AGENDA | REGULAR TOWN COUNCIL MEETING

Tuesday, November 10, 2026 at 6:00 PM
Council Chambers – Apex Town Hall, 73 Hunter Street
The meeting will adjourn when all business is concluded or 11:00 PM, whichever comes first

Governing Body and Town Senior Executive Leadership

Mayor: Jacques K. Gilbert | Mayor Pro Tempore: Terry Mahaffey
Council Members: Edward Gray, Arno Zegerman, Shane Reese, Sue Mu
Town Manager: Randal E. Vosburg
Deputy Town Managers: Demetria John, Shawn Purvis, and Marty Stone
Town Clerk: Allen L. Coleman | Interim Town Attorney: Brian Meyer

English	Spanish	Chinese (Simplified)
ANNOUNCEMENTS Members of the public can 1one1m and view the meeting on the Town's YouTube Channel https://www.youtube.com/c/TownofApexGov or attend in-person. The meeting date, start time, and location details are included at the top of this agenda document.	**ANUNCIOS** Las personas interesadas pueden acceder y ver la reunión a través del canal de YouTube de la Ciudad en https://www.youtube.com/c/TownofApexGov o asistir en persona. En la parte superior de este documento de agenda se indican la fecha, la hora de inicio y la ubicación de la reunión.	**公告** 公众可通过镇政府的YouTube频道 https://www.youtube.com/c/TownofApexGov 在线旁听会议，或选择现场参与。会议日期、开始时间及地点详情见本议程文件顶部。
Accommodation Statement: Anyone needing special accommodations to attend this meeting and/or if this 1one1mation is needed in an alternative format, please contact the Town Clerk's Office. The Town Clerk is located at 73 Hunter Street in Apex Town Hall on the 2nd Floor, (email) allen.coleman@apexnc.org or (1one) 919-249-1260.	**Aviso sobre adaptaciones:** Si necesita adaptaciones especiales para asistir a esta reunión o requiere esta información en un formato alternativo, comuníquese con la Oficina del Secretario Municipal, ubicada en el segundo piso del Ayuntamiento de Apex, en 73 Hunter Street, por correo electrónico a través de allen.coleman@apexnc.org o llamando al 919-249-1260.	**便利服务声明：** 如需特殊便利服务以参加本次会议，或需要将本信息提供为其他格式，请联系镇书记官办公室。 办公地址：Apex镇政务厅二楼（Hunter街73号） 邮箱：allen.coleman@apexnc.org 电话：919-249-1260

COMMENCEMENT, INVOCATION, AND PLEDGE OF ALLEGIANCE

The Town of Apex values and celebrates diversity and inclusion. We see diversity as a strength that binds our community together – inviting members from different faith communities to deliver the invocation at the beginning of our Council meetings, supports this unity. Recognizing that not everyone practices the same traditions, we welcome you to have a private moment of silence.
Please stand as you are able for the Pledge of Allegiance

ANNOUNCEMENTS AND PETITIONS BY THE GOVERNING BODY

Members of the governing body may use this time to share updates on a variety of different topics or submit petitions for future consideration with the entire board and the community.

ADOPTION OF THE MEETING AGENDA

The Mayor will call for additional Agenda items from Council or Staff and set the Regular Meeting Agenda prior to Council actions. Items to be pulled or added should be submitted to the Town Clerk in advance of the meeting.

CONSENT AGENDA

All Consent Agenda items are considered routine, to be enacted by one motion with the adoption of the Consent Agenda, and without discussion. If a Council Member requests discussion of an item, the item may be removed from the Consent Agenda and considered separately. The Mayor will present the Consent Agenda to be set prior to taking action on the following items:

CN1 Agreement – North Carolina Department of Transportation (NCDOT) - NC 55 and East Williams Street Intersection Improvements Project HL-0007

Russell Dalton, P.E., Traffic Engineering Manager, Transportation and Infra. Dev. Dept.

CN2 Annexation No. 838 – 2801 and 2805 Evans Road – 2.76 acres

Allen Coleman, Town Clerk

CN3 Advisory Board Appointment Term Amendment – Mrs. Tianduo Zhang

Allen Coleman, Town Clerk

CN4 Personnel Policy Amendments – Town Employee Vacation Accrual Rates and Retiree Insurance Eligibility

Karmen McGee, Director, Human Resources Department

CN5 Remote Participation Authorization in Upcoming Council Committee Meeting on December 03, 2026

Allen Coleman, Town Clerk

CN6 Rezoning Case No. 26CZ10 – Veridea Expansion V – Statement and Ordinance

Bruce Venable, Planner III, Planning Department

CN7 Tax Report – September 2026

Allen Coleman, Town Clerk

TOWN COUNCIL COMMITTEE REPORTS

TR1 Public Safety Council Committee Report – Thursday, November 05, 2026

Mayor Jacques K. Gilbert, Committee Chair

TOWN MANAGER'S REPORT

TM1 Apex Christmas Parade Invitation

Will Norton, Apex Rotary Club

TOWN CLERK'S REPORT

PUBLIC ART MOMENT QUARTERLY *– None Scheduled*

The quarterly public art moment spotlights local creativity, reflects community voices, and supports informed decisions that strengthen a vibrant and growing cultural landscape. The purpose of this item is to bring awareness and appreciation of local artists.

PROCLAMATIONS / SPECIAL PRESENTATIONS

PR1 Proclamation – Honoring 50th Anniversary of Wake County Public School System

Mayor Jacques K. Gilbert

PR2 Proclamation – National Caregivers Appreciation Month – November 2026

Mayor Jacques K. Gilbert

PR3 Proclamation – Small Business Saturday 2026 – Saturday, November 28, 2026

Mayor Jacques K. Gilbert

PR4 Recognizing Apex First Half-Marathon – Held Saturday, October 24, 2026

Mayor Jacques K. Gilbert

PR5 Pleasant Park Access Study Update

Jenna Shouse, Senior Planner – Longe Range, Planning Department

Lauren Triebert, P.E., Project Development Lead, VHB Engineering

PUBLIC FORUM

Public Forum allows the public an opportunity to address the Mayor and Town Council. The speaker is requested not to address items that appear as Public Hearings. The Mayor will recognize those who would like to speak at the appropriate time.
Large groups are asked to select a representative to speak for the entire group.
Comments must be limited to 3 minutes to allow others the opportunity to speak.
Members of the public are encouraged to view the Public Forum and Public Hearing Participation Guidelines.

PUBLIC HEARINGS

PH1 Annexation No. 839 – Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres

Dianne Khin, Director, Planning Department

PH2 Public Art – Butterfly Enchanter Sculpture Purchase Request - $5,500

Taylor Wray, Cultural Arts Center Manager, Parks, Recreation, and Cultural Res. Dept.

PH3 Public Art – Nature Park Amphitheatre Base Structure Mural Design Recommendation

Taylor Wray, Cultural Arts Center Manager, Parks, Recreation, and Cultural Res. Dept.

PH4 Public Art – Saunders Street Parking Lot Retaining Wall Mural Design Recommendation – "The Song Beneath the Town"

Taylor Wray, Cultural Arts Center Manager, Parks, Recreation, and Cultural Res. Dept.

PH5 Rezoning Case No. 25CZ24 – North Salem Street Mixed-Use PUD – *Continued from October 13, 2026*

Amanda Bunce, Assistant Director, Planning Department

REGULAR MEETING AGENDA

RA1 Resolution Establishing the Apex Technology Development and Innovation Task Force

Mayor Pro-Tempore Terry Mahaffey (sponsor)

INFORMATIONAL ITEMS

Information items focus on educating and bringing awareness to matters or topics that do not require immediate decision or action. Information items are for informational purposes only and may not be discussed as part of the business meeting.

CLOSED SESSION

Council will enter into closed session pursuant to:

CS1 Councilmember Edward Gray

NCGS §143-318.11(a)(6):

"To consider the qualifications, competence, performance, character, fitness, conditions of appointment, or conditions of initial employment of an individual public officer or employee or

prospective public officer or employee; or to hear or investigate a complaint, charge, or grievance by or against an individual public officer or employee."

ADJOURNMENT

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Russell H. Dalton, P.E., Traffic Engineering Manager

Department(s): Transportation and Infrastructure Development

Requested Motion

Motion to approve Maintenance Only Municipal Agreement No. 13753 between North Carolina Department of Transportation (NCDOT) and the Town of Apex, for Transportation Improvement Project HL-0007, establishing the Town's ownership and maintenance responsibilities associated with improvements to the NC 55, Technology Drive, and East Williams Street intersection, and authorize the Town Manager, or their designee, to execute on behalf of the Town.

Approval Recommended?

Yes

Item Details

This Agreement will require Town of Apex to maintain portions of the overall infrastructure being constructed as part of project HL-0007, NC 55 at SR 1191 (Technology Drive) / SR 6107 (East Williams Street). This includes MUP (multi-use paths), sidewalks, bus landings and Creekmont Lane, a two-lane street connecting Straywhite Avenue to Reunion Creek Parkway. These enhancements were requested through the Apex Technical Review Committee based on review of the proposed plans and in accordance with the Apex Transportation Plan. No additional local funding commitment is required for construction of the aforementioned infrastructure.

Additionally, it should be noted that per the Agreement: *The Municipality will indemnify and hold harmless the FHWA (if applicable), the Department and the State of North Carolina, their respective officers, directors, principals, employees, agents, successors, and assigns from and against any and all claims for damage and/or liability, including those that may be initiated by third parties, in connection with the Project activities performed pursuant to this Agreement including construction of the Project, except for those claims arising out of the errors, omissions, or negligence of the Department, its respective officers, directors, principals, employees, agents, successors, and assigns.*

Attachments

- CN1-A1: Agreement - North Carolina Department of Transportation (NCDOT) - NC 55 and East Williams Street Intersection Improvements Project HL-0007
- CN1-A2: Plan View Sheets - Agreement - North Carolina Department of Transportation (NCDOT) - NC 55 and East Williams Street Intersection Improvements Project HL-0007

AGREEMENT OVERVIEW

NORTH CAROLINA
WAKE COUNTY

DATE: 10/28/2026

PARTIES TO THE AGREEMENT:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

AND

TOWN OF APEX

PROJECT NUMBERS:

TIP #: HL-0007

The purpose of this Agreement is to identify the maintenance responsibilities of each party to this Agreement, as further defined in this Agreement.

SCOPE OF PROJECT ("Project"): The Project consists of NC 55 at SR 1191 (Technology Drive) / SR 6107 (East Williams Street) in Apex. Convert intersection to Alternative Intersection. The town to assume ownership of Creekmont Lane. New connection between Straywhite Ave. and Reunion Creek.

WORK REQUIRING MAINTENANCE: The Town of Apex will be responsible for maintenance of MUP, sidewalks, bus landings and Creekmont Lane.

EFFECTIVE DATES OF AGREEMENT:
START: Upon Full Execution of this Agreement
END: No End Date – Agreement in Place in Perpetuity.

This **Agreement** is made and entered into on the last date executed below, by and between the North Carolina Department of Transportation, an agency of the State of North Carolina, hereinafter referred to as the **Department** and the Town of Apex, hereinafter referred to as the **Municipality**; and collectively referred to as the **Parties**.

The **Parties** to this Agreement, listed above, intend that this Agreement, together with all attachments, schedules, exhibits, and other documents that both are referenced in this Agreement and refer to this Agreement, represents the entire understanding between the **Parties** with respect to its subject matter and supersedes any previous communication or agreements that may exist.

I. WHEREAS STATEMENTS

WHEREAS, the **Department** has plans to make certain street and highway constructions and improvements within the **Municipality** under Project HL-0007, in Wake County; and,

WHEREAS, the **Department** and the **Municipality** have agreed that the Project limits, as of the date of the awarding of the contract for the construction of the above-mentioned project, are to be used in determining the duties, responsibilities, rights, and legal obligations of the **Parties** hereto for the purposes of this Agreement; and,

WHEREAS, this Agreement is made under the authority granted to the **Department** by the North Carolina General Assembly, including but not limited to, the following applicable legislation: General Statutes of North Carolina (NCGS), Section 136-66.1, Section 136-66.3, Section 160A-296 and 297, Section 136-18, and Section 20-169, to participate in the planning and construction of a Project approved by the Board of Transportation for the safe and efficient utilization of transportation systems for the public good; and,

WHEREAS, the **Parties** to this Agreement have approved the construction of said Project with cost participation and responsibilities for the Project as hereinafter set out.

NOW, THEREFORE, the **Parties** hereto, each in consideration of the promises and undertakings of the other as herein provided, do hereby covenant and agree, each with the other, as follows:

II. SCOPE OF THE PROJECT

The Project consists of NC 55 at SR 1191 (Technology Drive) / SR 6107 (East Williams Street) in Apex. Convert intersection to Alternative Intersection. The town to assume ownership of Creekmont Lane. New connection between Straywhite Ave. and Reunion Creek.

III. PLANNING, RIGHT OF WAY AND UTILITIES

i. The **Department** shall prepare the environmental and/or planning document, and obtain any environmental permits needed to construct the Project and prepare the Project plans and specifications needed to construct the Project. All work shall be done in accordance with departmental standards, specifications, policies and procedures.

ii. The **Department** shall be responsible for acquiring any needed right of way required for the Project. Acquisition of right of way shall be accomplished in accordance with the policies and procedures set forth in the North Carolina Right of Way Manual.

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iii. The **Department** does not anticipate the need to relocate and adjust any municipally-owned utilities at this time. If it becomes necessary to adjust and relocate the municipally-owned utilities, the **Department** will enter into a separate agreement with the Utility owner.

IV. CONSTRUCTION

The **Department** shall construct, or cause to be constructed, the Project in accordance with the plans and specifications of said Project as filed with, and approved by, the **Department**. The **Department** shall administer the construction contract for said Project.

V. MAINTENANCE

Upon completion of the Project:

i. The **Department** shall be responsible for all traffic operating controls and devices which shall be established, enforced, and installed and maintained in accordance with the North Carolina General Statutes, the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, the latest edition of the "Policy on Street and Driveway Access to North Carolina Highways", and departmental criteria.

ii. The roadway improvement(s) shall be a part of the State Highway System and owned and maintained by the **Department**.

iii. The **Municipality**, at its own expense, shall be responsible for all liability and maintenance of the sidewalks constructed as part of the Project.

VI. ADDITIONAL PROVISIONS

A. AGREEMENT MODIFICATIONS

Any modification to scope, funding, responsibilities, or time frame will be agreed upon by all **Parties** by means of a written Supplemental Agreement.

B. ASSIGNMENT OF RESPONSIBILITIES

The **Department** must approve any assignment or transfer of the responsibilities of the **Municipality** set forth in this Agreement to other parties or entities.

C. AGREEMENT FOR IDENTIFIED PARTIES ONLY

This Agreement is solely for the benefit of the identified **Parties** to the Agreement and is not intended to give any rights, claims, or benefits to third parties or to the public at large.

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D. OTHER AGREEMENTS

The **Municipality** is solely responsible for all agreements, contracts, and work orders entered into or issued by the **Municipality** to meet the terms of this Agreement. The **Department** is not responsible for any expenses or obligations incurred for the terms of this Agreement except those specifically eligible for the funds and obligations as approved by the **Department** under the terms of this Agreement.

E. TITLE VI

The other party to this Agreement shall comply with Title VI of the Civil Rights Act of 1964 (Title 49 CFR, Subtitle A, Part 21) and related nondiscrimination authorities. Title VI and related authorities prohibit discrimination on the basis of race, color, national origin, disability, gender, and age in all programs or activities of any recipient of Federal assistance.

F. AUTHORIZATION TO EXECUTE

The **Parties** hereby acknowledge that the individual executing this Agreement has read this Agreement, conferred with legal counsel, fully understands its contents, and is authorized to execute this Agreement and to bind the respective **Parties** to the terms contained herein.

G. DEBARMENT POLICY

It is the policy of the **Department** not to enter into any agreement with parties that have been debarred by any government agency (Federal or State). By execution of this agreement, the **Municipality** certifies that neither it nor its agents or contractors are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal or State Agency or **Department** and that it will not enter into agreements with any entity that is debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction.

H. INDEMNIFICATION

The **Municipality** will indemnify and hold harmless the FHWA (if applicable), the **Department** and the State of North Carolina, their respective officers, directors, principals, employees, agents, successors, and assigns from and against any and all claims for damage and/or liability, including those that may be initiated by third parties, in connection with the Project activities performed pursuant to this Agreement including construction of the Project, except for those claims arising out of the errors, omissions, or negligence of the **Department**, its respective officers, directors, principals, employees, agents, successors, and assigns.

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I. AVAILABILITY OF FUNDS

All terms and conditions of this Agreement are dependent upon, and, subject to the allocation of funds for the purpose set forth in the Agreement and the Agreement shall automatically terminate if funds cease to be available.

J. COUNTERPARTS AND ELECTRONIC SIGNATURES

i. This Agreement, and other documents to be delivered pursuant to this Agreement, may be executed in one or more counterparts, each of which will be deemed to be an original copy and all of which, when taken together, will be deemed to constitute one and the same agreement or document and will be effective when counterparts have been signed by each of the **Parties**. An image of a manual signature on this Agreement, or other documents to be delivered pursuant to this Agreement, will constitute an original signature for all purposes. The delivery of copies of this Agreement or other documents to be delivered pursuant to this Agreement, including executed signature pages where required, by electronic transmission will constitute effective delivery of this Agreement or such other document for all purposes.

ii. The **Parties** hereto further acknowledge and agree that this Agreement may be signed and/or transmitted by email or a PDF document or using electronic signature technology (e.g. DocuSign, Adobe Sign, or other electronic signature technology), and that such signed record shall be valid and as effective to bind the **Party(ies)** so signing as a paper copy bearing a handwritten signature. By selecting "I Agree", "I Accept", or other similar item, button, or icon via use of a keypad, mouse, or other device, as part of the electronic signature technology, the **Parties** consent to be legally bound by the terms and conditions of Agreement and that such act constitutes a signature as if actually signed in writing. The **Parties** also agree that no certification authority or other third-party verification is necessary to validate its electronic signature and that the lack of such certification or third-party verification will not in any way affect the enforceability of its electronic signature. The **Parties** acknowledge and agree that delivery of a copy of this Agreement or any other document contemplated hereby through the electronic signature technology, will have the same effect as physical delivery of the paper document bearing an original written signature.

K. GIFT BAN

By Executive Order 24, issued by Governor Perdue, and NCGS 133-32, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's Cabinet Agencies (i.e. Administration, Adult Corrections, Commerce, Environmental Quality, Health and Human Services, Information Technology, Military and Veterans Affairs, Natural and Cultural Resources, Public Safety, Revenue, Transportation, and the Office of the Governor).

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SIGNATURE PAGE

IN WITNESS WHEREOF, this Agreement has been executed the day and year heretofore set out, on the part of the **Department** and the **Municipality** by authority duly given.

(DOCUSIGN ONLY)

TOWN OF APEX

Authorized Signer: _____

Print Name: _____

Title: _____

Date Signed: _____

If applicable, this Agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act:

Fed Tax ID No: _____

Remittance Address:

_____

_____

Finance Signer: _____

Print Name: _____

Title: _____

Date Signed: _____

DEPARTMENT OF TRANSPORTATION

By: _____

Print Name: _____

Title: _____

Date: _____

APPROVED BY BOARD OF TRANSPORTATION ITEM O: _____ (DATE)

DRAFT

SIGNATURE PAGE

IN WITNESS WHEREOF, this Agreement has been executed the day and year heretofore set out, on the part of the **Department** and the **Municipality** by authority duly given.

(INK SIGNATURES)

TOWN OF APEX

Attest:

By: _____

Title: _____

Authorized Signer: _____

Print Name: _____

Title: _____

Date Signed: _____

If applicable, this Agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act:

Fed Tax ID No: _____

Remittance Address:

_____

_____

Finance Signer: _____

Print Name: _____

Title: _____

Date Signed: _____

(DOCUSIGN)

DEPARTMENT OF TRANSPORTATION

By: _____

Print Name: _____

Title: _____

Date: _____

APPROVED BY BOARD OF TRANSPORTATION ITEM O: _____ (DATE)

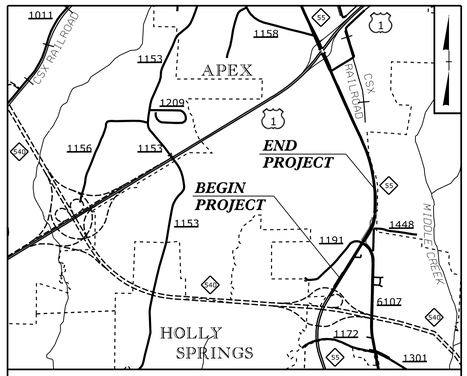
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09/08/99

TIP PROJECT: HL–0007

CONTRACT:

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HL–0007	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
49366.1.1	N/A	PE
49366.2.1	4936601	ROW
49366.2.2	4936601	UTILITIES
49366.3.1	4936601	CONST

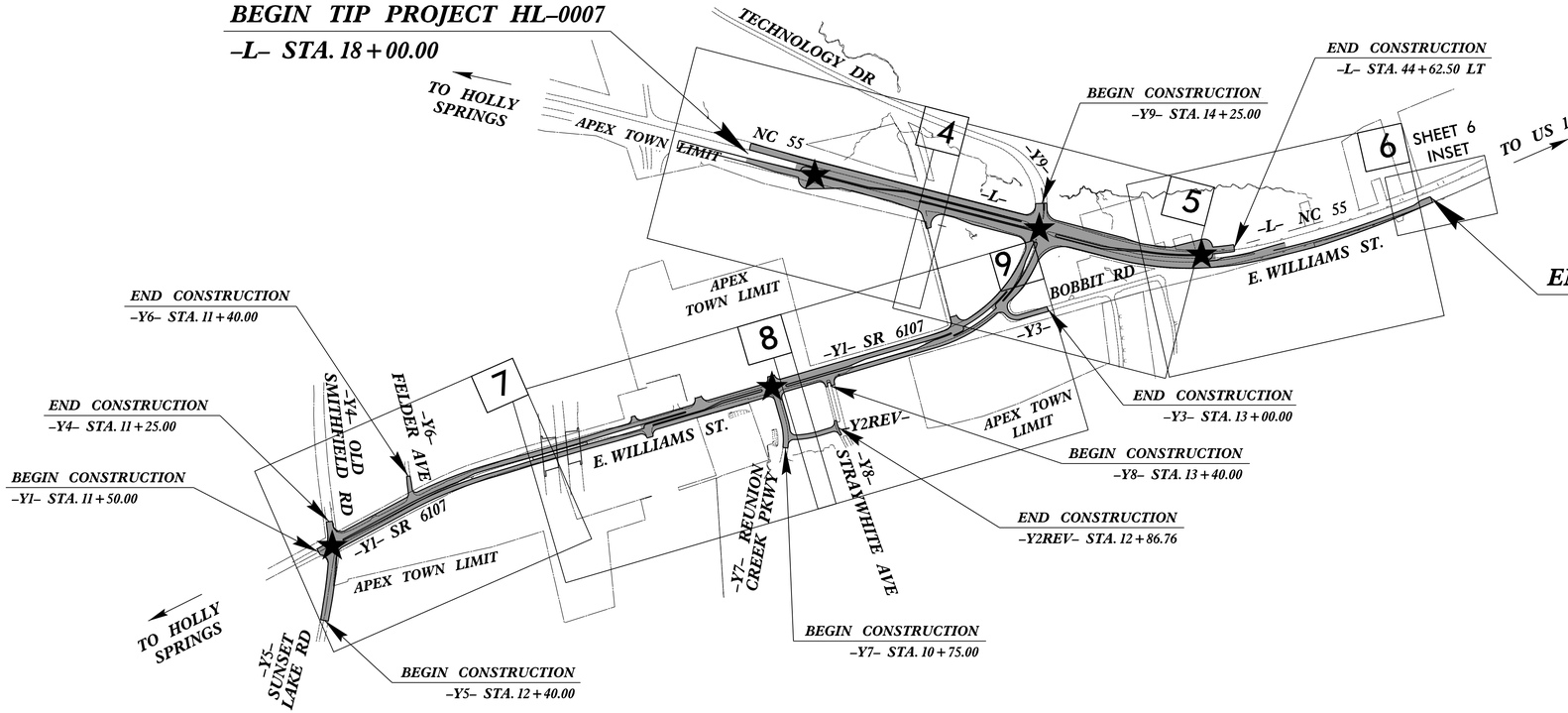
ROADWAY FINAL PLAN SET

LOCATION: NC 55 AT SR 1191 (TECHNOLOGY DRIVE) / SR 6107 (E. WILLIAMS STREET) IN APEX. CONVERT INTERSECTION TO ALTERNATIVE INTERSECTION.

TYPE OF WORK: DRAINAGE, GRADING, PAVING, AND SIGNALS

NAD 83/2011

BEGIN TIP PROJECT HL–0007
–L– STA. 18 + 00.00



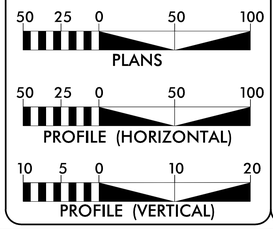
END TIP PROJECT HL–0007
–L– STA. 55 + 50.00

★ PROPOSED SIGNAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF APEX.
THIS IS A LIMITED CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES AND AT–GRADE INTERSECTIONS ON NC 55 SOUTH OF SR 1191 /SR 6107.

GRAPHIC SCALES



DESIGN DATA

ADT 2025 = 47,900
ADT 2045 = 56,200
K = 10 %
D = 60 %
T = 5 % *
V = 50 MPH
* TTST = 1% DUAL = 4%
FUNC CLASS =
PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT HL–0007 = 0.710 MILES

TOTAL LENGTH TIP PROJECT HL–0007 = 0.710 MILES

–L– USED TO DETERMINE PROJECT LENGTH

Prepared for NCDOT in the Office of:
Mead&Hunt
111 E. Hargett Street, Suite 300
Raleigh, North Carolina 27601
919-714-8670 | meadhunt.com
NC License No. F-1235

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 14, 2023

LETTING DATE:
APRIL 21, 2026

RICK DECOLA, PE
ROADWAY DESIGN ENGINEER

BRAD SMITH, PE
HYDRAULICS ENGINEER

JOHN BRAXTON
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

12-JAN-2026 15:38
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1784rjd

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
HL-0007	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP) — EIP
- Computed Property Corner
- Existing Concrete Monument (ECM) — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge

- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

** SUE – Subsurface Utility Engineering*
LOS – Level of Service – A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)* — P
- U/G Power Line (SUE – LOS C)* — P
- U/G Power Line (SUE – LOS D)* — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)* — T
- U/G Telephone Cable (SUE – LOS C)* — T
- U/G Telephone Cable (SUE – LOS D)* — T
- U/G Telephone Conduit (SUE – LOS B)* — TC
- U/G Telephone Conduit (SUE – LOS C)* — TC
- U/G Telephone Conduit (SUE – LOS D)* — TC
- U/G Fiber Optics Cable (SUE – LOS B)* — T FO
- U/G Fiber Optics Cable (SUE – LOS C)* — T FO
- U/G Fiber Optics Cable (SUE – LOS D)* — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE – LOS A)*
- U/G Water Line (SUE – LOS B)* — W
- U/G Water Line (SUE – LOS C)* — W
- U/G Water Line (SUE – LOS D)* — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Test Hole (SUE – LOS A)*
- U/G TV Cable (SUE – LOS B)* — TV
- U/G TV Cable (SUE – LOS C)* — TV
- U/G TV Cable (SUE – LOS D)* — TV
- U/G Fiber Optic Cable (SUE – LOS B)* — TV FO
- U/G Fiber Optic Cable (SUE – LOS C)* — TV FO
- U/G Fiber Optic Cable (SUE – LOS D)* — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE – LOS A)*
- U/G Gas Line (SUE – LOS B)* — G
- U/G Gas Line (SUE – LOS C)* — G
- U/G Gas Line (SUE – LOS D)* — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)* — FSS
- SS Force Main Line (SUE – LOS C)* — FSS
- SS Force Main Line (SUE – LOS D)* — FSS

MISCELLANEOUS:

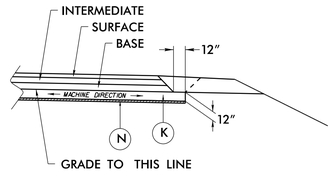
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line (SUE – LOS B)* — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

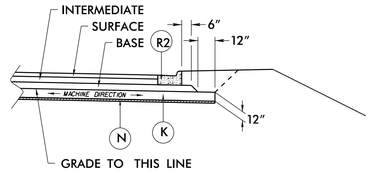
6/2/99

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	N	GEOTEXTILE FOR PAVEMENT STABILIZATION.
C2	PROP. APPROX. 2″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	R1	1′-6″ CONCRETE CURB AND GUTTER.
C3	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	2′-6″ CONCRETE CURB AND GUTTER.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2″ IN DEPTH.	R3	SHOULDER BERM GUTTER.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R4	5″ MONOLITHIC CONCRETE ISLAND (KEYED IN).
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.	R5	42″ VERTICAL CONCRETE BARRIER.
E1	PROP. APPROX. 3″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	S	4″ CONCRETE SIDEWALK.
E2	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E3	PROP. APPROX. 5½″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E4	PROP. APPROX. 7″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	V1	MILLING ASPHALT PAVEMENT, 1½″ DEPTH.
E5	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.	V2	INCIDENTAL MILLING.
J1	PROP. 8″ AGGREGATE BASE COURSE.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).
K	PROP. 12″ CLASS IV SUBGRADE STABILIZATION.	W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).
L	BASE TO BE STABILIZED WITH 200 TO 400 LBS. PER SQ. YD. OF STABILIZER AGGREGATE MIXED WITH THE TOP 3″ OF SUBGRADE SOIL AT LOCATIONS DIRECTED BY THE ENGINEER.	W3	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

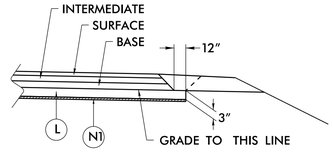
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.





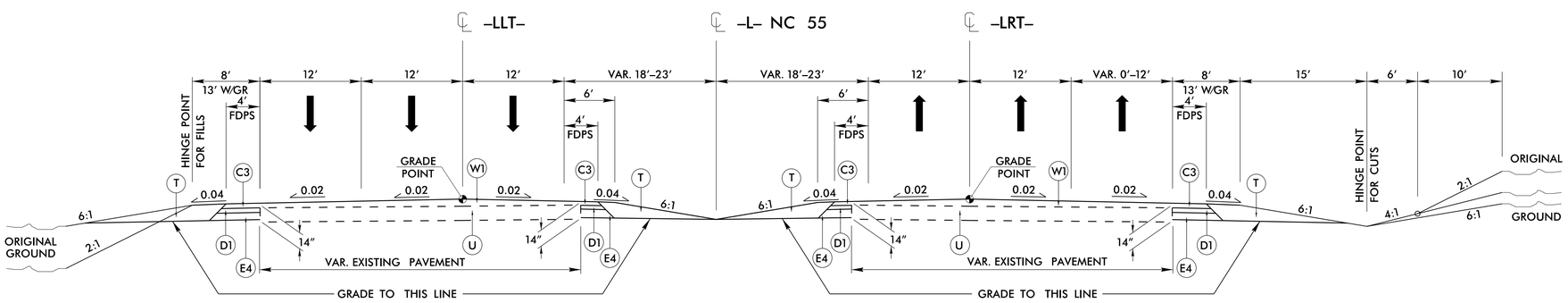
CLASS IV SUBGRADE STABILIZATION WITH GEOTEXTILE FOR PAVEMENT STABILIZATION

USE DETAIL FOR AGGREGATE SUBGRADE (TYPE 1)
–L– STA. 18+00 TO –L– STA. 55+50
–Y1– STA. 11+50 TO –Y1– STA. 54+00



STABILIZER AGGREGATE

USE DETAIL FOR CONTINGENCY ONLY



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
–L– STA. 18+00.00 TO STA. 20+60.00

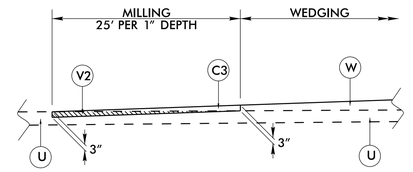
PROJECT REFERENCE NO.	SHEET NO.
HL-0007	2A-1

ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

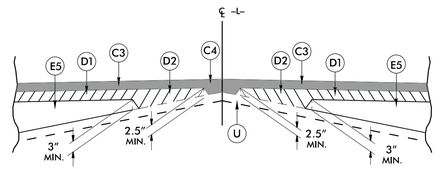
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INCIDENTAL MILLING DETAIL



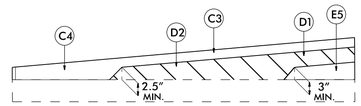
USE INCIDENTAL MILLING DETAIL AT ALL PROPOSED PROFILE TIE-INS TO EXISTING PAVEMENT

DETAIL W1



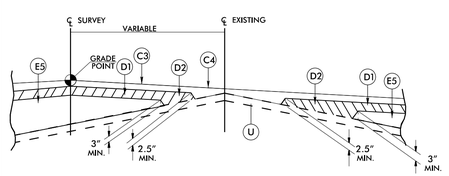
DETAIL SHOWING METHOD OF WEDGING

DETAIL W2



DETAIL SHOWING METHOD OF WEDGING

DETAIL W3



DETAIL SHOWING METHOD OF WEDGING

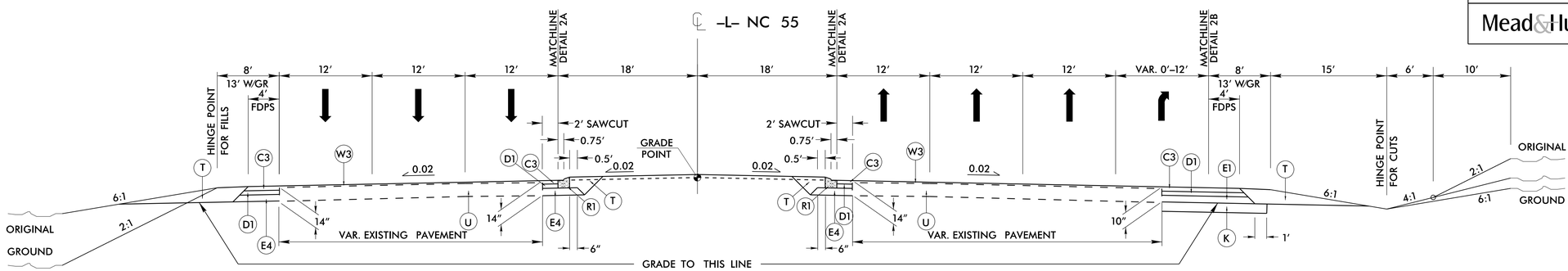
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PROJECT REFERENCE NO.	SHEET NO.
HL-0007	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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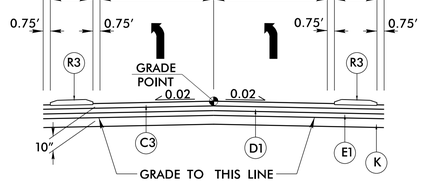
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TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

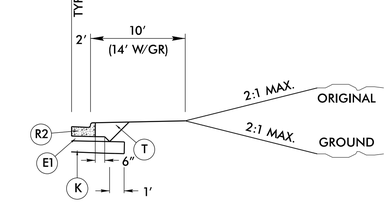
–L– STA. 20+60.00 TO STA. 33+00.00



TYPICAL SECTION NO. 2A

USE IN CONJUCTION WITH TYPICAL SECTION NO. 2
SEE PLANS FOR LOCATIONS

–L– STA. 26+15.00 TO 33+00.00

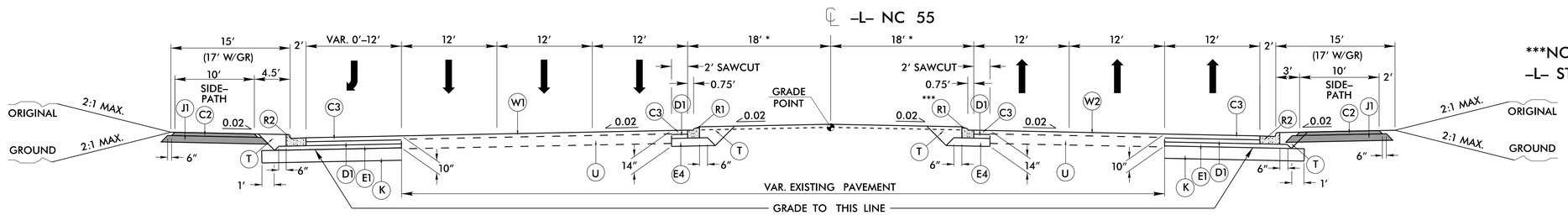


TYPICAL SECTION NO. 2B

USE IN CONJUCTION WITH TYPICAL SECTION NO. 2
SEE PLANS FOR LOCATIONS

–L– STA. 28+89.34 TO 33+00.00

PAVEMENT SCHEDULE	
C1	1.5″ S9.5C
C2	2″ S9.5C
C3	3″ S9.5C
C4	VAR. DEPTH S9.5C
D1	4″ I19.0C
D2	VAR. DEPTH I19.0C
E1	3″ B25.0C
E2	4″ B25.0C
E3	5.5″ B25.0C
E4	7″ B25.0C
E5	VAR. DEPTH B25.0C
J1	8″ ABC
K	SUBGRADE STAB.
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MCI
S	4″ SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.
V2	INCIDENTAL MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING



TYPICAL SECTION NO. 3

*SEE DETAIL SHEETS 2B–2 THRU 2B–3 FOR MEDIAN ISLAND LOCATIONS.

USE TYPICAL SECTION NO. 3

–L– STA. 33+00.00 TO STA. 44+62.50

***NOTE: USE 2′–9″ CURB & GUTTER
–L– STA. 43+55.00 TO 55+00.00 MED. RT.

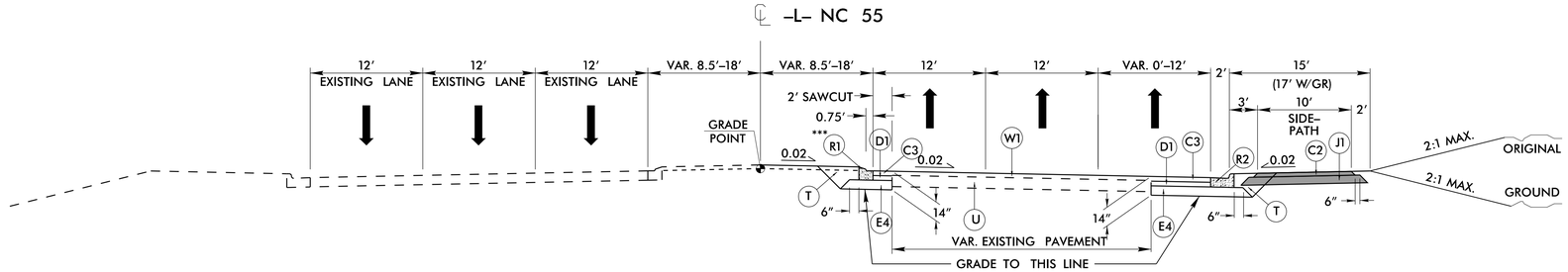
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PROJECT REFERENCE NO.	SHEET NO.
HL-0007	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

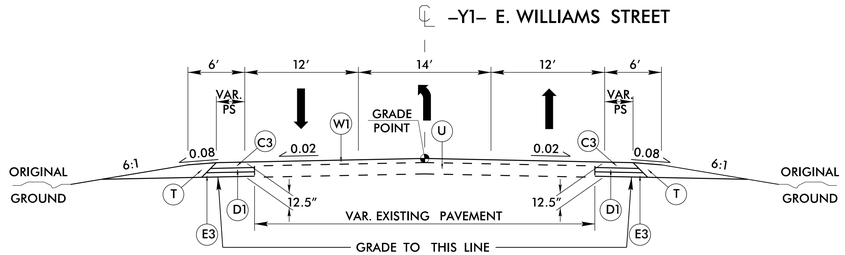
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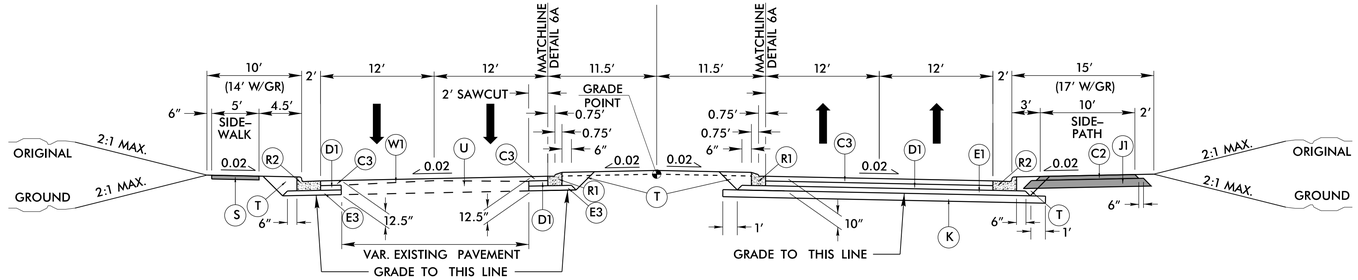
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
–L– STA. 44+62.50 TO STA. 55+00.00



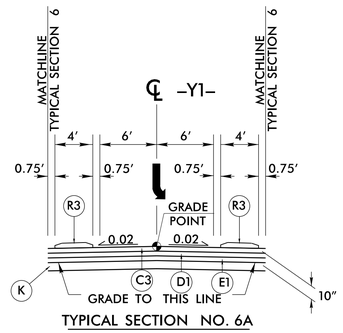
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
–Y1– STA. 11+50.00 TO STA. 12+50.00



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
–Y1– STA. 12+50.00 TO STA. 22+60.00
–Y1– STA. 28+55.00 TO STA. 54+26.33



TYPICAL SECTION NO. 6A

USE IN CONJUCTION WITH TYPICAL SECTION NO. 5
SEE PLANS FOR LOCATIONS
–Y1– STA. 30+30.00 TO 33+50.00
–Y1– STA. 46+25.00 TO 47+85.00 (REVERSE)
–Y1– STA. 50+18.50 TO 52+00.00

PAVEMENT SCHEDULE	
C1	1.5″ S9.5C
C2	2″ S9.5C
C3	3″ S9.5C
C4	VAR. DEPTH S9.5C
D1	4″ I19.0C
D2	VAR. DEPTH I19.0C
E1	3″ B25.0C
E2	4″ B25.0C
E3	5.5″ B25.0C
E4	7″ B25.0C
E5	VAR. DEPTH B25.0C
J1	8″ ABC
K	SUBGRADE STAB.
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MCI
S	4″ SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.
V2	INCIDENTAL MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

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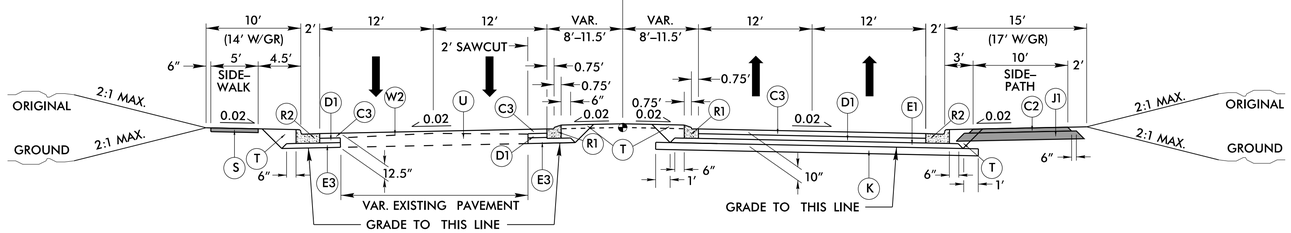
PROJECT REFERENCE NO.	SHEET NO.
HL-0007	2A-4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	2" S9.5C
C3	3" S9.5C
C4	VAR. DEPTH S9.5C
D1	4" I19.0C
D2	VAR. DEPTH I19.0C
E1	3" B25.0C
E2	4" B25.0C
E3	5.5" B25.0C
E4	7" B25.0C
E5	VAR. DEPTH B25.0C
J1	8" ABC
K	SUBGRADE STAB.
R1	1'-6" C & G
R2	2'-6" C & G
R3	5" MCI
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.
V	INCIDENTAL MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

–Y1– E. WILLIAMS STREET

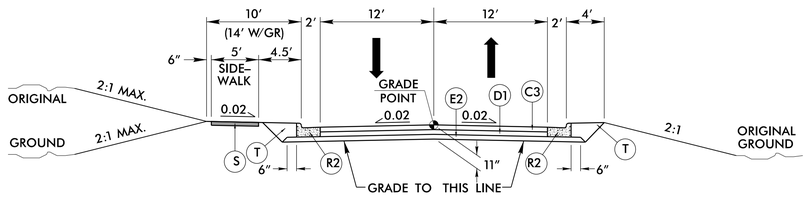


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

–Y1– STA. 22+60.00 TO STA. 28+55.00

–Y2REV– NEW SERVICE ROAD

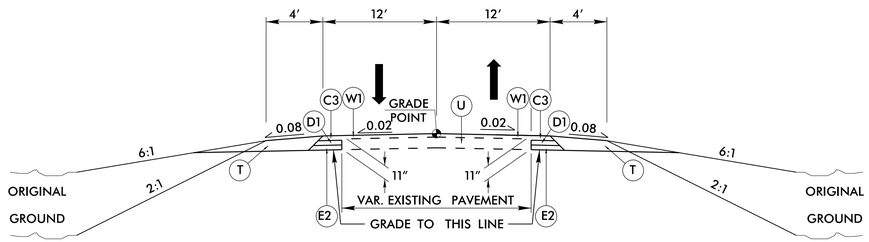


TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

–Y2REV– STA. 10+25.50 TO STA. 12+74.64

–Y3– BOBBITT ROAD

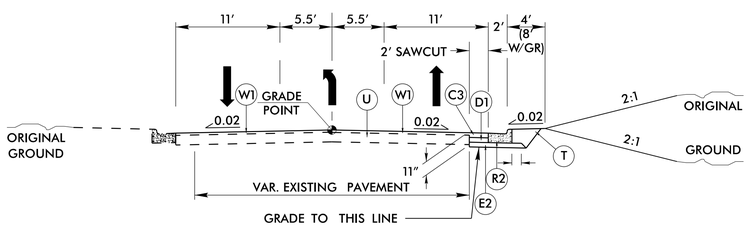


TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

–Y3– STA. 10+35.50 TO STA. 13+00.00

–Y4– OLD SMITHFIELD ROAD

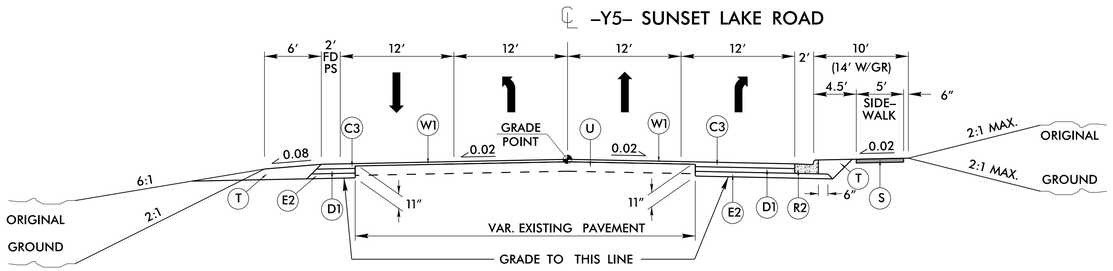


TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10

–Y4– STA. 10+37.99 TO STA. 11+25.00

–Y5– SUNSET LAKE ROAD



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11

–Y5– STA. 12+40.00 TO STA. 16+06.72

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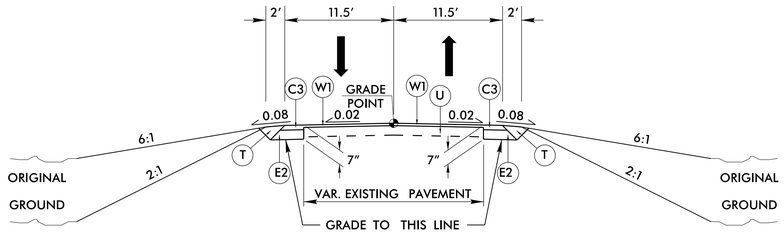
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PROJECT REFERENCE NO.	SHEET NO.
HL-0007	2A-5
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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–Y6– FELDER AVENUE

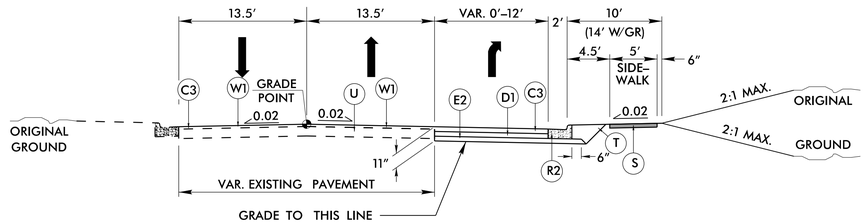


TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12

–Y6– STA. 10+37.80 TO STA. 11+40.00

–Y7– REUNION CREEK PARKWAY

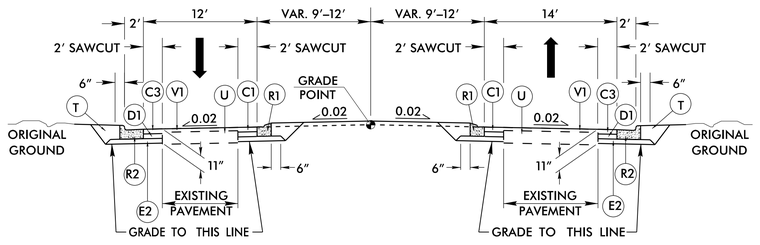


TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13

–Y7– STA. 10+75.00 TO STA. 13+36.70

–Y8– STRAYWHITE AVENUE



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14

–Y8– STA. 13+40.00 TO STA. 13+77.13

PAVEMENT SCHEDULE	
C1	1.5″ S9.5C
C2	2″ S9.5C
C3	3″ S9.5C
C4	VAR. DEPTH S9.5C
D1	4″ I19.0C
D2	VAR. DEPTH I19.0C
E1	3″ B25.0C
E2	4″ B25.0C
E3	5.5″ B25.0C
E4	7″ B25.0C
E5	VAR. DEPTH B25.0C
J1	8″ ABC
K	SUBGRADE STAB.
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	5″ MCI
S	4″ SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.
V1	1½″ DEPTH MILLING
V2	INCIDENTAL MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

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17841 id

PROJECT REFERENCE NO.	SHEET NO.
HL-0007	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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Mead&Hunt
111 E. Hargett Street, Suite 300
Raleigh, North Carolina 27601
919-714-8670 | meadhunt.com
NC License No. F-1235

REVISIONS

8/17/99 R/W REVISION: PROPERTY OWNER INFORMATION UPDATED ON PARCEL 2.(RJD 2/26/2024)
R/W REVISION: PARCEL 3 DIVIDED INTO PARCELS 3 AND 3A.(RJD 3/13/2024)
R/W REVISION: ADDED PDE ON PARCELS 3 & 4.(RJD 12/13/2024)
R/W REVISION: C/A ADDED TO PARCEL 4.(RJD 3/05/2024)
R/W REVISION: PARCEL 2 DIVIDED INTO PARCELS 2 AND 2A.(RJD 5/3/2024)

NAD 83/2001

-LLT- POT Sta. 14+00.00 =
-L- POT Sta. 14+00.00 (35.00' LT)

BEGIN CONSTRUCTION
-LRT- STA. 14+25.00

-LLT- PI Sta. 18+10.00 =
-L- POT Sta. 18+10.00 (35.00' LT)

-LLT- POT Sta. 20+60.05 =
-L- POT Sta. 20+60.00 (30.00' LT)

-LRT- POT Sta. 14+00.00 =
-L- POT Sta. 14+00.00 (34.50' RT)

BEGIN TIP PROJECT HL-0007
-L- POT STA. 18+00.00

-LRT- PI Sta. 18+10.00 =
-L- POT Sta. 18+10.00 (34.50' RT)

-LRT- POT Sta. 20+60.04 =
-L- POT Sta. 20+60.00 (30.00' RT)

MATCHLINE -L- STA. 28+00 SEE SHEET 5

EMC CORPORATION
DB 8681 PG 1014
BM 1997 PG 843

LEE, CHU YANG
DB 19413 PG 367
BM 1989 PG 1393

APEX-WILLIAMS STREET HOLDINGS, LLC
DB 16421 PG 1964

WILLIAMS STREET PROPERTIES LLC
LUND, MARCIA M
DB 17290 PG 300
BM 2003 PG 398

NCDOT DB 8399 PG 2161

DO NOT DISTURB EXISTING O/H SIGN

DO NOT DISTURB EXISTING DMS SIGN

PIPE OUTLET STABILIZATION
w/CL II RIP RAP
EST. 44 TONS CL II RIP RAP
EST. 47 SY GEOTEXTILE
EST. DDE=17 CY
S=1.05%
SEE DETAIL 4-4

CHANNEL STABILIZATION
EST. 45 TONS CL II RIP RAP
EST. 48 SY GEOTEXTILE
SEE DETAIL 4-12

STANDARD 4' BASE DITCH
EST. 245 TONS CL II RIP RAP
EST. 499 SY GEOTEXTILE
EST. DDE=1,142 CY
S=7.59%
SEE DETAIL 4-8

STANDARD 3' BASE DITCH
w/CL II RIP RAP
EST. 182 TONS CL II RIP RAP
EST. 192 SY GEOTEXTILE
EST. DDE=363 CY
S=12.88%
SEE DETAIL 4-9

STANDARD 3' BASE DITCH
EST. DDE=400 CY
S=1.10%
SEE DETAIL 4-7

LATERAL 'V' DITCH
w/CL B RIP RAP
EST. 3 TONS CL B RIP RAP
EST. 6 SY GEOTEXTILE
SEE DETAIL 4-3

SPECIAL LATERAL 'V' DITCH
w/CL B RIP RAP
EST. 21 TONS CL B RIP RAP
EST. 51 SY GEOTEXTILE
SEE DETAIL 4-2

CL B RIP RAP
EST. 2 TONS
EST. 7 SY GF

CL II RIP RAP
EST. 15 TONS
EST. 30 SY GF

SPECIAL CUT DITCH w/HINGE
SEE DETAIL 4-1

SPECIAL CUT 3' BASE DITCH
SEE DETAIL 4-6

42" CONC. BARRIER RAIL WITH MOMENT SLAB

TRENCHLESS INSTALLATION 36" WELDED STEEL

FLOWABLE FILL

REMOVE DI

REMOVE DI & 14 LF 24" RCP

FALSE SUMP
SEE DETAIL 4-10

FALSE SUMP
SEE DETAIL 4-11

END 48" CHAIN LINK FENCE

TIE TO EXISTING DITCH

TIE TO EXISTING CHANNEL

RETAIN

GREU TL-3

CAT-1

2GI-D

TYPE B-77

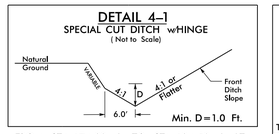
JB w/MH

24" w/ ELBOWS

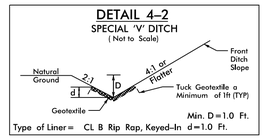
WOODS

CONC

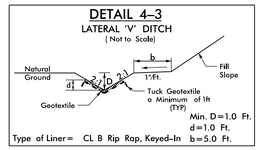
EXISTING R/W



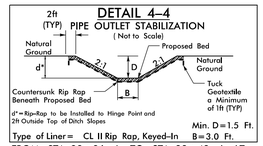
FROM STA. 17+82 -L- TO STA. 19+50 -L- LT
FROM STA. 18+00 -L- TO STA. 20+50 -L- RT
FROM STA. 21+00 -L- TO STA. 23+50 -L- RT
FROM STA. 24+50 -L- TO STA. 25+00 -L- RT



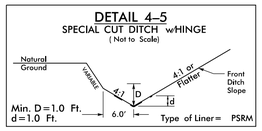
FROM STA. 22+50 -L- TO STA. 23+00 -L- LT



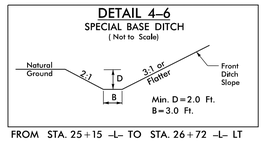
FROM STA. 23+00 -L- TO STA. 23+10 -L- LT



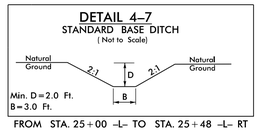
FROM STA. 23+36 -L- TO STA. 23+43 -L- LT



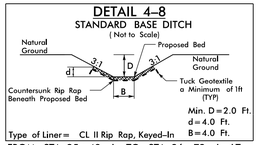
FROM STA. 25+00 -L- TO STA. 26+00 -L- RT



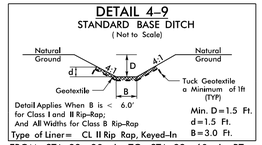
FROM STA. 25+15 -L- TO STA. 26+72 -L- LT



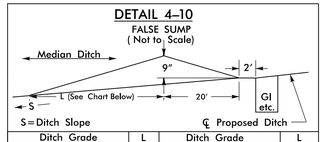
FROM STA. 25+00 -L- TO STA. 25+48 -L- RT



FROM STA. 25+48 -L- TO STA. 26+72 -L- LT

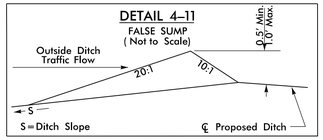


FROM STA. 22+20 -L- TO STA. 22+60 -L- RT

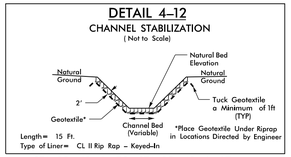


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

STA. 18+ ED



STA. 20+91 -L- RT



STA. 25+43 -L- TO STA. 25+48 -L- LT

★ PROPOSED TRAFFIC SIGNAL
FOR DETAIL, SEE SHEET 2B-1

FOR -LLT-, -LRT-, -L- PROFILES, SEE SHEETS 10 & 11

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PROJECT REFERENCE NO.	SHEET NO.
HL-0007	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NC License No. F-1235

8/17/99

REVISIONS

R/W REVISION: PARCEL 6 COMBINED WITH PARCEL 12, NOW PARCEL 12. PARCEL 8 DIVIDED INTO TWO PARCELS; PARCELS 8 AND 6. PARCEL 6 INCLUDES NAME CHANGE. (DJC 11/14/2024)
DESIGN REVISION: PLANS HAVE BEEN REVISED TO INCORPORATE VERIDEA NC 55 ROADWAY IMPROVEMENTS. (RJD 12/13/2024)
R/W REVISION: TCE ADDED TO PARCEL 6. R/W MODIFIED ON PARCEL 8. (RJD 1/21/2025)

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TRAFFIC VOLUME DATA

	1,640 / 2,400 TECHNOLOGY DRIVE		
33,730 / 42,800	570 / 1,100	630 / 700	47,900 / 56,200
NC 55	1,050 / 3,200	15,160 / 17,000	NC 55
2025 AADT / 2045 AADT	16,650 / 20,800	E WILLIAMS STREET	

-Y9- PC Sta. 10+00.00

BEGIN CONSTRUCTION -Y9- STA. 14+25.00

-L- CURVE DATA
PI Sta 41+91.67
Δ = 26° 04' 48.8" (LT)
D = 3° 34' 51.6"
L = 728.30'
T = 370.57'
R = 1,600.00'
e = 4%
R.O. = 260'

-Y1- CURVE DATA
PI Sta 50+87.72
Δ = 59° 49' 09.2" (LT)
D = 7° 09' 43.1"
L = 835.23'
T = 460.20'
R = 800.00'
e = 4%
R.O. = 200'

-Y3- CURVE DATA
PI Sta 11+14.52
Δ = 61° 15' 09.3" (LT)
D = 95° 29' 34.7"
L = 64.14'
T = 35.52'
R = 60.00'
e = 3%
R.O. = 60'

-Y9- CURVE DATA
PI Sta 13+06.80
Δ = 80° 44' 15.2" (RT)
D = 15° 52' 34.2"
L = 508.55'
T = 306.80'
R = 360.89'

NAD 83/2001

-Y9- PT Sta. 15+08.55

-L- POT STA. 33+99.21 =
-Y1- POT STA. 54+85.66
-Y9- POT Sta. 15+61.52

-L- PC Sta. 28+21.10

-Y1- RT Sta. 54+62.75

-Y1- STA. 50+24.42 =
-Y3- STA. 10+00.00

-Y3- PT Sta. 11+43.14

-Y3- PC Sta. 10+79.00

END CONSTRUCTION -Y3- STA. 13+00.00

MATCHLINE -L- STA. 28+00 SEE SHEET 4

MATCHLINE -L- STA. 41+00 SEE SHEET 6

MATCHLINE -Y1- STA. 49+50 SEE SHEET 9

(5) WILLIAMS STREET PROPERTIES LLC
LUND, MARCIA M
DB 17290 PG 300
BM 2003 PG 398

(12) RXR LEN APEX OWNER LLC
DB 19263 PG 2403
BM 2003 PG 398

(12) RXR LEN APEX OWNER LLC
DB 19263 PG 2403

(6) EDWARD C RITENOUR, JR
DB 6453 PG 736
BM 1948 PG 18

(9) NC DEPARTMENT OF TRANSPORTATION
DB 8068 PG 2255

(10) NC DEPARTMENT OF TRANSPORTATION
DB 8138 PG 1625
BM 1948 PG 18

(12) RXR LEN APEX OWNER LLC
DB 19263 PG 2403

(11) NC DEPARTMENT OF TRANSPORTATION
DB 8107 PG 179

(11A) NCDOT
DB 8107 PG 1171

(14) EMPIRE ESTATE LLC
DB 16378 PG 1727
BM 2018 PG 1239

(3A) NORTON DEVELOPMENT, LLC & GIGNY PARTNERS, LLC
DB 16733 PG 2377

(5A) WILLIAMS STREET PROPERTIES LLC
LUND, MARCIA M
DB 17290 PG 300
BM 2003 PG 398

(64) JERRY V EDWARDS & JUDITH B EDWARDS
DB 1924 PG 14
BM 2002 PG 1368

(8) NC DEPARTMENT OF TRANSPORTATION
DB 8715 PG 109

(9A) NCDOT
MAP 8005 PG 885

THOMAS G COSSA & KARLA J COSSA
DB 16108 PG 455
BM 2012 PG 28

KEVIN R SCOTT & DOROTHY E SCOTT
DB 16099 PG 2428
BM 2012 PG 28

OLGA A S
DB 1819?
BM 201?

PIPE INLET & OUTLET STABILIZATION
w/CL II RIP RAP
EST. 25 TONS CL II RIP RAP
EST. 27 SY GEOTEXTILE
EST. DDE=5 CY
S=2.75%
SEE DETAIL 5-8

LATERAL 3' BASE DITCH
w/CL I RIP RAP
EST. 174 TONS CL I RIP RAP
EST. 270 SY GEOTEXTILE
SEE DETAIL 5-6

CHANNEL REALIGNMENT
w/CL II RIP RAP
EST. 30 TONS CL II RIP RAP
EST. 32 SY GEOTEXTILE
EST. DDE=14 CY
S=8.33%
SEE DETAIL 5-3

CHANNEL REALIGNMENT
w/CL II RIP RAP
EST. 39 TONS CL II RIP RAP
EST. 41 SY GEOTEXTILE
EST. DDE=16 CY
S=6.67%
SEE DETAIL 5-3

LATERAL 'V' DITCH
w/CL B RIP RAP
EST. 9 TONS CL B RIP RAP
EST. 21 SY GEOTEXTILE
SEE DETAIL 5-2

PIPE CHANNEL STABILIZATION
EST. 38 TONS CL II RIP RAP
EST. 40 SY GEOTEXTILE
SEE DETAIL 5-5

PIPE CHANNEL STABILIZATION
EST. 26 TONS
CL I RIP RAP
EST. 40 SY
GEOTEXTILE
SEE DETAIL 5-5

CHANNEL CHANGE
EST. 95 TONS CL I RIP RAP
EST. 146 SY GEOTEXTILE
SEE DETAIL 5-1

LATERAL 3' BASE DITCH
w/CL I RIP RAP
EST. 35 TONS CL I RIP RAP
EST. 54 SY GEOTEXTILE
SEE DETAIL 5-4

CL I RIP RAP
EST. 11 TONS
EST. 22 SY GF

CL B RIP RAP
EST. 6 TONS
EST. 20 SY GF

SPECIAL CUT 'V' DITCH
SEE DETAIL 5-7

NOTE: RETAIN ALL EXXON GAS STATION DRAINAGE UNLESS OTHERWISE NOTED

NOTE: TOP SLAB TO DI IS MISSING
RETAIN DI

TRENCHLESS INSTALLATION 30" WELDED STEEL

FILL TO ELEV. = 354.0' & GRADE AWAY FROM FILL SLOPE

FILL TO ELEV. = 392.0' & TIE EXTG. 18" CMP TO PROP. STR. 0542

RETAIN 30" RCP

RETAIN & CLEAN OUT EXIST. 15" RCP

CONVERT JB TO CB

ADJUST OUTLET

REMOVE CB 15" RCP-IV

REMOVE DUAL CB & 15" RCP

REMOVE DI

FLOWABLE FILL

RIPRAP

RETAIN

WOODS

NC 55 BYP EB 29 BST

NC 55 BYP EB/E WILLIAMS ST 47 BST

NC 55 BYP WB 49 BST

NC 55 BYP WB/E WILLIAMS ST 35' BST

NC 55/E WILLIAMS ST 54' BST

E WILLIAMS ST 35' BST

NC 55 BYP WB 32' BST

DUKE ENERGY

CHARTER COMM. FO

AT&T CORP. COPPER

CENTURYLINK

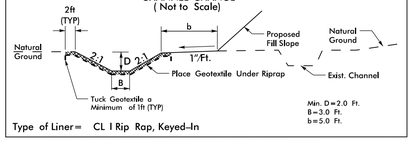
MCCOMM FO

GREU TL-3

PROPOSED TRAFFIC SIGNAL ★

FOR -L- PROFILE, SEE SHEET 11
FOR -Y1- PROFILE, SEE SHEET 14
FOR -Y3- PROFILE, SEE SHEET 14
FOR -Y9- PROFILE, SEE SHEET 15
FOR DETAIL, SEE SHEET 2B-1 & 2B-2

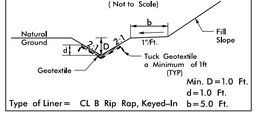
DETAIL 5-1
CHANNEL CHANGE
(Not to Scale)



Type of Liner= CL I Rip Rap, Keyed-In

FROM STA. 30+00 -L- TO STA. 30+59 -L- RT

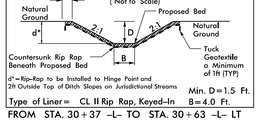
DETAIL 5-2
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL B Rip Rap, Keyed-In

FROM STA. 30+00 -L- TO STA. 30+37 -L- LT

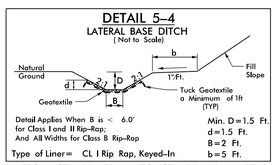
DETAIL 5-3
CHANNEL REALIGNMENT
(Not to Scale)



Type of Liner= CL II Rip Rap, Keyed-In

FROM STA. 30+37 -L- TO STA. 30+63 -L- LT

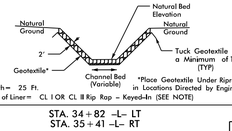
DETAIL 5-4
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CL I Rip Rap, Keyed-In

FROM STA. 29+50 -L- TO STA. 30+00 -L- RT
FROM STA. 37+70 -L- TO STA. 40+00 -L- LT

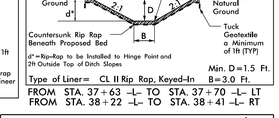
DETAIL 5-5
PIPE CHANNEL STABILIZATION
(Not to Scale)



Length= 25 Ft.
Type of Liner= CL I OR CL II Rip Rap – Keyed-In (SEE NOTE)

STA. 34+82 -L- LT
STA. 35+41 -L- RT

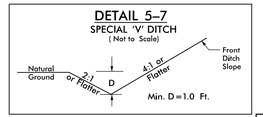
DETAIL 5-6
2ft PIPE INLET & OUTLET STABILIZATION
(Not to Scale)



Type of Liner= CL II Rip Rap, Keyed-In

FROM STA. 37+63 -L- TO STA. 37+70 -L- LT
FROM STA. 38+22 -L- TO STA. 38+41 -L- RT

DETAIL 5-7
SPECIAL 'V' DITCH
(Not to Scale)



FROM STA. 51+00 -Y1- TO STA. 53+00 -Y1- RT
FROM STA. 52+00 -Y1- TO STA. 53+72 -Y1- LT
FROM STA. 11+00 -Y3- TO STA. 12+06 -Y3- LT

PROJECT REFERENCE NO.	SHEET NO.
HL-0007	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NC License No. F-1235

8/17/99

REVISIONS

R/W REVISION: ELIMINATED PARCEL 13. MODIFIED PUE AND R/W ON PARCELS 16 AND 65. (TAC 12/07/2023)
R/W REVISION: PARCELS 6, 12, 23, AND 65 OWNERS NAMES CHANGED. (TAC 1/29/2024)
R/W AND DESIGN REVISION: REMOVED DUE FROM PARCEL 12. PLANS HAVE BEEN REVISED TO INCORPORATE VERIDEA. NC 55 ROADWAY IMPROVEMENTS. (RJD 12/13/2024)

-L- CURVE DATA

PI Sta 41+91.67
△ = 26° 04' 48.8" (LT)
D = 3° 34' 51.6"
L = 728.30'
T = 370.57'
R = 1,600.00'
e = 4%
R.O. = 260'

PI Sta 60+07.85
△ = 29° 45' 17.0" (LT)
D = 1° 02' 37.1"
L = 2,851.06'
T = 1,458.45'
R = 5,490.00'
e = 2%
R.O. = 130'

NAD 83/2001

MATCHLINE -L- STA. 41+00 SEE SHEET 5

MATCHLINE -L- STA. 54+00 SEE THIS SHEET

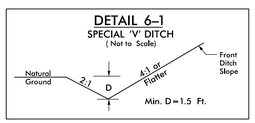
END CONSTRUCTION -L- STA. 44+62.50 LT

-L- PCC Sta. 45+49.40

END TIP PROJECT HL-0007 -L- POT STA. 55+50.00

★ PROPOSED TRAFFIC SIGNAL
FOR -L- PROFILE, SEE SHEET 12
FOR DETAIL, SEE SHEET 2B-2 & 2B-3

DETAIL 6-1
SPECIAL 'V' DITCH
(Not to Scale)



FROM STA. 42+00 -L- TO STA. 47+00 -L- RT

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7841-id

8/17/99

HYDRAULICS LEGEND
1. DRAINAGE STRUCTURE REMOVAL
2. PIPE REMOVAL
3. PLUG AND FLOW FILL

-Y1- CURVE DATA
PI Sta 19+17.20
△ = 11° 53' 20.9" (RT)
D = 2° 29' 28.0"
L = 477.26'
T = 239.49'
R = 2,300.00'
e = 3%
R.O. = 150'

-Y5- CURVE DATA
PI Sta 14+45.29
△ = 7° 49' 53.3" (LT)
D = 2° 29' 28.0"
L = 314.38'
T = 157.43'
R = 2,300.00'
e = 3%
R.O. = SEE PLANS

NAD 83/2001

PROJECT REFERENCE NO.	SHEET NO.
HL-0007	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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REVISIONS
R/W REVISION: REDUCED TCE ON PARCEL 44, DRIVES AND PDE ADDED TO PARCEL 47. - TAC 1/25/2024
R/W REVISION: DUE CHANGED TO R/W ON PARCEL 50, PROPERTY OWNER INFORMATION UPDATED ON PARCELS 29,32 AND 33, ELIMINATED PARCELS 34,37 AND 38. (RJD 2/26/2024)

-Y4- POT Sta. 12+12.02
END CONSTRUCTION
-Y4- STA. 11+25.00
-Y1- STA. 12+31.32 =
-Y4- STA. 10+00.00
BEGIN CONSTRUCTION
-Y1- STA. 11+50.00
END CONSTRUCTION
-Y6- STA. 11+40.00
-Y6- PT Sta. 12+20.29
-Y1- STA. 12+38.04 =
-Y5- Sta. 16+48.18
-Y5- PT Sta. 16+02.24
-Y1- PC Sta. 16+77.71
-Y5- PC Sta. 12+87.86
-Y1- STA. 11+15 =
-Y6- STA. 10+00.00
-Y1- PT Sta. 21+54.97
BEGIN CONSTRUCTION
-Y5- STA. 12+40.00
MATCHLINE -Y1- STA. 24+50 SEE SHEET 8

DEBRA A. JONES DB 13753 PG 2474 BM 1950 PG 85
VARAPRASAD N SOMPALLI & MADHURI PAPANI DB 13282 PG 607 BM 2008 PG 1997
PINNACLE REALTY GROUP INC DB 16783 PG 2580 BM 1950 PG 85
MILTON K & TERESA M FUSSELL DB 15270 PG 741 BM 1960 PG 273
ERNESTINE STONE & ALEXANDER BAKER DB 6754 PG 392 BM 1960 PG 273
LUCILLE H WIGGINS & ROSA B JONES DB 13-E PG 598 BD 172 PG 55 BM 1960 PG 273
CALVARY DELIVERANCE CHURCH OF THE APOSTOLIC FAITH INC DB 10438 PG 2006 BM 1960 PG 273
JENNIFER H ROBINSON DB 17484 PG 1977 BM 1960 PG 273
BLANCHE MCCOY DB 2464 PG 548
MITKO & DIMKA DIMITROV DB 18129 PG 757
BOBBY L & PEGGY S CANNADY DB 5417 PG 665
LORENE DOBBS DB 16509 PG 394
ATCHAMAMBA YARRAM DB 17983 PG 2547 BM 1960 PG 273
ANGLEWOOD MOTEL DB 18975 PG 68 BM 1995 PG 801
CHRISTINE M WILLIAMS DB 14039 PG 1426
NAYMA CHOWDHURY & NUR SULTANA CHOWDHURY DB 19339 PG 382
DARRIN F. MCCLAIN BRENDA F. MCCLAIN DB 19019 PG 195 DB 18425 PG 2211
ESTHER MAE PEARSON DB 1892 PG 89
MCI ENTERPRISES LLC DB 17729 PG 586 BM 1995 PG 613
STEVEN ANTHONY HUGHES LUCEY & KATHLEEN ANN LUCEY DB 17463 PG 984 BM 1999 PG 1842
ROBERTO REYNOSO & MELANIA REINOSO VASQUEZ DB 18069 PG 250 BM 1999 PG 1842
SEAN DOLE & CARLOTA PAMILAR DB 17122 PG 877 BM 1999 PG 1842
TISHA JONES DB 11589 PG 232 BM 1999 PG 1842
SAAD & AISHA HASAN DB 15853 PG 1133 BM 1999 PG 1842

DETAIL 7-1
SPECIAL 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D=1.0 Ft.
FROM STA. 13+50 -Y1- TO STA. 14+50 -Y1- LT
FROM STA. 20+50 -Y1- TO STA. 22+10 -Y1- LT
FROM STA. 12+50 -Y1- TO STA. 17+00 -Y1- RT
FROM STA. 10+75 -Y6- TO STA. 11+25 -Y6- LT
FROM STA. 15+00 -Y5- TO STA. 15+95 -Y5- RT

DETAIL 7-2
SPECIAL 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, d, D, 4:1 or Flatter, Front Ditch Slope
Min. D=1.0 Ft.
d=1.0 Ft.
Type of Liner= PSRM
FROM STA. 14+42 -Y5- TO STA. 15+00 -Y5- RT

DETAIL 7-3
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2:1, d, D, B, 2:1, b, 1':1ft., Fill Slope
Min. D=1.5 Ft.
d=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.
Type of Liner= PSRM
FROM STA. 22+65 -Y1- TO STA. 23+12 -Y1- LT

DETAIL 7-4
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, b, 1':1ft., Fill Slope
Min. D=1.5 Ft.
b=5.0 Ft.
FROM STA. 23+12 -Y1- TO STA. 24+00 -Y1- LT

DETAIL 7-5
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope, B
Min. D=1.0 Ft.
B=3.0 Ft.
FROM STA. 13+90 -Y5- TO STA. 15+70 -Y5- LT

DETAIL 7-6
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground, B
Min. D=1.5 Ft.
B=3.0 Ft.
FROM STA. 14+42 -Y5- TO STA. 14+62 -Y5- RT

DETAIL 7-7
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)
Natural Ground, Natural Bed Elevation, 3', Geotextile*, Channel Bed (Variable), Tuck Geotextile a Minimum of 1ft (TYP)
*Place Geotextile Under Riprap in Locations Directed by Engineer
Length= 25 Ft.
Type of Liner= CL I Rip Rap - Keyed-In
STA. 23+12 -Y1- RT

★ PROPOSED TRAFFIC SIGNAL
FOR DETAIL, SEE SHEET 2B-4
FOR -Y1- PROFILE, SEE SHEET 13
FOR -Y4- PROFILE, SEE SHEET 15
FOR -Y5- PROFILE, SEE SHEET 15
FOR -Y6- PROFILE, SEE SHEET 15

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PROJECT REFERENCE NO.	SHEET NO.
HL-0007	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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8/17/99

REVISIONS

R/W REVISION: DUE CHANGED TO R/W ON PARCEL 50. ELIMINATED PARCEL 39. (RJD 2/26/2024)

MATCHLINE -Y1- STA. 24+50 SEE SHEET 7

MATCHLINE -Y1- STA. 38+50 SEE SHEET 9

-Y2REV- CURVE DATA
PI Sta 11+18.08
Δ = 15° 03' 54.0" (LT)
D = 11° 27' 33.0"
L = 131.47'
T = 66.11'
R = 500.00'
e = 4%
R.O. = SEE PLANS

-Y7- CURVE DATA
PI Sta 11+38.73
Δ = 25° 50' 34.2" (LT)
D = 14° 53' 07.8"
L = 173.61'
T = 88.31'
R = 384.91'
e = 4%
R.O. = SEE PLANS

NAD 83/2001

NC TURNPIKE AUTHORITY
DB 14144 PG 831

KATHERINE J. BLOUNT
JEANETTE S. BLOUNT &
WILLIAM H JR BLOUNT
DB 2403 PG 365

HOPE COMMUNITY CHURCH OF NC INC
DB 16429 PG 301
BM 2016 PG 1690

NEELKAMAL CORP
DB 13774 PG 1884
BM 2000 PG 509

APEX FIRST BAPTIST CHURCH
DB 6697 PG 443
BM 1994 PG 1797

APEX FIRST BAPTIST CHURCH
DB 6233 PG 748
BM 1990 PG 99

MCI ENTERPRISES LLC
DB 13240 PG 1979
BM 2017 PG 2357

RICKY E MANGUM &
PAMELA C MANGUM
DB 5981PG 578

CSP COMMUNITY OWNER LLC
DB 13253 PG 1405
BM 1999 PG 1518

SUMMIT MANAGEMENT COMPANY
DB 8285 PG 1652
BM 1999 PG 538

PIPE INLET BANK STABILIZATION
EST. 24 TONS CL B RIP RAP
EST. 35 SY GEOTEXTILE
SEE DETAIL 8-4

PIPE OUTLET CHANNEL STABILIZATION
EST. 11 TONS CL I RIPRAP
EST. 16 SY GEOTEXTILE
SEE DETAIL 8-2

STANDARD 3' BASE DITCH w/CL I RIP RAP
EST. 24 TONS CL I RIP RAP
EST. 30 SY GEOTEXTILE
EST. DDE=18 CY, S=0.4%
SEE DETAIL 8-3

SPECIAL CUT 'V' DITCH
SEE DETAIL 8-1

TIE 2GI TO EXISTING 38" & RETAIN EXISTING 18"

TIE PROP DITCH TO DITCH CONST. BY R-2721 & CONVERT 2GI TO JB w/ MH

RETAIN 18" RCP

TIE CB TO EXISTING 18" RCP
RETAIN 18" RCP

DO NOT DISTURB EXIST. LIGHT POLE

DO NOT DISTURB EXIST. LIGHT POLE

-Y7- PT Sta. 12+24.04

-Y2_REV- STA.10+00.00 = -Y7- STA.11+15.30

-Y7- PC Sta. 10+50.43

-Y7- POT Sta. 10+00.00

-Y2_REV- PC Sta. 10+51.96

BEGIN CONSTRUCTION
-Y7- STA.10+75.00

FILL TO ELEV. = 388.0'

CLEAN OUT EXST. 42" RCP

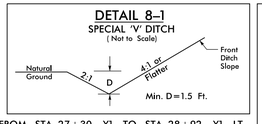
TIE TO EXIST. CB
RETAIN

TRIBUTARY -Y2_REV- INTERMITTENT

20' STORM DRAINAGE EASEMENT BM 1999 PG 538

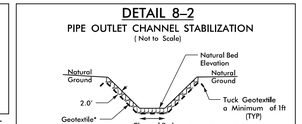
20' PUBLIC SANITARY SEWER EASEMENT BM 1999 PG 538

DETAIL 8-1
SPECIAL 'V' DITCH
(Not to Scale)



FROM STA. 27+30 -Y1- TO STA. 28+92 -Y1- LT
FROM STA. 34+00 -Y1- TO STA. 37+00 -Y1- LT
FROM STA. 38+40 -Y1- TO STA. 38+50 -Y1- LT
FROM STA. 11+67 -Y7- TO STA. 11+95 -Y7- RT
FROM STA. 10+50 -Y2- TO STA. 11+00 -Y2- LT

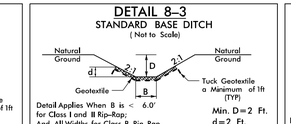
DETAIL 8-2
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



Type of Liner= CL I Rip-Rap - Keyed-In

STA. 35+53 -Y1- RT

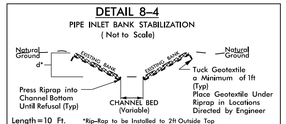
DETAIL 8-3
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0'
And All Widths for Class B Rip-Rap
Min. D=2 Ft.
d=2 Ft.
B=3.0 Ft.
Type of Liner= CL I Rip Rap, Keyed-In

STA. 36+25 -Y1- RT

DETAIL 8-4
PIPE INLET BANK STABILIZATION
(Not to Scale)



STA. 32+80 -Y1- LT

★ PROPOSED TRAFFIC SIGNAL

FOR -Y7- PROFILE, SEE SHEET 15
FOR -Y2REV- PROFILE, SEE SHEET 14
FOR DETAIL, SEE SHEET 2B-5 & 2B-6
FOR -Y1- PROFILE, SEE SHEETS 13 & 14

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Hal Jones

8/17/99

REVISIONS

R/W REVISION: PROPERTY OWNER INFORMATION UPDATED ON PARCELS 2 AND 63.(RJD 2/26/2024)
R/W REVISION: PARCEL 3 DIVIDED INTO PARCELS 3 AND 3A.(RJD 3/13/2024)

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PROJECT REFERENCE NO.	SHEET NO.
HL-0007	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/2001

-Y1- CURVE DATA
PI Sta 50+87.72
△ = 59° 49' 09.2" (LT)
D = 7° 09' 43.1"
L = 835.23'
T = 460.20'
R = 800.00'
e = 4%
R.O. = 200'

-Y2_REV- CURVE DATA
PI Sta 11+18.08
△ = 15° 03' 54.0" (LT)
D = 11° 27' 33.0"
L = 131.47'
T = 66.11'
R = 500.00'
e = 4%
R.O. = SEE PLANS

-Y8- CURVE DATA
PI Sta 10+93.56
△ = 13° 29' 48.3" (RT)
D = 19° 59' 09.5"
L = 67.53'
T = 33.92'
R = 286.68'
e = 4%
R.O. = SEE PLANS

MATCHLINE -Y1- STA. 38+50 SEE SHEET 8

MATCHLINE -Y1- STA. 49+50 SEE SHEET 5

HOPE COMMUNITY CHURCH OF NC INC. DB 16429 PG 301 BM 2016 PG 1690 — (53)

JAMES C & MARY JANE BARONE DB 12408 PG 146 BM 1991 PG 260 — (61)

RONALD E LEASURE & MARY L HANNER DB 4872 PG 899 BM 1991 PG 260 — (62)

LEE CHU YANG DB 19413 PG 367 BM 1989 PG 1393 — (2)

APEX-WILLIAMS STREET HOLDINGS, LLC DB 16421 PG 1964 — (3A)

EMPIRE ESTATE LLC DB 16378 PG 1727 BM 2018 PG 1239 — (14)

SUMMIT MANAGEMENT COMPANY DB 8285 PG 1652 BM 1999 PG 538 — (57)

MIRAMONTE HOMEOWNERS ASSN INC DB 12259 PG 454 BM 2004 PG 2319 — (60)

LEE CHU YANG DB 19413 PG 367 BM 1989 PG 1393 — (63)

MIRAMONTE HOMEOWNERS ASSN INC DB 12259 PG 454 BM 2004 PG 2319 — (58)

JERRY V EDWARDS & JUDITH B EDWARDS DB 1924 PG 14 BM 2002 PG 1368 — (64)

-Y1- PC Sta. 46+27.52

-Y1- STA. 40+30.57 = -Y8- STA. 14+12.65

BEGIN CONSTRUCTION -Y8- STA. 13+40.00

-Y8- PT Sta. 11+27.17

-Y2_REV- STA. 12+99.64 = -Y8- STA. 11+14.27

-Y8- PC Sta. 10+59.64

-Y8- POT Sta. 10+00.00

END CONSTRUCTION -Y2REV- STA. 12+86.76

END GRADE -Y2REV- STA. 12+74.64

-Y2_REV- PT Sta. 11+83.43

N 0° 58' 36.4" E

N 0° 21' 34.3" E

S 87° 29' 38.8" W

N 85° 45' 52" W 302.51'

S 85° 28' 28" W 345.50'

S 13° 26' 31" W 135.99'

N 13° 26' 31" E 12.09'

SPECIAL CUT 'V' DITCH SEE DETAIL 9-1

2GI-D w/NSSG

15" RCP-IV

18" RCP-IV

CB

DI

ISFD

ISBKD

ISMTL BUS

ISWH

WOODS

ABAND

TOWN OF APEX, 16" DIP

DOMINION ENERGY, 4"

AT&T CORP., FO

DUKE ENERGY, 30" C&G

CHARTER COMM., FO

+00.58 -Y1- 69.84' RT

+72.56 -Y1- 69.80' RT

+03.15 -Y1- EX. R/W

+27.52 -Y1- 52.50' RT

+25.89 -Y1- 70.30' RT 80.25' RT

+62.17 -Y1- EX. R/W

+36.45 -Y1- 68.59' RT

+34.90 -Y1- 81.49' RT

+00.00 -L- 72.88' RT 95.00' RT

+71.06 -Y1- EX. R/W

+70.32 -Y1- EX. R/W

+58.92 -Y2 REV- EX. R/W

+83.43 -Y2 REV- 18.00' RT

+80.00 -Y2 REV- 18.00' RT

+80.00 -Y8- EX. R/W

+16.35 -Y1- 52.50' RT 78.52' RT

+50.00 -Y1- 52.50' RT

+85.87 -Y1- EX. R/W

+01.00 -Y1- 52.50' RT 59.00' RT

+79.00 -Y1- 52.50' RT 59.00' RT

+42.50 -Y1- 115.00' LT

+22.50 -Y1- 65.00' LT

+25.00 -Y1- 70.00' LT EX. R/W

+50.00 -Y1- 90.00' LT 61.96' LT

S 08°21'05" W 116.90'

S 06°02'47" W 98.82'

S 14°11'44" W 76.08'

S 07°05'39" W 109.00'

S 03°10'55" W 53.16'

S 03°10'55" W 131.02'

S 02°34'03" E 209.59'

S 15°47'09" W 13.74'

S 06°55'34" W 111.13'

S 03°06'21" W 32.30'

S 14°06'21" W 30.61'

DETAIL 9-1
SPECIAL 'V' DITCH
(Not to Scale)

Natural Ground; 2:1; D; 4:1 or Flatter; Front Ditch Slope; Min. D=1.5 Ft.

