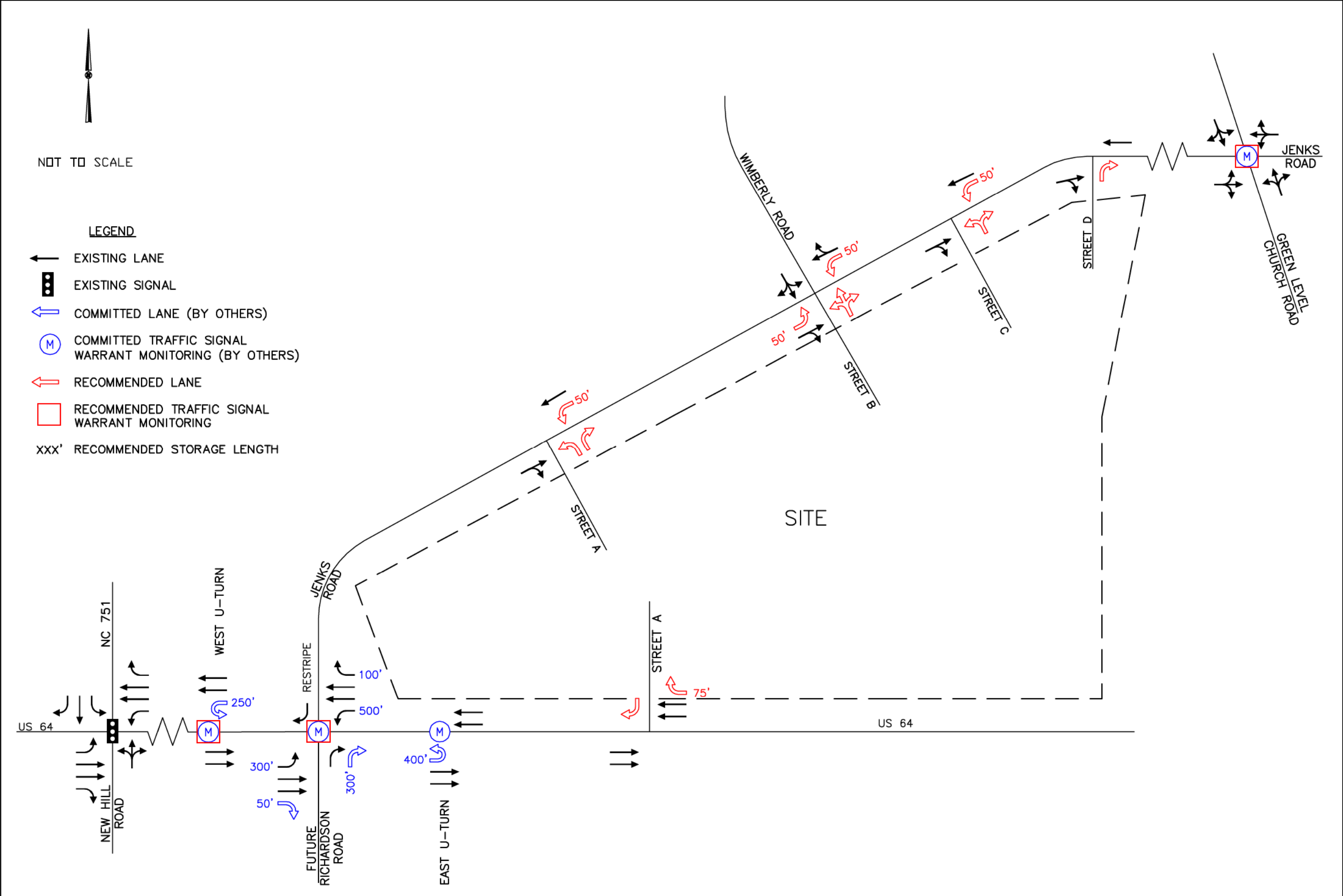
**Prepared for:
The Halle Companies
Apex, North Carolina**

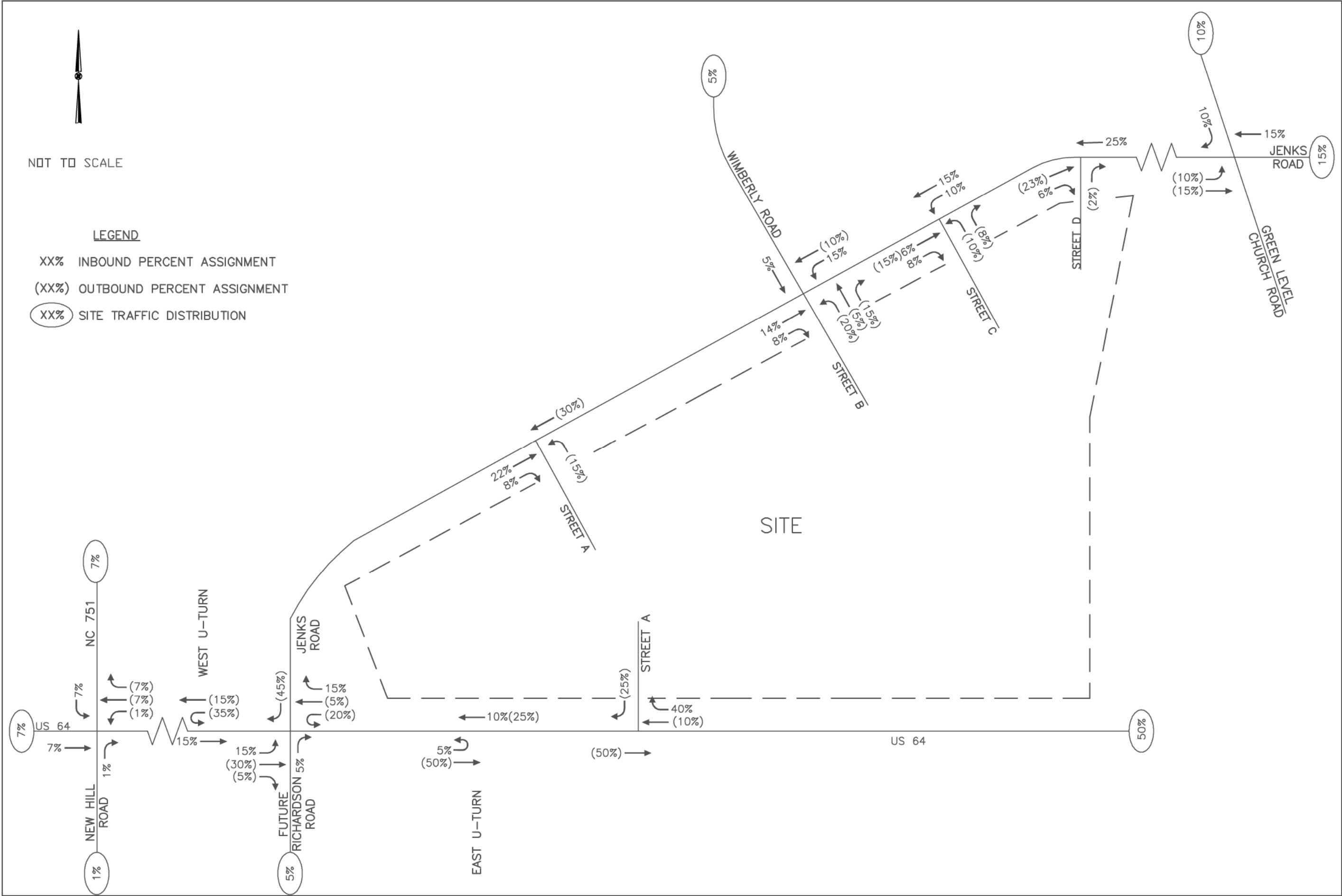
**Prepared by:
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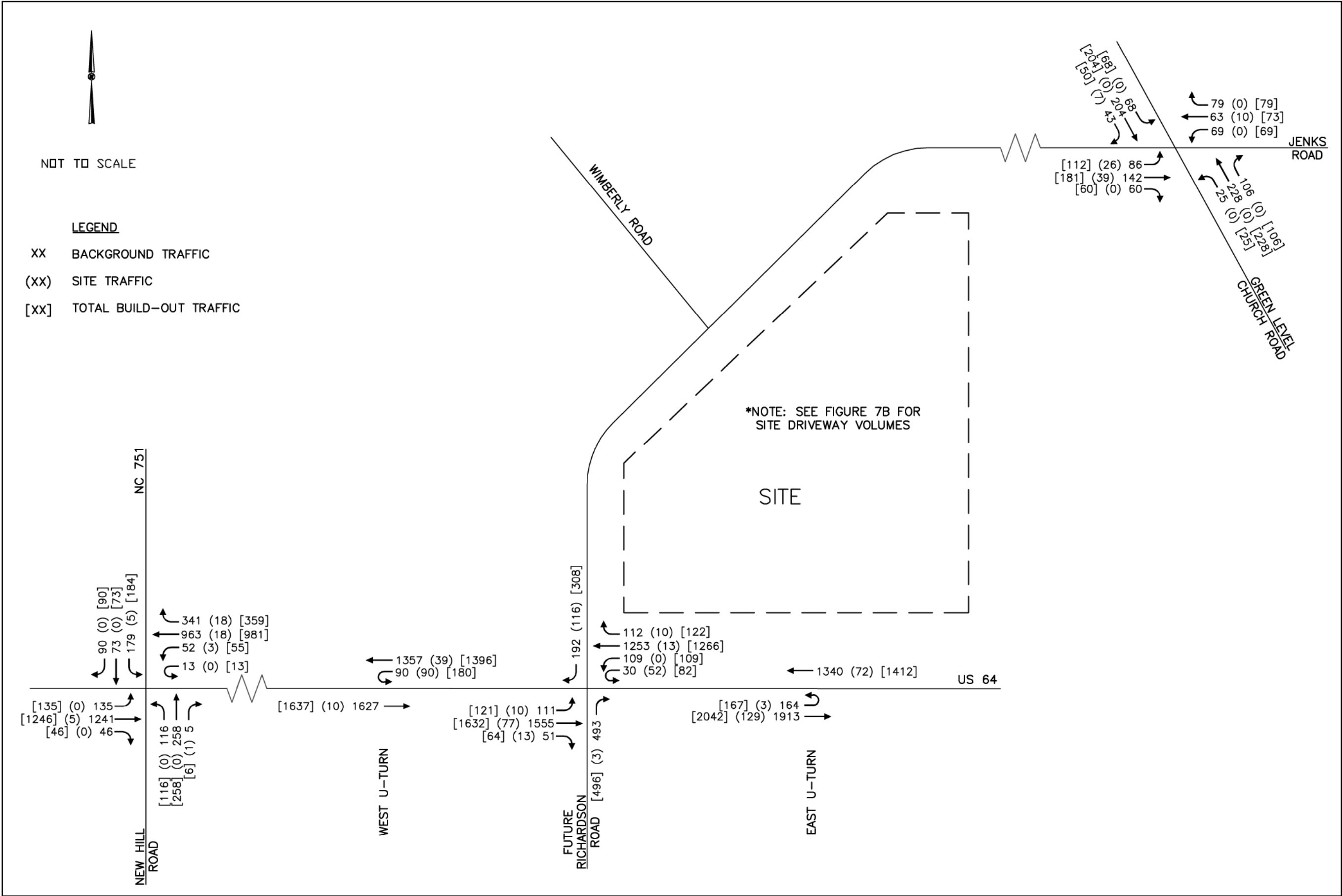
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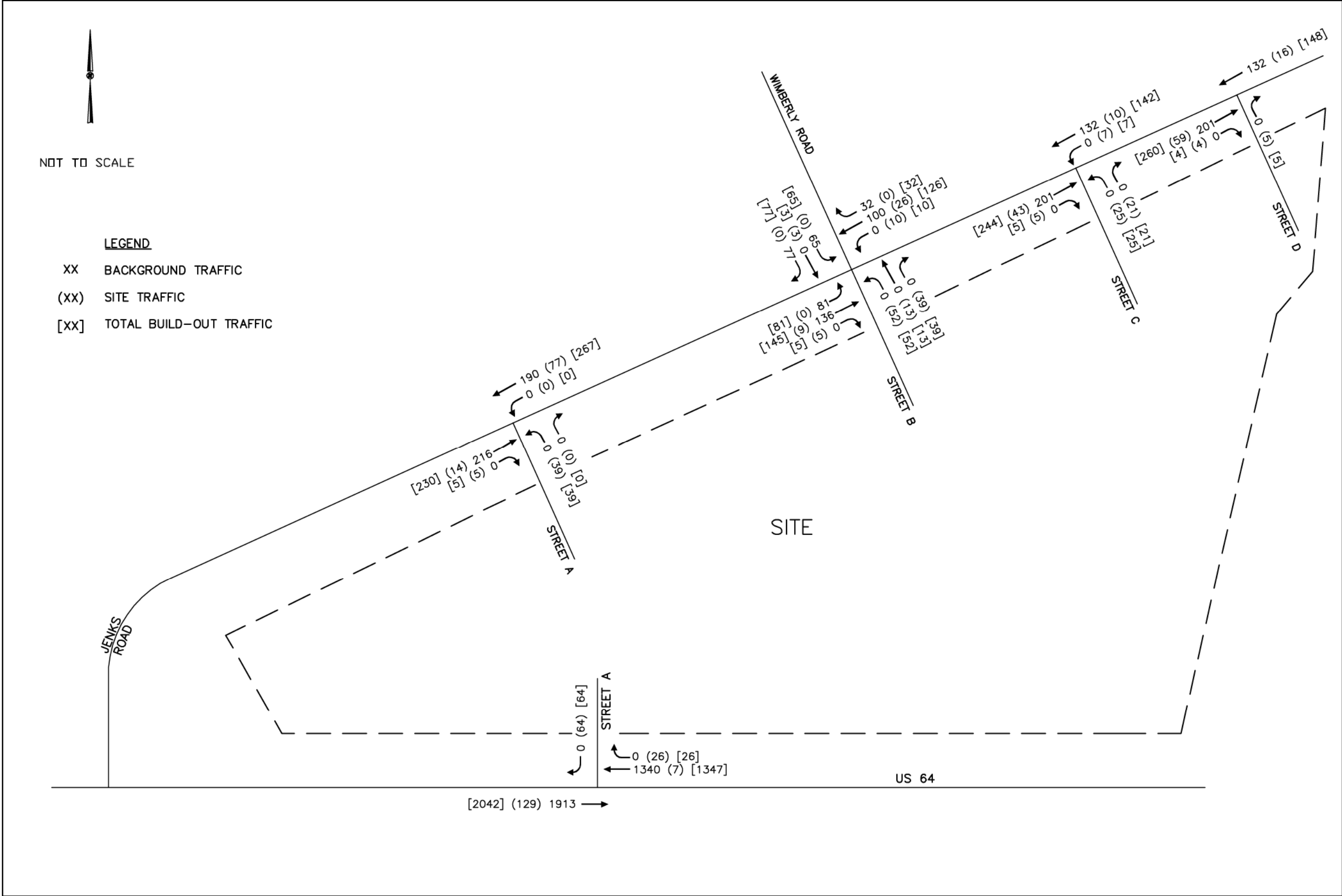


