STAFF REPORT

Rezoning #21CZ12 Legacy PUD

September 28, 2021 Town Council Meeting

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

BACKGROUND INFORMATION:	
Location:	3601 and 3609 US 64 Hwy W and 0 Olive Chapel Road
Applicant:	Ryan Linker, GCI Acquisitions, LLC
Authorized Agent:	Ryan Linker, GCI Acquisitions, LLC
Owners:	Deanna's Dowry, LLC; John and Faye Long; and Joel & Christiane Bond
PROJECT DESCRIPTION:	
Acreage:	+/- 60.97 acres
PINs:	0722040381, 0722037373, and 0712949922
Current Zoning:	Rural Residential (RR) and Wake Co. R-80W
Proposed Zoning:	Planned Unit Development-Conditional Zoning (PUD-CZ)
2045 Land Use Map:	Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services
Town Limits:	Partially inside the ETJ and partially outside the ETJ

ADJACENT ZONING & LAND USES:

	Zoning	Land Use
North:	Wake Co. R-80W	US Highway 64 W; Single-family residential
South:	Wake Co. R-80W	Single-family residential & Vacant
East:	Wake Co. R-80W; Tech/Flex (TF); Rural Residential (RR)	American Tobacco Trail; Driving Range; Forestry
West:	Rural Residential (RR); Wake Co. R-80W	Single-family residential; Forestry

EXISTING CONDITIONS:

The site consists of three (3) parcels totaling +/- 60.97 acres. The Legacy PUD is in the western region of Apex, south of US 64 Highway W and west of the American Tobacco Trail. The lots are primarily vacant and wooded with a few cleared areas and a few streams throughout.

NEIGHBORHOOD MEETING:

The applicant conducted a neighborhood meeting on December 15, 2020. The meeting report is attached to the staff report.

2045 LAND USE MAP:

The parcels for this project are split between two land use classifications on the 2045 Land Use Map. Approximately 31.68 acres is designated as Low Density Residential to the south. The rezoning proposes that density shall not exceed 2.4 units per acre, with a maximum of 75 residential units in this area. The remaining 29.29 acres to the north is designated as Mixed Use: High Density Residential/Office Employment/Commercial Services. The rezoning proposes a maximum of 400 multi-family residential units and a maximum density of 17 units per acre. The proposal also sets aside 5.66 acres of the Mixed Use area for non-residential uses. This project anticipates developing with the adjacent Tee2Green site, which is also non-residential and measures roughly 10.20 acres. The proposed rezoning is generally consistent with the 2045 Land Use Map designations.

The dividing line between the Mixed Use area and Low Density Residential area on the PUD layout is shown slightly further south than it's shown on the 2045 LUM. If the property is rezoned as proposed in the PUD-CZ application, the 2045 LUM will automatically be amended to shift the Mixed Use area south per NCGS 160D-605(a).

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 high schools within the current assignment area for this rezoning/development are anticipated to have insufficient capacity for future students; transportation to schools outside of the current assignment area should be anticipated. School expansion or construction within the next five years may address concerns at the high school level. Possible long-term solutions may include capping students out to schools with available seats (not very proximate), reassignments, or calendar changes.

In an effort to help alleviate the school shortage, the applicant has offered to sell the Low Density Residential portion of this development to WCPSS as a future public school site. Staff has participated in meetings with the applicant and representatives of WCPSS. At this time, the WCPSS has not committed to purchasing the site.

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.

Uses	SF-1	MF-1	C-1
Residential Uses			
Accessory apartment	P	P	
Single-Family	P		
Townhouse	P*	P	
Duplex	P*	P	
Multi-family or apartment**		P	P
Triplex or quadplex	P*	P	
Public & Civic Uses			
Ambulatory Health-care Facility with Emergency Dept.			P
Assembly Hall, nonprofit	P		P
Assembly Hall, for profit	P		P
Church, or place of worship	P/S		P/S
Day Care Facility	P		P
Drop-in or short-term day care	P		P
Government service			P
Hospital			P
School, public or private	P		P
Veterinary clinic or hospital			P
Vocational school			P

Uses	SF-1	MF-1	C-1
Utilities			
Communication tower, commercial	S	S	S
Communication tower, constructed stealth	S	S	S
Communication tower, camouflage stealth	S	S	S
Communication tower, public safety	S	S	S
Utility, Minor	P	P	P
Wireless support structure	P	P	P
Wireless communication facility	P	P	P
Recreational Uses			
Botanical garden		P	P
Entertainment, indoor			P
Greenway	P	P	P
Park, active	P	P	P
Park, passive	P	P	P
Recreation facility, private	P	P	
Food & Beverage Service			
Restaurant, drive through			P
Restaurant, general		P	P
Office & Research			
Medical or dental office or clinic		P	P
Medical or dental laboratory		P	P
Office, business or professional		P	P
Public Accommodations			
Bed & breakfast			P
Hotel or motel			P
Retail Sales & Service			
Artisan studio			P
Barber and beauty shop			P
Bookstore			P
Convenience store w/gas sales			P
Dry cleaners and laundry service			P
Farmer's market			P
Financial institution			P
Floral shop			P
Gas & fuel, retail			P
Grocery, general/specialty			P
Health/fitness center or spa			P
Kennel			P
Personal service			P
Pharmacy			P

Uses	SF-1	MF-1	C-1
Real estate sales			P
Retail sales, general			P
Studio for art			P
Tailor shop			P
Pet services			P

P = Permitted Uses = Special Use Permit
* = may only take up a portion of the SF area. Per the 2045 LUM, they may only be constructed in conjunction with SF homes.
** = Vertical mixed use may be an option for Multifamily or condominiums.

Conditions:

A. To further illustrate the project's commitment to preserving and replacing tree canopy, at the time of first subdivision or site plan submittal the developer will provide a donation to a local non-profit organization with a mission towards tree preservation in the amount of $10,000.

B. The proposed development shall install one (1) sign to reduce pet waste per SCM, in locations that are publicly accessible, such as adjacent to amenity centers, sidewalks, greenways or side paths.

C. Install a minimum of five (5) pet waste stations throughout the community.

D. Energy Efficiency:
   a. Per the UDO requirements, the project will include EV charging stations that are spread out on the site where feasible. The charging stations will be at least a level 2, or 40 amps.
   b. The exterior lighting for all multi-family and commercial buildings and parking lots will be 100% LED fixtures.
   c. Exterior lighting will meet UDO requirements to provide only full cut off lights.
   d. The project will install light timers or sensors or smart lighting technology for the multifamily units in the parking lot/outdoor lighting in the parking lot.
   e. All bedrooms and living rooms in multifamily units will have a window for natural lighting.

E. Affordable Housing: The developer shall provide a donation to the Town of Apex's Affordable Housing Fund (the "FUND") in the amount of $215.00 per residential lot or dwelling unit, payable at the time of Final Plat. Instead of a single lump sum donation, the developer may make payments based on the number of residential lots or dwelling units shown on each Final Plat.

F. When each phase of the project is platted, the following shall be added to the plat:
AVIGATION Notice: Deck Air Park, an active, general aviation airport open to the public, is located near this subdivision, and the flight paths of aircraft landing, taking off, and flying nearby pass directly over this subdivision. The lots shown on this plat will be subject to the impacts of the aviation uses being conducted to, from, at and nearby Deck Air Park for so long as that airport may continue to be used.

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:

Single-Family:

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. The roof shall be pitched at 5:12 or greater for 75% of the building design.
3. Garage doors shall have windows, decorative details or carriage-style adornments on them.
4. The garage shall not protrude more than 1' out from the front façade or front porch.
5. Eaves shall project at least 12 inches from the wall of the structure.
6. The visible side of a home on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements:
   a) Windows
   b) Bay window
   c) Recessed window
   d) Decorative window
   e) Trim around the windows
   f) Wrap around porch or side porch
   g) Two or more building materials
   h) Decorative brick/stone
   i) Decorative trim
   j) Decorative shake
   k) Decorative air vents on gable
   l) Decorative gable
   m) Decorative cornice
   n) Column
   o) Portico
   p) Balcony
   q) Dormer
7. A varied color palette shall be utilized on homes throughout the subdivision to include a minimum of three color families for siding and shall include varied trim, shutter, and accent colors complementing the siding color.
8. House entrances for units with front-facing single-car garages shall have a prominent covered porch/stoop area leading to the front door.
9. The rear and side elevations of the units that can be seen from the right-of-way shall have trim around the windows.
10. Front porches shall be a minimum of 6 feet deep.
11. No more than 25% of lots may be accessed with J-driveways. There shall be no more than 3 such homes in a row on any single block. Any lots eligible for a J-driveway home shall be identified on the Final Plat.
12. All single-family homes shall be pre-configured with conduit for a solar energy system.
13. Homeowner Association covenants shall not restrict the construction of accessory dwelling units.

Townhomes, Duplexes, Triplexes, Quadplexes:

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. The roofline cannot be a single mass; it must be broken up horizontally and vertically between every unit.
3. Garage doors must have windows, decorative details or carriage-style adornments on them.
4. House entrances for units with front-facing single-car garages shall have a prominent covered porch/stoop area leading to the front door.
5. The garage cannot protrude more than 1 foot out from the front façade or front porch.
6. Building facades shall have horizontal relief achieved by the use of recesses and projections.
7. A varied color palette shall be utilized on homes throughout the subdivision to include a minimum of three color families for siding and shall include varied trim, shutter, and accent colors complementing the siding color.
8. The rear and side elevations of the units that can be seen from the right-of-way shall have trim around the windows.
9. The visible side of a townhome on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements:
   a. Windows
   b. Bay window
   c. Recessed window
   d. Decorative window

e. Trim around the windows
f. Wrap around porch or side porch
g. Two or more building materials
h. Decorative brick/stone
i. Decorative trim
j. Decorative shake
k. Decorative air vents on gable
l. Decorative gable
m. Decorative cornice
n. Column
o. Portico
p. Balcony
q. Dormer

Multi-Family: Apartments

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. Siding materials shall be varied in type and/or color on 30% of each facade on each building.
3. Windows must vary in size and/or type.
4. Windows that are not recessed must be trimmed.
5. Recesses and projections shall be provided for at least 50% of each facade on each building.
6. Rooflines cannot be a single mass; they must be varied with the use of gables or parapets.

Non-Residential:

1. The predominant exterior building materials shall be high quality materials, including brick, glass, native stone, precast concrete, and decorative masonry units.
2. Cut off lighting fixtures and side shields on the sides where the property is adjacent to residential zoning shall only be allowed.
3. EIFS cornices and parapet trim are permitted.
4. EIFS or synthetic stucco shall not be used in the first four feet above grade and shall be limited to only 25% of each building facade.
5. Prohibited materials include:
    a. Vinyl siding. Vinyl details and trim are permitted.
    b. Painted, smooth faced concrete block
    c. Metal Walls. Decorative metal accents and panels may be accepted.
6. Exterior lighting shall not exceed a color temperature of 3,500K and meet UDO requirements for full cut off lights.
7. A solar PV system shall be incorporated into buildings to be constructed on the property. Such PV systems shall have a capacity of not less than 2 kW/1,000 heated square feet of building floor area.

Proposed Design Controls:

Maximum Density:	
Max in Low Density:	2.4 units/acre
Max in Mixed Use:	17 units/acre
Maximum Residential Units:	
Max # in Low Density:	75
Max # of Multi-Family:	400
Minimum Lot Width:	
Single-family:	50 ft
Townhomes:	20 ft
Maximum Building Height:	

Single-Family:	45 ft
Townhouse, Duplex, Triplex & Quadplex:	45 ft
Multi-Family:	55 ft
Public/Civic Uses:	65 ft
Hotels:	75 ft
Communication Towers/Wireless Facilities:	200 ft
All Other Uses:	50 ft
Maximum Built-Upon Area:	70%

Building Setbacks:	Single-Family:	Townhomes:	Multi-Family	Non-Residential
Front:	10 ft to front façade 20 ft from sidewalk to garage door	10 ft to front façade 20 ft from sidewalk to garage door	10 ft	10 ft
Side:	5 ft	Aggregate 8 ft between buildings	10 ft	10 ft
Rear:	15 ft	15 ft	10 ft	10 ft
Corner:	10 ft	10 ft	10 ft	10 ft
Building side to side:	N/A	Aggregate 8 ft	10 ft	10 ft
From Buffers/RCA:				
For buildings:	Per UDO: 10 ft	Per UDO: 10 ft	10 ft	10 ft
For parking areas:	N/A	N/A	Per UDO: 5 ft	Per UDO: 5 ft

Proposed RCA, Landscaping, and Buffers Conditions:

The proposed Legacy PUD complies with the UDO requirements for RCA. Gross square footage and percent of RCA required: 18.4 acres or approximately 30% of the overall site.

- (Mixed Use area = 25%)
- (Low Density residential area = 35% (assumed mass graded, if not mass graded then this area is 30%)

	Approx. Area	Ratio	RCA Area
Low Density Residential:	31.68	35%	11.08
Mixed Use Area	29.29	25%	7.32
Overall Gross	60.97	30%	18.41*

**Note that the total RCA area can be provided in any combination anywhere within the PUD as long as the total area is met.*

Landscaping:

- The project shall increase biodiversity within perimeter buffers, common owned open space, and other landscape areas by providing a variety of native and adaptive species for the canopy, understory and shrub levels. A minimum of 75% of the species selected shall be native or a native 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 within a single development site.
- To further illustrate the project's commitment to preserving and replacing tree canopy, at the time of first subdivision or site plan submittal the developer will provide a donation to a local non-profit organization

with a mission towards tree preservation in the amount of $10,000.

- The project will plant deciduous shade trees on the southern side of buildings where applicable.
- The project will plant pollinator friendly flora that is diverse and provides blooming in succession from spring to fall.
- The project will provide and allow for undisturbed spaces (e.g. leaf piles, un-mowed fields, fallen trees) for nesting and overwintering for native pollinators and wildlife.
- The project will plant warm season grasses for drought resistance.

Buffers:	UDO Requirement:	Proposed:
US Hwy 64 W:	100-foot Type A or 50-foot Type A if UDO Sec. 8.2.6.B.5.f.ii is met	50-foot Type A buffer (measured from the ultimate right-of-way)*
South boundary:	20-foot Type B	20-foot Type B
East boundary:		
Adjacent to American Tobacco Trail:	50-foot Type A	50-foot Type A
West boundary:		
Adjacent to Use Class 1:	20-foot Type B	20-foot Type B
Major Collector within development:		
Along MF-1, C-1, and SCM Frontage:	10-foot Type A or 20-foot Type D	30-foot type D
Along the SF-1 Frontage:	10-foot Type A	10-foot Type A

**The development will meet the UDO Sec. 8.2.6.B.5.f.ii requirements to reduce from a 100-foot Type A buffer.*

ENVIROMENTAL ADVISORY BOARD:

The Apex Environmental Advisory Board (EAB) held a pre-application meeting for this rezoning on April 15, 2021. The zoning conditions suggested by the EAB are listed below along with the applicant's response to each condition.

EAB Suggested Conditions		Applicant's Response
1.	Install signage near environmental sensitive areas in order to: Reduce pet waste near SCM drainage areas. Eliminate fertilizer near SCM drainage areas.	Added
2.	Plant trees as designed for efficiency. Plant deciduous shade trees on southern side of buildings.	Added
3	Increase biodiversity. Option 1: Plant pollinator-friendly flora.	Added
4.	Implement green infrastructure. Option 4: Provide diverse and abundant pollinator and bird food sources (e.g. nectar, pollen, and berries from blooming plants) that bloom in succession from spring to fall. Option 5: Provide and allow for undisturbed spaces (e.g. leaf piles, un-mowed fields, fallen trees) for nesting and overwintering for native pollinators and wildlife.	Added
5.	Include landscaping that requires less irrigation and chemical use. Option 1: Plant warm season grasses for drought-resistance.	Added
6.	Install pet waste stations in neighborhoods.	Added
7.	Install convenient electric vehicle charging stations.	Added

EAB Suggested Conditions		Applicant's Response
	Spread out charging stations as much as possible considering all sides of the property for all potential users.	
8.	Include energy efficient lighting in building design. Lower maximum foot-candles outside of buildings.	Added
9.	Install timers or light sensors or smart lighting technology.	Added
10.	Include International Dark Sky Association compliance standards. Outdoor lighting shall be shielded in a way that focuses lighting to the ground. Lighting that minimizes the emission of blue light to reduce glare shall be used.	Added
11.	Add east to west connections to existing surrounding greenways, including from the American Tobacco Trail.	Added
12.	Minimize the number of stream crossings, keeping the riparian buffer connected without barriers, as much as possible.	Added
13.	Provide space for additional tree plantings by single-family residential in planning for above and underground obstructions.	Not Added

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 provide a greenway trail that will provide a connection from the American Tobacco Trail to the west.

The Parks, Recreation, and Cultural Resources Advisory Commission reviewed the Legacy Planned Unit Development at their May 26, 2021 meeting. The Advisory Commission unanimously recommended a fee-in-lieu of dedication with credit provided for construction of greenway trail that will provide an east-west connection in a similar location on the Greenway Master Plan.

Public Facilities:

The proposed Legacy PUD will be served by Town of Apex water, sanitary sewer, and electrical systems. The utility design will be finalized at Master Subdivision Plan and Site Plan review. A conceptual Utility Plan is included in the PUD Plan for reference. A 12-inch water line will be extended along the south side of US Hwy 64 W from Sweetwater to the proposed development. Water lines will be run along the road network to connect to each piece of the development and provide connection to the adjacent properties. Sewer will connect through Smith Farm and run along the streams within Legacy. The ultimate design for the utilities shall meet the current Town of Apex Master Water and Sewer Plans for approval.

The proposed development plan will require stormwater management measures in accordance with Sections 6.1 and 7.5.7 in the Town of Apex Unified Development Ordinance. Stormwater captured on the site will be conveyed to the proposed Stormwater Control Measures, which will be identified on plans during the major subdivision or site plan approval stage. Post development peak runoff shall not exceed pre-development peak runoff for the 24-hour, 1-year and 10-year storm events in accordance with the Unified Development Ordinance. Treatment for the first 1-inch of runoff will be provided such that the removal of 85% Total Suspended Solids is achieved. All stormwater devices will meet the design requirements of NCDENR and the Town of Apex.

Apex Transportation Plan/Access and Circulation:

The Bicycle and Pedestrian System Plan Map shows a proposed public greenway running east-west from the American Tobacco trail. The proposed amendment to the plan will add sidepath along the eastern side of the future major collector starting from the roundabout and continuing south to Olive Chapel Rd. The proposed PUD will provide sidewalks along both sides of all internal streets, sidepath as shown on the amendment, and build their portion of the east-west greenway.

Per the proposed amendment to the Apex Thoroughfare and Collector Street Plan map, a future major collector is shown where the eastern property line intersects with US Hwy 64 W. It connects to a future roundabout and runs roughly southwest within the PUD. It is anticipated to connect to Transit Trail, which will be upgraded to a future major collector with future development.

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 applicant proposed the following traffic improvements for this development:

1. Convert the intersection of US 64 at Flying Hawk Road to a directional crossover in both directions in Phase 1, prior to first certificate of occupancy (CO), serving a new major collector street intersection to the south. In addition, developer shall conduct a signal warrant analyses for the collector street half of the intersection prior to the last CO for the apartments and prior to the last CO for the commercial development and install a traffic signal if permitted by NCDOT at either point.
2. Construct a new major collector street along the eastern property line to connect to US 64 at the intersection of Flying Hawk Road/directional crossover. The proposed major collector will be constructed as part of the development plan from US 64 southward through the project serving local connections to the east, west, and south. Construction of the major collector street may be phased in accordance with a phasing plan to be approved as part of site and subdivision plans.
3. Construct an eastbound right turn lane with 100 feet of storage and appropriate deceleration length and taper per NCDOT guidance on US 64 at the new major collector street in Phase 2, prior to first certificate of occupancy for the mixed-use area and/or prior to the first residential subdivision plat.
4. Construct a right-in-only driveway with 100 feet of storage and appropriate deceleration length and taper per NCDOT guidance on US 64 approximately 700-800 feet west of the major collector street, if/when that access is proposed west of the major collector street.
5. Construct a U-turn bulb at Pinefield Road in Phase 1 that can, at a minimum, accommodate a Bus-40 vehicle if the current geometry does not accommodate that movement.
6. Construct a U-turn bulb at Goodwin Road in Phase 1 that can, at a minimum accommodate, a Bus-40 vehicle if the current geometry does not accommodate the turn movement in Phase 1. In addition, developer shall conduct a signal warrant analyses for the intersection prior to the last CO for the apartments and prior to the last CO for the commercial development and install a traffic signal if permitted by NCDOT at either point.

Transportation Staff proposes revising the last two sentences from items 1 and 6 above as follows:

1. Convert the intersection of US 64 at Flying Hawk Road to a directional crossover in both directions in Phase 1, prior to first certificate of occupancy (CO), serving a new major collector street intersection to the south. <u>In addition, developer shall conduct a signal warrant analysis for the intersection prior to the last CO for the apartments and install a traffic signal if permitted by NCDOT. If not permitted at that time, developer shall pay a fee in lieu for the estimated cost of design and installation.</u>
6. Construct a U-turn bulb at Goodwin Road in Phase 1 that can, at a minimum accommodate, a Bus-40 vehicle if the current geometry does not accommodate the turn movement in Phase 1. <u>In addition, developer shall conduct a signal warrant analysis for the intersection prior to the last CO for the apartments and install a traffic signal if permitted by NCDOT. If not permitted at that time, developer shall pay a fee in lieu for the estimated cost of design and installation.</u>

If the conditions are amended as shown above, Transportation and Planning staff agree to the proposed conditions.

PLANNING STAFF RECOMMENDATION:

Planning staff recommends approval of Rezoning #21CZ12 Legacy PUD with the change to the transportation conditions as suggested by staff.

PLANNING BOARD RECOMMENDATION:

The Planning Board heard this project at their September 13, 2021 meeting. They unanimously recommended approval of the rezoning with the conditions proposed by staff, with direction that staff work~~s~~ with the applicant on explicit language to allow the developer to get their fee-in-lieu returned if the signal is not warranted in a certain amount of time that is agreeable to both parties.

To that end, Planning, Transportation and Legal staff worked together to draft language that would meet the request for a compromise and be legally enforceable. Staff does not support the addition of condition 7 below, but drafted it as directed by the Planning Board. If Town Council is inclined to include the condition, the wording is legal and enforceable.

The language was sent to the applicant and they have agreed that it is acceptable to them. They updated their PUD text to include this language.

1. Convert the intersection of US 64 at Flying Hawk Road to a directional crossover in both directions in Phase 1, prior to first certificate of occupancy (CO), serving a new major collector street intersection to the south. In addition, prior to the final CO being issued for the last apartment building but not before issuance of the building permit for the last apartment building, developer shall conduct a signal warrant analysis for the collector street half of the intersection and install a traffic signal if permitted by NCDOT. If not permitted at that time, developer shall pay a fee in lieu for the estimated cost of design and installation.

6. Construct a U-turn bulb at Goodwin Road in Phase 1 that can at a minimum accommodate a Bus-40 vehicle if the current geometry does not accommodate the turn movement in Phase 1. In addition, prior to the final CO being issued for the last apartment building but not before issuance of the building permit for the last apartment building, developer shall conduct a signal warrant analysis for the intersection and install a traffic signal if permitted by NCDOT. If not permitted at that time, developer shall pay a fee in lieu for the estimated cost of design and installation.
7. If NCDOT has not permitted either traffic signal described above to be installed within 5 years from the date of payment of the fee in lieu, developer, upon written request to the Town of Apex, shall be entitled to a refund of the fee in lieu.

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 and Mixed Use: High Density Residential/Office Employment/Commercial Services. The proposed rezoning includes nonresidential uses and residential uses at densities supported by the 2045 Land Use Map. If the rezoning is approved as proposed, the 2045 Land Use Map designation will automatically be amended to shift the line between Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services per NCGS 160D-605(a). The Apex Town Council has further considered that the proposed rezoning to Planned

Unit Development – Conditional Zoning (PUD-CZ) will maintain the character and appearance of the area and provide the flexibility to accommodate the growth in population, economy, and infrastructure consistent with that contemplated by the 2045 Land Use Map.

The proposed rezoning is reasonable and in the public interest because it will permit a variety of energy efficient housing types, increase non-residential development opportunities, and contribute to the affordable housing fund.

PLANNED UNIT DEVELOPMENT DISTRICT AND CONDITIONAL ZONING STANDARDS:

Standards

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

1. *Planned Unit Development (PUD-CZ) District*
   In approving a Planned Development (PD) Zoning District designation for a PUD-CZ, the Town Council shall find the PUD-CZ district designation and PD Plan for PUD-CZ demonstrates compliance with the following standards:
   a) *Development parameters*
      (i) The uses proposed to be developed in the PD Plan for PUD-CZ are those uses permitted in Sec. 4.2.2 *Use Table.*
      (ii) The uses proposed in the PD Plan for PUD-CZ can be entirely residential, entirely non-residential, or a mix of residential and non-residential uses, provided a minimum percentage of non-residential land area is included in certain mixed use areas as specified on the 2045 Land Use Map. The location of uses proposed by the PUD-CZ must be shown in the PD Plan with a maximum density for each type of residential use and a maximum square footage for each type of non-residential use.
      (iii) The dimensional standards in Sec. 5.1.3 *Table of Intensity and Dimensional Standards, Planned Development Districts* may be varied in the PD Plan for PUD-CZ. The PUD-CZ shall demonstrate compliance with all other dimensional standards of the UDO, North Carolina Building Code, and North Carolina Fire Code.
      (iv) The development proposed in the PD Plan for PUD-CZ encourages cluster and compact development to the greatest extent possible that is interrelated and linked by pedestrian ways, bikeways and other transportation systems. At a minimum, the PD Plan must show sidewalk improvements as required by the Apex Transportation Plan and the *Town of Apex Standard Specifications and Standard Details*, and greenway improvements as required by the Town of Apex Parks, Recreation, Greenways, and Open Space Plan and the Apex Transportation Plan. In addition, sidewalks shall be provided on both sides of all streets for single-family detached homes.
      (v) The design of development in the PD Plan for PUD-CZ results in land use patterns that promote and expand opportunities for walkability, connectivity, public transportation, and an efficient compact network of streets. Cul-de-sacs shall be avoided unless the design of the subdivision and the existing or proposed street

system in the surrounding area indicate that a through street is not essential in the location of the proposed cul-de-sac, or where sensitive environmental areas such as streams, floodplains, and wetlands would be substantially disturbed by making road connections.

(vi) The development proposed in the PD Plan for PUD-CZ is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties.

(vii) The development proposed in the PD Plan for PUD-CZ has architectural and design standards that are exceptional and provide higher quality than routine developments. All residential uses proposed in a PD Plan for PUD-CZ shall provide architectural elevations representative of the residential structures to be built to ensure the Standards of this Section are met.

b) *Off-street parking and loading*. The PD Plan for PUD-CZ shall demonstrate compliance with the standards of Sec. 8.3 *Off-Street Parking and Loading*, except that variations from these standards may be permitted if a comprehensive parking and loading plan for the PUD-CZ is submitted as part of the PD Plan that is determined to be suitable for the PUD-CZ, and generally consistent with the intent and purpose of the off-street parking and loading standards.

c) RCA. The PD Plan for PUD-CZ shall demonstrate compliance with Sec. 8.1.2 Resource Conservation Area, except that the percentage of RCA required under Sec. 8.1.2 may be reduced by the Town Council by no more than 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;

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*.

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. Sec. 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.

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.

July 29, 2021

Travis Fluitt, P.E.
Kimley-Horn and Associates, Inc.
421 Fayetteville Street, Suite 600
Raleigh, NC 27601

Subject: **Staff summary and comments for the US 64 Residential TIA, 05/01/2021**

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

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

- US 64 at Flying Hawk Road/ Site Access Road
- US 64 at Right-In/Right-Out Site Driveway

The following 2 intersections were also included for analysis in the TIA study area:

- US 64 at Pinefield Road/ West U-turn
- US 64 at Goodwin Road/ East U-turn

Trip Generation

The proposed development is expected to consist of two phases. Phase 1 is expected to consist of 400 apartments units. It's projected to generate approximately 35 new trips entering and 98 new trips exiting the site during the weekday A.M. peak hour and 102 new trips entering and 66 new trips exiting the site during the weekday P.M. peak hour. Phase 1 of the development is projected to add an additional 2,178 new daily trips onto the adjacent roadway network. Phase 2 is expected to consist of an additional 75 single family homes, 11,000 square feet of day care center, and 3,500 square feet of drive-thru fast food restaurant. Phase 2 in combination with Phase 1 is expected to generate 141 new trips entering, and 218 new trips exiting the site during the weekday A.M. peak hour, and 209 new trips entering and 157 new trips exiting the site during the weekday P.M. peak hour. Phase 2 in combination with Phase 1 is expected to generate a total of 3,956 new trips on the adjacent roadway network.

Background traffic

Background traffic consists of 3% annual background traffic growth compounded to build out year 2024 for Phase 1, and build out year 2026 for Phase 2, with no background developments.

Trip Distribution and Assignment

The trip distributions to and from the development site are as follows for Phase 1:

- 80% to/from the east on US 64
- 20% to/from the west on US 64

The trip distributions to and from the development site are as follows for Phase 2:

- 70% to/from the east on US 64
- 30% to/from the west on US 64

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 2021** - Existing year 2021 traffic adjusted to account for pandemic traffic conditions.
- **No Build 2024** – Projected year (2024) with background traffic growth.
- **Build 2024 –** Projected year (2024) with background traffic, background improvements, and Phase 1 site build-out conditions including recommended improvements where applicable.
- **Build 2024 (RI/RO) –** Build 2024 scenario that also includes the construction of a right-in/right out access point on US 64.
- **No Build 2026** – Projected year (2026) with background traffic growth.
- **Build 2026 –** Projected year (2026) with background traffic, background improvements, and Phase 2 site build-out conditions including recommended improvements where applicable.
- **Build 2026 (RI/RO) –** Build 2026 scenario that also includes the construction of a right-in/right out access point on US 64.

US 64 at Flying Hawk Road/ Site Access Road (Unsignalized)

Table 1. A.M. / P.M. Unsignalized Peak Hour Levels of Service US 64 at Flying Hawk Road/ Site Access Road							
	Existing 2021	**No Build 2024**	**Build 2024**	**Build 2024 (RI/RO)**	**No Build 2026**	**Build 2026**	**Build 2026 (RI/RO)**
Overall	NA	NA	NA	NA	NA	NA	NA
Eastbound (US 64)	*C / B[2]*	*C / C[2]*	*C / E[2]*	*C / E[2]*	*C / E[2]*	*C / E[2]*	*D / F[2]*
Westbound (US 64)	*C / C[2]*	*D / D[2]*	*C / C[2]*	*C / C[2]*	*E / E[2]*	*D / E[2]*	*C / D[2]*
Northbound (Site Access Road)	*NA*	*NA*	*C / C[1]*	*C / C[1]*	*NA*	*F / E[1]*	*D / D[1]*
Southbound (Flying Hawk Road)	*E / F[1]*	*F / F[1]*	*B / C[1]*	*B / C[1]*	*F / F[1]*	*C / C[1]*	*B / C[1]*

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

TIA recommendations:

- In Phase 1, the TIA recommends construction of a stop-controlled northbound approach with one lane of ingress and one lane of egress opposite of Flying Hawk Road on US 64. The TIA recommends conversion of the intersection to a directional crossover (allowing lefts-in from US 64 and right-in/right-out operations at both Flying Hawk Road and Site Access Road). Left-out movements from the side roads would be diverted to downstream intersections of Pinefield Road and Goodwin Road where U-turn movements can be accommodated. In Phase 2 the TIA recommends construction of an eastbound right turn lane with 100 feet of storage in the Build 2026 scenario, or the construction of an eastbound right turn taper in the Build 2026 Right-in/Right-out scenario. The TIA also recommends monitoring the intersection for a traffic signal.

Apex staff recommendations:

- Apex staff concur with the recommendations for Phase 1. A directional crossover at this intersection combined with nearby U-turns will promote safety and efficiency by eliminating left-out conflicts from the side streets. It is also consistent with the short term strategy for controlling traffic along this section of US 64 until it can be converted to a freeway. Traffic analysis showed acceptable levels of service per the UDO at the intersection in the Build 2024 scenarios.
- For Phase 2, Apex staff recommends construction of an eastbound right turn lane with 100 feet of storage and appropriate deceleration length and taper per NCDOT guidance for safe ingress. Apex staff concurs with the TIA in regard to monitoring this intersection for signalization, and recommends installation of a signal if warranted. In the Build 2026 scenarios LOS is projected to degrade to LOS E or F on multiple approaches. However, storage is projected to be adequate on the US 64 left turn lanes. A traffic signal would mitigate vehicular delays on the northbound approach and the left turn movements on US 64.

US 64 at Right-In/Right-Out Driveway (Unsignalized)

Table 2. A.M. / P.M. Unsignalized Peak Hour Levels of Service US 64 at Right-In/Right-Out Driveway		
	Build 2024 (RI/RO)	**Build 2026 (RI/RO)**
Overall	NA	NA
Eastbound (US 64)	*NA*	*NA*
Westbound (US 64)	*NA*	*NA*
Northbound (Right-In/Right-Out Driveway)	*C / C[1]*	*C / C[1]*

1. Level of service for stop-controlled minor street approaches.

TIA recommendations:

- The TIA recommends construction of a two-lane, two-way Right-In/Right-Out Driveway approximately 700-800 feet west of Flying Hawk Road in Phase 1. In Phase 2 the TIA recommends the construction of an exclusive eastbound right turn lane with 100 feet of storage on US 64 for the right-in movement.

Apex staff recommendations:

- Apex staff supports the recommendation for a right-in movement at this location, but does not recommend a right-out movement. The addition of the right-out movement does not show an operational benefit. With the right-out movement, the TIA assumes a significant portion of traffic heading westbound from the site will turn right then make a weaving maneuver across eastbound US 64 to access the U-turn at Flying Hawk Road. Due to the short distance (approximately 700 feet) the weaving maneuver introduces a potentially unsafe movement that is anticipated to increase the risk of crashes on this segment of US 64. Additionally it introduces another conflict point on US 64 which is a partially access-controlled facility with long term plans to convert to a freeway. Apex recommends an exclusive eastbound right turn lane with 100 feet of storage and appropriate deceleration lane and taper for a 60 mph design speed to be constructed if and when the development chooses to pursue a Right-In Only Driveway at this location.

US 64 at Pinefield Road/ West U-turn (Unsignalized)

Table 3. A.M. / P.M. Unsignalized Peak Hour Levels of Service US 64 at Pinefield Road/ West U-turn					
	Existing 2021	**No Build 2024**	**Build 2024**	**No Build 2026**	**Build 2026**
Overall	NA	NA	NA	NA	NA
Eastbound (US 64)	*B / D*[2]	*B / D*[2]	*B / E*[2]	*C / E*[2]	*C / E*[2]
Westbound (US 64)	*C / D*[2]	*D / D*[2]	*D / E*[2]	*D / E*[2]	*E / E*[2]
Southbound (Pinefield Road)	*E / F*[1]	*F / F*[1]	*F / F*[1]	*F / F*[1]	*F / F*[1]

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

TIA recommendations:

- The TIA recommends no improvements at this intersection.

Apex staff recommendations:

- Apex staff recommends providing a U-turn bulb at Pinefield Road that can at a minimum accommodate a Bus-40 vehicle if the current geometry does not accommodate that movement. Trucks traveling to and from the site as well as adjacent properties using the proposed major collector road will need adequate space for U-turns.
- It should be noted that both the left/U-turn movements and the stop controlled southbound approach are projected to operate at LOS E or F in the Build 2024 and 2026 PM peak hours. However, aside from the U-turn accommodations no other geometric improvements are recommended as traffic volumes for the left/U-turns are relatively low (less than 10 vehicles per hour) and 95th percentile queues are not projected to exceed 50 feet. Storage capacity on the US 64 left turn storage bays are projected to contain the queues. Most of the long delays on the southbound approach can be attributed to left turning traffic. Given the high traffic volume on US 64 that is expected. The intersection will not warrant a traffic signal based on projected traffic volumes.

US 64 at Goodwin Road/ East U-turn (Unsignalized)

Table 4. A.M. / P.M. Unsignalized Peak Hour Levels of Service US 64 at Goodwin Road/ East U-turn							
	Existing 2021	**No Build 2024**	**Build 2024**	**Build 2024 (RI/RO)**	**No Build 2026**	**Build 2026**	**Build 2026 (RI/RO)**
Overall	NA	NA	NA	NA	NA	NA	NA
Eastbound (US 64)	*B / C*[2]	*B / D*[2]	*C / F*[2]	*C / E*[2]	*C / E*[2]	*E / F*[2]	*D / F*[2]
Westbound (US 64)	*C / C*[2]	*D / D*[2]	*D / E*[2]	*D / E*[2]	*D / E*[2]	*E / E*[2]	*E / E*[2]
Southbound (Goodwin Road)	*E / F*[1]	*F / F*[1]	*F / F*[1]	*F / F*[1]	*F / F*[1]	*F / F*[1]	*F / F*[1]

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

TIA recommendations:

- The TIA recommends no improvements at this intersection for Phase 1 (Build 2024 Scenarios). In Phase 2 the TIA recommends monitoring this intersection for signalization under the Build 2026 scenario (no additional right-in/right-out access to the site).

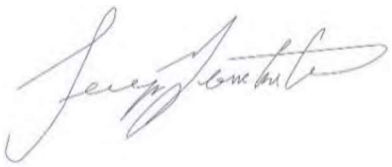
Apex staff recommendations:

- Apex staff recommends providing a U-turn bulb at Goodwin Road that can at a minimum accommodate a Bus-40 vehicle if the current geometry does not accommodate the turn movement in Phase 1. Trucks traveling to and from the site as well as adjacent properties using the proposed major collector road will need adequate space for U-turns. Apex staff concur with the recommendation for Phase 2, and recommends the installation of the traffic signal if warranted.
- It should be noted that both the left/U-turn movements and the stop controlled southbound approach are projected to operate at LOS E or F in both the Build 2024 and Build 2026 scenarios, with overall delays and queues being higher under the scenario that does not consider the Right-In/Right-Out access point at the site. This operational difference is attributed to the TIA assumption that a significant portion of westbound site traffic will make a weaving maneuver across US 64 to U-turn at Flying Hawk Road rather than Goodwin Road- a maneuver that is not supported by staff. 95th percentile queues are projected to increase to a maximum of 300 feet on the eastbound left turn lane in the PM peak hour. However, storage capacity on US 64 left turn storage bays is projected to be adequate to contain the queues. Most of the long delays on the southbound approach can be attributed to left turning traffic. Given the high traffic volume on US 64

that is expected. A traffic signal, if warranted will mitigate vehicle delays and queueing on the minor street approach.

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,



Serge Grebenschikov
Traffic Engineer
919-372-7448


Rezoning #21CZ12
Pinefield Rd
Lettie Rd
US 64 Hwy W
64
64
Air Park Dr
Deck Air Park
Lawson Ln
Chestnut Bluff Run
Deer Creek
Lovage Dr
Sweetwater
Smith Farm PUD
Richardson Rd
Soaring Silo Way
Early Planting Ave
Barn Cat Way
Grindall Aly
0
500
1,000
Feet
July 2021
May 2021 Aerial Photography
Prepared by Town of Apex Planning Department

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 #: 2021-002 (NW) Rezoning Case #21CZ02 Submittal Date: 5/3/21

Fee Paid $3310.00 TIA $1000 PUD 2110.00 Check # Visa

PETITION TO AMEND THE OFFICIAL ZONING DISTRICT MAP

Project Name: Legacy

Address(es): 3601 US 64 HWY W, 0 Olive Chapel Road, and 3609 US 64 HWY W

PIN(s) 0722040381, 0722037373, 0712949922,

Acreage: 60.97 +/-

Current Zoning: Rural Residential, R-80 W Proposed Zoning: PUD CZ

Current 2045 LUM Designation: North:Mixed Use,Comm.,O&I,High Density Res.,South Low Density Res.

Requested 2045 LUM Designation: North:Mixed Use,Comm.,O&I,High Density Res.,South Low Density Res.

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: 30.99

Area proposed as non-residential development: Acreage: 5.35

Percent of mixed use area proposed as non-residential: Percent: 17.3%(including 10 ac. Tee 2 Green)

Applicant Information

Name: GCI Acquisitions LLC ATTN: Ryan Linker

Address: 25101 Chagrin Blvd. Suite #300

City: Beachwood State: Ohio Zip: 44122

Phone: 216-644-5992 E-mail: rlinker@goldbergcompanies.com

Owner Information

Name: Deannas Dowry,LLC (John H Bryson III, Susan Yates), John William and Faye Long, Joel and Christiane Bond

Address: 3601 US 64 HWY W, 0 Olive Chapel Rd, 3609 US 64 HWY W

City: Apex State: NC Zip: 27523

Phone: 804-922-0305;919-880-6944;919-810-2298 E-mail: jbryson@openplan;Johnlong1@prodigy.net;joelbond@gmail.com

Agent Information

Name: GCI Acquisitions LLC ATTN: Ryan Linker

Address: 25101 Chagrin Blvd. Suite #300

City: Beachwood State: Ohio Zip: 44112

Phone: 216-644-5992 E-mail: rlinker@goldbergcompanies.com

Other contacts: Contact Person: Glenda Toppe 919-605-7390 glenda@gstplanning.com

Ed Tang 919-369-0125 etang@withersravenell.com,

Travis Fluitt 919-653-2948 Travis.Fluitt@kimley-horn..com

PLANNED UNIT DEVELOPMENT APPLICATION

Application #: 2021-002 Submittal Date: 5/3/21

2045 LAND USE MAP AMENDMENT (if applicable)

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

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

South of US 64 HWY W and North Olive Chapel Road

Current 2045 Land Use Classification: North:Mixed Use,Comm.,O&I,High Density Res.,South Low Density Res.

Proposed 2045 Land Use Classification: North:Mixed Use,Comm.,O&I,High Density Res.,South Low Density Res.

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

There is an amendment proposed to the 2045 Land Use Plan Map. The proposed PUD shifts the line for the Low Density Residential component of the Plan slightly to the . south. This is due to topographic features and the proposed road configuration. This revision also reduces the number of single-family detached homes, thus minimizing the impact on Wake County Public School System.

CERTIFIED LIST OF NEIGHBORING PROPERTY OWNERS

Application #: 2021-002 Submittal Date: 5/3/21

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

	Owner's Name	PIN
1.	See Attached List.	
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

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

Date: 4/29/2021 By: Glenda S. Tapp

COUNTY OF WAKE STATE OF NORTH CAROLINA

Sworn and subscribed before me, Geraldine Guillory, a Notary Public for the above State and County, on this the 29th day of April, 2021.

Geraldine Guillory
Notary Public

Geraldine Guillory
Print Name

SEAL

GERALDINE GUILLORY NOTARY PUBLIC MY COMMISSION EXPIRES OCTOBER 31, 2024 WAKE COUNTY, NC

My Commission Expires: 10-31-2024

2021-002

CLEMENT, MARTHA S
3200 OLIVE CHAPEL RD
APEX NC 27502-6785

BOND, JOEL BOND, CRISTIANE
3609 US 64 HWY W
APEX NC 27523-8448

SLOVER, SARAH J
327 E PARK ST
CARY NC 27511-3518

CLEMENT, MARTHA S
3200 OLIVE CHAPEL RD
APEX NC 27502-6785

SHELTON PROPERTY INVESTMENTS LLC
2701 WEAVER HILL DR
APEX NC 27502-6548

POLLOCK, AARON L
POLLOCK, CAROLINA W
1521 FLYING HAWK RD
APEX NC 27523-7858

NC DEPARTMENT OF TRANSPORTATION
PO BOX 25201
RALEIGH NC 27611-5201

LENNAR CAROLINAS, LLC
1100 PERIMETER PARK DR STE 112
MORRISVILLE NC 27560-9119

GOODWIN, LILIJA B
GOODWIN, CALVIN LEE
1812 LAWSON LN
APEX NC 27502-9324

NC DEPARTMENT OF TRANSPORTATION
PO BOX 1067
ABERDEEN NC 28315-1067

BRANTON, CHARLES J
3608 US 64 HWY W
APEX NC 27523-8447

LONG, JOHN WILLIAM
LONG, FAYE C
314 NC HIGHWAY 751
APEX NC 27523-5491

SHELTON PROPERTY INVESTMENTS LLC
2701 WEAVER HILL DR
APEX NC 27502-6548

EVERETT, JOSEPH MCNEILL
EVERETT, PHYLLIS JANE
1421 FLYING HAWK RD
APEX NC 27523-7856

LENNAR CAROLINAS, LLC
1100 PERIMETER PARK DR STE 112
MORRISVILLE NC 27560-9119

GRAYDON HOLDINGS LLC
1734 REGATTA DR
FERNANDINA BEACH FL 32034-5534

GOODWIN, CALVIN L<
GOODWIN, RENA F
1621 LAWSON LN
APEX NC 27502-8595

LAWRENCE, JUSTIN MARKHAM
LAWRENCE, BASWELL H
1007 JAMES ST
APEX NC 27502-2137

CLEMENT, JOHN M JR
CLEMENT, JUDY S
1801 TRANSIT TRL
APEX NC 27502-8506

DEANNAS DOWRY LLC
10203 MAREMOUNT DR
RICHMOND, VA 23233

MCHUGH, JUDY B
3557 HERBERT FAUCETTE RD
BULLOCK NC 27507-9320

ROBACK, DONALD MICHAEL KENNY, MARIA ANN
1505 FLYING HAWK RD
APEX NC 27523-7858

LENNAR CAROLINAS, LLC
1100 PERIMETER PARK DR STE 112
MORRISVILLE NC 27560-9119

DEVELOPMENT NAME APPROVAL APPLICATION

Application #: 2021-002 Submittal Date: 5/3/21

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 #: 2021-002 Submittal Date: 5/3/21

Proposed Subdivision/Development Information

Description of location: South of US 64 HWY W, West of the ATT and North of Olive Chapel Road

Nearest intersecting roads: Lawson Lane and US 64 HWY W

Wake County PIN(s): 0712949922, 0722040381, 0722037373

Township: White Oak

Contact Information (as appropriate)

Contact person: Glenda Toppe, AICP Glenda S. Toppe & Associates

Phone number: 919-605-7390 Fax number:

Address: 4139 Gardenlake Drive Raleigh, NC 27612

E-mail address: glenda@gstplanning.com

Owner: Deannas Dowry,LLC(John H Bryson III Susan Yates),John William & Faye Long, Joel & Cristiane Bond

Phone number: Fax number:

Address: 10203 Maremount Dr. Richmond, VA; 314 NC Highway 751, Apex, NC; 3609 US 64 HWY W Apex, NC

E-mail address:

Proposed Subdivision/Development Name

1st Choice: Legacy

2nd Choice *(Optional)*:

Town of Apex Staff Approval:

Town of Apex Planning Department Staff Date

TOWN OF APEX UTILITIES OFFER AND AGREEMENT

Application #: 2021-002 Submittal Date: 5/3/21

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

WAKE COUNTY, NORTH CAROLINA CUSTOMER SELECTION AGREEMENT

3609 and 3601 US 64 HWY W, 0 Olive Chapel Road

(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.

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

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

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

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

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

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

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

ACCEPTED:

CUSTOMER: GCI Acquisitions LLC TOWN OF APEX

BY: Ryan Linker (Authorized Agent) BY: _____ (Authorized Agent)

DATE: 4-20-21 DATE: _____

AFFIDAVIT OF OWNERSHIP

Application #: 2021-002 Submittal Date: 5/3/21

The undersigned, GCI Acquisitions LLC, Ryan Linker (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 3601 US 64 HWY W 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 _____, and recorded in the Wake County Register of Deeds Office on _____, in Book _____ Page _____.

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 _____, 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 _____, 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 21st day of April, 2021.

Ryan Linker ~~(seal)~~

RYAN LINKER

Type or print name

STATE OF ~~NORTH CAROLINA~~ OHIO
COUNTY OF Cuyahoga

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

Allison Brown
Notary Public
Recorded in Cuyahoga County
My Commission Expires
December 1st, 2021
[NOTARY SEAL]

Allison Brown
Notary Public
State of ~~North Carolina~~ OHIO
My Commission Expires: 12/1/2021

AGENT AUTHORIZATION FORM

Application #: 2021-002 Submittal Date: 5/3/21

John William and Faye Long 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: 0 Olive Chapel Road

The agent for this project is: GCI Acquisitions LLC, Ryan Linker

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

Agent Name: GCI Acquisitions LLC, Ryan Linker

Address: 25101 Chagrin Blvd. Suite #300 Beachwood, Ohio 44112

Telephone Number: 216-644-5992

E-Mail Address: rlinker@goldbergcompanies.com

Signature(s) of Owner(s)*

John W Long — Type or print name — April 22, 2021 — Date

Faye C. Long — Type or print name — 4-22-21 — 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 #: 2021-002 Submittal Date: 5/3/21

The undersigned, GCI Acquisitions LLC, Ryan Linker (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 0 Olive Chapel Road and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").

2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.

3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated _____, and recorded in the Wake County Register of Deeds Office on _____, in Book _____ Page _____.

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 _____, 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 _____, 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 26 day of April, 2021.

Ryan Linker ~~(seal)~~

RYAN LINKER

Type or print name

STATE OF ~~NORTH CAROLINA~~ Ohio
COUNTY OF Cuyahoga

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

Allison Brown
Notary Public
Recorded in Cuyahoga County
My Commission Expires
December 1st, 2021
[NOTARY SEAL]

Allison Brown
Notary Public
State of ~~North Carolina~~ Ohio
My Commission Expires: 12-1-2021

AGENT AUTHORIZATION FORM

Application #: 2021-002 **Submittal Date:** 5/3/21

Joel and Christiane Bond **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: 3609 US 64 HWY W

The agent for this project is: GCI Acquisitions LLC, Ryan Linker

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

Agent Name: GCI Acquisitions LLC, Ryan Linker

Address: 25101 Chagrin Blvd. Suite #300 Beachwood, Ohio 44112

Telephone Number: 216-644-5992

E-Mail Address: rlinker@ goldbergcompanies.com

Signature(s) of Owner(s)*

Joel C. Bond — dotloop verified 04/21/21 1:42 PM EDT RJ1K-NN39-E2OP-R1V4

Joel Bond

Type or print name — Date

Cristiane Beth Houston Bond — dotloop verified 04/21/21 1:24 PM EDT 9TY0-ZDQJ-KKTE-OOM6

Christiane Bond

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 #: 2021-002 Submittal Date: 5-3-21

The undersigned, GCI Acquisitions LLC, Ryan Linker (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 3609 US 64 HWY W 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 _____, and recorded in the Wake County Register of Deeds Office on _____, in Book _____ Page _____.

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 _____, 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 _____, 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 26 day of April, 2021.

Ryan Linker -(seal)

RYAN LINKER

Type or print name

STATE OF ~~NORTH CAROLINA~~ Ohio
COUNTY OF Cuyahoga

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

Allison Brown
Notary Public
Recorded in Cuyahoga County
My Commission Expires
December 1st, 2021
[NOTARY SEAL]

Allison Brown
Notary Public
State of ~~North Carolina~~ Ohio
My Commission Expires: 12-1-2021

Agent Authorization Form

Application #: 2021-002 **Submittal Date:** 5-3-21

Deannas Dowry,LLC John H. Bryson III Susan Yates **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: 3601 US 64 HWY W

The agent for this project is: GCI Acquisitions LLC, Ryan Linker

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

Agent Name: GCI Acquisitions LLC, Ryan Linker

Address: 25101 Chagrin Blvd. Suite #300 Beachwood, Ohio 44112

Telephone Number: 216-644-5992

E-Mail Address: rlinker@goldbergcompanies.com

Signature(s) of Owner(s)*

Carol W. Bryson dotloop verified 04/21/21 12:23 PM EDT

Carol Bryson-Manager

Type or print name **Date**

_____

_____

Type or print name **Date**

Attach additional sheets if there are additional owners.

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

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

AFFIDAVIT OF OWNERSHIP

Application #: 2021-002 Submittal Date: 5-3-21

The undersigned, GCI Acquisitions LLC, Ryan Linker (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 3601 US 64 HWY W 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 _____, and recorded in the Wake County Register of Deeds Office on _____, in Book _____ Page _____.

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 _____, 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 _____, 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 21st day of April, 2021.

Ryan Linker ~~(seal)~~

RYAN LINKER

Type or print name

STATE OF ~~NORTH CAROLINA~~ OHIO
COUNTY OF Cuyahoga

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

Allison Brown
Notary Public
Recorded in Cuyahoga County
My Commission Expires
~~[NOTARY'S SEAL]~~
~~December 16, 2021~~

Allison Brown
Notary Public
State of ~~North Carolina~~ OHIO
My Commission Expires: 12/1/2021

AFFIDAVIT OF OWNERSHIP: EXHIBIT A – LEGAL DESCRIPTION

Application #: 2021.002 Submittal Date: 5-3-21

Insert legal description below.