FROM STA. 38+50 -Y1- TO STA. 39+50 -Y1- LT
FROM STA. 40+00 -Y1- TO STA. 40+50 -Y1- LT
FROM STA. 41+00 -Y1- TO STA. 41+50 -Y1- LT
FROM STA. 42+00 -Y1- TO STA. 44+00 -Y1- LT

DETAIL 9-2
TOE PROTECTION
(Not to Scale)

Natural Ground; d; 2:1 or Flatter Fill Slope; PSRM

d=1.0 Ft.

Type of Liner= PSRM

FROM STA. 48+00 -Y1- TO STA. 49+00 -Y1- RT

FOR DETAIL, SEE SHEET 2B-6
FOR -Y1- PROFILE, SEE SHEET 14
FOR -Y8- PROFILE, SEE SHEET 15
FOR -Y2REV- PROFILE, SEE SHEET 14

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Allen Coleman, Town Clerk

Department(s): Town Clerk's Office

Requested Motion

Motion to adopt a Resolution Directing the Town Clerk to Investigate Petition Received, to accept the Certificate of Sufficiency by the Town Clerk, and to adopt a Resolution Setting the Date of a Public Hearing for Thursday, December 17, 2026, on the Question of Annexation - Apex Town Council's intent to annex 2.76 +/- acres, located at 2801 Evans Road (PIN No. 0721-83-1019) and 2805 Evans Road (PIN No. 0721-83-3056), Annexation No. 838, into the Town Corporate limits.

Approval Recommended?

Yes

Item Details

The Town Clerk certifies to the investigation of said annexation.

Adoption of the Resolution authorizes the Town Clerk to advertise said public hearing by electronic means and on the Town of Apex's website.

These parcels are not associated with a rezoning and are seeking to receive Town services. Both parcels are zoned as Rural Residential.

Attachments

- CN2-A1: Resolution Directing the Town Clerk to Investigate Petition
  - Certificate of Sufficiency by the Town Clerk
  - Resolution Setting Date of Public Hearing
- CN2-A2: Legal Description – Annexation No. 838 – 2801 and 2805 Evans Road – 2.76 acres
- CN2-A3: Aerial Map – Annexation No. 838 – 2801 and 2805 Evans Road – 2.76 acres
- CN2-A4: Plat Map – Annexation No. 838 – 2801 and 2805 Evans Road – 2.76 acres
- CN2-A5: Annexation Petition – Annexation No. 838 – 2801 and 2805 Evans Road – 2.76 acres

RESOLUTION DIRECTING THE TOWN CLERK
TO INVESTIGATE PETITION RECEIVED UNDER G.S.§ 160A-31

Annexation Petition No. 838
2801 Evans Road and 2805 Evans Road – 2.76 acres

WHEREAS, G.S. §160A- 31 provides that the sufficiency of the petition shall be investigated by the Town Clerk before further annexation proceedings may take place; and

WHEREAS, the Town Council of the Town of Apex deems it advisable to proceed in response to this request for annexation;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Apex, that the Town Clerk is hereby directed to investigate the sufficiency of the above-described petition and to certify to the Town Council the result of his investigation.

This the 10th day of November, 2026.

_____
Jacques K. Gilbert
Mayor

ATTEST:

_____
Allen L. Coleman, CMC
Town Clerk

CERTIFICATE OF SUFFICIENCY BY THE TOWN CLERK

Annexation Petition No. 838
2801 Evans Road and 2805 Evans Road – 2.76 acres

To: The Town Council of the Town of Apex, North Carolina

I, Allen L. Coleman, Town Clerk, do hereby certify that I have investigated the annexation petition attached hereto, and have found, as a fact, that said petition is signed by all owners of real property lying in the area described therein, in accordance with G.S.§ 160A-31, as amended.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Town of Apex, North Carolina this 10th day of November, 2026.

_____
Allen L. Coleman, CMC
Town Clerk

(Seal)

RESOLUTION SETTING DATE OF PUBLIC HEARING
ON THE QUESTION OF ANNEXATION PURSUANT TO G.S.§ 160A-31 AS AMENDED

Annexation Petition No. 838
2801 Evans Road and 2805 Evans Road – 2.76 acres

WHEREAS, a petition requesting annexation of the area described herein has been received; and

WHEREAS, the Town Council of Apex, North Carolina has by Resolution directed the Town Clerk to investigate the sufficiency thereof; and

WHEREAS, Certification by the Town Clerk as to the sufficiency of said petition has been made;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Apex, North Carolina that:

Section 1. A public hearing on the question of annexation of the area described herein will be held at the Apex Town Hall at 6 o'clock p.m. on the 17th day of December, 2026.

Section 2. The area proposed for annexation is described as attached.

Section 3. Notice of said public hearing shall be published on the Town of Apex Website, www.apexnc.org, Public Notice, at least ten (10) days prior to the date of said public hearing.

This the 10th day of November, 2026.

_____
Jacques K. Gilbert,
Mayor

ATTEST:

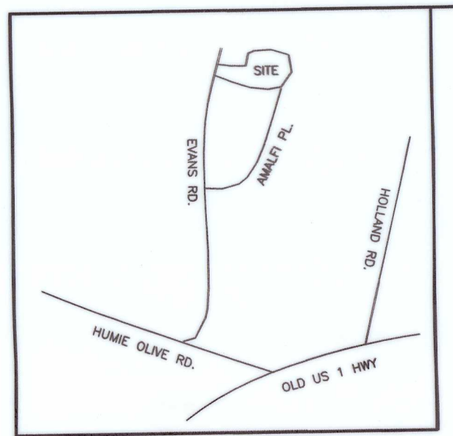
_____
Allen L. Coleman, CMC
Town Clerk
Attachment: Legal Description

LEGAL DESCRIPTION

BEGINNING at an existing iron pipe on the eastern right of way of Evans Road, having NC Grid Coordinates of N - 712986.79 and E - 2027999.88 (NAD 83 (2011) 2018), and also being North 16 degrees 23 minutes 16 seconds East - 379.15 feet from the intersection of Grouse Trail and Evans Road.
Thence from said beginning point North 84 degrees 50 minutes 14 seconds West - 32.07 feet to a point in the centerline of Evans Road;
Thence the following courses and distances along the centerline of Evans Road;
North 27 degrees 11 minutes 08 seconds East - 46.99 feet,
North 27 degrees 11 minutes 08 seconds East - 17.74 feet,
North 27 degrees 11 minutes 08 seconds East - 66.76 feet,
Thence North 03 degrees 04 minutes 42 seconds West - 57.11 feet to a point in the western right of way of N.C.S.R. #1147;
Thence North 03 degrees 04 minutes 42 seconds West - 55.20 feet to an existing iron pipe;
Thence South 87 degrees 19 minutes 50 seconds East - 51.96 feet to a point on the western right of way of N.C.S.R. #1147;
Thence South 87 degrees 19 minutes 50 seconds East - 78.57 feet and crossing N.C.S.R. #1147 to a point in the eastern right of way of N.C.S.R. #1147;
Thence South 87 degrees 19 minutes 50 seconds East - 51.18 feet to an existing iron pipe;
Thence South 87 degrees 26 minutes 39 seconds East - 318.67 feet to an existing iron pipe with a cap;
Thence South 04 degrees 25 minutes 50 seconds West - 240.95 feet to an existing iron pipe with a cap;
Thence North 87 degrees 26 minutes 40 seconds West - 318.93 feet to an existing iron pipe;
Thence North 84 degrees 50 minutes 14 seconds West - 185.49 feet to an existing iron pipe, said iron pipe being the point of BEGINNING, containing 2.76 acres more or less.

This is the same property conveyed in a deed for Taylor and Jessica Anderson and Todor and Helga Oldja, recorded in Book 20247 Page 848 and Book 20281 Page 2254, Wake County Registry.


Photography Prepared by: Town of Apex Planning Department
June 2026 Aerial
October 2026
Annexation #838
Urbino Ct
The Traditions at Bella Casa
Lazio Ln
Vetta Cv
Tordelo Pl
Grouse Trl
Evans Rd
Napoli Dr
Fellini Dr
Old Byre Way
Castello Ct
The Manors at Bella Casa
Amalfi Pl
Oro Pl
0
200
400
Feet



VICINITTY MAP (NO SCALE)

Annexation # _____

I, Allen Coleman, CMC, NCCCC, Town Clerk, Apex, North Carolina certify this a true and exact map of annexation

adopted the _____ day of _____, 20___, by the Town Council. I set my hand and seal of the

Town of Apex, _____.
Day/Month/Year

_____
Allen Coleman, CMC, NCCCC, Town Clerk

RR ZONING SETBACKS

FRONT: 40'
SIDE: 15'
REAR – 25'

NOTES

AREA BY COORDINATES
NC GRID COORDINATES OBTAINED USING A CARLSON BRx7 GPS UNIT, REFERENCED TO NAD 83(2018).

THIS SURVEY DID NOT HAVE THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO ANY MATTERS ONE MAY DISCLOSE. PROPERTY SUBJECT TO BOTH ABOVE AND/OR BELOW GROUND UTILITIES AND/OR EASEMENTS.

THIS PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA PER F.E.M.A. MAP #3720072100K, EFF. DATE: 7/19/2022 ZONE X

ZONED RR – TOWN OF APEX
THIS PROPERTY DOES FALL INSIDE OF THE ETJ.
ENTIRE SITE IS WITHIN THE PRIMARY WATERSHED PROTECTION OVERLAY.

DEVELOPMENT ON THE LOT(S)ARE SUBJECT TO TOWN OF APEX STORMWATER REGULATIONS IN 6.1 OF THE UDO, FLOODPLAIN REGULATIONS IN 6.2 OF THE UDO, AND EROSION CONTROL REGULATIONS IN THE CODE OF ORDINANCES UNLESS SPECIFICALLY EXEMPTED UNDER THE RESPECTIVE ORDINANCE SECTION(S).

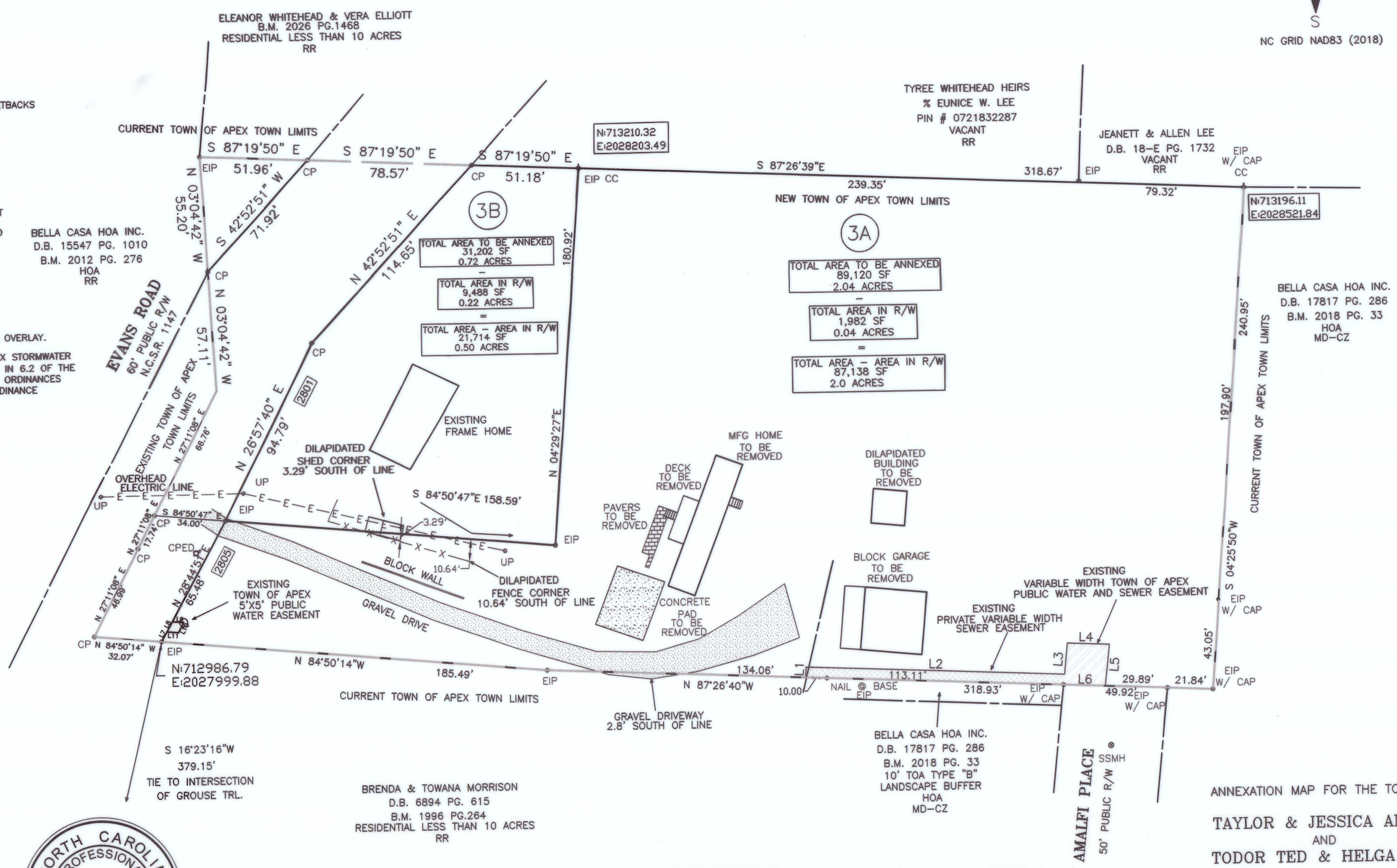
EASEMENT LINE TABLE

LINE	BEARING	DISTANCE
L1	S 02°33'20" W	5.00'
L2	S 87°26'40" E	123.65'
L3	N 05°59'38" E	15.00'
L4	N 87°26'40" W	20.00'
L5	N 05°59'38" E	20.00'
L6	N 87°26'40" W	20.00'
L7	N 28°43'23" E	5.00'
L8	N 28°44'51" E	5.00'
L9	S 84°50'14" E	5.00'
L10	S 28°44'51" W	5.00'
L11	S 84°50'14" E	5.00'

LEGEND

EIP – EXISITNG IRON PIPE
CPED – COMMUNICATION PEDESTAL
SSMH – SANITARY SEWER MANHOLE
UP – UTILITY POLE
R/W – RIGHT OF WAY
D.B. – DEED BOOK
B.M. – BOOK OF MAPS
CP – COMPUTED POINT
CC – CONTROL CORNER
107 – DENOTES ADDRESS

MAP REFERENCES
B.M. 1996 PG.264
B.M. 2018 PG. 33
B.M. 2014 PG. 1140
OTHERS AS SHOWN



NC GRID NAD83 (2018)

I, BENTON W. DEWAR, PROFESSIONAL LAND SURVEYOR NO. 3040, CERTIFY:
THAT THIS SURVEY IS OF ANOTHER CATEGORY, SUCH AS RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXEMPTION OR EXCEPTION TO THE DEFINITION OF SUBDIVISION.

Benton W. Dewar
BENTON W. DEWAR, NCPLS – 3040

NORTH CAROLINA PROFESSIONAL L - 3040 LAND SURVEYOR BENTON W. DEWAR

I, BENTON W. DEWAR CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION DEED BOOK 3182 PAGE 225 MAP # 2014 PAGE 1140; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK 2018 PAGE 53; THAT THE RATIO OF PRECISION OR POSITIONAL ACURACY AS CALCULATED IS 1:15,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANE WITH G.S. 47-30 AS AMMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 12TH DAY OF MARCH, A.D. 2026

Benton W. Dewar
BENTON W. DEWAR, NCPLS – 3040

I, BENTON W. DEWAR, CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY SUPERVISION FROM AN ACTUAL FIELD SURVEY OF DESCRIPTION(S) AS RECORDED IN DEED BOOK 3182 PAGE 225. THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS SUCH AND WERE PLOTTED FROM INFORMATION AS REFERENCED HEREON; THAT THE RATIO OF PRECISION AS CALCULATED WAS 10,000+ AND THAT THE GLOBAL NAVIGATIONAL SATELLITE SYSTEM(GNSS) WAS USED TO PERFORM A PORTION OF THIS SURVEY AND THE FOLLOWING INFORMATION WAS USED:

CLASS OF SURVEY	CLASS A
POSITIONAL ACCURACY	0.03
TYPE OF GPS FIELD PROCEDURE	VRS
DATUM/EPOCH	NAD 83
DATES OF SURVEY	2-20-2026
PUBLISHED/FIXED-CONTROL USE	RTK
GEOID MODEL	2018
COMBINED GRID FACTOR	9998885607
UNITS	US SURVEY FEET

REVISIONS
10/12/2026 TOWN COMMENTS

ANNEXATION MAP FOR THE TOWN OF APEX

TAYLOR & JESSICA ANDERSON
AND
TODOR TED & HELGA OLDJA

2805 & 2801 EVANS ROAD
APEX, NC 27502
LOT 3A BURNETT L. MORRISON ESTATE
BOOK OF MAPS 2014 PAGE 1140
DEED BOOK 20281 PAGE 2254
DEED BOOK 20247 PAGE 848
PIN # 721833056 AND 721831019
BUCKHORN TOWNSHIP
WAKE COUNTY – NORTH CAROLINA
SCALE: 1" = 40' FEBRUARY 26, 2026

0 10 20 40 60 80

BENTON DEWAR & ASSOCIATES
PROFESSIONAL LAND SURVEYOR
5920 HONEYCUTT ROAD
HOLLY SPRINGS, NC 27540
(919)-552-9813
EMAIL-bentondewar@gmail.com

26-120
OLDJA-ANNEXATION/26/750

PETITION FOR VOLUNTARY ANNEXATION

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 #:		Submittal Date:	
Fee Paid	$	Check #	

TO THE TOWN COUNCIL APEX, NORTH CAROLINA

1. We, the undersigned owners of real property, respectfully request that the area described in Part 4 below be annexed to the Town of Apex, ■ Wake County, ☐ Chatham County, North Carolina.
2. The area to be annexed is ■ contiguous, ☐ non-contiguous (satellite) to the Town of Apex, North Carolina and the boundaries are as contained in the metes and bounds description attached hereto.
3. If contiguous, this annexation will include all intervening rights-of-way for streets, railroads, and other areas as stated in G.S. 160A-31(f), unless otherwise stated in the annexation amendment.

OWNER INFORMATION

Taylor & Jessica Anderson	0721-83-3056 and 0721-83-1019
Owner Name (Please Print)	Property PIN or Deed Book & Page #
828-302-0756	tbanders86@gmail.com
Phone	E-mail Address
Todor & Helga Oldja	0721-83-3056 and 0721-83-1019
Owner Name (Please Print)	Property PIN or Deed Book & Page #
919-868-3600	toldja@hotmail.com
Phone	E-mail Address
Owner Name (Please Print)	Property PIN or Deed Book & Page #
Phone	E-mail Address

SURVEYOR INFORMATION

Surveyor: Benton Dewar & Associates

Phone: 9195529813 Fax:

E-mail Address: bentondewar@gmail.com

ANNEXATION SUMMARY CHART

Property Information		Reason(s) for annexation (select all that apply)	
Total Acreage to be annexed:	2.76	Need water service due to well failure	☐
Population of acreage to be annexed:	0	Need sewer service due to septic system failure	☐
Existing # of housing units:	2	Water service (new construction)	☐
Proposed # of housing units:	2	Sewer service (new construction)	☐
Zoning District*:	RR	Receive Town Services	☑

*If the property to be annexed is not within the Town of Apex's Extraterritorial Jurisdiction, the applicant must also submit a rezoning application with the petition for voluntary annexation to establish an Apex zoning designation. Please contact the Planning Department with questions.

PETITION FOR VOLUNTARY ANNEXATION

Application #: _____ Submittal Date: _____

COMPLETE IF SIGNED BY INDIVIDUALS:

All individual owners must sign. (If additional signatures are necessary, please attach an additional sheet.)

Todor Ted Oldja
Please Print

Signature

Helga Oldja
Please Print

Signature

Taylor Anderson
Please Print

Signature

Jessica Anderson
Please Print

Signature

STATE ~~OF NORTH CAROLINA~~ Florida
COUNTY OF ~~WAKE~~ Collier

Sworn and subscribed before me, Leoanys Medina, a Notary Public for the above State and County, this the 14 day of, September, 2026.

SEAL

Leoannys Medina Suarez
Notary Public, State of Florida
My Commission Expires 08/14/2027
Commission No. HH 433050

Notary Public

My Commission Expires: 08/14/2027

COMPLETE IF A CORPORATION:

In witness whereof, said corporation has caused this instrument to be executed by its President and attested by its Secretary by order of its Board of Directors, this the _____ day of _____, 20_____.

Corporate Name _____

SEAL

By: _____
President (Signature)

Attest:

_____
Secretary (Signature)

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, _____, a Notary Public for the above State and County, this the _____day of _____, 20____.

_____
Notary Public

SEAL

My Commission Expires: _____

Application #: _____ Submittal Date: _____

COMPLETE IF IN A LIMITED LIABILITY COMPANY

In witness whereof, _____ a limited liability company, caused this instrument to be executed in its name by a member/manager pursuant to authority duly given, this the ____ day of _____, 20____.

Name of Limited Liability Company _____

By: _____
Signature of Member/Manager

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, _____, a Notary Public for the above State and County, this the _____day of _____, 20____.

_____
Notary Public

SEAL

My Commission Expires: _____

COMPLETE IF IN A PARTNERSHIP

In witness whereof, _____, a partnership, caused this instrument to be executed in its name by a member/manager pursuant to authority duly given, this the _____ day of _____, 20_____.

Name of Partnership _____

By: _____
Signature of General Partner

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, _____, a Notary Public for the above State and County, this the _____day of _____, 20____.

_____
Notary Public

SEAL

My Commission Expires: _____

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Allen Coleman, Town Clerk

Department(s): Town Clerk's Office

Requested Motion

Motion to approve an amendment to Mrs. Tianduo Zhang's appointment to the Apex Planning Board, revising her term from October 13, 2026, through September 30, 2028, to January 1, 2027, through December 31, 2028.

Approval Recommended?

Yes

Item Details

On October 13, 2026, the Apex Town Council voted (3-2) to appoint Mrs. Tianduo Zhang to the Planning Board for a term beginning October 13, 2026, and ending September 30, 2028. Mrs. Zhang previously participated in the Council's appointment interview process on September 22, 2026, during which she indicated that she discussed the need to coordinate her teaching schedule in advance. Following her appointment and participation in the Town's Resident Advisory Board orientation, Mrs. Zhang formally requested that her term be adjusted to begin January 1, 2027, due to previously scheduled professional and teaching commitments, including international travel in December.

Mrs. Zhang has already completed the interview and appointment process but has not yet taken her Oath of Office or begun serving in an official capacity. An appointed member who has not taken the Oath of Office is not authorized to perform official duties and is not counted toward the Board's quorum. The proposed adjustment would accommodate her existing professional commitments while maintaining consistency with the Town's attendance requirements for resident advisory board members.

Given these circumstances, the proposed amendment is intended to address this specific appointment rather than establish a general practice of deferring appointment terms once set. The request is to official o amend Mrs. Zhang's appointment to establish a revised term beginning January 1, 2027, and ending December 31, 2028.

Attachments

- CN3-A1: Advisory Board Term Amendment – Mrs. Tianduo Zhang on Planning Board to January 1, 2027

From: Tina Zhang
To: Allen Coleman
Subject: Re: Congratulations - You"ve been appointed to the Planning Board!
Date: Monday, November 2, 2026 9:00:10 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png

Caution! This message was sent from outside your organization.

Good morning Allen,
I am kindly ask if my starting date of my appointment can be moved to January instead of immediately. As mentioned in during my interview, I am a college faculty and my teaching scheduled can be flexible but they got to be set ahead of time. In early October, my winter semester schedule is already set. I am already assigned a task of taking a group of students to China in early December which will be in conflict with the schedule. My spring schedule is still in the making, so I will coordinate accordingly. I can accommodate a January start of the appointment.
Best,
Tianduo

On Mon, Oct 19, 2026 at 3:23 PM Allen Coleman <Allen.Coleman@apexnc.org> wrote:

> Dear Tianduo Zhang,
>
> Congratulations on your recent appointment to the **Planning Board (PB)** with the Town of Apex. Please see the attached letter for additional details regarding your appointment, including important information and required next steps. A hard copy of the letter and a copy of the Resident Advisory Board Administrative Policy are being mailed to you.
>
> As outlined in the letter, you will be asked to **confirm your acceptance of this appointment** and indicate your preferred orientation session.
>
> If you have any questions, please do not hesitate to contact the Office of the Town Clerk.
>
> We look forward to working with you!
>
> Allen
>
> *Allen Coleman, CMC*
>
> Town Clerk

Town of Apex, NC

Town Clerk's Office

(919) 249-1260 (O) | (336) 583-6223 (M)

www.apexnc.org

Please note that email(s) sent to and from this address are subject to the North Carolina Public Records Law and may be disclosed to third parties

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Karmen McGee, Director

Department(s): Human Resources

Requested Motion

A) Motion to approve the proposed amendments to Article VI, Section 3 of the Town of Apex Personnel Policies, Retiree Health Insurance, as presented, establishing a one-year rehire eligibility period for recognizing prior Town service toward retiree health insurance benefits.

B) Motion to approve the proposed amendments to Article VII, Section 7 of the Town of Apex Personnel Policies, Vacation Leave Accrual Rate, as presented, establishing a one-year rehire eligibility period for recognizing prior Town service when determining vacation leave accrual rates.

Approval Recommended?

Yes

Item Details

The Human Resources Department, supported by the Town Manager's Office, are proposing amendments to the Town of Apex Personnel Policies to establish consistent guidelines for recognizing prior Town service when former employees are rehired. The proposed amendments address two areas: retiree health insurance eligibility (Article VI, Section 3) and vacation leave accrual rates (Article VII, Section 7). These revisions are intended to provide greater clarity and consistency in the administration of employee benefits, establish uniform expectations for returning employees, and support equitable application of the Town's personnel policies.

Under the proposed amendments, employees who separate from Town employment and are rehired within one (1) year may receive credit for their prior Town service. For retiree health insurance eligibility, employees originally hired before July 1, 2020 must return to a benefits-eligible position within one year of separation to retain eligibility for the benefit, subject to the policy's existing retirement requirements. This reduces the current rehire eligibility window from two years to one year. For vacation leave accruals, the amendment establishes that returning employees may receive credit for previous Town service when rehired within one year, allowing their accrual rates to reflect their cumulative service. Employees rehired

after more than one year will be treated as new hires for purposes of both benefits. Collectively, these changes align the rehire provisions across both policies while preserving the existing benefit structures and eligibility requirements.

Attachments

- CN4-A1: Proposed Amendment to Article VI, Section 3 – Retiree Health Insurance
- CN4-A2: Proposed Amendment to Article VII, Section 7 – Vacation Leave Accrual

Article VI, Section 3. Retiree Health Insurance

Employees hired prior to July 1, 2020

An employee who meets the conditions set forth under the provision of the North Carolina Local Government Employee's Retirement System (NCLGERS) may elect to retire and receive all benefits earned under the retirement plan. An employee who retires directly from the Town with 15 years of Town service may elect to continue on the Town's group health insurance plan if requested within 30 days of the retirement date. The retiree may continue dependent coverage (and pay the cost of this coverage) if enrolled in dependent coverage at the time of retirement. The Town will subsidize the cost of the health insurance premiums for the retiree as follows:

15* years of service: 50% subsidy
20* years of service: 75% subsidy
25* years of service: 100% subsidy

**Unused sick leave counted by the NCLGERS as creditable service time will count in determining total years of Town service.*

When a retiree reaches age 65, the retiree enroll sin Medicare Part A and B and pays the cost. The Town provides Medicare supplement insurance for the retiree and subsidizes the cost of the Medicare supplement (as shown above) not to exceed the Town's monthly premium contribution toward employee health insurance coverage. If the Town's Medicare plan is not available in the retiree's residing State, a plan with the most comparable coverage, as identified by the Town, will be offered.

Employees who were hired prior to July 1, 2020 and separate from Town service will forfeit this benefit unless re-hired with the Town into a benefits eligible position within ~~2~~1 year~~s~~ of the separation date, at which point previous service years will count towards overall service with the Town for the purpose of this benefit.

Employees who separate from service and are re-employed ~~2 or more years~~more than 1 year later will be considered a new hire and will not be eligible for the retiree health insurance benefit.

Employees hired on or after July 1, 2020

Employees hired on or after July 1, 2020 are not eligible for retiree health insurance.

Article VII, Section 7. Vacation Leave Accrual Rate

Each full -time employee of the Town shall earn vacation at the following schedule. Leave earning is pro-rated for full-time and part-time employees working more or less than 40 hours per week.

Years of Service	**Hours Accrued Per Year**
Less than 2	80
2 through 4	96
5 through 9	120
10 through 13	144
Year 14	1,104
15 through 19	168
20 through 23	192
Year 24	1,152
25 plus	192

The accrual rate for part-time employees is prorated by the average number of hours in the workweek. An employee must be at work or on paid leave status to accrue vacation leave. Shortterm disability and workers compensation leave are not considered paid leave. The accrual rate for an employee on any type of unpaid leave will be prorated based on the actual hours paid in the pay period.

Vacation leave may not be used prior to accruing it. Only vacation leave hours that display in an employee's vacation leave bank (HR Portal) are eligible to be used on a timesheet. Use of "pending" leave (leave that will accrue in the current pay period, but has not yet been earned) is not allowed.

Vacation leave accrual rates are based on years of service with the Town of Apex and cannot be transferred from other municipalities. Rehires may be granted credit for prior service with the Town of Apex if they are rehired within 1 year of their separation date. Employees who separate from service and are re-employed more than 1 year later will be considered a new hire for the purposes of vacation accruals and will accrue leave at the same rate as all new hires.

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| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Allen Coleman, Town Clerk

Department(s): Town Clerk's Office

Requested Motion

Motion to authorize the Governance, Fiscal Stewardship, and Internal Support Committee to conduct its December 3, 2026, meeting in either a hybrid or fully remote format, subject to applicable public notice, public access, and open meetings requirements, and direct the Town Clerk to coordinate the necessary arrangements to facilitate remote participation, recording, and public accessibility.

Approval Recommended?

Yes

Item Details

The Governance, Fiscal Stewardship, and Internal Support Committee serves in an advisory capacity to the Town Council, reviewing matters, conducting discussions, and developing recommendations for consideration by the full Council. The Committee does not have independent authority to take action binding upon the Town Council or the Town of Apex.

In response to a request for greater flexibility in Council Committee participation, the Town Clerk has developed proposed amendments to the Town Council's Rules of Procedure that would establish guidelines for remote participation and authorize Council Committees to conduct meetings in a hybrid or fully remote format. These proposed amendments are anticipated to be presented to the Town Council for consideration on December 17, 2026.

In the interim, staff is requesting Council authorization to allow the Governance, Fiscal Stewardship, and Internal Support Committee to conduct its December 3, 2026, meeting in either a hybrid or fully remote format, as necessary to accommodate member participation and expand accessibility options. Any meeting conducted under this authorization would be accessible to the public in real time, subject to applicable public notice and open meetings requirements, and recorded for subsequent posting to the Town's official

YouTube channel. The Town Clerk would coordinate with appropriate staff to ensure the necessary technology and public access arrangements are in place.

Attachments

- N/A

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Bruce Venable, Planner III

Department(s): Planning

Requested Motion

Motion to approve the Statement of the Town Council and Ordinance for Rezoning Application No. 26CZ10, Todd Rechler, RXR Realty and Edward C. Ritenour, Jr., petitioners for the properties located at 0 Prince Dead End Rd; 0 Technology Dr; 3125 & 3137 Veridea Pkwy; 0, 1714, & 1860 E. Williams St. (PINs 740889089, 0740990631, 0740188440, 0740188176,0740980243, 0740981239, 0740765322, and 0741217259).

Approval Recommended?

The Planning Department recommends approval.

Item Details

Rezoning Application No. 26CZ10 was approved at the October 27, 2026, Town Council meeting.

Attachments

- CN6-A1: Statement of the Town Council and Ordinance to Amend the Official Zoning District Map
  - Attachment A Legal Description
  - Attachment B Veridea SD Plan
  - Attachment C Veridea Environmental Enhancement Plan
  - Attachment D Veridea Pattern Book

STATEMENT OF TOWN COUNCIL AND ORDINANCE AMENDING THE OFFICIAL ZONING DISTRICT MAP OF THE TOWN OF APEX TO CHANGE THE ZONING OF APPROXIMATELY 23.09 ACRES LOCATED AT 0 PRINCE DEAD END RD; 0 TECHNOLOGY DR; 3125 & 3137 VERIDEA PKWY; 0, 1714, & 1860 E. WILLIAMS ST. FROM RURAL RESIDENTIAL (RR), LIGHT INDUSTRIAL (LI), AND RESIDENTIAL AGRICULTURAL (RA) TO SUSTAINABLE DEVELOPMENT-CONDITIONAL ZONING (SD-CZ) FOR VERIDEA

#26CZ10

WHEREAS, RXR LEN Apex Owner, LLC/ Edward Ritenour owner/applicant (the "Applicant"), submitted a completed application for a conditional zoning on the 3rd day of August 2026 (the "Application"). The proposed conditional zoning is designated #26CZ10;

WHEREAS, the Planning Director for the Town of Apex, Dianne Khin, caused proper notice to be given (by publication and posting) of a public hearing on #26CZ10 before the Planning Board on the 12th day of October 2026;

WHEREAS, the Apex Planning Board held a public hearing on the 12th day of October 2026, gathered facts, received public comments and formulated a recommendation regarding the application for conditional zoning #26CZ10. A motion was made by the Apex Planning Board to recommend approval; the motion passed unanimously for the application for #26CZ10;

WHEREAS, pursuant to N.C.G.S. §160D-601 and Sec. 2.2.11.E of the Unified Development Ordinance, the Planning Director caused proper notice to be given (by publication and posting), of a public hearing on #26CZ10 before the Apex Town Council on the 27th day of October 2026;

WHEREAS, the Apex Town Council held a public hearing on the 27th day of October 2026. Bruce Venable, Planner III, presented the Planning Board's recommendation at the public hearing;

WHEREAS, all persons who desired to present information relevant to the application for #26CZ10 were allowed to present evidence at the public hearing before the Apex Town Council. No one who wanted to speak was turned away;

WHEREAS, the Apex Town Council finds that the approval of the rezoning is consistent with the 2045 Land Use Plan and other adopted plans in that: The 2045 Land Use Map designates this area as Regional Mixed Use: Medium Density Residential/High Density Residential/Office Employment/Commercial Services/Industrial Employment. This designation on the 2045 Land Use Map includes the zoning district Sustainable Development-Conditional Zoning (SD-CZ) and the Apex Town Council has further considered that the proposed rezoning to Sustainable Development-Conditional Zoning (SD-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;

WHEREAS the Apex Town Council finds that approval of the rezoning is reasonable and in the public interest because it will encourage more efficient and compatible development of the property, provide for the same development standards as applicable to the undeveloped adjacent properties, and allow for uses that will generate jobs and increase the tax base.

WHEREAS, the Apex Town Council by a vote of 5 to 0 approved Application #26CZ10 rezoning the subject tract located at at 0 Prince Dead End Rd; 0 Technology Dr; 3125 & 3137 Veridea Pkwy; 0, 1714, & 1860 E. Williams St. from Rural Residential (RR), Light Industrial (LI), and Residential Agricultural (RA) to Sustainable Development-Conditional Zoning (SD-CZ) for Veridea.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF APEX

Section 1: The lands that are the subject of the Ordinance are those certain lands described in Attachment "A" – Legal Description which is incorporated herein by reference, and said lands are hereafter referred to as the "Rezoned Lands."

Ordinance Amending the Official Zoning District Map #26CZ03

Section 2: The Town of Apex Unified Development Ordinance, including the Town of Apex North Carolina Official Zoning District Map which is a part of said Ordinance, is hereby amended by changing the zoning classification of the "Rezoned Lands" from Rural Residential (RR), Light Industrial (LI), and Residential Agricultural (RA) to Sustainable Development-Conditional Zoning (SD-CZ) for Veridea, subject to the conditions stated herein.

Section 3: The Planning Director is hereby authorized and directed to cause the said Official Zoning District Map for the Town of Apex, North Carolina, to be physically revised and amended to reflect the zoning changes ordained by this Ordinance.

Section 4: The "Rezoned Lands" are subject to the conditions in Attachment "B" Veridea SD Plan which are imposed as part of this rezoning, Attachment "C" Veridea Environmental Enhancement Plan, and Attachment "D" Veridea Pattern Book.

Section 5: The "Rezoned Lands" shall be perpetually bound to the conditions imposed including the uses authorized, unless subsequently changed or amended as provided for in the Unified Development Ordinance. Site plans for any development to be made pursuant to this amendment to the Official Zoning District Map shall be submitted for site plan approval as provided for in the Unified Development Ordinance.

Section 6: This Ordinance shall be in full force and effect from and after its adoption.

Motion by Council Member_____

Seconded by Council Member_____

With ____ Council Member(s) voting "aye."

With ____ Council Member(s) voting "no."

This the _____ day of _____ 2026.

TOWN OF APEX

_____
Jacques K. Gilbert
Mayor

ATTEST:

_____
Allen Coleman, CMC, NCCCC
Town Clerk

APPROVED AS TO FORM:

_____
Interim Town Attorney

Being all of the land now or formerly owned by Roger W. and Glenda K. Bushee, as described in Deed Book 4691, page 197 less and except that land described in Deed Book 16358, page 754, being further shown on Book of Maps 1989, page 252 in the Wake County Register of Deeds, being more particularly described as:

Beginning at an existing concrete monument on the eastern right of way line of Veridea Parkway, a variable width public right of way, as described in Deed Book 16358, page 74, being also on the southern line of lands now or formerly owned by William Junior Fields and wife, Catherine Adams Fields as described in Deed Book 1876, page 667 and Deed Book 3138, page 93 and further shown on Book of Maps 1983, page 625, the point of beginning; thence from the beginning and with said common line, South 80°03'12" East a distance of 262.84 feet to a point being referenced by an existing iron pipe 0.80 feet east of the corner, being a southwest corner of lands now or formerly owned by RXR Len Apex Owner LLC, as described in Deed Book 19263, page 2335 and further shown on Book of Maps 2025, page 2368; thence with said common line, South 80°09'19" East a distance of 185.05 feet to an existing iron pipe, being a western corner of lands now or formerly owned by RXR Len Apex Owner LLC, as described in Deed Book 19737, page 1859 and further shown on Book of Maps 1998, page 1052; thence with said common line, South 09°39'36" West a distance of 270.00 feet to an existing iron pipe; thence North 80°06'44" West a distance of 60.00 feet to an existing iron pipe, being a northeast corner of lands now or formerly owned by RXR Len Apex Owner LLC, as described in Deed Book 19263, page 2335 and further shown on Book of Maps 2025, page 2368; thence with said common line, North 80°05'31" West a distance of 386.35 feet to a set iron pipe on the eastern right of way line of Veridea Parkway, a variable width public right of way as described in Deed Book 16358, page 754; thence with the eastern right of way line of Veridea Parkway, North 09°19'59" East a distance of 8.02 feet to a set iron pipe; thence North 09°19'59" East a distance of 10.18 feet to a point; thence North 09°19'59" East a distance of 1.17 feet to a point, passing through an existing rebar with cap 0.41 feet before the end of the line; thence North 09°19'59" East a distance of 250.63 feet to the point and place of beginning; containing an area of 120,679 square feet or 2.77 acres.

The property constitutes the same property described in that deed dated and recorded in the Office of the Register of Deeds Wake County, North Carolina, in Deed Book 4691, page 197 less and except that property conveyed in Deed Book 16358, page 754.

26CZ10 Legal Descriptions Attachment "A"

Being all of the land now or formerly owned by William Junior Fields and wife, Catherine Adams Fields, as described in Deed Book 1876, page 667 and Deed Book 3138, page 93, being further shown on Book of Maps 1983, page 625 in the Wake County Register of Deeds, being more particularly described as:

Beginning at a point on the eastern right of way line of Veridea Parkway, a 60 foot public right of way as shown on Book of Maps 2003, page 1756, being the southwest corner of lands now or formerly owned by Whitehouse Assets Management, LLC, as described in Deed Book 17143, page 2248, the point of beginning; thence from the beginning and with said common line, South 80°04'37" East a distance of 299.95 feet to a point on the western line of lands now or formerly owned by RXR Len Apex Owner LLC, as described in Deed Book 19263, page 2335 and further shown on Book of Maps 2025, page 2368, being referenced by an existing iron pipe 1.08 feet east of the corner, passing through an existing iron pipe 299.28 feet before the end of the line; thence with said common line, South 09°58'01" West a distance of 200.11 feet to a point on the northern line of lands now or formerly owned by Roger W. and Glenda K. Bushee, as described in Deed Book 4691, page 197 and Deed Book 16358, page 754, being further shown on Book of Maps 1989, page 252, being referenced by an existing iron pipe 0.80 feet east of the corner; thence with said common line, North 80°03'12" West a distance of 299.92 feet to a point on the eastern right of way line of Veridea Parkway, a 60 foot public right of way as shown on Book of Maps 2003, page 1756, being referenced by an existing concrete monument 0.89 feet southeast of the corner, passing through an existing concrete monument 37.08 feet before the end of the line; thence with the eastern right of way line of Veridea Parkway, North 09°57'22" East a distance of 199.98 feet to the point and place of beginning, containing an area of 60,000 square feet or 1.38 acres.

The property constitutes the same property described in those deeds recorded in the Office of the Register of Deeds Wake County, North Carolina, in Deed Book 1876, page 667 and in Deed Book 3138, page 93.

Being all of the land now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 20009, page 1511 in the Wake County Register of Deeds, and also being described as:

Beginning at an existing iron pipe at the northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, being on the southern right of way line of Technology Drive, a variable width public right of way as shown on Highway Map 3, page 174, being referenced by an existing concrete monument 2.11' northeast of the corner, the point of beginning; thence from the beginning and with the southern right of way line of Technology Drive, North 88°53'52" East a distance of 168.81 feet to an existing iron pipe; thence with a curve to the left a radius of 411.98 feet, an arc length of 314.04 feet, a chord bearing of North 67°03'44" East, a chord length of 306.49 feet to an existing iron pipe; thence North 44°56'53" East a distance of 463.60 feet to an existing concrete monument; thence North 45°12'15" East a distance of 156.84 feet to an existing iron pipe; thence South 45°56'03" East a distance of 35.56 feet to an existing concrete monument; thence with a curve to the left a radius of 5971.12 feet, an arc length of 405.86 feet, a chord bearing of North 43°02'27" East, a chord length of 405.79 feet to an existing iron pipe, being the southwest corner of lands now or formerly owned by Apex-Williams Street Holdings, LLC, as described in Deed Book 20180, page 763; thence leaving the southern right of way line of Technology Drive and with said common line, with a curve to the right a radius of 372.69 feet, an arc length of 59.94 feet, a chord bearing of North 67°34'41" East, a chord length of 59.88 feet to an existing iron pipe, being the northwest corner of lands now or formerly owned by Apex-Williams Street Holdings, LLC, as described in Deed Book 16421, page 1964; thence with said common line, South 02°45'29" West a distance of 234.46 feet to an existing iron pipe with a pinched top, being the northwest corner of a 12-foot roadway easement, as shown on Book of Maps 1989, page 1393, being referenced by a bent existing iron pipe 0.22' west of the corner; thence with the western line of said easement, South 01°26'47" West a distance of 12.22 feet to an existing iron pipe with a pinched top, being the northwest corner of lands now or formerly owned by Lee Chu Yang, as described in Deed Book 19413, page 367; thence with said common line, South 05°19'02" West a distance of 193.34 feet to an existing iron pipe on the western right of way line of N.C. Highway 55, a variable width controlled access right of way, as described in Deed Book 19794, page 1125 and shown on Highway Map 3, page 174; thence with the western right of way line of N.C. Highway 55, South 31°41'56" West a distance of 230.95 feet to an existing iron pipe; thence South 58°18'04" East a distance of 23.82 feet to an existing iron pipe; thence South 31°17'46" West a distance of 469.83 feet to an existing right of way disk; thence South 53°46'53" West a distance of 156.49 feet to an existing right of way disk at the intersection of the western right of way line of N.C. Highway 55 and the northern right of

way line of N.C. Highway 540, a variable width controlled access right of way as shown on Highway Map 4, page 241; thence with the northern right of way line of N.C. Highway 540, North 80°00'41" West a distance of 90.23 feet to an existing right of way disk; thence with a curve to the left a radius of 865.00 feet, an arc length of 475.17 feet, a chord bearing of South 84°16'29" West, a chord length of 469.21 feet to an existing right of way disk; thence South 61°42'52" West a distance of 236.34 feet to an existing iron pipe, being the southeast corner of lands now or formerly owned by Greenway Waste Solutions of Apex, LLC, as described in Deed Book 9099, page 1045; thence leaving the northern right of way line of N.C. Highway 540 and with said common line, North 02°16'38" East a distance of 429.35 feet to the point and place of beginning, containing an area of 613,741 square feet or 14.09 acres.

Being all of the land now or formerly owned by Edward C. Ritenour, Jr., as described in Deed Book 6453, page 736 (less and except land conveyed to the North Carolina Department of Transportation recorded in Deed Book 20006, page 1415), being more particularly described as:

Beginning at a set iron pipe on the western right of way of line of N.C. Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630, being a southern corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403 and further shown as New Tract 5 on Book of Maps 2024, page 630, the point of beginning; thence from the beginning, leaving the western right of way of N.C. Highway 55 and with said common line, North 86°24'46" West a distance of 46.54 feet to an existing iron pipe; thence North 01°23'44" East a distance of 198.75 feet to a point being referenced by an existing iron pipe 0.34 feet west of the corner, being the southwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 20197, page 275; thence with said common line, South 87°39'31" East a distance of 89.79 feet to a point on the western right of way line of N.C. Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630; thence with the western right of way line of N.C. Highway 55, South 36°36'03" West a distance of 7.37 feet to a point; thence South 84°36'46" West a distance of 25.00 feet to a point; thence South 35°34'06" West a distance of 35.09 feet to a point; thence South 58°31'02" East a distance of 85.50 feet to a point; thence South 31°28'58" West a distance of 136.58 feet to the point and place of beginning, containing an area of 15,130 square feet or 0.35 acres.

26CZ10 Legal Descriptions Attachment "A"

Being all of the land now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 20197, page 275 and further shown on Book of Maps 1948, page 18 in the Wake County Register of Deeds, being more particularly described as:

Commencing from an existing rebar with cap, having local site coordinates, Northing: 707,827.75 feet and Easting: 2,048,980.82 feet; thence North 20°17'43" West a distance of 172.11 feet to an existing iron pipe; thence North 01°23'44" East a distance of 198.75 feet to a point, being referenced by an existing iron pipe 0.34 feet west of the corner, the point of beginning; thence from the beginning, North 01°23'44" East a distance of 100.12 feet to a point, being referenced by an existing iron pipe 1.09 feet west of the corner; thence South 87°27'13" East a distance of 159.24 feet to a point; thence South 36°36'03" West a distance of 120.43 feet to a point; thence North 87°39'31" West a distance of 89.79 feet to the point and place of beginning; containing an area of 12,438 square feet or 0.28 acres.

26CZ10 Legal Descriptions Attachment "A"

Being all of the land now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 20197, page 275 and further shown on Book of Maps 1948, page 18 in the Wake County Register of Deeds, being more particularly described as:

Commencing from an existing rebar with cap, having local site coordinates, Northing: 707,827.75 feet and Easting: 2,048,980.82 feet; thence North 20°17'43" West a distance of 172.11 feet to an existing iron pipe; thence North 01°23'44" East a distance of 198.75 feet to a point, being referenced by an existing iron pipe 0.34 feet west of the corner; thence North 01°23'44" East a distance of 100.12 feet to a point, being referenced by an existing iron pipe 1.09 feet west of the corner, the point of beginning; thence from the beginning, North 01°23'44" East a distance of 48.92 feet to an existing iron pipe; thence South 87°21'16" East a distance of 193.06 feet to a point; thence South 36°36'03" West a distance of 58.63 feet to a point; thence North 87°27'13" West a distance of 159.24 feet to the point and place of beginning; containing an area of 8,589 square feet or 0.20 acres.

26CZ10 Legal Descriptions Attachment "A"

Being all of the land now or formerly owned by David E. Page, Heirs, as described in Deed Book 1107, page 549 in the Wake County Register of Deeds, being more particularly described as:

Commencing from a set iron pipe on the western right of way line of N.C. Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630, being the northeast corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19821, page 1026; thence leaving the western right of way line of N.C. Highway 55 and with said common line, South 89°36'58" West a distance of 166.91 feet to an existing iron pipe, the point of beginning; thence from the beginning and continuing with said common line, South 02°22'35" East a distance of 99.98 feet to a set iron pipe on the northern line of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19789, page 32; thence with said common line, South 89°41'49" West a distance of 235.12 feet to a set iron pipe, being an eastern corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403 and further shown as New Tract 4 on Book of Maps 2024, page 630; thence with said common line, North 05°37'02" West a distance of 100.00 feet to a set iron pipe; thence North 89°36'58" East a distance of 240.77 feet to the point and place of beginning, containing an area of 23,734 square feet or 0.54 acres.

26CZ10 Legal Descriptions Attachment "A"

Being all of the land now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 20095, page 1779 and further shown as Tract 3 on Book of Maps 2015, page 14 in the Wake County Register of Deeds; being more particularly described as:

Beginning at an existing iron pipe, being the northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19947, page 487 and further shown as Tract 2 on Book of Maps 1978, page 731 in the Wake County Register of Deeds, being also on the southern right of way line of U.S. Highway 1, a variable width controlled access right of way as shown on Book of Maps 2010, page 282, the point of beginning; thence from the beginning and with the southern right of way line of U.S. Highway 1, North 58°38'27" East a distance of 637.23 feet to a point in the centerline of a creek, being referenced by an existing iron pipe 15.00 feet before the end of the line; thence leaving the southern right of way line of U.S. Highway 1 and with the centerline of the creek, South 62°56'30" East a distance of 7.57 feet to a point; thence South 51°14'55" East a distance of 3.81 feet to a point; thence South 41°45'21" East a distance of 20.08 feet to a point; thence South 45°39'44" East a distance of 19.48 feet to a point; thence South 21°07'42" East a distance of 15.79 feet to a point; thence South 35°28'59" East a distance of 4.60 feet to a point; thence South 53°54'09" East a distance of 13.56 feet to a point; thence South 54°15'40" East a distance of 12.15 feet to a point; thence South 46°16'38" East a distance of 3.99 feet to a point; thence South 34°32'07" East a distance of 23.63 feet to a point; thence South 33°00'12" East a distance of 10.57 feet to a point; thence South 68°34'25" East a distance of 14.16 feet to a point; thence South 46°51'32" East a distance of 46.39 feet to a point; thence South 42°45'23" East a distance of 21.99 feet to a point; thence South 45°05'03" East a distance of 30.70 feet to a point; thence South 44°29'49" East a distance of 26.49 feet to a point; thence South 48°46'53" East a distance of 32.44 feet to a point; thence South 33°44'54" East a distance of 28.72 feet to a point; thence South 49°58'16" East a distance of 42.31 feet to a point; thence South 47°29'35" East a distance of 50.03 feet to a point; thence South 48°30'55" East a distance of 39.38 feet to a point; thence South 33°54'17" East a distance of 27.24 feet to a point, being the northeast corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19947, page 487 and further shown as a portion of Tract 3 on Book of Maps 1978, page 731; thence leaving the centerline of the creek and with said common line, North 88°58'01" West a distance of 584.55 feet to an existing iron pipe in the center of Prince Dead End Road, a 60 foot public right of way as shown on Book of Maps 1988, page 283, being referenced by an existing iron pipe 3.69 feet northeast of the corner, passing through an existing iron pipe 570.12 feet before the end of the line; thence leaving the center of Prince Dead End Road and continuing with said common line, North 88°58'01" West a

distance of 304.56 feet to the point and place of beginning; containing an area of 151,718 square feet or 3.48 acres.

Attachment "B"

Ordinance Amending the Official Zoning District Map #25CZ18

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF APEX

Section 1: The lands that are the subject of the Ordinance are those certain lands described in Attachment "A" – Legal Description which is incorporated herein by reference, and said lands are hereafter referred to as the "Rezoned Lands."

Section 2: The Town of Apex Unified Development Ordinance, including the Town of Apex North Carolina Official Zoning District Map which is a part of said Ordinance, is hereby amended by changing the zoning classification of the "Rezoned Lands" from Sustainable Development-Conditional Zoning (SD-CZ #09CZ07, #23CZ01, #24CZ01, #25CZ08, #25CZ15) to Sustainable Development-Conditional Zoning (SD-CZ) for Veridea, subject to the conditions stated herein.

Section 3: The Planning Director is hereby authorized and directed to cause the said Official Zoning District Map for the Town of Apex, North Carolina, to be physically revised and amended to reflect the zoning changes ordained by this Ordinance.

Section 4: The "Rezoned Lands" are subject to the conditions in Attachment "B" Veridea SD Plan which are imposed as part of this rezoning, Attachment "C" Veridea Environmental Enhancement Plan, and Attachment "D" Veridea Pattern Book.

Section 5: The "Rezoned Lands" shall be perpetually bound to the conditions imposed including the uses authorized, unless subsequently changed or amended as provided for in the Unified Development Ordinance. Site plans for any development to be made pursuant to this amendment to the Official Zoning District Map shall be submitted for site plan approval as provided for in the Unified Development Ordinance.

Section 6: This Ordinance shall be in full force and effect from and after its adoption.

Motion by Council Member Mahaffey

Seconded by Council Member Gray

With 5 Council Member(s) voting "aye."

With 0 Council Member(s) voting "no."

This the 13th day of January 2026.

TOWN OF APEX

Jacques K. Gilbert
Mayor

ATTEST:

Allen Coleman, CMC, NCCCC
Town Clerk

APPROVED AS TO FORM:

Town Attorney

Attachment A

PIN: 0740191376, 0741207566, 0730977087, 0730996270, 0740180091, 0740180331, 0740287376, 0740293940, 0740360895, 0740289979, 0740389302, 0740586619, 0740783479, 0740888498, 0740992174, 0741614057, 0740489140, 0741203157

Being a portion of the lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, Page 2403; RXR Len Apex Owner, LLC, as described in Deed Book 19297, Page 1692; RXR Len Apex Owner LLC, as described in Deed Book 19947, Page 487; RXR Len Apex Owner, LLC, as described in Deed Book 19263, Page 2335 in the Wake County Register of Deeds; being more particularly described as:

Beginning at a rebar with cap on the northern right of way line of N.C. Highway 540, a variable width controlled access right of way as described in Deed Book 15539, page 1855, being also the southeast corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403, the point of beginning; thence from the beginning and leaving the northern right of way line of NC Highway 540 and with said common line, North 00°14'49" West a distance of 667.80 feet to a point; thence South 87°37'02" West a distance of 180.32 feet to a point; thence North 01°55'47" West a distance of 1400.56 feet to a point; thence South 84°14'41" West a distance of 440.42 feet to a point on the eastern right of way line of Veridea Parkway, a variable width public right of way, as described in Deed Book 16421, page 2112 and Deed Book 16326, page 2125; thence with the eastern right of way line of Veridea Parkway, North 09°16'52" East a distance of 6.98 feet to a point; thence North 09°16'52" East a distance of 31.69 feet to a point; thence North 09°28'48" East a distance of 166.90 feet to a point; thence North 09°28'48" East a distance of 13.32 feet to a point; thence North 09°28'48" East a distance of 17.71 feet to a point; thence North 09°28'48" East a distance of 55.05 feet to a point on the southern line of lands now or formerly owned by Roger W. and Glenda K. Bushee, as described in Deed Book 4691, page 197; thence with said common line, South 80° 05'31" East a distance of 386.35 feet to an existing iron pipe, being a southwestern corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19737, page 1859; thence with said common line, South 09°53'16" West a distance of 120.00 feet to an existing iron pipe; thence North 89°42'24" East a distance of 427.65 feet to an existing iron pipe; thence North 28°17'19" East a distance of 258.03 feet to a point; thence North 25°29'27" West a distance of 398.53 feet to a point; thence South 85°22'14" West a distance of 220.54 feet to a point; thence South 09°39'36" West a distance of 200.09 feet to a point, being the northeast corner of lands now or formerly owned by Roger W. and Glenda K. Bushee, as described in Deed Book 4691, page 197; thence with said common line, North 80°09'19" West a distance of 185.05 feet to a point, being the southeast corner of lands now or formerly owned by W J and Catherin A Fields, as described in Deed Book 3138, page 93; thence with said common line and the common line of others, North 09°58'01" East a distance of 550.14 feet to a point, being the southeast corner

of lands now or formerly owned by Whitehouse Assets Management, LLC, as described in Deed Book 17143, page 2248; thence with said common line, North 24°25'22" East a distance of 442.30 feet to a point; thence South 69°45'18" West a distance of 509.98 feet to an existing rebar in the center of Veridea Parkway, a 60’ public right of way as shown on Book of Maps 2003, page 1756, passing through an existing iron pipe on the eastern right of way line of Veridea Parkway 34.45 feet before the end of the line; thence with the center of Veridea Parkway, South 09°52'33" West a distance of 171.70 feet to a point; thence South 09°57'23" West a distance of 550.24 feet to a point; thence South 09°26'46" West a distance of 21.55 feet to a point; thence leaving the center of Veridea Parkway, North 89°10'45" West a distance of 68.12 feet to a point on the western right of way line of Veridea Parkway, a variable width public right of way as described in Deed Book 16421, page 2112 and Deed Book 16326, page 2125, passing through an existing iron pipe 38.57 feet before the end of the line; thence with the western right of way line of Veridea Parkway, South 09°28'47" West a distance of 60.77 feet to a point; thence South 09°28'45" West a distance of 430.91 feet to an existing concrete monument; thence South 09°46'52" West a distance of 74.87 feet to an existing concrete monument, being the northeast corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence leaving the western right of way line of Veridea Parkway, and with said common line, North 89°09'45" West a distance of 1110.26 feet to an existing iron pipe; thence South 02°26'42" West a distance of 1505.96 feet to a point on the northern right of way line of NC Highway 540, a variable width controlled access right of way as described in Deed Book 15539, page 1837; thence with the northern right of way line of NC Highway 540, with a curve to the right a radius of 4035.00 feet, an arc length of 857.09 feet, a chord bearing of North 53°42'27" West, a chord length of 855.48 feet to an existing rebar; thence with a curve to the right a radius of 4054.26 feet, an arc length of 326.65 feet, a chord bearing of North 45°18'10" West, a chord length of 326.56 feet to an existing rebar with cap; thence North 36°43'15" West a distance of 102.76 feet to an existing rebar with cap; thence North 35°20'20" West a distance of 237.13 feet to an existing rebar with cap; thence North 07°47'12" West a distance of 131.08 feet to an existing rebar with cap; thence North 00°34'29" West a distance of 436.11 feet to an existing rebar with cap; thence North 12°52'53" East a distance of 565.14 feet to an existing rebar with cap; thence North 05°57'15" East a distance of 356.74 feet to an existing rebar with cap; thence North 15°26'08" East a distance of 134.33 feet to a point; thence North 15°26'08" East a distance of 200.01 feet to an existing rebar with cap; thence North 28°28'53" East a distance of 237.21 feet to an existing rebar with cap; thence North 45°14'54" East a distance of 75.20 feet to an existing rebar with cap; thence North 42°51'55" East a distance of 241.20 feet to an existing rebar with cap, transitioning to the southern right of way line of US Highway 1, a variable width controlled access right of way, as described in Deed Book 14140, page 979; thence with the southern right of way line of US Highway 1, North 50°43'55" East a distance of 160.95 feet to an existing rebar with cap; thence

North 58°37'05" East a distance of 364.36 feet to a point, being the southwest corner of lands now or formerly owned by The Young Men's Christian Association of the Triangle Area, Inc, as described in Deed Book 17017, page 2427, passing through an existing concrete monument 86.12 feet before the end of the line and an existing iron pipe 3.87 feet before the end of the line; thence leaving the southern right of way line of US Highway 1 and with said common line, North 87°38'44" East a distance of 265.82 feet to a point, passing through an existing iron pipe 259.41 feet before the end of the line; thence North 00°27'33" West a distance of 149.91 feet to a point on the southern right of way line of US Highway 1, a variable width controlled access right of way, as described in Deed Book 14140, page 979; thence with the southern right of way line of U.S. Highway 1, North 58°41'20" East a distance of 1668.68 feet to a point in the center of Veridea Parkway, a 60 foot public right of way as shown on Book of Maps 2003, page 1756; thence continuing with the southern right of way line of US Hihgway 1, North 58°41'20" East a distance of 31.03 feet to an existing concrete monument on the eastern right of way line of Veridea Parkway; thence continuing with the southern right of way line of US Highway 1, North 58°39'55" East a distance of 576.45 feet to a point, being a western corner of lands now or formerly owned by EBT Farms, LLC, as shown on Book of Maps 2015, page 14, passing through an existing iron pipe 3.61 feet before the end of the line; thence with said common line, South 88°58'01" East a distance of 304.56 feet to a point in the center of Prince Dead End Road, a 60 foot public right of way as shown on Book of Maps 1988, page 283, being referenced by an existing iron pipe 3.69 feet northeast of the corner; thence leaving the center of Prince Dead End Road and continuing with said common line, South 88°58'01" East a distance of 584.55 feet to a point, being a western corner of lands now or formerly owned by the Town of Apex, as shown on Book of Maps 1989, page 59, passing through an existing iron pipe 14.43 feet before the end of the line; thence with said common line, South 23°14'08" East a distance of 315.07 feet to an existing bent iron pipe on a northern line of lands now or formerly owned by Wildbird LLC, as shown on Book of Maps 1985, page 64; thence with said common line, North 89°17'57" West a distance of 82.50 feet to an existing iron pipe; thence South 00°32'06" West a distance of 760.78 feet to an existing iron pipe, passing through an existing iron pipe 546.06 feet before the end of the line; thence South 00°33'48" West a distance of 1301.27 feet to an existing iron stake, passing through existing iron pipes 776.99 feet and 741.67 feet before the end of the line; thence South 88°56'50" East a distance of 1524.31 feet to an existing iron pipe; thence North 42°37'27" East a distance of 84.50 feet to a point; thence South 87°51'02" East a distance of 208.48 feet to an existing iron pipe, passing through an existing iron pipe 155.64 feet before the end of the line; thence North 00°58'38" East a distance of 734.06 feet to an existing iron pipe, passing through an existing iron pipe 31.40 feet before the end of the line; thence North 00°58'38" East a distance of 2549.03 feet to an existing iron pipe, passing through an existing iron pipe 2465.38 feet before the end of the line; thence South 89°46'05" West a distance of 25.90 feet to an existing iron pipe, being a southeast corner of lands now or formerly owned by

Town of Apex, as shown on Book of Maps 1989, page 59; thence with said common line, North 01°31'12" East a distance of 572.91 feet to an existing iron pipe; thence North 01°28'31" East a distance of 119.73 feet to an existing iron pipe; thence North 01°30'44" East a distance of 41.12 feet to an existing iron pipe on the southern right of way line of US Highway 1, a variable width controlled access right of way as shown on Book of Maps 2024, page 630; thence with said common line, North 58°51'35" East a distance of 406.60 feet to an existing concrete monument; thence North 58°00'23" East a distance of 434.93 feet to an existing iron pipe; thence with a curve to the left a radius of 5860.99 feet, an arc length of 1031.97 feet, a chord bearing of North 51°39'15" East, a chord length of 1030.63 feet to an existing iron pipe; thence South 41°41'54" East a distance of 29.56 feet to an existing iron pipe; thence North 46°57'49" East a distance of 79.93 feet to a point in the centerline of the creek, passing through an existing iron pipe 10.00 feet before the end of the line; thence with the centerline of the creek, South 08°18'39" West a distance of 74.71 feet to a point; thence South 03°57'01" East a distance of 106.42 feet to a point on the northern line of lands now or formerly owned by Justin Stanley, as described in Deed Book 17473, page 2663; thence leaving the centerline of the creek and with said common line, South 58°19'32" West a distance of 25.09 feet to an existing concrete monument, passing through an existing iron pipe 15.09 feet before the end of the line; thence South 31°28'08" East a distance of 99.98 feet to an existing iron pipe on a northern line of lands now or formerly owned by Madison Apex Owner, LLC, as described in Deed Book 18329, page 2014; thence with said common line, South 58°37'43" West a distance of 311.61 feet to an existing iron pipe; thence South 05°32'28" West a distance of 311.05 feet to an existing iron pipe; thence South 18°18'17" East a distance of 266.26 feet to an existing iron pipe; thence South 58°02'56" East a distance of 253.73 feet to an existing iron pipe; thence South 24°13'34" East a distance of 1064.47 feet to an existing iron pipe; thence North 51°40'44" East a distance of 610.52 feet to an existing iron pipe, being a western corner of lands now or formerly owned by FTPA Storage Apex, LLC, as described in Deed Book 16283, page 140; thence with said common line, South 29°10'43" East a distance of 276.67 feet to an existing iron pipe, being the southwest corner of lands now or formerly owned by Sunil and Sudarshini Shelke, as described in Deed Book 14964, page 1295; thence with said common line, North 89°42'08" East a distance of 414.38 feet to an existing iron pipe, being the northwest corner of lands now or formerly owned by Apex Rent Account, LLC, as described in Deed Book 16018, page 896; thence South 02°52'31" West a distance of 576.07 feet to an existing iron pipe, being a northwest corner of lands now or formerly owned by PPTapex, LLC, as described in Deed Book 16247, page 277; thence with said common line, South 03°02'31" West a distance of 260.47 feet to an existing iron pipe, being the northwest corner of lands now or formerly owned by James Irvin Rigsbee, as described in Deed Book 2176, page 224; thence with said common line, South 03°08'36" West a distance of 288.05 feet to an existing iron pipe; thence South 02°21'58" West a distance of 72.79 feet to an existing axle, being the northwest corner of lands now or formerly owned by Kenan Transport Co., as

described in Deed Book 2003, page 233; thence with said common line, South 02°22'52" West a distance of 365.20 feet to an existing iron pipe, passing through an existing iron pipe 53.41 feet before the end of the line; thence South 89°54'31" East a distance of 270.03 feet to an existing iron pipe; thence South 89°55'44" East a distance of 403.93 feet to an existing iron pipe, being the northwest corner of lands now or formerly owned by David F. and Sharon L Raymer, as described in Deed Book 8712, page 265; thence with said common line, South 04°23'01" East a distance of 445.52 feet to an existing iron pipe, being the northwest corner of lands now or formerly owned by Thompson Gas – Smokies, LLC, as described in Deed Book 15976, page 1140; thence with said common line, South 05°37'02" East a distance of 199.93 feet to an existing iron pipe; thence North 89°21'15" East a distance of 417.22 feet to an existing iron pipe on the western right of way line of NC Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630; thence with the western right of way line of NC Highway 55, with a curve to the right a radius of 5633.75 feet, an arc length of 101.71 feet, a chord bearing of South 04°07'50" East, a chord length of 101.71 feet to an existing iron pipe; thence leaving the western right of way line of NC Highway 55 and with the common line of RXR Len Apex Owner, LLC and others, South 89°36'58" West a distance of 414.74 feet to an existing iron pipe, passing through the western right of way line of NC Highway 55 407.68 feet before the end of the line and an existing iron pipe 240.77 feet before the end of the line; thence South 05°37'02" East a distance of 100.00 feet to an existing iron pipe, being the northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19789, page 32; thence South 17°12'56" East a distance of 140.08 feet to an existing iron pipe; thence South 87°06'10" East a distance of 374.27 feet to an existing iron pipe on the western right of way line of NC Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630, passing through the western right of way line NC Highway 55 9.29 feet before the end of the line; thence with the western right of way line of NC Highway 55, with a curve to the right a radius of 5633.75 feet, an arc length of 100.26 feet, a chord bearing of South 00°30'27" East, a chord length of 100.26 feet to an existing iron pipe; thence South 01°41'54" East a distance of 100.29 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.94 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.94 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.94 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.94 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.94 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.94 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.94 feet to an existing iron pipe; thence South 01°45'44" West a distance of 49.79 feet to an existing iron pipe; thence South 01°45'44" West a distance of 50.00 feet to an existing iron pipe; thence South 01°45'44" West a distance of 50.00 feet to an existing iron pipe; thence South 01°45'44" West a distance of 3.89 feet to a point; thence North 80°39'17" West a distance of 39.57 feet to a point; thence with a curve to the right a radius of 1515.50 feet, an arc length of 73.75 feet, a chord bearing of

South 10°44'22" West, a chord length of 73.75 feet to a point; thence South 50°25'39" West a distance of 72.79 feet to a point; thence South 03°20'53" West a distance of 77.92 feet to a point, being the northeast corner of lands now or formerly owned by NC Department of Transportation, as described in Deed Book 8235, page 1160; thence with said common line, North 86°43'05" West a distance of 16.98 feet to an existing iron pipe; thence South 01°28'00" West a distance of 100.88 feet to an existing iron pipe; thence South 87°17'00" East a distance of 10.63 feet to a point on the western right of way line of NC Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630; thence with the western right of way line of NC Highway 55, South 02°47'00" West a distance of 30.24 feet to a point; thence with a curve to the right a radius of 1525.00 feet, an arc length of 20.91 feet, a chord bearing of South 21°53'09" West, a chord length of 20.91 feet to a point; thence North 87°17'00" West a distance of 2.64 feet to an existing iron pipe; thence South 01°28'00" West a distance of 16.53 feet to a point; thence with a curve to the right a radius of 1525.00 feet, an arc length of 34.27 feet, a chord bearing of South 23°40'23" West, a chord length of 34.27 feet to a point; thence continuing with the northern right of way line of NC Highway 55 and the common line of lands now or formerly owned by NC Department of Transportation, as described in Deed Book 8138, page 1625, North 87°21'16" West a distance of 246.10 feet to an existing iron pipe; thence continuing with said common line and the common line of others, South 01°23'44" West a distance of 347.79 feet to an existing iron pipe; thence South 86°24'46" East a distance of 46.54 feet to a point on the western right of way line of NC Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630; thence with the western right of way line of NC Highway 55, South 31°28'58" West a distance of 41.58 feet to a point on the northern right of way line of Technology Drive, a variable width public right of way as shown on Book of Maps 2008, page 448; thence with the northern right of way line of Technology Drive, South 81°05'32" West a distance of 325.98 feet to an existing iron pipe, passing through an existing iron pipe 125.44 feet before the end of the line; thence South 60°43'09" West a distance of 132.34 feet to an existing iron pipe; thence with a curve to the left a radius of 426.43 feet, an arc length of 181.19 feet, a chord bearing of South 49°06'58" West, a chord length of 179.83 feet to an existing iron pipe; thence South 36°56'38" West a distance of 162.54 feet to an existing iron pipe; thence South 37°44'51" West a distance of 163.20 feet to an existing iron pipe, being the southeast corner of lands now or formerly owned by Margaret Evans Heirs, as shown on Book of Maps 2002, page 165; thence leaving the northern right of way line of Technology Drive and with said common line, North 02°38'53" East a distance of 477.63 feet to an existing iron pipe; thence North 86°17'11" West a distance of 191.04 feet to an existing iron pipe; thence South 02°37'54" West a distance of 192.78 feet to an existing iron pipe; thence South 87°21'03" East a distance of 144.87 feet to an existing iron pipe; thence South 02°38'53" West a distance of 351.16 feet to an existing iron pipe on the northern right of way line of Technology Drive, a variable width public right of way as shown on Book of Maps 2008, page

448; thence with the northern right of way line of Technology Drive, with a curve to the right a radius of 5840.02 feet, an arc length of 578.81 feet, a chord bearing of South 42°11'18" West, a chord length of 578.57 feet to an existing iron pipe; thence South 45°24'35" East a distance of 26.85 feet to an existing iron pipe; thence South 44°12'36" West a distance of 620.76 feet to an existing iron pipe; thence with a curve to the right a radius of 351.98 feet, an arc length of 268.88 feet, a chord bearing of South 67°02'07" West, a chord length of 262.39 feet to an existing iron pipe; thence South 88°52'01" West a distance of 164.86 feet to an existing iron pipe on the eastern line of EMC Corporation, as described in Deed Book 8681, page 1014; thence with said common line, North 02°16'22" East a distance of 50.18 feet to an existing iron pipe; thence North 02°17'00" East a distance of 1402.38 feet to an existing iron pipe; thence North 02°17'00" East a distance of 163.32 feet to an existing iron pipe; thence North 02°11'42" East a distance of 120.99 feet to a point in the centerline of the creek, passing through an existing iron pipe 10.00 feet before the end of the line; thence with the centerline of the creek, North 82°46'29" West a distance of 59.32 feet to a point; thence North 38°01'48" West a distance of 154.60 feet to a point; thence North 84°02'09" West a distance of 86.70 feet to a point; thence South 20°44'56" West a distance of 18.43 feet to a point; thence South 79°18'34" West a distance of 39.77 feet to a point; thence South 13°19'46" East a distance of 38.31 feet to a point; thence South 76°35'49" West a distance of 53.23 feet to a point; thence South 26°54'51" West a distance of 42.90 feet to a point; thence South 33°19'02" East a distance of 29.87 feet to a point; thence South 51°46'22" West a distance of 61.75 feet to a point; thence North 64°34'50" West a distance of 58.31 feet to a point; thence South 29°34'47" West a distance of 47.94 feet to a point; thence South 71°40'28" West a distance of 23.79 feet to a point; thence North 39°32'53" West a distance of 102.73 feet to a point; thence North 69°26'41" West a distance of 124.25 feet to a point; thence South 57°24'05" West a distance of 82.87 feet to a point; thence South 07°43'11" West a distance of 131.15 feet to a point; thence South 83°27'25" West a distance of 147.78 feet to a point; thence South 00°36'20" East a distance of 95.70 feet to a point; thence South 80°37'14" West a distance of 210.03 feet to a point; thence South 21°46'20" West a distance of 110.71 feet to a point; thence South 78°48'03" East a distance of 41.76 feet to a point; thence South 32°29'11" West a distance of 93.04 feet to a point; thence North 66°26'02" West a distance of 45.02 feet to a point; thence South 47°52'32" West a distance of 34.12 feet to a point; thence South 00°28'52" West a distance of 71.12 feet to a point; thence South 79°33'24" West a distance of 96.46 feet to a point; thence North 52°02'42" West a distance of 30.57 feet to a point; thence South 81°23'08" West a distance of 60.05 feet to a point; thence South 41°39'40" West a distance of 186.48 feet to a point; thence South 44°48'01" East a distance of 60.58 feet to a point; thence South 20°16'03" West a distance of 35.02 feet to a point; thence North 76°32'52" West a distance of 126.07 feet to a point; thence South 34°49'57" West a distance of 90.84 feet to a point; thence North 41°34'57" West a distance of 26.79 feet to a point; thence South 44°48'57" West a

distance of 69.31 feet to a point; thence South 28°17'36" East a distance of 74.29 feet to a point; thence South 47°29'27" West a distance of 92.11 feet to a point; thence North 49°33'56" West a distance of 78.37 feet to a point; thence South 87°17'25" West a distance of 290.72 feet to a point; thence South 11°44'33" West a distance of 20.66 feet to a point; thence South 64°16'17" West a distance of 220.45 feet to a point; thence South 82°21'19" West a distance of 72.19 feet to a point; thence North 36°16'44" West a distance of 42.40 feet to a point; thence South 69°36'51" West a distance of 126.77 feet to a point; thence South 62°06'56" West a distance of 316.17 feet to a point; thence South 17°45'27" West a distance of 29.26 feet to a point; thence South 26°24'46" West a distance of 31.72 feet to a point; thence South 40°05'18" West a distance of 78.74 feet to a point; thence South 07°45'39" West a distance of 35.25 feet to a point; thence South 42°06'24" West a distance of 57.16 feet to a point, being a northwest corner of lands now or formerly owned by EMC Corporation, as described in Deed Book 8681, page 1014; thence with said common line, South 01°06'28" West a distance of 351.89 feet to an existing iron pipe on the northern line of lands now of formerly owned by Greenway Waste Solutions of Apex, LLC, as described in Deed Book 9099, page 1045; thence with said common line, South 88°51'48" West a distance of 28.47 feet to a point in the centerline of the creek; thence with the centerline of the creek, South 03°52'45" West a distance of 158.77 feet to a point; thence South 23°38'07" East a distance of 210.79 feet to a point; thence South 30°01'31" West a distance of 156.29 feet to a point; thence South 11°48'54" East a distance of 104.71 feet to a point; thence South 19°26'04" West a distance of 147.77 feet to a point on the northern right of way line of NC Highway 540, a variable width public right of way as described in Deed Book 15539, page 1850; thence with the northern right of way line of NC Highway 540, North 87°35'38" West a distance of 1273.34 feet to an existing rebar with cap; thence North 75°03'53" West a distance of 276.59 feet to an existing rebar with cap; thence South 36°13'41" West a distance of 120.37 feet to a point; thence North 49°31'49" West a distance of 105.40 feet to the point and place of beginning, having an area of 36,092,685 square feet, 828.57 acres

Less and Except the Following:

PIN: 0730977967; 0740081019; 0740082199; 0740070950; 0740082327

Being all of the lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 20025, page 1418, and Yifei Wang and wife, Hua Mei, as described in Deed Book 18896, page 1725 in the Wake County Register of Deeds; being more particularly described as:

Beginning at an existing iron pipe, being a western corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19297, page 1692, the point of beginning; thence from the beginning and with said common line, South 02°19'40" West a distance of 199.14 feet to a point, being a northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence with said common line, South 02°19'40" West a distance of 64.13 feet to an existing iron pipe, being a northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence with said common line, South 02°13'53" West a distance of 189.40 feet to an existing iron pipe; thence South 02°17'48" West a distance of 67.39 feet to an existing iron pipe, being a northeast corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence with said common line, South 65°19'45" West a distance of 538.99 feet to a point; thence South 01°27'55" West a distance of 148.65 feet to a point; thence South 77°54'05" West a distance of 389.22 feet to an existing iron pipe; thence North 00°01'19" West a distance of 967.73 feet to a point; thence North 89°58'41" East a distance of 616.26 feet to an existing rebar; thence North 89°58'41" East a distance of 133.87 feet to an existing iron pipe, being a southwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19297, page 1692; thence with said common line, North 87°19'22" East a distance of 145.34 feet to the point and place of beginning, containing an area of 668,038 square feet or 15.34 acres.