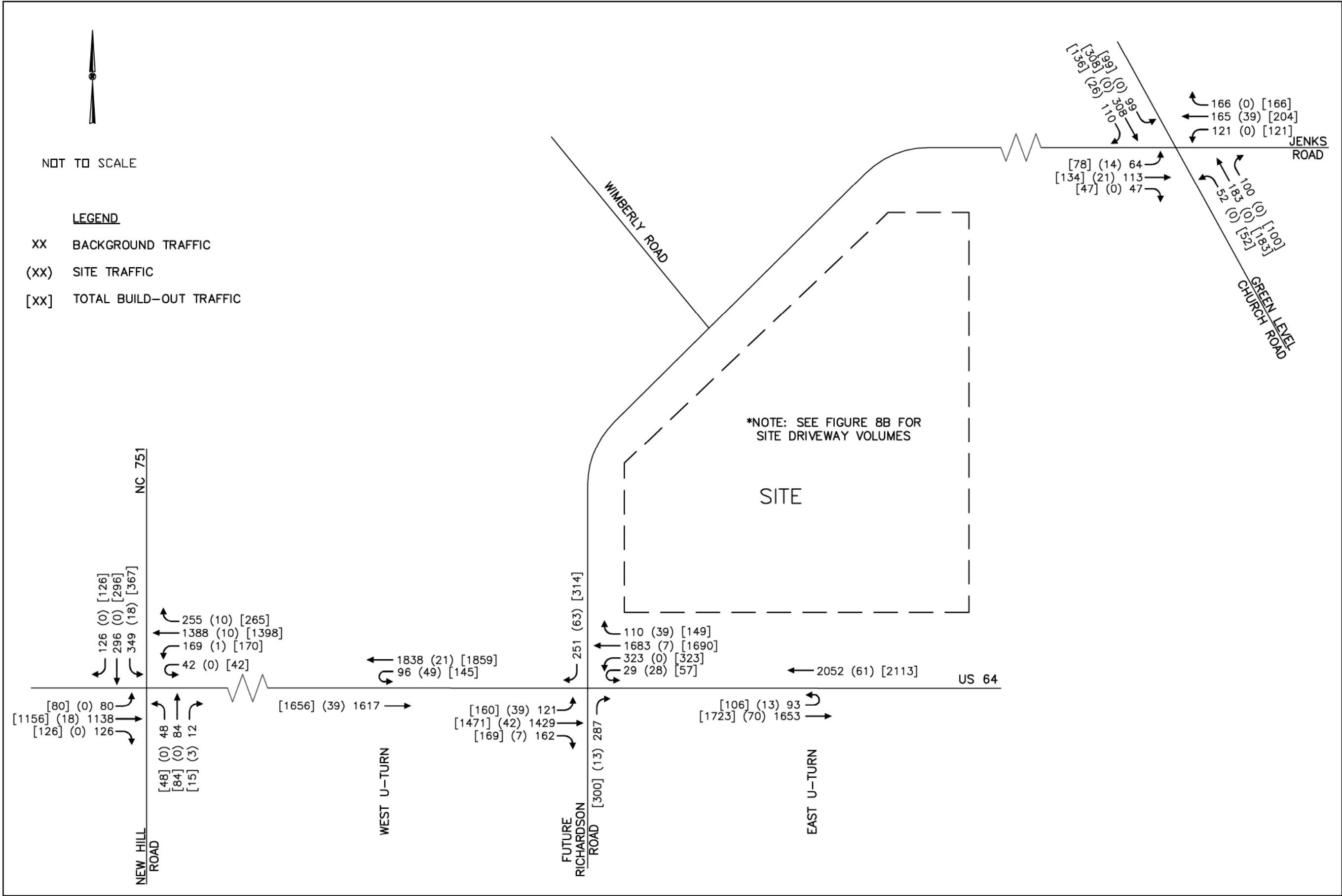
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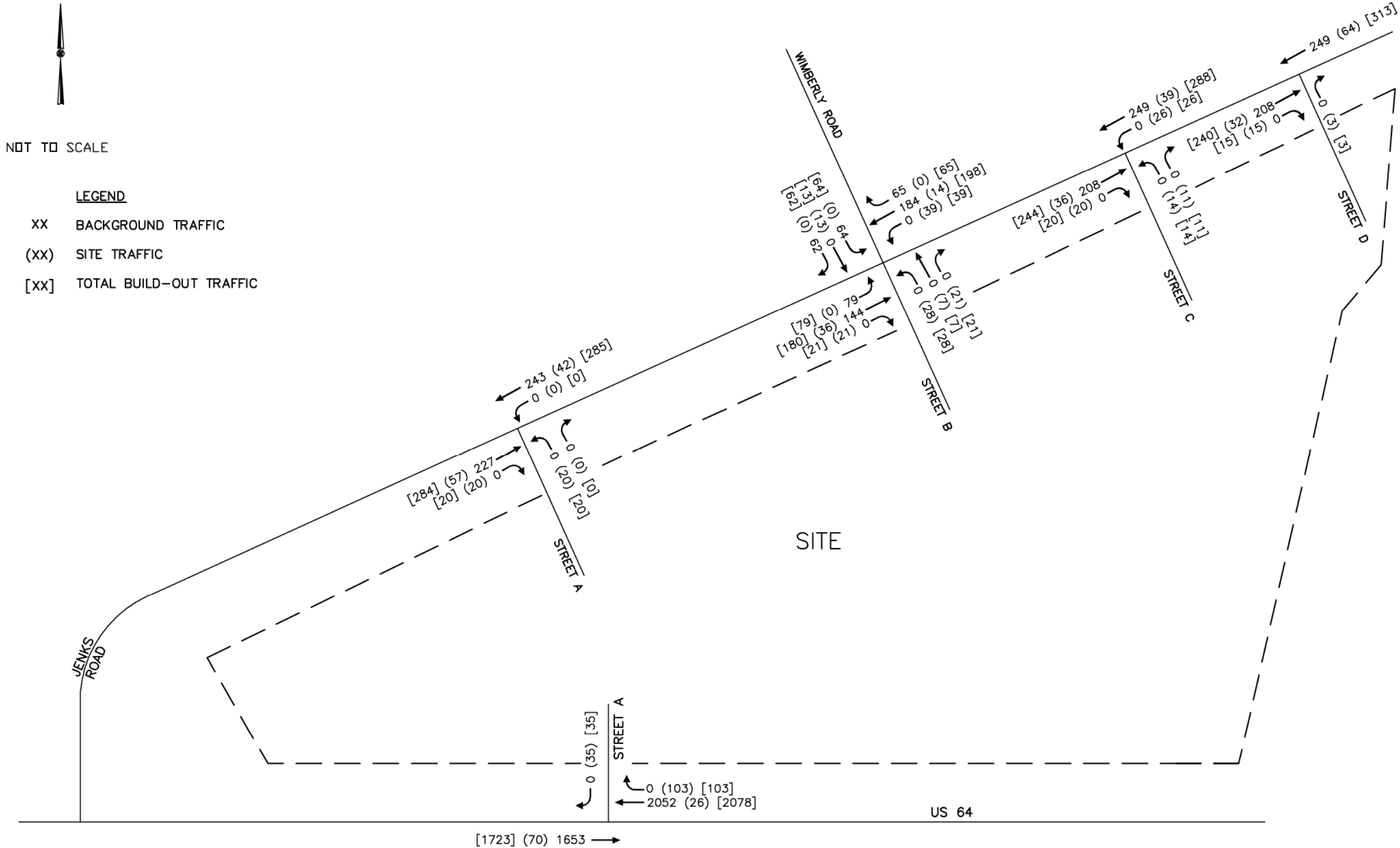












7.0 Recommendations

The following roadway improvements are committed to be performed by other developments in the area:

US 64 at Jenks Road:

- Convert existing intersection to a superstreet configuration with left turn crossovers and downstream U-Turns (by Sweetwater Phase 1)
- Monitor crossovers for MUTCD traffic signal warrants and install a traffic signal if warrants are met (by Sweetwater Phase 1)
- Construct a single westbound left-turn lane with 300 feet of storage and a single right-turn lane with 100 feet of storage on US 64 (by Sweetwater Phase 1)
- Construct a single eastbound left-turn lane with 300 feet of storage and a single right-turn lane with 50 feet of storage on US 64 (by Sweetwater Phase 1)
- Extend the westbound left-turn lane on US 64 to provide 500 feet of storage (by Smith Farm prior to platting 300 units)
- Extend the eastbound right-turn lane on US 64 to provide 100 feet of storage (by Smith Farm prior to platting of 360 units)
- Construct an additional northbound right-turn lane on Richardson Road with 300 feet of storage (by Smith Farm prior to platting 360 units)

US 64 at West U-turn:

- Construct a single lane U-turn with 250 feet of storage (by Sweetwater Phase 1)
- Monitor for MUTCD traffic signal warrants and install a traffic signal if warrants are met (by Sweetwater Phase 1)

US 64 at East U-turn:

- Construct a single lane U-turn with 250 feet of storage on US 64 (by Sweetwater Phase 1)
- Monitor for MUTCD traffic signal warrants and install a traffic signal if warrants are met (by Sweetwater Phase 1)
- Extend eastbound U-turn lane on US 64 to provide 400 feet of storage (by Smith Farm Phase 1)

Green Level Church Road at Jenks Road:

- Monitor this intersection for MUTCD traffic signal warrants and install a traffic signal if warrants are met (by The Preserve at White Oak Creek)

The following roadway improvements are recommended to be performed to accommodate projected Westford site traffic based on the analysis presented herein:

US 64 at Jenks Road:

- If not already done by others, monitor this intersection for MUTCD traffic signal warrants for the eastbound left-turn, the westbound through and right-turn, and the southbound right-turn movements and install a traffic signal if warrants are met

US 64 at West U-Turn:

- If not already done by others, monitor this intersection for MUTCD traffic signal warrants and install a traffic signal if warrants are met

Jenks Road at Green Level Church Road:

- If not already done by others, monitor this intersection for MUTCD traffic signal warrants and install a traffic signal if warrants are met

Jenks Road at Wimberly Road / Street B:

- Construct an exclusive westbound left-turn lane with a minimum of 50 feet of storage on Jenks Road
- Construct an exclusive eastbound left-turn lane with a minimum of 50 feet of storage on Jenks Road

US 64 at Street A:

- Construct an exclusive westbound right-turn lane with a minimum of 75 feet of storage on US 64

Jenks Road at Street A:

- Construct an exclusive westbound left-turn lane with a minimum of 50 feet of storage on Jenks Road
- Provide separate left- and right-turn lanes on the northbound approach of Street A

Jenks Road at Street C:

- Construct an exclusive westbound left-turn lane with a minimum of 50 feet of storage on Jenks Road

Analysis indicates that with the committed and recommended improvements in place, all of the study intersections are expected to operate at an acceptable level of service. The recommended lane geometry is shown on Figure 9.

MEMORANDUM

To: Mr. Russell Dalton, P.E., Town of Apex
Mr. Scott Wheeler, NCDOT

From: Travis Fluitt, P.E.
Kimley-Horn and Associates, Inc.

Date: June 29, 2017

Subject: Westford – Traffic Impact Analysis Addendum – Commercial Parcel



Kimley-Horn has prepared this addendum to the *Westford TIA* (Kimley-Horn, December 2016) to determine the impacts of site traffic associated the proposed commercial portion of the development located south of Jenks Road between US 64 and Wimberly Road in Apex, North Carolina. While the original TIA was performed for the residential portion of the development, which as currently proposed would include approximately 300 apartments, 225 townhomes, and 90 single-family homes with a projected build-out year of 2019, this addendum studied the construction of approximately 100,000 square feet (SF) of general retail space to be located generally southwest of the residential uses along Jenks Road. The commercial portion of the site will be accessed primarily by the right-in/right-out site driveway on US 64 (Street A), a shared full-movement driveway on Jenks road with the residential uses (Street A), and an additional right-in/right-out driveway on Jenks Road west of Street A. The commercial portion of the development has a projected build-out year of 2021.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the proposed development in the 2021 study year. Figure 1 shows the proposed site plan.

Background Traffic

Based on historic daily traffic volumes in the area and to be consistent with the *Westford TIA*, an annual growth factor of 2% was applied to the existing traffic volumes up to the year 2021 to calculate background traffic volumes.

Approved development volumes were obtained from the December 2016 *Westford TIA*. It should be noted that, with the inclusion of a 2% annual growth rate and approved development traffic, the effective annual growth rate analyzed as part of this development ranged from approximately 4% to nearly 22%. Peak hour background traffic volumes, which include historic growth traffic, are shown on Figures 2 and 3.

Trip Generation

The trip generation potential for the commercial portion of the development was determined by calculating the difference between the trip generation of the combined site (residential and commercial uses) and the trip generation of the residential land uses only (obtained from the *Westford TIA*). The

net new external trips for the commercial portion of the development were assigned to the network based on the overall distribution discussed below, while the site trips for the residential portion of the development were obtained from the *Westford TIA* and assigned directly to the network. In order to accurately depict the impacts of the entire Westford development, site traffic associated with the residential portion of the project was only analyzed in the build-out traffic condition (as opposed to analyzing it as approved development traffic).

Table 1 summarizes the estimated traffic generation potential for the site.

Table 1 ITE Traffic Generation (Vehicles)									
Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out
210	Single Family Detached Housing	90	d.u.	472	472	18	55	60	36
220	Apartments	300	d.u.	971	971	30	121	119	64
230	Townhomes	225	d.u.	651	651	17	82	78	39
820	Shopping Center	100,000	s.f.	3,396	3,396	97	59	288	311
<i>Subtotal</i>				5,495	5,495	162	317	545	450
<i>Internal Capture</i>				955	955	0	0	110	110
<i>Pass-by Capture</i>				830	830	0	0	88	78
<i>Net New Residential Trips from TIA</i>				2,094	2,094	65	258	257	139
Difference in Total Net New External Trips				1,616	1,616	97	59	90	123

Table 1 shows that, separate from the site trips generated by the residential portion of the development, the commercial portion of the site has the potential to generate 1,616 new entering trips and 1,616 new exiting trips on a typical weekday, with 97 new trips entering and 59 new trips exiting in the AM peak hour and 90 new trips entering and 123 new trips exiting in the PM peak hour.

Trip Distribution and Assignment

The new generated commercial trips were assigned to the surrounding roadway network. The directional distribution and assignment, which are somewhat different than those for the residential uses, were based on land uses and existing travel patterns in the area.

- 50% to/from the east on US 64
- 15% to/from the east on Jenks Road
- 13% to/from the west on US 64
- 10% to/from the north on Green Level Church Road
- 5% to/from the north on NC 751
- 5% to/from the north on Wimberly Road
- 2% to/from the south on New Hill Road

The site traffic distribution and percent assignment for the net new site trips are shown on Figure 4.

The attached Figures 5 and 6 show the AM and PM peak hour site traffic volumes at the study intersections, respectively, as well as the total build-out peak hour traffic volumes.

Capacity Analysis

Capacity analyses were performed using Synchro Version 9.1 and SIDRA version 7 software.

Synchro intersection level-of-service (LOS) and SIDRA reports are attached. The LOS for the study intersections are summarized in Table 2.

Table 2 Level-of-Service Summary		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
US 64 at Jenks Road (Signalized)		
Projected (2021) Background Traffic - <i>Signalized, Superstreet Configuration</i>	US 64 EB – B (20.0) US 64 WB – A (9.8)	US 64 EB – B (17.2) US 64 WB – B (14.1)
Projected (2021) Build Traffic - <i>Signalized, Superstreet Configuration w/ Imps.</i>	US 64 EB – B (16.8) US 64 WB – B (16.8)	US 64 EB – B (14.3) US 64 WB – C (25.2)
US 64 at U-Turn West of Jenks Road		
Projected (2021) Background Traffic - <i>Unsignalized</i>	WBU – D (27.0)	WBU – D (27.5)
Projected (2021) Build-out Traffic - <i>Signalized</i>	B (14.6)	B (15.5)
US 64 at U-Turn East of Jenks Road (Signalized)		
Projected (2021) Background Traffic	B (11.2)	B (14.8)
Projected (2021) Build-out Traffic	B (10.3)	B (18.6)
US 64 at NC 751/New Hill Road (Signalized)		
Projected (2021) Background Traffic	E (57.4)	D (44.9)
Projected (2021) Build-out Traffic	E (61.0)	D (46.2)

Table 2 (cont.) Level-of-Service Summary		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Jenks Road at Green Level Church Road		
Projected (2021) Background Traffic – <i>Unsignalized, All-Way Stop Control</i>	C (24.1)	F (92.9)
Projected (2021) Background Traffic – <i>Roundabout</i>	B (10.2) v/c = 0.53	C (17.3) v/c = 0.79
Projected (2021) Build-out Traffic – <i>Roundabout</i> ^A	B (12.0) v/c = 0.58	C (23.8) v/c = 0.89
Jenks Road at Wimberly Road/Street B (Unsignalized)		
Projected (2021) Background Traffic	SB – B (12.3) EBL – A (7.7)	SB – B (14.1) EBL – A (8.1)
Projected (2021) Build-out Traffic w/ <i>Improvements</i>	NB – C (16.6) SB – C (15.8) EBL – A (7.9) WBL – A (7.6)	NB – C (20.1) SB – C (23.3) EBL – A (8.2) WBL – A (7.9)
US 64 at Street A (Unsignalized)		
Projected (2021) Build-out Traffic.	SB – C (19.1)	SB – E (44.4)
Jenks Road at Right-in/Right-out Site Driveway (Unsignalized)		
Projected (2021) Build-out Traffic	NB – A (9.9)	NB – B (10.7)
Jenks Road at Street A (Unsignalized)		
Projected (2021) Build-out Traffic	NB – B (14.5) WBL – A (7.9)	NB – C (19.5) WBL – A (8.2)
Jenks Road at Street C (Unsignalized)		
Projected (2021) Build-out Traffic	NB – B (11.5) WBL – A (7.9)	NB – B (13.0) WBL – A (8.0)
Jenks Road at Street D (Unsignalized)		
Projected (2021) Build-out Traffic	NB – B (10.0)	NB – B (10.0)

^ANote: Roundabout analysis performed using SIDRA version 7.

It should be noted that the intersections of US 64 at Jenks Road, Richardson Road, and the U-Turn East of Richardson Road were assumed to be signalized in both the background and build-out traffic conditions.

Recommendations

Based on the capacity analyses presented herein, the following improvements are recommended in addition to the improvements committed to be performed by other developments in the study area and by the residential portion of the Westford development:

US 64 at Richardson Road:

- If not already completed by others, construct an additional westbound left-turn lane on US 64 with approximately 400 feet of storage to be used as an exclusive U-turn lane

US 64 at West U-Turn:

- If not already done by others, monitor this intersection for MUTCD traffic signal warrants and install a traffic signal if warrants are met

US 64 at Street A:

- Provide an additional 50 feet of storage for the exclusive westbound right-turn lane on US 64 to provide a total of 125 feet of storage and appropriate tapers

Jenks Road at Right-in/Right-out Site Driveway

- Construct an exclusive eastbound right-turn lane on Jenks Road with 50 feet of storage and appropriate tapers

Analysis indicates that, all of the study intersections are expected to operate at an acceptable level-of-service at full build-out of the development with the exception of the intersection of US 64 at NC 751/New Hill Road. However, that intersection, which is nearly 2 miles from the project site, is expected to operate at LOS E in the AM peak hour with or without the proposed development in place. As the intersection delay is expected to increase by less than 4 seconds with the addition of site traffic, and since site traffic associated with the development accounts for less than 4% of the total traffic in the build-out traffic condition, no roadway improvements are recommended at this intersection. The recommended laneage is shown on Figure 7.

Should you have any questions or comments, please do not hesitate to contact me at (919) 653-2948 or travis.fluitt@kimley-horn.com.