AS SURVEYED
LEGAL DESCRIPTION

TRACT 1 LEGAL DESCRIPTION (PIN NO. 0712949922) JOEL BOND AND CHRISTIANE BOND

BEGINNING AT A NEW IRON PIPE LOCATED ON THE SOUTHERN RIGHT OF WAY OF US HWY 64 AND HAVING NORTH CAROLINA GRID COORDINATES (NAD83, 2011), N: 725,205.14', E: 2,019,726.21'; SAID IRON PIPE ALSO BEING THE NORTHWEST CORNER OF THAT PARCEL OF LAND OWNED BY DEANNAS DOWRY, LLC, DEED BOOK 13139, PAGE 920 AND BOOK OF MAPS 2004, PAGE 1409, WAKE COUNTY REGISTRY. THENCE LEAVING SAID RIGHT OF WAY, SOUTH 43°21'40" EAST, 185.73' TO AN EXISTING IRON PIPE, SAID PIPE BEING THE TRUE POINT AND PLACE OF BEGINNING, THENCE NORTH 82°57'52" EAST, 200.03' TO AN EXISTING IRON PIPE, THENCE SOUTH 00°42'10" WEST, 199.45' TO AN EXISTING IRON PIPE, THENCE SOUTH 82°49'09" WEST, 199.93' TO AN EXISTING IRON PIPE, THENCE NORTH 00°39'15" EAST, 199.94' TO AN EXISTING IRON PIPE, THE TRUE POINT AND PLACE OF BEGINNING AND CONTAINING AN AREA OF 0.908 ACRES (39,567 SF), MORE OR LESS.

TRACT 2 LEGAL DESCRIPTION (PIN NO. 0722040381) DEANNAS DOWRY, LLC

BEGINNING AT A NEW IRON PIPE LOCATED ON THE SOUTHERN RIGHT OF WAY OF US HWY 64 AND HAVING NORTH CAROLINA GRID COORDINATES (NAD83, 2011), N: 725,205.14', E: 2,019,726.21'; SAID IRON PIPE ALSO BEING THE NORTHWEST CORNER OF THAT PARCEL OF LAND OWNED BY DEANNAS DOWRY, LLC, DEED BOOK 13139, PAGE 920 AND BOOK OF MAPS 2004, PAGE 1409, WAKE COUNTY REGISTRY. THENCE NORTH 82°58'49" EAST, 828.63' TO A NEW IRON PIPE, THENCE SOUTH 01°36'41" WEST, 79.80' TO AN EXISTING IRON PIPE, THENCE SOUTH 01°36'41" WEST, 893.94' TO AN EXISTING IRON PIPE, THENCE SOUTH 01°57'07" WEST, 417.11' TO AN EXISTING IRON PIPE, THENCE SOUTH 01°41'50" WEST, 1,184.25' TO AN EXISTING IRON PIPE, THENCE NORTH 88°22'09" WEST, 96.90' TO AN EXISTING IRON PIPE, THENCE NORTH 88°06'17" WEST, 329.76' TO AN EXISTING IRON PIPE, THENCE NORTH 88°07'13" WEST, 346.86' TO AN EXISTING IRON PIPE, THENCE NORTH 00°38'28" EAST, 1,431.61' TO AN EXISTING IRON PIPE, THENCE NORTH 00°35'23" EAST, 74.24' TO AN EXISTING IRON PIPE, THENCE NORTH 00°39'29" EAST, 186.13' TO AN EXISTING IRON PIPE, THENCE NORTH 00°38'23" EAST, 755.82' TO A NEW IRON PIPE, BEING THE POINT AND PLACE OF BEGINNING AND CONTAINING AN AREA OF 45.963 ACRES (2,002,141 SF), MORE OR LESS.

TRACT 3 LEGAL DESCRIPTION (PIN NO. 0722037373) JOHN WILLIAM LONG AND FAYE C. LONG

BEGINNING AT AN EXISTING IRON PIPE LOCATED ON THE WESTERN RIGHT OF WAY OF THE AMERICAN TOBACCO TRAIL AND HAVING NORTH CAROLINA GRID COORDINATES (NAD83, 2011), N: 722,806.09', E: 2,021,093.03'; SAID IRON PIPE ALSO BEING THE NORTHEAST CORNER OF THAT PARCEL OF LAND OWNED BY MARTHA S. CLEMENT, DEED BOOK 2819, PAGE 423 AND BOOK OF MAPS 1980, PAGE 239, WAKE COUNTY REGISTRY. THENCE SOUTH 83°14'18" WEST, 625.41' TO AN EXISTING IRON PIPE, THENCE NORTH 01°41'50" EAST, 1,184.25' TO AN EXISTING IRON PIPE, THENCE SOUTH 88°56'40" EAST, 508.89' TO AN EXISTING IRON PIPE, THENCE SOUTH 04°52'38" EAST, 747.81' TO A POINT, THENCE SOUTH 04°32'44" EAST, 99.12' TO A POINT, THENCE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 2,814.96', AN ARC LENGTH OF 256.96', AND A CHORD BEARING AND DISTANCE OF SOUTH 01°16'55" EAST, 256.87' TO AN EXISTING IRON PIPE, BEING THE POINT AND PLACE OF BEGINNING AND CONTAINING AN AREA OF 15.000 ACRES (653,417 SF), MORE OR LESS.

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.

December 2, 2020
Date

Dear Neighbor:

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

3609 and 3601 US 64 HWY W, 0 Olive Chapel Rd (Address(es)) PIN 0712949922,0722040381,0722037373 (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
☑	Rezoning (including Planned Unit Development)	Town Council
☐	Major Site Plan	Town Council (QJPH*)
☐	Special Use Permit	Town Council (QJPH*)
☐	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 proposed rezoning is a PUD that includes a Village Center with a variety of nonresidential uses along with mulit-family and single-family uses. The request complies with the 2045 Land Use Plan Map.

Estimated submittal date: January 4, 2021

MEETING INFORMATION:

Property Owner(s) name(s):	Long, Dowry, Bond
Applicant(s):	GCI Acquisitions LLC
Contact information (email/phone):	Glenda Toppe, glenda@gstplanning.com, 919-605-7390
Electronic Meeting invitation/call in info:	If you are interested in attending the meeting,contact Ryan Linker by email by 5:00 PM on Tuesday, December 15. His email is rlinker@goldbergcompanies.com.
Date of meeting**:	Wednesday, December 16, 2020
Time of meeting**:	5:30 pm - 7:30 pm

MEETING AGENDA TIMES:

Welcome: 5:30 pm Project Presentation: 5:40 pm Question & Answer: 5:40pm-7:30pm

**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: Legacy Zoning: PUD CZ

Location: 3609 and 3601 US 64 HWY W, and 0 Olive Chapel Road

Property PIN(s): 0712949922,0722040381,0722037373 Acreage/Square Feet: 60.97 acres

Property Owner: Bond, Dowry, Long

Address: 3609 US 64 W, 4000 Green Level West Rd., 314 NC Highway 751

City: Apex State: NC Zip: 27523

Phone: Email:

Developer: GCI Acquisitions LLC

Address: 25101 Chagrin Blvd. Suite #300

City: Beachwood State: Ohio Zip: 44122

Phone: 216.831.6100 Fax: 216.831.2745 Email: rlinker@goldbergcompanies.com

Engineer: Ed Tang, PE

Address: 115 MacKenan Drive

City: Cary State: NC Zip: 27511

Phone: 919.238.0338 Fax: Email: etang@withersravenel.com

Builder (if known): GCI Acquisitions LLC

Address: 25101 Chagrin Blvd. Suite #300

City: Beachwood State: Ohio Zip: 44122

Phone: 919.238.0338 Fax: 216.831.2745 Email: rlinker@goldbergcompanies.com

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, Environmental Engineering Manager (Stormwater, Sedimentation & Erosion Control) Stan Fortier, Senior Engineer (Stormwater, Sedimentation & Erosion Control) James Gregg, Utility Engineering Manager (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

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

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

There can be issues with roadway damage, roadway improvements, and traffic control. Potholes, rutting, inadequate lanes/signing/striping, 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

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

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	919-372-7470
	Danny Smith	Danny.Smith@ncdenr.gov

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

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

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

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

Electric Utility Installation:	Rodney Smith	919-249-3342

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

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: Electronic virtual meeting

Date of meeting: Dec. 16, 2020 Time of meeting: 5:30 pm-7:30 pm

Property Owner(s) name(s): Bond, Dowry, Long

Applicant(s): GCI Acquisitions LLC rlinker@goldbergcompanies.com

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.	Joel & Cristiane Bond	3606 US HWWY 64 W Apex	[redacted]		Yes
2.	John & Faye Long	314 NC HWY 751 Apex			
3.					
4.	Edward "Brad" Bradshaw	500 New Hill-Olive Chapel Rd			
5.	Kip Clement				Yes
6.	Chris Goodwin	1453 Tody Goodwin Rd			
7.	Jim Clark	115 MacKenan Drive Cary			
8.	Ryan Linker	25101 Chagrin Blvd Beachwood OH			
9.	Travis Fluitt	421 Fayetteville St Ste 600 Ral.			
10.	Ian Stuart	25101 Chagrin Blvd Beachwood OH			
11.	Glenda Toppe	4139 Gardenlake Drive Ral			
12.	Charles Zevenhuizen	Barker Realty			
13.	Evan Vlaeminck	2510Chagrin Blvd BeachwoodOH			
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): Bond, Dowry, Long

Applicant(s): GCI Acquisitions LLC

Contact information (email/phone): Glenda S. Toppe glenda@gstplanning.com 919-605-7390

Meeting Format: Electronic virtual meeting

Date of meeting: Dec. 16, 2020 Time of meeting: 5:30 pm - 7:30 pm

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:
Are the arrows shown connection points. Property owner immediately to the south of the project.

Applicant's Response:
Yes, the dashed lines are potential roads.Not approved yet. Any road would would be extended to your property line, but not further. Then if you choose to develop your property, the road could continue in the future.

Question/Concern #2:
Resident asked if there will be a greenway connection to the American Tobacco Trail.

Applicant's Response:
The Town's Greenway Plan envisions a connection to the American Tobacco Trail, but the specifics have not been determined. Glenda Toppe offered to send a copy of the Master Plan and suggested Angela Reincke.

Question/Concern #3:
There was a question about the type of buffer required along the southern property line.

Applicant's Response:

Question/Concern #4:

Applicant's Response:

AFFIDAVIT OF CONDUCTING AN ELECTRONIC NEIGHBORHOOD MEETING 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, Glenda Tapp, do hereby declare as follows:
Print Name

1. I have conducted an Electronic Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Residential 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 Electronic Neighborhood Meeting.

3. The meeting was conducted via Electronic virtual (indicate format of meeting) on Dec. 16, 2020 (date) from 5:30 pm (start time) to 7:30 pm (end time).

4. I have included the mailing list, meeting invitation, attendance 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.

4/29/2021
Date

By: Glenda A. Tapp

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Geraldine Guillory, a Notary Public for the above State and County, on this the 29 day of April, 20 21.

SEAL

GERALDINE GUILLORY NOTARY PUBLIC WAKE COUNTY, NC COMMISSION EXPIRES OCTOBER 31, 2024

Geraldine Guillory
Notary Public

Geraldine Guillory
Print Name

My Commission Expires: 10-31-2024

GLENDA S. TOPPE & ASSOCIATES
LAND PLANNING, ZONING & ENTITLEMENT CONSULTANTS

December 2, 2020

Dear Property Owner,

The purpose of this letter is to invite you to a neighborhood meeting to discuss a rezoning in Apex. Attached you will find a vicinity map of the property. The name the development is Legacy Apex. The size of the project is approximately 60.97acres. The current zoning is Rural Residential (RR Apex) and Residential-80 Watershed (R-80 W Wake County). The portion of the property located in Wake County will need to be annexed. The proposed zoning is Planned Unit Development Conditional Zoning (PUD-CZ).

The properties are located at 3609 US 64 HWY W, 3601 US 64 HWY W, and 0 Olive Chapel Road. The accompanying PINS are 0712949922, 0722040381, and 0722037373.

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. The proposed development includes a Village Center which will include a mix of non-residential uses, along with multi-family and single-family uses. The request complies with the adopted Apex 2045 Land Use Plan Map.

The applicant is GCI Acquisitions LLC. We are estimating a submittal date for the rezoning of January 4, 2021.

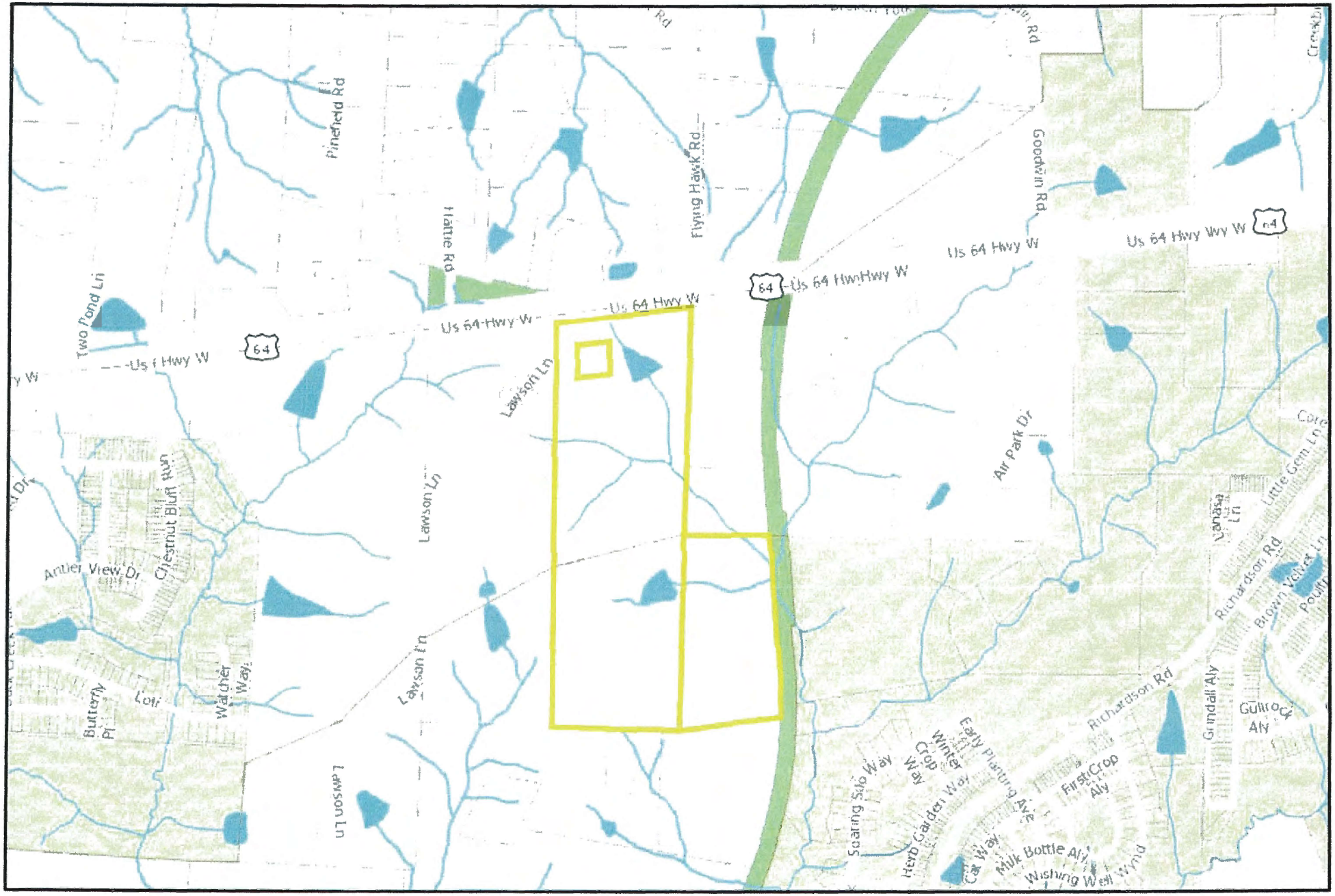
Due to Covid19 Virus, we will be holding a virtual meeting. **The date for the virtual meeting is Wednesday, December 16, 2020 from 5:30 pm - 7:30 pm.**

If you are interested in attending the virtual meeting, please send Ryan Linker with GCI Acquisitions an email by **Tuesday at 5:00 pm on December 15** requesting a meeting invite. Upon request, Ryan will send you a link for a virtual meeting held either on Zoom or Microsoft Teams. Ryan's email address is: rlinker@goldbergcompanies.com.

If you have any questions, please call or email Glenda Toppe.

Thank you.

Glenda Toppe, AICP
Glenda S. Toppe & Associates
glenda@gstplaning.com
919-605-7390



Bond, Long and Dowry Vicinity Map

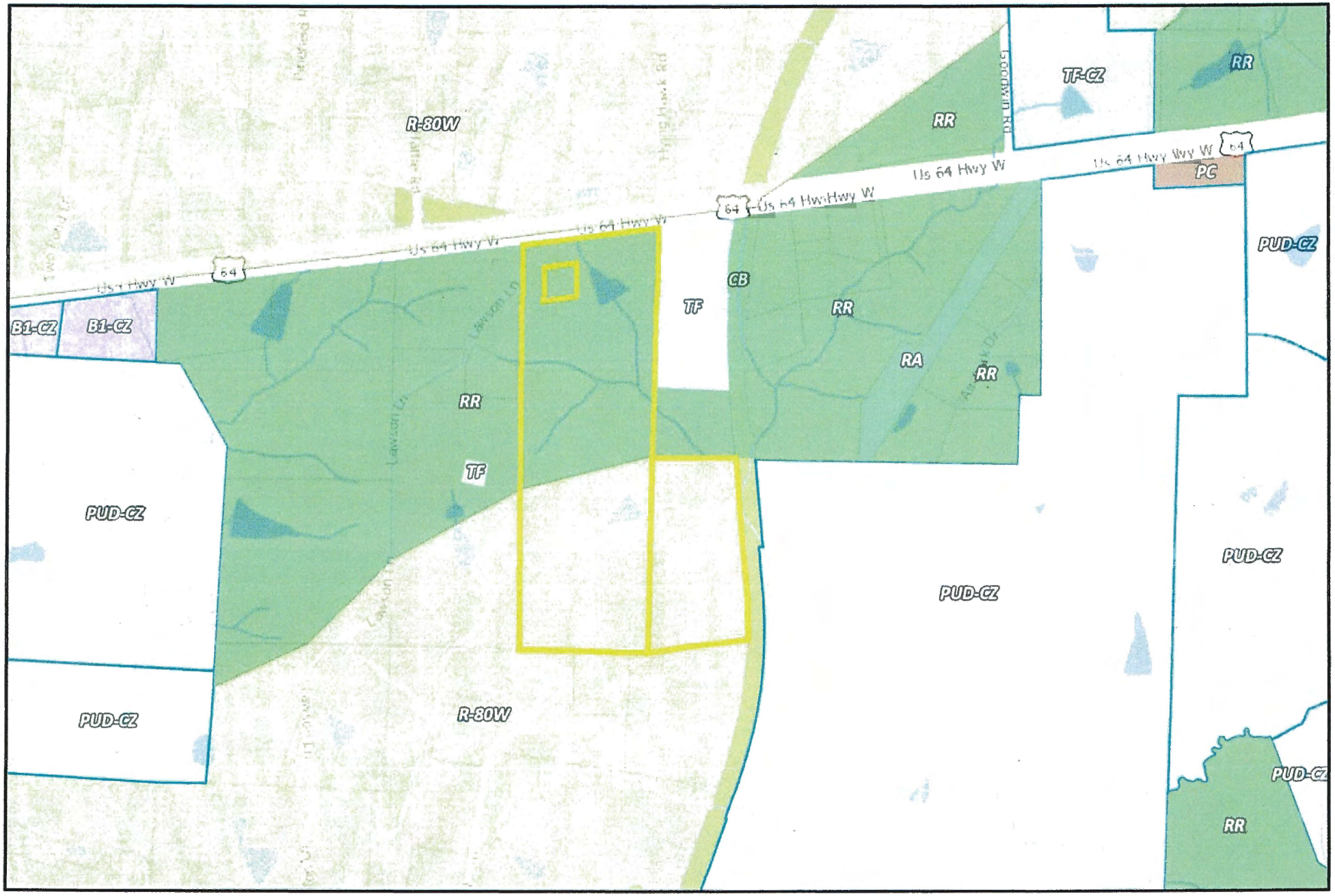
N

0 425 850 1,700 ft

1 inch = 800 feet

Disclaimer

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



Zoning: Apex RR; Wake Co. R-80 W

N

0 425 850 1,700 ft

1 inch = 800 feet

GCI Apex Site

CONCEPTUAL PUD PLAN

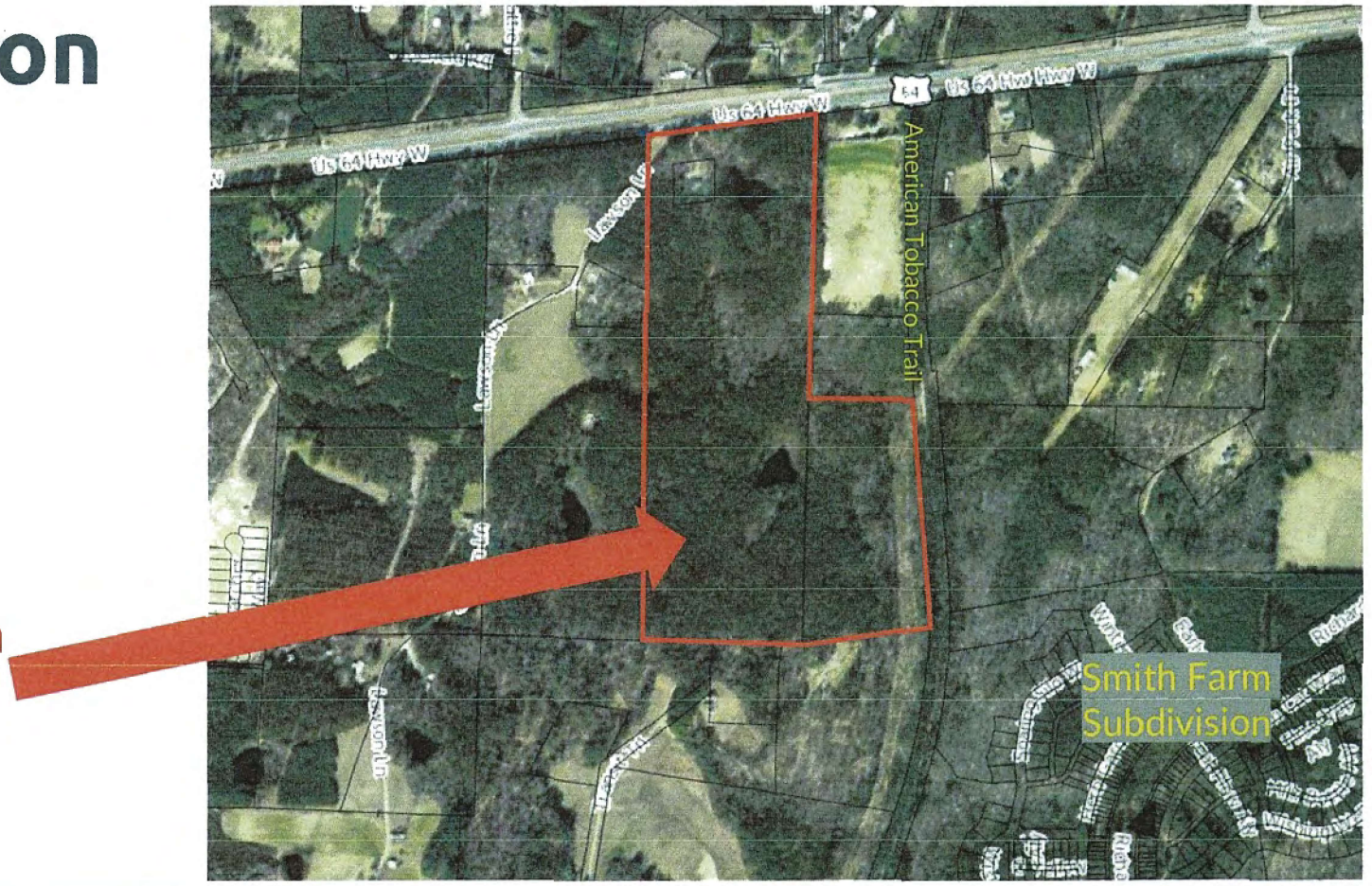
N

0 425 850 1,700 ft

1 inch = 800 feet

PRELIMINARY AND SUBJECT TO CHANGE

Site Location

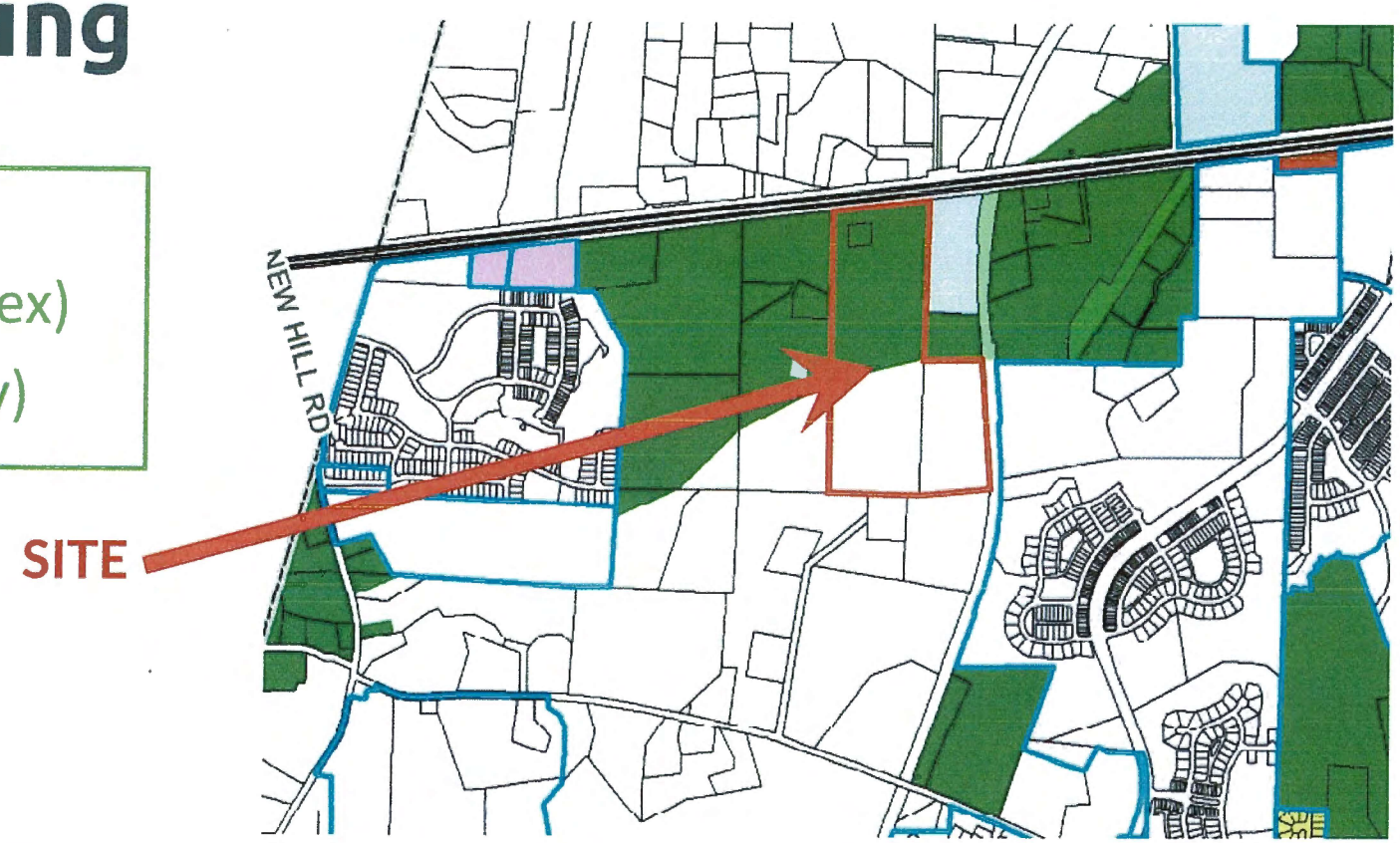


Rezoning Area
61 acres

Existing Zoning

Base Zoning:

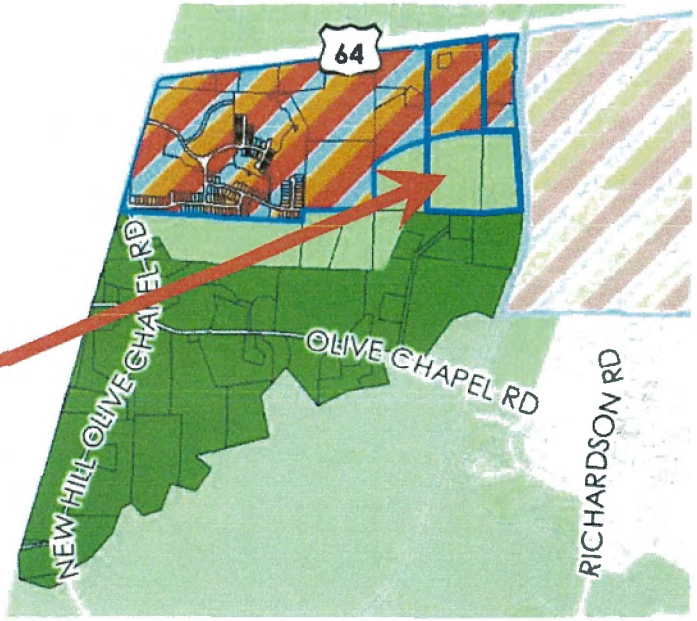
- Rural Residential (Apex)
- R-80W (Wake County)



Town of Apex
Future Land Use Map

Destination Center
- Low/High Density Residential
- Office Employment
- Commercial Services

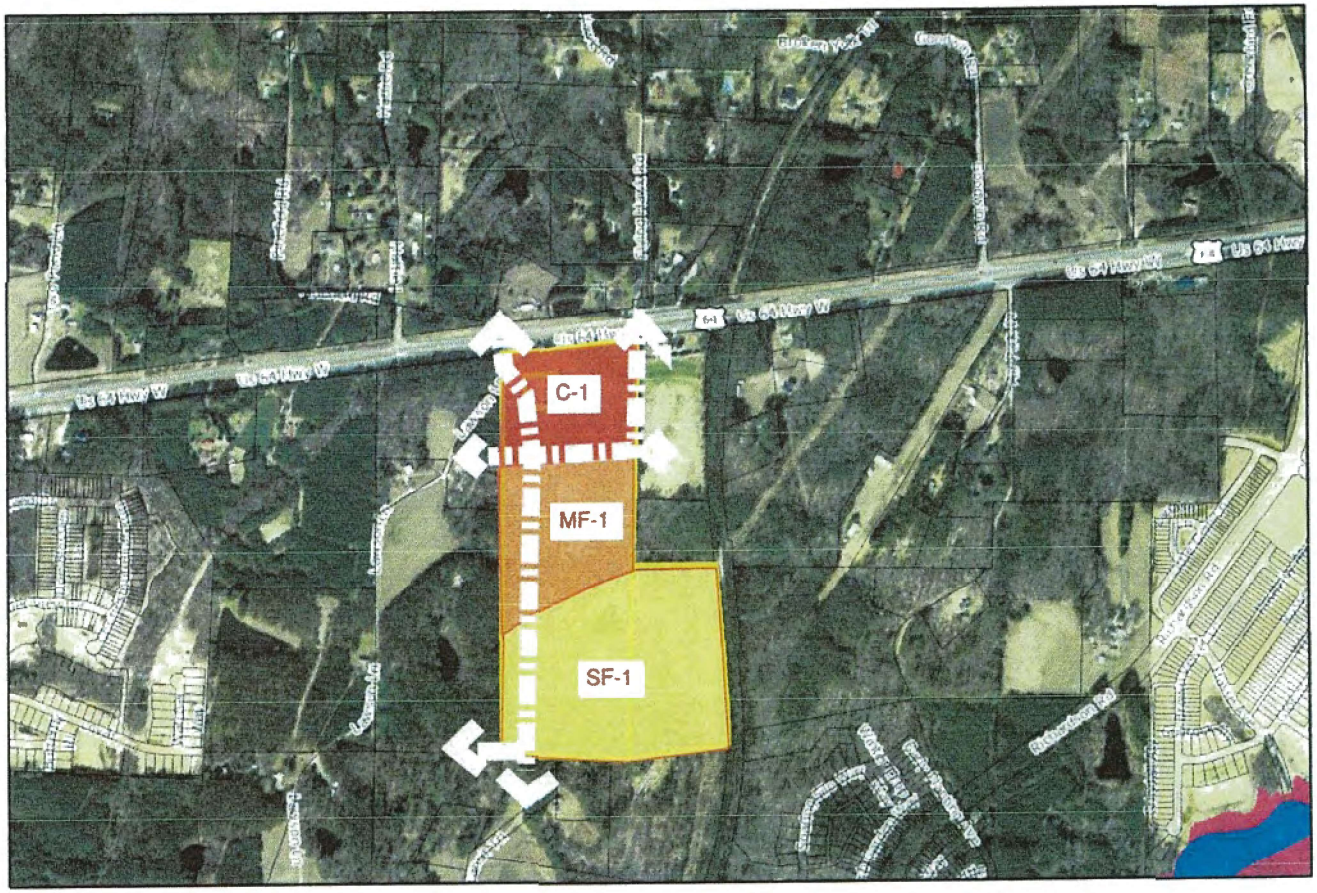
2045 Land Use Map:



Plan Unit Development (PUD)

Legend:

- C-1: Commercial
- MF-1: Multi-Family
- SF-1: Single Family/ Townhomes/Duplex



GCI Apex Site

CONCEPTUAL PUD PLAN

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

PRELIMINARY AND SUBJECT TO CHANGE








ELEVATION STUDY: ARCHITECTURAL STYLING DETAILS

SCALE: 1/8"=1'-0"

NOTE: THESE ARE ILLUSTRATIVE ONLY AND ACTUAL BUILDING ELEVATIONS FOR THE SINGLE FAMILY DETACHED PRODUCT MAY VARY BASED ON END USER BUT WILL COMPLY WITH THE ARCHITECTURAL SECTION OF THE PUD.

WithersRavenel
Engineers | Planners | Surveyors
115 MacKenan Drive | Cary, NC 27511 | t: 919.469.3340 | license # C-0832 | www.withersravenel.com

GCI- LEGACY PUD

Apex, North Carolina

ILLUSTRATIVE ELEVATIONS

Job No	02200485	Drawn By	WR
Date	05/03/2021	Designer	WR

PRELIMINARY
NOT APPROVED FOR CONSTRUCTION

Revisions

Sheet No
A1.0

GCI PLANNED UNIT DEVELOPMENT

LEGACY

A PLANNED UNIT DEVELOPMENT

APEX, NORTH CAROLINA

DATE: AUGUST 30, 2021

Applicant:
GCI Acquisitions, LLC
25101 Chagrin Blvd. Suite #300
Beachwood, Ohio 44122

Consultants:

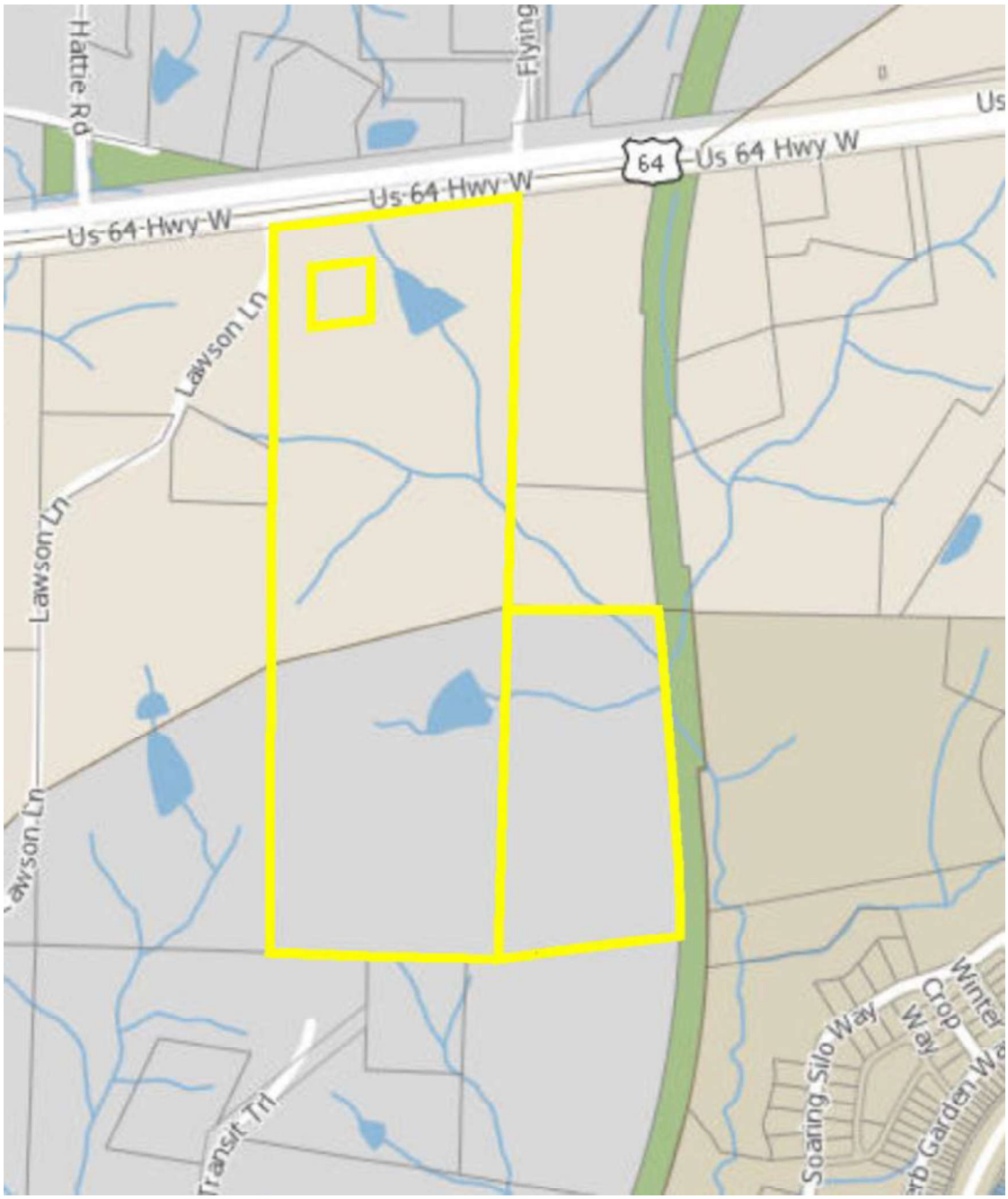
Glenda S. Toppe & Associates
WithersRavenel
Kimley-Horn

Legacy PUD

Section 1: Table of Contents

Legacy PUD

Section 2: Vicinity Map



Legacy PUD

Section 3: Project Data

Prepared By:

Planner
Glenda Toppe, AICP
Glenda S. Toppe & Associates
4139 Gardenlake Drive
Raleigh, North Carolina 27612
919-605-7390
glenda@gstplanning.com

Engineer
Ed Tang, P.E.
WithersRavenel
115 Mackenan Drive
Cary, North Carolina 27511
919-238-0338
etang@withersravenel.com

Traffic Engineer
Travis Fluitt, P.E.
Kimley-Horn
421 Fayetteville Street, Suite 600
Raleigh, North Carolina 27601
919-653-2948
travis.fluitt@kimley-horn.com

Applicant
GCI Acquisitions, LLC
25101 Chagrin Blvd. Suite #300
Beachwood, Ohio 44122

Designated Contact
Glenda Toppe

Current Zoning:	Rural Residential (RR) Residential-80 Watershed (R-80W Wake County)
Proposed Rezoning:	Planned Unit Development - Conditional Zoning (PUD-CZ)
Existing 2045 LUM Designation:	Mixed Use: Commercial Services, Office & Institutional, and High-Density Residential Low Density Residential
Proposed 2045 LUM Designation:	Mixed Use: Commercial Services, Office & Institutional, and High-Density Residential Low Density Residential
Overall Project Area:	+/- 61 Acres
Area within Mixed Use Village Center	29.29 +/- acres (We are providing 5.66 acres/29.29 acres =19.3% if you don't add Tee2Green.)
Area Designated as Low Density Residential	31.68 +/- acres

Legacy PUD

Section 4: Purpose Statement

Purpose Statement explains how this project meets the standards found for Planned Unit Developments (PUD) in Sec. 2.3.4 of the UDO.

Legacy is a proposed mixed use development consisting of nonresidential, multi-family and low density residential development. The property is located south of US 64 HWY W. The American Tobacco Trail is to the east as is the Smith Farm subdivision. Deer Creek PUD is approximately one mile to the west. The PUD consists of the three (3) parcels. The current zoning is Rural Residential in Apex and Residential-80W in Wake County. The total acreage is approximately 61 acres. The proposed 2045 Land Use Map designation is Mixed Use to the north, which includes Commercial Services, Office Employment, and High Density Residential. The south portion of the site is designated as Low Density Residential. The proposed zoning classification is PUD CZ.

The purpose of the proposed PUD is to provide a high-quality development that is compatible with the character of the surrounding area and complies with the 2045 Land Use Map. The proposed development includes streetscapes and buffers. The planned detached single-family homes provide the appropriate transition from the higher density residential uses to the north to the lower densities to the south. The design protects the environmentally sensitive areas on the property and establishes Resource and Conservation areas in accordance with the Town's requirements. The proposed PUD will meet or exceed all other requirements of the Apex Transportation Plan and the Town of Apex.

The proposed new development is intended to provide an area for nonresidential development that will be combined with the nonresidential development planned for the property on our eastern property boundary. This area will satisfy the requirements for the commercial and office development portion of the Land Use Map. The proposed plan then transitions to high density residential. After the high density residential, the proposed use is low density residential as per the 2045 Land Use Plan Map. Potential uses include detached residential, townhouses, and school.

An amendment to the Town's Transportation Plan is proposed to add a major collector street to the Plan.

The type of development planned is appropriate at this location. The proposed development is intended to provide a community that is configured on the property in a way that integrates the new development into the existing area. Sidewalks, integrated into the community will provide for pedestrian connectivity along the proposed street network, ensuring that the development plan provides for a safe and attractive pedestrian network. The community will have both nonresidential and residential development. By incorporating of a mixture of multi-family unit sizes and the potential for single family for sale, the PUD will offer a variety of housing options for people who want to live in this community. The PUD takes into account the environmental features of the property. The proposed PUD will maintain the architectural integrity consistent with Town of Apex standards and will complement the vision Apex has memorialized in their "Advance Apex" long range plan. The planned community will enhance adjoining property values by offering a high-quality development that will complement and anchor future development in the surrounding area.

Section 5: Permitted Uses

The table below lists the uses that are allowed in the proposed PUD. The list of uses will provide the opportunity for the proposed development to have flexibility in the ultimate build out of the project. Uses are subject to the limitations and regulations stated in the UDO.

Non-Residential uses listed in MF-1 are only permitted on the first floor of vertical mixed use buildings. Apartments and Condominiums are permitted on the upper floors of vertical mixed use buildings in either the MF-1 or C-1 areas.

Legacy PUD

Uses	SF-1	MF-1	C-1
Residential Uses			
Accessory apartment	P	P	
Single-Family	P		
Townhouse	P*	P	
Duplex	P*	P	
Multi-family or apartment**		P	P
Triplex or quadplex	P*	P	
Public & Civic Uses			
Ambulatory Health-care Facility with Emergency Dept.			P
Assembly Hall, nonprofit	P		P
Assembly Hall, for profit	P		P
Church, or place of worship	P/S		P/S
Day Care Facility	P		P
Drop-in or short-term day care	P		P
Government service			P
Hospital			P
School, public or private	P		P
Veterinary clinic or hospital			P
Vocational school			P
Utilities			
Communication tower, commercial	S	S	S
Communication tower, constructed stealth	S	S	S
Communication tower, camouflage stealth	S	S	S
Communication tower, public safety	S	S	S
Utility, Minor	P	P	P
Wireless support structure	P	P	P

Legacy PUD

Wireless communication facility	P	P	P
Recreational Uses			
Botanical garden		P	P
Entertainment, indoor			P
Greenway	P	P	P
Park, active	P	P	P
Park, passive	P	P	P
Recreation facility, private	P	P	
Food & Beverage Service			
Restaurant, drive through			P
Restaurant, general		P	P
Office & Research			
Medical or dental office or clinic		P	P
Medical or dental laboratory		P	P
Office, business or professional		P	P
Public Accommodations			
Bed & breakfast			P
Hotel or motel			P
Retail Sales & Service			
Artisan studio			P
Barber and beauty shop			P
Bookstore			P
Convenience store w/gas sales			P
Dry cleaners and laundry service			P
Farmer's market			P
Financial institution			P
Floral shop			P
Gas & fuel, retail			P
Grocery, general/specialty			P
Health/fitness center or spa			P

Kennel			P
Personal service			P
Pharmacy			P
Real estate sales			P
Retail sales, general			P
Studio for art			P
Tailor shop			P
Pet services			P

P = Permitted Uses

S = Special Use Permit

* = may only take up a portion of the SF area. Per the 2045 LUM, they may only be constructed in conjunction with SF homes.

** = Vertical mixed use may be an option for Multifamily or condominiums.

Section 6: Design Controls

When each phase of the development is platted, the following note shall be added to the plat:

> AVIGATION NOTICE: Deck Air Park, an active, general aviation airport open to the public, is located near this subdivisión, and the flight paths of aircraft landing, taking off, and flying nearby pass directly over this subdivisión. The lots show non this plat Will be subject to the impacts of the aviation uses being conducted to, from, at, and nearby Deck Air Park for so long as that airport may continue to be used.

RESIDENTIAL

Single Family Area: Single-family, Townhomes, Duplexes, Triplexes, and Quadplexes:

Acreage: Approximately 31.68 acres

Maximum Number of Units: 75

Maximum Density: 2.4 units/acre

Single Family:

Minimum Lot Width: 50 feet

Maximum Building Height: 45 feet

Public/Civic Uses: 65 feet

Communications Towers/Wireless facilities: 200 feet.

Building Setbacks:

Front: 10 feet to front façade; 20 feet from sidewalk to garage door.

Side: 5 feet

Rear: 15 feet

Corner: 10 feet

Porch, patio, deck and other accessary structures may encroach into the prescribed setbacks as allowed by the existing Town of Apex UDO.

Townhomes, Duplexes, Triplexes and Quadplexes:

Minimum Lot Width: 20 feet

Maximum Building Height: 45 feet

Building Setbacks:

Front: 10 feet to front façade

20 feet from sidewalk to garage door

Side: Aggregate 8 feet between buildings

Rear: 15 feet

Corner End Unit: 10 feet

Multi-Family: Apartments and/or Condominiums

Acreage: Approximately 23.63 acres

Maximum Number of Units: 400

Maximum Height: 55 feet

Building setback: 10 feet from property line, public right-of-way, or riparian and perimeter buffers

NON-RESIDENTIAL

Area: Approximately 5.66 acres

Square Footage: The maximum commercial is 27,500 square feet

Maximum Height:

Hotels: 75 feet

Public/Civic Uses: 65 feet

Communications Towers/Wireless facilities: 200 feet.

All Other Uses: 50 feet

Building setbacks: 10 feet from property lines, perimeter buffers or riparian buffers

BUFFERS/STREETSCAPES/LANDSCAPING

Perimeter Buffers:

Southern buffer: 20-foot Type B buffer

Eastern buffer: 50-foot Type A buffer adjacent to ATT

Western buffer: 20-foot Type B buffer

Streetscapes:

US HWY 64 W: 50-foot Type A buffer (measured from the ultimate right-of-way)*

The development will meet the UDO Sec. 8.2.6.B.5.f.ii requirements to reduce from a 100-

foot Type A buffer.

Major Collector Street: 30 feet Type D (Along the MF-1 frontage)

10 feet Type A (Along the SF-1 frontage)

Section 7: Architectural Standards

Architectural standards are important to the Town of Apex. The Town and its citizens expect quality development. This PUD provides standards for both residential and nonresidential development.

Single-Family:

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. The roof shall be pitched at 5:12 or greater for 75% of the building design.
3. Garage doors shall have windows, decorative details or carriage-style adornments on them.
4. The garage shall not protrude more than 1' out from the front façade or front porch.
5. Eaves shall project at least 12 inches from the wall of the structure.
6. The visible side of a home on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements:
   a) Windows
   b) Bay window
   c) Recessed window
   d) Decorative window
   e) Trim around the windows
   f) Wrap around porch or side porch
   g) Two or more building materials
   h) Decorative brick/stone
   i) Decorative trim
   j) Decorative shake
   k) Decorative air vents on gable
   l) Decorative gable
   m) Decorative cornice
   n) Column
   o) Portico
   p) Balcony
   q) Dormer
7. A varied color palette shall be utilized on homes throughout the subdivision to include a minimum of three color families for siding and shall include varied trim, shutter, and accent colors complementing the siding color.
8. House entrances for units with front-facing single-car garages shall have a prominent covered porch/stoop area leading to the front door.
9. The rear and side elevations of the units that can be seen from the right-of-way shall have trim around the windows.
10. Front porches shall be a minimum of 6 feet deep.
11. No more than 25% of lots may be accessed with J-driveways. There shall be no more than 3 such homes in a row on any single block. Any lots eligible for a J-driveway home shall be identified on the Final Plat.
12. All single-family homes shall be pre-configured with conduit for a solar energy system.

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

Townhomes, Duplexes, Triplexes, Quadplexes:

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. The roofline cannot be a single mass; it must be broken up horizontally and vertically between every unit.
3. Garage doors must have windows, decorative details or carriage-style adornments on them.
4. House entrances for units with front-facing single-car garages shall have a prominent covered porch/stoop area leading to the front door.
5. The garage cannot protrude more than 1 foot out from the front façade or front porch.
6. Building facades shall have horizontal relief achieved by the use of recesses and projections.
7. A varied color palette shall be utilized on homes throughout the subdivision to include a minimum of three color families for siding and shall include varied trim, shutter, and accent colors complementing the siding color.
8. The rear and side elevations of the units that can be seen from the right-of-way shall have trim around the windows.
9. The visible side of a townhome on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements:
    a. Windows
    b. Bay window
    c. Recessed window
    d. Decorative window
    e. Trim around the windows
    f. Wrap around porch or side porch
    g. Two or more building materials
    h. Decorative brick/stone
    i. Decorative trim
    j. Decorative shake
    k. Decorative air vents on gable
    l. Decorative gable
    m. Decorative cornice
    n. Column
    o. Portico
    p. Balcony
    q. Dormer

Multi-Family: Apartments

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
2. Siding materials shall be varied in type and/or color on 30% of each facade on each building.
3. Windows must vary in size and/or type.
4. Windows that are not recessed must be trimmed.
5. Recesses and projections shall be provided for at least 50% of each facade on each building.
6. Rooflines cannot be a single mass; they must be varied with the use of gables or parapets.

Non-Residential:

1. The predominant exterior building materials shall be high quality materials, including brick, glass, native stone, precast concrete, and decorative masonry units.
2. Cut off lighting fixtures and side shields on the sides where the property is adjacent to residential zoning shall only be allowed.
3. EIFS cornices and parapet trim are permitted.
4. EIFS or synthetic stucco shall not be used in the first four feet above grade and shall be limited to only 25% of each building facade.
5. Prohibited materials include:
    a. Vinyl siding. Vinyl details and trim are permitted.
    b. Painted, smooth faced concrete block
    c. Metal Walls. Decorative metal accents and panels may be accepted.
6. Exterior lighting shall not exceed a color temperature of 3,500K and meet UDO requirements for full cut off lights.
7. A solar PV system shall be incorporated into buildings to be constructed on the property. Such PV systems shall have a capacity of not less than 2 KW/1,000 heated square feet of building floor area.

Section 8: Parking, Loading and Sidewalk

Parking and loading shall comply with all applicable requirements of the UDO.

Sidewalks shall be provided on both sides of all public streets. The streets within apartments shall be privately owned and maintained.

Section 9: RCA and Landscaping

RCA Requirements:

Gross square footage and percent of RCA required: 18.4 acres or approximately 30% of the overall site

- (Mixed Use area = 25%)
- (Low Density residential area = 35% (assumed mass graded, if not mass graded then this area is 30%)

	Approx. Area	Ratio	RCA Area
Low Density Residential	31.68	35%	11.08
Mixed Use Area	29.29	25%	7.32
Overall Gross	60.97	30%	18.41*

**Note that the total RCA area can be provided in any combination anywhere within the PUD as long as the total area is met.*

Landscaping:

- The project shall increase biodiversity within perimeter buffers, common owned open space, and other landscape areas by providing a variety of and adaptive species for the canopy, understory

and shrub levels.

- A minimum of 75% of the species selected shall be native or a native 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 within a single development site.
- The project will plant deciduous shade trees on the southern side of buildings where applicable.
- The project will plant pollinator friendly flora that is diverse and provides blooming in succession from spring to fall.
- The project will provide and allow for undisturbed spaces (e.g. leaf piles, un-mowed fields, fallen trees) for nesting and overwintering for native pollinators and wildlife.
- Planting warm season grasses for drought resistance.
- To further illustrate the project's commitment to preserving and replacing tree canopy, at the time of first subdivision or site plan submittal the developer will provide a donation to a local non-profit organization with a mission towards tree preservation in the amount of $10,000.

Section 10: Signage

Signage will comply with all applicable requirements of the UDO.

Section 11: Public Facilities

Water and Sanitary Sewer:

All lots within the project will be served by the Town of Apex Public Water and Sewer system. Refer to sheet 3.0 of the PUD plan for conceptual connections to infrastructure within the surrounding vicinity. This project will meet the Town of Apex Master Plans for Water and Sewer.

Roadways:

Internal streets shall be designed to Town of Apex public road standards. The proposed development roadway system will be in accordance with the Apex Thoroughfare and Collector Street plan. Refer to sheet 2.0 of the PUD plan for proposed access points and planned/future connectivity. Access points are shown conceptual and will be finalized at site/subdivision plan stage. Internal streets to the multifamily area will be private streets and maintained by the apartment complex.

