

STAFF REPORT

Rezoning #21CZ04 Williams Farm PUD

June 22, 2021 Town Council Meeting



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

BACKGROUND INFORMATION:

Location: 4525 Green Level West Rd
Applicant: Jessie Hardesty, McAdams Co.
Authorized Agent: Jacob Anderson, Alliance Group
Owner: Eliza C. Williams

PROJECT DESCRIPTION:

Acreage: +/- 61.919 acres
PIN: Portion of 0713943738
Current Zoning: Rural Residential (RR)
Proposed Zoning: Planned Unit Development–Conditional Zoning (PUD-CZ)
2045 Land Use Map: Low Density Residential
Town Limits: Inside the ETJ

ADJACENT ZONING & LAND USES:

	Zoning	Land Use
North:	Wake County Residential (R-40W)	Single-family residential & Vacant; Green Level West Rd
South:	Low Density Residential-Conditional Zoning (LD-CZ #13CZ17 & #14CZ32)	Single-family residential amenity center (Lake Castleberry Subdivision); Lake Castleberry
East:	Low Density Residential-Conditional Zoning (LD-CZ #13CZ17); Rural Residential (RR)	Single-family residential (Lake Castleberry Subdivision); Single-family residential
West:	Chatham Co. R-1	Single-family residential; Vacant

EXISTING CONDITIONS:

The site consists of one (1) parcel totaling +/- 61.919 acres. The Williams Farm PUD is in the northwest region of Apex, south of Green Level West Road and east of the Chatham County line. The Lake Castleberry subdivision is under development east and south of the site. The property is primarily vacant and wooded with a few cleared areas containing a few outbuildings. There is also a large stream along the eastern and southern border. It was the site of the historic landmark James Madison Williams House, which burned in 2019.

NEIGHBORHOOD MEETING:

The applicant conducted a neighborhood meeting on February 11, 2021. The meeting report is attached to the staff report.

2045 LAND USE MAP:

The 2045 Land Use Map designates the site as Low Density Residential. The PUD proposes a maximum density of 2.89 units per acre, with a maximum of 176 residential units in this area. The proposed rezoning is consistent with the 2045 Land Use Map designation.

WCPSS COORDINATION:

A Letter of Impact from Wake County Public School System (WCPSS) was received for this rezoning and is included in the staff report packet. WCPSS indicates that elementary and middle schools within the current assignment area for this rezoning/development are anticipated to have insufficient capacity for future students;

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transportation to schools outside of the current assignment area should be anticipated. School expansion or construction within the next five years is not anticipated to address concerns. Possible long-term solutions may include capping students out to schools with available seats (not very proximate), reassignments, or calendar changes.

PLANNED UNIT DEVELOPMENT PLAN:

The applicant is proposing a Planned Unit Development with uses and development standards as follows:

Proposed 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.

- Accessory apartment
- Single-family
- Greenway
- Recreation Facility, private
- Park, active
- Park, passive
- Utility, minor

Conditions:

- A. A maximum of 176 residential units shall be permitted upon the property.
- B. No covenant prohibiting the accessory apartment use shall encumber the property.
- C. Affordable Housing: The developer will contribute \$284.10 per lot to the Apex Affordable Housing Fund, to be paid at plat. Based on 176 lots, the total fee should be \$50,000.

Architectural Conditions:

The proposed development offers the following architectural controls to ensure a consistency of character throughout the development, while allowing for enough variety to create interest and avoid monotony. Changes to the exterior materials, roof, windows, doors, process, trim, etc. are allowable with administrative approval at the staff level. Further details shall be provided at the time of Site Plan submittal. The following conditions shall apply:

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. Front-facing garage doors shall have windows, decorative details or carriage-style adornments on them.
3. The garage cannot protrude more than 1 foot out from the front façade or front porch, measured from roof of porch.
4. On single-family homes, the roof shall be pitched at 5:12 or greater (not to include porches, bay windows, etc.).
5. House entrances for units with front-facing single-car garages must have a covered porch/stoop area leading to the front door.
6. Rear and side elevations of units that have right-of-way frontage shall have trim around the windows.
7. Four of the following decorative elements shall be used on each building: decorative shake, board and batten siding, decorative porch rails and posts, shutters, decorative functional foundation and roof vents, recessed windows, decorative windows, decorative brick or stone, decorative gables, decorative cornices, or metal roofing.
8. A varied color palette shall be utilized on single family homes throughout the subdivision and shall include siding, trim, shutter, and accent colors complementing the siding colors.
9. Solar conduit will be provided on all single-family homes to accommodate the future installation of solar panels.

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Proposed Design Controls:

Overall Maximum Density:	2.89 units/acre
Maximum Residential Units:	176
Minimum Lot Size:	5,000 ft ²
Minimum Lot Width:	40 ft
Minimum Lot Depth:	100 ft
Maximum Building Height:	45 ft

Building Setbacks:	
Front:	20 ft
Side:	5 ft
Rear:	20 ft
Alley:	5 ft
Corner:	8 ft

Proposed RCA & Buffers:

The proposed Williams Farm PUD complies with the UDO requirement for 30% of the gross project area to be provided as RCA. At least 3 of the champion trees located along Green Level West Road will be preserved, subject to health evaluation and frontage roadway design requirements.

Buffers:	UDO Requirement:	Proposed:
Green Level West Road (Thoroughfare):	30-foot Type B	30-foot Type B
South boundary:	10-foot Type B	20-foot Type B
East boundary		
Adjacent to Large Lot Single-Family:	10-foot Type B	20-foot Type B
Adjacent to Lake Castleberry Lots:	10-foot Type B	40-foot Type B
West boundary	10-foot Type B	10-foot Type B
Southwest boundary	10-foot Type B	10-foot Type B

ENVIRONMENTAL COMMITMENTS:

As confirmed by the North Carolina State Historic Preservation Office, there are no historic structures present within the project boundary. The James Madison Williams House was designated as a Wake County Landmark on December 15, 2015, however, the home was lost to fire on May 22, 2019.

While the historic farmhouse no longer exists, a number of significant champion trees as well as an iconic stacked stone wall remain as important historical remnants of the past. Pending evaluation of the health and safety of the trees, both the trees and stacked stone walls will be preserved and incorporated into the landscape design of the community. The project will preserve a minimum of 200 linear feet of the existing stacked stone walls located along the Green Level West Road frontage. Segments of the wall in disrepair may be reconstructed to match the original look of the wall.

The existing pond shall be preserved, pending an evaluation of the dam. The dam is not located on this property, so the developer will work with the owner to evaluate it. Two (2) acres of open space and pocket parks will be provided. The existing private gas line easement may be used to meet this requirement as long as it is graded and

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improved to contain features such as lawn area, walking trails, or vegetation that attracts bird and butterfly habitat. If private play lawns or walking trails are located within the gas easement, they may count 50% towards the RCA requirement.

All homes within the community shall be located no further than 800 feet from an improved open space area such as a play lawn, trail head, greenway, or pocket park.

The project will increase biodiversity in perimeter buffers and open space areas by providing a variety of species for the canopy, understory, and shrub levels. Native and adaptive plant species shall be provided within these areas to minimize death from disease and to provide increased habitat and food sources for insects and animals. A minimum of 70% of the species provided shall be native or a nativar of North Carolina. No invasive species shall be permitted. No single species of tree or shrub shall constitute more than 20% of the plant material of its type installed on a single development site.

Tree canopy areas within the Williams Farm PUD are primarily concentrated around the wetland areas, stream features, perimeter buffers, and champion trees which are to be preserved RCA area. Where trees cannot be preserved as part of the implementation of this community, the project will re-establish a new tree canopy with vegetated perimeter buffers, pocket parks, community gathering spaces, and other open space areas.

Educational signage shall be installed relating to wetlands or other on-site environmental features.

Public Facilities:

The Williams Farm PUD will be served by Town of Apex water, sanitary sewer, and electrical systems. A conceptual Utility Plan is included in the PUD Plan for reference. A portion of the site will be serviced by an on-site pump station in accordance with Town of Apex standards. Preliminary approval for a pump station has been received by Town of Apex Public Utilities. The utility design will be finalized at the time of Master Subdivision Plan approval and be based on available facilities adjacent to the site at that time. The ultimate design for the utilities shall meet the current Town of Apex Master Water and Sewer Plans for approval.

The project site does not sit within a designated current or future 100-year floodplain as shown on the Town of Apex FEMA map and FIRM Panel 3720071300K, dated February 2, 2007. This project is located within the Cape Fear River Basin. This project site is located within the Primary Watershed Protection Overlay District as shown on the Town of Apex Watershed Protection Map. This PUD shall go above the stormwater management requirements for quality and quantity treatment outlined in Section 6.1.7 of the UDO such that:

- Post development peak runoff shall not exceed pre-development peak runoff conditions for the 1 year, 10-year, 25-year, and 24-hour storm events.
- Treatment for the first 1 inch of runoff will provide 85% removal of total suspended solids.

Apex Transportation Plan/Access and Circulation:

Per the Apex Thoroughfare and Collector Street Plan map, Green Level West Road is designated as a future 4-lane median-divided thoroughfare. The developer will dedicate right-of-way along their property frontage on Green Level West Road to meet the requirements shown in Advance Apex.

Roadway improvements are subject to modification and final approval by the Town of Apex and NCDOT as part of the Master Subdivision Plan review and approval process. A Traffic Impact Analysis has been performed as part of this PUD rezoning consistent with the Town's standards for the same. Based upon the Traffic Impact Analysis, the following traffic improvements are proposed for this development:

Developer shall provide a westbound left turn lane with 50 feet of full width and appropriate deceleration length and taper on Green Level West Road at the location of the proposed public street accessing the

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subdivision, located approximately 700 feet west of Batchelor Road. No other new points of access are proposed along Green Level West Road. Developer is responsible for any necessary roadway improvements to meet or exceed required sight distance at the proposed access location, subject to NCDOT review and approval.

Additionally, at the time of master subdivision, the developer shall work with the Town of Apex and NCDOT to ensure adequate sight distance at the proposed site access on Green Level West Road. This may require realignment of Green Level West Road and/or a sight distance easement across the frontage of the parcel to the west.

The Apex Bicycle and Pedestrian System Plan map shows a proposed bicycle lane and sidewalk along the south side of Green Level West Road. The project proposes the following:

- Five-foot wide public sidewalks along the south side of Green Level West Road along road frontage of property.
- Five-foot wide public sidewalks along both sides of all internal streets
- Six-foot wide private walking trails throughout the development
- Crosswalks constructed at appropriate street intersections

ENVIROMENTAL ADVISORY BOARD:

The Apex Environmental Advisory Board (EAB) held a pre-application meeting for this rezoning on February 18, 2021. The zoning conditions suggested by the EAB are listed below along with the applicant's response to each condition.

EAB Suggested Condition	Applicant's Response
Preserve champion trees.	Included
Preserve stacked stone walls.	Included
Tree canopy preservation and replacement rates.	Included
Minimum amount of open space/pocket parks.	Included
Minimum length of trails.	Included
Educational signage about wetlands.	Included
Pet waste stations and educational signage outside of sensitive areas.	Included
Increased stormwater quantity/quality control measures above ordinance requirement. Commitment to attenuate the 25-year storm.	Included
Increased perimeter buffer to east.	Included
Retention of existing farm pond and exploration of water re-use if possible.	Included
Increased bio-diversity in perimeter buffers and open space areas.	Included
Use of pollinator-friendly flora and native plant species.	Included
Solar conduit in homes.	Included
Full cut-off street lighting per Apex UDO standards.	Included

Parks, Recreation, and Cultural Resources Advisory Commission:

Based on the Bike Apex and the Parks, Recreation, Greenways, and Open Space Master Plan maps, this project is required to pay a fee-in-lieu of dedication.

The Parks, Recreation, and Cultural Resources Advisory Commission reviewed the Williams Farm PUD at their March 31, 2021 meeting. The Advisory Commission unanimously recommended fee-in-lieu.

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Housing Type	Number of Units	Fee Per Unit	Total Fees
Single-Family	176	\$3,495.24	\$615,162.24

PLANNING STAFF RECOMMENDATION:

Planning staff recommends approval of Rezoning #20CZ04 Williams Farm PUD as shown.

PLANNING BOARD RECOMMENDATION:

Planning Board heard this at their regularly scheduled meeting on June 14, 2021. They voted unanimously to recommend approval of the rezoning as proposed 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:

The 2045 Land Use Map designates the site as Low Density Residential. The proposed rezoning to PUD-CZ as proposed is consistent with the 2045 Land Use Map designation.

The proposed rezoning is reasonable and in the public interest because it will preserve and provide environmental features, provide funding for the Affordable Housing Fund, and permit the development of housing that is compatible with that to the east and south of the site.

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-

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- 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 10% provided that the PD Plan for PUD-CZ includes one or more of the following:
- (i) A non-residential component; (ii) An overall density of 7 residential units per acre or more; or (iii) Environmental measures including but not limited to the following:
 - a. The installation of a solar photovoltaic (PV) system on a certain number or percentage of single-family or townhouse lots or on a certain number or percentage of multifamily, mixed-use, or nonresidential buildings. All required solar installation shall be completed or under construction prior to 90% of the building permits being issued for the approved number of lots or buildings. For single-family or townhouse installations, the lots on which these homes are located shall be identified on the Master Subdivision Plat, which may be amended;

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- b. The installation of a geothermal system for a certain number or percentage of units within the development; or
 - c. Energy efficiency standards that exceed minimum Building Code requirements (i.e. SEER rating for HVAC).
- 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*.

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- 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.

Legislative Considerations

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

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.
- 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.

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- 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 12, 2021

Joshua T. Reinke, PE.
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609

Subject: **Staff summary and comments for the Williams Property TIA, 03/01/2021**

Mr. Reinke:

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 subdivision development at the following intersection:

- Site Drive 1 and Green Level West Road

The following two intersections were also studied in the TIA:

- Green Level West Road and Batchelor Road
- Green Level West Road and Wimberly Road

Trip Generation

The proposed development is expected to consist of up to 170 single-family homes. It's projected to generate approximately 31 new trips entering and 95 new trips exiting the site during the weekday A.M. peak hour and 106 new trips entering and 63 new trips exiting the site during the weekday P.M. peak hour. The development is projected to add an additional 1,700 new daily trips onto the adjacent roadway network.

Background traffic

Background traffic consists of 2% annual background traffic growth compounded to build out year 2026, and the following approved developments:

- Parks at Wimberly (Wolfe Properties)
- Preserve and White Oak Creek
- Westford
- Weddington
- Lake Castleberry
- Batchelor Road Residential (17-TAR-423)

Trip Distribution and Assignment

The trip distributions to and from the development site are as follows:

- 15% to/from the south via Wimberly Road
- 15% to/from the west via Green Level West Road
- 70% to/from the east 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 3 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 2021** - Existing year 2021 traffic developed from pre-pandemic turning movement counts taken in 2019.
- **No Build 2026** – Projected year (2026) with background growth, approved development traffic from others, and committed transportation improvements by others where applicable.
- **Build 2026** – Projected year (2026) with background traffic, background improvements, and site build-out including recommended improvements where applicable.

Site Drive 1 and Green Level West Road (Unsignalized)

Table 1. A.M. / P.M. Unsignalized Peak Hour Levels of Service Site Drive 1 and Green Level West Road	
	Build 2026
<u>Overall</u>	<u>NA</u>
<i>Eastbound (Green Level West Road)</i>	NA
<i>Westbound (Green Level West Road)</i>	A / A^2
<i>Northbound (Site Drive 1)</i>	B / B^1

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

TIA recommendations:

- The TIA recommends construction of future Site Drive 1 as a two-lane road (one lane in each direction) with stop control at Green Level West Road. Additionally, the TIA recommends construction of a westbound left-turn lane with minimum of 50 feet of full-width storage and appropriate deceleration and taper length.

Apex staff recommendations:

- Apex staff concur with the recommendations. With these improvements all approaches are projected to operate at LOS B or better with minimal vehicle delays. The 50 feet long westbound left turn lane will provide enough storage capacity to meet the left turn traffic demand.

Batchelor Road and Green Level West Road

Table 2. A.M. / P.M. Unsignalized Peak Hour Levels of Service Batchelor Road and Green Level West Road			
	Existing 2021	No Build 2026	Build 2026
<u>Overall</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
<i>Eastbound (Green Level West Road)</i>	<i>A / A²</i>	<i>A / A²</i>	<i>A / A²</i>
<i>Westbound (Green Level West Road)</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
<i>Southbound (Batchelor Road)</i>	<i>A / A¹</i>	<i>B / B¹</i>	<i>B / B¹</i>

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

TIA recommendations:

- The TIA recommends no improvements at this intersection.

Apex staff recommendations:

- Apex staff concur with the recommendations. The intersection operates at LOS B or better on all approaches with minimal vehicle delays.

Wimberly Road and Green Level West Road

Table 3. A.M. / P.M. Unsignalized Peak Hour Levels of Service Wimberly Road and Green Level West Road			
	Existing 2021	No Build 2026	Build 2026
<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 / A²</i>	<i>A / A²</i>	<i>A / A²</i>
<i>Northbound (Wimberly Road)</i>	<i>A / B¹</i>	<i>B / C¹</i>	<i>B / C¹</i>

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

TIA recommendations:

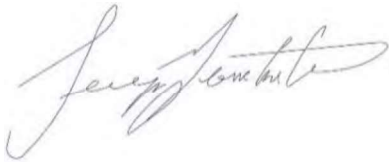
- Aside from the northbound right turn lane which has been committed by the Parks at Wimberly (Wolf Properties) development, the TIA recommends no additional improvements at this intersection.

Apex staff recommendations:

- Apex staff concur with the recommendations in the TIA. All approaches are projected to operate at LOS C or better with minimal vehicle delays. The adjacent development has committed to providing a northbound right turn lane with 50 feet of storage and appropriate deceleration and taper length per NCDOT guidance for left and right turn lanes. It's not projected that this development will generate northbound right turn traffic at this intersection. Therefore, even if the adjacent development does not move forward, the northbound approach will operate at acceptable levels of service without the right turn lane improvement.

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', written in dark ink.

Serge Grebenschikov
Traffic Engineer
919-372-7448



The Point
at Lake
Castleberry

Lake
Castleberry

CHATHAM COUNTY

Rezoning #21CZ04

1000
500
0
Feet

PLANNED UNIT DEVELOPMENT APPLICATION

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.

Application #: 2021-03
Fee Paid: \$3119.19

Submittal Date: 3-1-2021
Check #: Charge

PETITION TO AMEND THE OFFICIAL ZONING DISTRICT MAP

Project Name: Williams Farm
Address(es): 4525 Green Level West Rd
PIN(s): P/O 0713943738

Acreage: 61.919
Current Zoning: RR Proposed Zoning: PUD-CZ

Current 2045 LUM Designation: Low Density Residential

Requested 2045 LUM Designation: Low Density Residential

See next page for LUM amendment

If any portion of the project is shown as mixed use (3 or more stripes on the 2045 Land Use Map) provide the following:

Area classified as mixed use:	Acreage:	<u>N/A</u>
Area proposed as non-residential development:	Acreage:	<u>N/A</u>
Percent of mixed use area proposed as non-residential:	Percent:	<u>N/A</u>

Applicant Information

Name: Jessie Hardesty
Address: 2905 Meridian Parkway
City: Durham State: NC Zip: 27713
Phone: 919-361-5000 E-mail: hardesty@mcadamsco.com

Owner Information

Name: Eliza C Williams
Address: 4525 Green Level West Rd
City: Apex State: NC Zip: 27523
Phone: _____ E-mail: _____

Agent Information

Name: Alliance Group of NC (developer/real estate consultant)
Address: 7208 Falls of the Neuse Rd Suite 101
City: Raleigh State: NC Zip: 27615
Phone: 919-475-7314 E-mail: zumwalt@alliancegroupnc.com
Other contacts: Bob Zumwalt

CERTIFIED LIST OF NEIGHBORING PROPERTY OWNERS

Application #: _____

Submittal Date: _____

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 of owners within 300' of the subject property.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

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

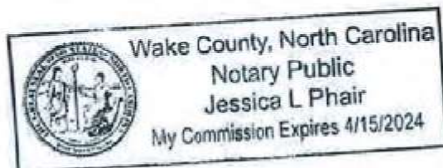
Date: 02/25/2021

By: Jessie Hardesty

COUNTY OF WAKE STATE OF NORTH CAROLINA

Sworn and subscribed before me, Jessica L Phair, a Notary Public for the above State and County, on this the 25th day of February, 2021.

SEAL



Jessica L Phair
Notary Public
Jessica L. Phair
Print Name

My Commission Expires: 4/15/24

PIN	Owner	Mail Address 1	Mail Address 2	Mail Address 3
713825716	LAKE CASTLEBERRY OWNERS ASSOCIATION INC	1100 PERIMETER PARK DR STE 112	MORRISVILLE NC 27560-9119	
713933017	MOWLANEJAD, SOPHIA ALEXANDER, JOHN LEE	414 GRAND HIGHCLERE WAY	APEX NC 27523-9609	
713933167	ASHTON RALEIGH RESIDENTIAL LLC	5711 SIX FORKS RD STE 300	RALEIGH NC 27609-3888	
713935033	LAKE CASTLEBERRY OWNERS ASSOCIATION INC	CHARLESTON MANAGEMENT CORPORATION	PO BOX 97243	RALEIGH NC 27624-7243
713935328	LAKE CASTLEBERRY OWNERS ASSOCIATION INC	1100 PERIMETER PARK DR STE 112	MORRISVILLE NC 27560-9119	
713936103	ASHTON RALEIGH RESIDENTIAL LLC	5711 SIX FORKS RD STE 300	RALEIGH NC 27609-3888	
713936189	ASHTON RALEIGH RESIDENTIAL LLC	5711 SIX FORKS RD STE 300	RALEIGH NC 27609-3888	
713937383	HARNEY, KEITH T. PENDRAK, PAMELA	395 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
713937588	NOVELLI, MARIBEL S NOVELLI, DANILO	390 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
713938460	CUMMINGS, HEATHER CUMMINGS, MICHAEL	391 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
713938663	LEE, GENE TRUSTEE BARTO, AMY E TRUSTEE	386 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
713939446	AGSTER, BRIAN AGSTER, MISCHA	387 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
713939659	HALL, JAMES F HALL, KAVITA K	382 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
713939905	LAKE CASTLEBERRY OWNERS ASSOCIATION INC	CHARLESTON MANAGEMENT CORPORATION	PO BOX 97243	RALEIGH NC 27624-7243
713943738	WILLIAMS, ELIZA C	4525 GREEN LEVEL WEST RD	APEX NC 27523-7516	
713947388	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
713947691	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
713948472	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
713948708	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
713949448	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
713949656	LAKE CASTLEBERRY OWNERS ASSOCIATION INC	CHARLESTON MANAGEMENT CORPORATION	PO BOX 97243	RALEIGH NC 27624-7243

713949804	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
713959207	JOHNSON, FREEMAN R	4501 GREEN LEVEL WEST RD	APEX NC 27523-7516	
713961359	HELTON, ROBERT D HELTON, LAURA S	1025 BATCHELOR RD	APEX NC 27523-5718	
713963564	HILLIARD, DOUGLAS R HILLIARD, DOROTHY A	1029 BATCHELOR RD	APEX NC 27523-5718	
713965333	POLKA, ESTHER POLKA, JAMES	1017 BATCHELOR RD	APEX NC 27523-5718	
723030521	SIVAKUMAR, MAHESH VEMULA, SUDHEERA	383 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
723030734	ROBBINS, JONATHAN W ROBBINS, STEPHANIE H	378 GRAND HIGHCLERE WAY	APEX NC 27523-9608	
723040524	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
723040769	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
723041509	TOLL SOUTHEAST LP COMPANY INC	250 GIBRALTAR RD	HORSHAM PA 19044-2323	
723042327	LAKE CASTLEBERRY OWNERS ASSOCIATION INC	CHARLESTON MANAGEMENT CORPORATION	PO BOX 97243	RALEIGH NC 27624-7243
723050996	LEE, GREGORY LEE, REGINA	109 TURNSTONE DR	DURHAM NC 27703-8375	
723051332	GREENWELL, LINDA P TRUSTEE TRUSTEE OF LINDA J HALE LIVING TRUST	PO BOX 250	TERRELL NC 28682-0250	
723064572	SRN PROPERTIES LLC	123 PRESTON GRANDE WAY	MORRISVILLE NC 27560-7073	
18017	WILLIAMS ELIZA C	4525 GREEN LEVEL WEST RD	APEX NC 27523-7516	
76469	RAGLAND DIANE SEARS	1576 LUTHER RD	APEX NC 27502	
18057	SEARS BILLY L & JULIA N	1578 LUTHER RD	APEX NC 27523	
76468	CUMMINGS HEATH PHILLIP	315 SEARS PLACE DR	APEX NC 27523-5753	
18039	HILLIARD DOUGLAS R ETUX DOROTHY A	1029 BATCHELOR RD	APEX NC 27523	
18040	EVANGELIST WILLIAM J	1117 BATCHELOR RD	APEX NC 27502	
	TOWN OF APEX PLANNING DEPARTMENT	PO BOX 250	APEX NC 27502	

DEVELOPMENT NAME APPROVAL APPLICATION

Application #: _____

Submittal Date: _____

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 #: _____

Submittal Date: _____

Proposed Subdivision/Development Information

Description of location: 4525 Green Level West Rd, Apex NC

Nearest intersecting roads: Green Level West Rd and Batchelor Rd

Wake County PIN(s): 0713943738

Township: White Oak

Contact Information (as appropriate)

Contact person: Bob Zumwalt

Phone number: 919-475-7314

Fax number: _____

Address: 7208 Falls of the Neuse Rd Suite 101 Raleigh, NC

E-mail address: zumwalt@alliancegroupnc.com

Owner: Eliza C Williams

Phone number: _____

Fax number: _____

Address: 4525 Green Level West Rd Apex, NC

E-mail address: _____

Proposed Subdivision/Development Name

1st Choice: Williams Farm

2nd Choice (Optional): _____

Town of Apex Staff Approval:

Town of Apex Planning Department Staff

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

Williams Property 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.

Stanley Martin Homes, 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: Stanley Martin Homes

BY: _____

Authorized Agent

DATE: 8/22/2021

TOWN OF APEX

BY: _____

Authorized Agent

DATE: _____

AGENT AUTHORIZATION FORM

Application #: _____ Submittal Date: _____

Eliza C Williams _____ 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: 4525 Green Level West Rd Apex, NC 27523

The agent for this project is: Alliance Group of NC

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

Agent Name: Jacob Anderson

Address: 7208 Falls of the Neuse Rd Suite 101 Raleigh, NC

Telephone Number: 919-239-9486

E-Mail Address: jacob@alliancegroupnc.com

Signature(s) of Owner(s)*

Eliza C. Williams
Eliza C. Williams
Type or print name

2-22-21
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, Eliza C. Williams (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 4525 Green Level West Rd 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 12-3-13, and recorded in the Wake County Register of Deeds Office on 12-3-13, in Book 14-E Page 362.
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 12-3-13, 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 12-3-13, 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 17 day of February, 2021.

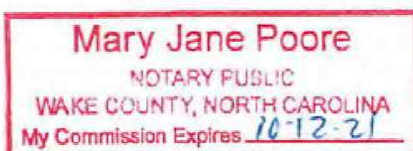
Eliza C. Williams (seal)
Eliza C. Williams

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 ELIZA C WILLIAMS, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's Drivers License, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.



[NOTARY SEAL]

Mary Jane Poore
Notary Public
State of North Carolina
My Commission Expires: 10-12-21

AFFIDAVIT OF OWNERSHIP: EXHIBIT A – LEGAL DESCRIPTION

Application #: _____

Submittal Date: _____

Insert legal description below.

WILLIAMS TRACT LEGAL DESCRIPTION

BEGINNING AT A POINT IN THE SOUTHERN RIGHT OF WAY OF GREEN LEVEL WEST ROAD (60-FOOT PUBLIC RIGHT OF WAY); THENCE SOUTH 01°32'22" WEST 672.98 FEET TO AN IRON PIPE; THENCE SOUTH 01°31'22" WEST 1361.14 FEET TO A STAKE; THENCE SOUTH 56°33'17" WEST 368.90 FEET TO AN IRON PIPE; THENCE SOUTH 88°32'13" WEST 421.25 FEET TO AN IRON PIPE; THENCE SOUTH 66°10'21" WEST 554.69 FEET TO AN IRON PIPE; THENCE NORTH 10°48'22" WEST 715.81 FEET TO A POINT IN THE COUNTY LINE BETWEEN CHATHAM AND WAKE COUNTY; THENCE SAID COUNTY LINE NORTH 15°51'13" EAST 2040.73 FEET TO A POINT IN THE SOUTHERN RIGHT OF WAY OF GREEN LEVEL WEST ROAD (60-FOOT PUBLIC RIGHT OF WAY); THENCE WITH SAID RIGHT OF WAY A CURVE TO THE RIGHT WITH AN ARC LENGTH OF 73.21 FEET, WITH A RADIUS OF 630.00 FEET, WITH A CHORD BEARING OF SOUTH 51°48'57" EAST, WITH A CHORD LENGTH OF 73.17 FEET TO A POINT; THENCE SOUTH 48°29'13" EAST 203.90 FEET TO A POINT; THENCE WITH A CURVE TO THE LEFT WITH AN ARC LENGTH OF 272.48 FEET, WITH A RADIUS OF 320.00 FEET, WITH A CHORD BEARING OF SOUTH 72°52'50" EAST, WITH A CHORD LENGTH OF 264.32 FEET TO A POINT; THENCE NORTH 82°43'32" EAST 98.78 FEET TO A POINT; THENCE NORTH 80°33'13" EAST 310.74 FEET TO THE POINT AND PLACE OF BEGINNING CONTAINING 2,697,206 SQUARE FEET, 61.919 ACRES.



Wake County Residential Development Notification

Developer Company Information

Company Name	Stanley Martin Homes
Company Phone Number	919-977-8760
Developer Representative Name	Brian Ketchem
Developer Representative Phone Number	919-724-0624
Developer Representative Email	KetchemBK@stanleymartin.com

New Residential Subdivision Information

Date of Application for Subdivision	August 2021
City, Town or Wake County Jurisdiction	Apex
Name of Subdivision	Williams Property PUD
Address of Subdivision (if unknown enter nearest cross streets)	Green Level West Rd and Batchelor Rd.
REID(s)	0077518
PIN(s)	0713943738

Please complete each section of this form and submit with your application.

Town of Apex staff will enter this information into the online WCPSS form.

Please send any questions about this form to:
studentassignment-gis-group@wcpss.net

Projected Dates Information

Subdivision Completion Date	January 2022
Subdivision Projected First Occupancy Date	November 2023

Lot by Lot Development Information

Unit Type	Total # of Units	Senior Living	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom	Square Foot Range		Price Range		Anticipated Completion Units & Dates					
								Min	Max	Low	High	Year	# Units	Year	# Units	Year	# Units
Single Family	166						166	2,800	3,500	\$550K	\$750K	2023	50	2024	58	2025	58
Townhomes	10					10		1,800	2,400	\$250K	\$320K	2023	0	2024	10	2025	
Condos																	
Apartments																	
Other																	

NOTICE OF ELECTRONIC 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.

January 27, 2021

Date

Dear Neighbor:

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

4525 GREEN LEVEL WEST RD

0713943738

Address(es)

PIN(s)

in accordance with the Town of Apex Electronic 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. If you are unable to attend, you may contact the applicant before or after the meeting is held. 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. If at all feasible given emergency declarations, limits on in-person gatherings, and social distancing, an additional in-person Neighborhood Meeting may be scheduled and held prior to a public hearing or staff decision on the application.

An Electronic 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) PUD-CZ	Town Council
<input type="checkbox"/>	Major Site Plan	Town Council (QJPH*)
<input type="checkbox"/>	Special Use Permit	Town Council (QJPH*)
<input 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)):

The attached maps and plan illustrate the proposal for a rezoning located on Green Level West Road for a new residential development. The proposed project area is about 62 acres, and is located on the border of Wake County and Chatham County.

Estimated submittal date: March 1, 2021

MEETING INFORMATION:

Property Owner(s) name(s): Eliza C Williams

Applicant(s): McAdams

Contact information (email/phone): hardesty@mcadamsco.com / 540-958-9098

Electronic Meeting invitation/call in info: Please see attached sheet for Zoom meeting information

Date of meeting**: February 11, 2021

Time of meeting**: 6:00 pm - 8:00 pm

MEETING AGENDA TIMES:

Welcome: 6:00-6:05

Project Presentation: 6:05-6:20

Question & Answer: 6:20-8:00

**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: Williams Property Zoning: PUD-CZ

Location: 4525 Green Level West Rd

Property PIN(s): 0713943738 Acreage/Square Feet: Total: 73.10 Project Area: 61.83

Property Owner: Eliza C Williams

Address: 4525 Green Level West Rd

City: Apex State: NC Zip: 27523

Phone: _____ Email: _____

Developer: Alliance Group of NC

Address: 7208 Falls of the Neuse Rd Suite 101

City: Raleigh State: NC Zip: 27615

Phone: 919-475-7314 Fax: _____ Email: zumwalt@alliancegroupnc.com

Engineer: McAdams

Address: 2905 Meridian Parkway

City: Durham State: NC Zip: 27713

Phone: 919-624-3672 Fax: _____ Email: jfinch@mcadamsc.com

Builder (if known): _____

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 Jessica Bolin, Senior Engineer (Stormwater, Sedimentation & Erosion Control) Stan Fortier, Senior Engineer (Stormwater, Sedimentation & Erosion Control) James Gregg, Utility Engineer (Water & Sewer)	(919) 249-3537 (919) 249-1166 (919) 249-3324
Electric Utilities Division Rodney Smith, Electric Technical Services Manager	(919) 249-3342

Providing Input to Town Council:

Each Town Council meeting agenda includes a Public Forum time when anyone is permitted to speak for three (3) minutes on any topic with the exception of items listed as Public Hearings for that meeting. The Town Council meets on the 1st and 3rd Tuesdays of each month at 6:00 p.m. (except for holidays, see schedule of meetings at <http://www.apexnc.org/838/Agendas-Minutes>). You may also contact Town Council by e-mail at AllCouncil@apexnc.org.

Private Agreements and Easement Negotiation:

The Town of Apex cannot enforce private agreements between developers and neighbors and is not a party to the easement and right-of-way negotiation that occurs between developers and neighboring property owners for easements or rights-of-way that are necessary to build the project.

It is recommended that all private agreements be made in writing and that if a property owner feels it necessary, they should obtain private legal counsel in order to protect their interests in both private agreements and during easement negotiations. The only conditions that the Town of Apex can enforce are those conditions that are made a part of the conditional zoning of the property by agreement of the developer and the Town.

As an example, if a developer offers to build a fence for a neighbor to mitigate some impact, the Town can only enforce the construction of the fence if the fence becomes a condition of the rezoning. This would occur by the developer offering the condition as part of their conditional zoning application package or at the Town Council public hearing on the conditional zoning and the Town accepting it as a condition. Private agreements regarding a fence being constructed will not be enforced by the Town.

To request that any agreement with a developer is made a part of the conditional zoning at the time of approval, you may ask at the Town Council public hearing if the agreement is included in the conditions. If it is not, you may request that the Town Council not approve the rezoning without the agreement being included in the conditions (note that it is up to Town Council whether to approve or deny the rezoning but they cannot impose conditions that the applicant does not agree to add). The developer's proposed conditions can be viewed any time after a rezoning is submitted on the Interactive Development Map at: <http://apexnc.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=fa9ba2017b784030b15ef4da27d9e795>

Documentation:

Neighbors to a requested new development and/or rezoning are strongly encouraged to fully document (such as through dated photographs) the condition of their property before any work is initiated for the new development. Stormwater controls installed on developed property are not designed to and will likely not remove 100% of the soil particles transported by stormwater runoff. As a result, creeks and ponds could become cloudy for a period of time after rain events.

COMMON CONSTRUCTION ISSUES & WHO TO CALL

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.

Noise & Hours of Construction:	Non-Emergency Police	919-362-8661
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Noise from tree removal, grading, excavating, paving, and building structures is a routine part of the construction process. The Town generally limits construction hours from 7:00 a.m. to 8:30 p.m. so that there are quiet times even during the construction process. Note that construction outside of these hours is allowed with special permission from the Town when it makes more sense to have the construction occur at night, often to avoid traffic issues. In addition, the Town limits hours of blasting rock to Monday through Friday from 8:00 a.m. to 5:00 p.m. Report violations of construction hours and other noise complaints to the Non-Emergency Police phone number at 919-362-8661.

Construction Traffic:	James Misciagno	919-372-7470
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Construction truck traffic will be heavy throughout the development process, including but not limited to removal of trees from site, loads of dirt coming in and/or out of the site, construction materials such as brick and wood brought to the site, asphalt and concrete trucks come in to pave, etc. The Town requires a construction entrance that is graveled to try to prevent as much dirt from leaving the site as possible. If dirt does get into the road, the Town can require they clean the street (see "Dirt in the Road" below).

Road Damage & Traffic Control:	Water Resources – Infrastructure Inspections	919-362-8166
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There can be issues with roadway damage, roadway improvements, and traffic control. Potholes, rutting, inadequate lanes/signing/stripping, poor traffic control, blocked sidewalks/paths are all common issues that should be reported to Water Resources – Infrastructure Inspections at 919-249-3427. The Town will get NCDOT involved if needed.

Parking Violations:	Non-Emergency Police	919-362-8661
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Unless a neighbor gives permission, there should be no construction parking in neighbors' driveways or on their property. Note that parking in the right-of-way is allowed, but Town regulations prohibit parking within 15 feet of driveways so as not to block sight triangles. Trespassing and parking complaints should be reported to the Non-Emergency Police phone number at 919-362-8661.

Dirt in the Road:	James Misciagno	919-372-7470
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Sediment (dirt) and mud gets into the existing roads due to rain events and/or vehicle traffic. These incidents should be reported to James Misciagno. He will coordinate the cleaning of the roadways with the developer.

Dirt on Properties or in Streams:	James Misciagno Danny Smith	919-372-7470 Danny.Smith@ncdenr.gov
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Sediment (dirt) can leave the site and get onto adjacent properties or into streams and stream buffers; it is typically transported off-site by rain events. These incidents should be reported to James Misciagno at 919-372-7470 so that he can coordinate the appropriate repairs with the developer. Impacts to the streams and stream buffers should also be reported to Danny Smith (danny.smith@ncdenr.gov) with the State.

Dust:	James Misciagno	919-372-7470
--------------	------------------------	---------------------

During dry weather dust often becomes a problem blowing into existing neighborhoods or roadways. These incidents should be reported to James Misciagno at 919-372-7470 so that he can coordinate the use of water trucks onsite with the grading contractor to help control the dust.

Trash:	James Misciagno	919-372-7470
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Excessive garbage and construction debris can blow around on a site or even off of the site. These incidents should be reported to James Misciagno at 919-372-7470. He will coordinate the cleanup and trash collection with the developer/home builder.