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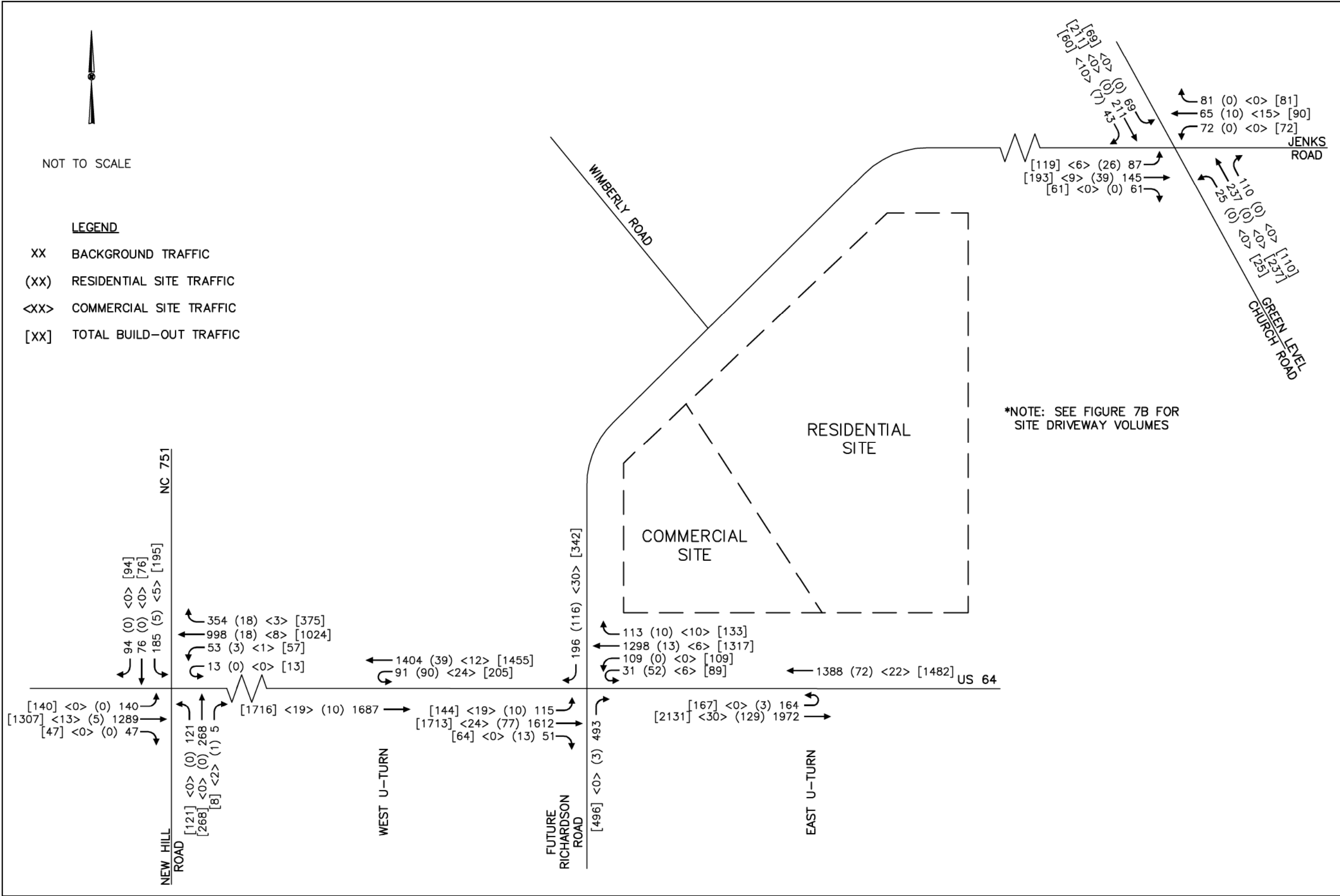


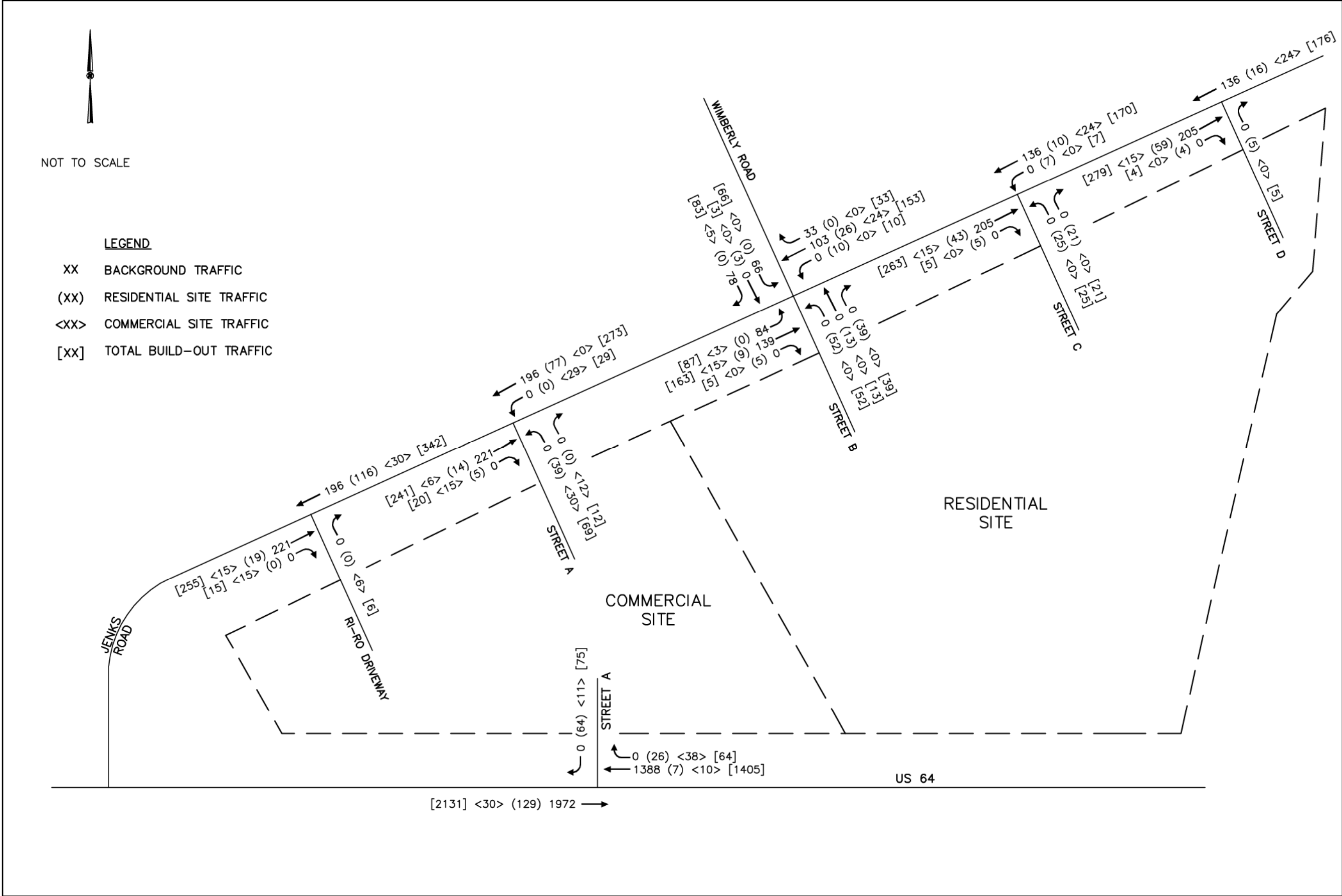
FIGURE 5A

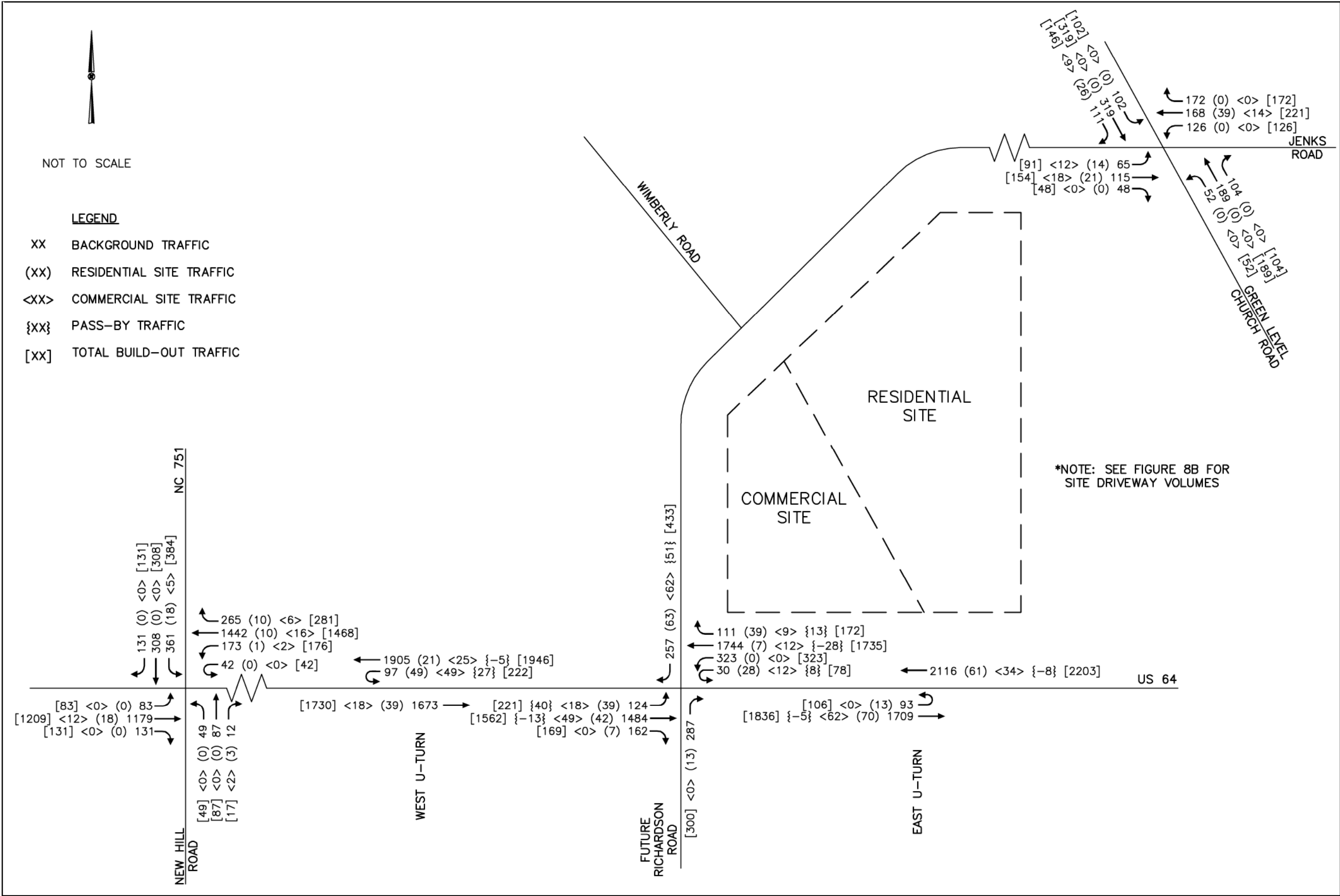
PROJECTED (2021) BUILD-OUT AM PEAK HOUR TRAFFIC VOLUMES EXTERNAL INTERSECTIONS

WESTFORD-COMMERCIAL APEX, NC TRAFFIC IMPACT ANALYSIS

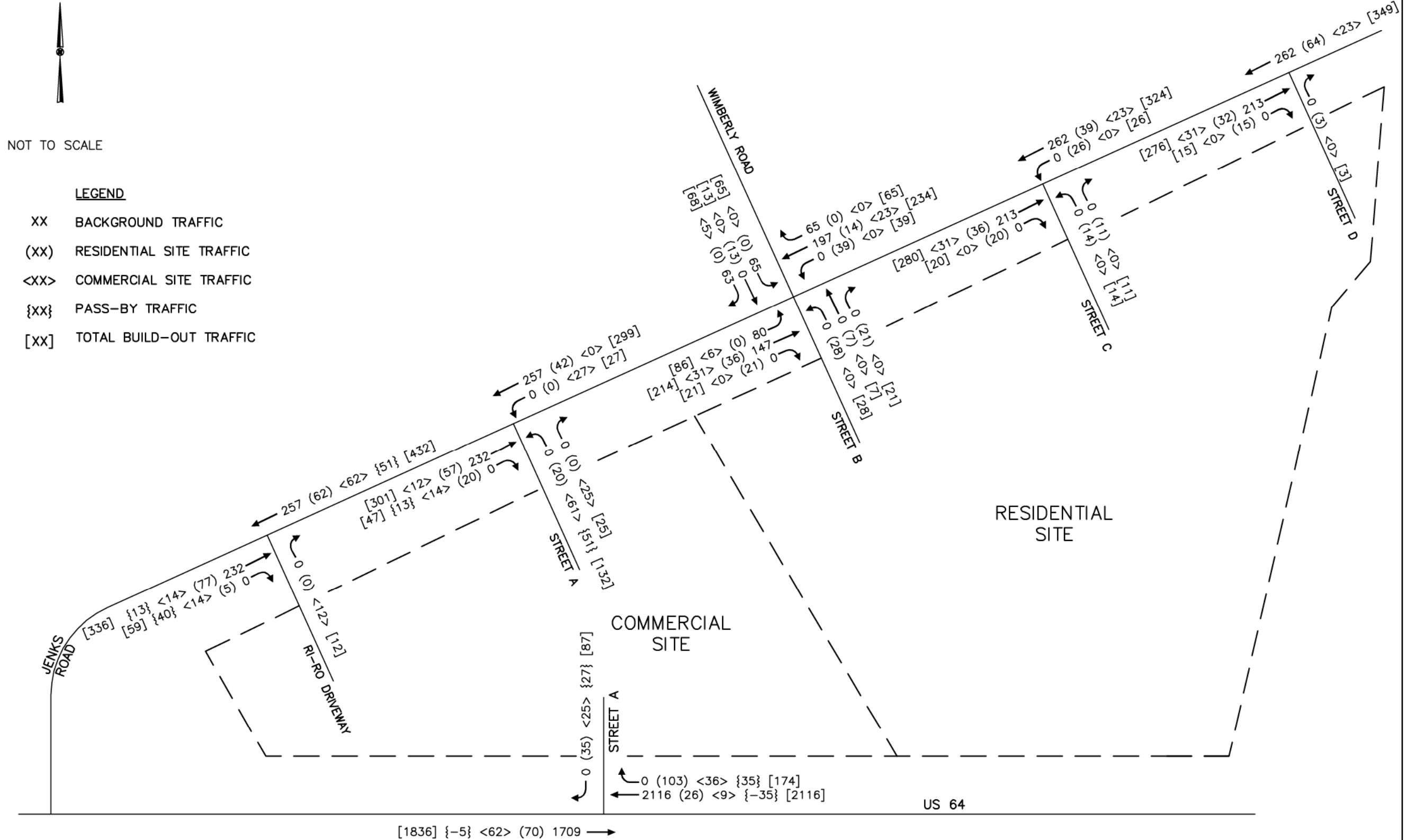


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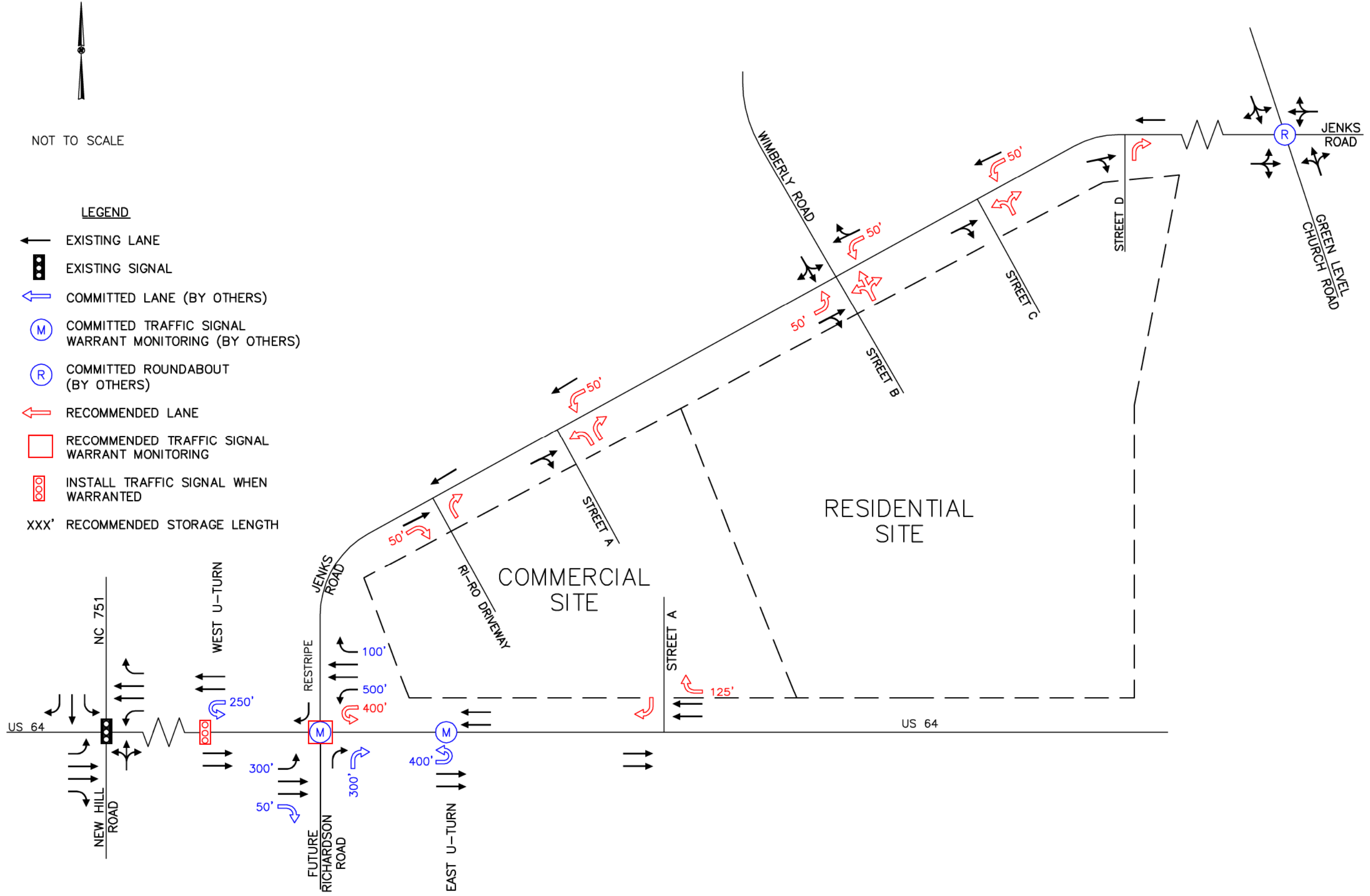




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March 2, 2017

J. Travis Fluitt
Kimley-Horn and Associates, Inc.
421 Fayetteville St, Suite 600
Raleigh, NC 27601

Subject: **Staff summary and comments for Westford TIA, 12/7/16**

Mr. Fluitt:

Please review the following summary of my comments and recommendations. You may schedule a meeting with me and your client to discuss at your convenience.

Study Area

Five points of access are proposed, four of which are located along Jenks Road and one on US 64.

Intersections included in the TIA are as follows:

- US 64 at Jenks Rd / Richardson Rd
- US 64 at U-turn west of Jenks Road
- US 64 at U-turn east of Jenks Road
- US 64 at NC 751 / New Hill Road
- Jenks Rd at Green Level Church Rd
- Jenks Road at Wimberly Road / Street B
- US 64 at Street A
- Jenks Road at Street A
- Jenks Road at Street C
- Jenks Road at Street D

Trip Generation

The development is expected to include 90 single family homes, 300 apartments, and 225 townhomes. Total traffic generation is 65 new inbound trips and 258 new outbound trips in the A.M. peak hour and 257 new inbound trips and 139 new outbound trips in the P.M. peak hour. The development is expected to add 4,188 total new daily trips to the adjacent roadways at build out. The proposed plan analyzed in the TIA does not include the commercial area so traffic from those land uses will be subject to separate review at a later date when submitted.