Section 12: Natural Resources and Environmental Data

Existing Vegetation:

The site is primarily wooded with pines and hardwoods typically found in this area. There are several small ponds on site. They will be evaluated for preservation at site or subdivision plan submission.

The existing streams on site will be assessed at site or subdivision plan submission. Any intermittent or perennial streams will have the riparian buffers and be protected in accordance with the UDO and NCDWR regulations. Existing vegetation within the buffers will remain undisturbed. To the extent practicable, the project will minimize the number of stream crossings that will provide interconnectivity of the site for emergency services and good circulation practices. The NCDWR and US Army Corps will have final permit authority on the number of crossings.

Watershed:

The site is located within Primary Watershed Protection Overlay of the Beaver Creek Basin via Reedy

Branch.

Percentage of Built Upon Area (Impervious Surface)

The maximum built-upon area shall be 70% per section 5.1 of the UDO.

Energy Efficiency:

- Per the UDO requirements, the project will include EV charging stations that are spread out on the site where feasible. The charging stations will be at least a level 2, or 40 amps.
- The exterior lighting for all multi-family and commercial buildings and parking lots will be 100% LED fixtures.
- Exterior lighting will meet UDO requirements to provide only full cut off lights.
- The project will install light timers or sensors or smart lighting technology for the multifamily units in the parking lot/outdoor lighting in the parking lot.
- All bedrooms and living rooms in multifamily units will have a window for natural lighting.

Other:

- The proposed development shall install one (1) sign to reduce pet waste per SCM, in locations that are publicly accessible, such as adjacent to amenity centers, sidewalks, greenways or side paths.
- Install a minimum of five (5) pet waste stations throughout the community.

Section 13: Stormwater Management

The proposed development plan will require stormwater management measures in accordance with Sections 6.1and 7.5.7 in the Town of Apex Unified Development Ordinance. Stormwater captured on the site will be conveyed to the proposed Stormwater Control Measures, which will be identified on plans during the major subdivision or site plan approval stage. Post development peak runoff shall not exceed pre-development peak runoff for the 24-hour, 1-year and10-year storm events in accordance with the Unified Development Ordinance. Treatment for the first 1-inch of runoff will be provided such that the removal of 85%Total Suspended Solids is achieved. All stormwater devices will meet the design requirements of NCDENR and the Town of Apex.

Section 14: Parks and Recreation

On May 26, 2021, The PRCR Committee recommended a fee-in-lieu of dedication with credit provided for construction of greenway trail that will provide an east-west connection in a similar location on the Greenway Master plan.

Section 15: Transportation Improvements

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

1. Convert the intersection of US 64 at Flying Hawk Road to a directional crossover in both directions in Phase 1, prior to first certificate of occupancy (CO), serving a new major collector street intersection to the south. In addition, prior to the final CO being issued for the last apartment building but not before issuance of the building permit for the last apartment building, developer shall conduct a signal warrant analysis for the collector street half of the intersection and

install a traffic signal if permitted by NCDOT. If not permitted at that time, developer shall pay a fee in lieu for the estimated cost of design and installation.

2. Construct a new major collector street along the eastern property line to connect to US 64 at the intersection of Flying Hawk Road/directional crossover. The proposed major collector will be constructed as part of the development plan from US 64 southward through the project serving local connections to the east, west, and south. Construction of the major collector street may be phased in accordance with a phasing plan to be approved as part of site and subdivision plans.
3. Construct an eastbound right turn lane with 100 feet of storage and appropriate deceleration length and taper per NCDOT guidance on US 64 at the new major collector street in Phase 2, prior to first certificate of occupancy for the mixed-use area and/or prior to the first residential subdivision plat.
4. Construct a right-in-only driveway with 100 feet of storage and appropriate deceleration length and taper per NCDOT guidance on US 64 approximately 700-800 feet west of the major collector street, if/when that access is proposed west of the major collector street.
5. Construct a U-turn bulb at Pinefield Road in Phase 1 that can at a minimum accommodate a Bus-40 vehicle if the current geometry does not accommodate that movement.
6. Construct a U-turn bulb at Goodwin Road in Phase 1 that can at a minimum accommodate a Bus-40 vehicle if the current geometry does not accommodate the turn movement in Phase 1. In addition, prior to the final CO being issued for the last apartment building but not before issuance of the building permit for the last apartment building, developer shall conduct a signal warrant analysis for the intersection and install a traffic signal if permitted by NCDOT. If not permitted at that time, developer shall pay a fee in lieu for the estimated cost of design and installation.
7. If NCDOT has not permitted either traffic signal described above to be installed within 5 years from the date of payment of the fee in lieu, developer, upon written request to the Town of Apex, shall be entitled to a refund of the fee in lieu.

Section 16: Environmental Advisory Board Recommendations

The consultants and developer for this project met with the EAB on April 15, 2021. The EAB's recommendations are listed below.

- Install signage near environmental sensitive areas in order to:
  - Reduce pet waste near SCM drainage areas.
  - Eliminate fertilizer near SCM drainage areas.
- Plant trees as designed for efficiency.
  - *Option 1:* Plant deciduous shade trees on southern side of buildings.
- Increase biodiversity.
  - *Option 1:* Plant pollinator-friendly flora.
- Implement green infrastructure.

- *Option 4:* Provide diverse and abundant pollinator and bird food sources (e.g. nectar, pollen, and berries from blooming plants) that bloom in succession from spring to fall.
- *Option 5:* Provide and allow for undisturbed spaces (e.g. leaf piles, un-mowed fields, fallen trees) for nesting and overwintering for native pollinators and wildlife.

- Include landscaping that requires less irrigation and chemical use.
  - *Option 1:* Plant warm season grasses for drought-resistance.
- Install pet waste stations in neighborhoods.
- Install convenient electric vehicle charging stations.
  - Spread out charging stations as much as possible considering all sides of the property for all potential users.
- Include energy efficient lighting in building design.
  - *Option 1:* Lower maximum foot-candles outside of buildings.
- Install timers or light sensors or smart lighting technology.
- Incorporate natural lighting techniques into building design.
- Add east to west connections to existing surrounding greenways, including from the American Tobacco Trail.
- Include International Dark Sky Association compliance standards.
  - Outdoor lighting shall be shielded in a way that focuses lighting to the ground.
  - Lighting that minimizes the emission of blue light to reduce glare shall be used.
- Minimize the number of stream crossings, keeping the riparian buffer connected without barriers, as much as possible.
- Provide space for additional tree plantings by single-family residential in planning for above and underground obstructions.

Section 17: Affordable Housing

The developer shall provide a donation to the Town of Apex's Affordable Housing Fund (the "FUND") in the amount of $215.00 per residential lot or dwelling unit, payable at the time of Final Plat. Instead of a single lump sum donation, the developer may make payments based on the number of residential lots or dwelling units shown on each Final Plat.

Section 18: Consistency with 2045 Land Use Plan Map

The Apex 2045 Future Land Use Map designates the property as Mixed Use to the north, which includes Commercial Services, Office Employment and, high density residential. The southern portion of the site is designated as Low Density Residential. The uses proposed comply with the 2045 Future Land Use Map designations of Mixed Use: Commercial Services, Office Employment and High Density Residential and Low Density Residential with a maximum density of 3 dwelling units per acre. No changes to the 2045 Land Use Map are proposed.

The purpose of the proposed PUD is to provide a high-quality development that is compatible with the character of the surrounding area and complies with the 2045 Land Use Map. The planned detached single-family homes provide the appropriate transition from the higher density residential uses to the

north to the lower densities to the south. The design protects the environmentally sensitive areas on the property and establishes Resource and Conservation areas in accordance with the Town's requirements. The proposed PUD will meet or exceed all other requirements of the Apex Transportation Plan and the Town of Apex.

The mixed use development planned is appropriate at this location. The proposed development is intended to create an integrated, multi-purpose community that is designed to incorporate aspects of new and existing development in the vicinity. The Applicant expects that the planned community will enhance adjoining property values by offering a high quality development that will complement the surrounding area.

Section 19: Compliance with Unified Development (UDO)

The proposed development is consistent with all applicable requirements of the Town's Unified Development Ordinance unless otherwise specified in the PUD document.

Simultaneous with the PUD request there is also a concurrent amendment request to the Town's Transportation Plan to add the north-south major collector road.

Section 20: Elevations

Elevations provided are representative of architecture, material and building types. Final elevations submitted at Major Subdivision Plan will meet the requirements of the Architectural Controls in Section 7 of the PUD Plan.

PLANNED UNIT DEVELOPMENT

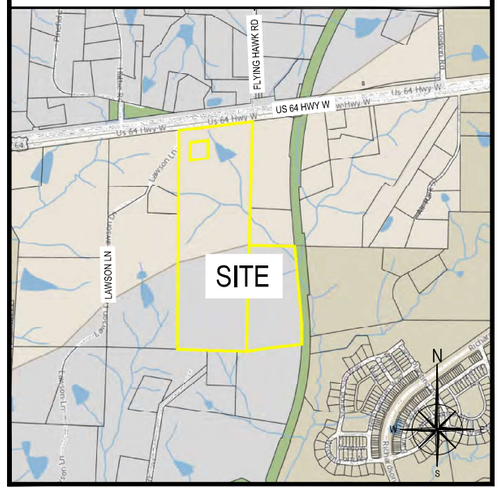
LEGACY

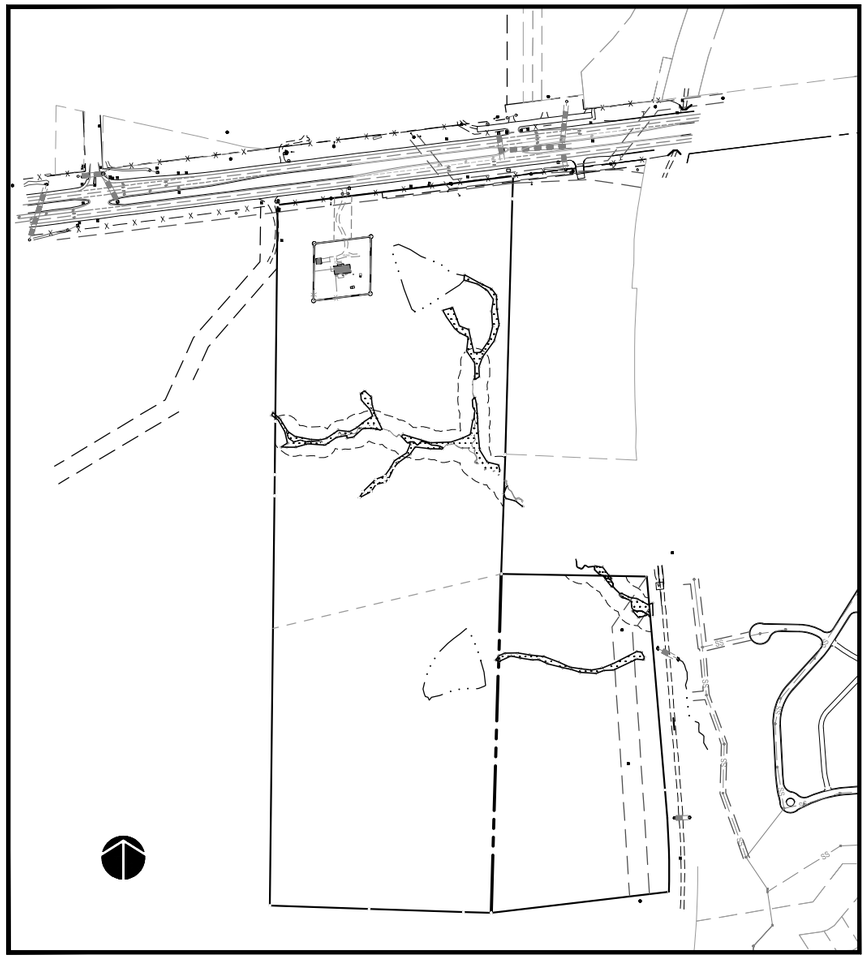
APEX, NORTH CAROLINA

AUGUST 13, 2021

PUD PLAN
FOR: LEGACY APEX
WR PROJECT NO.:0220685

VICINITY MAP
1"=800'





Sheet List Table	
Sheet Number	Sheet Title
C0.0	Cover
C1.0	Overall Existing Conditions
C1.1	Existing Conditions
C2.0	Conceptual Site Plan
C3.0	Conceptual Utility Plan
A1.0 - A1.3	Illustrative Elevations

SITE DATA				
2045 LAND USE PLAN DESIGNATION	CURRENT	MIXED USE, COMMERICAL, OFFICE AND HIGH DENSITY RESIDENTIAL		
	PROPOSED	NO CHANGE		
ZONING	CURRENT	RURAL RESIDENTIAL (RR) (R-80W)		
	PROPOSED	PLANNED UNIT DEVELOPMENT (PUD-CZ)		
AREA OF TRACTS IN PROPOSED PUD	0712-04-9922	0.91 ACRES		
	0722-03-7373	15 ACRES		
	0722-04-0381	45.06 ACRES		
	TOTAL:	60.97 ACRES		
AREA DESIGNATED AS MIXED-USE ON 2045 LAND USE MAP	26.63 ACRES + 2.66 ACRES (ADDED TO MIXED USE) = 29.29 AC			
AREA OF MIXED-USE PROPERTY PROPOSED AS NON-RESIDENTIAL DEVELOPMENT	5.96 ACRES (DOES NOT INCLUDE 10.2 ACRES OF TEE2 GREEN SITE)			
PERCENT OF MIXED-USE PROPERTY PROPOSED AS NON-RESIDENTIAL DEVELOPMENT	19.3% (DOES NOT INCLUDE TEE2/GREEN SITE)			
	40.2% (INCLUDES 10.2 ACRES OF TEE2/GREEN SITE)			
REQUESTED SEWER CAPACITY	TO BE DETERMINED			
MAXIMUM RESIDENTIAL DENSITY	MULTIFAMILY = 17 UPA, SINGLE FAMILY = 2.4 UPA			
MAXIMUM BUILDING HEIGHT	MULTIFAMILY = 55', SINGLE FAMILY, TOWNHOMES, DUPLEX, TRI AND QUAD PLEX = 45', HOTELS = 75', NON-RESIDENTIAL: 50'			
SETBACKS: SINGLE FAMILY	FRONT: 20 FT FROM GARAGE TO BACK OF SIDEWALK, 10 TO FRONT FACADE	REAR: 15 FT	SIDE: 5 FT	CORNER SIDE: 10 FT
SETBACKS: TOWNHOMES, DUPLEXES, TRI AND QUAD PLEXES	FRONT: 10' TO FRONT FACADE, 20' FROM BACK OF SIDEWALK TO GARAGE	REAR: 15 FT	SIDE: AGGREGATE 8' BETWEEN BLDGS	
WATERSHED	JORDAN LAKE WATERSHED, PRIMARY WATERSHED PROTECTION OVERLAY			
HISTORIC STRUCTURES	N/A			
COMMUNITY AMENITIES	COMMUNITY GATHERING SPACE WITH BENCHES, TOT LOT			
SITE BUFFERS	NORTH	50' TYPE A BUFFER ALONG US 64		
	EAST	50' TYPE A BUFFER ALONG ATT		
	SOUTH	20' TYPE B BUFFER		
	WEST	20' TYPE B BUFFER		

A NEW MAJOR COLLECTOR ROAD WILL BE CONSTRUCTED BETWEEN US 64 AND THE SOUTHERN PROPERTY LINE. THE MAJOR COLLECTOR WILL SERVE AS ACCESS TO THE SOUTHERN PORTION OF THE SITE AND ALSO ULTIMATELY AS PARCELS TO THE SOUTH DEVELOP TIE INTO OLIVE CHAPEL ROAD. NO WIDENING OF US 64 IS PROPOSED.

DEVELOPER/OWNER

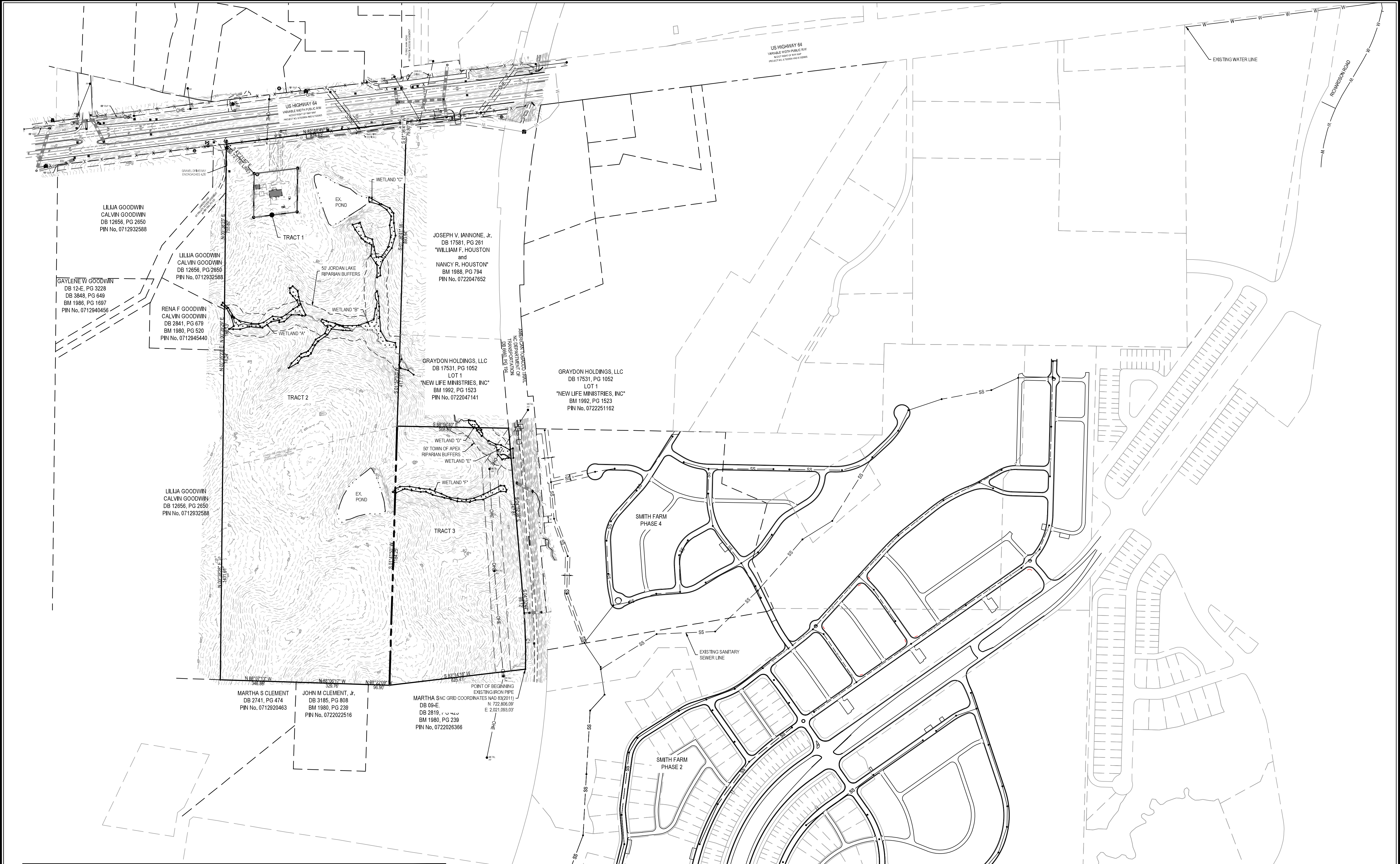
GOLDBERG COMPANIES, INC
25101 CHAGRIN BLVD #300
BEECHWOOD, OH 44122

ATTN: IAN STUART

PREPARED BY:

WithersRavenel
Engineers | Planners | Surveyors

115 MacKenan Drive | Cary, NC 27511 | t: 919.469.3340 | license #: C-0832 | www.withersravenel.com



PROPERTY INFORMATION:

TRACT NUMBER:	1	2	3
OWNER NAME:	JOEL AND CRISTIANE BOND	DEANNAS DOWRY, LLC	JOHN WILLIAM LONG AND FAYE C LONG
COMMITMENT No.:	20-17005CH	20-17004CH	20-17003CH
PIN:	0712-94-9922	0722-04-0381	0722-03-7373
DEED INFO:	DB 12965, PG 1376	DB13139, PG 920, BM 2004, PG 1409	DB 2070, PG 631
AREA:	0.91 AC (39,467 SF)	45.06 AC (2,002,141 SF)	15.00 AC (653,417 SF)

EXISTING CONDITION NOTES:

1. TOPOGRAPHIC AND UTILITY INFORMATION BASED ON AVAILABLE GIS MAPPING. BOUNDARY AND TOPO FROM SURVEY PREPARED BY WITHERSRAVENEL DATED FEBRUARY 2021.
2. WETLAND/STREAM INFORMATION BASED ON EVALUATION BY WITHERSRAVENEL DATED OCTOBER 2020
3. REGULATORY FEMA MAPPED FLOODPLAINS EXIST ON SITE PER FIRM MAP #3720072200J (5/2/06).
4. THE SUBJECT PROPERTY IS LOCATED WITHIN THE TOWN OF APEX PRIMARY WATERSHED PROTECTION OVERLAY DISTRICT.
5. ALL EXISTING STRUCTURES ON THE SUBJECT PROPERTY SHALL BE REMOVED PER TOWN OF APEX STANDARDS AND REQUIREMENTS.

WithersRavenel
Engineers | Planners | Surveyors
115 MacKenan Drive | Cary, NC 27511 | t: 919.469.3340 | license #: C-0832 | www.withersravenel.com

GCI- LEGACY PUD

Apex, North Carolina

OVERALL EXISTING CONDITIONS

Job No.	02200685	Drawn By	WR
Date	05/03/2021	Designer	WR

PRELIMINARY
NOT APPROVED FOR CONSTRUCTION

Revisions

Sheet No.
C1.0

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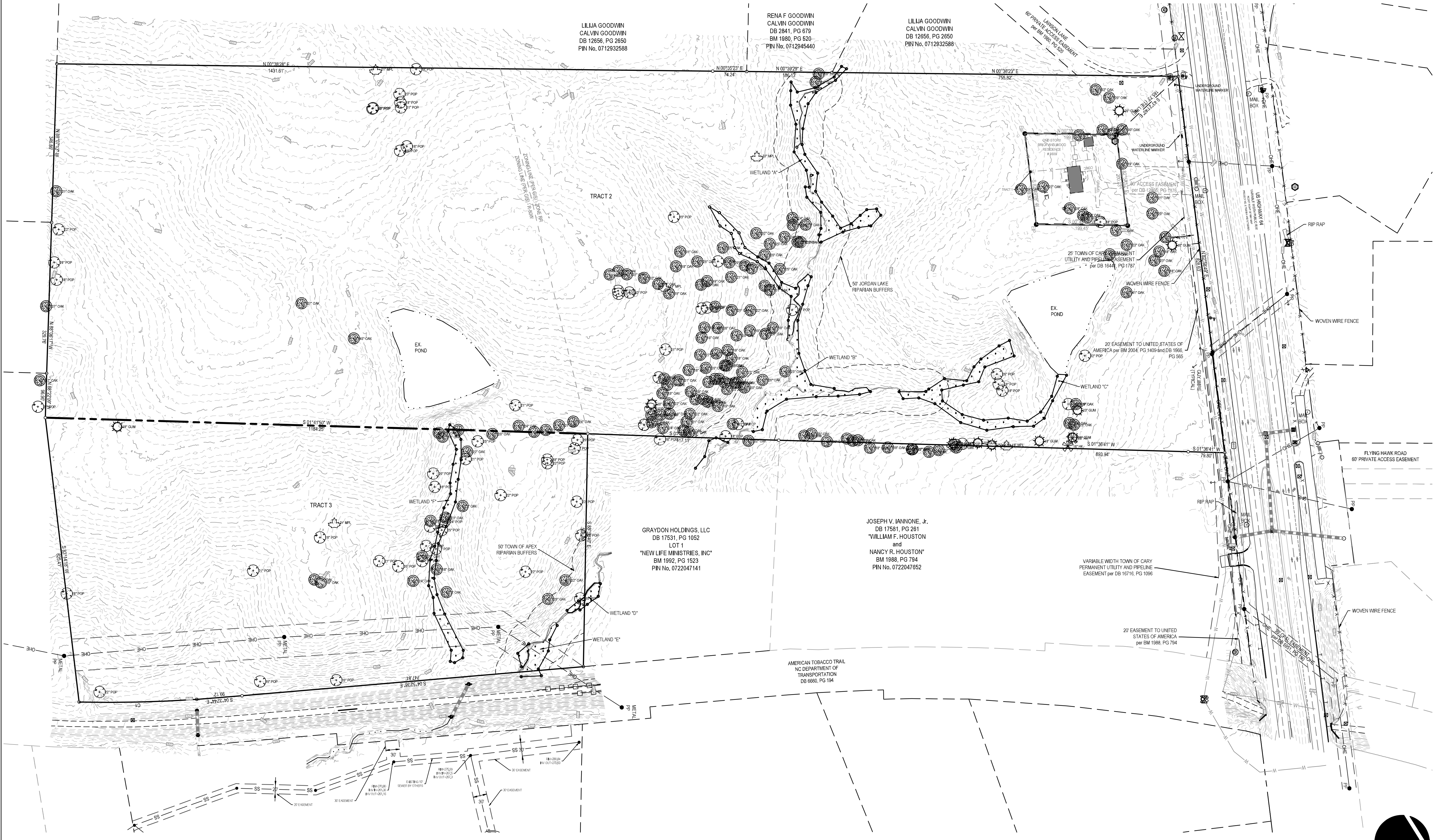

LILIJA GOODWIN
CALVIN GOODWIN
DB 12656, PG 2650
PIN No. 0712932588
RENA F GOODWIN
CALVIN GOODWIN
DB 2841, PG 679
BM 1980, PG 520
PIN No. 0712945440
LILIJA GOODWIN
CALVIN GOODWIN
DB 12656, PG 2650
PIN No. 0712932588
TRACT 2
TRACT 3
EX. POND
EX. POND
WETLAND "A"
WETLAND "B"
WETLAND "C"
WETLAND "D"
WETLAND "E"
WETLAND "F"
50' JORDAN LAKE RIPARIAN BUFFERS
50' TOWN OF APEX RIPARIAN BUFFERS
GRAYDON HOLDINGS, LLC
DB 17531, PG 1052
LOT 1
"NEW LIFE MINISTRIES, INC"
BM 1992, PG 1523
PIN No. 0722047141
JOSEPH V. IANNONE, Jr.
DB 17581, PG 261
"WILLIAM F. HOUSTON
and
NANCY R. HOUSTON"
BM 1988, PG 794
PIN No. 0722047652
AMERICAN TOBACCO TRAIL
NC DEPARTMENT OF TRANSPORTATION
DB 6860, PG 194
FLYING HAWK ROAD
60' PRIVATE ACCESS EASEMENT
LAWSON LANE
60' PRIVATE ACCESS EASEMENT
per BM 1980, PG 520
US HIGHWAY 64
25' TOWN OF CARY PERMANENT UTILITY AND PIPELINE EASEMENT per DB 1644, PG 1787
20' EASEMENT TO UNITED STATES OF AMERICA per BM 2004, PG 1409 and BM 1966, PG 565
VARIABLE WIDTH TOWN OF CARY PERMANENT UTILITY AND PIPELINE EASEMENT per DB 16716, PG 1096
20' EASEMENT TO UNITED STATES OF AMERICA per BM 1988, PG 794
WOVEN WIRE FENCE
WOVEN WIRE FENCE
WOVEN WIRE FENCE
RIP RAP
RIP RAP
UNDERGROUND WATERLINE MARKER
UNDERGROUND WATERLINE MARKER
MAIL BOX
N 00°38'29" E
1431.61'
N 00°39'23" E
74.24'
N 00°38'23" E
755.82'
S 01°41'50" W
1154.25'
S 01°36'41" W
893.94'

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GRAPHIC SCALE

100 0 50 100 200

1 inch = 100 ft.

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GCI- LEGACY PUD

Apex, North Carolina

EXISTING CONDITIONS

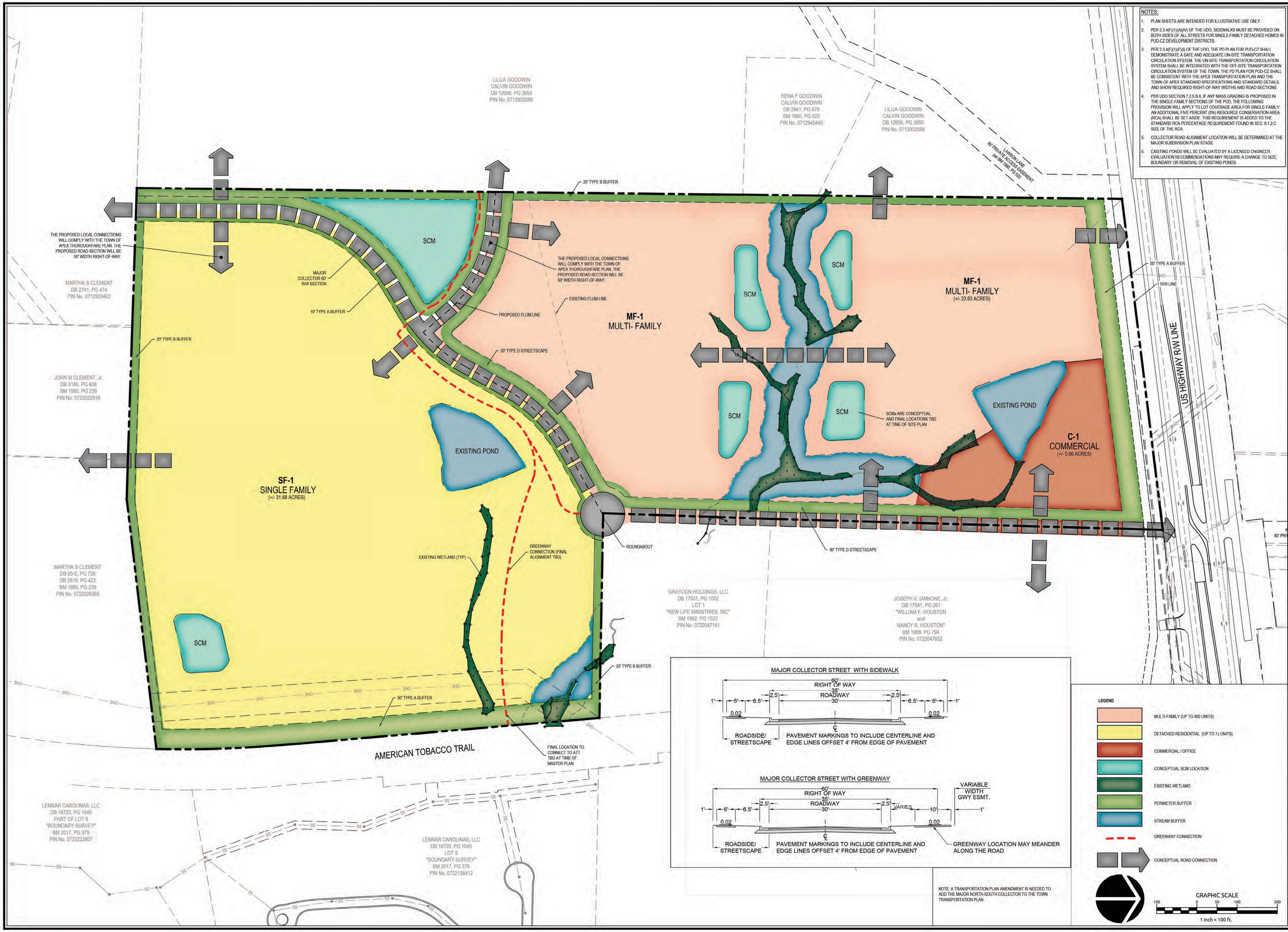
Job No.	Drawn By
02200685	WR
Date	Designer
05/03/2021	WR

PRELIMINARY
NOT APPROVED FOR CONSTRUCTION

Revisions

Sheet No.

C1.1


SF-1
SINGLE FAMILY
(+/- 31.68 ACRES)
MF-1
MULTI- FAMILY
MF-1
MULTI- FAMILY
(+/- 23.63 ACRES)
C-1
COMMERCIAL
(+/- 5.66 ACRES)
SCM
EXISTING POND
ROUNDABOUT
AMERICAN TOBACCO TRAIL
US HIGHWAY R/W LINE
THE PROPOSED LOCAL CONNECTIONS WILL COMPLY WITH THE TOWN OF APEX THOROUGHFARE PLAN. THE PROPOSED ROAD SECTION WILL BE 50' WIDTH RIGHT-OF-WAY.
MAJOR COLLECTOR 60' R/W SECTION
10' TYPE A BUFFER
20' TYPE B BUFFER
30' TYPE D STREETSCAPE
50' TYPE A BUFFER
R/W LINE
PROPOSED FLUM LINE
EXISTING FLUM LINE
SCMs ARE CONCEPTUAL AND FINAL LOCATIONS TBD AT TIME OF SITE PLAN
EXISTING WETLAND (TYP)
GREENWAY CONNECTION (FINAL ALIGNMENT TBD)
FINAL LOCATION TO CONNECT TO ATT TBD AT TIME OF MASTER PLAN
LILIJA GOODWIN
CALVIN GOODWIN
DB 12656, PG 2650
PIN No. 0712932588
RENA F GOODWIN
CALVIN GOODWIN
DB 2841, PG 679
BM 1980, PG 520
PIN No. 0712945440
MARTHA S CLEMENT
DB 2741, PG 474
PIN No. 0712920463
JOHN M CLEMENT, Jr.
DB 3185, PG 808
BM 1980, PG 239
PIN No. 0722022516
MARTHA S CLEMENT
DB 09-E, PG 726
DB 2819, PG 423
BM 1980, PG 239
PIN No. 0722026366
GRAYDON HOLDINGS, LLC
DB 17531, PG 1052
LOT 1
"NEW LIFE MINISTRIES, INC"
BM 1992, PG 1523
PIN No. 0722047141
JOSEPH V. IANNONE, Jr.
DB 17581, PG 261
"WILLIAM F. HOUSTON
and
NANCY R. HOUSTON"
BM 1988, PG 794
PIN No. 0722047652
LENNAR CAROLINAS, LLC
DB 16720, PG 1045
PART OF LOT 8
"BOUNDARY SURVEY"
BM 2017, PG 379
PIN No. 0722223807
LENNAR CAROLINAS, LLC
DB 16720, PG 1045
LOT 9
"BOUNDARY SURVEY"
BM 2017, PG 379
PIN No. 0722136412
LAWSON LANE
60' PRIVATE ACCESS EASEMENT
per BM 1980, PG 520
MAJOR COLLECTOR STREET WITH SIDEWALK
60' RIGHT OF WAY
35' ROADWAY
30'
ROADSIDE/ STREETSCAPE
PAVEMENT MARKINGS TO INCLUDE CENTERLINE AND EDGE LINES OFFSET 4' FROM EDGE OF PAVEMENT
MAJOR COLLECTOR STREET WITH GREENWAY
VARIABLE WIDTH GWY ESMT.
GREENWAY LOCATION MAY MEANDER ALONG THE ROAD
LEGEND
MULTI-FAMILY (UP TO 400 UNITS)
DETACHED RESIDENTIAL (UP TO 75 UNITS)
COMMERCIAL / OFFICE
CONCEPTUAL SCM LOCATION
EXISTING WETLAND
PERIMETER BUFFER
STREAM BUFFER
GREENWAY CONNECTION
CONCEPTUAL ROAD CONNECTION
NOTE: A TRANSPORTATION PLAN AMENDMENT IS NEEDED TO ADD THE MAJOR NORTH-SOUTH COLLECTOR TO THE TOWN TRANSPORTATION PLAN.
GRAPHIC SCALE
1 inch = 100 ft.

NOTES:

1. PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE USE ONLY.
2. PER 2.3.4(F)(1)(A)(IV) OF THE UDO, SIDEWALKS MUST BE PROVIDED ON BOTH SIDES OF ALL STREETS FOR SINGLE-FAMILY DETACHED HOMES IN PUD-CZ DEVELOPMENT DISTRICTS.
3. PER 2.3.4(F)(1)(F)(I) OF THE UDO, THE PD PLAN FOR PUD-CZ SHALL DEMONSTRATE 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.
4. PER UDO SECTION 7.2.5.B.8, IF ANY MASS GRADING IS PROPOSED IN THE SINGLE-FAMILY SECTIONS OF THE PUD, THE FOLLOWING PROVISION WILL APPLY TO LOT COVERAGE AREA FOR SINGLE-FAMILY: AN ADDITIONAL FIVE PERCENT (5%) RESOURCE CONSERVATION AREA (RCA) SHALL BE SET ASIDE. THIS REQUIREMENT IS ADDED TO THE STANDARD RCA PERCENTAGE REQUIREMENT FOUND IN SEC. 8.1.2.C SIZE OF THE RCA.
5. COLLECTOR ROAD ALIGNMENT LOCATION WILL BE DETERMINED AT THE MAJOR SUBDIVISION PLAN STAGE.
6. EXISTING PONDS WILL BE EVALUATED BY A LICENSED ENGINEER. EVALUATION RECOMMENDATIONS MAY REQUIRE A CHANGE TO SIZE, BOUNDARY OR REMOVAL OF EXISTING PONDS.

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GCI LEGACY

CONCEPT PLAN

Job No. 02200685	Drawn By WR
Date 05/03/21	Designer WR

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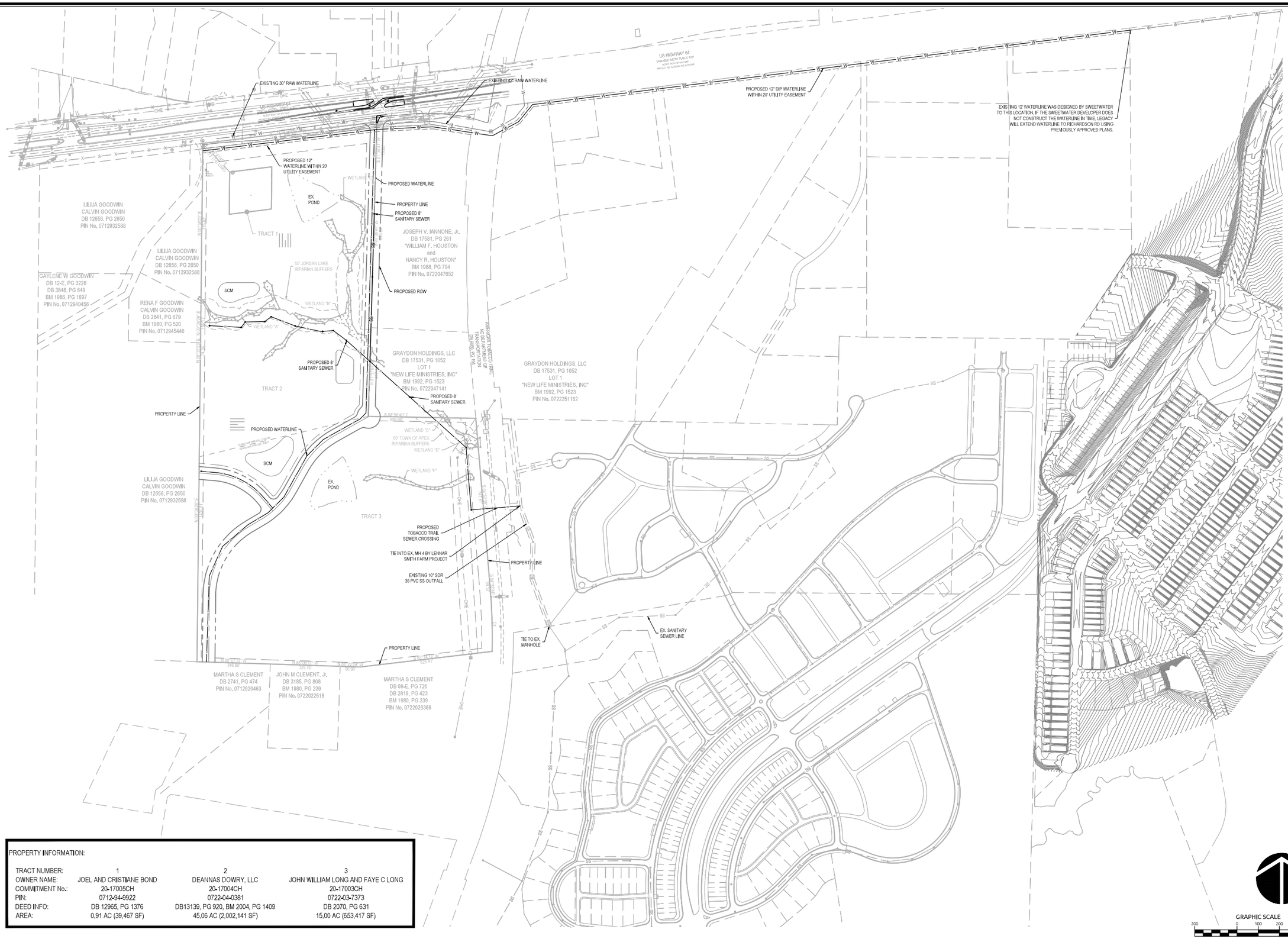

PROPERTY INFORMATION:

	1	2	3
TRACT NUMBER:			
OWNER NAME:	JOEL AND CRISTIANE BOND	DEANNAS DOWRY, LLC	JOHN WILLIAM LONG AND FAYE C LONG
COMMITMENT No.:	20-17005CH	20-17004CH	20-17003CH
PIN:	0712-94-9922	0722-04-0381	0722-03-7373
DEED INFO:	DB 12965, PG 1376	DB13139, PG 920, BM 2004, PG 1409	DB 2070, PG 631
AREA:	0,91 AC (39,467 SF)	45,06 AC (2,002,141 SF)	15,00 AC (653,417 SF)

NOTE: SUBDIVISION PLAN AND CONSTRUCTION DRAWINGS WILL FALL UNDER THE 2021 STANDARDS AND SPECIFICATIONS,

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GCI- LEGACY PUD

Apex, North Carolina

CONCEPTUAL UTILITY PLAN

Job No.	02200685	Drawn By	WR
Date	05/03/2021	Designer	WR

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GCI- LEGACY PUD

Apex, North Carolina

ILLUSTRATIVE ELEVATIONS

Job No. 02200685	Drawn By WR
Date 05/03/2021	Designer WR

PRELIMINARY
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Revisions

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GCI- LEGACY PUD

Apex, North Carolina

ILLUSTRATIVE ELEVATIONS

Job No.	02200685	Drawn By	WR
Date	05/03/2021	Designer	WR

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Apex, North Carolina

ILLUSTRATIVE ELEVATIONS

Job No. 02200685	Drawn By WR
Date 05/03/2021	Designer WR

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Sheet No.

A1.2

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GCI- LEGACY PUD

Apex, North Carolina

ILLUSTRATIVE ELEVATIONS

Job No.	02200685	Drawn By	WR
Date	05/03/2021	Designer	WR

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Sheet No.
A1.3

Traffic Impact Analysis

US 64 Residential
Apex, NC

Prepared for:

Goldberg Companies, Inc.

Kimley»Horn

Traffic Impact Analysis for

US 64 Residential

Apex, North Carolina

Prepared for:

Goldberg Companies, Inc.

Beechwood, OH

Prepared by:

Kimley-Horn and Associates, Inc.

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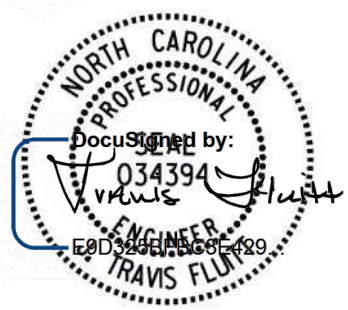
Raleigh, NC 27601
(919) 677-2000

April 2021

013329004



4/30/2021

Executive Summary

Kimley-Horn and Associates, Inc. has performed a Traffic Impact Analysis for the proposed US 64 Residential project located south of US 64 and west of the former Tee-to-Green site in Apex, North Carolina. As currently envisioned, the project will include up to 400 apartment units. Since site access coordination is ongoing, two build-out scenarios were analyzed in this study: one scenario with a new access road connection to US 64 opposite Flying Hawk Road and an existing right-in/right-out driveway on US 64, and a second scenario with just the new access road connection to US 64. Build-out is anticipated by 2024.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2021) traffic condition and the projected (2024) background and build-out traffic conditions.

As shown in Table ES-1, the proposed development has the potential to generate 2,178 new trips on a typical weekday, 133 new trips during the AM peak hour, and 168 new trips during the PM peak hour.

Table ES-1
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		PM Peak Hour	
					In	Out	In	Out
221	Multi-family Housing (Mid-Rise)	400	d.u.	2,178	35	98	102	66

Capacity analyses were performed using Synchro Version 10 software. Table ES-2 summarizes the operation of the study intersections for the AM and PM peak hour traffic conditions.

Table ES-2
Level-of-Service Summary

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
US 64 at Pinefield Road (Unsignalized)		
Existing (2021) Traffic	SB – E (36.4) EBL – B (11.2) WBU – C (23.1)	SB – F (91.2) EBL – D (25.2) WBU – D (25.1)
Background (2024) Traffic	SB – F (52.6) EBL – B (12.2) WBU – D (29.7)	SB – F (190.8) EBL – D (34.1) WBU – D (33.4)
Build-out (2024) Traffic	SB – F (54.5) EBL – B (12.3) WBU – D (29.9)	SB – F (210.6) EBL – E (35.0) WBU – E (38.2)

Table ES-2 (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
US 64 at Flying Hawk Road/Site Access Road (Unsignalized)		
Existing (2021) Traffic	SB – E (38.5) EBL – C (15.1) WBU – C (24.1)	SB – F (105.1) EBL – B (14.7) WBU – C (24.6)
Background (2024) Traffic	SB – F (58.3) EBL – C (17.7) WBU – D (31.1)	SB – F (253.3) EBL – C (17.3) WBU – D (32.5)
Build-out (2024) Traffic – *with RI/RO Driveway Scenario*	NB – C (18.0) SB – B (13.9) EBL – C (22.0) WBL – C (17.8)	NB – C (18.0) SB – C (19.6) EBL – E (46.2) WBL – C (19.0)
Build-out (2024) Traffic –*without RI/RO Driveway Scenario*	NB – C (20.0) SB – B (14.1) EBL – C (18.0) WBL – C (18.2)	NB – C (19.4) SB – C (19.7) EBL – E (36.3) WBL – C (19.2)
US 64 at Goodwin Road (Unsignalized)		
Existing (2021) Traffic	SB – E (37.5) EBL – B (11.2) WBU – C (23.3)	SB – F (81.5) EBL – C (23.9) WBU – C (24.0)
Background (2024) Traffic	SB – F (56.7) EBL – B (12.2) WBU – D (30.4)	SB – F (165.0) EBL – D (31.8) WBU – D (31.9)
Build-out (2024) Traffic – *with RI/RO Driveway Scenario*	SB – F (65.3) EBL – C (18.6) WBU – D (34.1)	SB – F (207.5) EBL – E (36.5) WBU – E (35.3)
Build-out (2024) Traffic – *without RI/RO Driveway Scenario*	SB – F (75.9) EBL – C (22.9) WBU – D (34.1)	SB – F (260.0) EBL – F (52.5) WBU – E (35.3)
US 64 at RI/RO Site Driveway (Unsignalized)		
Build-out (2024) Traffic	NB – C (16.9)	NB – C (17.4)

The following improvements are recommended to be performed in conjunction with the US 64 Residential development:

US 64 at Flying Hawk Drive/Site Access Road

- Convert the intersection to a directional crossover (left-in/right-in/right-out) configuration
- Construct the Site Access Road with one ingress lane and one egress lane

US 64 at RI/RO Site Driveway

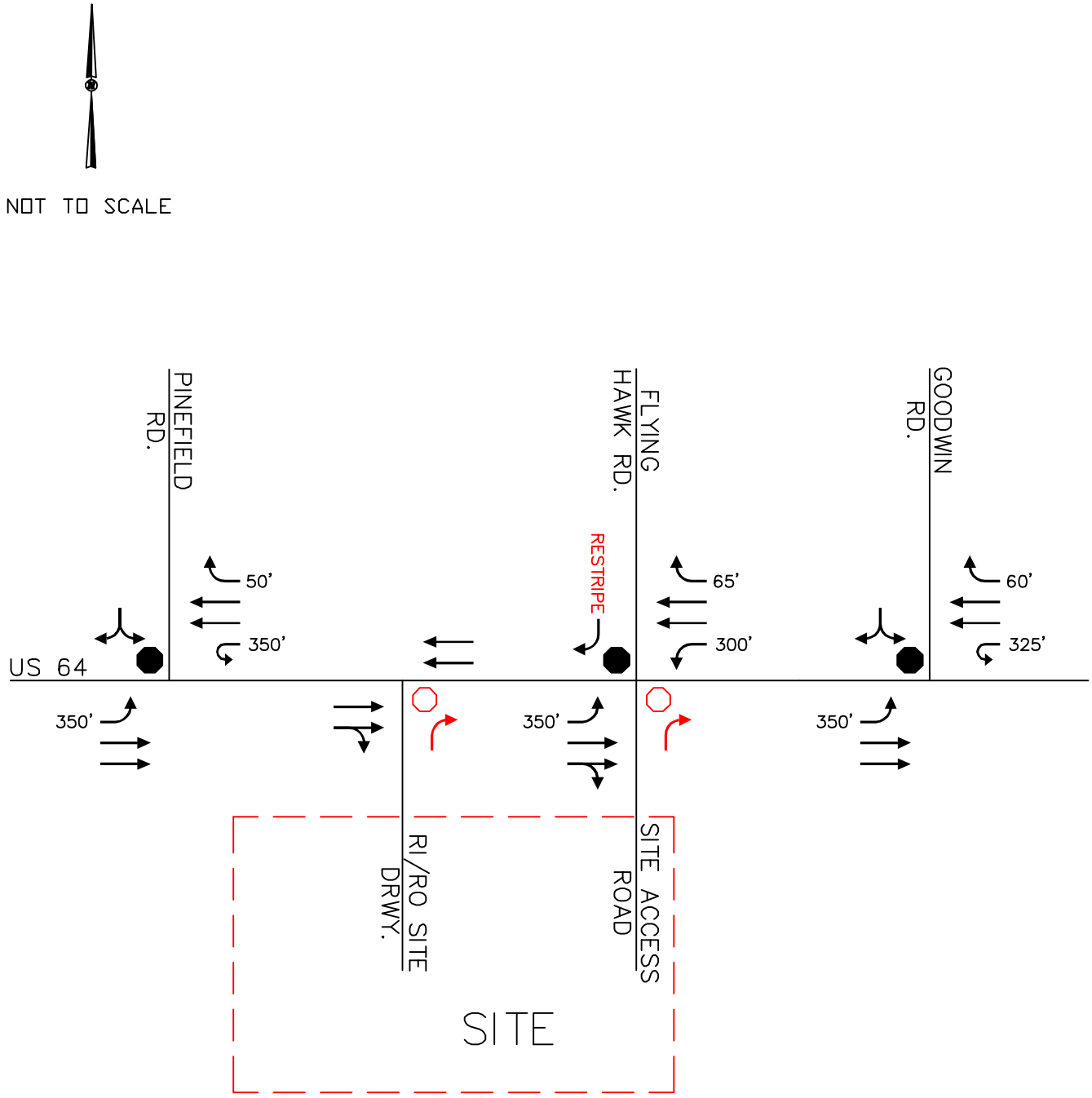
- Construct the RI/RO Site Driveway with one ingress lane and one egress lane

Analyses indicate that the full-movement intersections of US 64 at Pinefield Road and US 64 at Goodwin Road are expected to operate with long delays on the minor street approaches in 2024 with or without the proposed development in place. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Synchro indicates that site traffic is not anticipated to add significant delays to either of these intersections, in part because projected site traffic is expected to account for less than 5% of the build-out volumes at either intersection.