PIN: 0740992565

Being a portion of the lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403 in the Wake County Register of Deeds; being more particularly described as: Beginning at an existing iron pipe on the western right of way line of NC Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630, being also the southeast corner of the subject parcel, the point of beginning; thence from the beginning and with the western right of way line of NC Highway 55 and the common line of RXR Len Apex Owner, LLC, as described in Deed Book 19789, page 32, South 89°40'44" West a distance of 123.48 feet to an existing iron pipe, passing through the western right of way line of NC Highway 55 116.17 feet before the end of the line; thence North 02°18'46" West a distance of 50.01 feet to an existing iron pipe, being a southern corner lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19821, page 1026; thence with said common line, North 89°43'19" East a distance of 123.46 feet to an existing iron pipe on the western right of way line of NC Highway 55, passing through the western right of way line of NC Highway 55 7.22 feet before the end of the line; thence with the western right of way line of NC Highway 55, with a curve to the right a radius of 5633.75 feet, an arc length of 49.92 feet, a chord bearing of South 02°20'20" East, a chord length of 49.92 feet to the point and place of beginning, containing an area of 6,168 square feet or 0.14 acres.

PIN 0740992632; 0740990489

Being two tracts of land now or formerly owned by RXR Len Apex Owner LLC, as described in Deed Book 19821, page 1026 and Deed Book 19789, page 32 in the Wake County Register of Deeds; being more particularly described as:

Beginning at a point, being the northeast corner of lands now or formerly owned by RXR Len Apex Owner LLC, as described in Deed Book 19821, page 1026 in the Wake County Register of Deeds, being also a corner on the western right of way line of N.C. Highway 55, a variable width public right of way as shown on Book of Maps 2024, page 630, the point of beginning; thence from the beginning and with the western right of way line of N.C. Highway 55, with a curve to the right a radius of 5412.50 feet, an arc length of 100.31 feet, a chord bearing of South 03°00'35" East, a chord length of 100.31 feet to a point on the northern line of lands now or formerly owned by RXR Len Apex Owner LLC, as described in Deed Book 19263, page 2403; thence leaving the western right of way line of N.C. Highway 55 and with said common line, South 89°43'19" West a distance of 116.24 feet to an existing iron pipe; thence South 02°18'46" East a distance of 50.01 feet to an existing iron pipe; thence North 89°40'44" East a distance of 116.17 feet to a point on the western right of way line of N.C. Highway 55; thence with the western right of way line of N.C. Highway 55, with a curve to the right a radius of 2791.21 feet, an arc length of 91.54 feet, a chord bearing of South 00°35'17" East, a chord length of 91.54 feet to a point; thence with a curve to the right a radius of 5411.27 feet, an arc length of 12.91 feet, a chord bearing of South 00°14'58" West, a chord length of 12.91 feet to a point on a northern line of lands now or formerly owned by RXR Len Apex Owner LLC, as shown as New Tract 4 on Book of Maps 2024, page 630; thence leaving the western right of way line of N.C. Highway 55 and with said common line, North 87°06'10" West a distance of 364.98 feet to an existing iron pipe; thence North 17°12'56" West a distance of 140.08 feet to an existing iron pipe, being the southwest corner of lands now or formerly owned by David E. Page, Heirs, as described in Deed Book 1107, page 549; thence with said common line, North 89°41'49" East a distance of 235.12 feet to a point; thence North 02°22'35" West a distance of 99.98 feet to an existing iron pipe on a southern line of lands now or formerly owned by RXR Len Apex Owner LLC, as shown as New Tract 4 on Book of Maps 2024, page 630; thence with said common line, North 89°36'58" East a distance of 166.91 feet to the point and place of beginning, containing an area of 66,202 square feet or 1.52 acres.

PIN: 0740283126 (6300 King David Court)

Being all of the land now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19737, page 1859 in the Wake County Register of Deeds; being more particularly described as:

Beginning at a point, being the northeast corner of lands now or formerly owned by Roger W. and Glenda K. Bushee, as described in Deed Book 4691, page 197, being also a corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2335, the point of beginning; thence from the beginning, and with the common line of RXR Len Apex Owner, LLC, North 09°39'36" East a distance of 200.09 feet to a point; thence North 85°22'14" East a distance of 220.54 feet to a point; thence South 25°29'27" East a distance of 398.53 feet to a point; thence South 28°17'19" West a distance of 258.03 feet to an existing iron pipe; thence South 89°42'24" West a distance of 427.65 feet to an existing iron pipe; thence North 09°53'16" East a distance of 120.00 feet to an existing iron pipe, being a southern corner of lands now or formerly owned by Roger W. and Glenda K. Bushee, as described in Deed Book 4691, page 197; thence with said common line, South 80°06'44" East a distance of 60.00 feet to a point; thence North 09°39'36" East a distance of 270.00 feet to the point and place of beginning, containing an area of 217,807 square feet or 5.00 acres.

PIN: 0730977967; 0740081019; 0740082199; 0740082327; 0740070950

Being all of the lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 20025, page 1418, and Yifei Wang and wife, Hua Mei, as described in Deed Book 18896, page 1725 in the Wake County Register of Deeds; being more particularly described as: Beginning at an existing iron pipe, being a western corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19297, page 1692, the point of beginning; thence from the beginning and with said common line, South 02°19'40" West a distance of 199.14 feet to a point, being a northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence with said common line, South 02°19'40" West a distance of 64.13 feet to an existing iron pipe, being a northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence with said common line, South 02°13'53" West a distance of 189.40 feet to an existing iron pipe; thence South 02°17'48" West a distance of 67.39 feet to an existing iron pipe, being a northeast corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence with said common line, South 65°19'45" West a distance of 538.99 feet to a point; thence South 01°27'55" West a distance of 148.65 feet to a point; thence South 77°54'05" West a distance of 389.22 feet to an existing iron pipe; thence North 00°01'19" West a distance of 967.73 feet to a point; thence North 89°58'41" East a distance of 616.26 feet to an existing rebar; thence North 89°58'41" East a distance of 133.87 feet to an existing iron pipe, being a southwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19297, page 1692; thence with said common line, North 87°19'22" East a distance of 145.34 feet to the point and place of beginning, containing an area of 668,038 square feet or 15.34 acres.

Zoning line that runs across the subject parcels taken from legal description signed and sealed by Joe H. Patterson, III, L-3717, and dated 9/23/25, as included on pages 40-42 in rezoning report #24CZ23. Document accessed by Google on October 23, 2025 at the following weblink:

https://mccmeetingspublic.blob.core.usgovcloudapi.net/apexnc-meet-03a58966ba85431aa8fe86ef0da28897/ITEM-Attachment-001-2d34773ae54546f69e3816c213718a14.pdf

Zoning line in said description was aligned and merged with boundary performed by the John R. McAdams Company.

PIN: 0740240814, 0740241461, 0740241030

Being a portion of the lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403 in the Wake County Register of Deeds; being more particularly described as:

Beginning at an existing concrete monument at a northwest corner of the subject lands, being on the eastern right of way line of Old Holly Springs Apex Road, a variable width public right of way as shown on Book of Maps 2022, page 2, and the southern right of way line of the NC Highway 540 ramp, a variable width controlled access right of way as described in Deed Book 15539, page 1855, the point of beginning; thence from the beginning and with the southern right of way line of the NC Highway 540 ramp, North 48°17'55" East a distance of 64.35 feet to a point; thence North 48°17'55" East a distance of 3.48 feet to a point; thence South 76°02'09" East a distance of 316.69 feet to an existing concrete monument, passing through an existing concrete monument 312.72 feet before the end of the line; thence South 77°42'22" East a distance of 224.13 feet to an existing concrete monument; thence North 74°21'52" East a distance of 75.00 feet to a point; thence leaving the southern right of way line of the NC Highway 540 ramp and across the subject lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403, South 17°16'29" East a distance of 276.68 feet to a point; thence South 49°13'21" East a distance of 207.69 feet to a point; thence South 08°25'14" East a distance of 269.34 feet to a point; thence South 24°55'35" East a distance of 469.85 feet to a point on the northern line of lands now or formerly owned by Wake County, as described in Deed Book 2272, page 678; thence with said common line, North 88°36'32" West a distance of 1161.37 feet to an existing iron pipe, being an eastern corner of lands now or

formerly owned by Wake County, as described in Deed Book 4803, page 67; thence with said common line, North 04°58'10" East a distance of 362.56 feet to a point; thence South 89°45'44" West a distance of 59.47 feet to a point on the eastern right of way line of Old Holly Springs Apex Road, a variable width public right of way as shown on Book of Maps 2022, page 2; thence with the eastern right of way line of Old Holly Springs Apex Road, North 13°15'47" East a distance of 53.04 feet to an existing concrete monument; thence with a curve to the left a radius of 1700.00 feet, an arc length of 338.32 feet, a chord bearing of North 07°33'43" East, a chord length of 337.77 feet to an existing concrete monument, passing through an existing concrete monument 305.65 feet before the end of the line; thence with a curve to the left a radius of 1900.00 feet, an arc length of 76.93 feet, a chord bearing of North 01°06'08" West, a chord length of 76.92 feet to an existing concrete monument; thence with a curve to the left a radius of 1900.00 feet, an arc length of 63.33 feet, a chord bearing of North 01°01'01" West, a chord length of 63.33 feet to an existing concrete monument; thence with a curve to the left a radius of 1900.00 feet, an arc length of 31.67 feet, a chord bearing of North 02°26'58" West, a chord length of 31.67 feet to an existing concrete monument; thence North 02°54'23" East a distance of 203.97 feet to the point and place of beginning, containing an area of 1,000,850 square feet or 22.98 acres.

PIN: 0740558687 “0” Technology Drive

Beginning at an existing Rebar having an NC Grid NAD 83 Coordinate of N: 706447.20 E: 2046758.62. Thence South 01°08'38" East a distance of 80.10 feet to a point; thence North 88°51'22" East a distance of 155.80 feet to a point; thence South 02°16'41" West a distance of 461.59 feet to a point along the Northern Right of Way of NC Highway 540; thence along Right of way South 61°27'09" West a distance of 26.84 feet to a point; thence South 59°58'25" West a distance of 237.08 feet to a point; thence North 28°22'04" West a distance of 10.00 feet to a point; thence with a curve turning to the right with an arc length of 786.41 feet, with a radius of 1650.00 feet, with a chord bearing of South 75°17'10" West, with a chord length of 778.99 feet to a point; thence North 88°45'04" West a distance of 203.97 feet to a point; thence North 87°37'46" West a distance of 718.10 feet to a point; thence North 87°36'50" West a distance of 643.60 feet to a point; thence North 87°37'20" West a distance of 356.63 feet to a point; thence leaving said Right of way North 19°26'04" East a distance of 147.77 feet to a point; thence North 11°48'54" West a distance of 104.71 feet to a point; thence North 30°01'31" East a distance of 156.29 feet to a point; thence North 23°38'07" West a distance of 210.79 feet to a point; thence North 03°52'45" East a distance of 158.77 feet to a point; thence North 88°51'48" East a distance of 28.47 feet to an Iron Pipe; thence North 88°51'48" East a distance of 1457.31 feet to a point; thence North 88°51'48" East a distance of 1251.38 feet to the Point of Beginning,

Having an area of 2202540 square feet, 50.56 acres

Tract PIN: 0740-07-8021 (REID: 0407983)

Being a portion of the land now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403 in the Wake County Register of Deeds; being more particularly described as: Beginning at an existing concrete monument at the northeast corner of the subject parcel, being on the western right of way line of Veridea Parkway, a variable width controlled access and public right of way as described in Deed Book 15539, page 1885, the point of beginning; thence from the beginning and with the western right of way line of Veridea Parkway, with a curve to the right a radius of 1933.03 feet, an arc length of 173.41 feet, a chord bearing of South 14°22'33" West, a chord length of 173.35 feet to a point; thence South 16°56'46" West a distance of 296.14 feet to a point; thence South 36°46'38" West a distance of 128.94 feet to a point; thence South 21°28'31" West a distance of 304.38 feet to a point; thence South 20°42'10" West a distance of 61.19 feet to a point; thence with a curve to the left a radius of 6150.50 feet, an arc length of 428.45 feet, a chord bearing of South 18°25'23" West, a chord length of 428.36 feet to an existing concrete monument; thence with a curve to the left a radius of 6150.50 feet, an arc length of 203.98 feet, a chord bearing of South 15°28'40" West, a chord length of 203.97 feet to an existing concrete monument; thence with a curve to the left a radius of 6150.50 feet, an arc length of 244.84 feet, a chord bearing of South 13°23'14" West, a chord length of 244.82 feet to an existing concrete monument on the northern right of way line of N.C. Highway 540, a variable width controlled access right of way, as described in Deed Book 15539, page 1837; thence with the northern right of way line of N.C. Highway 540, South 82°34'50" West a distance of 63.94 feet to an existing concrete monument; thence with a curve to the right a radius of 4035.00 feet, an arc length of 584.49 feet, a chord bearing of North 63°59'55" West, a chord length of 583.98 feet to a point, being the southeast corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence leaving the northern right of way line of N.C. Highway 540 and with said common line, North 02°26'42" East a distance of 1505.96 feet to an existing iron pipe, being the southwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403; thence with said common line, South 89°09'45" East a distance of 1110.26 feet to the point and place of beginning, containing an area of 1,405,383 square feet or 32.26 acres.

Tract PIN: 0740-16-7653 (REID: 0407980)

Being a portion of the land now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2403 in the Wake County Register of Deeds; being more particularly described as: Beginning at an existing rebar with cap at the southeast corner of the subject parcel, being on the northern right of way line of the N.C. Highway 540 Ramp, a variable width controlled access right of way, as described in Deed Book 15539, page 1855, the point of beginning; thence from the beginning and with the northern right of way line of the N.C. Highway 540 Ramp, North 65°24'12" West a distance of 112.48 feet to an existing concrete monument; thence with a curve to the right a radius of 865.00 feet, an arc length of 261.30 feet, a chord bearing of North 54°43'51" West, a chord length of 260.31 feet to an existing concrete monument; thence North 42°11'22" West a distance of 182.87 feet to an existing concrete monument; thence North 40° 19'02" West a distance of 35.61 feet to a point; thence North 44°05'45" West a distance of 184.73 feet to an existing concrete monument; thence with a curve to the left a radius of 534.00 feet, an arc length of 249.50 feet, a chord bearing of North 64°32'31" West, a chord length of 247.24 feet to an existing concrete monument; thence North 77°55'37" West a distance of 220.93 feet to an existing concrete monument; thence North 25° 05'55" West a distance of 60.93 feet to an existing concrete monument on the eastern right of way line of Veridea Parkway, a variable width controlled access and public right of way, as described in Deed Book 15539, page 1885; thence with the eastern right of way line of Veridea Parkway, with a curve to the right a radius of 5930.50 feet, an arc length of 363.87 feet, a chord bearing of North 18°48'19" East, a chord length of 363.81 feet to a point; thence North 20°49'17" East a distance of 59.37 feet to a point; thence North 17°36'52" East a distance of 299.95 feet to a point; thence North 07°20'42" East a distance of 127.17 feet to a point; thence North 16°56'54" East a distance of 296.14 feet to a point; thence with a curve to the left a radius of 2067.50 feet, an arc length of 227.29 feet, a chord bearing of North 13°47'56" East, a chord length of 227.18 feet to a point, being a southwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2335; thence leaving the eastern right of way line of Veridea Parkway and with said common line, North 84°14'41" East a distance of 440.42 feet to a point, being the northwest corner of lands now or formerly owned by RXR Len Apex Owner, LLC, as described in Deed Book 19263, page 2335; thence with said common line, South 01°55'47" East a distance of 1400.56 feet to a point; thence North 87°37'02" East a distance of 180.32 feet to a point; thence South 00°14'49" East a distance of 667.80 feet to the point and place of beginning, containing an area of 1,187,508 square feet or 27.26 acres.

PIN: 0730865572, 0730852539, 0740052449

BEING A PORTION OF THE LANDS NOW OR FORMERLY OWNED BY RXR LEN APEX OWNER, LLC, AS DESCRIBED IN DEED BOOK 19263, PAGE 2403, IN THE WAKE COUNTY REGISTER OF DEEDS; BEING MORE PARTICULARLY DESCRIBED AS: BEGINNING AT A CONCRETE MONUMENT ON THE WESTERN RIGHT OF WAY OF VERIDEA PARKWAY, SAID MONUMENT BEING ON THE NORTHERN LINE OF THE TRACT SHOWN ON BOOK OF MAPS 1986, PAGE 1865, THE POINT OF BEGINNING; THENCE NORTH 71°59'15" WEST A DISTANCE OF 337.68 FEET TO AN IRON PIPE; THENCE NORTH 86°29'50" WEST A DISTANCE OF 829.07 FEET TO AN IRON PIPE, THE NORTHEAST CORNER OF TRACT 3 AS SHOWN ON BOOK OF MAPS 2022, PAGE 3; THENCE WITH SAID COMMON LINE SOUTH 87°43'51" WEST A DISTANCE OF 2,965.86 FEET TO AN IRON PIPE ON THE EASTERN LINE OF TRACT F, AS SHOWN ON BOOK OF MAPS 1974, PAGE 228; THENCE WITH SAID COMMON LINE NORTH 00°24'36" EAST A DISTANCE OF 1,161.04 FEET TO A POINT ON THE SOUTHERN LINE OF TRACT B, AS SHOWN ON BOOK OF MAPS 1979, PAGE 686; THENCE WITH SAID COMMON LINE SOUTH 78°13'36" EAST A DISTANCE OF 73.65 FEET TO A POINT; THENCE SOUTH 70°13'09" EAST A DISTANCE OF 113.59 FEET TO A POINT; THENCE SOUTH 71°57'54" EAST A DISTANCE OF 121.73 FEET TO A POINT; THENCE SOUTH 70°58'13" EAST A DISTANCE OF 114.09 FEET TO A POINT; THENCE SOUTH 72°14'11" EAST A DISTANCE OF 343.92 FEET TO A POINT; THENCE SOUTH 74°17'38" EAST A DISTANCE OF 315.81 FEET TO A POINT; THENCE SOUTH 65°13'58" EAST A DISTANCE OF 138.23 FEET TO A POINT; THENCE SOUTH 65°10'08" EAST A DISTANCE OF 10.00 FEET TO A POINT IN BIG BRANCH; THENCE WITH SAID BRANCH NORTH 19°49'58" EAST A DISTANCE OF 52.46 FEET TO A POINT; THENCE NORTH 27°34'56" EAST A DISTANCE OF 25.74 FEET TO A POINT; THENCE NORTH 62°53'48" EAST A DISTANCE OF 26.76 FEET TO A POINT; THENCE NORTH 29°01'04" WEST A DISTANCE OF 21.84 FEET TO A POINT; THENCE NORTH 05°59'14" WEST A DISTANCE OF 34.25 FEET TO A POINT; THENCE NORTH 49°53'01" EAST A DISTANCE OF 15.65 FEET TO A POINT; THENCE NORTH 35°50'22" EAST A DISTANCE OF 26.00 FEET TO A POINT; THENCE NORTH 57°56'55" WEST A DISTANCE OF 27.74 FEET TO A POINT; THENCE SOUTH 77°56'49" WEST A DISTANCE OF 70.86 FEET TO A POINT; THENCE NORTH 69°25'39" WEST A DISTANCE OF 55.42 FEET TO A POINT; THENCE NORTH 16°13'12" WEST A DISTANCE OF 54.07 FEET TO A POINT; THENCE NORTH 47°24'29" EAST A DISTANCE OF 30.81 FEET TO A POINT; THENCE SOUTH 76°52'37" EAST A DISTANCE OF 46.52 FEET TO A POINT; THENCE NORTH 23°54'47" EAST A DISTANCE OF 15.13 FEET TO A POINT; THENCE NORTH 10°53'04" EAST A DISTANCE OF 79.33 FEET TO A POINT; THENCE NORTH 70°48'08" WEST A DISTANCE OF 21.80 FEET TO A POINT; THENCE NORTH 13°57'57" WEST A DISTANCE OF 44.13 FEET TO A POINT; THENCE NORTH 54°45'55" WEST A DISTANCE OF 48.38 FEET TO A POINT; THENCE SOUTH 57°21'14" WEST A DISTANCE OF 58.90 FEET TO A POINT; THENCE SOUTH 44°33'39" WEST A DISTANCE OF 46.68 FEET TO A POINT; THENCE NORTH 46°24'21" WEST A DISTANCE OF 39.79 FEET TO A POINT; THENCE NORTH 72°29'35" WEST A DISTANCE OF 36.60 FEET TO A POINT; THENCE SOUTH 47°15'35" WEST A DISTANCE OF 18.92 FEET TO A POINT; THENCE NORTH 74°35'59" WEST A DISTANCE OF 21.22 FEET TO A POINT; THENCE NORTH 28°54'22" WEST A DISTANCE OF 20.74 FEET TO A POINT; THENCE NORTH 42°54'07" WEST A

DISTANCE OF 46.75 FEET TO A POINT; THENCE NORTH 06°55'02" EAST A DISTANCE OF 26.65 FEET TO A POINT; THENCE NORTH 88°27'17" EAST A DISTANCE OF 37.67 FEET TO A POINT; THENCE NORTH 27°00'55" EAST A DISTANCE OF 19.39 FEET TO A POINT; THENCE NORTH 01°16'06" EAST A DISTANCE OF 31.60 FEET TO A POINT; THENCE NORTH 45°55'37" EAST A DISTANCE OF 50.02 FEET TO A POINT; THENCE NORTH 01°23'54" EAST A DISTANCE OF 14.01 FEET TO A POINT; THENCE NORTH 65°17'04" WEST A DISTANCE OF 42.02 FEET TO A POINT; THENCE NORTH 01°21'12" EAST A DISTANCE OF 32.19 FEET TO A POINT; THENCE NORTH 46°19'10" WEST A DISTANCE OF 51.21 FEET TO A POINT; THENCE NORTH 06°48'02" EAST A DISTANCE OF 35.97 FEET TO A POINT; THENCE NORTH 69°34'03" EAST A DISTANCE OF 41.13 FEET TO A POINT; THENCE NORTH 39°27'36" EAST A DISTANCE OF 39.13 FEET TO A POINT; THENCE NORTH 15°04'34" WEST A DISTANCE OF 20.63 FEET TO A POINT; THENCE NORTH 51°45'25" WEST A DISTANCE OF 25.88 FEET TO A POINT; THENCE NORTH 30°03'26" EAST A DISTANCE OF 27.95 FEET TO A POINT; THENCE SOUTH 60°17'18" EAST A DISTANCE OF 30.79 FEET TO A POINT; THENCE SOUTH 36°34'38" EAST A DISTANCE OF 34.28 FEET TO A POINT; THENCE SOUTH 78°45'43" EAST A DISTANCE OF 52.43 FEET TO A POINT; THENCE NORTH 41°36'19" EAST A DISTANCE OF 15.36 FEET TO A POINT; THENCE NORTH 04°43'43" EAST A DISTANCE OF 44.44 FEET TO A POINT; THENCE NORTH 30°37'30" EAST A DISTANCE OF 51.77 FEET TO A POINT; THENCE NORTH 05°00'41" EAST A DISTANCE OF 35.48 FEET TO A POINT; THENCE SOUTH 62°04'45" WEST A DISTANCE OF 33.82 FEET TO A POINT; THENCE NORTH 44°58'03" WEST A DISTANCE OF 39.84 FEET TO A POINT; THENCE NORTH 44°37'02" EAST A DISTANCE OF 21.58 FEET TO A POINT; THENCE NORTH 53°05'19" EAST A DISTANCE OF 60.88 FEET TO A POINT; THENCE NORTH 61°15'57" WEST A DISTANCE OF 39.17 FEET TO A POINT; THENCE NORTH 50°49'25" WEST A DISTANCE OF 23.78 FEET TO A POINT; THENCE NORTH 10°03'59" WEST A DISTANCE OF 28.54 FEET TO A POINT; THENCE NORTH 38°48'29" EAST A DISTANCE OF 55.95 FEET TO A POINT; THENCE NORTH 43°08'07" WEST A DISTANCE OF 60.59 FEET TO A POINT; THENCE NORTH 42°28'11" EAST A DISTANCE OF 31.74 FEET TO A POINT; THENCE NORTH 70°54'18" WEST A DISTANCE OF 69.18 FEET TO A POINT; THENCE NORTH 86°35'18" WEST A DISTANCE OF 111.94 FEET TO A POINT; THENCE NORTH 47°58'54" WEST A DISTANCE OF 68.58 FEET TO A POINT; THENCE NORTH 30°52'49" EAST A DISTANCE OF 32.56 FEET TO A POINT; THENCE NORTH 21°24'56" WEST A DISTANCE OF 54.07 FEET TO A POINT; THENCE NORTH 55°25'47" EAST A DISTANCE OF 39.27 FEET TO A POINT; THENCE NORTH 03°25'23" WEST A DISTANCE OF 46.46 FEET TO A POINT; THENCE NORTH 31°42'04" EAST A DISTANCE OF 54.96 FEET TO A POINT; THENCE NORTH 18°30'38" EAST A DISTANCE OF 44.10 FEET TO A POINT; THENCE NORTH 01°10'29" WEST A DISTANCE OF 65.77 FEET TO A POINT; THENCE NORTH 22°17'56" WEST A DISTANCE OF 29.93 FEET TO A POINT; THENCE NORTH 19°15'09" EAST A DISTANCE OF 2.52 FEET TO A POINT ON THE SOUTH LINE OF ROBERT BEREMAN; THENCE WITH SAID COMMON LINE NORTH 87°19'40" EAST A DISTANCE OF 837.86 FEET TO A POINT ON THE SOUTHERN RIGHT OF WAY OF NORTH CAROLINA HIGHWAY 540; THENCE WITH SAID RIGHT OF WAY SOUTH 48°51'19" EAST A DISTANCE OF 616.60 FEET TO A REBAR WITH CAP; THENCE NORTH 44°43'56" EAST A DISTANCE OF 25.00 FEET TO A REBAR WITH CAP; THENCE SOUTH 50°09'33" EAST A DISTANCE OF 205.32 FEET TO A REBAR WITH CAP;

THENCE SOUTH 39°54'37" EAST A DISTANCE OF 212.61 FEET TO A REBAR WITH CAP; THENCE A CURVE TO THE LEFT A RADIUS OF 4,375.00 FEET, AN ARC LENGTH OF 311.61 FEET, A CHORD BEARING OF SOUTH 45°34'54" EAST, A CHORD LENGTH OF 311.54 FEET TO A REBAR WITH CAP; THENCE A CURVE TO THE LEFT, A RADIUS OF 4,375.00 FEET, AN ARC LENGTH OF 1,106.45 FEET, A CHORD BEARING OF SOUTH 54°52'03" EAST, A CHORD LENGTH OF 1,103.50 FEET TO A POINT; THENCE A CURVE TO THE LEFT, A RADIUS OF 4,375.00 FEET, AN ARC LENGTH OF 456.34 FEET, A CHORD BEARING OF SOUTH 65°10'37" EAST, A CHORD LENGTH OF 456.13 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 49°00'55" EAST A DISTANCE OF 133.17 FEET TO A POINT ON THE WESTERN RIGHT OF WAY OF VERIDEA PARKWAY; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE LEFT, A RADIUS OF 1,680.00 FEET, AN ARC LENGTH OF 355.38 FEET, A CHORD BEARING OF SOUTH 05°50'57" WEST, A CHORD LENGTH OF 354.72 FEET TO A POINT; THENCE WITH A CURVE TO THE LEFT A RADIUS OF 1,680.00 FEET, AN ARC LENGTH OF 205.93 FEET, A CHORD BEARING OF SOUTH 03°43'21" EAST, A CHORD LENGTH OF 205.80 FEET TO THE POINT OF BEGINNING; CONTAINING 5,629,803 SQUARE FEET OR 129.24 ACRES.

PIN: 0741117192

Being all of the land now or formerly owned by RXR Len Apex Owner, LLC, as described as “PIN: 0741-11-7192 (Tract 1)” in Deed Book 19947, page 487 in the Wake County Register of Deeds; being more particularly described as: Beginning at an existing concrete monument on the eastern right of way line of Veridea Parkway, a 60 foot public right of way as shown on Book of Maps 2003, page 1756, being also a corner on the northern right of way line of U.S. Highway 1, a variable width controlled access right of way as shown on Book of Maps 2010, page 282, the point of beginning; thence from the beginning and with the eastern right of way line of Veridea Parkway, North 35°53'59" West a distance of 81.82 feet to an existing iron pipe, being a southern corner of lands now or formerly owned by Greater Raleigh Area Christian Education, Inc., as shown on Book of Maps 2015, page 14; thence leaving the eastern right of way line of Veridea Parkway and with said common line, North 00°44'04" East a distance of 32.54 feet to an existing iron pipe; thence South 89°07'32" East a distance of 204.62 feet to an existing iron pipe on the northern right of way line of U.S. Highway 1; thence with the northern right of way line of U.S. Highway 1, South 58°38'37" West a distance of 183.90 feet to the point and place of beginning, containing an area of 10,829 square feet or 0.25 acres.

December 3, 2025

Town of Apex
Planning Department
322 N. Mason Street
Apex, NC 27502

RE: Veridea Sustainable Development Plan Amendment for parcels south of US 1, east of I-540, and west and east of Veridea Parkway

To Whom It May Concern,

This letter is to inform you of a proposed amendment to the Veridea Sustainable Development Plan Conditional Zoning (SD-CZ) to (i) facilitate the development of the North Carolina Children's Hospital and campus, and (ii) revise certain conditions for the remainder of Veridea.

The Veridea Sustainable Development Plan was approved by the Town of Apex on May 9, 2011 (Rezoning #09CZ07).

In the summer of 2025, North Carolina Children's announced their intention to develop a new, state-of-the-art children's hospital within Veridea, bringing North Carolina's first freestanding children's hospital to the Triangle. The North Carolina Children's health care campus and its supporting uses (including but not limited to medical, research, academic, administrative, transport, patient and family respite and accommodations) have a specific set of needs for automobile and pedestrian circulation, massing, scale, and materials. These unique considerations require the enclosed technical exemptions to the SD-CZ Plan (Exhibit A).

Exhibit A proposes exemptions from technical standards found within the SD-CZ Plan. The exemptions would apply to the Hospital Site and surrounding supporting uses which will make up the campus. The exemptions that apply to the health care campus and surrounding supporting uses (including but not limited to medical, research, academic, administrative, transport, patient and family respite and accommodations, central utility plant, and adequate parking facilities) which will make up the campus are found in Part 1 of Exhibit A. These uses and parcels are approximately equivalent to +/- 193 acres of the Urban Core (UC) sustainable zone and +/- 29 acres of the Village Center (VC) sustainable zone within the Veridea development. Exemptions for the overall SD-CZ Zoned area are contained within Part 2 of Exhibit A.

Exemptions or modifications requested herein for the hospital campus relate to standards for glazing, lot width, block perimeter, build-to/maximum setbacks, rear loading, and location of parking and entrances. Exemptions or modifications requested herein for the remainder of Veridea relate to recreation land dedication, land reservation for future rail, and development thresholds. Where exemptions from text are requested, the full text is provided. Where exemptions from a table are requested, the full table is included as an attachment.

Where an exemption is granted from the SD-CZ plan, the development will default to the current UDO standards effective at the date of approval of this amendment.

A corresponding SD-CZ rezoning application has been filed in the Town's development portal.

Sincerely,

Veridea Development Team

Veridea SD Plan Amendment

Proposed Rezoning Changes

December 3, 2025

PART 1 North Carolina Children's (NCC) Campus Property

The Sustainable Development Plan south of US 1, east of I-540, and west of Veridea Parkway (PINs 0740191376, 0730996270, 0730977087, 0730977967, 0740081019, 0740070950, 0740082327, 0740082199, 0740078021, 0740180091, 0740180331, 0731902142 (portion of)) and a portion of the Sustainable Development Plan south of US 1 and east of Veridea Parkway (PINs 0741207566, 0741203157, 0740293940) (collectively, the "NCC Campus Property") will retain all of the conditions from rezoning #09CZ07 except:

Section 3.3.3 Written Statement from Responsible Person Required; Noncompliance

Modification to Section 3.3.3

Any site plan or Subdivision Plan submitted to the Town for approval for a project to be undertaken by a party other than the Responsible Person must be accompanied by a written statement from the Responsible Person indicating its approval of the Project. Such written statement shall also state the authorized development allocated to the Project (i.e., number of dwelling units and/or square feet of non-residential Retail, Office and/or Industrial Uses) as well as the development fee credits, if any, other credits, and/or liabilities and responsibilities assigned to or assumed by the Project. Provided however, any site plan or Subdivision Plan submitted to the Town for approval for a project to be undertaken on the NCC Campus Property shall not be required to be accompanied by a written statement from the Responsible Person indicating its approval of the Project. Such site plans or Subdivision Plans shall be subject to the terms of the SD Plan, as amended, and the Unified Development Ordinance where not inconsistent with the SD Plan.

Any event of non-compliance with any requirement of this SD Plan or the UDO that relates solely to a Project or Projects within Veridea shall not be attributed to Veridea as a whole, but rather shall be attributed only to that Project or Projects, such that any enforcement action taken by the Town shall be limited to the Project or Projects at issue.

In addition to any other remedy that may be available to the Town, if a violation of this SD Plan, Town Standards, Sustainability Standards applicable to Veridea or the UDO remains in existence with respect to a Project or Projects or a distinct area within Veridea after the Town complies with the procedures of UDO 11.5, the Town may withhold the issuing, approving or granting of grading permits, building permits, certificates of compliance or occupancy, site plans, subdivision plans or plats and other permits or approvals for the Project or Projects or distinct area in issue until the non-compliance is corrected and cured.

In addition to any other remedy that may be available to the Town, if a violation of this SD Plan, Town Standards, Sustainability Standards applicable to Veridea or the UDO which applies to Veridea as a whole remains in existence after the Town complies with the procedures of UDO 11.5, the Town may withhold the issuing, approving or granting of grading permits, site plans and subdivision plans or plats throughout Veridea until the non-compliance is corrected and cured.

Section 3.7: Energy Standards

Exemption from the energy efficiency goal of Section 3.7.2.v.

v. The improvement of energy performance by 20% compared to baseline building performance ratings per ASHRAE/ IESNA Standard 90.1-2004.

Section 4: Community Design Standards

Exemption from 4.2.3.a. (i. – ii.)

a. Buildings and frontages along the A-Grids shall reflect multi-modal and pedestrian standards of the SD Plan supporting pedestrian activity.
   Thoroughfares within an A-Grid Zone may be developed according to B-Grid standards subject to the following special and limiting conditions:
   i. Transition conditions within A-Grid Zones to adjacent B- Grid Zones; and
   ii. Small internal Thoroughfares of limited length to respond to a specific condition of the site or a use. Notwithstanding these special and limiting conditions, no more than 15% of the aggregate length of Thoroughfares within an A-Grid Zone may be designated as a B-Grid and follow B-Grid standards. Location and other specifics of such B-Grid Thoroughfares shall be addressed within site plans.

Exemption from 4.2.3.b (i. – iii.)

b. Buildings and frontages along the B-Grids may reflect automobile- oriented standards. B-Grids may be developed in whole or in part to A-Grid standards. It is the goal that B-Grid zones eventually become redeveloped as A-Grids. Therefore, site plans for B-Grids shall reflect in their planning and site engineering this goal by:
   i. Establishing a B-Grid Thoroughfare grid and therefore a block layout that can be redeveloped into smaller blocks exhibiting the characteristics of an A-Grid;
   ii. Establishing the B-Grid Thoroughfares in such a manner that they can be redeveloped into A-Grid Thoroughfares and frontages; and
   iii. Locating utilities and site features so that they will not prohibit the establishment of an A-Grid development pattern, and do so without significant redesign or cost impacts. Site plans for B- Grid zones shall depict both the B-Grid configuration, and conceptually reflect how the B-Grid configuration may be redeveloped into an A-Grid.

Exemption from 4.3.5 – 4.3.7

4.3.5 Village Center – A-Grid (VC A-Grid) consists of higher Density Mixed Use buildings that accommodate retail, Office, rowhouses and apartments. It has a tight network of Thoroughfares, with wide sidewalks, steady street tree planting and buildings set close to the sidewalks.

4.3.6 Village Center – B-Grid (VC B-Grid) consists of larger block sizes, and larger format uses supporting regional users. It has a coarse network of Thoroughfares, with sidewalks and steady street tree planting.

4.3.7 Urban Core – A-Grid (UC A-Grid) consists of the highest Density and height, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks; Thoroughfares have steady street tree planting and buildings are set close to wide sidewalks.

4.3.8 Urban Core – B-Grid (UC B-Grid) consists of the highest Density and height, with predominantly Office, lab, and research uses. It may have larger blocks; streets have steady street tree planting and buildings may be set back from the sidewalks.

Exemption from 4.5.1.e. & h.

e. The Thoroughfare network shall be designed to define Blocks not exceeding the size indicated in Table 14. The perimeter shall be measured as the sum of Lot Frontage Lines.
h. Each Lot shall be bounded by a vehicular Thoroughfare, except that 20% of the Lots within each Sustainable Zone may be bounded by a Passage, so long as the Thoroughfare assembly behind such Lots is constructed to Rear Alley standards, will meet emergency vehicle access requirements and is public.

Note: If subdivided, lot dimensions and minimum public frontage standards will default to UDO standards.

Exemption from 4.5.3.a. (i. -iii.)

a. General to all zones OS, NG, NM, VC, UC
    i. The Public Frontage contributes to the character of the Sustainable Zone, and includes the requisite types of Sidewalk, Curb, Planter, bicycle parking, and street trees.
    ii. Public Frontages shall be designed as shown in Table 4A and Table 4B and allocated within Sustainable Zones as specified in Table 14d.
    iii. Within the Public Frontages, the types of Public Planting and Public Lighting shall be as shown in Table 4A, Table 4B, Table 5 and Table 6.

Note: Public frontage standards will default to the Town of Apex UDO Section 7.5.

Section 5: Building Standards

Exemption from 5.4.1.a. – g.

a. Newly platted Lots shall be dimensioned according to Table 14f and Table 15.
b. Building Disposition shall be as shown in Table 9 and Table 14i.
c. Buildings shall be disposed in relation to the boundaries of their Lots according to Table 14g, Table 14h, and Table 15.
d. One Principal Building at the Frontage and one Outbuilding to the rear of the Principal Building may be built on each Lot as shown in Table 17c.
e. Lot coverage by buildings shall not exceed that specified in Table 14f and Table 15.
f. Facades shall be built parallel to a rectilinear Principal Frontage Line or to the tangent of a curved Principal Frontage Line, and along a minimum percentage of the Frontage width at the Setback, as specified as Frontage Buildout on Table 14g and Table 15.
g. Setbacks for Principal Buildings shall be as shown in Table 14g and Table 15.

Exemption from 5.4.2.a

a. The Principal Entrance shall be on a Frontage Line.

Exemption from 5.5.1 (a., b., d., g.)

a. The Private Frontage of buildings shall conform to and be allocated in accordance with Table 7 and Table 14j.
b. Buildings on corner Lots shall have two Private Frontages as shown in Table 17. Prescriptions for the second and third Layers pertain only to the Principal Frontage. Prescriptions for the first Layer pertain to both Frontages.
d. Building stories, Stepbacks, and Expression Lines shall conform to Table 8 and Table 14j.
g. Prescriptions for the parking Layers pertain only to the Principal Frontage. Prescriptions for the first Layer pertain to both Frontages of a corner Lot.

Modification to 5.5.1. c.

c. All Facades shall be glazed with clear glass no less than 30% of the first Story, however glazing shall be no less than 50% <u>of the first Story</u> in the VC Zone A-Grid and UC Zone A-Grid areas. <u>Within the NCC Campus Property, this requirement shall only apply to buildings within 200 feet of the Veridea Parkway right-of-way with the exception of any inpatient, outpatient, or supporting medical use.</u>

Exemption from 5.5.5.e.

e. In the absence of a building Facade along any part of a Frontage Line, a Streetscreen may be built co-planar with the Facade or adjacent Facades.

Exemption from 5.8.1 (a. - c.)

a. Parking shall be accessed by Rear Alleys or Rear Lanes, when available.

b. Open parking areas and Parking Structures shall be masked from the Frontage by a Building or Streetscreen.
c. For buildings on B-Grids, open parking areas and Parking Structures are allowed unmasked on the Frontage in the front Layer, except for corner Lots at intersections with the A-Grid.

Exemption from 5.8.4 (a. & c.)

a. All parking lots, garages, and Parking Structures shall be located at the second or third Layer except along B-Grids where parking may be located in the first layer. (Table 17d)
c. Parking Structures on the A-Grid shall have Liner Buildings lining the first and second Stories.

Modification to 5.8.4.b:

1. Vehicular entrances to parking lots, garages, and Parking Structures shall ~~be no wider than 24 feet at the Frontage for A-Grid Thoroughfares. Driveways at Frontages for B-Grid Thoroughfares shall be no wider than necessary to accommodate the straight and turn lanes in the first Layer. (Table 3B.f)~~ meet the requirements found in the *Town of Apex Standard Specifications and Standard Details or be designed to accommodate the use subject to TRC approval*.

Section 6: Tables

Note: Exempted tables are included as attachments to this letter, labeled as described below.

Table 1 – Sustainable Zone Descriptions

The NCC Campus Property shall be exempt from Table 1.

Tables 3B – Vehicular Lane and Parking Assemblies

The NCC Campus Property shall be exempt from Table 3B c., d., and e. streetside parking requirements.

Tables 4A & 4B – Public Frontages

The NCC Campus Property shall be exempt from Tables 4A & 4B.

Tables 4C – Thoroughfare Assemblies

The NCC Campus Property shall be exempt from Tables 4C.

Tables 4D – Thoroughfare Cross Sections

The NCC Campus Property shall be exempt from Tables 4D.

Table 6 – Public Planting

The NCC Campus Property shall be exempt from Table 6.

Table 7 – Private Frontages

The NCC Campus Property shall be exempt from Table 7.

Table 8 – Building Configuration

The NCC Campus Property shall be exempt from Table 8.

Table 9 – Building Disposition

The NCC Campus Property shall be exempt from Table 9.

Table 13 – Civic Space

The NCC Campus Property shall be exempt from Table 13.

Table 14 – Form-Based Code Summary

The NCC Campus Property shall be exempt from the struck through standards of Table 14 as shown below relating to block perimeter, rear-loading, lot width, and building disposition for the VC and UC sustainable zones. Other applicable standards shall be amended as indicated with the callout black boxes below.

c. Block Size

c. BLOCK SIZE	OS OPEN SPACE ZONE	NG NEIGHBORHOOD GENERAL ZONE	NM NEIGHBORHOOD MIXED-USE ZONE	VC VILLAGE CENTER ZONE	UC URBAN CORE ZONE
Block Perimeter: A-Grids	no maximum	3000 ft. max	2400 ft. max	~~2000 ft. max *~~	~~2000 ft. max *~~
Block Perimeter: B-Grids	not applicable	not applicable	not applicable	~~* 3500 ft max with parking structures~~	

d. Thoroughfare

d. THOROUGHFARES (see Table 3 and Table 4)	OS OPEN SPACE ZONE	NG NEIGHBORHOOD GENERAL ZONE	NM NEIGHBORHOOD MIXED-USE ZONE	VC VILLAGE CENTER ZONE	UC URBAN CORE ZONE
Highway (HW)	permitted	permitted	not permitted	not permitted	not permitted
Boulevard (BV)	not permitted	not permitted	not permitted	permitted	permitted
Avenue (AV)	not permitted	permitted	permitted	permitted	permitted
Commercial Street (CS)	not permitted	not permitted	not permitted	permitted	permitted
Drive (DR)	not permitted	permitted	permitted	permitted	permitted
Street (ST)	permitted	permitted	permitted	permitted	not permitted
Road (RD)	permitted	permitted	not permitted	not permitted	not permitted
Rear Lane (RL)	permitted	permitted	permitted	not permitted	not permitted
Rear Alley (RA)	not permitted	permitted	required	~~required~~	~~required~~
Path (PT)	permitted	permitted	permitted	not permitted	not permitted
Passage (PS)	not permitted	permitted	permitted	permitted	permitted
Bicycle Trail (BT)	permitted	permitted	not permitted *	~~not permitted *~~	~~not permitted *~~
Bicycle Lane (BL)	permitted	permitted	permitted	permitted	permitted
Bicycle Route (BR)	permitted	permitted	permitted	permitted	permitted

Amend to "permitted"

Amend to "permitted"

f. Lot Occupation

f. LOT OCCUPATION	OS OPEN SPACE ZONE	NG NEIGHBORHOOD GENERAL ZONE	NM NEIGHBORHOOD MIXED-USE ZONE	VC VILLAGE CENTER ZONE	UC URBAN CORE ZONE
Lot Width: A-Grids	variable	25 ft. min 120 ft. max	18 ft. min 400 ft. max	~~18 ft. min 600 ft. max~~	~~18 ft. min 700 ft. max~~
Lot Width: B-Grids	not applicable	not applicable	not applicable	no max	no max

Amend to "no max"

i. Setbacks – Outbuilding

h. SETBACKS - OUTBUILDING (see Table 15)	OS OPEN SPACE ZONE	NG NEIGHBORHOOD GENERAL ZONE	NM NEIGHBORHOOD MIXED-USE ZONE	VC VILLAGE CENTER ZONE	UC URBAN CORE ZONE
(h.1) Front Setback	not applicable	20 ft. min +bldg setback	20 ft. min +bldg setback	~~40 ft. max from real prop~~	not applicable
(h.2) Side Setback	not applicable	0 ft. or 3 ft. min	0 ft. or 3 ft. min	0 ft. min	not applicable
(h.3) Rear Setback	not applicable	3 ft. min	3 ft. min	~~3 ft. min~~	not applicable

Amend to "not applicable"

j. Building Disposition

i. BUILDING DISPOSITION (see Table 9)	OS OPEN SPACE ZONE	NG NEIGHBORHOOD GENERAL ZONE	NM NEIGHBORHOOD MIXED-USE ZONE	VC VILLAGE CENTER ZONE	UC URBAN CORE ZONE
Edgeyard	permitted	permitted	permitted	permitted	permitted
Sideyard	not permitted	permitted	permitted	permitted	~~not permitted~~
Rearyard	not permitted	permitted	permitted	permitted	permitted
Courtyard	not permitted	not permitted	permitted	permitted	permitted

Amend to "permitted"

Table 15D – Form-Based Code Graphics – VC – Village Center

The NCC Campus Property shall be exempt from the Form-based code standards in Table 15 D.

Table 15E - Form-Based Code Graphics - UC - Urban Core

The NCC Campus Property shall be exempt from the Form-based code standards in Table 15 E.

In addition to the standards and conditions of the Sustainable Development Plan for Veridea (#09CZ07), as amended, the NCC Campus Property shall comply with the following:

1. All lots shall front on a public street.
2. Hospital, behavioral health, and accessory/supportive uses including but not limited to central utility plants, shared services (i.e. laboratory, sterile processing, security, network support, logistics, housekeeping, maintenance, laundry, supply chain, dietary and food preparation), parking structures, ambulatory surgery centers (with or without Emergency Department), and physician office buildings shall be considered a Civic Use for SD Zoning and UDO regulatory requirements including calculations related to maximum development of respective uses within the SD Zoning boundary.
3. For the area west of Veridea Parkway only, four (4) bus stops shall be constructed. The location of the stops will be finalized and shown on the first Major Site Plan within the NCC Campus Property. All bus stops shall be within ¼ -mile radius of a healthcare building. Bus stops shall

meet Town of Apex Standard Specifications including landing pad, amenity pad, and pedestrian circulation path. Each bus stop (at a minimum) will include the following, pending Planning Director or designee approval:

- 1 bus shelter
- 1 trash receptacle
- 1 bench
- 2 bicycle racks
- Pedestrian connections to surrounding street network to ADA and PROWAG guidelines.

PART 2 Veridea Properties Zoned SD-CZ

The Sustainable Development Plan for Veridea (#09CZ07), is amended as follows, with additions underlined and deletions being shown by stricken-through text:

Elimination of Rail

The rail requirements of the SD Plan no longer apply. Any references within the SD Plan to rail shall not be applicable.

Modification to 3.4.2.2 Specific Recreation Requirements

Section 3.4.2.2 is deleted in its entirety and replaced as follows:

3.4.2.2 Specific Recreation Requirements

(i) Developer shall grant to the Town a public access easement over the stormwater and linear parks areas shown generally on the attached **Exhibit A-1**. Developer shall work collaboratively with the Town to program the space within this easement. The Town, in its sole discretion, shall approve all uses of the space within the easement and Developer and Town shall execute an agreement detailing scheduled uses of the easement space prior to approval of the Master Subdivision Final Plat that contains said easement;

(ii) Developer shall construct a 25,000sf programmable recreation center at its sole cost and expense to be designed with interior finishes consistent with other Town of Apex recreation center facilities. This recreation center shall be located south of Adesso Way and north of Forest Light Way as shown generally on the attached **Exhibit A-1.** The programmable recreational facility may include but is not limited to gymnasium, adaptive classroom/ program/ camp spaces, and associated support spaces such as restrooms, offices and storage to be determined in agreement with PRCR staff and as part of the developer agreement. Prior to construction of the recreation center, Town must approve the design, construction schedule, construction cost, and location of the recreation center. Construction will not

begin until Town and the Developer have executed a Development Agreement outlining the roles and obligations associated with the design and construction of the recreation center;

(iii) A site plan for this recreation center shall be submitted to the Town of Apex prior to issuance of a building permit for the 1,000th dwelling unit or platting of the 4,000th lot within Veridea, whichever comes first. Construction of this recreation center shall be completed within three (3) years of Developer's receipt of building permit approval. In the event construction has not been completed within this time, including the issuance of a Certificate of Occupancy, no building permits will be issued for any additional dwelling units within the Veridea Development until construction of the recreation center is complete.

(iv) The costs and expenses incurred by Developer in construction of the recreation facility required by subsection (iii) hereof shall be credited against parks and recreation fees due for residential development within Veridea and shall be outlined in the Development Agreement. This credit shall be in favor of Developer exclusively and may be applied by Developer from time-to-time for the permitting of residential dwellings constructed by third parties. Further, any parks and recreation fees paid for any development within Veridea prior to construction of the recreation center shall be paid over to Developer on an agreed upon schedule as construction of the recreation center progresses. In the event that parks and recreation fees-in-lieu received by the Town prior to commencement of the recreation center exceed the cost of the recreation center, such excess amounts shall be retained by the Town and all residential development within Veridea thereafter shall be required to pay applicable Parks and Recreation fees-in-lieu in accordance with Town and state requirements for the same.

(v) Subject to the foregoing, all development within Veridea shall be subject to all applicable Parks and Recreation fees-in-lieu in accordance with Town and state requirements for the same.

(vi) These Developer commitments related to the construction of the recreation center shall be reduced to a development agreement between the Town and Developer which shall be executed prior to the issuance of the 750th building permit. In addition to the foregoing terms, the Development Agreement shall include an agreed upon construction schedule for the recreation center and shall provide the Town a remedy to take over construction in the event that Developer fails to comply with said construction schedule beyond any applicable cure periods.

Modification to 3.5.3.d Land Reservation for Future Rail

~~d. Land Reservation: Land shall be reserved for the future Regional Public Transit System within Veridea. With regard to the Regional Public Transit System alignment and associated rights of way ("ROW") outside of Veridea, the location along Veridea's perimeter where the Regional Public Transit System will enter and exit Veridea in the vicinity of the interchange of US 1 with the Triangle Expressway will be determined by Triangle Transit, and/or other regional transit organization, and/or the Town. As Veridea is developed, site plans and Subdivision Plans will be shared with Triangle Transit, and/or other relevant regional transit organization, to assist such entities in the planning for and selection of the final alignment of the Regional Public Transit System.~~

~~The reservation of land to accommodate the Regional Public Transit System will be made as follows:~~

~~i. Land shall be reserved in a manner consistent with the development pattern of the Sustainability Zone in which it resides, and may overlap dedications made for other public uses such as Thoroughfares and utilities as long as the overlap is not contrary to sound planning and engineering practice that ensures that the reservation and dedication are sufficient for all planned infrastructure;~~

~~ii. Reservation shall include an area for transit station functions which shall be located within a UC zone, and shall be reserved in a manner that is in keeping with an urban development pattern of that zone as defined by the SD Plan, and may overlap reservations and, dedications made for other public uses such as Thoroughfares and utilities as long as the overlap is not contrary to sound planning and engineering practice that ensures that the reservation and dedication are sufficient for all planned infrastructure;~~

~~iii. Determination of the form, character, location, and relationship to adjacent development, relationship to other reservations and/or dedications and dimensions shall occur during site planning jointly by the Responsible Person, the TRC or Town Council, as appropriate.~~

~~iv. The reservation of land will prohibit permanent development within the designated reserve area until 2035 at which time, if there are no plans that financially commit the Triangle Transit, and/or other regional transit organization, and/or the Town to implement a regional rail plan that includes the Development, the Responsible Person may consider the reservation null and void.~~

~~v. Land reserved hereunder will be dedicated to Triangle Transit, and/or other regional transit organization, and/or the Town once the applicable entity secures funding and commits to construct the Regional Public Transit System within the Development.~~

~~vi. Buildout of any of single land use of the three (3) uses identified in Article 4.2.2.b.i-iii shall not exceed 85% of the total authorized development for the respective use, unless Town Council otherwise approves in accordance with UDO 2.3.16 F) 3) a), until the commencement of a Regional Public Transit System that will serve Veridea.~~

With the removal of regional rail from the Town's Transportation Plan, the reference to regional rail in this section shall no longer apply and shall be replaced with a requirement that a bus transit center site shall be identified within Veridea (but not within the NCC Campus Property) with the first site plan submittal that includes the area identified as the location of the Bus Transit Center on the Transit Plan Map. The site plan for the transit center shall be submitted to the Town prior to approval of the site plan or subdivision plan containing the 2,000th dwelling unit within Veridea.

Prior to approval of the site plan or subdivision plan for the 3,000th dwelling unit within Veridea, Developer shall construct and install the following Bus Transit Center Improvements:

- Restroom accessible to bus operators. In the event the recreation center required by Section 3.4.2.2 is not located within 500 feet of the Bus Transit Center, the restrooms required herein shall be constructed and installed independent of the recreation center;
- Bus layover area including at least two (2) bus layover parking spaces;

- Park and ride area including at least ten (10) standard vehicle parking spaces (inclusive of ADA space where required);
- Two bus stops (one for each direction of travel) with dimensions per the Town of Apex Standard Specification, including a thirty foot (30') landing pad between the curb and pedestrian circulation, and a six foot (6') by thirty foot (30') amenity pad behind the pedestrian circulation path. The bus stops shall include the following amenities:
    i. One (1) bus shelter (two (2) total)
    ii. One (1) trash receptacle (two (2) total)
    iii. One (1) bench (two (2) total)
    iv. Two (2) bicycle racks (four (4) total)
    v. Direct pedestrian connections to surrounding street network to ADA and PROWAG guidelines
    vi. Final location to be approved by Planning Director

The Town, in its sole discretion, will approve the design and construction of Bus Transit Center Improvements before this condition is considered satisfied. In the event that the Town provides Developer with notice that a fully funded bus route has been approved that will provide service within Veridea prior to the schedule outlined above, then the site plan for the transit center shall be submitted within six (6) months of receipt of said notice and the center shall be constructed and completed within two (2) years of receipt of permit approval for the same.

Modification to 3.5.5.g.ii Perry Road improvements

Veridea shall not exceed 50% build-out of any single land use until ~~both the interchange of Perry Road at US 1 and the interchange of Old Holly Springs Apex Road at Triangle Expressway are open to traffic~~ an overpass for Perry Road is constructed across US HWY 1 in accordance with the Apex Transportation Plan.

Exemption from 4.2.2.b maximum authorized development intensities for Hospital and Behavior Health Center Components of NCC Campus Property

Hospital, behavioral health, and accessory/supportive uses including but not limited to central utility plants, shared services (i.e. laboratory, sterile processing, security, network support, logistics, housekeeping, maintenance, laundry, supply chain, dietary and food preparation), parking structures, ambulatory surgery centers (with or without Emergency Department), and physician office buildings shall be considered a Civic Use for SD Zoning and UDO regulatory requirements including calculations related to maximum development of respective uses within the SD Zoning boundary.

Exemption from 4.2.4 Development Thresholds

Upon commencement of development work on the North Carolina Children's Hospital Campus development thresholds 1-5 contained within Section 4.2.4 shall be deemed satisfied.

Modification to Various Sections

With the exception of references within Section 3.4.2.2, all other references to “building permit” or “certificate of occupancy” as a development threshold shall be replaced with “Site Plan Final Plat or Master Subdivision Final Plat”, as determined by staff.

EXHIBIT A-1

McADAMS

PREPARED FOR:
RXR Realty



VERIDEA RECREATION FACILITY & BUS TRANSIT

APEX, NORTH CAROLINA

SCALE: 1" = 100'

RXR22005
© 3..2025

01

ORDINANCE AMENDING THE OFFICIAL ZONING DISTRICT MAP
#09CZ07

WHEREAS, the application of Lookout Ventures, Inc., petitioner, for the rezoning of lands hereinafter described was duly filed with the office of the Planning Director and thereafter public hearings were held hereon on the 13th day of December, 2010 and the 13th day of January, 2011 before the Planning Board and the 18th day of January, 2011, the 1st day and 15th of February, 2011, the 15th day of March, 2011 and the 10th day of May, 2011, before the Town Council, respectively, pursuant to due notice mailed and published pursuant to G.S. § 160A-384. Thereafter, the Planning Board submitted its final report to the Town Council recommending approval of said application for the rezoning of the lands hereinafter described, all in accordance with the requirements of the Town of Apex Unified Development Ordinance and the provisions of Chapter 160A, Article 19, of the North Carolina General Statutes; **NOW, THEREFORE,**

BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF APEX

Section 1: The Town of Apex Unified Development Ordinance, including the Town of Apex North Carolina Official Zoning District Map which is a part of said Ordinance, is hereby amended by changing the zoning classification of the lands hereinafter described from Planned Unit Development Conditional Zoning (PUD-CZ), Light Industrial (LI), Rural Residential (RR) and Residential Agricultural (RA) to SD-CZ (Sustainable Development Conditional Zoning) District, said lands so rezoned being described as follows:

See Attachement "A" (Legal Description)

Section 2: The Planning Director is hereby authorized and directed to cause the said Official Zoning District Map for the Town of Apex, North Carolina, to be physically revised and amended to reflect the zoning changes directed by this Ordinance.

Section 3: A request to amend the Official Zoning District Map is granted whereby the previously described property and the subject of the previously mentioned change in zoning classification is subject to the following limitations:

See Attachment "B" (SD Plan and UDO Amendments)

Section 4: This property shall be perpetually bound to the uses authorized, unless subsequently changed or amended as provided for in the Unified Development Ordinance. Site plans for any development to be made pursuant to this amendment to the Official Zoning District Map shall be submitted for site plan approval as provided for in the Unified Development Ordinance.

Section 5: This ordinance shall be in full force and effect from and after its adoption.

Motion by Council Member Jones

Seconded by Council Member Jensen

With 4 Council Member(s) voting "aye."
With 0 Council Member(s) voting "no."

This the 2nd day of August, 2011.

TOWN OF APEX, NORTH CAROLINA

Mayor

ATTEST:

Town Clerk

APPROVED AS TO FORM:

Town Attorney

STATEMENT OF THE APEX TOWN COUNCIL PURSUANT TO G.S. 160A-383 ADDRESSING ACTION ON ZONING PETITION #09CZ09

Lookout Ventures, Inc., owners/applicants (the "Applicant"), submitted a completed application for a conditional zoning on the 1st day of June, 2009 (the "Application"). The proposed conditional zoning is designated #09CZ07.

The Planning Director for the Town of Apex, Dianne Khin, caused proper notice to be given (by publication and posting) of a public hearing on #09CZ07 before the Planning Board held on the 13th day of December, 2010 and the 13th day of January, 2011.

Pursuant to G.S. §160A-384 and Sec. 2.2.11(E) of the Unified Development Ordinance, the Planning Director caused proper notice to be given (by publication and posting), of a public hearing on #09CZ07 before the Town Council on the 18th day of January, 2011, the 1st day and 15th of February, 2011, the 15th day of March, 2011 and the 10th day of May, 2011.

The Apex Planning Board held a public hearing on the 13th day of December, 2010 and the 13th day of January, 2011, gathered facts, received public comments and formulated a recommendation regarding the application for conditional zoning #09CZ07. A motion was made at the Apex Planning Board to recommend approval; the motion passed unanimously for the application for #09CZ07.

The Apex Town Council held a public hearing on the 18th day of January, 2011, the 1st day and 15th of February, 2011, the 15th day of March, 2011 and the 10th day of May, 2011. Dianne Khin presented the Planning Board's recommendation at the public hearing.

All persons who desired to present information relevant to the application for #09CZ07 and who were residents of Apex or its extraterritorial jurisdiction, or who owned property adjoining the property for which the conditional zoning is sought, were allowed to present evidence at the public hearing before the Apex Town Council. No one who wanted to speak was turned away.

The Town Council by a vote of 5 and 0 approved Application #09CZ07.

In zoning Application #09CZ07, Applicant seeks to rezone the subject tract located west of NC 55, south of US#1, north and adjacent to proposed 540 from Planned Unit Development Conditional Zoning (PUD-CZ), Light Industrial (LI), Rural Residential (RR) and Residential Agricultural (RA) to SD-CZ (Sustainable Development Conditional Zoning). After public hearing, Town Council approved the rezoning. This Statement will address consistency with the Town's comprehensive and other applicable plans, reasonableness and affect on public interest.

Approval of the rezoning is in line with the mixed use development proposed on the 2025 Land Use Plan. The rezoning request includes amendments to the Unified Development Ordinance, the 2025 Land Use Plan, and the Official Zoning District Map. The changes being made are consistent with the long range vision to create a unified sustainable development in the requested area. The rezoning is compatible with the surrounding area, and should be of no detriment to immediate neighbors and the surrounding community.

Property Description

Tract 1 (Poe):

BEGINNING at a point which is the northeast corner of the 54.650 acre tract shown on Boundary Survey Prepared for Apex Land Assemblage, LLC by Riley Surveying, PA dated February 23, 2006 and recorded in Book of Maps 2006, Page 416, Wake County Registry; thence along the line of said 54.650 acre tract N 89° 54' 34" W 1794.53 feet to a point in the centerline of Big Branch; thence along the centerline of Big Branch, the following courses and distances denoted L87 through L156 on the following table:

CENTERLINE BIG BRANCH

LINE TABLE		
LINE	*BEARING*	*LENGTH*
L87	*N20° 48' 14" E*	*52.19*
L88	*N27° 36' 15" E*	*25.74*
L89	*N62° 55' 07" E*	*26.76*
L90	*N28° 59' 45" W*	*21.84*
L91	*N05° 57' 55" W*	*34.25*
L92	*N49° 54' 20" E*	*15.65*
L93	*N35° 51' 41" E*	*26.00*
L94	*N57° 55' 36" W*	*27.74*
L95	*S77° 58' 08" W*	*70.86*
L96	*N69° 24' 20" W*	*55.42*
L97	*N16° 11' 53" W*	*54.07*
L98	*N47° 25' 48" E*	*30.81*
L99	*S76° 51' 18" E*	*46.52*
L100	*N23° 56' 06" E*	*15.13*
L101	*N10° 54' 23" E*	*79.33*
L102	*N70° 46' 49" W*	*21.80*
L103	*N13° 56' 38" W*	*44.13*
L104	*N54° 44' 36" W*	*48.38*
L105	*S57° 22' 33" W*	*58.59*
L106	*S44° 34' 58" W*	*46.68*
L107	*N46° 23' 02" W*	*39.79*
L108	*N72° 28' 16" W*	*36.60*
L109	*S47° 16' 54" W*	*18.92*
L110	*N74° 34' 40" W*	*21.22*
L111	*N28° 53' 03" W*	*20.74*
L112	*N42° 52' 48" W*	*46.75*
L113	*N06° 56' 21" E*	*26.65*
L114	*N88° 28' 36" E*	*43.87*
L115	*N27° 02' 14" E*	*18.93*
L116	*N01° 17' 25" E*	*31.60*
L117	*N45° 56' 56" E*	*50.02*
L124	*N39° 28' 55" E*	*39.13*
L125	*N15° 03' 15" W*	*20.63*
L126	*N51° 44' 06" W*	*25.88*
L127	*N30° 05' 45" E*	*27.95*
L128	*S60° 15' 59" E*	*30.79*
L129	*S36° 33' 19" E*	*34.28*
L130	*S78° 44' 24" E*	*52.43*
L131	*N41° 37' 38" E*	*15.36*
L132	*N04° 45' 02" E*	*44.44*
L133	*N30° 38' 49" E*	*51.77*
L134	*N05° 02' 00" W*	*35.48*
L135	*S62° 06' 04" W*	*33.82*
L136	*N44° 56' 44" W*	*39.84*
L137	*N44° 38' 21" E*	*21.58*
L138	*N53° 06' 38 E*	*60.88*
L139	*N61° 14' 38" W*	*39.17*
L140	*N50° 48' 06" W*	*23.78*
L141	*N10° 02' 40" W*	*28.54*
L142	*N38° 49' 48" E*	*55.95*
L143	*N43° 06' 48" W*	*60.59*
L144	*N42° 29' 30" E*	*31.74*
L145	*N70° 52' 59" W*	*69.18*
L146	*N86° 33' 59" W*	*111.94*
L147	*N47° 57' 35" W*	*68.58*
L148	*N30° 54' 08" E*	*32.56*
L149	*N21° 23' 37" W*	*54.07*
L150	*N55° 27' 06" E*	*39.27*
L151	*N03° 24' 04" W*	*46.46*
L152	*N31° 43' 23" E*	*54.96*
L153	*N18° 31' 57" E*	*44.10*
L154	*N01° 09' 10" W*	*65.77*
L155	*N22° 16' 37" W*	*29.93*
L156	*N19° 16' 28" E*	*2.52*

L118	*N01° 25' 13" E*	*14.01*
L119	*N65° 15' 45" W*	*42.02*
L120	*N01° 22' 31" E*	*32.19*
L121	*N46° 17' 51" W*	*51.21*
L122	*N06° 49' 21" E*	*35.97*
L123	*N69° 35' 22" E*	*41.13*

Thence leaving the course of Big Branch, N 87° 20' 59" E 1317.72 feet to a point; thence N 00° 20' 59" E 1411.74 feet to a point; thence N 87° 17' 47" E 1396.96 feet to a point; thence S 02° 19' 40" W 527.05 feet to a point; thence S 90° 00' 00" W 750.13 feet to a point; thence S 00° 00' 00" W 967.73 feet to a point; thence N 77° 55' 24" E 389.22 feet to a point; thence N 01° 29' 14" E 148.65 feet to a point; thence N 65° 20' 41" E 538.98 feet to a point; thence S 02° 20' 59" W 179.73 feet to a point; thence S 02° 28' 41" W 1915.88 feet to a point; thence N 89° 11' 33" W 648.01 feet to the point and place of beginning and being all of Tract 3 containing 128.439 acres shown on a survey entitled "Exempt Division Survey – Property of Bobby and Elizabeth Poe" prepared by Riley Surveying, PA dated November 9, 2006.

Tract 2 (Poe):

BEING all of the 1.710 acre tract and the 0.042 acre tract shown as area in the right of way of Old Holly Springs – Apex Road shown on a map entitled "Property of Bobby W. and Elizabeth A. Poe, F.D. Prince, Sr, Trustee" recorded in Book of Maps 2002, Page 109, Wake County Registry, reference to which is hereby made for greater certainty of description and also being more particularly described as follows: Beginning at an existing nail in the northwest corner of the property of E.K. Huang, et. al. as described in Deed Book 6650, Page 866, Wake County Registry, and the southwest corner of the property of F.D. Prince, Sr. as described in Deed Book 8291, page 540, Wake County Registry, runs thence North 05 degrees 23 minutes 24 seconds East 64.21 feet to an iron pipe; thence North 74 degrees 31 minutes 24 seconds East 381.93 feet to an iron pipe; thence South 86 degrees 04 minutes 18 seconds East 863.27 feet to an iron pipe in the west right of way of SR 1153 (Old Holly Springs – Apex Road). Thence South 86 degrees 04 minutes 18 seconds East 30.32 feet to the centerline of SR 1153; thence along the centerline of SR 1153, South 12 degrees, 45 minutes 03 seconds West 60.72 feet to a point; thence with the north line of Huang, et. al., North 86 degrees 04 minutes 18 seconds West 30.32 feet to an existing iron pipe; thence North 86 degrees 04 minutes 18 seconds West 843.70 feet to an existing iron pipe; thence South 74 degrees 31 minutes 24 seconds West 394.54 feet to an existing iron pipe, the point and place of Beginning, and also being Tract 1 containing 1.754 acres shown on a survey entitled "Exempt Division Survey – Property of Bobby and Elizabeth Poe" prepared by Riley Surveying, PA dated November 9, 2006.