Background traffic

The approved developments added to the existing traffic in addition to 2% annual background growth to the build out year 2019 are as follows:

- Sweetwater (residential portion only)
- Smith Farm (residential portion only)
- Deer Creek (residential portion only)
- The Preserve at White Oak Creek
- Greenmoor
- Lake Castleberry
- Crestmont

The Sweetwater TIA included a full build out analysis of their project in 2019 with traffic from both the residential and commercial phases of Deer Creek originally anticipated to be built out in 2021 according to the Deer Creek TIA. Smith Farm included a full build out analysis by 2021. Commercial development may or may not occur on those timelines within the aforementioned projects subject to market conditions. The Westford TIA included traffic from the residential portions of those projects for a 2019 build out analysis but did not account for the effect of the commercial uses of those projects in part or as a whole. However, it did include all of the residential build out and only the improvements associated with Sweetwater's residential phase. Additional improvements are committed with full build out of the other projects that are not included in this 2019 residential build out analysis, but Westford does represent traffic being added to those committed longer term improvements.

Trip Distribution and Assignment

The development includes four points of access along Jenks Road and one point of access on US 64. The distribution is as follows:

- 50% east and 7% west on US 64
- 15% east on Jenks Road
- 10% north on Green Level Church Road
- 7% north on NC 751
- 5% north on Wimberly Road
- 5% south on Richardson Road
- 1% south on New Hill Road

Traffic Capacity Analysis and Recommendations

Level of Service (LOS) is a grade of A through F assigned to an intersection, approach, or movement to describe how well or how poorly it operates. LOS A through D is considered acceptable for peak hour operation. LOS E or F describes potentially unacceptable operation and developers may be required to mitigate their anticipated traffic impact to improve LOS based on the Apex Unified Development Ordinance (UDO).

Tables 1 through 10 describe the levels of service (LOS) for the scenarios analyzed in the TIA. "NA" is shown when the scenario does not apply. The scenarios are as follows:

- **Existing 2016** - Existing year 2016 based on traffic counts

- **Background 2019** - Projected year 2019 with background growth and approved development traffic from others without the proposed site
- **Build-out 2019** - Projected year 2019 with background traffic and site build-out including recommended improvements where applicable

US 64 at Jenks Road-Richardson Road

Table 1. A.M. / P.M. Peak Hour Levels of Service US 64 at Jenks Road-Richardson Road				
	Existing 2016	Background 2019 "Superstreet"		Build-out 2019 "Superstreet" Signalized
		Stop control	Signalized	
<u>Overall Richardson Rd at EB US 64</u>	<u>NA</u>	<u>NA</u>	<u>B / B</u>	<u>C / C</u>
<i>Northbound Richardson Rd</i>	<i>NA</i>	<i>F / D</i>	<i>D / C</i>	<i>C / C</i>
<i>Eastbound US 64</i>	-	-	-	-
<i>-Through & Right</i>	<i>Free flow</i>	<i>Free flow</i>	<i>B / B</i>	<i>B / B</i>
<i>-Left</i>	<i>B / C</i>	<i>F / F</i>	<i>C / C</i>	<i>C / C</i>
<u>Overall Jenks Rd at WB US 64</u>	<u>NA</u>	<u>NA</u>	<u>A / D</u>	<u>B / C</u>
<i>Southbound Jenks Rd</i>	<i>F / F</i>	<i>D / F</i>	<i>D / D</i>	<i>D / D</i>
<i>Westbound US 64</i>	-	-	-	-
<i>-Through & Right</i>	<i>Free flow</i>	<i>Free flow</i>	<i>A / A</i>	<i>A / B</i>
<i>-Left</i>	<i>C / C</i>	<i>F / F</i>	<i>C / C</i>	<i>C / D</i>

TIA recommendations:

- The TIA recommends, if not already installed, monitoring for signalization of westbound US 64 at Jenks Road and installing a signal on that part of the Superstreet when warranted.

Apex staff recommendations:

- Apex staff concur with the recommendation for signalization of westbound US 64 at Jenks Road when warranted. The warrant study should be conducted prior to platting eighty percent (80%) of the dwelling units and proceed with the installation of a traffic signal when permitted by NCDOT. Signalization of eastbound US 64 at Richardson Road is anticipated to be done as part of Sweetwater when warranted.

US 64 at U-turn west of Jenks Road

Table 2. A.M. / P.M. Peak Hour Unsignalized Levels of Service US 64 at U-turn west of Jenks Road		
	Background 2019 "Superstreet"	Build-out 2019 "Superstreet"
<u>Overall</u>	<u>NA</u>	<u>NA</u>
<i>Eastbound US 64 Through</i>	<i>Free flow</i>	<i>Free flow</i>
<i>Westbound US 64 U-turn</i>	<i>D / D</i>	<i>E / E</i>

TIA recommendations:

- The TIA recommends, if not already installed, monitoring for signalization of the US 64 U-turn west of Jenks Road and installing a signal on that part of the Superstreet when warranted.

Apex staff recommendations:

- Apex staff concur with the recommendation for signalization of US 64 U-turn west of Jenks Road as part of the Westford development plan when warranted if not already installed. Until then, the planned 250-foot U-turn storage is adequate for unsignalized residential build-out conditions. The warrant study should be conducted prior to platting eighty percent (80%) of the dwelling units and proceed with the installation of a traffic signal when permitted by NCDOT. Sweetwater is committed to providing a traffic signal as part of the commercial phase if not warranted and installed prior to that time.

US 64 at U-turn east of Jenks Road

Table 3. A.M. / P.M. Peak Hour Levels of Service US 64 at U-turn east of Jenks Road			
	Background 2019 "Superstreet"		Build-out 2019 "Superstreet" Signalized
	Stop control	Signalized	
<u>Overall</u>	<u>NA</u>	<u>B / B</u>	<u>B / B</u>
<i>Westbound US 64 Through</i>	<i>Free flow</i>	<i>A / B</i>	<i>A / B</i>
<i>Eastbound US 64 U-turn</i>	<i>D / E</i>	<i>C / D</i>	<i>D / D</i>

TIA recommendations:

- The TIA does not recommend any additional improvements other than the installation of a traffic signal for background conditions if warranted as part of the Sweetwater project.

Apex staff recommendations:

- Apex staff concur with the recommendation for signalization of US 64 U-turn east of Jenks Road as part of the Sweetwater development plan pending justification through a warrant study as already required in the zoning conditions. Traffic from the Westford residential phase does not have a significant impact on unsignalized or signalized conditions at the U-turn. Sweetwater is committed to providing dual 250-foot U-turn lanes and a traffic signal as part of the commercial phase.

US 64 at NC 751-New Hill Road

Table 4. A.M. / P.M. Peak Hour Signalized Levels of Service US 64 at NC 751-New Hill Road			
	Existing 2016	Background 2019	Build-out 2019
<u>Overall</u>	<u>D / C</u>	<u>D / D</u>	<u>D / D</u>
<i>Eastbound US 64</i>	<i>D / C</i>	<i>D / D</i>	<i>D / D</i>
<i>Westbound US 64</i>	<i>C / C</i>	<i>C / D</i>	<i>C / D</i>
<i>Northbound New Hill Road</i>	<i>F / E</i>	<i>F / F</i>	<i>F / F</i>
<i>Southbound NC 751</i>	<i>C / C</i>	<i>C / D</i>	<i>C / D</i>

TIA recommendations:

- The TIA recommends no additional turn lanes or changes to the signal phasing for the residential build-out represented by this analysis.

Apex staff recommendations:

- Apex staff concur with no additional improvements for US 64 at NC 751-New Hill Road as part of the residential phase. There will be failing conditions for the New Hill Road approach but overall LOS D with or without the Westford project. The Westford residential build-out does not represent enough traffic increase to would justify additional improvements as part of the development plan. Also, the Deer Creek zoning conditions already include commitments for improvements at the intersection to mitigate traffic impacts as part of the future site plan.

Jenks Road at Green Level Church Road

Table 5. A.M. / P.M. Peak Hour Levels of Service Jenks Road at Green Level Church Road				
	Existing 2016	Background 2019	Build-out 2019	
			Stop control	Signalized
<u>Overall</u>	<u>B / B</u>	<u>C / F</u>	<u>D / F</u>	<u>B / C</u>
<i>Eastbound Jenks Rd</i>	<i>A / B</i>	<i>C / D</i>	<i>E / D</i>	<i>B / B</i>
<i>Westbound Jenks Rd</i>	<i>B / B</i>	<i>C / F</i>	<i>C / F</i>	<i>B / C</i>
<i>Northbound Green Level Ch Rd</i>	<i>B / B</i>	<i>D / E</i>	<i>D / E</i>	<i>B / B</i>
<i>Southbound Green Level Ch Rd</i>	<i>B / C</i>	<i>C / F</i>	<i>D / F</i>	<i>B / C</i>

TIA recommendations:

- The TIA recommends, if not already installed, monitoring for signalization of the intersection of Jenks Road at Green Level Church Road and installing a signal when warranted.

Apex staff recommendations:

- Apex Staff recommend consideration of a roundabout for Jenks Road at Green Level Church Road. The Westford development plan should include analysis of a one-lane roundabout for the build-out condition and pursue design of a one-lane roundabout set up for future expansion to a two-lane roundabout when permitted by NCDOT, provided there is also support from the Town of Apex for what is beyond the anticipated cost of a traffic signal. If the Town is unable to commit funds for the roundabout beyond the cost of a traffic signal, then the developer should conduct a signal warrant study prior to platting fifty percent (50%) of the dwelling units and proceed with the installation of a traffic signal when permitted by NCDOT.

Jenks Road at Wimberly Road-Street B

Table 6. A.M. / P.M. Peak Hour Unsignalized Levels of Service Jenks Road at Wimberly Road-Street B			
	Existing 2016	Background 2019	Build-out 2019
<u>Overall</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
<i>Southbound Wimberly Road</i>	<i>A / B</i>	<i>B / B</i>	<i>B / C</i>
<i>Northbound Street B</i>	<i>NA</i>	<i>NA</i>	<i>C / C</i>
<i>Eastbound Jenks Rd left turn movement</i>	<i>A / A</i>	<i>A / A</i>	<i>A / A</i>
<i>Westbound Jenks Rd left turn movement</i>	<i>NA</i>	<i>NA</i>	<i>A / A</i>

TIA recommendations:

- The TIA recommends exclusive eastbound and westbound left turn lanes with 50 feet of storage.

Apex staff recommendations:

- Apex staff concur with the proposed left turn lanes on Jenks Road for Wimberly Road and Street B. Minimum length should include 100 feet of taper and 50 feet of full width deceleration lane in addition to proposed storage.

US 64 at Street A

Table 7. A.M. / P.M. Peak Hour Unsignalized Levels of Service US 64 at Street A (right-in/right-out)	
	Build-out 2019
<u>Overall</u>	<u>NA</u>
<i>Southbound Street A (right-out only)</i>	<i>C / D</i>

TIA recommendations:

- The TIA recommends an exclusive westbound right turn lane on US 64 at Street A with a minimum of 75 feet of storage.

Apex staff recommendations:

- Apex staff concur with the proposed right turn deceleration lane on US 64 at Street A. Minimum length should include 200 feet of taper and 50 feet of full width deceleration lane in addition to proposed storage.

Jenks Road at Street A

Table 8. A.M. / P.M. Peak Hour Unsignalized Levels of Service Jenks Road at Street A	
	Build-out 2019
<u>Overall</u>	<u>NA</u>
<i>Northbound Street A</i>	<i>B / B</i>
<i>Westbound Jenks Rd left turn movement</i>	<i>A / A</i>

TIA recommendations:

- The TIA recommends an exclusive westbound left turn lane with 50 feet of storage and exclusive left and right turn lanes exiting Street A.

Apex staff recommendations:

- Apex staff concur with the proposed left turn lane on Jenks Road at Street A. Minimum length should include 100 feet of taper and 50 feet of full width deceleration lane in addition to proposed storage.

Jenks Road at Street C

Table 9. A.M. / P.M. Peak Hour Unsignalized Levels of Service Jenks Road at Street C	
	Build-out 2019
<u>Overall</u>	<u>NA</u>
<i>Northbound Street C</i>	<i>B / B</i>
<i>Westbound Jenks Rd left turn movement</i>	<i>A / A</i>

TIA recommendations:

- The TIA recommends an exclusive westbound left turn lane with 50 feet of storage.

Apex staff recommendations:

- Apex staff concur with the proposed left turn lane on Jenks Road at Street C. Minimum length should include 100 feet of taper and 50 feet of full width deceleration lane in addition to proposed storage.

Jenks Road at Street D

Table 10. A.M. / P.M. Peak Hour Unsignalized Levels of Service Jenks Road at Street D (right-in/right-out)	
	Build-out 2019
<u>Overall</u>	<u>NA</u>
<i>Northbound Street D (right-out only)</i>	<i>A / A</i>

TIA recommendations:

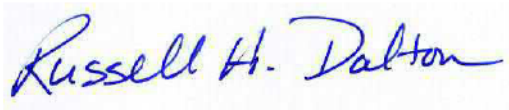
- The TIA recommends no additional improvements.

Apex staff recommendations:

- Apex staff concur with right-in/right-out operation and no additional turn lanes to serve Street D. The left turn restriction should be served by a four-foot wide monolithic concrete median according to NCDOT standards along the center of Jenks Road at Street D for a minimum distance of 100 feet.

Apex staff encourage a meeting with NCDOT to discuss recommendations prior to Town Council consideration.

Sincerely,



Russell H. Dalton, PE
Senior Engineer
919-249-3358

Council-Smith Tracts

Apex, NC

PREPARED FOR

Baker Residential
c/o Will Yadusky
8059 Brandyapple Drive
Raleigh, NC 27615

PREPARED BY



VHB Engineering NC, PC (C-3705)
4000 WestChase Boulevard, Suite 530
Raleigh, NC 27607
919.829.0328

September 11, 2015

Council-Smith Tracts

Apex, NC

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Baker Residential
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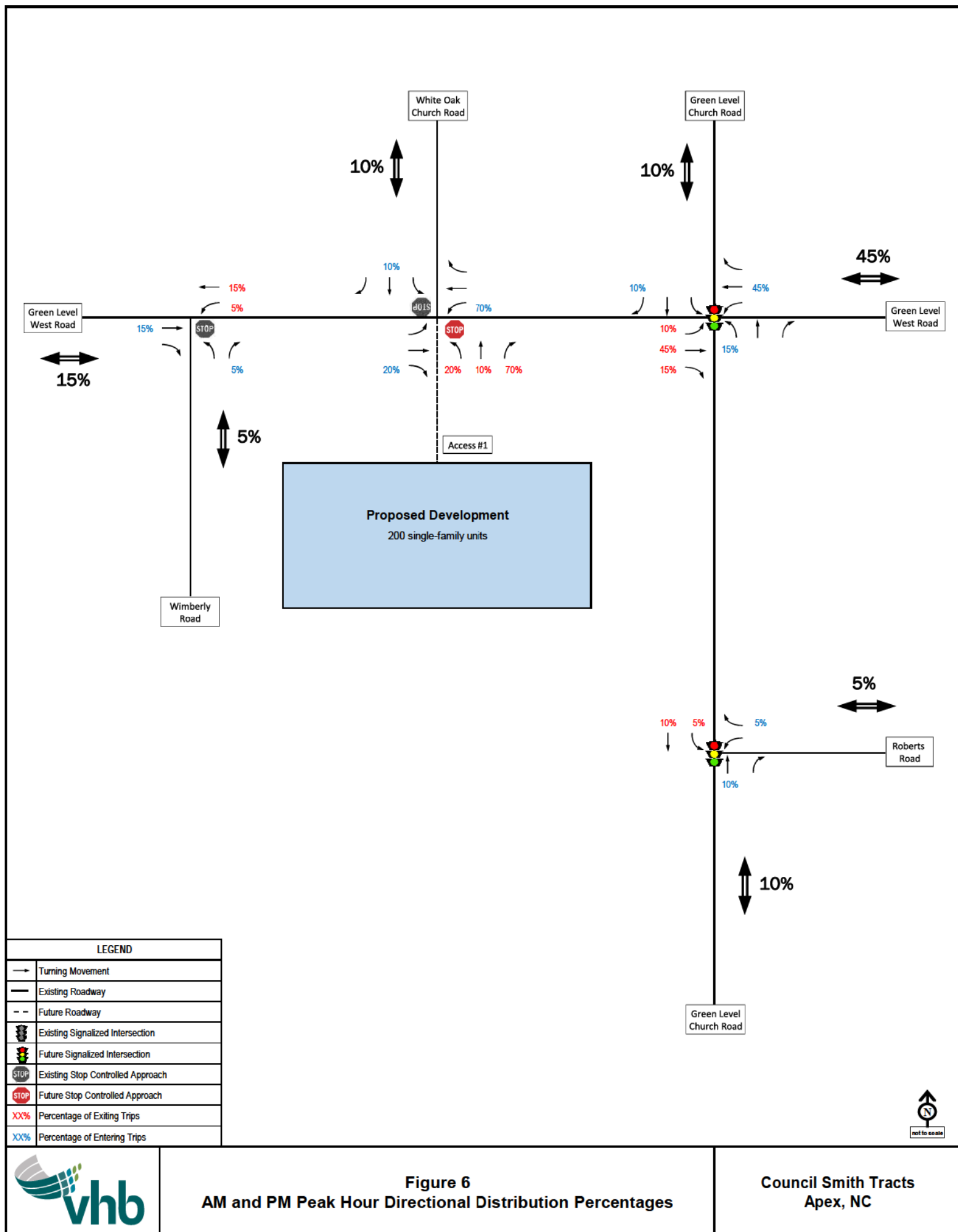
PREPARED BY