Temporary Sediment Basins:	James Misciagno	919-372-7470
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Temporary sediment basins during construction (prior to the conversion to the final stormwater pond) are often quite unattractive. Concerns should be reported to James Misciagno at 919-372-7470 so that he can coordinate the cleaning and/or mowing of the slopes and bottom of the pond with the developer.

Stormwater Control Measures:	Jessica Bolin	919-249-3537
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Post-construction concerns related to Stormwater Control Measures (typically a stormwater pond) such as conversion and long-term maintenance should be reported to Mike Deaton at 919-249-3413.

Electric Utility Installation:	Rodney Smith	919-249-3342
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Concerns with electric utility installation can be addressed by the Apex Electric Utilities Department. Contact Rodney Smith at 919-249-3342.



NEIGHBORHOOD MEETING NOTICE

January 27, 2021

RE: Virtual Neighborhood Meeting – Zoom Instructions

Dear Property Owner,

Due to the current circumstances of COVID-19, we will be hosting a virtual neighborhood meeting via Zoom Webinar. The meeting will be held on February 11th and begin at 6:00 PM Eastern Time.

- > To attend the meeting via computer, type in the following link in your internet browser:
<https://mcadamsco.zoom.us/j/94170532762?pwd=cGZjUktWS3lZT0pGNXp6Vi81enFmZz09>

Passcode: **415490**

- > To attend the meeting via phone, you may dial in by your location:
US: +1 646 876 9923 or
+1 301 715 8592 or
877 853 5247 (Toll Free)

When prompted, enter the Meeting ID: **941 7053 2762**

Sincerely,

MCADAMS



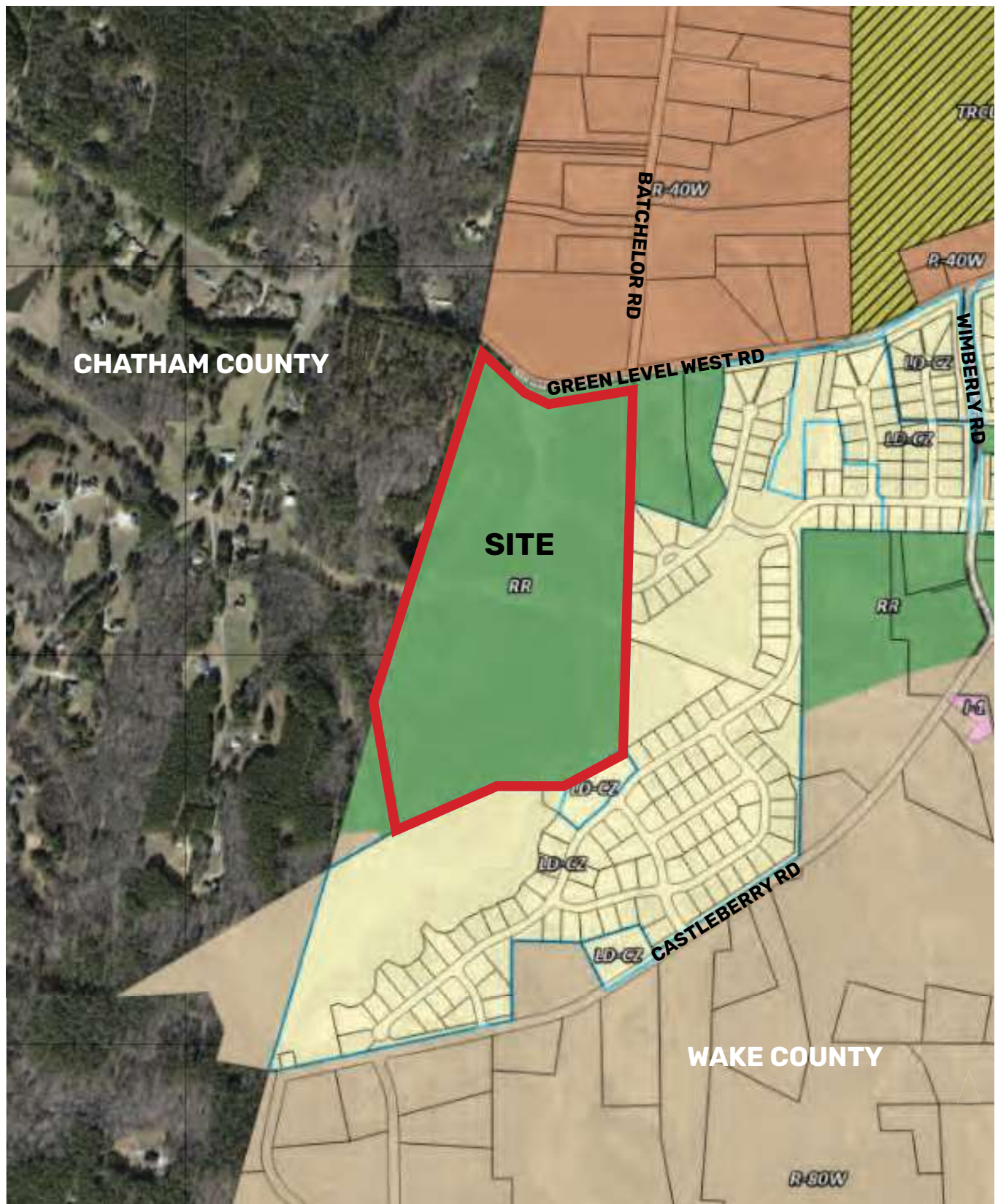
**WILLIAMS PROPERTY
REZONING**

**4525 GREEN LEVEL
WEST RD
APEX, NC**

VICINITY MAP

FEB 2021





**WILLIAMS PROPERTY
REZONING**

**4525 GREEN LEVEL
WEST RD
APEX, NC**

**EXISTING
ZONING MAP**

FEB 2021



WILLIAMS PROPERTY

SITE DATA TABLE

Total Site Area	+/- 61.83 acres
Advance Apex 2045 Land Use Designation	Low Density Residential
*Low Density Residential is intended to provide for single-family residential development or single-family residential development with a mix of duplexes and/or townhomes on lots smaller than those in the rural residential areas. Densities shall not exceed 3 units per acre.	
Low Density Residential Maximum Density	3 units/acre
Proposed Maximum Density	2.85 units/acre (176 units)
Required Resource Conservation Area	30% of total site area

LEGEND

- REALIGNED ROADWAY
- ACCESS ARROW
- TRAILS
- CHAMPION TREES

CHAMPION TREES AND STACKED STONE WALL

FLATTEN CURVE ALIGNMENT OF GREEN LEVEL WEST ROAD

EXISTING LAKE

CHATHAM COUNTY WAKE COUNTY

EASTERN PROPERTY LINE: 20' TYPE 'B' BUFFER

DEVIN CREST CT

HAWTHORNE WOODS RD

WALKING TRAILS

GRAND HIGHCLERE WAY

LAKE CASTLEBERRY DR
BELLAMY RIDGE DR

LAKE CASTLEBERRY

ELECTRONIC NEIGHBORHOOD MEETING ATTENDANCE 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 Format: Zoom

Date of meeting: February 11, 2021 Time of meeting: 6:00pm-8:00pm

Property Owner(s) name(s): Eliza C. Williams

Applicant(s): McAdams & Alliance Group of NC

Please list Electronic Neighborhood Meeting Attendees who provided their name and/or contact information either during the meeting or via phone/email before or after the meeting.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	Rehab Hamad				
2.	Stephanie Hedrick				
3.	Maribel Novelli	390 Grand Highclere Way, Apex 27523			
4.	Billy L. Sears	225 Sears Place Drive			
5.	Pam Pendrak & Keith Harney	395 Grand Highclere Way			
6.	Sumanth Kota & Ramya Kota	3212 Devon Crest CT, Apex, NC 27523			
7.	Warren A Sears	305 Averroe Drive			
8.	Joni and David Klem	316 Grand Highclere Way, Apex,			
9.	Shirley and Scott Diefenbach				
10.	John Hamilton	434 Grand Highclere Way, Apex			
11.	Zoe Stamataros	221 Glenvale Street, Lake Castleberry			
12.	Elsie and Joe Florio				
13.	Ed Paiewonsky	3260 Bellamy Ridge Drive			
14.	Vasanth Baliga				

Use additional sheets, if necessary.

ELECTRONIC NEIGHBORHOOD MEETING ATTENDANCE 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 Format: Zoom

Date of meeting: February 11, 2021 Time of meeting: 6:00pm-8:00pm

Property Owner(s) name(s): Eliza C. Williams

Applicant(s): McAdams & Alliance Group of NC

Please list Electronic Neighborhood Meeting Attendees who provided their name and/or contact information either during the meeting or via phone/email before or after the meeting.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	Kenneth and Dianne Ragland	186 Sears Place Drive Apex Nc			
2.	Jamie Hinckley	363 Grand Highclere Way			
3.	Gene Lee & Amy Barto	386 Grand Highclere Way			
4.	Meena and Vasanth Baliga	3200 Devon Crest Ct			
5.	Deepak Dhar	214 Glenvale St, Apex NC 27523			
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					

Use additional sheets, if necessary.

SUMMARY OF DISCUSSION FROM THE ELECTRONIC 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): Eliza Williams

Applicant(s): McAdams

Contact information (email/phone): hardesty@mcadamsco.com / 540-958-9098

Meeting Format: Zoom

Date of meeting: 02/11/2021 Time of meeting: 6:00pm-8:00pm

Please summarize the questions/comments and your response from the Electronic 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:

Will this community connect to Hawthorne Woods Rd?

Applicant's Response:

Yes, this connection will be required by the Town of Apex.

Question/Concern #2:

Can you further explain the purple areas on the eastern side?

Applicant's Response:

We are required to collect all water and detain and treat it. Those areas are conceptual stormwater collection areas.
They will look like wetland areas with plants.

Question/Concern #3:

Will anything be done to decrease traffic?

Applicant's Response:

Our traffic engineer is currently preparing a traffic study and if there are issues that arise, those will be commitments in our application.

Question/Concern #4:

Will the neighborhood have a pool or other amenities?

Applicant's Response:

There won't be a pool or clubhouse like Castleberry. Our amenities would look more like small pocket parks throughout the development with things like a gazebo, picnic shelter, law areas, etc.

Question/Concern #5: How many single family units will there be?

Applicant Response: We will have a maximum of 176 units total.

Question/Concern #6: How much of a buffer will there be on the eastern side by Devon Crest Ct?

A: There will be at least a 20' buffer or more on the eastern property line.

Question/Concern #7: How will you prevent drainage from going into Lake Castleberry?

Applicant Response: Ultimately the water will drain to this lake, but it will be treated. (gave details of how)

Question/Concern #8: Is it possible to ensure that townhomes won't be close to Lake Castleberry?

Applicant Response: If there are any townhomes, we will make sure there are conditions so they are not close to the lake and adjacent neighborhood. We appreciate that feedback and we imagine if there are townhomes they would be closer to Green Level West Rd.

Question/Concern #9: What kind of tree screens will there be? Will we see homes in the new development?

Applicant Response: We will have a Type B buffer that requires a certain mix of trees and shrubs. The vast majority of the interface between the two neighborhoods will have about 200 feet of preserved wetland buffer so there won't be many areas where you can see the neighborhood.

Question/Concern #10: Is the Castleberry Lake considered to be a part of this property?

Applicant Response: There is a very small piece of the lake that crosses the property line. We might have a trail that goes to this area, but we aren't proposing new trails to go all the way around the lake outside of our property.

Question/Concern #11: What will the stormwater treatment areas look like?

Applicant Response: These will likely look similar to the wet ponds that exist in Lake Castleberry neighborhood with vegetation/plantings around the perimeter.

Question/Concern #12: Do you have plans from the creek sections? We have trees that are falling because their roots are wet from extra water from houses.

Applicant Response: We are not allowed to disturb anything in the creeks and the buffer areas remain untouched unless we have to remove a tree because it is sick/unhealthy.

Question/Concern #13: There is a big concern about traffic with the future neighborhood cutting through Lake Castleberry to get to Wimberly.

Applicant Response: We imagine it will actually be easier for residents in the new neighborhood to drive straight out to Green Level West. The traffic study will also take note of things like this and we will note your concern.

Question/Concern #14: What additional buffers will be provided by Lake Castleberry?

Applicant Response: There will already be 200+ feet of buffers, so nothing in addition to that.

Question/Concern #15: What will be across from the lake?

Applicant Response: We won't touch buffer areas across from the lake, and any homes that are across from the lake will be single family.

Question/Concern #16: How many single family versus townhomes?

Applicant Response: It is too early to tell, but we wouldn't have more than 20-25 townhomes if we have any. This is part of why we are here tonight is to hear your feedback on that.

Question/Concern #17: Are there any similar neighborhoods to this development that are in the area?

Applicant Response: None exactly like this from Stanley Martin. Yates Mill and Buffalo Trace is probably not too far off as far as product.

Question/Concern #18: We would prefer just single family homes instead of townhomes.

Applicant Response: Thanks for your feedback.

Question/Concern #19: Concern about removing trees near Devin Crest Ct – is there anything else that can be done?

Applicant Response: Maybe we can walk the property line with you so we can come up with creative solutions and work on it together. It is a little early for us to understand what would be stormwater related behind your home. We are happy to work with you and talk through it.

Question/Concern #20: Are there any buffers on the western side of the property?

Applicant Response: We will probably be providing buffers similar to the eastern side of the property. It is the same owner as our property.

Question/Concern #21: Our property is lower than your property next door. Concerned about erosion and water.

Applicant Response: There will be significant natural area between new homes and your property. We can coordinate with you more to as the design develops to communicate everything.

Question/Concern #22: What is build out time?

Applicant Response: Development wouldn't happen for at least another two years.

Question/Concern #23: Will you be purchasing the property to the west.

Applicant Response: No plans to pursue the property at this time. Being in Chatham County provides some complications.

Question/Concern #24: I noticed surveyors using the Lake Castleberry parking lot next to my property. Will this be happening in the future?

Applicant Response: Our surveyors used this parking lot to access the southern property line, but their work has been completed. We can give notice if for some reason they need to come back out to the property. The only other thing you might see on site is that there are soil borings in the next couple of weeks.

Question/Concern #25: Why are you are connecting to Hawthorne Woods Rd?

Applicant Response: Apex has connection and access point requirements, and we are required to make this connection. We will also have traffic calming throughout the development.

Question/Concern #26: Who is the builder?

Applicant Response: Stanley Martin Homes.

Question/Concern #27: What is the first red arrow above Hawthorne Woods Road?

Applicant Response: This is a road stub. The adjacent property could develop in the future and would connect to our property through that stub.

Question/Concern #28: What is the pricing range on homes going in here?

Applicant Response: We really aren't sure yet, it will depend on the market. They will be nice homes.

Question/Concern #29: Will this neighborhood be zoned for White Oak Elementary and Mills Park Middle?

Applicant Response: Yes, it is.

Question/Concern #30: Will there be a follow up call in the future?

Applicant Response: We definitely want to meet up with Shirley and Sumanth at the site to walk through some things and then have a follow up meeting to begin to paint the picture more for everyone in 3 to 4 weeks.

At approximately 7:05pm there were no more questions. The zoom meeting stayed open until 8:00pm in case anyone joined in late, but there were no more attendees.

WILLIAMS PROPERTY

SITE DATA TABLE

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- ACCESS ARROW
- TRAILS
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CHAMPION TREES AND STACKED STONE WALL

FLATTEN CURVE ALIGNMENT OF GREEN LEVEL WEST ROAD

EXISTING LAKE

CHATHAM COUNTY WAKE COUNTY

EASTERN PROPERTY LINE: 20' TYPE 'B' BUFFER

DEVIN CREST CT

HAWTHORNE WOODS RD

WALKING TRAILS

GRAND HIGHCLERE WAY

LAKE CASTLEBERRY DR
BELLAMY RIDGE DR

LAKE CASTLEBERRY

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, Jessie Hardesty, 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 Zoom Webinar (location/address)
on February 11, 2021 (date) from 6:00pm (start time) to 8:00pm (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.

02/25/2021

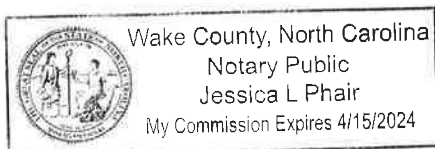
Date

By: Jessie Hardesty

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Jessica L Phair, a Notary Public for the above State and County, on this the 25th day of February, 20 21.

SEAL



Jessica L. Phair
Notary Public
Jessica L. Phair
Print Name

My Commission Expires: 4/15/24



WILLIAMS FARM PLANNED UNIT DEVELOPMENT

4525 GREEN LEVEL WEST RD
APEX, NORTH CAROLINA | PD PLAN



WILLIAMS FARM

Planned Unit Development **Prepared for The Town of Apex, North Carolina**

Submittal Dates

First Submittal:	March 1, 2021
Second Submittal:	April 9, 2021
Third Submittal:	May 15, 2021
Fourth Submittal:	May 27, 2021
Fifth Submittal:	June 14, 2021

Real Estate Consultant

Alliance Group of NC
7208 Falls of Neuse Rd Suite 101
Raleigh NC 27615

Builder

Stanley Martin Homes
4020 Westchase Blvd, Suite 470,
Raleigh, NC 27607

Planner, Engineer, Landscape Architect, Surveyor

McAdams
2905 Meridian Parkway
Durham NC 27113

Environmental Consultant

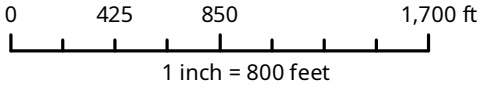
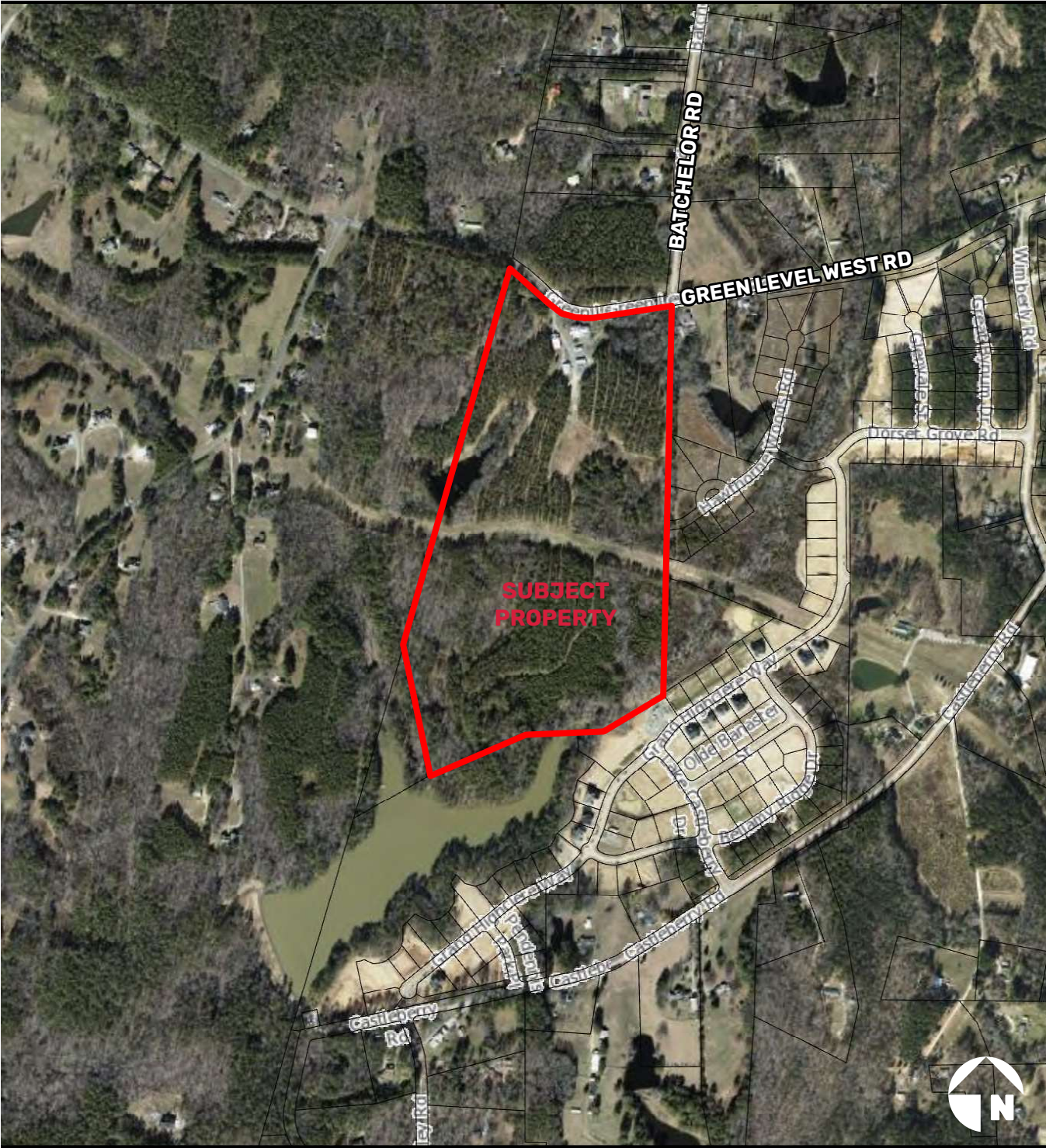
S&EC
8412 Falls of Neuse Road, Suite 104
Raleigh, NC 27615



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8. PARKING AND LOADING
9. SIGNAGE
10. LANDSCAPING
11. NATURAL RESOURCE AND ENVIRONMENTAL DATA
12. STORMWATER MANAGEMENT
13. PARKS AND RECREATION
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17. CONSISTENCY WITH LAND USE PLAN
18. COMPLIANCE WITH UDO
19. TRANSPORTATION IMPROVEMENTS

VICINITY MAP



PROJECT DATA

Name of Project:	Williams Farm
Applicant/Real Estate Consultant:	Alliance Group of NC 7208 Falls of Neuse Rd Suite 101 Raleigh NC 27615 919-475-7314
Prepared By:	McAdams 2905 Meridian Parkway Durham, NC 27713 919-361-5000
Current Zoning Designation:	RR
Proposed Zoning Designation:	PUD-CZ
Current 2045 Land Use Map Designation:	Low Density Residential
Proposed 2045 Land Use Map Designation:	Low Density Residential
Size of Project:	Approximately 61.919 acres (Acreage may vary based on final alignment of Green Level West Road)
Property Identification Number:	P/O 0713943738

PURPOSE STATEMENT

The Williams Farm PUD will be a residential development consisting of single family homes. The proposed development will set aside required resource conservation areas throughout the 61.919-acre property. Williams Farm's concept is consistent with the Town's stated PUD goal to provide site specific, high quality neighborhoods that exhibit natural feature preservation as well as compatibility with, and connectivity to, surrounding land uses. This development will comply with the PUD Development Parameters outlined in §2.3.4.F.1.a.i-vii of the Town of Apex Unified Development Ordinance. The Williams Farm PUD is in accordance with the Development Parameters as follows:

- *The uses to be developed in the PD Plan for the PUD-CZ are those uses permitted in Section 4.2.2, Use Table.*
 - » The uses permitted within the Williams Farm PUD are permitted per §4.2.2 of the Town of Apex UDO.
- *The uses proposed in the PD Plan for the PUD-CZ can be entirely residential, entirely non-residential, or a mix of residential and non-residential uses, provided a minimum percentage of the 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 on 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.*
 - » Williams Farm is an entirely residential development including a maximum of 176 units.
- *The dimensional standards in §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.*
 - » The proposed dimensional standards are in compliance with the Town of Apex UDO. Development of the parcel will be in compliance with all other requirements of the UDO, North Carolina Building Code, and North Carolina Fire Code.
- *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 Details, and greenway improvements as required by the Town of Apex Parks, Recreation, 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.*
 - » Public sidewalks will be constructed along the both sides of all streets as well as along the entire frontage of Green Level West Road, per Town of Apex UDO standards. To encourage a healthy lifestyle and establish a walkable community, pedestrian greenways will also be incorporated throughout the development connecting residential areas to open space amenities located throughout the development. In addition, the site is located within a half mile of the American Tobacco Trail which may be accessed via public sidewalk connections through the Lake Castleberry neighborhood and ultimately along Green Level West Road.

- *The design of development in the PD Plan for the PUD-CZ results in land use patterns that promote and expand opportunities for walkability, connectivity, public transportation, and an efficient network of streets. Cul-de-sacs shall be avoided unless the design of the subdivision and the existing proposed or proposed street system in the surrounding area indicated that a through street is not essential in the location of the proposed cul-de-sacs, or where sensitive environmental features such as streams, floodplains, or wetlands would be substantially disturbed by making road connections.*
 - » Williams Farm will create a walkable residential community connected by sidewalks, tree-lined streets, and greenways. Cul-de-sacs will be avoided to enhance the connectivity of the development.
- *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.*
 - » Williams Farm PUD-CZ is consistent with The Town of Apex's Future Land Use Map and compatible with the surrounding land uses. The parcel is designated as Low Density Residential on the 2045 Land Use Map as are the surrounding properties. Current zoning surrounding the development includes Apex RR and LD-CZ on the eastern side, Wake County R-40W on the northern side, and Chatham County R-1 zoning on the western side of the property. It is important to note that the western boundary of the proposed PUD coincides with the Chatham County line. In addition, land located immediately north is within the Town of Cary's ETJ.
- *The development proposed in the PD Plan for the PUD-CZ has architectural and design standards that are exceptional and provide a 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.*
 - » All single-family homes will be of a higher quality construction than the typical residential development. Architectural controls and sample elevations illustrating the high-quality appearance of single-family homes are included with the PUD-CZ application.

All site-specific standards and conditions of this PD Plan shall be consistent with all Conditional Zoning (CZ) District standards set forth in the UDO Section 2.3.3, Conditional Zoning Districts. The proposed PUD will provide a development density consistent with the 2045 Land Use Plan designation of Low Density Residential. The Advance Apex Plan describes Low Density Residential as "intended to provide for single-family residential development or single-family residential development with a mix of duplexes and/or townhomes on lots smaller than those in the rural residential areas...Densities shall not exceed 3 units per acre." The proposed density of this development is 2.89 units per acre.

The proposed development aims to incorporate the history of the site into the design, preserving notable elements such as the stacked stone walls along Green Level West Rd, the champion trees at the entry to the neighborhood, and the old farm pond on the western boundary. The site will dedicate at least 30% of the land for resource conservation areas with an emphasis on protecting the wetlands located heavily on the eastern property boundary. The site is divided by an existing gas easement, but walking trails will wind through the development connecting residential areas, open space, pocket parks, and forested land throughout.

PERMITTED 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.

Permitted uses include:

Residential
Single-Family
Accessory apartment*
Utilities
Utility, minor
Recreational Uses
Greenway
Park, Active
Park, Passive
Recreation Facility, private

* Homeowner Association covenants shall not restrict the construction of accessory dwelling units.

AFFORDABLE HOUSING

The project is committed to helping the Town of Apex advance their Affordable Housing Plan to welcome and attract a diverse population with moderate to low incomes and of different age groups. As such, the developer will contribute \$284.10 per lot to the Apex Affordable Housing Fund, to be paid at plat. Based on 176 lots, the total fee should be \$50,000.

DESIGN CONTROLS

Total Project Area:

61.919 acres

Overall Density Limitations (across 61.919-acre site):

2.89 units per acre

- Maximum number of units (single-family homes):

176

Residential Design Controls

Single-Family

- Minimum Lot Size: 5,000 square feet
- Minimum Lot Width: 40 feet
- Minimum Lot Depth: 100 feet
- Maximum Building Height: 45 feet
- Building Setbacks
 - » Front: 20 feet to garage; 8 feet to building façade
 - » Side: 5 feet
 - » Rear: 20 feet
 - » Alley: 5 feet
 - » Corner: 8 feet

ARCHITECTURAL STANDARDS

The proposed development offers the following architectural controls to ensure a consistency of character throughout the development, while allowing for enough variety to create interest and avoid monotony. Elevations included are limited examples of multiple options available. Changes to the exterior materials, roof, windows, doors, process, trim, etc. are allowable with administrative approval at the staff level. Further details shall be provided at the time of Residential Master Subdivision Plan or Site Plan submittal.

Residential areas envisioned for the Williams PUD will be comprised of single-family homes. In order to create rich architectural character along the streetscapes, the project will offer a variety of distinct residential elevations – see examples at the end of this document. These elevations will incorporate a natural material selection and earth tone color palette with wood, brick or stone accents, which will help to add diversity to the streetscape.

While each of the architectural offerings proposed will have their own identity, several common threads will create consistency within the Williams PUD including color palettes, materials, roofing, and decorative garage doors. Elevations have been included below in an effort to represent the bulk, massing, scale and architectural style of the development.

Additional features used as focal points or key terminus points shall be located within or around the development (i.e. open spaces, gazebos, stacked stone walls, and public art) in order to meet the Community Amenities requirement of the UDO. Other features not mentioned may be considered with administrative staff approval.

Residential Design Guidelines (all product types):

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. Front-facing garage doors shall have windows, decorative details or carriage-style adornments on them.
3. The garage cannot protrude more than 1 foot out from the front façade or front porch, measured from roof of porch.
4. On single-family homes, the roof shall be pitched at 5:12 or greater (not to include porches, bay windows, etc.).
5. House entrances for units with front-facing single-car garages must have a covered porch/stoop area leading to the front door.
6. Rear and side elevations of units that have right-of-way frontage shall have trim around the windows.
7. Four of the following decorative elements shall be used on each building: decorative shake, board and batten siding, decorative porch rails and posts, shutters, decorative functional foundation and roof vents, recessed windows, decorative windows, decorative brick or stone, decorative gables, decorative cornices, or metal roofing.
8. A varied color palette shall be utilized on single family homes throughout the subdivision and shall include siding, trim, shutter, and accent colors complementing the siding colors.
9. Solar conduit will be provided on all single-family homes to accommodate the future installation of solar panels.

Proposed Residential Materials and Styles

Proposed materials and styles will be of a similar palette to provide consistency of character along with visual interest. Exterior materials that may be incorporated into any of the residential building products include:

- Cementitious lap siding
- Board and batten siding
- Shake and shingle siding
- Wood siding
- Stone or synthetic stone
- Brick

Vinyl siding is not permitted on the exterior of any single-family homes within the project.

Additional building materials may be included with administrative staff approval. Substitute materials shall be allowed by staff as long as they are determined by the Planning Director to be substantially similar.

PARKING AND LOADING

All parking for this PUD will comply with Section 8.3 Off-Street Parking and Loading, of the Town of Apex UDO.

SIGNAGE

All signage for this PUD shall comply with Section 8.7, *Signs*, of the Town of Apex UDO.

LANDSCAPING

Minimum perimeter and streetscape landscape buffers are as follows (see PUD Plan Sheet C2.00 for details):

- 30-ft Type B streetscape buffer along Green Level West Rd
- 10-ft Type B perimeter buffer along western and southwestern property boundary
- 20-ft Type B perimeter buffer along southern property boundary
- 20-ft to 40-ft Type B perimeter buffer along eastern property boundary

The project will increase biodiversity in perimeter buffers and open space areas by providing a variety of species for the canopy, understory, and shrub levels. Native and adaptive plant species shall be provided within these areas to minimize death from disease and to provide increased habitat and food sources for insects and animals. A minimum of 70% of the species provided shall be native or a nativar of North Carolina. No invasive species shall be permitted. No single species of tree or shrub shall constitute more than 20% of the plant material of its type installed on a single development site.

NATURAL RESOURCES AND ENVIRONMENTAL DATA

River Basins and Watershed Protection Overlay Districts

This project is located within the Cape Fear River Basin. This project site is located within the Primary Watershed Protection Overlay District as shown on the Town of Apex Watershed Protection Map. Accordingly, this PUD will comply with all built upon area, vegetated conveyances, structural SCMs and riparian stream buffer requirements of Section 6.1.7.

Resource Conservation Areas (RCA) - Required and Provided

This PUD will be subject to, and meet the requirements of, Section 8.1.2 of the UDO, *Resource Conservation Area* and Section 2.3.4, *Planned Development Districts*.

The PUD will provide a minimum of 30% of the gross project area as a Resource Conservation Area (RCA). Designated RCA areas will be consistent with the items listed in Section 8.1.2(B) of the Town's UDO. Preserved streams, wetlands, and associated riparian buffers provide the primary RCAs throughout the site. Additional RCA areas may include perimeter and streetfront buffers, stormwater management areas (as permitted by the UDO), and greenway.

The project will protect and preserve at least three of the champion trees located along Green Level West Road (subject to health evaluation and frontage roadway design requirements).

The existing farm pond shall be preserved, pending an evaluation of the dam. The dam is not located on this property, so the developer will work with the owner to evaluate it.

Educational signage shall be installed relating to wetlands or other on-site environmental features.

Floodplain

The project site does not sit within a designated current or future 100-year floodplain as shown on the Town of Apex FEMA map and FIRM Panel 3720071300K, dated February 2, 2007.

Tree Canopy

Tree canopy areas on the Williams Farm are primarily concentrated around the wetland areas, stream features, perimeter buffers and champion trees which are to be preserved RCA area.

Where trees cannot be preserved, as part of the implementation of this community, the project will re-establish a new tree canopy with vegetated perimeter buffers, pocket parks, community gathering spaces and other open space areas.

Historic Structures

As confirmed by the North Carolina State Historic Preservation Office, there are no historic structures present within the project boundary. The JM Williams farmhouse was a Study List Entry in 2016, however, the home burned down on May 22, 2019.

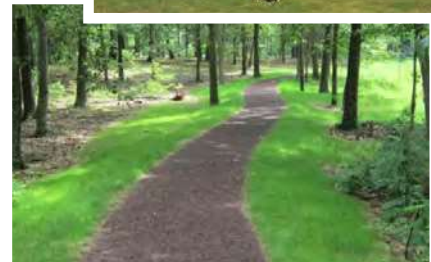
While the farmhouse no longer exists, a number of significant champion trees as well as an iconic stacked stone wall remain as important historical remnants of the past. Pending evaluation of health and safety of the trees, both the trees and stacked stone walls will be preserved and incorporated into the landscape design of the community.

The project will preserve a minimum of 200 linear feet of the existing stacked stone walls located along the Green Level West Road frontage. Segments of the wall in disrepair may be reconstructed to match the original look of the wall.

Environmental Commitments Summary

The following environmental commitments were discussed and approved by the Apex Environmental Advisory Board on February 18, 2021 to include in the Williams Farm development:

- The project will protect and preserve at least three of the champion trees located along Green Level West Road (subject to health evaluation and frontage roadway design requirements).
- The project will preserve a minimum of 200 linear feet of the existing stacked stone walls located along the Green Level West Road frontage. Segments of the wall in disrepair may be reconstructed to match the original look of the wall.
- Tree canopy preservation and replacement (30% of site)
- Two acres of open space and pocket parks will be provided. The existing gas line easement may be used to meet this requirement as long as it is graded and improved to contain features such as lawn area, walking trails or vegetation that attracts bird and butterfly habitat.
- All homes within the community shall be located no further than 800 feet from an improved open space area such as a play lane, trail head, greenway or pocket park.
- The project will construct a minimum 1,800 LF of soft surface or paved walking trails in addition to required sidewalks.
- Installation of educational signage related to wetlands or other on-site environmental features
- Increased stormwater quantity and quality control measures (see Stormwater Management section for details)
- Increased perimeter buffers on the eastern property boundary (see PUD plan)
- Retention of the existing farm pond
- The project will increase biodiversity in perimeter buffers and open space areas by providing a variety of species for the canopy, understory, and shrub levels. Native and adaptive plant species shall be provided within these areas to minimize death from disease and to provide increased habitat and food sources for insects and animals. A minimum of 70% of the species provided shall be native or a nativar of North Carolina. No invasive species shall be permitted. No single species of tree or shrub shall constitute more than 20% of the plant material of its type installed on a single development site.
- Solar conduit in all single-family homes
- Full cutoff street lighting by Apex Electric



STORMWATER MANAGEMENT

This PUD shall go above the stormwater management requirements for quality and quantity treatment outlined in Section 6.1.7 of the UDO such that:

- Post development peak runoff shall not exceed pre-development peak runoff conditions for the 1 year, 10-year, 25-year, and 24-hour storm events.
- Treatment for the first 1 inch of runoff will provide 85% removal of total suspended solids.

Acceptable stormwater structures shall include detention ponds, constructed wetlands, bio-retention areas, or other approved devices consistent with the NC DEQ Stormwater Design Manual and the Town of Apex UDO.

PARKS AND RECREATION

The Parks, Recreation and Cultural Resources Advisory Commission unanimously recommended a fee-in-lieu of dedication on March 31, 2021.

Number of Units*	Housing Type	Fee Per Unit**	Total Fees
176	Single-Family	\$3,495.24	\$615,162.24
Total	-	-	\$615,162.24

*Final unit count will be determined at the time of Master Subdivision.

**Fees are based upon approval date and runs with project with exception of the increase in total unit count.

PRIVATE AMENITIES

Two acres of private open space and pocket parks will be provided. The existing gas line easement may be used to meet this requirement as long as it is graded and improved to contain features such as lawn area, walking trails or vegetation that attracts bird and butterfly habitat.

All homes within the community shall be located no further than 800 feet from an improved open space area such as a play lawn, trail head, greenway or pocket park.

The project will construct a minimum 1,800 LF of soft surface (mulch) or paved walking trails in addition to required sidewalks.

PUBLIC FACILITIES

The proposed PUD shall meet all Public Facilities requirements as set forth in UDO Section 2.3.4(F)(1) (f) and be designed according to sound engineering standards. Road and utility infrastructure shall be as follows:

General Roadway Infrastructure

All proposed roadway infrastructure and right-of-way dedications will be consistent with the Town of Apex UDO and Transportation Plan.

Green Level West Road shall be realigned and widened along the frontage of the property in accordance with NCDOT and Town of Apex Transportation standards. Flattening of this curve will allow for safer entry and exit to and from the neighborhood. It will also improve sight distance and safety for motorists and bicyclists traveling along Green Level West Road. Details of this road realignment will be provided at Master Subdivision Plan.

Proposed access to Green Level West Road shall be located approximately 700 feet west of the intersection with Bachelor Road and include a westbound left turn lane with 50 feet of full width storage, 50 feet of full width deceleration, and a 100-foot taper.

Water and Sanitary Sewer

All lots within the project will be served by Town of Apex for water and sanitary sewer. A portion of the site will be serviced by an on-site pump station in accordance with Town of Apex standards. Preliminary approval for a pump station has been received by Town of Apex Public Utilities. The utility design will be finalized at the time of master subdivision plan approval and be based on available facilities adjacent to the site at that time. The design will meet the current Town of Apex master plans for water and sewer.