Tract 3 (Lyna):

BEGINNING at a point in the centerline of Old Holly Springs Apex Road, said point being calculated as follows: Beginning at a point in the line of Tract A shown on a map entitled "Proposed Subdivision and Recombination of Properties of Wake County" which is recorded in Book of Maps 1998, Page 782, Wake County Registry, said point also being North 45° 03' 47" East 1591.01 feet from the centerline of the intersection of Old Holly Springs Apex Road and

Woods Creek Road; thence North 09° 24' 42" East 362.56 feet to a point; thence North 85° 47' 44" West 162.21 feet to an iron pin in the centerline of Old Holly Springs Apex Road; thence along the centerline of Old Holly Springs Apex Road in an northerly direction along a left hand curve having a radius of 1963.49 feet an arc distance of 423.08 feet and chord bearing and distance of North 12° 12' 26" East 422.26 feet to the POINT AND PLACE OF BEGINNING: thence continuing along the centerline of said Old Holly Springs Apex Road in a northerly direction along a left hand curve having a radius of 1963.49 feet, an arc distance of 259.39 feet and a chord bearing and distance of North 02° 14' 59" East 259.20 feet; thence North 00° 00' 56" East 187.39 feet to a point; thence South 67° 20' 57" East 925.18 feet to a point; thence South 61° 30' 00" East 301.10 feet to a point; thence South 73° 33' 19" East 346.87 feet to a point; thence South 74° 36' 50" East 217.48 feet to a point; thence South 70° 39" 03" East 219.39 feet to a point; thence South 66° 06' 14" East 183.83 feet to a point; thence South 51° 10' 55" East 327.09 feet to a point in the centerline of White Oak Creek a/k/a Falls Branch Creek; thence along the centerline of said creek as follows: South 03° 23' 35" East 31.18 feet to a point; thence South 19° 58' 50" East 138.13 feet to a point; thence South 09° 01' 05" West 63.94 feet to a point; thence South 22° 49' 37" West 94.25 feet to a point; thence South 05° 19' 49" West 65.12 feet to a point; thence leaving the center line of said creek N 67° 48' 05" W 2481.26 feet to the point and place of BEGINNING and being all of Tract 1 containing 23.62 acres as shown on a survey entitled "Exempt Subdivision prepared for Apex Land Assemblage, LLC" by Riley Surveying, P.A. dated May 13, 2005.

Tract 4 (Reeves):

BEGINNING at a point in the line of Tract A shown on a map entitled "Proposed Subdivision and Recombination of Properties of Wake County" which is recorded in Book of Maps 1998, Page 782, Wake County Registry, said point also being North 45° 03' 47" East 1591.01 feet from the centerline of the intersection of Old Holly Springs Apex Road and Woods Creek Road, being the point and place of BEGINNING, thence North 09° 24' 42" East 362.56 feet to a point; thence North 85° 47' 44" West 162.21 feet to a point; thence North 85° 47' 44" West 30.48 feet to an iron pin in the centerline of Old Holly Springs Apex Road; thence along the centerline of Old Holly Springs Apex Road in an northerly direction along a left hand curve having a radius of 1963.49 feet, an arc distance of 423.08 feet and chord bearing and distance of North 12° 12' 26" East 422.26 feet to a point; thence leaving the centerline of said road South 67° 48' 05" East 2481.26 feet to a point in the centerline of White Oak Creek a/k/a Falls Branch Creek; thence along the centerline of said creek as follows South 05° 19' 49" West 39.71 feet to a point; thence South 17° 13' 42" West 52.16 feet to a point; thence South 63° 16' 26" West 25.88 feet to a point; thence South 17° 55' 39" West 68.74 feet to a point; thence leaving the line of said creek North 78° 00' 00" West 876.99 feet to a point; thence North 84° 10' 00" West 1370.01 feet to the point and place of BEGINNING, and being all of Tract 2 containing 23.62 acres as shown on a survey entitled "Exempt Subdivision prepared for Apex Land Assemblage, LLC" by Riley Surveying, P.A. dated May 13, 2005.

Tract 5 (Goodwin/ALAN):

BEING all that certain tract or parcel of land containing 54.650 acres, more or less, as shown on plat of survey entitled "Boundary Survey Prepared for Apex Land Assemblage, LLC" dated February 16, 2006 and revised February 23, 2006, prepared by Phillip W. Riley, professional Land Surveyor, of Riley Surveying, P.A. and recorded in Book of Maps 2006, Page 416, Wake County Registry, which plat is referenced for a more particular description.

Tract 6 (Adams):

BEING all that certain tract or parcel of land containing 86.334 acres as shown on plat of survey entitled "Boundary Survey, Prepared for HH Trinity Apex Investments, LLC, Holly Springs Township, Wake County, NC" dated September 17, 2007, prepared by Phillip W. Riley, Professional Land Surveyor, of Riley Survey, P.A. and recorded in Book of Maps 2007, Page 2469, Wake County Registry, which plat is referenced for a more particular description.

Tract 7 (Cox):

BEING all that certain tract or parcel of land containing 65.210 acres as shown on plat of survey entitled "Boundary Survey, Prepared for HH Trinity Apex Investments, LLC, Holly Springs Township, Wake County, NC" dated September 19, 2007, prepared by Phillip W. Riley, Professional Land Surveyor, of Riley Survey, P.A. and recorded in Book of Maps 2007, Page 2467, Wake County Registry, which plat is referenced for a more particular description.

Tracts 8 - 11 (Raymer):

BEING all those certain tracts or parcels of land designated as Tract I-A, containing 278.521 acres; Tract II, containing 2.134 acres; Tract III, containing 4.333 acres; and Tract 840' x 40', containing 0.626 acres, as shown on plat of survey entitled "Boundary Survey, Prepared for HH Trinity Apex Investments, LLC, Holly Springs Township, Wake County, NC" dated September 20, 2007, prepared by Phillip W. Riley, Professional Land Surveyor, of Riley Surveying, P.A. and recorded in Book of Maps 2007, Page 2468, Wake County Registry, which plat is referenced for a more particular description.

Tract 12 (Apex Town Square):

Being all of that certain tract of land lying in the Town of Apex, Holly Springs Township, Wake County, North Carolina, and being more particularly described as follows:

BEGINNING at an existing iron pipe at the northeastern corner of the now or formerly EMC Corporation property described in Deed recorded Book 2791, Page 428, Wake County Registry, said pipe also being located in the western line of the now or formerly Cash and Maynard Tract 1-A as shown on plat of survey recorded in Book of Maps 2003, Page 398, Wake County Registry (the "Plat"), said pipe being located North 02° 14' 00" East 271.08 feet from a common corner with said Cash and Maynard Tract 1-A and the now or formerly Cor Bregman property in said EMC Corporation's eastern property line as shown on the Plat; thence with said EMC Corporation's northern property line, South 89° 33' 33" West 1,910.66 feet to an existing iron pipe; thence with EMC Corporation's interior eastern property line, North 02° 07' 56" East

543.28 feet to an existing iron pipe, the southeastern corner of the now or formerly Colon Hobby property; thence with the eastern property line of said Colon Hobby property, North 00° 59' 41" East 734.53 feet to a set iron pipe marking the southwest corner of the said Cash and Maynard Tract 1-A; thence with said Cash and Maynard's Tract 1-A's southern property line and passing over an existing iron pipe at a distance of 15.08 feet, South 87° 48' 34" East 1,905.24 feet (total) to an existing iron pipe; thence continuing with said Cash and Maynard's Tract 1-A's interior western property line, South 01° 15' 42" West 1,190.09 feet to the point or place of BEGINNING, containing 53.939 acres, more or less, including any deed/survey gaps that may exist along the western line of the property herein described, as shown on the Plat, which Plat is referenced for a more particular description and being all of the property conveyed to Apex Town Square, LLC, by deed dated January 6, 2006, and recorded in Book 11766, Page 242, Wake County Registry.

Tract 13 (Bregman):

Lying and being in Town of Apex, Holly Springs Township, Wake County, North Carolina, and being more particularly described as follows:

BEGINNING at an existing iron pipe at a corner of the property now or formerly owned by Heartland Raleigh Apex U.S. 1 Limited Partnership (Book 4454, Page 666, Wake County Registry ["WCR"]), said pipe being located at NC Grid Coordinates: N=707,936.09; E2,048,195.68, and also being located South 31° 57' 19" West a distance of 2,292.37 feet (Grid) from NCGS Monument "TANK" (N=709,881.08; E2,049,408.93); from said POINT OF BEGINNING, running thence along and with the western line of the aforesaid Heartland Raleigh property the following courses and distances:

- South 02° 41' 34" West a distance of 537.74 feet to an existing iron pipe;
- South 02° 41' 34" West a distance of 100.28 feet to an existing iron pipe;
- South 02° 41' 34" West a distance of 2.08 feet to an existing iron pipe;
- South 02° 39' 56" West a distance of 37.18 feet to an existing iron pipe in the northern right-of-way of Technology Drive;

running thence along and with the northern right-of-way of Technology Drive the following courses and distances:

- along and with the arc of a curve to the left having a radius of 411.97 feet (Chord Bearing: South 60° 59' 56" West; Chord Distance: 224.57 feet) a distance of 227.45 feet to an existing iron pipe;
- South 45° 37' 55" West a distance of 288.89 feet to an existing iron pipe;
- South 44° 59' 17" West a distance of 549.68 feet to an existing iron pipe;
- South 44° 59' 17" West a distance of 70.66 feet to an existing iron pipe;
- along and with the arc of a curve to the right having a radius of 351.97 feet (Chord Bearing: South 57° 36' 33" West; Chord Distance: 151.96 feet) a distance of 153.17 feet to an existing iron pipe;
- along and with the arc of a curve to the right having a radius of 351.97 feet (Chord Bearing: South 79° 30' 30" West; Chord Distance: 115.27 feet) a distance of 115.79 feet to an existing iron pipe;
- South 88° 51' 29" West a distance of 164.77 feet to a point in the eastern line of property

now or formerly owned by Data General (Book 2791, Page 428, WCR);

leaving the northern right-of-way of Technology Drive and running thence along and with the eastern line of the aforesaid Data General property, North 02° 16' 29" East a distance of 1,200.00 feet to an existing iron pipe; continuing with the eastern line of the Data General property and running thence North 02° 17' 20" East a distance of 416.31 feet to an existing iron pipe in the southern line of the aforesaid Heartland Raleigh property; running thence along and with the southern line of the Heartland Raleigh property, South 86° 16' 48" East a distance of 1,218.14 feet to the POINT AND PLACE OF BEGINNING, containing 34.0763 acres, more or less, and being all of Tract 4 north of the right-of-way of Technology Drive, as shown on that certain survey entitled "Recombination And Minor Subdivision of Technology Drive Property For Thomas H. Byrd, III", dated December 11, 1996, and prepared by Niall W. Gillespie, R.L.S. (No. L-2629) (File Name: BYRDTOPO), to which survey reference is hereby made for a more particular description, and being the same property conveyed to Cor S. Bregman by deed recorded in Book 7409, Page 255, Wake County Registry, and being the same property conveyed to Cornelius S. Bregman and Kandes K. Bregman, as Trustees of the Cornelius and Kandes Bregman Trust, under Agreement dated September 20, 1999 by deed recorded in Book 10856, Page 2786, Wake County Registry, LESS AND EXCEPT (i) the property conveyed to Thomas H. Byrd, IV, and wife Lisa W. Byrd, by deed recorded in Book 10129, Page 491, Wake County Registry, and (ii) the property conveyed to the Department of Transportation by deed recorded in Book 8128, Page 153, Wake County Registry.

Tracts 14 - 15 (EMC):

Being all those certain tracts or parcels of land containing approximately 47.419 acres and identified as portions of parcel identification numbers 0740672147 (containing approximately 46.61 acres) and 0740570471 (containing approximately 77.66 acres), and as generally shown as Tract 2 on the map attached hereto as Schedule 1.

Tract 16 (Whitehouse):

Being all that certain tract or parcel of land containing approximately 27.47 acres and identified as parcel identification number 0740287376 and being the same property conveyed to Brenda P. Whitehouse, individually, a 55% undivided interest, and Brenda P. Whitehouse as Trustee of the Irene F. Prince Family Trust dated February 19, 2004, a 45% undivided interest, by deed recorded in Book 10680, Page 477, Wake County Registry.

Tract 17 (F. Prince):

Being all that certain tract or parcel of land containing approximately 75.63 acres and identified as parcel identification number 0740191376 and being the same property conveyed to F.D. Prince, Sr., sole Trustee, or his successors in trust, under the Frank Dixon Prince, Sr. Living Trust, dated October 20, 1988, and any amendments thereto, by deed recorded in Book 8291, Page 540, Wake County Registry.

Tract 18 (F. Prince):

Being all that certain tract or parcel of land containing approximately 21.36 acres and identified as parcel identification number 0730996270 and being the same property conveyed to F.D. Prince, Sr., sole Trustee, or his successors in trust, under the Frank Dixon Prince, Sr. Living Trust, dated October 20, 1988, and any amendments thereto, by deed recorded in Book 8291, Page 540, Wake County Registry.

Tract 19 (B. Prince):

Being all that certain tract or parcel of land containing approximately 32.06 acres and identified as parcel identification number 0741207566 and being the same property conveyed to William Ira Prince, III, by deed recorded in Book 2673, Page 652, Wake County Registry.

Tract 20 (J. Prince):

Being all that certain tract or parcel of land containing approximately 1.80 acres and identified as parcel identification number 0740293940 and being the same property conveyed to William I. Prince and Jean P. Prince, by deed recorded in Book 6217, Page 146, Wake County Registry.

Tracts 21-38 (Stephens):

Being all of those certain tracts or parcels of land identified as parcel identification numbers 0740886966, 0740991702, 0740992565, 0740991337, 0740991237, 0740990140, 0740980647, 0740982309, 0740982534, 0740982635, 0740982769, 0740982866, 0740982964, 0740982929, 0740992024, 0740992069, 0740992169 and 0740982764.

Tract 39 (Tew):

Being all that certain tract or parcel of land containing approximately 1.84 acres and identified as parcel identification number 0741203157 and being the same property conveyed to Kim Prince Tew, and husband, David Wayne Tew, by deed recorded in Book 10633, Page 1741, Wake County Registry.

Tract 40 (Huang):

Being all that certain tract or parcel of land containing approximately 13.33 acres and identified as parcel identification number 0740180091 and being the same property conveyed to Ruey Shiue Huang, Co-Trustee, and Edward K. Huang, Co-Trustee, of The Huang Family Trust, dated September 30, 2005, by deed recorded in Book 10656, Page 33, Wake County Registry.

Sustainable Development Plan

for

VERIDEA

A Sustainable Mixed-Use Community
Apex, North Carolina

10 MAY 2011

Responsible Person:

Lookout Ventures, Inc.
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SUSTAINABLE DEVELOPMENT PLAN

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DEVELOPED BY

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ARTICLE 1.0 DEFINITIONS OF CAPITALIZED TERMS USED IN THE SUSTAINABLE DEVELOPMENT (SD) PLAN

A-Grid: cumulatively, those Thoroughfares that by virtue of their pedestrian-supportive qualities, and their importance to pedestrian connectivity, are part of multi-modal transportation network that is vehicle tolerant and is linked to the contextual nature of the place. *See B-Grid.*

A-Grid Zones: areas of the Concept Map where A-Grids are required.

Accessory Structures: structures or buildings incidental to and appropriate to support a Function or use (i.e., ticket booths and storage for outdoor amphitheaters, and dugouts and storage for baseball and softball.)

Accessory Unit or Building: a dwelling not greater than 800 square feet sharing ownership and shared or separate utility connections with a Principal Building. *See Table 10 and Table 17.* (Syn: ancillary unit)

Advanced Materials: a broad technology category based on a rapidly evolving area of science, with applications ranging from aircraft to computer chips. Advanced structural materials can make products strong, lighter, and more effective as well as enable the development of totally new products. The materials can increasingly be designed and tailored to specific applications. A material is said to be "advanced" if it is a new material for the application. *See Table 12.*

Agricultural Plot: a parcel of land used for small-scale agricultural purposes such as the raising of agricultural products or poultry. *See Table 12 and Table 19.*

Alleé: a regularly spaced and aligned row or rows of trees usually planted along a Thoroughfare or Path.

Anticipatory Design: a development approach intended to predict and facilitate the use of innovative technology and other best development practices as they evolve and become practically and economically feasible over time.

Arcade: a Private Frontage conventional for Retail use wherein the Facade is a colonnade supporting habitable space that overlaps the Sidewalk, while the Facade at Sidewalk level remains at the Frontage Line.

Avenue ("**AV**"): a Thoroughfare designed for high vehicular capacity and low to moderate speed, acting as a short distance connector between Village Centers, and usually equipped with a landscaped median.

B-Grid: cumulatively, those Thoroughfares that by virtue of their use or location are vehicle supportive and pedestrian tolerant. *See A-Grid.*

B-Grid Zones: areas of the Concept Map where B-Grids are permitted.

Backbuilding: a single-Story structure connecting a Principal Building to an Outbuilding. *See Table 17.*

Bed and Breakfast: an owner or manager controlled Lodging type, permitted to serve breakfast in the mornings to guests in the Neighborhood General (NG) zone and at all times in other Sustainable Zones.

Bicycle Lane ("**BL**"): a dedicated lane for cycling within a moderate-speed vehicular Thoroughfare.

Bicycle Route ("**BR**"): a Thoroughfare suitable for the shared use of bicycles and automobiles moving at low speeds. These routes are signed as "bike route."

Bicycle Trail ("**BT**"): a bicycle and pedestrian way running independently of a vehicular Thoroughfare.

Biotechnology: the science of using living things and components of living things to produce goods and services. It involves manipulating and modifying organisms, often at the molecular level, to create new and practical applications for agriculture, medicine and industry. *See Table 12.*

Block: the aggregate of private Lots, Passages, Rear Alleys and Rear Lanes, circumscribed by Thoroughfares.

Boulevard ("**BV**"): a Thoroughfare designed for high vehicular capacity and moderate speed, traversing an urbanized area. Boulevards are usually equipped with Slip Streets buffering Sidewalks and buildings.

By Right: characterizing a proposal or component of a proposal for the Development that is allowed by the SD Plan.

Civic Building: a building primarily dedicated to public functions such as arts, culture, education, recreation, government, transit, and parking, or for other public purposes. Civic Buildings are primarily operated by public or not-for-profit entities.

Civic Space: land containing a Civic Building and/or an outdoor area dedicated for public use including Parks but not including street rights of way. Civic Space types are defined by the combination of certain physical constants including the relationships among their intended use, their size, their landscaping and their enfronting buildings. *See Table 13.*

Civic Use: Open Space that is designated for Civic Buildings and Civic Space and Public Space.

Commercial: the term collectively defining workplace, Office, Retail, and Lodging Functions.

Common Destination: an area of focused community activity. It may include, without limitation, one or more of the following: a Civic Space, a Civic Building, a Commercial center, or a transit station or stop, and may act as the social center of a neighborhood.

Community Garden: a grouping of garden plots available for small scale cultivation, generally to the residents of apartments and other dwelling types without private gardens, permitting individual storage sheds, and providing a locus of recreation and sociability greater than that of a private yard, thus being a Common Destination.

Concept Map: *See* Veridea **Sustainable Development Concept Map**.

Concessions: a place where food, drinks and incidental retail items are sold or rented.

Conference Center: a facility that is constructed for and devoted to meetings and meeting space. *See Table 12.*

Configuration: the form of a building, based on its massing, Private Frontage, and height or the geographic characteristics of an area of land.

Convention Center: a Facility designed to accommodate multiple groups or large groups and consisting of exhibit halls, meeting rooms, ballrooms or banquet space but not sleeping accommodations. *See Table 12.*

Corridor: a lineal geographic system incorporating transportation and/or Greenway trajectories.

Curb: the edge of the vehicular pavement that may be raised or flush to a Swale. It usually incorporates the drainage system. *See Table 4A and Table 4B.*

Density: the amount of development measured on the basis of a Gross Acre of land area expressed in the number of Dwelling Units Per Acre ("DUA") for residential or Floor Area Ratio ("FAR") for non-residential.

Design Speed: the velocity at which a Thoroughfare tends to be driven without the constraints of signage or enforcement. There are four ranges of speed: Very Low: (below 20 MPH); Low: (20-25 MPH); Moderate: (25-35 MPH); High: (above 35 MPH). Lane width is determined by desired Design Speed. *See Table 3A.*

Design Standards: all of the provisions of the SD Plan, other than authorized Density, related to the development of Veridea, including but not limited to standards, designs, criteria, illustrations and other elements and materials of both a descriptive and proscriptive nature.

Developable Areas: lands other than those in the OS Open Space Zone.

Development: refers to Veridea and the land encompassed by the Veridea Sustainable Development Plan as a whole.

Disposition: the placement of a building on its Lot. *See Table 9 and Table 17.*

Drive ("**DR**"): a Thoroughfare along the boundary between an urbanized and a natural condition, usually along a waterfront or Park. One side has the urban character of a Thoroughfare, with Sidewalk and building, while the other has the qualities of a Road or parkway, with naturalistic planting and rural details.

Dwelling Units Per Acre ("**DUA**"): the number of dwelling units per Gross Acre.

Driveway: a vehicular lane within a Lot, often leading to a garage. *See Article 5.8 and Table 3B.f.*

Effective Parking: the amount of parking required for Mixed Use after adjustment by the Shared Parking Factor. *See Table 11.*

Effective Turning Radius: the measurement of the inside Turning Radius taking parked cars into account. *See Table 17.*

Elevation: an exterior wall of a building not along a Frontage Line. *See Table 17.* See: **Facade.**

Encroach: to break the plane of a vertical or horizontal regulatory limit with a structural element so that it extends into a Setback, into an easement, into the Public Frontage, or above a height limit.

Encroachment: any structural element that breaks the plane of a vertical or horizontal regulatory limit, extending into a Setback, into an easement, into the Public Frontage, or above a height limit.

Environmental Enhancement Plan: additional Sustainability Standards related to environmental enhancement required to be submitted to the Town Council for approval in accordance with UDO 2.3.16 F) 3) b).

Existing Communication Towers: towers that are currently in place within Veridea, including any and all guy wires, anchors, supporting cables, tower assembly, and ancillary buildings.

Expression Line: a line prescribed at a certain level of a building for the major part of the width of a Facade, expressed by a variation in material or by a limited projection such as a molding or balcony. *See Table 8.* (Syn: transition line.)

Facade: the exterior wall of a building that is set along a Frontage Line. *See* **Elevation.**

Farm: an active, usually commercial, agricultural operation, such as the raising of agricultural products, livestock, poultry and dairying at a scale requiring industrial sized machinery and farm buildings, consistent with the requirements and limitations of the UDO. *See Table 12 and Table 19.*

Floor Area Ratio ("**FAR**"): the ratio of total building floor area per Gross Acre.

Forecourt: a Private Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back. *See Table 7.*

Frontage: the area between a building Facade and the vehicular lanes, inclusive of its built and planted components. Frontage is divided into **Private Frontage** and **Public Frontage.** *See Table 4A and Table 7.*

Frontage Line: a Lot Line bordering a Public Frontage. Facades facing

Frontage Lines define the public realm and are therefore more regulated than the Elevations facing other Lot Lines. *See Table 17.*

Function: the use or uses accommodated by a building and its Lot, categorized as *Restricted, Limited,* or *Open*, according to the intensity of the use. *See Table 10 and Table 12.*

Gallery: a Private Frontage conventional for Retail use wherein the Facade is aligned close to the Frontage Line with an attached cantilevered shed or lightweight colonnade overlapping the Sidewalk. *See Table 7.*

Goal(s): the desired result of Veridea's effort to achieve sustainability.

Green: a Civic Space type for unstructured recreation, spatially defined by landscaping rather than building Frontages. *See Table 13.*

Green Roof: a building roof partially or completely covered with vegetation and soil, or some other living medium, over a waterproofing membrane.

Green Technology: a continuously evolving group of methods and materials, including—but not limited to—environmentally-sound techniques for: generating energy, energy efficiency, chemistry, nanotechnology and construction. *See Table 12.*

Greenway: a Corridor in largely natural conditions, which shall include trails for bicycles or pedestrians.

Gross Acre: an acre of land within the Veridea Sustainable Development District used for the purpose of Density calculation.

Guiding Principles: the Principles used to develop Veridea.

High Performance Computing: the use of supercomputers and computer clusters to solve advanced computation problems. *See Table 12.*

Highway ("**HW**"): a rural and suburban Thoroughfare of high vehicular speed and capacity. This type is allocated to the more rural Sustainable Zones (OS and NG).

Home Occupation: non-Retail Commercial enterprises within or closely associated with a dwelling.

Impermeable Surface: surfaces constructed using materials that allow no infiltration of water into the soil. Impermeable surfaces include, but are not limited to, public and private Thoroughfares, sidewalks, driveways, rooftops, parking lots and patios constructed with asphalt, concrete, compacted aggregate base course or other impervious materials. The surface area of bodies of water (natural or man-made) and wooden decks shall be considered permeable and shall not be included in the calculation of built-upon area. Green Roofs, permeable pavements, and other surfaces constructed with uniformly graded gravel, porous materials or pervious materials and designed in accordance with the NC Division of Water Quality Stormwater Best Management Practices Manual to accommodate the infiltration of water shall not be considered impermeable surfaces and shall not be included in the

calculation of the built-upon area.

Independent Living: a Project, or a portion of a Project, consisting of residences of any type or various types primarily accommodating age targeted residents maintaining an independent lifestyle.

Industrial: the term collectively defining Manufacturing, warehousing and storage uses.

Information Technology: the application of computer, communications and software technology to the management, processing and dissemination of information. *See Table 12.*

Internal Trip Capture: a concept used in transportation modeling to define an automobile trip between different land uses within Veridea that would have required an automobile trip external to the site.

Layer: a range of depth of a Lot, measured from the Frontage Line, within which certain elements are permitted. *See Table 17.*

Lightwell: a Private Frontage type that is a below-grade entrance or recess designed to allow light into basements. *See Table 7.* (Syn: light court.)

Liner Building: a building specifically designed to mask a blank building wall, a service area, a parking lot, or a Parking Structure from a Frontage.

Live-Work: a Mixed Use unit consisting of a Commercial and Residential Function. *See Table 10.*

Lodging: premises available for daily and weekly renting of bedrooms. *See Table 10 and Table 12.*

Lot: a parcel of land accommodating a building or buildings of unified design. The size of a Lot is controlled by its width in order to determine the grain (i.e., fine grain, as characterized by a tight-knit Thoroughfare grid, or coarse grain, as characterized by a loose-knit street grid) of the urban fabric.

Lot Line: the boundary that legally and geometrically demarcates a Lot.

Lot Width: the length of the Principal Frontage Line of a Lot.

Manufacturing: all areas of manufacturing, including design, control, fabrication, and assembly for uses where activities are conducted and confined within a building or structure including, but are not limited to: electronics, computers/IT, instrumentation, industrial equipment, medical, pharmaceutical, telecom, aerospace, defense, government, appliances, food, beverage and consumer products.

Medical Devices: products used for medical purposes for patients, in diagnosis, therapy or surgery. *See Table 12.*

Mixed Use: multiple Functions within the same building through vertical integration or adjacency, or in multiple buildings by adjacency.

Mixed Use Block: See Mixed Use and Block. *See Table 12.*

Modular Construction: single-family, multi-family or mixed use building constructed on-site and composed of components substantially assembled in a manufacturing plant and transported to the building site for final assembly that complies with the requirements of the North Carolina State Building Code.

Nanotechnology: is an advanced technology involving the fabrication and use of devices so small that the convenient unit of measurement is the nanometer (one thousand-millionth of a meter); or, is the art of manipulating and exploiting the properties of matter at a molecular level. *See Table 12.*

Natatorium: a building containing a swimming pool. *See Table 12.*

NCDENR: The North Carolina Department of the Environment and Natural Resources, or any successor executive agency or agencies having the powers and authority of such department.

Neighborhood General: A Sustainable Zone. *See* Table 1.

Neighborhood Mixed-Use: A Sustainable Zone. *See* Table 1.

Non-residential Uses: uses and building functions other than residential. Vertically integrated residential and Non-residential uses will be considered non-residential for the purposes of the SD Plan and the UDO. *See Article 4.2.2 and Table 12.*

Office: premises available for the transaction of general business, lab and research uses but excluding Retail uses. *See Table 10.*

Open Space ("**OS**"): A Sustainable Zone. *See* Table 1.

Outbuilding: an Accessory Building, usually located toward the rear of the same Lot as a Principal Building, and sometimes connected to the Principal Building by a Backbuilding. *See Table 17.*

Park: a Civic Space type or type of Open Space used for active and/or passive recreation purposes or natural preserve available for unstructured recreation, including all examples in Table 13.

Parking Garage (deck): See Parking Structure.

Parking Management Plan: a plan setting forth various policies and programs intended to optimize the efficient use of parking resources.

Parking Structure: a building containing one or more Stories of parking at, above and/or below grade. A Parking Structure may be stand alone or may be connected to or integrated with other uses. *See Table 12.*

Passage ("**PS**"): a pedestrian connector, open or roofed, that passes between buildings to provide shortcuts through long Blocks and connect rear parking areas to Frontages.

Path ("**PT**"): a pedestrian and/or bicycle way traversing a Park or rural area, with landscape matching the contiguous Neighborhood General (NG) Zone, ideally connecting directly with the urban sidewalk network.

Pattern Book(s): a book or books of text, diagrams and illustrations setting forth the principles of design for Veridea or some portion thereof in order to provide consistencies in characteristic form, massing, composition, style, method, materials, lighting and signage while simultaneously allowing for architectural and aesthetic diversity.

Planter: the element of the Public Frontage, which accommodates street trees and other vegetation, whether continuous or individual.

Plaza: a Civic Space type designed for Civic purposes and Commercial activities in the more urban Sustainable Zones, generally paved and spatially defined by building Frontages.

Power Facility: A facility for the generation of electric or thermal power. *See Table 12.*

Principal Building: the main building on a Lot, usually located toward the Frontage. *See Table 17.*

Principal Entrance: the main point of access for pedestrians into a building.

Principal Frontage: on corner Lots, the Private Frontage designated to bear the address and Principal Entrance to the building, and the measure of minimum Lot width. *See* **Frontage.**

Principle(s): fundamental positions that serve as the foundation for the creation of Veridea.

Private Frontage: the privately held Layer between the Frontage Line and the Principal Building Facade. *See Table 7 and Table 17.*

Project: individual developments within the Veridea Sustainable Development District to which the Sustainable Development Plan applies.

Public Frontage: the area between the Curb of the vehicular lanes and the Frontage Line, possibly containing utility easements, for walkways. *See Table 4A and Table 4B.*

Public Parking Facility: a parking facility that may include decks, structures or lots that may be publicly or privately owned and contain shared spaces available for public use that are not allocated to other residential or non-residential uses within Veridea.

Public School: A school operated by the Wake County Public Schools System, a charter school, or other type of school sanctioned by the State of North Carolina for public instruction and wholly or partially funded by the State and/or Wake County.

Public Space: land accessible to the general public through dedication or easement, but not including street rights of way.

Rear Alley ("**RA**"): a vehicular way, either public or private, located to the rear of Lots providing access to service areas, parking, and Outbuildings and possibly containing utility easements. *See Table 4A and Table 4C.*

Rear Lane ("**RL**"): a vehicular way, either public or private, located to the rear of Lots providing access to service areas, parking, and Outbuildings and containing utility easements. *See Table 4A and Table 4C.*

Rearyard: a building that occupies the full Frontage Line, leaving the rear of the Lot as the sole yard. *See Table 9.* (Var: Townhouse, Apartment House)

Regional Public Transit System: a transit system operated by a public agency that serves a geographic area that extends beyond the jurisdictional limits of the Town of Apex that includes, as one of its elements, a fixed guideway or comparable transit technology.

Renewable Energy Facility: a facility that either: i) generates thermal and/or electric power primarily by the use of a Renewable Energy Resource; ii) uses heat derived primarily from a Renewable Energy Resource to produce electricity or useful, measurable thermal or mechanical energy; iii) is a solar thermal energy facility; iv) specifically allows for co-firing with non-renewable energy resources as long as non-renewable energy resources are not the primary energy source; or v) provides energy storage capacity.

Renewable Energy Resource: a solar electric, solar thermal, wind, hydropower, geothermal, or ocean current or wave energy resource; a biomass resource, including agricultural waste, animal waste, wood waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, energy crops, or landfill methane; waste heat derived from a renewable energy resource and used to produce electricity or useful, measurable thermal energy; or hydrogen derived from a renewable energy resource. Renewable Energy Resource does not include peat, a fossil fuel, or nuclear energy resource.

Responsible Person: that person identified in the SD Plan and appointed pursuant to UDO 2.3.16 D), or his successors or assigns, to make certain decisions with respect to the SD Plan and the zoning of Veridea. The Responsible Person is sometimes referred to in this SD Plan as the "Developer."

Retail: the sale, (other than wholesale), rental or repair of goods, merchandise and services and food and beverage service and sales.

Retail Kiosk: a place where merchandise and food and drink may be sold or rented. *See Table 12.*

Retail Storage within Retail Spaces: stock rooms and storage areas located within retail spaces. *See Table 12.*

Road ("**RD**"): a local, rural and suburban Thoroughfare of low-to-moderate vehicular speed and capacity. This type is allocated to the more rural, less dense Sustainable Zones (OS-NG). *See Table 3A and Table 4C.*

School Authority: The Wake County Public Schools System or other entity having state-sanctioned authority for public education.

School Dormitory: an educational building or a group of rooms in a building

used for institutional living and sleeping purposes for students. *See Table 12.*

Secondary Frontage: on corner Lots, the Private Frontage that is not the Principal Frontage. As it affects the public realm, its First Layer is regulated. *See Table 17.*

Setback: the area of a Lot measured from the Lot line to a building Facade or Elevation that is maintained clear of permanent structures, with the exception of Encroachments listed in *Article 5.5. See Table 14.g.* (Var: build-to-line.)

Shared Parking Factor: an accounting for parking spaces that are available to more than one Function. *See Table 11.*

Shopfront: a Private Frontage conventional for Retail use, with substantial glazing and sometimes an awning, wherein the Facade is aligned close to the Frontage Line with the building entrance at Sidewalk grade. *See Table 7.*

Shopping Center: a building or multiple buildings consisting of a complex of shops, with interconnecting walkways along with associated parking. *See Table 12.*

Slip Street: an outer vehicular lane or lanes of a Thoroughfare, designed for slow speeds while inner lanes carry higher speed traffic, and that may be separated from them by a planted median. (Syn: access lane, service lane)

Smart Power: the system of generation, transmission, distribution and use of energy through means that both increase efficiency throughout the system and reduce the environmental impact of the cycle of production, delivery and use. The referenced means include development, manufacture and deployment of information technology, engineering, manufacturing, construction techniques, building science, controls, and HVAC and lighting systems. *See Table 12.*

Square: a Civic Space type designed for unstructured recreation and Civic purposes, spatially defined by building Frontages and consisting of Paths, lawns and trees, formally disposed. S*ee Table 13.*

Stoop: a Private Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk for privacy, with an exterior stair and landing at the entrance. *See Table 7.*

Story: a habitable level within a building, excluding an attic, mezzanine, or raised basement. *See Table 8.* Regardless of the number of stories, maximum height of a multi-story building shall not exceed 400 feet.

Strategy: general approach to achieve desired goals for Veridea.

Street ("**ST**"): a local urban Thoroughfare of low speed and capacity. *See Table 3B and Table 4B*.

Streetscreen: a freestanding wall or a free standing or attached trellis system for supporting plants along the Frontage Line, or coplanar with the Facade. It may mask a parking lot from the Thoroughfare, provide privacy to a side yard, and/or strengthen the spatial definition of the public realm. (Syn:

streetwall.) *See Article 5.5.5f.*

Sustainability: the process and ultimately the benefits of implementing a sustainable development program.

Sustainable: as used within the context of "sustainable development," and as derived from the 1987 Brundtland report: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". In practice, to develop sustainably is to integrate the economic, social and environmental dimensions to create human habitats that contribute to a quality life now, and in the future based upon an evolution of society, knowledge and technology.

Sustainable Zone: one of several areas described in the SD Plan and shown on the Sustainable Development Concept Map (and thereafter more clearly delineated in subdivision and site plans) analogous to Zoning Districts established under the UDO. Allowable land uses and development regulations applicable to such zones shall be as provided in the SD Plan.

Swale: a low or slightly depressed natural area for drainage.

Thoroughfare: a way for use, including a street, by vehicular and pedestrian traffic and to provide access to Lots and Open Space, consisting of vehicular lanes and the Public Frontage. *See Table 3A, Table 3B, Table 4C and Table 17a.*

Town Standards: any statement, codification or other document setting forth standards, designs, directives or plans for the construction of roads, utilities, parks, public facilities or infrastructure of any nature adopted by the Town of Apex and regulating the development of property and the construction of improvements and infrastructure within the jurisdiction of the Town. Town Standards shall include, but shall not be limited to, the Town of Apex Code of Ordinances, the Apex Unified Development Ordinance, Apex Comprehensive Plan, Apex Watershed Overlay District, Apex 2025 Land Use Plan, Apex Transportation Plans, NC 540 Land Use Plan, the Apex Standard Specifications and Standard Details, Wastewater Master Plan, Water Distribution Master Plan, and the Apex Parks and Recreation Master Plan.

Townhouse: a building that occupies the full Frontage Line, leaving the rear of the Lot as the sole yard. *See* **Rearyard Building.**

Transit Oriented Development ("**TOD**"): those areas within an average 1/2 mile radius or 2640 feet of a transit stop (bus or rail) present or proposed as a Common Destination, as set forth in *Article 5.7.2d.*

Transportation Demand Management ("**TDM**"): is a general term for strategies that result in more efficient use of transportation resources. The strategies include developing comprehensive plans for bus and rail transit, bike/transit integration, car sharing, flex cars, and park and ride resources.

Turning Radius: the curved edge of a Thoroughfare at an intersection, measured at the inside edge of the vehicular tracking. The smaller the Turning

Radius, the shorter the pedestrian crossing distance and the more slowly the vehicle is forced to make the turn. *See Table 3B and Table 17.*

Unified Development Ordinance ("**UDO**"): The Apex Unified Development Ordinance.

Urban Farm: agricultural land used for the production of fruits and vegetables, livestock, poultry or other agricultural products, or some combination thereof, consistent with the requirements and limitations of the UDO**.** *See Table 12 and Table 19.*

Urbanism: collective term for the condition of a compact, Mixed Use settlement, including the physical form of its development and its environmental, functional, economic, and socio-cultural aspects.

Urban Core ("**UC**"): A Sustainable Zone. *See Table 1.*

Vegetable Garden: private agricultural land dedicated to food production to be locally consumed, restricted to back yards. *See Table 12 and Table 19.*

Veridea Sustainable Development Concept Map: the map or set of maps that depicts a concept for the development of a community and the conceptual location of Sustainable Zones and Thoroughfares within it. *See Table 2.*

Veridea Sustainable Development District: the zoning district as depicted by the Veridea Sustainable Development Concept Map and developed in accordance with this SD Plan.

Vertical Farm: agricultural production in buildings not primarily within yards, but as a part of or incidental to inhabited buildings, or as a stand alone feature, utilizing container gardens or boxes, which may be associated with windows, balconies and terraces, or roof gardens.

Village Center ("**VC**"): A Sustainable Zone. *See Table 1.*

Yield: characterizing a Thoroughfare that has two-way traffic but only one effective travel lane because of parked cars, necessitating slow movement and driver negotiation. Also, characterizing parking on such a Thoroughfare.

ARTICLE 2.0 THE DISTRICT

2.1 INTRODUCTION

This Sustainable Development Plan (the "SD Plan") is submitted by the Responsible Person and approved by the Town Council pursuant to UDO 2.3.16 of the Town of Apex (the "Town" or "Apex") with respect to the proposed rezoning of property within the Town for the Sustainable, mixed-use development to be known as "Veridea." The SD Plan and its standards and applicable provisions of the UDO and other Town Ordinances and Town Standards shall authorize, regulate, and control the development of land within Veridea and shall establish the design and form for such development. To the extent that the SD Plan varies from the provisions of the UDO, other Town Ordinances, Town Standards or any document or policy referenced or incorporated therein as they exist on the date of approval of the SD Plan and as they may be amended from time to time by the Town Council, the SD Plan shall control.

2.2 CHANGE OF THE RESPONSIBLE PERSON

Pursuant to UDO 2.3.16 D), the Petition to Amend the Official Zoning District Map requesting the rezoning of Veridea to Sustainable Development Conditional Zoning District SD-CZ identified and appointed Lookout Ventures, Inc. as the Responsible Person for the district. Any successor corporation to Lookout Ventures, Inc. by way of merger or other reorganization shall become Responsible Person for the district, and written notice of such succession shall be provided to the Planning Director. At any time following the rezoning of Veridea as requested, Lookout Ventures, Inc. (or its successor corporation) may appoint another person as the Responsible Person for the district by providing notice of such change in writing to the Planning Director of the Town. In the event of the death, incapacity or dissolution of the Responsible Person without its appointment of a new Responsible Person, a new Responsible Person shall be appointed by the owners of fifty-one percent (51%) of the land comprising Veridea at the time of such appointment and written notice of such appointment shall be provided to the Planning Director.

2.3 AUTHORIZED DEVELOPMENT

No development shall occur within Veridea, or any parcel added to Veridea, except as is specifically authorized by this SD Plan with reference, when appropriate, to the UDO.

2.4 MASTER PROPERTY OWNERS' ASSOCIATION

Prior to the Developer's conveyance of any of the Properties within Veridea by the Developer or its assigns, a Master Property Owners' Association ("MPOA") will be established. Membership in the MPOA will be mandatory for any property owner. The MPOA will be funded by dues to be established in the Declaration or other duly recorded document. The MPOA will be responsible for the enforcement of recorded restrictive covenants and for the maintenance of certain common areas within Veridea, including private Thoroughfares. Subassociations of property owners may be established for individual development tracts within Veridea, which will be responsible for the maintenance of the common area within that specific tract, unless otherwise provided in documents relating to the respective subassociation. Should any subassociation fail to perform its maintenance obligations, the MPOA shall be responsible for such performance within a commercially reasonable timeframe. The Town will maintain all Thoroughfares and any other real property that is properly dedicated to and accepted by the Town.

2.5 DECLARATION OF RESTRICTIVE COVENANTS

Prior to the Developer's conveyance of any property within Veridea subsequent to its rezoning, the Developer shall record in the Wake County Registry with respect to the Development a Declaration of Restrictive Covenants (the "Declaration"), duly executed by the record owner or owners of each parcel included within the Development, stating that the Development is within the zoning jurisdiction of the Town of Apex and is zoned Sustainable Development Conditional Zoning ("SDCZ") District and that (i) the Development and the use of property therein are therefore subject to regulations applicable to the SDCZ District described in Section 2.3.16 of the UDO and other provisions of such Ordinance, a copy of which is available in the Planning Department of the Town of Apex (the "Planning Department") at the Apex Town Hall, 73 Hunter Street, Apex, North Carolina 27502; (ii) the Development and the use of land within the Development are also subject to the terms and provisions of a Sustainable Development Plan approved upon the rezoning of the Development to SDCZ District, a copy of which is available in the Planning Department; (iii) under applicable provisions of the UDO and the aforementioned SD Plan, the Developer, its successors and assigns, as Responsible Person, has the sole authority to make certain decisions with regard to property comprising the Development; and (iv) upon acceptance and recordation of any deed conveying property within Veridea, the grantee or grantees of such deed shall become a member of the Master Property Owners' Association for Veridea established pursuant to Section 2.4 of this Plan and any subassociation established pursuant to such section that relates to the property conveyed in the respective deed. The Declaration shall further provide that (i) each deed conveying land within Veridea recorded subsequent to the recordation of the Declaration shall state that the respective conveyance is subject to the Declaration, but that the failure to include such statement in a deed shall not affect the enforceability of the Declaration with respect to the property conveyed or invalidate the respective conveyance; and (ii) no rezoning petition shall be submitted or proposed with regard to the Development, or any portion thereof, without the written consent of the Developer.

ARTICLE 3.0 GENERAL SUSTAINABILITY STANDARDS AND FURTHER DEVELOPMENT APPROVALS

3.1 PURPOSE OF THE PLAN

3.1.1 The SD Plan has been adopted to facilitate the development of Veridea as a community of safe, healthy, resource efficient and transit-oriented mixed-use Projects planned and developed in accordance with Principles promoting Sustainability. Accordingly, Veridea will be developed in view of the following Guiding Principles:

a. Create economic value
b. Eliminate the concept of waste
c. Insist on a renewable future
d. Create delightful urban places
e. Integrate nature throughout the community

The Guiding Principles for Veridea have been developed in accordance with The Hannover Principles, Design for Sustainability, which was authored by William McDonough and Michael Braungart. The Hannover Principles are as follows:

1. **Insist on rights of humanity and nature to co-exist** in a healthy, supportive, diverse and Sustainable condition.

2. **Recognize interdependence**. The elements of human design interact with and depend upon the natural world, with broad and diverse implications at every scale. Expand design considerations to recognizing even distant effects.

3. **Respect relationships between spirit and matter**. Consider all aspects of human settlement including community, dwelling, industry and trade in terms of existing and evolving connections between spiritual and material consciousness.

4. **Accept responsibility for the consequences of design** decisions upon human well-being, the viability of natural systems and their right to co-exist.

5. **Create safe objects of long-term value**. Do not burden future generations with requirements for maintenance or vigilant administration of potential danger due to the careless creation of products, processes or standards.

6. **Eliminate the concept of waste**. Evaluate and optimize the full life-cycle of products and processes, to approach the state of natural systems, in which there is no waste.

7. **Rely on natural energy flows**. Human designs should, like the living world, derive their creative forces from perpetual solar income. Incorporate this energy efficiently and safely for responsible use.

8. **Understand the limitations of design**. No human creation lasts forever and design does not solve all problems. Those who create and plan should practice humility in the face of nature. Treat nature as a model and mentor, not as an inconvenience to be evaded or controlled.

9. **Seek constant improvement by the sharing of knowledge**. Encourage direct and open communication between colleagues, patrons, manufacturers and users to link long term Sustainable considerations with ethical responsibility, and re-establish the integral relationship between natural processes and human activity.

In addition, the Guiding Principles are grounded in the belief that they can only be achieved through a flexible development plan which recognizes the reality of the time in which elements of the plan are developed. The Guiding Principles will be pursued in an anticipatory manner, one which acknowledges that Veridea will be developed over a sustained period of time and according to evolving criteria that define accepted and attainable Sustainable development practices. The SD Plan establishes a flexible framework of development standards (collectively, the "Sustainability Standards") that, by its very nature, seeks to anticipate future trends and technologies and acknowledges that future technologies and practices are, by definition, evolutionary. Accordingly, an Anticipatory Design process shall be used in the planning and design of Veridea and in the design of specific Projects within Veridea.

3.1.2 In order to achieve these Guiding Principles, Veridea shall be developed as Sustainable Zones, as described in Table 1, in accordance with the SD Plan and the Sustainability Standards. In accordance with UDO 2.3.16 F) 2), Sustainability Standards include natural and cultural resource standards, transportation infrastructure standards, utility infrastructure standards, energy standards, community design standards, and building standards. Additional, modified or elective Sustainability Standards shall be adopted in accordance with UDO 2.3.16 F) 3). Sustainability Standards contemplated for Veridea shall include an Environmental Enhancement Plan and may include additional plans as follows:

Sustainability Standards	Authority	When Adopted
SD Plan	UDO 2.3.16	Rezoning
Environmental Enhancement Plan	UDO 2.3.16 F) 3) b)	Prior to first site plan or subdivision plan
Pattern Book	UDO 2.3.16 F) 3) a)	With first site plan
Transportation Demand Management Plan	UDO 2.3.16 F) 3) a)	With first site plan that deviates from UDO standards related to parking
Parking Management Plan	UDO 2.3.16 F) 3) a)	With first site plan that deviates from UDO standards related to parking

Additional Sustainability Standards	UDO 2.3.16 F) 3) a)	As appropriate, subsequent to rezoning
Elective Sustainability Standards	UDO 2.3.16 F) 3) c)	

Figure 1. Sustainability Standards in Veridea

3.1.3 In addition to the total authorized development authorized by this SD Plan, a minimum of 250 acres of land, in varying locations and varying scales and forms, shall be designated by the Responsible Person during the site plan and subdivision approval process as follows:

a. 100 acres shall be designated for Resource Conservation Area.
b. Sufficient acreage shall be designated to accommodate the recreation requirements specifically set forth in Article 3.4.2.2; and
c. 150 acres less the acreage sufficient to accommodate the recreation requirements of Article 3.4.2.2 shall be designated for Open Space, Public Space, and Civic Space. Civic Buildings dedicated to government, transit or parking and any portion of the respective lot not routinely accessible to the public shall not be included in the acreage designated pursuant to this subsection. Civic Buildings dedicated to arts, culture, education and social activity and any portion of the respective lot routinely accessible to the public shall be included in the acreage designated pursuant to this subsection. Any privately-owned or operated buildings located in an Open Space zone and any portion of the respective lot not routinely accessible to the public shall not be included in the acreage designated pursuant to this subsection.

3.2 SUSTAINABLE FRAMEWORK

3.2.1 The Veridea Sustainable Development District is utilized for Veridea to create a framework for compact and connected Sustainable Urbanism. In view of its scale and the Guiding Principles, the Veridea Sustainable Development District is distinguished from the other districts within the UDO and offers an additional lifestyle choice to Apex for current and future residents. Because technology and the laws and regulations affecting sustainability are evolutionary, the SD Plan recognizes the need to enable Anticipatory Design and to maintain flexibility in order to incorporate and adapt to future best practices.

3.2.2 In view of the Guiding Principles, the Goals of Veridea are intended to capture the spirit and intent of sustainability in order to achieve the following desired results:

a. Economic Value
    i. Create a model community of Sustainable design.

ii. Create a framework for the next generation version of the Research Triangle Park that is a vibrant, urban, mixed-use transit-oriented community.

b. Energy
   i. Pursue renewably sourced energy supplies.
   ii. Maximize energy efficiency.
   iii. Pursue energy opportunities presented by the evolving regulatory landscape and emerging renewable energy technologies.

c. Water
   i. Release to the ecosystem only water that is clean and healthy.
   ii. Treat water as a precious resource by conserving and reusing it to the maximum extent practicable.

d. Community
   i. Create a world class model of a safe, healthy, delightful, Sustainable mixed-use urban environment that enables the community to live, work and play.
   ii. Facilitate a mix of housing types, sizes and tenure options that allow all members of society to remain part of the community throughout the human life cycle.
   iii. Establish a full-service pedestrian-friendly transit-oriented community that respects and encourages wellness and safety.
   iv. Establish a community that respects the history of Apex and compliments and expands its existing community infrastructure.
   v. Set aside Open Space and Civic Space throughout the community.
   vi. Reduce, re-use and recycle construction and demolition materials whenever practicable.

3.3 DEVELOPMENT APPROVALS

3.3.1 Site Plans

a. The approval of site plans within the Development shall comply with the procedures and standards of UDO 2.3.6 except as modified in the SD Plan.

b. Within the Development, notwithstanding any provision of UDO 2.3.6 D) 2), only those individual site plans that propose 100,000 square feet or more of nonresidential floor area or 200 residential units or more shall be considered Major Site Plans and shall be processed and reviewed in accordance with UDO 2.3.6 D) 3). Notwithstanding UDO 2.3.6 D) 2) a), multiple site plan applications within any three year period for one property, or portions of the same property, or neighboring properties if owned by the same entity, shall be considered as individual site plans for the determination of the existence of a Major Site Plan and shall not be considered cumulatively for any purpose. All other site plans within the Development, shall be considered Minor Site Plans and shall be processed and reviewed in accordance with UDO 2.3.6 D) 1).

3.3.2 Subdivision Plans

The approval of subdivision plans shall comply with the procedures and standards of UDO 2.3.7 except as modified in the SD Plan. A minor Subdivision Plan, for the purposes of UDO 2.3.7 G), shall be defined as a division of a tract or parcel into fewer than 200 lots. In approving a major Subdivision Plan, the Town Council shall find that the area of the proposed subdivision will be adequately served by public fire and law enforcement personnel.

3.3.3 Written Statement from Responsible Person Required; Noncompliance

Any site plan or Subdivision Plan submitted to the Town for approval for a Project to be undertaken by a party other than the Responsible Person must be accompanied by a written statement from the Responsible Person indicating its approval of the Project. Such written statement shall also state the authorized development allocated to the Project (i.e., number of dwelling units and/or square feet of non-residential Retail, Office and/or Industrial Uses) as well as the development fee credits, if any, other credits, and/or liabilities and responsibilities assigned to or assumed by the Project.

Any event of non-compliance with any requirement of this SD Plan or the UDO that relates solely to a Project or Projects within Veridea shall not be attributed to Veridea as a whole, but rather shall be attributed only to that Project or Projects, such that any enforcement action taken by the Town shall be limited to the Project or Projects at issue.

In addition to any other remedy that may be available to the Town, if a violation of this SD Plan, Town Standards, Sustainability Standards applicable to Veridea or the UDO remains in existence with respect to a Project or Projects or a distinct area within Veridea after the Town complies with the procedures of UDO 11.5, the Town may withhold the issuing, approving or granting of grading permits, building permits, certificates of compliance or occupancy, site plans, subdivision plans or plats and other permits or approvals for the Project or Projects or distinct area in issue until the non-compliance is corrected and cured.

In addition to any other remedy that may be available to the Town, if a violation of this SD Plan, Town Standards, Sustainability Standards applicable to Veridea or the UDO which applies to Veridea as a whole remains in existence after the Town complies with the procedures of UDO 11.5, the Town may withhold the issuing, approving or granting of grading permits, site plans and subdivision plans or plats throughout Veridea until the non-compliance is corrected and cured.

3.3.4. Additional, Modified and Elective Sustainability Standards

All of the provisions of the SD Plan, including those related to development approvals, may be affected by any standards applicable to SD-CZ districts that may be adopted at any time or from time to time by the Town Council in accordance with UDO 2.3.16 F) 3). Upon the consent of the Responsible Person, any Sustainability Standards adopted or modified by the Town

Council in accordance with the provisions of UDO 2.3.16 F) 3) a), b) or c) shall apply to subsequent site plans and Subdivision Plans and be incorporated into the SD Plan. The Environmental Enhancement Plan shall be the sole required additional Sustainability Standard under this SD Plan and shall be adopted pursuant to UDO 2.3.16 F) 3) b).

3.3.5. Encroachment Agreements

Notwithstanding any other provision in this SD Plan, any encroachment into a Town of Apex right-of-way or easement requires an encroachment and maintenance agreement with the Town before such encroachment is made.

3.4 RESOURCE CONSERVATION – NATURAL AND CULTURAL RESOURCE STANDARDS

3.4.1 General

The natural and cultural resource standards set forth herein, as a component of the Sustainability Standards, provide certain community resources and conserve and protect natural and cultural resources and the quality of the water, land, and air within Veridea.

As set forth in Article 3.1.1 of the SD Plan, Veridea will be developed in view of the Guiding Principles over time according to evolving criteria that will define accepted and attainable sustainable development practices at the time of site plan or Subdivision Plan submission. As set forth in Article 3.1.2 and elsewhere within the SD Plan, Veridea shall include both Open Space, as an independent zone, and Developable Areas, generally identified as Sustainable Development Zones. Accordingly, Environmental and Natural Resource Protection Standards and Community Resource Standards shall vary as to those that apply within the Open Space zones, and those that apply within the Sustainable Development Zones. Further, due to the different levels of development within each Sustainable Development Zone, the Environmental and Natural Resource Protection Standards and Community Resource Standards shall vary with the level of development intensity within each zone. Also as set forth in Article 3.1.1 of the SD Plan, development standards are intended to be flexible in order to anticipate future trends and technologies, and yet acknowledge that future technologies and practices are unknown.

The provisions of Section 9 (d) of Session Law 2006-246, which provide a landward setback of 30 feet for built upon areas adjacent to certain surface waters, shall be applicable to Veridea except to the extent exceptions are granted by the Town Council in accordance with Section 11 (a) of such Session Law. Otherwise, UDO 6.1 shall apply until the Environmental Enhancement Plan is adopted by Town Council in accordance with UDO 2.3.16. F) 3) b).

3.4.2 Community Resource Standards

Veridea will achieve intensity of development within an environment of Sustainability.

3.4.2.1. Parks, Recreation and Open Space

All of the landscape that comprises Veridea will be purposefully designed to achieve a wide range of Goals to achieve Sustainability. The scale of Veridea's Parks will vary from small urban greens and squares, to active recreation areas with playfields, to natural preserve areas conducive to passive recreation. Within each Park, recreation, and open space site setting, appropriate human activity, from the passive to the most active, will be accommodated. Parks may be publicly or privately owned as determined at the time of site plan or Subdivision Plan approval, however only public parks will count toward recreation requirements. As Veridea is developed, land shall be dedicated for parks, recreation, and open space or fees in-lieu paid with respect thereto as contemplated by UDO 7.3.1 and 7.5.9 B). At any time, the Town Council and the Responsible Person may agree upon a plan or plans that deal with parks, recreation and open space for all or any portion of Veridea.

3.4.2.2. Specific Recreation Requirements

In accordance with the above and consistent with other requirements of the SD Plan, the Developer shall, at a minimum, dedicate land parcels to accommodate the following: i) four (4) lighted regulation softball fields in keeping with the standards of the American Softball Association (ASA) Men's Slow-Pitch Open Division; ii) six (6) lighted tennis courts in keeping with the standards of the United States Tennis Association (USTA); iii) a 22,500 square foot community center consistent with phase 1 of the existing community center at 53 Hunter Street, Apex, North Carolina; and iv) a dog park of at least one (1) acre. The Responsible Person shall have the discretion to disperse items i – iv and any part of items i or ii. No later than at the time 1000 residential units have received building permits, the Responsible Person shall submit to the Town Council for approval a Master Parks Plan depicting the location of the land parcels associated with items i, ii, iii and iv. The land parcels for items i, ii, iii, and iv shall be dedicated to the Town no later than at the time 2000 residential units have received building permits. Once the Master Parks Plan has been approved, any portion of the remaining obligation under Article 3.4.2.1. may be satisfied, at the election of the Responsible Person, by the payment of fees in lieu pursuant to UDO 7.3.1, which shall be utilized by the Town as soon as practicable for the foregoing construction of items i, ii, iii and iv.

The Responsible Person shall receive credits from the Town Council against fees in lieu payable under UDO 7.3.1 for the value of any historic or

cultural resource sites or facilities dedicated to and accepted by the Town and for amounts which it expends in developing and improving land for parks, recreation and open space pursuant to the recommendation of the Parks, Recreation and Cultural Resources Advisory Commission and approval by Town Council. Notwithstanding the foregoing sentence, any dedicated historic or cultural resource sites or facilities for which the Responsible Person receives credits against fees in lieu cannot be credited toward the RCA requirement set forth in Article 3.4.3 hereof.

3.4.2.3. Greenways

The Development will provide easements for Town of Apex greenways generally consistent with the current Parks and Recreation Master Plan. To the extent practicable, greenways will be constructed to Town Standards and located along stream corridors and within Open Space and easements. In cases where greenways generally follow public rights-of-way, greenways may be either constructed as a multi-use trail in lieu of a sidewalk, or when located within more urban areas, as pedestrian-oriented streetscapes containing both hardscape elements (including but not limited to sidewalks, decorative lighting, street furniture, and fountains) and street tree plantings which do not have to meet typical island widths or sizes. Greenways may be located within existing and future utility easements. Greenways may be publicly or privately owned as determined at the time of site plan or Subdivision Plan approval. Greenways may be dedicated to the Town as linear Parks, subject to the Town's approval.

3.4.2.4 Public Schools

The Development shall make available for purchase or lease by a School Authority three (3) Public School sites within Veridea, each having a minimum size of five (5) acres. Unless earlier purchased or leased by a School Authority, one (1) of such school sites shall be reserved by the Responsible Person upon the issuance of the 2,000th residential building permit within Veridea, and a similar reservation shall occur on the issuance of each of the 4,000th and 6,000th residential building permit within Veridea. Each area reserved should meet site design standards of a School Authority. Each such reservation shall exist for a period of ten (10) years, and during such period no permanent construction shall occur within the area reserved. The Public Schools constructed upon the areas so reserved shall be of a compact urban form and design appropriate for Veridea and meeting the standards of the State or the School Authority. There may be arrangements with the Town for the shared use of recreational facilities.

3.4.3 Resource Conservation – Environmental and Natural Resource Protection Standards

3.4.3.1 Resource Conservation Area ("RCA")

UDO 8.1, Resource Conservation, and other provisions of the UDO dealing with RCA not otherwise specifically dealt with in this SD Plan shall apply to the Development until the Environmental Enhancement Plan is adopted by Town Council in accordance with UDO 2.3.16.F) 3) b), except as follows:

a. UDO 8.1.2 A) shall apply to the Development as a whole as opposed to individual site plans or Subdivision Plans.

b. UDO 8.1.2 B) 2) f) shall not apply.

c. The maximum impermeable surface area shall be as listed in Table 14.

d. Notwithstanding UDO 8.1.3, Tree and Vegetation Conservation, the requirements for conservation of existing trees and vegetation and new landscaping requirements are set forth in Article 5.9 of the SD Plan.

e. Not including the land parcels to be dedicated to the Town pursuant to SD Plan 3.4.2.2, both: i) Open Space, excluding Civic Buildings and all associated parking, municipal parking lots, and parking associated with Open Space that exceeds the direct needs of such Open Space; and ii) recreation area provided in Public Space or Civic Space within the Development including, but not limited to, open space, pools, tennis courts, tot lots, ball fields, and village greens shall be allowed to be counted as partial credit toward the RCA requirement. The credit for such area shall be 50% of the area provided. (For example, 1 acre of area shall count as 0.5 acres of RCA) In order to qualify as RCA, the area must be located on a lot 0.5 acre or larger in size.

f. Notwithstanding UDO 8.1.2 A) 1) d), the provision of off-site RCA shall be provided at the same rate as the on-site RCA, and off-site RCA may be provided in lieu of on-site RCA.

3.4.3.2 Water

a. Stormwater Management

The Goals of Stormwater Management within Veridea are as follows:

i. Reducing pollutants to protect surface water bodies;
ii. Promoting recharge of ground water resources;
iii. Eliminating flooding within the Development and downstream;
iv. Enhancing safety and aesthetics for the public; and
v. Creating wildlife habitats and educational opportunities.

Specific stormwater management standards, technologies, devices and control structures for the Development shall work interdependently and holistically with the built and natural environment both on-site and off-site. The standards for Veridea's stormwater management shall be in

accordance with Town Standards. Further, to the extent practicable, low impact development ("LID") techniques such as bio-swales, vegetated channels, pervious pavement where appropriate, rainwater harvesting and "green" roofs to convey and treat runoff, may be used within the Development to the maximum extent practicable, based on the best available technology and research at the time of site plan and/or Subdivision Plan submission.

b. Water Conservation

The Goals of water conservation within Veridea are as follows:

i. Reducing per capita water use while retaining attractive landscapes;
ii. Protecting ground and surface water supplies from unsustainable depletion;
iii. Eliminating unnecessary waste in water use practices;
iv. Reducing wastewater treatment volume and associated municipal expenditures; and
v. Promoting the increased use of re-use water for irrigation.

Water conservation standards within the Development shall be in accordance with the Town of Apex Water Conservation Ordinance. Landscape plant materials shall be in accordance with NCDENR or North Carolina Cooperative Extension standards for drought tolerant, native species. Only re-use water, where practicably available, shall be used for landscape irrigation; however, where re-use water is not available, potable water use for landscape irrigation shall be used in accordance with the Town of Apex Water Conservation Ordinance.

c. Surface Water Enhancement

Encroachment on streams and associated riparian buffers will be unavoidable in some places in order to accomplish the Goals in light of the Guiding Principles. However, the Environmental Enhancement Plan, in accordance with 3.4.1 of the SD Plan, will be developed to provide for the protection and enhancement of the aquatic function of the surface water resources within the Development.

The Environmental Enhancement Plan will address surface water enhancement with the following objectives:

i. Maintaining water quality by capturing or controlling sediment, nutrients, and other pollutants to an extent that is equal to or better than would be the case if the encroachments did not occur;
ii. Maintaining the hydraulic conditions downstream to ensure that post-development peak flows do not exceed pre-development flows for the 1-year, 24-hour and 10-year, 24-hour storms, stream

channel stability is maintained or improved, increased sedimentation of the stream bed is avoided, and no increase in downstream flooding occurs;

iii. Maintaining or enhancing the aquatic ecosystem in order to restore or improve biodiversity;
iv. Augmenting low flow in order to improve downstream aquatic habitat;
v. Providing space and ecological conditions that maintain or enhance wildlife habitat and travel corridors;
vi. Constructing wetlands or enhancing naturally occurring wetlands; and
vii. Enhancing public use and enjoyment of the natural systems will be considered during the planning process.

3.4.3.3 Land

a. Sedimentation and Erosion Control

The Goals for sedimentation and erosion control are as follows:

i. Minimize disturbance to vegetation and soils;
ii. Minimize runoff and diversion;
iii. Minimize the need for additional storm drainage facilities;
iv. Reduce sedimentation; and
v. Prompt restoration after land clearing and grading.

Land disturbing activity within the Development shall comply with the Town of Apex Soil Erosion and Sedimentation Control Ordinance, as amended from time to time. The Town's standards related to the design of erosion and sedimentation collection devices for the 25-year storm and for the provision for 3,600 cubic feet per disturbed acre in sediment basins shall be implemented in the Development unless alternative design standards that are the functional equivalent or better are proposed by the Developer and approved by the TRC.

b. Waste Minimization

The Goals of waste minimization within Veridea are as follows:

i. Minimize the volume of demolition and construction waste generated in the Development;
ii. Distinguish between useful or reusable resources in demolition materials and waste materials from demolished buildings; and
iii. Expand the market for recycled construction and demolition materials.

The waste minimization standards shall support the following solid waste goals identified in the Wake County Environmental Stewardship Agenda, adopted by the Wake County Board of Commissioners February 21, 2005

and as may be amended from time to time:

i. Ensuring a solid waste management system for waste reduction, reuse and recycling to the maximum extent practicable;
ii. Providing convenient opportunities for residents, institutions, and businesses to recycle a full range of marketable materials (including yard debris), and to properly dispose of waste requiring special handling (e.g., used motor oil, household hazardous wastes, pesticide containers, automobile batteries, electronic waste, and others);
iii. Offering incentives, disincentives, and policies that motivate residents, businesses, and institutions to reduce and recycle waste, including institution of a countywide construction and demolition debris mandatory recycling ordinance;
iv. Devising an efficient recovery and processing infrastructure with the capacity to collect and divert from disposal all recyclable materials that have reliable market outlets;
v. Supplying accessible, user-friendly information to all citizens on how to reduce and recycle waste in their homes, places of work, and places of learning;
vi. Devising an expanded recycled products purchasing program with formal policies on procurement of products with recycled content and other "green" products by participating Wake local governments; and
vii. Working with Environmental Education and Environmental Information Providers to develop effective programs and services for a variety of County audiences on the importance of reducing, reusing, and recycling solid waste; buying recycled products and creating new and local markets; and reducing personal consumption and/or disposal of material goods and/or packaging.

Specifications of building and site work material may include recycled content requirements consistent with industry standards, including but not limited to, aggregate base and sub-base materials, asphalt, concrete, and finishes.

3.4.3.4 Air

The SD Plan for Veridea is grounded in the belief that the most effective planning Strategy to reduce greenhouse gas emissions is the pursuit of a dense, mixed-use, walkable and ultimately transit-oriented development. Greenhouse gas emissions are associated with both transportation and the total energy demands of the built environment. By targeting the expected growth within an area that can be served best by the municipality's ability to provide and afford municipal services, by balancing the land uses within the community, and by designing the community in conjunction with multi-modal transportation, a walkable, livable community such as Veridea can be created as a model of Sustainability.

Further, the creation of such a community concentrates development and attracts development that otherwise would occur outside of Veridea in a

sprawl-like manner that is inherently less Sustainable.

The SD Plan recognizes that the technologies and practices associated with the reduction of greenhouse gas emissions are evolving. Accordingly, in recognition of the impacts of greenhouse gas emissions and in an effort to minimize such emissions, transportation planning at all scales shall be approached and implemented in a manner that encourages the pattern of development defined within the Sustainable Development Plan.

The Goals for Air Quality within Veridea are as follows:

a. Establish a connected circulation plan that uses an integrated network of Thoroughfares, sidewalks, and paths linked to land uses with convenient access to alternative modes of travel including rail, bus, and walking to increase community internal trip capture and reduce vehicular trip generation and vehicle miles traveled in order to lower overall emissions and traffic congestion in otherwise heavily traveled areas.

b. Incorporate Transit Oriented Development in conjunction with a parking management Strategy within a mixed-use community, linked to a growth area to increase pedestrian and bicycle traffic, and transit share while reducing vehicle miles traveled.

c. Provide open space and landscaping within the Development to maintain a significant carbon absorbing medium.

d. To the extent practicable, comply with applicable EPA emission goals for the operation of non-road diesel engines.

3.5 TRANSPORTATION INFRASTRUCTURE STANDARDS

3.5.1 General

The transportation infrastructure standards set forth herein, a component of the Sustainability Standards, shall adhere to the Principles described and depicted throughout this Sustainable Development Plan.

Transit Oriented Development in conjunction with a parking management Strategy within a mixed-use community, linked to a growth area, has been proven to be very effective in increasing pedestrian and bicycle traffic and transit share while reducing vehicle trips and vehicle miles traveled. By establishing a connected circulation plan that uses an integrated network of Thoroughfares, sidewalks, and paths linked to land uses with convenient access to alternative modes of travel including rail, bus, and walking, community internal trip capture is significantly increased. One significant advantage of Sustainable Urbanism is that it reduces sprawl and the need to drive. Reduction in vehicular trip

generation and vehicle miles traveled lowers overall emissions and limits traffic congestion in otherwise heavily traveled areas. A second significant advantage of a connected circulation plan is that public safety is enhanced when the plan is based upon an integrated network of Thoroughfares that provides alternative routes from one destination to another, and that is designed to industry recognized criteria to reduce the performance speed of Thoroughfares and provides enhanced pedestrian safety.

a. Transportation Demand Management Plan

The SD Plan incorporates TDM strategies into the plan. The SD Plan provides for a compact mixed-use development with an efficient, connected multi-modal transportation network, key components of any TDM plan. The integration of land use and transportation decisions increases travel efficiencies and change travel behavior. This results in less auto dependence and an increase in use of other modes of transportation. TDM strategies will be applied to all levels of the land development process including long-range actions implemented after the land is developed. The Responsible Person shall prepare a Transportation Demand Management Plan outlining transportation options and incentives to be reviewed and, if feasible, developed, and setting the strategic framework for implementation. The options to be reviewed include:

i) Ridesharing;

ii) Telecommuting/flex time;

iii) Bicycle and pedestrian planning;

iv) Park and ride facilities;

v) Parking management;

vi) Shuttle bus;

vii) Bus/bus rapid transit;

viii) Car sharing; and

ix) Regional public transit.

The TDM Plan shall be submitted by the Responsible Person for approval by the Town, in accordance with UDO 2.3.16 F) 3) a) prior to or concurrent with the submittal of the first site plan that varies any standards related to parking set forth in the UDO. In accordance with UDO 2.3.16 F) 3) a) and the provisions of UDO 2.3.2 applicable to amendment to text, the TDM Plan may be updated or modified as the build-out of the Development occurs. Because preparation of the TDM Plan is triggered by the occurrence of development within Veridea, the TDM Plan is not required for the purposes of UDO 2.3.16 F) 3) b).

Parking planning and management refers to various policies and programs that result in more efficient use of parking resources. It recognizes that too much parking supply can be as damaging as too little and seeks to provide an optimal parking supply. A Parking Management Plan will be utilized in the B-Grid and

NG Zones. The plan shall address spillover parking for Commercial uses when located near single family development. The plan shall be submitted or updated as needed for site plans in the B-Grid and NG Zones.

3.5.2 Alternative Thoroughfare Standards

a. Thoroughfares shall conform to the *Apex Transportation Plan* to provide for the appropriate projection of principal streets in surrounding areas to permit reasonable access for surrounding properties. The exact placement of the streets and Thoroughfares within the plan may be adjusted. In areas within the Development, Thoroughfares shall be designed and located in proper relation to existing and proposed streets, to the topography of the area, and to natural features.
b. Thoroughfares in their construction shall conform to Town Standards except as noted within the SD Plan. Exceptions to Town Standards set forth in the SD Plan may be used by right, as an alternative to the Town Standards available. Exceptions are as listed hereafter or as provided elsewhere in this SD Plan:

    i. Section 3 *Streets of the Standard Specifications* shall apply except for the dimensional and other standards of 3.02b *Pavement & Right-of-Way Widths*, 3.02d *Radii of Curvature* and 3.02e Tangents, all of which shall be modified by the SD Plan, including but not limited to Tables 3A, 3B, 4A, 4B, and 4C, subject to TRC review and approval as to their application within the site plans or Subdivision Plans.
    ii. The dimensional standards of Standard Detail Number 3.01 *Street Typical Sections*, Sheets 1 through 4 shall be modified by this Sustainable Development Plan and Tables 3A, subject to TRC review and approval as to their application within the site plans or Subdivision Plans.
    iii. The location of utilities as shown on Standard Detail Number 3.10 *Standard Street Cross Section Showing Utility Locations* may be adjusted to permit street trees and utility locations in the Rear Alleys and Rear Lanes. Due to the anticipatory nature of the design of the Development, additional utilities, both public and private, may be incorporated into the right-of-way as the technology becomes available. Regulated utilities shall be permitted within the Thoroughfare right-of-way to include the District Utility Zone as illustrated in Table 4D.
c. In the event that Thoroughfares as identified in Table 4C do not meet the approval of the North Carolina Department of Transportation (“NCDOT”) for the design of thoroughfares under NCDOT’s jurisdiction, an alternative acceptable to the Responsible Person, the TRC and NCDOT may be utilized.
d. Thoroughfares shall be included as part of each Sustainable Zone.

e. Thoroughfares should be laid out in such manner as to encourage the flow of vehicle traffic at very low to low design speed, except upon major Thoroughfares, and to encourage pedestrian circulation. Public Sidewalks shall be required along all public streets except when the TRC approves an alternative plan during the site plan and construction plan review process upon its determination that the alternative plan, viewed in the context of surrounding development, adequately accommodates pedestrian connectivity. The street classifications shown on Tables 4B and 4C shall be used as guidance for sidewalk placement when possible. If determined by the TRC to provide an equal or better pedestrian system, Bicycle Trails may be allowed in lieu of some sidewalks within the Development. In addition to the requirements of Articles 3.5.1 and 3.5.2.b, the layout of thoroughfares and intersections will reasonably allow for emergency vehicle access. This may require an evaluation of emergency routes and turning radii during the site and construction plan review process. The TRC may consider alternative design elements and refer to third party published sources of information in order to minimize impacts to the intended character of the Development while accommodating emergency vehicles.

f. Private Thoroughfares and sidewalks may be allowed for Commercial, Manufacturing, and multi-family residential uses that conform to widths shown in Tables 4B and 4C, provided however that a five (5) foot public access easement will be provided on all private sidewalks fronting public Thoroughfares.

g. Rear Alleys and Rear Lanes shall be allowed that conform to widths shown in Tables 4B and 4C. Where required for public access and public utilities, continuous and/or crossing easements shall be provided for private Thoroughfares and/or sidewalks.

h. Right-of-way widths may be adjusted to the back of curbs during the site plan and construction plan review process. If the right-of-way does not extend beyond the back of curbs, public access and utility easements shall be provided to cover areas along the public street and Thoroughfare that allow for safe and adequate pedestrian flow and maintenance areas.

i. Design Standards for thoroughfare assemblies with reverse curves shall comply with the AASHTO Policy on Geometric Design of Highways and Streets, latest edition.

j. Thoroughfare standards may, at the election of the Responsible Person, include additional or elective regulations and standards, if any, adopted at any time and from time to time by Town Council in accordance with UDO 2.3.16 F) 3) a) or 2.3.16 F) 3) c).

3.5.3 Traffic

a. The Development and each Project will be designed to:
    i. Reduce vehicle miles traveled;
    ii. Increase share of alternative modes of transportation;
    iii. Reduce external trips; and

iv. Facilitate and encourage pedestrian and bicycle traffic.

b. Master Traffic Impact Analysis: A Master Traffic Impact Analysis ("Master TIA") will be prepared for Veridea. The Master TIA will address the maximum densities and allowable building square footage of various uses in the SD Plan along with recommended off-site thoroughfare improvements at the build-out of Veridea. Thoroughfare and associated improvements beyond those recommended in the Master TIA that are outside of the study area will be the responsibility of other developers or entities. Thoroughfare and associated improvements required as a direct result of other developments or background growth outside the scope of the Master TIA shall not be the responsibility of the Developer. However, internal improvements needed to serve site plans within Veridea will be identified when additional analyses are conducted.

The Developer shall provide Thoroughfare and associated improvements as recommended in the Master TIA. Additional traffic impact analyses ("TIAs") will be conducted for each major site plan or major Subdivision Plan required to serve Veridea, and Section 13.19 of the UDO shall be used as a guide for preparing the TIAs. TIAs shall be performed only for projects meeting the major site or subdivision plan threshold set forth in Article 3.3.1.b hereof. The study area of each TIA shall encompass all necessary street intersections internal to the Development but shall rely on the Master TIA for improvements along NC 55 and the proposed interchanges on the Triangle Expressway and US 1 external to the Development.

The Town shall have no obligation to provide financial assistance for the planning, design, permitting, acquisition of right of way, or construction of the following roadway improvements: i) those identified in the Master TIA; ii) those identified in the Article 3.5.5.a-g hereof; and iii) those identified in subsequent TIAs for each major site plan or major Subdivision Plan. Notwithstanding the foregoing, it is acknowledged that the Town may provide right of way that it currently owns for the new US 1 Interchange identified in the Master TIA and shown on the Town's Thoroughfare Plan.

c. Public Transit: A Regional Public Transit System may be accommodated and encouraged within the Development. Bus circulation shall be accommodated and encouraged within the Development. Optimally, the pedestrian network will provide direct pedestrian links from the proposed residential units, Offices and other commercial buildings to designated transit stops. Triangle Transit standards for bus stop amenities shall serve as a guideline. Access to the Regional Public Transit System by the adjacent pedestrian and bicycle network and park and ride facilities is an important component of the transit system. As noted in SD Plan 3.5.1.a, the TDM Plan will address bicycle and pedestrian planning as well as park and ride facilities.

d. Land Reservation: Land shall be reserved for the future Regional Public Transit System within Veridea. With regard to the Regional Public Transit System alignment and associated rights of way ("ROW") outside of Veridea, the location along Veridea's perimeter where the Regional Public Transit System will enter and exit Veridea in the vicinity of the interchange of US 1 with the Triangle Expressway will be determined by Triangle Transit, and/or other regional transit organization, and/or the Town. As Veridea is developed, site plans and Subdivision Plans will be shared with Triangle Transit, and/or other relevant regional transit organization, to assist such entities in the planning for and selection of the final alignment of the Regional Public Transit System.