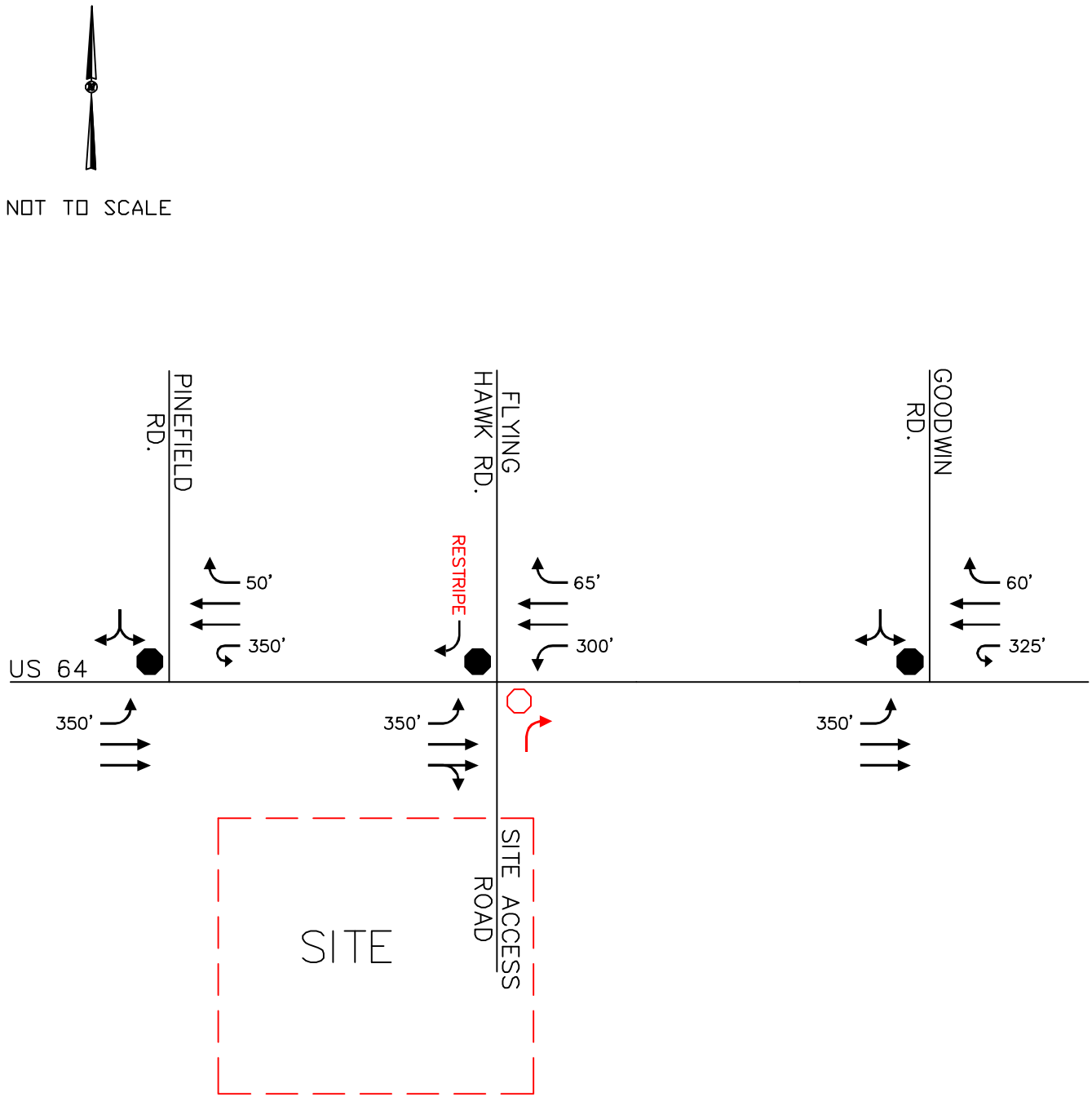
The intersection of US 64 at Flying Hawk Road/Site Access Road is expected to operate with short delays at project build-out when converted to a directional crossover. All queues are expected to be accommodated within the existing turn lane storage bays.

Synchro did not indicate significant differences between the "with RI/RO Driveway" and "without RI/RO Driveway" build-out conditions. The study intersections are expected to operate similarly with or without the RI/RO Driveway in place.

Figures ES-1 and **ES-2** show the recommended roadway laneage for the "with RI/RO Driveway" and "without RI/RO Driveway" scenarios, respectively.



Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE – WITH RI/RO DRIVEWAY	FIGURE ES-1



Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE – NO RI/RO DRIVEWAY	FIGURE ES-2

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APPENDICIES

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1.0 Introduction

Kimley-Horn and Associates, Inc. has performed a Traffic Impact Analysis for the proposed US 64 Residential project located south of US 64 and west of the former Tee-to-Green site in Apex, North Carolina. As currently envisioned, the project will include up to 400 apartment units. Since site access coordination is ongoing, two build-out scenarios were analyzed in this study: one scenario with a new access road connection to US 64 opposite Flying Hawk Road and an existing right-in/right-out driveway on US 64, and a second scenario with just the new access road connection to US 64. Build-out is anticipated by 2024.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2021) traffic condition and the projected (2024) background and build-out traffic conditions.

North Carolina Department of Transportation (NCDOT) and Town of Apex staff were consulted regarding the elements to be covered in this analysis. The approved assumptions memorandum is included in the Appendix of this report.

2.0 Inventory

2.1 *Study Area*

The study area is assumed to include the following intersections:

- US 64 at Pinefield Drive
- US 64 at Flying Hawk Road/Site Access Road
- US 64 at Goodwin Road
- US 64 at RI/RO Site Driveway

Figure 2.1 shows the site location. **Figure 2.2** shows the conceptual site plan.

2.2 *Existing Conditions*

The proposed development is located project located south of US 64 and west of the former Tee-to-Green site in Apex, North Carolina. Major roadways in the study area include US 64, Pinefield Road, Flying Hawk Road, and Goodwin Road. **Figure 2.3** shows the existing roadway laneage.

US 64 is a four-lane divided roadway with a posted speed limit of 55 miles per hour in the vicinity of the site. The reported 2019 average daily traffic (ADT) volume was 27,000 vehicles per day (vpd) between New Hill Road and New Hill Olive Chapel Road.

Pinefield Road, Flying Hawk Road, and Goodwin Road are all two-lane undivided roadways which intersect US 64 in the vicinity of the site. While no ADT data is available for these roadways, all three are estimated to carry less than 1,000 vpd.

Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	SITE LOCATION	FIGURE 2.1

K:\RAL_TPTO_Traffic\013329004 US 64 Residential\T5 – Report-Submittals\Figures\US 64 Residential – TIA figures.dwg

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Drawn by	WRS
Checked by	WRS

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TRAFFIC STUDY
CONCEPT PLAN

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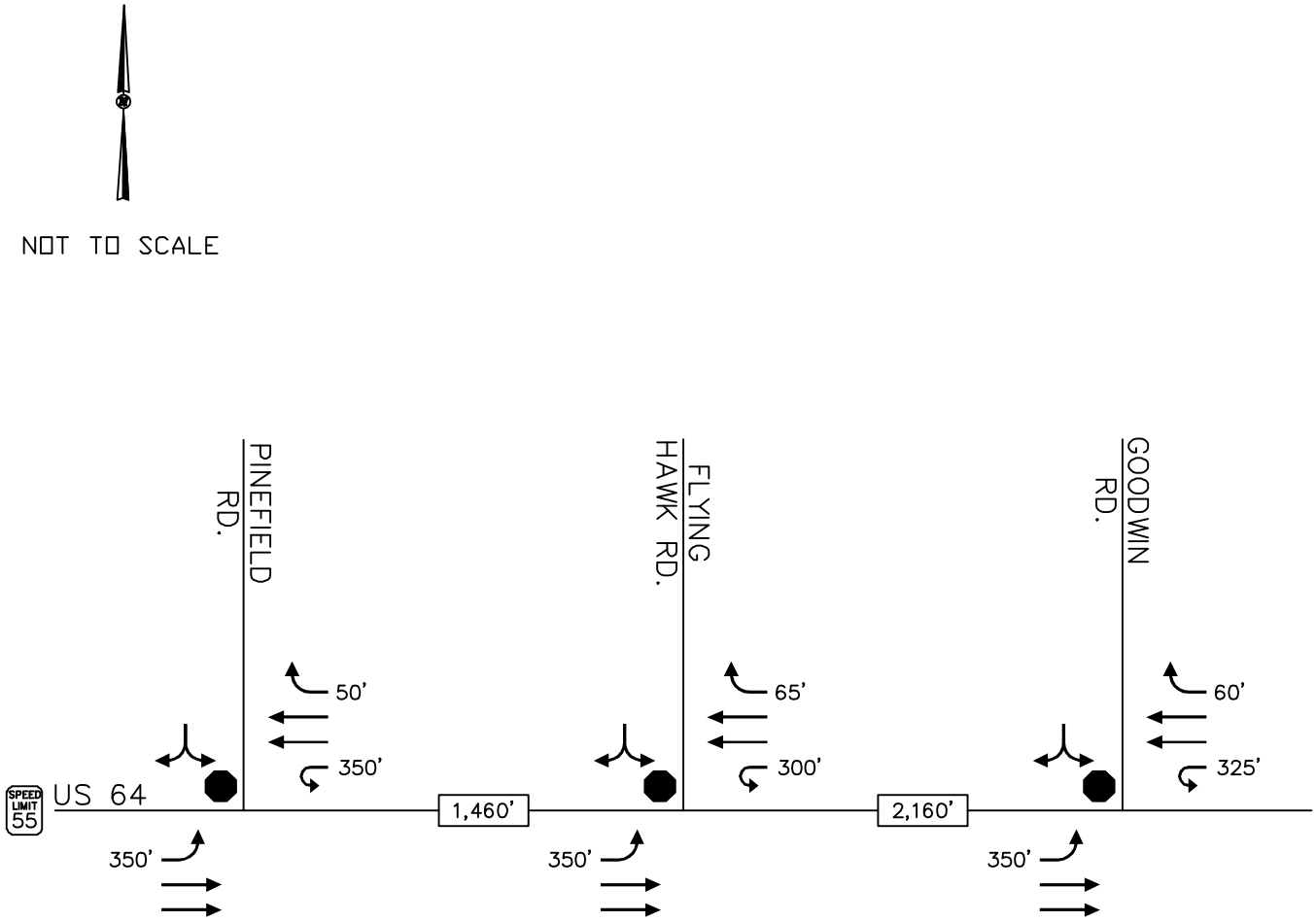
Kimley»Horn

US 64 RESIDENTIAL
APEX, NC
TRAFFIC IMPACT ANALYSIS

CONCEPTUAL SITE PLAN

FIGURE
2.2



LEGEND

- EXISTING LANE
- EXISTING STOP SIGN
- SPEED LIMIT XX — POSTED SPEED LIMIT
- XXX' — APPROXIMATE DISTANCE BETWEEN INTERSECTIONS
- XX' — STORAGE LENGTH

Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	EXISTING ROADWAY LANEAGE	FIGURE 2.3

3.0 Traffic Generation

As currently envisioned, the US 64 Residential development will include up to 400 apartment units. The traffic generation potential of the development was determined using the traffic generation rates and equations published in *Trip Generation* (Institute of Transportation Engineers, 10th Edition, 2017). Table 3.1 summarizes the trip generation potential of the proposed development.

Table 3.1
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		PM Peak Hour	
					In	Out	In	Out
221	Multi-family Housing (Mid-Rise)	400	d.u.	2,178	35	98	102	66

As shown in Table 3.1, the proposed development has the potential to generate 2,178 new trips on a typical weekday, 133 new trips during the AM peak hour, and 168 new trips during the PM peak hour.

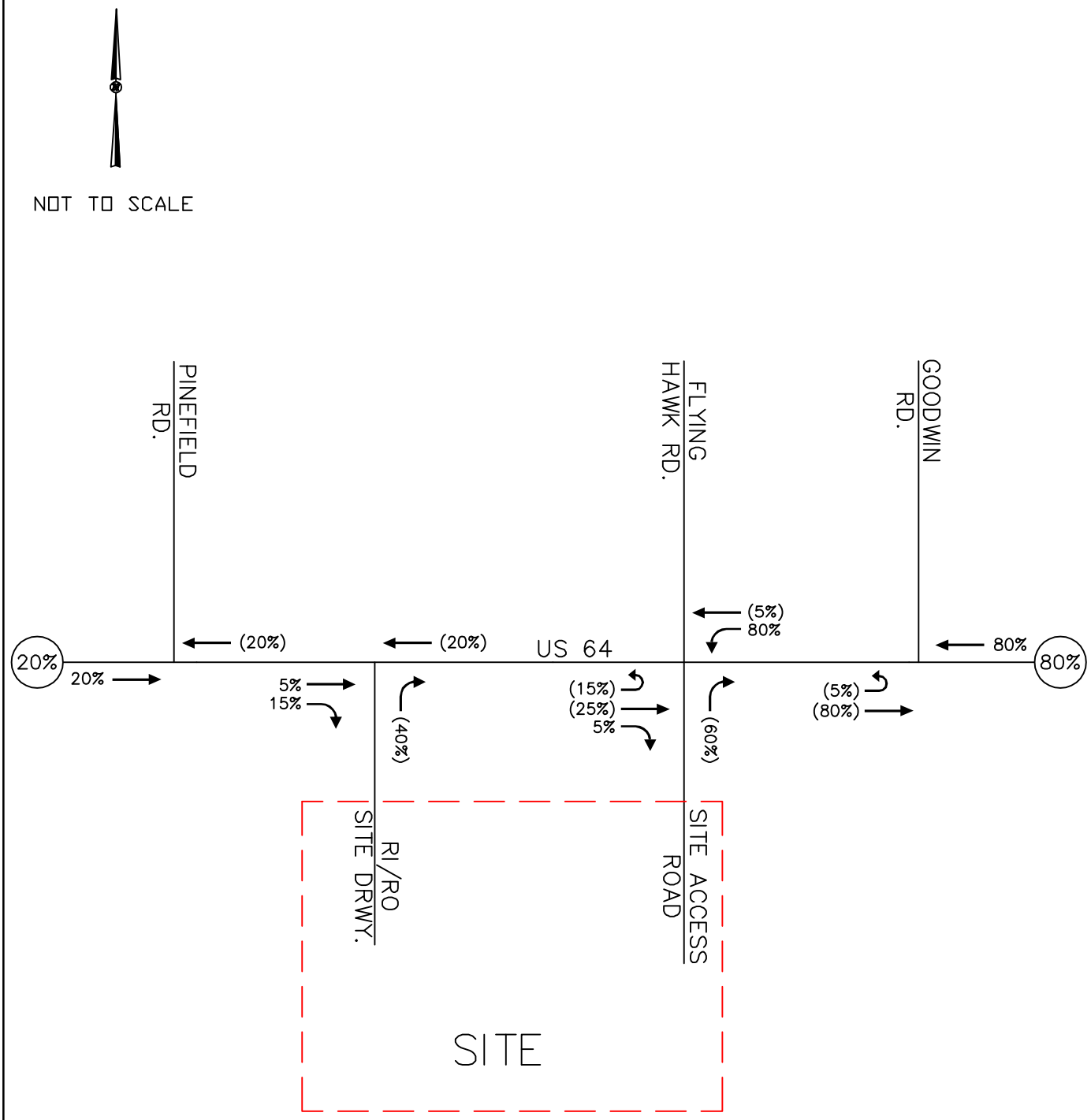
Detailed trip generation calculations are included in the Appendix of this report.

4.0 Site Traffic Distribution

The proposed generated trips were assigned to the surrounding roadway network. The directional distribution and assignment were based on land uses in the area, existing travel patterns, and a review of area origins and destinations. The following overall distribution was used for site trips:

- 80% to/from the east on US 64
- 20% to/from the west on US 64

Figures 4.1 and **4.2** show the site traffic distribution and percent assignment for the "with RI/RO Driveway" and the "without RI/RO Driveway" scenarios, respectively.



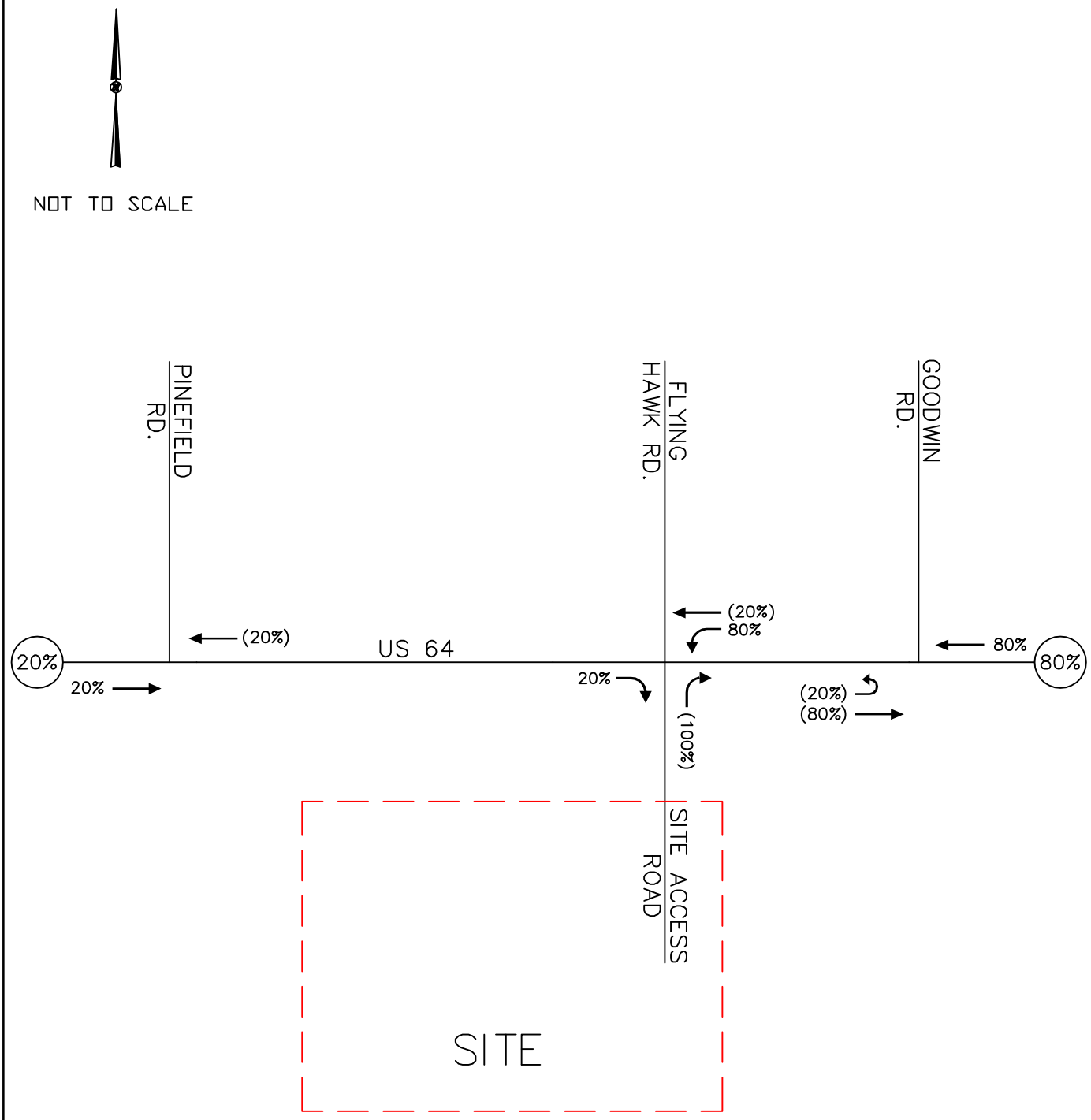
LEGEND

(XX%) OVERALL DISTRIBUTION

XX% INBOUND PERCENT ASSIGNMENT

(XX%) OUTBOUND PERCENT ASSIGNMENT

Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT – WITH RI/RO SITE DRIVEWAY	FIGURE 4.1



LEGEND

(XX%) OVERALL DISTRIBUTION

XX% INBOUND PERCENT ASSIGNMENT

(XX%) OUTBOUND PERCENT ASSIGNMENT

Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT – NO RI/RO SITE DRIVEWAY	FIGURE 4.2

5.0 Projected Traffic Volumes

5.1 *Existing Traffic*

Weekday AM (7-9 AM) and PM (4-6 PM) peak hour turning movement were collected at the following study intersections:

- US 64 at Pinefield Road December 1, 2020
- US 64 at Flying Hawk Road December 1, 2020
- US 64 at Goodwin Road January 26, 2021

To account for the impacts of business and school closures associated with COVID-19 on traffic volumes, a 24-hour pneumatic tube count was collected in December 2020 on US 64 between New Hill Road and New Hill Olive Chapel Road. This count was compared to historic daily traffic volume data from NCDOT. Based on this comparison, a 25% growth factor was applied to all turning movement count volumes to estimate 2021 existing volumes at the study intersections.

Traffic count volumes on US 64 at Goodwin Road were also increased to balance with the count volumes at Flying Hawk Road.

Figures 5.1 and **5.2** show the adjusted existing AM and PM peak hour traffic volumes, respectively.

5.2 *Historic Growth Traffic*

Historic growth traffic is the increase in traffic due to non-specific growth throughout the area. Consistent with other studies in the area, an annual growth rate of 3% was applied to the adjusted existing traffic volumes through the 2024 build-out year. Background growth calculations are detailed on intersection spreadsheets in the Appendix.

5.3 *Approved Development Traffic*

Approved development traffic is generated by approved, but not yet constructed, projects in the vicinity of the proposed project. Based on discussions with the Town of Apex and NCDOT, site traffic from three approved developments in the project area were included in this analysis as background traffic:

The *Sweetwater Development* proposes the construction of 640 residential units, 40,00 SF of general office space, 183,000 SF of retail space, a drive-in bank, and 10,000 SF of restaurant space south of US 64 opposite Jenks Road. Based on discussions with the Town of Apex, 15% of the residential trips and 100% of the commercial trips associated with this development were included in this analysis as background traffic.

The *Smith Farm Assemblage* project the construction of 430 single-family homes and 170 townhomes south of US 64, north of Olive Chapel Road, and west of Kelly Road. Based on

discussions with the Town of Apex, 25% of the residential trips associated with this development were included in this analysis as background traffic.

The *Deer Creek PUD* proposes the construction of 175 single-family homes, 127 townhomes, and 30 acres of business park in the southeast quadrant of the intersection of US 64 and New Hill Olive Chapel Road. Based on discussions with the Town of Apex, 20% of the residential trips and 0% of the commercial trips associated with this development were included in this analysis as background traffic.

5.4 *Background Traffic*

Projected (2024) background traffic volumes, which include existing and historic growth traffic are shown on **Figures 5.1** and **5.2** for the AM and PM peak hours, respectively.

5.5 *Site Traffic*

The projected site traffic for the proposed developments was generated and assigned to the adjacent roadway network according to the distribution discussed previously in *Section 4.0*. **Figures 5.3** and **5.4** show the projected peak hour site traffic volumes for the "with RI/RO Driveway" scenario while **Figures 5.5** and **5.6** show the projected peak hour site traffic volumes for the "without RI/RO Driveway" scenario.

5.6 *Access Diversion*

With the proposed public street connection to US 64 at Flying Hawk Road, this intersection will be converted to a directional crossover (left-in/right-in/right-out) consistent with the long-term plan for the US 64 corridor. Traffic from Flying Hawk Road wanting to head east on US 64, will be required to make a right turn onto US 64 and then make a U-turn at Pinefield Road. **Figures 5.4** and **5.6** show the diversion of PM peak hour left-turn traffic from Flying Hawk Road. No left-turns were observed to divert in the AM peak hour.

5.7 *Build-Out Traffic*

To obtain the projected (2024) build-out traffic volumes, the projected site traffic and access diversions were added to the projected (2024) background traffic. **Figures 5.3** and **5.4** show the projected peak hour build-out traffic volumes for the "with RI/RO Driveway" scenario while **Figures 5.5** and **5.6** show the projected peak hour build-out traffic volumes for the "without RI/RO Driveway" scenario.

Traffic volume calculations are detailed in intersection spreadsheets in the Appendix.

NOT TO SCALE

LEGEND

XX EXISTING TRAFFIC

(XX) BACKGROUND GROWTH

<XX> APPROVED DEVELOPMENT TRAFFIC

[XX] TOTAL BUILD-OUT TRAFFIC

FIGURE 5.1

EXISTING AND PROJECTED (2024) BACKGROUND AM PEAK HOUR TRAFFIC VOLUMES

US 64 RESIDENTIAL
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

LEGEND

XX EXISTING TRAFFIC

(XX) BACKGROUND GROWTH

<XX> APPROVED DEVELOPMENT TRAFFIC

[XX] TOTAL BUILD-OUT TRAFFIC

FIGURE 5.2

EXISTING AND PROJECTED (2024) BACKGROUND PM PEAK HOUR TRAFFIC VOLUMES

US 64 RESIDENTIAL
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

US 64

PINEFIELD RD.

[1] (0) 1
[0] (0) 0

0 (0) [0]
1224 (20) [1244]

[0] (0) 0
[1416] (7) 1409

1219 (20) [1239]

[1413] (2) 1411
[5] (5) 0

0 (39) [39]

RI/RO SITE DRWY.

FLYING HAWK RD.

[0] (0) 0
[0] (0) 0

1 (0) [1]
1218 (5) [1223]
0 (28) [28]
1 (0) [1]

[16] (15) 1
[1] (0) 1
[1434] (25) 1409
[2] (2) 0

0 (59) [59]

SITE ACCESS ROAD

GOODWIN RD.

[1] [1]
(0) (0)
1 1

1 (0) [1]
1223 (28) [1251]
10 (0) [10]

[5] (5) 0
[0] (0) 0
[1492] (78) 1414

SITE

LEGEND

XX BACKGROUND TRAFFIC

(XX) SITE TRAFFIC

[XX] TOTAL BUILD-OUT TRAFFIC

PROJECTED (2024) BUILD-OUT
AM PEAK HOUR TRAFFIC VOLUMES
– WITH RI/RO DRIVEWAY

FIGURE
5.3

US 64 RESIDENTIAL
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

US 64

PINEFIELD RD.

[3] (0) 3
[3] (0) 3
[1540] (20) 1520 →

1 (0) [1]
← 1791 (13) [1804]
3 (0) <7> [10]

← 1818 (13) <7> [1838]

[1533] <7> (5) 1521 →
[15] (15) 0

0 (26) [26]
RI/RO SITE DRWY.

FLYING HAWK RD.

[0] <-7> (0) 7
[11] <7> (0) 4

[10] (10) 0
[4] (0) 4
[1541] <7> (17) 1517 →
[5] (5) 0

4 (0) [4]
← 1814 (3) [1817]
0 (82) [82]
4 (0) [4]

0 (40) [40]
SITE ACCESS ROAD

GOODWIN RD.

0 (0) [0]
0 (0) [0]

[4] (3) 1
[0] (0) 0
[1572] (53) 1519 →

1 (0) [1]
← 1814 (82) [1896]
9 (0) [9]

SITE

LEGEND

XX BACKGROUND TRAFFIC

(XX) SITE TRAFFIC

<XX> ACCESS DIVERSION

[XX] TOTAL BUILD-OUT TRAFFIC

PROJECTED (2024) BUILD-OUT
PM PEAK HOUR TRAFFIC VOLUMES
– WITH RI/RO DRIVEWAY

FIGURE
5.4

US 64 RESIDENTIAL
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

US 64

PINEFIELD RD.

[1] (0) 0
[0] (0) 1

0 (0) [0]
1224 (20) [1244]

[0] (0) 0
[1416] (7) 1409

FLYING HAWK RD.

[0] (0) 0

1 (0) [1]
1218 (20) [1238]
0 (28) [28]
1 (0) [1]

[1] (0) 1
[1] (0) 1
[1409] (0) 1409
[7] (7) 0

0 (98) [98]

GOODWIN RD.

[1] (0) 1
[1] (0) 1

1 (0) [1]
1223 (28) [1251]
10 (0) [10]

[20] (20) 0
[0] (0) 0
[1492] (78) 1414

SITE ACCESS ROAD

SITE

LEGEND

XX BACKGROUND TRAFFIC

(XX) SITE TRAFFIC

[XX] TOTAL BUILD-OUT TRAFFIC

PROJECTED (2024) BUILD-OUT
AM PEAK HOUR TRAFFIC VOLUMES
– NO RI/RO DRIVEWAY

FIGURE 5.5

US 64 RESIDENTIAL
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

US 64

PINEFIELD RD.

FLYING HAWK RD.

GOODWIN RD.

SITE ACCESS ROAD

SITE

[3] (0) 3
[3] (0) 3
[1540] (20) 1520

1 (0) [1]
1791 (13) [1804]
3 (0) <7> [10]

[4] (0) 4
[1524] <7> (0) 1517
[20] (20) 0

[0] <-7> (0) 7
[11] <7> (0) 4

4 (0) [4]
1814 (13) [1827]
0 (82) [82]
4 (0) [4]

0 (69) [69]

[14] (13) 1
[0] (0) 0
[1572] (53) 1519

[0] (0) 0
[0] (0) 0

1 (0) [1]
1814 (82) [1896]
9 (0) [9]

LEGEND

XX BACKGROUND TRAFFIC

(XX) SITE TRAFFIC

<XX> ACCESS DIVERSION

[XX] TOTAL BUILD-OUT TRAFFIC

PROJECTED (2024) BUILD-OUT
PM PEAK HOUR TRAFFIC VOLUMES
– NO RI/RO DRIVEWAY

FIGURE
5.6

US 64 RESIDENTIAL
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

6.0 Capacity Analysis

Capacity analyses (see Appendix) were performed for the AM and PM peak hours for the existing (2021) and projected (2024) background and build-out traffic conditions at the study intersections using Synchro Version 10 software to determine the operating characteristics of the adjacent road network and the impacts of the proposed project.

Capacity is defined as the maximum number of vehicles that can pass over a road segment or through a particular intersection within a set time duration. Capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a road segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays. LOS D is the typically accepted standard for signalized intersections in urbanized areas. For signalized intersections, LOS is defined for the overall intersection operation.

For unsignalized intersections, only the movements that must yield right-of-way experience control delay. Therefore, LOS criteria for the overall intersection is not reported by Synchro Version 10 or computable using methodology published in the *Highway Capacity Manual.* It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Table 6.0-A lists the LOS control delay thresholds published in the *Highway Capacity Manual* for signalized and unsignalized intersections.

Table 6.0
Level-of-Service Control Delay Thresholds

Level-of-Service	Signalized Intersections – Control Delay Per Vehicle [sec/veh]	Unsignalized Intersections – Average Control Delay [sec/veh] & Qualitative Operational Description	
A	≤ 10	≤ 10	Short Delays
B	> 10 – 20	> 10 – 15	
C	> 20 – 35	> 15 – 25	
D	> 35 – 55	> 25 – 35	Moderate Delays
E	> 55 – 80	> 35 – 50	
F	> 80	> 50	Long Delays

Actual peak hour factors (PHF) were used where those values exceeded 0.90 in each of the study conditions. A PHF of 0.90 was used for new movements at the site driveways.

6.1 *US 64 at Pinefield Road*

Analyses indicate that the unsignalized intersection of US 64 at Pinefield Road currently operates with moderate delays in the AM peak hour and long delays in the PM peak hour on the minor street approach (Pinefield Road). The minor street approach is expected to operate with long delays in both peak hours in 2024 with or without the proposed project in place. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Synchro indicates that site traffic is not anticipated to add significant delays to the intersection, in part because projected site traffic is expected to account for less than 5% of the build-out volumes. Therefore, no roadway improvements are recommended at this intersection to accommodate projected traffic demands.

Table 6.1 summarizes the operation of the intersection of US 64 at Pinefield Road for the existing (2021) and projected (2024) background and build-out traffic conditions.

Table 6.1
Level-of-Service
US 64 at Pinefield Road (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2021) Traffic	SB – E (36.4) EBL – B (11.2) WBU – C (23.1)	SB – F (91.2) EBL – D (25.2) WBU – D (25.1)
Background (2024) Traffic	SB – F (52.6) EBL – B (12.2) WBU – D (29.7)	SB – F (190.8) EBL – D (34.1) WBU – D (33.4)
Build-out (2024) Traffic	SB – F (54.5) EBL – B (12.3) WBU – D (29.9)	SB – F (210.6) EBL – E (35.0) WBU – E (38.2)

6.2 *US 64 at Flying Hawk Road/Site Access Road*

Analyses indicate that the unsignalized intersection of US 64 at Flying Hawk Road currently operates with moderate delays in the AM peak hour and long delays in the PM peak hour on the minor street approach (Flying Hawk Road).

A public roadway connection is proposed to be constructed as part of this project as the fourth leg to this intersection. The following improvements are recommended to be performed at this intersection in conjunction with the US 64 Residential project:

- Convert the intersection to a directional crossover (left-in/right-in/right-out) configuration
- Construct the Site Access Road with one ingress lane and one egress lane

The intersection is expected to operate with short delays at project build-out when converted to a directional crossover. SimTraffic simulations show all queues are expected to be accommodated within the existing storage turn lane storage lengths. Synchro does not indicate significant delay or queue differences between the "with RI/RO Driveway" and "without RI/RO Driveway" build-out conditions at this intersection.

Table 6.2 summarizes the operation of the intersection of US 64 at Flying Hawk Road/Site Access Road for the existing (2021) and projected (2024) background and build-out traffic conditions.

Table 6.2
Level-of-Service
US 64 at Flying Hawk Road/Site Access Road (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2021) Traffic	SB – E (38.5) EBL – C (15.1) WBU – C (24.1)	SB – F (105.1) EBL – B (14.7) WBU – C (24.6)
Background (2024) Traffic	SB – F (58.3) EBL – C (17.7) WBU – D (31.1)	SB – F (253.3) EBL – C (17.3) WBU – D (32.5)
Build-out (2024) Traffic – *with RI/RO Driveway Scenario*	NB – C (18.0) SB – B (13.9) EBL – C (22.0) WBL – C (17.8)	NB – C (18.0) SB – C (19.6) EBL – E (46.2) WBL – C (19.0)
Build-out (2024) Traffic – *without RI/RO Driveway Scenario*	NB – C (20.0) SB – B (14.1) EBL – C (18.0) WBL – C (18.2)	NB – C (19.4) SB – C (19.7) EBL – E (36.3) WBL – C (19.2)

6.3 *US 64 at Goodwin Road*

Analyses indicate that the unsignalized intersection of US 64 at Goodwin Road currently operates with moderate delays in the AM peak hour and long delays in the PM peak hour on the minor street approach (Goodwin Road). The intersection is expected to operate with long delays in both peak hours in 2024 with or without the proposed project in place. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Synchro indicates that site traffic is not anticipated to add significant delays to the intersection, in part because projected site traffic is expected to account for less than 5% of the build-out volumes.

While longer delays are expected on the southbound and eastbound approaches in the "without RI/RO Driveway" build-out condition, Synchro indicates that queues on these approaches are expected to increase by less than 25 feet relative to the "with RI/RO Driveway" build-out condition. Therefore, no roadway improvements are recommended at this intersection to accommodate projected traffic demands.

Table 6.3 summarizes the operation of the intersection of US 64 at Goodwin Road for the existing (2021) and projected (2024) background and build-out traffic conditions.

Table 6.3
Level-of-Service
US 64 at Goodwin Road (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2021) Traffic	SB – E (37.5) EBL – B (11.2) WBU – C (23.3)	SB – F (81.5) EBL – C (23.9) WBU – C (24.0)
Background (2024) Traffic	SB – F (56.7) EBL – B (12.2) WBU – D (30.4)	SB – F (165.0) EBL – D (31.8) WBU – D (31.9)
Build-out (2024) Traffic – *with RI/RO Driveway Scenario*	SB – F (65.3) EBL – C (18.6) WBU – D (34.1)	SB – F (207.5) EBL – E (36.5) WBU – E (35.3)
Build-out (2024) Traffic – *without RI/RO Driveway Scenario*	SB – F (75.9) EBL – C (22.9) WBU – D (34.1)	SB – F (260.0) EBL – F (52.5) WBU – E (35.3)

6.4 *US 64 at RI/RO Site Driveway*

The proposed site is currently served by a right-in/right-out driveway. If this driveway is maintained, analyses indicate that this intersection is expected to operate with short delays and queues on the minor street approach (Site Driveway) in both peak hours in the build-out condition. No roadway improvements are recommended at this intersection.

Table 6.4 summarizes the operation of the intersection of US 64 at RI/RO Site Driveway for the projected (2024) build-out traffic condition.

Table 6.4
Level-of-Service
US 64 at RI/RO Site Driveway (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2024) Traffic	NB – C (16.9)	NB – C (17.4)

7.0 Recommendations

The following improvements are recommended to be performed in conjunction with the US 64 Residential development:

US 64 at Flying Hawk Drive/Site Access Road

- Convert the intersection to a directional crossover (left-in/right-in/right-out) configuration
- Construct the Site Access Road with one ingress lane and one egress lane

US 64 at RI/RO Site Drive

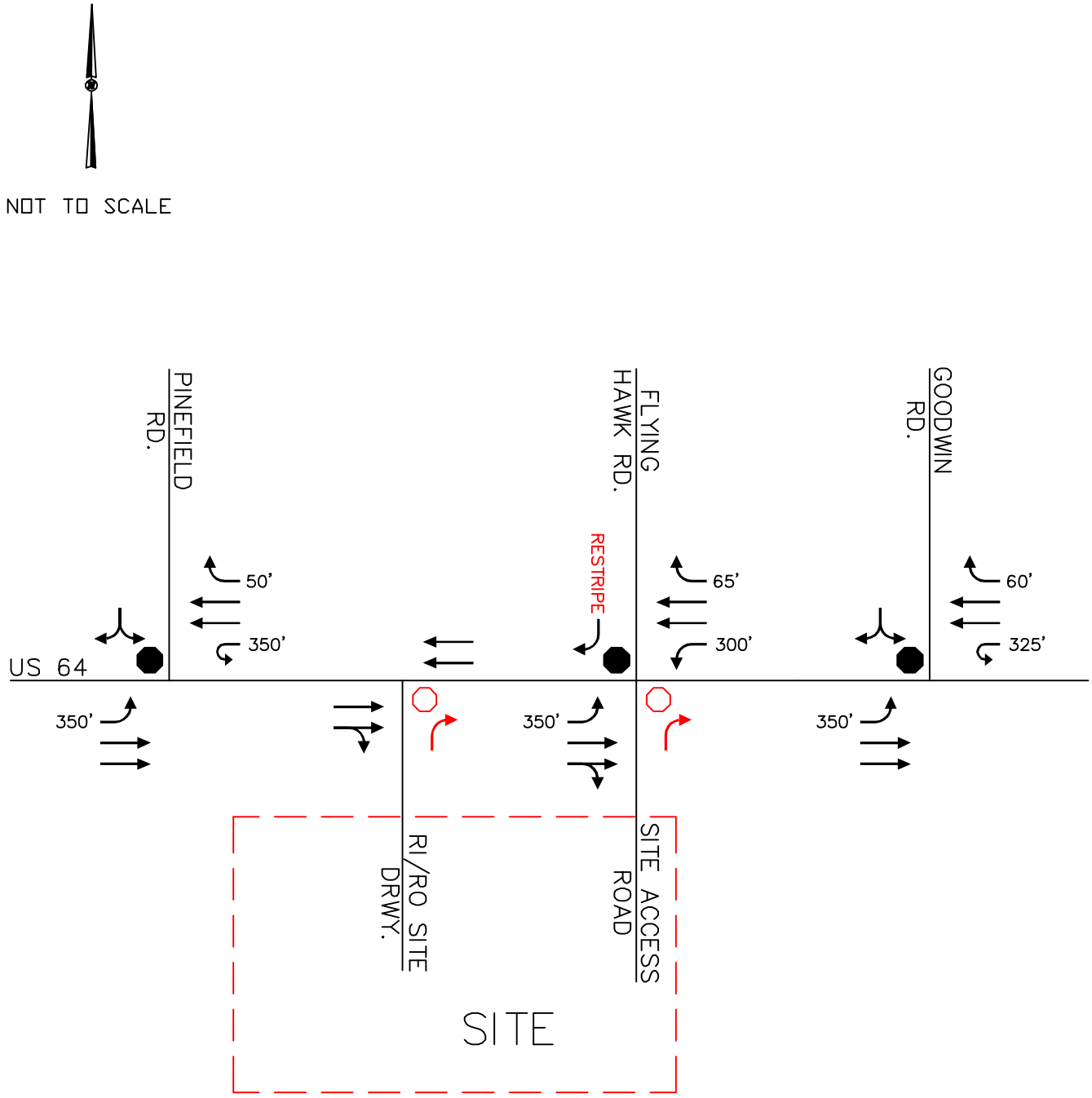
- Construct the RI/RO Site Driveway with one ingress lane and one egress lane

Analyses indicate that the full-movement intersections of US 64 at Pinefield Road and US 64 at Goodwin Road are expected to operate with long delays on the minor street approaches in 2024 with or without the proposed development in place. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Synchro indicates that site traffic is not anticipated to add significant delays to either of these intersections, in part because projected site traffic is expected to account for less than 5% of the build-out volumes at either intersection.

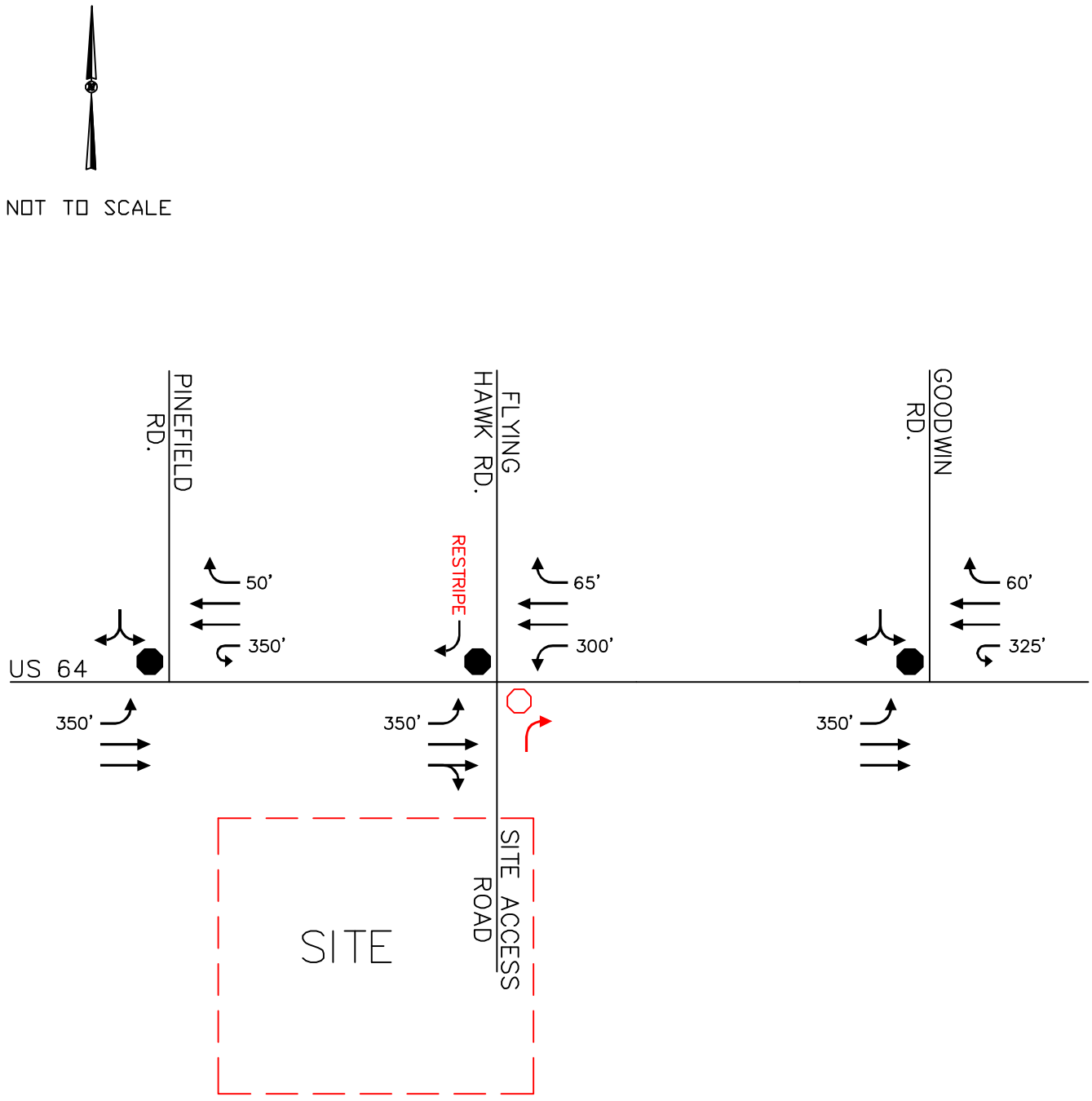
The intersection of US 64 at Flying Hawk Road/Site Access Road is expected to operate with short delays at project build-out when converted to a directional crossover. SimTraffic simulations show all queues are expected to be accommodated within the existing storage turn lane storage lengths.

Synchro did not indicate significant delay or queue differences between the "with RI/RO Driveway" and "without RI/RO Driveway" build-out conditions. The study intersections are expected to operate similarly with or without the RI/RO Driveway in place.

Figures 7.1 and 7.2 show the recommended roadway laneage for the "with RI/RO Driveway" and "without RI/RO Driveway" scenarios, respectively.



Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE – WITH RI/RO DRIVEWAY	FIGURE 7.1



Kimley»Horn	US 64 RESIDENTIAL APEX, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE – NO RI/RO DRIVEWAY	FIGURE 7.2

Appendix

Appendix A:
Assumptions Memorandum

Preliminary Assumptions
US 64 Residential - Traffic Impact Analysis
Apex, North Carolina

KHA will perform analyses for the proposed US 64 Residential development, located south of US 64 and west of the former Tee-to-Green site in Apex, North Carolina. The following assumptions will be used in the analysis of the site:

Analysis Scenarios
The study scenarios will consist of:

- Existing (2020)
- Background (2024)
- Build-out (2024)

Study Area
The study area will consist of the following intersections:

- US 64 at Goodwin Road
- US 64 at Flying Hawk Road/Site Driveway
- US 64 at Pinefield Road
- US 64 at Site Driveway (right-in/right-out)

Existing Volume Development
Weekday AM (7-9 AM) and PM (4-6 PM) peak hour turning movement counts will be collected at the two existing study area intersections:

- US 64 at Goodwin Road
- US 64 at Flying Hawk Road
- US 64 at Pinefield Road

Due to school and business closures associated with COVID-19, a 24-hour volume count will be performed on US 64. The resulting volume will be compared to historic daily traffic volumes on US 64. If needed, a growth factor will be applied to the collected peak hour volumes to estimate pre-COVID existing conditions.

Background Traffic
A 3% annual growth rate will be applied to existing turning movement volumes to estimate 2024 volumes. Based on discussions with the Town and NCDOT, portions of the following approved developments will be included in this analysis as background traffic:

- Sweetwater Development (per October 2016 Update)
    - Residential: 85% built-out; include site trips from remaining 15%
    - Commercial: assume 100% commercial build-out before future study year
- Smith Farm Assemblage (per November 2015 TIA)
    - Residential: 75% built-out; include site trips from remaining 25%
    - Commercial: no commercial development anticipated before future study year
- Deer Creek (per August 2014 TIA)
    - Residential: 80% built-out; include site trips from remaining 20%
    - Commercial: no commercial development anticipated before future study year

Background Roadway Projects
No roadway improvements are proposed as part of public or private projects in the study area.

Trip Generation
The project proposes 340 apartment units, and trip generation calculations based on the 10th Edition of the ITE *Trip Generation Manual* are attached.

Trip Distribution
Based on a review of surrounding land uses, the following overall trip distribution will be used for net new site trips generated by the project:

- 80% to/from the east on US 64
- 20% to/from the west on US 64

Other Study Assumptions
The following assumptions will be incorporated in this analysis and documented in the TIA as necessary:

Peak Hour Factor:
- A PHF of 0.90 will be used at the study intersections in each traffic condition.

Crash Data:
- No crash data analysis will be performed as part of this study.

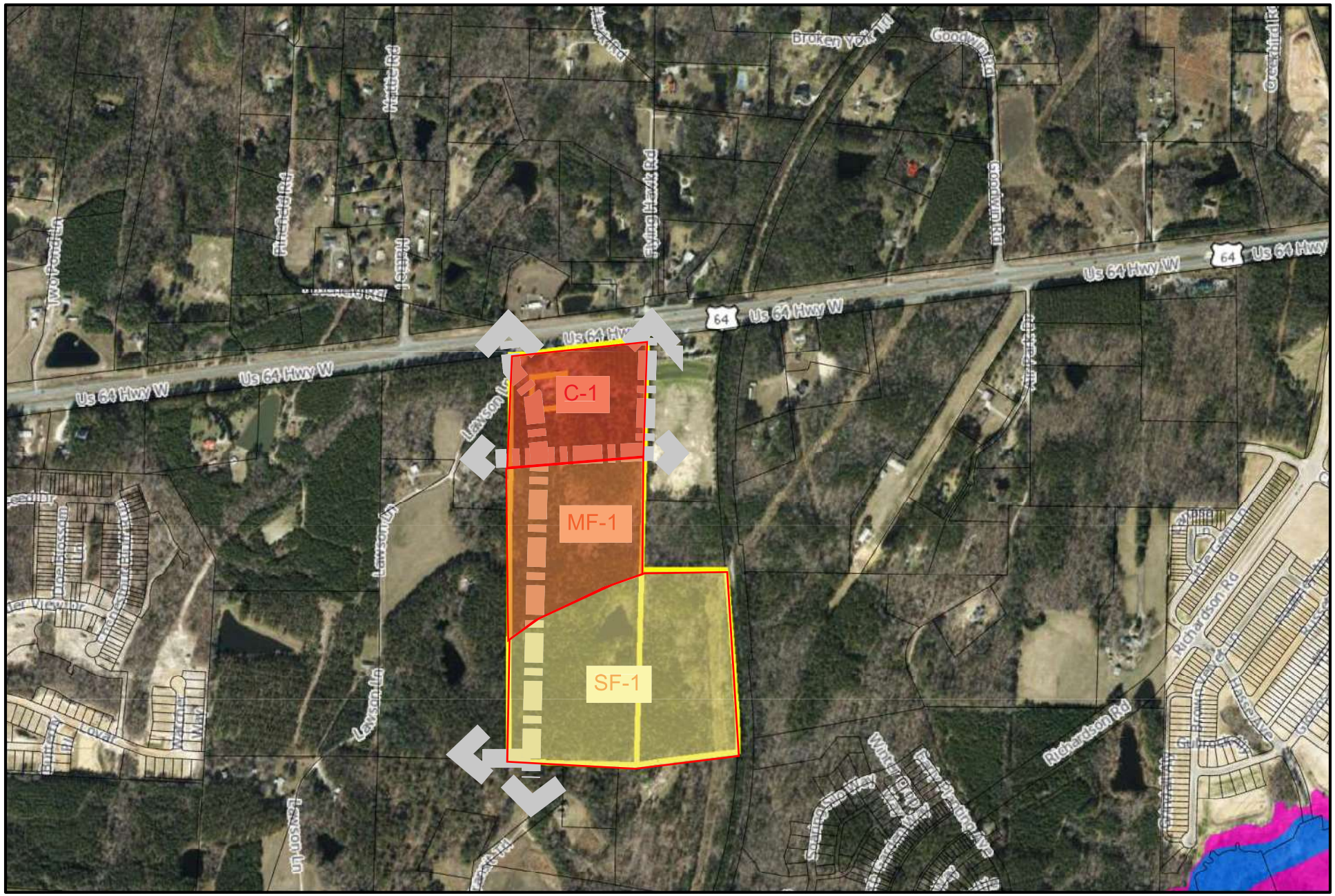
Intersection Configuration:
- As part of this development, the intersection of US 64 at Flying Hawk Road and the new Site Driveway will be converted to a directional crossover.