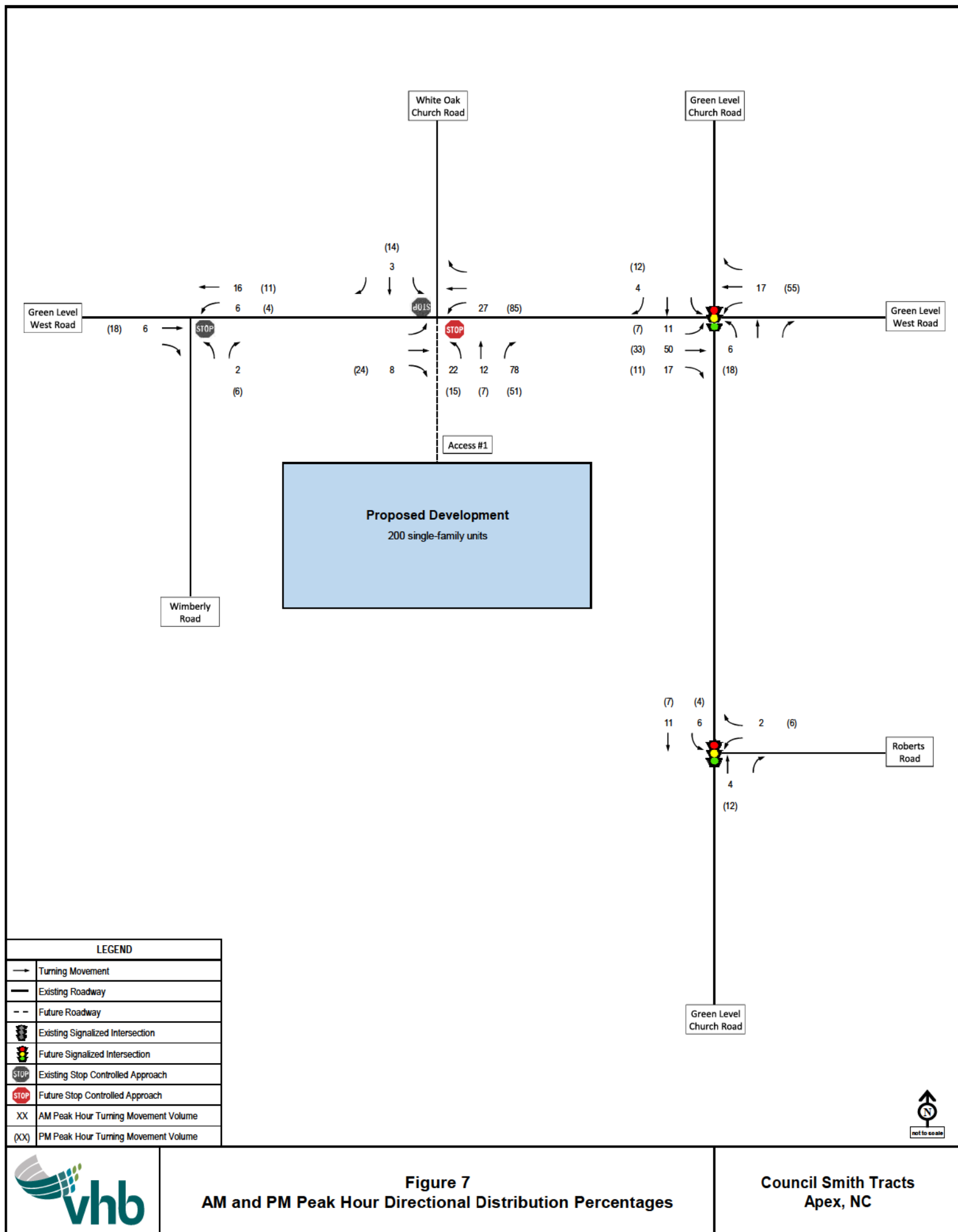


VHB Engineering NC, PC (C-3705)
4000 WestChase Boulevard, Suite 530
Raleigh, NC 27607
919.829.0328

September 11, 2015







Findings and Conclusions

As indicated in the traffic operations analyses, the proposed development is projected to have minimal impact on the traffic operations of the surrounding roadway network and intersections. Therefore, no offsite improvements are recommended; however the following driveway configuration should be considered.

Green Level West Road and White Oak Church Road/Access #1

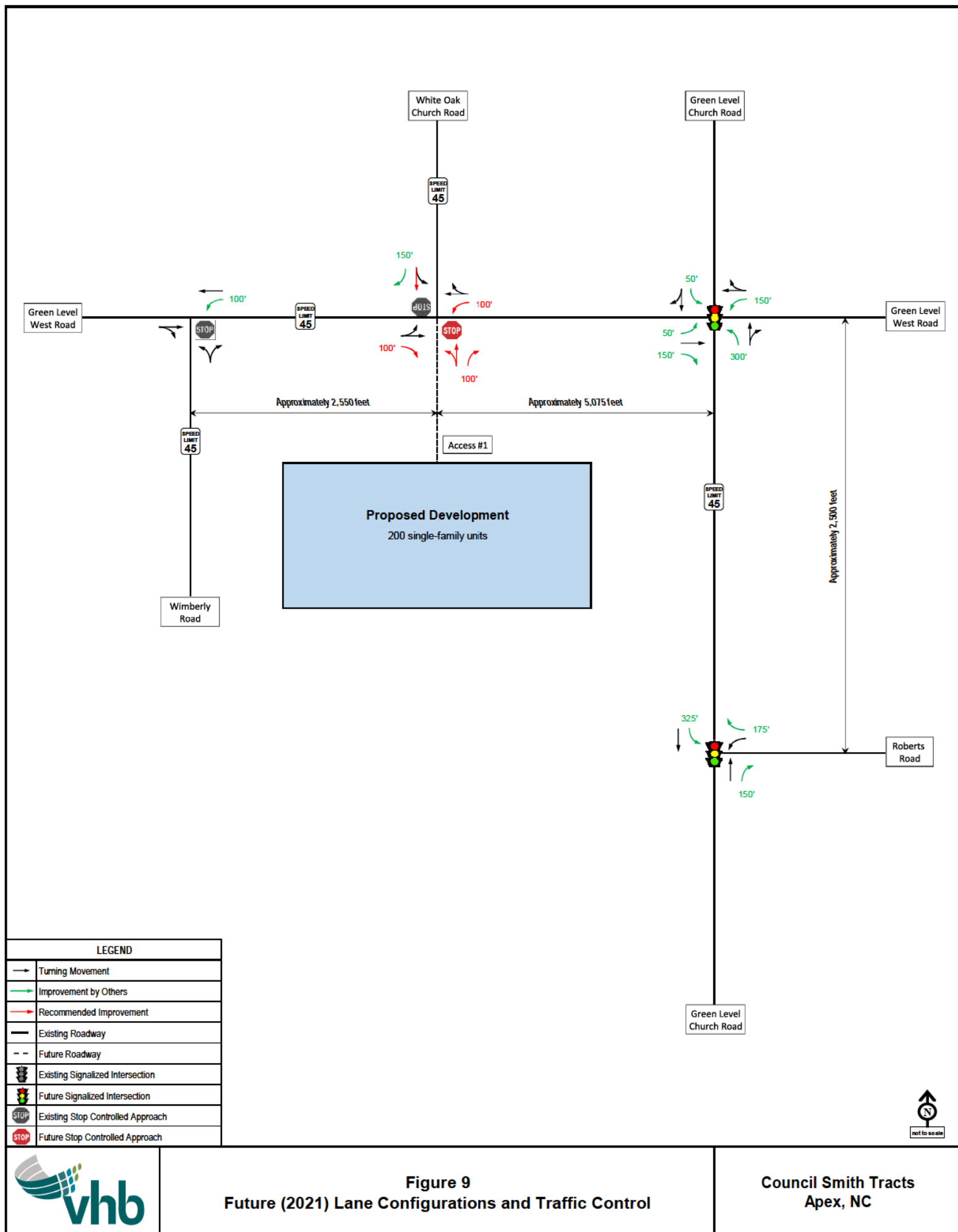
The traffic analysis indicates that the southbound stop-controlled approach is projected to operate at LOS F in the AM peak hour. The development is projected to add only one (1) southbound trip in the AM peak hour. The projected delays at this location are primarily due to the site trips associated with the approved E-37 Elementary School being constructed along White Oak Church Road and it is likely that the poor level of service in the AM peak hour will only last for a short duration of time within the peak hour. A southbound right-turn lane along White Oak Church Road was committed to as part of the E-37 TIA and is expected to be constructed at this location. With the construction of the proposed development, the following driveway configuration should be considered at this location:

- Construct the northbound Access #1 approach to provide for one ingress lane and two egress lanes – an exclusive right-turn lane that provides at least 100 feet of full storage and an appropriate taper and a shared thru/left-turn lane.
- Construct an exclusive westbound left-turn lane along Green Level West Road that provides at least 100 feet of full storage and an appropriate taper.
- Construct an exclusive eastbound right-turn lane along Green Level West Road that provides at least 100 feet of full storage and an appropriate taper.

A peak hour signal warrant analysis indicated that this intersection is projected to meet AM peak hour signal warrants in 2021 due to the projected trips from the E-37 Elementary School, however the PM peak hour signal warrant is not projected to be met in 2021.

All other study area intersections are projected to operate acceptably during the future year (2021) and therefore, no further improvements are recommended.

A summary of LOS results across scenarios is shown in Table 7, and the resulting future lane configurations and traffic control for 2021 are shown in Figure 9.



February 11, 2014

R. Steven Epley, PE
sepley@vhb.com
VHB Engineering

Subject: **Staff comments for Lake Castleberry Development TIA dated 1/10/14**

Mr. Epley:

Please review the following comments and recommendations. You may schedule a meeting with me and your client to discuss at your convenience.

Study Area

- The subdivision is located on the north side of Castleberry Road west of the intersection with Wimberly Road and extends northward to connect with Green Level West Road.
- The study includes the following intersections:
 - Wimberly Road at Green Level West Road
 - Green Level West Road at Green Level Church Road
 - Wimberly Road at Castleberry Road
 - Wimberly Road at Jenks Road
 - Site Access Driveways to Castleberry Road (2), Wimberly Road, and Green Level West Road

Trip Generation and Distribution

The TIA assumes 172 single family homes and is anticipated to generate 33 inbound trips and 97 outbound trips in the a.m. peak hour, 108 inbound trips and 63 outbound trips in the p.m. peak hour, and 1,730 trips on a typical weekday. The distribution is as follows:

- 40% east on Green Level West Road
- 30% west on Green Level West Road
- 10% east on US 64
- 10% west on US 64
- 5% north on Green Level Church Road
- 5% south on Green Level Church Road

Site Access

- Two points of access are proposed along Castleberry Road west of Wimberly Road.
- One point of access is proposed along Wimberly Road north of Castleberry Road.
- One point of access is proposed along Green Level West Road west of Wimberly Road.
- All four points of access are proposed as full movement.

Traffic Capacity Analysis

- With the installation of a traffic signal and construction of a northbound left turn lane as planned by others, the intersection of Green Level West Road at Green Level Church Road is anticipated to operate at overall LOS D for build-out in 2018. The westbound approach of Green Level West Road is anticipated to operate at LOS E in the a.m. peak hour and LOS F in the p.m. peak hour for build-out in 2018.
- With the construction of left turn lanes on Jenks Road as planned by others, the southbound and proposed (Westford Driveway) northbound approach of Wimberly Road at Jenks Road are anticipated to operate with long delays for build-out in 2018.
- All proposed points of access for the site, Castleberry Road at Wimberly Road, and Wimberly Road at Green Level West Road are anticipated to operate with short delays.

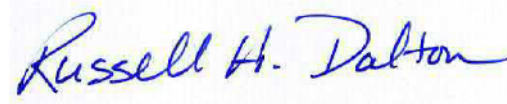
Recommendations

1. The TIA recommends a 100-foot westbound left turn lane on Green Level West Road at Wimberly Road. ***Apex staff concurs with the recommendation.***
2. The TIA recommends no additional improvements for Green Level West Road at Green Level Church Road. The H7 High School development plans include installation of a traffic signal and the Beckwith Property development plans include a 125-foot northbound left turn lane. ***Apex staff concurs with no additional recommendations.***
3. The TIA recommends no additional lanes for Wimberly Road at Castleberry Road. ***Apex staff concurs.***
4. The TIA recommends no additional improvements for Wimberly Road at Jenks Road. The Westford development plans include construction of 100-foot left turns lanes each direction on Jenks Road. ***Apex staff concurs with no additional recommendations.***
5. The TIA recommends a 100-foot westbound left turn lane on Green Level West Road at the proposed Site Access Driveway. ***Apex staff concurs with the recommendation.***

6. The TIA recommends no exclusive turning lanes for either of the two proposed Site Access Driveways on Castleberry Road and no exclusive turning lanes for the Site Access Driveway on Wimberly Road. ***Apex staff concurs with the recommendations.***

NCDOT maintains Green Level Church Road, Green Level West Road, Jenks Road, Wimberly Road, and Castleberry Road. I welcome the opportunity to discuss any recommendations pertaining to state-maintained roads and encourage discussions with NCDOT as early as possible prior to review by Town Council.

Sincerely,



Russell H. Dalton, PE
Transportation Engineer
919-249-3358



Lake Castleberry Development

Apex, NC

Prepared for Withers & Ravenel
c/o Craig Duerr, PE, LEED AP
115 MacKenan Drive
Cary, NC 28511

Prepared by **VHB Engineering NC, P.C. (C-3705)**
4000 Westchase Boulevard, Suite 530
Raleigh, NC 27607
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January 10, 2014