The reservation of land to accommodate the Regional Public Transit System will be made as follows:

i. Land shall be reserved in a manner consistent with the development pattern of the Sustainability Zone in which it resides, and may overlap dedications made for other public uses such as Thoroughfares and utilities as long as the overlap is not contrary to sound planning and engineering practice that ensures that the reservation and dedication are sufficient for all planned infrastructure;
ii. Reservation shall include an area for transit station functions which shall be located within a UC zone, and shall be reserved in a manner that is in keeping with an urban development pattern of that zone as defined by the SD Plan, and may overlap reservations and, dedications made for other public uses such as Thoroughfares and utilities as long as the overlap is not contrary to sound planning and engineering practice that ensures that the reservation and dedication are sufficient for all planned infrastructure;
iii. Determination of the form, character, location, and relationship to adjacent development, relationship to other reservations and/or dedications and dimensions shall occur during site planning jointly by the Responsible Person, the TRC or Town Council, as appropriate.
iv. The reservation of land will prohibit permanent development within the designated reserve area until 2035 at which time, if there are no plans that financially commit the Triangle Transit, and/or other regional transit organization, and/or the Town to implement a regional rail plan that includes the Development, the Responsible Person may consider the reservation null and void.
v. Land reserved hereunder will be dedicated to Triangle Transit, and/or other regional transit organization, and/or the Town once the applicable entity secures funding and commits to construct the Regional Public Transit System within the Development.

vi. Buildout of any of single land use of the three (3) uses identified in Article 4.2.2.b.i-iii shall not exceed 85% of the total authorized development for the respective use, unless Town Council otherwise approves in accordance with UDO 2.3.16 F) 3) a), until the commencement of a Regional Public Transit System that will serve Veridea.

3.5.4 Schedule of Installation

Transportation infrastructure shall be completed in accordance with UDO 7.5.9. For the purposes of UDO 7.5.9, vertically-integrated residential and non-residential uses will be considered non-residential.

3.5.5 Phasing of Traffic Infrastructure

Traffic infrastructure shall be developed as build-out of Veridea occurs, as set forth herein. Percent build-out of "any single land use" refers to a percentage of building permits for residential dwelling units or certificates of occupancy for non-residential uses for the three (3) different uses identified in Article 4.2.2.b.i– iii hereof.

a. NC 55 at US 1 Northbound Ramps

Veridea shall not exceed 10% build-out of any single land use until the northbound inside right turn lane on NC 55 at US 1 is extended back to the intersection with Lufkin Road.

b. NC 55 at Lufkin Road

Veridea shall not exceed 10% build-out of any single land use until the third (3rd) northbound through lane on NC 55, starting at least 500 feet in advance of Lufkin Road, is constructed.

c. NC 55 at Lufkin Road Connector (Pristine Water Drive)/Site Access 1

Access shall not be granted to NC 55 through the fourth leg of the intersection across from the Lufkin Road Connector/Pristine Water Drive (Site Access 1) until the Lufkin Road Connector and Pristine Water Drive are complete and open to traffic. The Lufkin Road Connector includes a new location extension to Lufkin Rd and paving of Pristine Water Dr with improvements according to the Master Traffic Impact Analysis (Master TIA) including a landscaped median-divided cross section on NC 55 with a traffic signal.

d. Site Access 2, 3, 4, 5, 6, and 7

Access shall not be granted to NC 55 through Site Access 2, 3, 4, 5, 6, or 7 until improvements according to the Master TIA at the corresponding access are constructed including a landscaped median-divided cross section on NC 55.

e. NC 55 at Jessie Drive Extension

Access shall not be granted to NC 55 through Jessie Drive extension until improvements for Veridea according to the Master TIA are constructed including a landscaped median-divided cross section on NC 55 and a traffic signal.

f. NC 55 at Technology Drive

Access shall not be granted to NC 55 through Technology Drive until Technology Drive is widened to four-lane divided roadway and the departing second (2^{nd}) eastbound through lane along NC 55 Business is constructed for a minimum of 1000 feet prior to the lane drop. In addition, access shall not be granted to NC 55 through Technology Drive until a second (2^{nd}) northbound left turn lane and second (2^{nd}) southbound left turn lane on NC 55 is open to traffic.

g. Perry Road at US 1 Interchange and Old Holly Springs Apex Road at Triangle Expressway Interchange

i. Veridea shall not exceed 15% build-out of any single land use until either the interchange of Perry Road at US 1 or the interchange of Old Holly Springs Apex Road at Triangle Expressway is open to traffic.

ii. Veridea shall not exceed 50% build-out of any single land use until both the interchange of Perry Road at US 1 and the interchange of Old Holly Springs Apex Road at Triangle Expressway are open to traffic.

iii. The Responsible Person shall coordinate with the NC Department of Transportation (NCDOT) and the Town of Apex to determine the appropriate phasing of completion of the ultimate lane geometry and signalization at the ramp termini as recommended in the Master TIA. The phasing plan for the ultimate build-out of improvements shall be determined through subsequent site plan and subdivision plan TIAs referenced by 3.5.3.b.

3.6 UTILITY INFRASTRUCTURE STANDARDS

3.6.1 General

Water and sanitary sewer lines with connections to municipal systems, adequate drainage system for the proper drainage of all surface water, and dry utilities, including but not limited to, electrical distribution, natural gas, and telecommunication lines shall be provided in accordance with the Town Standards, unless otherwise noted in Article 3.6.2. Dry utilities, wherever practicable, shall be installed underground.

3.6.2 Alternative Utility Standards

a. At the election of the Responsible Person, standards and requirements applicable to utilities in the Development may include any additional Sustainability Standards adopted by the Town Council in accordance with UDO 2.3.16 F) 3) a) or 2.3.16 F) 3) c).
b. Easement encroachments and shared use easements shall be allowed with the approval of the Town Council to minimize land disturbance and Thoroughfare sections, to encourage joint trenching agreements, and to maximize the beneficial use of easements for greenway trails at the time of site plan and Subdivision Plan submittal.

3.6.3 Schedule of Installation

Utility infrastructure shall be completed in accordance UDO 7.5.9. For the purposes of UDO 7.5.9, vertically-integrated residential and non-residential uses will be considered non-residential.

3.6.4 Regional Utility Standards

a. Potable Water
It is anticipated that off-site extension of existing potable water mains will be required. Within the Development, a network of potable water mains will be required. Potable water infrastructure for the Development shall be in accordance with the Town's Water Distribution System Master Plan and Cross Connection Control Ordinance (Sec. 12-156 through 166), as amended from time to time.
b. Reclaimed Water
The Developer may request that the Town apply to NCDENR for conjunctive systems permit in order to modify the Middle Creek Water Reclamation Facility ("WRF") to provide a source of reclaimed water for use within the Development. If such permit is issued, then water re-use distribution infrastructure may be provided within the Development to provide a circulation network of water for non-potable uses, including fire suppression. Standards and specifications related to reclaimed water shall comply with rules and regulations as promulgated, established and interpreted by NCDENR and Town Standards, if any. It is anticipated that any reclaimed water that is not consumed in the reuse options available will be discharged within the Development in accordance with applicable law and regulation.

If and when the Town adopts standards for the permitting, construction, modification and operation of reclaimed water distribution lines, the Town shall work cooperatively with Veridea to ensure that the standards allow for all actual or planned for uses within the Development. Should public reuse water become available to the Development through the Town of Apex, the Town specifications and details will be the authority for design, ownership and maintenance issues within Town right-of-way.

c. Sanitary Sewer
In all cases, Veridea shall follow the Town's Wastewater Master Plan, as may be amended from time to time. If a conjunctive systems permit is issued for the Middle Creek WRF as set forth in 3.6.4.b hereof, then the Town's Wastewater Master Plan may be amended to allow for wastewater generated within the Development to discharge to the Middle Creek WRF. If a conjunctive systems permit is not issued for the Middle Creek WRF, then wastewater generated within the Development shall be treated in accordance with the Town's Wastewater Master Plan.

d. Electric and Thermal
If a Renewable Energy Facility is available, distribution lines may be provided to provide an alternate source to meet power and thermal demands within the Development.

3.7 ENERGY STANDARDS

3.7.1 Renewable Energy

The Goals for the use of Renewable Energy Facilities and Renewable Energy Resources within Veridea are as follows:

i. Removing regulatory obstacles and adopting streamlined processes for the installation and safe interconnection of renewable energy technologies;
ii. Creating a receptive environment for innovative uses of Renewable Energy Facilities;
iii. Providing for use of shared non-polluting Renewable Energy Resources to reduce climate change and greenhouse gas emissions; and,
iv. Enhancing the opportunity for increased development of Renewable Energy Facilities and Renewable Energy Resources in the future to increase energy independence;

The use of Renewable Energy Facilities shall be allowed. Renewable energy standards, a component of the Sustainability Standards, shall be consistent with generally accepted industry standards and best practices, recognizing that relevant technology and standards are evolving. Such standards include, but are not limited to, priorities, standards, and practices developed by entities such as the American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE"), Environmental Protection Agency ("EPA"), and the Department of Energy ("DOE"), and requirements for interconnection and other associated safety metrics.

3.7.2 Energy Efficiency

The goals for energy efficiency within Veridea are as follows:

i. Encourage the use of energy efficient technologies and design to fully maximize the use of existing generation capacity;
ii. Encourage environmental stewardship through reduction in energy use;
iii. Encourage local investment in efficiency as a substitute for out-of-state resources;
iv. Promote an overall reduction in energy demand to ensure reliability of supply in the face of increased population and to preserve affordability in the face of rising costs imposed by carbon constraints; and
v. The improvement of energy performance by 20% compared to baseline building performance ratings per ASHRAE/ IESNA Standard 90.1-2004.

The use of technologies and designs intended to maximize energy efficiency shall be consistent with generally accepted industry standards and best practices, recognizing that relevant technology and standards are evolving. Such standards include, but are not limited to guidelines developed by the US Green Building Council (USGBC), ASHRAE, EPA, and DOE.

3.8 NO OBLIGATION

3.8.1 No Obligation

Nothing in this SD Plan obligates the Town to provide any financial assistance with respect to any infrastructure or improvements referenced herein, nor shall it prohibit the Town from doing so.

ARTICLE 4.0 COMMUNITY DESIGN STANDARDS

4.1 GENERAL

4.1.1 Development shall comply with the community design standards, a component of the Sustainability Standards, set forth in this Article.

4.1.2 Subdivision Plans and site plans shall be prepared in accordance with the SD Plan.

4.1.3 Site plans and Subdivision Plans shall designate areas and elements as follows:

a. Sustainable Zones:
   i. **OS** Open Space
   ii. **NG** Neighborhood General
   iii. **NM** Neighborhood Mixed-Use
   iv. **VC** Village Center
   v. **UC** Urban Core
b. Civic Uses; and
c. Thoroughfares.

The respective Sustainable Zones are described in Table 1.

4.1.4 It is possible that as the build out of the Development occurs, the Town Council may adopt elective regulations and standards applicable to SD-CZ districts pursuant to UDO 2.3.16 F) 3) c).

4.1.5 Open Space is one of the Sustainable Zones, and will exist both as an independent Zone as well as being integrated into and completely surrounded by other Sustainable Zones.

4.2 VERIDEA SUSTAINABLE DEVELOPMENT CONCEPT MAP

4.2.1 Veridea Sustainable Development Concept Map

Table 2 contains the Veridea Sustainable Development Concept Map (Concept Map), which depicts a concept for the development of Veridea and the conceptual location of its Sustainable Zones. The Concept Map depicts the configuration of land uses believed to be appropriate for Veridea. However, based on future planning, market and demographic conditions, the Sustainable Zones may be located anywhere within the Development as determined by the Responsible Person. The Responsible Person may revise the Concept Map from time to time and shall provide the TRC with a copy of each revision. The development of Veridea shall include the following minimum acreages with respect to the Sustainable Zones noted:

NG	Neighborhood General	75 acres
NM	Neighborhood Mixed-Use	50 acres
VC	Village Center	215 acres
UC	Urban Core	135 acres

The VC and UC Zones shall contain a minimum of 150 acres allocated as A-Grid Zones. Further, a minimum of 250 acres within Veridea shall be designated as provided in Article 3.1.3 hereof.

4.2.2 Land Use Locations and Densities

a. Land uses and Densities allowed in each Sustainable Zone are set forth in Article 7 Tables. Such land uses can be located anywhere within the respective Sustainable Zones.
b. For purposes of the SD Plan, Density is expressed in terms of housing units per acre for residential uses and as FAR for other uses as specified for the area of each respective Sustainable Zone in Table 14. The FAR for each Sustainable Zone is set as an average Density for the zone. Areas designated for Open Space, utilities infrastructure, Thoroughfares and other transportation infrastructure, such as a Regional Public Transit System, may be allocated from time to time by the Responsible Person to any other area or areas for the purpose of calculating authorized Density for the area or areas receiving the allocation. The Responsible Person shall have the authority to reallocate the authorized square footage numbers of the Non-residential Uses within Article 4.2.2.b.ii and iii on a square foot-for-square foot basis; provided, however, that the Responsible Person may only increase or decrease the Retail square footage by up to 20% subject to the limitation that the reallocation shall not result in a total daily vehicular trip generation for Veridea that exceeds the maximum daily vehicular trip generation that served as the basis for the Master TIA. Any further increase related to retail must be approved by Town Council in accordance with UDO 2.3.16 F) 3) a. In addition to the total authorized development provided below, Public, Civic, Utilities, Recreational and Lodging Uses are authorized to support the total authorized development set forth in Article 4.2.2.b.i, ii, and iii. In the event that additional parcels are incorporated into the Veridea Sustainable Development District, the total authorized development hereinafter provided shall be adjusted in accordance with UDO 2.3.16 D).

The total authorized development for the Development shall be as follows:

i.	Authorized Number of Dwelling Units (all types)	8,000
ii.	Authorized Retail Uses (gross leasable area)	3,500,000 Square Feet
iii.	Authorized Office and Industrial Uses (gross floor area)	12,000,000 Square Feet

4.2.3 The Sustainable Development Concept Map designates VC and UC zones as being either A-Grid or B-Grid. Subsequent approved site plans and Subdivision Plans shall confirm or modify such zones as called for in the SD Plan, and shall designate Thoroughfares within the VC and UC zones as being either A-Grid or B-Grid.

a. Buildings and frontages along the A-Grids shall reflect multi-modal and pedestrian standards of the SD Plan supporting pedestrian activity.

Thoroughfares within an A-Grid Zone may be developed according to B-Grid standards subject to the following special and limiting conditions:

i. Transition conditions within A-Grid Zones to adjacent B- Grid Zones; and

ii. Small internal Thoroughfares of limited length to respond to a specific condition of the site or a use. Notwithstanding these special and limiting conditions, no more than 15% of the aggregate length of Thoroughfares within an A-Grid Zone may be designated as a B-Grid and follow B-Grid standards. Location and other specifics of such B-Grid Thoroughfares shall be addressed within site plans.

b. Buildings and frontages along the B-Grids may reflect automobile- oriented standards. B-Grids may be developed in whole or in part to A-Grid standards. It is the goal that B-Grid zones eventually become redeveloped as A-Grids. Therefore, site plans for B-Grids shall reflect in their planning and site engineering this goal by:

i. Establishing a B-Grid Thoroughfare grid and therefore a block layout that can be redeveloped into smaller blocks exhibiting the characteristics of an A-Grid;
ii. Establishing the B-Grid Thoroughfares in such a manner that they can be redeveloped into A-Grid Thoroughfares and frontages; and
iii. Locating utilities and site features so that they will not prohibit the establishment of an A-Grid development pattern, and do so without significant redesign or cost impacts. Site plans for B- Grid zones shall depict both the B-Grid configuration, and conceptually reflect how the B-Grid configuration may be redeveloped into an A-Grid.

4.2.4. Development Thresholds

In order to create and maintain a mix of uses as the buildout of Veridea occurs, the following requirements shall be applicable to development within Veridea, unless otherwise provided by the Town Council at the request of the Responsible Person:

Threshold 1: Certificates of Occupancy shall not be issued for more than 10% (1,200,000 sf) of the total authorized Office and/or Industrial square footage or more than 20% (700,000 sf) of the total authorized Retail square footage unless and until building permits have been issued for dwelling units. Similarly, building permits for no more than 20% (1,600 units) of the total authorized dwelling units can be issued until Certificates of Occupancy have been issued for at least 2% (70,000 sf) of the total authorized retail square footage and 2% (240,000 sf) of the total authorized Office and/or Industrial square footage.

Threshold 2: Certificates of Occupancy shall not be issued for more than 25% (3,000,000 sf) of the total authorized Office and/or Industrial square footage or more than 50% (1,750,000 sf) of the total authorized Retail square footage until building permits have been issued for at least 5% (400 units) of the total authorized dwelling units. Similarly, building permits for no more than 37.5%(3,000 units) of the total authorized dwelling units can be issued until Certificates of Occupancy have been issued for at least 10% (350,000 sf) of the total authorized Retail square footage and 5% (600,000 sf) of the total authorized Office and/or Industrial square footage.

Threshold 3: Certificates of Occupancy shall not be issued for more than 50% (6,000,000 sf) of the total authorized Office and/or Industrial square footage or more than 60% (2,100,000 sf) of the total authorized Retail square footage until building permits have been issued for at least 15% (1,200 units) of the total authorized dwelling units. Similarly, building permits for no more than 60% (4,800 units) of the total authorized dwelling units can be issued until Certificates of Occupancy have been issued for at least 25% (875,000 sf) of the total authorized Retail square footage and 10% (1,200,000 sf) of the total authorized Office and/or Industrial square footage.

Threshold 4: Certificates of Occupancy shall not be issued for more than 70% (8,400,000 sf) of the total authorized Office and/or Industrial square footage or more than 80% (2,800,000 sf) of the total authorized Retail square footage until building permits have been issued for at least 40% (3,200 units) of the total authorized dwelling units. Similarly, building permits for no more than 80% (6,400 units) of the total authorized dwelling units can be issued until Certificates of Occupancy have been issued for at least 40% (1,400,000 sf) of the total authorized Retail square footage and 25% (3,000,000 sf) of the total authorized Office and/or Industrial square footage.

Threshold 5: Certificates of Occupancy shall not be issued for more than 85% (10,200,000 sf) of the total authorized Office and/or Industrial square footage (or more than 85% (2,975,000 sf) of the total authorized Retail square footage until building permits have been issued for at least 50% (4,000 units) of the total authorized dwelling units. Similarly, building permits for no more than 85% (6,800 units) of the total authorized dwelling units can be issued until Certificates of Occupancy have been issued for at least 50% (1,750,000 sf) of the total authorized Retail square footage and 40% (4,800,000 sf) of the total authorized Office and/or Industrial square footage.

Threshold 6: See the requirements set forth in SD Plan 3.5.3.d.vi and 4.2.2.b.

The foregoing requirements are illustrated by the tables below:

RESIDENTIAL CONTROL

	Minimum Required	
DU BP's	**Retail SF C/O's**	**O&I SF C/O's**
1 - 1,600	0	0
1,601 - 3,000	70,000	240,000
3,001 - 4,800	350,000	600,000
4,801 - 6,400	875,000	1,200,000
6,401 - 6,800	1,400,000	3,000,000
6,801 - 8,000	1,750,000	4,800,000

RETAIL CONTROL

	Minimum Required	
Retail SF C/O's	**DU BP's**	**O&I SF C/O's**
0 - 700,000	0	0
700,001 - 1,750,000	1	0
1,750,001 - 2,100,000	400	0
2,100,001 - 2,800,000	1,200	0
2,800,001 - 2,975,000	3,200	240,000
2,975,001 - 3,500,000	4,000	240,000

O&I CONTROL

	Minimum Required	
O&I SF C/O's	**DU BP's**	**Retail SF C/O's**
0 - 1,200,000	0	0
1,200,001 - 3,000,000	1	0
3,000,001 - 6,000,000	400	0
6,000,001 - 8,400,000	1,200	0
8,400,001 - 10,200,000	3,200	70,000
10,200,001 - 12,000,000	4,000	70,000

Although the foregoing tables are intended to illustrate the preceding text, the text shall control the construction of this Article 4.2.4.

4.3 SUSTAINABLE ZONES

4.3.1 Sustainable Zones, as shown on the Sustainable Development Concept Map shall have the character described in Table 1.

4.3.2 Open Space (OS) consists of lands approximating or reverting to a natural condition and farmland, parks, greenways, Civic Uses, utility corridors and easements, and waterways or water bodies, including lands unsuitable for development due to topography, hydrology and/or vegetation.

a. Open Space includes areas protected by law or regulation, as well as land designated for conservation.
b. Open Space shall be identified in site and Subdivision Plans approved for the Development. Upon the approval of a subdivision or site plan designating an area Open Space, such area may be conveyed in fee or by easement to (i) an entity created by law to hold interests in property designated for conservation purposes, or (ii) to a property owners association formed, in part, for such purpose, or (iii) to a public entity.
c. Land area within Open Space may be used in calculating the Density of a Project.
d. Open Space is an independent Sustainable Zone and will also be integrated into other Sustainable Zones.

4.3.3 Neighborhood General (NG) consists of low Density residential areas, adjacent to higher Density zones that consist of some Mixed Use. Home occupations and Outbuildings are allowed. Planting is naturalistic and Setbacks are relatively deep. Blocks may be large and the Thoroughfares irregular to accommodate natural conditions.

4.3.4 Neighborhood Mixed-Use (NM) consists of Mixed Uses within a medium to high Density residential urban fabric. It may have a wide range of building types: single, sideyard, rowhouses, and apartments. Setbacks and landscaping are variable. Thoroughfares with curbs and sidewalks define medium-sized blocks.

4.3.5 Village Center – A-Grid (VC A-Grid) consists of higher Density Mixed Use buildings that accommodate retail, Office, rowhouses and apartments. It has a tight network of Thoroughfares, with wide sidewalks, steady street tree planting and buildings set close to the sidewalks.

4.3.6 Village Center – B-Grid (VC B-Grid) consists of larger block sizes, and larger format uses supporting regional users. It has a coarse network of Thoroughfares, with sidewalks and steady street tree planting.

4.3.7 Urban Core – A-Grid (UC A-Grid) consists of the highest Density and height, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks; Thoroughfares have steady street tree planting and buildings are set close to wide sidewalks.

4.3.8 Urban Core – B-Grid (UC B-Grid) consists of the highest Density and height, with predominantly Office, lab, and research uses. It may have larger blocks; streets have steady street tree planting and buildings may be set back from the sidewalks.

4.4 CIVIC USES

4.4.1 General

a. Space for Civic Uses shall be designated on the Sustainable Development Concept Map as Civic Space (CS) and Civic Building (CB) as Subdivision Plans and site plans are approved for the Development.
b. Civic Space (CS) shall denote public sites supportive of or ancillary to Civic Buildings or sites permanently dedicated to Open Space.
c. Civic Building (CB) shall denote sites for buildings primarily operated by governmental or not-for-profit organizations dedicated to Functions such as culture, education, religion, government, transit and municipal parking.

4.4.2 Civic Space (CS) Specific to NG, NM, VC, and UC Zones

a. Civic Spaces shall be designed as generally described in Table 13 and distributed throughout Sustainable Zones as described in Table 14e.

4.5 THOROUGHFARE STANDARDS

4.5.1 General

a. Thoroughfares are intended for use by vehicular and pedestrian traffic and to provide access throughout the Development.
b. Thoroughfares shall consist of vehicular lanes and Public Frontages. Walkways shall be in accordance with Table 4B.
c. Thoroughfares shall be designed in context with the desired vehicular design speed of the Sustainable Zones through which they pass. The Public Frontages of Thoroughfares that pass from one Sustainable Zone to another shall be adjusted accordingly or, alternatively, the Sustainable Zone may follow the alignment of the Thoroughfare to the depth of one Lot, retaining a single Public Frontage throughout its course.
d. Within areas designated as B-Grid Zones, pedestrian use shall be a secondary consideration of the Thoroughfare. Design conflict(s) between vehicular and pedestrian traffic generally shall be decided in favor of the vehicle. Within the more urban A-Grid Zones, pedestrian use shall be a primary consideration of the Thoroughfare. Design conflict(s) between vehicular and pedestrian movement generally shall be decided in favor of the pedestrian.
e. The Thoroughfare network shall be designed to define Blocks not exceeding the size indicated in Table 14. The perimeter shall be measured as the sum of Lot Frontage Lines.

f. Street trees shall satisfy traffic calming measures required within the Development.
g. Thoroughfares shall terminate at other Thoroughfares, forming a network. Internal Thoroughfares shall connect wherever practicable to those on adjacent sites. Cul-de-sacs may be permitted to accommodate unusual site conditions subject to UDO 7.2.1 G).
h. Each Lot shall be bounded by a vehicular Thoroughfare, except that 20% of the Lots within each Sustainable Zone may be bounded by a Passage, so long as the Thoroughfare assembly behind such Lots is constructed to Rear Alley standards, will meet emergency vehicle access requirements and is public.
i. Thoroughfares within designated B-Grid Zones and designated as B-Grid Thoroughfares may follow the specified B-Grid Public Frontage and Private Frontage requirements in Tables 4A and 4B, and Table 7.
j. B-Grid Thoroughfares are permitted within A-Grid Zones for Thoroughfares necessary to support vehicular traffic and that enhance the pedestrian network per Article 4.2.3. These Thoroughfares shall be addressed on the individual site plans and may follow the standards for B-Grid.
k. The B-Grid Zones may abut freeways and conventional commercial arteries that are pedestrian intolerant. B-Grid Zones are used to transition into the more multi-modal and pedestrian supportive environments. B-Grid Zones may be developed in whole or in part to A-Grid standards and may evolve into A-Grid Zones over time.

4.5.2 Vehicular lanes

a. The standards for vehicular lanes shall follow the guidance in Table 3A or the Town Standards, or may follow other additional or elective regulations and standards adopted by the Town Council in accordance with UDO 2.3.16 F) 3) a) or 2.3.16 F) 3) c).
b. A bicycle network consisting of Bicycle Trails, Bicycle Routes and Bicycle Lanes shall be permitted as set forth in Table 14d.

4.5.3 Public Frontages

a. General to all zones OS, NG, NM, VC, UC
    i. The Public Frontage contributes to the character of the Sustainable Zone, and includes the requisite types of Sidewalk, Curb, Planter, bicycle parking, and street trees.
    ii. Public Frontages shall be designed as shown in Table 4A and Table 4B and allocated within Sustainable Zones as specified in Table 14d.
    iii. Within the Public Frontages, the types of Public Planting and Public Lighting shall be as shown in Table 4A, Table 4B, Table 5 and Table 6.
b. Specific to OS and NG Zones
    i. The Public Frontage may include trees of various species, naturalistically clustered, as well as understory.
    ii. The landscape may consist primarily of native species requiring minimal irrigation, fertilization and maintenance.

c. Specific to NM, VC and UC Zone
    i. The landscape shall consist primarily of durable species tolerant of soil compaction.
d. Specific to NM Zone
    i. The Public Frontage shall include trees planted in a regularly-spaced and aligned pattern of single or alternated species with shade canopies of a height that, at maturity, clears at least one Story. Various street tree species shall be used within the NM Zone.
e. Specific to VC and UC Zone
    i. The Public Frontage shall include trees planted in a regularly-spaced and aligned pattern of single species with shade canopies of a height that, at maturity, clears at least one Story. Various street tree species shall be used within the VC and UC Zones. At Retail Frontages, the spacing of the trees may be irregular, to avoid visually obscuring the Shopfronts.
    ii. Streetscape solar panels as shown in Table 18 may be used in the place of street trees where required. This section shall provide design flexibility in the creation of a public statement in the form of either art or symbolic statements of sustainability, but shall not allow the wholesale replacement of mandatory street trees with solar-powered streetlights or prohibit the installation of larger solar panel assemblages elsewhere within the Development.
    iii. Thoroughfares with Galleries, Arcades, or a right-of-way width of 40 feet or less shall be exempt from the tree planting requirement.

ARTICLE 5.0 BUILDING STANDARDS

5.1 TABLES AND PLAN

5.1.1 It is possible that the evolution of technology, building materials and lifestyle may result in the future in the Town Council's adoption of elective Sustainability Standards for SD-CZ districts pursuant to UDO 2.3.16 F) 3) c).

5.1.2 B-Grid Zones within the Development shall comply with UDO 9.2 and 9.3, except that the requirements of UDO 9.2 and 9.3 may be varied, in accordance with UDO 2.3.16 F) 3) a), by the standards set forth in the Pattern Book.

5.2 CIVIC BUILDINGS

5.2.1 Civic Buildings ("CB")

a. Civic Buildings shall be subject to the requirements of this Article.

5.3 OPEN SPACE ("OS") ZONES

5.3.1 Buildings shall not be allowed in an OS Zone, except as listed in Table 12 and for accessory structures incidental to and necessary to support the permitted Functions and uses.

5.4 BUILDING DISPOSITION

5.4.1 Specific to OS, NG, NM, VC and UC Zones

a. Newly platted Lots shall be dimensioned according to Table 14f and Table 15.
b. Building Disposition shall be as shown in Table 9 and Table 14i.
c. Buildings shall be disposed in relation to the boundaries of their Lots according to Table 14g, Table 14h, and Table 15.
d. One Principal Building at the Frontage and one Outbuilding to the rear of the Principal Building may be built on each Lot as shown in Table 17c.
e. Lot coverage by buildings shall not exceed that specified in Table 14f and Table 15.
f. Facades shall be built parallel to a rectilinear Principal Frontage Line or to the tangent of a curved Principal Frontage Line, and along a minimum percentage of the Frontage width at the Setback, as specified as Frontage Buildout on Table 14g and Table 15.
g. Setbacks for Principal Buildings shall be as shown in Table 14g and Table 15.
h. Adequate access to and clearance around utilities and HVAC units shall be provided.

5.4.2 Specific to UC Zone

a. The Principal Entrance shall be on a Frontage Line.

5.4.3 Specific to NM, VC and UC Zones

a. Farmers Markets may be located on unbuffered Lots of any size.
b. Diagonal parking on commercial streets shall be as set forth in the SD Plan.

5.5 BUILDING CONFIGURATION

5.5.1 General to OS, NG, NM, VC and UC Zones
a. The Private Frontage of buildings shall conform to and be allocated in accordance with Table 7 and Table 14j.
b. Buildings on corner Lots shall have two Private Frontages as shown in Table 17. Prescriptions for the second and third Layers pertain only to the Principal Frontage. Prescriptions for the first Layer pertain to both Frontages.
c. All Facades shall be glazed with clear glass no less than 30% of the first Story, however glazing shall be no less than 50% in the VC Zone A-Grid and UC Zone A-Grid areas.
d. Building stories, Stepbacks, and Expression Lines shall conform to Table 8 and Table 14j.
e. In a Parking Structure or garage, each above-ground level counts as a single Story regardless of its relationship to habitable Stories.
f. Story limits do not apply to attics or raised basements, masts, belfries, clock towers, chimney flues, water tanks, cupolas or elevator bulkheads.
g. Prescriptions for the parking Layers pertain only to the Principal Frontage. Prescriptions for the first Layer pertain to both Frontages of a corner Lot.
h. Public access requirements shall comply with UDO 7.5.4 E) except that the requirements of UDO 7.5.4 E) may be varied in accordance with UDO 2.3.16 F) 3) a), by the standards set forth in the Pattern Book.

5.5.2 Specific to NG, NM and VC Zones
a. The habitable area of an Accessory Unit within a Principal Building or an Outbuilding shall not exceed 800 square feet, excluding any enclosed parking area.

5.5.3 Specific to NG Zone
a. No portion of the Private Frontage may Encroach into the Sidewalk.
b. Open porches may Encroach into the first Layer 50% of its depth. (Table 17d)
c. Balconies, cantilevers, and bay windows may Encroach into the first Layer up to 25% of the depth defined for the first Layer. In addition, porches including balconies on porch roofs may Encroach into the first Layer up to 50% of the depth defined for the first Layer.
d. A first level Residential or Lodging Function shall be raised a minimum of three steps from average Sidewalk grade, except as required for accessibility under applicable federal and state laws or to accommodate single-family senior housing units.

5.5.4 Specific to NM Zone
a. Balconies, open porches, cantilevers and bay windows may Encroach into the first Layer 50% of its depth. (Table 17d)

5.5.5 Specific to OS, VC and UC Zones

a. Arcades, awnings, and Galleries may Encroach into the Sidewalk to within 2 feet of the Curb but must clear the Sidewalk vertically by at least 9 feet. Arcades and Galleries within public rights-of-way require encroachment and maintenance agreements with the Town.
b. Maximum Encroachments for Arcades shall be as shown on Table 8.
c. Stoops, Lightwells, balconies, bay windows, cantilevers and terraces may Encroach into the first Layer for 100% of its depth. (Table 17d)
d. Loading docks and service areas shall be permitted along/within Frontages.
e. In the absence of a building Facade along any part of a Frontage Line, a Streetscreen may be built co-planar with the Facade or adjacent Facades.
f. Streetscreens shall be between 3.5 and 8 feet in height. The Streetscreen may be in the form of a hedge, fence or wall. Walls may be constructed of masonry, stone, stucco, EIFS or may match the building materials of the adjacent buildings. Fences shall be constructed of wood or wrought iron (or products created to resemble these materials) and shall be finished on the side facing the public right-of way. Streetscreens shall have openings no larger than reasonably necessary to allow vehicular and pedestrian access.
g. Arena, auditorium or stadium uses shall be located a minimum of 500 feet from any NG or NM Zone and may be located in Mixed Use Blocks, in Mixed Use buildings or on Lots of sufficient size and with sufficient Frontage to support the use and comply with the egress requirements of the North Carolina State Building Code.
h. Outdoor entertainment areas such as small amphitheaters may be incorporated without enclosure into Open Space, Public Space, or Civic Space or on an individual Lot as long as there is sufficient Frontage to support the use and comply with the egress requirements of the North Carolina State Building Code.
i. Drive-through facilities associated with financial institutions and pharmacies may be integrated into multi-story buildings.

5.5.6 Specific to NM, VC and UC Zones

a. Lodging Functions may be located in Mixed Use Blocks, in Mixed Use buildings or on Lots of any size to support the use and comply with the egress requirements of the North Carolina State Building Code when the use is located 100 feet or more from NG Zones.

5.6 BUILDING FUNCTION

5.6.1 General to OS, NG, NM, VC and UC Zones

a. Buildings in each Sustainable Zone shall comply with Article 7 Tables.
b. Historic Sites may be used for residential, lodging, food and beverage, Office or retail sales and service use.

5.6.2 Specific to NG Zone

a. Accessory Functions of Lodging or Office shall be permitted within an Accessory Building. See Table 10.

5.6.3 Specific to NM Zones

a. Commercial Functions shall be permitted.

5.6.4 Specific to VC and UC Zones

a. Commercial Functions shall be permitted.
b. Manufacturing Functions may be permitted.
c. Utilities such as communication towers and water towers may be integrated into building structures without the need for screening. See Article 5.5.2 for existing cell towers.
d. Electrical Power Facilities shall be set back a minimum of 20 feet from property lines or easement lines and may be screened or buffered by architectural means or located internally within a block to permit integration into an urban fabric.

5.7 PARKING AND DENSITY STANDARDS

5.7.1 Specific to NG Zone

a. Buildable Density on a Lot shall be determined by the actual parking provided as applied to the Functions permitted in Table 10 and Table 11.

5.7.2 Specific to OS, NM, NG, VC and UC Zones

a. As provided in Tables 10 and 11, buildable Density on a Lot shall be determined by the sum of the actual parking calculated as that provided (1) within the Lot (2) along the parking lane corresponding to the Lot Frontage, and (3) by purchase, lease, allocation, dedication, reservation or assignment from a public or private parking structure or lot within 1,200 feet of any entrance for customer, patron, or resident parking and within 1,200 feet of any entrance of the principal use for employee parking, if available.
b. The actual parking may be adjusted downward according to the Shared Parking Factor of Table 11 to determine the Effective Parking. The Shared Parking Factor is available for any two Functions within any block, any pair of adjacent Blocks or within any area contained within a single site plan submittal. Further adjustment is permitted for areas controlled by a comprehensive parking plan in accordance with Article 5.7.3.
c. Based on the Effective Parking available, the Density of the projected Function may be determined according to Table 10.
d. Within the area of a Transit Oriented Development (“TOD”) the Effective Parking may be further adjusted downward by 30% and the distances listed in 5.7.2.a are permitted to be increased by 20%.
e. Accessory Units do not factor into Density calculations.
f. Liner Buildings less than 30 feet deep and up to the first two Stories shall be exempt from parking requirements.
g. Retail spaces of 1,500 square feet or less of net floor area shall be exempt from the parking requirements.
h. In accordance with SD Plan 3.1.2, a Parking Management Plan, subject to review and approval by the Town Council in accordance with UDO 2.3.16 F) 3) a), shall be submitted with the first site plan that deviates from applicable UDO standards related to parking and shall be updated as necessary for subsequent site plans.

5.7.3 Off-Street Parking: Further reduction in off-street parking beyond those otherwise allowed by the SD Plan is permitted for the Veridea Sustainable Development District or portions thereof within the area of a TOD in conjunction with a TDM plan.

5.7.4 Off-Street and On-Street Loading: The Veridea Sustainable Development District or portions thereof are permitted to have comprehensive loading plans to include on-street loading in Thoroughfares during non-peak hours, on side streets and/or in non-dedicated parking areas of parking lots for all or portions of the site.

5.7.5 A portion of the parking spaces provided in any public or private parking lots or parking deck may be compact spaces if such spaces are: a) assigned and/or private spaces; b) assigned to a car-share program; c) specifically designated for electric cars; or d) approved by the TRC upon its determination that then current market data support the use by compact vehicles of the number of compact spaces proposed. A compact space will be a space of at least 8.5 feet by 14 feet, and a compact vehicle shall be a vehicle that can safely park in the area of the compact space proposed.

5.8 PARKING LOCATION STANDARDS

5.8.1 General to OS, NG, NM, VC and UC Zones

a. Parking shall be accessed by Rear Alleys or Rear Lanes, when available.
b. Open parking areas and Parking Structures shall be masked from the Frontage by a Building or Streetscreen.
c. For buildings on B-Grids, open parking areas and Parking Structures are allowed unmasked on the Frontage in the front Layer, except for corner Lots at intersections with the A-Grid.
d. Bicycle parking locations at Common Destinations shall be determined at the time of site plan approval for all Sustainable Zones including OS Zones.
e. Commercial Parking Garages may be incorporated into Mixed Use Blocks or in Mixed Use buildings on the same Lot to allow for internal block parking.

5.8.2 Specific to NG Zone

a. Open parking areas shall be located at the second and third Lot Layers, except that Driveways, drop-offs and unpaved parking areas may be located at the first Lot Layer. (Table 17d)
b. Garages shall be located at the second or third Layer except that side- or rear-entry types may be allowed in the first Layer by the TRC.
c. Driveways at Frontages shall be no wider than 24 feet in the first Layer. (Table 3B.f)

5.8.3 Specific to NM Zone

a. All parking areas and garages shall be located at the second or third Layer except for lots located on designated B-Grids. (Table 17d)
b. Driveways at Frontages shall be no wider than 24 feet in the first Layer. (Table 3B.f)

5.8.4 Specific to VC and UC Zones

a. All parking lots, garages, and Parking Structures shall be located at the second or third Layer except along B-Grids where parking may be located in the first layer. (Table 17d)
b. Vehicular entrances to parking lots, garages, and Parking Structures shall be no wider than 24 feet at the Frontage for A-Grid Thoroughfares. Driveways at Frontages for B-Grid Thoroughfares shall be no wider than necessary to accommodate the straight and turn lanes in the first Layer. (Table 3B.f)
c. Parking Structures on the A-Grid shall have Liner Buildings lining the first and second Stories.

5.9 LANDSCAPE STANDARDS

5.9.1 General to OS, NG, NM, VC and UC Zones

a. The landscape plantings shall consist of native or naturalized species requiring minimal irrigation, fertilization and maintenance as shown on Table 6.
b. Street trees and landscape planted in public rights-of-way shall require maintenance agreements with the Town.
c. Public utility locations, placement and accessibility shall be laid out and engineered so that trees and landscaping and utility conflicts are eliminated or substantially minimized.
d. Trees shall not be required in the first Layer where Setbacks are less than 12 feet.
e. Planting selection in the first Layer shall be appropriate for the scale of the space and located so as to avoid conflicts with buildings, walls and utilities.
f. Street trees shall be planted within the Public Frontage as illustrated in Table 7 and listed in Table 4C. Street trees may be shifted or eliminated along any Thoroughfares as long as the average number of trees based upon the Public Frontage is met for the site plan or Subdivision Plan. Tree preservation areas located in Open Space Zones shall be exempt from the street tree planting requirements. Public Frontages on Thoroughfares that are exempt from the tree planting requirement and Thoroughfare Assemblies for Rear Lanes, Rear Alleys, or where the landscape type is listed as trees clustered shall not be used in the calculation of the average number of trees.
g. In order to accommodate the intended density, connectivity and integration of uses, the landscape requirements set forth in UDO 7.2.5 C) 9) and UDO 7.2.5 C) 12) through UDO 7.2.5. C) 14) shall not apply within the Development.
h. Screening shall comply with UDO 8.2.8. Notwithstanding the foregoing, HVAC and other mechanical units shall not be required to be screened from adjacent properties when not visible from the public street.
i. Veridea shall comply with UDO 8.2.1, 8.2.2 and 8.2.3, except that, in order to accommodate the intended density, connectivity and integration of uses, the landscape buffer requirements of UDO 8.2 shall not apply.

j. Fences, walls and berms shall comply with UDO 8.2.7, except to the extent modified by Articles 5.5.5.e, 5.5.5.f. and 5.8.1.b. hereof.

5.9.2 Specific to NG and NM Zones

a. The first Layer may not be paved, with the exception of Driveways as specified in Article 5.8. (Table 17d)

5.9.3 Specific to NG Zone

a. One appropriately sized tree at maturity per Lot shall be planted within the first Layer. (Table 17d)
b. Trees shall be of single or multiple native or naturalized species as shown on Table 6.
c. Trees shall be naturalistically clustered.
d. Lawn shall be permitted upon site plan approval. Only re-use water, where available, may be used for Lawn irrigation.

5.9.4 Specific to NM Zone

a. One appropriately sized tree at maturity per Lot shall be planted within the first Layer. (Table 17d)
b. Trees should not be of a single species throughout large areas. Tree species selected are permitted to alternate along blocks. Selection of plant material shall be appropriate for the scale of the space.
c. Lawn shall be permitted. Only re-use water, where available, may be used for Lawn irrigation.

5.9.5 Specific to VC and UC Zones

a. Trees shall not be required in the first Layer.
b. The first Layer may be paved to match the pavement of the Public Frontage.
c. A minimum of one shade tree is required for every two thousand (2,000) square feet of vehicular surface area located within or adjacent to the parking area. Parking Structures are excluded from this requirement.
d. A minimum of 1 shrub is required for every five hundred (500) square feet of vehicular surface area. Selection of the plant material shall be appropriate for the scale of the space. Parking Structures are excluded from this requirement.
e. All vehicular surface areas within fifty (50) feet of any right-of-way that are visible from a Thoroughfare (street) are required to be screened from off-site view to a minimum height of thirty-six (36) inches. Plants, closed fences, walls, earthen berms or a combination thereof may be used to satisfy this requirement. Plants must be a minimum of thirty-six (36) inches at maturity or used in combination with earthen berms to satisfy this requirement. Screening material other than plants and earthen berms shall be harmonious with surrounding architecture and shall accommodate pedestrian and vehicular ingress and egress where applicable.
f. No vehicular parking space shall be located farther than fifty (50) feet from the back of curb in a planting area with one shade tree, or seventy five (75) feet from the back of curb in a planting area with two or more shade trees. Parking Structures are excluded from this requirement.

5.10 SIGNAGE

5.10.1 General to All Sustainable Zones

Signage shall comply with UDO 8.6, Signs, except that the requirements of UDO 8.6 may be varied by the standards set forth in the Pattern Book(s).

5.11 COMMUNICATION TOWERS

5.11.1 General to All Sustainable Zones

a. Communication Towers are exempt from the standards set forth in UDO 4.4.3 B).
b. Existing Communication Towers will be contained on a Lot.
c. Existing Communication Towers may be located a Lot that contains other uses.
d. Existing Communication Towers, or a portion thereof, may occupy a leased parcel on the Lot in which it is located.
e. New or relocated Communication Towers shall be located in accordance with Table 12.
f. New rooftop communication towers and devices may be allowed within UC and VC Zones.

5.12 EXTERIOR LIGHTING

5.12.1 General to All Sustainable Zones

Exterior lighting shall comply with UDO 8.7, Exterior Lighting, except that the requirements of UDO 8.7 may be varied by the standards set forth in the Pattern Book(s).

5.13 PATTERN BOOK(S)

A Pattern Book(s) may be submitted for approval from time to time in accordance with UDO 2.3.16 F) 3) a). Each site plan submitted with respect to Veridea shall designate the existing Pattern Book, or portion thereof, which shall be applicable to the site plan, or a Pattern Book applicable thereto shall be submitted with the site plan for approval pursuant to UDO 2.3.16 F) 3) a).

ARTICLE 6.0 TABLES

6.1 TABLES

6.1.1. The Tables which follow shall establish, together with the foregoing provisions of the SD Plan and applicable provisions of the UDO, other Town Ordinances and Town Standards, the standards and regulations which shall govern all development and land use within the Development.

6.1.2. If the Responsible Person so determines, as with the other provisions of the SD Plan, specific portions of the Tables may be affected by additional or elective regulations and standards hereafter adopted by the Town Council in accordance with UDO 2.3.16 F) 3) a) or 2.3.16 F) 3) c).

6.1.3. Design Standards contained in one or more of the Articles, Sections, or Tables of the Plan that pertain to the same aspect of development may be implemented independently or in conjunction with one another.

6.1.4. The text and numerical descriptions in the Tables are an integral part of this SD Plan. However, the graphics that accompany them represent guidelines. Where in conflict, the text and numerical descriptions shall take precedence over graphics.

6.2 TOWN STANDARDS

6.2.1 The Town and the Responsible Person may enter into a Development Agreement providing that the Town Standards applicable to the Development shall be those in existence as of the date of the adoption of this SD Plan. However, notwithstanding the foregoing, the Apex Standard Specifications and Standard Details, as modified and amended from time to time, shall be applicable to the Development, except to the extent otherwise specifically provided in this SD Plan or where the modified Apex Standard Specifications and Standard Details are specifically inapplicable to Veridea.

TABLE 1. SUSTAINABLE ZONE DESCRIPTIONS

TABLE 1A: Sustainable Zone Descriptions. This table provides descriptions of the character of each Sustainable Zone.

OS



OS - OPEN SPACE

OS Open Space Zone consists of lands approximating or reverting to a natural condition and farmland, parks, Civic Uses, RCA, utility corridors, non-street easements, greenways, waterways or water bodies, including lands unsuitable for settlement due to topography, hydrology or vegetation.

General Character:	Natural landscape and parkland (active and passive parks) with some civic and agricultural use
Building Placement:	Variable front and side setbacks for park structures, civic structures, agricultural and maintenance buildings
Frontage Types:	Variable
Building Height:	1- to 2-Story
Type of Civic Space:	Parks, Greenways, Civic Buildings

NG



NG - NEIGHBORHOOD GENERAL

NG Neighborhood General Zone consists of low density residential areas, adjacent to higher zones that consists of some mixed use. Home occupations and outbuildings are allowed. Planting is naturalistic and setbacks are relatively deep. Blocks may be large and the Thoroughfares irregular to accommodate natural conditions.

General Character:	Lawns, and landscaped yards surrounding predominantly detached single-family houses with some mix of Townhouses; pedestrians occasionally
Building Placement:	Medium and variable front and side yard Setbacks
Frontage Types:	Porches, fences, naturalistic tree planting
Building Height:	1- to 3-Story with some 4-Story
Type of Civic Space:	Parks, Greenways

NM

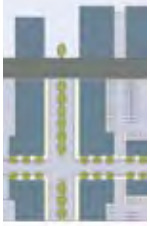


NM - NEIGHBORHOOD MIXED-USE

NM Neighborhood Mixed-Use Zone consists of mixed uses within a medium to high density residential urban fabric. It may have a wide range of building types: single, sideyard, rowhouses, and apartments. Setbacks and landscaping are variable. Thoroughfares with curbs and sidewalks define medium-sized blocks.

General Character:	Mix of Houses, Townhouses & Apartment buildings, with moderate Commercial activity; balance between landscape and buildings; presence of pedestrians
Building Placement:	Shallow to medium front and side yard Setbacks
Frontage Types:	Porches, fences, Dooryards
Building Height:	1- to 4-Story with a few taller Mixed Use buildings up to 7 stories adjacent to Village Center Zones and major transportation corridors
Type of Civic Space:	Squares, Greens

VC A-GRID



VC - VILLAGE CENTER - A-GRID

VC Village Center Zone consists of higher density mixed use buildings that accommodate retail, offices, rowhouses and apartments. It has a tight network of Thoroughfares, with wide sidewalks, steady street tree planting and buildings set close to the sidewalks.

General Character:	Shops mixed with Townhouses, larger Apartment houses, Offices, workplace, and Civic buildings; predominantly attached buildings; trees within the public right-of-way; substantial pedestrian activity
Building Placement:	Shallow Setbacks or none; buildings oriented to the street defining a street wall. See the Concept Map for locations
Frontage Types:	Stoops, Shopfronts, Galleries
Building Height:	1- to 10-Story with some variation up to 15 stories adjacent to Urban Center Zones,
Type of Civic Space:	Parks, Plazas and Squares, median landscaping

UC A-GRID



UC - URBAN CORE - A-GRID

UC Urban Core Zone consists of the highest density and height, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks; Thoroughfares have steady street tree planting and buildings are set close to wide sidewalks.

General Character:	Medium-high to high-Density Mixed Use buildings, entertainment, Civic and cultural uses. Attached buildings forming a continuous street wall; trees within the public right-of-way; highest pedestrian and transit activity
Building Placement:	Shallow Setbacks or none; buildings oriented to street, defining a street wall.
Frontage Types:	Stoops, Dooryards, Forecourts, Shopfronts, Galleries, and Arcades
Building Height:	4- to 20-Story with a few shorter buildings including some 1 story uses
Type of Civic Space:	Parks, Plazas and Squares; median landscaping

TABLE 1. SUSTAINABLE ZONE DESCRIPTIONS

VC B-GRID



VC - VILLAGE CENTER - B-GRID

VC Village Center Zone consisting of larger block sizes, and larger format uses supporting regional users. It has a coarse network of Thoroughfares, with sidewalks, regular street tree planting.

General Character:	Larger single-use retail, office, and manufacturing formats with out-parcels permitted, transitioning to shops mixed with Townhouses, and larger Apartment houses towards A-Grid Zones; trees within the public right-of-way; substantial automobile activity
Building Placement:	Larger setbacks with parking permitted in the setback for any Layer except along adjacent A-Grids
Frontage Types:	Common Yard, Shopfronts,
Building Height:	Predominantly 1- to 4-Story with some increased variation up to 7 stories
Type of Civic Space:	Not required

UC B-GRID



UC - URBAN CORE - B-GRID

UC Urban Core Zone consists of the highest density and height, with predominantly office, lab, and research uses. It may have larger blocks; a coarse network of Thoroughfares, regular street tree planting and may have buildings set back from the sidewalks.

General Character:	High-density single and Mixed Use buildings. Attached and detached buildings forming a continuous street wall or set-back from the street; trees within the public right-of-way; highest pedestrian activity near the building and substantial automobile activity at the parking
Building Placement:	Shallow setbacks or none along A-Grid Thoroughfares with buildings oriented to streets transitioning to larger setbacks with parking permitted in the setback for any Layer
Frontage Types:	Common Yards, Stoops, Dooryards, Forecourts, Shopfronts, Galleries, and Arcades
Building Height:	1- to 20-Story with a few shorter buildings including some 1 story uses
Type of Civic Space:	None required

TABLE 2. VERIDEA SUSTAINABLE DEVELOPMENT CONCEPT MAP

Sustainable Zones

OS	Open Space and Civic Use
NG	Neighborhood General
NM	Neighborhood Mixed Use
VC-A	Village Center - A Grid
VC-B	Village Center - B Grid
UC-A	Urban Core - A Grid
UC-B	Urban Core - B Grid

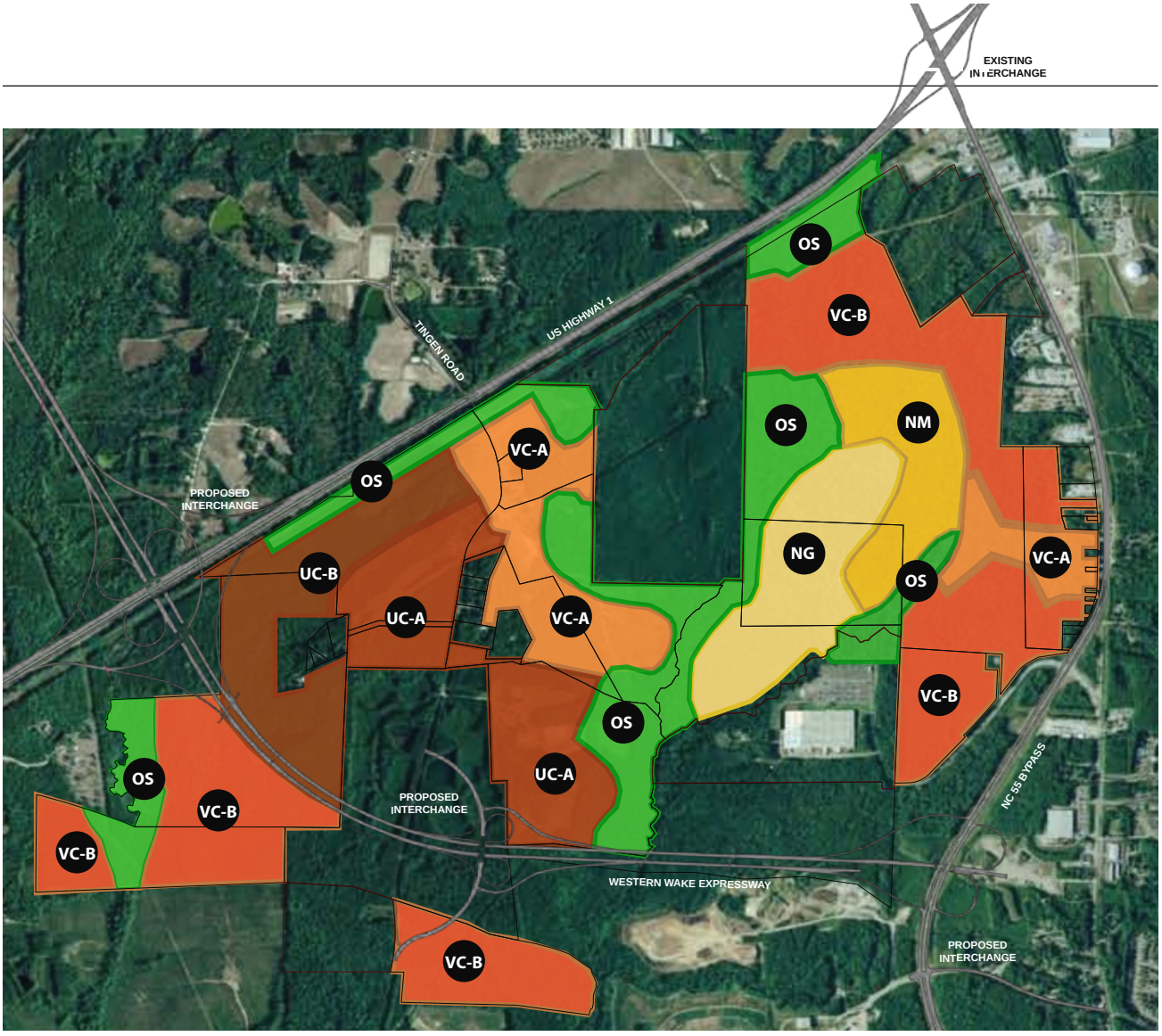


TABLE 3A. VEHICULAR LANE DIMENSIONS

TABLE 3A: Vehicular Lane Dimensions. This table assigns lane widths to Sustainable Zones. The Design ADT (Average Daily Traffic) is the determinant for each of these sections. The assemblies are shown in Table 3B. Design Speeds shown in these Tables represent desired speeds for traffic flow based on typical sections. Thoroughfare alignments (excluding Rear Lanes and Rear Alleys) shall be based on a minimum 25 mile per hour design speed. Design exceptions to otherwise posted regulatory speed, if approved by the TRC will require warning signs.

DESIGN SPEED	TRAVEL LANE WIDTH	OS	NG	NM	VC	UC
Below 20 mph	10 feet	■	■	▫		
20-25 mph	10 feet	■	■	■	▫	▫
25-35 mph	10 feet	■	■	■	■	■
25-35 mph	11 feet	■			■	■
Above 35 mph	12 feet	■			■	■

DESIGN SPEED	PARKING LANE WIDTH					
20-25 mph	(Angle) 16 to18 feet				■	■
20-25 mph	(Parallel) 7 to 8 feet		■	■	■	
25-35 mph	(Parallel) 8 feet		■	■	■	■
Above 35 mph	(Parallel) 9 feet				■	■

DESIGN SPEED	EFFECTIVE TURNING RADIUS					(See Table 17b)
Below 20 mph	5-10 feet		■	■	■	■
20-25 mph	10-15 feet	■	■	■	■	■
25-35 mph	15-20 feet	■	■	■	■	■
Above 35 mph	20-30 feet	■			▫	▫

■ BY RIGHT

▫ BY THE TRC

TABLE 3B. VEHICULAR LANE & PARKING ASSEMBLIES

TABLE 3B: Vehicular Lane/Parking Assemblies. The projected design speeds determine the dimensions of the vehicular lanes and Turning Radii assembled for Thoroughfares. All dimensions listed are minimums. Design Speeds shown in these Tables represent desired speeds for traffic flow based on typical sections. Thoroughfare alignments (excluding Rear Lanes and Rear Alleys) shall be based on a minimum 25 mile per hour design speed. Design exceptions to otherwise posted regulatory speed, if approved by the TRC will require warning signs.

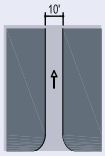
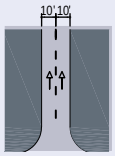
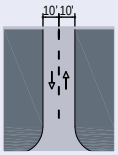
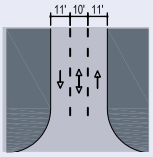
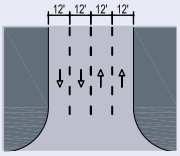
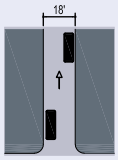
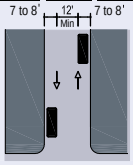
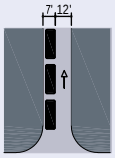
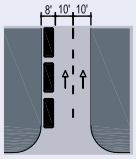
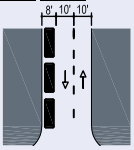
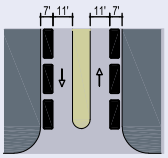
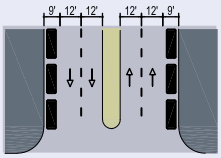
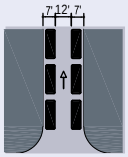
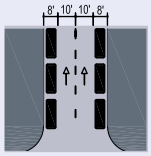
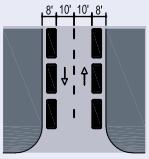
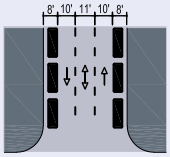
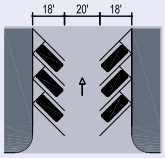
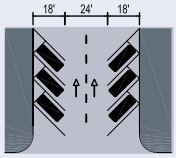
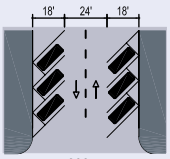
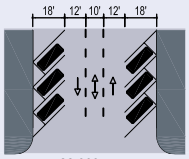
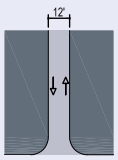
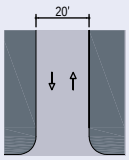
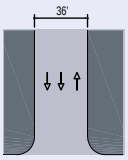
	ONE WAY MOVEMENT →		TWO WAY MOVEMENT →		
a. NO PARKING	OS NG 	OS 	OS NG 	OS 	OS 
Design ADT	300 VPD	600 VPD	2,500 VPD	22,000 VPD	36,000 VPD
Pedestrian Crossing	3 Seconds	5 Seconds	5 Seconds	9 Seconds	13 Seconds
Design Speed	20 - 30 MPH	Below 20 MPH	20-25 MPH		35 MPH and above
b. YIELD PARKING	OS NM 		NG NM VC UC 		
Design ADT	1,000 VPD		1,000 VPD		
Pedestrian Crossing	5 Seconds		7 Seconds		
Design Speed					
c. PARKING ONE SIDE PARALLEL	OS NG NM VC NG NM VC 		NG NM VC 	NG NM VC UC 	NG NM VC UC 
Design ADT	5,000 VPD	18,000 VPD	16,000 VPD	15,000 VPD	32,000 VPD
Pedestrian Crossing	5 Seconds	8 Seconds	8 Seconds	11 Seconds	13 Seconds
Design Speed	20-30 MPH		25-30 MPH	25-30 MPH	
d. PARKING BOTH SIDES PARALLEL	NG NM VC UC NM VC UC 		NM VC UC 	VC UC 	
Design ADT	8,000 VPD	20,000 VPD	15,000 VPD	22,000 VPD	
Pedestrian Crossing	7 Seconds	10 Seconds	10 Seconds	13 Seconds	
Design Speed	Below 20 MPH	25-30 MPH	25-30 MPH	25-30 MPH	
e. PARKING BOTH SIDES DIAGONAL	VC UC 	VC UC 	VC UC 	VC UC 	
Design ADT	18,000 VPD	20,000 VPD	15,000 VPD	22,000 VPD	
Pedestrian Crossing	15 Seconds	17 Seconds	17 Seconds	20 Seconds	
Design Speed	Below 20 MPH	20-25 MPH	20-25 MPH	25-30 MPH	
f. PARKING ACCESS			NG NM 	NG NM VC UC 	NM VC UC 
Design ADT					
Pedestrian Crossing			3 Seconds	6 Seconds	10 Seconds
Design Speed					

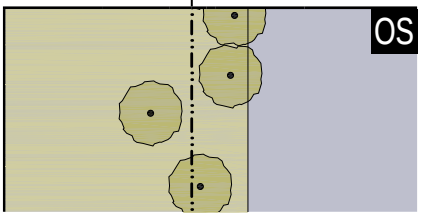
TABLE 4A. PUBLIC FRONTAGES - GENERAL

TABLE 4A: Public Frontages - General. The Public Frontage is the area between the private Lot line and the edge of the vehicular lanes. Dimensions are given in Table 4B. Note:

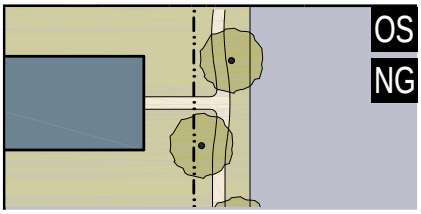
PLAN

LOT ▶ ◀ R.O.W.
PRIVATE FRONTAGE ▶ ◀ PUBLIC FRONTAGE

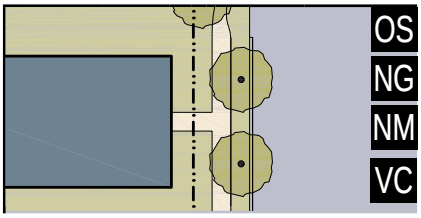
a. (HW) Highway: This Frontage has open Swales, Bicycle Trails and no parking. The landscaping consists of the natural condition or multiple species arrayed in naturalistic clusters. Buildings are buffered by distance or berms.



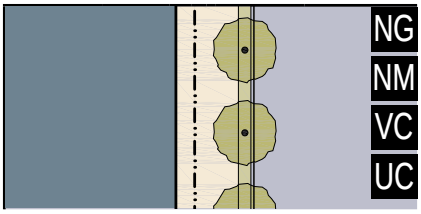
b. (RD) Road: This Frontage has open Swales and a Sidewalk walking Path or Bicycle Trail and Yield parking. The landscaping consists of multiple species arrayed in naturalistic clusters.



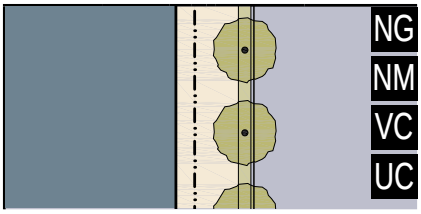
c. (ST) Street: This Frontage has raised Curbs drained by inlets and Sidewalks separated from the vehicular lanes by individual or continuous Planters, with parking on one or both sides. The landscaping consists of street trees of a single or alternating species aligned in a regularly spaced Allee, with the exception that Streets with a right-of-way (R.O.W.) width of 40 feet or less are exempt from tree requirements.



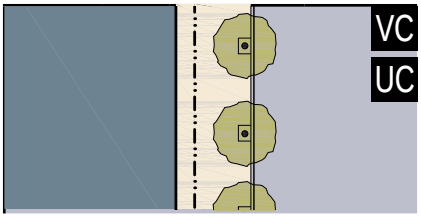
d. (DR) Drive: This Frontage has raised Curbs drained by inlets and a wide Sidewalk or paved Path along one side, related to a Greenway or waterfront. It is separated from the vehicular lanes by individual or continuous Planters. The landscaping consists of street trees of a single or alternating species aligned in a regularly spaced Allee.



e. (AV) Avenue: This Frontage has raised Curbs drained by inlets and wide Sidewalks separated from the vehicular lanes by a narrow continuous Planter with parking on both sides. The landscaping consists of a single tree species aligned in a regularly spaced Allee.



f. (CS) (AV) Commercial Street or Avenue: This Frontage has raised Curbs drained by inlets and very wide Sidewalks along both sides separated from the vehicular lanes by separate tree wells and parking on both sides. The landscaping consists of a single tree species aligned with regular spacing where possible, but clears the storefront entrances.



g. (BV) Boulevard: This Frontage may have Slip Streets on both sides. It consists of raised Curbs drained by inlets and Sidewalks along both sides, separated from the vehicular lanes by Planters. The landscaping consists of double rows of a single tree species aligned in a regularly spaced Allee.

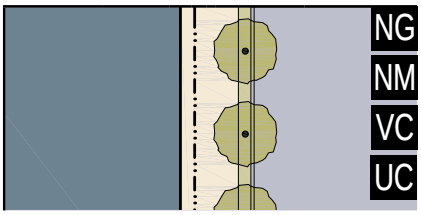


TABLE 4B. PUBLIC FRONTAGES - SPECIFIC

Table 4B: Public Frontages - Specific. This table assembles prescriptions and dimensions for the Public Frontage elements - Curbs, walkways and Planters – relative to specific Thoroughfare types within Sustainable Zones. Table 4B-a assembles all of the elements for the various street types. Public Frontages also include bicycle parking where applicable.

R U R A L I I I I I I I I I I I I I I I I I Z O N E S I I I I I I I I I I I I I I I I I U R B A N

B - G R I D I I I I I I I I I I I I I A - G R I D

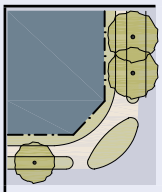
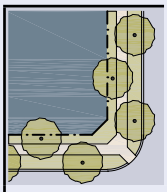
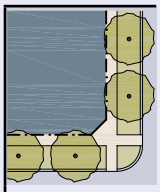
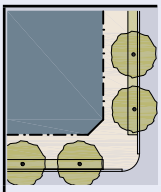
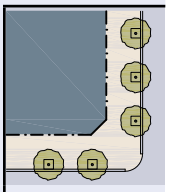
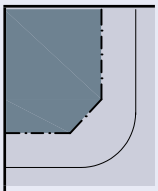
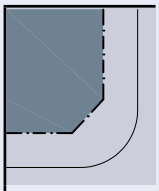
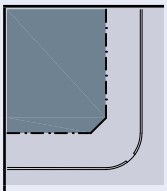
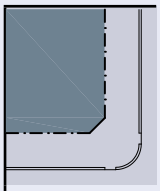
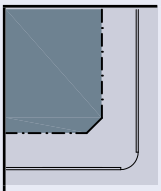
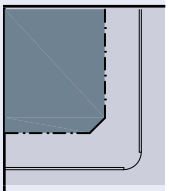
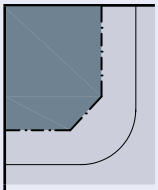
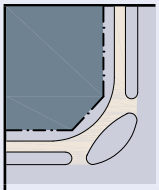
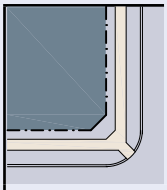
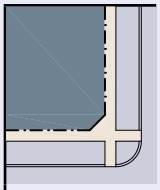
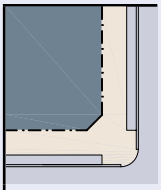
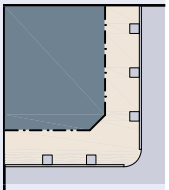
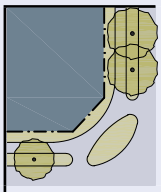
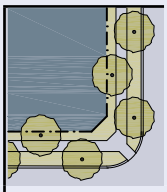
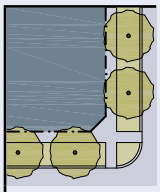
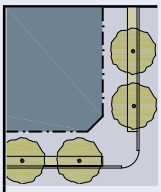
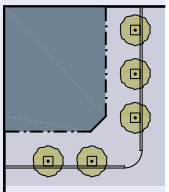
SUSTAINABLE ZONE Public Frontage Type	OS HW	OS NG RD & ST	NG NM VC ST-DR-AV	NM VC UC ST-DR-AV-BV	VC UC CS-DR-AV-BV	VC UC CS-DR-AV-BV
a. **Assembly:** The principal variables are the type and dimension of Curbs, walkways, Planters and landscape. Total Width	 16-24 feet	 12-24 feet	 12-18 feet	 12-18 feet	 18-24 feet	 18-30 feet
b. **Curb:** The detailing of the edge of the vehicular pavement, incorporating drainage. Type Radius	 Open Swale 10-30 feet	 Open Swale or Curb 10-30 feet	 Raised Curb 5-20 feet	 Raised Curb 5-20 feet	 Raised Curb 5-20 feet	 Raised Curb 5-20 feet
c. **Walkway:** The pavement dedicated exclusively to pedestrian activity. Type Width	 Path Optional n/a	 Path, Sidewalk, or BT 5-8 feet	 Sidewalk 5-8 feet	 Sidewalk 5-8 feet	 Sidewalk 12-20 feet	 Sidewalk 12-30 feet
d. **Planter:** The layer which accommodates street trees and other landscape. Arrangement Species Planter Type Planter Width	 Clustered Multiple Continuous Swale 8 feet-16 feet	 Clustered Multiple Continuous Swale 8 feet-16 feet	 Regular Alternating Continuous Planter 8 feet-12 feet	 Regular Single Continuous Planter 8 feet-12 feet	 Regular Single Continuous Planter 4 feet-6 feet	 Opportunistic Single Tree Well 4 feet-6 feet
e. **Landscape:** The recommended plant species. (See Table 6)						
f. **Lighting:** The recommended Public Lighting. (See Table 5)						

TABLE 4C. THOROUGHFARE ASSEMBLIES

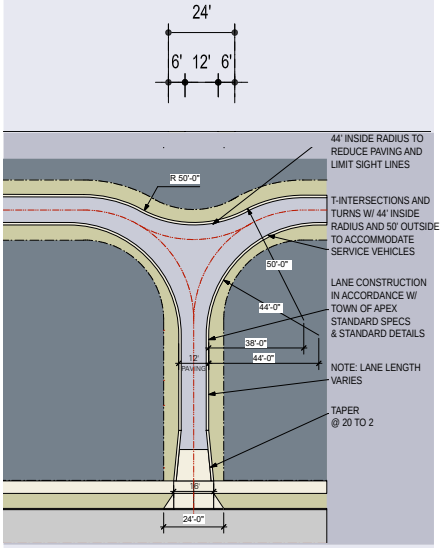
TABLE 4C: Thoroughfare Assemblies. These Thoroughfares are assembled from the elements that appear in Tables 3A and 3B and incorporate the Public Frontages of Table 4A. The key gives the Thoroughfare type followed by the right-of-way width, followed by the pavement width, and in some instances followed by specialized transportation capability. All dimensions listed are minimums. Design Speeds shown in these Tables represent desired speeds for traffic flow based on typical sections. Thoroughfare alignments (excluding Rear Lanes and Rear Alleys) shall be based on a minimum 25 mile per hour design speed. Design exceptions to otherwise posted regulatory speed, if approved by the TRC will require warning signs.

KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

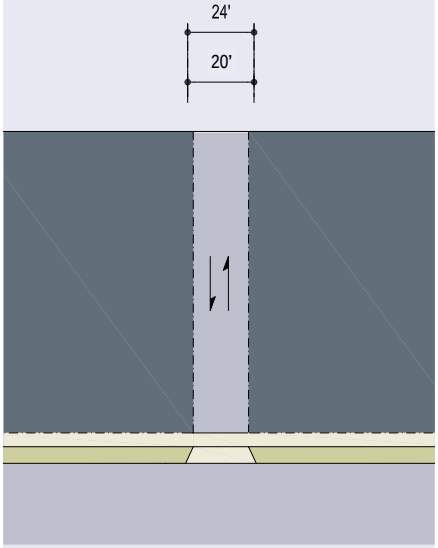
THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR



KEY	RL-24-12
Thoroughfare Type	Rear Lane
Sustainable Zone Assignment	OS, NG, NM
Right-of-Way Width	24 feet
Pavement Width	12 feet
Movement	Yield Movement
Design Speed	10 MPH
Pedestrian Crossing Time	3.5 seconds
Traffic Lanes	n/a
Parking Lanes	None
Curb Radius	Flared section with driveway apron
Walkway Type	None
Planter Type	None
Curb Type	
Landscape Type	None
Transportation Provision	None

Note: Rear Lanes may be public or private. If Rear Lanes are public, the minimum pavement width shall be 16 feet. Private maintenance shall be required for private Rear Lanes and the maintenance shall be adequately funded by a Veridea property owners' association.



KEY	RA-24-20
Thoroughfare Type	Rear Alley
Sustainable Zone Assignment	NG, NM, VC, UC
Right-of-Way Width	24 feet min
Pavement Width	20 feet min
Movement	Slow Movement
Design Speed	10 MPH
Pedestrian Crossing Time	7 seconds
Traffic Lanes	n/a
Parking Lanes	None
Curb Radius	Driveway apron
Walkway Type	None
Planter Type	None
Curb Type	
Landscape Type	None
Transportation Provision	None

Note: Rear Alleys may be public or private. If Rear Alleys are private, then private maintenance shall be required and the maintenance shall be adequately funded by a Veridea property owners' association.