US 64 Residential

Table 1 - Trip Generation ITE 10th Edition)

Land Use	Intensity	Daily			AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out	Total	In	Out
221 Multifamily Housing (Mid-Rise)	340 d.u.	1,852	926	926	114	30	84	143	87	56

K:\RAL_TPTO_Traffic\013329004 US 64 Residential\T4 - Analysis\[US 64 Residential - TIA Data - Trip Gen 10.xls]Trip Gen 12/7/20



GCI Apex Site

CONCEPTUAL PUD PLAN

N

0 425 850 1,700 ft

1 inch = 800 feet

Disclaimer

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

PRELIMINARY AND SUBJECT TO CHANGE

Appendix B:
Traffic Count Data

Project ID: 20-160024-002
Location: Pinefield Rd & US 64
City: Apex

Day: Tuesday
Date: 12/1/2020

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Pinefield Rd Northbound					Pinefield Rd Southbound					US 64 Eastbound					US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	230	0	0	0	230	0	174	0	0	0	174	404
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	273	0	0	0	273	0	184	0	0	0	184	457
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	278	0	0	0	278	0	204	0	0	0	204	482
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	257	0	0	0	257	0	203	0	0	0	203	460
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1038	0	0	0	1038	0	765	0	0	0	765	1803
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	195	0	0	0	195	0	223	0	0	0	223	419
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	247	0	0	0	247	0	223	0	0	0	223	470
8:30 AM	0	0	0	0	0	0	2	0	0	0	0	2	0	243	0	0	0	243	0	217	0	0	0	217	462
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	249	0	1	0	250	0	177	3	1	0	181	432
Total	0	0	0	0	0	0	4	0	0	0	0	4	0	934	0	1	0	935	0	840	3	1	0	844	1783
BREAK																									
4:00 PM	0	0	0	0	0	0	3	0	0	0	0	3	1	241	0	1	0	243	0	238	1	1	0	240	486
4:15 PM	0	0	0	0	0	0	2	0	0	0	0	2	0	204	0	1	0	205	0	300	3	0	0	303	510
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	260	0	1	0	261	0	260	3	2	0	265	526
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	259	0	0	0	259	0	305	0	1	0	306	566
Total	0	0	0	0	0	0	6	0	0	0	0	6	1	964	0	3	0	968	0	1103	7	4	0	1114	2088
5:00 PM	0	0	0	0	0	0	1	0	1	0	0	2	1	238	0	2	0	241	0	295	0	1	0	296	539
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	281	0	0	0	282	0	332	0	0	0	332	614
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	269	0	0	0	269	0	308	1	0	0	309	579
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	236	0	0	0	236	0	249	1	0	0	250	487
Total	0	0	0	0	0	0	2	0	2	0	0	4	2	1024	0	2	0	1028	0	1184	2	1	0	1187	2219
Grand Total	0	0	0	0	0	0	12	0	2	0	0	14	3	3960	0	6	0	3969	0	3892	12	6	0	3910	7893
Apprch %	0.0	0.0	0.0	0.0	0.0		85.7	0.0	14.3	0.0	0.0		0.1	99.8	0.0	0.2	0.0		0.0	99.5	0.3	0.2	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	50.2	0.0	0.1	0.0	50.3	0.0	49.3	0.2	0.1	0.0	49.5	
Cars, PU, Vans	0	0	0	0		0	12	0	2	0		14	3	3727	0	5		3735	0	3668	11	6		3685	7434
% Cars, PU, Vans	0.0	0.0	0.0	0.0		0.0	100.0	0.0	100.0	0.0		100.0	100.0	94.1	0.0	83.3		94.1	0.0	94.2	91.7	100.0		94.2	94.2
Heavy trucks	0	0	0	0		0	0	0	0	0		0	0	233	0	1		234	0	224	1	0		225	459
%Heavy trucks	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	5.9	0.0	16.7		5.9	0.0	5.8	8.3	0.0		5.8	5.8

Project ID: 20-160024-002
Location: Pinefield Rd & US 64
City: Apex

PEAK HOURS

Day: Tuesday
Date: 12/1/2020

AM

	Pinefield Rd Northbound					Pinefield Rd Southbound					US 64 Eastbound					US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	278	0	0	278	0	204	0	0	204	482
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	257	0	0	257	0	203	0	0	203	460
8:00 AM	0	0	0	0	0	1	0	0	0	1	0	195	0	0	195	0	223	0	0	223	419
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	247	0	0	247	0	223	0	0	223	470
Total Volume	0	0	0	0	0	1	0	0	0	1	0	977	0	0	977	0	853	0	0	853	1831
% App. Total	0.0	0.0	0.0	0.0	0	100.0	0.0	0.0	0.0	100	0.0	100.0	0.0	0.0	100	0.0	100.0	0.0	0.0	100	
PHF										0.250					0.879					0.956	0.950
Cars, PU, Vans	0	0	0	0	0	1	0	0	0	1	0	909	0	0	909	0	773	0	0	773	1683
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	93.0	0.0	0.0	93.0	0.0	90.6	0.0	0.0	90.6	91.9
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	68	0	0	68	0	80	0	0	80	148
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	7.0	0.0	9.4	0.0	0.0	9.4	8.1

PM

	Pinefield Rd Northbound					Pinefield Rd Southbound					US 64 Eastbound					US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	259	0	0	259	0	305	0	1	306	566
5:00 PM	0	0	0	0	0	1	0	1	0	2	1	238	0	2	241	0	295	0	1	296	539
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	281	0	0	282	0	332	0	0	332	614
5:30 PM	0	0	0	0	0	0	0	1	0	1	0	269	0	0	269	0	308	1	0	309	579
Total Volume	0	0	0	0	0	2	0	2	0	4	2	1047	0	2	1051	0	1240	1	2	1243	2298
% App. Total	0.0	0.0	0.0	0.0	0	50.0	0.0	50.0	0.0	100	0.2	99.6	0.0	0.2	100	0.0	99.8	0.1	0.2	100	
PHF										0.500					0.932					0.936	0.936
Cars, PU, Vans	0	0	0	0	0	2	0	2	0	4	2	1007	0	2	1011	0	1200	1	2	1203	2218
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0	96.2	0.0	100.0	96.2	0.0	96.8	100.0	100.0	96.8	96.5
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	40	0	0	40	0	40	0	0	40	80
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	3.8	0.0	3.2	0.0	0.0	3.2	3.5

National Data & Surveying Services Intersection Turning Movement Count

Project ID: 20-160024-001
Location: Flying Hawk Rd & US 64
City: Apex

Day: Tuesday
Date: 12/1/2020

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Flying Hawk Rd Northbound						Flying Hawk Rd Southbound						US 64 Eastbound						US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	238	0	0	0	238	0	181	0	1	0	182	420
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	262	0	0	0	262	0	173	0	0	0	173	435
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	286	0	0	0	286	0	206	0	0	0	206	492
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	250	0	0	0	250	0	209	0	0	0	209	459
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1036	0	0	0	1036	0	769	0	1	0	770	1806
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	205	0	1	0	206	0	214	0	0	0	214	420
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	236	0	0	0	237	0	220	1	1	0	222	459
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	247	0	0	0	247	0	218	2	0	0	220	468
8:45 AM	0	0	0	0	0	0	2	0	0	0	0	2	0	254	0	0	0	254	0	193	0	1	0	194	450
Total	0	0	0	0	0	0	3	0	0	0	0	3	1	942	0	1	0	944	0	845	3	2	0	850	1797
BREAK																									
4:00 PM	0	0	0	0	0	0	2	0	1	0	0	3	0	254	0	0	0	254	0	247	0	0	0	247	504
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	198	0	0	0	198	0	294	1	1	0	296	495
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	263	0	0	0	263	0	251	3	1	0	255	519
4:45 PM	0	0	0	0	0	0	2	0	1	0	0	3	0	265	0	0	0	265	0	317	0	0	0	317	585
Total	0	0	0	0	0	0	6	0	2	0	0	8	0	980	0	0	0	980	0	1109	4	2	0	1115	2103
5:00 PM	0	0	0	0	0	0	1	0	1	0	0	2	1	231	0	0	0	232	0	298	2	1	0	301	535
5:15 PM	0	0	0	0	0	0	1	0	1	0	0	2	0	279	0	0	0	279	0	325	1	1	0	327	608
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	1	2	270	0	0	0	272	0	317	0	1	0	318	591
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1	234	0	0	0	235	0	245	2	0	0	247	483
Total	0	0	0	0	0	0	3	0	3	0	0	6	4	1014	0	0	0	1018	0	1185	5	3	0	1193	2217
Grand Total	0	0	0	0	0	0	12	0	5	0	0	17	5	3972	0	1	0	3978	0	3908	12	8	0	3928	7923
Apprch %	0.0	0.0	0.0	0.0	0.0		70.6	0.0	29.4	0.0	0.0		0.1	99.8	0.0	0.0	0.0		0.0	99.5	0.3	0.2	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.2	0.1	50.1	0.0	0.0	0.0	50.2	0.0	49.3	0.2	0.1	0.0	49.6	
Cars, PU, Vans	0	0	0	0		0	6	0	1	0		7	2	3743	0	1		3746	0	3686	6	8		3700	7453
% Cars, PU, Vans	0.0	0.0	0.0	0.0		0.0	50.0	0.0	20.0	0.0		41.2	40.0	94.2	0.0	100.0		94.2	0.0	94.3	50.0	100.0		94.2	94.1
Heavy trucks	0	0	0	0		0	6	0	4	0		10	3	229	0	0		232	0	222	6	0		228	470
%Heavy trucks	0.0	0.0	0.0	0.0		0.0	50.0	0.0	80.0	0.0		58.8	60.0	5.8	0.0	0.0		5.8	0.0	5.7	50.0	0.0		5.8	5.9

Project ID: 20-160024-001
Location: Flying Hawk Rd & US 64
City: Apex

PEAK HOURS

Day: Tuesday
Date: 12/1/2020

AM

	Flying Hawk Rd Northbound					Flying Hawk Rd Southbound					US 64 Eastbound					US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	286	0	0	286	0	206	0	0	206	492
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	250	0	0	250	0	209	0	0	209	459
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	205	0	1	206	0	214	0	0	214	420
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	236	0	0	237	0	220	1	1	222	459
Total Volume	0	0	0	0	0	0	0	0	0	0	1	977	0	1	979	0	849	1	1	851	1830
% App. Total	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.1	99.8	0.0	0.1	100	0.0	99.8	0.1	0.1	100	
PHF															0.856					0.958	0.930
Cars, PU, Vans	0	0	0	0	0	0	0	0	0	0	1	909	0	1	911	0	765	0	1	766	1677
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	93.0	0.0	100.0	93.1	0.0	90.1	0.0	100.0	90.0	91.6
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	68	0	0	68	0	84	1	0	85	153
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	6.9	0.0	9.9	100.0	0.0	10.0	8.4

PM

	Flying Hawk Rd Northbound					Flying Hawk Rd Southbound					US 64 Eastbound					US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
4:45 PM	0	0	0	0	0	2	0	1	0	3	0	265	0	0	265	0	317	0	0	317	585
5:00 PM	0	0	0	0	0	1	0	1	0	2	1	231	0	0	232	0	298	2	1	301	535
5:15 PM	0	0	0	0	0	1	0	1	0	2	0	279	0	0	279	0	325	1	1	327	608
5:30 PM	0	0	0	0	0	1	0	0	0	1	2	270	0	0	272	0	317	0	1	318	591
Total Volume	0	0	0	0	0	5	0	3	0	8	3	1045	0	0	1048	0	1257	3	3	1263	2319
% App. Total	0.0	0.0	0.0	0.0	0	62.5	0.0	37.5	0.0	100	0.3	99.7	0.0	0.0	100	0.0	99.5	0.2	0.2	100	
PHF										0.667					0.939					0.966	0.954
Cars, PU, Vans	0	0	0	0	0	2	0	0	0	2	0	1009	0	0	1009	0	1218	1	3	1222	2233
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	25.0	0.0	96.6	0.0	0.0	96.3	0.0	96.9	33.3	100.0	96.8	96.3
Heavy trucks	0	0	0	0	0	3	0	3	0	6	3	36	0	0	39	0	39	2	0	41	86
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	60.0	0.0	100.0	0.0	75.0	100.0	3.4	0.0	0.0	3.7	0.0	3.1	66.7	0.0	3.2	3.7

National Data & Surveying Services Intersection Turning Movement Count

Project ID: 21-160010-001
Location: Goodwin Rd & US 64
City: Apex

Day: Tuesday
Date: 1/26/2021

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Goodwin Rd Northbound						Goodwin Rd Southbound						US 64 Eastbound						US 64 Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	186	0	0	0	186	0	142	0	0	0	142	329
7:15 AM	0	0	0	0	0	0	2	0	0	0	0	2	0	251	0	0	0	251	0	158	1	0	0	159	412
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	261	0	0	0	261	0	186	0	0	0	186	447
7:45 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	259	0	0	0	259	0	208	0	2	0	210	470
Total	0	0	0	0	0	0	4	0	0	0	0	4	0	957	0	0	0	957	0	694	1	2	0	697	1658
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	236	0	0	0	236	0	195	1	2	0	198	434
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	224	0	0	0	224	0	214	0	3	0	217	442
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	216	0	0	0	216	0	208	0	0	0	208	424
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	223	0	0	0	223	0	182	2	1	0	185	408
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	899	0	0	0	899	0	799	3	6	0	808	1708
BREAK																									
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	1	0	209	0	235	0	1	0	236	445
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	203	0	0	0	203	0	229	1	1	0	231	434
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	264	0	0	0	264	0	252	1	2	0	255	519
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	219	0	0	0	219	0	265	0	2	0	267	486
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	894	0	1	0	895	0	981	2	6	0	989	1884
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	226	0	1	0	227	0	284	0	0	0	284	511
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	210	0	0	0	210	0	297	0	2	0	299	509
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	252	0	2	0	254	0	259	1	0	0	260	514
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	182	0	0	0	182	0	257	0	0	0	257	439
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	870	0	3	0	873	0	1097	1	2	0	1100	1973
Grand Total	0	0	0	0	0	0	4	0	1	0	0	5	0	3620	0	4	0	3624	0	3571	7	16	0	3594	7223
Apprch %	0.0	0.0	0.0	0.0	0.0		80.0	0.0	20.0	0.0	0.0		0.0	99.9	0.0	0.1	0.0		0.0	99.4	0.2	0.4	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	50.1	0.0	0.1	0.0	50.2	0.0	49.4	0.1	0.2	0.0	49.8	
Cars, PU, Vans	0	0	0	0		0	4	0	1	0		5	0	3431	0	4		3435	0	3395	7	14		3416	6856
% Cars, PU, Vans	0.0	0.0	0.0	0.0		0.0	100.0	0.0	100.0	0.0		100.0	0.0	94.8	0.0	100.0		94.8	0.0	95.1	100.0	87.5		95.0	94.9
Heavy trucks	0	0	0	0		0	0	0	0	0		0	0	189	0	0		189	0	176	0	2		178	367
%Heavy trucks	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	5.2	0.0	0.0		5.2	0.0	4.9	0.0	12.5		5.0	5.1

Project ID: 21-160010-001
Location: Goodwin Rd & US 64
City: Apex

PEAK HOURS

Day: Tuesday
Date: 1/26/2021

AM

	Goodwin Rd Northbound					Goodwin Rd Southbound					US 64 Eastbound					US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	261	0	0	261	0	186	0	0	186	447
7:45 AM	0	0	0	0	0	1	0	0	0	1	0	259	0	0	259	0	208	0	2	210	470
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	236	0	0	236	0	195	1	2	198	434
8:15 AM	0	0	0	0	0	0	0	1	0	1	0	224	0	0	224	0	214	0	3	217	442
Total Volume	0	0	0	0	0	1	0	1	0	2	0	980	0	0	980	0	803	1	7	811	1793
% App. Total	0.0	0.0	0.0	0.0	0	50.0	0.0	50.0	0.0	100	0.0	100.0	0.0	0.0	100	0.0	99.0	0.1	0.9	100	
PHF										0.500					0.939					0.934	0.954
Cars, PU, Vans	0	0	0	0	0	1	0	1	0	2	0	910	0	0	910	0	750	1	6	757	1669
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	92.9	0.0	0.0	92.9	0.0	93.4	100.0	85.7	93.3	93.1
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	70	0	0	70	0	53	0	1	54	124
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	7.1	0.0	6.6	0.0	14.3	6.7	6.9

PM

	Goodwin Rd Northbound					Goodwin Rd Southbound					US 64 Eastbound					US 64 Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	264	0	0	264	0	252	1	2	255	519
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	219	0	0	219	0	265	0	2	267	486
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	226	0	1	227	0	284	0	0	284	511
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	210	0	0	210	0	297	0	2	299	509
Total Volume	0	0	0	0	0	0	0	0	0	0	0	919	0	1	920	0	1098	1	6	1105	2025
% App. Total	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	99.9	0.0	0.1	100	0.0	99.4	0.1	0.5	100	
PHF															0.871					0.924	0.975
Cars, PU, Vans	0	0	0	0	0	0	0	0	0	0	0	886	0	1	887	0	1069	1	5	1075	1962
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.4	0.0	100.0	96.4	0.0	97.4	100.0	83.3	97.3	96.9
Heavy trucks	0	0	0	0	0	0	0	0	0	0	0	33	0	0	33	0	29	0	1	30	63
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	3.6	0.0	2.6	0.0	16.7	2.7	3.1

Prepared by National Data & Surveying Services

VOLUME

US 64 Bet. New Hill Rd & New Hill Olive Chapel Rd

Day: Tuesday
Date: 12/1/2020

City: Apex
Project #: NC20_160025_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	11,074	12,214	23,288

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			11		13		24		12:00			189		171		360	
0:15			7		9		16		12:15			170		170		340	
0:30			4		5		9		12:30			190		219		409	
0:45			6	28	7	34	13	62	12:45			173	722	211	771	384	1493
1:00			2		10		12		13:00			162		196		358	
1:15			4		9		13		13:15			183		205		388	
1:30			6		1		7		13:30			202		227		429	
1:45			6	18	0	20	6	38	13:45			166	713	233	861	399	1574
2:00			6		6		12		14:00			162		206		368	
2:15			5		6		11		14:15			180		203		383	
2:30			7		3		10		14:30			216		211		427	
2:45			7	25	6	21	13	46	14:45			188	746	219	839	407	1585
3:00			8		1		9		15:00			182		216		398	
3:15			5		3		8		15:15			156		249		405	
3:30			9		5		14		15:30			223		236		459	
3:45			7	29	3	12	10	41	15:45			202	763	294	995	496	1758
4:00			8		9		17		16:00			226		243		469	
4:15			19		8		27		16:15			179		294		473	
4:30			9		9		18		16:30			254		254		508	
4:45			30	66	13	39	43	105	16:45			229	888	310	1101	539	1989
5:00			31		23		54		17:00			215		297		512	
5:15			33		42		75		17:15			277		338		615	
5:30			55		45		100		17:30			244		308		552	
5:45			73	192	54	164	127	356	17:45			225	961	255	1198	480	2159
6:00			103		77		180		18:00			192		254		446	
6:15			160		94		254		18:15			144		209		353	
6:30			202		164		366		18:30			157		178		335	
6:45			194	659	149	484	343	1143	18:45			127	620	132	773	259	1393
7:00			229		180		409		19:00			92		104		196	
7:15			248		174		422		19:15			91		115		206	
7:30			247		212		459		19:30			77		118		195	
7:45			244	968	209	775	453	1743	19:45			84	344	88	425	172	769
8:00			173		212		385		20:00			63		75		138	
8:15			219		220		439		20:15			55		88		143	
8:30			257		219		476		20:30			59		76		135	
8:45			217	866	186	837	403	1703	20:45			43	220	55	294	98	514
9:00			172		192		364		21:00			39		55		94	
9:15			162		203		365		21:15			29		56		85	
9:30			175		162		337		21:30			37		36		73	
9:45			179	688	195	752	374	1440	21:45			30	135	40	187	70	322
10:00			141		184		325		22:00			26		42		68	
10:15			173		184		357		22:15			26		25		51	
10:30			144		185		329		22:30			17		25		42	
10:45			191	649	192	745	383	1394	22:45			20	89	25	117	45	206
11:00			139		158		297		23:00			11		18		29	
11:15			144		169		313		23:15			14		15		29	
11:30			175		193		368		23:30			20		23		43	
11:45			167	625	175	695	342	1320	23:45			15	60	19	75	34	135
TOTALS				4813		4578		**9391**	**TOTALS**				6261		7636		**13897**
SPLIT %				51.3%		48.7%		**40.3%**	**SPLIT %**				45.1%		54.9%		**59.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	11,074	12,214	23,288

AM Peak Hour			7:00	7:45	**7:45**	**PM Peak Hour**			16:30	16:45	**16:45**
AM Pk Volume			968	860	**1753**	**PM Pk Volume**			975	1253	**2218**
Pk Hr Factor			0.976	0.977	**0.921**	**Pk Hr Factor**			0.880	0.927	**0.902**
7 - 9 Volume	0	0	1834	1612	**3446**	**4 - 6 Volume**	0	0	1849	2299	**4148**
7 - 9 Peak Hour			7:00	7:45	**7:45**	**4 - 6 Peak Hour**			16:30	16:45	**16:45**
7 - 9 Pk Volume	0	0	968	860	**1753**	**4 - 6 Pk Volume**	0	0	975	1253	**2218**
Pk Hr Factor	0.000	0.000	0.976	0.977	**0.921**	**Pk Hr Factor**	0.000	0.000	0.880	0.927	**0.902**

Appendix C:
Approved Development Information

RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

RAMEY KEMP & ASSOCIATES, INC.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609
Phone - 919-872-5115 Fax - 919-878-5416
www.rameykemp.com

October 20, 2016

Gordon Paulsen
Retail Strategies of NC, Inc
3900 Merton Drive, Suite 160
Raleigh, NC 27609

Subject: **Sweetwater Development – Richardson Road Access Study**
Apex, North Carolina

Dear Mr. Paulsen:

This letter provides a summary of the updated capacity analysis for the proposed driveway locations along the Richardson Road Extension as part of the Sweetwater Development located south of the intersection of US 64 and Jenks Road in Apex, North Carolina. The purpose of this study is to update the Traffic Impact Analysis that was approved in 2015 with the current commercial area site plan.

Background

The original TIA report was prepared for the Sweetwater Development in December 2014 and approved by the Town of Apex (Town) and the North Carolina Department of Transportation (NCDOT). Improvements were required of the development for the intersection of US 64 and Jenks Road / Richardson Road. The site plan evaluated in the TIA did not include apartments in the commercial area. The current plan for the commercial area includes a reduction in the original residential units, a reduction in retail space, and an addition of 230 apartment units within the commercial area. This study evaluates the transportation network based on the current proposed plan.

The following intersections were included in this study:

- US 64 and Jenks Road
- US 64 and Richardson Road
- West U-Turn on US 64
- East U-Turn on US 64
- Kelly Road and Beaver Creek Commons Drive
- US 64 and Kellyridge Road
- Richardson Road and Site Drive 1 (northern access)
- Richardson Road and Site Drive 2 (southern access)

It should be noted that a third access to each side of the commercial area is also proposed and these driveways are restricted to right-in / right-out (RIRO) movements. Although these site drives were not considered study intersections, a percentage of site trips were routed to these intersections.

Table 1
Updated Trip Generation Summary – Full Build Out

Land Use (ITE Code)	Size	Unit	Weekday 24 Hour Volumes	Weekday AM Peak Hour Trips		Weekday PM Peak Hour Trips	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing (210)	347	Dwelling Units	3,300	65	195	219	128
Mid-Rise Apartments (223)	230	Dwelling Units	1,520*	21	48	52	38
Townhomes (230)	63	Dwelling Units	370	5	23	22	11
General Office (710)	40,000	Square Feet	440	55	7	10	50
General Retail (820)	183,000	Square Feet	10,100	140	85	431	467
Drive-In Bank** (912)	4	lanes	560	22	15	65	68
High-Turnover Restaurant (932)	7,000	Square Feet	890	49	44	70	59
Fast Food w/ Drive Through (934)	3,000	Square Feet	1,490	69	67	51	47
Subtotal			18,670	426	484	920	868
Internal Capture (15%)			*2,800*	*0*	*0*	*138*	*130*
Pass-By			--	*39*	*39*	*195*	*195*
Total Updated Trips			**15,870**	**387**	**445**	**587**	**543**

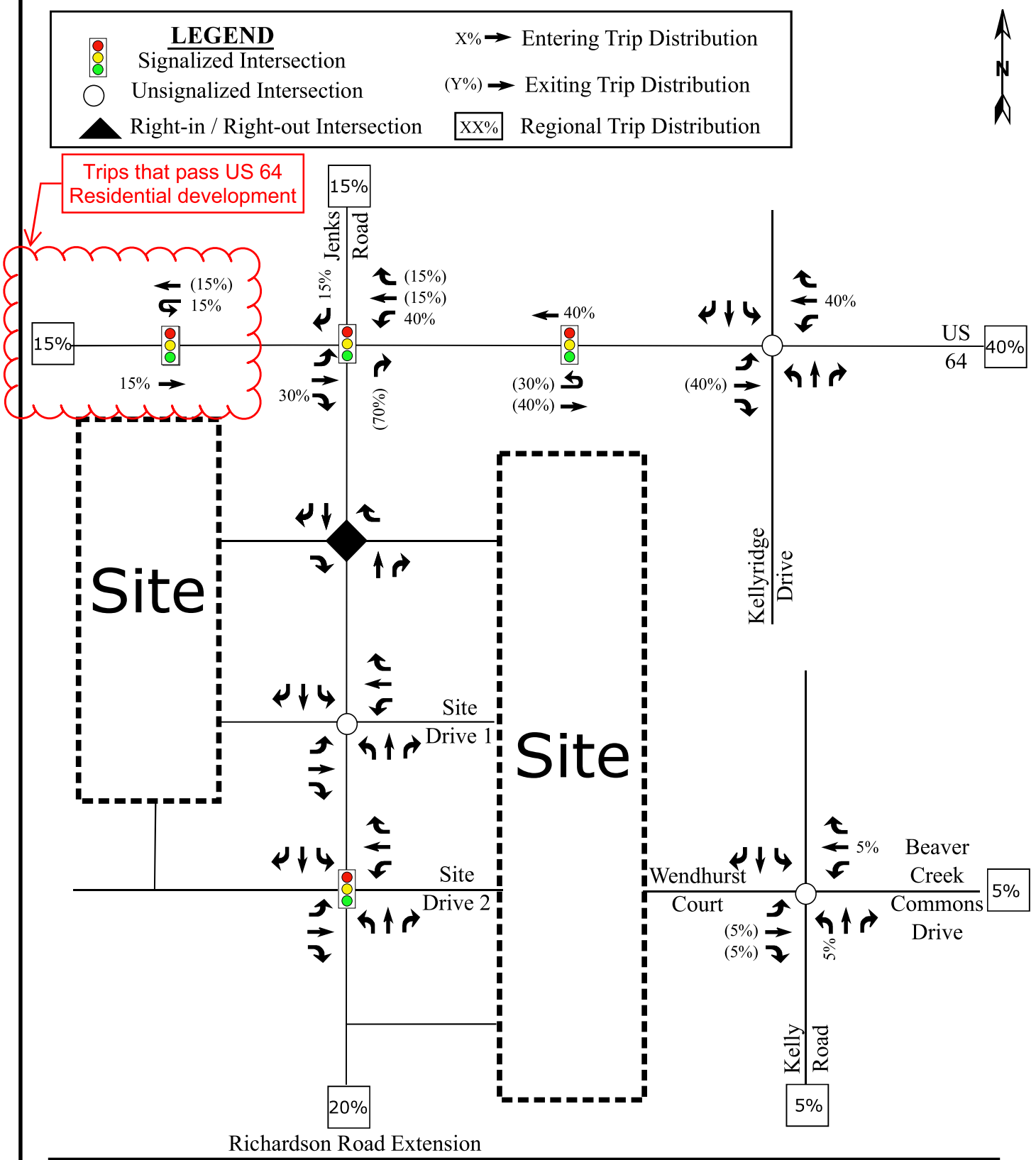
*Land use code 220 was used to calculate the Weekday Daily trips due to limitations in the ITE Trip Generation Manual.
**Lanes instead of square footage were used to calculate trip generation for drive-in bank.

15% RESIDENTIAL TRIPS
AM In = 0.15 x (65 + 21 + 5) = 14
AM Out = 0.15 x (195 + 48 + 23) = 40
PM In = 0.15 x [0.85 x (219 + 52 +22)] = 37
PM Out = .15 x [0.85 x (128 + 38 + 11)] = 23

100% COMMERCIAL TRIPS
AM In = 55 + 140 + 22 + 49 + 69 - 39 = 296
AM Out = 7 + 85 + 15 + 44 + 67 - 39 = 179
PM In = 0.85*(10 + 431 + 65 + 70 + 51) - 195 = 338
PM Out = 0.85*(50 + 467 + 68 + 59 + 47) - 195 = 392

15% OF 15% OF RESIDENTIAL TRIPS
AM In = 0.15 x 14 = 2
AM Out = 0.15 x 40 = 6
PM In = 0.15 x 37 = 6
PM Out = 0.15 x 23 = 3

15% OF 100% OF COMMERCIAL TRIPS
AM In = 0.15 x 296 = 44
AM Out = 0.15 x 179 = 27
PM In = 0.15 x 338 = 51
PM Out = 0.15 x 392 = 59



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

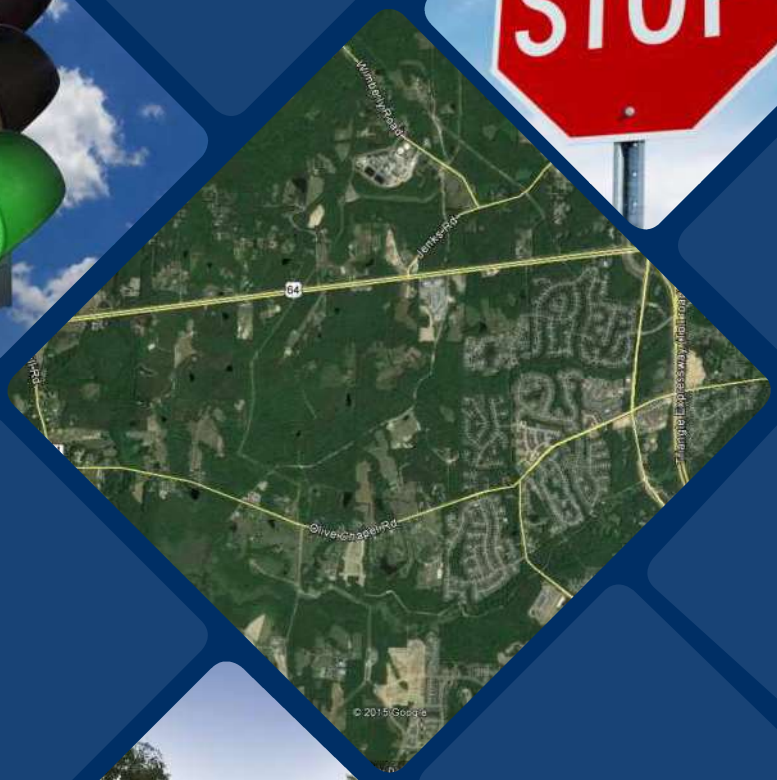
Sweetwater Development Update
Apex, NC

Regional Site Trip Distribution

Scale: Not to Scale

Figure 4

Traffic Impact Analysis
Smith Farm Assemblage
Apex, North Carolina



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Traffic Impact Analysis

For

Smith Farm Assemblage

Located in

Apex, North Carolina

Prepared For:
Lennar
909 Aviation Parkway, Suite 700
Morrisville, NC 27560

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

11-24-15

November 2015

RKA Project #15248

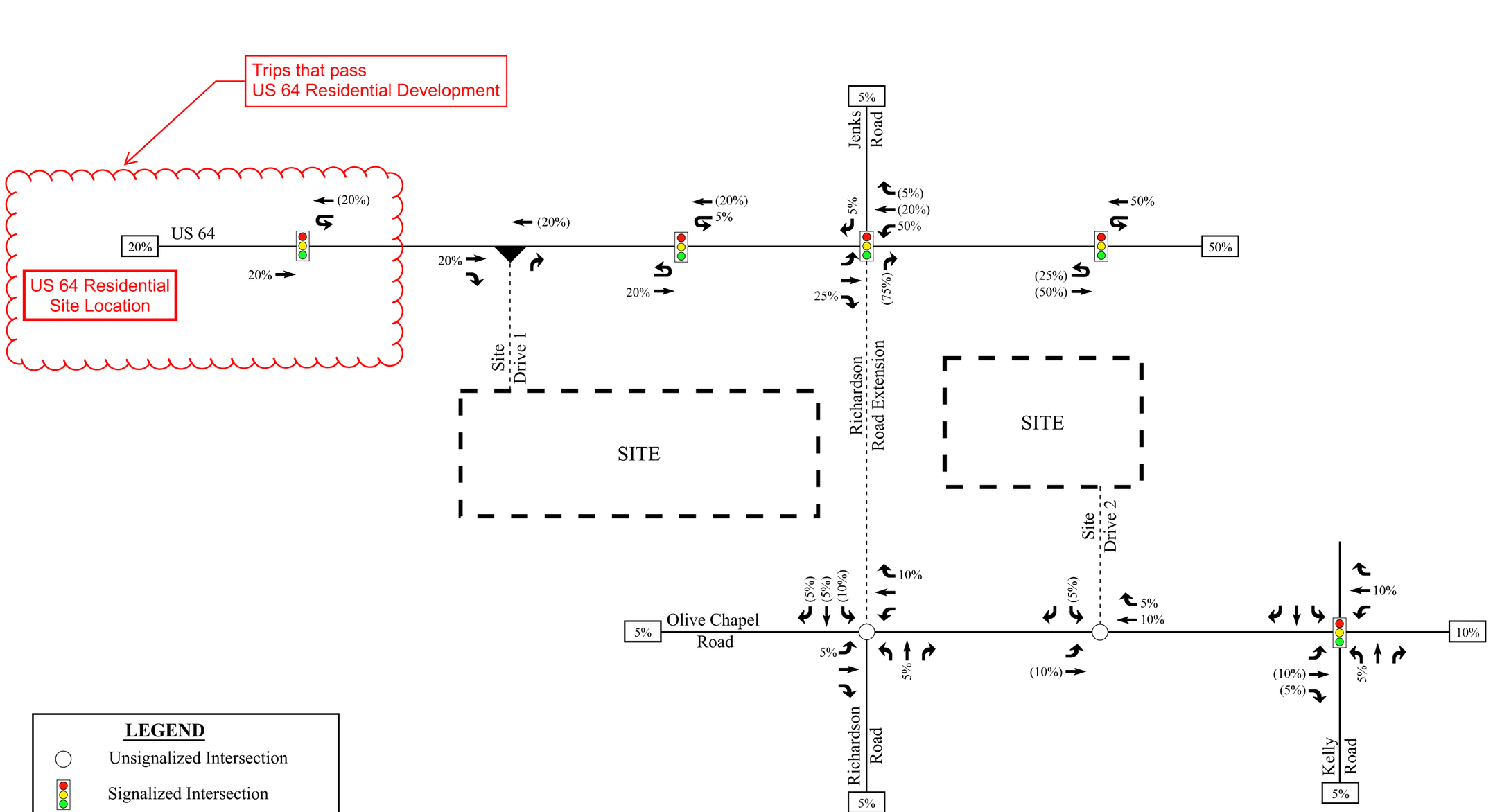
4. TRIP GENERATION

The proposed development is expected to consist of approximately 430 single-family detached homes, 170 townhomes, 150 apartment units, and various non-residential land uses. For the purpose of this study, a scenario with only the residential portion (the Residential Phase) of the site was analyzed separate from full build-out. This scenario was studied because it is assumed that the non-residential land uses will not be completed until much later than the Residential Phase. 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*, 9th Edition. Tables 1 and 2 provide a summary of the trip generation potential for the sites.

Table 1: Trip Generation Summary – Residential Phase

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single Family Homes (210)	430 dwellings	4,100	81	242	271	159
Townhomes (230)	161 dwellings	990	13	62	59	29
Apartments (220)	150 dwellings	1,030	15	62	65	35
Total Trips		**6,120**	**109**	**366**	**395**	**223**

It is estimated that the proposed development will generate 6,120 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 475 trips (109 entering and 366 exiting) will occur during the AM peak hour and 618 (395 entering and 223 exiting) will occur during the PM peak hour.



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution
- – – – Proposed Roadway

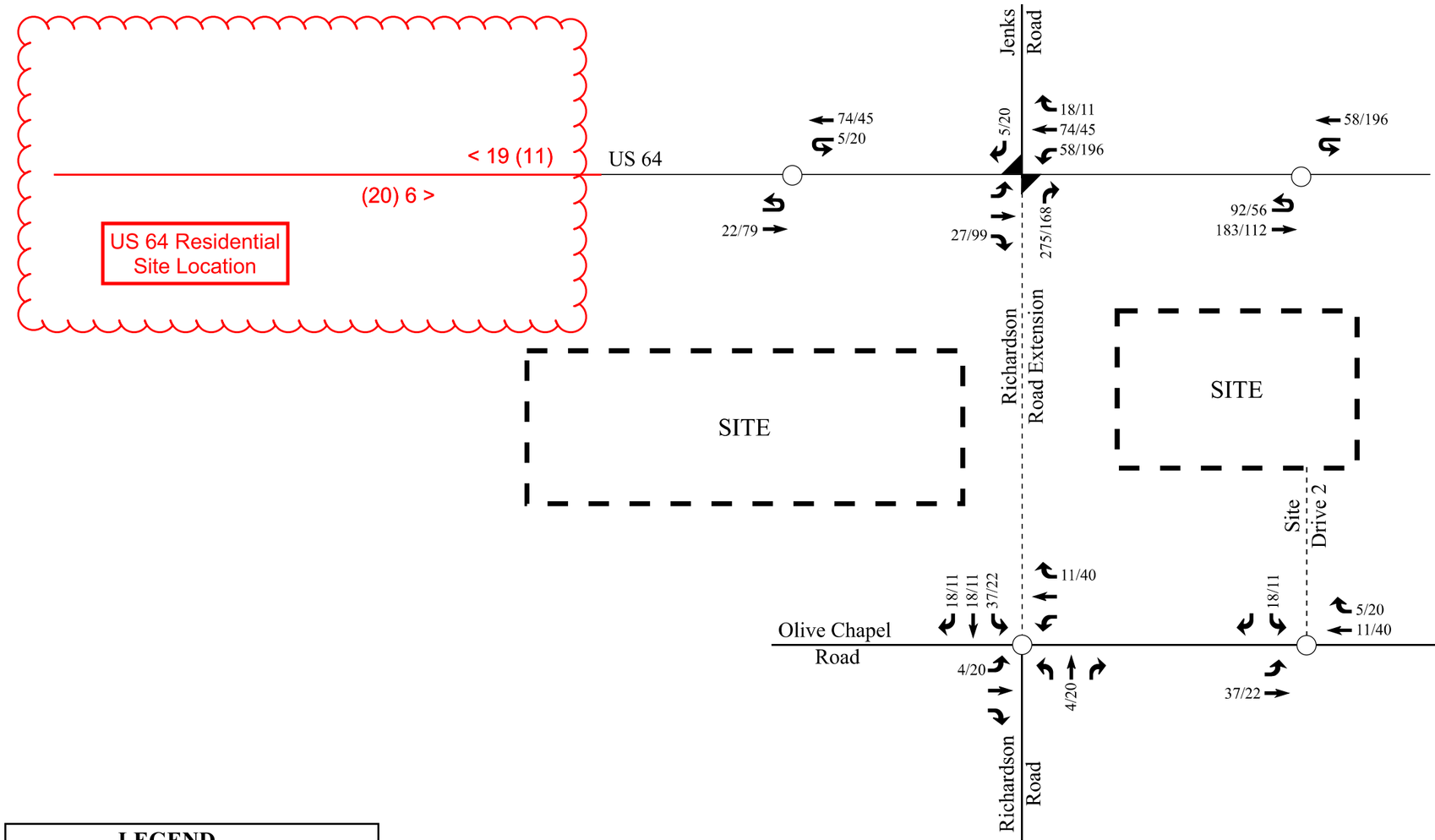
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Smith Farm Assemblage
Apex, NC

Residential Site
Trip Distribution

Scale: Not to Scale | Figure 9

25% of residential site trips to be included in US 64 Residential TIA



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Left-Over Intersection
- X / Y → AM / PM Peak Hour Site Trips
- Proposed Roadway

RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Smith Farm Assemblage
Apex, NC

Total Site Trips - Residential Phase

Scale: Not to Scale | Figure 11

Traffic Analysis Report

Deer Creek PUD

Apex, NC

Prepared for **Withers & Ravenel**
c/o Ed Tang, PE
115 MacKenan Drive
Cary, NC 27511

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

August 8, 2014

Planning | Transportation | Land Development | Environmental

Table 5: Phase 1 Trip Generation Rates (Vehicle Trips)

AM Peak Hour Total Trips						
ITE Land Use Code	Use	Units	ITE MANUAL RATES*			
			ADT	AM Enter	AM Exit	AM Total
210	Single-Family Detached Housing	175 du	1,757	33	99	132
230	Townhome	127 du	792	11	52	63
		Total Trips	*2,549*	*44*	*151*	*195*

PM Peak Hour Total Trips						
ITE Land Use Code	Use	Units	ITE MANUAL RATES*			
			ADT	PM Enter	PM Exit	PM Total
210	Single-Family Detached Housing	175 du	1,757	110	64	174
230	Townhome	127 du	792	49	24	73
		Total Trips	*2,549*	*159*	*88*	*247*

* ITE Trip Generation, 9th Edition

Phase 1 Traffic Distribution and Assignment

The generated site trips were distributed in accordance with the existing traffic patterns and land uses in the vicinity of the study area as follows:

- US 64 to the west – 5%
- US 64 to the east – 70%
- NC 751 to the north – 10%
- New Hill Olive Chapel Road to the south – 10%
- Jenks Road to the east – 5%

The site trip percentages are depicted in Figure 6, with the resulting site trips shown in Figure 7.

Table 5: Phase 1 Trip Generation Rates (Vehicle Trips)

AM Peak Hour Total Trips						
ITE Land Use Code	Use	Units	ITE MANUAL RATES*			
			ADT	AM Enter	AM Exit	AM Total
210	Single-Family Detached Housing	175 du	1,757	33	99	132
230	Townhome	127 du	792	11	52	63
		Total Trips	*2,549*	*44*	*151*	*195*

PM Peak Hour Total Trips						
ITE Land Use Code	Use	Units	ITE MANUAL RATES*			
			ADT	PM Enter	PM Exit	PM Total
210	Single-Family Detached Housing	175 du	1,757	110	64	174
230	Townhome	127 du	792	49	24	73
		Total Trips	*2,549*	*159*	*88*	*247*

* ITE Trip Generation, 9th Edition

Phase 1 Traffic Distribution and Assignment

The generated site trips were distributed in accordance with the existing traffic patterns and land uses in the vicinity of the study area as follows:

- US 64 to the west – 5%
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- NC 751 to the north – 10%
- New Hill Olive Chapel Road to the south – 10%
- Jenks Road to the east – 5%

The site trip percentages are depicted in Figure 6, with the resulting site trips shown in Figure 7.

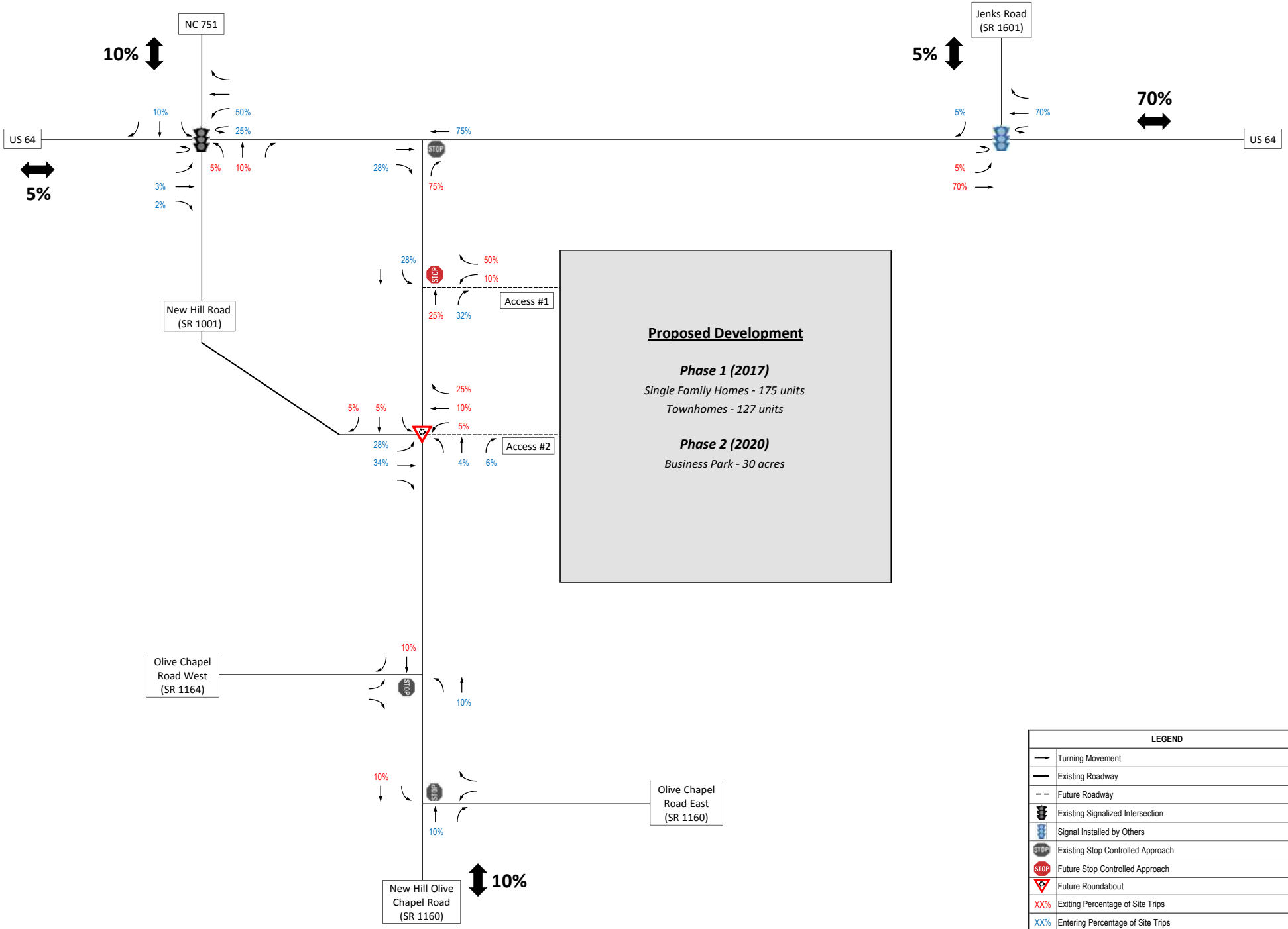

Figure 6
Phase 1 AM and PM Peak Hour Directional Distribution Percentages

Deer Creek PUD
Apex, NC

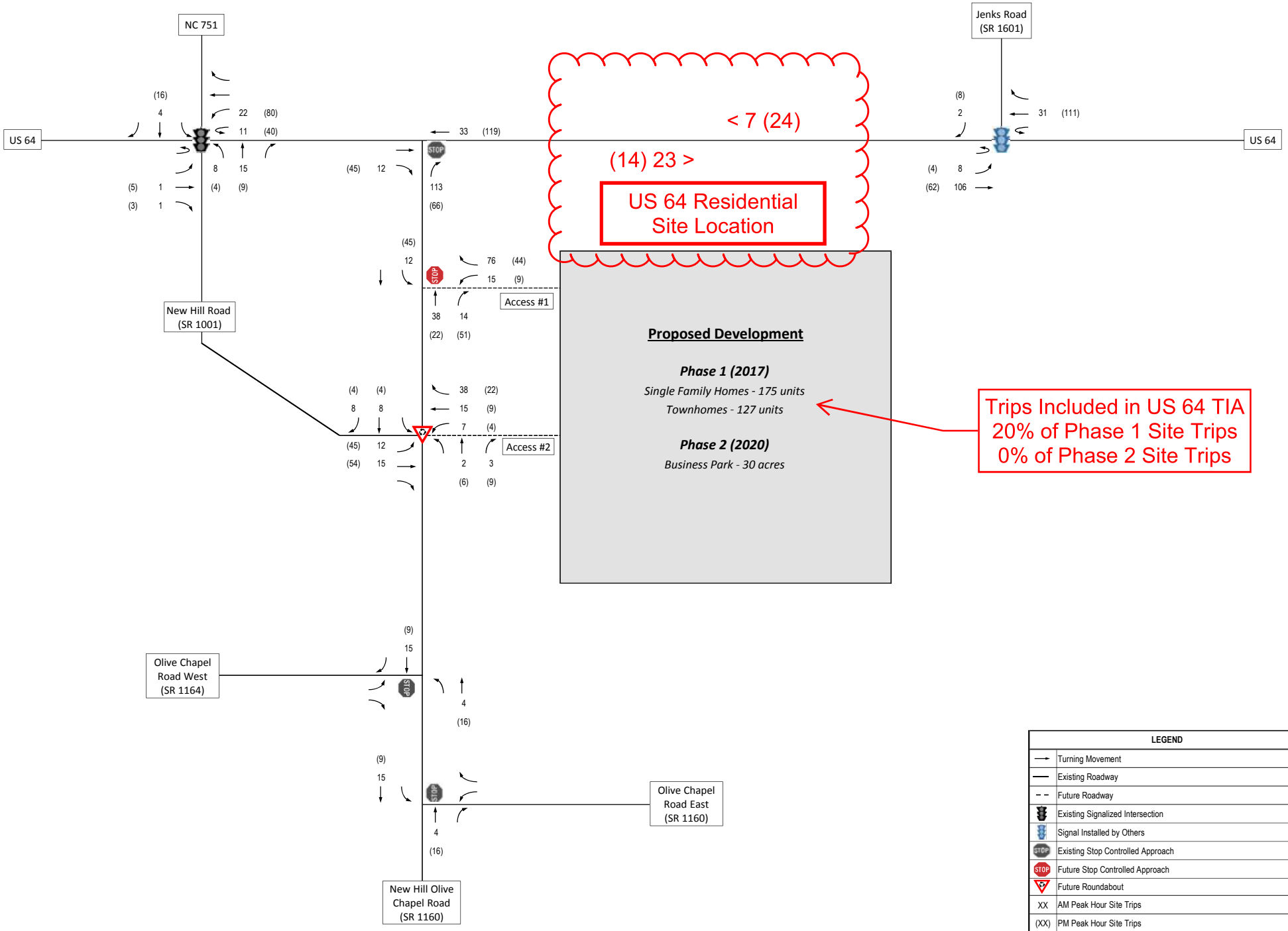

Figure 7
Phase 1 AM and PM Peak Hour Site Trips

Deer Creek PUD
Apex, NC

Appendix D:
Trip Generation

Kimley»Horn

4/23/2021

US 64 Residential

Table 1 - Trip Generation (ITE 10th Edition)

Land Use	Intensity	Daily	AM Peak Hour			PM Peak Hour		
		Total	Total	In	Out	Total	In	Out
221 Multifamily Housing (Mid-Rise)	400 d.u.	2,178	133	35	98	168	102	66

Appendix E:
Intersection Spreadsheets

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Pinefield Road**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	35	98	102	66
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.092727	**Buildout Year:**	2024

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Pinefield Road **Southbound** Left	Through	Right
2020 Traffic Count	0	0	977	0	0	853	0	0	0	0	1	0	0
25% COVID-19 Factoring	0	0	244	0	0	213	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1221	0	0	1066	0	0	0	0	1	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	113	0	0	99	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2024 Background Traffic	0	0	1409	0	0	1224	0	0	0	0	1	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	7	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	20	0	0	0	0	0	0	0
Total Project Traffic	0	0	7	0	0	20	0	0	0	0	0	0	0
2024 Buildout Total	0	0	1416	0	0	1244	0	0	0	0	1	0	0
Percent Impact (Approach)			0.5%			1.6%			-			0.0%	

Overall Percent Impact 1.0%

PM PEAK HOUR
PM PHF = 0.94

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Pinefield Road **Southbound** Left	Through	Right
2020 Traffic Count	2	2	1047	0	2	1240	1	0	0	0	2	0	2
25% COVID-19 Factoring	1	1	262	0	1	310	0	0	0	0	1	0	1
2021 Existing Traffic	3	3	1309	0	3	1550	1	0	0	0	3	0	3
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	121	0	0	144	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2024 Background Traffic	3	3	1520	0	3	1791	1	0	0	0	3	0	3
Superstreet Diversion	0	0	0	0	7	0	0	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	20	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	13	0	0	0	0	0	0	0
Total Project Traffic	0	0	20	0	0	13	0	0	0	0	0	0	0
2024 Buildout Total	3	3	1540	0	10	1804	1	0	0	0	3	0	3
Percent Impact (Approach)			1.3%			0.7%			-			0.0%	

Overall Percent Impact 1.0%

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Flying Hawk Road/Site Access Road**
E/W Street:	**US 64**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	35	98	102	66
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.092727	**Buildout Year:**	2024

AM PEAK HOUR
AM PHF = 0.93

	US 64 Eastbound				US 64 Westbound				Site Access Road Northbound			Flying Hawk Road Southbound		
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	1	1	977	0	1	0	849	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	244	0	0	0	212	0	0	0	0	0	0	0
2021 Existing Traffic	1	1	1221	0	1	0	1061	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	113	0	0	0	98	0	0	0	0	0	0	0
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	0	59	0	0	0	0	0	0	0
2024 Background Traffic	1	1	1409	0	1	0	1218	1	0	0	0	0	0	0
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	5%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	2	0	28	0	0	0	0	0	0	0	0
Percent Assignment Outbound	15%	0%	25%	0%	0%	0%	5%	0%	0%	0%	60%	0%	0%	0%
Outbound Project Traffic	15	0	25	0	0	0	5	0	0	0	59	0	0	0
Total Project Traffic	15	0	25	2	0	28	5	0	0	0	59	0	0	0
2024 Buildout Total	16	1	1434	2	1	28	1223	1	0	0	59	0	0	0
Percent Impact (Approach)			2.9%				2.6%			100.0%			-	
Overall Percent Impact	4.8%													

PM PEAK HOUR
PM PHF = 0.95

	US 64 Eastbound				US 64 Westbound				Site Access Road Northbound			Flying Hawk Road Southbound		
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	3	1045	0	3	0	1257	3	0	0	0	5	0	3
25% COVID-19 Factoring	0	1	261	0	1	0	314	1	0	0	0	1	0	1
2021 Existing Traffic	0	4	1306	0	4	0	1571	4	0	0	0	6	0	4
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	121	0	0	0	146	0	0	0	0	1	0	0
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	0	97	0	0	0	0	0	0	0
2024 Background Traffic	0	4	1517	0	4	0	1814	4	0	0	0	7	0	4
Superstreet Diversion	0	0	7	0	0	0	0	0	0	0	0	-7	0	7
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	5%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	5	0	82	0	0	0	0	0	0	0	0
Percent Assignment Outbound	15%	0%	25%	0%	0%	0%	5%	0%	0%	0%	60%	0%	0%	0%
Outbound Project Traffic	10	0	17	0	0	0	3	0	0	0	40	0	0	0
Total Project Traffic	10	0	17	5	0	82	3	0	0	0	40	0	0	0
2024 Buildout Total	10	4	1541	5	4	82	1817	4	0	0	40	0	0	11
Percent Impact (Approach)			2.1%				4.5%			100.0%			0.0%	
Overall Percent Impact	4.5%													

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**January 26, 2021**
N/S Street:	**Goodwin Road**
E/W Street:	**US 64**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	35	98	102	66
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.092727	**Buildout Year:**	2024

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Goodwin Road **Southbound** Left	Through	Right
2021 Traffic Count	0	0	980	0	7	803	1	0	0	0	1	0	1
25% COVID-19 Factoring	0	0	245	0	2	201	0	0	0	0	0	0	0
Volume Balancing	0	0	0	0	0	61	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1225	0	9	1065	1	0	0	0	1	0	1
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	114	0	1	99	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2024 Background Traffic	0	0	1414	0	10	1223	1	0	0	0	1	0	1
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	28	0	0	0	0	0	0	0
Percent Assignment Outbound	5%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	5	0	78	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	5	0	78	0	0	28	0	0	0	0	0	0	0
2024 Buildout Total	5	0	1492	0	10	1251	1	0	0	0	1	0	1
Percent Impact (Approach)			5.5%			2.2%			-			0.0%	
Overall Percent Impact	4.0%												