Transportation | Land Development | Environmental

Lake Castleberry Development

Apex, NC

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January 10, 2014



Transportation | Land Development | Environmental



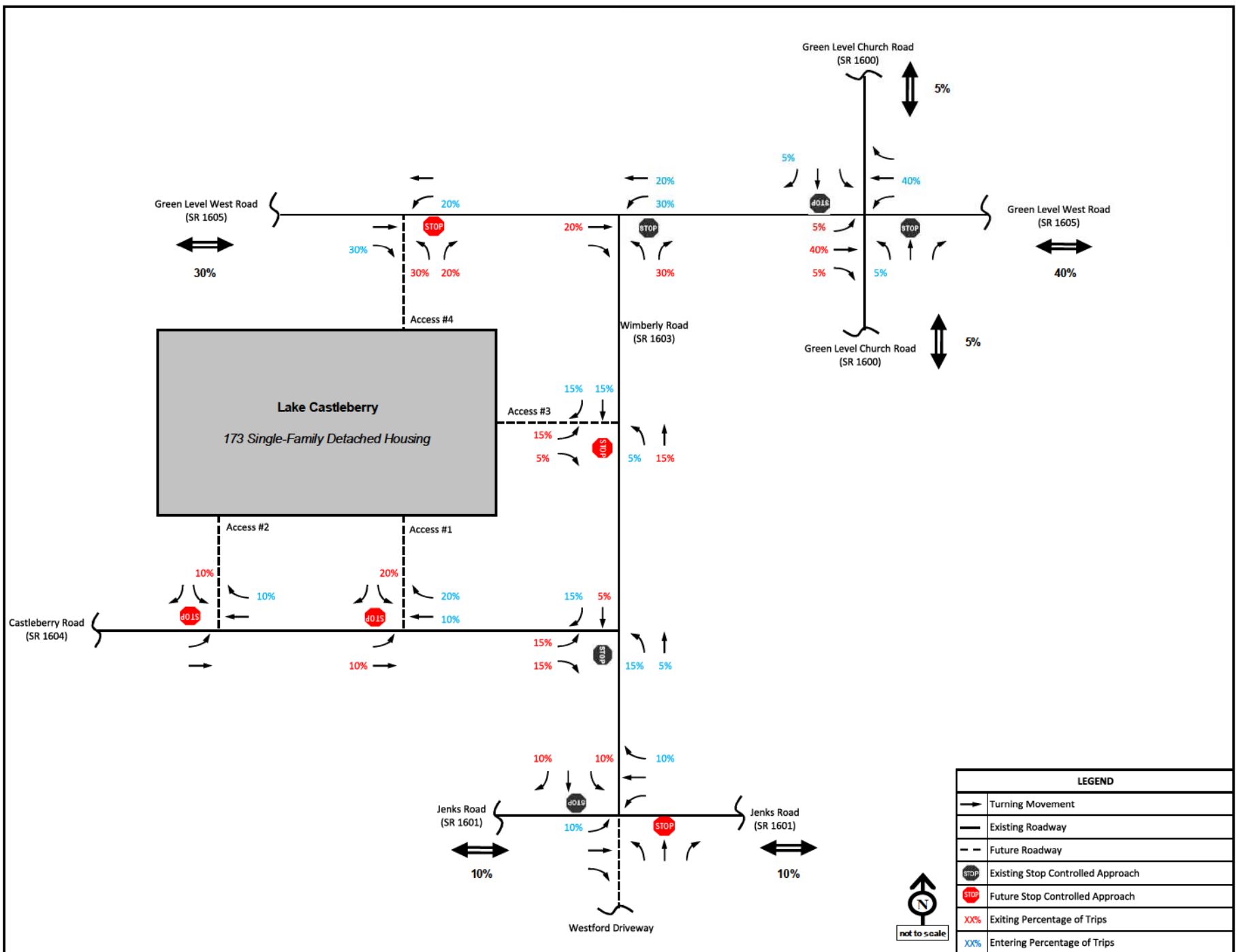


Figure 6
Peak Hour Directional Distribution Percentages

Lake Castleberry TIA
Town of Apex, NC

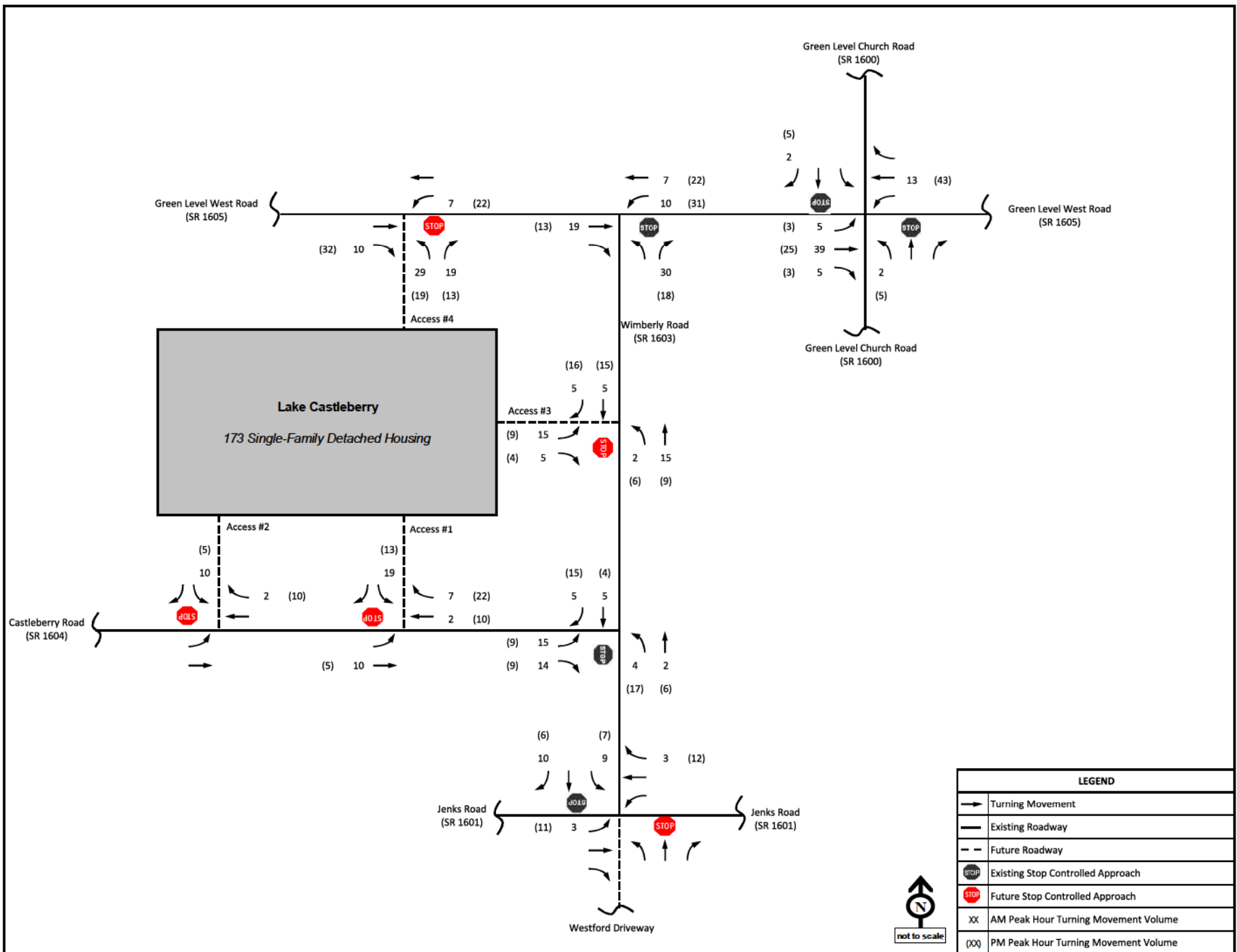


Figure 7
AM and PM Peak Hour Site Trips

Lake Castleberry TIA
Town of Apex, NC

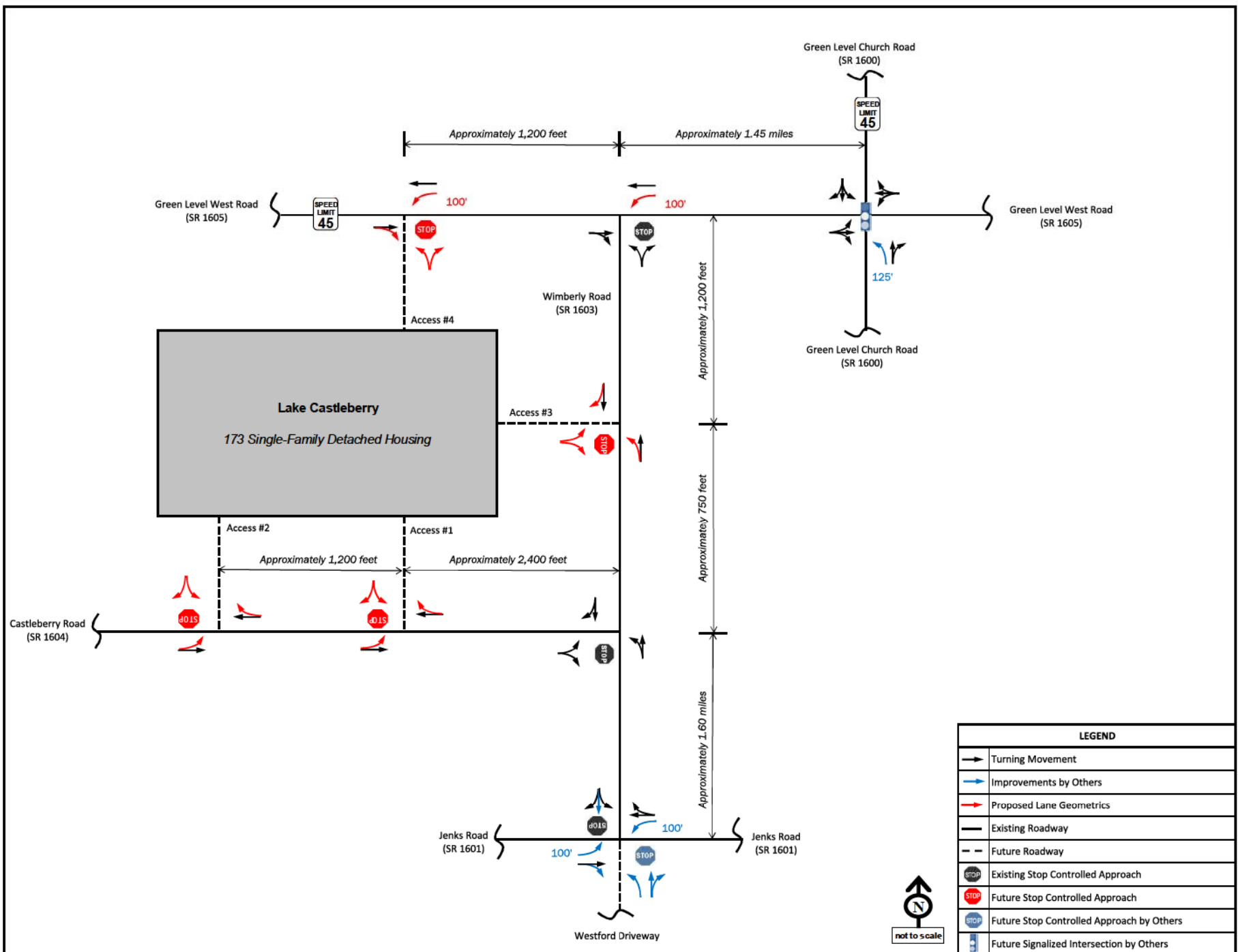


Figure 9
Recommended (2018) Lane Geometrics and Traffic Control

Lake Castleberry TIA
Town of Apex, NC

Findings and Conclusions

As indicated in the traffic operations analyses, the proposed development is projected to have minimal impact on the traffic operations of the surrounding roadway network and intersections. The following roadway improvements are recommended.

Phase I - Castleberry Road and Site Access #1 (unsignalized)

The traffic analysis indicates that this intersection is projected to operate acceptably during the AM and PM peak hours. Therefore, the following intersection configuration is recommended at this location:

- Construct Site Access #1 to provide one egress lane and one ingress lane.

Phase II - Castleberry Road and Site Access #2 (unsignalized)

The traffic analysis indicates that this intersection is projected to operate acceptably during the AM and PM peak hours. Therefore, the following intersection configuration is recommended at this location:

- Construct Site Access #2 to provide one egress lane and one ingress lane.

Phase III - Wimberly Road and Site Access #3 (unsignalized)

The traffic analysis indicates that this intersection is projected to operate acceptably during the AM and PM peak hours. The following intersection configuration is recommended at this location to accommodate the proposed development's traffic volumes and reduce delay on Wimberly Road:

- Construct Site Access #3 to provide one egress lane and one ingress lane.

Phase IV - Green Level West Road and Site Access #4 (unsignalized)

The traffic analysis indicates that this intersection is projected to operate acceptably during the AM and PM peak hours. The following intersection configuration is recommended at this location to accommodate the proposed development's traffic volumes and reduce delay along Green Level West Road:

- Construct a westbound left-turn lane along Green Level West Road that provides at least 100 feet of full storage and an appropriate taper.
- Construct Site Access #4 to provide one egress lane and one ingress lane.



Phase V - Green Level West Road and Wimberly Road (unsignalized)

The traffic analysis indicates that this intersection is projected to operate acceptably during the AM and PM peak hours. However, due to the anticipated westbound left-turn volume on Green Level West Road once Phase IV is completed, the following is recommended at this location:

- Construct a westbound left-turn lane along Green Level West Road that provides at least 100 feet of full storage and an appropriate taper.

The rest of the study intersections are projected to operate at acceptable levels of service under Build (2018) conditions. Therefore, no further improvements are recommended.

A summary of LOS results across scenarios is shown in Table 7, and the resulting future lane configurations and traffic control for 2018 are shown in Figure 9.



Town of Apex

P. O. BOX 250
APEX, NORTH CAROLINA 27502

September 25, 2015

Richard T. Pate, PE
TPate@VHB.com
VHB Engineering NC, PC
4000 WestChase Boulevard, Suite 530
Raleigh, NC 27607

Subject: **Staff summary and comments for Council-Smith Tracts (Smith Roberts PUD) TIA dated 9/11/15**

Mr. Pate:

Please review the following comments and recommendations. You may schedule a meeting with me and your client to discuss at your convenience.

Study Area

The primary routes are Green Level West Road, Green Level Church Road, Roberts Road, Wimberly Road, and White Oak Church Road. One point of access is proposed on Green Level West Road directly across from White Oak Church Road. Additionally, cross access is proposed eastward through the adjacent approved "Beckwith Property" (Toll Brothers) project with an already approved access to Green Level West Road.

Trip Generation

The proposed subdivision is expected to include 200 single-family homes. It is expected to generate 38 new inbound trips and 112 new outbound trips in the A.M. peak hour. It is expected to generate 123 new inbound trips and 73 new outbound trips in the P.M. peak hour. 1,987 daily trips are expected to access the development in a 24-hour period.

Background Growth and Approved Developments

Nineteen (19) approved developments were assumed as background traffic for a 2021 build-out.

Trip Distribution and Assignment

The development includes one new full movement point of access on Green Level West Road and a connection to the Toll Brothers "Beckwith Property." The distribution is as follows.

- 45% east and 15% west on Green Level West Road
- 10% north and 10% south on Green Level Church Road
- 10% north on White Oak Church Road
- 5% east on Roberts Road
- 5% south on Wimberly Road

Traffic Capacity Analysis

Level of Service (LOS) is a grade of A through F assigned to an intersection, approach, or movement to describe how well or how poorly it operates. LOS D is the typical threshold considered acceptable for peak hour operation. LOS E or F describes potentially unacceptable operation and developers may be required to mitigate their anticipated traffic impact to improve LOS based on the Unified Development Ordinance (UDO).

The following table lists the levels of service reported for the signalized intersections and also for the signalized movements that experience worse than LOS D for one or more conditions. Movements experiencing LOS D or better for all conditions are not reported in this summary. Improvements planned by Wake County Public School System as part of school development on Roberts Road (high school) and on White Oak Church Road (elementary school) are assumed in the no-build and build analyses as well as site traffic from those schools.

Table 1. 2015 Existing (2021 No-Build) [2021 Build] Signalized Level of Service*		
	Level of Service (A – F)	
Signalized intersection/ movement**	A.M. Peak Hour	P.M. Peak Hour
Green Level West Road at Green Level Church Road	(D) [D]	(C) [C]
<i>Green Level West Rd westbound left turn</i>	<i>(E) [F]</i>	<i>(D) [E]</i>
<i>Green Level Church Rd southbound through-right</i>	<i>(D) [E]</i>	<i>(C) [D]</i>
Green Level Church Road at Roberts Road	(D) [D]	(B) [B]
<i>Green Level Church Rd southbound left turn</i>	<i>(E) [E]</i>	<i>(A) [A]</i>
<i>Roberts Rd westbound left turn</i>	<i>(E) [E]</i>	<i>(C) [C]</i>

*Signalization and turn lanes planned by Wake County Public School System.

**Movements with LOS D or better for all conditions not shown.

As shown in Table 1, LOS E conditions are experienced for the westbound left turn on Green Level West Road at Green Level Church Road without site traffic and worsen to LOS F with site traffic in the a.m. peak hour. In the p.m. peak hour LOS D for that same movement falls to LOS E with site traffic. No site traffic is added to that movement and no additional improvements are recommended at this time. Overall intersection LOS is acceptable.

Also shown in Table 1, LOS E conditions are experienced for the southbound left turn on Green Level Church Road at Roberts Road with or without site traffic in the a.m. peak hour. The site adds only six (6) vehicles during that hour. LOS E conditions in the a.m. peak hour are also experienced for the westbound left turn on Roberts Road at Green Level Church Road with or without site traffic. No site traffic is added to that movement and no additional improvements are recommended at this time. Overall intersection LOS is acceptable.

There is only one stop controlled movement in the TIA that falls below LOS D as shown in Table 2. All others are LOS D or better.

Table 2. 2015 Existing (2021 No-Build) [2021 Build] Unsignalized Movements Worse than LOS D		
	Level of Service (A – F)	
Unsignalized movement*	A.M. Peak Hour	P.M. Peak Hour
White Oak Church Road southbound single lane (left turn) [through-left] at Green Level West Road	A (F) [F]	A (B) [C]

The southbound left turn on White Oak Church Road at Green Level West Road will operate at LOS F with or without site traffic in the a.m. peak hour due to the planned Elementary School adding a relatively large volume of traffic in the no-build condition. The school is constructing a 150-foot southbound right turn lane to mitigate the impact for the southbound approach and the proposed development will restripe the left turn as a through-left, adding the fourth leg to the south, with only three (3) vehicles traveling through in the a.m. peak hour. The northbound site access is proposed with a 100-foot right turn lane and a through-left lane. A traffic signal is not anticipated based on the projected traffic volumes but may eventually be warranted in later years depending on additional growth and traffic patterns.

Recommendations

1. **The TIA recommends no additional changes to the signalized intersection of Green Level West Road at Green Level Church Road.** Wake County Public School System (WCPSS) will be adding turn lanes and a traffic signal at this location. Site traffic adds more than 10% to the eastbound left turn movement and storage planned for that lane does not accommodate the build-out queue. ***The proposed project should extend the eastbound left turn lane to provide at least 75 feet of full width storage based on the 95th percentile queue to mitigate site traffic impacts.*** Wake County Public Schools is planning 50 feet of storage. The intersection operates at LOS D or better for build-out conditions.

2. **The TIA recommends no additional changes to the signalized intersection of Green Level Church Road at Roberts Road.**
WCPSS will be adding turn lanes and a traffic signal at this location. Apex staff concur with no additional changes at this location based on site traffic impacts. The intersection operates at LOS D or better for build-out conditions.
3. **The TIA recommends a 100-foot eastbound right turn lane, 100-foot westbound left turn lane, and 100-foot northbound right turn lane at the intersection of Green Level West Road at White Oak Church Road/Access #1.** Apex staff concur with the proposed improvements to accommodate the addition of a fourth leg accessing the site. Long delays will be experienced for the southbound left turn for morning carpool traffic coming from the planned school with or without site traffic. The proposed turn lanes will mitigate the impact of site traffic at this intersection.
4. **The TIA recommends no additional changes to the stop-controlled intersection of Green Level West Road at Wimberly Road.** The Lake Castleberry project will be adding the 100-foot westbound left turn lane assumed in the TIA. Apex staff concur with no additional changes to the intersection. The stopped approach of Wimberly Road operates at LOS B with or without site traffic.

Please coordinate with the NCDOT District Engineer's Office concerning recommended improvements and site access. All proposed changes to state-maintained roadways are subject to NCDOT review and approval. Town staff will be available for meetings with NCDOT staff to discuss as needed.