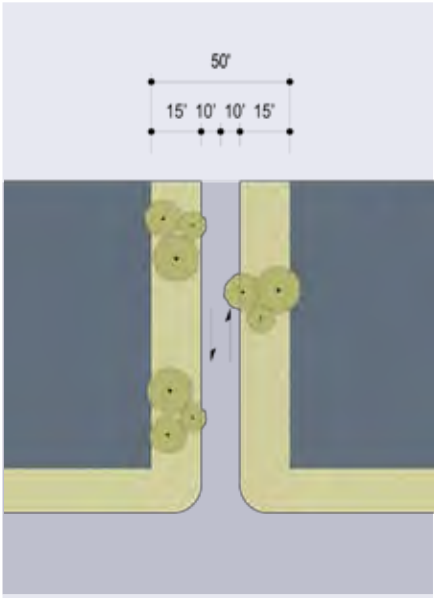
TABLE 4C THOROUGHFARE ASSEMBLIES

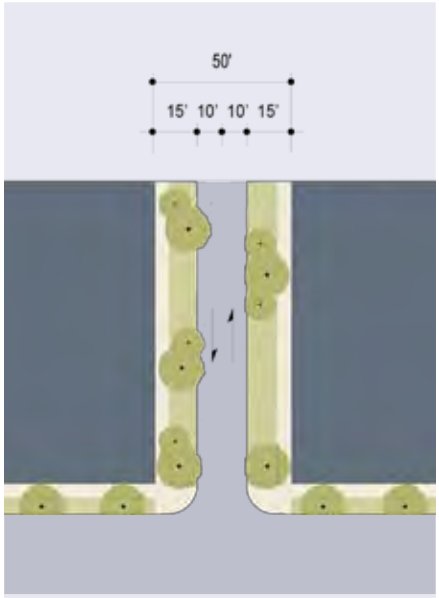
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	RDOS-50-20	RD-50-20
Thoroughfare Type	Road	Road
Sustainable Zone Assignment	OS	OS, NG
Right-of-Way Width	50 feet	50 feet
Pavement Width	16 feet	18 feet
Movement	Slow Movement	Slow Movement
Design Speed	15 MPH	15 MPH
Pedestrian Crossing Time	5.1 seconds	5.1 seconds
Traffic Lanes	2 lanes	2 lanes
Parking Lanes	None	None
Curb Radius	25 feet	25 feet
Walkway Type	Path, Sidewalk or BT	Path, Sidewalk or BT
Planter Type	Continuous Swale	Continuous Swale
Curb Type	Swale or Curb	Swale or Curb
Landscape Type	Trees clustered	Trees clustered
Transportation Provision	BT	BT

Note: Requires approval of TRC

Note: Curb radius to be high-strength / reinforced

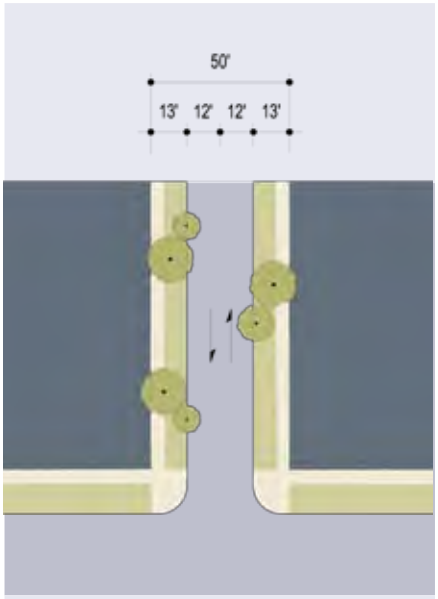
TABLE 4C THOROUGHFARE ASSEMBLIES

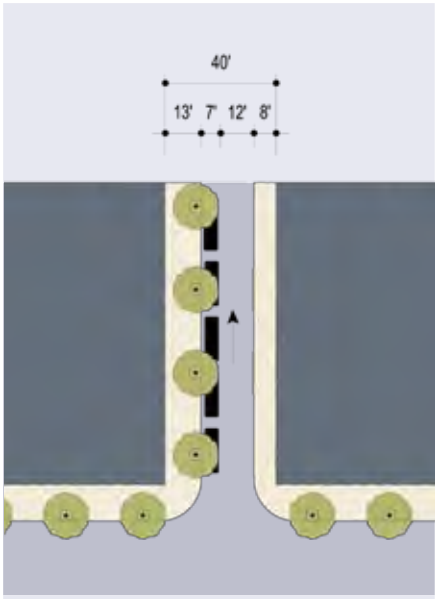
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	RD-50-24	ST-40-19
Thoroughfare Type	Road	Street
Sustainable Zone Assignment	OS, NG	OS, NG, NM, VC
Right-of-Way Width	50 feet	40 feet
Pavement Width	24 feet	19 feet
Movement	Slow Movement	Slow Movement
Design Speed	20 MPH	20 MPH
Pedestrian Crossing Time	6.8 seconds	5.4 seconds
Traffic Lanes	2 lanes	1 lane
Parking Lanes	None	One side @ 7 feet marked
Curb Radius	25 feet	15 feet
Walkway Type	Path, Sidewalk or BT	13/8 foot Sidewalk
Planter Type	Continuous Swale	Tree well (Permitted but not required per 4.5.3 e. ii.)
Curb Type	Swale or Curb	Curb
Landscape Type	Trees clustered	Trees at 50' o.c. Avg. (Permitted but not required per 4.5.3 e. ii.)
Transportation Provision	BL optional, BT optional	

Note: Requires approval of TRC
Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

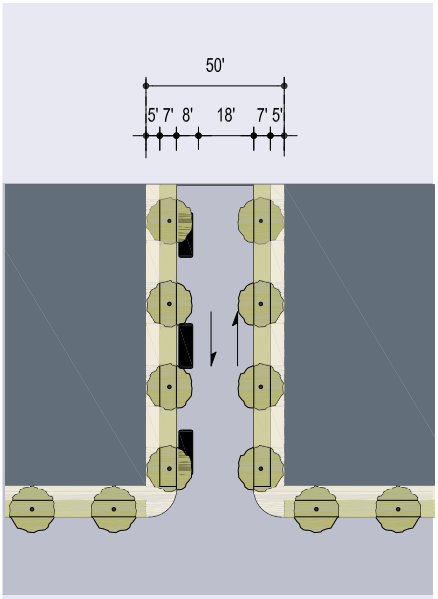
TABLE 4C THOROUGHFARE ASSEMBLIES

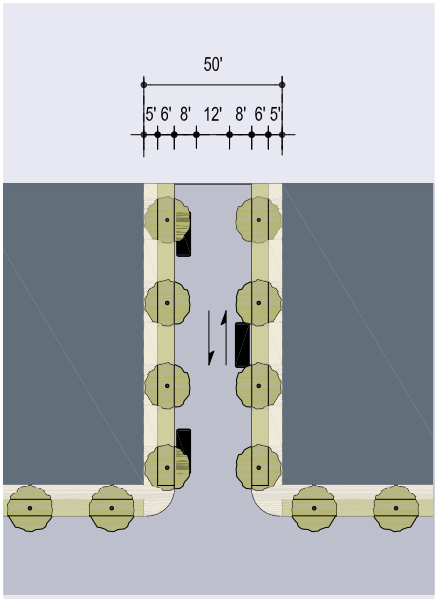
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	ST-50-26	ST-50-28
Thoroughfare Type	Street	Street
Sustainable Zone Assignment	NG, NM, VC, UC	NG, NM, VC, UC
Right-of-Way Width	50 feet	50 feet
Pavement Width	26 feet	28 feet
Movement	Free Movement	Yield Movement
Design Speed	20 MPH	20 MPH
Pedestrian Crossing Time	7.4 seconds	7.6 seconds
Traffic Lanes	2 lanes	2 lane
Parking Lanes	One side @ 8 feet marked	Both sides @ 8 feet unmarked
Curb Radius	10 feet	10 feet
Walkway Type	5 foot Sidewalk	5 foot Sidewalk
Planter Type	7 foot continuous Planter	6 foot continuous Planter
Curb Type	Curb	Curb
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision	BL optional	BL optional

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

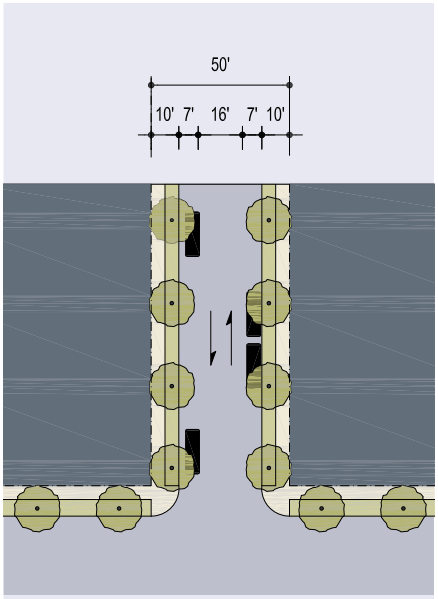
TABLE 4C THOROUGHFARE ASSEMBLIES

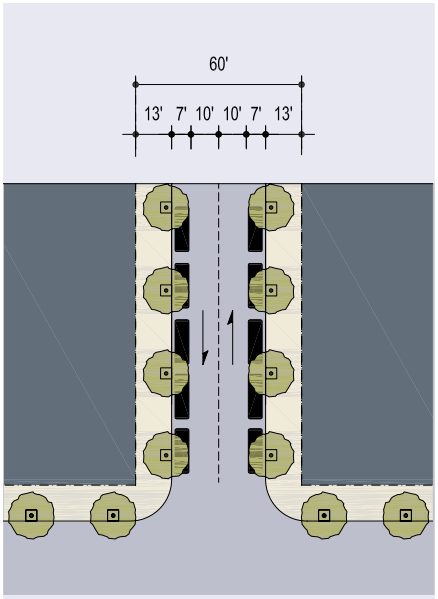
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	ST-50-30	ST-60-34
Thoroughfare Type	Street	Street
Sustainable Zone Assignment	NG, NM, VC	NG, NM, VC, UC
Right-of-Way Width	50 feet	60 feet
Pavement Width	30 feet	34 feet
Movement	Slow Movement	Slow Movement
Design Speed	20 MPH	20 MPH
Pedestrian Crossing Time	8.5 seconds	9.7 seconds
Traffic Lanes	2 lanes	2 lanes
Parking Lanes	Both sides @ 7 feet unmarked	Both Sides @ 7 feet marked
Curb Radius	10 feet	15 feet
Walkway Type	5 foot Sidewalk	6 foot Sidewalk
Planter Type	5 foot continuous Planter	Tree well or 7 foot continuous Planter
Curb Type	Curb	Curb
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision	BL optional	BR

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

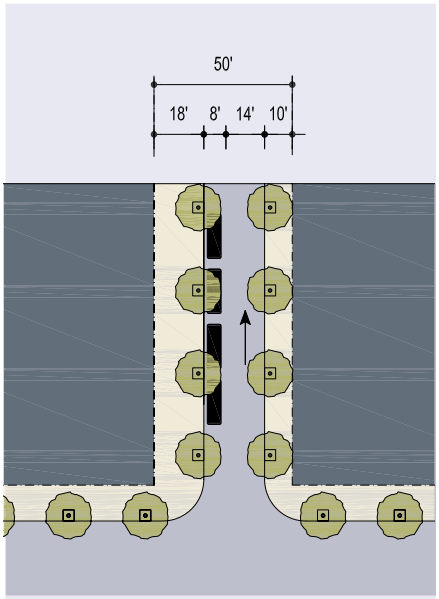
TABLE 4C THOROUGHFARE ASSEMBLIES

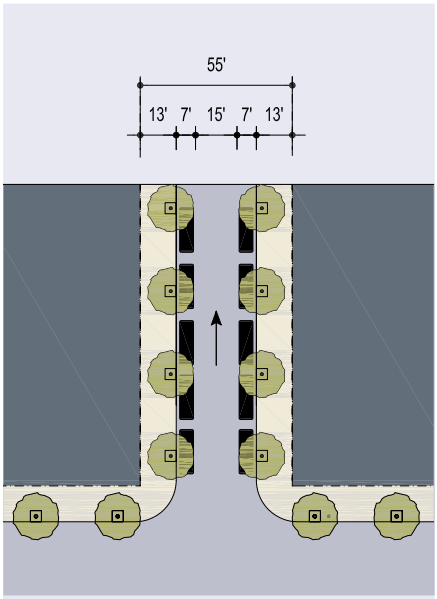
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	CS-50-22	CS-55-29
Thoroughfare Type	Commercial Street	Commercial Street
Sustainable Zone Assignment	NG, NM, VC, UC	NG, NM, VC, UC
Right-of-Way Width	50 feet	55 feet
Pavement Width	22 feet	29 feet
Movement	Slow Movement	Slow Movement
Design Speed	20 MPH	20 MPH
Pedestrian Crossing Time	6.2 seconds	8.2 seconds
Traffic Lanes	1 lane	1 lane
Parking Lanes	One side @ 8 feet marked	Both sides @ 7 feet marked
Curb Radius	15 feet	15 feet
Walkway Type	18/10 foot Sidewalk	13 foot Sidewalk
Planter Type	Tree well	Tree well
Curb Type	Curb	Curb
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision		

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

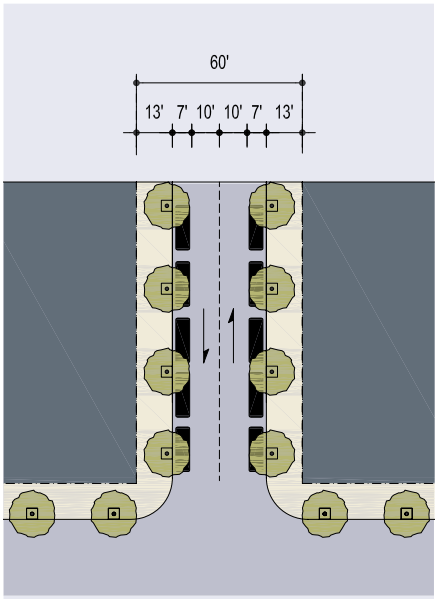
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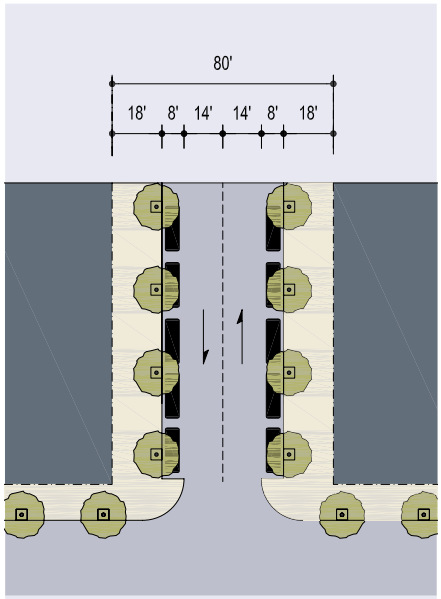
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	CS-60-34	CS-80-44
Thoroughfare Type	Commercial Street	Commercial Street
Sustainable Zone Assignment	NM, VC, UC	VC, UC
Right-of-Way Width	60 feet	80 feet
Pavement Width	34 feet	44 feet
Movement	Slow Movement	Free Movement
Design Speed	20 MPH	25 MPH
Pedestrian Crossing Time	9.7 seconds	8 seconds at corners
Traffic Lanes	2 lanes	2 lanes
Parking Lanes	Both sides @ 7 feet marked	Both sides @ 8 feet marked
Curb Radius	10 feet	10 feet
Walkway Type	13 foot Sidewalk	18 foot Sidewalk
Planter Type	Tree well	Tree well
Curb Type	Curb	Curb
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision		

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

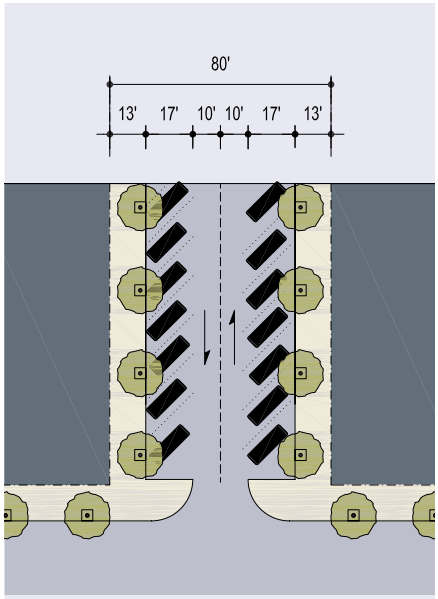
TABLE 4C THOROUGHFARE ASSEMBLIES

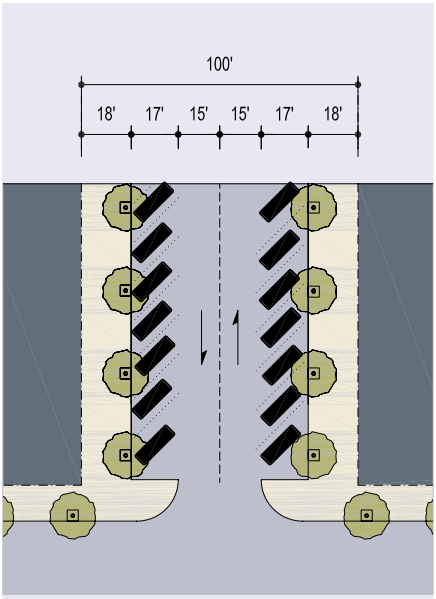
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	CS-80-54	CS-100-64
Thoroughfare Type	Commercial Street	Commercial Street
Sustainable Zone Assignment	VC, UC	VC, UC
Right-of-Way Width	80 feet	100 feet
Pavement Width	54 feet	64 feet
Movement	Slow Movement	Slow Movement
Design Speed	25 MPH	25 MPH
Pedestrian Crossing Time	5.7 seconds at corners	8.5 seconds at corners
Traffic Lanes	2 lanes	2 lanes
Parking Lanes	Both sides angled @ 17 feet marked	Both sides angled @ 17 feet marked
Curb Radius	10 feet	10 feet
Walkway Type	13 foot Sidewalk	18 foot Sidewalk
Planter Type	Tree well	Tree well
Curb Type	Curb	Curb
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision		

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

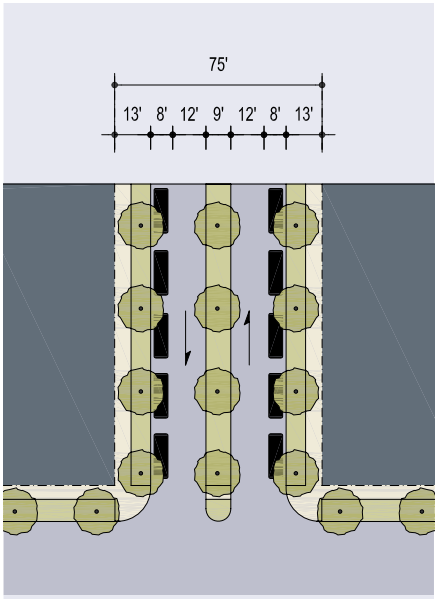
TABLE 4C THOROUGHFARE ASSEMBLIES

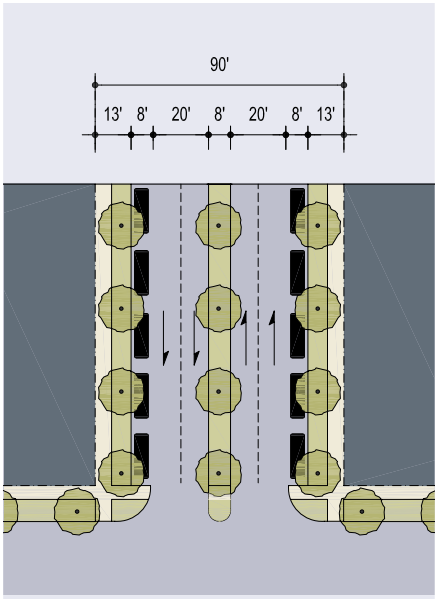
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	AV-75-40	AV-90-56
Thoroughfare Type	Avenue	Avenue
Sustainable Zone Assignment	NG, NM, VC, UC	NG, NM, VC, UC
Right-of-Way Width	75 feet	90 feet
Pavement Width	40 feet total	56 feet total
Movement	Slow Movement	Slow Movement
Design Speed	25 MPH	25 MPH
Pedestrian Crossing Time	5.7 seconds - 5.7 seconds	5.7 seconds - 5.7 seconds at corners
Traffic Lanes	2 lanes	4 lanes
Parking Lanes	Both sides @ 8 feet marked	Both sides @ 8 feet marked
Curb Radius	10 feet	10 feet
Walkway Type	6 foot Sidewalk	6 foot Sidewalk
Planter Type	7 foot continuous Planter	7 foot continuous Planter
Curb Type	Curb or Swale	Curb or Swale
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision	BR, TR	BR, TR

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

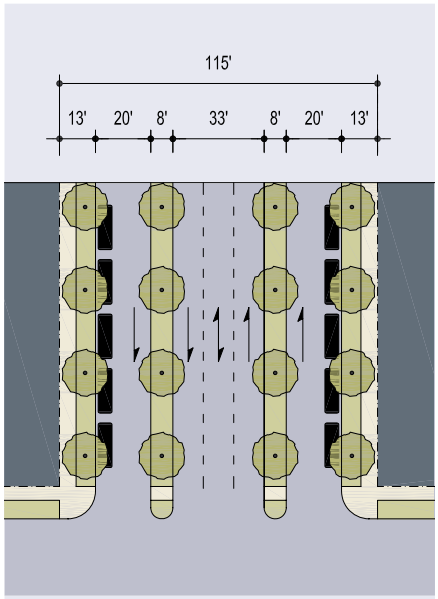
TABLE 4C THOROUGHFARE ASSEMBLIES

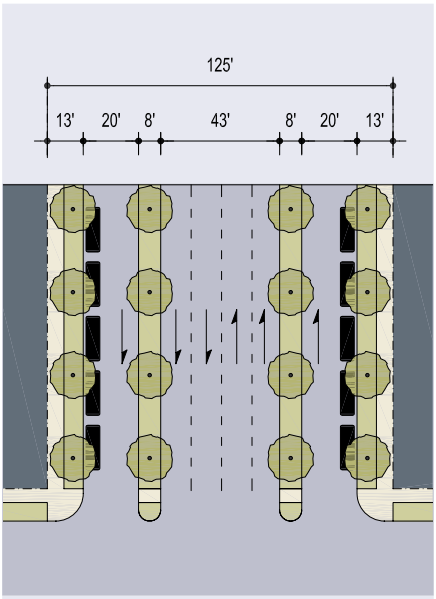
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





KEY	BV-115-33	BV-125-43
Thoroughfare Type	Boulevard	Boulevard
Sustainable Zone Assignment	VC, UC	VC, UC
Right-of-Way Width	115 feet	125 feet
Pavement Width	20 feet - 33 feet - 20 feet	20 feet - 43 feet - 20 feet
Movement	Free Movement (inner lanes)	Free Movement (inner lanes)
Design Speed	35 MPH	35 MPH
Pedestrian Crossing Time	5.7 seconds - 9.4 seconds - 5.7 seconds	5.7 seconds - 12.2 seconds - 5.7 seconds
Traffic Lanes	3 lanes, one turning lane & two one-way slip roads	4 lanes & two one-way slip roads
Parking Lanes	8 feet	8 feet
Curb Radius	10 feet	10 feet
Walkway Type	6 foot Sidewalk	6 foot Sidewalk
Planter Type	7 foot continuous Planter	7 foot continuous Planter
Curb Type	Curb	Curb
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision	BR, TR	BR, TR

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

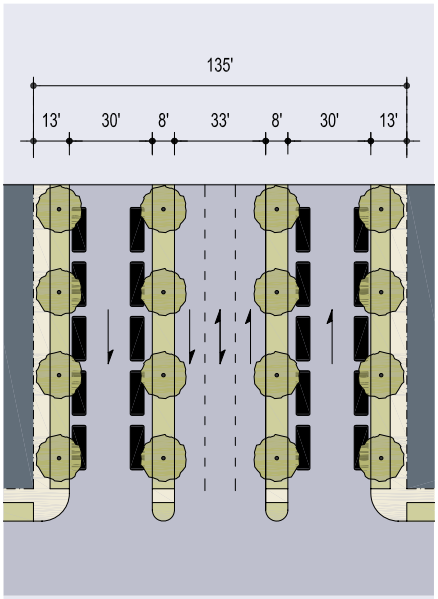
TABLE 4C THOROUGHFARE ASSEMBLIES

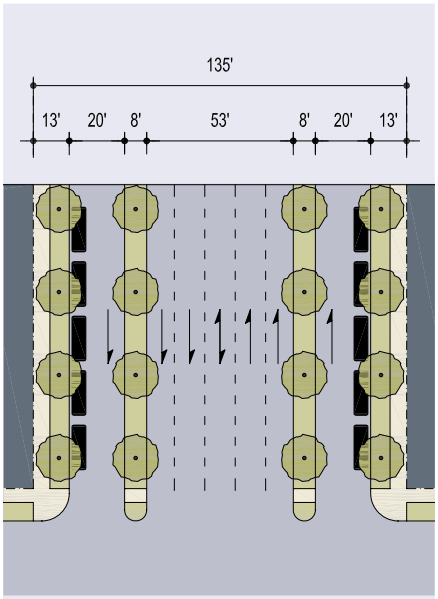
KEY ST-57-20-BL

- Thoroughfare Type
- Right of Way Width
- Pavement Width
- Transportation Provisions

THOROUGHFARE TYPES

Highway:	HW
Boulevard:	BV
Avenue:	AV
Commercial Street:	CS
Drive:	DR
Street:	ST
Road:	RD
Rear Alley:	RA
Rear Lane:	RL
Bicycle Trail:	BT
Bicycle Lane:	BL
Bicycle Route:	BR
Path:	PT
Passage:	PS
Transit Route:	TR





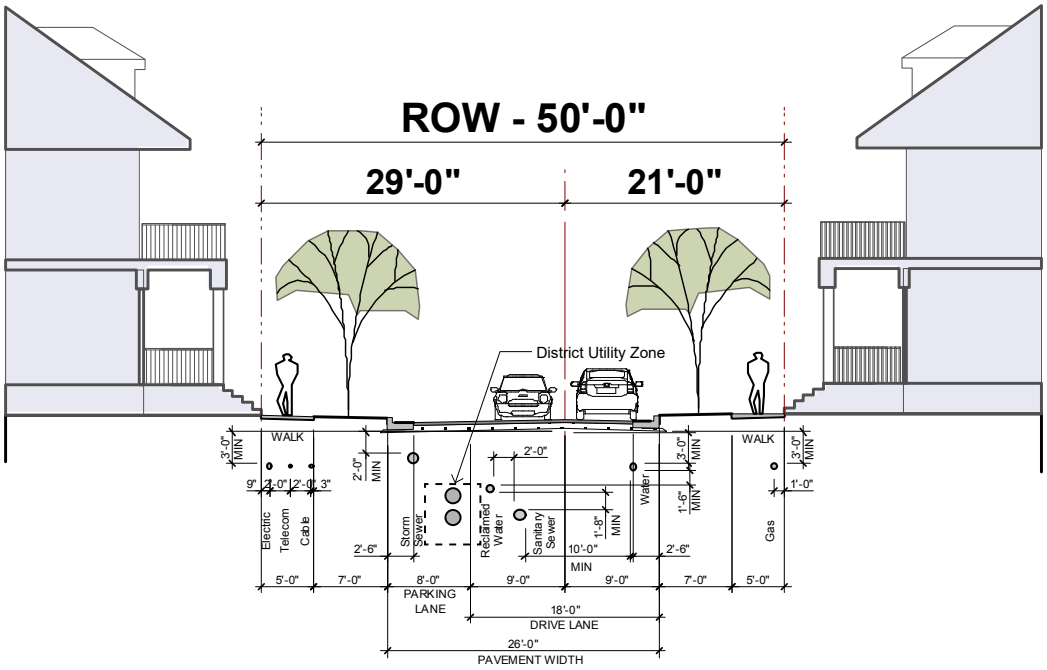
KEY	BV-135-33	BV-135-53
Thoroughfare Type	Boulevard	Boulevard
Sustainable Zone Assignment	VC, UC	VC, UC
Right-of-Way Width	135 feet	135 feet
Pavement Width	30 feet - 33 feet - 30 feet	20 feet - 53 feet - 20 feet
Movement	Free Movement	Free Movement
Design Speed	35 MPH	35 MPH
Pedestrian Crossing Time	8.5 seconds - 9.4 seconds - 8.5 seconds	5.7 seconds - 15.1 seconds - 5.7 seconds
Traffic Lanes	3 lanes, one turning lane & two one-way slip roads	5 Lanes, one turning lane & two one-way slip roads
Parking Lanes	8 feet	8 feet
Curb Radius	10 feet	10 feet
Walkway Type	6 foot Sidewalk	6 foot Sidewalk
Planter Type	7 foot continuous Planter	7 foot continuous Planter
Curb Type	Curb	Curb
Landscape Type	Trees at 50' o.c. Avg.	Trees at 50' o.c. Avg.
Transportation Provision	BR, TR	BR, TR

Note: Curb radius to be high-strength / reinforced

Note: Curb radius to be high-strength / reinforced

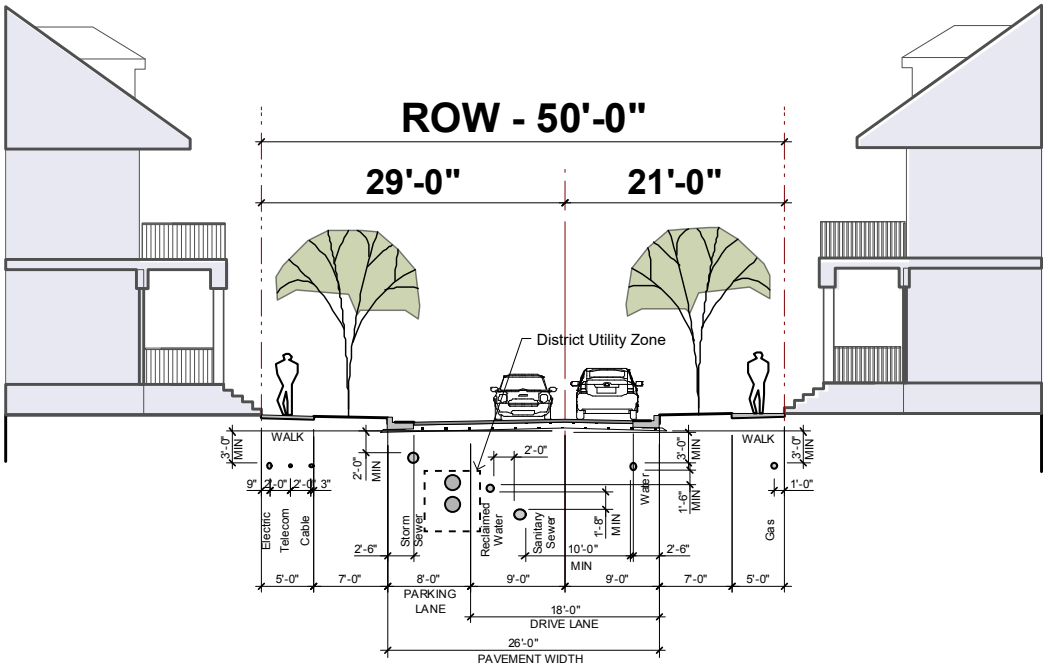
TABLE 4D. THOROUGHFARE CROSS SECTIONS

TABLE 4D: Thoroughfare Cross Sections. These Thoroughfares Cross Sections are assembled from the some of the typical Thoroughfares that appear in Table 4C and represent Standard Street Cross Sections Showing Utilities.



ST-50-26 without Rear Lane

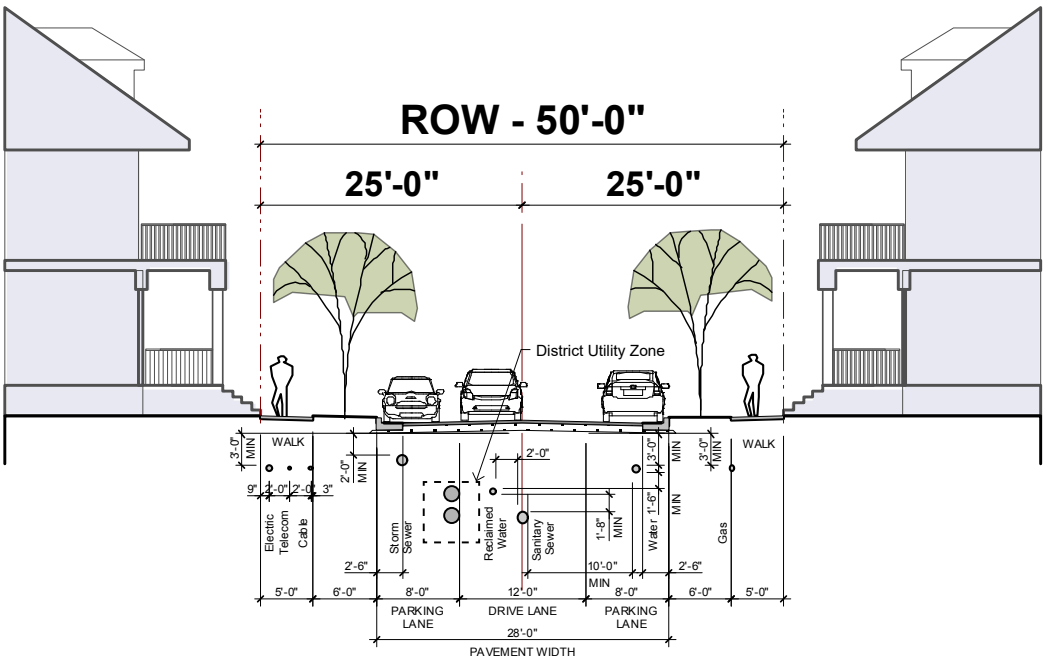
Thoroughfare Sections with Utilities



ST-50-26 with Rear Lane

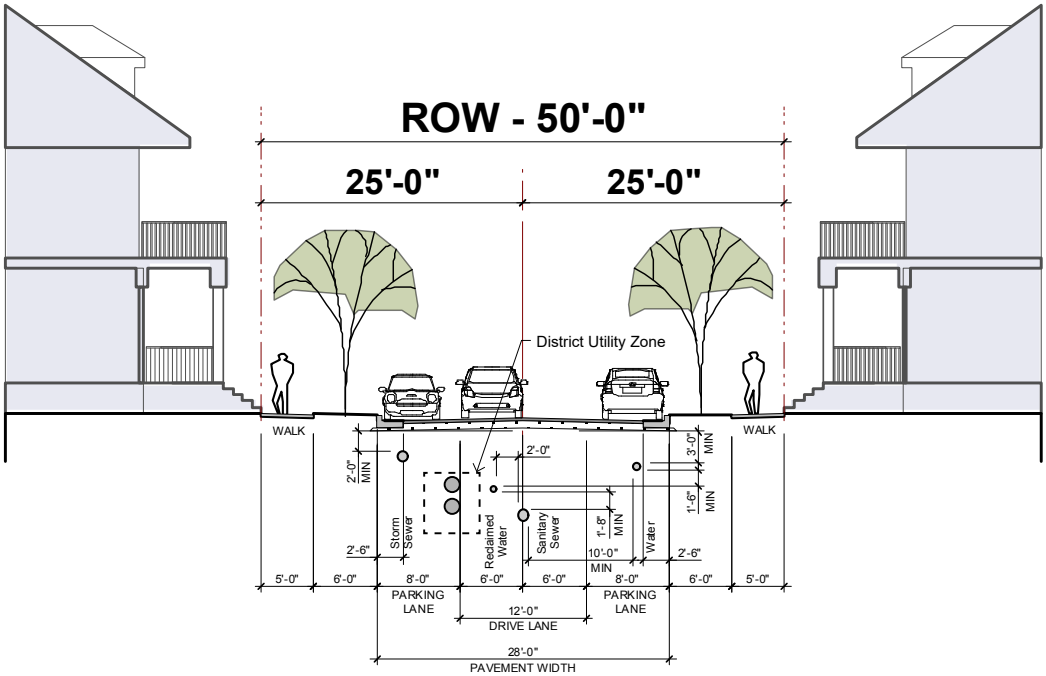
Thoroughfare Sections with Utilities

TABLE 4D. THOROUGHFARE CROSS SECTIONS



ST-50-28 without Rear Lane

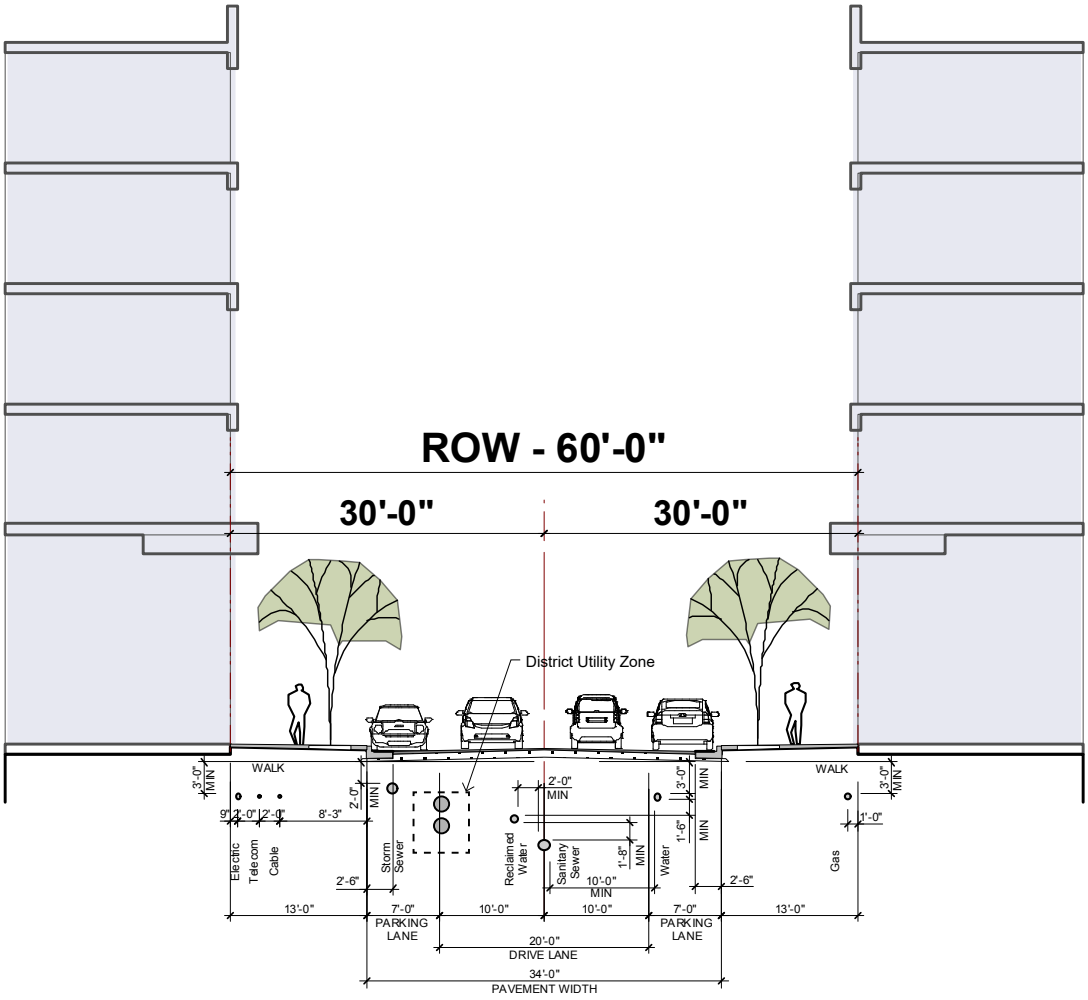
Thoroughfare Sections with Utilities



ST-50-28 with Rear Lane

Thoroughfare Sections with Utilities

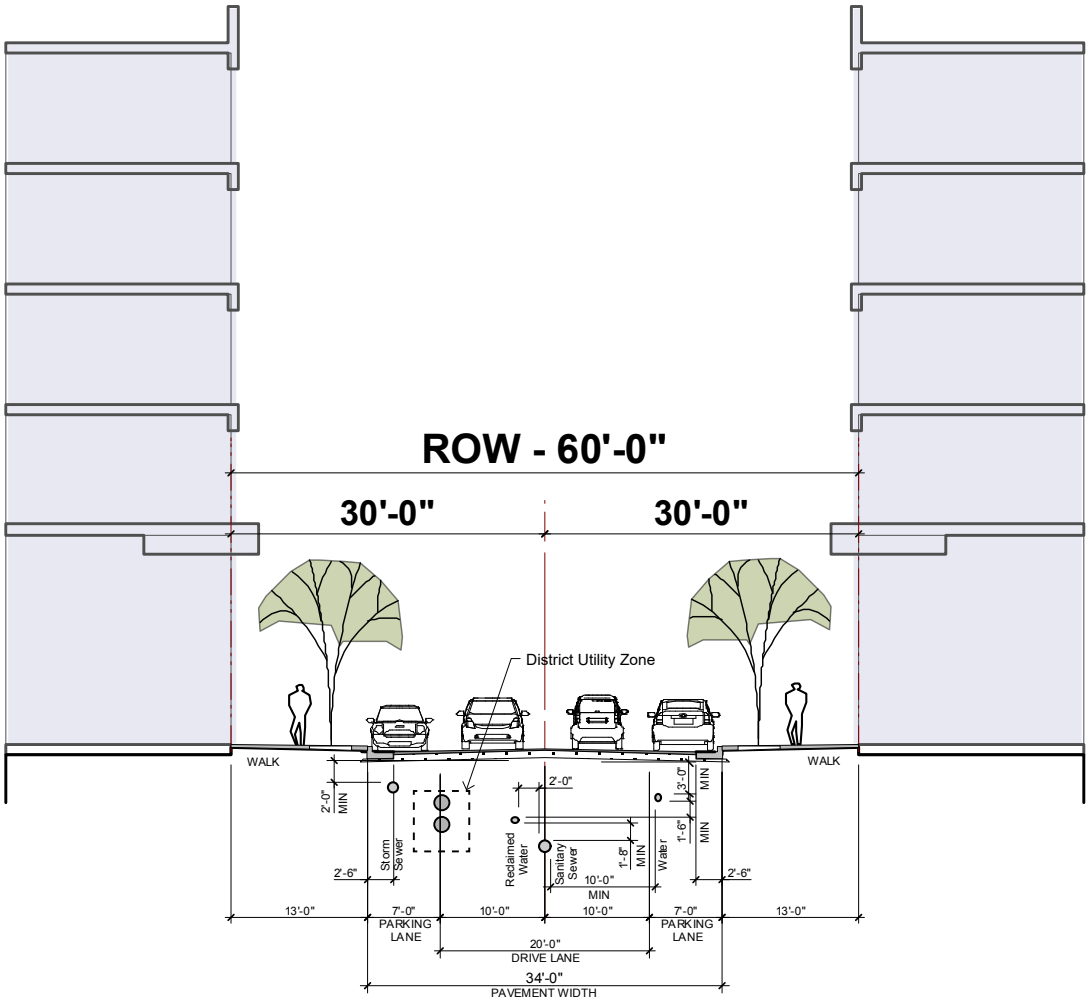
TABLE 4D. THOROUGHFARE CROSS SECTIONS



CS-60-34 without Rear Alley

Thoroughfare Sections with Utilities

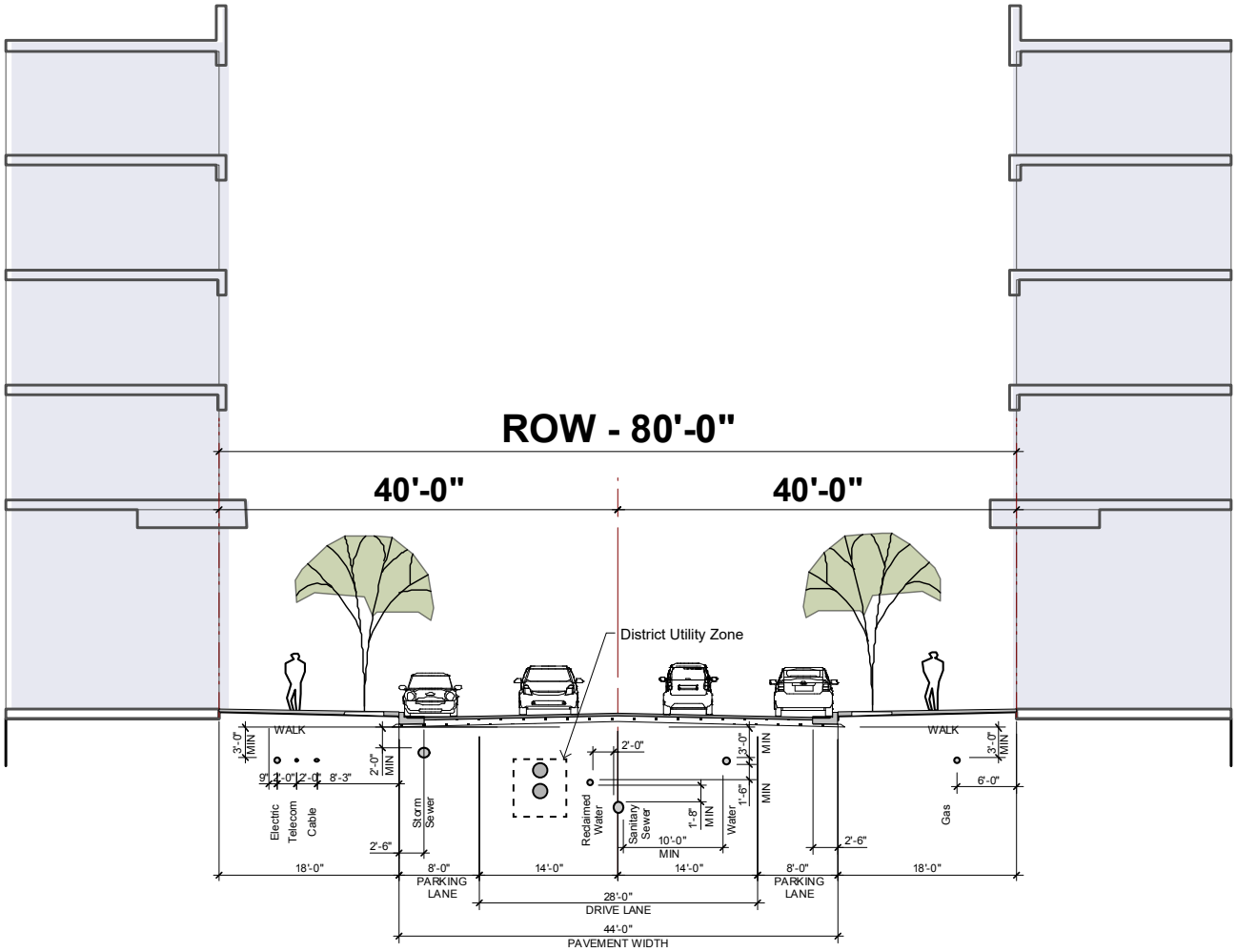
TABLE 4D. THOROUGHFARE CROSS SECTIONS



CS-60-34 with Rear Alley

Thoroughfare Sections with Utilities

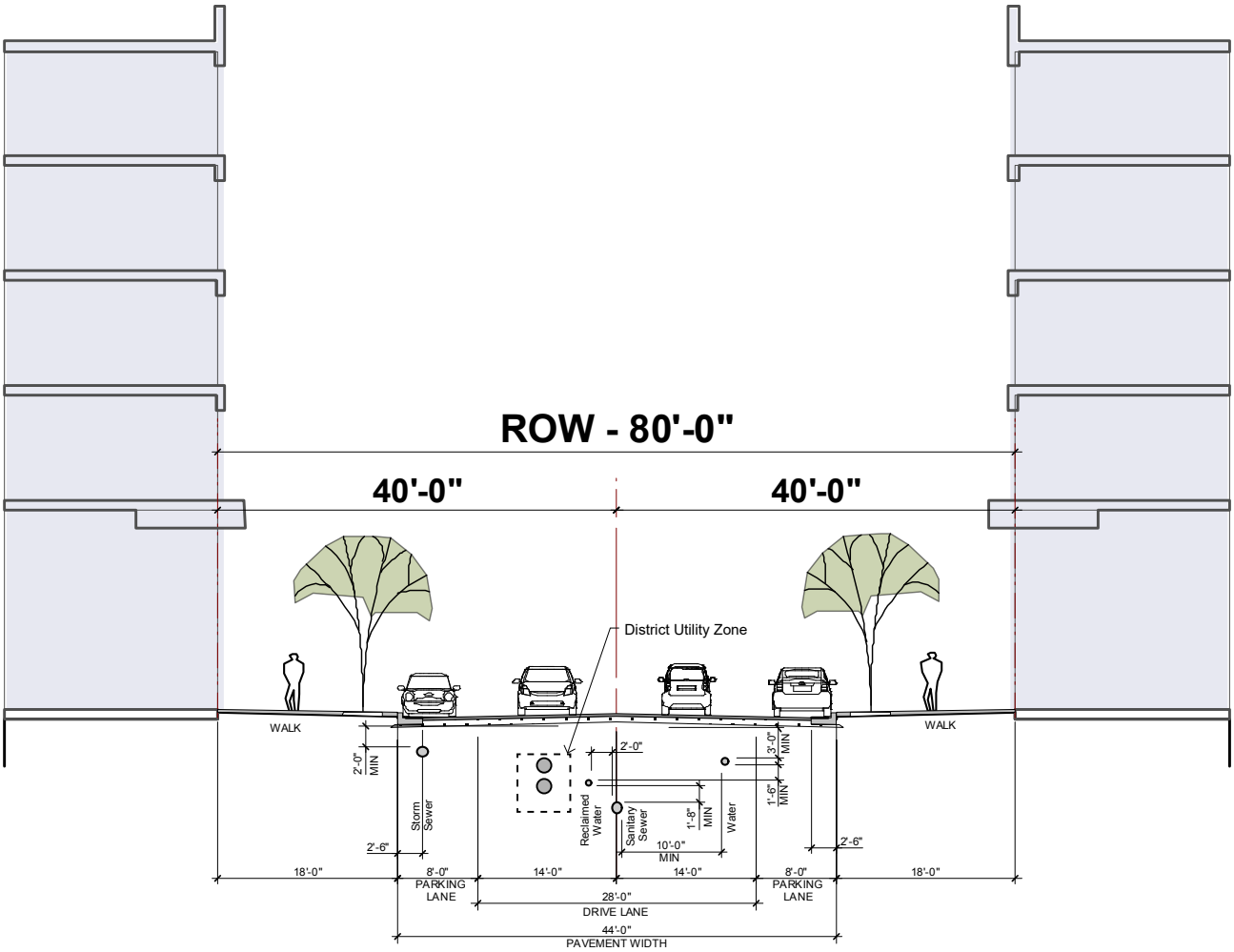
TABLE 4D. THOROUGHFARE CROSS SECTIONS



CS-80-44 without Rear Alley

Thoroughfare Sections with Utilities

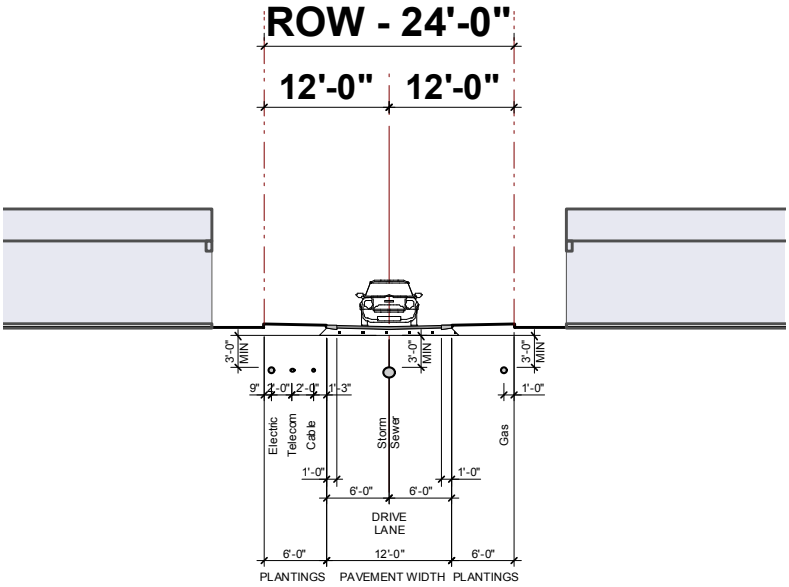
TABLE 4D. THOROUGHFARE CROSS SECTIONS



CS-80-44 with Rear Alley

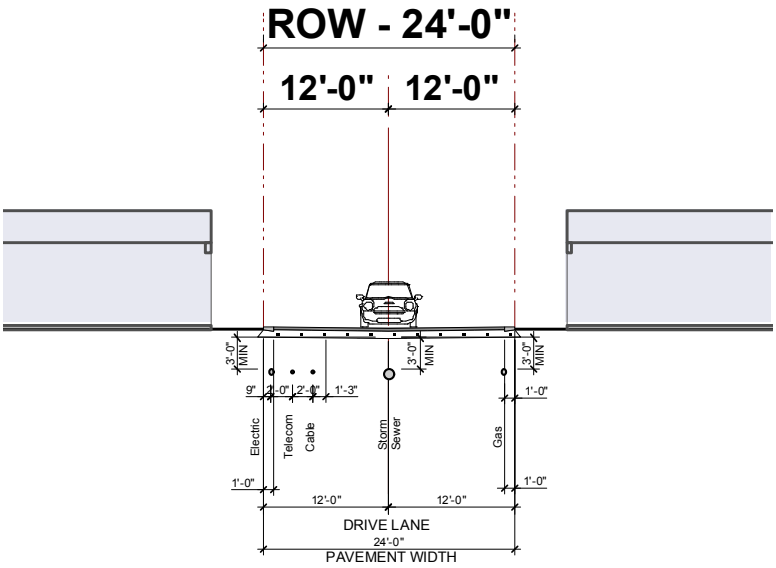
Thoroughfare Sections with Utilities

TABLE 4D. THOROUGHFARE CROSS SECTIONS



RL-12-24 Rear Lane

Thoroughfare Sections with Utilities



RA-24-24 Rear Alley

Thoroughfare Sections with Utilities

TABLE 6. PUBLIC PLANTING

TABLE 6: Public Planting. This table shows five common types of street tree shapes and their appropriateness within the Sustainable Zones. Provide adequate soil volumes for street trees set within hardscape. A registered professional shall prepare a landscape plan and provide planting details to ensure adequate soil preparation for the size and species proposed on the plan.

	OS	NG	NM	VC	UC	Native and Naturalized Plant List Table Page 27
Oval 	▪	▪	▪	▪	▪	
Ball 	▪	▪	▪	▪	▪	
Pyramid 	▪	▪	▪	▪	▪	
Umbrella 	▪	▪	▪	▪	▪	
Vase 	▪	▪	▪	▪	▪	

TABLE 6. PUBLIC PLANTING

TABLE 6: Public Planting. This table shows a list of native and naturalized trees divided in five common types of street tree shapes and their appropriateness within the Sustainable Zones. Other types of hardy plant material are allowed with TRC approval.

Oval Shape (OS, NG, NM, VC, UC)		Tree Size*
Acer campestre	Hedge Maple	L
Acer truncatum	Purpleblow Maple	M
Carpinus caroliniana	American Hornbeam	M
Pistacia chinensis cultivar “Keith Davey”	Chinese Pistache	M
Tilia americana	American Linden	L
Tilia cordata	Littleleaf Linden	M
Ball Shape (OS, NG, NM, VC, UC)		
Acer barbatum	Southern Sugar Maple	M
Acer buergeranum	Trident Maple	S
Acer ginnala	Amur Maple	M
Amelanchier arborea	Downy Serviceberry	M
Platanus X acerifolia	London Planetree	L
Quercus coccinea	Scarlet Oak	L
Quercus lyrata	Overcup Oak	L
Quercus phellos	Willow Oak	L
Qurcus shumardii	Shumard Oak	L
Quercus virginiana	Live Oak	L
Pyramid Shape (OS, NG, NM)		
Carpinus betulus	European Hornbeam	M
Cryptomeria japonica	Japanese Cryptomeria	M
Ginkgo biloba (Male only)	Ginkgo	L
Ilex opaca	American Holly	L
Juniperus virginiana	Eastern Redcedar	L
Magnolia grandifolia	Southern Magnolia	L
Metasequoia glyptostroboides	Dawn Redwood	L
Nyssa sylvatica	Black Gum	L
Umbrella Shape (OS, NG, NM)		
Celtis laevigata	Sugar Hackberry	L
Cornus florida	Flowering Dogwood	S
Gleditsia triacanthos var.inermis	Thornless Honey Locust	M
Koelreuteria paniculata	Golden Rain Tree	M
Ostrya virginiana	Ironwood	L
Ulmus parvifolia	Lacebark Elm	L
Vitex agnus-castus	Chaste Tree	S
Zelkova serrata	Japanese Zelkova	L
Vase Shape (OS, NG, NM)		
Acer ginnala	Amur Maple	M
Cercis canadensis	Eastern Redbud	S
Chionanthus virginicus	Fringetree	S
Lagerstroemia indica	Crape Myrtle	S/M
Styrax japonica	Japanese Snowbell	S

* Tree Size

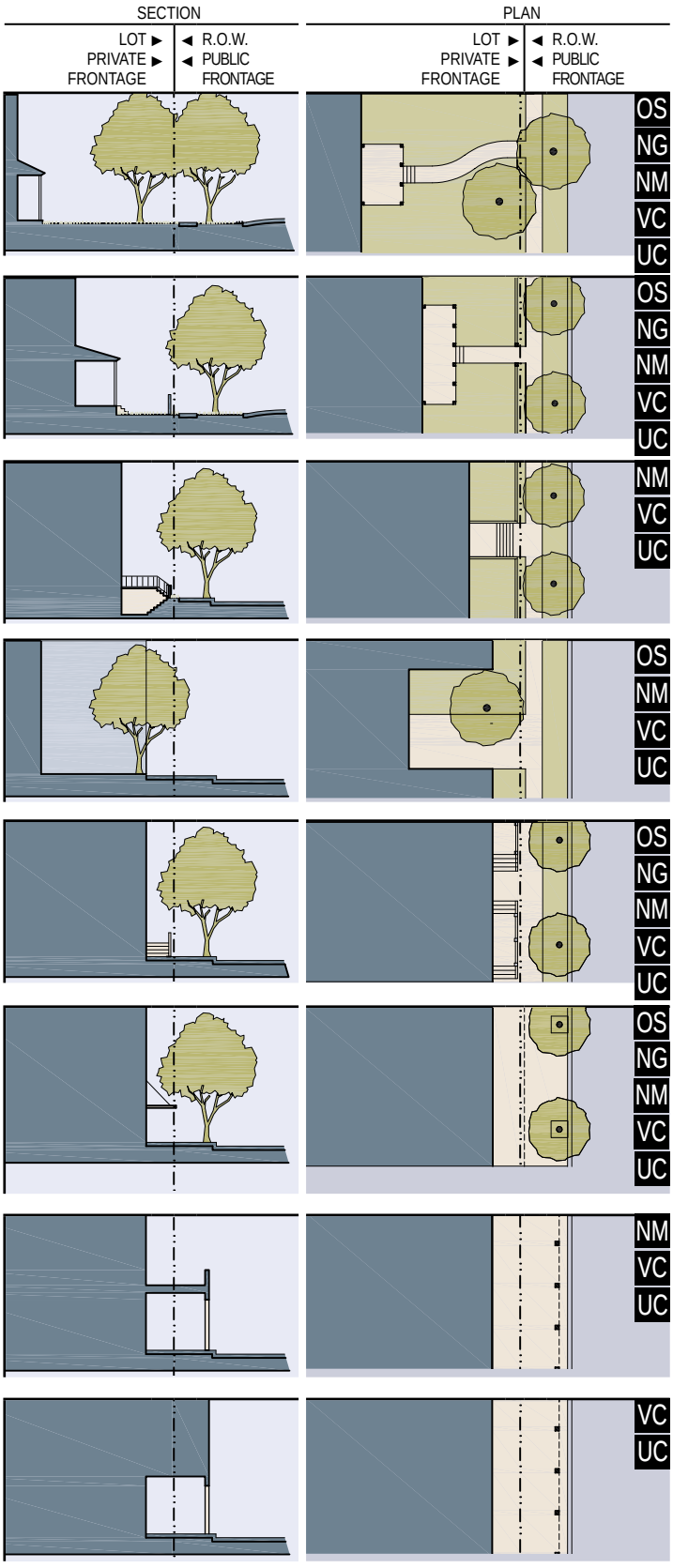
Small Tree (S): Trees with a mature height of less than 20 feet tall. Small trees shall be planted in permeable areas no less than 6’ x 8’ and 3’ minimum depth of soil preparation per Town of Apex standards.

Medium Tree (M): Trees with mature height between 20 and 30 feet tall. Medium trees shall be planted in permeable areas no less than 6’ x 8’ and 3’ minimum depth of soil preparation per Town of Apex standards

Large Trees (L): Trees with mature height above 30 feet tall. Large trees shall be planted in permeable areas no less than 10’ x 12’ and 3’ minimum depth of soil preparation per Town of Apex standards

TABLE 7. PRIVATE FRONTAGES

TABLE 7: Private Frontages. The Private Frontage is the area between the building Facade and the Lot line. Note that buildings in B-Grid Zones reflect automobile-oriented standards with parking permitted in front and larger building setbacks.



a. Common Yard - A-Grid: a planted Frontage wherein the Facade is set back from the Frontage Line. The front yard created remains unfenced and is visually continuous with adjacent yards, supporting a common landscape.
Common Yard - B-Grid: a Frontage that permits parking in the front Layer with perimeter landscaping

b. Porch: a planted Frontage wherein the Facade is set back from the Frontage Line with an attached porch permitted to Encroach. A fence, low wall or slope at the Frontage Line may be used to maintain street spatial definition. Porches shall be no less than 8 feet deep.

c. Terrace or Lightwell: a Frontage wherein the Facade is set back from the Frontage line by an elevated terrace and/or a sunken Lightwell. This type buffers Residential use from urban Sidewalks and removes the private yard from public Encroachment. Terraces are suitable for conversion to outdoor cafes. Syn: Dooryard.

d. Forecourt: a Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back. The Forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other Frontage types. Large trees within the Forecourts may overhang the Sidewalks.

e. Stoop: a Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor Residential use.

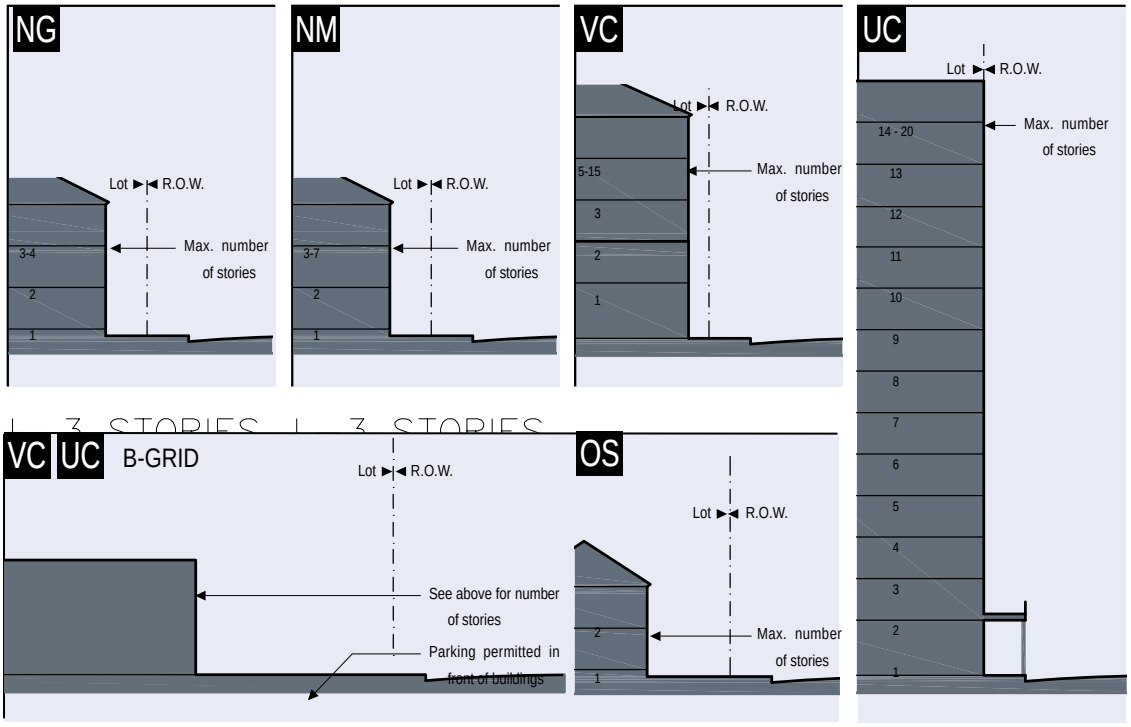
f. Shopfront - A-Grid: a Frontage wherein the Facade is aligned close to the Frontage Line with the building entrance at Sidewalk grade. This type is conventional for Retail use. It has a substantial glazing on the Sidewalk level and may have awning or canopies that may overlap the Sidewalk to within 2 feet of the Curb. Syn: Retail Frontage.
Shopfront- B-Grid: a Frontage that permits parking in the front Layer with perimeter landscaping

g. Gallery: a Frontage wherein the Facade is aligned close to the Frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the Sidewalk. This type is conventional for Retail use. The Gallery shall be no less than 10 feet wide (clear) and should overlap the Sidewalk to within 2 feet of the Curb.

h. Arcade: a colonnade supporting habitable space that overlaps the Sidewalk, while the Facade at Sidewalk level remains at or behind the Frontage Line. This type is conventional for Retail use. The Arcade shall be no less than 12 feet wide (clear) and should overlap the Sidewalk to within 2 feet of the Curb. See Table 8.

TABLE 8. BUILDING CONFIGURATION

TABLE 8: Building Configuration. This table shows the Configurations for different building heights for each Sustainable Zone. Maximum number of stories specified in Table 14k. Regardless of the number of stories, maximum height of a multi-story building shall not exceed 400 feet.



* UC not in excess of 20 stories without specific site plan review and approval by Council.

Stepbacks/Arcade/Gallery Heights. The diagrams below show Arcade and Gallery Frontages. Diagrams above apply to all other Frontages.

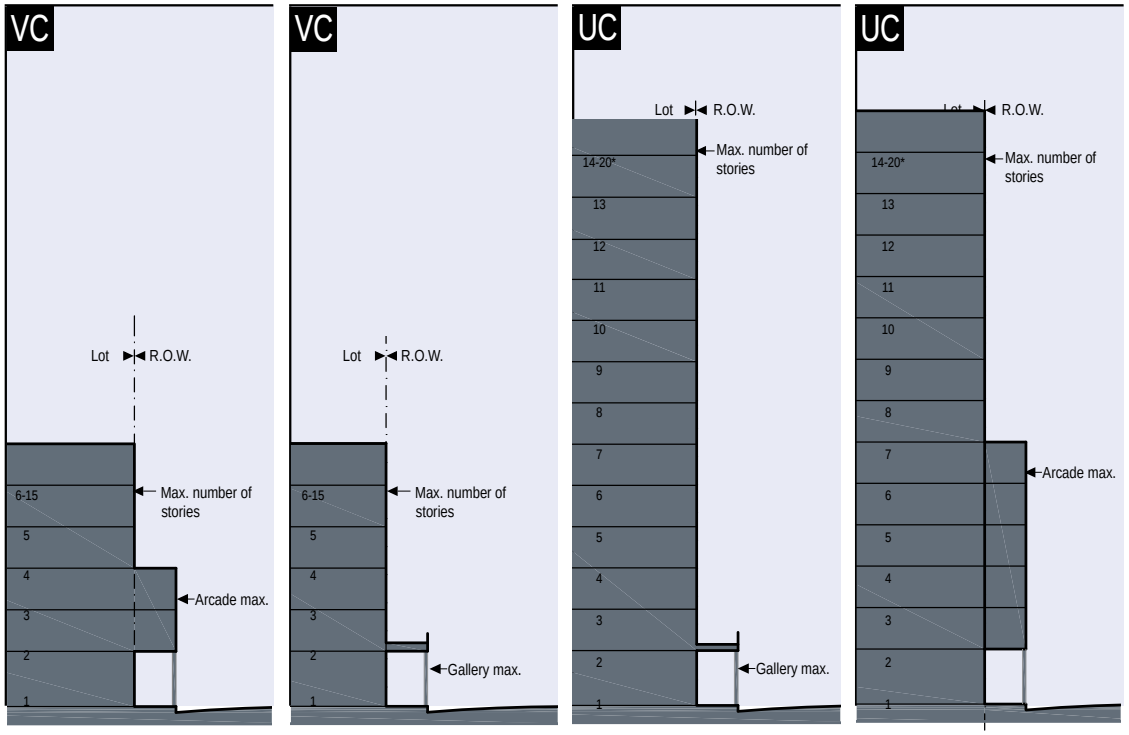
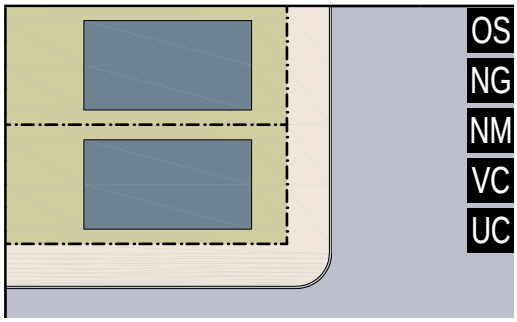


TABLE 9. BUILDING DISPOSITION

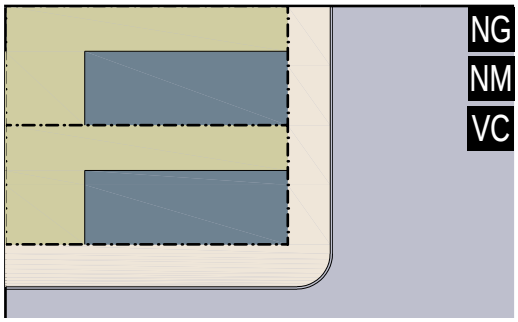
TABLE 9: Building Disposition. This table depicts the location of the structure relative to the boundaries of each individual Lot, establishing suitable basic building types for each Sustainable Zone.

a. Edgeyard - A-Grid: A building that occupies the center of its Lot with Setbacks on all sides. The front yard is visually continuous with the yards of adjacent buildings. The rear yard can be secured for privacy by fences and a well-placed Backbuilding and/or Outbuilding.

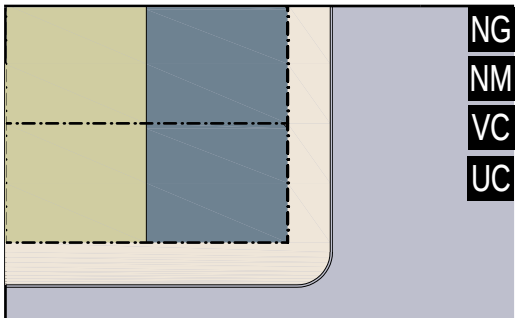
Edgeyard - B-Grid (VC & UC Zones): A building that occupies the center of its Lot with Setbacks on all sides. The front Layer side and rear yards may be used for parking. This is the least urban of types as the building Facade sets back from the Frontage. The rear yard can be used for truck access and may secured for privacy by fences.



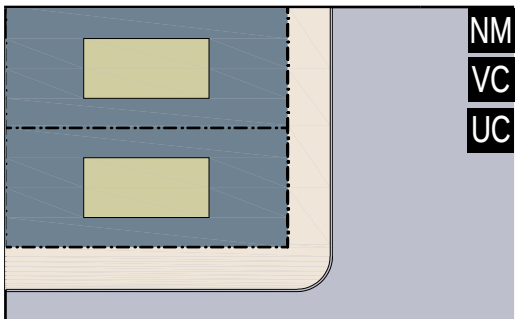
b. Sideyard: A building that occupies one side of the Lot with the Setback to the other side. A shallow Frontage Setback defines a more urban condition. If the adjacent building is similar with a blank side wall, the yard can be quite private. This type permits systematic climatic orientation in response to the sun or the breeze.



c. Rearyard: A building that occupies the full Frontage, leaving the rear of the Lot as the sole yard for residential and as building, sole yard or structured parking for other uses. This is a very urban type as the continuous Facade steadily defines the public Thoroughfare. The rear Elevations may be articulated for functional purposes. In its Residential form, this type is the Townhouse. For its Commercial form, the rear yard can accommodate substantial parking.



d. Courtyard: A building that occupies the boundaries of its Lot while internally defining one or more private spaces. This is the most urban of types, as it is able to shield the private realm from all sides while strongly defining the public Thoroughfare. Because of its ability to accommodate incompatible activities, masking them from all sides.



TABLES 10 & 11. BUILDING FUNCTION & PARKING CALCULATIONS

TABLE 10: Building Function. This table categorizes Building Functions within Sustainable Zones. Parking requirements are correlated to functional intensity. For Specific Function and Use permitted By Right or by Administrative Approval, see Table 12. The Commercial Function of a Live-Work unit may be anywhere in the unit. It may be occupied by a business operator who lives in the same structure that contains the Commercial activity or industry.

	OS NG	NM	VC UC
a. RESIDENTIAL	Residential: The number of single family dwellings on each Lot is restricted to one within a Principal Building and one within an Accessory Building. Both dwellings shall be under single ownership. The habitable area of the Accessory Unit shall not exceed 800 sf, excluding the enclosed parking area. See Table 11A for required parking.	Residential: The number of dwellings on each Lot is calculated by the minimum requirement of parking places for each dwelling, a ratio which may be reduced according to the shared parking standards (See Table 11). See Table 11A for required parking.	Residential: The number of dwellings on each Lot is calculated by the minimum requirement of 1.0 parking places per dwelling, a ratio which may be reduced according to the shared parking standards (See Table 11). Parking requirements may be satisfied off-site per Section 5.7. Parking is calculated by the minimum requirement of 0.75 parking places per dwelling for Independent Living.
b. LODGING	Lodging: The number of bedrooms available on each Lot for lodging is calculated by the requirement of 1.0 assigned parking place for each bedroom, up to five, in addition to the parking requirement for the dwelling. Food service may be provided in the a.m. Not applicable for OS.	Lodging: The number of bedrooms available on each Lot for lodging is calculated by the minimum requirement of 1.0 assigned parking places for each bedroom, up to twelve, in addition to the parking requirement for the dwelling. Food service may be provided at all times.	Lodging: The number of bedrooms available on each Lot for lodging is calculated by the minimum requirement of 0.5 assigned parking places for each bedroom. Food service may be provided at all times. The area allocated for food service shall be calculated and provided with parking according to Retail Function. Parking requirements may be satisfied off-site per Section 5.7.
c. OFFICE / MANUFACTURING	**Office/Manufacturing:** The building area available for office use on each Lot is restricted to the first Story of the Principal or the Accessory Building and by the minimum requirement of 3.0 assigned parking places per 1000 square feet of gross office space in addition to the parking requirement for any dwellings. The specific use shall be further limited to 8,000 SF for any single tenant use. Not applicable for OS.	Office/Manufacturing: The building area available for office may include the Accessory building, and by the minimum requirement of 3.0 assigned parking places per 1000 square feet of gross office space in addition to any parking requirement for other uses.	**Office/Manufacturing:** The building area available for office use on each Lot is calculated by the minimum requirement of 1.6 assigned parking places per 1000 square feet of gross office space. Parking requirements may be satisfied off-site per Section 5.7.
d. RETAIL	Retail: The building area available for Retail use is calculated by the minimum requirement of 3.0 assigned parking places per 1000 square feet of gross Retail space in addition to the parking requirement of any dwellings. The specific use shall be further limited to 8,000 SF for any single tenant use, or food service seating no more than 100.	Retail: The building area available for Retail use is calculated by the minimum requirement of 3.0 assigned parking places per 1000 square feet of gross Retail space in addition to any parking requirement for other uses. The specific use shall be further limited by Table 12 to include, but not be limited to neighborhood stores, or food service seating no more than 120.	Retail: The building area available for Retail use is calculated by the minimum requirement of 2.5 assigned parking places per 1000 square feet of gross Retail space. Retail spaces under 1500 square feet are exempt from parking requirements. Parking requirements may be satisfied off-site per Section 5.7.
e. CIVIC	See Table 12	See Table 12	See Table 12
f. OTHER	See Table 12	See Table 12	See Table 12

TABLE 11: Parking Calculations. The Shared Parking Factor for two Functions, when divided into the sum of the two amounts as listed on the Required Parking table below, produces the Effective Parking needed for each site involved in sharing. Conversely, if the Sharing Factor is used as a multiplier, it indicates the amount of building allowed on each site given the parking available. Within the overlay area of a Transit Oriented Development (TOD) the Effective Parking may be further adjusted downward by 30%.

REQUIRED PARKING (See Table 10)

	OS NG	NM	VC UC
RESIDENTIAL	See Table 11A	See Table 11A	1.0 / dwelling
LODGING	1.0 / bedroom	1.0 / bedroom	0.5 / bedroom
OFFICE	3.0 / 1000 sq. ft.	3.0 / 1000 sq. ft.	1.6 / 1000 sq. ft.
RETAIL	3.0 / 1000 sq. ft.	3.0 / 1000 sq. ft.	2.5 / 1000 sq. ft.
CIVIC	Determined by the Planning Director or Planning Director's designee		
OTHER	Determined by the Planning Director or Planning Director's designee		

SHARED PARKING FACTOR

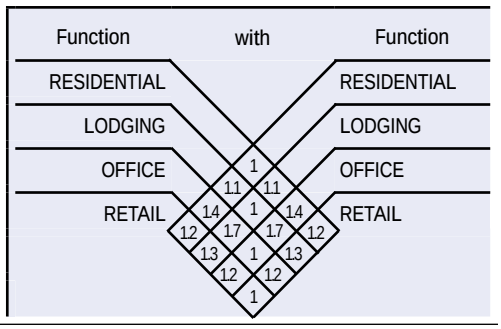


TABLE 11A. PARKING

Single Family Residential Building Types. This parking diagram illustrates the parking locations for on and off street parking for the various residential building types within the Neighborhood General and Neighborhood Mixed-Use Zones. Parking is calculated by the minimum requirement of 0.75 parking places per dwelling for Independent Living.

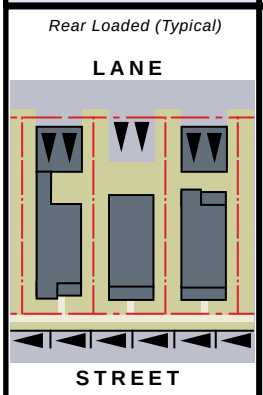
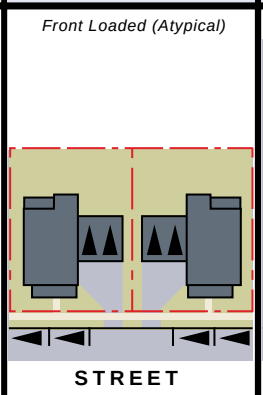
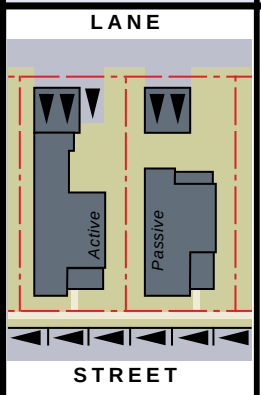
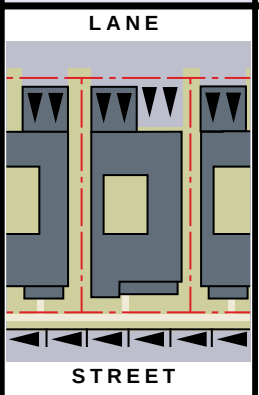
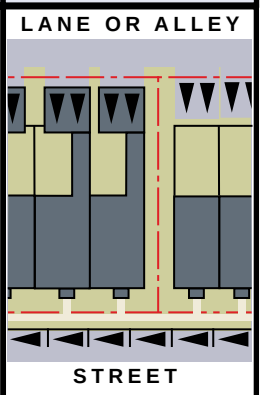
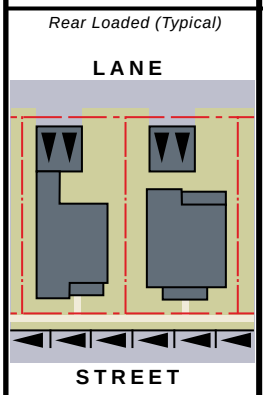
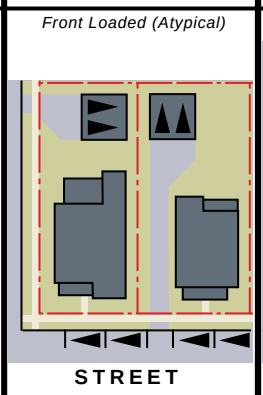
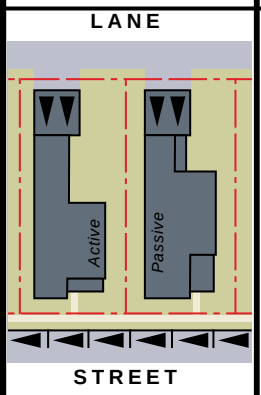
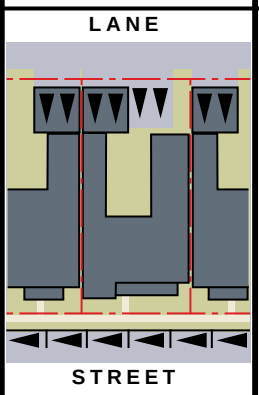
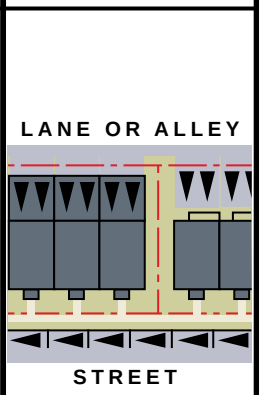
NG NM	NG NM	NG NM	NM	NG NM
Detached House	Detached House	Sideyard House	Courtyard House	Townhouse
				
				
Detached House: an edge yard building type. A single-family dwelling on small to large lots, shared with an accessory building in the rear yard.	**Detached House:** an edge yard building type. A single-family dwelling on medium to large lots, shared with an accessory building in the rear yard and front or side driveway where alley is not available (atypical condition).	**Sideyard House:** a sideyard building type. A single-family dwelling which occupies one side of the lot, with the primary yard to the other side, shared with ancillary building in the rear yard.	**Courtyard House:** a courtyard building type which surrounds one or more private yards. This is a functionally flexible type as it is able to shield the private open space from a public realm of great intensity.	**Townhouse:** a rear yard building type. A single family dwelling with common walls on the side lot lines, the facades forming a continuous frontage line. Rowhouses are the highest density type able to provide private yards..
NG **Required Parking:** 2 Off-Street	NG **Required Parking:** 2 Off-Street	NG **Required Parking:** 2 Off-Street	NM **Required Parking:** 2 Off-Street	NG **Required Parking:** 2 Off-Street
NM **Required Parking:** 2 Off-Street Table 11 Shared Parking Factor does not apply to this use.	NM **Required Parking:** 2 Off-Street Table 11 Shared Parking Factor does not apply to this use.	NM **Required Parking:** 2 Off-Street Table 11 Shared Parking Factor does not apply to this use.	NM **Required Parking:** 2 Off-Street Table 11 Shared Parking Factor does not apply to this use.	NM **Required Parking:** 2 Off-Street Table 11 Shared Parking Factor does not apply to this use.