PM PEAK HOUR
PM PHF = 0.98

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Goodwin Road **Southbound** Left	Through	Right
2021 Traffic Count	1	0	919	0	6	1098	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	230	0	2	275	0	0	0	0	0	0	0
Volume Balancing	0	0	159	0	0	198	0	0	0	0	0	0	0
2021 Existing Traffic	1	0	1308	0	8	1571	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	121	0	1	146	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2024 Background Traffic	1	0	1519	0	9	1814	1	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	82	0	0	0	0	0	0	0
Percent Assignment Outbound	5%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	3	0	53	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	3	0	53	0	0	82	0	0	0	0	0	0	0
2024 Buildout Total	4	0	1572	0	9	1896	1	0	0	0	0	0	0
Percent Impact (Approach)			3.6%			4.3%			-			-	
Overall Percent Impact	4.0%												

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**Balanced with Flying Hawk Road (Int. #2)**
N/S Street:	**RI/RO Site Driveway**
E/W Street:	**US 64**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	35	98	102	66
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.092727	**Buildout Year:**	2024

AM PEAK HOUR
AM PHF =

Description	US 64 **Eastbound** Left	Through	Right	US 64 **Westbound** Left	Through	Right	RI/RO Site Driveway **Northbound** Left	Through	Right	**Southbound** Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	1223	0	0	1062	0	0	0	0	0	0	0
2021 Existing Traffic	0	1223	0	0	1062	0	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	113	0	0	98	0	0	0	0	0	0	0
Committed Projects												
Sweetwater (15% res. + 100% comm.)	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	75	0	0	59	0	0	0	0	0	0	0
2024 Background Traffic	0	1411	0	0	1219	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	5%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	2	5	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	20%	0%	0%	0%	40%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	20	0	0	0	39	0	0	0
Total Project Traffic	0	2	5	0	20	0	0	0	39	0	0	0
2024 Buildout Total	0	1413	5	0	1239	0	0	0	39	0	0	0
Percent Impact (Approach)		0.5%			1.6%			100.0%			-	

Overall Percent Impact 2.4%

PM PEAK HOUR
PM PHF =

Description	US 64 **Eastbound** Left	Through	Right	US 64 **Westbound** Left	Through	Right	RI/RO Site Driveway **Northbound** Left	Through	Right	**Southbound** Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	1310	0	0	1575	0	0	0	0	0	0	0
2021 Existing Traffic	0	1310	0	0	1575	0	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	121	0	0	146	0	0	0	0	0	0	0
Committed Projects												
Sweetwater (15% res. + 100% comm.)	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	90	0	0	97	0	0	0	0	0	0	0
2024 Background Traffic	0	1521	0	0	1818	0	0	0	0	0	0	0
Superstreet Diversion	0	7	0	0	7	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	5%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	5	15	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	20%	0%	0%	0%	40%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	13	0	0	0	26	0	0	0
Total Project Traffic	0	5	15	0	13	0	0	0	26	0	0	0
2024 Buildout Total	0	1533	15	0	1838	0	0	0	26	0	0	0
Percent Impact (Approach)		1.3%			0.7%			100.0%			-	

Overall Percent Impact 1.7%

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential**
Location:	**Apex NC**
Scenario:	**No RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Pinefield Road**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	35	98	102	66
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.092727	**Buildout Year:**	2024

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Pinefield Road **Southbound** Left	Through	Right
2020 Traffic Count	0	0	977	0	0	853	0	0	0	0	1	0	0
25% COVID-19 Factoring	0	0	244	0	0	213	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1221	0	0	1066	0	0	0	0	1	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	113	0	0	99	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2024 Background Traffic	0	0	1409	0	0	1224	0	0	0	0	1	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	7	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	20	0	0	0	0	0	0	0
Total Project Traffic	0	0	7	0	0	20	0	0	0	0	0	0	0
2024 Buildout Total	0	0	1416	0	0	1244	0	0	0	0	1	0	0
Percent Impact (Approach)			0.5%			1.6%			-			0.0%	

Overall Percent Impact 1.0%

PM PEAK HOUR
PM PHF = 0.94

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Pinefield Road **Southbound** Left	Through	Right
2020 Traffic Count	2	2	1047	0	2	1240	1	0	0	0	2	0	2
25% COVID-19 Factoring	1	1	262	0	1	310	0	0	0	0	1	0	1
2021 Existing Traffic	3	3	1309	0	3	1550	1	0	0	0	3	0	3
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	121	0	0	144	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2024 Background Traffic	3	3	1520	0	3	1791	1	0	0	0	3	0	3
Superstreet Diversion	0	0	0	0	7	0	0	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	20	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	13	0	0	0	0	0	0	0
Total Project Traffic	0	0	20	0	0	13	0	0	0	0	0	0	0
2024 Buildout Total	3	3	1540	0	10	1804	1	0	0	0	3	0	3
Percent Impact (Approach)			1.3%			0.7%			-			0.0%	

Overall Percent Impact 1.0%

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential**
Location:	**Apex NC**
Scenario:	**No RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Flying Hawk Road/Site Access Road**
E/W Street:	**US 64**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	35	98	102	66
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.092727	**Buildout Year:**	2024

AM PEAK HOUR
AM PHF = 0.93

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Left	Through	Right	Site Access Road **Northbound** Left	Through	Right	Flying Hawk Road **Southbound** Left	Through	Right
2020 Traffic Count	1	1	977	0	1	0	849	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	244	0	0	0	212	0	0	0	0	0	0	0
2021 Existing Traffic	1	1	1221	0	1	0	1061	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	113	0	0	0	98	0	0	0	0	0	0	0
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	0	59	0	0	0	0	0	0	0
2024 Background Traffic	1	1	1409	0	1	0	1218	1	0	0	0	0	0	0
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	7	0	28	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	100%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	20	0	0	0	98	0	0	0
Total Project Traffic	0	0	0	7	0	28	20	0	0	0	98	0	0	0
2024 Buildout Total	1	1	1409	7	1	28	1238	1	0	0	98	0	0	0
Percent Impact (Approach)			0.5%				3.8%			100.0%			-	
Overall Percent Impact	5.5%													

PM PEAK HOUR
PM PHF = 0.95

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Left	Through	Right	Site Access Road **Northbound** Left	Through	Right	Flying Hawk Road **Southbound** Left	Through	Right
2020 Traffic Count	0	3	1045	0	3	0	1257	3	0	0	0	5	0	3
25% COVID-19 Factoring	0	1	261	0	1	0	314	1	0	0	0	1	0	1
2021 Existing Traffic	0	4	1306	0	4	0	1571	4	0	0	0	6	0	4
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	121	0	0	0	146	0	0	0	0	1	0	0
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	0	97	0	0	0	0	0	0	0
2024 Background Traffic	0	4	1517	0	4	0	1814	4	0	0	0	7	0	4
Superstreet Diversion	0	0	7	0	0	0	0	0	0	0	0	-7	0	7
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	20	0	82	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	100%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	13	0	0	0	66	0	0	0
Total Project Traffic	0	0	0	20	0	82	13	0	0	0	66	0	0	0
2024 Buildout Total	0	4	1524	20	4	82	1827	4	0	0	66	0	0	11
Percent Impact (Approach)			1.3%				5.0%			100.0%			0.0%	
Overall Percent Impact	5.1%													

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential**
Location:	**Apex NC**
Scenario:	**No RI/RO Site Driveway**
Ct. Date	**January 26, 2021**
N/S Street:	**Goodwin Road**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	35	98	102	66
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.092727	**Buildout Year:**	2024

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Goodwin Road **Southbound** Left	Through	Right
2021 Traffic Count	0	0	980	0	7	803	1	0	0	0	1	0	1
25% COVID-19 Factoring	0	0	245	0	2	201	0	0	0	0	0	0	0
Volume Balancing	0	0	0	0	0	61	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1225	0	9	1065	1	0	0	0	1	0	1
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	114	0	1	99	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2024 Background Traffic	0	0	1414	0	10	1223	1	0	0	0	1	0	1
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	28	0	0	0	0	0	0	0
Percent Assignment Outbound	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	20	0	78	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	20	0	78	0	0	28	0	0	0	0	0	0	0
2024 Buildout Total	20	0	1492	0	10	1251	1	0	0	0	1	0	1
Percent Impact (Approach)			6.5%			2.2%			-			0.0%	
Overall Percent Impact	4.5%												

PM PEAK HOUR
PM PHF = 0.98

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Goodwin Road **Southbound** Left	Through	Right
2021 Traffic Count	1	0	919	0	6	1098	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	230	0	2	275	0	0	0	0	0	0	0
Volume Balancing	0	0	159	0	0	198	0	0	0	0	0	0	0
2021 Existing Traffic	1	0	1308	0	8	1571	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
2024 Background Growth	0	0	121	0	1	146	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2024 Background Traffic	1	0	1519	0	9	1814	1	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	82	0	0	0	0	0	0	0
Percent Assignment Outbound	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	13	0	53	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	13	0	53	0	0	82	0	0	0	0	0	0	0
2024 Buildout Total	14	0	1572	0	9	1896	1	0	0	0	0	0	0
Percent Impact (Approach)			4.2%			4.3%			-			-	
Overall Percent Impact	4.2%												

Appendix F:
Synchro Output:
Existing (2021)

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1221	4	1066	4	4	4
Future Volume (vph)	4	1221	4	1066	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		350		50	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		200			25	
Satd. Flow (prot)	1687	3374	1656	3312	1482	1694	0
Flt Permitted	0.950		0.950			0.976	
Satd. Flow (perm)	1687	3374	1656	3312	1482	1694	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		1522		1461		593	
Travel Time (s)		18.9		18.1		16.2	
Confl. Bikes (#/hr)					1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1285	4	1122	4	8	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1221	4	1066	4	4	4
Future Vol, veh/h	4	1221	4	1066	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	350	-	50	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	7	7	9	9	9	2	2
Mvmt Flow	4	1285	4	1122	4	4	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1126	0	1285	-	0	1781	561
Stage 1	-	-	-	-	-	1130	-
Stage 2	-	-	-	-	-	651	-
Critical Hdwy	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	588	-	203	-	-	73	471
Stage 1	-	-	-	-	-	270	-
Stage 2	-	-	-	-	-	481	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	588	-	203	-	-	71	471
Mov Cap-2 Maneuver	-	-	-	-	-	71	-
Stage 1	-	-	-	-	-	268	-
Stage 2	-	-	-	-	-	471	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	36.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	588	-	203	-	-	123
HCM Lane V/C Ratio	0.007	-	0.021	-	-	0.068
HCM Control Delay (s)	11.2	-	23.1	-	-	36.4
HCM Lane LOS	B	-	C	-	-	E
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.2

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1221	4	1061	4	4	4
Future Volume (vph)	4	4	1221	4	1061	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		300		65	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1727	3374	1641	3282	1468	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1641	3282	1468	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1461		2160		406	
Travel Time (s)			18.1		26.8		11.1	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	7%	10%	10%	10%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1313	4	1141	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1221	4	1061	4	4	4
Future Vol, veh/h	4	4	1221	4	1061	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	300	-	65	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	7	7	10	10	10	2	2
Mvmt Flow	4	4	1313	4	1141	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1141	1145	0	1313	-	0	1822	571
Stage 1	-	-	-	-	-	-	1149	-
Stage 2	-	-	-	-	-	-	673	-
Critical Hdwy	6.44	4.24	-	6.6	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.6	-	-	3.52	3.32
Pot Cap-1 Maneuver	269	578	-	193	-	-	69	464
Stage 1	-	-	-	-	-	-	264	-
Stage 2	-	-	-	-	-	-	468	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	365	365	-	193	-	-	66	464
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	-
Stage 1	-	-	-	-	-	-	257	-
Stage 2	-	-	-	-	-	-	458	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	38.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	365	-	193	-	-	116
HCM Lane V/C Ratio	0.024	-	0.022	-	-	0.074
HCM Control Delay (s)	15.1	-	24.1	-	-	38.5
HCM Lane LOS	C	-	C	-	-	E
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.2

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1225	9	1065	4	4	4
Future Volume (vph)	4	1225	9	1065	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		325		60	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		225			25	
Satd. Flow (prot)	1687	3374	1687	3374	1509	1694	0
Flt Permitted	0.950		0.950			0.976	
Satd. Flow (perm)	1687	3374	1687	3374	1509	1694	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		2160		1240		530	
Travel Time (s)		26.8		15.4		14.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1289	9	1121	4	8	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1225	9	1065	4	4	4
Future Vol, veh/h	4	1225	9	1065	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	325	-	60	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	7	7	7	7	7	2	2
Mvmt Flow	4	1289	9	1121	4	4	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1125	0	1289	-	0	1792	561
Stage 1	-	-	-	-	-	1139	-
Stage 2	-	-	-	-	-	653	-
Critical Hdwy	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	589	-	206	-	-	72	471
Stage 1	-	-	-	-	-	267	-
Stage 2	-	-	-	-	-	480	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	589	-	206	-	-	68	471
Mov Cap-2 Maneuver	-	-	-	-	-	68	-
Stage 1	-	-	-	-	-	265	-
Stage 2	-	-	-	-	-	459	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.2	37.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	589	-	206	-	-	119
HCM Lane V/C Ratio	0.007	-	0.046	-	-	0.071
HCM Control Delay (s)	11.2	-	23.3	-	-	37.5
HCM Lane LOS	B	-	C	-	-	E
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.2

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1309	4	1550	4	4	4
Future Volume (vph)	4	4	1309	4	1550	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1752	3471	1752	3505	1568	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1752	3471	1752	3505	1568	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		1461		593	
Travel Time (s)			18.9		18.1		16.2	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1393	4	1649	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1309	4	1550	4	4	4
Future Vol, veh/h	4	4	1309	4	1550	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	4	4	3	3	3	2	2
Mvmt Flow	4	4	1393	4	1649	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1649	1653	0	1393	-	0	2370	825
Stage 1	-	-	-	-	-	-	1657	-
Stage 2	-	-	-	-	-	-	713	-
Critical Hdwy	6.44	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	126	377	-	183	-	-	29	316
Stage 1	-	-	-	-	-	-	141	-
Stage 2	-	-	-	-	-	-	447	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	187	187	-	183	-	-	27	316
Mov Cap-2 Maneuver	-	-	-	-	-	-	27	-
Stage 1	-	-	-	-	-	-	134	-
Stage 2	-	-	-	-	-	-	437	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.1	91.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	187	-	183	-	-	50
HCM Lane V/C Ratio	0.046	-	0.023	-	-	0.17
HCM Control Delay (s)	25.2	-	25.1	-	-	91.2
HCM Lane LOS	D	-	D	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.6

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1306	4	1571	4	6	4
Future Volume (vph)	4	1306	4	1571	4	6	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		300		65	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		225			25	
Satd. Flow (prot)	1736	3471	1752	3505	1568	1711	0
Flt Permitted	0.950		0.950			0.971	
Satd. Flow (perm)	1736	3471	1752	3505	1568	1711	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		1461		2160		406	
Travel Time (s)		18.1		26.8		11.1	
Confl. Bikes (#/hr)					1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1375	4	1654	4	10	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1306	4	1571	4	6	4
Future Vol, veh/h	4	1306	4	1571	4	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	300	-	65	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	3	3	3	2	2
Mvmt Flow	4	1375	4	1654	4	6	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1658	0	1375	-	0	2358	827
Stage 1	-	-	-	-	-	1662	-
Stage 2	-	-	-	-	-	696	-
Critical Hdwy	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	376	-	188	-	-	30	315
Stage 1	-	-	-	-	-	140	-
Stage 2	-	-	-	-	-	456	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	376	-	188	-	-	29	315
Mov Cap-2 Maneuver	-	-	-	-	-	29	-
Stage 1	-	-	-	-	-	138	-
Stage 2	-	-	-	-	-	446	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	105.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	376	-	188	-	-	46
HCM Lane V/C Ratio	0.011	-	0.022	-	-	0.229
HCM Control Delay (s)	14.7	-	24.6	-	-	105.1
HCM Lane LOS	B	-	C	-	-	F
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.8

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1308	8	1571	4	4	4
Future Volume (vph)	4	4	1308	8	1571	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1752	3471	1736	3471	1553	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1752	3471	1736	3471	1553	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	4%	4%	4%	4%	4%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1335	8	1603	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1308	8	1571	4	4	4
Future Vol, veh/h	4	4	1308	8	1571	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	4	4	4	4	4	2	2
Mvmt Flow	4	4	1335	8	1603	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1603	1607	0	1335	-	0	2303	802
Stage 1	-	-	-	-	-	-	1619	-
Stage 2	-	-	-	-	-	-	684	-
Critical Hdwy	6.44	4.18	-	6.48	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.24	-	2.54	-	-	3.52	3.32
Pot Cap-1 Maneuver	135	393	-	198	-	-	32	327
Stage 1	-	-	-	-	-	-	147	-
Stage 2	-	-	-	-	-	-	462	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	199	199	-	198	-	-	30	327
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	-
Stage 1	-	-	-	-	-	-	141	-
Stage 2	-	-	-	-	-	-	444	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	81.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	199	-	198	-	-	55
HCM Lane V/C Ratio	0.041	-	0.041	-	-	0.148
HCM Control Delay (s)	23.9	-	24	-	-	81.5
HCM Lane LOS	C	-	C	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.5

Appendix G:
Synchro Output:
Background (2024)

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1409	4	1224	4	4	4
Future Volume (vph)	4	1409	4	1224	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		350		50	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		200			25	
Satd. Flow (prot)	1687	3374	1656	3312	1482	1694	0
Flt Permitted	0.950		0.950			0.976	
Satd. Flow (perm)	1687	3374	1656	3312	1482	1694	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		1522		1461		593	
Travel Time (s)		18.9		18.1		16.2	
Confl. Bikes (#/hr)					1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1483	4	1288	4	8	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1409	4	1224	4	4	4
Future Vol, veh/h	4	1409	4	1224	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	350	-	50	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	7	7	9	9	9	2	2
Mvmt Flow	4	1483	4	1288	4	4	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1292	0	1483	-	0	2046	644
Stage 1	-	-	-	-	-	1296	-
Stage 2	-	-	-	-	-	750	-
Critical Hdwy	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	506	-	150	-	-	49	416
Stage 1	-	-	-	-	-	220	-
Stage 2	-	-	-	-	-	427	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	506	-	150	-	-	47	416
Mov Cap-2 Maneuver	-	-	-	-	-	47	-
Stage 1	-	-	-	-	-	218	-
Stage 2	-	-	-	-	-	415	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	52.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	506	-	150	-	-	84
HCM Lane V/C Ratio	0.008	-	0.028	-	-	0.1
HCM Control Delay (s)	12.2	-	29.7	-	-	52.6
HCM Lane LOS	B	-	D	-	-	F
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.3

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1409	4	1218	4	4	4
Future Volume (vph)	4	4	1409	4	1218	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		300		65	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1727	3374	1641	3282	1468	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1641	3282	1468	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1461		2160		406	
Travel Time (s)			18.1		26.8		11.1	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	7%	10%	10%	10%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1515	4	1310	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1409	4	1218	4	4	4
Future Vol, veh/h	4	4	1409	4	1218	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	300	-	65	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	7	7	10	10	10	2	2
Mvmt Flow	4	4	1515	4	1310	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1310	1314	0	1515	-	0	2092	655
Stage 1	-	-	-	-	-	-	1318	-
Stage 2	-	-	-	-	-	-	774	-
Critical Hdwy	6.44	4.24	-	6.6	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.6	-	-	3.52	3.32
Pot Cap-1 Maneuver	209	496	-	142	-	-	45	409
Stage 1	-	-	-	-	-	-	214	-
Stage 2	-	-	-	-	-	-	415	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	292	292	-	142	-	-	42	409
Mov Cap-2 Maneuver	-	-	-	-	-	-	42	-
Stage 1	-	-	-	-	-	-	207	-
Stage 2	-	-	-	-	-	-	403	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	58.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	292	-	142	-	-	76
HCM Lane V/C Ratio	0.029	-	0.03	-	-	0.113
HCM Control Delay (s)	17.7	-	31.1	-	-	58.3
HCM Lane LOS	C	-	D	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.4

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1414	10	1223	4	4	4
Future Volume (vph)	4	1414	10	1223	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		325		60	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		225			25	
Satd. Flow (prot)	1687	3374	1687	3374	1509	1694	0
Flt Permitted	0.950		0.950			0.976	
Satd. Flow (perm)	1687	3374	1687	3374	1509	1694	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		2160		1240		530	
Travel Time (s)		26.8		15.4		14.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1488	11	1287	4	8	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1414	10	1223	4	4	4
Future Vol, veh/h	4	1414	10	1223	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	325	-	60	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	7	7	7	7	7	2	2
Mvmt Flow	4	1488	11	1287	4	4	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1291	0	1488	-	0	2061	644
Stage 1	-	-	-	-	-	1309	-
Stage 2	-	-	-	-	-	752	-
Critical Hdwy	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	507	-	152	-	-	47	416
Stage 1	-	-	-	-	-	217	-
Stage 2	-	-	-	-	-	426	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	507	-	152	-	-	43	416
Mov Cap-2 Maneuver	-	-	-	-	-	43	-
Stage 1	-	-	-	-	-	215	-
Stage 2	-	-	-	-	-	395	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.2	56.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	507	-	152	-	-	78
HCM Lane V/C Ratio	0.008	-	0.069	-	-	0.108
HCM Control Delay (s)	12.2	-	30.4	-	-	56.7
HCM Lane LOS	B	-	D	-	-	F
HCM 95th %tile Q(veh)	0	-	0.2	-	-	0.3

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1520	4	1791	4	4	4
Future Volume (vph)	4	4	1520	4	1791	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1752	3471	1752	3505	1568	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1752	3471	1752	3505	1568	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		1461		593	
Travel Time (s)			18.9		18.1		16.2	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1617	4	1905	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1520	4	1791	4	4	4
Future Vol, veh/h	4	4	1520	4	1791	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	4	4	3	3	3	2	2
Mvmt Flow	4	4	1617	4	1905	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1905	1909	0	1617	-	0	2738	953
Stage 1	-	-	-	-	-	-	1913	-
Stage 2	-	-	-	-	-	-	825	-
Critical Hdwy	6.44	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	86	299	-	131	-	-	16	260
Stage 1	-	-	-	-	-	-	102	-
Stage 2	-	-	-	-	-	-	391	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	132	132	-	131	-	-	14	260
Mov Cap-2 Maneuver	-	-	-	-	-	-	14	-
Stage 1	-	-	-	-	-	-	95	-
Stage 2	-	-	-	-	-	-	379	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.1	190.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	132	-	131	-	-	27
HCM Lane V/C Ratio	0.064	-	0.032	-	-	0.315
HCM Control Delay (s)	34.1	-	33.4	-	-	190.8
HCM Lane LOS	D	-	D	-	-	F
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-	1

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1517	4	1814	4	7	4
Future Volume (vph)	4	1517	4	1814	4	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		300		65	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		225			25	
Satd. Flow (prot)	1736	3471	1752	3505	1568	1717	0
Flt Permitted	0.950		0.950			0.969	
Satd. Flow (perm)	1736	3471	1752	3505	1568	1717	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		1461		2160		406	
Travel Time (s)		18.1		26.8		11.1	
Confl. Bikes (#/hr)					1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1597	4	1909	4	11	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1517	4	1814	4	7	4
Future Vol, veh/h	4	1517	4	1814	4	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	300	-	65	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	3	3	3	2	2
Mvmt Flow	4	1597	4	1909	4	7	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1913	0	1597	-	0	2724	955
Stage 1	-	-	-	-	-	1917	-
Stage 2	-	-	-	-	-	807	-
Critical Hdwy	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	298	-	135	-	-	17	259
Stage 1	-	-	-	-	-	101	-
Stage 2	-	-	-	-	-	399	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	298	-	135	-	-	16	259
Mov Cap-2 Maneuver	-	-	-	-	-	16	-
Stage 1	-	-	-	-	-	100	-
Stage 2	-	-	-	-	-	387	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	253.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	298	-	135	-	-	24
HCM Lane V/C Ratio	0.014	-	0.031	-	-	0.482
HCM Control Delay (s)	17.3	-	32.5	-	-	253.3
HCM Lane LOS	C	-	D	-	-	F
HCM 95th %tile Q(veh)	0	-	0.1	-	-	1.4

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1519	9	1814	4	4	4
Future Volume (vph)	4	4	1519	9	1814	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1752	3471	1736	3471	1553	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1752	3471	1736	3471	1553	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	4%	4%	4%	4%	4%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1550	9	1851	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1519	9	1814	4	4	4
Future Vol, veh/h	4	4	1519	9	1814	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	4	4	4	4	4	2	2
Mvmt Flow	4	4	1550	9	1851	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1851	1855	0	1550	-	0	2660	926
Stage 1	-	-	-	-	-	-	1869	-
Stage 2	-	-	-	-	-	-	791	-
Critical Hdwy	6.44	4.18	-	6.48	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.24	-	2.54	-	-	3.52	3.32
Pot Cap-1 Maneuver	93	314	-	143	-	-	18	271
Stage 1	-	-	-	-	-	-	107	-
Stage 2	-	-	-	-	-	-	407	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	142	142	-	143	-	-	16	271
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	-
Stage 1	-	-	-	-	-	-	101	-
Stage 2	-	-	-	-	-	-	381	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.2	165
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	142	-	143	-	-	30
HCM Lane V/C Ratio	0.057	-	0.064	-	-	0.272
HCM Control Delay (s)	31.8	-	31.9	-	-	165
HCM Lane LOS	D	-	D	-	-	F
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	0.9

Appendix H:
Synchro Output:
Build-out (2024)

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1416	4	1244	4	4	4
Future Volume (vph)	4	1416	4	1244	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		350		50	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		200			25	
Satd. Flow (prot)	1687	3374	1656	3312	1482	1694	0
Flt Permitted	0.950		0.950			0.976	
Satd. Flow (perm)	1687	3374	1656	3312	1482	1694	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		1522		848		593	
Travel Time (s)		18.9		10.5		16.2	
Confl. Bikes (#/hr)					1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1491	4	1309	4	8	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1416	4	1244	4	4	4
Future Vol, veh/h	4	1416	4	1244	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	350	-	50	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	7	7	9	9	9	2	2
Mvmt Flow	4	1491	4	1309	4	4	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1313	0	1491	-	0	2071	655
Stage 1	-	-	-	-	-	1317	-
Stage 2	-	-	-	-	-	754	-
Critical Hdwy	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	497	-	149	-	-	47	409
Stage 1	-	-	-	-	-	215	-
Stage 2	-	-	-	-	-	425	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	497	-	149	-	-	45	409
Mov Cap-2 Maneuver	-	-	-	-	-	45	-
Stage 1	-	-	-	-	-	213	-
Stage 2	-	-	-	-	-	414	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	54.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	497	-	149	-	-	81
HCM Lane V/C Ratio	0.008	-	0.028	-	-	0.104
HCM Control Delay (s)	12.3	-	29.9	-	-	54.5
HCM Lane LOS	B	-	D	-	-	F
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.3

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	16	4	1434	4	4	28	1223	4	0	0	59	0	0	4
Future Volume (vph)	16	4	1434	4	4	28	1223	4	0	0	59	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		0		300		65	0		0	0		0
Storage Lanes		1		0		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1753	3374	0	0	1754	3282	1468	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1753	3374	0	0	1754	3282	1468	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			612				2160			468			406	
Travel Time (s)			7.6				26.8			12.8			11.1	
Confl. Bikes (#/hr)								1						1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.93	0.90	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	7%	2%	10%	2%	10%	10%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														10%
Lane Group Flow (vph)	0	21	1546	0	0	35	1315	4	0	0	66	0	0	4
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	16	4	1434	4	4	28	1223	4	0	0	59	0	0	4
Future Vol, veh/h	16	4	1434	4	4	28	1223	4	0	0	59	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	-	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	93	90	93	93	90	90	90	93	93	93
Heavy Vehicles, %	2	7	7	2	10	2	10	10	2	2	2	2	2	2
Mvmt Flow	17	4	1542	4	4	31	1315	4	0	0	66	0	0	4

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1315	1319	0	0	1546	1546	0	0	-	-	773	-	-	658
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.24	-	-	6.6	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.27	-	-	2.6	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	208	494	-	-	135	425	-	-	0	0	342	0	0	407
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	233	233	-	-	317	317	-	-	-	-	342	-	-	407
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	18	13.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	342	233	-	-	317	-	-	407
HCM Lane V/C Ratio	0.192	0.092	-	-	0.112	-	-	0.011
HCM Control Delay (s)	18	22	-	-	17.8	-	-	13.9
HCM Lane LOS	C	C	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0.4	-	-	0

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	5	4	1492	10	1251	4	4	4
Future Volume (vph)	5	4	1492	10	1251	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1736	3374	1687	3374	1509	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1736	3374	1687	3374	1509	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	10	1571	11	1317	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	5	4	1492	10	1251	4	4	4
Future Vol, veh/h	5	4	1492	10	1251	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	90	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	7	7	7	2	2
Mvmt Flow	6	4	1571	11	1317	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1317	1321	0	1571	-	0	2145	659
Stage 1	-	-	-	-	-	-	1339	-
Stage 2	-	-	-	-	-	-	806	-
Critical Hdwy	6.44	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	207	493	-	134	-	-	42	406
Stage 1	-	-	-	-	-	-	209	-
Stage 2	-	-	-	-	-	-	400	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	274	274	-	134	-	-	37	406
Mov Cap-2 Maneuver	-	-	-	-	-	-	37	-
Stage 1	-	-	-	-	-	-	201	-
Stage 2	-	-	-	-	-	-	367	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.3	65.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	274	-	134	-	-	68
HCM Lane V/C Ratio	0.036	-	0.079	-	-	0.124
HCM Control Delay (s)	18.6	-	34.1	-	-	65.3
HCM Lane LOS	C	-	D	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	0.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1413	5	0	1239	0	39
Future Volume (vph)	1413	5	0	1239	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	3536	0	0	3539	0	1611
Flt Permitted						
Satd. Flow (perm)	3536	0	0	3539	0	1611
Link Speed (mph)	55			55	25	
Link Distance (ft)	848			612	311	
Travel Time (s)	10.5			7.6	8.5	
Peak Hour Factor	0.93	0.90	0.93	0.93	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1525	0	0	1332	0	43
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1413	5	0	1239	0	39
Future Vol, veh/h	1413	5	0	1239	0	39
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	93	90	93	93	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1519	6	0	1332	0	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	763
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	347
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	347
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	347	-	-	-
HCM Lane V/C Ratio	0.125	-	-	-
HCM Control Delay (s)	16.9	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1540	10	1804	4	4	4
Future Volume (vph)	4	4	1540	10	1804	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1727	3374	1656	3312	1482	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1656	3312	1482	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		848		593	
Travel Time (s)			18.9		10.5		16.2	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1638	11	1919	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.9%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1540	10	1804	4	4	4
Future Vol, veh/h	4	4	1540	10	1804	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	7	7	9	9	9	2	2
Mvmt Flow	4	4	1638	11	1919	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1919	1923	0	1638	-	0	2776	960
Stage 1	-	-	-	-	-	-	1941	-
Stage 2	-	-	-	-	-	-	835	-
Critical Hdwy	6.44	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	84	284	-	119	-	-	15	257
Stage 1	-	-	-	-	-	-	98	-
Stage 2	-	-	-	-	-	-	386	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	128	128	-	119	-	-	13	257
Mov Cap-2 Maneuver	-	-	-	-	-	-	13	-
Stage 1	-	-	-	-	-	-	91	-
Stage 2	-	-	-	-	-	-	350	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.2	210.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	128	-	119	-	-	25
HCM Lane V/C Ratio	0.066	-	0.089	-	-	0.34
HCM Control Delay (s)	35	-	38.2	-	-	210.6
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-	1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	10	4	1541	5	4	82	1817	4	0	0	40	0	0	11
Future Volume (vph)	10	4	1541	5	4	82	1817	4	0	0	40	0	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		0		300		65	0		0	0		0
Storage Lanes		1		0		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1747	3371	0	0	1764	3282	1468	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1747	3371	0	0	1764	3282	1468	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			612				2160			468			406	
Travel Time (s)			7.6				26.8			12.8			11.1	
Confl. Bikes (#/hr)								1						1
Peak Hour Factor	0.95	0.95	0.95	0.90	0.95	0.90	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	2%	10%	2%	10%	10%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	15	1628	0	0	95	1913	4	0	0	44	0	0	12
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	10	4	1541	5	4	82	1817	4	0	0	40	0	0	11
Future Vol, veh/h	10	4	1541	5	4	82	1817	4	0	0	40	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	-	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	90	95	90	95	95	90	90	90	95	95	95
Heavy Vehicles, %	2	7	7	2	10	2	10	10	2	2	2	2	2	2
Mvmt Flow	11	4	1622	6	4	91	1913	4	0	0	44	0	0	12

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1913	1917	0	0	1628	1628	0	0	-	-	814	-	-	957
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.24	-	-	6.6	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.27	-	-	2.6	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	85	286	-	-	119	395	-	-	0	0	321	0	0	258
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	102	102	-	-	352	352	-	-	-	-	321	-	-	258
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.9	18	19.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	321	102	-	-	352	-	-	258
HCM Lane V/C Ratio	0.138	0.144	-	-	0.271	-	-	0.045
HCM Control Delay (s)	18	46.2	-	-	19	-	-	19.6
HCM Lane LOS	C	E	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.5	0.5	-	-	1.1	-	-	0.1

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1572	9	1896	4	4	4
Future Volume (vph)	4	4	1572	9	1896	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1727	3374	1687	3374	1509	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1687	3374	1509	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.90	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1604	9	1935	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1572	9	1896	4	4	4
Future Vol, veh/h	4	4	1572	9	1896	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	90	98	98	98	98	98	98	98
Heavy Vehicles, %	2	7	7	7	7	7	2	2
Mvmt Flow	4	4	1604	9	1935	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1935	1939	0	1604	-	0	2771	968
Stage 1	-	-	-	-	-	-	1953	-
Stage 2	-	-	-	-	-	-	818	-
Critical Hdwy	6.44	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	82	280	-	128	-	-	15	254
Stage 1	-	-	-	-	-	-	96	-
Stage 2	-	-	-	-	-	-	394	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	123	123	-	128	-	-	13	254
Mov Cap-2 Maneuver	-	-	-	-	-	-	13	-
Stage 1	-	-	-	-	-	-	89	-
Stage 2	-	-	-	-	-	-	366	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.2	207.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	123	-	128	-	-	25
HCM Lane V/C Ratio	0.069	-	0.072	-	-	0.327
HCM Control Delay (s)	36.5	-	35.3	-	-	207.5
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1533	15	0	1838	0	26
Future Volume (vph)	1533	15	0	1838	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	3532	0	0	3539	0	1611
Flt Permitted						
Satd. Flow (perm)	3532	0	0	3539	0	1611
Link Speed (mph)	55			55	25	
Link Distance (ft)	848			612	311	
Travel Time (s)	10.5			7.6	8.5	
Peak Hour Factor	0.95	0.90	0.95	0.95	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1631	0	0	1935	0	29
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1533	15	0	1838	0	26
Future Vol, veh/h	1533	15	0	1838	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	90	95	95	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1614	17	0	1935	0	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	816
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	320
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	320
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	320	-	-	-
HCM Lane V/C Ratio	0.09	-	-	-
HCM Control Delay (s)	17.4	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	1416	4	1244	4	4	4
Future Volume (vph)	4	1416	4	1244	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		350		50	0	0
Storage Lanes	1		1		1	1	0
Taper Length (ft)	200		200			25	
Satd. Flow (prot)	1687	3374	1656	3312	1482	1694	0
Flt Permitted	0.950		0.950			0.976	
Satd. Flow (perm)	1687	3374	1656	3312	1482	1694	0
Link Speed (mph)		55		55		25	
Link Distance (ft)		1522		1461		593	
Travel Time (s)		18.9		18.1		16.2	
Confl. Bikes (#/hr)					1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	1491	4	1309	4	8	0
Sign Control		Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	4	1416	4	1244	4	4	4
Future Vol, veh/h	4	1416	4	1244	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	350	-	350	-	50	0	-
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	7	7	9	9	9	2	2
Mvmt Flow	4	1491	4	1309	4	4	4

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1313	0	1491	-	0	2071	655
Stage 1	-	-	-	-	-	1317	-
Stage 2	-	-	-	-	-	754	-
Critical Hdwy	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	497	-	149	-	-	47	409
Stage 1	-	-	-	-	-	215	-
Stage 2	-	-	-	-	-	425	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	497	-	149	-	-	45	409
Mov Cap-2 Maneuver	-	-	-	-	-	45	-
Stage 1	-	-	-	-	-	213	-
Stage 2	-	-	-	-	-	414	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	54.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	497	-	149	-	-	81
HCM Lane V/C Ratio	0.008	-	0.028	-	-	0.104
HCM Control Delay (s)	12.3	-	29.9	-	-	54.5
HCM Lane LOS	B	-	D	-	-	F
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.3

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	4	4	1409	7	4	28	1238	4	0	0	98	0	0	4
Future Volume (vph)	4	4	1409	7	4	28	1238	4	0	0	98	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		0		300		65	0		0	0		0
Storage Lanes		1		0		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1727	3371	0	0	1754	3282	1468	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1727	3371	0	0	1754	3282	1468	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			1461				2160			468			406	
Travel Time (s)			18.1				26.8			12.8			11.1	
Confl. Bikes (#/hr)								1						1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.93	0.90	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	7%	2%	10%	2%	10%	10%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														10%
Lane Group Flow (vph)	0	8	1523	0	0	35	1331	4	0	0	109	0	0	4
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	4	1409	7	4	28	1238	4	0	0	98	0	0	4
Future Vol, veh/h	4	4	1409	7	4	28	1238	4	0	0	98	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	-	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	93	90	93	93	90	90	90	93	93	93
Heavy Vehicles, %	2	7	7	2	10	2	10	10	2	2	2	2	2	2
Mvmt Flow	4	4	1515	8	4	31	1331	4	0	0	109	0	0	4

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1331	1335	0	0	1523	1523	0	0	-	-	762	-	-	666
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.24	-	-	6.6	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.27	-	-	2.6	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	203	487	-	-	140	434	-	-	0	0	347	0	0	402
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	285	285	-	-	309	309	-	-	-	-	347	-	-	402
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	20	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	347	285	-	-	309	-	-	402
HCM Lane V/C Ratio	0.314	0.03	-	-	0.115	-	-	0.011
HCM Control Delay (s)	20	18	-	-	18.2	-	-	14.1
HCM Lane LOS	C	C	-	-	C	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0.4	-	-	0

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	20	4	1492	10	1251	4	4	4
Future Volume (vph)	20	4	1492	10	1251	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1756	3374	1687	3374	1509	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1756	3374	1687	3374	1509	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	26	1571	11	1317	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	20	4	1492	10	1251	4	4	4
Future Vol, veh/h	20	4	1492	10	1251	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	92	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	7	7	7	2	2
Mvmt Flow	22	4	1571	11	1317	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1317	1321	0	1571	-	0	2177	659
Stage 1	-	-	-	-	-	-	1339	-
Stage 2	-	-	-	-	-	-	838	-
Critical Hdwy	6.44	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	207	493	-	134	-	-	39	406
Stage 1	-	-	-	-	-	-	209	-
Stage 2	-	-	-	-	-	-	385	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	226	226	-	134	-	-	32	406
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	-
Stage 1	-	-	-	-	-	-	185	-
Stage 2	-	-	-	-	-	-	353	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0.3	75.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	226	-	134	-	-	59
HCM Lane V/C Ratio	0.115	-	0.079	-	-	0.143
HCM Control Delay (s)	22.9	-	34.1	-	-	75.9
HCM Lane LOS	C	-	D	-	-	F
HCM 95th %tile Q(veh)	0.4	-	0.3	-	-	0.5

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1540	10	1804	4	4	4
Future Volume (vph)	4	4	1540	10	1804	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1727	3374	1656	3312	1482	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1656	3312	1482	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		1461		593	
Travel Time (s)			18.9		18.1		16.2	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1638	11	1919	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.9%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1540	10	1804	4	4	4
Future Vol, veh/h	4	4	1540	10	1804	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	7	7	9	9	9	2	2
Mvmt Flow	4	4	1638	11	1919	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1919	1923	0	1638	-	0	2776	960
Stage 1	-	-	-	-	-	-	1941	-
Stage 2	-	-	-	-	-	-	835	-
Critical Hdwy	6.44	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	84	284	-	119	-	-	15	257
Stage 1	-	-	-	-	-	-	98	-
Stage 2	-	-	-	-	-	-	386	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	128	128	-	119	-	-	13	257
Mov Cap-2 Maneuver	-	-	-	-	-	-	13	-
Stage 1	-	-	-	-	-	-	91	-
Stage 2	-	-	-	-	-	-	350	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.2	210.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	128	-	119	-	-	25
HCM Lane V/C Ratio	0.066	-	0.089	-	-	0.34
HCM Control Delay (s)	35	-	38.2	-	-	210.6
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-	1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	4	4	1524	20	4	82	1827	4	0	0	66	0	0	11
Future Volume (vph)	4	4	1524	20	4	82	1827	4	0	0	66	0	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		0		300		65	0		0	0		0
Storage Lanes		1		0		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1727	3369	0	0	1764	3282	1468	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1727	3369	0	0	1764	3282	1468	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			1461				2160			468			406	
Travel Time (s)			18.1				26.8			12.8			11.1	
Confl. Bikes (#/hr)								1						1
Peak Hour Factor	0.95	0.95	0.95	0.90	0.95	0.90	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	2%	10%	2%	10%	10%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	8	1626	0	0	95	1923	4	0	0	73	0	0	12
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	4	1524	20	4	82	1827	4	0	0	66	0	0	11
Future Vol, veh/h	4	4	1524	20	4	82	1827	4	0	0	66	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	-	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	90	95	90	95	95	90	90	90	95	95	95
Heavy Vehicles, %	2	7	7	2	10	2	10	10	2	2	2	2	2	2
Mvmt Flow	4	4	1604	22	4	91	1923	4	0	0	73	0	0	12

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1923	1927	0	0	1626	1626	0	0	-	-	813	-	-	962
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.24	-	-	6.6	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.27	-	-	2.6	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	83	283	-	-	119	396	-	-	0	0	322	0	0	256
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	124	124	-	-	347	347	-	-	-	-	322	-	-	256
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	19.4	19.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	322	124	-	-	347	-	-	256
HCM Lane V/C Ratio	0.228	0.068	-	-	0.275	-	-	0.045
HCM Control Delay (s)	19.4	36.3	-	-	19.2	-	-	19.7
HCM Lane LOS	C	E	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.9	0.2	-	-	1.1	-	-	0.1

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	14	4	1572	9	1896	4	4	4
Future Volume (vph)	14	4	1572	9	1896	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1752	3374	1687	3374	1509	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1752	3374	1687	3374	1509	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.90	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	20	1604	9	1935	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	14	4	1572	9	1896	4	4	4
Future Vol, veh/h	14	4	1572	9	1896	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	90	98	98	98	98	98	98	98
Heavy Vehicles, %	2	7	7	7	7	7	2	2
Mvmt Flow	16	4	1604	9	1935	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1935	1939	0	1604	-	0	2795	968
Stage 1	-	-	-	-	-	-	1953	-
Stage 2	-	-	-	-	-	-	842	-
Critical Hdwy	6.44	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	82	280	-	128	-	-	15	254
Stage 1	-	-	-	-	-	-	96	-
Stage 2	-	-	-	-	-	-	383	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	95	95	-	128	-	-	11	254
Mov Cap-2 Maneuver	-	-	-	-	-	-	11	-
Stage 1	-	-	-	-	-	-	76	-
Stage 2	-	-	-	-	-	-	356	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0.2	260
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	95	-	128	-	-	21
HCM Lane V/C Ratio	0.207	-	0.072	-	-	0.389
HCM Control Delay (s)	52.5	-	35.3	-	-	260
HCM Lane LOS	F	-	E	-	-	F
HCM 95th %tile Q(veh)	0.7	-	0.2	-	-	1.1

KIMLEY-HORN AND ASSOCIATES, INC
NC License #F-0102

MEMORANDUM

To:	Mr. Serge Grebenschikov, P.E., Town of Apex Mr. Russell Dalton, P.E., Town of Apex
From:	Travis Fluitt, P.E., Kimley-Horn and Associates, Inc,
Date:	July 9, 2021
Subject:	US 64 Residential, Apex, NC – Phase 2 TIA Addendum

NORTH CAROLINA PROFESSIONAL SEAL 034394 ENGINEER TRAVIS FLUITT
DocuSigned by:
E9D325B4BC3E429...
7/9/2021

Kimley-Horn has prepared this addendum to the *US 64 Residential TIA* (Kimley-Horn, April 2021) to evaluate the traffic impact of Phase 2 of the proposed development. Per the original TIA, Phase 1 of the development was assumed to include 400 apartment units and to be built-out by 2024. For this analysis, Phase 2 of the development is assumed to include 75 single family homes, a 11,000 square foot (SF) day care center, and a 3,500 SF drive-thru fast-food restaurant. Phase 2 is assumed to be built-out by 2026.

This report presents trip generation, directional distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with build-out of Phase 2 of the proposed development in the 2026 study year.

Study Area

The study area intersections were obtained from the original TIA and were not modified as part of this analysis. Consistent with the original TIA, two site access scenarios were analyzed:

With RI/RO Driveway Scenario

- Proposed access road connection to US 64 opposite Flying Hawk Road
- Existing right-in/right-out (RI/RO) driveway on US 64

Without RI/RO Driveway Scenario

- Proposed access road connection to US 64 opposite Flying Hawk Road

Background Traffic

The projected (2024) background traffic volumes from the original TIA were grown at a 3% annual rate up to the 2026 study year to calculate the projected (2026) background traffic volumes.

Trip Generation and Assignment

Consistent with the original TIA, the trip generation potential of the proposed development was determined using the traffic generation data published in the *ITE Trip Generation Handbook* (Institute of Transportation Engineers, Tenth Edition, 2017). The trip generation is summarized in Table 1.

Table 1 ITE Traffic Generation (Vehicles)								
Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		PM Peak Hour	
				Total	In	Out	In	Out
210	Single Family Housing	75	d.u.	798	15	43	49	28
221	Multifamily Housing (Mid-Rise)	400	d.u.	2,178	35	98	102	66
565	Day Care Center	11,000	s.f.	524	64	57	57	65
934	Fast-Food Restaurant	3,500	s.f.	1,648	72	69	59	55
Subtotal				5,148	186	267	267	214
Internal Capture Reduction				*462*	*17*	*17*	*18*	*18*
Pass-by Capture/Diverted Link Trips				*730*	*28*	*32*	*40*	*39*
Total Net New External Trips				**3,956**	**141**	**218**	**209**	**157**

As shown in Table 1, the development is anticipated to generate approximately 3,956 new external trips on a typical weekday, with 359 new external trips during the AM peak hour and 366 new external trips during the PM peak hour.

Internally captured trips are trips that begin and end on the project site and do not access the external roadway network. ITE Methodology indicates that internal capture between the proposed land uses will represent approximately 7.5% of site trips in both peak hours.

Pass-by trips are trips already on the network that will make a trip to the site as they pass by on the adjacent street. ITE Methodology indicates that approximately 49% of the AM peak hour trips and 50% of the PM peak hour trips associated with the fast-food restaurant will be pass-by trips. ITE Methodology also indicates that up to 50% of the day care trips in the PM peak hour may be diverted link trips. Consistent with previous studies performed in the Town, a diverted link trip percentage of 25% was applied to the PM peak hour day care trips to present a conservative analysis.

The proposed site-generated trips were assigned to the surrounding roadway network. Due to the addition of the commercial traffic, the following overall distribution was used for Phase 2:

- 70% to/from the east on US 64
- 30% to/from the west on US 64

The proposed pass-by trips were assigned to the roadway network based on the directional distribution of background volumes along US 64.

Full trip generation calculations, site-generated trip assignment, and pass-by trip assignment are shown on the intersection spreadsheets attached to this memorandum.

Build-out Traffic

The projected (2026) background volumes were added to the proposed site-generated trips to calculate the projected (2026) build-out traffic volumes. **Figures 1** and **2** show the projected build-out traffic volumes for the "With RI/RO Driveway" scenario, and **Figures 3** and **4** show the projected build-out traffic volumes for the "Without RI/RO Driveway" scenario.

Capacity Analysis

Capacity analyses were performed using Synchro/SimTraffic Version 10 software. Consistent with the original TIA, peak hour factors (PHF) were obtained from turning movement counts for the existing intersections while a PHF of 0.90 was used at the site driveways. Synchro intersection level-of-service (LOS) reports are attached and 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 Pinefield Road (Unsignalized)		
Background (2026) Traffic	SB – F (64.3) EBL – C (18.6) WBU – D (33.2)	SB – F (234.6) EBL – E (40.0) WBU – E (37.8)
Phase 2 Build-out (2026) Traffic	SB – F (75.9) EBL – C (20.0) WBU – E (35.3)	SB – F (350.0) EBL – E (42.7) WBU – E (43.9)
US 64 at Flying Hawk Road/Site Access Road (Unsignalized)		
Background (2026) Traffic	SB – F (69.8) EBL – C (19.1) WBU – E (35.1)	SB – F (343.0) EBL – E (38.3) WBU – E (36.9)
Phase 2 Build-out (2026) Traffic – *with RI/RO Driveway Scenario*	NB – D (28.9) SB – B (14.6) EBL – D (33.4) WBL – C (23.2)	NB – D (26.9) SB – C (21.0) EBL – F (138.5) WBL – D (33.4)
Phase 2 Build-out (2024) Traffic – *without RI/RO Driveway Scenario*	NB – F (53.3) SB – C (15.0) EBL – C (20.5) WBL – D (28.3)	NB – E (40.3) SB – C (21.6) EBL – E (41.8) WBL – E (38.6)

Table 2 (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
US 64 at Goodwin Road (Unsignalized)		
Background (2026) Traffic	SB – F (69.6) EBL – C (18.6) WBU – D (34.1)	SB – F (231.0) EBL – E (37.2) WBU – E (36.1)
Phase 2 Build-out (2026) Traffic – *with RI/RO Driveway Scenario*	SB – F (133.2) EBL – D (30.1) WBU – E (44.7)	SB – F (> 500) EBL – F (95.7) WBU – E (43.3)
Phase 2 Build-out (2024) Traffic – *without RI/RO Driveway Scenario*	SB – F (322.8) EBL – E (48.4) WBU – E (44.7)	SB – F (> 500)* EBL – F (285.8) WBU – E (43.3)
US 64 at RI/RO Site Driveway (Unsignalized)		
Phase 2 Build-out (2026) Traffic	NB – C (21.7)	NB – C (23.7)

**Note: Synchro reports short delays for this movement, but this seems to be an error in the calculations.*

Recommendations

Based on the analysis presented herein, the following roadway improvements are recommended to be performed in conjunction with Phase 2 of the US 64 Residential development:

With RI/RO Driveway Scenario

US 64 at Flying Hawk Road/Site Access Road

- Construct an eastbound right-turn taper on US 64
- Monitor for a traffic signal

US 64 at RI/RO Site Driveway

- Construct an eastbound right-turn lane with 100 feet of storage on US 64

Per the NCDOT Roadway Design Manual, the intersection of US 64 at Flying Hawk Road/Site Access Road is expected to warrant an eastbound right-turn taper under projected build-out traffic demands. To present a conservative analysis this improvement was not included in the analysis files. At project build-out with the additional driveway on US 64, the Site Access Road approach is expected to operate with moderate delays in both peak hours. However, SimTraffic indicates the possibility of long eastbound and westbound left-turn queues in the PM peak hour. Therefore, due to projected left-turn and conflicting through volumes on US 64, it is recommended that this intersection be monitored for signalization.

Per the NCDOT Roadway Design Manual, the intersection of US 64 at RI/RO Site Driveway is expected to warrant an eastbound right-turn lane under projected build-out traffic demands. With this lane in place, the intersection is expected to operate with short delays on the minor street approach (RI/RO Site Driveway) in both peak hours. No queuing issues are expected at this intersection.

The full-movement intersections of US 64 at Pinefield Road and US 64 at Goodwin Road are expected to operate with long minor street delays in 2026 with or without the proposed development in place. It is typical for stop sign controlled side streets intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Furthermore, Synchro indicates that 95th percentile queues on the minor street approaches are expected to be less than 2 vehicles under projected build-out traffic demands. Therefore, no roadway improvements are recommended at these intersections in this scenario.

Figure 5 shows the recommended roadway laneage for the "With RI/RO Driveway" scenario.

Without RI/RO Driveway Scenario

US 64 at Flying Hawk Road/Site Access Road

- Construct an eastbound right-turn lane with 100 feet of storage on US 64
- Monitor for a traffic signal

US 64 at Goodwin Road

- Monitor for a traffic signal

Per the Roadway Design Manual, the intersection of US 64 at Flying Hawk Road/Site Access Road is expected to warrant an eastbound right-turn lane under projected build-out traffic demands. With the lane in place, the Site Access Road approach is expected to operate with long delays in the AM peak hour and moderate delays in the PM peak hour. SimTraffic indicates the possibility of long queues on the northbound approach of the Site Access Road in the AM peak hour and long westbound left-turn queues on US 64 in the PM peak hour. Therefore, due to projected left-turn and conflicting through volumes on US 64, it is recommended that this intersection be monitored for signalization.

The intersection of US 64 at Goodwin Road is expected to operate with long delays on the minor street approach (Goodwin Road) in 2026 with or without the proposed development in place. SimTraffic indicates the possibility of long queues for the eastbound U-turn at Goodwin Road in the PM peak hour without the additional site access on US 64. Therefore, it is recommended that this intersection be monitored for signalization in this scenario.