Walkability

The following facilities will be provided to contribute to a walkable community within and surrounding the Williams Farm development:

- Five-foot wide public sidewalks along the south side of Green Level West Road through frontage of property.
- Five-foot wide public sidewalks along both sides of all streets
- Six-foot wide private walking trails throughout the development
- Crosswalks constructed at appropriate street intersections

Other Utilities and Facilities

Electricity will be provided by Apex Electric. Phone, cable, and gas will be provided by the developer and shall meet the Town of Apex standards as outlined in the UDO.

Streetscape features may be used to help with establishing a framework for the proposed development. These features may include street trees within the public right-of-way, benches, trash receptacles, and street and/or pedestrian lights compatible with their context.

PHASING PLAN

This PUD will be completed in up to four phases.

CONSISTENCY WITH LAND USE PLAN

The proposed land use will be consistent with Advance Apex 2045: The Apex Comprehensive Plan, adopted in February 2019.

The Future Land Use Map designates this parcel as Low Density Residential, and the proposed land use will stay consistent with this designation allowing single-family homes under 3 dwelling units per acre.

COMPLIANCE WITH UDO

The development standards adopted for this PUD comply with those set forth in the current version of the Town's Unified Development Ordinance (UDO).

TRANSPORTATION IMPROVEMENTS

The following zoning condition represents the recommendations by Apex staff and NCDOT based on a review of the TIA prepared for the Williams Farm plan.

- Developer shall provide a westbound left turn lane with 50 feet of full width and appropriate deceleration length and taper on Green Level West Road at the location of the proposed public street accessing the subdivision, located approximately 700 feet west of Bachelor Road. No other new points of access are proposed along Green Level West Road. Developer is responsible for any necessary roadway improvements to meet or exceed required sight distance at the proposed access location, subject to NCDOT review and approval.

Additionally, at the time of master subdivision, the developer shall work with the Town of Apex and NCDOT to ensure adequate site distance at the Green Level West Road site access. This may require realignment of Green Level West Road and/or a site distance easement across the frontage of the parcel to the west.

Representative Residential Building Elevations

















WILLIAMS FARM

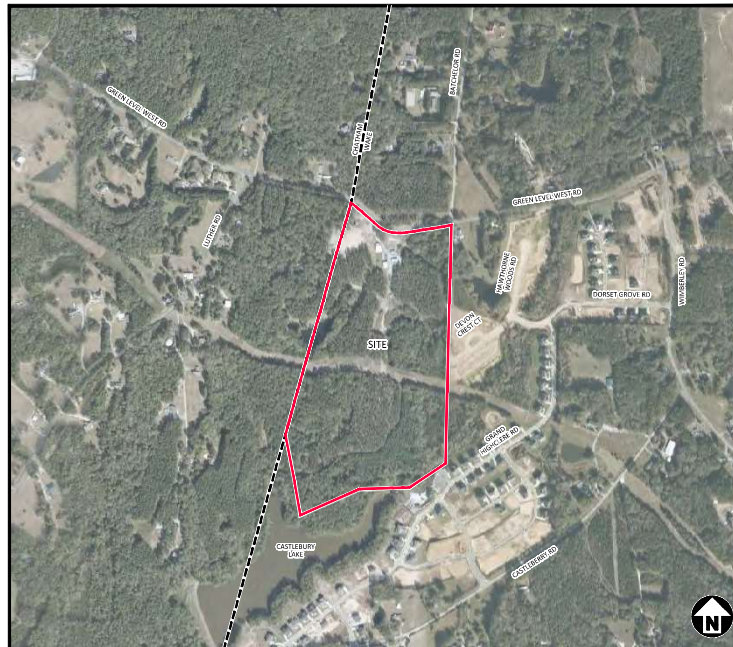
4525 GREEN LEVEL WEST ROAD
APEX, NORTH CAROLINA

PLANNED DEVELOPMENT PLAN FOR PUD-CZ

PROJECT NUMBER: 2020110181

DATE: MARCH 1, 2021

REVISED: JUNE 8, 2021



AERIAL & VICINITY MAP
N.T.S.

SHEET INDEX

C1.00	EXISTING CONDITIONS
C2.00	PRELIMINARY LAYOUT & UTILITY PLAN

ZONING CONDITIONS

1. DEVELOPER SHALL PROVIDE A WESTBOUND LEFT TURN LANE WITH 50 FEET OF FULL WIDTH AND APPROPRIATE DECLINATION LENGTH AND TAPER ON GREEN LEVEL WEST ROAD AT THE LOCATION OF THE PROPOSED PUBLIC STREET ACCESSING THE SUBDIVISION, LOCATED APPROXIMATELY 750 FEET WEST OF BACHELOR ROAD. NO OTHER NEW POINTS OF ACCESS ARE PROPOSED ALONG GREEN LEVEL WEST ROAD. DEVELOPER IS RESPONSIBLE FOR ANY NECESSARY ROADWAY IMPROVEMENTS TO MEET OR EXCEED REQUIRED SIGHT DISTANCE AT THE PROPOSED ACCESS LOCATION. SUBJECT TO NCOT REVIEW AND APPROVAL.

SITE DATA

PARCEL IDENTIFICATION NUMBER (PIN)	PORTION OF 0733-04-0338
EXISTING ZONING	RR
PROPOSED ZONING	PUD-CZ
CURRENT 2045 LAND USE MAP DESIGNATION	LOW DENSITY RESIDENTIAL
PROPOSED 2045 LAND USE MAP DESIGNATION	LOW DENSITY RESIDENTIAL
SITE AREA	APPROX. 61.92 AC - GROSS APPROX. 0.27 AC - N/W DEDICATION APPROX. 0.12 AC - RELEASED N/W APPROX. 61.72 AC - NET
EXISTING USE	VACANT
PROPOSED USE	SINGLE FAMILY LOTS
TO NORTH	MINIMUM 170 UNITS / 51.77 AC = 3.28 DU/AC
LOT SIZE	MINIMUM 5,000 SF
LOT WIDTH	MINIMUM 40'
LOT DEPTH	MINIMUM 100'
BUILDING HEIGHT	MINIMUM 4.5'
SETBACKS	FRONT 10' TO GARAGE, 8' TO BUILDING FACADE SIDE 5' REAR 20' ALLEY 5' CORNER 8'
PARKING	REQUIRED 170 UNITS x 2/UNIT = 342 SPACES PROPOSED 352 SPACES
BUILT UPON AREA (IMPERVIOUS SURFACE)	MINIMUM 43.24 AC (70%)
RESOURCE CONSERVATION AREA	MINIMUM 18.53 AC (30%)
WATERSHED PROTECTION OVERLAY	PRIMARY WATERSHED PROTECTION DISTRICT
FEMA FLOODPLAIN	NONE (FIRM PANEL 372007100K, EFFECTIVE 02/02/2007)
HISTORIC STRUCTURES	NONE

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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CONTACT

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CONTACT: BRIAN KETCHUM



REAL ESTATE CONSULTANT
ALLIANCE GROUP OF NORTH CAROLINA
7208 FALLS OF NEUSE ROAD, SUITE 101
RALEIGH, NC 27615
CONTACT: BOB FUMWALT



OWNER
ELISA C WILLIAMS
4525 GREEN LEVEL WEST ROAD
APEX, NC 27523

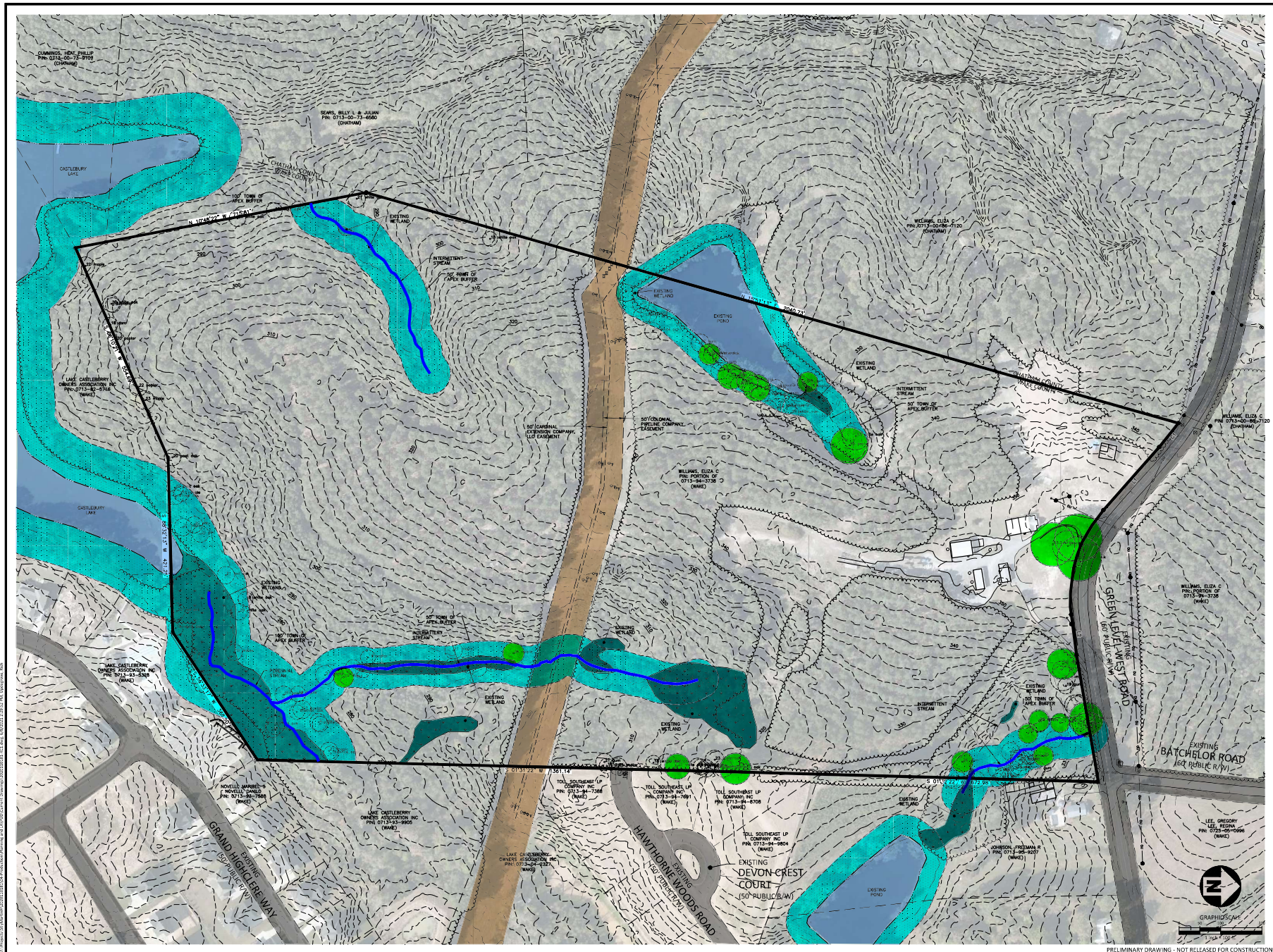


REVISIONS

NO.	DATE	REVISION
1	04.09.2021	PER TOWN COMMENTS
2	05.14.2021	PER TOWN COMMENTS
3	05.27.2021	PER TOWN COMMENTS
4	06.08.2021	PER TOWN COMMENTS

PLANNED DEVELOPMENT PLAN FOR:

WILLIAMS FARM
APEX, NORTH CAROLINA
PROJECT NUMBER:
2020110181



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AGNC
AGRICULTURAL GREENBELT CONSULTING

WILLIAMS FARM
PLANNED DEVELOPMENT PLAN FOR PUD-CZ
4525 GREEN LEVEL WEST ROAD
APEX, NORTH CAROLINA

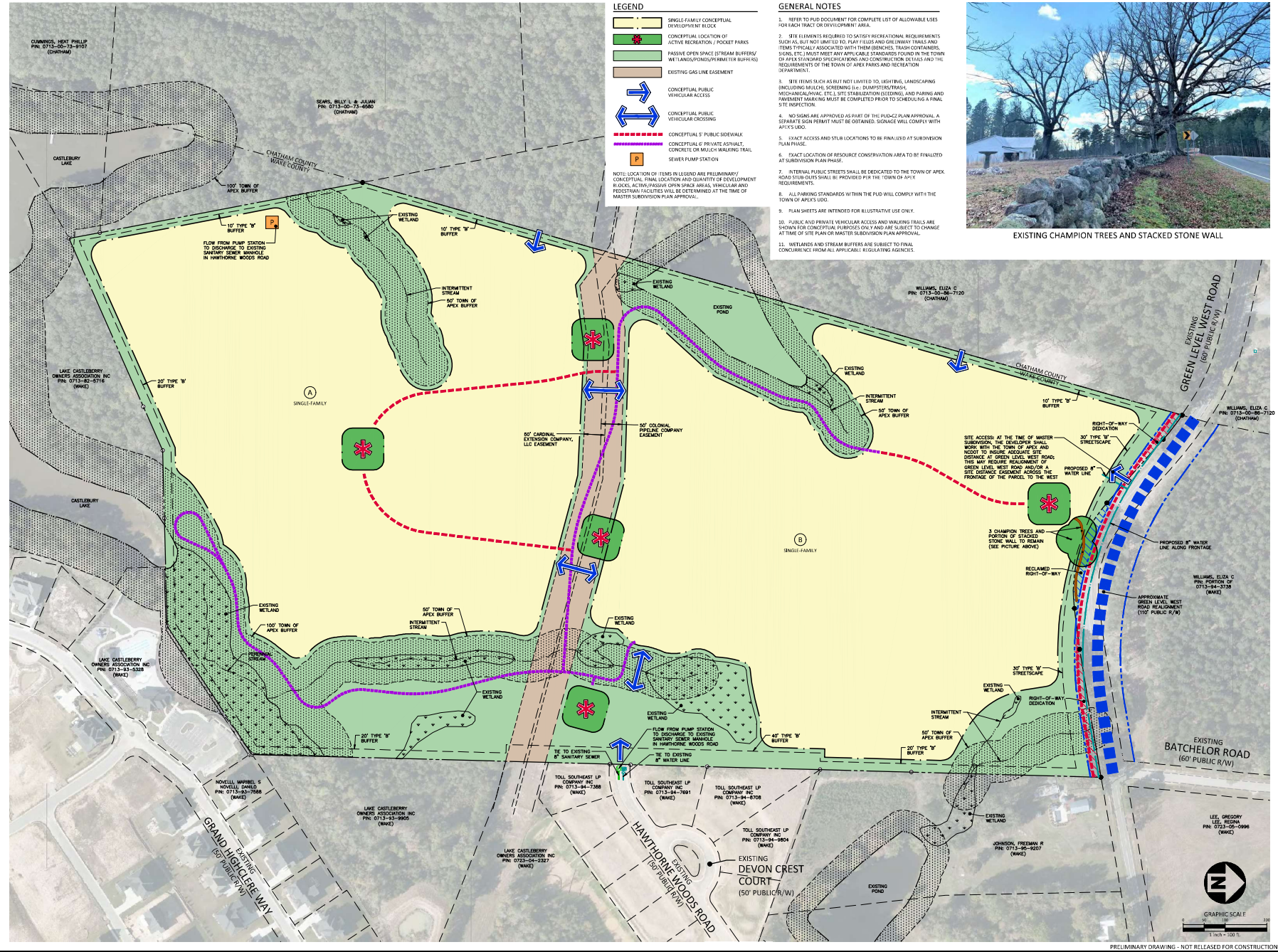
REVISIONS

NO.	DATE	REVISION
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3	05.27.2021	PER TOWN COMMENTS
4	06.08.2021	PER TOWN COMMENTS

PLAN INFORMATION

PROJECT NO.	2020110181
FILENAME	2020110181-KC1
CHECKED BY	JVF
DRAWN BY	RLU
SCALE	1"=100'
DATE	03.01.2021

EXISTING CONDITIONS
C1.00



LEGEND

- SINGLE-FAMILY CONCEPTUAL DEVELOPMENT BLOCK
- CONCEPTUAL LOCATION OF ACTIVE RECREATION / POCKET PARKS
- PASSIVE OPEN SPACE / STREAM BUFFERS / WETLANDS / CONCEPTUAL BUFFER
- EXISTING GAS LINE EASEMENT
- CONCEPTUAL PUBLIC VEHICULAR CROSSING
- CONCEPTUAL PUBLIC VEHICULAR ACCESS
- CONCEPTUAL 5' PUBLIC SIDEWALK
- CONCEPTUAL 8' PRIVATE SIDEWALK
- CONCRETE OR MULCH WALKING TRAIL
- SEWER PUMP STATION

NOTE: LOCATION OF ITEMS IN LEGEND ARE PRELIMINARY / CONCEPTUAL. FINAL LOCATION AND QUANTITY OF DEVELOPMENT IS LOCKED. ACTIVE / PASSIVE OPEN SPACE AREAS, VEHICULAR AND PEDESTRIAN FACILITIES WILL BE DETERMINED AT THE TIME OF MASTER SUBDIVISION PLAN APPROVAL.

GENERAL NOTES

- REFER TO PUD DOCUMENT FOR COMPLETE LIST OF ALLOWABLE USES FOR EACH TRACT OR DEVELOPMENT AREA.
- 5' SETBACKS ARE REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, PATH FIELDS AND GREENWAY TRAILS AND TENDS TO BE ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX TO MEASURE SPECIFIC TRAILS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
- 5' SETBACKS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING (INCLUDING MULCH), SCREENING (i.e., DUMPSTER/TRASH MECHANICAL, ETC.), SITE STABILIZATION (EROSION), AND PARKING AND PAINT MARKING MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.
- NO SIGNS ARE APPROVED AS PART OF THE PUD-PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED. SIGNAGE WILL COMPLY WITH APEX'S UDO.
- EXACT ACCESS AND STUB LOCATIONS TO BE FINALIZED AT SUBDIVISION PLAN PHASE.
- EXACT LOCATION OF RESOURCE CONSERVATION AREA TO BE FINALIZED AT SUBDIVISION PLAN PHASE.
- INTERVAL PUBLIC STREETS SHALL BE DEDICATED TO THE TOWN OF APEX. 100' STUB DRIVES SHALL BE PROVIDED FOR THE TOWN OF APEX REQUIREMENTS.
- ALL PARKING STANDARDS WITHIN THE PUD WILL COMPLY WITH THE TOWN OF APEX'S UDO.
- PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE USE ONLY.
- PUBLIC AND PRIVATE VEHICULAR ACCESS AND WALKING TRAILS ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY AND ARE SUBJECT TO CHANGE AT THE TIME OF SITE PLAN OR MASTER SUBDIVISION PLAN APPROVAL.
- WETLANDS AND STREAM BUFFERS ARE SUBJECT TO FINAL CONCURRENT REVIEW FROM ALL APPLICABLE REGULATING AGENCIES.



EXISTING CHAMPION TREES AND STACKED STONE WALL

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WILLIAMS FARM
PLANNED DEVELOPMENT PLAN FOR PUD-CZ
4525 GREEN LEVEL WEST ROAD
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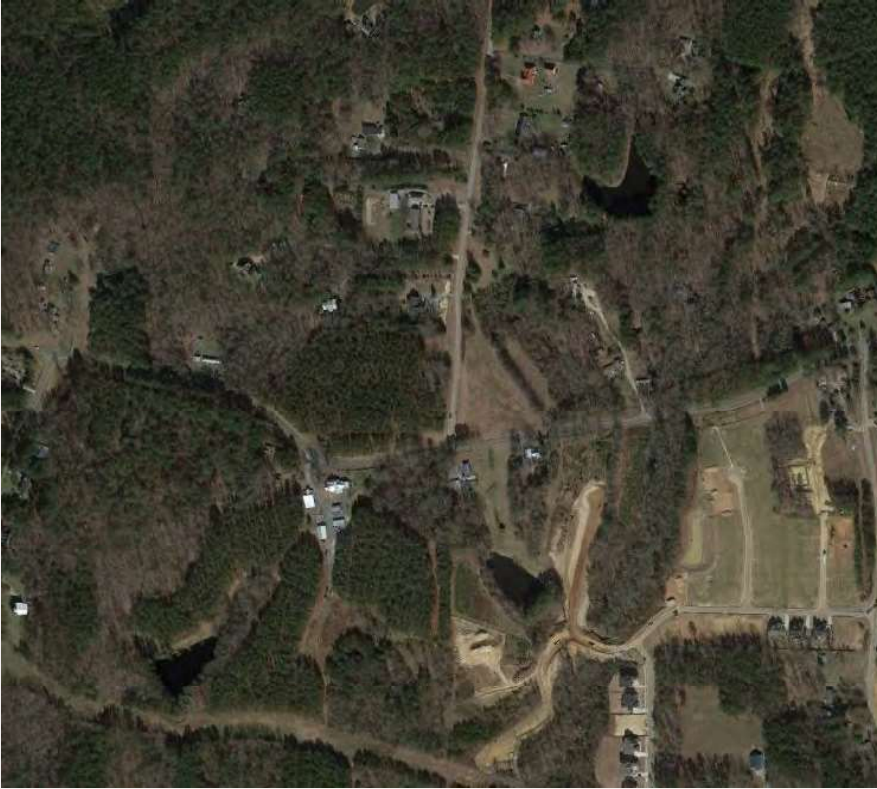
PLAN INFORMATION

PROJECT NO.	202010181
FILENAME	202010181-51
CHECKED BY	JVF
DRAWN BY	RLU
SCALE	1"=100'
DATE	03.01.2021

PRELIMINARY LAYOUT & UTILITY PLAN
C2.00

RAMEY KEMP ASSOCIATES

Moving forward.



Williams Property **Traffic Impact Analysis** **Apex, North Carolina**

**TRAFFIC IMPACT
ANALYSIS**

FOR

WILLIAMS PROPERTY

LOCATED

IN

APEX, NORTH CAROLINA

Prepared For:
Stanley Martin
11710 Plaza America Drive, Suite 1100
Reston, VA 20190

Prepared By:
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609
License #C-0910

March 2021



RKA Project No. 21025

Prepared By: MLS

Reviewed By: JTR

TRAFFIC IMPACT ANALYSIS
WILLIAMS PROPERTY
APEX, NORTH CAROLINA

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Williams Property development in accordance with the Apex (Town) Unified Development Ordinance (UDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed development is to be located south of Green Level West Road and west of Batchelor Road in Apex, North Carolina. The proposed development is expected to be a maximum of 170 single-family home development and estimated to be built out in 2026. Site access is proposed via one (1) full movement access point along Green Level West Road to the west of Batchelor Road.

2. Existing Traffic Conditions

The study area for the TIA was determined through coordination with the Town and NCDOT and consists of the following existing intersections:

- Green Level West Road and Wimberly Road
- Green Level West Road and Batchelor Road

Peak hour counts were conducted at the intersection of Green Level West Road and Wimberly Road in October of 2019, during weekday AM (7:00 to 9:00 AM) and weekday PM (4:00 to 6:00 PM) peak hours. This data was grown up to 2021 via a 2% annually compounded growth rate. Due to the COVID-19 pandemic, new data was not collected.

Peak hour turning movement counts were conducted at the intersection of Green Level West Road and Batchelor Road in October of 2017, during weekday AM (7:00 to 9:00 AM) and weekday PM (4:00 to 6:00 PM) peak hours. Based on Google Earth aerials between 2017 and 2020, there has been minimal changes to development along Batchelor Road; however, turning movement volumes were still grown up to 2021 via a 2% annually compounded growth rate to be conservative. The through movement volumes at this intersection were balanced with the

adjacent intersection of Green Level West Road and Wimberly Road, since data collection at this intersection was more recent. This methodology was coordinated with the Town and NCDOT during scoping and through email coordination after scoping.

3. Site Trip Generation

The proposed development is assumed to consist of a maximum of 170 single-family homes. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE Trip Generation Manual, 10th Edition. Table E-1 provides a summary of the trip generation potential for the site.

Table E-1: Site Trip Generation

LAND USE (ITE Code)	INTENSITY	DAILY TRIPS (VPD)	WEEKDAY AM PEAK HOUR (VPH)		WEEKDAY PM PEAK HOUR (VPH)	
			Enter	Exit	Enter	Exit
Single Family Detached Housing (210)	170 units	1,700	31	95	106	63

4. Future Traffic Conditions

Through coordination with the Town and NCDOT, it was determined that an annual growth rate of 2% would be used to generate projected (2022) weekday AM and PM peak hour traffic volumes. The following adjacent developments were identified to be considered under future conditions:

- Wolfe Properties
- Tunstall Property (Preserve and White Oak Creek)
- Westford
- Council-Smith (Weddington Smith Roberts PUD)
- Lake Castleberry
- Batchelor Road Residential (17-TAR-423)

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for existing (2021), no-build (2026), and build (2026) conditions. Refer to Section 7 of the report for the capacity analysis summary performed at each study intersection.

6. Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at study intersections. The improvements are summarized below and are illustrated in Figure E-1.

Improvements by Wolfe Properties

Green Level West Road and Wimberly Road

- Provide an exclusive northbound right-turn lane with a minimum of 50 feet of full-width storage and appropriate deceleration and taper length.

Recommended Improvements by Developer

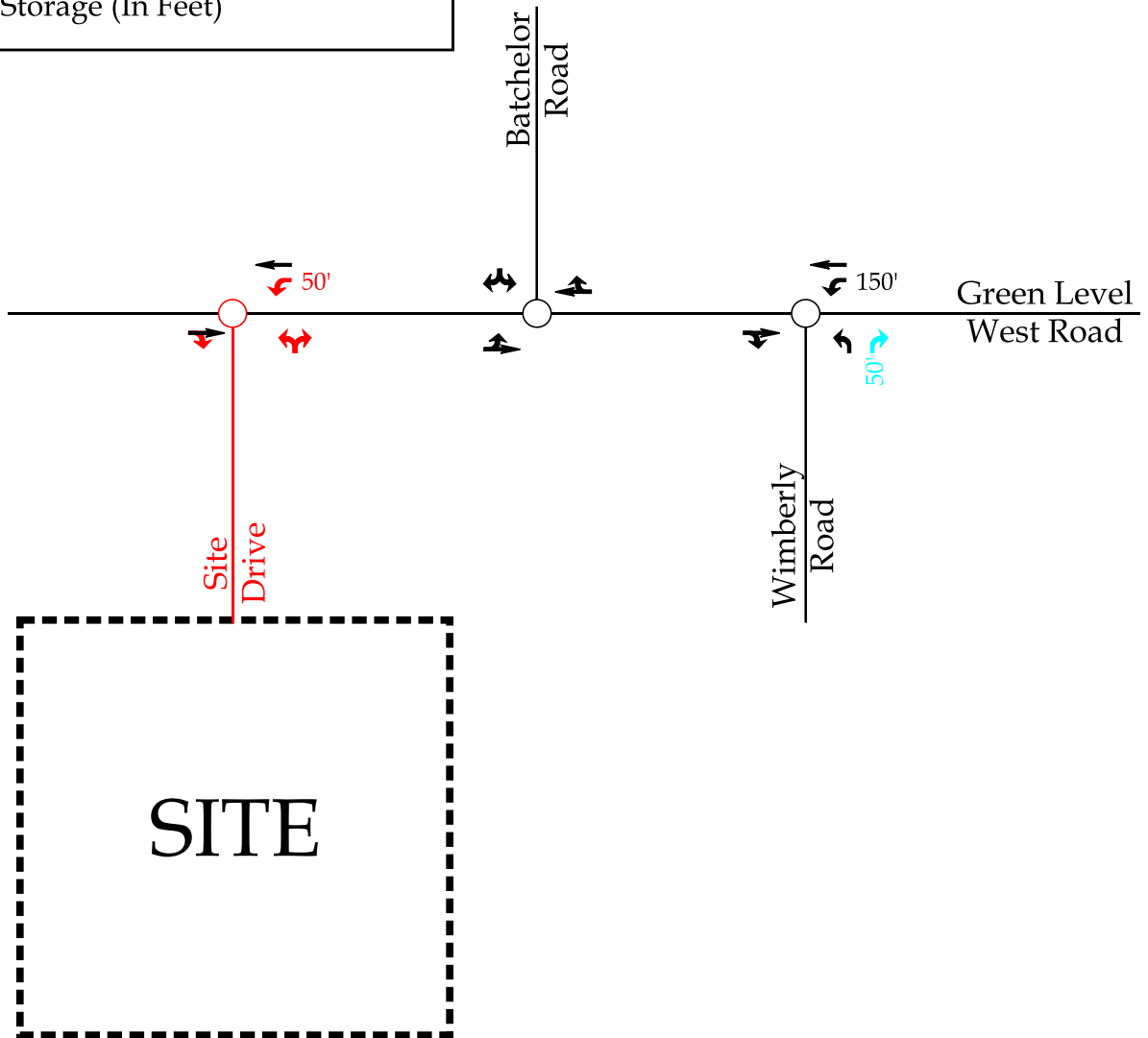
Green Level West Road and Site Drive

- Construct the northbound approach with one ingress lane and one egress lane.
- Provide an exclusive westbound left-turn lane with a minimum of 50 feet of full-width storage and appropriate deceleration and taper length.
- Provide stop control for the northbound approach.



LEGEND

- Unsignalized Intersection
- ➡ Existing Lane
- ➡ Improvement by Developer
- ➡ Wolfe Properties Improvement
- x' Storage (In Feet)



Moving forward.

RKA
RAMEY KEMP ASSOCIATES

Williams Property
Apex, NC

Recommended Lane
Configurations

Scale: Not to Scale | Figure E-1

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TECHNICAL APPENDIX

Appendix A:	Scoping Documentation
Appendix B:	Traffic Counts
Appendix C:	Adjacent Development Information
Appendix D:	Capacity Calculations – Green Level West Road and Wimberly Road
Appendix E:	Capacity Calculations – Green Level West Road and Batchelor Road
Appendix F:	Capacity Calculations – Green Level West Road and Site Drive

TRAFFIC IMPACT ANALYSIS
WILLIAMS PROPERTY
APEX, NORTH CAROLINA

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Williams Property development, located south of Green Level West Road and west of Batchelor Road in Apex, North Carolina. The purpose of this study is to determine the potential impacts to the surrounding transportation system created by traffic generated by the proposed development, as well as recommend improvements to mitigate the impacts.

The proposed development, anticipated to be completed in 2026, is expected to consist of a maximum of 170 single-family homes.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- Existing (2021) Traffic Conditions
- No-Build (2026) Traffic Conditions
- Build (2026) Traffic Conditions

1.1. Site Location and Study Area

The development is proposed to be located south of Green Level West Road and south of Wimberly Road in Apex, North Carolina. Refer to Figure 1 for the site location map.

The study area for the TIA was determined through coordination with the North Carolina Department of Transportation (NCDOT) and the Town of Apex (Town) and consists of the following existing intersections:

- Green Level West Road and Wimberly Road
- Green Level West Road and Batchelor Road

Refer to Appendix A for the approved scoping documentation.

1.2. Proposed Land Use and Site Access

The site is expected to be located south of Green Level West Road and west of Batchelor Road. The proposed development, anticipated to be completed in 2026, is assumed to consist of a maximum of 170 single-family homes.

Site access is proposed via one (1) full movement access point along Green Level West Road to the west of Batchelor Road. Refer to Figure 2 for a copy of the preliminary site plan.

1.3. Adjacent Land Uses

The proposed development is located in an area consisting primarily of farms, undeveloped land, and residential development.

1.4. Existing Roadways

Existing lane configurations (number of traffic lanes on each intersection approach), speed limits, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1 provides a summary of this information, as well.

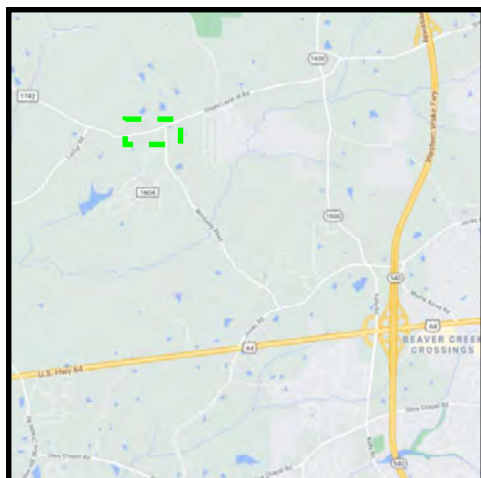
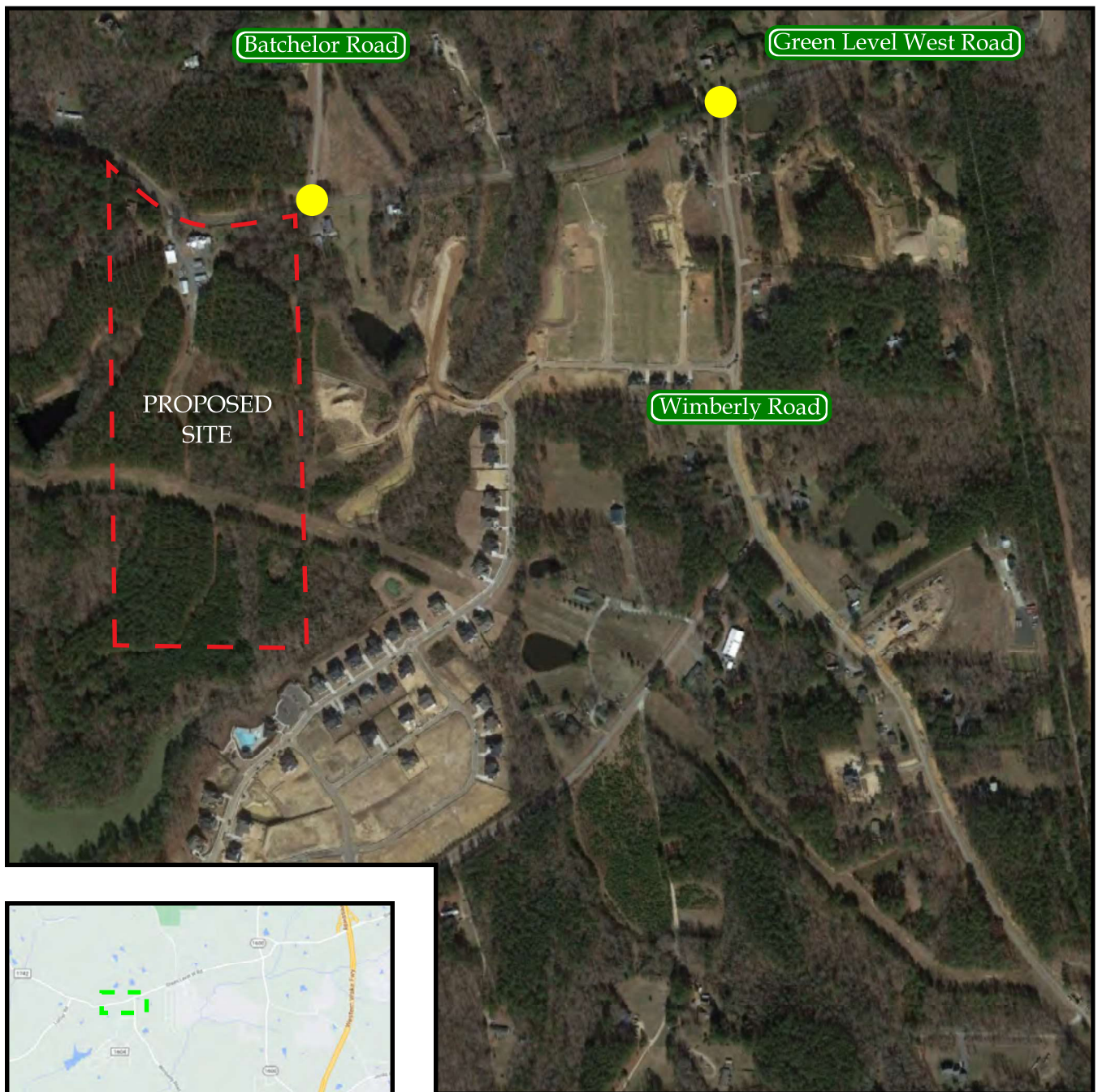
Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	Maintained By	AADT (vpd)
Green Level West Road	SR 1605	2-lane undivided	45 mph	NCDOT	2,500 ¹
Batchelor Road	SR 1759	2-lane undivided	35 mph	NCDOT	160 ²
Wimberly Road	SR 1603	2-lane undivided	45 mph	NCDOT	880 ³

1. 2019 NCDOT AADT

2. AADT based on the traffic counts grown to 2021 and assuming the weekday PM peak hour volume is 10% of the average daily traffic

3. 2015 NCDOT AADT



LEGEND

- Proposed Site Location
- Study Intersection
- Study Area

Moving forward.

RKA
RAMEY KEMP ASSOCIATES

Williams Property
Apex, NC

Site Location Map

Scale: Not to Scale

Figure 1

WILLIAMS PROPERTY CONCEPT PLAN

SITE DATA TABLE

Total Site Area	+/- 61.83 acres
RCA Required (30%)	+/- 18.55 acres
50'x125' SF Detached Units	91 lots
60'x125' SF Detached Units	72 lots
Total Dwelling Units	163 lots
Proposed Density	2.63 DU/AC

NOTES

1. All information taken from GIS and survey subject to change.
2. Additional sewer analysis needed to understand improvements required.
3. Streams and wetlands shown are subject to change.
4. Storm drainage analysis required to verify storm drainage requirements and improvements.
5. RCA areas shown per Apex UDO.
6. Green Level West Road realignment - conceptual shown on plan.