TABLE 11A. PARKING

Townhome and Multi-Family Residential Building Types. This parking diagram illustrates the parking locations for on and off street parking for the various residential building types within the Neighborhood General and Neighborhood Mixed-Use Zones. Parking is calculated by the minimum requirement of 0.75 parking places per dwelling for Independent Living.

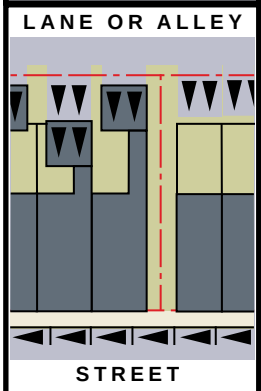
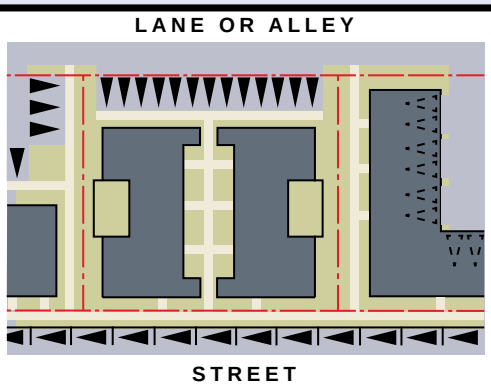
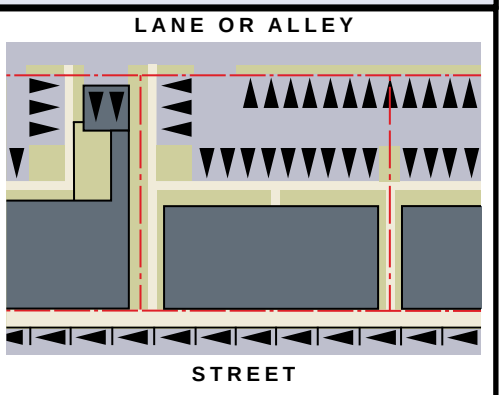
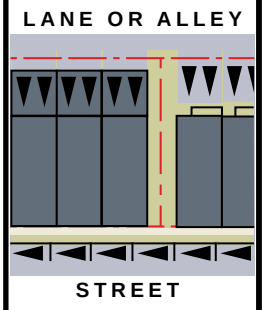
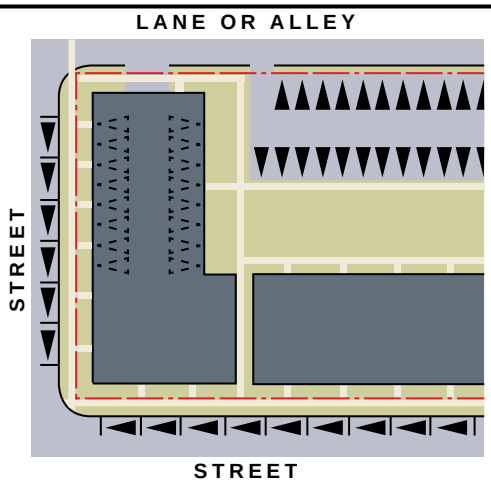
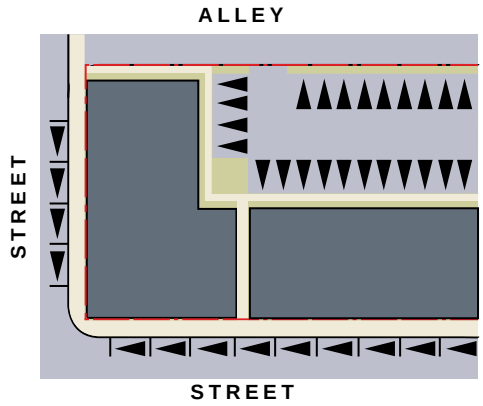
NG NM	NM	NG NM
Live-Work	Multi-Family or Apartment	Mixed Use
		
		
Live-Work: a rear yard, fully mixed use building type with one dwelling above or behind a commercial space. NG **Required Parking:** 2 Off-Street 1 On-Street NM **Required Parking:** 2 Off-Street 1 On-Street Table 11 Shared Parking Factor does not apply to this use.	**Multi-Family or Apartment:** a rear yard residential building type accommodating multiple dwellings disposed above and beside each other, with individual or sharing entries. Parking may be on the surface, structured or underground. NM **Required Parking:** 1.25 Parking Spaces per Unit	**Mixed Use Building or Mixed Use Block:** a rear yard, flexible commercial building type with residential uses above. Commercial buildings may have floor plates deeper than residential ones. NG **Required Parking (Residential):** 1.50 Off-Street Spaces per Unit NM **Required Parking (Residential):** 1.25 Off-Street Spaces per Unit

TABLE 12. SPECIFIC FUNCTION & USE

TABLE 12: Specific Function & Use. This table expands the categories of Table 10 to delegate specific Functions and uses within Sustainable Zones. Table 12 has been customized for local character and requirements. The Sustainable Development District provides for the following uses to be permitted within the Sustainable Zones.

Permitted (P): The permitted uses for the District

Permitted (b): The permitted uses for the District on B-Grid Thoroughfares and within B-Grid Zones only

SUSTAINABLE ZONE	OS	NG	NM	VC	UC
a. RESIDENTIAL					
Accessory Unit or Building		P	P	P	
Condominium			P	P	P
Congregate living facility *			P	P	P
Duplex		P	P		
Family care home *		P	P		
Farm residence	P	P	P		
Historic Site, Adaptive Use	P	P	P	P	P
Independent living		P	P	P	P
Multi-family or apartment			P	P	P
Nursing or convalescent facility *			P	P	P
Single-family		P	P	P	
Townhouse		P	P	P	P
Townhouse, detached		P			
Triplexes or quadplexes			P	P	
Live-Work		P	P	P	P
Modular Construction		P	P	P	P
Mixed Use Block		P	P	P	P
b. PUBLIC/CIVIC USES					
Ambulatory healthcare facility				P	P
Amphitheater **	P	P	P	P	P
Assembly hall, nonprofit			P	P	P
Church, or place of worship		P	P	P	P
Cemetery	P	P	P	P	P
Day care facility		P	P	P	P
Government service		P	P	P	P
Heliport or helipad	P		P	P	P
Hospital				P	P
Natatorium **	P		P	P	P
Restrooms	P	P	P	P	P
Picnic Shelter **	P	P	P	P	P
School, public or private **		P	P	P	P
Transportation facility				P	P
Veterinary clinic or hospital			P	P	P
c. UTILITIES					
Communication tower, (Commercial; Stealth)	P	P	P	P	P
Communication or water tower Integrated Into building or structure (Camouflage Stealth)	P	P	P	P	P
Utility, Minor	P			P	P
Power facility	P			P	P
Renewable Energy Facilities	P	P	P	P	P
d. RECREATIONAL USES					
Arena, auditorium, or stadium **	P			P	P
Entertainment, indoor **				P	P
Entertainment, outdoor **	P		P	P	P
Greenway	P	P	P	P	P
Horse boarding and riding stable **	P				
Park, active	P	P	P	P	P
Park, passive	P	P	P	P	P
Recreation facility, private	P	P	P	P	P
e. COMMUNICATIONS					
Broadcast station (radio and television)				b	P
Radio and television recording studio				b	P

TABLE 12. SPECIFIC FUNCTION & USE

SUSTAINABLE ZONE	OS	NG	NM	VC	UC
f. FOOD AND BEVERAGE SERVICE					
Concessions	P		P	P	P
Restaurant, drive-through				P	b
Restaurant, general	P		P	P	P
Bar or nightclub			P	P	P
g. OFFICE LAB AND RESEARCH					
Dispatching office				P	P
Historic site – adaptive use	P	P	P	P	P
Medical or dental clinic or office			P	P	P
Medical or dental laboratory				P	P
Office, business or professional			P	P	P
Publishing office			P	P	P
Research facility				P	P
h. PARKING, COMMERCIAL					
Parking Garage (deck), commercial			P	P	P
Parking Garage (deck) private			P	P	P
Parking lot, commercial				P	P
Parking lot, surface	P	P	P	P	P
i. LODGING					
Bed and breakfast (up to 5 rooms)		P	P	P	P
Bed and breakfast (up to 12 rooms)			P	P	P
Hotel or motel			P	P	P
Conference Center				P	P
Convention Center					P
School Dormitory				P	P
j. RETAIL SALES AND SERVICE					
Barber and beauty shop		P	P	P	P
Bookstore		P	P	P	P
Building Supplies, Retail				b	b
Convenience store			P	P	P
Convenience store with gas sales			P	P	P
Dry cleaners and laundry service		P	P	P	P
Farmer's market	P	P	P	P	P
Financial institution			P	P	P
Floral shop		P	P	P	P
Funeral home			P	P	P
Gas and fuel, retail				P	P
Greenhouse or nursery, retail			P	P	P
Grocery, general				P	P
Grocery, specialty		P	P	P	P
Health/fitness center or spa			P	P	P
Kennel, indoor				P	P
Laundromat			P	P	P
Newsstand or gift shop		P	P	P	P
Personal service			P	P	P
Pharmacy			P	P	P
Printing and copying service			P	P	P
Real estate sales		P	P	P	P
Retail Kiosk	P		P	P	P
Retail sales, bulky goods				b	b
Retail sales, general		P	P	P	P
Studio for art		P	P	P	P
Tailor shop		P	P	P	P
Theater				P	P
Shopping Center				P	P
k. VEHICLE REPAIR AND SERVICE					
Automotive paint or body shop					
Automotive parts				P	P
Automotive service station				P	P
Car wash or auto detailing				P	P
Repair services limited				P	P
Vehicle inspection center				P	P

TABLE 12. SPECIFIC FUNCTION & USE

SUSTAINABLE ZONE	OS	NG	NM	VC	UC
l. INDUSTRY, MANUFACTURING, STORAGE					
Biotechnology and Medical Devices				P	P
Information Technology and High					
Performance Computing				P	P
Manufacturing				P	P
Nanotechnology and Advanced Materials				P	P
Retail Storage within Retail spaces		P	P	P	P
Smart Power and Green Technology	P			P	P
Self-service storage			P	P	P
Warehousing				b	b
m. FOOD PRODUCTION (SEE TABLE 19)					
Farm	P				
Agricultural plots	P	P			
Vegetable gardens		P	P	P	P
Urban farms	P	P	P	P	
Community gardens	P	P	P	P	P
Green roofs		P	P	P	P
Vertical farms			P	P	P

If an application is submitted for a use type that is not permitted by Table 12 in one or more of the Sustainable Zones and the use type is not one prohibited by the UDO, the Planning Director shall be authorized to make a similar use interpretation based on the use categories Listed in Table 12. If the Planning Director determines that the proposed use does not fit any of the use categories, no similar use interpretation shall be made and the use shall not be permitted.

Any land uses not specially dealt with in this Table but otherwise permitted by the UDO and not excluded by any provision of this SD Plan are subject to a similar use interpretation by the Planning Director and if found to be similar to a use permitted by this Table shall be allowed within all sustainable zones in which the similar use is allowed.

* For the purposes of density and parking, dwelling rooms shall be treated as 0.2 dwelling units with parking per the multi-family requirements.

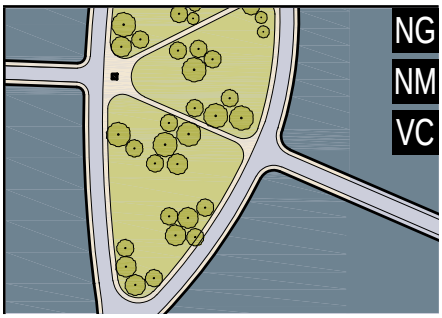
** The building and any portion of the lot routinely accessible to the public shall be included in the acreage designated pursuant to SD Plan 3.1.3.c.

TABLE 13. CIVIC SPACE

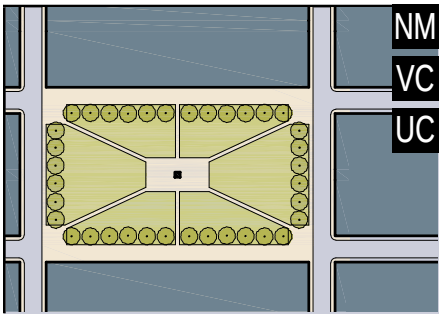
a. Park: A natural preserve available for unstructured recreation or a park for active recreation. A park may be independent of surrounding building Frontages. Its landscape shall consist of Paths and trails, meadows, waterbodies, woodland and open shelters, all naturalistically disposed. Parks may be lineal, following the trajectories of natural corridors.



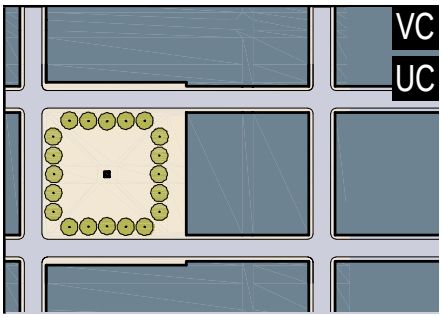
b. Green: An Open Space, available for unstructured recreation. A Green may be spatially defined by landscaping rather than building Frontages. Its landscape shall consist of lawn and trees, naturalistically disposed. The minimum size shall be 1/4 acre and the maximum shall be 8 acres.



c. Square: An Open Space available for unstructured recreation and Civic purposes. A Square is spatially defined by building Frontages. Its landscape shall consist of paths, lawns and trees, formally disposed. Squares shall be located at the intersection of important Thoroughfares. The minimum size shall be 1/2 acre and the maximum shall be 5 acres.



d. Plaza: A public or private Open Space available for Civic purposes and Commercial activities. A Plaza shall be spatially defined by building Frontages. Its landscape shall consist primarily of pavement. Trees are optional. Plazas should be located at the intersection of important streets. The minimum size shall be 1/8 acre and the maximum shall be 2 acres.



e. Playground: An Open Space designed and equipped for the recreation of children. A playground may be fenced and may include an open shelter. Playgrounds shall be interspersed within Residential areas and may be placed within a Block. Playgrounds may be included within Parks and Greens. There shall be no minimum or maximum size.

Dog Parks: An Open Space designed as a safe place where dogs may play and get exercise while not on a leash. Dog Parks shall be fenced and may be interspersed within Residential areas. They may be placed within a Block or included within Parks and Greens. There shall be no minimum or maximum size.

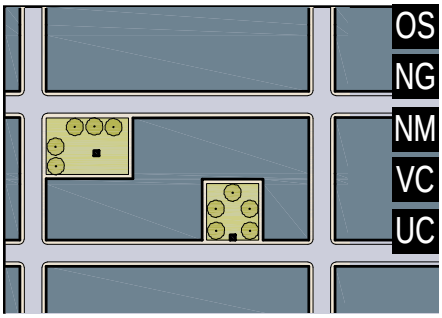
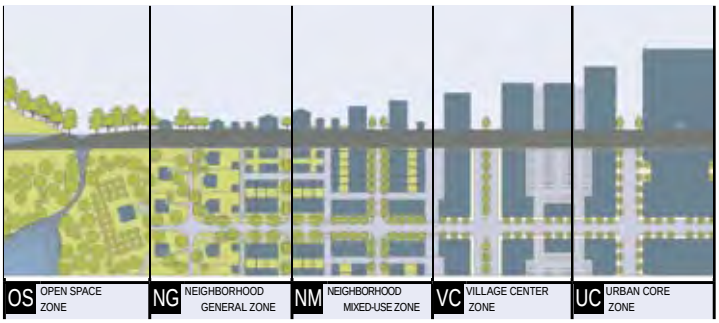


TABLE 14. FORM-BASED CODE SUMMARY



OS OPEN SPACE ZONE	NG NEIGHBORHOOD GENERAL ZONE	NM NEIGHBORHOOD MIXED-USE ZONE	VC VILLAGE CENTER ZONE	UC URBAN CORE ZONE

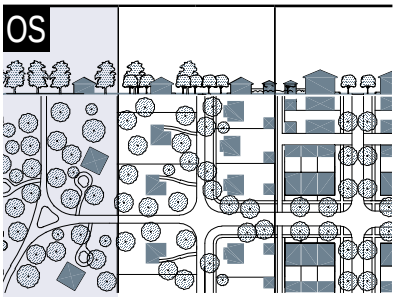
a. ALLOCATION OF ZONES						
Minimum Acres	not applicable	75 acres	50 acres	215 acres	135 acres	
Min Acres for Non-Residential	variable	3 acres	7 acres	120 acres	75 acres	
b. DENSITY (see Sustainable Development Concept Map						
By Right - DUA	not applicable	20 units / ac. gross	40 units / ac. gross	80 units / ac. gross	100 units / ac. gross	
By Right - Other Uses - FAR	permitted	2.00 / ac. gross	4.00 / ac. gross	6.00 / ac. gross	12.00 / ac. gross	
Maximum Impermeable Surface	30%	65%	75%	90%	100%	
c. BLOCK SIZE						
Block Perimeter: A-Grids	no maximum	3000 ft. max	2400 ft. max	2000 ft. max *	2000 ft. max *	
Block Perimeter: B-Grids	not applicable	not applicable	not applicable	* 3500 ft max with parking structures		
d. THOROUGHFARES (see Table 3 and Table 4)						
Highway (HW)	permitted	permitted	not permitted	not permitted	not permitted	
Boulevard (BV)	not permitted	not permitted	not permitted	permitted	permitted	
Avenue (AV)	not permitted	permitted	permitted	permitted	permitted	
Commercial Street (CS)	not permitted	not permitted	not permitted	permitted	permitted	
Drive (DR)	not permitted	permitted	permitted	permitted	permitted	
Street (ST)	permitted	permitted	permitted	permitted	not permitted	
Road (RD)	permitted	permitted	not permitted	not permitted	not permitted	
Rear Lane (RL)	permitted	permitted	permitted	not permitted	not permitted	
Rear Alley (RA)	not permitted	permitted	required	required	required	
Path (PT)	permitted	permitted	permitted	not permitted	not permitted	
Passage (PS)	not permitted	permitted	permitted	permitted	permitted	
Bicycle Trail (BT)	permitted	permitted	not permitted *	not permitted *	not permitted *	
Bicycle Lane (BL)	permitted	permitted	permitted	permitted	permitted	
Bicycle Route (BR)	permitted	permitted	permitted	permitted	permitted	
e. CIVIC SPACES (see Table 13)					* permitted within Open Spaces	
Park	permitted	permitted	permitted	permitted	permitted	
Green	not permitted	permitted	permitted	permitted	permitted	
Square	not permitted	not permitted	permitted	permitted	permitted	
Plaza	not permitted	not permitted	not permitted	permitted	permitted	
Playground	permitted	permitted	permitted	permitted	permitted	
f. LOT OCCUPATION						
Lot Width: A-Grids	variable	25 ft. min 120 ft. max	18 ft. min 400 ft. max	18 ft. min 600 ft. max	18 ft. min 700 ft. max	
Lot Width: B-Grids	not applicable	not applicable	not applicable	no max	no max	
g. SETBACKS - PRINCIPAL BUILDING (see Table 15)						
(g.1) Front Setback (Principal)	10 ft. min	15 ft. min	6 ft. min	0 ft. min	0 ft. min	
(g.2) Front Setback (Secondary)	5 ft. min	12 ft. min	6 ft. min	0 ft. min	0 ft. min	
(g.3) Side Setback	5 ft. min	0 ft. min.	0 ft. min	0 ft. min	0 ft. min	
(g.4) Rear Setback	5 ft. min	12 ft. min	3 ft. min	3 ft. min	0 ft. min	
h. SETBACKS - OUTBUILDING (see Table 15)						
(h.1) Front Setback	not applicable	20 ft. min +bldg setback	20 ft. min +bldg setback	40 ft. max from rear prop	not applicable	
(h.2) Side Setback	not applicable	0 ft. or 3 ft. min	0 ft. or 3 ft. min	0 ft. min	not applicable	
(h.3) Rear Setback	not applicable	3 ft. min	3 ft. min	3 ft. min	not applicable	
i. BUILDING DISPOSITION (see Table 9)						
Edgeyard	permitted	permitted	permitted	permitted	permitted	
Sideyard	not permitted	permitted	permitted	permitted	not permitted	
Rearyard	not permitted	permitted	permitted	permitted	permitted	
Courtyard	not permitted	not permitted	permitted	permitted	permitted	
j. PRIVATE FRONTAGES (see Table 7)						
Common Yard	permitted	permitted	permitted	permitted	permitted	
Porch & Fence	permitted	permitted	permitted	permitted	permitted	
Terrace or Lightwell	not permitted	not permitted	permitted	permitted	permitted	
Forecourt	permitted	not permitted	permitted	permitted	permitted	
Stoop	permitted	permitted	permitted	permitted	permitted	
Shopfront	permitted	permitted	permitted	permitted	permitted	
Gallery	not permitted	permitted	permitted	permitted	permitted	
Arcade	not permitted	not permitted	permitted	permitted	permitted	
k. BUILDING CONFIGURATION (see Table 8)						
Principal Building	1 to 2 Stories	4 Stories max	7 Stories max, 1 min	15 Stories, Note 2, 1 min	20 Stories, Note 1, 1 min	
Outbuilding	not applicable	2 Stories max	2 Stories max	2 Stories max	not applicable	

ZONE
LOT
DISPOSITION
CONFIGURATION
ARTICLE 5
ARTICLE 2, 3, 4

Note 1: Not in excess of 20 stories without specific site plan review and approval by Town Council.
Note 2: Not in excess of 15 stories without specific site plan review and approval by Town Council.
Note 3: Accessory Structures shall be treated as Principal Buildings.

TABLE 15A. FORM-BASED CODE GRAPHICS - OS - OPEN SPACE

OS



(see Table 1)

k. BUILDING CONFIGURATION (see Table 8)	
Principal Building	2 stories max.
Outbuilding	not applicable.
f. LOT OCCUPATION (see Table 14f)	
Lot Width	variable
i. BUILDING DISPOSITION (see Table 9)	
Edgeyard	permitted
Sideyard	not permitted
Rearyard	not permitted
Courtyard	not permitted
g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)	
(g.1) Front Setback Principal	10 ft. min
(g.2) Front Setback Secondary	5 ft. min
(g.3) Side Setback	5 ft. min
(g.4) Rear Setback	5 ft. min
h. SETBACKS - OUTBUILDING (see Table 14h)	
(h.1) Front Setback	not applicable
(h.2) Side Setback	not applicable
(h.3) Rear Setback	not applicable
j. PRIVATE FRONTAGES (see Table 7)	
Common Lawn	permitted
Porch	permitted
Terrace or Lightwell.	not permitted
Forecourt	permitted
Stoop	permitted
Shopfront	permitted
Gallery	not permitted
Arcade	not permitted

Refer to Summary Table 14

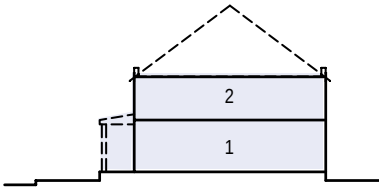
PARKING PROVISIONS
See Table 10 & Table 11

*or 15 ft. from center line of alley

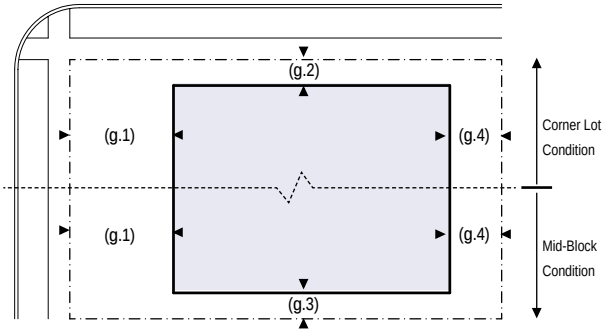
"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

Vinyl Siding Notes:
1. Vinyl exterior material may be used in areas not in view of the public, such as service areas.
2. Elements such as vinyl trim, vinyl windows, decorative vents, and the like are permitted.

BUILDING CONFIGURATION
1. Stories exclude Attics and raised basements.



SETBACKS - PRINCIPAL BLDG
1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage.
3. Accessory Structures shall be treated as Principal Buildings.



SETBACKS - OUTBUILDING
1. Not applicable

PARKING PLACEMENT
1. Uncovered parking spaces may be provided within the second and third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the second or third Layer as shown in the diagram (see Table 17d). .
3. Trash containers shall be stored within the third Layer.

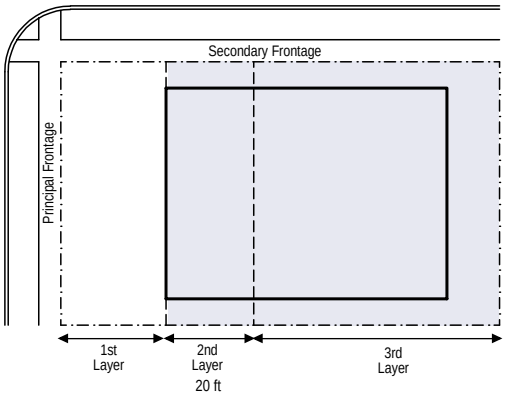
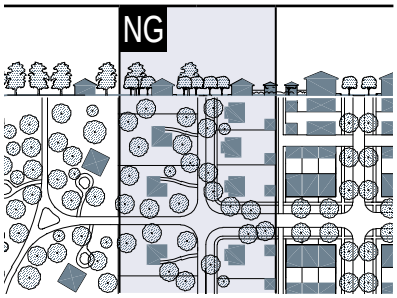


TABLE 15B. FORM-BASED CODE GRAPHICS - NG - NEIGHBORHOOD GENERAL



(see Table 1)

k. BUILDING CONFIGURATION (see Table 8)	
Principal Building	4 stories max.
Outbuilding	2 stories max.
f. LOT OCCUPATION (see Table 14f)	
Lot Width (Note 1)	25 ft. min 120 ft. max
i. BUILDING DISPOSITION (see Table 9)	
Edgeyard	permitted
Sideyard	permitted
Rearyard	permitted
Courtyard	not permitted
g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)	
(g.1) Front Setback Principal	15 ft. min
(g.2) Front Setback Secondary	12 ft min.
(g.3) Side Setback	0 ft min.
(g.4) Rear Setback	12 ft min.
h. SETBACKS - OUTBUILDING (see Table 14h)	
(h.1) Front Setback	20 ft. min. + bldg setback
(h.2) Side Setback	0 ft. or 3 ft at corner
(h.3) Rear Setback	3 ft. min
j. PRIVATE FRONTAGES (see Table 7)	
Common Lawn	permitted
Porch	permitted
Terrace or Lightwell.	not permitted
Forecourt	not permitted
Stoop	permitted
Shopfront	permitted
Gallery	permitted
Arcade	not permitted

Refer to Summary Table 14

PARKING PROVISIONS
See Table 10 & Table 11

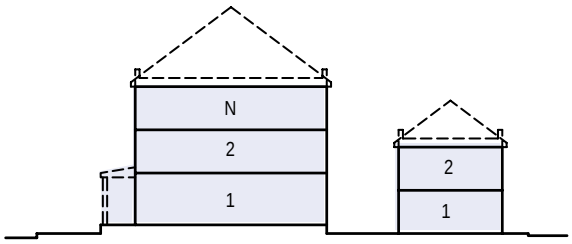
*or 15 ft. from center line of alley

"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

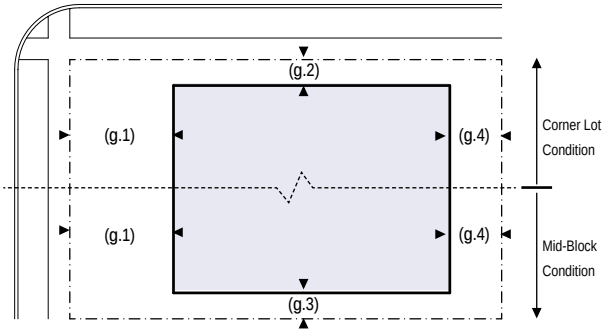
Note 1: Lot width reductions to 20' for single family and 18' for townhomes require specific site plan review and approval by Town Council.

Vinyl Siding Notes:
1. Vinyl siding is not permitted on single family homes and Townhouses except as permitted in vinyl siding note 3 below.
2. Vinyl exterior material may be used above the second story of an apartment, condominium or Mixed Use buildings and in areas not in view of the public, such as service areas.
3. Elements such as vinyl trim, vinyl windows, decorative vents, and the like are permitted.

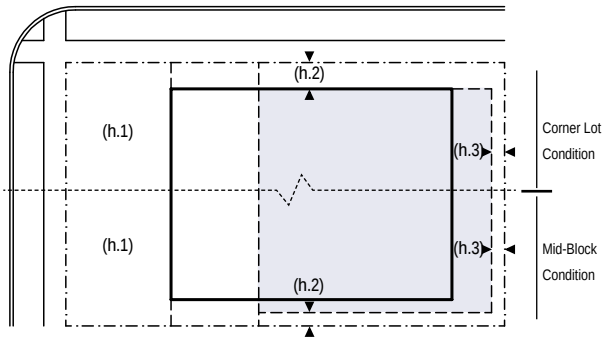
BUILDING CONFIGURATION
1. Stories exclude Attics and raised basements.



SETBACKS - PRINCIPAL BLDG
1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage



SETBACKS - OUTBUILDING
1. The Elevation of the Outbuilding shall be distanced from the Lot lines as shown.



PARKING PLACEMENT
1. Uncovered parking spaces may be provided within the second and third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the second or third Layer as shown in the diagram (see Table 17d). Side-entry garages are permitted on corner lots and front-entry garages may be allowed.
3. Trash containers shall be stored within the third Layer.

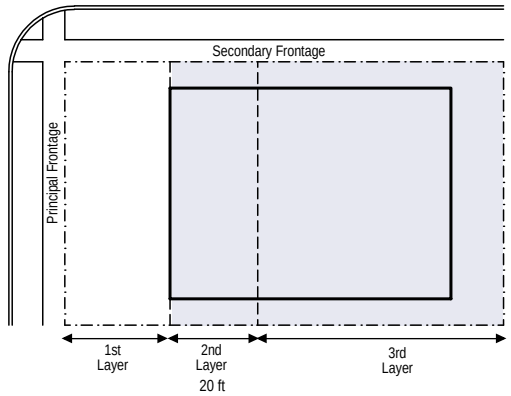
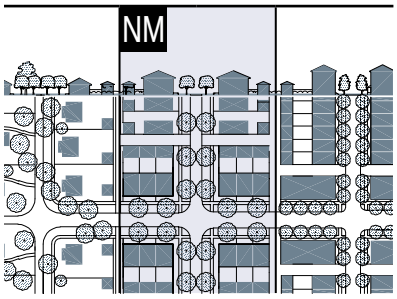


TABLE 15C. FORM-BASED CODE GRAPHICS - NM - NEIGHBORHOOD MIXED-USE



(see Table 1)

k. BUILDING CONFIGURATION (see Table 8)	
Principal Building	7 stories max, 1 min
Outbuilding	2 stories max.
f. LOT OCCUPATION (see Table 14f)	
Lot Width	18 ft min 400 ft max
i. BUILDING DISPOSITION (see Table 9)	
Edgeyard	permitted
Sideyard	permitted
Rearyard	permitted
Courtyard	permitted
g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)	
(g.1) Front Setback Principal	6 ft. min.
(g.2) Front Setback Secondary	6 ft. min.
(g.3) Side Setback	0 ft. min.
(g.4) Rear Setback	3 ft. min.*
h. SETBACKS - OUTBUILDING (see Table 14h)	
(h.1) Front Setback	20 ft. min. + bldg. setback
(h.2) Side Setback	0 ft. min. or 3 ft at corner
(h.3) Rear Setback	3 ft. min
j. PRIVATE FRONTAGES (see Table 7)	
Common Lawn	permitted
Porch & Fence	permitted
Terrace or Lightwell.	permitted
Forecourt	permitted
Stoop	permitted
Shopfront	permitted
Gallery	permitted
Arcade	permitted
	Refer to Summary Table 14
PARKING PROVISIONS	
See Table 10 & Table 11	

*or 15 ft. from center line of alley

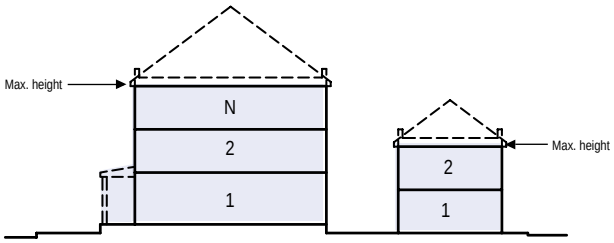
"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

Vinyl Siding Notes:

1. Vinyl siding is not permitted on single family homes and Townhouses except as permitted in vinyl siding note 3 below.
2. Vinyl exterior material may be used above the second story of an apartment, condominium or Mixed Use buildings and in areas not in view of the public, such as service areas.
3. Elements such as vinyl trim, vinyl windows, decorative vents, and the like are permitted.

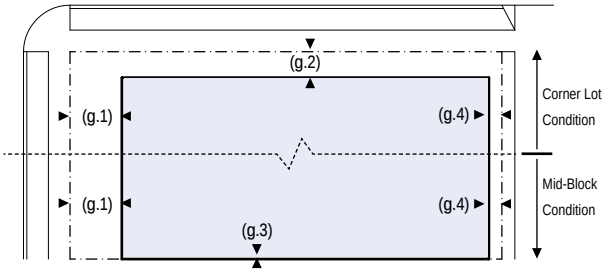
BUILDING CONFIGURATION

1. Stories exclude Attics and raised basements.



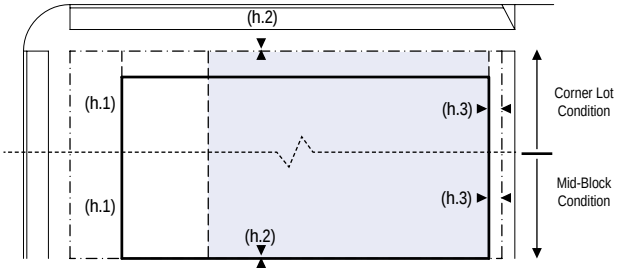
SETBACKS - PRINCIPAL BLDG

1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage.



SETBACKS - OUTBUILDING

1. The Elevations of the Outbuilding shall be distanced from the Lot lines as shown.



PARKING PLACEMENT

1. Uncovered parking spaces may be provided within the third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the third Layer as shown in the diagram (see Table 17d).
3. Trash containers shall be stored within the third Layer.

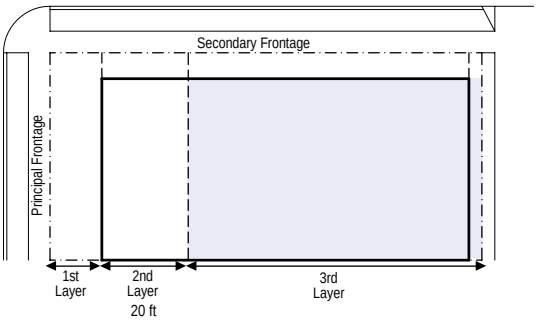
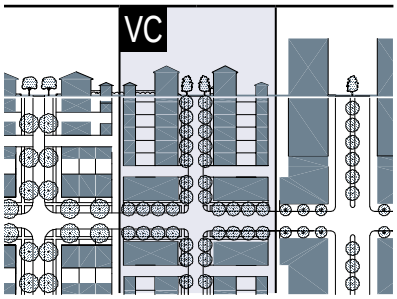


TABLE 15D. FORM-BASED CODE GRAPHICS - VC - VILLAGE CENTER



(see Table 1)

k. BUILDING CONFIGURATION (see Table 8)	
Principal Building	15 stories, Note 2, 1 min.
Outbuilding	2 stories max.
f. LOT OCCUPATION (see Table 14f)	
Lot Width: A-Grids	18 ft min 700 ft max
Lot Width: B-Grids	no max
i. BUILDING DISPOSITION (see Table 9)	
Edgeyard	permitted
Sideyard	permitted
Rearyard	permitted
Courtyard	permitted
g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)	
(g.1) Front Setback Principal	0 ft. min.
(g.2) Front Setback Secondary	0 ft. min.
(g.3) Side Setback	0 ft. min.
(g.4) Rear Setback	3 ft. min.*
h. SETBACKS - OUTBUILDING (see Table 14h)	
(h.1) Front Setback	40 ft. max. from rear prop.
(h.1) Front Setback	40 ft. max. from rear prop.
(h.2) Side Setback	0 ft. min. or 2 ft at corner
(h.3) Rear Setback	3 ft. max.
j. PRIVATE FRONTAGES (see Table 7)	
Common Lawn	permitted
Porch	permitted
Terrace or Lightwell	permitted
Forecourt	permitted
Stoop	permitted
Shopfront	permitted
Gallery	permitted
Arcade	permitted
	Refer to Summary Table 14
PARKING PROVISIONS	
See Table 10 & Table 11	

*or 15 ft. from center line of alley

"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums.

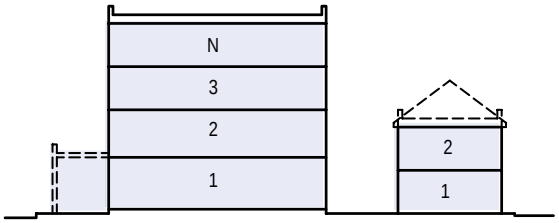
Note 2: Not in excess of 15 stories without specific site plan review and approval by Town Council.

Vinyl Siding Notes:

1. Vinyl siding is not permitted on single family homes and Townhouses except as permitted in vinyl siding note 3 below.
2. Vinyl exterior material may be used above the second story of an apartment, condominium or Mixed Use buildings and in areas not in view of the public, such as service areas.
3. Elements such as vinyl trim, vinyl windows, decorative vents, and the like are permitted.

BUILDING CONFIGURATION

1. Stories, exclude Attics mezzanines and basements.



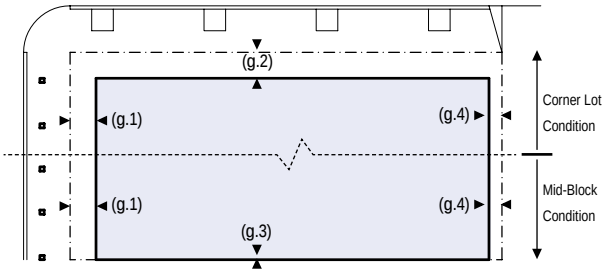
SETBACKS - PRINCIPAL BLDG

A-GRIDS

1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage.

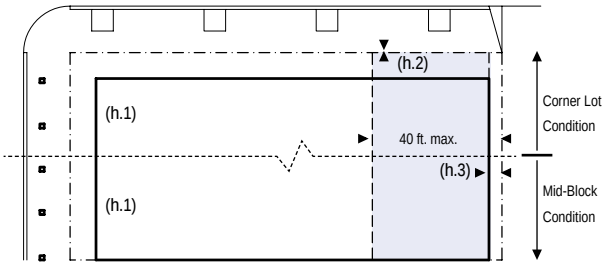
B-GRIDS

1. Multiple Buildings may be located on the same Lot.



SETBACKS - OUTBUILDING

1. The Elevations of the Outbuilding shall be distanced from the Lot lines as shown.



PARKING PLACEMENT

A-GRIDS

1. Uncovered parking spaces may be provided within the third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the third Layer as shown in the diagram (see Table 17d) except as noted above.
3. Trash containers shall be stored within the third Layer.

B-GRIDS

1. Uncovered parking spaces may be provided within any Layer as shown in the diagram (see Table 17d).
2. Trash containers shall be stored within the third Layer.

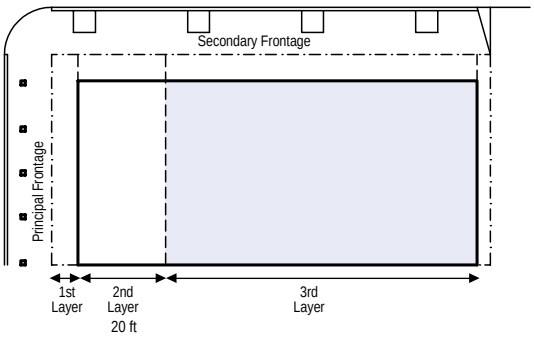
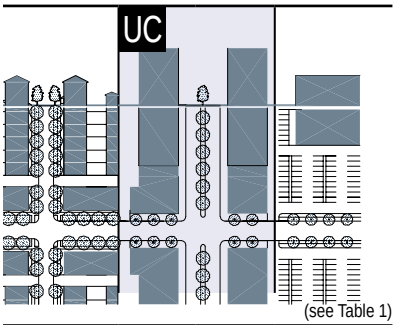


TABLE 15E. FORM-BASED CODE GRAPHICS - UC - URBAN CORE



k. BUILDING CONFIGURATION (see Table 8)	
Principal Building	20 stories, Note 1, 1 min.
Outbuilding	N/A
f. LOT OCCUPATION (see Table 14f)	
Lot Width: A-Grids	18 ft. min 700 ft. max
Lot Width: B-Grids	no max
i. BUILDING DISPOSITION (see Table 9)	
Edgeyard	permitted
Sideyard	not permitted
Rearyard	permitted
Courtyard	permitted
g. SETBACKS - PRINCIPAL BUILDING (see Table 14g)	
(g.1) Front Setback Principal	0 ft. min.
(g.2) Front Setback Secondary	0 ft. min.
(g.3) Side Setback	0 ft. min.
(g.4) Rear Setback	0 ft. min.
h. SETBACKS - OUTBUILDING (see Table 14h)	
Front Setback	N/A
Side Setback	N/A
Rear Setback	N/A
j. PRIVATE FRONTAGES (see Table 7)	
Common Lawn	permitted
Porch	permitted
Terrace or Lightwell	permitted
Forecourt	permitted
Stoop	permitted
Shopfront	permitted
Gallery	permitted
Arcade	permitted
	Refer to Summary Table 14
PARKING PROVISIONS	
See Table 10 & Table 11	

*or 15 ft. from center line of alley

"N" stands for any Stories above those shown, up to the maximum. Refer to metrics for exact minimums and maximums

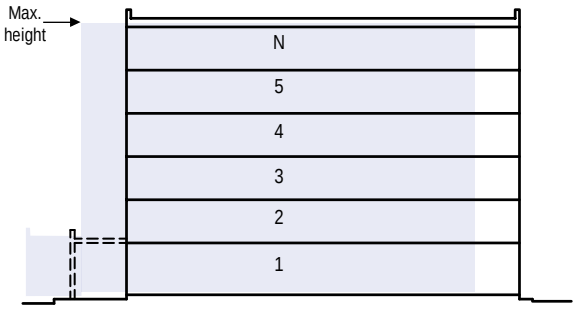
Note 1: Not in excess of 20 stories without specific site plan review and approval by Town Council.

Vinyl Siding Notes:

1. Vinyl siding is not permitted on single family homes and Townhouses except as permitted in vinyl siding note 3 below.
2. Vinyl exterior material may be used above the second story of an apartment, condominium or Mixed Use buildings and in areas not in view of the public, such as service areas.
3. Elements such as vinyl trim, vinyl windows, decorative vents, and the like are permitted.

BUILDING CONFIGURATION

1. Stories, exclude Attics mezzanines and basements.



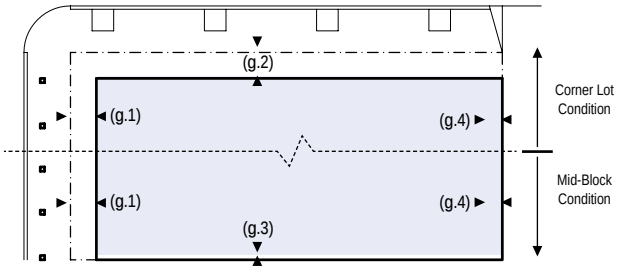
SETBACKS - PRINCIPAL BLDG

A-GRIDS

1. The Facades and Elevations of Principal Buildings shall be distanced from the Lot lines as shown.
2. Facades shall be built along the Principal Frontage.

B-GRIDS

1. Multiple Buildings may be located on the same Lot



PARKING PLACEMENT

A-GRIDS

1. Uncovered parking spaces may be provided within the third Layer as shown in the diagram (see Table 17d).
2. Covered parking shall be provided within the third Layer as shown in the diagram (see Table 17d) except as noted above.
3. Trash containers shall be stored within the third Layer.

B-GRIDS

1. Uncovered parking spaces may be provided within any Layer as shown in the diagram (see Table 17d).
2. Trash containers shall be stored within the third Layer.

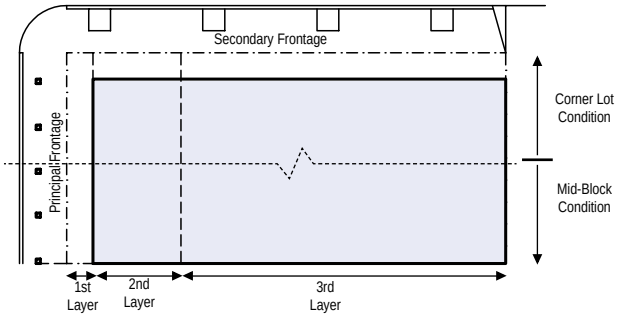
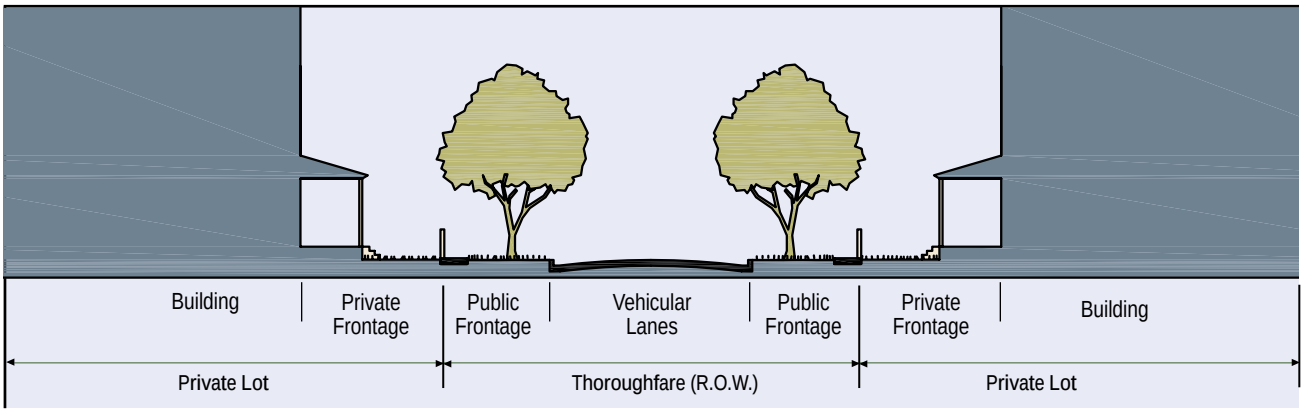
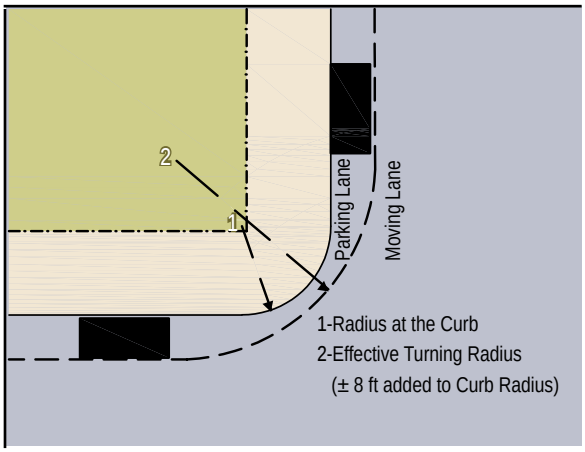


TABLE 17. DEFINITIONS ILLUSTRATED

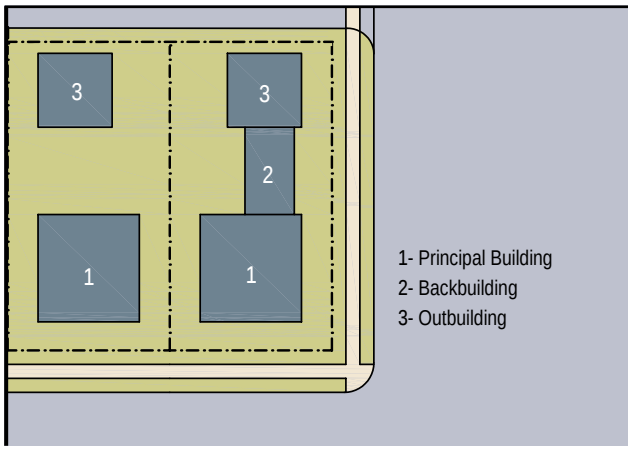
a. THOROUGHFARE & FRONTAGES



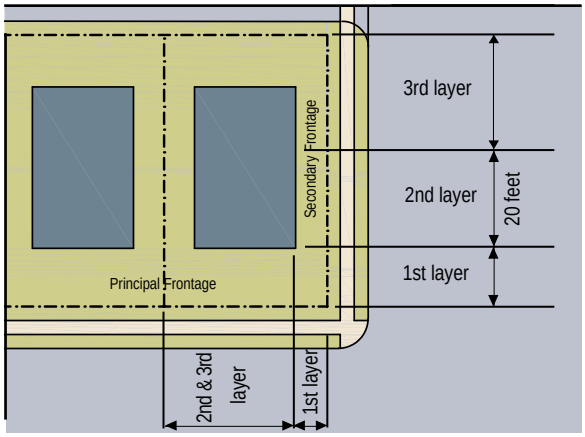
b. TURNING RADIUS



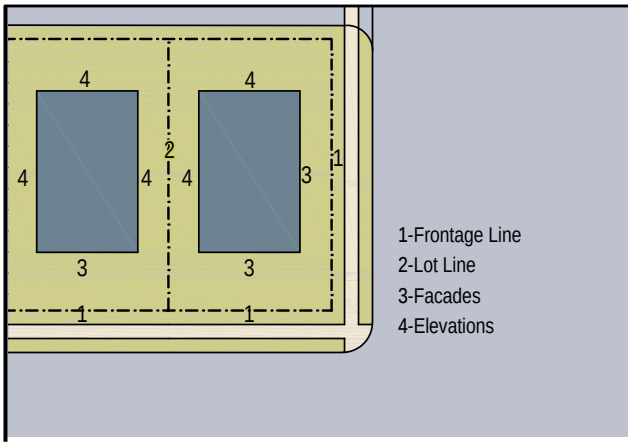
c. BUILDING DISPOSITION



d. LOT LAYERS



e. FRONTAGE & LOT LINES



f. SETBACK DESIGNATIONS

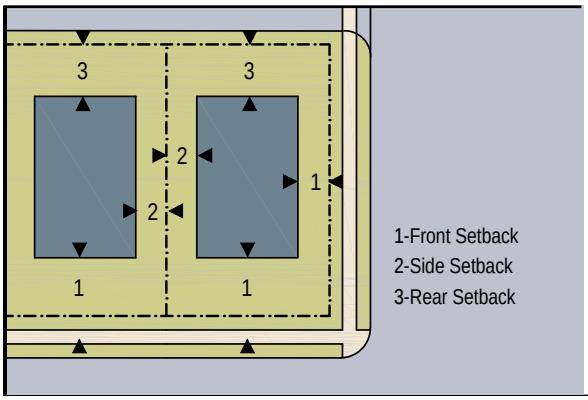


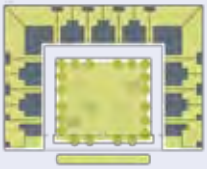
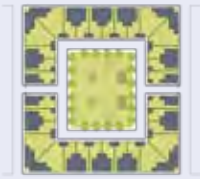
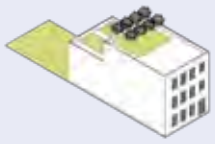
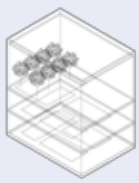
TABLE 18. SUSTAINABILITY - SOLAR ENERGY

Sustainability - Solar Energy. This table shows opportunities for the placement of types of solar-powered devices within the Sustainable Zones.

	OS	NG	NM	VC	UC	Specifics
Solar Farm 	.		.	.	.	
Roof Mounted Solar Panels 	.	.	.	.	.	
Streetscape Solar Panels 	.	.	.	.	.	Streetscape solar panels may be used in place of street trees

TABLE 19. SUSTAINABILITY - FOOD PRODUCTION

Sustainability - Food Production. This table shows ways of incorporating types of food production along the Sustainable Zones.

	OS	NG	NM	VC	UC	Specific
Farm 	▪					
Agricultural Plots 	▪	▪				
Vegetable Garden 		▪	▪	▪	▪	
Urban Farm 	▪	▪	▪	▪		
Community Garden 	▪	▪	▪	▪	▪	
Green Roof 		▪	▪	▪	▪	
Vertical Farm 			▪	▪	▪	

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TABLE 20. SUSTAINABILITY - COMPOSTING AND RECYCLING

	OS	NG	NM	VC	UC
On-Site Organics Processing	▪	▪			
Self-Drop Collection Systems					
Optional/Competitive Collection		▪			
Mandatory Curbside Collection			▪	▪	▪
Centralized Composting Systems	▪				
Smaller Regional Composting	▪	▪			
On-Site Processing		▪			
Re-Use Centers		▪	▪	▪	▪
Recycling Processing Centers		▪	▪	▪	▪
Once-Used Materials Storage		▪			
Transfer Stations		▪	▪	▪	▪
Disposal Facilities	Prohibited				

I. Article 2 / Administration
Sec. 2.3 / DEVELOPMENT APPROVALS

2.3.16 Sustainable Development Conditional Zoning District

A) ***General***

This Section establishes the procedures and standards applicable to the Town's Sustainable Development Conditional Zoning District SD-CZ.

B) ***General Applicability***

Before any development shall be designated as a Sustainable Development Conditional Zoning District SD-CZ on the Official Zoning District Map, it shall receive approval pursuant to the terms of this Section and Section 2.3.3 of this Ordinance.

C) ***Location***

A Sustainable Development Conditional Zoning District SD-CZ designation may be established on any land located in the Town and its ETJ that complies with all of the applicable standards of this Section and Section 3.3.4B), including the requirement that a Sustainable Development Conditional Zoning District SD-CZ include a minimum of 500 contiguous acres. An SD-CZ District may include other parcels of any size within 2000 feet of such parcel of at least 500 contiguous acres.

D) ***Unified Ownership or Control***

One person shall have all the responsibility and authority to make all the developer land use planning decisions for all land that is part of a Sustainable Development Conditional Zoning District SD-CZ. A person shall be considered to have such responsibility and authority for all lands in the Sustainable Development Conditional Zoning District SD-CZ either through ownership or by written agreement by and between such person and each owner of parcels comprising said lands agreeing to the conditions and standards of the adopting ordinance and the Sustainable Development Conditional Zoning District SD-CZ and granting the person such responsibility and authority. This one person, who shall be identified in the Sustainable Development Conditional Zoning District SD-CZ Re-Zoning Application as the "Responsible Person," will be the sole person from whom the Town will accept decisions regarding the Sustainable Development (SD) Plan and Sustainable Development Conditional Zoning District SD-CZ, including amendments, modifications or supplements thereof or the addition of lands thereto. The SD Plan shall provide the process for effecting a change or succession of Responsible Person for the purposes of a specific district. A parcel or parcels (the "Parcel") of any size may be added to an existing Sustainable Development Conditional Zoning District if (i) any portion of the Parcel is within two thousand (2000) feet of such existing district, (ii) the

Responsible Person of the existing district consents in writing and (iii) the Town Council approves a rezoning of the Parcel to Sustainable Development Conditional Zoning District SD-CZ in accordance with Sections 2.3.3 and 2.3.16. In such event the SD Plan approved for the existing SD-CZ District shall be applicable to the Parcel(s) added to such existing district, and the development densities authorized in the existing SD Plan (including number of residential units and authorized square footage of other land uses) shall be increased on a pro-rata basis based on the size of the Parcel(s) added to the district, unless the Town Council provides otherwise with the consent of the Responsible Person.

E) ***Procedures***

1) *Overview.* Approval of a Sustainable Development Conditional Zoning District SD-CZ shall constitute an amendment to the Official Zoning District Map. It shall be controlled by an SD Plan that is approved as part of the Sustainable Development Conditional Zoning District SD-CZ designation and that designates the appropriate form and scale of development within the Sustainable Development Conditional Zoning District SD-CZ. The procedure requires review and recommendation of approval or disapproval by the Planning Board and approval, approval with conditions, or disapproval by the Town Council.

2) *General.* The procedures for initiation of the application, the application contents, fees, submission and review by Town staff and/or consulting firms on retainer, public notification, review by the Planning Board and then approval, approval with conditions, or disapproval by the Town Council at a public hearing(s) shall comply with the requirements of Sec. 2.2 *Common Review Procedures,* Sec 2.2.7 *Neighborhood Meeting* and Sec. 2.3.16 (F) *Sustainability Standards*.

F) ***Standards***

1) In return for greater flexibility in site design requirements, the Sustainable Development Conditional Zoning District SD-CZ is expected to deliver exceptional quality designs on a large-scale basis that:

a) facilitate the integration of a broad array of uses;

b) preserve and enhance critical environmental and natural resources, including water resources and ecosystem services in the stream network flowing through the district;

c) incorporate creativity in the design and configuration of buildings, roads, public space and infrastructure; and

d) employ innovative techniques and practices aimed at maximizing efficiency in the use of energy and materials.

In short, the Sustainable Development Conditional Zoning District SD-CZ is expected to provide a high quality of life through the creation of a healthy, living landscape within a high-intensity mixed-used community.

2) The purpose, intent and scale of the Sustainable Development Conditional Zoning District SD-CZ are unique from the other districts established in Sec. 3.2. Thus, the unique nature of the Sustainable Development Conditional Zoning District SD-CZ necessitates alternative standards, regulations, specifications, details, designs, and criteria (the "Sustainability Standards") to meet the spirit and intent of this Ordinance. These Sustainability Standards, which shall be set forth in the SD Plan and may be established pursuant to paragraph 3) hereafter, may:

a) specify the nature, density, maximums on development, minimums on development, development thresholds, and design characteristics proposed for the Sustainable Development Conditional Zoning District SD-CZ;

b) address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks;

c) facilitate a full diversity of building types, thoroughfare types, and public space types with appropriate characteristics for their respective locations;

d) facilitate the restoration and enhancement of the environment and natural resources through both accepted practice and innovative practices; and

e) modify and supersede the provisions of this Ordinance or any land development document referenced or incorporated therein, or other land development ordinances or policies of the Town. However, an SD Plan and development pursuant thereto shall conform to all applicable Town ordinances and policies, including the UDO, except to the extent that ordinances or policies, including the UDO, are varied in the approved SD Plan or in Sustainability Standards adopted pursuant to paragraph 3) hereafter. An SD Plan and the Sustainability Standards may not modify the requirements that an SD-CZ District include a minimum of 500 contiguous acres.

3) The Sustainability Standards and other provisions of the SD Plan, as well as Sustainability Standards established pursuant to this paragraph F) 3), shall form the basis for a development of exceptional quality and innovation that is an

enhancement to the welfare of the Town's citizens. At any time, and from time to time:

a) with the consent of the Responsible Person, the Town Council may adopt additional or modified Sustainability Standards for an approved SD-CZ District following review and recommendation by the Planning Board;

b) where an SD Plan requires additional or modified Sustainability Standards for an approved SD-CZ District, site plan approval, subdivision approval, construction or grading shall not commence within such SD-CZ District unless and until the required Sustainability Standards are adopted as provided in the SD Plan; with the consent of the Responsible Person, the Town Council shall review and consider and may adopt such additional and modified Sustainability Standards following review and recommendation by the Planning Board;

c) as an amendment to this Ordinance, the Town Council may adopt elective Sustainability Standards for SD-CZ districts, which may, at the election of a Responsible Person, (i) be incorporated, in whole or in part, into an approved SD Plan for an existing SD-CZ district or (ii) be included within an SD Plan for a proposed SD-CZ district. In the case of an approved SD Plan, the elective Sustainability Standards so incorporated may provide that they serve as a supplement to the provisions of the SD Plan and serve as an alternative to the application of any inconsistent provisions of the Plan;

d) actions by the Town Council under the foregoing subsections 2.3.16 F) 3) a), b) and c) shall be taken in accordance with the provisions of Sec. 2.3.2 applicable to Amendments to the Text of this Ordinance. It is provided, however, that such actions may be proposed only by the Town Council, the Planning Director, or the Responsible Person; and

e) this Subsection 2.3.16 does not reduce any authority that the Town otherwise has to amend its UDO or an approved SD-CZ rezoning and SD Plan; the vested rights applicable to a SD-CZ rezoning and SD Plan shall be determined by other applicable law and by the provisions of a developer agreement if any.

G) ***SD Plan***

To the degree necessary and appropriate, the SD Plan and the Sustainability Standards shall include, but shall not be limited to, requirements related to:

1) standards a) through d) set forth in the foregoing Section 2.3.16 F) 1);

2) design guidelines;

3) parks, open space and greenways;

4) water resources and ecosystem services;

5) comprehensive signage;

6) landscaping conditions;

7) parking requirements; and

8) public infrastructure improvements and public facilities.

The SD Plan shall also include a map depicting the concept for the development of the property. To the extent that provisions of the SD Plan or Sustainability Standards vary the provisions of this Ordinance, or other ordinances or policies of the Town, the provisions of the SD Plan or Sustainability Standards shall be applicable.

H) ***Placement of Sustainable Development Conditional Zoning District SD-CZ Designation on Official Zoning District Map***

After final approval of the adopting ordinance for the Sustainable Development Conditional Zoning District SD-CZ designation and the SD Plan, the Planning Director shall amend the Official Zoning District Map to show a Sustainable Development Conditional Zoning District SD-CZ designation.

I) ***Effect***

Approval of an adopting ordinance for Sustainable Development Conditional Zoning District SD-CZ designation and the SD Plan shall constitute an Official Zoning District Map designation and recognition by the Town that the landowner may proceed, consistent with the SD Plan, to develop the land. The next appropriate development approval for the land is a site plan or subdivision plan.

J) ***Deviation to SD Plan***

When appropriate to further the goals of an approved SD-CZ District and its SD Plan, the Planning Director may approve deviations of up to ten percent (10%) with respect to any standard, design, configuration, disposition, or matter established or quantified in an SD Plan or the Sustainability Standards, except that this authority shall not apply to density, maximums on development minimums on development or thresholds. Any other modification, revision or supplementation of an SD Plan or the Sustainability Standards shall require the approval of the Town Council following review by the Planning Board.

K) ***Amendment to Sustainable Development Conditional Zoning District SD-CZ***

An amendment to the Official Zoning District Map for a Sustainable Development Conditional Zoning District SD-CZ may be made only pursuant to the procedures and standards for its original approval, and specifically Sec. 2.3.16 (D) *Unified Ownership or Control*.

II. Article 3 / Zoning Districts
Sec. 3.2 / ZONING DISTRICTS ESTABLISHED

3.2.8 Conditional Zoning Other Districts

A) *CB-CZ Conservation Buffer District; and*

B) *SD-CZ Sustainable Development Conditional Zoning District.*

III. Article 3 / Zoning Districts
Sec. 3.3 / DISTRICT PURPOSES

3.3.4 Other Districts

B) ***Sustainable Development Conditional Zoning District***
The purpose and intent of the Sustainable Development Conditional Zoning District SD-CZ is to encourage the design of a sustainable community through the application of design approaches that allow and encourage flexibility, an intensity of uses, integration among uses, restoration and enhancement of the environment and natural resources, transit-oriented development, pedestrian-oriented development and the efficient use of resources, energy and materials. This shall be accomplished by allowing design flexibility and innovative approaches to environmental stewardship incorporated in a plan for development that:

1) addresses the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks;

2) facilitates a full diversity of building types, thoroughfare types, and public space types with appropriate characteristics for their respective locations; and

3) facilitates the restoration and enhancement of the environment and natural resources.

Further, because the aforementioned design standards are best implemented on a large-scale basis, a purpose and intent of the Sustainable Development Conditional Zoning District SD-CZ is to provide sufficient lands for such implementation. To this end, the Sustainable Development Conditional Zoning District SD-CZ must include a minimum of 500 contiguous acres. An SD-CZ

District may include other parcels of any size within 2000 feet of such parcel of at least 500 contiguous acres.

The unique purpose and intent, and the scale and standards to which the development plan must adhere, distinguish the Sustainable Development Conditional Zoning District SD-CZ from the other districts established in Sec. 3.2. Therefore, the specific procedures and standards for the review of the Sustainable Development Conditional Zoning District SD-CZ are found in Sec. 2.3.16, *Sustainable Development Conditional Zoning District SD-CZ.*

IV. Article 4 / Use Regulations
Sec.4.2 / USE TABLE
Sec.4.2.2 / Use Table

The Use Table in Section 4.2.2 shall be amended to include among the Zoning Districts shown at the top of the table "SD" to denote the **Sustainable Development Conditional Zoning District** as a Zoning District in the "Other" category and to place a double asterisk (**) in the block under SD for each use listed within all of the Use Types, with the exception of the following uses: Adult Establishment; Airplane Landing Strip; Airport; Sanitary Landfill; Land Clearing and Inert Debris Landfill; Mobile Homes; and Asphalt or Concrete Plant. Further, the following shall be inserted below the table:

"**Uses allowed as a matter-of-right in a Sustainable Development Conditional Zoning District shall be those uses authorized in the Sustainable Development Plan approved for such district. Standards applicable to each such use shall be as provided in this Use Table unless modified by the respective Sustainable Development Plan."

V. Article 4 / Use Regulations
Sec.4.3 / Use Classifications
Sec.4.3.1 / Residential Uses

A) ***Accessory Apartment***

A secondary dwelling unit either (1) inside of or added to an existing single-family dwelling, (2) in an accessory structure on the same lot as the principal single-family dwelling, (3) on any floor except for the ground floor of a commercial use in the B1 Neighborhood Business District, B2 Downtown Business District, MEC-CZ Major Employment Center District, TND-CZ Traditional Neighborhood District, PUD-CZ Planned Unit Development District, or (4) on any floor of a commercial use in the SD-CZ Sustainable Development Conditional Zoning District. An accessory apartment is a complete, independent living facility equipped with a kitchen and with provisions for sanitation and sleeping. An accessory structure may include a loft.

VI. Article 5 / Measurements

Sec.5.1 / TABLE OF INTENSITY AND DIMENSIONAL STANDARDS
Sec.5.1.4 / Other Development Districts

The table for "Other Development Districts" in Section 5.1.4 shall be amended to include "SD" to denote the **Sustainable Development Conditional Zoning District** under "Use" and below "*See Sec. 6.1, Watershed Protection Overlay Districts." "All uses" shall be inserted below "SD" and to the right thereof shall be inserted "All Intensity and Dimensional Standards shall be as set forth in the Sustainable Development Plan approved for the respective Sustainable Development Conditional Zoning District."

VII. TECHNICAL AMENDMENTS

A) Each of the following Sections shall be amended to insert "SD-CZ" immediately after "PUD-CZ" at each place in the respective Section at which "PUD-CZ" appears:

2.1.1 A) 2) b)
2.1.2 A) 2) b)
2.1.7 A) 2)
2.2.11 E)
2.3.15 B)
4.1.2 A)
4.5.6
4.5.6 A)
4.5.6 D)
4.5.6 F)
4.6.1 C) 1) a)
5.2.2 A) 2)
8.2.6
8.3.6 B) 5)
8.4.2
9.1.2

B) Section 2.3.1 shall be amended to insert within the Table under "Development Permit" and following "Traditional Neighborhood District (TND-CZ) (Sec. 2.3.4)" the words "Sustainable Development Conditional Zoning District (SD-CZ) (Sec. 2.3.16)"; to place the letter "R" under each of "Planning Director/Technical Review Committee" and "Planning Board"; and to place the letter "D" under "Town Council."

C) Section 2.3.3 J) 2) shall be amended to insert "or Section 2.3.16 J) *Minor Deviation to a SD Plan* or Section 2.3.16 K) *Modification of SD Plan*" following "2.3.4(M) *Minor Deviations*".

D) Section 2.3.16, **Site Work Prior to Development Approvals**, shall be re-numbered to "Section 2.3.17".

E) Section 2.3.17, **Utility Service**, shall be re-numbered to "Section 2.3.18".

F) Sections 4.3.1 A), 4.4.5 F), and 4.6.1 C) 3) shall each be amended to insert ", SD-CZ Sustainable Development Conditional Zoning District," immediately following "TND-CZ Traditional Neighborhood District" at each place where "TND-CZ Traditional Neighborhood District" appears.

G) Section 5.2.2 F) shall be amended to insert at the beginning of the paragraph "Except in Sustainable Development Conditional Zoning District (SD-CZ)," and to replace "I" with "i" in "internal."

H) Section 8.3.6 B) 5) shall be amended to substitute "Section 8.4.4" for "Section 8.5.3."

I. Article 2 / Administration
Sec. 2.3 / DEVELOPMENT APPROVALS

2.3.16 Sustainable Development Conditional Zoning District

A) ***General***

This Section establishes the procedures and standards applicable to the Town's Sustainable Development Conditional Zoning District SD-CZ.

B) ***General Applicability***

Before any development shall be designated as a Sustainable Development Conditional Zoning District SD-CZ on the Official Zoning District Map, it shall receive approval pursuant to the terms of this Section and Section 2.3.3 of this Ordinance.

C) ***Location***

A Sustainable Development Conditional Zoning District SD-CZ designation may be established on any land located in the Town and its ETJ that complies with all of the applicable standards of this Section and Section 3.3.4B), including the requirement that a Sustainable Development Conditional Zoning District SD-CZ include a minimum of 500 contiguous acres. An SD-CZ District may include other parcels of any size within 2000 feet of such parcel of at least 500 contiguous acres.

D) ***Unified Ownership or Control***

One person shall have all the responsibility and authority to make all the developer land use planning decisions for all land that is part of a Sustainable Development Conditional Zoning District SD-CZ. A person shall be considered to have such responsibility and authority for all lands in the Sustainable Development Conditional Zoning District SD-CZ either through ownership or by written agreement by and between such person and each owner of parcels comprising said lands agreeing to the conditions and standards of the adopting ordinance and the Sustainable Development Conditional Zoning District SD-CZ and granting the person such responsibility and authority. This one person, who shall be identified in the Sustainable Development Conditional Zoning District SD-CZ Re-Zoning Application as the "Responsible Person," will be the sole person from whom the Town will accept decisions regarding the Sustainable Development (SD) Plan and Sustainable Development Conditional Zoning District SD-CZ, including amendments, modifications or supplements thereof or the addition of lands thereto. The SD Plan shall provide the process for effecting a change or succession of Responsible Person for the purposes of a specific district. A parcel or parcels (the "Parcel") of any size may be added to an existing Sustainable Development Conditional Zoning District if (i) any portion of the Parcel is within two thousand (2000) feet of such existing district, (ii) the

Responsible Person of the existing district consents in writing and (iii) the Town Council approves a rezoning of the Parcel to Sustainable Development Conditional Zoning District SD-CZ in accordance with Sections 2.3.3 and 2.3.16. In such event the SD Plan approved for the existing SD-CZ District shall be applicable to the Parcel(s) added to such existing district, and the development densities authorized in the existing SD Plan (including number of residential units and authorized square footage of other land uses) shall be increased on a pro-rata basis based on the size of the Parcel(s) added to the district, unless the Town Council provides otherwise with the consent of the Responsible Person.

E) ***Procedures***

1) *Overview.* Approval of a Sustainable Development Conditional Zoning District SD-CZ shall constitute an amendment to the Official Zoning District Map. It shall be controlled by an SD Plan that is approved as part of the Sustainable Development Conditional Zoning District SD-CZ designation and that designates the appropriate form and scale of development within the Sustainable Development Conditional Zoning District SD-CZ. The procedure requires review and recommendation of approval or disapproval by the Planning Board and approval, approval with conditions, or disapproval by the Town Council.

2) *General.* The procedures for initiation of the application, the application contents, fees, submission and review by Town staff and/or consulting firms on retainer, public notification, review by the Planning Board and then approval, approval with conditions, or disapproval by the Town Council at a public hearing(s) shall comply with the requirements of Sec. 2.2 *Common Review Procedures,* Sec 2.2.7 *Neighborhood Meeting* and Sec. 2.3.16 (F) *Sustainability Standards*.

F) ***Standards***

1) In return for greater flexibility in site design requirements, the Sustainable Development Conditional Zoning District SD-CZ is expected to deliver exceptional quality designs on a large-scale basis that:

a) facilitate the integration of a broad array of uses;

b) preserve and enhance critical environmental and natural resources, including water resources and ecosystem services in the stream network flowing through the district;

c) incorporate creativity in the design and configuration of buildings, roads, public space and infrastructure; and

d) employ innovative techniques and practices aimed at maximizing efficiency in the use of energy and materials.

In short, the Sustainable Development Conditional Zoning District SD-CZ is expected to provide a high quality of life through the creation of a healthy, living landscape within a high-intensity mixed-used community.

2) The purpose, intent and scale of the Sustainable Development Conditional Zoning District SD-CZ are unique from the other districts established in Sec. 3.2. Thus, the unique nature of the Sustainable Development Conditional Zoning District SD-CZ necessitates alternative standards, regulations, specifications, details, designs, and criteria (the "Sustainability Standards") to meet the spirit and intent of this Ordinance. These Sustainability Standards, which shall be set forth in the SD Plan and may be established pursuant to paragraph 3) hereafter, may:

a) specify the nature, density, maximums on development, minimums on development, development thresholds, and design characteristics proposed for the Sustainable Development Conditional Zoning District SD-CZ;

b) address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks;

c) facilitate a full diversity of building types, thoroughfare types, and public space types with appropriate characteristics for their respective locations;

d) facilitate the restoration and enhancement of the environment and natural resources through both accepted practice and innovative practices; and

e) modify and supersede the provisions of this Ordinance or any land development document referenced or incorporated therein, or other land development ordinances or policies of the Town. However, an SD Plan and development pursuant thereto shall conform to all applicable Town ordinances and policies, including the UDO, except to the extent that ordinances or policies, including the UDO, are varied in the approved SD Plan or in Sustainability Standards adopted pursuant to paragraph 3) hereafter. An SD Plan and the Sustainability Standards may not modify the requirements that an SD-CZ District include a minimum of 500 contiguous acres.

3) The Sustainability Standards and other provisions of the SD Plan, as well as Sustainability Standards established pursuant to this paragraph F) 3), shall form the basis for a development of exceptional quality and innovation that is an

enhancement to the welfare of the Town's citizens. At any time, and from time to time:

a) with the consent of the Responsible Person, the Town Council may adopt additional or modified Sustainability Standards for an approved SD-CZ District following review and recommendation by the Planning Board;

b) where an SD Plan requires additional or modified Sustainability Standards for an approved SD-CZ District, site plan approval, subdivision approval, construction or grading shall not commence within such SD-CZ District unless and until the required Sustainability Standards are adopted as provided in the SD Plan; with the consent of the Responsible Person, the Town Council shall review and consider and may adopt such additional and modified Sustainability Standards following review and recommendation by the Planning Board;

c) as an amendment to this Ordinance, the Town Council may adopt elective Sustainability Standards for SD-CZ districts, which may, at the election of a Responsible Person, (i) be incorporated, in whole or in part, into an approved SD Plan for an existing SD-CZ district or (ii) be included within an SD Plan for a proposed SD-CZ district. In the case of an approved SD Plan, the elective Sustainability Standards so incorporated may provide that they serve as a supplement to the provisions of the SD Plan and serve as an alternative to the application of any inconsistent provisions of the Plan;

d) actions by the Town Council under the foregoing subsections 2.3.16 F) 3) a), b) and c) shall be taken in accordance with the provisions of Sec. 2.3.2 applicable to Amendments to the Text of this Ordinance. It is provided, however, that such actions may be proposed only by the Town Council, the Planning Director, or the Responsible Person; and

e) this Subsection 2.3.16 does not reduce any authority that the Town otherwise has to amend its UDO or an approved SD-CZ rezoning and SD Plan; the vested rights applicable to a SD-CZ rezoning and SD Plan shall be determined by other applicable law and by the provisions of a developer agreement if any.

G) ***SD Plan***

To the degree necessary and appropriate, the SD Plan and the Sustainability Standards shall include, but shall not be limited to, requirements related to:

1) standards a) through d) set forth in the foregoing Section 2.3.16 F) 1);

2) design guidelines;

3) parks, open space and greenways;

4) water resources and ecosystem services;

5) comprehensive signage;

6) landscaping conditions;

7) parking requirements; and

8) public infrastructure improvements and public facilities.

The SD Plan shall also include a map depicting the concept for the development of the property. To the extent that provisions of the SD Plan or Sustainability Standards vary the provisions of this Ordinance, or other ordinances or policies of the Town, the provisions of the SD Plan or Sustainability Standards shall be applicable.

H) ***Placement of Sustainable Development Conditional Zoning District SD-CZ Designation on Official Zoning District Map***

After final approval of the adopting ordinance for the Sustainable Development Conditional Zoning District SD-CZ designation and the SD Plan, the Planning Director shall amend the Official Zoning District Map to show a Sustainable Development Conditional Zoning District SD-CZ designation.

I) ***Effect***

Approval of an adopting ordinance for Sustainable Development Conditional Zoning District SD-CZ designation and the SD Plan shall constitute an Official Zoning District Map designation and recognition by the Town that the landowner may proceed, consistent with the SD Plan, to develop the land. The next appropriate development approval for the land is a site plan or subdivision plan.