The intersection of US 64 at Pinefield Road is expected to operate with long minor street delays in 2026 with or without the proposed development in place. It is typical for stop sign controlled side streets intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Furthermore, Synchro indicates that 95th percentile queues on the minor street approaches are expected to be less than 2 vehicles under projected build-out traffic demands. Therefore, no roadway improvements are recommended at this intersection.

Figure 6 shows the recommended roadway laneage for the "Without RI/RO Driveway" scenario.

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

NOT TO SCALE

US 64

PINEFIELD RD.

FLYING HAWK RD.

GOODWIN RD.

[1] (0) 0
[0] (0) 1

0 (0) [0]
1295 (65) <1> [1361]

1291 (65) <1> [1357]

[0] (0) 0
[0] (0) 0

1 (0) [1]
1289 (22) <-8> [1303]
0 (99) <13> [112]
1 (0) [1]

[1] (0) 1
[1] (0) 1

1 (0) [1]
1294 (99) [1393]
10 (0) [10]

[0] (0) 0
[1532] (42) 1490

[1497] <-7> (14) 1490
[35] <7> (28) 0

0 (87) <13> [100]

[55] <10> (44) 1
[1] (0) 1
[1522] <-12> (44) 1490
[22] <8> (14) 0

0 (131) <19> [150]

[27] <5> (22) 0
[0] (0) 0
[1666] <18> (153) 1495

RI/RO SITE DRWY.

SITE ACCESS ROAD

SITE

LEGEND

XX BACKGROUND TRAFFIC

(XX) SITE TRAFFIC

<XX> PASS-BY TRAFFIC

[XX] TOTAL BUILD-OUT TRAFFIC

PROJECTED (2026) PHASE 2 BUILD-OUT
AM PEAK HOUR TRAFFIC VOLUMES
– WITH RI/RO DRIVEWAY

FIGURE 1

US 64 RESIDENTIAL – PHASE 2
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

K:\RAL_TPTO_Traffic\013329004 US 64 Residential\Phase 2 Addendum\T5 - Report-Submittals\US 64 Residential (Phase 2 Addendum) - TIA Figures.dwg

NOT TO SCALE

US 64

PINEFIELD RD.

[3] (0) 3
[3] (0) 3

1 (0) [1]
1894 (47) <-1> [1940]
3 (0) {7} [10]

1927 (47) <-1> {7} [1980]

FLYING HAWK RD.

[0] {-7} (0) 7
[12] {7} (0) 5

5 (0) [5]
1918 (16) <-14> [1920]
0 (146) <22> [168]
5 (0) [5]

GOODWIN RD.

0 (0) [0]
0 (0) [0]

1 (0) [1]
1918 (146) [2064]
9 (0) [9]

[3] (0) 3
[3] (0) 3
[1670] (63) 1607

[1633] {7} <-6> (21) 1611
[48] <6> (42) 0

0 (63) <16> [79]

[45] <14> (31) 0
[5] (0) 5
[1626] {7} <-16> (31) 1604
[33] <12> (21) 0

0 (94) <23> [117]

[25] <8> (16) 1
[0] (0) 0
[1734] <18> (110) 1606

RI/RO SITE DRWY.

SITE ACCESS ROAD

SITE

LEGEND

XX BACKGROUND TRAFFIC

(XX) SITE TRAFFIC

<XX> PASS-BY TRAFFIC

{XX} ACCESS DIVERSION

[XX] TOTAL BUILD-OUT TRAFFIC

FIGURE 2

PROJECTED (2026) PHASE 2 BUILD-OUT
PM PEAK HOUR TRAFFIC VOLUMES
– WITH RI/RO DRIVEWAY

US 64 RESIDENTIAL – PHASE 2
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

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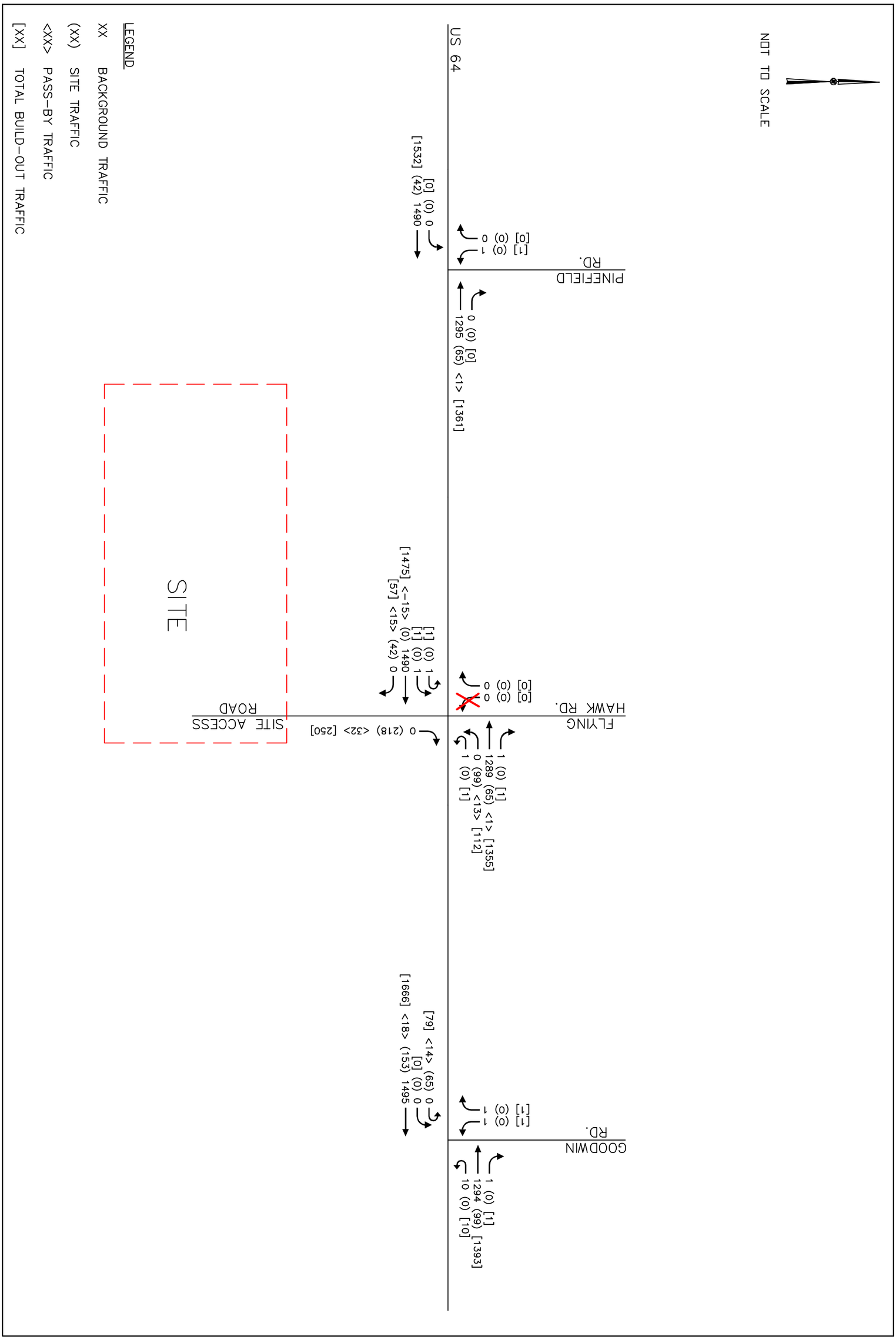

Kimley»Horn	US 64 RESIDENTIAL – PHASE 2 APEX, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2026) PHASE 2 BUILD-OUT AM PEAK HOUR TRAFFIC VOLUMES – NO RI/RO DRIVEWAY	FIGURE 3

NOT TO SCALE

US 64

PINEFIELD RD.

[3] (0) 3
[3] (0) 3
[1670] (63) 1607

1 (0) [1]
1894 (47) <-1> [1940]
3 (0) {7} [10]

FLYING HAWK RD.

[0] {-7} (0) 7
[12] {7} (0) 5

[5] (0) 5
[1593] {7} <-18> (0) 1604
[81] <18> (63) 0

5 (0) [5]
1918 (47) <-1> [1964]
0 (146) <22> [168]
5 (0) [5]

0 (157) <39> [196]

GOODWIN RD.

[0] (0) 0
[69] <21> (47) 1
[0] (0) 0
[1734] <18> (110) 1606

1 (0) [1]
1918 (146) [2064]
9 (0) [9]

SITE ACCESS ROAD

SITE

LEGEND

XX BACKGROUND TRAFFIC

(XX) SITE TRAFFIC

<XX> PASS-BY TRAFFIC

{XX} ACCESS DIVERSION

[XX] TOTAL BUILD-OUT TRAFFIC

PROJECTED (2026) PHASE 2 BUILD-OUT
PM PEAK HOUR TRAFFIC VOLUMES
– NO RI/RO DRIVEWAY

FIGURE 4

US 64 RESIDENTIAL – PHASE 2
APEX, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

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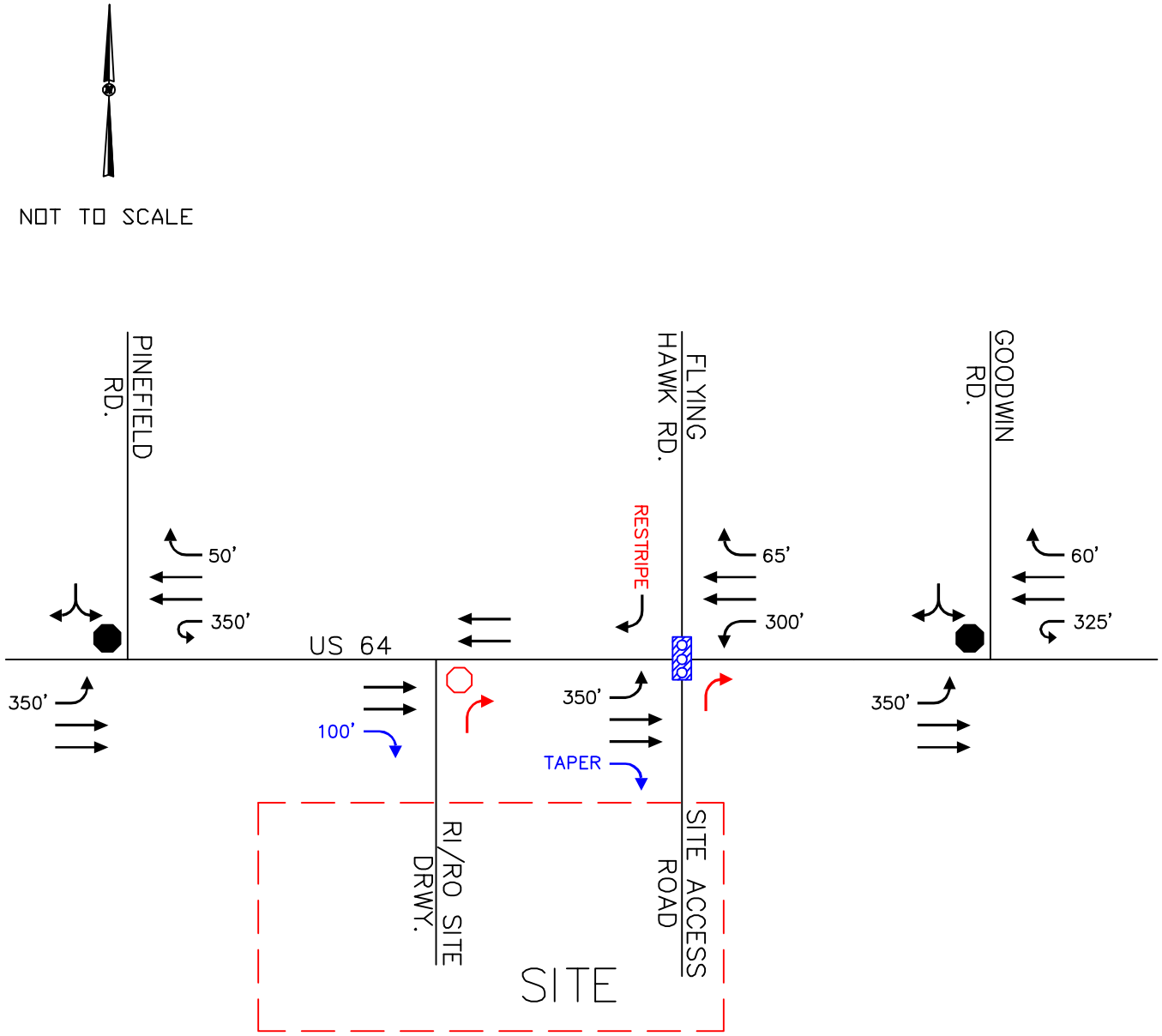
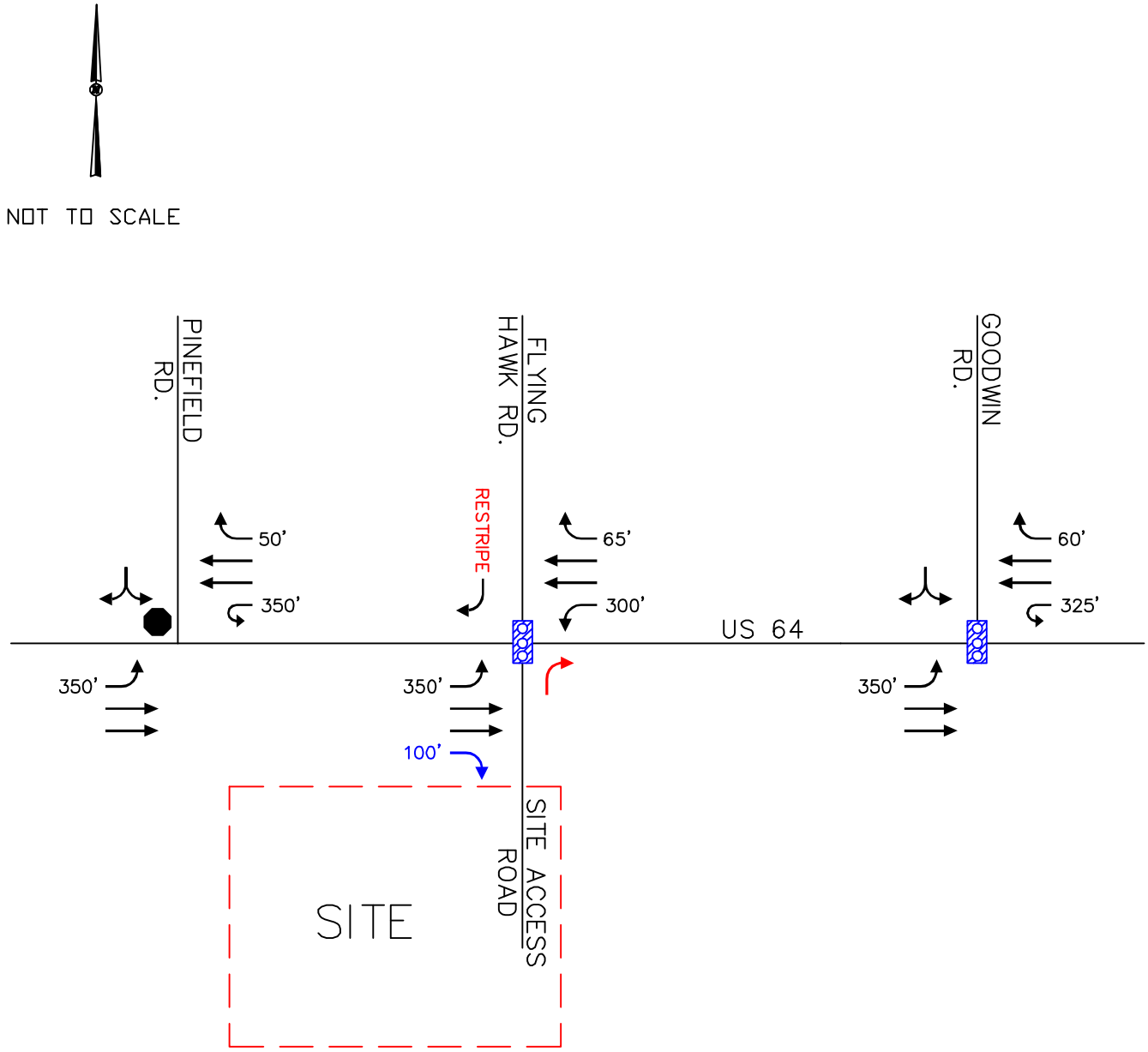


LEGEND

- EXISTING LANE
- EXISTING STOP SIGN
- PHASE 1 RECOMMENDED LANE (FROM ORIGINAL TIA)
- PHASE 1 RECOMMENDED STOP SIGN (FROM ORIGINAL TIA)
- PHASE 2 RECOMMENDED MONITORING FOR SIGNALIZATION
- PHASE 2 RECOMMENDED LANE
- XX' STORAGE LENGTH

Kimley»Horn	US 64 RESIDENTIAL – PHASE 2 APEX, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE – WITH RI/RO DRIVEWAY	FIGURE 5



LEGEND

- EXISTING LANE
- EXISTING STOP SIGN
- PHASE 1 RECOMMENDED LANE (FROM ORIGINAL TIA)
- PHASE 2 RECOMMENDED MONITORING FOR SIGNALIZATION
- PHASE 2 RECOMMENDED LANE
- XX' STORAGE LENGTH

Kimley»Horn	US 64 RESIDENTIAL – PHASE 2 APEX, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE – NO RI/RO DRIVEWAY	FIGURE 6

Attachments

Trip Generation Table

US 64 Residential - Phase 2

Table 1 - Trip Generation ITE (10th Edition)

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
210 Single Family Detached Housing	75	d.u.	798	399	399	58	15	43	77	49	28
221 Multifamily Housing (Mid-Rise)	400	d.u.	2,178	1,089	1,089	133	35	98	168	102	66
565 Day Care Center	11,000	s.f.	524	262	262	121	64	57	122	57	65
934 Fast-Food Restaurant with Drive-Through Window	3,500	s.f.	1,648	824	824	141	72	69	114	59	55
Subtotal			**5,148**	**2,574**	**2,574**	**453**	**186**	**267**	**481**	**267**	**214**
Internal Capture											
210 Single Family Detached Housing			62	24	38	5	1	4	5	3	2
221 Multifamily Housing (Mid-Rise)			169	67	102	12	2	10	13	7	6
934 Fast-Food Restaurant with Drive-Through Window			231	140	91	17	14	3	18	8	10
Internal Capture Total			*462*	*231*	*231*	*34*	*17*	*17*	*36*	*18*	*18*
Total External Trips			**4,686**	**2,343**	**2,343**	**419**	**169**	**250**	**445**	**249**	**196**
Pass-By Capture/Diverted Link Trips	AM	PM									
565 Day Care Center	0%	25%	30	15	15	0	0	0	30	14	16
934 Fast-Food Restaurant with Drive-Through Window	49%	50%	700	350	350	60	28	32	49	26	23
Pass-By Capture/Diverted Link Total			*730*	*365*	*365*	*60*	*28*	*32*	*79*	*40*	*39*
Total Net New External Trips			**3,956**	**1,978**	**1,978**	**359**	**141**	**218**	**366**	**209**	**157**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	0	0	0	0	0	0
Restaurant	824	824	72	69	59	55
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,488	1,488	50	141	151	94
Hotel	0	0	0	0	0	0
	2,312	2,312	122	210	210	149

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	0	0	0	0	0	0
Restaurant	140	91	14	3	8	10
Cinema/Entertainment	0	0	0	0	0	0
Residential	91	140	3	14	10	8
Hotel	0	0	0	0	0	0
	231	231	17	17	18	18
% Reduction	10.0%		10.2%		10.0%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	0	0	0	0	0	0
Restaurant	684	733	58	66	51	45
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,397	1,348	47	127	141	86
Hotel	0	0	0	0	0	0
	2,081	2,081	105	193	192	131

With RI/RO Driveway Scenario: Intersection Spreadsheet, Synchro Output, and Turn Lane Warrants

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential - Phase 2**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Pinefield Road**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	141	218	209	157
Pass-By Trips:	28	32	40	39

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.159274	**Buildout Year:**	2026

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Pinefield Road **Southbound** Left	Through	Right
2020 Traffic Count	0	0	977	0	0	853	0	0	0	0	1	0	0
25% COVID-19 Factoring	0	0	244	0	0	213	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1221	0	0	1066	0	0	0	0	1	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	194	0	0	170	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2026 Background Traffic	0	0	1490	0	0	1295	0	0	0	0	1	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	42	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	65	0	0	0	0	0	0	0
Total External Site Traffic	0	0	42	0	0	65	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	-15	0	0	-13	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	15	0	0	14	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	1	0	0	0	0	0	0	0
Total Project Traffic	0	0	42	0	0	66	0	0	0	0	0	0	0
2026 Buildout Total	0	0	1532	0	0	1361	0	0	0	0	1	0	0
Percent Impact (Approach)			2.7%			4.8%			-			0.0%	

Overall Percent Impact 3.7%

PM PEAK HOUR
PM PHF = 0.94

Description	US 64 **Eastbound** U-Turn	Left	Through	Right	US 64 **Westbound** U-Turn	Through	Right	**Northbound** Left	Through	Right	Pinefield Road **Southbound** Left	Through	Right
2020 Traffic Count	2	2	1047	0	2	1240	1	0	0	0	2	0	2
25% COVID-19 Factoring	1	1	262	0	1	310	0	0	0	0	1	0	1
2021 Existing Traffic	3	3	1309	0	3	1550	1	0	0	0	3	0	3
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	208	0	0	247	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2026 Background Traffic	3	3	1607	0	3	1894	1	0	0	0	3	0	3
Superstreet Diversion	0	0	0	0	7	0	0	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	63	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	47	0	0	0	0	0	0	0
Total External Site Traffic	0	0	63	0	0	47	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	-18	0	0	-22	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	18	0	0	21	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	-1	0	0	0	0	0	0	0
Total Project Traffic	0	0	63	0	0	46	0	0	0	0	0	0	0
2026 Buildout Total	3	3	1670	0	10	1940	1	0	0	0	3	0	3
Percent Impact (Approach)			3.8%			2.4%			-			0.0%	

Overall Percent Impact 3.0%

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential - Phase 2**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Flying Hawk Road/Site Access Road**
E/W Street:	**US 64**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	141	218	209	157
Pass-By Trips:	28	32	40	39

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.159274	**Buildout Year:**	2026

AM PEAK HOUR
AM PHF = 0.93

Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Left	Through	Right	Site Access Road Northbound Left	Through	Right	Flying Hawk Road Southbound Left	Through	Right
2020 Traffic Count	1	1	977	0	1	0	849	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	244	0	0	0	212	0	0	0	0	0	0	0
2021 Existing Traffic	1	1	1221	0	1	0	1061	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	194	0	0	0	169	0	0	0	0	0	0	0
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	0	59	0	0	0	0	0	0	0
2026 Background Traffic	1	1	1490	0	1	0	1289	1	0	0	0	0	0	0
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	10%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	14	0	99	0	0	0	0	0	0	0	0
Percent Assignment Outbound	20%	0%	20%	0%	0%	0%	10%	0%	0%	0%	60%	0%	0%	0%
Outbound Project Traffic	44	0	44	0	0	0	22	0	0	0	131	0	0	0
Total External Site Traffic	44	0	44	14	0	99	22	0	0	0	131	0	0	0
Pass-By Capture Reduction	0	0	-15	0	0	0	-13	0	0	0	0	0	0	0
Pass-By Capture Assignment	10	0	3	8	0	13	5	0	0	0	19	0	0	0
Total Pass-By Traffic	10	0	-12	8	0	13	-8	0	0	0	19	0	0	0
Total Project Traffic	54	0	32	22	0	112	14	0	0	0	150	0	0	0
2026 Buildout Total	55	1	1522	22	1	112	1303	1	0	0	150	0	0	0
Percent Impact (Approach)			6.8%				8.9%			100.0%			-	

Overall Percent Impact 12.1%

PM PEAK HOUR
PM PHF = 0.95

Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Left	Through	Right	Site Access Road Northbound Left	Through	Right	Flying Hawk Road Southbound Left	Through	Right
2020 Traffic Count	0	3	1045	0	3	0	1257	3	0	0	0	5	0	3
25% COVID-19 Factoring	0	1	261	0	1	0	314	1	0	0	0	1	0	1
2021 Existing Traffic	0	4	1306	0	4	0	1571	4	0	0	0	6	0	4
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	1	208	0	1	0	250	1	0	0	0	1	0	1
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	0	97	0	0	0	0	0	0	0
2026 Background Traffic	0	5	1604	0	5	0	1918	5	0	0	0	7	0	5
Superstreet Diversion	0	0	7	0	0	0	0	0	0	0	0	-7	0	7
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	10%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	21	0	146	0	0	0	0	0	0	0	0
Percent Assignment Outbound	20%	0%	20%	0%	0%	0%	10%	0%	0%	0%	60%	0%	0%	0%
Outbound Project Traffic	31	0	31	0	0	0	16	0	0	0	94	0	0	0
Total External Site Traffic	31	0	31	21	0	146	16	0	0	0	94	0	0	0
Pass-By Capture Reduction	0	0	-18	0	0	0	-22	0	0	0	0	0	0	0
Pass-By Capture Assignment	14	0	2	12	0	22	8	0	0	0	23	0	0	0
Total Pass-By Traffic	14	0	-16	12	0	22	-14	0	0	0	23	0	0	0
Total Project Traffic	45	0	15	33	0	168	2	0	0	0	117	0	0	0
2026 Buildout Total	45	5	1626	33	5	168	1920	5	0	0	117	0	0	12
Percent Impact (Approach)			5.4%				8.1%			100.0%			0.0%	

Overall Percent Impact 9.7%

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential - Phase 2**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**January 26, 2021**
N/S Street:	**Goodwin Road**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	141	218	209	157
Pass-By Trips:	28	32	40	39

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.159274	**Buildout Year:**	2026

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Through	Right	Northbound Left	Through	Right	Goodwin Road Southbound Left	Through	Right
2021 Traffic Count	0	0	980	0	7	803	1	0	0	0	1	0	1
25% COVID-19 Factoring	0	0	245	0	2	201	0	0	0	0	0	0	0
Volume Balancing	0	0	0	0	0	61	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1225	0	9	1065	1	0	0	0	1	0	1
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	195	0	1	170	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2026 Background Traffic	0	0	1495	0	10	1294	1	0	0	0	1	0	1
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	99	0	0	0	0	0	0	0
Percent Assignment Outbound	10%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	22	0	153	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	22	0	153	0	0	99	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	5	0	18	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	5	0	18	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	27	0	171	0	0	99	0	0	0	0	0	0	0
2026 Buildout Total	27	0	1666	0	10	1393	1	0	0	0	1	0	1
Percent Impact (Approach)			11.7%			7.1%			-			0.0%	
Overall Percent Impact	9.6%												

PM PEAK HOUR
PM PHF = 0.98

Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Through	Right	Northbound Left	Through	Right	Goodwin Road Southbound Left	Through	Right
2021 Traffic Count	1	0	919	0	6	1098	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	230	0	2	275	0	0	0	0	0	0	0
Volume Balancing	0	0	159	0	0	198	0	0	0	0	0	0	0
2021 Existing Traffic	1	0	1308	0	8	1571	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	208	0	1	250	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2026 Background Traffic	1	0	1606	0	9	1918	1	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	146	0	0	0	0	0	0	0
Percent Assignment Outbound	10%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	16	0	110	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	16	0	110	0	0	146	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	8	0	18	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	8	0	18	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	24	0	128	0	0	146	0	0	0	0	0	0	0
2026 Buildout Total	25	0	1734	0	9	2064	1	0	0	0	0	0	0
Percent Impact (Approach)			8.6%			7.0%			-			-	
Overall Percent Impact	7.8%												

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential - Phase 2**
Location:	**Apex NC**
Scenario:	**With RI/RO Site Driveway**
Ct. Date	**Balanced with Flying Hawk Road (Int. #2)**
N/S Street:	**RI/RO Site Driveway**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	141	218	209	157
Pass-By Trips:	28	32	40	39

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.159274	**Buildout Year:**	2026

AM PEAK HOUR
AM PHF =

Description	US 64 Eastbound Left	US 64 Eastbound Through	US 64 Eastbound Right	US 64 Westbound Left	US 64 Westbound Through	US 64 Westbound Right	RI/RO Site Driveway Northbound Left	RI/RO Site Driveway Northbound Through	RI/RO Site Driveway Northbound Right	Southbound Left	Southbound Through	Southbound Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	1221	0	0	1063	0	0	0	0	0	0	0
2021 Existing Traffic	0	1221	0	0	1063	0	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	194	0	0	169	0	0	0	0	0	0	0
Committed Projects												
Sweetwater (15% res. + 100% comm.)	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	75	0	0	59	0	0	0	0	0	0	0
2026 Background Traffic	0	1490	0	0	1291	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	10%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	14	28	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30%	0%	0%	0%	40%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	65	0	0	0	87	0	0	0
Total External Site Traffic	0	14	28	0	65	0	0	0	87	0	0	0
Pass-By Capture Reduction	0	-15	0	0	-13	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	8	7	0	14	0	0	0	13	0	0	0
Total Pass-By Traffic	0	-7	7	0	1	0	0	0	13	0	0	0
Total Project Traffic	0	7	35	0	66	0	0	0	100	0	0	0
2026 Buildout Total	0	1497	35	0	1357	0	0	0	100	0	0	0
Percent Impact (Approach)		2.7%			4.9%			100.0%			-	

Overall Percent Impact 7.0%

PM PEAK HOUR
PM PHF =

Description	US 64 Eastbound Left	US 64 Eastbound Through	US 64 Eastbound Right	US 64 Westbound Left	US 64 Westbound Through	US 64 Westbound Right	RI/RO Site Driveway Northbound Left	RI/RO Site Driveway Northbound Through	RI/RO Site Driveway Northbound Right	Southbound Left	Southbound Through	Southbound Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	1312	0	0	1579	0	0	0	0	0	0	0
2021 Existing Traffic	0	1312	0	0	1579	0	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	209	0	0	251	0	0	0	0	0	0	0
Committed Projects												
Sweetwater (15% res. + 100% comm.)	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	90	0	0	97	0	0	0	0	0	0	0
2026 Background Traffic	0	1611	0	0	1927	0	0	0	0	0	0	0
Superstreet Diversion	0	7	0	0	7	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	10%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	21	42	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30%	0%	0%	0%	40%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	47	0	0	0	63	0	0	0
Total External Site Traffic	0	21	42	0	47	0	0	0	63	0	0	0
Pass-By Capture Reduction	0	-18	0	0	-22	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	12	6	0	21	0	0	0	16	0	0	0
Total Pass-By Traffic	0	-6	6	0	-1	0	0	0	16	0	0	0
Total Project Traffic	0	15	48	0	46	0	0	0	79	0	0	0
2026 Buildout Total	0	1633	48	0	1980	0	0	0	79	0	0	0
Percent Impact (Approach)		3.7%			2.3%			100.0%			-	

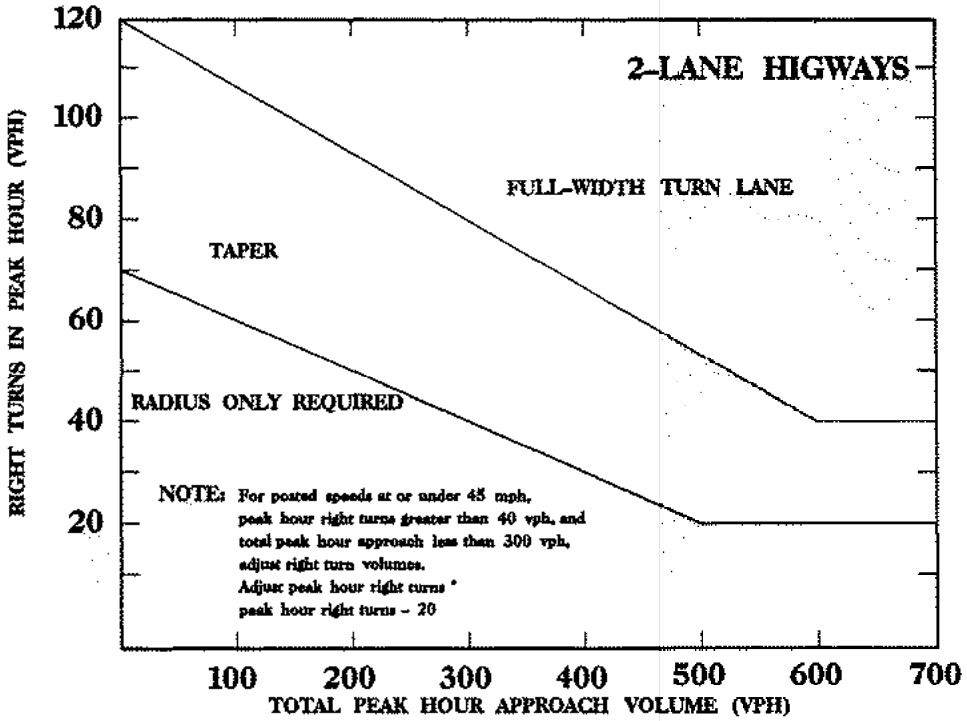
Overall Percent Impact 5.0%

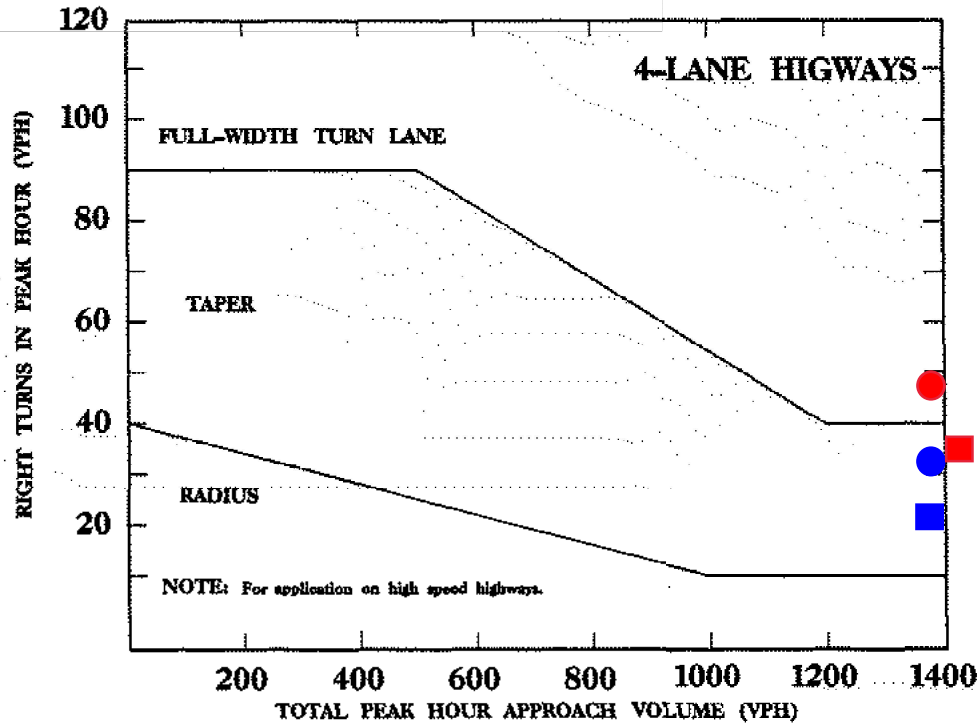
WITH RI/RO SITE DRIVEWAY SCENARIO

FIGURE 4 **9 - 1**

F – 4 C

RIGHT TURN LANE WARRANTS





■ EBR @ RI/RO Site Drive - AM ■ EBR @ Site Access Road - AM

● EBR @ RI/RO Site Drive - PM ● EBR @ Site Access Road - PM

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1490	4	1295	4	4	4
Future Volume (vph)	4	4	1490	4	1295	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1727	3374	1656	3312	1482	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1656	3312	1482	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		1461		593	
Travel Time (s)			18.9		18.1		16.2	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1568	4	1363	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1490	4	1295	4	4	4
Future Vol, veh/h	4	4	1490	4	1295	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	9	9	9	2	2
Mvmt Flow	4	4	1568	4	1363	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1363	1367	0	1568	-	0	2171	682
Stage 1	-	-	-	-	-	-	1371	-
Stage 2	-	-	-	-	-	-	800	-
Critical Hdwy	6.44	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	194	473	-	132	-	-	40	392
Stage 1	-	-	-	-	-	-	201	-
Stage 2	-	-	-	-	-	-	403	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	273	273	-	132	-	-	38	392
Mov Cap-2 Maneuver	-	-	-	-	-	-	38	-
Stage 1	-	-	-	-	-	-	195	-
Stage 2	-	-	-	-	-	-	391	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	64.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	273	-	132	-	-	69
HCM Lane V/C Ratio	0.031	-	0.032	-	-	0.122
HCM Control Delay (s)	18.6	-	33.2	-	-	64.3
HCM Lane LOS	C	-	D	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.4

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1490	4	1289	4	4	4
Future Volume (vph)	4	4	1490	4	1289	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		300		65	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1727	3374	1641	3282	1468	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1641	3282	1468	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1461		2160		406	
Travel Time (s)			18.1		26.8		11.1	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	7%	10%	10%	10%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1602	4	1386	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1490	4	1289	4	4	4
Future Vol, veh/h	4	4	1490	4	1289	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	300	-	65	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	7	7	10	10	10	2	2
Mvmt Flow	4	4	1602	4	1386	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1386	1390	0	1602	-	0	2211	693
Stage 1	-	-	-	-	-	-	1394	-
Stage 2	-	-	-	-	-	-	817	-
Critical Hdwy	6.44	4.24	-	6.6	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.6	-	-	3.52	3.32
Pot Cap-1 Maneuver	187	463	-	124	-	-	37	386
Stage 1	-	-	-	-	-	-	195	-
Stage 2	-	-	-	-	-	-	395	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	264	264	-	124	-	-	35	386
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	-
Stage 1	-	-	-	-	-	-	188	-
Stage 2	-	-	-	-	-	-	382	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	69.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	264	-	124	-	-	64
HCM Lane V/C Ratio	0.033	-	0.035	-	-	0.134
HCM Control Delay (s)	19.1	-	35.1	-	-	69.8
HCM Lane LOS	C	-	E	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.4

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1495	10	1294	4	4	4
Future Volume (vph)	4	4	1495	10	1294	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1727	3374	1687	3374	1509	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1687	3374	1509	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1574	11	1362	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1495	10	1294	4	4	4
Future Vol, veh/h	4	4	1495	10	1294	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	7	7	7	2	2
Mvmt Flow	4	4	1574	11	1362	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1362	1366	0	1574	-	0	2187	681
Stage 1	-	-	-	-	-	-	1384	-
Stage 2	-	-	-	-	-	-	803	-
Critical Hdwy	6.44	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	194	473	-	134	-	-	39	393
Stage 1	-	-	-	-	-	-	198	-
Stage 2	-	-	-	-	-	-	401	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	273	273	-	134	-	-	35	393
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	-
Stage 1	-	-	-	-	-	-	192	-
Stage 2	-	-	-	-	-	-	368	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.3	69.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	273	-	134	-	-	64
HCM Lane V/C Ratio	0.031	-	0.079	-	-	0.132
HCM Control Delay (s)	18.6	-	34.1	-	-	69.6
HCM Lane LOS	C	-	D	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	0.4

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1607	4	1894	4	4	4
Future Volume (vph)	4	4	1607	4	1894	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1736	3471	1752	3505	1568	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1736	3471	1752	3505	1568	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		1461		593	
Travel Time (s)			18.9		18.1		16.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1710	4	2015	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.4%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1607	4	1894	4	4	4
Future Vol, veh/h	4	4	1607	4	1894	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	4	4	3	3	3	2	2
Mvmt Flow	4	4	1710	4	2015	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	2015	2019	0	1710	-	0	2894	1008
Stage 1	-	-	-	-	-	-	2023	-
Stage 2	-	-	-	-	-	-	871	-
Critical Hdwy	6.48	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.54	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	71	271	-	114	-	-	13	239
Stage 1	-	-	-	-	-	-	88	-
Stage 2	-	-	-	-	-	-	370	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	111	111	-	114	-	-	12	239
Mov Cap-2 Maneuver	-	-	-	-	-	-	12	-
Stage 1	-	-	-	-	-	-	81	-
Stage 2	-	-	-	-	-	-	357	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.1	234.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	111	-	114	-	-	23
HCM Lane V/C Ratio	0.077	-	0.037	-	-	0.37
HCM Control Delay (s)	40	-	37.8	-	-	234.6
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-	1.1

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	5	1604	5	1918	5	7	5
Future Volume (vph)	4	5	1604	5	1918	5	7	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		300		65	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1736	3471	1752	3505	1568	1709	0
Flt Permitted		0.950		0.950			0.972	
Satd. Flow (perm)	0	1736	3471	1752	3505	1568	1709	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1461		2160		406	
Travel Time (s)			18.1		26.8		11.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	9	1688	5	2019	5	12	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	5	1604	5	1918	5	7	5
Future Vol, veh/h	4	5	1604	5	1918	5	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	300	-	65	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	3	3	3	2	2
Mvmt Flow	4	5	1688	5	2019	5	7	5

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	2019	2024	0	1688	-	0	2891	1010
Stage 1	-	-	-	-	-	-	2029	-
Stage 2	-	-	-	-	-	-	862	-
Critical Hdwy	6.48	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.54	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	70	270	-	118	-	-	13	238
Stage 1	-	-	-	-	-	-	88	-
Stage 2	-	-	-	-	-	-	374	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	118	118	-	118	-	-	12	238
Mov Cap-2 Maneuver	-	-	-	-	-	-	12	-
Stage 1	-	-	-	-	-	-	81	-
Stage 2	-	-	-	-	-	-	358	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.1	$ 343
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	118	-	118	-	-	20
HCM Lane V/C Ratio	0.08	-	0.045	-	-	0.632
HCM Control Delay (s)	38.3	-	36.9	-	-	$ 343
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-	1.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1606	9	1918	4	4	4
Future Volume (vph)	4	4	1606	9	1918	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1736	3471	1736	3471	1553	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1736	3471	1736	3471	1553	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1639	9	1957	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1606	9	1918	4	4	4
Future Vol, veh/h	4	4	1606	9	1918	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	4	4	4	4	4	4	2	2
Mvmt Flow	4	4	1639	9	1957	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1957	1961	0	1639	-	0	2811	979
Stage 1	-	-	-	-	-	-	1975	-
Stage 2	-	-	-	-	-	-	836	-
Critical Hdwy	6.48	4.18	-	6.48	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.54	2.24	-	2.54	-	-	3.52	3.32
Pot Cap-1 Maneuver	77	285	-	125	-	-	14	249
Stage 1	-	-	-	-	-	-	94	-
Stage 2	-	-	-	-	-	-	386	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	120	120	-	125	-	-	12	249
Mov Cap-2 Maneuver	-	-	-	-	-	-	12	-
Stage 1	-	-	-	-	-	-	88	-
Stage 2	-	-	-	-	-	-	358	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.2	231
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	120	-	125	-	-	23
HCM Lane V/C Ratio	0.068	-	0.073	-	-	0.355
HCM Control Delay (s)	37.2	-	36.1	-	-	231
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	1.1

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1532	4	1361	4	4	4
Future Volume (vph)	4	4	1532	4	1361	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1727	3374	1656	3312	1482	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1656	3312	1482	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		848		593	
Travel Time (s)			18.9		10.5		16.2	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1613	4	1433	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1532	4	1361	4	4	4
Future Vol, veh/h	4	4	1532	4	1361	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	9	9	9	2	2
Mvmt Flow	4	4	1613	4	1433	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1433	1437	0	1613	-	0	2264	717
Stage 1	-	-	-	-	-	-	1441	-
Stage 2	-	-	-	-	-	-	823	-
Critical Hdwy	6.44	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	174	444	-	123	-	-	34	372
Stage 1	-	-	-	-	-	-	184	-
Stage 2	-	-	-	-	-	-	392	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	248	248	-	123	-	-	32	372
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	-
Stage 1	-	-	-	-	-	-	178	-
Stage 2	-	-	-	-	-	-	379	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	75.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	248	-	123	-	-	59
HCM Lane V/C Ratio	0.034	-	0.034	-	-	0.143
HCM Control Delay (s)	20	-	35.3	-	-	75.9
HCM Lane LOS	C	-	E	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.5

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	55	4	1522	22	4	112	1303	4	0	0	150	0	0	4
Future Volume (vph)	55	4	1522	22	4	112	1303	4	0	0	150	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		0		300		65	0		0	0		0
Storage Lanes		1		0		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1764	3369	0	0	1765	3282	1468	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1764	3369	0	0	1765	3282	1468	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			612				2160			468			406	
Travel Time (s)			7.6				26.8			12.8			11.1	
Confl. Bikes (#/hr)								1						1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.93	0.90	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	7%	2%	10%	2%	10%	10%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														10%
Lane Group Flow (vph)	0	63	1661	0	0	128	1401	4	0	0	167	0	0	4
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.9

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	55	4	1522	22	4	112	1303	4	0	0	150	0	0	4
Future Vol, veh/h	55	4	1522	22	4	112	1303	4	0	0	150	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	-	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	93	90	93	93	90	90	90	93	93	93
Heavy Vehicles, %	2	7	7	2	10	2	10	10	2	2	2	2	2	2
Mvmt Flow	59	4	1637	24	4	124	1401	4	0	0	167	0	0	4

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1401	1405	0	0	1661	1661	0	0	-	-	831	-	-	701
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.24	-	-	6.6	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.27	-	-	2.6	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	183	457	-	-	113	384	-	-	0	0	313	0	0	381
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	189	189	-	-	324	324	-	-	-	-	313	-	-	381
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.9	28.9	14.6
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	313	189	-	-	324	-	-	381
HCM Lane V/C Ratio	0.532	0.336	-	-	0.397	-	-	0.011
HCM Control Delay (s)	28.9	33.4	-	-	23.2	-	-	14.6
HCM Lane LOS	D	D	-	-	C	-	-	B
HCM 95th %tile Q(veh)	2.9	1.4	-	-	1.8	-	-	0

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	27	4	1666	10	1393	4	4	4
Future Volume (vph)	27	4	1666	10	1393	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1759	3374	1687	3374	1509	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1759	3374	1687	3374	1509	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	34	1754	11	1466	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.8

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	27	4	1666	10	1393	4	4	4
Future Vol, veh/h	27	4	1666	10	1393	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	90	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	7	7	7	2	2
Mvmt Flow	30	4	1754	11	1466	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1466	1470	0	1754	-	0	2433	733
Stage 1	-	-	-	-	-	-	1488	-
Stage 2	-	-	-	-	-	-	945	-
Critical Hdwy	6.44	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	166	431	-	101	-	-	26	363
Stage 1	-	-	-	-	-	-	174	-
Stage 2	-	-	-	-	-	-	338	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	178	178	-	101	-	-	19	363
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	-
Stage 1	-	-	-	-	-	-	141	-
Stage 2	-	-	-	-	-	-	301	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0.3	133.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	178	-	101	-	-	36
HCM Lane V/C Ratio	0.192	-	0.104	-	-	0.234
HCM Control Delay (s)	30.1	-	44.7	-	-	133.2
HCM Lane LOS	D	-	E	-	-	F
HCM 95th %tile Q(veh)	0.7	-	0.3	-	-	0.8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1497	35	0	1357	0	100
Future Volume (vph)	1497	35	0	1357	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		0	1
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	0	3539	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	1583	0	3539	0	1611
Link Speed (mph)	55			55	25	
Link Distance (ft)	848			612	311	
Travel Time (s)	10.5			7.6	8.5	
Peak Hour Factor	0.93	0.90	0.93	0.93	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1610	39	0	1459	0	111
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1497	35	0	1357	0	100
Future Vol, veh/h	1497	35	0	1357	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	90	93	93	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1610	39	0	1459	0	111

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	805
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	325
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	325
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	325	-	-	-
HCM Lane V/C Ratio	0.342	-	-	-
HCM Control Delay (s)	21.7	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	1.5	-	-	-

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1670	10	1940	4	4	4
Future Volume (vph)	4	4	1670	10	1940	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1736	3471	1752	3505	1568	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1736	3471	1752	3505	1568	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		848		593	
Travel Time (s)			18.9		10.5		16.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1777	11	2064	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1670	10	1940	4	4	4
Future Vol, veh/h	4	4	1670	10	1940	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	4	4	3	3	3	2	2
Mvmt Flow	4	4	1777	11	2064	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	2064	2068	0	1777	-	0	2991	1032
Stage 1	-	-	-	-	-	-	2086	-
Stage 2	-	-	-	-	-	-	905	-
Critical Hdwy	6.48	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.54	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	66	259	-	103	-	-	11	230
Stage 1	-	-	-	-	-	-	81	-
Stage 2	-	-	-	-	-	-	355	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	104	104	-	103	-	-	9	230
Mov Cap-2 Maneuver	-	-	-	-	-	-	9	-
Stage 1	-	-	-	-	-	-	74	-
Stage 2	-	-	-	-	-	-	317	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.2	$ 350
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	104	-	103	-	-	17
HCM Lane V/C Ratio	0.082	-	0.103	-	-	0.501
HCM Control Delay (s)	42.7	-	43.9	-	-	$ 350
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-	1.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	45	5	1626	33	5	168	1920	5	0	0	117	0	0	12
Future Volume (vph)	45	5	1626	33	5	168	1920	5	0	0	117	0	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		0		300		65	0		0	0		0
Storage Lanes		1		0		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1736	3461	0	0	1752	3505	1568	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1736	3461	0	0	1752	3505	1568	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			612				2160			468			406	
Travel Time (s)			7.6				26.8			12.8			11.1	
Peak Hour Factor	0.95	0.95	0.95	0.90	0.95	0.90	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	4%	3%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	52	1749	0	0	192	2021	5	0	0	130	0	0	13
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.8%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.2

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	45	5	1626	33	5	168	1920	5	0	0	117	0	0	12
Future Vol, veh/h	45	5	1626	33	5	168	1920	5	0	0	117	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	-	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	90	95	90	95	95	90	90	90	95	95	95
Heavy Vehicles, %	4	4	4	4	3	3	3	3	2	2	2	2	2	2
Mvmt Flow	47	5	1712	37	5	187	2021	5	0	0	130	0	0	13

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	2021	2026	0	0	1748	1749	0	0	-	-	875	-	-	1011
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.48	4.18	-	-	6.46	4.16	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.54	2.24	-	-	2.53	2.23	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	70	269	-	-	107	350	-	-	0	0	292	0	0	237
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	71	71	-	-	312	312	-	-	-	-	292	-	-	237
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4	2.9	26.9	21
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	292	71	-	-	312	-	-	237
HCM Lane V/C Ratio	0.445	0.741	-	-	0.615	-	-	0.053
HCM Control Delay (s)	26.9	138.5	-	-	33.4	-	-	21
HCM Lane LOS	D	F	-	-	D	-	-	C
HCM 95th %tile Q(veh)	2.2	3.4	-	-	3.8	-	-	0.2

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	25	4	1734	9	2064	4	4	4
Future Volume (vph)	25	4	1734	9	2064	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1736	3471	1736	3471	1553	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1736	3471	1736	3471	1553	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	30	1769	9	2106	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	25	4	1734	9	2064	4	4	4
Future Vol, veh/h	25	4	1734	9	2064	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	4	4	4	4	4	4	2	2
Mvmt Flow	26	4	1769	9	2106	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	2106	2110	0	1769	-	0	3069	1053
Stage 1	-	-	-	-	-	-	2124	-
Stage 2	-	-	-	-	-	-	945	-
Critical Hdwy	6.48	4.18	-	6.48	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.54	2.24	-	2.54	-	-	3.52	3.32
Pot Cap-1 Maneuver	61	249	-	103	-	-	9	223
Stage 1	-	-	-	-	-	-	77	-
Stage 2	-	-	-	-	-	-	338	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	67	67	-	103	-	-	5	223
Mov Cap-2 Maneuver	-	-	-	-	-	-	5	-
Stage 1	-	-	-	-	-	-	43	-
Stage 2	-	-	-	-	-	-	309	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0.2	$ 689.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	67	-	103	-	-	10
HCM Lane V/C Ratio	0.442	-	0.089	-	-	0.816
HCM Control Delay (s)	95.7	-	43.3	-	-	$ 689.7
HCM Lane LOS	F	-	E	-	-	F
HCM 95th %tile Q(veh)	1.7	-	0.3	-	-	1.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1633	48	0	1980	0	79
Future Volume (vph)	1633	48	0	1980	0	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		0	1
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	0	3539	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	1583	0	3539	0	1611
Link Speed (mph)	55			55	25	
Link Distance (ft)	848			612	311	
Travel Time (s)	10.5			7.6	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1814	53	0	2200	0	88
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1633	48	0	1980	0	79
Future Vol, veh/h	1633	48	0	1980	0	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	-	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	1814	53	0	2200	0	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	907
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	279
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	279
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	279	-	-	-
HCM Lane V/C Ratio	0.315	-	-	-
HCM Control Delay (s)	23.7	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	1.3	-	-	-

Without RI/RO Driveway Scenario: Intersection Spreadsheet, Synchro Output, and Turn Lane Warrants

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential - Phase 2**
Location:	**Apex NC**
Scenario:	**No RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Pinefield Road**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	141	218	209	157
Pass-By Trips:	28	32	40	39

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.159274	**Buildout Year:**	2026