CHAMPION TREES AND STACKED STONE WALL

CHAMPION TREES
STACKED STONE WALL

SCM

PLAY LAWN

EXISTING LAKE

50' GAS EASEMENT

SCM

PLAY LAWN

4,800 LF OF WALKING TRAILS

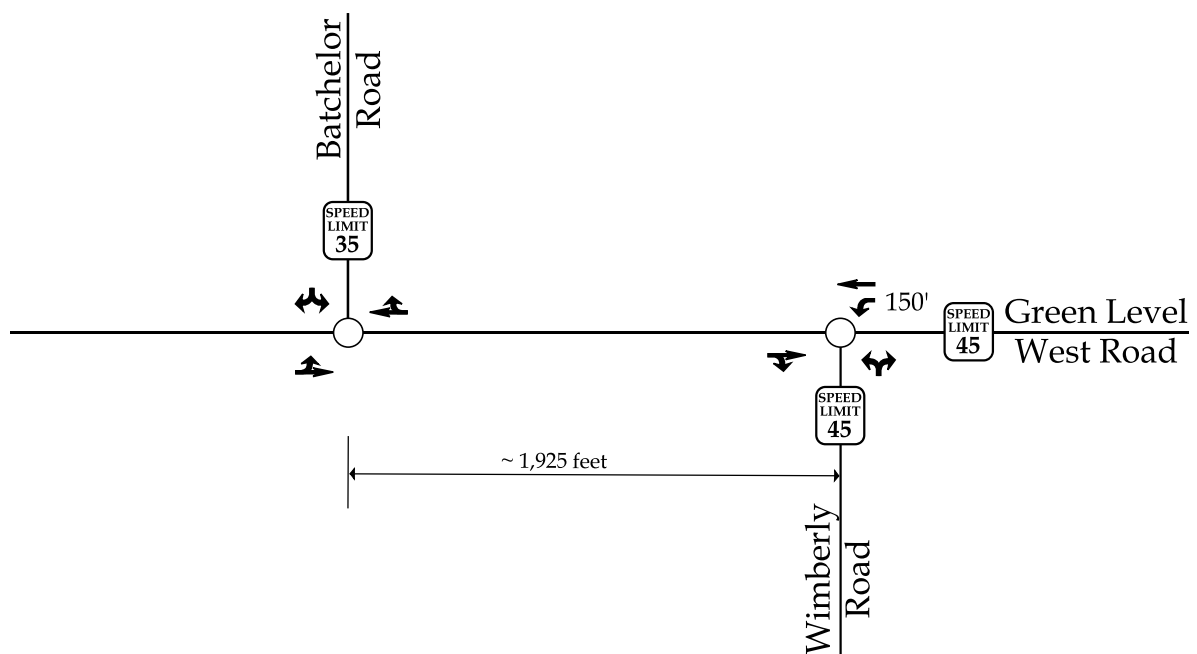
OVERLOOK AND FISHING DOCK

LAKE CASTLEBERRY

LEGEND

- Unsignalized Intersection
- ➔ Existing Lane
- X' Storage (In Feet)
- SPEED LIMIT XX

 Posted Speed Limit



<div>Moving forward.</div> <div>RKA</div> <div>RAMEY KEMP ASSOCIATES</div>	<div>Williams Property</div> <div>Apex, NC</div>	Existing (2021) Lane Configurations	
		Scale: Not to Scale	Figure 3

2. EXISTING (2021) PEAK HOUR CONDITIONS

2.1. Existing (2021) Peak Hour Traffic

Peak hour counts were conducted at the intersection of Green Level West Road and Wimberly Road in October of 2019, during weekday AM (7:00 to 9:00 AM) and weekday PM (4:00 to 6:00 PM) peak hours. This data was grown up to 2021 via a 2% annually compounded growth rate. Due to the COVID-19 pandemic, new data was not collected.

Peak hour turning movement counts were conducted at the intersection of Green Level West Road and Batchelor Road in October of 2017, during weekday AM (7:00 to 9:00 AM) and weekday PM (4:00 to 6:00 PM) peak hours. Based on Google Earth aerials between 2017 and 2020, there has been minimal changes to development along Batchelor Road; however, turning movement volumes were still grown up to 2021 via a 2% annually compounded growth rate to be conservative. The through movement volumes at this intersection were balanced with the adjacent intersection of Green Level West Road and Wimberly Road, since data collection at this intersection was more recent.

The above methodology was coordinated with the Town and NCDOT during scoping and through email coordination after scoping. Refer to Appendix A for a copy of the Memorandum of Understanding (MOU) and other scoping coordination documentation.

Refer to Figure 4 for existing (2021) weekday AM and PM peak hour traffic volumes. A copy of the count data is located in Appendix B of this report.

2.2. Analysis of Existing (2021) Peak Hour Traffic

The existing (2021) weekday AM and PM peak hour traffic volumes were analyzed to determine the current levels of service at the study intersections under existing roadway conditions. The results of the analysis are presented in Section 7 of this report.

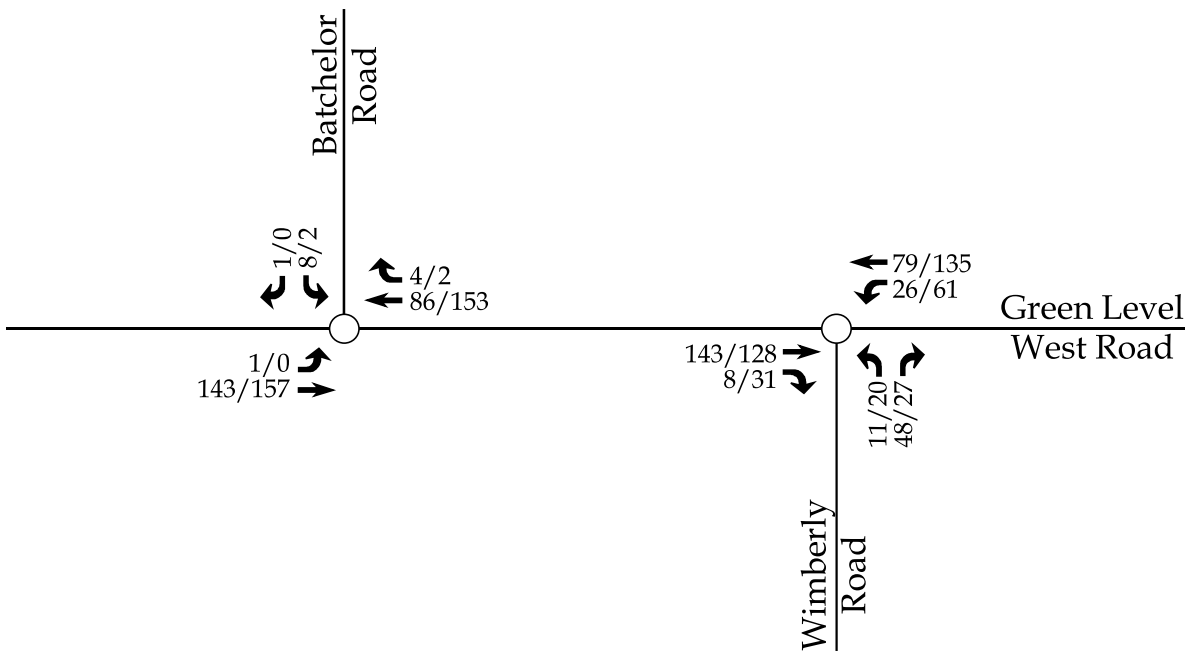
LEGEND

○

Unsignalized Intersection

X / Y →

Weekday AM / PM Peak Hour Traffic



<div>Moving forward.</div> <div>RKA</div> <div>RAMEY KEMP ASSOCIATES</div>	Williams Property Apex, NC	Existing (2021) Peak Hour Traffic	
		Scale: Not to Scale	Figure 4

3. NO-BUILD (2026) PEAK HOUR CONDITIONS

In order to account for growth of traffic and subsequent traffic conditions at a future year, no-build traffic projections are needed. No-build traffic is the component of traffic due to the growth of the community and surrounding area that is anticipated to occur regardless of whether or not the proposed development is constructed. No-build traffic is comprised of existing traffic growth within the study area and additional traffic created as a result of adjacent approved developments.

3.1. Ambient Traffic Growth

Through coordination with the Town and NCDOT, it was determined that an annual growth rate of 2% would be used to generate projected (2026) weekday AM and PM peak hour traffic volumes. Refer to Figure 5 for projected (2026) peak hour traffic.

3.2. Adjacent Development Traffic

Through coordination with the Town and NCDOT, the following adjacent developments were identified to be included in this study:

- Wolfe Properties
- Tunstall Property (Preserve and White Oak Creek)
- Westford
- Council-Smith (Weddington Smith Roberts PUD)
- Lake Castleberry
- Batchelor Road Residential (17-TAR-423)

Table 2 on the following page provides a summary of the adjacent developments. Additional adjacent development information can be found in Appendix C.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Wolfe Properties	East of Wimberly Road, between Green Level West Road and Jenks Road	2025	70 single-family homes and 50 townhomes	November of 2019 by Mott MacDonald
Tunstall Property	North of Jenks Road and east of Wimberly Road	Prior to the build-out of the proposed Williams Property development	258 single-family homes and 72 townhomes	June of 2013 by Kimley-Horn
Westford	North of US 64 and east of Jenks Road	2021	300 apartments, 225 townhomes, 90 single-family homes, and 100,000 sq. ft. of retail	June of 2017 by Kimley-Horn
Council-Smith	South of Green Level West Road, directly across from White Oak Church Road	2021	200 single-family homes	September of 2015 by VHB
Lake Castleberry	North of Castleberry Road, west of Wimberly Road	Prior to the build-out of the proposed Williams Property development	172 single-family homes	February of 2014 by VHB
Batchelor Road Residential	West of White Oak Church Road and north of Green Level West Road	2022	125 single-family homes	March 2018 by RKA

Wolfe Properties is committed to providing an exclusive northbound right-turn lane with 50 feet of storage and appropriate deceleration and taper length at the intersection of Wimberly

Road and Green Level West Road. This turn lane was included in all future analysis scenarios. It should be noted that neither of the study area intersections for the proposed site were included in the Tunstall Property and Westford TIAs. Based on the locations of these developments, adjacent development trips to/from the north along Wimberly Road were assumed to ultimately travel to/from the west along Green Level West Road for these two developments. This was assumed due to the interconnectivity to the east and that it would be easier for the trips from these developments to utilize Jenks Road and/or Green Level Church Road if traveling to/from the east. This methodology is expected to provide conservative results, because it routes trips from these developments through the entire roadway network for the proposed Williams Property development. It should be noted that the adjacent developments were approved, during scoping, by the Town and NCDOT. Adjacent development trips are shown in Figure 6. Refer to Appendix A for a copy of the approved MOU.

3.3. Future Roadway Improvements

Based on coordination with the NCDOT and the Town, it was determined there were no future, public roadway improvements to consider with this study.

3.4. No-Build (2026) Peak Hour Traffic Volumes

The no-build (2026) traffic volumes were determined by projecting the existing (2021) peak hour traffic to the year 2026 and adding the adjacent development trips. Refer to Figure 7 for an illustration of the no-build (2026) peak hour traffic volumes at the study intersections.

3.5. Analysis of No-Build (2026) Peak Hour Traffic Conditions

The no-build (2026) AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.

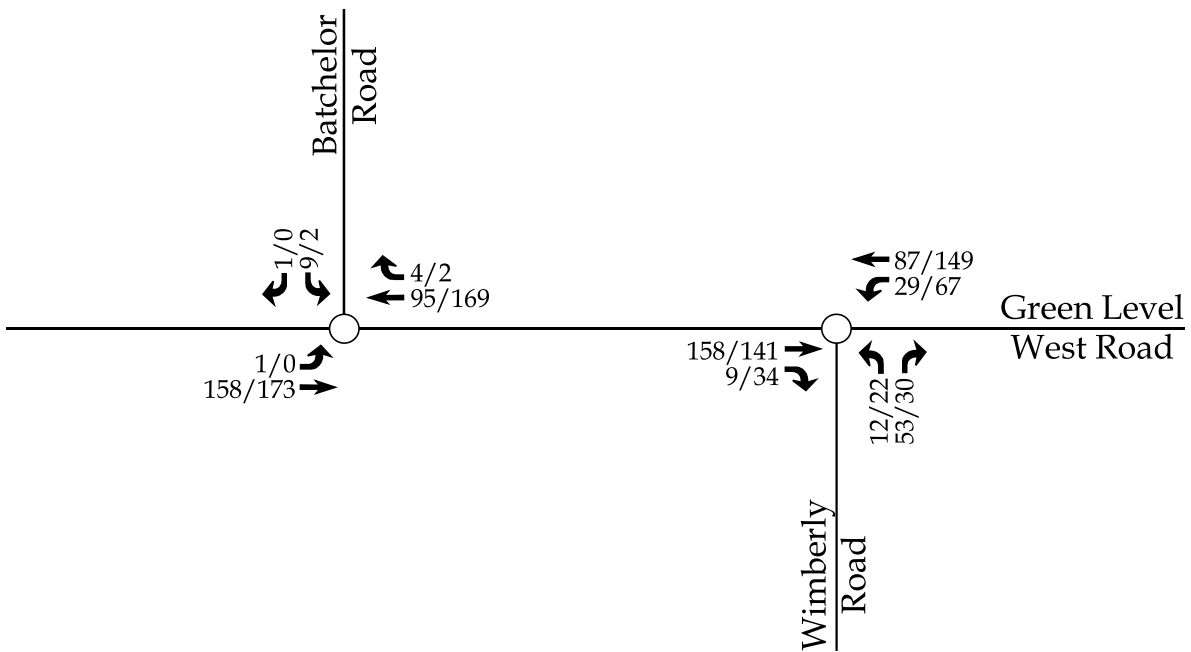
LEGEND

○

Unsignalized Intersection

X / Y →

Weekday AM / PM Peak Hour Traffic



Moving forward.



Williams Property
Apex, NC

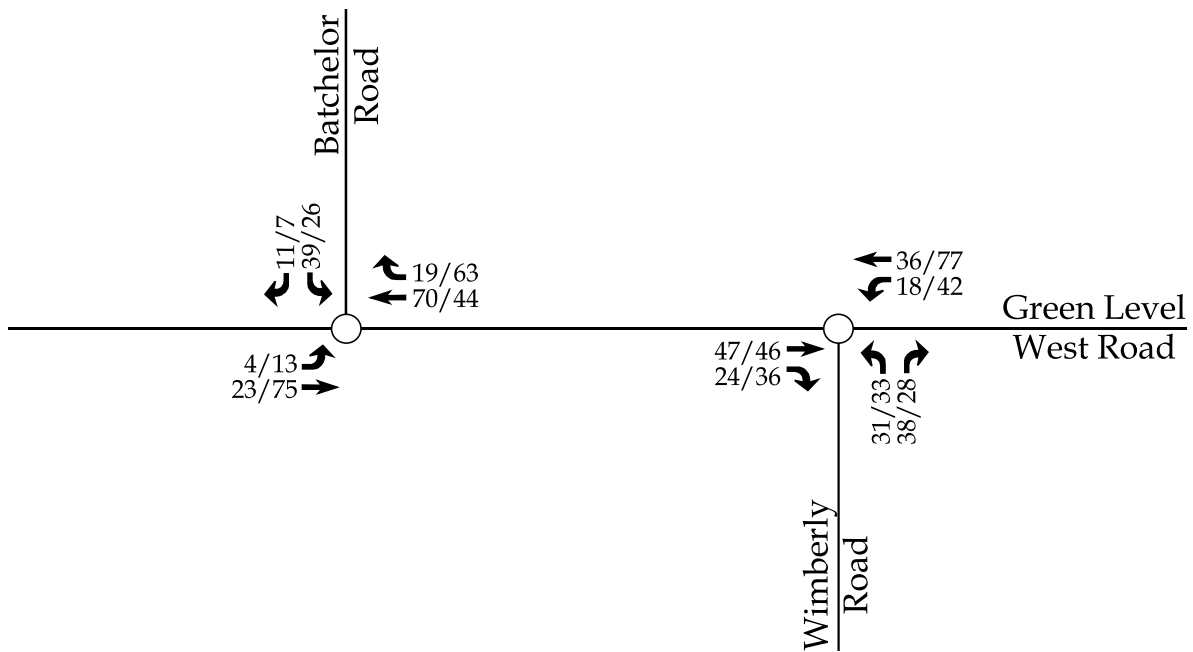
Projected (2026)
Peak Hour Traffic

Scale: Not to Scale

Figure 5

LEGEND

- Unsignalized Intersection
- X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips



Moving forward.



Williams Property
Apex, NC

Peak Hour Adjacent
Development Trips

Scale: Not to Scale

Figure 6

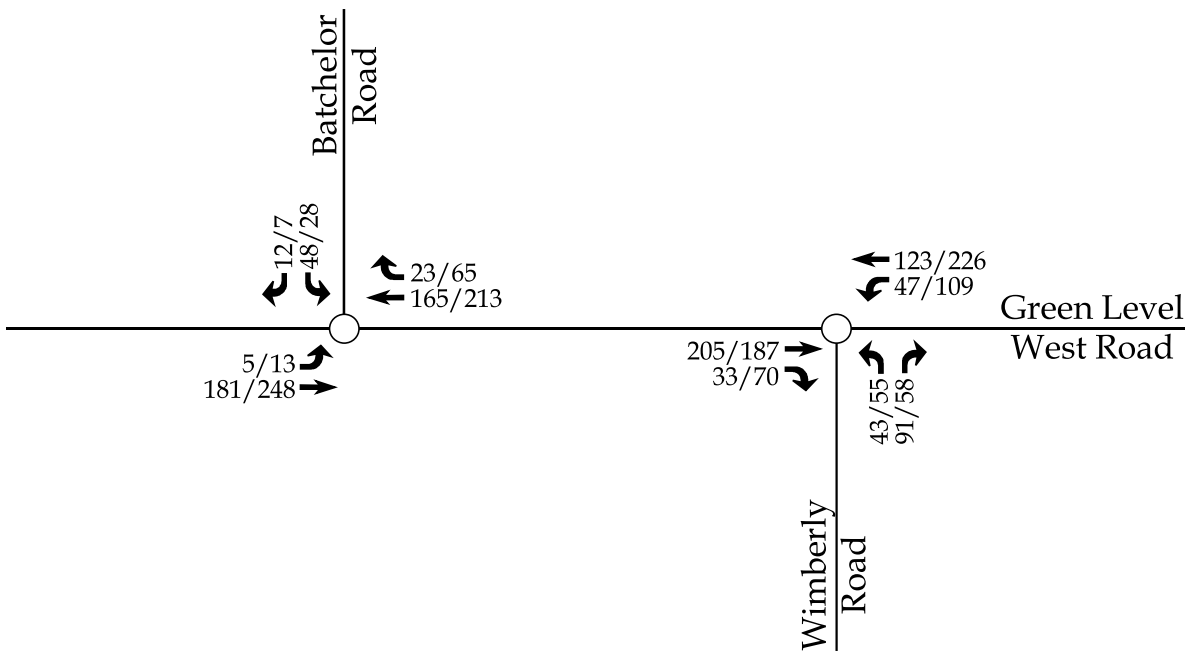
LEGEND

○

Unsignalized Intersection

X / Y →

Weekday AM / PM Peak Hour Traffic



<div>Moving forward.</div> <div>RKA</div> <div>RAMEY KEMP ASSOCIATES</div>	Williams Property Apex, NC	No-Build (2026) Peak Hour Traffic	
		Scale: Not to Scale	Figure 7

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

The proposed development is assumed to consist of a maximum of 170 single-family homes. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the *ITE Trip Generation Manual*, 10th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing (210)	170 units	1,700	31	95	106	63

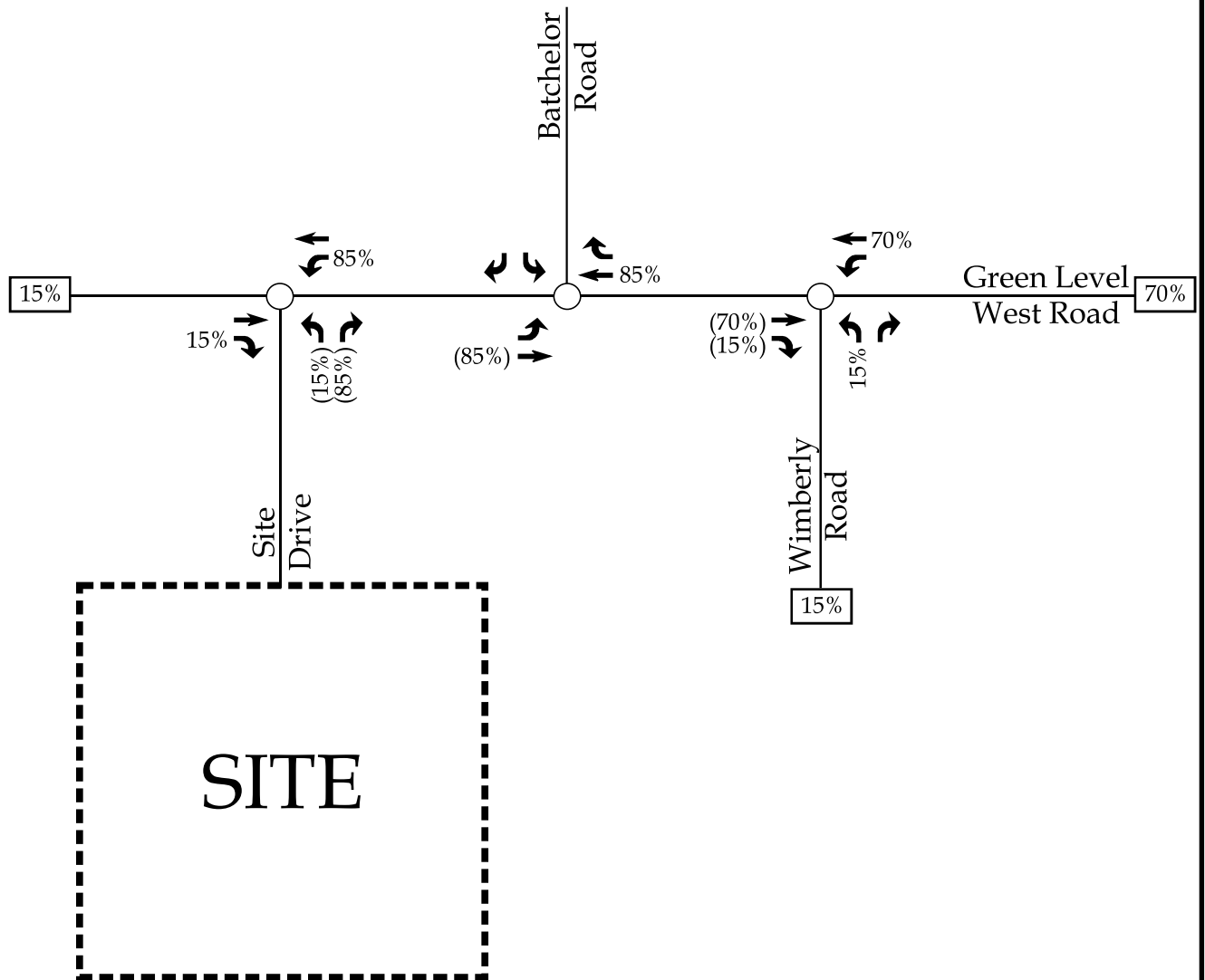
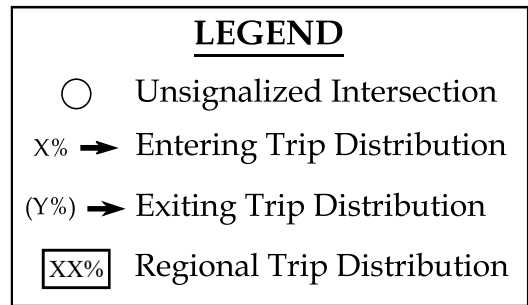
It is estimated that the proposed development will generate approximately 1,700 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 126 trips (31 entering and 95 exiting) will occur during the weekday AM peak hour and 169 (106 entering and 63 exiting) will occur during the weekday PM peak hour.

4.2. Site Trip Distribution and Assignment

Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment. It is estimated that the site trips will be regionally distributed as follows:

- 15% to/from the south via Wimberly Road
- 15% to/from the west via Green Level West Road
- 70% to/from the east via Green Level West Road

This distribution was reviewed and approved by the Town and NCDOT. Refer to Appendix A for a copy of the MOU. The site trip distribution is shown in Figure 8. Refer to Figure 9 for the site trip assignment.



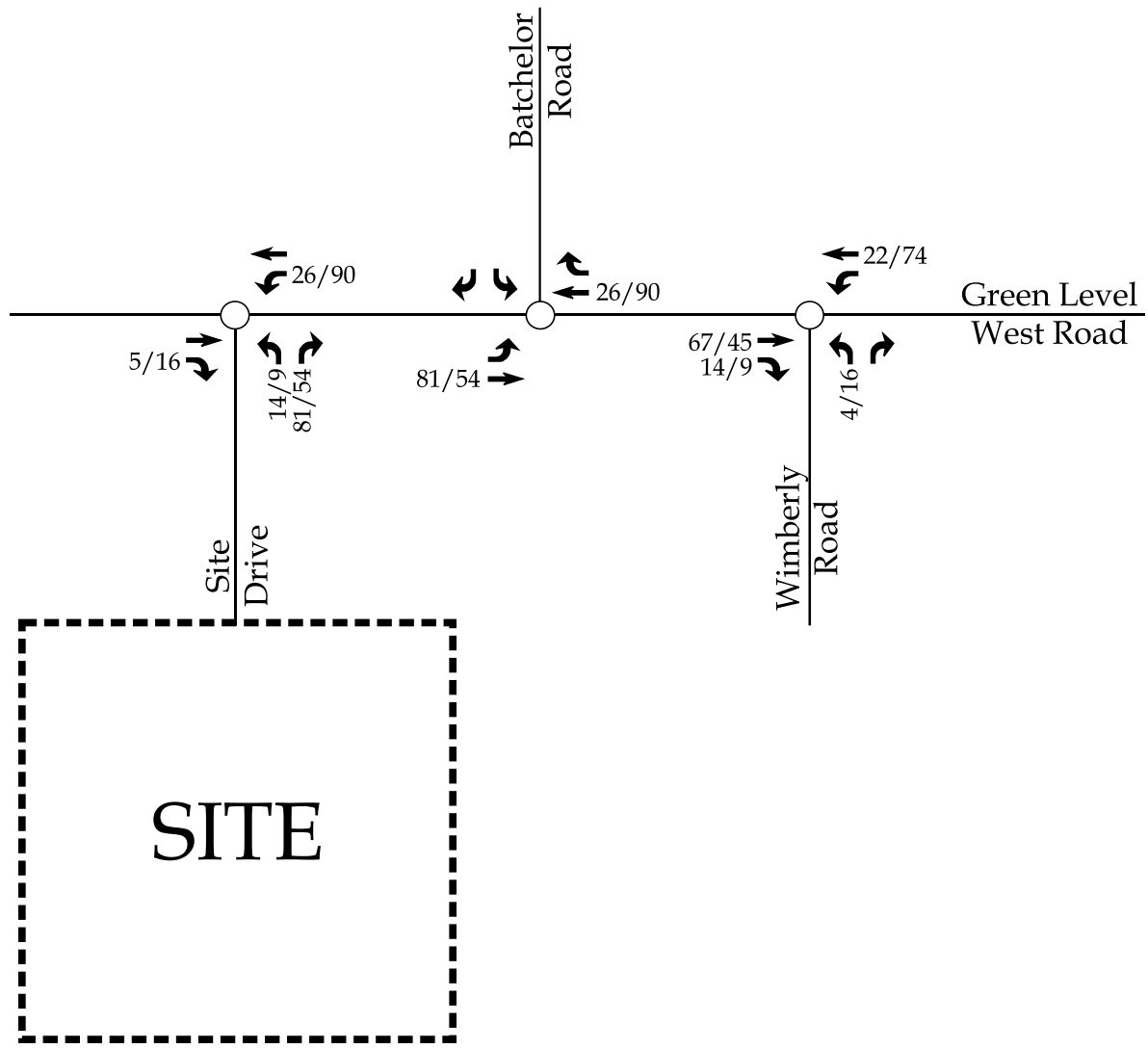
LEGEND

○

Unsignalized Intersection

X / Y →

Weekday AM / PM Peak
Hour Site Trips



5. BUILD (2026) TRAFFIC CONDITIONS

5.1. Build (2026) Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the total site trips were added to the no-build (2026) traffic volumes to determine the build (2026) traffic volumes. Refer to Figure 10 for an illustration of the build (2026) peak hour traffic volumes with the proposed site fully developed.

5.2. Analysis of Build (2026) Peak Hour Traffic

Study intersections were analyzed with the build (2026) traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.

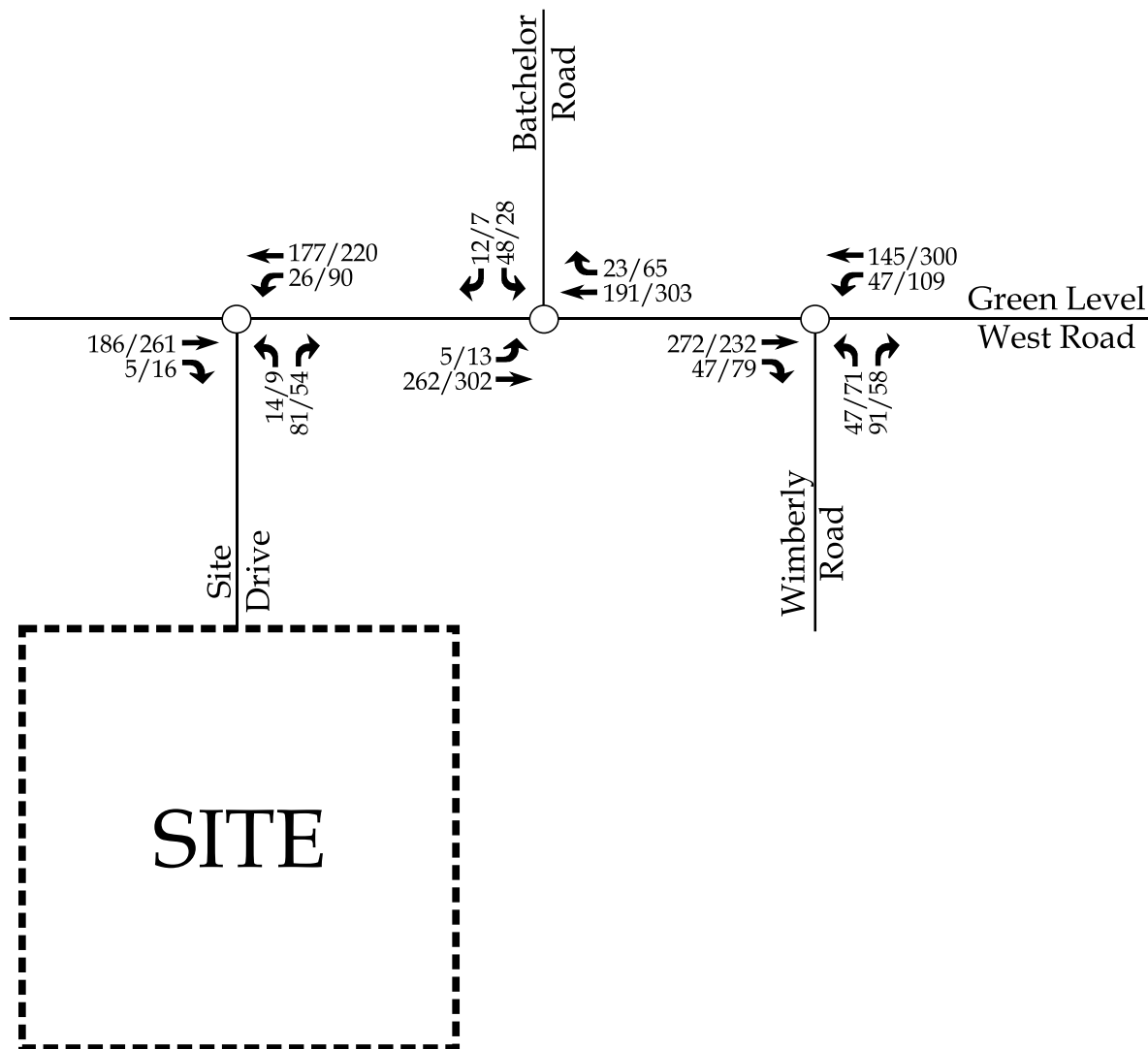
LEGEND

○

Unsignalized Intersection

X / Y →

Weekday AM / PM Peak Hour Traffic



6. TRAFFIC ANALYSIS PROCEDURE

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM), 6th Edition published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 10.3), was used to complete the analyses for all of the study area intersections. Please note that the unsignalized capacity analysis does not provide an overall level of service for an intersection; only delay for an approach with a conflicting movement.

The HCM defines capacity as “the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.” Level of service (LOS) is a term used to represent different driving conditions, and is defined as a “qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers.” Level of service varies from Level “A” representing free flow, to Level “F” where breakdown conditions are evident. Refer to Table 4 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes “initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay”. An average control delay of 50 seconds at a signalized intersection results in LOS “D” operation at the intersection.

Table 4: Highway Capacity Manual – Levels-of-Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

6.1. Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to the NCDOT Congestions Management Guidelines.

7. CAPACITY ANALYSIS

7.1. Green Level West Road and Wimberly Road

The existing unsignalized intersection of Green Level West Road and Wimberly Road was analyzed under existing (2021), no-build (2026), and build (2026) traffic conditions with lane configurations and traffic control shown in Table 5. Based on committed improvements by adjacent developments at this intersection, an exclusive northbound right-turn lane with 50 feet of full width storage and appropriate deceleration and taper length is anticipated to be provided by Wolfe Properties under no-build (2026) conditions. Refer to Table 5 for a summary of the analysis results. Refer to Appendix D for the Synchro capacity analysis reports.

Table 5: Analysis Summary of Green Level West Road and Wimberly Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
Existing (2021) Conditions	EB WB NB	1 TH-RT 1 LT, 1 TH 1 LT-RT	-- A ¹ A ²	N/A	-- A ¹ B ²	N/A
No-Build (2026) Conditions	EB WB NB	1 TH-RT 1 LT, 1 TH 1 LT, 1 RT	-- A ¹ B ²	N/A	-- A ¹ C ²	N/A
Build (2026) Conditions	EB WB NB	1 TH-RT 1 LT, 1 TH 1 LT, 1 RT	-- A ¹ B ²	N/A	-- A ¹ C ²	N/A

1. Level of service for major-street left-turn movement.

2. Level of service for minor-street approach.

Improvement by Wolfe Properties is shown in blue.

Capacity analysis of existing (2021), no-build (2026), and build (2026) traffic conditions indicates the major street left-turn movement of Green Level West Road and Wimberly Road is expected to operate at LOS A during the weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS C or better under all analysis scenarios during the weekday AM and PM peak hours. Based on SimTraffic simulations, the turn lane storages are anticipated to be sufficient under build (2026) conditions.

7.2. Green Level West Road and Batchelor Road

The existing unsignalized intersection of Green Level West Road and Batchelor Road was analyzed under existing (2021), no-build (2026), and build (2026) traffic conditions with existing lane configurations and traffic control. Refer to Table 6 for a summary of the analysis results. Refer to Appendix E for the Synchro capacity analysis reports.

Table 6: Analysis Summary of Green Level West Road and Batchelor Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
Existing (2021) Conditions	EB	1 LT-TH	A ¹	N/A	A ¹	N/A
	WB	1 TH-RT	--		--	
	SB	1 LT-RT	A ²		B ²	
No-Build (2026) Conditions	EB	1 LT-TH	A ¹	N/A	A ¹	N/A
	WB	1 TH-RT	--		--	
	SB	1 LT-RT	B ²		B ²	
Build (2026) Conditions	EB	1 LT-TH	A ¹	N/A	A ¹	N/A
	WB	1 TH-RT	--		--	
	SB	1 LT-RT	B ²		B ²	

1. Level of service for major-street left-turn movement.

2. Level of service for minor-street approach.

Capacity analysis of existing (2021), no-build (2026), and build (2026) traffic conditions indicates the major street left-turn movement at the intersection of Green Level West Road and Batchelor Road is expected to operate at LOS A during the weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS B or better under all analysis scenarios during the weekday AM and PM peak hours. Based on SimTraffic simulations, minimal queuing is anticipated under build (2026) conditions. Based on the proposed location of Site Drive along Green Level West Road and the low number of left-turning vehicles at this intersection, the proposed spacing is anticipated to be sufficient to avoid conflicting left-turn volumes between these two offset intersections.

7.3. Green Level West Road and Site Drive

The proposed intersection of Green Level West and Site Drive was analyzed under build (2026) traffic conditions with the lane configurations and traffic control shown in Table 7. Refer to Table 7 for a summary of the analysis results. Refer to Appendix F for the Synchro capacity analysis reports.

Table 7: Analysis Summary of Green Level West Road and Site Drive

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
Build (2026) Conditions	EB WB NB	1 TH-RT 1 LT, 1 TH 1 LT-RT	-- A ¹ B ²	N/A	-- A ¹ B ²	N/A

1. Level of service for major-street left-turn movement.

2. Level of service for minor-street approach.

Improvements by the developer are shown in **bold**.

Capacity analysis of build (2026) traffic conditions indicates the minor-street approach at the proposed intersection of Green Level West Road and Site Drive is expected to operate at LOS B during both weekday AM and PM peak hours. The major-street left-turn movement is expected to operate at LOS A.

Based on SimTraffic simulations, an exclusive westbound left-turn lane with 50 feet of storage and appropriate deceleration and taper length is recommended at this intersection. Due to the low eastbound volumes at this intersection and minimal queuing, an exclusive eastbound right-turn lane is not recommended.

8. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the proposed development located south of Green Level West Road and west of Batchelor Road in Apex, North Carolina. The proposed development is expected to be built out in 2026. Site access is proposed via one (1) full movement access point along Green Level West Road.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- Existing (2021) Traffic Conditions
- No-Build (2026) Traffic Conditions
- Build (2026) Traffic Conditions

Trip Generation

It is estimated that the proposed development will generate approximately 126 trips (31 entering and 95 exiting) during the weekday AM peak hour and 169 trips (106 entering and 63 exiting) during the weekday PM peak hour.

Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to NCDOT Congestion Management Guidelines. Refer to section 6.1 of this report for a detailed description of any adjustments to these guidelines made throughout the analysis.

Intersection Capacity Analysis Summary

All the study area intersections (including the proposed site driveways) are expected to operate at acceptable levels-of-service under existing and future year conditions.

9. RECOMMENDATIONS

Based on the findings of this study, specific geometric improvements have been identified and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figure 11 for an illustration of the recommended lane configuration for the proposed development.

Improvements by Wolfe Properties

Green Level West Road and Wimberly Road

- Provide an exclusive northbound right-turn lane with a minimum of 50 feet of full-width storage and appropriate deceleration and taper length.