Sincerely,



Russell H. Dalton, PE
Transportation Engineer
919-249-3358



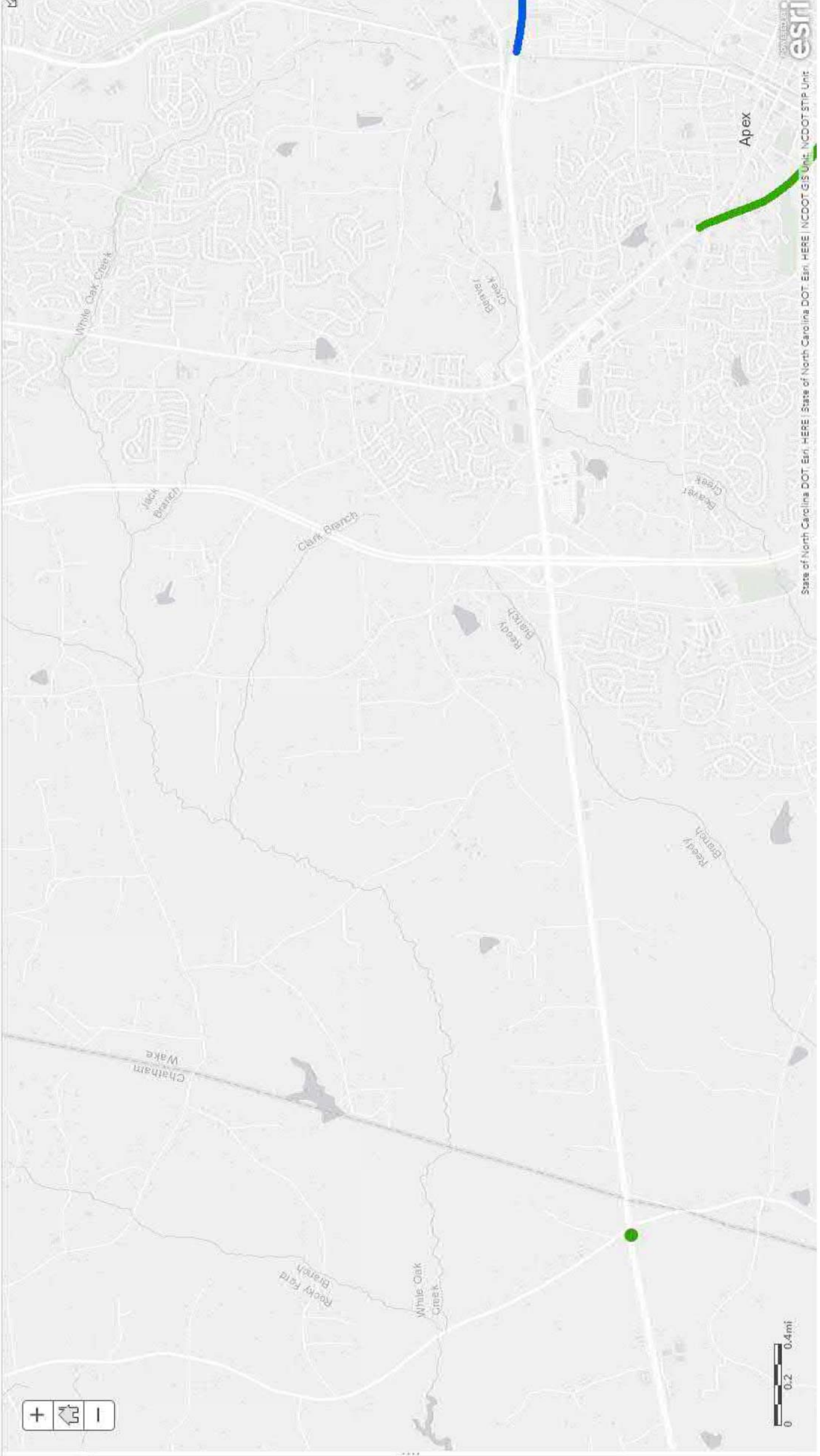
NCDOT 2020-2029 STIP

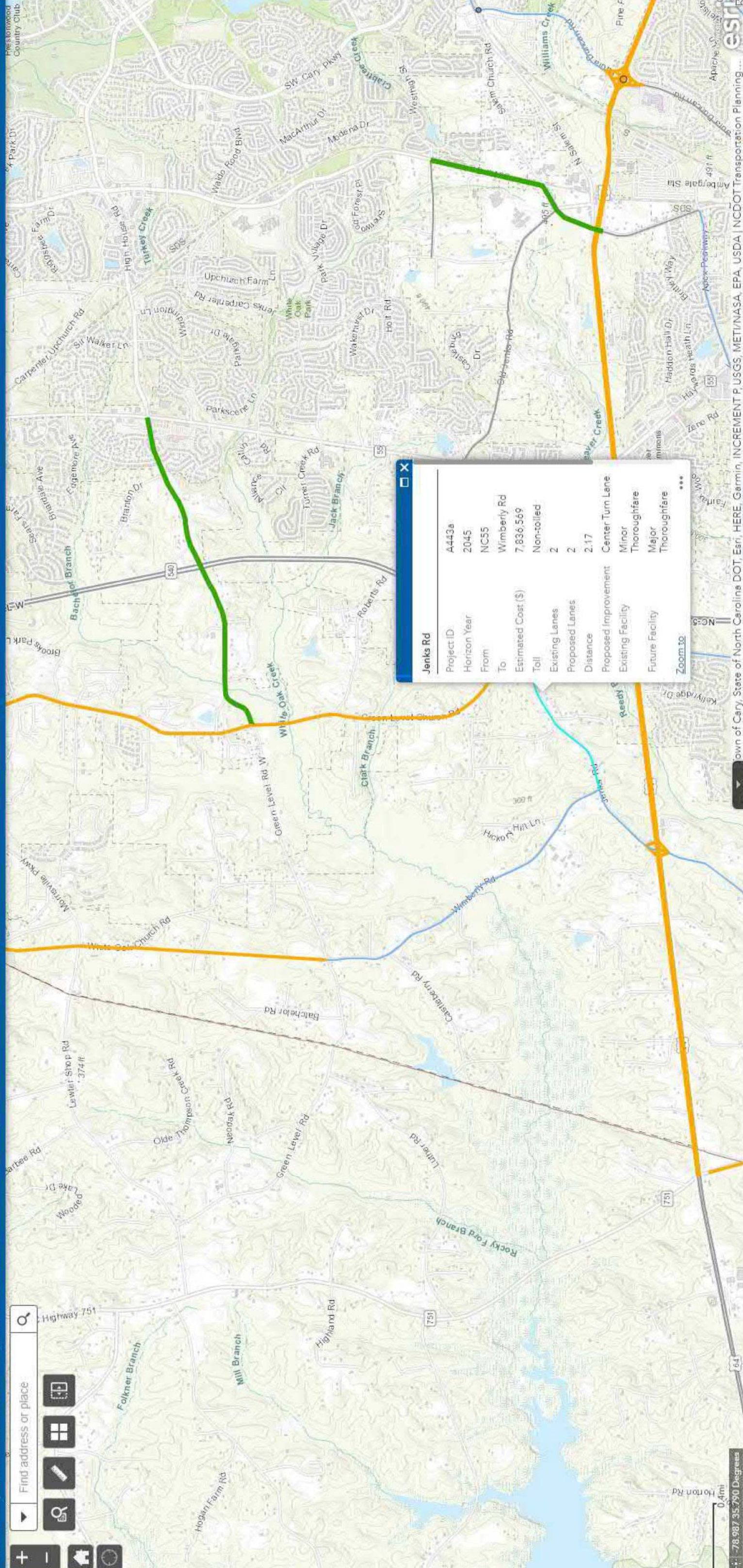
2020-2029 STIP Points

-  Statewide Highway
-  Regional Highway
-  Division Highway
-  Interstate Maintenance
-  Bridge
-  Transition Highway
-  Other Highway
-  Statewide Aviation
-  Regional Aviation
-  Division Aviation
-  Aviation
-  Regional Ferry
-  Division Ferry
-  Transition Ferry
-  Statewide Rail
-  Regional Rail
-  Division Rail
-  Transition Rail
-  Other Rail
-  Regional Public Transit
-  Division Public Transit
-  Division Bicycle And Pedestrian
-  Transition Bicycle And Pedestrian

2020-2029 STIP Lines

-  Statewide Highway
-  Regional Highway
-  Division Highway
-  IM



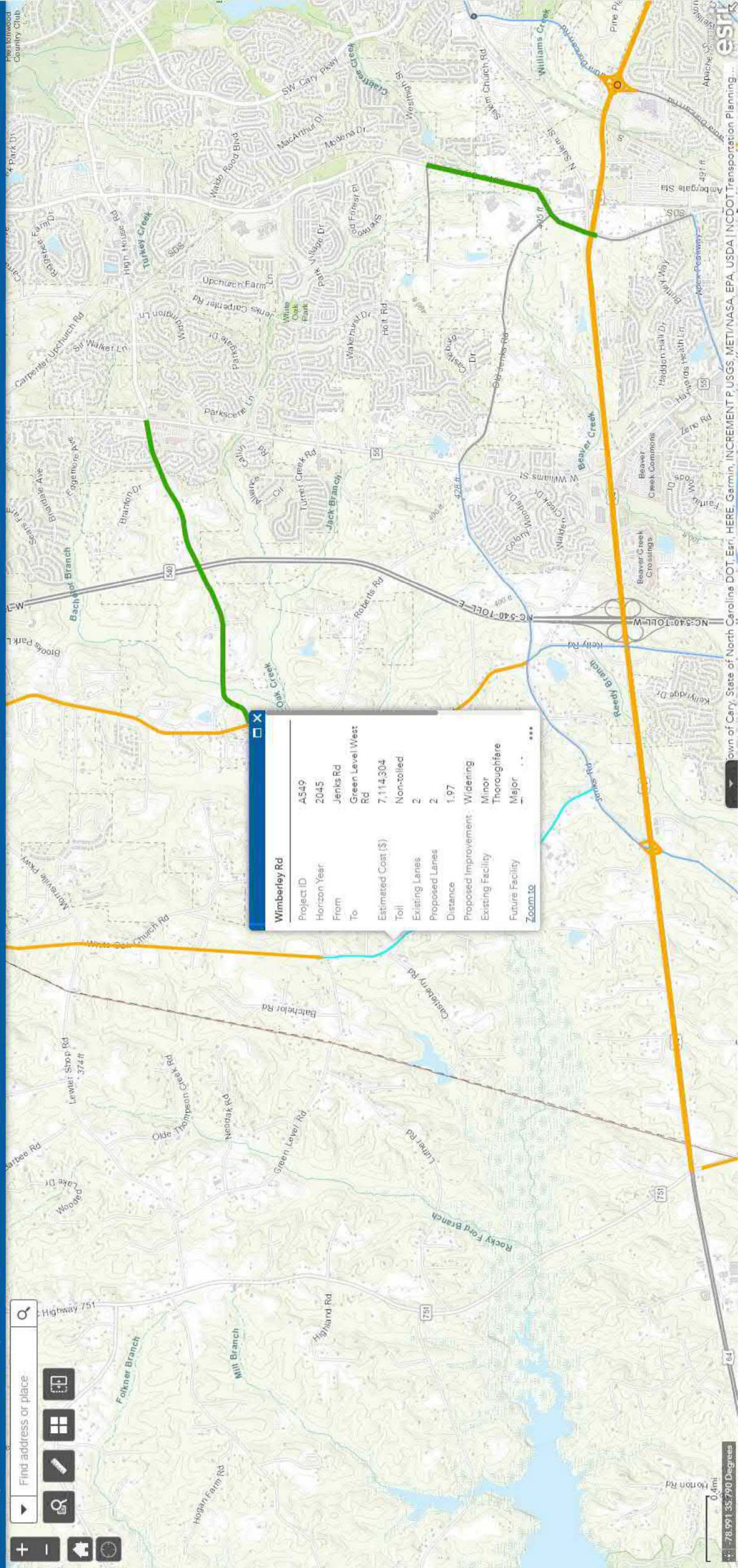


Jenks Rd

Project ID	A443a
Horizon Year	2045
From	NC55
To	Wimberly Rd
Estimated Cost (\$)	7,836,569
Toll	Non-tolled
Existing Lanes	2
Proposed Lanes	2
Distance	2.17
Proposed Improvement	Center Turn Lane
Existing Facility	Minor Thoroughfare
Future Facility	Major Thoroughfare

Zoom to: ***














Wimberley Rd									
Project ID	A549								
Horizon Year	2045								
From	Jenks Rd								
To	Green Level West Rd								
Estimated Cost (\$)	7,114,304								
Toll	Non-tolled								
Existing Lanes	2								
Proposed Lanes	2								
Distance	1.97								
Proposed Improvement	Widening								
Existing Facility	Minor Thoroughfare								
Future Facility	Major								
Zoom to									

Appendix E

Background (2025) Analyses

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↱	↱	↱	
Traffic Vol, veh/h	171	9	48	106	12	84
Future Vol, veh/h	171	9	48	106	12	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	9	9
Mvmt Flow	190	10	53	118	13	93
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	200	0	419	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	-	-	4.16	-	6.49	6.29
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.254	-	3.581	3.381
Pot Cap-1 Maneuver	-	-	1349	-	578	829
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	797	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1349	-	555	829
Mov Cap-2 Maneuver	-	-	-	-	555	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	766	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.4		10.3		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	781	-	-	1349	-	
HCM Lane V/C Ratio	0.137	-	-	0.04	-	
HCM Control Delay (s)	10.3	-	-	7.8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-	











Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	109	10	11	90	21	32	10	47	39	4	51
Future Vol, veh/h	72	109	10	11	90	21	32	10	47	39	4	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	0	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	6	6	6	4	4	4
Mvmt Flow	80	121	11	12	100	23	36	11	52	43	4	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	132	0	0	447	428	121	454	428	112
Stage 1	-	-	-	-	-	-	281	281	-	136	136	-
Stage 2	-	-	-	-	-	-	166	147	-	318	292	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.16	6.56	6.26	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.14	5.54	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.554	4.054	3.354	3.536	4.036	3.336
Pot Cap-1 Maneuver	1440	-	-	1453	-	-	515	513	920	513	516	936
Stage 1	-	-	-	-	-	-	717	671	-	862	780	-
Stage 2	-	-	-	-	-	-	827	768	-	689	667	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1440	-	-	1453	-	-	457	480	920	452	483	936
Mov Cap-2 Maneuver	-	-	-	-	-	-	457	480	-	452	483	-
Stage 1	-	-	-	-	-	-	677	633	-	814	774	-
Stage 2	-	-	-	-	-	-	766	762	-	603	630	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.9			0.7			11.3			11.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	462	920	1440	-	-	1453	-	-	631
HCM Lane V/C Ratio	0.101	0.057	0.056	-	-	0.008	-	-	0.166
HCM Control Delay (s)	13.7	9.1	7.6	-	-	7.5	-	-	11.8
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.2	0.2	-	-	0	-	-	0.6

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↲	↱	↲↳	
Traffic Vol, veh/h	165	34	103	170	21	57
Future Vol, veh/h	165	34	103	170	21	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	183	38	114	189	23	63
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	221	0	619	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	417	-
Critical Hdwy	-	-	4.12	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.218	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1348	-	449	834
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1348	-	411	834
Mov Cap-2 Maneuver	-	-	-	-	411	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	605	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3		11.4	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	653	-	-	1348	-	
HCM Lane V/C Ratio	0.133	-	-	0.085	-	
HCM Control Delay (s)	11.4	-	-	7.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-	

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	131	18	40	142	32	24	6	26	49	10	62
Future Vol, veh/h	76	131	18	40	142	32	24	6	26	49	10	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	0	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	2	2	2	17	17	17	2	2	2
Mvmt Flow	84	146	20	44	158	36	27	7	29	54	11	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	194	0	0	166	0	0	618	596	146	606	598	176
Stage 1	-	-	-	-	-	-	314	314	-	264	264	-
Stage 2	-	-	-	-	-	-	304	282	-	342	334	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.27	6.67	6.37	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.27	5.67	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.27	5.67	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.653	4.153	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	1373	-	-	1412	-	-	381	397	863	409	416	867
Stage 1	-	-	-	-	-	-	666	630	-	741	690	-
Stage 2	-	-	-	-	-	-	674	651	-	673	643	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1373	-	-	1412	-	-	319	361	863	363	379	867
Mov Cap-2 Maneuver	-	-	-	-	-	-	319	361	-	363	379	-
Stage 1	-	-	-	-	-	-	625	592	-	696	669	-
Stage 2	-	-	-	-	-	-	591	631	-	604	604	-









Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.6			1.4			13.6			14.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	327	863	1373	-	-	1412	-	-	520
HCM Lane V/C Ratio	0.102	0.033	0.062	-	-	0.031	-	-	0.259
HCM Control Delay (s)	17.3	9.3	7.8	-	-	7.6	-	-	14.3
HCM Lane LOS	C	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0.2	-	-	0.1	-	-	1

Appendix F

Build (2025) Analyses

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↰	↱	↰↱	
Traffic Vol, veh/h	171	10	50	106	15	90
Future Vol, veh/h	171	10	50	106	15	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	9	9
Mvmt Flow	190	11	56	118	17	100
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	201	0	426	196
Stage 1	-	-	-	-	196	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	-	-	4.16	-	6.49	6.29
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.254	-	3.581	3.381
Pot Cap-1 Maneuver	-	-	1347	-	572	828
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	548	828
Mov Cap-2 Maneuver	-	-	-	-	548	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	759	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.5		10.5	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	772	-	-	1347	-	
HCM Lane V/C Ratio	0.151	-	-	0.041	-	
HCM Control Delay (s)	10.5	-	-	7.8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-	

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	109	10	11	90	25	32	10	47	51	4	90
Future Vol, veh/h	84	109	10	11	90	25	32	10	47	51	4	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	0	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	2	2	2	6	6	6	4	4	4
Mvmt Flow	93	121	11	12	100	28	36	11	52	57	4	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	128	0	0	132	0	0	497	459	121	482	456	114
Stage 1	-	-	-	-	-	-	307	307	-	138	138	-
Stage 2	-	-	-	-	-	-	190	152	-	344	318	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.16	6.56	6.26	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.14	5.54	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.554	4.054	3.354	3.536	4.036	3.336
Pot Cap-1 Maneuver	1434	-	-	1453	-	-	477	493	920	491	498	933
Stage 1	-	-	-	-	-	-	694	654	-	860	779	-
Stage 2	-	-	-	-	-	-	803	764	-	667	650	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1434	-	-	1453	-	-	399	458	920	430	462	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	399	458	-	430	462	-
Stage 1	-	-	-	-	-	-	649	611	-	804	773	-
Stage 2	-	-	-	-	-	-	707	758	-	578	608	-










Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.2			0.7			11.8			12.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	412	920	1434	-	-	1453	-	-	648
HCM Lane V/C Ratio	0.113	0.057	0.065	-	-	0.008	-	-	0.249
HCM Control Delay (s)	14.9	9.1	7.7	-	-	7.5	-	-	12.4
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.2	0.2	-	-	0	-	-	1

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	12	3	88	1	1	64
Future Vol, veh/h	12	3	88	1	1	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	3	98	1	1	71
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	172	99	0	0	99	0
Stage 1	99	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	818	957	-	-	1494	-
Stage 1	925	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	817	957	-	-	1494	-
Mov Cap-2 Maneuver	817	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.4	0	0.1			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	842	1494	-	
HCM Lane V/C Ratio	-	-	0.02	0.001	-	
HCM Control Delay (s)	-	-	9.4	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	39	6	83	15	2	74
Future Vol, veh/h	39	6	83	15	2	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	7	92	17	2	82
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	187	101	0	0	109	0
Stage 1	101	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	802	954	-	-	1481	-
Stage 1	923	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	801	954	-	-	1481	-
Mov Cap-2 Maneuver	801	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.7	0	0.2			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	819	1481	-	
HCM Lane V/C Ratio	-	-	0.061	0.002	-	
HCM Control Delay (s)	-	-	9.7	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱		↲	↱	↲↳	
Traffic Vol, veh/h	165	37	110	170	23	61
Future Vol, veh/h	165	37	110	170	23	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	183	41	122	189	26	68
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	224	0	637	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	433	-
Critical Hdwy	-	-	4.12	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.218	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1345	-	438	832
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	398	832
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	591	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3.1		11.6	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	641	-	-	1345	-	
HCM Lane V/C Ratio	0.146	-	-	0.091	-	
HCM Control Delay (s)	11.6	-	-	7.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-	

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	118	131	18	40	142	45	24	6	26	57	10	87
Future Vol, veh/h	118	131	18	40	142	45	24	6	26	57	10	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	0	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	2	2	2	17	17	17	2	2	2
Mvmt Flow	131	146	20	44	158	50	27	7	29	63	11	97

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	208	0	0	166	0	0	733	704	146	707	699	183
Stage 1	-	-	-	-	-	-	408	408	-	271	271	-
Stage 2	-	-	-	-	-	-	325	296	-	436	428	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.27	6.67	6.37	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.27	5.67	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.27	5.67	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.653	4.153	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	1357	-	-	1412	-	-	318	344	863	350	364	859
Stage 1	-	-	-	-	-	-	591	572	-	735	685	-
Stage 2	-	-	-	-	-	-	657	642	-	599	585	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1357	-	-	1412	-	-	249	301	863	301	319	859
Mov Cap-2 Maneuver	-	-	-	-	-	-	249	301	-	301	319	-
Stage 1	-	-	-	-	-	-	534	517	-	664	664	-
Stage 2	-	-	-	-	-	-	555	622	-	516	528	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.5			1.3			15.6			16.7		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	258	863	1357	-	-	1412	-	-	478
HCM Lane V/C Ratio	0.129	0.033	0.097	-	-	0.031	-	-	0.358
HCM Control Delay (s)	21	9.3	7.9	-	-	7.6	-	-	16.7
HCM Lane LOS	C	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	0.3	-	-	0.1	-	-	1.6

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	8	2	86	3	3	133
Future Vol, veh/h	8	2	86	3	3	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	2	96	3	3	148

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	252	98	0
Stage 1	98	-	-
Stage 2	154	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	737	958	-
Stage 1	926	-	-
Stage 2	874	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	736	958	-
Mov Cap-2 Maneuver	736	-	-
Stage 1	926	-	-
Stage 2	872	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	772	1494
HCM Lane V/C Ratio	-	-	0.014	0.002
HCM Control Delay (s)	-	-	9.7	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	25	4	85	52	7	134
Future Vol, veh/h	25	4	85	52	7	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	4	94	58	8	149

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	288	123	0
Stage 1	123	-	-
Stage 2	165	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	702	928	-
Stage 1	902	-	-
Stage 2	864	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	698	928	-
Mov Cap-2 Maneuver	698	-	-
Stage 1	902	-	-
Stage 2	859	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	723	1429
HCM Lane V/C Ratio	-	-	0.045	0.005
HCM Control Delay (s)	-	-	10.2	7.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0



PLANNING BOARD REPORT TO TOWN COUNCIL

Rezoning Case: #19CZ22 Wolfe Properties PUD

Planning Board Meeting Date: June 8, 2020



Report Requirements:

Per NCGS 160A-387, all proposed amendments to the zoning ordinance or zoning map shall have a written report provided from the Planning Board to the Town Council within 30 days of referral of the amendment to the Planning Board, or the Town Council may proceed in its consideration of the amendment without the Planning Board report. Furthermore, in no case is the Town Council bound by the recommendations, if any, of the Planning Board.