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 Eastbound U-Turn	Eastbound Left	Eastbound Through	Eastbound Right	US 64 Westbound U-Turn	Westbound Through	Westbound Right	Northbound Left	Northbound Through	Northbound Right	Pinefield Road Southbound Left	Southbound Through	Southbound Right
2020 Traffic Count	0	0	977	0	0	853	0	0	0	0	1	0	0
25% COVID-19 Factoring	0	0	244	0	0	213	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1221	0	0	1066	0	0	0	0	1	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	194	0	0	170	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2026 Background Traffic	0	0	1490	0	0	1295	0	0	0	0	1	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	42	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	65	0	0	0	0	0	0	0
Total External Site Traffic	0	0	42	0	0	65	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	-15	0	0	-13	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	15	0	0	14	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	1	0	0	0	0	0	0	0
Total Project Traffic	0	0	42	0	0	66	0	0	0	0	0	0	0
2026 Buildout Total	0	0	1532	0	0	1361	0	0	0	0	1	0	0
Percent Impact (Approach)			2.7%			4.8%			-			0.0%	

Overall Percent Impact 3.7%

PM PEAK HOUR
PM PHF = 0.94

Description	US 64 Eastbound U-Turn	Eastbound Left	Eastbound Through	Eastbound Right	US 64 Westbound U-Turn	Westbound Through	Westbound Right	Northbound Left	Northbound Through	Northbound Right	Pinefield Road Southbound Left	Southbound Through	Southbound Right
2020 Traffic Count	2	2	1047	0	2	1240	1	0	0	0	2	0	2
25% COVID-19 Factoring	1	1	262	0	1	310	0	0	0	0	1	0	1
2021 Existing Traffic	3	3	1309	0	3	1550	1	0	0	0	3	0	3
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	208	0	0	247	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2026 Background Traffic	3	3	1607	0	3	1894	1	0	0	0	3	0	3
Superstreet Diversion	0	0	0	0	7	0	0	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	63	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	47	0	0	0	0	0	0	0
Total External Site Traffic	0	0	63	0	0	47	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	-18	0	0	-22	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	18	0	0	21	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	-1	0	0	0	0	0	0	0
Total Project Traffic	0	0	63	0	0	46	0	0	0	0	0	0	0
2026 Buildout Total	3	3	1670	0	10	1940	1	0	0	0	3	0	3
Percent Impact (Approach)			3.8%			2.4%			-			0.0%	

Overall Percent Impact 3.0%

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential - Phase 2**
Location:	**Apex NC**
Scenario:	**No RI/RO Site Driveway**
Ct. Date	**December 1, 2020**
N/S Street:	**Flying Hawk Road/Site Access Road**
E/W Street:	**US 64**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	141	218	209	157
Pass-By Trips:	28	32	40	39

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.159274	**Buildout Year:**	2026

AM PEAK HOUR
AM PHF = 0.93

Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Left	Through	Right	Site Access Road Northbound Left	Through	Right	Flying Hawk Road Southbound Left	Through	Right
2020 Traffic Count	1	1	977	0	1	0	849	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	244	0	0	0	212	0	0	0	0	0	0	0
2021 Existing Traffic	1	1	1221	0	1	0	1061	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	194	0	0	0	169	0	0	0	0	0	0	0
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	0	59	0	0	0	0	0	0	0
2026 Background Traffic	1	1	1490	0	1	0	1289	1	0	0	0	0	0	0
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	30%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	42	0	99	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	100%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	65	0	0	0	218	0	0	0
Total External Site Traffic	0	0	0	42	0	99	65	0	0	0	218	0	0	0
Pass-By Capture Reduction	0	0	-15	0	0	0	-13	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	15	0	13	14	0	0	0	32	0	0	0
Total Pass-By Traffic	0	0	-15	15	0	13	1	0	0	0	32	0	0	0
Total Project Traffic	0	0	-15	57	0	112	66	0	0	0	250	0	0	0
2026 Buildout Total	1	1	1475	57	1	112	1355	1	0	0	250	0	0	0
Percent Impact (Approach)			2.7%				12.1%			100.0%			-	

Overall Percent Impact 14.4%

PM PEAK HOUR
PM PHF = 0.95

Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Left	Through	Right	Site Access Road Northbound Left	Through	Right	Flying Hawk Road Southbound Left	Through	Right
2020 Traffic Count	0	3	1045	0	3	0	1257	3	0	0	0	5	0	3
25% COVID-19 Factoring	0	1	261	0	1	0	314	1	0	0	0	1	0	1
2021 Existing Traffic	0	4	1306	0	4	0	1571	4	0	0	0	6	0	4
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	1	208	0	1	0	250	1	0	0	0	1	0	1
Committed Projects														
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	0	97	0	0	0	0	0	0	0
2026 Background Traffic	0	5	1604	0	5	0	1918	5	0	0	0	7	0	5
Superstreet Diversion	0	0	7	0	0	0	0	0	0	0	0	-7	0	7
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	30%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	63	0	146	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	100%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	47	0	0	0	157	0	0	0
Total External Site Traffic	0	0	0	63	0	146	47	0	0	0	157	0	0	0
Pass-By Capture Reduction	0	0	-18	0	0	0	-22	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	18	0	22	21	0	0	0	39	0	0	0
Total Pass-By Traffic	0	0	-18	18	0	22	-1	0	0	0	39	0	0	0
Total Project Traffic	0	0	-18	81	0	168	46	0	0	0	196	0	0	0
2026 Buildout Total	0	5	1593	81	5	168	1964	5	0	0	196	0	0	12
Percent Impact (Approach)			3.8%				10.0%			100.0%			0.0%	

Overall Percent Impact 11.7%

INTERSECTION ANALYSIS SHEET

Project:	**US 64 Residential - Phase 2**
Location:	**Apex NC**
Scenario:	**No RI/RO Site Driveway**
Ct. Date	**January 26, 2021**
N/S Street:	**Goodwin Road**
E/W Street:	**US 64**

	AM In	AM Out	PM In	PM Out
Net New Trips:	141	218	209	157
Pass-By Trips:	28	32	40	39

Annual Growth Rate:	3.0%	**Existing Year:**	2021
Growth Factor:	0.159274	**Buildout Year:**	2026

AM PEAK HOUR
AM PHF = 0.95

Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Through	Right	Northbound Left	Through	Right	Goodwin Road Southbound Left	Through	Right
2021 Traffic Count	0	0	980	0	7	803	1	0	0	0	1	0	1
25% COVID-19 Factoring	0	0	245	0	2	201	0	0	0	0	0	0	0
Volume Balancing	0	0	0	0	0	61	0	0	0	0	0	0	0
2021 Existing Traffic	0	0	1225	0	9	1065	1	0	0	0	1	0	1
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	195	0	1	170	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	46	0	0	33	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	6	0	0	19	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	23	0	0	7	0	0	0	0	0	0	0
Total Committed Traffic	0	0	75	0	0	59	0	0	0	0	0	0	0
2026 Background Traffic	0	0	1495	0	10	1294	1	0	0	0	1	0	1
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	99	0	0	0	0	0	0	0
Percent Assignment Outbound	30%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	65	0	153	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	65	0	153	0	0	99	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	14	0	18	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	14	0	18	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	79	0	171	0	0	99	0	0	0	0	0	0	0
2026 Buildout Total	79	0	1666	0	10	1393	1	0	0	0	1	0	1
Percent Impact (Approach)			14.3%			7.1%			-			0.0%	
Overall Percent Impact	11.1%												

PM PEAK HOUR
PM PHF = 0.98

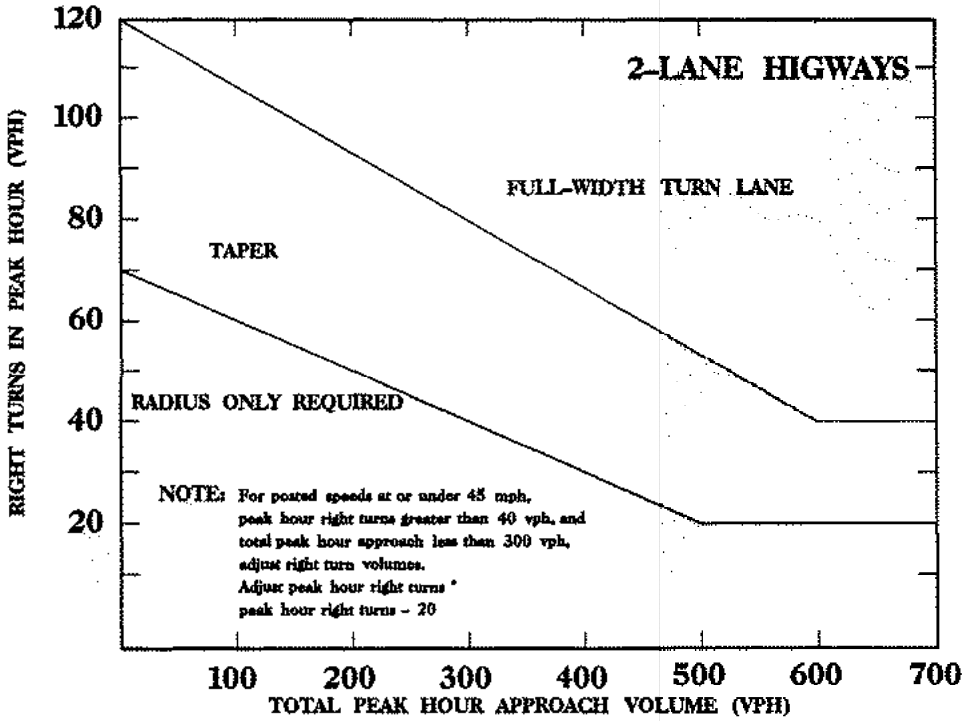
Description	US 64 Eastbound U-Turn	Left	Through	Right	US 64 Westbound U-Turn	Through	Right	Northbound Left	Through	Right	Goodwin Road Southbound Left	Through	Right
2021 Traffic Count	1	0	919	0	6	1098	1	0	0	0	0	0	0
25% COVID-19 Factoring	0	0	230	0	2	275	0	0	0	0	0	0	0
Volume Balancing	0	0	159	0	0	198	0	0	0	0	0	0	0
2021 Existing Traffic	1	0	1308	0	8	1571	1	0	0	0	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2026 Background Growth	0	0	208	0	1	250	0	0	0	0	0	0	0
Committed Projects													
Sweetwater (15% res. + 100% comm.)	0	0	57	0	0	62	0	0	0	0	0	0	0
Smith Farm (25% residential)	0	0	20	0	0	11	0	0	0	0	0	0	0
Deer Creek (20% residential)	0	0	13	0	0	24	0	0	0	0	0	0	0
Total Committed Traffic	0	0	90	0	0	97	0	0	0	0	0	0	0
2026 Background Traffic	1	0	1606	0	9	1918	1	0	0	0	0	0	0
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	146	0	0	0	0	0	0	0
Percent Assignment Outbound	30%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	47	0	110	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	47	0	110	0	0	146	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	21	0	18	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	21	0	18	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	68	0	128	0	0	146	0	0	0	0	0	0	0
2026 Buildout Total	69	0	1734	0	9	2064	1	0	0	0	0	0	0
Percent Impact (Approach)			10.9%			7.0%			-			-	
Overall Percent Impact	8.8%												

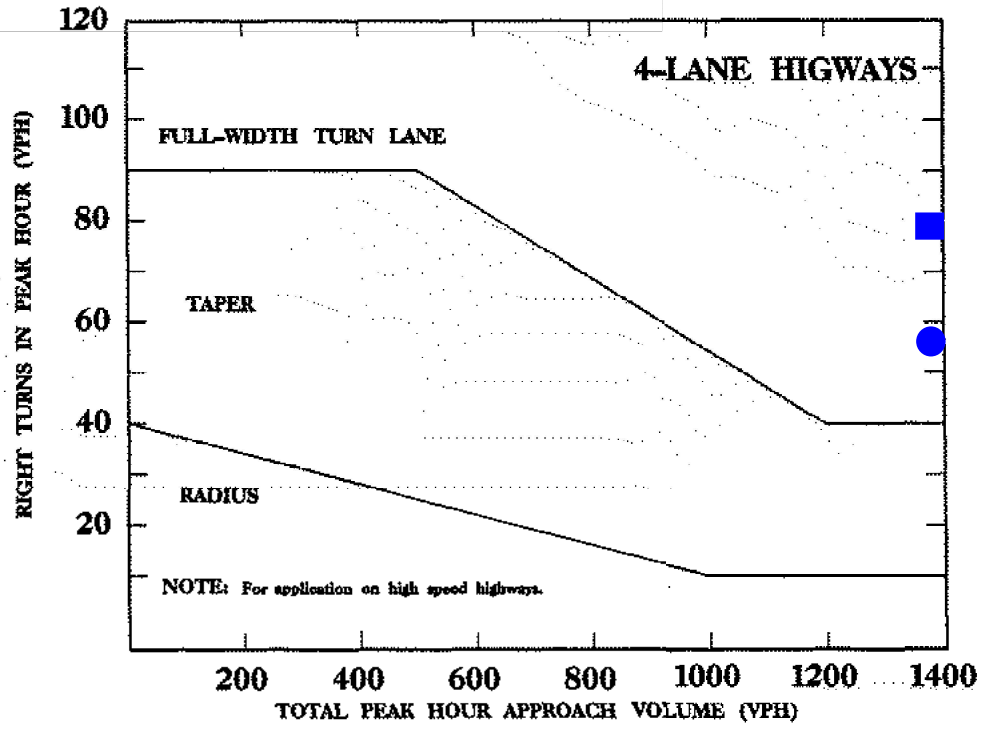
WITHOUT RI/RO SITE DRIVEWAY SCENARIO

FIGURE 4 **9 - 1**

F – 4 C

RIGHT TURN LANE WARRANTS





■ EBR @ Site Access Road - AM

● EBR @ Site Access Road - PM

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1532	4	1361	4	4	4
Future Volume (vph)	4	4	1532	4	1361	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1727	3374	1656	3312	1482	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1727	3374	1656	3312	1482	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		1461		593	
Travel Time (s)			18.9		18.1		16.2	
Confl. Bikes (#/hr)						1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	9%	9%	9%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1613	4	1433	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1532	4	1361	4	4	4
Future Vol, veh/h	4	4	1532	4	1361	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	9	9	9	2	2
Mvmt Flow	4	4	1613	4	1433	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1433	1437	0	1613	-	0	2264	717
Stage 1	-	-	-	-	-	-	1441	-
Stage 2	-	-	-	-	-	-	823	-
Critical Hdwy	6.44	4.24	-	6.58	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.59	-	-	3.52	3.32
Pot Cap-1 Maneuver	174	444	-	123	-	-	34	372
Stage 1	-	-	-	-	-	-	184	-
Stage 2	-	-	-	-	-	-	392	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	248	248	-	123	-	-	32	372
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	-
Stage 1	-	-	-	-	-	-	178	-
Stage 2	-	-	-	-	-	-	379	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	75.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	248	-	123	-	-	59
HCM Lane V/C Ratio	0.034	-	0.034	-	-	0.143
HCM Control Delay (s)	20	-	35.3	-	-	75.9
HCM Lane LOS	C	-	E	-	-	F
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	0.5

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	4	4	1475	57	4	112	1355	4	0	0	250	0	0	4
Future Volume (vph)	4	4	1475	57	4	112	1355	4	0	0	250	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		100		300		65	0		0	0		0
Storage Lanes		1		1		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1727	3374	1583	0	1765	3282	1468	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1727	3374	1583	0	1765	3282	1468	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			1461				2160			468			406	
Travel Time (s)			18.1				26.8			12.8			11.1	
Confl. Bikes (#/hr)								1						1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.93	0.90	0.93	0.93	0.90	0.90	0.90	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	7%	2%	10%	2%	10%	10%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														10%
Lane Group Flow (vph)	0	8	1586	63	0	128	1457	4	0	0	278	0	0	4
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	4	1475	57	4	112	1355	4	0	0	250	0	0	4
Future Vol, veh/h	4	4	1475	57	4	112	1355	4	0	0	250	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	100	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	93	90	93	93	90	90	90	93	93	93
Heavy Vehicles, %	2	7	7	2	10	2	10	10	2	2	2	2	2	2
Mvmt Flow	4	4	1586	63	4	124	1457	4	0	0	278	0	0	4

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1457	1461	0	0	1586	1649	0	0	-	-	793	-	-	729
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.24	-	-	6.6	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.27	-	-	2.6	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	168	434	-	-	127	388	-	-	0	0	331	0	0	365
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	240	240	-	-	280	280	-	-	-	-	331	-	-	365
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.3	53.3	15
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	331	240	-	-	280	-	-	365
HCM Lane V/C Ratio	0.839	0.036	-	-	0.46	-	-	0.012
HCM Control Delay (s)	53.3	20.5	-	-	28.3	-	-	15
HCM Lane LOS	F	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	7.4	0.1	-	-	2.3	-	-	0

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	79	4	1666	10	1393	4	4	4
Future Volume (vph)	79	4	1666	10	1393	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1766	3374	1687	3374	1509	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1766	3374	1687	3374	1509	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	7%	7%	7%	7%	7%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	90	1754	11	1466	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.3

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	79	4	1666	10	1393	4	4	4
Future Vol, veh/h	79	4	1666	10	1393	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	92	95	95	95	95	95	95	95
Heavy Vehicles, %	2	7	7	7	7	7	2	2
Mvmt Flow	86	4	1754	11	1466	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	1466	1470	0	1754	-	0	2545	733
Stage 1	-	-	-	-	-	-	1488	-
Stage 2	-	-	-	-	-	-	1057	-
Critical Hdwy	6.44	4.24	-	6.54	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	2.27	-	2.57	-	-	3.52	3.32
Pot Cap-1 Maneuver	166	431	-	101	-	-	22	363
Stage 1	-	-	-	-	-	-	174	-
Stage 2	-	-	-	-	-	-	295	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	169	169	-	101	-	-	9	363
Mov Cap-2 Maneuver	-	-	-	-	-	-	9	-
Stage 1	-	-	-	-	-	-	81	-
Stage 2	-	-	-	-	-	-	263	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0.3	$ 322.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	169	-	101	-	-	18
HCM Lane V/C Ratio	0.533	-	0.104	-	-	0.468
HCM Control Delay (s)	48.4	-	44.7	-	-	$ 322.8
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	2.7	-	0.3	-	-	1.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	4	4	1670	10	1940	4	4	4
Future Volume (vph)	4	4	1670	10	1940	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		350		50	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		200			25	
Satd. Flow (prot)	0	1736	3471	1752	3505	1568	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1736	3471	1752	3505	1568	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			1522		1461		593	
Travel Time (s)			18.9		18.1		16.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	8	1777	11	2064	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	4	4	1670	10	1940	4	4	4
Future Vol, veh/h	4	4	1670	10	1940	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	350	-	50	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	4	4	3	3	3	2	2
Mvmt Flow	4	4	1777	11	2064	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	2064	2068	0	1777	-	0	2991	1032
Stage 1	-	-	-	-	-	-	2086	-
Stage 2	-	-	-	-	-	-	905	-
Critical Hdwy	6.48	4.18	-	6.46	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.54	2.24	-	2.53	-	-	3.52	3.32
Pot Cap-1 Maneuver	66	259	-	103	-	-	11	230
Stage 1	-	-	-	-	-	-	81	-
Stage 2	-	-	-	-	-	-	355	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	104	104	-	103	-	-	9	230
Mov Cap-2 Maneuver	-	-	-	-	-	-	9	-
Stage 1	-	-	-	-	-	-	74	-
Stage 2	-	-	-	-	-	-	317	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.2	$ 350
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	104	-	103	-	-	17
HCM Lane V/C Ratio	0.082	-	0.103	-	-	0.501
HCM Control Delay (s)	42.7	-	43.9	-	-	$ 350
HCM Lane LOS	E	-	E	-	-	F
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-	1.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (vph)	4	5	1593	81	5	168	1964	5	0	0	196	0	0	12
Future Volume (vph)	4	5	1593	81	5	168	1964	5	0	0	196	0	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		100		300		65	0		0	0		0
Storage Lanes		1		1		1		1	0		1	0		1
Taper Length (ft)		200				225			25			25		
Satd. Flow (prot)	0	1736	3471	1553	0	1752	3505	1568	0	0	1611	0	0	1611
Flt Permitted		0.950				0.950								
Satd. Flow (perm)	0	1736	3471	1553	0	1752	3505	1568	0	0	1611	0	0	1611
Link Speed (mph)			55				55			25			25	
Link Distance (ft)			1461				2160			468			406	
Travel Time (s)			18.1				26.8			12.8			11.1	
Peak Hour Factor	0.95	0.95	0.95	0.90	0.95	0.90	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	4%	3%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)														10%
Lane Group Flow (vph)	0	9	1677	90	0	192	2067	5	0	0	218	0	1	12
Sign Control			Free				Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection														
Int Delay, s/veh	4													

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	4	5	1593	81	5	168	1964	5	0	0	196	0	0	12
Future Vol, veh/h	4	5	1593	81	5	168	1964	5	0	0	196	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	350	-	100	-	300	-	65	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	90	95	90	95	95	90	90	90	95	95	95
Heavy Vehicles, %	4	4	4	4	3	3	3	3	2	2	2	2	2	2
Mvmt Flow	4	5	1677	90	5	187	2067	5	0	0	218	0	0	13

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	2067	2072	0	0	1677	1767	0	0	-	-	839	-	-	1034
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.48	4.18	-	-	6.46	4.16	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.54	2.24	-	-	2.53	2.23	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	65	258	-	-	119	345	-	-	0	0	309	0	0	229
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	107	107	-	-	291	291	-	-	-	-	309	-	-	229
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	3.3	40.3	21.6
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	309	107	-	-	291	-	-	229
HCM Lane V/C Ratio	0.705	0.089	-	-	0.66	-	-	0.055
HCM Control Delay (s)	40.3	41.8	-	-	38.6	-	-	21.6
HCM Lane LOS	E	E	-	-	E	-	-	C
HCM 95th %tile Q(veh)	5	0.3	-	-	4.3	-	-	0.2

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	69	4	1734	9	2064	4	4	4
Future Volume (vph)	69	4	1734	9	2064	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350		325		60	0	0
Storage Lanes		1		1		1	1	0
Taper Length (ft)		200		225			25	
Satd. Flow (prot)	0	1736	3471	1736	3471	1553	1694	0
Flt Permitted		0.950		0.950			0.976	
Satd. Flow (perm)	0	1736	3471	1736	3471	1553	1694	0
Link Speed (mph)			55		55		25	
Link Distance (ft)			2160		1240		530	
Travel Time (s)			26.8		15.4		14.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	74	1769	9	2106	4	8	0
Sign Control			Free		Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.5

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	69	4	1734	9	2064	4	4	4
Future Vol, veh/h	69	4	1734	9	2064	4	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	350	-	325	-	60	0	-
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	4	4	4	4	4	4	2	2
Mvmt Flow	70	4	1769	9	2106	4	4	4

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	2106	2110	0	1769	-	0	3157	1053
Stage 1	-	-	-	-	-	-	2124	-
Stage 2	-	-	-	-	-	-	1033	-
Critical Hdwy	6.48	4.18	-	6.48	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.54	2.24	-	2.54	-	-	3.52	3.32
Pot Cap-1 Maneuver	~ 61	249	-	103	-	-	8	223
Stage 1	-	-	-	-	-	-	77	-
Stage 2	-	-	-	-	-	-	304	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	~ 63	63	-	103	-	-	0	223
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	278	-

Approach	EB	WB	SB
HCM Control Delay, s	11.5	0.2	21.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	63	-	103	-	-	223
HCM Lane V/C Ratio	1.182	-	0.089	-	-	0.037
HCM Control Delay (s)	285.8	-	43.3	-	-	21.8
HCM Lane LOS	F	-	E	-	-	C
HCM 95th %tile Q(veh)	6.1	-	0.3	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

PLANNING BOARD REPORT TO TOWN COUNCIL

Rezoning Case: 21CZ12 Legacy PUD

Planning Board Meeting Date: September 13, 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: +/- 60.97 acres

PIN(s): 0722040381, 0722037373, and 0712949922

Current Zoning: Rural Residential (RR) and Wake Co. R-80W

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

2045 Land Use Map: Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services

Town Limits: Partially inside the ETJ and partially outside 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: _____

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: _____

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 Recommendation:

Motion: To recommend approval with conditions as stated below.

Introduced by Planning Board member: Tina Sherman

Seconded by Planning Board member: Ryan Akers

☐ *Approval*: the project is consistent with all applicable officially adopted plans and the applicable legislative considerations listed above.

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

Conditions as proposed by staff, but the Board would like staff and applicant to work together on explicit language to allow the developer to get their fee-in-lieu returned if the signal is not warranted in a certain amount of time that is agreeable to both parties.

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

With 7 Planning Board Member(s) voting "aye"

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

Reasons for dissenting votes:

This report reflects the recommendation of the Planning Board, this the 13th day of September 2021.

Attest:

Michael Marks Digitally signed by Michael Marks Date: 2021.09.13 20:45:16 -04'00'

Michael Marks, Planning Board Chair

Dianne Khin Digitally signed by Dianne Khin Date: 2021.09.13 18:14:41 -04'00'

Dianne Khin, Director of Planning and Community Development

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

PUBLIC NOTIFICATION OF PUBLIC HEARINGS
CONDITIONAL ZONING #21CZ12
Legacy 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 of the Town of Apex. The purpose of these hearings is to consider the following:

Applicant: Ryan Linker, GCI Acquisitions, LLC
Authorized Agent: Ryan Linker, GCI Acquisitions, LLC
Property Addresses: 3601 and 3609 US 64 Hwy W, 0 Olive Chapel Rd
Acreage: ±60.97 acres
Property Identification Numbers (PINs): 0722040381, 0722037373, and 0712949922
Current 2045 Land Use Map Designation: Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services
Existing Zoning of Properties: Rural Residential (RR) and Wake Co. (R-80W)
Proposed Zoning of Properties: Planned Unit Development-Conditional Zoning (PUD-CZ)

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

Planning Board Public Hearing Date and Time: September 13, 2021 4:30 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. Please visit www.apexnc.org on the day of the meeting to confirm whether the meeting will be held in-person or remotely.

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the clerk of the Planning Board, Bonnie Brock (73 Hunter Street or USPS mail - P.O. Box 250, Apex, NC 27502), up to 24 hours prior to the scheduled time of the meeting per to NCGS §166A-19.24. You must provide your name and address for the record. The written statements will be delivered to the Planning Board prior to their vote. Please include the Public Hearing name in the subject line.

In the event that the Planning Board meeting is held remotely or with at least one member attending virtually, written comments may be submitted up to 24 hours prior to the scheduled time of the meeting per NCGS §166A-19.24 according to the methods specified above. Virtual meetings may be viewed via the Town's YouTube livestream at https://www.youtube.com/c/townofapexgov.

A separate notice of the Town Council public hearing on this project will be mailed and posted in order to comply with State public notice requirements.

Vicinity Map:

Property owners, tenants, and neighborhood associations 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.raleighnc.gov/maps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-249-3426, 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/15529.

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

Published Dates: August 27 – September 13, 2021

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

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #21CZ12
Legacy PUD (Desarrollo de Unidad Planificada)

De conformidad con las disposiciones de los Estatutos Generales de Carolina del Norte §160D-602 y con la Sección 2.2.11 de la Ordenanza de Desarrollo Unificado (UDO) del ayuntamiento de Apex, por la presente se notifican las audiencias públicas ante la Junta de Planificación de Apex. El propósito de estas audiencias es considerar lo siguiente:

Solicitante: Ryan Linker, GCI Acquisitions, LLC
Agente autorizado: Ryan Linker, GCI Acquisitions, LLC
Dirección de las propiedades: 3601 y 3609 US 64 Hwy W, 0 Olive Chapel Rd
Superficie: ±60.97 acres
Números de identificación de las propiedades: 0722040381, 0722037373, and 0712949922
Designación actual en el Mapa de Uso Territorial para 2045: Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services
Ordenamiento territorial existente de las propiedades: Rural Residential (RR) and Wake Co. (R-80W)
Ordenamiento territorial propuesto para las propiedades: Planned Unit Development-Conditional Zoning (PUD-CZ)

Lugar de la audiencia pública: Ayuntamiento de Apex
Cámara del Consejo, 2º piso
73 Hunter Street, Apex, Carolina del Norte

Fecha y hora de la audiencia pública de la Junta de Planificación: 13 de septiembre, 2021 4:30 P.M.
Puede asistir a la reunión de manera presencial o seguir la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexnc. Por favor visite www.apexnc.org el día de la reunión para confirmar si la reunión se llevará a cabo de manera presencial o remotamente.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la secretaria de la Junta de Planificación, Bonnie Brock (73 Hunter Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la votación de la Junta de Planificación. Debe proporcionar su nombre y dirección para que conste en el registro. Las declaraciones escritas se entregarán a la Junta de Planificación antes de la votación. No olvide incluir el nombre de la audiencia pública en el asunto.

En caso de que la reunión de la Junta de Planificación se lleve a cabo remotamente o que por lo menos uno de los miembros asista virtualmente, se permite presentar comentarios por escrito hasta 24 horas antes de la hora programada de la reunión según los estatutos de Carolina del Norte NCGS §166A-19.24 siguiendo los métodos especificados anteriormente. Las reuniones virtuales se pueden seguir en la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexnc.

De conformidad con los requisitos estatales de notificaciones públicas, se enviará por correo y se publicará por separado una notificación de la audiencia pública del Consejo Municipal sobre este proyecto.

Mapa de las inmediaciones:

Los propietarios, inquilinos y asociaciones de vecinos en un radio de 300 pies del Ordenamiento Territorial Condicional propuesto han recibido esta notificación por correo postal de primera clase. Todas las partes interesadas pueden presentar comentarios sobre la solicitud a través de los medios especificados anteriormente. La ubicación de la propiedad también puede verse aquí: https://maps.raleighnc.gov/imaps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/478. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación y Desarrollo Comunitario al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/35529.

Dianne F. Khin, AICP
Directora de Planificación y Desarrollo Comunitario

Fechas de publicación: 27 de agosto - 13 de setiembre, 2021

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

PUBLIC NOTIFICATION OF PUBLIC HEARINGS

CONDITIONAL ZONING #21CZ12
Legacy 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 of the Town of Apex. The purpose of these hearings is to consider the following:

Applicant: Ryan Linker, GCI Acquisitions, LLC
Authorized Agent: Ryan Linker, GCI Acquisitions, LLC
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Existing Zoning of Properties: Rural Residential (RR) and Wake Co. (R-80W)
Proposed Zoning of Properties: Planned Unit Development-Conditional Zoning (PUD-CZ)

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

Planning Board Public Hearing Date and Time: September 13, 2021 4:30 PM

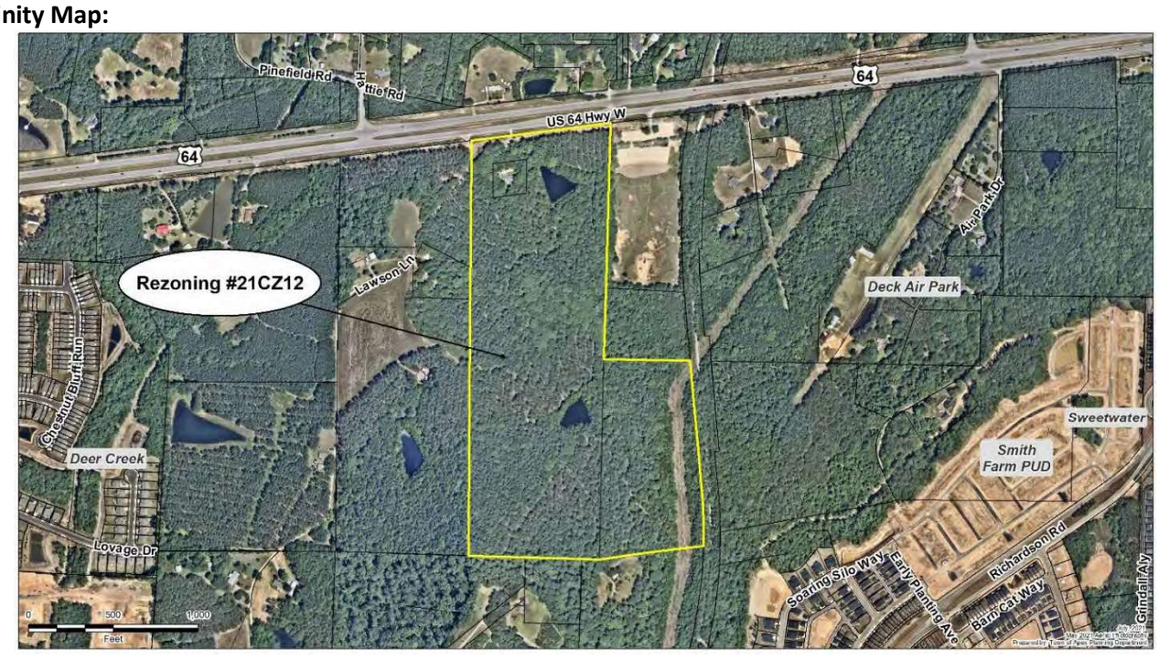
You may attend the meeting in person or view the meeting through the Town's YouTube livestream at: https://www.youtube.com/c/townofapexgov. Please visit www.apexnc.org on the day of the meeting to confirm whether the meeting will be held in-person or remotely.

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the clerk of the Planning Board, Bonnie Brock (73 Hunter Street or USPS mail - P.O. Box 250, Apex, NC 27502), up to 24 hours prior to the scheduled time of the meeting per to NCGS §166A-19.24. You must provide your name and address for the record. The written statements will be delivered to the Planning Board prior to their vote. Please include the Public Hearing name in the subject line.

In the event that the Planning Board meeting is held remotely or with at least one member attending virtually, written comments may be submitted up to 24 hours prior to the scheduled time of the meeting per NCGS §166A-19.24 according to the methods specified above. Virtual meetings may be viewed via the Town's YouTube livestream at https://www.youtube.com/c/townofapexgov.

A separate notice of the Town Council public hearing on this project will be mailed and posted in order to comply with State public notice requirements.

Vicinity Map:



Property owners, tenants, and neighborhood associations 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.raleighnc.gov/imaps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-249-3426, 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/35529.

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

Published Dates: August 27 – September 13, 2021

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

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS

ORDENAMIENTO TERRITORIAL CONDICIONAL #21CZ12
Legacy PUD (Desarrollo de Unidad Planificada)

De conformidad con las disposiciones de los Estatutos Generales de Carolina del Norte §160D-602 y con la Sección 2.2.11 de la Ordenanza de Desarrollo Unificado (UDO) del ayuntamiento de Apex, por la presente se notifican las audiencias públicas ante la Junta de Planificación de Apex. El propósito de estas audiencias es considerar lo siguiente:

Solicitante: Ryan Linker, GCI Acquisitions, LLC
Agente autorizado: Ryan Linker, GCI Acquisitions, LLC
Dirección de las propiedades: 3601 y 3609 US 64 Hwy W, 0 Olive Chapel Rd
Superficie: ±60.97 acres
Números de identificación de las propiedades: 0722040381, 0722037373, and 0712949922
Designación actual en el Mapa de Uso Territorial para 2045: Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services
Ordenamiento territorial existente de las propiedades: Rural Residential (RR) and Wake Co. (R-80W)
Ordenamiento territorial propuesto para las propiedades: Planned Unit Development-Conditional Zoning (PUD-CZ)

Lugar de la audiencia pública: Ayuntamiento de Apex
Cámara del Consejo, 2º piso
73 Hunter Street, Apex, Carolina del Norte

Fecha y hora de la audiencia pública de la Junta de Planificación: 13 de septiembre, 2021 4:30 P.M.

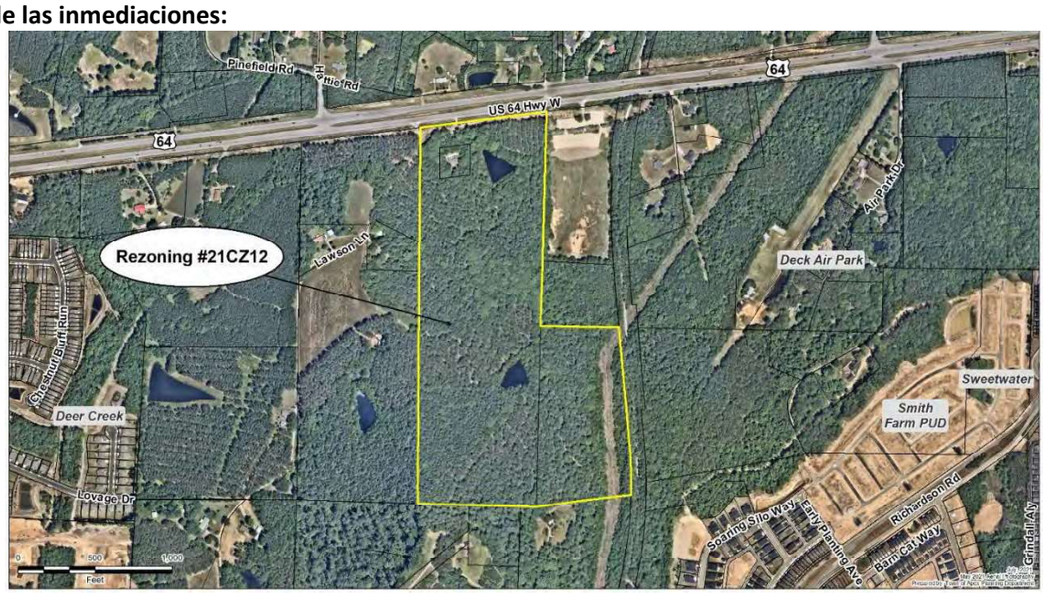
Puede asistir a la reunión de manera presencial o seguir la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov. Por favor visite www.apexnc.org el día de la reunión para confirmar si la reunión se llevará a cabo de manera presencial o remotamente.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la secretaría de la Junta de Planificación, Bonnie Brock (73 Hunter Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la votación de la Junta de Planificación. Debe proporcionar su nombre y dirección para que conste en el registro. Las declaraciones escritas se entregarán a la Junta de Planificación antes de la votación. No olvide incluir el nombre de la audiencia pública en el asunto.

En caso de que la reunión de la Junta de Planificación se lleve a cabo remotamente o que por lo menos uno de los miembros asista virtualmente, se permite presentar comentarios por escrito hasta 24 horas antes de la hora programada de la reunión según los estatutos de Carolina del Norte NCGS §166A-19.24 siguiendo los métodos especificados anteriormente. Las reuniones virtuales se pueden seguir en la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov.

De conformidad con los requisitos estatales de notificaciones públicas, se enviará por correo y se publicará por separado una notificación de la audiencia pública del Consejo Municipal sobre este proyecto.

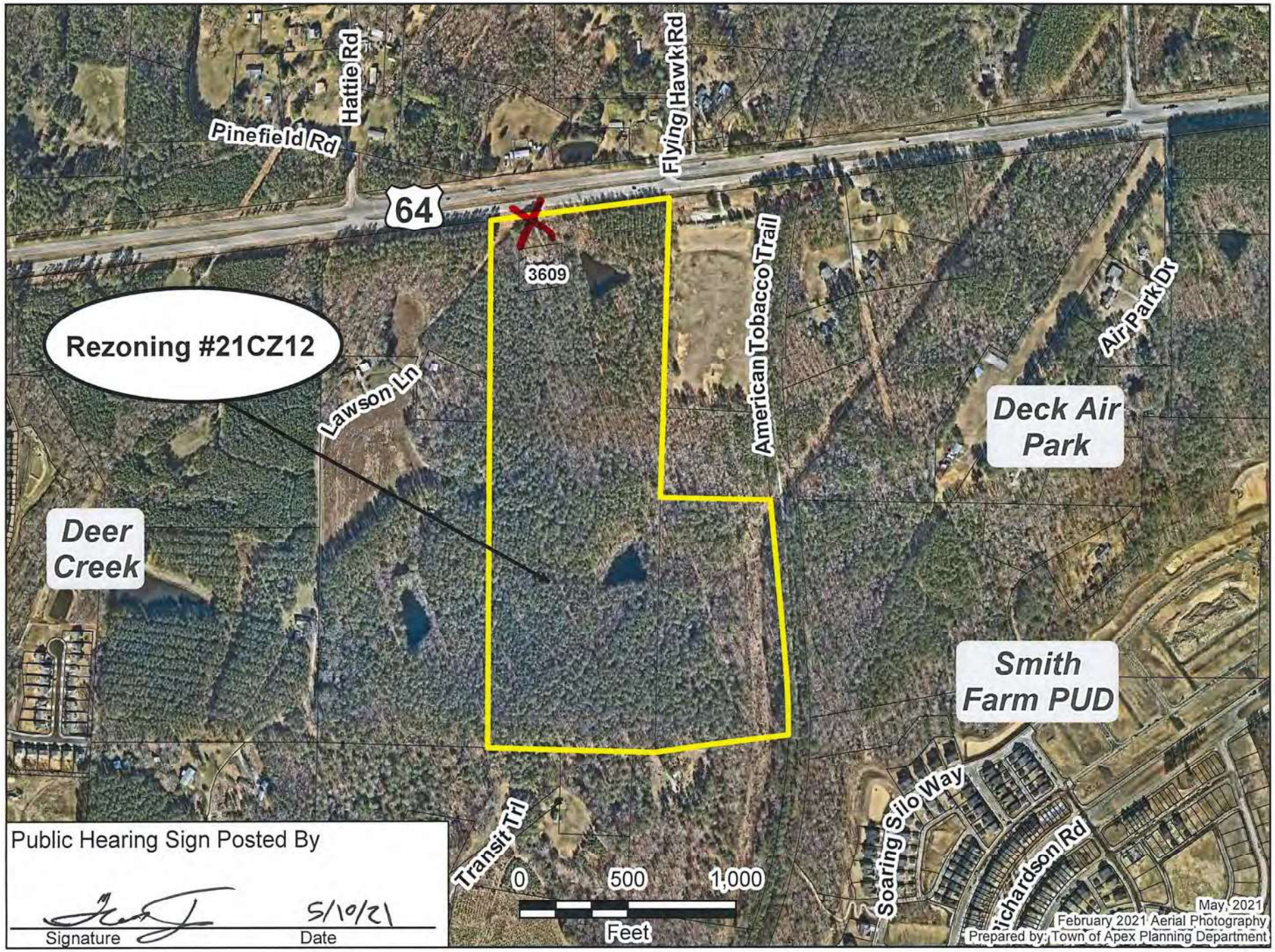
Mapa de las inmediaciones:



Los propietarios, inquilinos y asociaciones de vecinos en un radio de 300 pies del Ordenamiento Territorial Condicional propuesto han recibido esta notificación por correo postal de primera clase. Todas las partes interesadas pueden presentar comentarios sobre la solicitud a través de los medios especificados anteriormente. La ubicación de la propiedad también puede verse aquí: https://maps.raleighnc.gov/imaps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/478. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación y Desarrollo Comunitario al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/35529.

Dianne F. Khin, AICP
Directora de Planificación y Desarrollo Comunitario

Fechas de publicación: 27 de agosto - 13 de setiembre, 2021



Public Hearing Sign Posted By

5/10/21

Signature Date

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

AFFIDAVIT CERTIFYING
Public Notification – Written (Mailed) Notice

Section 2.2.11
Town of Apex Unified Development Ordinance

Project Name:	Conditional Zoning #21CZ12 Legacy PUD
Project Location:	3601 and 3609 US 64 Hwy W, 0 Olive Chapel Rd
Applicant or Authorized Agent:	Ryan Linker
Firm:	GCI Acquisitions, LLC

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 August 27, 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.

8/31/2021
Date

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 31 day of August, 2021.

Jeri Chastain Pederson
Notary Public

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

My Commission Expires: 3/10/2024

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

PUBLIC NOTIFICATION
OF PUBLIC HEARINGS
CONDITIONAL ZONING #21CZ12
Legacy 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 Town Council of the Town of Apex. The purpose of these hearings is to consider the following:

Applicant: Ryan Linker, GCI Acquisitions, LLC
Authorized Agent: Ryan Linker, GCI Acquisitions, LLC
Property Addresses: 3601 and 3609 US 64 Hwy W, 0 Olive Chapel Rd
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Existing Zoning of Properties: Rural Residential (RR) and Wake Co. (R-80W)
Proposed Zoning of Properties: 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 the Planning Board public hearing will not be provided to the Town Council. Separate comments for the Town Council public hearing must be provided by the deadline specified below.

Town Council Public Hearing Date and Time: September 28, 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. Please visit www.apexnc.org on the day of the meeting to confirm whether the meeting will be held in-person or remotely.

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the Deputy Town Clerk, Tesa Silver (73 Hunter Street or USPS mail - P.O. Box 250, Apex, NC 27502), at least two business days prior to the Town Council vote. You must provide your name and address for the record. The written statements will be delivered to the Town Council members prior to their vote. Please include the Public Hearing name in the subject line.

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Vicinity Map:

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

Published Dates: September 3 – September 28, 2021

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELÉFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL ##21CZ12
Legacy PUD (Desarrollo de Unidad Planificada)

De conformidad con las disposiciones de los Estatutos Generales de Carolina del Norte §160D-602 y con la Sección 2.2.11 de la Ordenanza de Desarrollo Unificado (UDO) del ayuntamiento de Apex, por la presente se notifican las audiencias públicas ante el Consejo Municipal del Ayuntamiento de Apex. El propósito de estas audiencias es considerar lo siguiente:

Solicitante: Ryan Linker, GCI Acquisitions, LLC
Agente autorizado: Ryan Linker, GCI Acquisitions, LLC
Dirección de las propiedades: 3601 y 3609 US 64 Hwy W, 0 Olive Chapel Rd
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Ordenamiento territorial propuesto para las propiedades: Planned Unit Development-Conditional Zoning (PUD-CZ)

Lugar de la audiencia pública: Ayuntamiento de Apex
Cámara del Consejo, 2º piso
73 Hunter Street, Apex, Carolina del Norte

Los comentarios recibidos antes de la audiencia pública de la Junta de Planificación no se proporcionarán al Consejo Municipal. Los comentarios para la audiencia pública del Consejo Municipal deben presentarse por separado en el plazo especificado a continuación.

Fecha y hora de la audiencia pública del Consejo Municipal: 28 de septiembre, 2021 6:00 P.M.

Puede asistir a la reunión de manera presencial o seguir la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov. Por favor visite www.apexnc.org el día de la reunión para confirmar si la reunión se llevará a cabo de manera presencial o remotamente.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la secretaria municipal adjunta, Tesa Silver (73 Hunter Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la votación del Consejo Municipal. Debe proporcionar su nombre y dirección para que conste en el registro. Las declaraciones escritas se entregarán al Consejo Municipal antes de la votación. No olvide incluir el nombre de la audiencia pública en el asunto.

En caso de que la reunión del Consejo Municipal se lleve a cabo remotamente o que por lo menos uno de los miembros asista virtualmente, se permite presentar comentarios por escrito hasta 24 horas antes de la hora programada de la reunión según los estatutos de Carolina del Norte NCGS §166A-19.24 siguiendo los métodos especificados anteriormente. Las reuniones virtuales se pueden seguir en la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov.

Mapa de las inmediaciones:

Los propietarios, inquilinos y asociaciones de vecinos en un radio de 300 pies del Ordenamiento Territorial Condicional propuesto han recibido esta notificación por correo postal de primera clase. Todas las partes interesadas pueden presentar comentarios sobre la solicitud a través de los medios especificados anteriormente. La ubicación de la propiedad también puede verse aquí: https://maps.raleighnc.gov/imaps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/478. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación y Desarrollo Comunitario al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/35529.

Dianne F. Khin, AICP
Directora de Planificación y Desarrollo Comunitario

Fechas de publicación: 3 de septiembre - 28 de septiembre, 2021

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

PUBLIC NOTIFICATION OF PUBLIC HEARINGS

CONDITIONAL ZONING #21CZ12
Legacy 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 Town Council of the Town of Apex. The purpose of these hearings is to consider the following:

Applicant: Ryan Linker, GCI Acquisitions, LLC
Authorized Agent: Ryan Linker, GCI Acquisitions, LLC
Property Addresses: 3601 and 3609 US 64 Hwy W, 0 Olive Chapel Rd
Acreage: ±60.97 acres
Property Identification Numbers (PINs): 0722040381, 0722037373, and 0712949922
Current 2045 Land Use Map Designation: Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services
Existing Zoning of Properties: Rural Residential (RR) and Wake Co. (R-80W)
Proposed Zoning of Properties: 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 the Planning Board public hearing will not be provided to the Town Council. Separate comments for the Town Council public hearing must be provided by the deadline specified below.

Town Council Public Hearing Date and Time: September 28, 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. Please visit www.apexnc.org on the day of the meeting to confirm whether the meeting will be held in-person or remotely.

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the Deputy Town Clerk, Tesa Silver (73 Hunter Street or USPS mail - P.O. Box 250, Apex, NC 27502), at least two business days prior to the Town Council vote. You must provide your name and address for the record. The written statements will be delivered to the Town Council members prior to their vote. Please include the Public Hearing name in the subject line.

In the event that the Town Council meeting is held remotely or with at least one member attending virtually, written comments may be submitted up to 24 hours prior to the scheduled time of the meeting per NCGS §166A-19.24 according to the methods specified above. Virtual meetings may be viewed via the Town's YouTube livestream at https://www.youtube.com/c/townofapexgov.

Vicinity Map:

Property owners, tenants, and neighborhood associations 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.raleighnc.gov/imaps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-249-3426, 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/35529.

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

Published Dates: September 3 – September 28, 2021

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELÉFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS

ORDENAMIENTO TERRITORIAL CONDICIONAL ##21CZ12
Legacy PUD (Desarrollo de Unidad Planificada)

De conformidad con las disposiciones de los Estatutos Generales de Carolina del Norte §160D-602 y con la Sección 2.2.11 de la Ordenanza de Desarrollo Unificado (UDO) del ayuntamiento de Apex, por la presente se notifican las audiencias públicas ante el Consejo Municipal del Ayuntamiento de Apex. El propósito de estas audiencias es considerar lo siguiente:

Solicitante: Ryan Linker, GCI Acquisitions, LLC
Agente autorizado: Ryan Linker, GCI Acquisitions, LLC
Dirección de las propiedades: 3601 y 3609 US 64 Hwy W, 0 Olive Chapel Rd
Superficie: ±60.97 acres
Números de identificación de las propiedades: 0722040381, 0722037373, and 0712949922
Designación actual en el Mapa de Uso Territorial para 2045: Low Density Residential and Mixed Use: High Density Residential/Office Employment/Commercial Services
Ordenamiento territorial existente de las propiedades: Rural Residential (RR) and Wake Co. (R-80W)
Ordenamiento territorial propuesto para las propiedades: Planned Unit Development-Conditional Zoning (PUD-CZ)

Lugar de la audiencia pública: Ayuntamiento de Apex
Cámara del Consejo, 2º piso
73 Hunter Street, Apex, Carolina del Norte

Los comentarios recibidos antes de la audiencia pública de la Junta de Planificación no se proporcionarán al Consejo Municipal. Los comentarios para la audiencia pública del Consejo Municipal deben presentarse por separado en el plazo especificado a continuación.

Fecha y hora de la audiencia pública del Consejo Municipal: 28 de septiembre, 2021 6:00 P.M.

Puede asistir a la reunión de manera presencial o seguir la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov. Por favor visite www.apexnc.org el día de la reunión para confirmar si la reunión se llevará a cabo de manera presencial o remotamente.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la secretaría municipal adjunta, Tesa Silver (73 Hunter Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la votación del Consejo Municipal. Debe proporcionar su nombre y dirección para que conste en el registro. Las declaraciones escritas se entregarán al Consejo Municipal antes de la votación. No olvide incluir el nombre de la audiencia pública en el asunto.

En caso de que la reunión del Consejo Municipal se lleve a cabo remotamente o que por lo menos uno de los miembros asista virtualmente, se permite presentar comentarios por escrito hasta 24 horas antes de la hora programada de la reunión según los estatutos de Carolina del Norte NCGS §166A-19.24 siguiendo los métodos especificados anteriormente. Las reuniones virtuales se pueden seguir en la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov.

Mapa de las inmediaciones:

Los propietarios, inquilinos y asociaciones de vecinos en un radio de 300 pies del Ordenamiento Territorial Condicional propuesto han recibido esta notificación por correo postal de primera clase. Todas las partes interesadas pueden presentar comentarios sobre la solicitud a través de los medios especificados anteriormente. La ubicación de la propiedad también puede verse aquí: https://maps.raleighnc.gov/imaps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/478. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación y Desarrollo Comunitario al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/35529.

Dianne F. Khin, AICP
Directora de Planificación y Desarrollo Comunitario

Fechas de publicación: 3 de septiembre - 28 de septiembre, 2021

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 #21CZ12 Legacy PUD
Project Location:	3601 and 3609 US 64 Hwy W, 0 Olive Chapel Rd
Applicant or Authorized Agent:	Ryan Linker
Firm:	GCI Acquisitions, LLC

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 September 3, 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.

9/7/2021
Date

Director of Planning and Community Development

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Paralee J. Smith, a Notary Public for the above State and County, this the 7 day of September, 2021.

PARALEE J. SMITH NOTARY PUBLIC JOHNSTON COUNTY, NC SEAL

Notary Public

My Commission Expires: 9/12/2023

WAKE COUNTY PUBLIC SCHOOL SYSTEM

Glenn Carrozza
5625 Dillard Drive
Cary, NC, 27518
studentassignment@wcpss.net

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

July 13, 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: May 3, 2021
- Name of development: 21CZ12 Legacy PUD
- Address of rezoning/development: 3601 US 64 Hwy W, 3609 US 64 Hwy W, 0 Olive Chapel Road
- Total number of proposed residential units: 475
- Type(s) of residential units proposed: Single-family detached (75) and multi-family (400)

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
Glenn Carrozza