Recommended Improvements by Developer

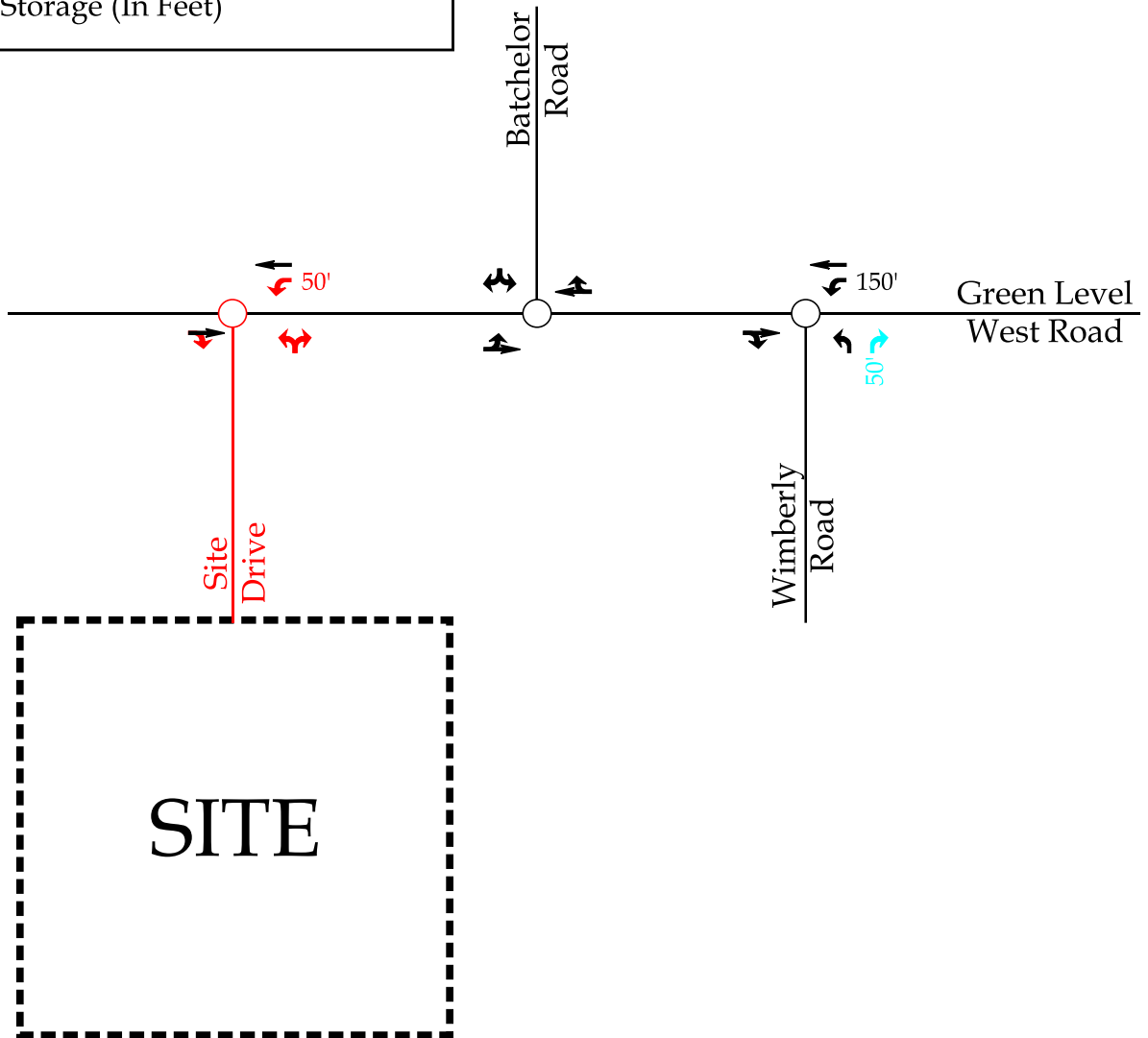
Green Level West Road and Site Drive

- Construct the northbound approach with one ingress lane and one egress lane.
- Provide an exclusive westbound left-turn lane with a minimum of 50 feet of full-width storage and appropriate deceleration and taper length.
- Provide stop control for the northbound approach.



LEGEND

- Unsignalized Intersection
- ➡ Existing Lane
- ➡ Improvement by Developer
- ➡ Wolfe Properties Improvement
- x' Storage (In Feet)



Moving forward.



Williams Property
Apex, NC

Recommended Lane
Configurations

Scale: Not to Scale | Figure 11

TECHNICAL APPENDIX

APPENDIX A

SCOPING DOCUMENTATION

Mary Lynn Smith

From: Brennan, Sean P <spbrennan@ncdot.gov>
Sent: Friday, February 05, 2021 8:41 AM
To: Serge Grebenschikov; Mary Lynn Smith; Russell Dalton; Neidringhaus, Amy N; Bunting, Clarence B
Cc: Joshua Reinke; Ishak, Doumit Y; Walker, Braden M
Subject: Re: [External] RE: Williams Property - TIA Scoping Meeting Minutes

Sounds good!

Regards,

Sean Brennan, PE
Senior Assistant District Engineer
Division 5/District 1
Department of Transportation

919-733-3213 office
919-715-5778 fax
spbrennan@ncdot.gov

4009 District Drive (Physical Address)
Raleigh, NC 27607

1575 Mail Service Center (Mailing Address)
Raleigh, NC 27699-1575



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From: Serge Grebenschikov <Serge.Grebenschikov@apexnc.org>
Sent: Friday, February 5, 2021 8:39 AM
To: Mary Lynn Smith <msmith@rameykemp.com>; Brennan, Sean P <spbrennan@ncdot.gov>; Russell Dalton

<Russell.Dalton@apexnc.org>; Neidringhaus, Amy N <anneidringhaus@ncdot.gov>; Bunting, Clarence B <cbunting@ncdot.gov>
Cc: Joshua Reinke <jreinke@rameykemp.com>; Ishak, Doumit Y <dishak@ncdot.gov>; Walker, Braden M <bmwalker1@ncdot.gov>
Subject: RE: [External] RE: Williams Property - TIA Scoping Meeting Minutes

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Thanks Mary Lynn!

From: Mary Lynn Smith [mailto:msmith@rameykemp.com]
Sent: Thursday, February 04, 2021 6:33 PM
To: Serge Grebenschikov <Serge.Grebenschikov@apexnc.org>; Brennan, Sean P <spbrennan@ncdot.gov>; Russell Dalton <Russell.Dalton@apexnc.org>; Neidringhaus, Amy N <anneidringhaus@ncdot.gov>; Bunting, Clarence B <cbunting@ncdot.gov>
Cc: Joshua Reinke <jreinke@rameykemp.com>; Ishak, Doumit Y <dishak@ncdot.gov>; Walker, Braden M <bmwalker1@ncdot.gov>
Subject: RE: [External] RE: Williams Property - TIA Scoping Meeting Minutes

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Good afternoon all,

Serge mentioned one additional adjacent development to include – Batchelor Road Residential (17-TAR-423). We have added this development into the attached MOU and updated the proposed adjacent development trips figure. Please feel free to reach out with any questions. None of the other assumptions or methodologies have been changed from the original.

Thank you!

Mary Lynn Smith, EI
Traffic Engineering Associate
T 919 872 5115 | D 919 872 0642

rameykemp.com

From: Serge Grebenschikov <Serge.Grebenschikov@apexnc.org>
Sent: Thursday, February 04, 2021 8:32 AM
To: Brennan, Sean P <spbrennan@ncdot.gov>; Mary Lynn Smith <msmith@rameykemp.com>; Russell Dalton <Russell.Dalton@apexnc.org>; Neidringhaus, Amy N <anneidringhaus@ncdot.gov>; Bunting, Clarence B <cbunting@ncdot.gov>
Cc: Joshua Reinke <jreinke@rameykemp.com>; Ishak, Doumit Y <dishak@ncdot.gov>; Walker, Braden M <bmwalker1@ncdot.gov>
Subject: RE: [External] RE: Williams Property - TIA Scoping Meeting Minutes

Hi Mary Lynn,

Thanks for sending this over to review. The approach in the MOU works for the Town as well.

Kind regards

Serge Grebenschikov, PE

Traffic Engineer
Public Works & Transportation – Traffic
73 Hunter Street, 3rd Fl
PO Box 250
Apex, NC 27502
P: (919) 372-7448
E: Serge.Grebenschikov@apexnc.org

From: Brennan, Sean P [<mailto:spbrennan@ncdot.gov>]
Sent: Thursday, February 04, 2021 8:20 AM
To: Mary Lynn Smith <msmith@rameykemp.com>; Russell Dalton <Russell.Dalton@apexnc.org>; Neidringhaus, Amy N <anneidringhaus@ncdot.gov>; Bunting, Clarence B <cbunting@ncdot.gov>; Serge Grebenschikov <Serge.Grebenschikov@apexnc.org>
Cc: Joshua Reinke <jreinke@rameykemp.com>; Ishak, Doumit Y <dishak@ncdot.gov>; Walker, Braden M <bmwalker1@ncdot.gov>
Subject: Re: [External] RE: Williams Property - TIA Scoping Meeting Minutes

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Mary Lynn,

I'm okay with the MOU.

Regards,

Sean Brennan, PE

Senior Assistant District Engineer

Division 5/District 1

Department of Transportation

919-733-3213 office

919-715-5778 fax

spbrennan@ncdot.gov

4009 District Drive (Physical Address)

Raleigh, NC 27607

1575 Mail Service Center (Mailing Address)

Raleigh, NC 27699-1575



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From: Mary Lynn Smith <msmith@rameykemp.com>

Sent: Wednesday, February 3, 2021 6:31 PM

To: Russell Dalton <Russell.Dalton@apexnc.org>; Neidringhaus, Amy N <anneidringhaus@ncdot.gov>; Bunting, Clarence B <cbunting@ncdot.gov>; Serge Grebenschikov <Serge.Grebenschikov@apexnc.org>; Brennan, Sean P <spbrennan@ncdot.gov>

Cc: Joshua Reinke <jreinke@rameykemp.com>; Ishak, Doumit Y <dishak@ncdot.gov>; Walker, Braden M <bmwalker1@ncdot.gov>

Subject: [External] RE: Williams Property - TIA Scoping Meeting Minutes

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to [Report Spam](#).

Good afternoon all,

Please see attached for the MOU for Williams Property. Let us know if you have any questions!

Thank you,

Mary Lynn Smith, EI
Traffic Engineering Associate
T 919 872 5115 | D 919 872 0642

rameykemp.com

From: Mary Lynn Smith
Sent: Tuesday, January 26, 2021 8:08 AM
To: Jacob Anderson <jacob@alliancegroupnc.com>; Russell Dalton <Russell.Dalton@apexnc.org>; Neidringhaus, Amy N <anneidringhaus@ncdot.gov>; Bunting, Clarence B <cbunting@ncdot.gov>; Serge Grebenschikov <Serge.Grebenschikov@apexnc.org>; Brennan, Sean P <spbrennan@ncdot.gov>
Cc: Bob Zumwalt <zumwalt@alliancegroupnc.com>; Brian K. Ketchem <KetchemBK@stanleymartin.com>; Joshua Reinke <jreinke@rameykemp.com>; Ishak, Doumit Y <dishak@ncdot.gov>; Walker, Braden M <bmwalker1@ncdot.gov>
Subject: Williams Property - TIA Scoping Meeting Minutes

Good morning,

Thank you all for taking the time to meet for the proposed Williams Property residential development. Please see below for a summary of the meeting minutes/scope. Anything that was discussed after the scoping meeting is included in *italics*. Feel free to let us know if you have any additional thoughts or questions and feel free to distribute these notes, as necessary.

Attendees: Clarence Bunting (NCDOT), Sean Brennan (NCDOT), Amy Neidringhaus (NCDOT), Russell Dalton (Town), Serge Grebenschikov (Town), Jacob Anderson (Alliance Group of NC), Mary Lynn Smith (RKA), Josh Reinke (RKA)

Overview:

- Size:
 - 170 single-family homes
- Located south of Green Level West Road and west of Wimberly Road
- Access is proposed to be provided via one (1) full movement driveway along Green Level West Road west of Batchelor Road
- Build year: 2025-2026

Study Area

- Existing Study Intersections:
 - Green Level West Road and Wimberly Road
 - *2019 counts from Wolfe Property (attached) will be grown to 2021 via a 2% annually compounded growth rate for existing conditions due to the COVID-19 pandemic*
 - Green Level West Road and Batchelor Road
 - *2017 turning movement counts will be utilized at Batchelor Road (and conservatively growing up by 2% compounded annually even though not much has changed along Batchelor Road)*
 - *Through movement traffic will be balanced against the grown 2019 counts at Wimberly Road along Green Level West Road*

Analysis Scenarios:

- Existing (2021) conditions
- No-Build (2026) conditions
- Build (2026) conditions
- Build (2026) conditions with improvements

Future Conditions:

- Growth rate of 2%/year
- Adjacent development(s):
 - Wolfe Properties
 - *Tunstall Property (Preserve at White Oak Creek)*
 - *Westford*
 - *Council-Smith (Weddington Smith Roberts PUD)*
 - *Lake Castleberry*
- *The following improvements by adjacent developments will be included in future analysis:*
 - *Wimberly Road and Green Level West Road*
 - *Construct an exclusive westbound left-turn lane with 100' of storage (Lake Castleberry/Council-Smith)*
 - *Construct an exclusive northbound right-turn lane with 50' of storage (Wolfe Properties)*

Additional Notes/Questions:

- NCDOT mentioned neighbor complaints along Batchelor Road regarding walkability

Mary Lynn Smith, EI
Traffic Engineering Associate
 T 919 872 5115 | D 919 872 0642
rameykemp.com

Moving forward.



RAMEY KEMP ASSOCIATES

OWNERSHIP • OUR CULTURE • YOUR SUCCESS



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February 4, 2021

Serge Grebenschikov, PE
Traffic Engineer
Public Works & Transportation – Traffic
73 Hunter Street, 3rd Fl
PO Box 250
Apex, NC 27502

Reference: Williams Property
Apex, North Carolina

Subject: Memorandum of Understanding for TIA Report

Dear Mr. Grebenschikov:

The following is a Memorandum of Understanding (MOU) outlining the proposed scope of work and assumptions related to the Traffic Impact Analysis (TIA) for the proposed Williams Property development, located south of Green Level West Road and west of Wimberly Road in Apex, North Carolina. The development is anticipated to consist of approximately 170 single-family homes and is expected to be fully built-out by 2026. Access to the site is proposed via one (1) full movement access point along Green Level West Road.

Study Area

Based on coordination with the North Carolina Department of Transportation (NCDOT) and the Town of Apex (Town), the study area is proposed to consist of the following intersections:

- Green Level West Road and Wimberly Road
- Green Level West Road and Batchelor Road
- Green Level West Road and Site Drive

Analysis Scenarios

All capacity analyses will be performed utilizing Synchro (Version 10.3). All study intersections will be analyzed during the weekday AM and PM peak hours under the following proposed traffic scenarios:

- Existing (2021) Traffic Conditions
- No-Build (2026) Traffic Conditions
- Build (2026) Traffic Conditions
- Build (2026) Traffic Conditions with Improvements

Existing Traffic Volumes

Peak hour counts were conducted at the intersection of Green Level West Road and Wimberly Road in October of 2019, during weekday AM (7:00 to 9:00 AM) and weekday PM (4:00 to 6:00 PM) peak hours. This data was grown up to 2021 via a 2% annually compounded growth rate. Due to the COVID-19 pandemic, new data was not collected.

Peak hour turning movement counts were conducted at the intersection of Green Level West Road and Batchelor Road in October of 2017, during weekday AM (7:00 to 9:00 AM) and weekday PM (4:00 to 6:00 PM) peak hours. Based on Google Earth aerials between 2017 and 2020, there has been minimal changes to development along Batchelor Road; however, turning movement volumes were still grown up to 2021 via a 2% annually compounded growth rate to be conservative. The through movement volumes at this intersection were balanced with the adjacent intersection of Green Level West Road and Wimberly Road, since data collection at this intersection was more recent.

The above methodology was coordinated with the Town and NCDOT during scoping and through email coordination after scoping.

No-Build Traffic Volumes

Per coordination with NCDOT and the Town, no-build traffic volumes will be determined by projecting existing (2021) traffic volumes to 2026 using a 2% annually compounded growth rate.

Adjacent Developments

Per coordination with NCDOT and the Town, the following adjacent developments will be considered in this study:

- Wolfe Properties
- Tunstall Property (Preserve at White Oak Creek)
- Westford
- Council-Smith (Weddington Smith Roberts PUD)
- Lake Castleberry
- Batchelor Road Residential

Wolfe Properties has an improvement at the intersection of Wimberly Road and Green Level West Road, which is proposed to be included in future analysis scenarios:

- Provide an exclusive northbound right-turn lane with 50 feet of storage.

It should be noted that neither of the study area intersections for the proposed site were included in the Tunstall Property and Westford TIAs. Based on the locations of these developments, adjacent development trips to/from the north along Wimberly Road were assumed to ultimately travel to/from the west along Green Level West Road for these two developments. This was assumed due to the interconnectivity to the east and that it would be easier for the trips from these developments to utilize Jenks Road and/or Green Level Church Road if traveling to/from the east. This methodology is expected to provide conservative results because it routes trips from these developments through the entire proposed roadway network. Refer to the attachments for adjacent development trips.

Trip Generation

Average weekday daily and peak hour trips for the proposed site were calculated utilizing methodology contained within the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition. Refer to Table 1 for a detailed breakdown of the trip generation.

Table 1: Trip Generation Summary

Land Use	Intensity	Daily Traffic (vpd)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing (210)	170 units	1,700	31	95	106	63

It is estimated that the proposed development will generate approximately 1,700 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 126 trips (31 entering and 95 exiting) will occur during the weekday AM peak hour and 169 trips (106 entering and 63 exiting) will occur during the weekday PM peak hour.

Trip Distribution

The site trips were distributed based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment. A summary of the proposed site trip distribution is below:

- 15% to/from the south via Wimberly Road
- 15% to/from the west via Green Level West Road
- 70% to/from the east via Green Level West Road

Refer to the attachments for a figure showing the anticipated site trip distribution for the site.

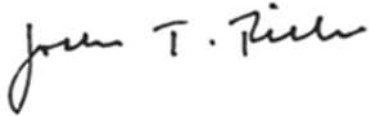
Report

The TIA will be prepared based on NCDOT requirements.

If you find this memorandum of understanding acceptable, please let me know so that we may include it in the TIA report. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

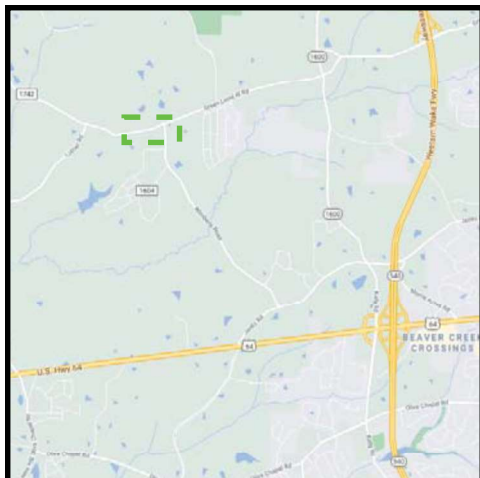
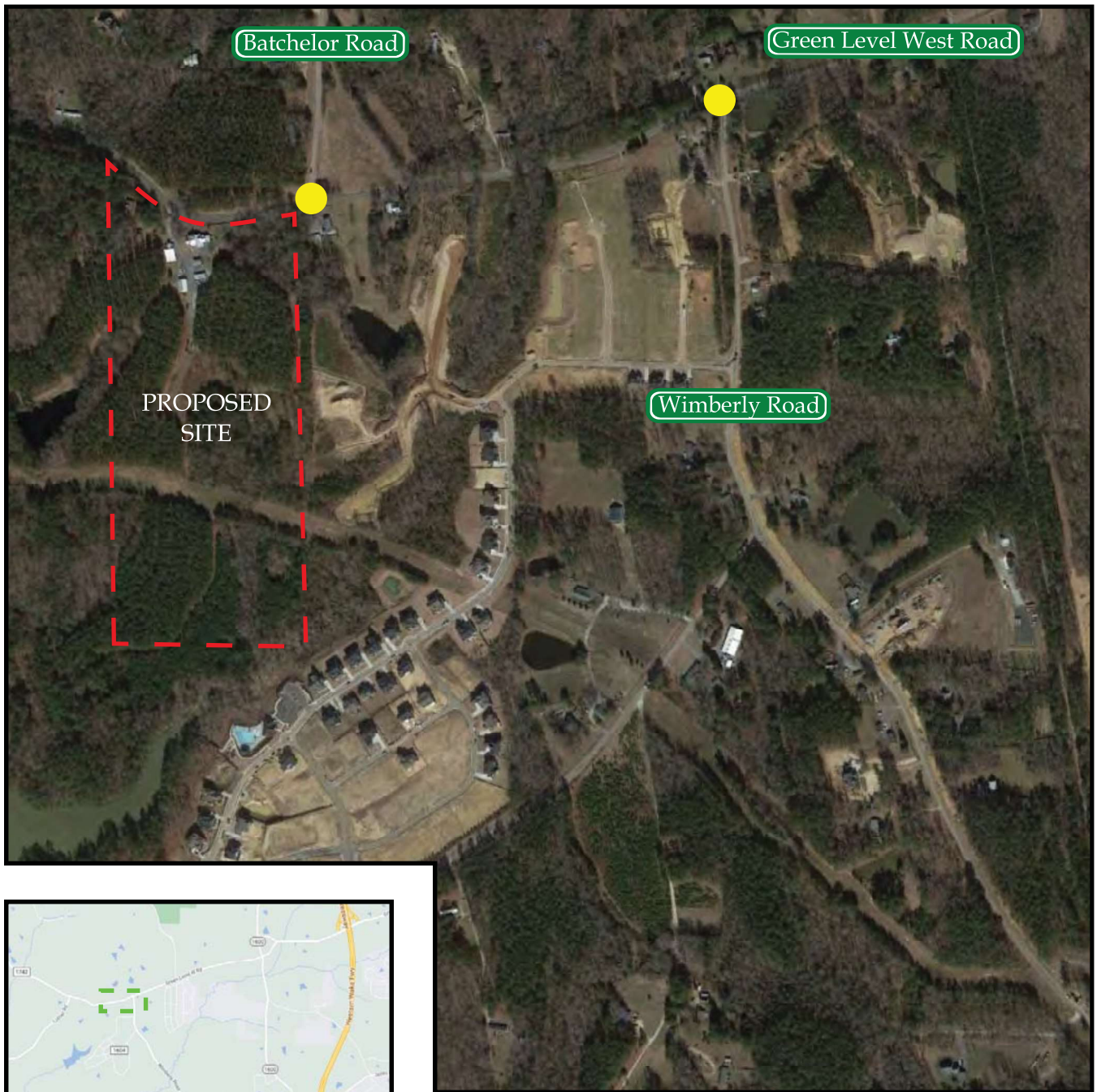
Ramey Kemp & Associates, Inc.



Josh Reinke, PE
State Traffic Engineering Lead

Attachments: Site Location Map Figure
Existing Lane Configurations
Existing (2021) Traffic Volumes Figure
Adjacent Development Information
Site Trip Distribution Figure
Count Information





LEGEND

- - - Proposed Site Location
- Study Intersection
- - - Study Area

Moving forward.

RKA
RAMEY KEMP ASSOCIATES

Williams Property
Apex, NC

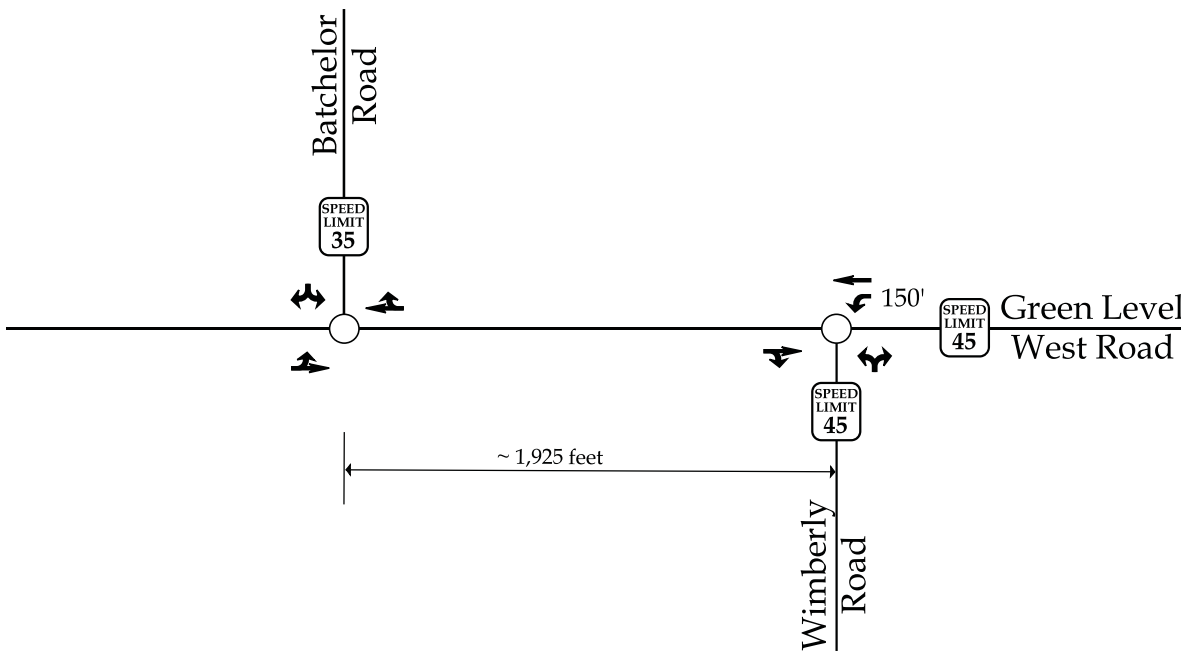
Site Location Map

Scale: Not to Scale

LEGEND

- Unsignalized Intersection
- ➔ Existing Lane
- X' Storage (In Feet)
- SPEED LIMIT XX

 Posted Speed Limit



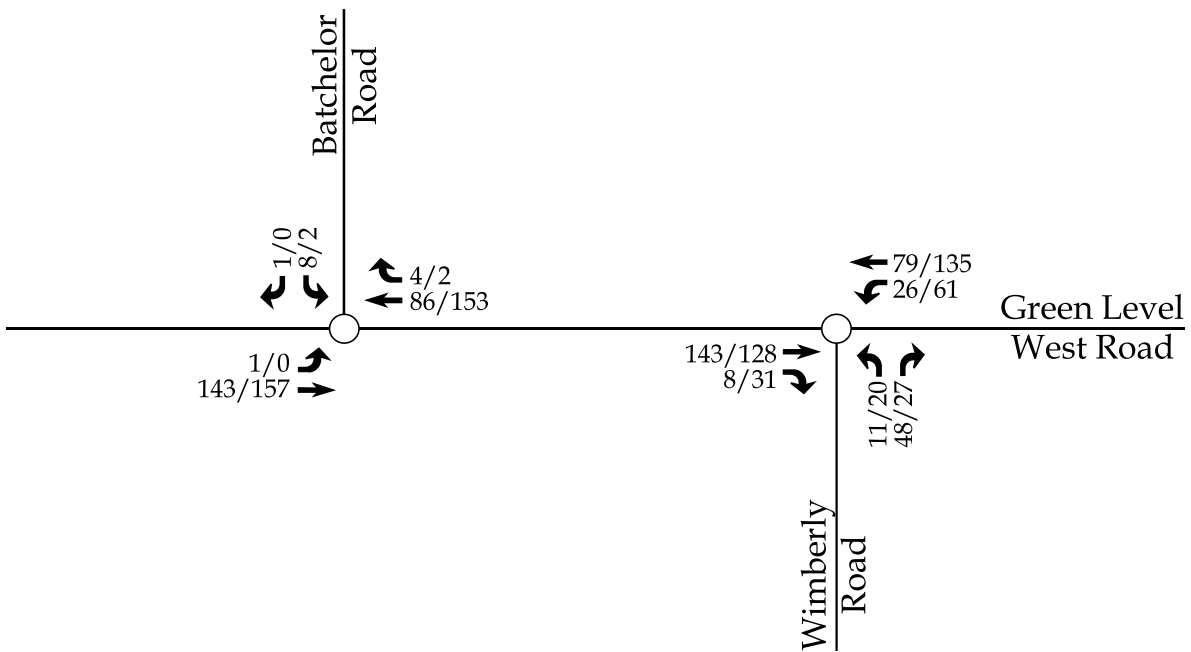
LEGEND

○

Unsignalized Intersection

X / Y →

Weekday AM / PM Peak Hour Traffic



Moving forward.



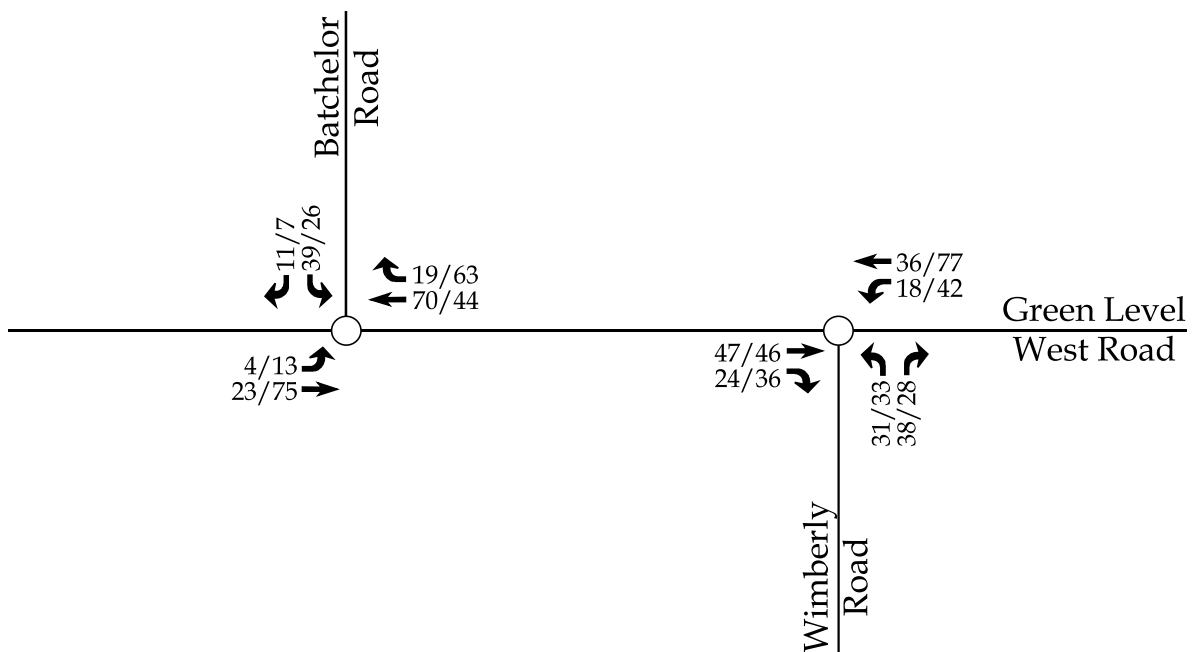
Williams Property
Apex, NC

Existing (2021)
Peak Hour Traffic

Scale: Not to Scale

LEGEND

- Unsignalized Intersection
- X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips



Moving forward.



Williams Property
Apex, NC

Peak Hour Adjacent
Development Trips

Scale: Not to Scale

LEGEND

○

Unsignalized Intersection

x% →

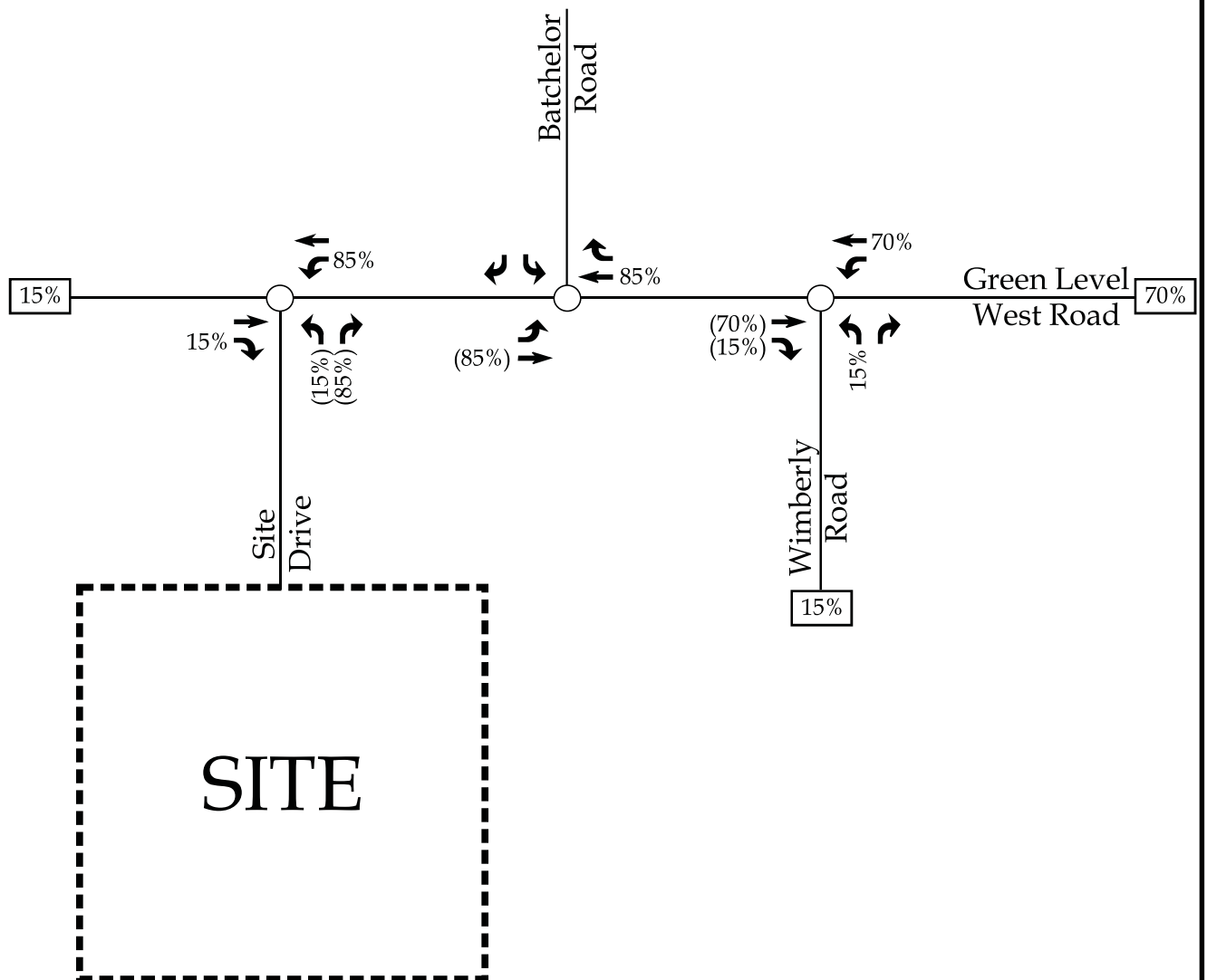
Entering Trip Distribution

(Y%) →

Exiting Trip Distribution

XX%

Regional Trip Distribution



APPENDIX B

COUNT DATA



5808 Faringdon Place, Suite 100
 Raleigh, NC 27609
 PH: 919 872-5115

File Name : Green Level West Road and Batchelor Road
 Site Code : 00101817
 Start Date : 10/18/2017
 Page No : 1

Groups Printed- Cars & Trucks

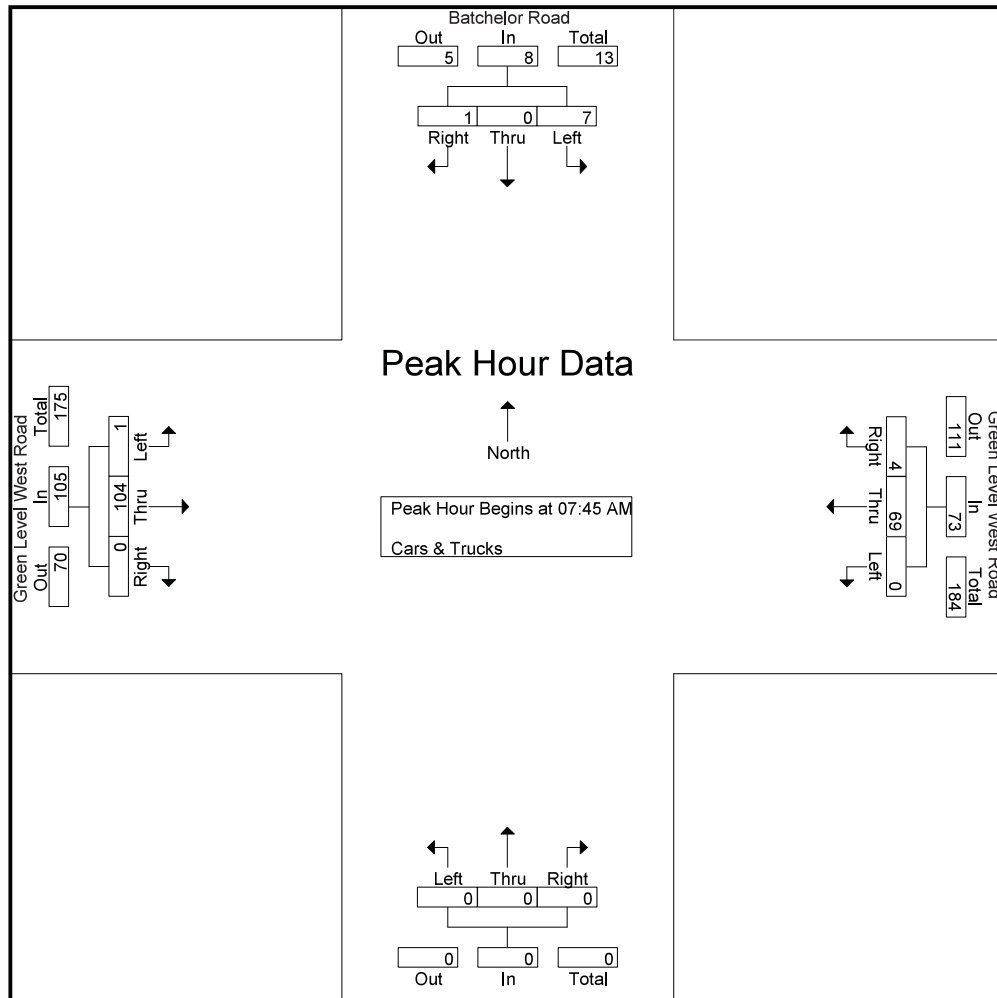
	Batchelor Road From North					Green Level West Road From East					From South					Green Level West Road From West					Exclu. Total	Inclu. Total	Int. Total
Start Time	Right	Thru	Left	TRKS	App. Total	Right	Thru	Left	TRKS	App. Total	Right	Thru	Left	TRKS	App. Total	Right	Thru	Left	TRKS	App. Total			
07:00 AM	0	0	2	0	2	0	23	0	1	23	0	0	0	0	0	0	12	0	0	12	1	37	38
07:15 AM	1	0	3	0	4	1	14	0	0	15	0	0	0	0	0	0	16	0	0	16	0	35	35
07:30 AM	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	24	0	0	24	0	39	39
07:45 AM	0	0	2	0	2	0	17	0	0	17	0	0	0	0	0	0	22	0	1	22	1	41	42
Total	1	0	7	0	8	1	69	0	1	70	0	0	0	0	0	0	74	0	1	74	2	152	154
08:00 AM	0	0	2	0	2	1	19	0	1	20	0	0	0	0	0	0	22	0	0	22	1	44	45
08:15 AM	0	0	1	0	1	1	19	0	0	20	0	0	0	0	0	0	31	1	2	32	2	53	55
08:30 AM	1	0	2	0	3	2	14	0	3	16	0	0	0	0	0	0	29	0	1	29	4	48	52
*** BREAK ***																							
Total	1	0	5	0	6	4	52	0	4	56	0	0	0	0	0	0	82	1	3	83	7	145	152
*** BREAK ***																							
04:00 PM	0	0	1	0	1	3	6	0	0	9	0	0	0	0	0	0	12	1	1	13	1	23	24
04:15 PM	0	0	4	0	4	1	19	0	0	20	0	0	0	0	0	0	20	2	0	22	0	46	46
04:30 PM	0	0	0	0	0	2	16	0	0	18	0	0	0	0	0	0	23	0	1	23	1	41	42
04:45 PM	0	0	0	0	0	3	20	0	1	23	0	0	0	0	0	0	22	0	0	22	1	45	46
Total	0	0	5	0	5	9	61	0	1	70	0	0	0	0	0	0	77	3	2	80	3	155	158
05:00 PM	0	0	1	0	1	1	26	0	1	27	0	0	0	0	0	0	38	0	0	38	1	66	67
05:15 PM	0	0	0	0	0	1	31	0	0	32	0	0	0	0	0	0	41	0	0	41	0	73	73
05:30 PM	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	0	49	0	1	49	1	77	78
05:45 PM	0	0	1	0	1	0	28	0	1	28	0	0	0	0	0	0	37	0	0	37	1	66	67
Total	0	0	2	0	2	2	113	0	2	115	0	0	0	0	0	0	165	0	1	165	3	282	285
Grand Total	2	0	19	0	21	16	295	0	8	311	0	0	0	0	0	0	398	4	7	402	15	734	749
Apprch %	9.5	0	90.5			5.1	94.9	0			0	0	0			0	99	1					
Total %	0.3	0	2.6		2.9	2.2	40.2	0		42.4	0	0	0		0	0	54.2	0.5		54.8	2	98	