Per NCGS 160A-383, the Planning Board shall advise and comment on whether the proposed zoning amendment is consistent with all applicable officially adopted plans, and provide a written recommendation to the Town Council that addresses plan consistency and other matters as deemed appropriate by the Planning Board, but a comment by the Planning Board that a proposed amendment is inconsistent with the officially adopted plans shall not preclude consideration or approval of the proposed amendment by the Town Council.

PROJECT DESCRIPTION:

Acreage: ±43.52 acres

PIN(s): 0722595328, 0722598851, 0723406397, 0723504154, 0723508938, & 0723601654

Current Zoning: Wake County R-80W & Rural Residential (RR)

Proposed Zoning: Planned Unit Development-Conditional Zoning (PUD-CZ)

2045 Land Use Map: Low Density Residential

Town Limits: Outside ETJ; a portion of PIN 0722598851 is within the ETJ

Applicable Officially Adopted Plans:

The Board must state whether the project is consistent or inconsistent with the following officially adopted plans, if applicable. Applicable plans have a check mark next to them.

☒ 2045 Land Use Map
☒ Consistent ☐ Inconsistent Reason: _____

☒ Apex Transportation Plan
☒ Consistent ☐ Inconsistent Reason: _____

☒ Parks, Recreation, Open Space, and Greenways Plan
☒ Consistent ☐ Inconsistent Reason: _____

PLANNING BOARD REPORT TO TOWN COUNCIL

Rezoning Case: #19CZ22 Wolfe Properties PUD

Planning Board Meeting Date: June 8, 2020



Legislative Considerations:

The applicant shall propose site-specific standards and conditions that take into account the following considerations, which are considerations that are relevant to the legislative determination of whether or not the proposed conditional zoning district rezoning request is in the public interest. These considerations do not exclude the legislative consideration of any other factor that is relevant to the public interest.

1. *Consistency with 2045 Land Use Plan.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and consistency with the purposes, goals, objectives, and policies of the 2045 Land Use Plan.

☒ Consistent

☐ Inconsistent

Reason: _____

2. *Compatibility.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and compatibility with the character of surrounding land uses.

☒ Consistent

☐ Inconsistent

Reason: _____

3. *Zoning district supplemental standards.* The proposed Conditional Zoning (CZ) District use's compliance with Sec. 4.4 *Supplemental Standards*, if applicable.

☒ Consistent

☐ Inconsistent

Reason: _____

4. *Design minimizes adverse impact.* The design of the proposed Conditional Zoning (CZ) District use's minimization of adverse effects, including visual impact of the proposed use on adjacent lands; and avoidance of significant adverse impacts on surrounding lands regarding trash, traffic, service delivery, parking and loading, odors, noise, glare, and vibration and not create a nuisance.

☒ Consistent

☐ Inconsistent

Reason: _____

5. *Design minimizes environmental impact.* The proposed Conditional Zoning District use's minimization of environmental impacts and protection from significant deterioration of water and air resources, wildlife habitat, scenic resources, and other natural resources.

☒ Consistent

☐ Inconsistent

Reason: _____

PLANNING BOARD REPORT TO TOWN COUNCIL

Rezoning Case: #19CZ22 Wolfe Properties PUD

Planning Board Meeting Date: June 8, 2020



6. *Impact on public facilities.* The proposed Conditional Zoning (CZ) District use's avoidance of having adverse impacts on public facilities and services, including roads, potable water and wastewater facilities, parks, schools, police, fire and EMS facilities.

☒ Consistent

☐ Inconsistent

Reason: _____

7. *Health, safety, and welfare.* The proposed Conditional Zoning (CZ) District use's effect on the health, safety, or welfare of the residents of the Town or its ETJ.

☒ Consistent

☐ Inconsistent

Reason: _____

8. *Detrimental to adjacent properties.* Whether the proposed Conditional Zoning (CZ) District use is substantially detrimental to adjacent properties.

☒ Consistent

☐ Inconsistent

Reason: _____

9. *Not constitute nuisance or hazard.* Whether the proposed Conditional Zoning (CZ) District use constitutes a nuisance or hazard due to traffic impact or noise, or because of the number of persons who will be using the Conditional Zoning (CZ) District use.

☒ Consistent

☐ Inconsistent

Reason: _____

10. *Other relevant standards of this Ordinance.* Whether the proposed Conditional Zoning (CZ) District use complies with all standards imposed on it by all other applicable provisions of this Ordinance for use, layout, and general development characteristics.

☒ Consistent

☐ Inconsistent

Reason: _____

PLANNING BOARD REPORT TO TOWN COUNCIL

Rezoning Case: #19CZ22 Wolfe Properties PUD

Planning Board Meeting Date: June 8, 2020



Planning Board Recommendation:

Motion: Motion to approve with conditions as offered by applicant

Introduced by Planning Board member: Beth Godfrey

Seconded by Planning Board member: Keith Braswell

- ☐ *Approval:* the project is consistent with all applicable officially adopted plans and the applicable legislative considerations listed above.
- ☒ *Approval with conditions:* the project is not consistent with all applicable officially adopted plans and/or the applicable legislative considerations as noted above, so the following conditions are recommended to be included in the project in order to make it fully consistent:

Conditions submitted by applicant, including four additional conditions added at Planning Board meeting
(to be included in PUD document in Town Council agenda packet) and re-worded fence condition
(also to be included in PUD document in Town Council agenda packet).

- ☐ *Denial:* the project is not consistent with all applicable officially adopted plans and/or the applicable legislative considerations as noted above.

With 6 Planning Board Member(s) voting "aye"

With 0 Planning Board Member(s) voting "no"

Reasons for dissenting votes:

This report reflects the recommendation of the Planning Board, this the 8th day of June 2020.

Attest:

Michael Marks Digitally signed by Michael Marks
Date: 2020.06.08 21:09:25 -04'00'

Michael Marks, Planning Board Chair

Dianne Khin Digitally signed by Dianne Khin
Date: 2020.06.08 17:06:10 -04'00'

Dianne Khin, Planning Director



TOWN OF APEX

POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

PUBLIC NOTIFICATION OF PUBLIC HEARINGS CONDITIONAL ZONING #19CZ22 Wolfe Properties PUD

Pursuant to the provisions of North Carolina Statutes Section 160A-364 and to the Town of Apex Unified Development Ordinance (UDO) Section 2.2.11, notice is hereby given of public hearings before the Planning Board and Town Council of the Town of Apex. The purpose of these hearings is to consider the following:

Applicant/Authorized Agent: Josh Swindell, Envision Homes, LLC

Property Addresses: 1405, 1409, 1209, & 1401 Wimberly Road and 1012 & 1000 Double Helix Road

Acreage: ±43.52 acres

Property Identification Numbers (PINs): 0722595328, 0722598851, 0723406397, 0723504154, 0723508938, & 0723601654

2045 Land Use Map Designation: Low Density Residential

Existing Zoning of Properties: Wake County R-80W and Rural Residential (RR)

Proposed Zoning of Properties: Planned Unit Development-Conditional Zoning (PUD-CZ)

Public Hearing Location: Apex Town Hall
73 Hunter Street, Apex, North Carolina
Council Chambers, 2nd Floor

Planning Board Public Hearing Date and Time: June 8, 2020 4:30 PM

If you would like to speak during the public hearing, you may sign-in ahead of time by emailing your name and address to bonnie.brock@apexnc.org.

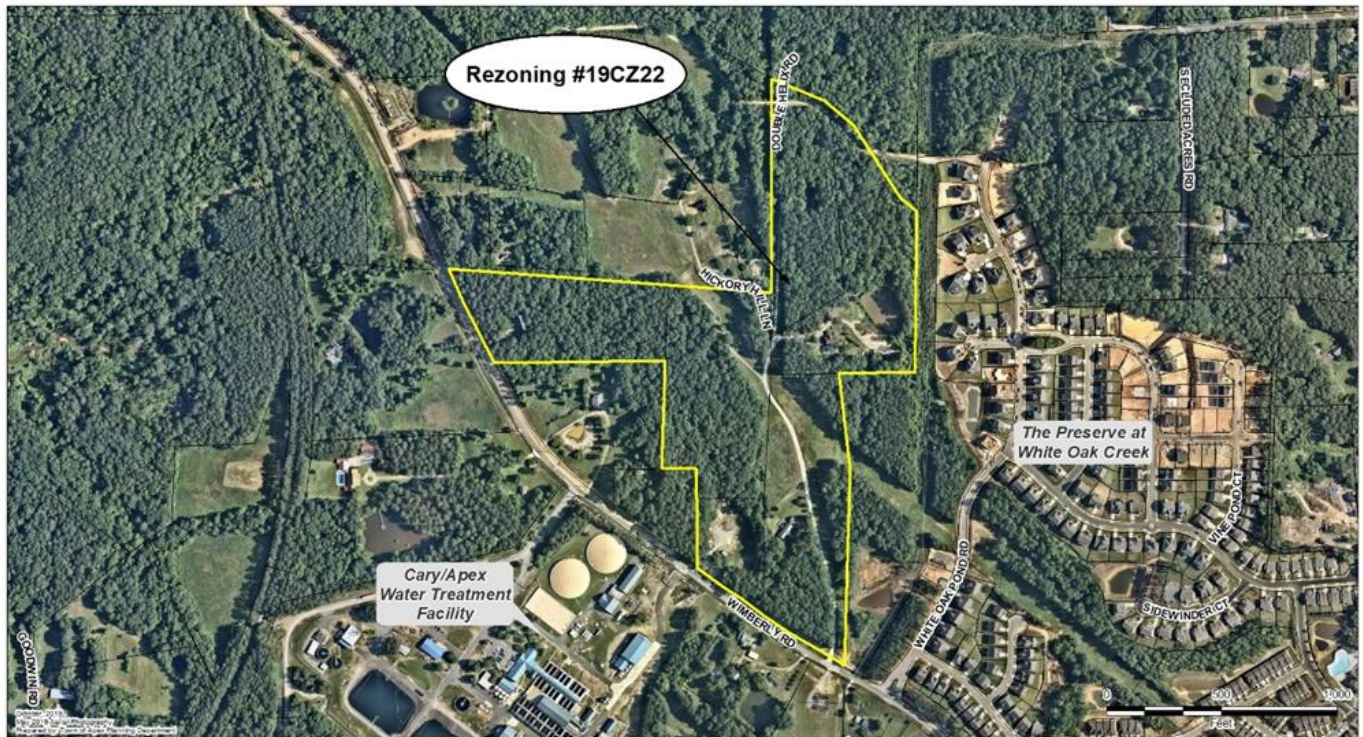
If you are unable to attend, you may view the meeting through the Town's YouTube livestream at: <https://www.youtube.com/c/townofapexgov>. You may also share comments by noon on Friday, June 5, 2020, following instructions in the [Remote Participation policy](#). The policy includes options to provide comments by email (public.hearing@apexnc.org, 350-word limit) or voicemail (919-372-7300, 3-minute limit).

Town Council Public Hearing Date and Time: June 16, 2020 6:00 PM

If you are unable to attend, you may view the meeting through the Town's YouTube livestream at: <https://www.youtube.com/c/townofapexgov>. You may share comments by noon on Monday, June 15, 2020, following instructions in the [Remote Participation policy](#). The policy includes options to provide comments by email (public.hearing@apexnc.org, 350-word limit) or voicemail (919-372-7300, 3-minute limit).

-CONTINUED-

Vicinity Map:



Property owners within 300 feet of the proposed conditional zoning have been sent this notice via first class mail. All interested parties may appear at the public hearing and be heard with respect to the application. Maps showing the location for the above site(s) to be considered in addition to a copy of the [2045 Land Use Map](#) can be inspected at the Apex Town Hall or call 919-249-3426, Department of Planning and Community Development, for further information. To view the petition and related documents on-line: <https://www.apexnc.org/DocumentCenter/View/2929>.

Dianne F. Khin, AICP
Director of Planning and
Community Development

Published Dates: May 29, 2020 – June 16, 2020

**PUBLIC NOTIFICATION
OF PUBLIC HEARINGS**
CONDITIONAL ZONING #19C232
Waite Properties PUD

Partners in the protection of North Carolina's natural resources. 2000-2012 and in the Town of Apala Unified Development Ordinance (UDO) Section 2.2.21, notice is hereby given of public hearings before the Planning Board and Town Council of the Town of Apala. The purpose of these hearings is to consider the following:

Applicant/Author and Agent: John Swindell, American Homes, LLC
Property Address: 1003, 1200, 1201, & 1021 Woodbury Road and 1021 & 1003 Duvalville Road
Mappage Address: 44.5.2.2016
Property Identification Numbers (PINs): 01232001124, 01232000010, 01232000007, 01232001016, 01232000016
CD Number: 1034
2016 Land Use Map Designations: Low Density Residential
Existing Zoning of Properties: State County & HWY and Rural Residential (RR)
Proposed Zoning of Properties: Planned Office Development Conditional Zoning (POD-C2)

Public Hearing Location: April 11, 2011
77 Pavilion Street, Apex, North Carolina
Shaw-Walsh Community Center, 2nd floor

Planning Board Public Hearing Date and Time: June 8, 2020 - 6:30 PM

If you would like to speak during the public hearing, you may sign in ahead of time by emailing your name and address to heaven.bush@quekx.org.

If you are unable to attend, you may view the meeting through the Society's YouTube livestream at: <https://www.youtube.com/watch?v=8m3m3m3m3m>. You may also listen comments by mail on Friday, June 4, 2020, following instructions in the [Society Publications Guide](#). The policy election system to provide comments by email (health.society@hawaii.gov, 100-word limit) or by mail (100-223-7300, 6-minute limit).

Transcript Entry Creation Date and Time: 10/16/2020 6:30 PM

If you are unable to attend, you may view the meeting through the fund's YouTube feedroom at: <https://www.ashland.com/investoraffairs/>. You may share comments by email on Monday, June 18, 2019 following verification at the [Registered Participants page](#). The policy includes options to provide comments either investor@ashland.com. Feedback text is restricted (300-450 TALK, 5-minute limit).

—CONTINUED—

[Weekly blogs](#)

Property owners within 100 feet of this proposed residential zoning have been sent this notice by first class mail. All interested parties are invited to appear at the public hearing and be heard with respect to the application. Maps showing the location for the street of utility (s) to be constructed in addition to a copy of the <http://www.ci.milpitas.ca.us> can be inspected at the Date Town Hall at 140 E. 1st St., 240-0326, Department of Planning and Community Development, for further information. To view the petition and related documents on-line: <http://www.ci.milpitas.ca.us/development/development.htm>

David E. Glick, AICP
Director of Planning and
Community Development

Published Online: May 26, 2008—June 16, 2008

Rezoning #19CZ22

Double Helix Rd

Secluded Acres Rd

The Preserve
at White
Oak Creek

Winberry Rd

1309

1325

Hickory Hill Ln

1409

Cary/Apex
Water Treatment
Facility

White Oak Pond Rd

Tunstall Grove Dr

Vine Pond Ct

Public Hearing Sign Posted By

October, 2019
May 2019 Aerial Photography
Prepared by: Town of Apex Planning Department

0 500 1,000
Feet

 10/7/19
Signature Date



TOWN OF APEX

POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

AFFIDAVIT CERTIFYING Public Notification – Written (Mailed) Notice

Section 2.2.11

Town of Apex Unified Development Ordinance

Project Name: Rezoning 19CZ22, Wolfe Properties PUD
Project Location: 1405, 1409, 1209, & 1401 Wimberly Road and 1012 & 1000
Double Helix Road
Applicant or Authorized Agent: Josh Swindell
Firm: Envision Homes, LLC

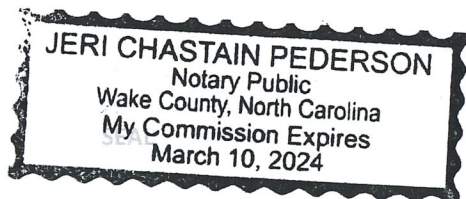
This is to certify that I, as Planning Director, mailed or caused to have mailed by first class postage for the above mentioned project **May 29, 2020** a notice containing the time and place, location, nature and scope of the application, where additional information may be obtained, and the opportunity for interested parties to be heard, to the property owners within 300' of the land subject to notification. I further certify that I relied on information provided to me by the above-mentioned person as to accuracy and mailing addresses of property owners within 300' of the land subject to notification.

6/2/2020
Date

Shanie F. Khan
Director of Planning and Community Development

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, *Jeri Chastain Pederson*, a Notary Public for the above
State and County, this the 2 day of June, 2020



Jeri Chastain Pederson
Notary Public

My Commission Expires: 03/10/2024