5808 Faringdon Place, Suite 100
 Raleigh, NC 27609
 PH: 919 872-5115

File Name : Green Level West Road and Batchelor Road
 Site Code : 00101817
 Start Date : 10/18/2017
 Page No : 2

	Batchelor Road From North				Green Level West Road From East				From South				Green Level West Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	2	2	0	17	0	17	0	0	0	0	0	22	0	22	41
08:00 AM	0	0	2	2	1	19	0	20	0	0	0	0	0	22	0	22	44
08:15 AM	0	0	1	1	1	19	0	20	0	0	0	0	0	31	1	32	53
08:30 AM	1	0	2	3	2	14	0	16	0	0	0	0	0	29	0	29	48
Total Volume	1	0	7	8	4	69	0	73	0	0	0	0	0	104	1	105	186
% App. Total	12.5	0	87.5		5.5	94.5	0		0	0	0		0	99	1		
PHF	.250	.000	.875	.667	.500	.908	.000	.913	.000	.000	.000	.000	.000	.839	.250	.820	.877

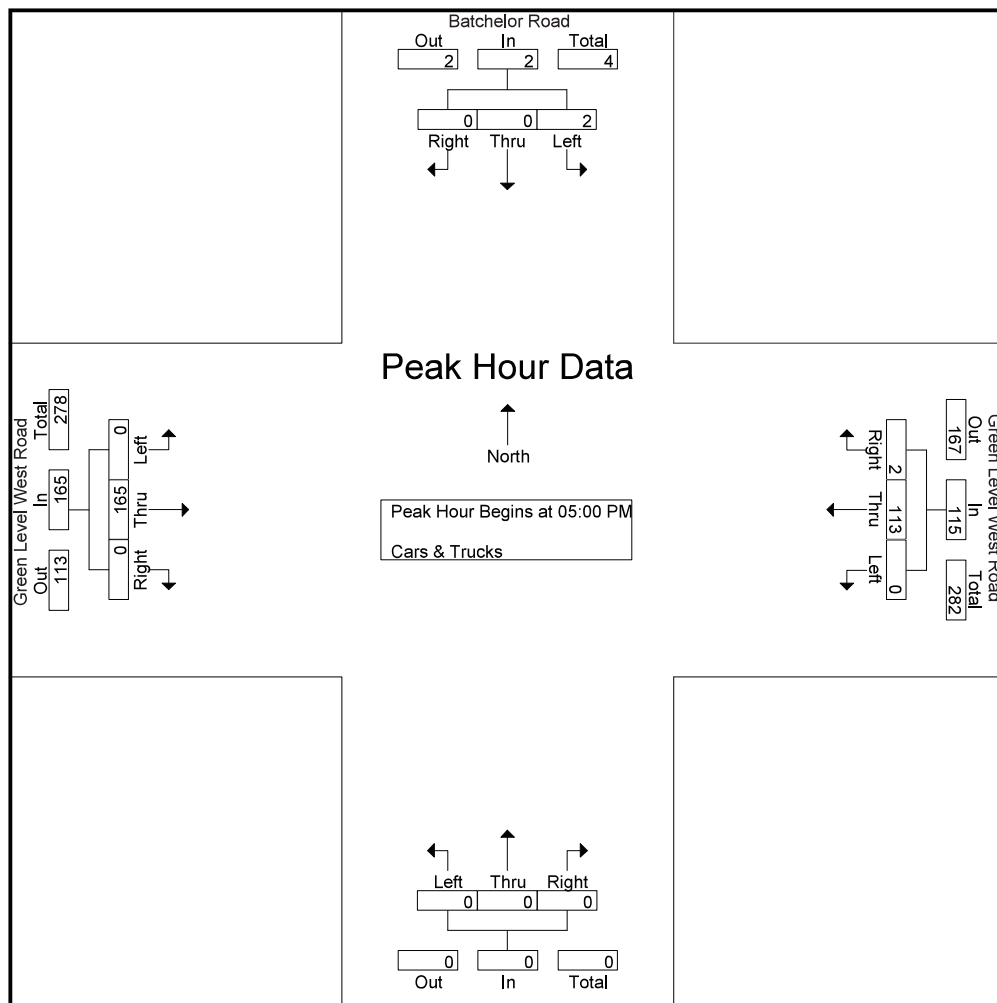




5808 Faringdon Place, Suite 100
 Raleigh, NC 27609
 PH: 919 872-5115

File Name : Green Level West Road and Batchelor Road
 Site Code : 00101817
 Start Date : 10/18/2017
 Page No : 3

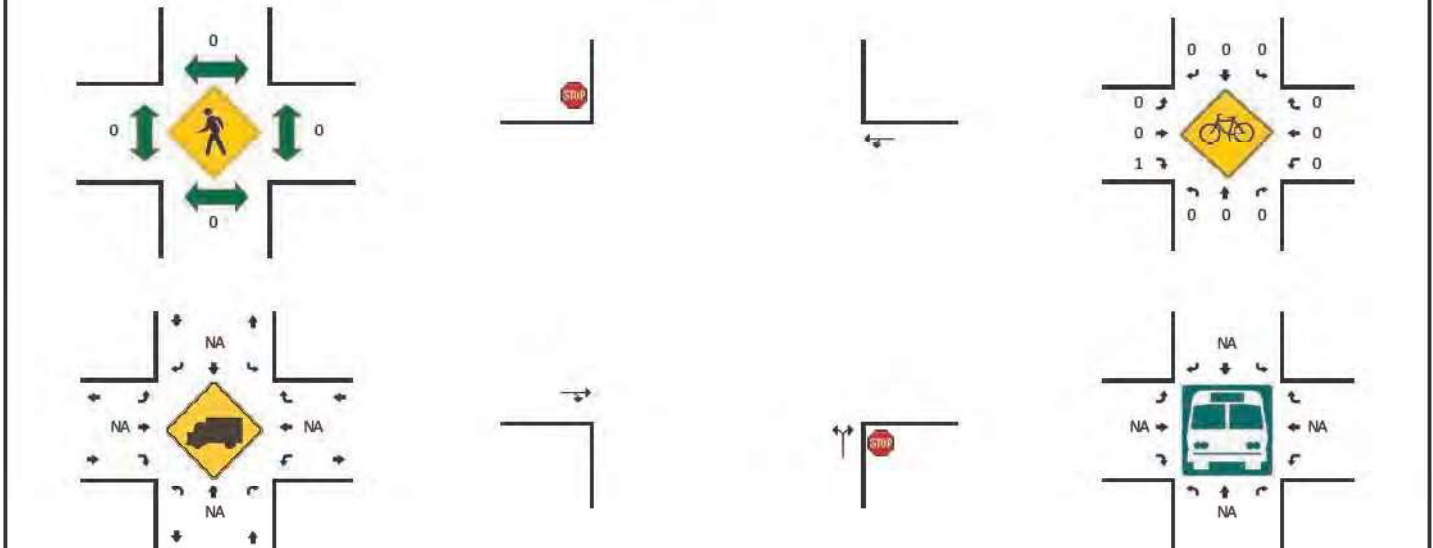
	Batchelor Road From North				Green Level West Road From East				From South				Green Level West Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	1	1	1	26	0	27	0	0	0	0	0	38	0	38	66
05:15 PM	0	0	0	0	1	31	0	32	0	0	0	0	0	41	0	41	73
05:30 PM	0	0	0	0	0	28	0	28	0	0	0	0	0	49	0	49	77
05:45 PM	0	0	1	1	0	28	0	28	0	0	0	0	0	37	0	37	66
Total Volume	0	0	2	2	2	113	0	115	0	0	0	0	0	165	0	165	282
% App. Total	0	0	100		1.7	98.3	0		0	0	0		0	100	0		
PHF	.000	.000	.500	.500	.500	.911	.000	.898	.000	.000	.000	.000	.000	.842	.000	.842	.916



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																		

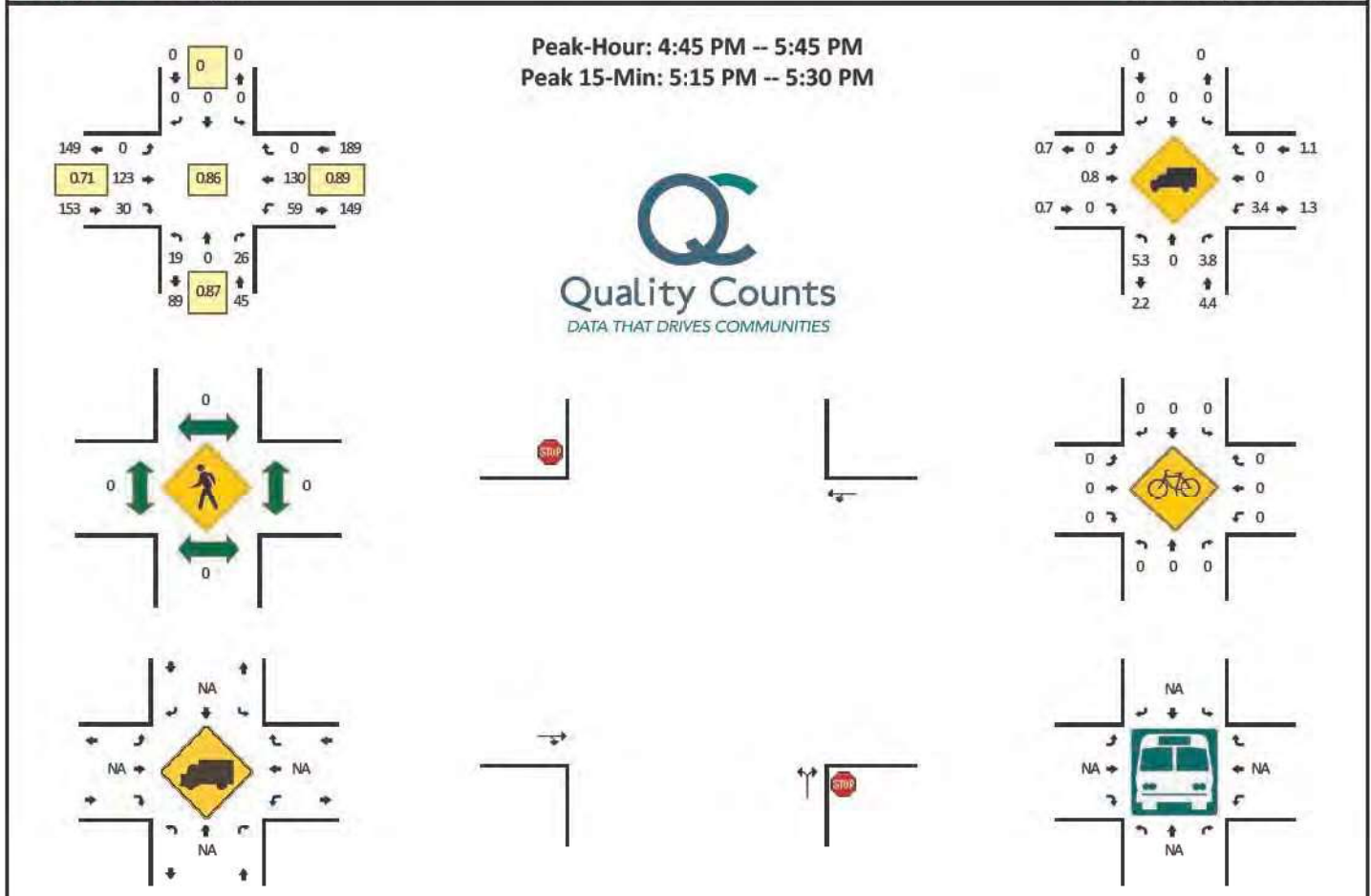
Comments:

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



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:

APPENDIX C

ADJACENT DEVELOPMENT INFORMATION

Traffic Impact Analysis

Tunstall Property Apex, NC

Prepared for:

Raleigh Land Fund I, LLC

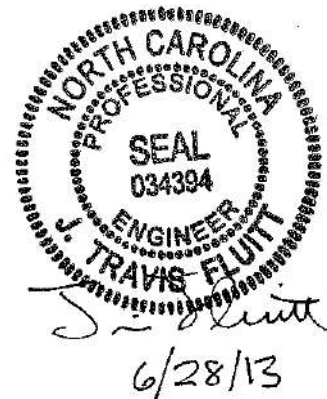
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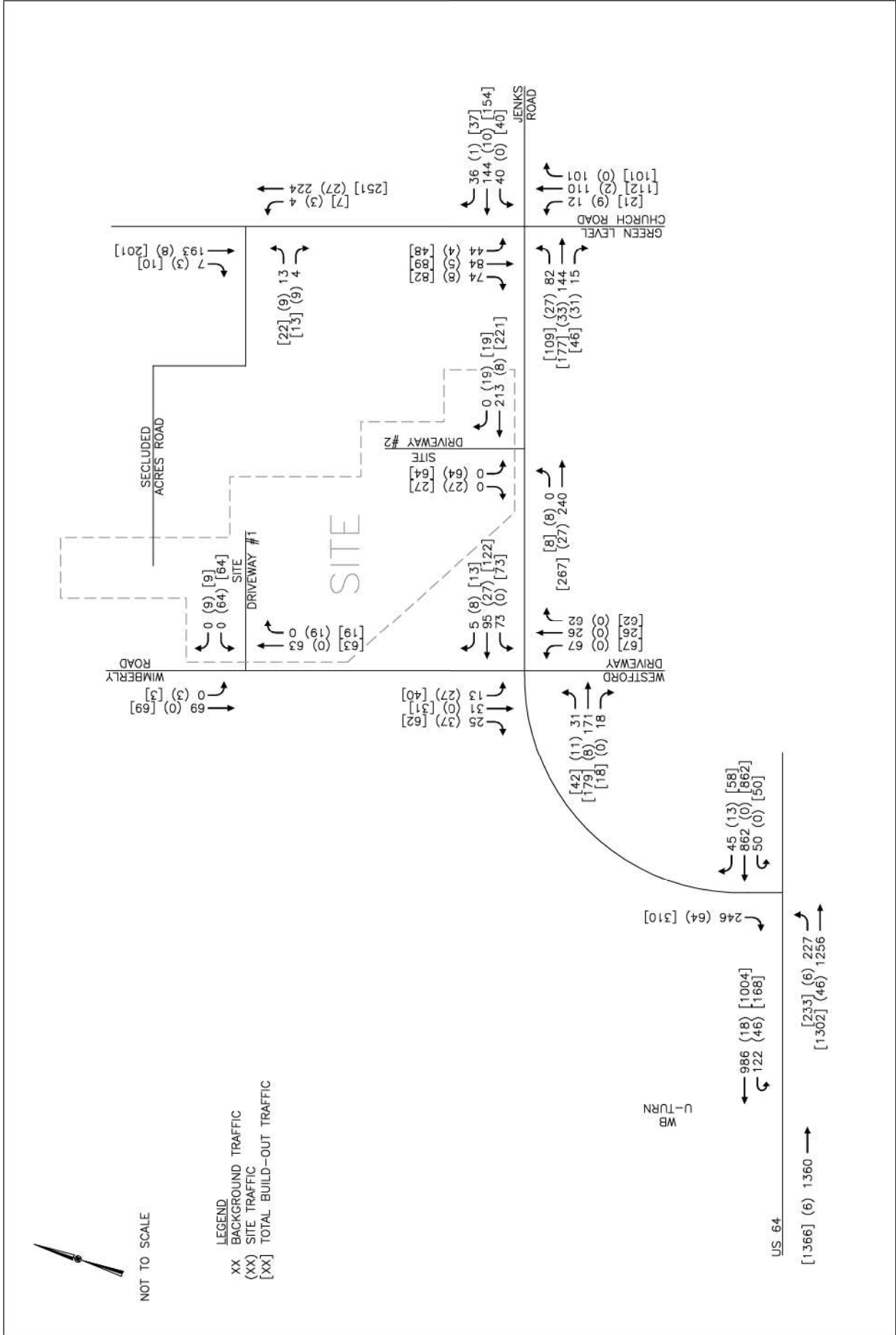
**Traffic Impact Analysis
for
Tunstall Property
Apex, North Carolina**

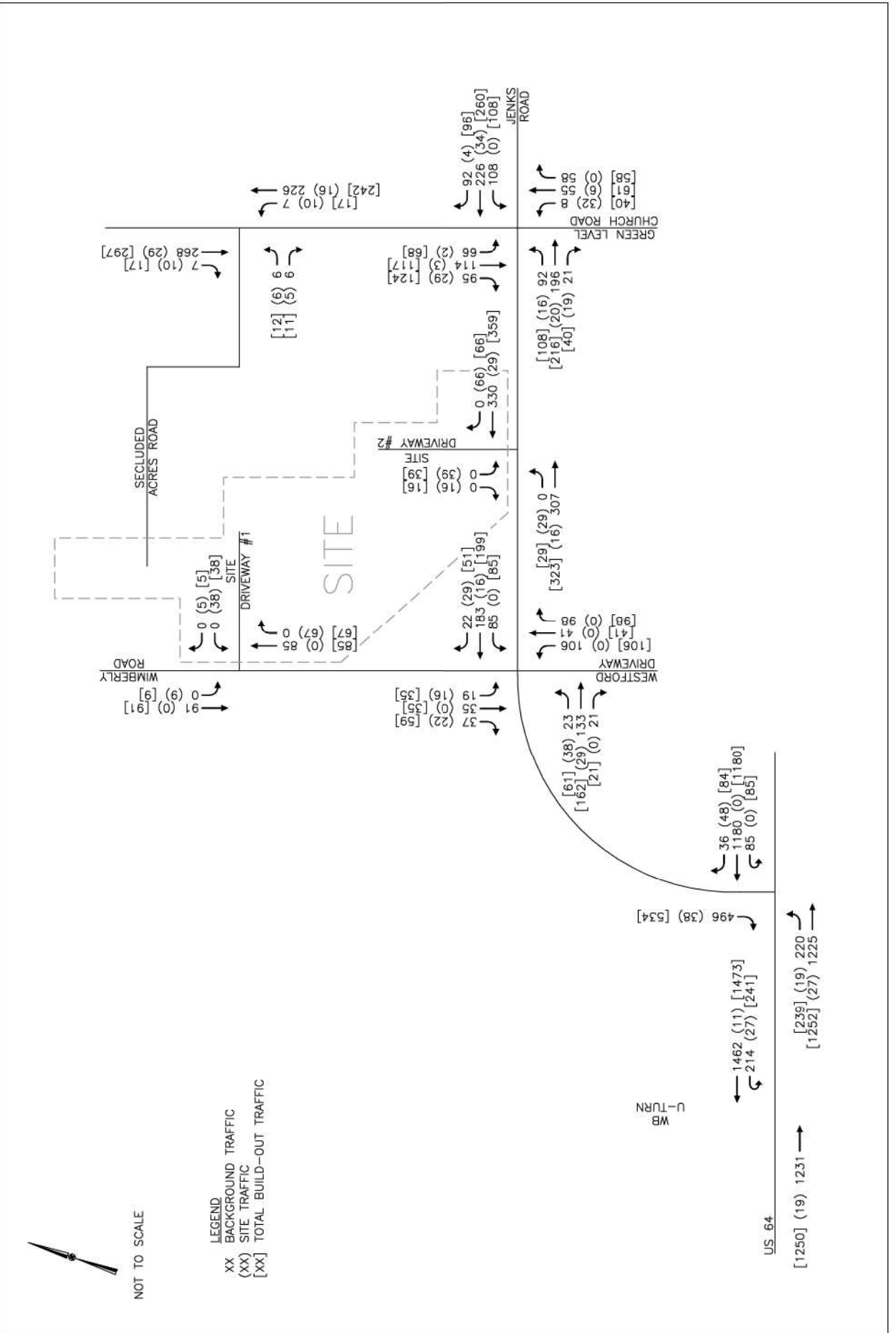
**Prepared for:
Raleigh Land Fund I, LLC
Raleigh, NC**

**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:

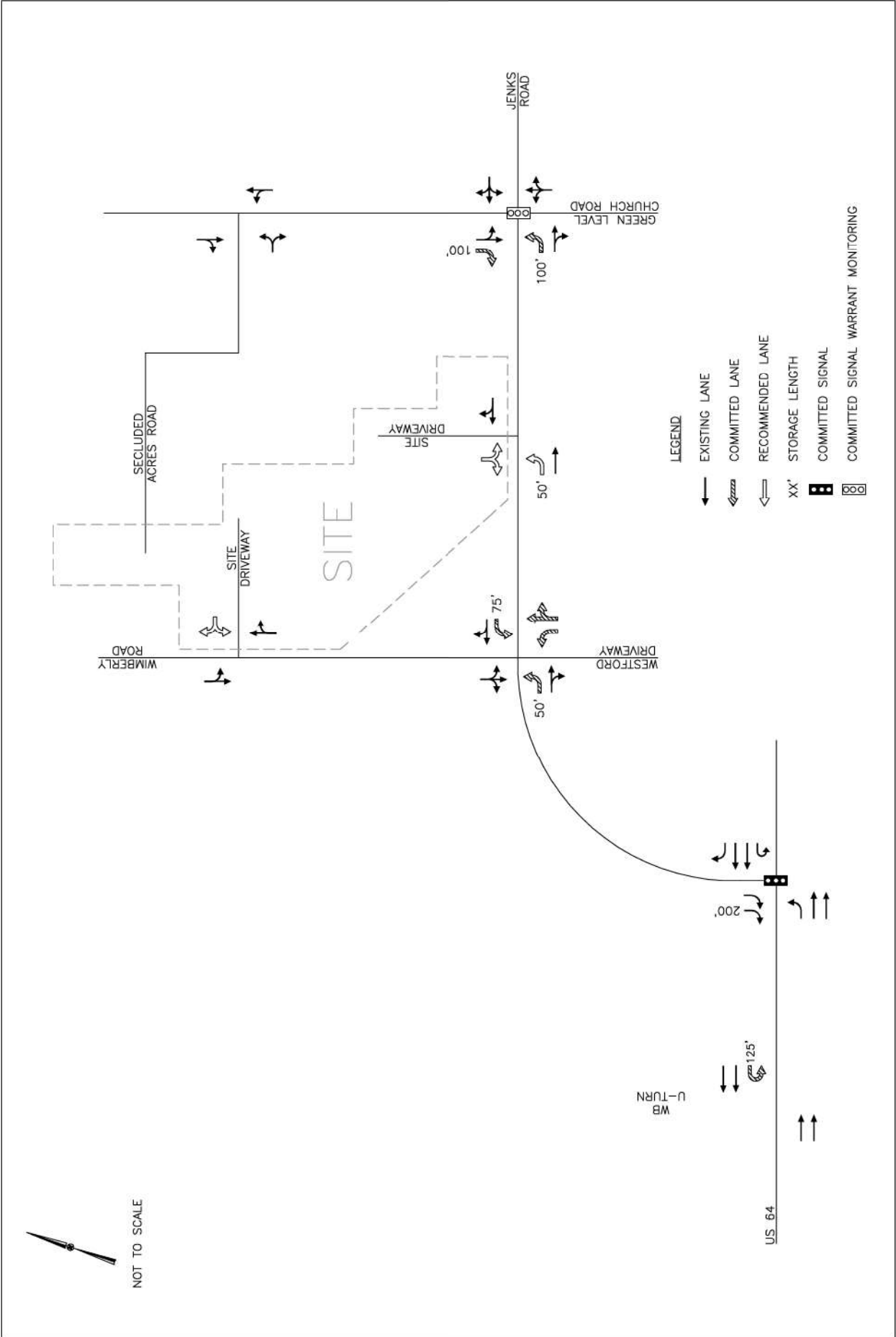
- Construct an exclusive eastbound left-turn lane with 100 feet of storage on Jenks Road
- Construct exclusive southbound right-turn lane with 100 feet of storage on Green Level Church Road
- Monitor intersection for traffic signal warrants and install a traffic signal if they are met

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.



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

© Kimley-Horn and Associates, Inc. 2016

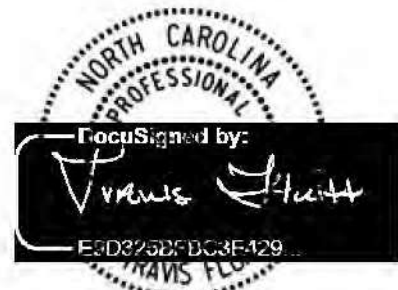
Kimley»Horn

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

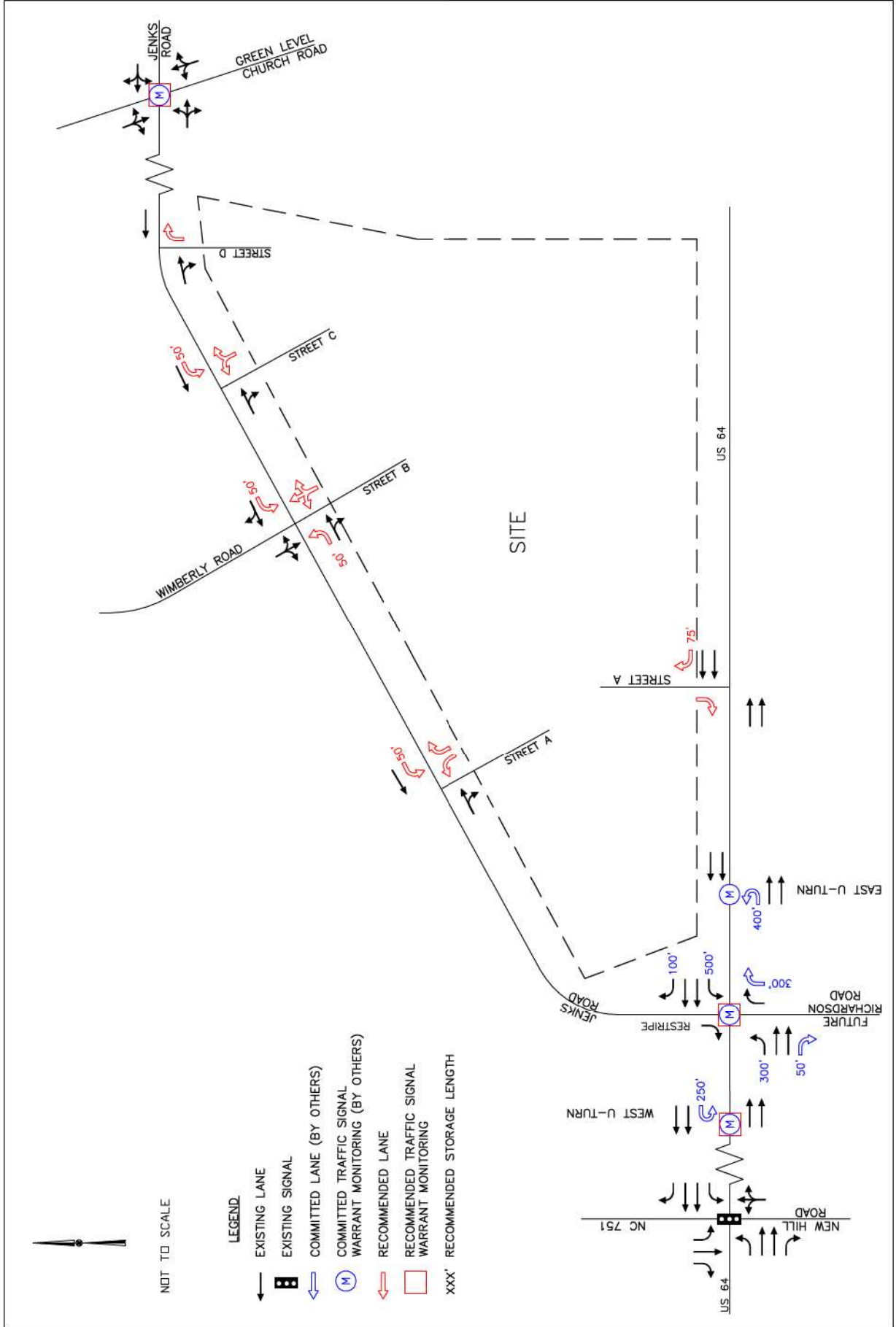
**Prepared for:
The Halle Companies
Apex, North Carolina**

**Prepared by:
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Raleigh, NC 27601
(919) 677-2000**

**December 2016
018995001**

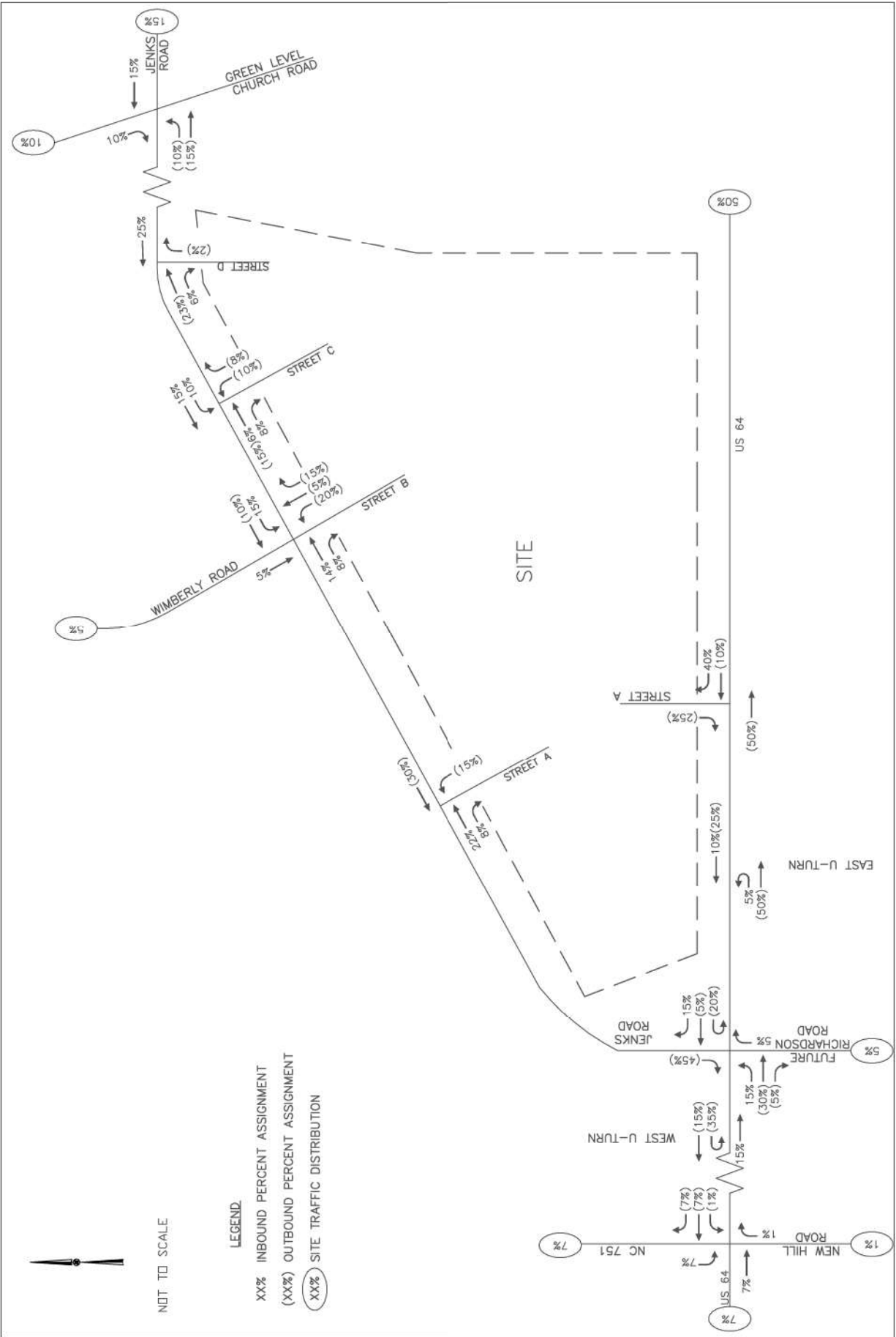


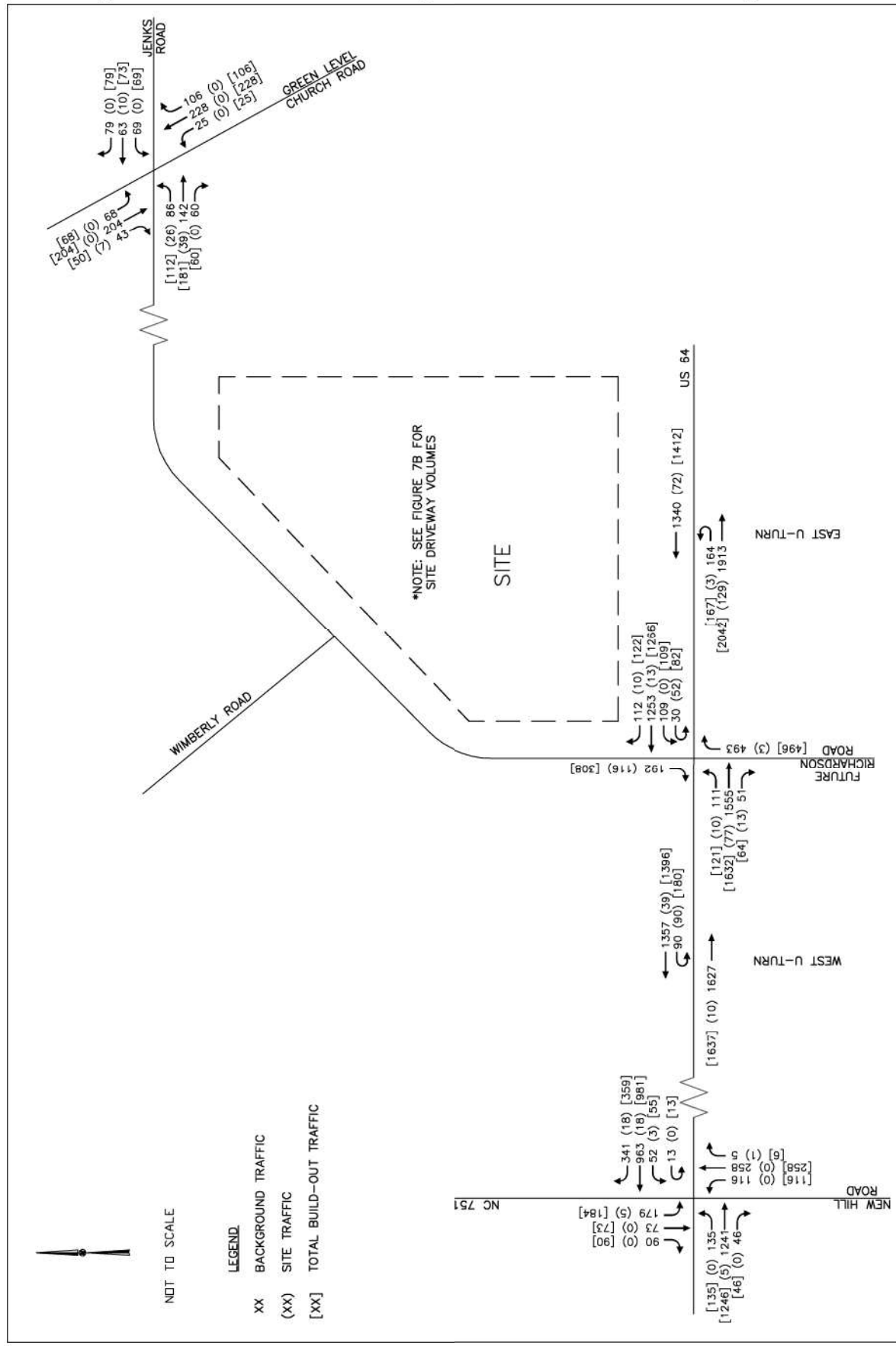
12/7/2016

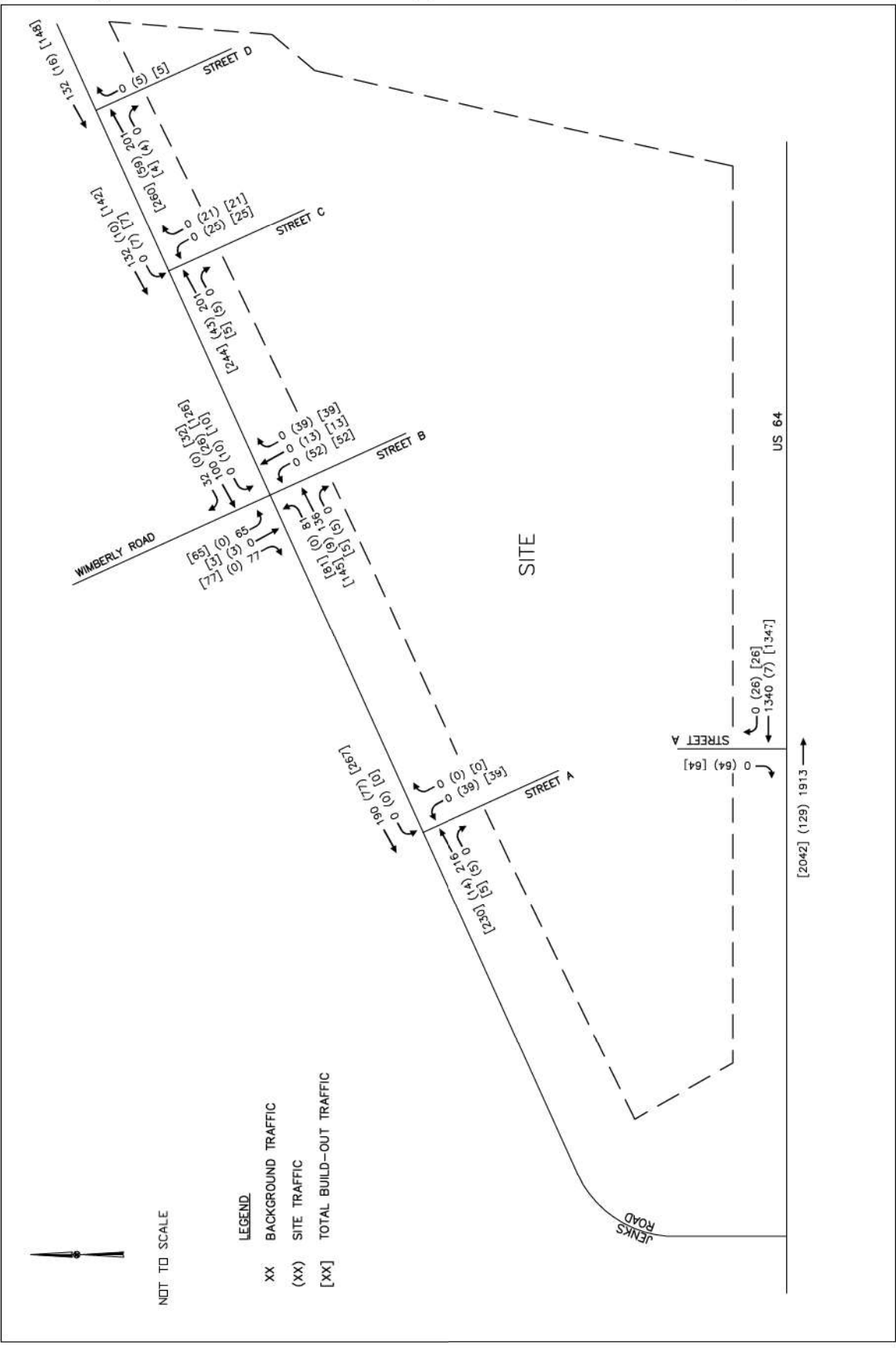


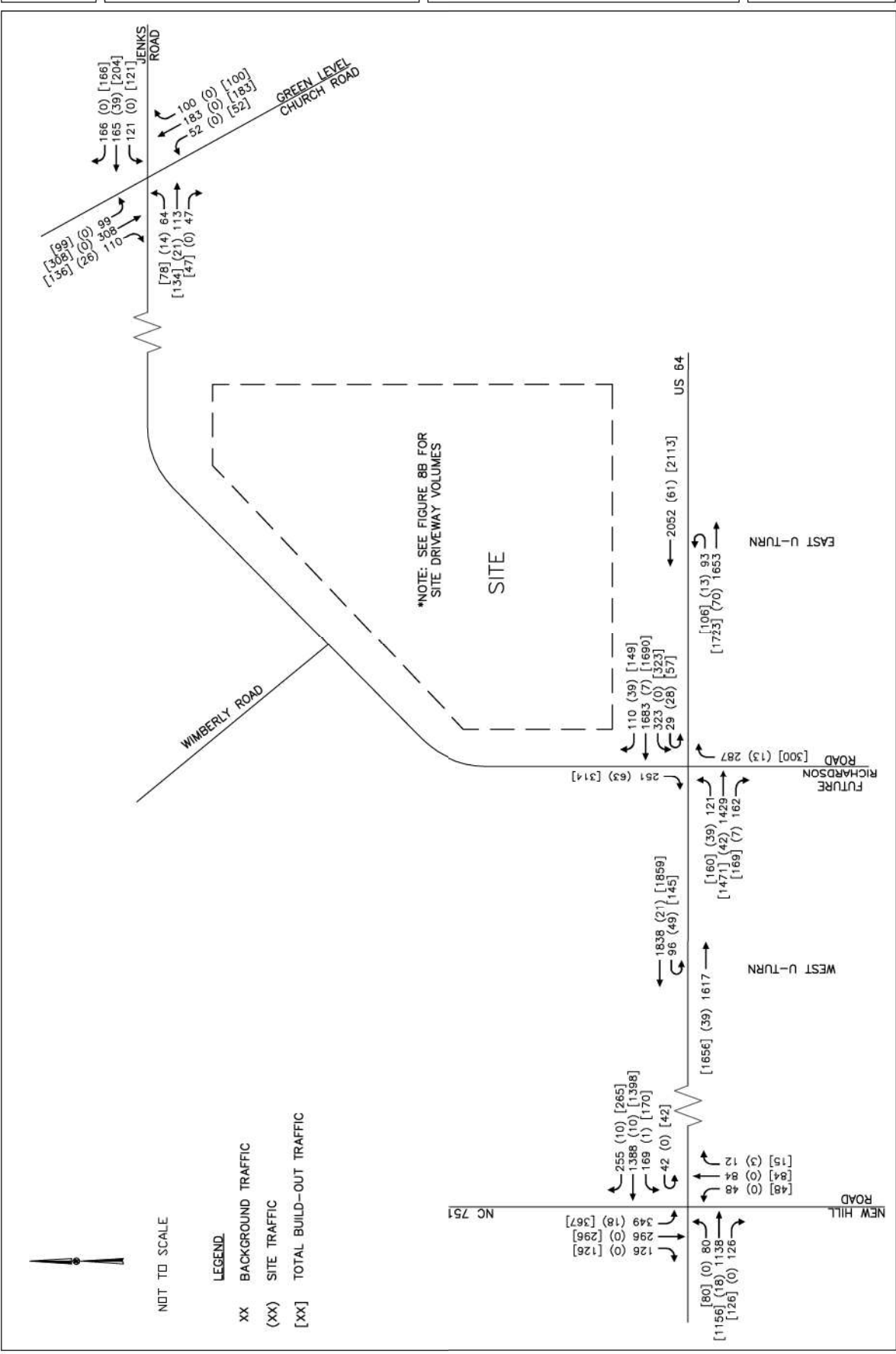
SITE TRAFFIC DISTRIBUTION
AND PERCENT ASSIGNMENT

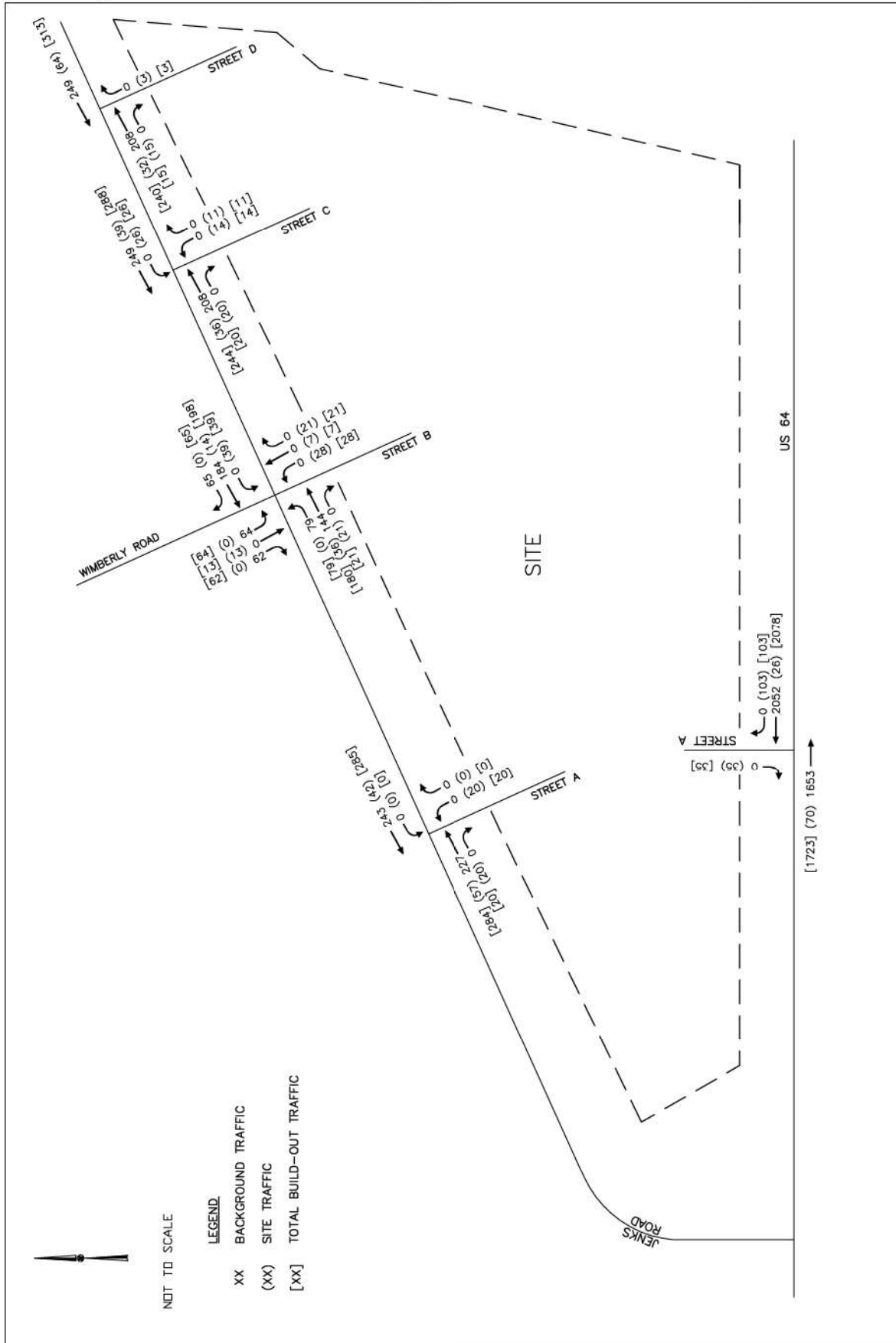
FIGURE
4











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> [^]	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)

[^]Note: 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

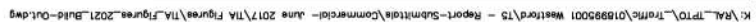
Jenks Road at Right-in/Right-out Site Driveway

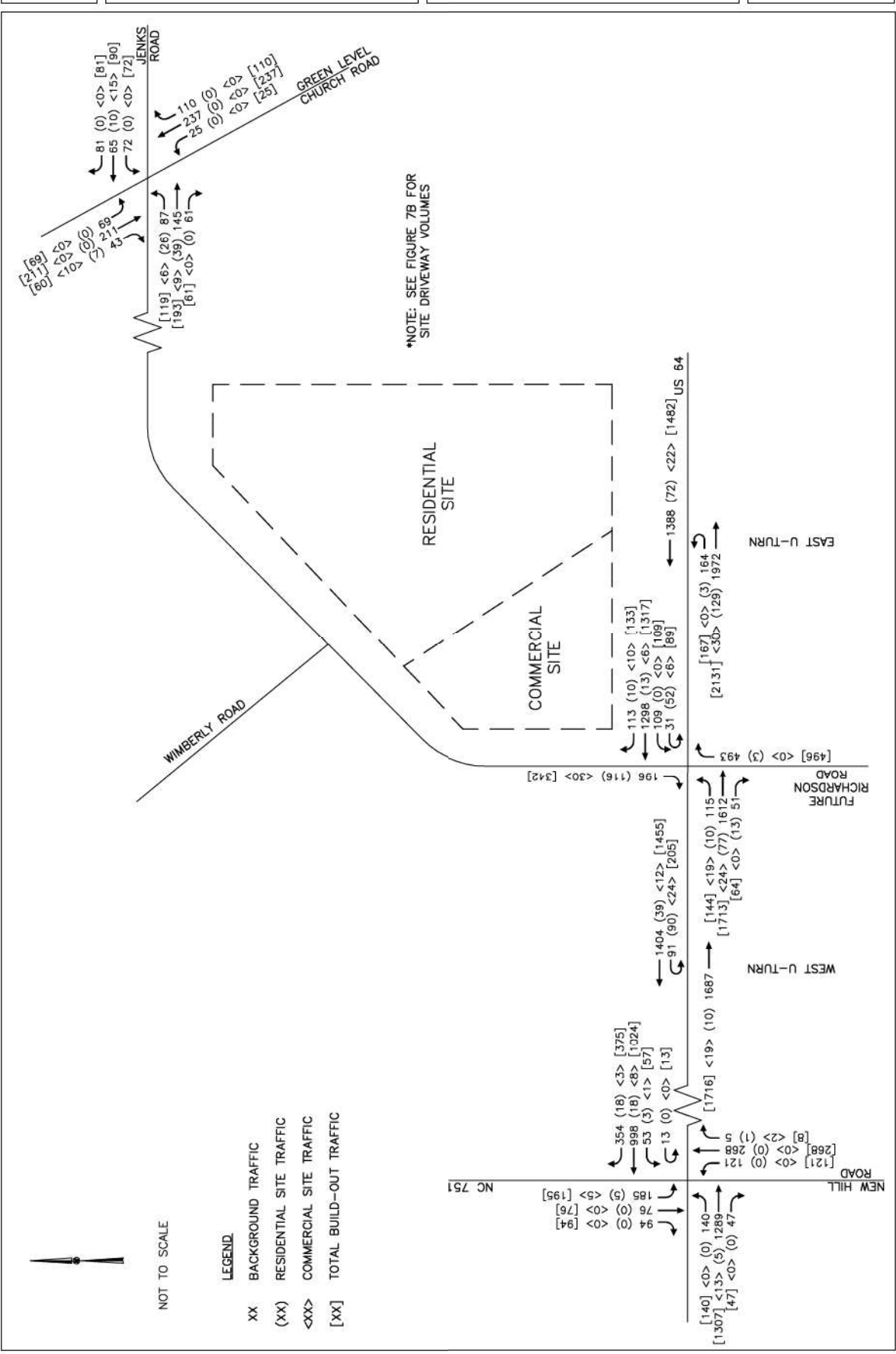
- Construct an exclusive eastbound right-turn lane on Jenks Road with 50 feet of storage and appropriate tapers

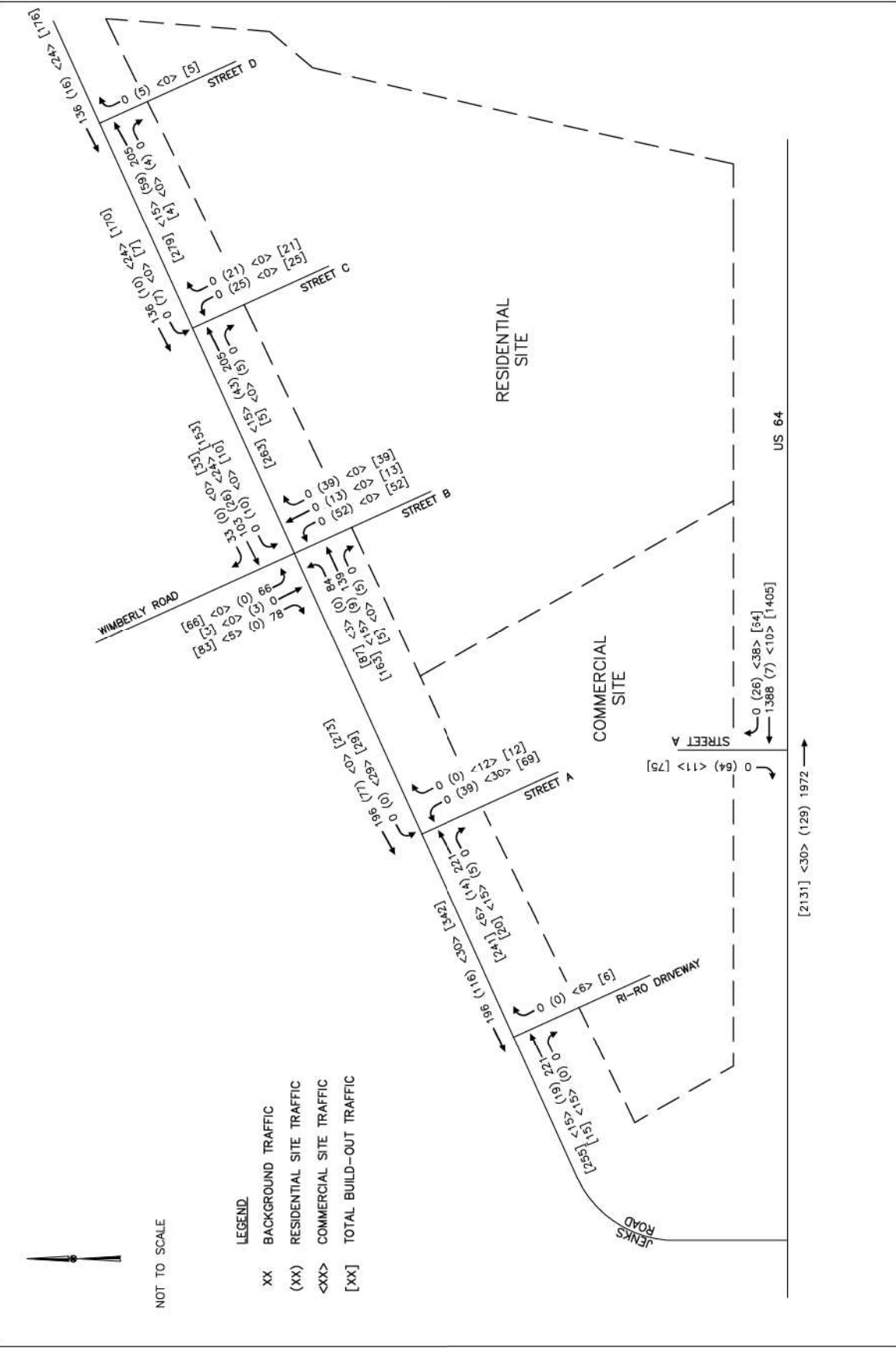
Analysis indicates that, all of the study intersections are expected to operate at an acceptable level-of-service at full build-out of the development with the exception of the intersection of US 64 at NC 751/New Hill Road. However, that intersection, which is nearly 2 miles from the project site, is 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.

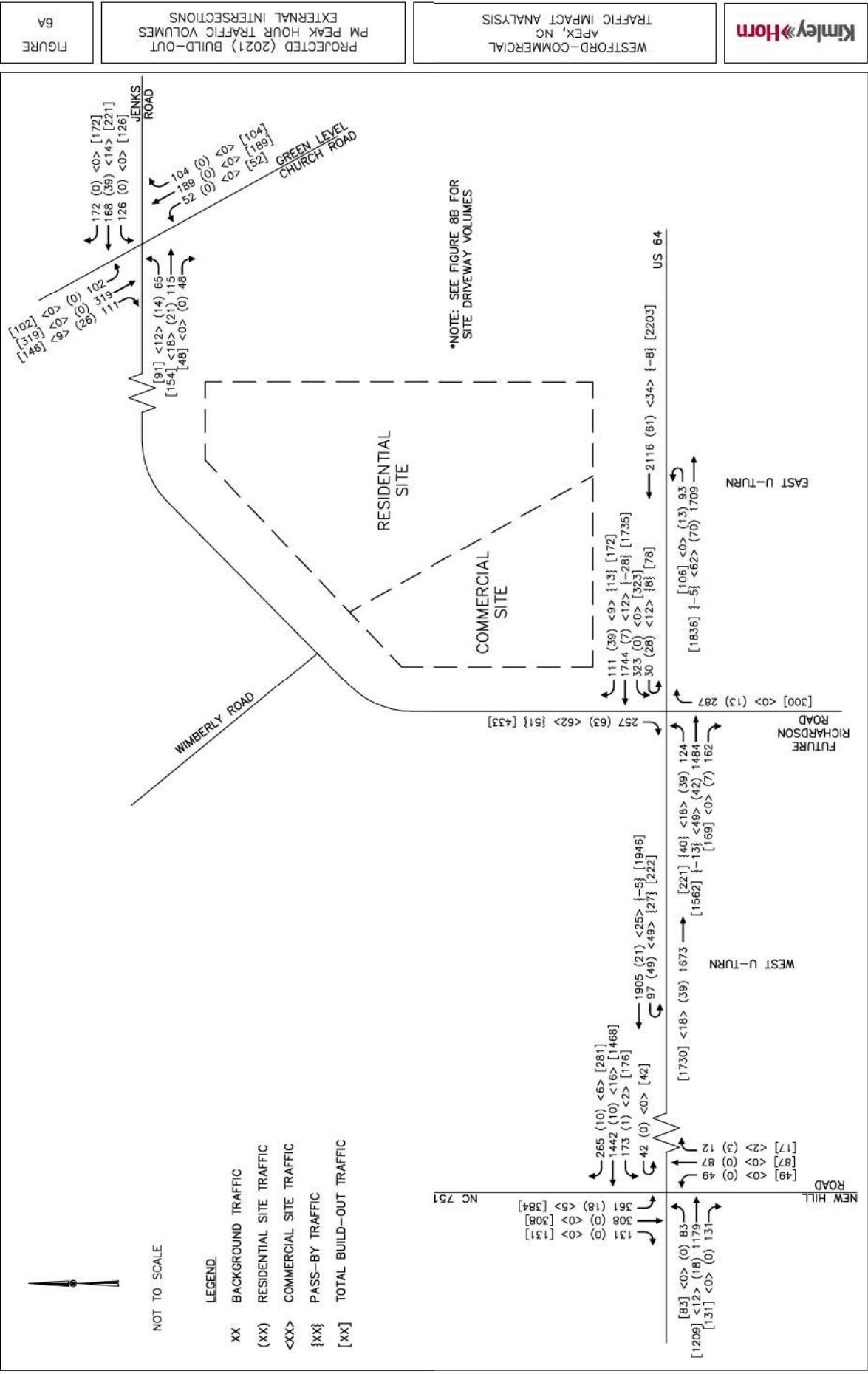
Should you have any questions or comments, please do not hesitate to contact me at (919) 653-2948 or travis.fluitt@kimley-horn.com.

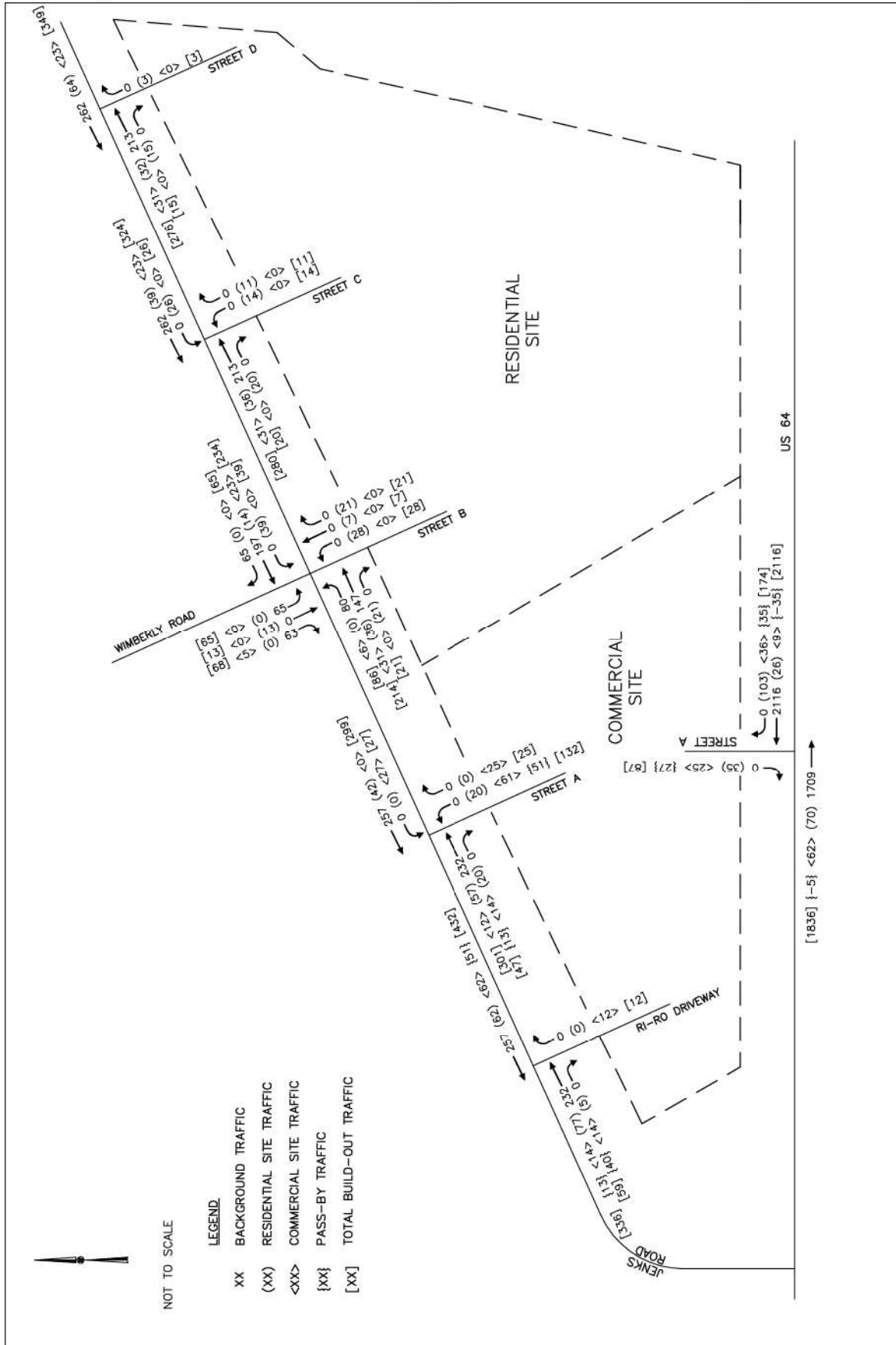
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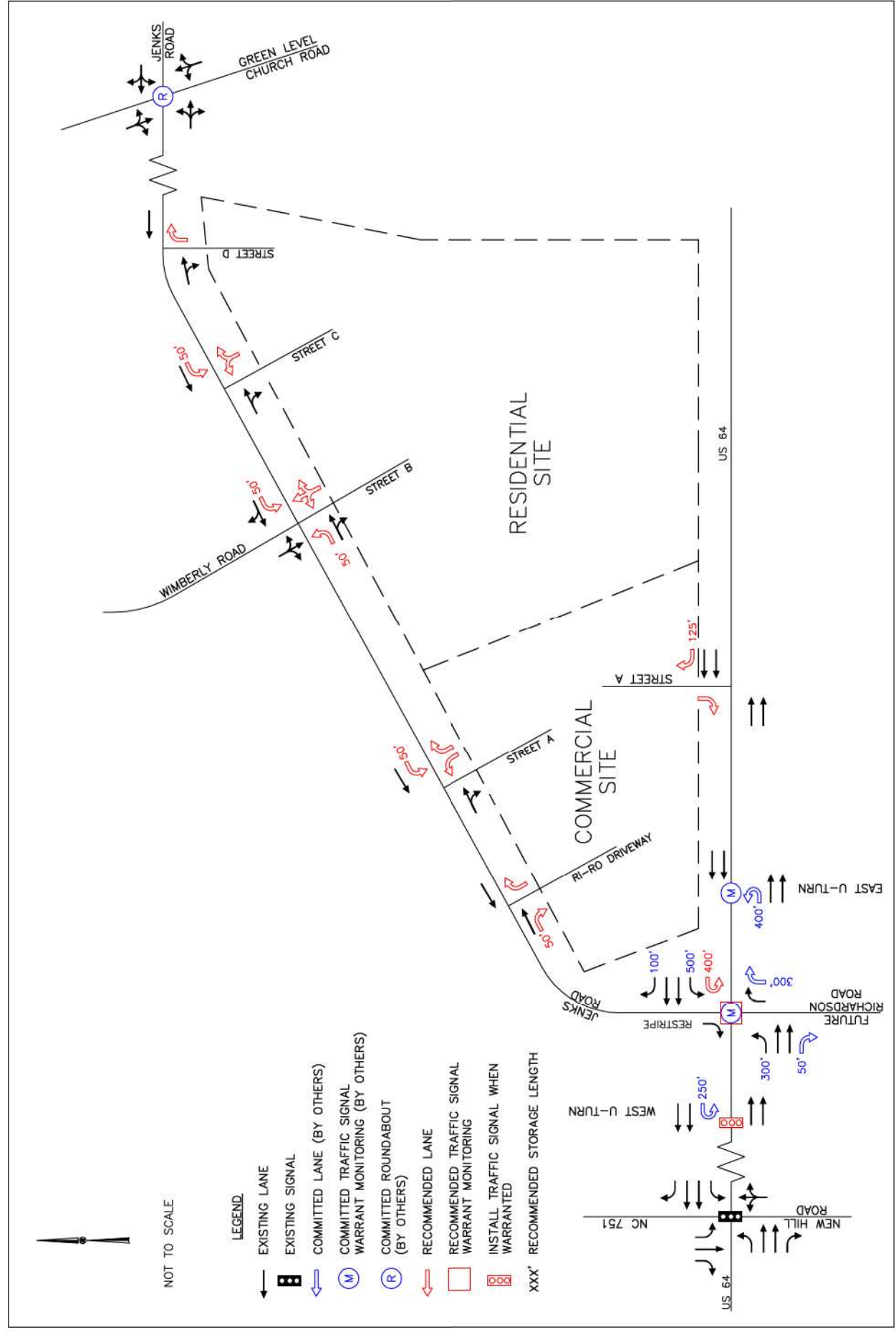














March 2, 2017

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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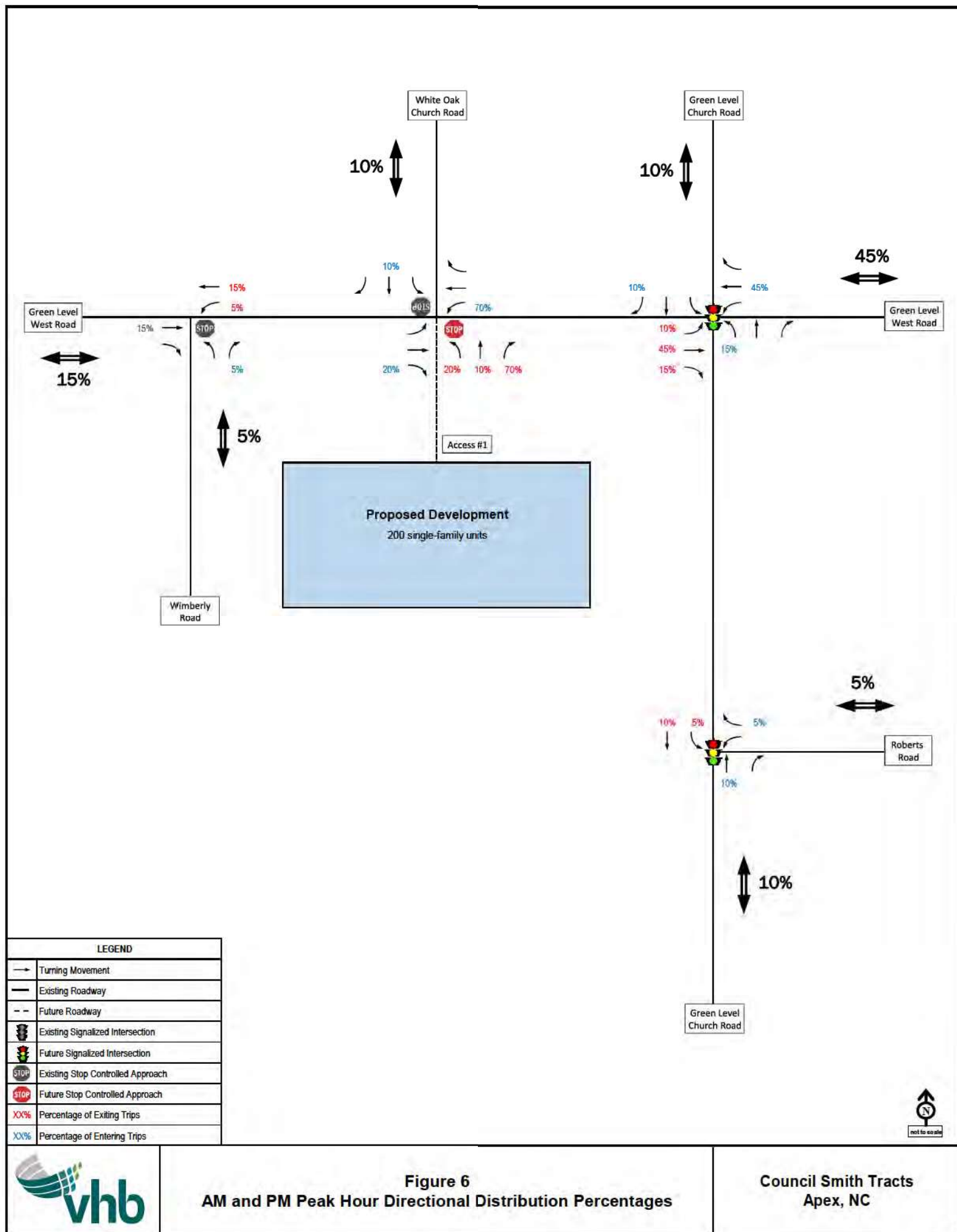
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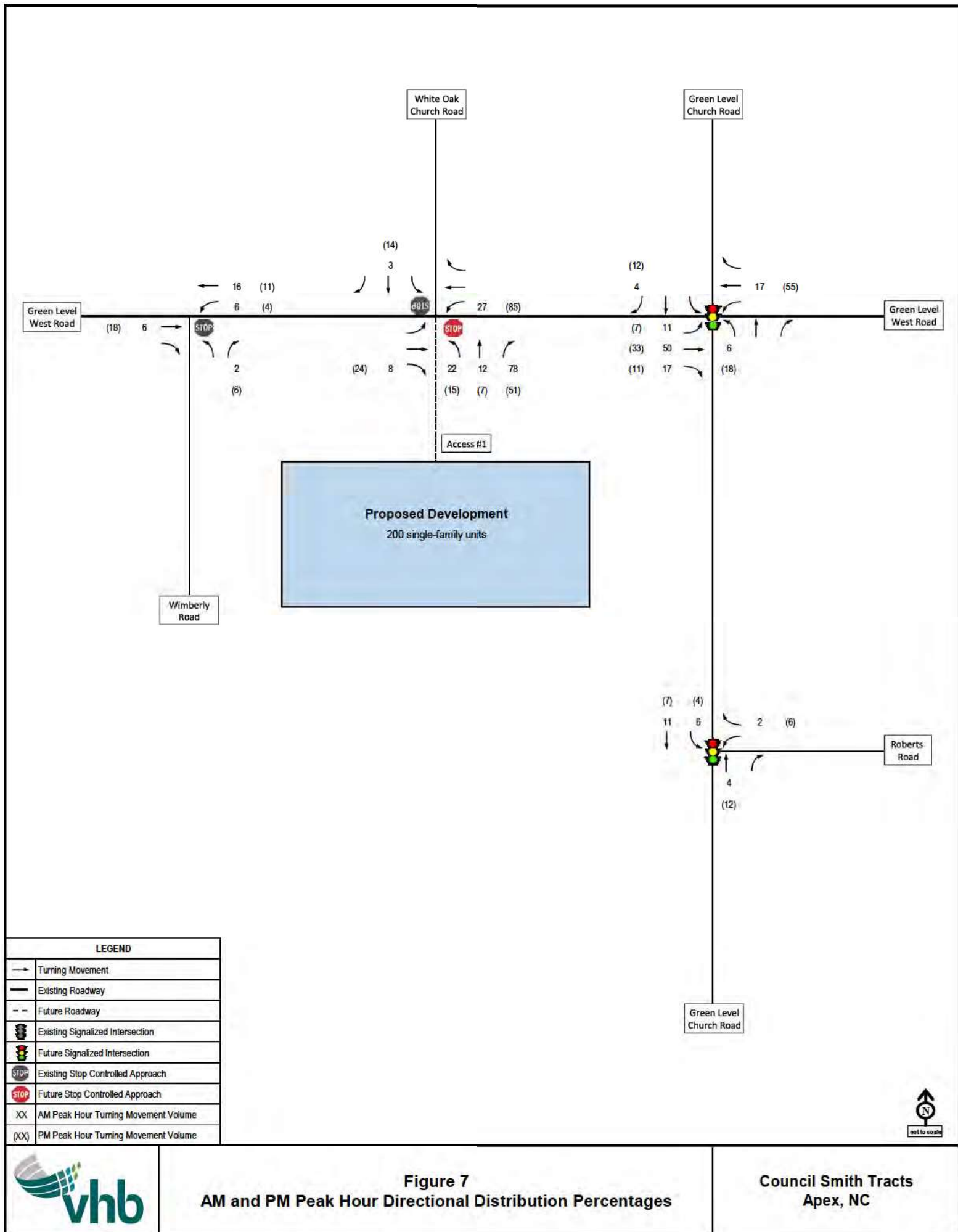


VHB Engineering NC, PC (C-3705)
4000 WestChase Boulevard, Suite 530
Raleigh, NC 27607
919.829.0328

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

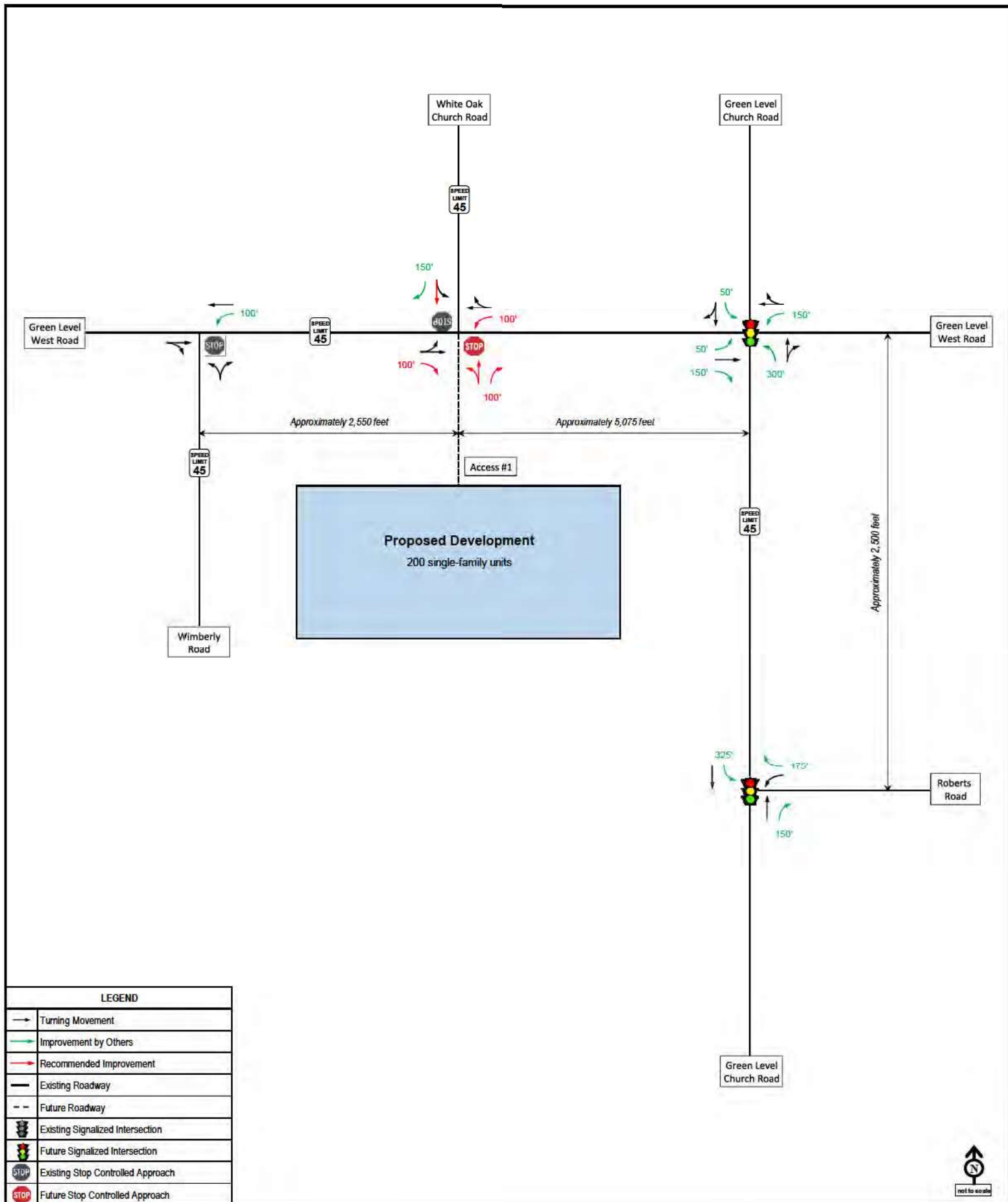
The traffic analysis indicates that the southbound stop-controlled approach is projected to operate at LOS F in the AM peak hour. The development is projected to add only one (1) southbound trip in the AM peak hour. The projected delays at this location are primarily due to the site trips associated 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
 919.829.0328 • Fax 919.829.0329
 www.vhb.com

January 10, 2014



Transportation | Land Development | Environmental

Lake Castleberry Development

Apex, NC

Prepared for Withers & Ravenel
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Cary, NC 28511

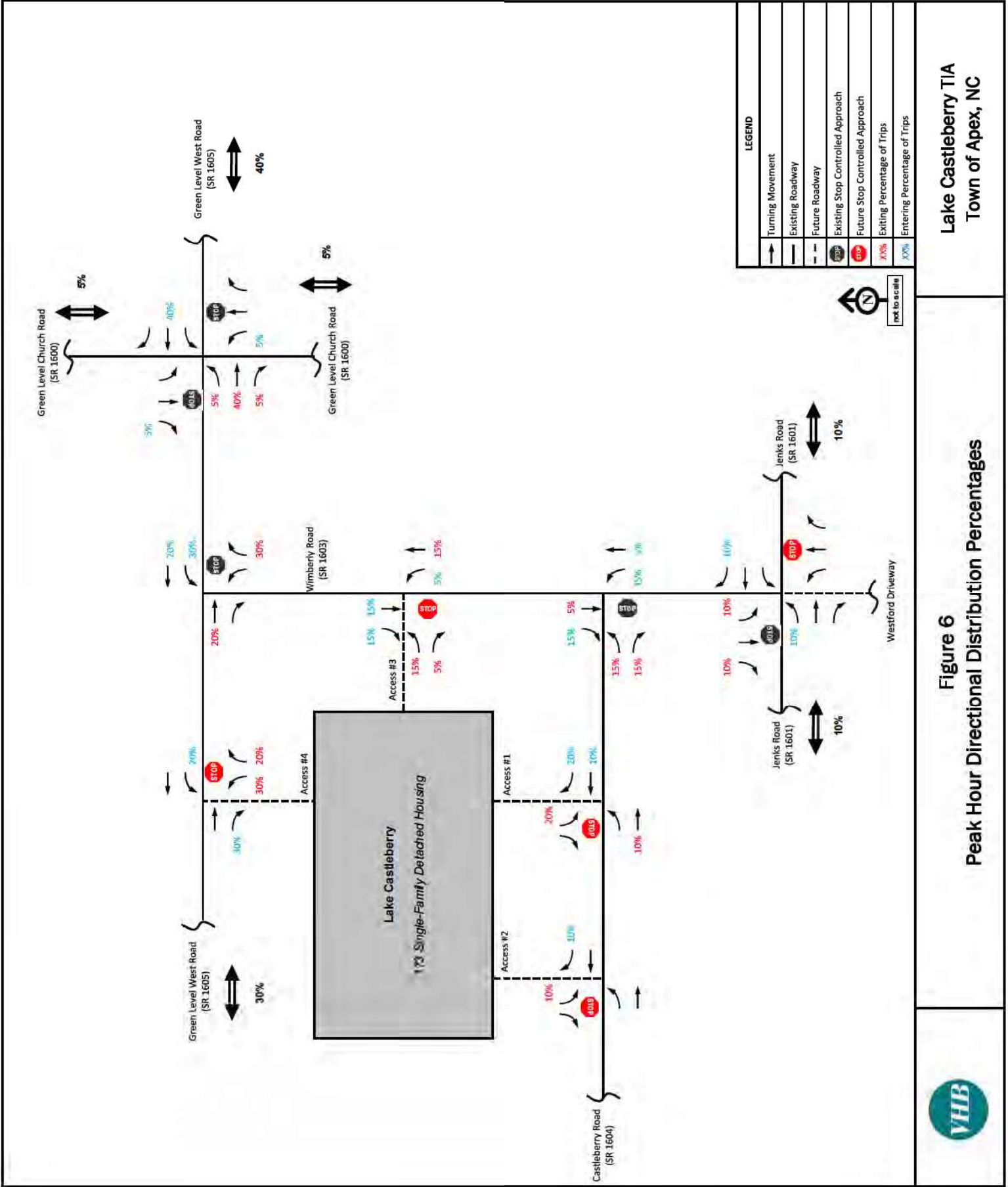
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January 10, 2014



Transportation | Land Development | Environmental





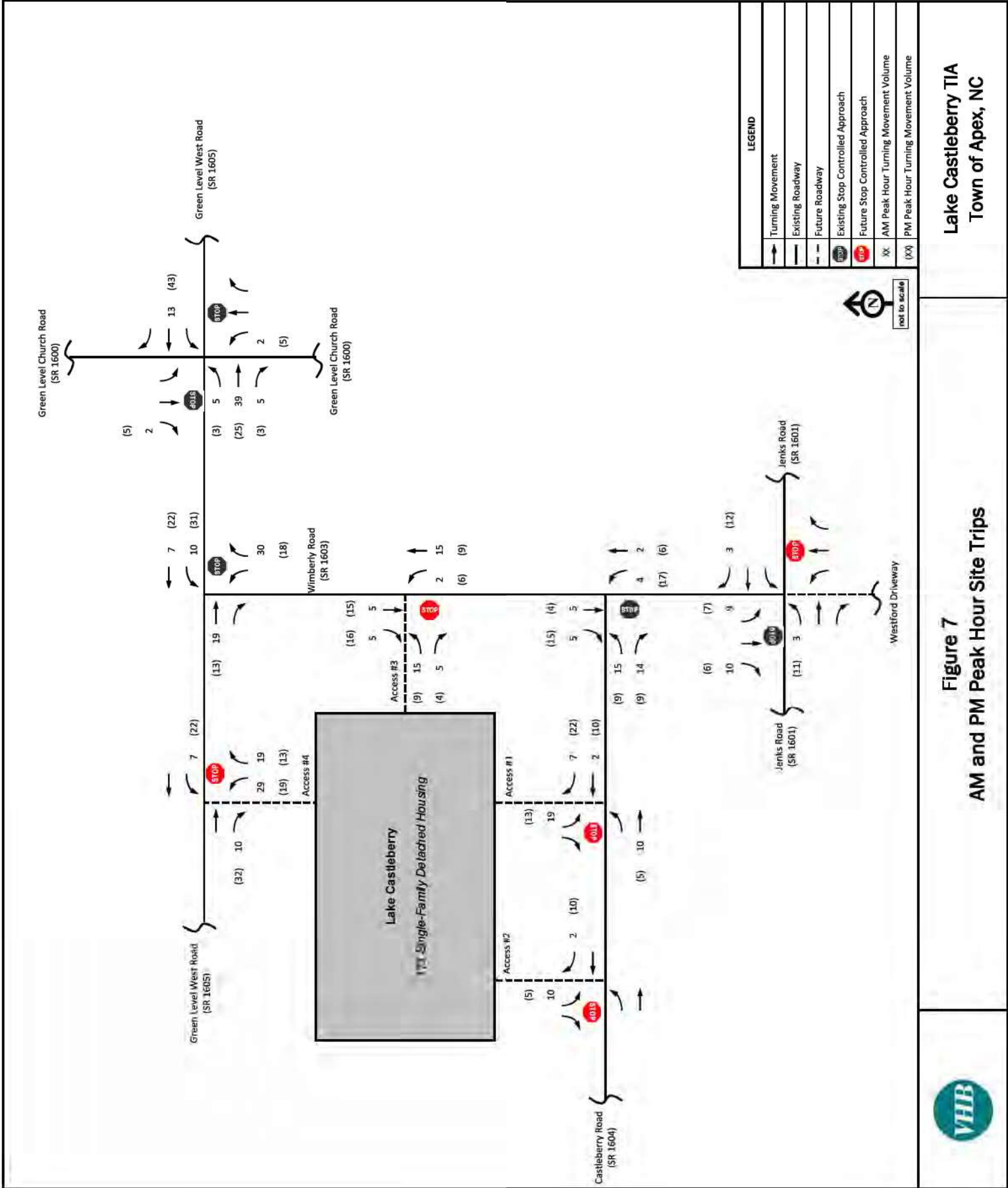


Figure 7
AM and PM Peak Hour Site Trips

Lake Castleberry TIA
Town of Apex, NC



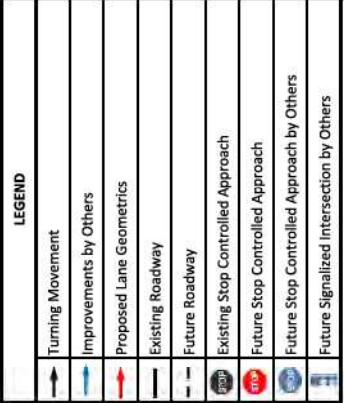


Figure 9
Recommended (2018) Lane Geometrics and Traffic Control

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.

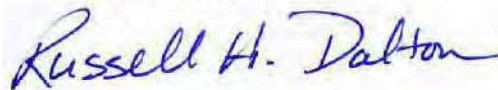
Recommendations

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





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>	<i>NA</i>
<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>	A / B^2
<i>Northbound (Wimberly Road)</i>	NA
<i>Southbound (Wimberly Road)</i>	A / A^1

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>	NA	NA	NA
<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:

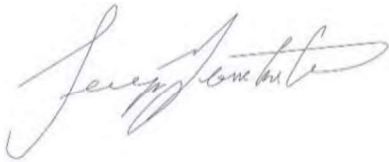
- The TIA does not recommend any improvements at this intersection. Analysis results indicated the minor street approach to operate at LOS B or better during both A.M. and P.M. peak hours with 95th percentile queues to be less than 50 feet in length.

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

 Hugh J. Gilleece
and Associates
875 Walnut Street
Suite 360
Cary, NC 27511
Phone: (919) 469-1101
Fax: (919) 460-7637

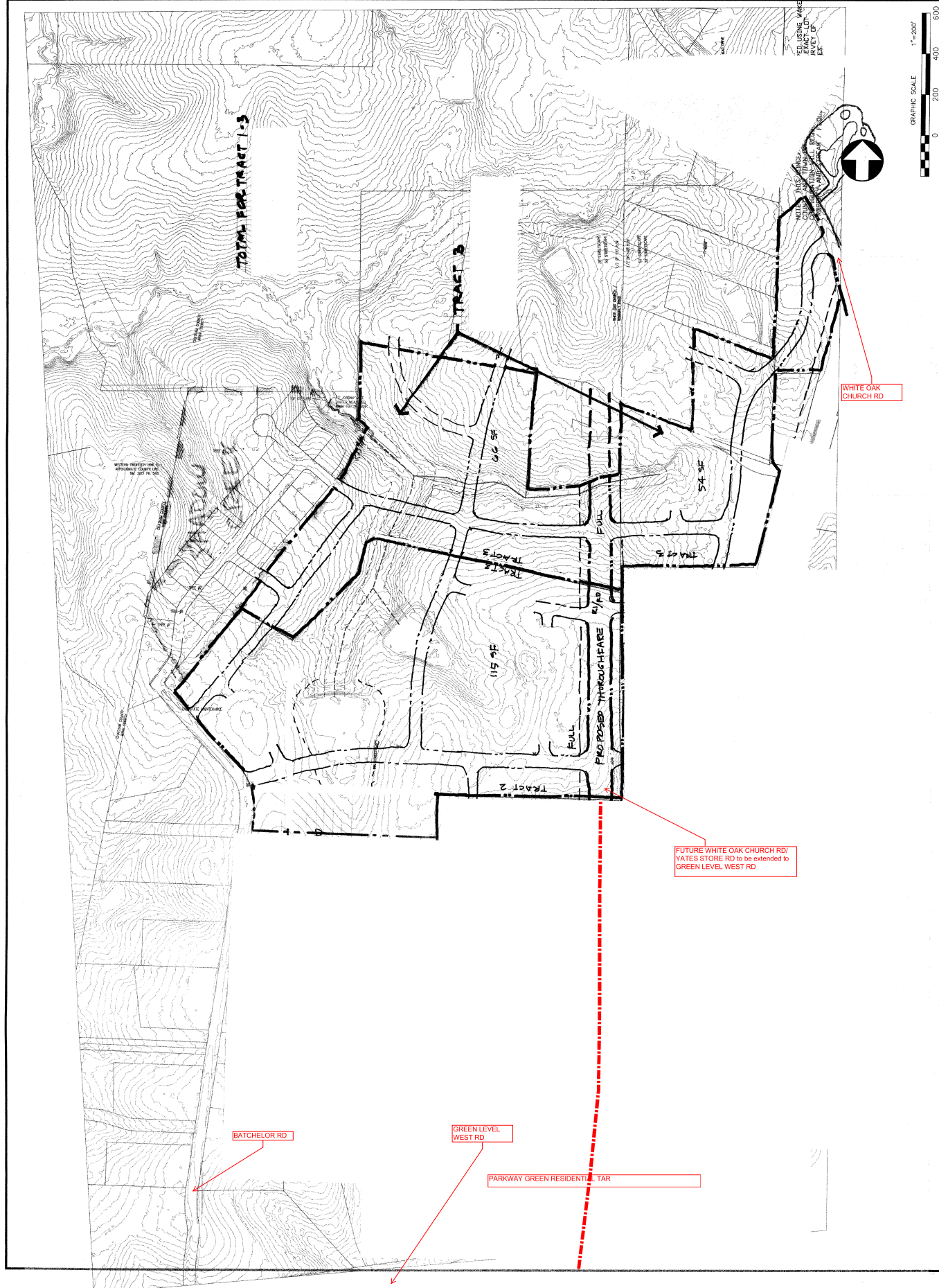
[illegible]

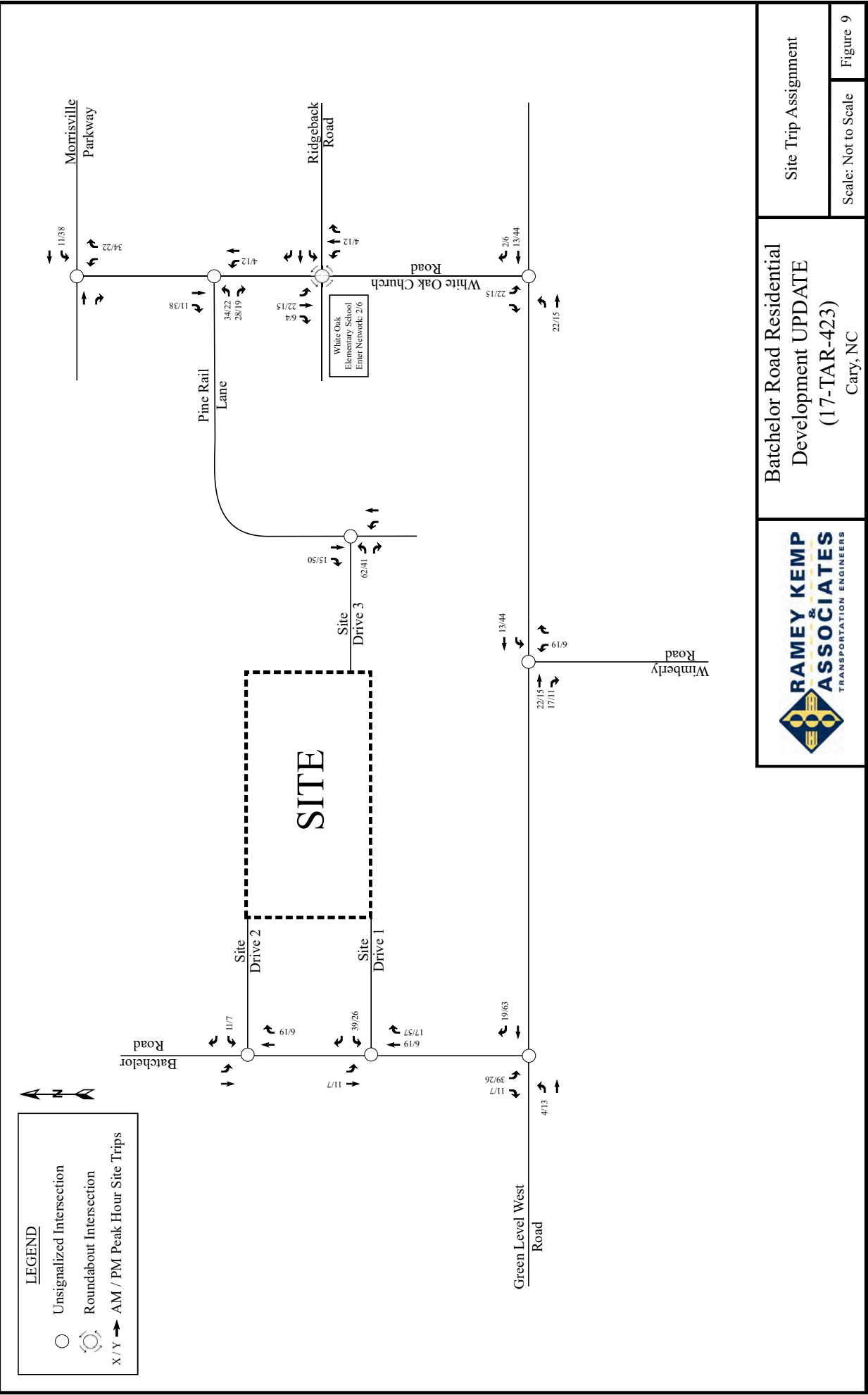
CONCEPTUAL

**CONCEPTUAL LAYOUT FOR
WIMBERLY ROAD
FOR
BATCHELOR ROAD / PINE RAIL LANE
SITUATED AT
GREEN LEVEL WEST ROAD
CARRY
WAKE COUNTY, NORTH CAROLINA**

JOB #	8000.00
DSN/CHK BY:	
DWN BY:	WH
DATE:	3/14/17
HRZ SCALE:	1"=200'
VRT SCALE:	NONE

SHEET NO. C1





**Batchelor Road Residential
Development UPDATE
(17-TAR-423)
Cary, NC**

Site Trip Assignment

Scale: Not to Scale

Figure 9

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS

GREEN LEVEL WEST ROAD






&

WIMBERLY ROAD

HCM 6th TWSC
1: Wimberly Road & Green Level West Road

Existing (2021) AM
02/08/2021

Intersection

Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	143	8	26	79	11	48
Future Vol, veh/h	143	8	26	79	11	48
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	2	2
Mvmt Flow	159	9	29	88	12	53

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	168
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1410
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1410
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-






Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	832	-	-	1410	-
HCM Lane V/C Ratio	0.079	-	-	0.02	-
HCM Control Delay (s)	9.7	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

HCM 6th TWSC
1: Wimberly Road & Green Level West Road

Existing (2021) PM
02/08/2021

Intersection

Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	128	31	61	135	20	27
Future Vol, veh/h	128	31	61	135	20	27
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	2	2
Mvmt Flow	142	34	68	150	22	30

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	176
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1400
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1400
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-






Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	698	-	-	1400	-
HCM Lane V/C Ratio	0.075	-	-	0.048	-
HCM Control Delay (s)	10.6	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

HCM 6th TWSC
1: Wimberly Road & Green Level West Road

No-Build (2026) AM
02/08/2021

Intersection

Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	205	33	47	123	43	91
Future Vol, veh/h	205	33	47	123	43	91
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	50
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	228	37	52	137	48	101

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	265
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1299
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1299
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-






Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	517	792	-	-	1299	-
HCM Lane V/C Ratio	0.092	0.128	-	-	0.04	-
HCM Control Delay (s)	12.7	10.2	-	-	7.9	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.1	-

HCM 6th TWSC
1: Wimberly Road & Green Level West Road

No-Build (2026) PM
02/08/2021

Intersection

Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	187	70	109	226	55	58
Future Vol, veh/h	187	70	109	226	55	58
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	50
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	208	78	121	251	61	64

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	286
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1276
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1276
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-






Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	348	792	-	-	1276	-
HCM Lane V/C Ratio	0.176	0.081	-	-	0.095	-
HCM Control Delay (s)	17.5	9.9	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.3	-	-	0.3	-

HCM 6th TWSC
1: Wimberly Road & Green Level West Road

Build (2026) AM
02/08/2021

Intersection

Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	272	47	47	145	47	91
Future Vol, veh/h	272	47	47	145	47	91
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	50
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	302	52	52	161	52	101

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	354
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1205
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1205
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-






Approach	EB	WB	NB
HCM Control Delay, s	0	2	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	448	713	-	-	1205	-
HCM Lane V/C Ratio	0.117	0.142	-	-	0.043	-
HCM Control Delay (s)	14.1	10.9	-	-	8.1	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0.1	-

HCM 6th TWSC
1: Wimberly Road & Green Level West Road

Build (2026) PM
02/08/2021

Intersection

Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	232	79	109	300	71	58
Future Vol, veh/h	232	79	109	300	71	58
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	50
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	258	88	121	333	79	64

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	346
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1213
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1213
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	287	738	-	-	1213	-
HCM Lane V/C Ratio	0.275	0.087	-	-	0.1	-
HCM Control Delay (s)	22.2	10.3	-	-	8.3	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.3	-	-	0.3	-

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS

GREEN LEVEL WEST ROAD

&




BATCHELOR ROAD

HCM 6th TWSC
2: Green Level West Road & Batchelor Road

Existing (2021) AM
02/08/2021

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	143	86	4	8	4
Future Vol, veh/h	4	143	86	4	8	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	4	159	96	4	9	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	100	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1493	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1493	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1493	-	-	-	787
HCM Lane V/C Ratio	0.003	-	-	-	0.017
HCM Control Delay (s)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1




HCM 6th TWSC
2: Green Level West Road & Batchelor Road

Existing (2021) PM
02/08/2021

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	4	157	153	4	4	4
Future Vol, veh/h	4	157	153	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	4	174	170	4	4	4

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	174	0	-	0	354	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1403	-	-	-	644	872
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	849	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1403	-	-	-	642	872
Mov Cap-2 Maneuver	-	-	-	-	642	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	849	-

Approach EB WB SB

HCM Control Delay, s	0.2	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1




Capacity (veh/h)	1403	-	-	-	740
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th TWSC
2: Green Level West Road & Batchelor Road

No-Build (2026) AM
02/08/2021

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	181	165	23	48	12
Future Vol, veh/h	5	181	165	23	48	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	6	201	183	26	53	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	209	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1362	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1362	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.4
HCM LOS			B




Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1362	-	-	-	633
HCM Lane V/C Ratio	0.004	-	-	-	0.105
HCM Control Delay (s)	7.7	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

HCM 6th TWSC
2: Green Level West Road & Batchelor Road

No-Build (2026) PM
02/08/2021

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	248	213	65	28	7
Future Vol, veh/h	13	248	213	65	28	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	14	276	237	72	31	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	309	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1252	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1252	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	12.6
HCM LOS			B




Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1252	-	-	-	511
HCM Lane V/C Ratio	0.012	-	-	-	0.076
HCM Control Delay (s)	7.9	0	-	-	12.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM 6th TWSC
2: Green Level West Road & Batchelor Road

Build (2026) AM
02/08/2021

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	262	191	23	48	12
Future Vol, veh/h	5	262	191	23	48	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	6	291	212	26	53	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	238	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1329	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1329	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1329	-	-	-	549
HCM Lane V/C Ratio	0.004	-	-	-	0.121
HCM Control Delay (s)	7.7	0	-	-	12.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4




HCM 6th TWSC
2: Green Level West Road & Batchelor Road

Build (2026) PM
02/08/2021

Intersection

Int Delay, s/veh 0.8

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	13	302	303	65	28	7
Future Vol, veh/h	13	302	303	65	28	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	14	336	337	72	31	8

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	409	0	-	0	737	373
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1150	-	-	-	386	673
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1150	-	-	-	380	673
Mov Cap-2 Maneuver	-	-	-	-	380	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	703	-

Approach EB WB SB

HCM Control Delay, s	0.3	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1150	-	-	-	416
HCM Lane V/C Ratio	0.013	-	-	-	0.093
HCM Control Delay (s)	8.2	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

APPENDIX F

CAPACITY ANALYSIS CALCULATIONS

GREEN LEVEL WEST ROAD

&






SITE DRIVE

HCM 6th TWSC
3: Site Drive & Green Level West Road

Build (2026) AM
02/08/2021

Intersection

Int Delay, s/veh 2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	5	26	177	14	81
Future Vol, veh/h	186	5	26	177	14	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	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	207	6	29	197	16	90

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	213
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1357
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1357
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-





Approach	EB	WB	NB
HCM Control Delay, s	0	1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	770	-	-	1357	-
HCM Lane V/C Ratio	0.137	-	-	0.021	-
HCM Control Delay (s)	10.4	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

HCM 6th TWSC
3: Site Drive & Green Level West Road

Build (2026) PM
02/08/2021

Intersection

Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	261	16	90	220	9	54
Future Vol, veh/h	261	16	90	220	9	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	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	290	18	100	244	10	60

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	308
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1253
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1253
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	640	-	-	1253	-
HCM Lane V/C Ratio	0.109	-	-	0.08	-
HCM Control Delay (s)	11.3	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.3	-

PLANNING BOARD REPORT TO TOWN COUNCIL

Rezoning Case: 21CZ04 Williams Farm PUD

Planning Board Meeting Date: June 14, 2021



Report Requirements:

Per NCGS §160D-604(b), all proposed amendments to the zoning ordinance or zoning map shall be submitted to the Planning Board for review and comment. If no written report is received from the Planning Board within 30 days of referral of the amendment to the Planning Board, the Town Council may act on the amendment without the Planning Board report. The Town Council is not bound by the recommendations, if any, of the Planning Board.

Per NCGS §160D-604(d), the Planning Board shall advise and comment on whether the proposed action 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: +/- 61.919

PIN(s): Portion of 0713943738

Current Zoning: Rural Residential (RR)

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

2045 Land Use Map: Low Density Residential

Town Limits: Inside 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: 21CZ04 Williams Farm PUD

Planning Board Meeting Date: June 14, 2021



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: 21CZ04 Williams Farm PUD

Planning Board Meeting Date: June 14, 2021



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: 21CZ04 Williams Farm PUD

Planning Board Meeting Date: June 14, 2021



Planning Board Recommendation:

Motion: Approve

Introduced by Planning Board member: Braswell

Seconded by Planning Board member: Skinner

☒ *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:

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

With 8 Planning Board Member(s) voting "aye"

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

Reasons for dissenting votes:

*Ryan Akers was recused as the engineering firm where he works is produced the plans for this rezoning.

This report reflects the recommendation of the Planning Board, this the 14 day of June 2021.

Attest:

Michael Marks Digitally signed by Michael Marks
Date: 2021.06.15 20:33:58 -04'00'

Michael Marks, Planning Board Chair

Amanda Bunce Digitally signed by Amanda Bunce
DN: cn=Amanda Bunce, o, ou,
email=amanda.bunce@apexnc.org, c=US
Date: 2021.06.14 17:07:22 -04'00'

for Dianne Khin, Director of Planning and
Community Development



1 / 1



50%

**TOWN OF APEX**

POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-248-3426

**PUBLIC NOTIFICATION
OF PUBLIC HEARINGS
CONDITIONAL ZONING #21C204
Williams Farm PUD**

Pursuant to the provisions of North Carolina General Statutes §160D-602 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: Jessie Hardesty, McAdams Co.

Authorized Agent: Jacob Anderson, Alliance Group of NC

Property Address: 4525 Green Level West Rd.

Acreage: ±61.919 acres

Property Identification Number (PIN): portion of 0713943738

2045 Land Use Map Designation: Low Density Residential

Existing Zoning of Property: Rural Residential (RR)

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

Public Hearing Location: Apex Town Hall

Council Chamber, 2nd Floor

73 Hunter Street, Apex, North Carolina

Comments received prior to or during the Planning Board public hearing will not be read during the Town Council public hearing. Separate comments must be provided for the two public hearings in the time frames specified below.

Planning Board Public Hearing Date and Time: June 14, 2021 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. You may attend the meeting in person or view the meeting through the Town's YouTube livestream at: <https://www.youtube.com/c/townofapexgov>.

If you are unable to attend, you may provide comments no later than noon on Friday, June 11, 2021 by email (public.hearing@apexnc.org, 350-word limit) or voicemail (919-362-7300, 3-minute limit) according to the Remote Participation Policy at: <http://www.apexnc.org/DocumentCenter/View/31397/>. You must provide your name and address for the record. These comments will be read during the Planning Board meeting.

Town Council Public Hearing Date and Time: June 22, 2021 6:00 PM

You may attend the meeting in person or view the meeting through the Town's YouTube livestream at: <https://www.youtube.com/c/townofapexgov>.

If you are unable to attend, you may provide comments no sooner than Friday, June 11, 2021 at noon but no later than noon on Monday, June 21, 2021 by email (public.hearing@apexnc.org, 350-word limit) or voicemail (919-362-7300, 3-minute limit) according to the Remote Participation Policy at: <http://www.apexnc.org/DocumentCenter/View/31397/>. You must provide your name and address for the record. These comments will be read during the Town Council meeting.

If the Council meeting is held with at least one member attending virtually, the vote on the subject of this public hearing will be delayed per State law to allow for comments to be submitted between publication of any required notice and 24 hours after the public hearing. Comments must be provided according to the means specified above. This item will be then be scheduled for the next Town Council meeting. Please note that at this subsequent meeting, Town Council may choose to vote on the item, table the discussion to a later date, or take other action which would delay Council action to another time.

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 submit comments with respect to the application by the means specified above. In addition to the above map, the location of the property may be viewed online at <https://maps.rainiernc.gov/images>. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-248-3426, Department of Planning and Community Development, with questions or for further information. To view the petition and related documents on-line: <https://www.apexnc.org/DocumentCenter/View/34740>



TOWN OF APEX

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

PUBLIC NOTIFICATION OF PUBLIC HEARINGS CONDITIONAL ZONING #21CZ04 Williams Farm PUD

Pursuant to the provisions of North Carolina General Statutes §160D-602 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:

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Authorized Agent: Jacob Anderson, Alliance Group of NC

Property Address: 4525 Green Level West Rd.

Acreage: ±61.919 acres

Property Identification Number (PIN): portion of 0713943738

2045 Land Use Map Designation: Low Density Residential

Existing Zoning of Property: Rural Residential (RR)

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

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

Comments received prior to or during the Planning Board public hearing will not be read during the Town Council public hearing. Separate comments must be provided for the two public hearings in the time frames specified below.

Planning Board Public Hearing Date and Time: June 14, 2021 4:30 PM

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Town Council Public Hearing Date and Time: June 22, 2021 6:00 PM

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Rezoning #21CZ04

The Point
at Lake
Castleberry

Lake
Castleberry

Wimberly Trace

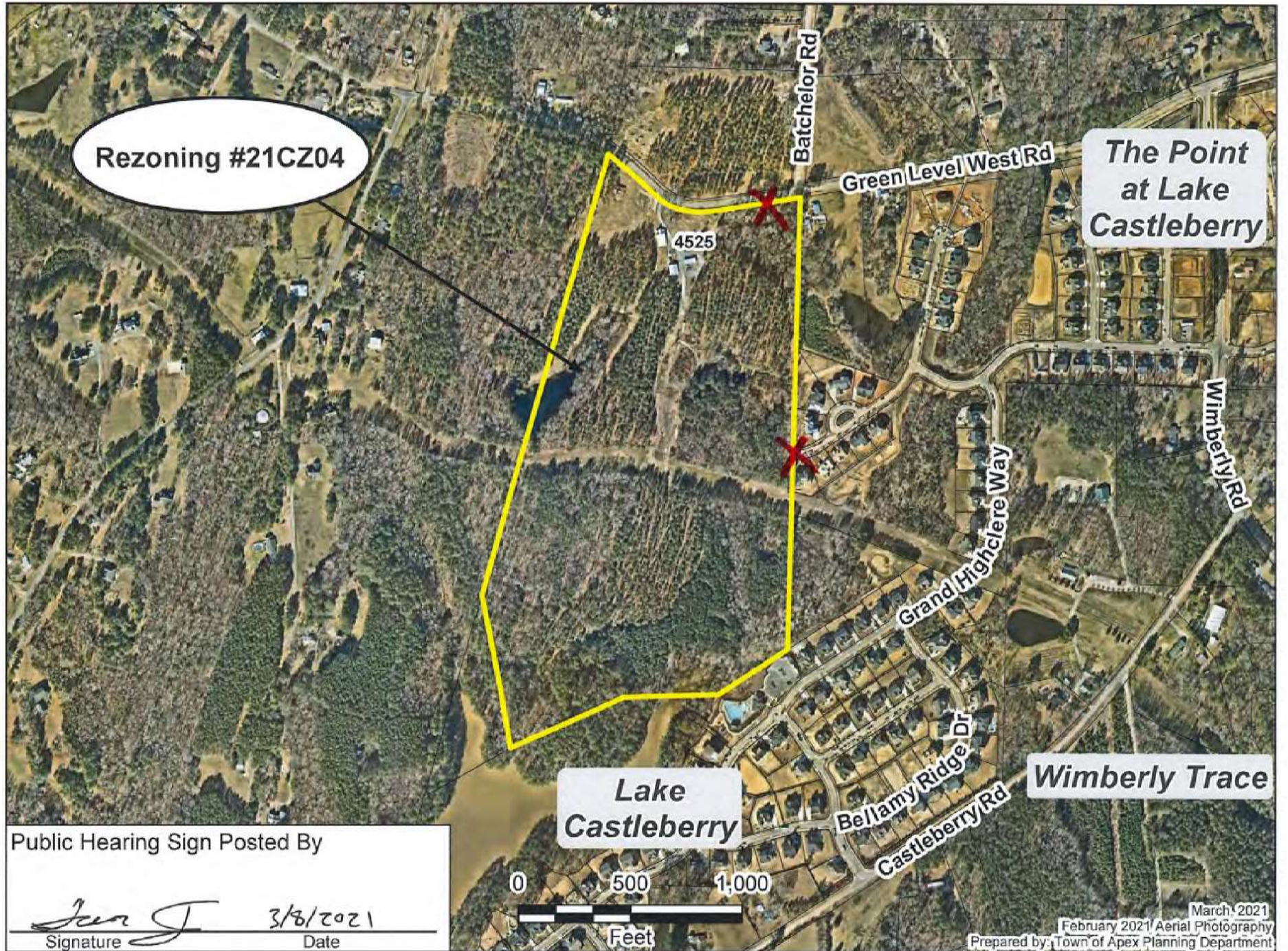
Public Hearing Sign Posted By

Jan J.
Signature

3/8/2021
Date

0 500 1,000
Feet

March, 2021
February 2021 Aerial Photography
Prepared by: Town of Apex Planning Department





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: Conditional Zoning #21CZ04
Williams Farm PUD
Project Location: 4525 Green Level West Rd.
Applicant: Jessie Hardesty
Firm: McAdams Co

This is to certify that I, as Director of Planning and Community Development, mailed or caused to have mailed by first class postage for the above mentioned project on May 28, 2021, 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.

5-28-21

Date

Amanda Bener for Dianne Khin
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 28 day of May, 2021.

JERI CHASTAIN PEDERSON
Notary Public
Wake County, North Carolina
My Commission Expires
March 10, 2024

Jeri Chastain Pederson
Notary Public

My Commission Expires: 03 / 10 / 2024



TOWN OF APEX

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

PUBLIC NOTIFICATION OF PUBLIC HEARINGS

CONDITIONAL ZONING #21CZ04

Williams Farm PUD –

VOTE CONTINUED

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Town Council Public Hearing Date and Time: ~~June 22, 2021~~ vote continued to July 27, 2021 6:00 PM

You may attend the meeting in person or view the meeting through the Town's YouTube livestream at: <https://www.youtube.com/c/townofapexgov>.

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Published Dates: ~~May 28 – June 22, 2021~~ June 23 – July 27, 2021

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



Student Assignment

Glenn Carrozza

5625 Dillard Drive
Cary, NC 27518

tel: (919) 431-7333
fax: (919) 694-7753

May 20, 2021

Dianne Khin, AICP
Director, Department of Planning and Community Development
Town of Apex
Dianne.Khin@apexnc.org

Dear Dianne,

The Wake County Public School System (WCPSS) Office of School Assignment received information about a proposed rezoning/development within the Town of Apex planning area. We are providing this letter to share information about WCPSS's capacity related to the proposal. The following information about the proposed rezoning/development was provided through the Wake County Residential Development Notification database:

- Date of application: March 1, 2021
- Name of development: 21CZ04 Williams Farm PUD
- Address of rezoning/development: 4525 Green Level West Rd
- Total number of proposed residential units: 176
- Type(s) of residential units proposed: Single-family;

Based on the information received at the time of application, the Office of School Assignment is providing the following assessment of possible impacts to the Wake County Public School System:

- ☐ Schools at all grade levels within the current assignment area for the proposed rezoning/development are anticipated to have sufficient capacity for future students.
- ☒ Schools at the following grade levels within the current assignment area for the proposed rezoning/development are anticipated to have insufficient capacity for future students; transportation to schools outside of the current assignment area should be anticipated:

☒ Elementary ☒ Middle ☐ High

The following mitigation of capacity concerns due to school construction or expansion is anticipated:

- ☐ Not applicable – existing school capacity is anticipated to be sufficient.
- ☒ School expansion or construction within the next five years is not anticipated to address concerns.
- ☐ School expansion or construction within the next five years may address concerns at these grade levels:

☐ Elementary ☐ Middle ☐ High

Thank you for sharing this information with the Town of Apex Planning Board and Town Council as they consider the proposed rezoning/development.

Sincerely,

Glenn Carrozza