J) ***Deviation to SD Plan***

When appropriate to further the goals of an approved SD-CZ District and its SD Plan, the Planning Director may approve deviations of up to ten percent (10%) with respect to any standard, design, configuration, disposition, or matter established or quantified in an SD Plan or the Sustainability Standards, except that this authority shall not apply to density, maximums on development minimums on development or thresholds. Any other modification, revision or supplementation of an SD Plan or the Sustainability Standards shall require the approval of the Town Council following review by the Planning Board.

K) ***Amendment to Sustainable Development Conditional Zoning District SD-CZ***

An amendment to the Official Zoning District Map for a Sustainable Development Conditional Zoning District SD-CZ may be made only pursuant to the procedures and standards for its original approval, and specifically Sec. 2.3.16 (D) *Unified Ownership or Control*.

II. Article 3 / Zoning Districts
Sec. 3.2 / ZONING DISTRICTS ESTABLISHED

3.2.8 Conditional Zoning Other Districts

A) *CB-CZ Conservation Buffer District; and*

B) *SD-CZ Sustainable Development Conditional Zoning District.*

III. Article 3 / Zoning Districts
Sec. 3.3 / DISTRICT PURPOSES

3.3.4 Other Districts

B) ***Sustainable Development Conditional Zoning District***
The purpose and intent of the Sustainable Development Conditional Zoning District SD-CZ is to encourage the design of a sustainable community through the application of design approaches that allow and encourage flexibility, an intensity of uses, integration among uses, restoration and enhancement of the environment and natural resources, transit-oriented development, pedestrian-oriented development and the efficient use of resources, energy and materials. This shall be accomplished by allowing design flexibility and innovative approaches to environmental stewardship incorporated in a plan for development that:

1) addresses the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks;

2) facilitates a full diversity of building types, thoroughfare types, and public space types with appropriate characteristics for their respective locations; and

3) facilitates the restoration and enhancement of the environment and natural resources.

Further, because the aforementioned design standards are best implemented on a large-scale basis, a purpose and intent of the Sustainable Development Conditional Zoning District SD-CZ is to provide sufficient lands for such implementation. To this end, the Sustainable Development Conditional Zoning District SD-CZ must include a minimum of 500 contiguous acres. An SD-CZ

District may include other parcels of any size within 2000 feet of such parcel of at least 500 contiguous acres.

The unique purpose and intent, and the scale and standards to which the development plan must adhere, distinguish the Sustainable Development Conditional Zoning District SD-CZ from the other districts established in Sec. 3.2. Therefore, the specific procedures and standards for the review of the Sustainable Development Conditional Zoning District SD-CZ are found in Sec. 2.3.16, *Sustainable Development Conditional Zoning District SD-CZ.*

IV. Article 4 / Use Regulations
Sec.4.2 / USE TABLE
Sec.4.2.2 / Use Table

The Use Table in Section 4.2.2 shall be amended to include among the Zoning Districts shown at the top of the table "SD" to denote the **Sustainable Development Conditional Zoning District** as a Zoning District in the "Other" category and to place a double asterisk (**) in the block under SD for each use listed within all of the Use Types, with the exception of the following uses: Adult Establishment; Airplane Landing Strip; Airport; Sanitary Landfill; Land Clearing and Inert Debris Landfill; Mobile Homes; and Asphalt or Concrete Plant. Further, the following shall be inserted below the table:

"**Uses allowed as a matter-of-right in a Sustainable Development Conditional Zoning District shall be those uses authorized in the Sustainable Development Plan approved for such district. Standards applicable to each such use shall be as provided in this Use Table unless modified by the respective Sustainable Development Plan."

V. Article 4 / Use Regulations
Sec.4.3 / Use Classifications
Sec.4.3.1 / Residential Uses

A) ***Accessory Apartment***

A secondary dwelling unit either (1) inside of or added to an existing single-family dwelling, (2) in an accessory structure on the same lot as the principal single-family dwelling, (3) on any floor except for the ground floor of a commercial use in the B1 Neighborhood Business District, B2 Downtown Business District, MEC-CZ Major Employment Center District, TND-CZ Traditional Neighborhood District, PUD-CZ Planned Unit Development District, or (4) on any floor of a commercial use in the SD-CZ Sustainable Development Conditional Zoning District. An accessory apartment is a complete, independent living facility equipped with a kitchen and with provisions for sanitation and sleeping. An accessory structure may include a loft.

VI. Article 5 / Measurements

Sec.5.1 / TABLE OF INTENSITY AND DIMENSIONAL STANDARDS
Sec.5.1.4 / Other Development Districts

The table for "Other Development Districts" in Section 5.1.4 shall be amended to include "SD" to denote the **Sustainable Development Conditional Zoning District** under "Use" and below "*See Sec. 6.1, Watershed Protection Overlay Districts." "All uses" shall be inserted below "SD" and to the right thereof shall be inserted "All Intensity and Dimensional Standards shall be as set forth in the Sustainable Development Plan approved for the respective Sustainable Development Conditional Zoning District."

VII. TECHNICAL AMENDMENTS

A) Each of the following Sections shall be amended to insert "SD-CZ" immediately after "PUD-CZ" at each place in the respective Section at which "PUD-CZ" appears:

2.1.1 A) 2) b)
2.1.2 A) 2) b)
2.1.7 A) 2)
2.2.11 E)
2.3.15 B)
4.1.2 A)
4.5.6
4.5.6 A)
4.5.6 D)
4.5.6 F)
4.6.1 C) 1) a)
5.2.2 A) 2)
8.2.6
8.3.6 B) 5)
8.4.2
9.1.2

B) Section 2.3.1 shall be amended to insert within the Table under "Development Permit" and following "Traditional Neighborhood District (TND-CZ) (Sec. 2.3.4)" the words "Sustainable Development Conditional Zoning District (SD-CZ) (Sec. 2.3.16)"; to place the letter "R" under each of "Planning Director/Technical Review Committee" and "Planning Board"; and to place the letter "D" under "Town Council."

C) Section 2.3.3 J) 2) shall be amended to insert "or Section 2.3.16 J) *Minor Deviation to a SD Plan* or Section 2.3.16 K) *Modification of SD Plan*" following "2.3.4(M) *Minor Deviations*".

D) Section 2.3.16, **Site Work Prior to Development Approvals**, shall be re-numbered to "Section 2.3.17".

E) Section 2.3.17, **Utility Service**, shall be re-numbered to "Section 2.3.18".

F) Sections 4.3.1 A), 4.4.5 F), and 4.6.1 C) 3) shall each be amended to insert ", SD-CZ Sustainable Development Conditional Zoning District," immediately following "TND-CZ Traditional Neighborhood District" at each place where "TND-CZ Traditional Neighborhood District" appears.

G) Section 5.2.2 F) shall be amended to insert at the beginning of the paragraph "Except in Sustainable Development Conditional Zoning District (SD-CZ)," and to replace "I" with "i" in "internal."

H) Section 8.3.6 B) 5) shall be amended to substitute "Section 8.4.4" for "Section 8.5.3."

November 26, 2025

Town of Apex

Planning Department

322 N. Mason Street

Apex, NC 27502

RE: Veridea Environmental Enhancement Plan (EEP) Amendment

To Whom It May Concern,

This letter is to inform you of a proposed amendment to the Veridea Environmental Enhancement Plan (EEP) to facilitate the development of the North Carolina Children's Hospital and campus.

The Veridea Environmental Enhancement Plan was approved by the Town of Apex on February 28th, 2023 (Ordinance #2023-023).

In the summer of 2025, North Carolina Children's announced their intention to develop a new, state-of-the-art children's hospital within Veridea, bringing North Carolina's first freestanding children's hospital to the Triangle. The hospital and its supporting uses (including but not limited to medical, research, academic, administrative, transport, patient and family respite and accommodations) have a specific set of needs for sustainable building and site design. These unique considerations require the enclosed technical exemptions to the Environmental Enhancement Plan (Exhibit A).

Exhibit A includes the proposed exemptions from technical standards found in the EEP. The exemptions that apply to the health care campus and surrounding supporting uses (including but not limited to medical, research, academic, administrative, transport, patient and family respite and accommodations, central utility plant, and adequate parking facilities) which will make up the campus are found in Part 1 of Exhibit A. Exemptions for the overall SD-CZ Zoned area are contained within Part 2 of Exhibit A.

Exemptions requested herein include standards which relate to specific energy performance ratings, specific fixtures, and EV parking. Where exemptions from text are requested, the full text is provided.

A corresponding UDO Amendment application has been filed in the Town's development portal.

Sincerely,

Veridea Development Team

Exhibit A.

Veridea EEP Plan Amendment

Proposed Text Changes

November 26, 2025

PART 1 NCC Campus Property

The Environmental Enhancement Plan south of US 1, east of I-540, and west of Veridea Parkway (PINs 0740191376, 0730996270, 0730977087, 0730977967, 0740081019, 0740070950, 0740082327, 0740082199, 0740078021, 0740180091, 0740180331, 0731902142 (portion of)) and a portion of the Sustainable Development Plan south of US 1 and east of Veridea Parkway (PINs 0741207566, 0741203157, 0740293940) will retain all of the standards from Ordinance # ORD-2023-023 except:

Section I: Building Standards

Exemption from I.A.1.a., b. & e.

a. In furtherance of the goals set forth in SD Plan 3.7.2, all non-residential and mixed-use buildings in Veridea shall provide plan analysis demonstrating improvement of energy performance by 20% compared to baseline building performance ratings per ASHRAE/ IESNA Standard 90.1-2010 Appendix G. (Note: 2010 ASHREA is being referenced here, consistent with current LEED Rating System benchmark standard).

b. At build-out of Veridea, a minimum of 50% of non-residential buildings within Veridea shall be certified under one of these 3rd Party Certification Program options:

    a. LEED Rating System
    b. Green Globes
    c. Fitwel
    d. Similar alternative standard as determined by the Responsible Party

    Responsible Party will ensure the ability to meet this 50% commitment at the time of each non-residential building permit application to the Town of Apex.

e. Documentation

    i. For all buildings, a letter of compliance shall be provided to the Town with the submittal of building permits for that building by a Professional Engineer (PE) licensed to practice in North Carolina, an architect licensed in North Carolina, OR a qualified third-party certifier stating that, in his or her opinion, the building

design demonstrates improvement of energy performance by 20% compared to baseline building performance ratings per ASHRAE/ IESNA Standard 90.1-2010 Appendix G.

ii. For each building that is developed to meet the standards for certification under one of the 3rd Party Certification Options, a letter of building certification from the selected program shall be provided to the Town at building completion.

Exemption from I.B.1. & 2.

1. Bathroom Fixtures

    a. 100% of showerheads, lavatory faucets and toilets/urinals shall be WaterSense rated fixtures.

2. Water Using Appliances

    a. Dishwashers and clothes washers installed by builder must be Energy Star qualified.

PART 2 Veridea Properties Zoned SD-CZ

With respect to the entirety of the Development, the following exceptions and amendments to the Environmental Enhancement Plan shall apply:

Section V. Air Quality Protection

Modification to V. h.

h. ~~Parking for electric vehicles and bicycles will be provided as required by the Town of Apex UDO~~. Parking requirements:

i. Bicycle parking shall be provided as required by the Town of Apex UDO.

ii. For all uses on the NC Children's health care campus, EV charging spaces shall be provided for 0.3% of the required parking spaces and EV-Ready spaces shall be provided for 1.5% of the required parking spaces.

iii. Multi-family development and hotels shall be required to provide 10% of the required parking as EV charging spaces and 35% of the required parking as EV-Ready spaces.

iv. Higher Education uses shall provide 1% of the required parking as EV Charging spaces and 1.5% of the required parking as EV-Ready spaces.

v. Elementary, junior, and high schools (public or private) are required to meet UDO requirements for EV parking.

vi. All other uses shall be required to provide the UDO required amount of electric vehicle charging spaces and 10% of the required parking as EV-Ready spaces.

vii. For all uses with the Veridea SD-CZ zoning, in-lieu of EV-Ready spaces as defined in Article 12 of the Unified Development Ordinance, EV-Capable spaces shall be allowed. EV-Capable shall mean the installation of "raceway" (the enclosed conduit that forms the physical pathway for electrical wiring to protect it from damage) from the parking space to the nearest electrical distribution room for structured parking or the nearest manhole or hand hole for surface parking. Wire, circuitry, receptacles, chargers, electrical panels, distribution equipment, and/or any other supporting equipment are not required.

ORD · 2023 (5)

023

AN ORDINANCE TO ADOPT ADDITIONAL SUSTAINABILITY STANDARDS FOR VERIDEA

BE IT ORDAINED by the Town Council of the Town of Apex as follows:

Section 1. The Environmental Enhancement Plan for Veridea is hereby adopted in accordance with Section 2.3.16.F.3.b of the Unified Development Ordinance and Section 3.1.2 of the Sustainable Development Plan adopted for Veridea by Rezoning #09CZ07 ("Veridea SD Plan").

Section 2. The lands that are the subject of the Ordinance are those certain lands described in Attachment "A" – Legal Description which is incorporated herein by reference.

Section 3. Pursuant to Section 3.3.4 of the Veridea SD Plan, the Environmental Enhancement Plan in Attachment "B" is hereby incorporated into the Veridea SD Plan and is applicable to the land described in Attachment "A" and to any lands subsequently rezoned to be included in the Veridea SD Plan.

Section 4. The ordinance shall be effective upon enactment on the 28th day of February 2023.

Introduced by Council Member Gantt

Seconded by Council Member Gray

Attest:

Allen Coleman, CMC, NCCCC
Town Clerk

TOWN OF APEX

Jacques K. Gilbert
Mayor

Approved As To Form:

Laurie L. Hohe
Town Attorney

APEX 1873 NORTH CAROLINA

Attachment A

Property Description

Tract 1 (Poe):

BEGINNING at a point which is the northeast corner of the 54.650 acre tract shown on Boundary Survey Prepared for Apex Land Assemblage, LLC by Riley Surveying, PA dated February 23, 2006 and recorded in Book of Maps 2006, Page 416, Wake County Registry; thence along the line of said 54.650 acre tract N 89° 54' 34" W 1794.53 feet to a point in the centerline of Big Branch; thence along the centerline of Big Branch, the following courses and distances denoted L87 through L156 on the following table:

CENTERLINE BIG BRANCH

LINE TABLE		
LINE	*BEARING*	*LENGTH*
L87	*N20° 48' 14" E*	*52.19*
L88	*N27° 36' 15" E*	*25.74*
L89	*N62° 55' 07" E*	*26.76*
L90	*N28° 59' 45" W*	*21.84*
L91	*N05° 57' 55" W*	*34.25*
L92	*N49° 54' 20" E*	*15.65*
L93	*N35° 51' 41" E*	*26.00*
L94	*N57° 55' 36" W*	*27.74*
L95	*S77° 58' 08" W*	*70.86*
L96	*N69° 24' 20" W*	*55.42*
L97	*N16° 11' 53" W*	*54.07*
L98	*N47° 25' 48" E*	*30.81*
L99	*S76° 51' 18" E*	*46.52*
L100	*N23° 56' 06" E*	*15.13*
L101	*N10° 54' 23" E*	*79.33*
L102	*N70° 46' 49" W*	*21.80*
L103	*N13° 56' 38" W*	*44.13*
L104	*N54° 44' 36" W*	*48.38*
L105	*S57° 22' 33" W*	*58.59*
L106	*S44° 34' 58" W*	*46.68*
L107	*N46° 23' 02" W*	*39.79*
L108	*N72° 28' 16" W*	*36.60*
L109	*S47° 16' 54" W*	*18.92*
L110	*N74° 34' 40" W*	*21.22*
L111	*N28° 53' 03" W*	*20.74*
L112	*N42° 52' 48" W*	*46.75*
L113	*N06° 56' 21" E*	*26.65*
L114	*N88° 28' 36" E*	*43.87*
L115	*N27° 02' 14" E*	*18.93*
L116	*N01° 17' 25" E*	*31.60*
L117	*N45° 56' 56" E*	*50.02*
L124	*N39° 28' 55" E*	*39.13*
L125	*N15° 03' 15" W*	*20.63*
L126	*N51° 44' 06" W*	*25.88*
L127	*N30° 05' 45" E*	*27.95*
L128	*S60° 15' 59" E*	*30.79*
L129	*S36° 33' 19" E*	*34.28*
L130	*S78° 44' 24" E*	*52.43*
L131	*N41° 37' 38" E*	*15.36*
L132	*N04° 45' 02" E*	*44.44*
L133	*N30° 38' 49" E*	*51.77*
L134	*N05° 02' 00" W*	*35.48*
L135	*S62° 06' 04" W*	*33.82*
L136	*N44° 56' 44" W*	*39.84*
L137	*N44° 38' 21" E*	*21.58*
L138	*N53° 06' 38 E*	*60.88*
L139	*N61° 14' 38" W*	*39.17*
L140	*N50° 48' 06" W*	*23.78*
L141	*N10° 02' 40" W*	*28.54*
L142	*N38° 49' 48" E*	*55.95*
L143	*N43° 06' 48" W*	*60.59*
L144	*N42° 29' 30" E*	*31.74*
L145	*N70° 52' 59" W*	*69.18*
L146	*N86° 33' 59" W*	*111.94*
L147	*N47° 57' 35" W*	*68.58*
L148	*N30° 54' 08" E*	*32.56*
L149	*N21° 23' 37" W*	*54.07*
L150	*N55° 27' 06" E*	*39.27*
L151	*N03° 24' 04" W*	*46.46*
L152	*N31° 43' 23" E*	*54.96*
L153	*N18° 31' 57" E*	*44.10*
L154	*N01° 09' 10" W*	*65.77*
L155	*N22° 16' 37" W*	*29.93*
L156	*N19° 16' 28" E*	*2.52*

L118	*N01° 25' 13" E*	*14.01*
L119	*N65° 15' 45" W*	*42.02*
L120	*N01° 22' 31" E*	*32.19*
L121	*N46° 17' 51" W*	*51.21*
L122	*N06° 49' 21" E*	*35.97*
L123	*N69° 35' 22" E*	*41.13*

Thence leaving the course of Big Branch, N 87° 20' 59" E 1317.72 feet to a point; thence N 00° 20' 59" E 1411.74 feet to a point; thence N 87° 17' 47" E 1396.96 feet to a point; thence S 02° 19' 40" W 527.05 feet to a point; thence S 90° 00' 00" W 750.13 feet to a point; thence S 00° 00' 00" W 967.73 feet to a point; thence N 77° 55' 24" E 389.22 feet to a point; thence N 01° 29' 14" E 148.65 feet to a point; thence N 65° 20' 41" E 538.98 feet to a point; thence S 02° 20' 59" W 179.73 feet to a point; thence S 02° 28' 41" W 1915.88 feet to a point; thence N 89° 11' 33" W 648.01 feet to the point and place of beginning and being all of Tract 3 containing 128.439 acres shown on a survey entitled "Exempt Division Survey – Property of Bobby and Elizabeth Poe" prepared by Riley Surveying, PA dated November 9, 2006.

Tract 2 (Poe):

BEING all of the 1.710 acre tract and the 0.042 acre tract shown as area in the right of way of Old Holly Springs – Apex Road shown on a map entitled "Property of Bobby W. and Elizabeth A. Poe, F.D. Prince, Sr, Trustee" recorded in Book of Maps 2002, Page 109, Wake County Registry, reference to which is hereby made for greater certainty of description and also being more particularly described as follows: Beginning at an existing nail in the northwest corner of the property of E.K. Huang, et. al. as described in Deed Book 6650, Page 866, Wake County Registry, and the southwest corner of the property of F.D. Prince, Sr. as described in Deed Book 8291, page 540, Wake County Registry, runs thence North 05 degrees 23 minutes 24 seconds East 64.21 feet to an iron pipe; thence North 74 degrees 31 minutes 24 seconds East 381.93 feet to an iron pipe; thence South 86 degrees 04 minutes 18 seconds East 863.27 feet to an iron pipe in the west right of way of SR 1153 (Old Holly Springs – Apex Road). Thence South 86 degrees 04 minutes 18 seconds East 30.32 feet to the centerline of SR 1153; thence along the centerline of SR 1153, South 12 degrees, 45 minutes 03 seconds West 60.72 feet to a point; thence with the north line of Huang, et. al., North 86 degrees 04 minutes 18 seconds West 30.32 feet to an existing iron pipe; thence North 86 degrees 04 minutes 18 seconds West 843.70 feet to an existing iron pipe; thence South 74 degrees 31 minutes 24 seconds West 394.54 feet to an existing iron pipe, the point and place of Beginning, and also being Tract 1 containing 1.754 acres shown on a survey entitled "Exempt Division Survey – Property of Bobby and Elizabeth Poe" prepared by Riley Surveying, PA dated November 9, 2006.

Tract 3 (Lyna):

BEGINNING at a point in the centerline of Old Holly Springs Apex Road, said point being calculated as follows: Beginning at a point in the line of Tract A shown on a map entitled "Proposed Subdivision and Recombination of Properties of Wake County" which is recorded in Book of Maps 1998, Page 782, Wake County Registry, said point also being North 45° 03' 47" East 1591.01 feet from the centerline of the intersection of Old Holly Springs Apex Road and

Woods Creek Road; thence North 09° 24' 42" East 362.56 feet to a point; thence North 85° 47' 44" West 162.21 feet to an iron pin in the centerline of Old Holly Springs Apex Road; thence along the centerline of Old Holly Springs Apex Road in an northerly direction along a left hand curve having a radius of 1963.49 feet an arc distance of 423.08 feet and chord bearing and distance of North 12° 12' 26" East 422.26 feet to the POINT AND PLACE OF BEGINNING: thence continuing along the centerline of said Old Holly Springs Apex Road in a northerly direction along a left hand curve having a radius of 1963.49 feet, an arc distance of 259.39 feet and a chord bearing and distance of North 02° 14' 59" East 259.20 feet; thence North 00° 00' 56" East 187.39 feet to a point; thence South 67° 20' 57" East 925.18 feet to a point; thence South 61° 30' 00" East 301.10 feet to a point; thence South 73° 33' 19" East 346.87 feet to a point; thence South 74° 36' 50" East 217.48 feet to a point; thence South 70° 39" 03" East 219.39 feet to a point; thence South 66° 06' 14" East 183.83 feet to a point; thence South 51° 10' 55" East 327.09 feet to a point in the centerline of White Oak Creek a/k/a Falls Branch Creek; thence along the centerline of said creek as follows: South 03° 23' 35" East 31.18 feet to a point; thence South 19° 58' 50" East 138.13 feet to a point; thence South 09° 01' 05" West 63.94 feet to a point; thence South 22° 49' 37" West 94.25 feet to a point; thence South 05° 19' 49" West 65.12 feet to a point; thence leaving the center line of said creek N 67° 48' 05" W 2481.26 feet to the point and place of BEGINNING and being all of Tract 1 containing 23.62 acres as shown on a survey entitled "Exempt Subdivision prepared for Apex Land Assemblage, LLC" by Riley Surveying, P.A. dated May 13, 2005.

Tract 4 (Reeves):

BEGINNING at a point in the line of Tract A shown on a map entitled "Proposed Subdivision and Recombination of Properties of Wake County" which is recorded in Book of Maps 1998, Page 782, Wake County Registry, said point also being North 45° 03' 47" East 1591.01 feet from the centerline of the intersection of Old Holly Springs Apex Road and Woods Creek Road, being the point and place of BEGINNING, thence North 09° 24' 42" East 362.56 feet to a point; thence North 85° 47' 44" West 162.21 feet to a point; thence North 85° 47' 44" West 30.48 feet to an iron pin in the centerline of Old Holly Springs Apex Road; thence along the centerline of Old Holly Springs Apex Road in an northerly direction along a left hand curve having a radius of 1963.49 feet, an arc distance of 423.08 feet and chord bearing and distance of North 12° 12' 26" East 422.26 feet to a point; thence leaving the centerline of said road South 67° 48' 05" East 2481.26 feet to a point in the centerline of White Oak Creek a/k/a Falls Branch Creek; thence along the centerline of said creek as follows South 05° 19' 49" West 39.71 feet to a point; thence South 17° 13' 42" West 52.16 feet to a point; thence South 63° 16' 26" West 25.88 feet to a point; thence South 17° 55' 39" West 68.74 feet to a point; thence leaving the line of said creek North 78° 00' 00" West 876.99 feet to a point; thence North 84° 10' 00" West 1370.01 feet to the point and place of BEGINNING, and being all of Tract 2 containing 23.62 acres as shown on a survey entitled "Exempt Subdivision prepared for Apex Land Assemblage, LLC" by Riley Surveying, P.A. dated May 13, 2005.

Tract 5 (Goodwin/ALAN):

BEING all that certain tract or parcel of land containing 54.650 acres, more or less, as shown on plat of survey entitled "Boundary Survey Prepared for Apex Land Assemblage, LLC" dated February 16, 2006 and revised February 23, 2006, prepared by Phillip W. Riley, professional Land Surveyor, of Riley Surveying, P.A. and recorded in Book of Maps 2006, Page 416, Wake County Registry, which plat is referenced for a more particular description.

Tract 6 (Adams):

BEING all that certain tract or parcel of land containing 86.334 acres as shown on plat of survey entitled "Boundary Survey, Prepared for HH Trinity Apex Investments, LLC, Holly Springs Township, Wake County, NC" dated September 17, 2007, prepared by Phillip W. Riley, Professional Land Surveyor, of Riley Survey, P.A. and recorded in Book of Maps 2007, Page 2469, Wake County Registry, which plat is referenced for a more particular description.

Tract 7 (Cox):

BEING all that certain tract or parcel of land containing 65.210 acres as shown on plat of survey entitled "Boundary Survey, Prepared for HH Trinity Apex Investments, LLC, Holly Springs Township, Wake County, NC" dated September 19, 2007, prepared by Phillip W. Riley, Professional Land Surveyor, of Riley Survey, P.A. and recorded in Book of Maps 2007, Page 2467, Wake County Registry, which plat is referenced for a more particular description.

Tracts 8 - 11 (Raymer):

BEING all those certain tracts or parcels of land designated as Tract I-A, containing 278.521 acres; Tract II, containing 2.134 acres; Tract III, containing 4.333 acres; and Tract 840' x 40', containing 0.626 acres, as shown on plat of survey entitled "Boundary Survey, Prepared for HH Trinity Apex Investments, LLC, Holly Springs Township, Wake County, NC" dated September 20, 2007, prepared by Phillip W. Riley, Professional Land Surveyor, of Riley Surveying, P.A. and recorded in Book of Maps 2007, Page 2468, Wake County Registry, which plat is referenced for a more particular description.

Tract 12 (Apex Town Square):

Being all of that certain tract of land lying in the Town of Apex, Holly Springs Township, Wake County, North Carolina, and being more particularly described as follows:

BEGINNING at an existing iron pipe at the northeastern corner of the now or formerly EMC Corporation property described in Deed recorded Book 2791, Page 428, Wake County Registry, said pipe also being located in the western line of the now or formerly Cash and Maynard Tract 1-A as shown on plat of survey recorded in Book of Maps 2003, Page 398, Wake County Registry (the "Plat"), said pipe being located North 02° 14' 00" East 271.08 feet from a common corner with said Cash and Maynard Tract 1-A and the now or formerly Cor Bregman property in said EMC Corporation's eastern property line as shown on the Plat; thence with said EMC Corporation's northern property line, South 89° 33' 33" West 1,910.66 feet to an existing iron pipe; thence with EMC Corporation's interior eastern property line, North 02° 07' 56" East

543.28 feet to an existing iron pipe, the southeastern corner of the now or formerly Colon Hobby property; thence with the eastern property line of said Colon Hobby property, North 00° 59' 41" East 734.53 feet to a set iron pipe marking the southwest corner of the said Cash and Maynard Tract 1-A; thence with said Cash and Maynard's Tract 1-A's southern property line and passing over an existing iron pipe at a distance of 15.08 feet, South 87° 48' 34" East 1,905.24 feet (total) to an existing iron pipe; thence continuing with said Cash and Maynard's Tract 1-A's interior western property line, South 01° 15' 42" West 1,190.09 feet to the point or place of BEGINNING, containing 53.939 acres, more or less, including any deed/survey gaps that may exist along the western line of the property herein described, as shown on the Plat, which Plat is referenced for a more particular description and being all of the property conveyed to Apex Town Square, LLC, by deed dated January 6, 2006, and recorded in Book 11766, Page 242, Wake County Registry.

Tract 13 (Bregman):

Lying and being in Town of Apex, Holly Springs Township, Wake County, North Carolina, and being more particularly described as follows:

BEGINNING at an existing iron pipe at a corner of the property now or formerly owned by Heartland Raleigh Apex U.S. 1 Limited Partnership (Book 4454, Page 666, Wake County Registry ["WCR"]), said pipe being located at NC Grid Coordinates: N=707,936.09; E2,048,195.68, and also being located South 31° 57' 19" West a distance of 2,292.37 feet (Grid) from NCGS Monument "TANK" (N=709,881.08; E2,049,408.93); from said POINT OF BEGINNING, running thence along and with the western line of the aforesaid Heartland Raleigh property the following courses and distances:

- South 02° 41' 34" West a distance of 537.74 feet to an existing iron pipe;
- South 02° 41' 34" West a distance of 100.28 feet to an existing iron pipe;
- South 02° 41' 34" West a distance of 2.08 feet to an existing iron pipe;
- South 02° 39' 56" West a distance of 37.18 feet to an existing iron pipe in the northern right-of-way of Technology Drive;

running thence along and with the northern right-of-way of Technology Drive the following courses and distances:

- along and with the arc of a curve to the left having a radius of 411.97 feet (Chord Bearing: South 60° 59' 56" West; Chord Distance: 224.57 feet) a distance of 227.45 feet to an existing iron pipe;
- South 45° 37' 55" West a distance of 288.89 feet to an existing iron pipe;
- South 44° 59' 17" West a distance of 549.68 feet to an existing iron pipe;
- South 44° 59' 17" West a distance of 70.66 feet to an existing iron pipe;
- along and with the arc of a curve to the right having a radius of 351.97 feet (Chord Bearing: South 57° 36' 33" West; Chord Distance: 151.96 feet) a distance of 153.17 feet to an existing iron pipe;
- along and with the arc of a curve to the right having a radius of 351.97 feet (Chord Bearing: South 79° 30' 30" West; Chord Distance: 115.27 feet) a distance of 115.79 feet to an existing iron pipe;
- South 88° 51' 29" West a distance of 164.77 feet to a point in the eastern line of property

now or formerly owned by Data General (Book 2791, Page 428, WCR);

leaving the northern right-of-way of Technology Drive and running thence along and with the eastern line of the aforesaid Data General property, North 02° 16' 29" East a distance of 1,200.00 feet to an existing iron pipe; continuing with the eastern line of the Data General property and running thence North 02° 17' 20" East a distance of 416.31 feet to an existing iron pipe in the southern line of the aforesaid Heartland Raleigh property; running thence along and with the southern line of the Heartland Raleigh property, South 86° 16' 48" East a distance of 1,218.14 feet to the POINT AND PLACE OF BEGINNING, containing 34.0763 acres, more or less, and being all of Tract 4 north of the right-of-way of Technology Drive, as shown on that certain survey entitled "Recombination And Minor Subdivision of Technology Drive Property For Thomas H. Byrd, III", dated December 11, 1996, and prepared by Niall W. Gillespie, R.L.S. (No. L-2629) (File Name: BYRDTOPO), to which survey reference is hereby made for a more particular description, and being the same property conveyed to Cor S. Bregman by deed recorded in Book 7409, Page 255, Wake County Registry, and being the same property conveyed to Cornelius S. Bregman and Kandes K. Bregman, as Trustees of the Cornelius and Kandes Bregman Trust, under Agreement dated September 20, 1999 by deed recorded in Book 10856, Page 2786, Wake County Registry, LESS AND EXCEPT (i) the property conveyed to Thomas H. Byrd, IV, and wife Lisa W. Byrd, by deed recorded in Book 10129, Page 491, Wake County Registry, and (ii) the property conveyed to the Department of Transportation by deed recorded in Book 8128, Page 153, Wake County Registry.

Tracts 14 - 15 (EMC):

Being all those certain tracts or parcels of land containing approximately 47.419 acres and identified as portions of parcel identification numbers 0740672147 (containing approximately 46.61 acres) and 0740570471 (containing approximately 77.66 acres), and as generally shown as Tract 2 on the map attached hereto as Schedule 1.

Tract 16 (Whitehouse):

Being all that certain tract or parcel of land containing approximately 27.47 acres and identified as parcel identification number 0740287376 and being the same property conveyed to Brenda P. Whitehouse, individually, a 55% undivided interest, and Brenda P. Whitehouse as Trustee of the Irene F. Prince Family Trust dated February 19, 2004, a 45% undivided interest, by deed recorded in Book 10680, Page 477, Wake County Registry.

Tract 17 (F. Prince):

Being all that certain tract or parcel of land containing approximately 75.63 acres and identified as parcel identification number 0740191376 and being the same property conveyed to F.D. Prince, Sr., sole Trustee, or his successors in trust, under the Frank Dixon Prince, Sr. Living Trust, dated October 20, 1988, and any amendments thereto, by deed recorded in Book 8291, Page 540, Wake County Registry.

Tract 18 (F. Prince):

Being all that certain tract or parcel of land containing approximately 21.36 acres and identified as parcel identification number 0730996270 and being the same property conveyed to F.D. Prince, Sr., sole Trustee, or his successors in trust, under the Frank Dixon Prince, Sr. Living Trust, dated October 20, 1988, and any amendments thereto, by deed recorded in Book 8291, Page 540, Wake County Registry.

Tract 19 (B. Prince):

Being all that certain tract or parcel of land containing approximately 32.06 acres and identified as parcel identification number 0741207566 and being the same property conveyed to William Ira Prince, III, by deed recorded in Book 2673, Page 652, Wake County Registry.

Tract 20 (J. Prince):

Being all that certain tract or parcel of land containing approximately 1.80 acres and identified as parcel identification number 0740293940 and being the same property conveyed to William I. Prince and Jean P. Prince, by deed recorded in Book 6217, Page 146, Wake County Registry.

Tracts 21-38 (Stephens):

Being all of those certain tracts or parcels of land identified as parcel identification numbers 0740886966, 0740991702, 0740992565, 0740991337, 0740991237, 0740990140, 0740980647, 0740982309, 0740982534, 0740982635, 0740982769, 0740982866, 0740982964, 0740982929, 0740992024, 0740992069, 0740992169 and 0740982764.

Tract 39 (Tew):

Being all that certain tract or parcel of land containing approximately 1.84 acres and identified as parcel identification number 0741203157 and being the same property conveyed to Kim Prince Tew, and husband, David Wayne Tew, by deed recorded in Book 10633, Page 1741, Wake County Registry.

Tract 40 (Huang):

Being all that certain tract or parcel of land containing approximately 13.33 acres and identified as parcel identification number 0740180091 and being the same property conveyed to Ruey Shiue Huang, Co-Trustee, and Edward K. Huang, Co-Trustee, of The Huang Family Trust, dated September 30, 2005, by deed recorded in Book 10656, Page 33, Wake County Registry.

Attachment B

Environmental Enhancement Plan

Veridea

Apex, NC

November 1, 2022

Revised: December 1, 2022

2nd Revision: January 31, 2023

3rd Revision: February 3, 2023

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INTRODUCTION

On May 10, 2011, the Town of Apex adopted the Veridea Sustainable Development Plan ("SD Plan"). As set forth in the SD Plan, Veridea will be planned and developed as a safe, healthy, resource efficient, pedestrian and transit-oriented mixed-use community in accordance with these Guiding Principles:

- Create economic value;
- Eliminate the concept of waste;
- Insist on a renewable future;
- Create delightful urban places; and
- Integrate nature throughout the community.

The SD Plan is intended to encourage a pattern of high density, pedestrian-friendly development in some areas of Veridea and the conservation or enhancement of natural space in other areas. This Environmental Enhancement Plan ("EEP"), required by SD Plan Article 3.1.2, sets forth specific environmental Sustainability Standards applicable to Veridea to guide the development of Veridea in accordance with the SD Plan pursuant to Article 2.3.16 F) 3) b) of the Apex Unified Development Ordinance ("UDO"). The Sustainability Standards set forth in this EEP are intended to protect natural resources and the environment in light of this development pattern and to address secondary and cumulative impacts associated with the infrastructure required for Veridea. Unless otherwise defined herein, capitalized terms used in this EEP have the same meaning assigned to them in the UDO and in the SD Plan.

A. Purpose of the Environmental Enhancement Plan (EPP)

Taken as a whole, the Sustainability Standards set forth in the SD Plan and the EEP will provide a level of environmental protection that equals or exceeds the traditional metrics set forth in the Apex UDO, State and federal laws. A development project of Veridea's scale affords a rare opportunity to meaningfully plan for a more resilient future, by implement best practices in diversifying land use, building design, waste avoidance, energy optimization, water conservation and protection, transportation and open space. The EEP provides a framework for sustainable development principles over the lifespan of this multi-phase project.

B. Balancing Growth and Environmental Protection

In an effort to provide a holistic review of the Town's growth projections and infrastructure planned to support that growth, the Town of Apex has prepared a Secondary and Cumulative Impact Master Mitigation Plan (the "SCIMMP"), which examines the potential secondary and cumulative impacts throughout the Town's Planning Area associated with planned infrastructure. The SCIMMP acknowledges that sprawling development—the secondary and cumulative impacts associated with water, sewer and transportation infrastructure—will result in adverse environmental impacts and points out that Apex has taken progressive steps to balance the competing goals of growth and environmental protection. As noted in the SCIMPP, Apex has implemented mitigation measures that limit sprawl by encouraging areas of higher density development, such as is represented by Veridea.

While the SCIMMP served as a point of reference, this EEP sets forth alternative standards as an enhancement and mitigation strategy to address the potential secondary and cumulative impacts noted in the SCIMMP that may occur within Veridea. Specifically, the EEP, like the measures noted in the SCIMPP, is intended to balance the goals of growth and environmental protection, by facilitating

compact, dense, development that, in certain respects, is inherently less impactful than automobile-oriented low density residential development and that also lends itself to innovative environmental protection measures. The compact urban spaces in Veridea will allow for the use of both structural and non-structural SCMs, including innovative techniques for urban areas, for water quality protection that meets or exceeds that required by the measures noted in the SCIMPP. Similarly, the compact urban spaces in Veridea will be pedestrian- bicycle- and transit-oriented and, for this reason, will result in decreased automobile use and vehicle miles traveled. The decreased dependence on automobiles within Veridea will, in turn, improve air quality through the reduction of vehicular traffic and mobile energy consumption. In combination, the SD Plan and the EEP will result in the creation of compact, walkable, vibrant, and interconnected community that balances the goals of development and environmental protection and offers residents and visitors a high quality of life.

C. Organization of the Environmental Enhancement Plan

The EEP is organized into the following sections:

1. Building Standards
2. Environmental and Natural Resource Protection
3. Stormwater & Surface Water Management
4. Land Management
5. Air Quality Protections

I. BUILDING STANDARDS

A. Energy

1. Non-Residential and Mixed-Use Buildings Energy Efficiency

a. In furtherance of the goals set forth in SD Plan 3.7.2, all non-residential and mixed-use buildings in Veridea shall provide plan analysis demonstrating improvement of energy performance by 20% compared to baseline building performance ratings per ASHRAE/ IESNA Standard 90.1-2010 Appendix G. (Note: 2010 ASHREA is being referenced here, consistent with current LEED Rating System benchmark standard)

b. At build-out of Veridea, a minimum of 50% of non-residential buildings within Veridea shall be certified under one of these 3rd Party Certification Program options:
   i. LEED Rating System
   ii. Green Globes
   iii. Fitwel
   iv. Similar alternative standard as determined by the Responsible Party

   Responsible Party will ensure the ability to meet this 50% commitment at the time of each non-residential building permit application to the Town of Apex.

c. Solar facilities may be installed on the roofs of building occupied by industrial uses. Installation of solar facilities will be subject to a Return of Investment Analysis consistent with industry practices.

d. Solar facilities will be installed in the open space required to be dedicated per the SD Plan.

e. Documentation
   i. For all buildings, a letter of compliance shall be provided to the Town with the submittal of building permits for that building by a Professional Engineer (PE) licensed to practice in North Carolina, an architect licensed in North Carolina, OR a qualified third-party certifier stating that, in his or her opinion, the building design demonstrates improvement of energy performance by 20% compared to baseline building performance ratings per ASHRAE/ IESNA Standard 90.1-2010 Appendix G.

   ii. For each building that is developed to meet the standards for certification under one of the 3rd Party Certification Options, a letter of building certification from the selected program shall be provided to the Town at building completion.

2. Residential Buildings Energy Efficiency

a. All single-family, townhomes, multi-family, and condominium residential dwelling units to be constructed in Veridea must meet at least one of the following options (or similar alternative standard as determined by the Responsible Party).
   i. Energy Star Program Certification
   ii. ecoSelect Program Certification
   iii. Clear Program Certification
   iv. Passive House Institute US Certification
   v. DOE Zero Energy Ready Home (ZERH) Program

vi. National Green Building Standards (NGBS Program) Certification
vii. LEED for Homes Program Certification
viii. Similar alternative standard as determined by the Responsible Party

b. Certification Program Approval – Prior to the recordation of any final plat for single-family, townhome, or condo lots Town of Apex staff shall review and approve the selected residential energy efficiency program for compliance with this Plan.

3. Renewable Energy

a. Veridea will create a receptive environment for solar energy technologies. Panels will be allowed on any roof orientation while also maintaining compliance with architectural design guidelines
b. Conduit for wiring of solar panels shall be provided in all single-family and townhome residential units.

B. Water Efficiency

All water fixtures and appliances shall be rated, and design of buildings shall incorporate water-saving measures. Proof of compliance with the provisions below will be per I.A.1.c hereof.

1. Bathroom Fixtures
   a. 100% of showerheads, lavatory faucets and toilets/urinals shall be WaterSense rated fixtures.

2. Water Using Appliances
   a. Dishwashers and clothes washers installed by builder must be Energy Star qualified.

3. Water Efficient Design for Residential Plumbing Systems
   a. To reduce water wasted while waiting for hot water to be delivered to a fixture, the hot water pipe length shall be no more than 50 feet when measured from the water heater to the furthest fixture for all residential units, where practicable. For units with recirculation systems installed, demand-initiated controls should be encouraged.

4. Landscape Practices
   a. Landscape plantings shall be drought tolerant, native, and locally adaptive species (including turf); at minimum 80% of plantings. Such plantings shall be presented on plans submitted to the Town of Apex for review.

   b. When installed, irrigation systems shall be equipped with weather-based or soil moisture sensor-based controllers. Spray heads shall be limited to turf areas only. Reclaimed water should be used if available.

C. Indoor Air Quality

Residential (single-family, townhome, multi-family, and condominium) designs and construction within Veridea shall include practices that enhance indoor air quality. Proof of compliance with provisions below will be provided per I.A.1.c and I.A.2.b hereof.

1. Building Envelope
    a. Smoking restrictions implemented AND ETS transfer pathways minimized for commercial and multi-unit residential buildings.

2. Mechanicals
    a. Equipment designed and selected to keep relative humidity < 60% for conditioned space.
    b. Minimum MERV 8 filter on forced air HVAC systems
    c. All fireplaces within conditioned space are direct vented with gasketed doors. NO UNVENTED/VENT FREE FIREPLACES allowed within conditioned space.

3. Materials
    a. Interior paints and finishes certified low emission (Zero or less than 50g/l VOC content).
    b. Carpet, carpet adhesives, and carpet cushion certified low emission per the Carpet and Rug Institute (CRI) Indoor Air Quality Program (CRI Green Label Plus).

D. Material Management

Proof of compliance with provisions below will be provided per I.A.1.c and I.A.2.b hereof.

1. Storage and Collection of Recyclables
    a. Within every mixed-use or nonresidential project, recycling containers adjacent to other waste receptacles or recycling containers integrated into the design of the receptacle shall be provided.

2. Recycled Content
    a. To increase demand for building products that incorporate recycled content materials, special consideration must be given to contractors proposing to use materials with recycled content.

3. Regional Materials
    a. To increase demand for building materials and products that are extracted and manufactured locally, and in doing so supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation, special consideration must be given to contractors proposing to use building materials or products which have been extracted, harvested or recovered, as well as manufactured, within 500 miles of Veridea.

II. ENVIRONMENTAL AND NATURAL RESOURCE PROTECTION

A. Resource Conservation Area – SD Plan Article 3.4.3.1.

From its inception, Veridea has been conceived of and planned as a place in harmony with its natural surroundings. The standards contained herein and in the SD Zoning Plan encourage and require site design techniques that preserve the natural and cultural environment, thereby enhancing the developed environment.

1. Standards

a. Resource Conservation Area (RCA) - Apex has recognized that compliance with the Town's existing RCA requirements set forth in the UDO would prevent certain highly desirable development characteristics, such as density and connectivity, and has exempted areas intended for dense activity centers from the requirement of RCA. In keeping with this precedent, and to achieve the vision of Veridea, as set forth in SD Plan Article 3.1.3, notwithstanding UDO Article 8.1.2.C), 100-acres of land within Veridea shall be established as RCA.

b. Establishment of RCA - Notwithstanding UDO Article 8.1.2.A), RCA shall be established in Veridea according to the criteria set forth in III.A.2 hereof. RCA shall be shown on Master Subdivision Plans and Site Plans where applicable.

2. Criteria for Establishing Resource Conservation Area in Veridea

A. Categories of RCA

1. UDO 8.1.2.B.1 shall apply within Veridea.

2. Restoration Areas – restored, repaired and/or stabilized degraded stream channels, restored or re-vegetated stream buffers, constructed wetlands areas that are restored using innovative techniques authorized in accordance with IV.A.1 hereof, and SCMs that are amenities in accordance with IV.A.2.d hereof may be established as RCA.

3. In addition, any land within the Veridea SD zoned area placed in a conservation easement and deeded to the Master Property Owners' Association, or sub-associations within Veridea, or a qualified land management agency, such as but not limited to the Triangle Land Conservancy, may qualify as RCA.

4. In addition, as set forth in SD Plan 3.4.3.1.e, both:
   a. Open Space, excluding Civic Buildings and all associated parking, municipal parking lots, and parking associated with Open Space that exceeds the direct needs of such Open Space; and
   b. Recreation area provided in Public Space or Civic Space within the Development including, but not limited to, open space, pools, tennis courts, tot lots, ball fields, and village greens shall be allowed to be counted as partial credit toward the RCA requirement. The credit for such area shall be 50% of the area provided. (For example, 1 acre of area shall count as 0.5 acres of RCA.) In order to qualify as RCA, the area must be located on a lot 0.5 acre or larger in size.

5. Land utilized for renewable energy generating facilities qualifies as RCA.

6. Existing or proposed private easements that are also utilized for a trail, for a pedestrian walkway, as a passive recreational amenity, through environmentally sensitive areas, or as community gardens for public educational, recreational, or shared community use shall qualify as RCA.

B. Site and Tree Survey Required
   1. UDO 8.1.2.B.2 shall apply within Veridea.

   2. Notwithstanding the foregoing, consistent with IV.C.1 hereof and Section 3.4.3.1 of the Veridea SD Plan, UDO 8.1.2.B.2.f shall not apply within Veridea.

C. Ownership of RCA in Subdivisions
   The RCA within a subdivision shall be designated so that the RCA may not be removed, modified, or damaged. The RCA shall be a separate Lot(s) and be owned in common by the Lot owners or owned by a separate entity or entities (e.g. property owner's association, development corporation, building lot owner or owners, land management agency or non-profit such as a land trust or conservancy, etc.) In no case shall the RCA for one subdivision be owned by more than 3 entities.

D. Designation of RCA
   Though RCA shall be calculated for Veridea cumulatively, approved RCA shall be shown on the Site Plan or Subdivision Plan for each development site. The RCA shall be shown on the final plat with metes and bounds, to be preserved in perpetuity.

F. Standards for Protection During Construction
   The standards set forth in UDO 8.1.2.G shall apply within Veridea except to the extent that such standard is inconsistent with the provisions of this EEP or SD Plan.

G. Development Restrictions on Steep Slopes
   UDO 8.1.4 shall apply within Veridea.

III. STORMWATER & SURFACE WATER MANAGEMENT

A. Stormwater Management – SD Plan 3.4.3.2.a.

As set forth in SD Plan 3.4.3.2.a, the objectives for stormwater management within Veridea are:

i. Reducing pollutants to protect surface water bodies;
ii. Promoting recharge of ground water resources;
iii. Reduce / minimize flooding within the Development and downstream;
iv. Enhancing safety and aesthetics for the public; and
v. Creating wildlife habitats and educational opportunities.

All SCMs implemented within Veridea shall comply with the NC Department of Environmental Quality (NC DEQ) Stormwater Design Manual Considerations for selecting and using SCMs within Veridea will include, but are not limited to: site applicability, public safety, spatial requirements, soil characteristics, hydrologic benefits, slope, existing land use conditions, and maintenance requirements. In addition to the items listed above, it is the goal to make stormwater features amenities within Veridea and assets to the overall aesthetics of Veridea and the Town.

1. Approved SCMs

The following SCMs are approved for implementation in Veridea.

a. Detention systems that capture a volume of runoff and temporarily detain that volume for release over several days.

b. Constructed wetland systems that are similar to retention and detention systems, except that a major portion of the SCM water surface area (in pond systems) or bottom (in meadow-type systems) contains wetland vegetation.

c. Filtration systems that use some combination of a granular filtration media such as sand, soil, organic material, carbon or a membrane to remove typical pollutants found in runoff.

d. Vegetated systems (biofilters) such as green roofs, green walls, swales, filter strips that are designed to convey and treat either shallow flow or sheet flow runoff.

e. Innovative systems, as defined by 15A NCAC 02H.1003(6), or proprietary systems, may be approved by the Town on a case-by-case basis.

f. Regional stormwater management facilities, to augment, and/or in lieu of, on-site treatment and detention for stormwater management that is implemented on a Lot by Lot or Project by Project basis, to the extent allowed by applicable Federal and North Carolina law and regulation.

2. SCM Standards

a. SCM's will be designed to provide a minimum of 85% TSS removal from stormwater runoff from their contributory drainage area.

b. Downstream of Veridea: post-development peak flows shall not exceed pre-development peak flows for the 25-, 10-, and 1-year storms. Roadway projects shown on the Thoroughfare and Collector Street Plan of the Town of Apex and undertaken in public rights-of-way within Veridea shall be deemed exempt from these requirements.

c. Storage volumes shall be provided such that the runoff from the required water quality storm event (1.0-inch of rainfall) does not draw down in less than two days and that the volume is drawn down completely within five days.

d. To enhance the overall aesthetics of Veridea and the Town, SCMs that are amenities within Veridea may receive credit toward the Open Space requirement per SD Plan 3.1.3 or Resource Conservation Area per SD Plan 3.4.3. For a SCM to receive credit toward the Open Space requirement, it shall be designed to provide at least five (5) of the following features:
   i. Pedestrian access by way of an installed soft or hard surface path from the nearest pedestrian pathway;
   ii. Use of similar plant materials as those used in adjacent and surrounding planting beds;
   iii. Limit rip rap to 15% of the total surface area of the stormwater facility used for stabilization;
   iv. Plant pallet comprised of native and adaptive plant material that provides for visual interest and diversity, while attracting wildlife;
   v. Curvilinear forms that define the limits of the facility to avoid simple shapes that are incongruent with the natural topography of the site;
   vi. Active water feature;
   vii. Elements that provide opportunities for passive recreation including site furnishings, overhead shelter, and pleasant views;
   viii. Educational opportunities in the form of educational signage;
   ix. Fitness opportunities added along a pathway; and

e. SCM's meeting the standards of III.A.2.a.2 hereof, exclusive of riprap areas, may receive credit as Resource Conservation Area.

f. Structural SCMs shall be designed in accordance with UDO 6.1.12 and other applicable Town standards.

g. Described area containing each structural SCM shall be depicted on the site plan or Subdivision Plan and on the final plat in accordance with UDO 6.1.12.C.

h. For all structural SCMs approved, the owner of such SCM shall have an operation and maintenance agreement in accordance with UDO 6.1.12.D. An operation and maintenance agreement shall not be required for non-structural SCMs. For the purposes of this EEP, non-structural SCMs shall be defined as practices implemented in single family residential or commercial applications that are less than one-acre of disturbed area and generally include but are not limited to: disconnecting downspouts and other runoff features, limiting impervious surface and land disturbance, and other non-structural practices as approved by the Town.

i. Performance guarantees, maintenance and maintenance guarantees and inspection requirements for SCMs shall comply with UDO 6.1.12.G), H), and I).

j. SCMs located in a public right-of-way or easement require an encroachment and maintenance agreement with the Town before such encroachment is made, in accordance with SD Plan 3.3.5.

k. Storm drainage easements shall be recorded to identify the locations of SCMs on a Lot(s). The owner of the Lot shall not remove or structurally alter such SCM without prior written approval from the Town.

3. Floodplain

a. FEMA regulated floodplain is located in the southwestern portion of the parcel. Local floodplain will be determined through the definition of a base flood elevation by means of a detailed hydraulic report for streams with a drainage area greater than 100-acres. Per allowances in the UDO 6.2.16.B, non-residential buildings shall be allowed in the floodplain, and there shall be no over-riding requirement to preserve floodplain as RCA.

b. Notwithstanding UDO 6.2.3, stormwater management, detention and retention facilities may encroach within potential on-site flood hazard areas where a base flood elevation has been established pursuant to UDO 6.2.17.B. Where proposed, the detailed hydraulic analysis revising the base flood elevation will be provided at the time of site plan or subdivision submittal.

c. Revisions / modifications to the base flood elevation, including but not limited to fill and grading, may be submitted at the time of site plan or subdivision plan submittal in the event that the flow within a stream is changed and will impact the base flood elevation. Any modifications to FEMA regulated floodplain will be permitted in accordance with local and federal regulations.

B. Water Conservation – SD Plan 3.4.3.2.b.

The careful stewardship of the use of water within Veridea is set forth in the SD Plan goals for water conservation are:

- Reducing per capita water use while retaining attractive landscapes;
- Protection of ground and surface water supplies from unsustainable depletion;
- Eliminating unnecessary waste in water use practices;
- Reducing wastewater treatment volume and associated municipal expenditures;
- Promoting the increased use of re-use water for irrigation.

To achieve these goals water conservation standards in Veridea will include:

1. Water Efficient Landscape Practices

a. Planting
   i. The planting of landscape materials shall be in accordance with the Town of Apex, NCDEQ, or North Carolina Cooperative Extension standards for drought tolerant, native, and locally adaptive species.
   ii. Plant materials shall be chosen to thrive based on their exposure to sun, wind, and soil conditions.
   iii. Landscape beds shall provide a 3" layer of mulching material.
   iv. Plants shall be grouped according to water needs, or "hydrozones," to limit overwatering.

b. Irrigation
   i. Irrigation systems shall be equipped with weather-based or soil moisture sensor-based controllers.
   ii. Installation of spray heads shall be limited to turf areas only.

2. Storm Water Re-use

a. Re-use of stormwater for non-potable applications such as irrigation, vehicle washing, cooling tower make-up water, etc. will be encouraged, for both commercial and residential applications. Stormwater reuse will be utilized in the portions of Veridea approved for multi-family uses. Installation of stormwater reuse facilities will be subject to the design teams review of the viability on each building. Landscaped areas within the multifamily residential development will be irrigated with stormwater reuse where practicable. Where re-use water is not available, potable water may be used for irrigation in accordance with the Town of Apex Water Conservation Ordinance.

b. Re-use water may be used for irrigation in areas of public or private lawns, landscaping or recreation area.

c. Where a centralized chiller plant is utilized, and where practical, re-use water may provide cooling tower make-up water.

C. Surface Water Enhancement – SD Plan 3.4.3.2.c.

As set forth in SD Plan 3.4.3.2.c, the objectives for surface water enhancement within Veridea are:

- Maintaining water quality by capturing or controlling sediment, nutrients, and other pollutants per the minimum requirements of the Town of Apex;
- Ensure that post-development peak flows do not exceed pre-development flows for the 25-year storm event;
- Augmenting low flow from SCM's to improve downstream aquatic habitat;
- Enhancing public use and enjoyment of the natural system; and
- Install signage prohibiting pet waste and use of fertilizers near environmentally sensitive areas.

1. Stream Protection Buffers -

Veridea is located in the Secondary Watershed Protection District per the Town of Apex Watershed Protection Overlay District dated May 2022 and will utilize the High-Density Development Option. All perennial and intermittent streams have been field verified by the Town of Apex; verification is included as Appendix A to this Plan. Stream buffers will be maintained pursuant to 6.1.7.B of the Town of Apex UDO.

As provided in 6.1.7.b.2 of the Town of Apex UDO, a vegetative buffer an average width of not less than 100' shall be maintained along each side of a perennial stream and at no point shall the buffer width be less than 50'. While buffer widths may vary from the map included as Appendix B of this Plan, final buffer area provided within Veridea shall not be less than 166.87 acres.

The Town of Apex verification of the perennial and intermittent streams shall be valid for the period of the validity of any Army Corps of Engineers Individual / Nationwide Permit.

a. Future buffer authorizations within Veridea shall be in accordance with process in Section 6.1.11 of the Town of Apex UDO.

b. Impacts to the established stream protection areas established herein shall be mitigated per Section 6.1.13 of the Town of Apex UDO.

c. For the purposes of this EEP, "stream protection areas" shall refer to protected areas including floodways and floodplains Buffer widths shall be as described in Appendix B.

2. Mitigation

With a project the size and density of Veridea some unavoidable impacts are necessary to accommodate the required vehicular and pedestrian transportation improvements and utility infrastructure. The EEP proposes specific mitigation options to address these impacts. These impacts will be limited, yet necessary to address:

- Vehicular and pedestrian transportation improvements and interconnectivity

- Utility infrastructure that will serve Veridea as well as adjacent lands which are yet to be developed.

- Non-erosive outlets for stormwater management facilities

- Intermittent streams and isolated wetland pockets as needed to create developable land areas to support the proposed densities.

a. Mitigation for impacts to wetlands will be accomplished per the regulations of the United States Army Corps of Engineers and North Carolina Division of Environmental Quality.

b. Mitigation for impacts to streams will be performed, as required by any applicable federal or state law or regulation. The appropriate parameter to use in establishing the required mitigation, length or area, will be selected based on the type of stream area impacted and the proposed mitigation measure selected.

c. In all cases where mitigation is required for impacts to the buffer, a Plan shall be submitted with each site plan or subdivision plan depicting the proposed mitigation for those impacts. The mitigation requirement may be met through one of the following options, which are consistent with mitigation alternatives set forth in UDO 6.1.14.C:
   i. Construction of an alternative measure or combination of measures that reduce nutrient loading equal to or better than the setback that is lost and that is approved by the Town. Such measures may include stormwater SCMs, including LID applications, and other means of capturing and controlling nutrients and other pollutants and shall be located on the site of the riparian buffer that is lost, if practicable, or as close to that location as is practicable;
   ii. Payment of compensatory mitigation fee to a private mitigation bank that complies with banking requirements of the US Army Corps of Engineers, currently set out at http://www.saw.usace.army.mil/WETLANDS/Mitigation/mitbanks.html or from the US Army Corps of Engineers, P.O. Box 1890, Wilmington, NC, 28402-1890;
   iii. Donation of real property or of an interest in real property pursuant to Sec. 6.1.14.F; or
   iv. Restoration or enhancement of a non-forested riparian buffer pursuant to the requirements of Sec. 6.1.14.G.

d. Any and all mitigation performed pursuant to this EEP shall be available for use as mitigation credit against a federal or North Carolina mitigation requirement.

e. The following two documents, along with the Veridea Guiding Principles, will be used as guidance in the preparation of the mitigation measures:
   i. "Stream Mitigation Guidelines, April 2003", published by the US Army Corps of Engineers, as may be amended or updated from time to time, attached as Appendix 8, in particular Section 10.A Flexible Stream Mitigation, Urban Watershed Management; and
   ii. "EEP Mitigation Plan Template, Version 2.0 03-27-08", prepared by the North Carolina Ecosystem Enhancement Program, as may be amended from time to

time.

f. The TRC or Town Council, as applicable, in the event of an exception granted in as contemplated by SD Plan 3.4.1, shall approve the mitigation measures upon finding that the plan provides for:
   i. The option chosen for meeting the mitigation requirement and the required area of mitigation;
   ii. Consistency with the standards set forth in IV.C.2.c hereof;
   iii. Engineering feasibility;
   iv. Operation and maintenance, if any is required hereunder; and
   v. The offset payment amount, as applicable.

IV. LAND MANAGEMENT

A. Sedimentation & Erosion Control Standards

The goals for sedimentation and erosion control set forth in the SD Plan 3.4.3.3.a are:

i. Minimize disturbance to vegetation and soils
ii. Minimize runoff and diversion;
iii. Minimize the need for additional storm drainage facilities;
iv. Reduce sedimentation; and
v. Prompt stabilization after land clearing and grading

The most effective sedimentation and erosion control prevention is born from careful planning of grading activities, continuous inspection of the installed erosion control devices and ongoing maintenance of the devices to insure optimal performance.

a. Design - The Town's standards for design for the 25-year storm event and 3,600 cubic feet of volume per disturbed acres shall be implemented in Veridea.

b. Shared facilities – To minimize grading, where stormwater management devices are proposed those devices may first serve as erosion control sediment basins or traps and be converted to permanent stormwater management devices as soon as the contributing drainage area is sufficiently stabilized.

c. Stabilization – All land disturbing activity is to be planned and coordinated, to the extent practical, to minimize the disturbed areas exposed at any one time. Disturbed areas must be seeded after 7-working days of completion of grading. All remaining areas must be seeded and mulched, or otherwise stabilized within 14 calendar days after completion of grading of any phase of the project.

d. Outlet structures shall be designed to only draw down the cleanest water from the surface of the erosion control device.

e. Along with the required inspections after each storm event, weekly inspections will be performed to ensure that the installed devices have not been altered by construction activities. A log will be maintained by the contractor on each project demonstrating the vigilant monitoring and maintenance of the erosion control facilities.

f. Due to the mixed-use nature of the Veridea, residential development of single-family lots, townhomes, and condominiums within Veridea, net of public rights-of-way, RCA, and public and private easements, shall be exempt from the requirements of Section 7.2.5 of the Town of Apex UDO. Site Plans for single-family only developments in Veridea shall not be exempt from the requirements of 7.2.5.

B. Waste Minimization – SD Plan 3.4.3.3.b.

The waste minimization standards shall support the solid waste goals identified in the Wake County Environmental Stewardship Agenda, adopted by the Wake County Board of Commissioners February 21, 2005 and as may be amended from time to time.

a. Land-clearing Debris - Excavated soil and rock and land-clearing debris shall be re-used, to the extent allowed by applicable federal, state and local law, within Veridea to the maximum extent practicable. To this end, land-clearing debris may be mulched and used for landscaping and/or site stabilization purposes within Veridea.

b. Soil Stockpiles – Soil stockpiles 30' or less in height shall be permitted within the boundaries of Veridea. Stockpiles over 30' in height, but not exceeding 50', shall be permitted provided they are setback from property lines and thoroughfares a minimum of 100'. The maximum slope permitted for soil stockpiles is 3:1.

c. Mulch Stockpiles – Mulch stockpiles shall not exceed 15 feet in height and shall be stored no longer than 45 days.

C. Perimeter Buffers

a. A 10' Type B buffer is required where the SD zoning abuts property zoned or used primarily for residential purposes. This buffer is intended to remain undisturbed. If disturbance is necessary due to site constraints or other limiting factors, the areas disturbed will be replanted per the Type A Buffer standards in the Town of Apex UDO.

b. A 10' Type B Buffer is required when the SD zoning abuts property zoned or used primarily for retail, industrial, or other similar uses. This buffer is intended to remain undisturbed. If disturbance is necessary due to site constraints or other limiting factors, the areas disturbed will be replanted per the Type A Buffer standards in the Town of Apex UDO.

c. A 50' Type B Buffer is required where the residential uses in the SD zoning abut the rights-of-way of US-1 and NC-540. This buffer is intended to remain undisturbed. If disturbance is necessary due to site constraints or other limiting factors, the areas disturbed will be replanted per the Type A Buffer standards in the Town of Apex UDO.

d. A 20' Type B Buffer is required where non-residential and vertical mixed uses abut the rights-of-way of US-1 and NC-540. This buffer is intended to remain undisturbed. If disturbance is necessary due to site constraints or other limiting factors, the areas disturbed will be replanted per the Type A Buffer standards in the Town of Apex UDO.

e. When a building is constructed within 25' of the right-of-way of NC HWY 55, a planted 10' Type D buffer is required adjacent to NC HWY 55. No building shall be closer than 10' to the required buffer. This buffer is intended to remain undisturbed. If disturbance is necessary due to site constraints or other limiting factors, the areas disturbed will be replanted per the Type A Buffer standards in the Town of Apex UDO.

f. When a building is constructed more than 25' from the right-of-way of NC HWY 55, a planted 15' Type A buffer is required adjacent to NC HWY 55. This buffer is intended to remain undisturbed. If disturbance is necessary due to site constraints or other limiting factors, the areas disturbed will be replanted per the Type A Buffer standards in the Town of Apex UDO.

g. If additional property is added to the SD zoning, buffers on existing and newly added property shall meet the preceding buffer requirements or be removed, as applicable.

h. Greenways and side paths are permitted to traverse perimeter buffers.

D. Landscaping

a. Where feasible, deciduous shade trees shall be planted on the south sides of buildings; evergreens shall be planted on the north side.

b. Pollinator friendly landscaping will be planted in landscaped areas where feasible.

c. All landscaping planted within Veridea shall be listed in the Town of Apex's Design and Development Manual.

V. AIR QUALITY PROTECTION

In recognition of the impacts of greenhouse gas emissions that a development the size of Veridea could have the SD Plan 3.4.3.4. establishes air quality goals. The following standards aim to achieve these goals.

a. Multiple land uses that will provide the services and facilities to increase the internal trip capture of the community and reduce vehicular trip generation and vehicle miles traveled both within and outside Veridea.

b. Interconnected development that will provide sidewalks, greenways and walking paths to link land uses through-out the development to be accessible by means other than motorized vehicles.

c. Linear parks will be constructed along Jessie Drive to encourage walking and biking, preserve and highlight environmental features, and provide active greens spaces for future residents and employees.

d. Coordination with and, where appropriate, provide accommodations for alternative modes of travel including rail, bus, ride sharing, charging stations for moving both within Veridea and to connect to the rest of the region. In coordination with Town staff around Apex's Comprehensive Transportation plan, mobility hubs and curb areas planned for quick and safe pick -up and drop offs in high-density, nixed use areas of the Project.

e. Significant open space, conservation area, landscape areas and street trees in high density areas to maintain a significant carbon absorbing medium.

f. Where practicable, buildings will be oriented toward pedestrian facilities or transit routes to promote modes of travel other than the single automobile.

g. To promote walkability, two grade-separated pedestrian crossings will be constructed. The crossings will be constructed as required per the Town of Apex's Comprehensive Transportation Plan, as amended.

h. Parking for electric vehicles and bicycles will be provided as required per the Town of Apex UDO.

i. Single-family homes will include a 240A/50V electrical outlet in garages for electric vehicle charging.

APPENDIX A

WATER RESOURCES DEPARTMENT

December 09, 2022

Steven Ball, RF, PWS
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104
Raleigh, NC 27615

Subject: Stream Buffer Determination
Veridea
Apex, NC
Cape Fear River Basin

Apex 22-010

Dear Mr. Ball,

On December 07th, 2022, I met with you at the subject site to evaluate twenty-three (23) drainage features and determine if they are subject to the Town of Apex (Town) riparian buffer rules. Based on the information obtained during the evaluation and per the requirements set forth in Section 6.1.11 of the Town Unified Development Ordinance (UDO), I concur with the stream classifications as shown on the attached sketch dated 12-7-2022 and 11-22-2022 for SEV1.

Drainage Feature	Shown as on USGS	Shown as on Soil Survey	Determination made in the field	Determined Buffer Width
SEV1	Present	Perennial	Intermittent	50 feet
Feature 1 Upstream	Not Present	Intermittent	Ephemeral	0 feet
Feature 1 Downstream	Not Present	Intermittent	Intermittent	50 feet
Feature 2 Upstream	Not Present	Intermittent	Ephemeral	0 feet
Feature 2 Downstream	Not Present	Intermittent	Intermittent	50 feet
Feature 3 SFA	Not Present	Intermittent	Ephemeral	0 feet
Feature 3 SFB	Not Present	Intermittent	Intermittent	50 feet
Feature 4 Upstream	Not Present	Intermittent	Ephemeral	0 feet
Feature 4 Downstream	Not Present	Intermittent	Intermittent	50 feet

Feature 5 Upstream	Not Present	Intermittent	Ephemeral	0 feet
Feature 5 Downstream	Not Present	Intermittent	Intermittent	50 feet
Feature 6 Upstream	Not Present	Intermittent	Ephemeral	0 feet
Feature 6 Downstream	Not Present	Intermittent	Intermittent	50 feet
Feature 8 W	Not Present	Intermittent	Intermittent	50 feet
Feature 8 X	Not Present	Intermittent	Ephemeral	0 feet
Feature 9 Z	Not Present	Intermittent	Ephemeral	0 feet
Feature 10 Y	Not Present	Intermittent	Ephemeral	0 feet
Feature 11- I	Present	Perennial	Intermittent	50 feet
Feature 11-P	Present	Perennial	Perennial	100 feet
Feature 12	Present	Intermittent	Ephemeral	0 feet
Feature 13-E	Present	Intermittent	Ephemeral	0 feet
Feature 13-I	Present	Intermittent	Intermittent	50 feet
Stream 14	Not Present	Intermittent	Ephemeral	0 feet

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the Division of Water Resources (DWR) or Delegated Local Authority in the Jordan Lake watershed may request a determination by the DWR Director.

An appeal request must be made within sixty (60) days of date of this letter or from the date the affected party (including downstream and/or adjacent owners) is notified of this letter. A request for a determination by the Director shall be referred to in writing c/o Paul Wojoski, DWR – 401 & Buffer Permitting Branch; 1617 Mail Service Center, Raleigh, NC 27699-1617. Otherwise the appeal procedure will be in accordance with UDO Section 6.1.11.

If you dispute the Director's determination, you may file a petition for an administrative hearing. You must file the petition with the Office of Administrative Hearings within sixty (60) days of receipt of this notice of decision. A petition is considered filed when it is received in the Office of Administrative Hearings

during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official State holidays.

To request a hearing, send the original and one (1) copy of the petition to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. A copy of the petition must also be served to the Department of Natural Resources, c/o Bill Lane, General Counsel, 1601 Mail Service Center, Raleigh, NC 27699-1601.

This determination is final and binding unless, as detailed above, you ask for a hearing or appeal within sixty (60) days. This project may require a Section 404/401 Permit for the proposed activity. Any inquiries should be directed to the US Army Corp of Engineers (Raleigh Regulator Field Office) at (919) 554-4884. If you have any questions, please do not hesitate to contact me at (919) 372-7470.

Sincerely,

James Misciagno, CES, CPESC
Environmental Field Services Supervisor

NORTH CAROLINA
WAKE COUNTY

RIGHT OF ENTRY

This Right of Entry is executed this 13 day of October, 2022 by HH Trinity Apex Investments LLC and Veridea Holdings LLC (the "Owners").

WHEREAS, the Town of Apex ("Town") is seeking to make a stream buffer determination across the property known as Veridea - South Village East in the Town of Apex, North Carolina and designated as PIN # 0740240514, 0740261491, 0740241020 by the Wake County Revenue Department (the "**Subject Property**");

WHEREAS, the Owners are agreeable to provide the Town with this Right of Entry under the terms and conditions stated herein so that the above referenced determination may proceed.

NOW THEREFORE in light of the above premises, the Owners do hereby grant and give freely and without coercion, the right of access and entry to the Subject Property on the terms and conditions as stated below:

1. The Town of Apex and its contractors may enter the Subject Property for the purpose of conducting on-site environmental investigations and issuing a determination based on those investigations as it relates to stream buffer determination.
2. This Right of Entry does not convey to the Town any title or ownership interest in the Subject Property.
3. The Town and its employees, contractors, agents and representatives enter upon the Subject Property at their own risk and assume all risks related to the property.
4. The undersigned agrees and warrants to hold harmless the Town of Apex, its agencies, departments, contractors, and subcontractors, and discharges and waives any action, either equitable or legal that arise from the activities described above on the property except in the case of negligence by the Town.

Witness Cynthia Kedzuf By: _____

By: _____

Riparian Buffer Call
Application

This application is required to be fully completed and submitted to Town staff prior to conducting a buffer call. Please submit the application package electronically to james.miscione@apexnc.org.

PROPERTY INFORMATION

Owner(s): HH Trinity Apex Investments LLC / Veridea Holdings LLC

Site Address: Veridea Parkway - South of North Carolina Highway 540

CONSULTANT INFORMATION (If applicable)

Name: McAdams (William H. Derks)

Address: 621 Hillsborough Street, Raleigh, North Carolina 27603

Email: Derks@mcadamsco.com

Phone: 919- 361- 5000

CHECKLIST

Please place a checkmark in the spaces provided below to indicate that the required information has been provided with this submittal.

Right of Entry Form	X
NCDEQ Stream Identification Forms (v. 4.11)	X
Sketch Map*	X

Topo Map (most recent version)	X
1970 Wake County Soil Survey Map	X

*Sketch map should show all drainage features on the property with all applicable riparian buffers shown. Please clearly indicate or list which features are being called with this application.

NOTES

SIGNATURE (Consultant or Responsible Party)

By my signature below, I certify that the information provided with this application is accurate and truthful.

Date: October 21, 2022

East & South Village Delineation & Buffer Review.

The Preliminary Jurisdictional Determination (PJD) of streams and wetlands for the entirety of Veridea was reapproved by the USACOE and NCDENR on May 26, 2017. In discussions with the reviewers in preparation for the submittal of the Individual Permit (IP) application for Veridea it was agreed that that delineation would be utilized and would be extended by virtue of the IP approval for the duration of the IP.. There is precedent for a large IP to be approved for 25-years. The requested duration for the Veridea IP is 30-years.

It is understood that field conditions may change over time as development occurs in the watershed areas outside of the Veridea boundary. But the establishment of the buffers initially for East Village, and in the near future for the rest of Veridea, also need to have a longer commitment as well in order to have a reliable map for planning development that may occur 10-, 15, or 20-years from now.

To begin that confirmation field review of the streams in the East Village section of Veridea was completed by S&EC on September 29, 2022 and for South Village East on October 6, 2022. The scoring sheets are attached. The feature numbers below, from the recent review in the field, also have a reference to the Stream designation from the approved PJD. Discussion below references the inconsistencies of the PJD, Town's Watershed Protection Overlay Map, USGS, Wake County Soils Survey and field scoring sheets.

It is worth noting that all of the intermittent stream features shown on the East Village portion of Veridea are from designations on the Wake Co. Soils Survey. The Soils Survey was completed in 1970 and depicts the streams with intermittent buffers on the Town's map as either "Not crossable with tillage" or "Unclassified". None of the streams are shown on the online USGS Apex or New Hill Quad maps dated 2022.

Feature 1 (Stream LL) —This feature appears to extend upstream approx. 40-50' higher than the PJD. A new flag was hung (TOA 1) at the start point. Shown as a perennial stream on the PJD, intermittent on the Town's map, not identified on USGS and intermittent on the Soils Survey. Stream forms upstream and downstream were taken

Feature 2 (Stream II) – The start point stayed the same. A new flag was hung (TOA 2) start point. Stream forms were taken upstream and downstream

Feature 3 (Stream BB) - The pond is shown on USGS but not on the Soils Survey. Just the reverse for the stream. Not shown on USGS but indicated on the Soils Survey. Delineated as Intermittent Unimportant on the PJD. It appears that the buffer should start at the confluence of two minor draws from below the pond and the second running from the southeast. The feature begins at flag TOA 3, the buffer should not start until it reaches the drainage that runs north south from the pond as shown. There is also enough of a gap between the pond and this feature that the pond should not be buffered.

SEV1

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1 South Village East 1

Date: 10/06/2022	Project/Site: VERIDEA/11065	Latitude: 35.684766
Evaluator: SWEC - JOSHUA HARVEY	County: WAKE	Longitude: -78.855885
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 25.5	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 13.5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (0)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 0)				
18. Fibrous roots in streambed	(3)	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	(1)	1.5
24. Amphibians	0	0.5	(1)	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Per
USGS = Present

10/25/2022 JM

NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1 TOA 1 – UPStream

Date: 9/29/22	Project/Site: Vereden - EU	Latitude: 35.695892
Evaluator: K. Murph.	County: Wake	Longitude: -78.63536
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 13	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other Apex *e.g. Quad Name*

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel (artificial ditches are not rated; see discussions in manual)	No = (0)		Yes = 3	

B. Hydrology (Subtotal = 4.5)				
12. Presence of Baseflow	(3)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int
USGS = NP

JM 10/31/2022

Down TOA-1 TOA1- Down stream

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 9/24	Project/Site: Upside - EV	Latitude: 35.69571
Evaluator: BB/KM	County: Wake	Longitude: -78.83541
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 22.75	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other 1 pge *e.g. Quad Name:*

A. Geomorphology (Subtotal = 13)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	(2)	3
8. Headcuts	0	(0.5)	1	1.5
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	No = 0		Yes = 3	
11. Second or greater order channel				

*artificial ditches are not rated; see discussions in manual

B. Hydrology (4.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (1)	

C. Biology (Subtotal = 5.25)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	(0.5)	1	1.5
24. Amphibians	(0)	(0.5)	1	1.5
25. Algae	(0)	0.5	(1)	1.5
26. Wetland plants in streambed	FACW = (0.75) OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = NP

JM 10/31/2022

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1 TOA2 - UpStream

Date: 9/29/22	Project/Site: Veridea - EU	Latitude: 35.697061
Evaluator: BB/KM	County: Wake	Longitude: -78.836777
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 11.5	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

artificial ditches are not rated; see discussions in manual

B. Hydrology (0.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int
USGS = NP

JM 10/31/2022

T to A to Below

NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 9/29/22	Project/Site: Verdea - LU	Latitude: 35.696705
Evaluator: SB/KBM	County: Wake	Longitude: -78.83831
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* (19) (13.5)	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Apex e.g. Quad Name:

A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (1.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	0	1	0
19. Rooted upland plants in streambed	3	0	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int
USGS = NP

JM 10/31/2022

Feature 3 - SFA

NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 9/29/22	Project/Site: Verdera LV	Latitude: 35.701467
Evaluator: SB KM	County: Wake	Longitude: -78.852491
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** (7)	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: Apex

A. Geomorphology (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(2)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75 OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = NP

JM 11/16/2022

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Feature 3-SFB

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 9/29/22	Project/Site: Veridea EV	Latitude: 35.700 [illegible]
Evaluator: SB KM	County: Wake	Longitude: -78.[illegible]205
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: [illegible]

A. Geomorphology (Subtotal = 9.5)	Absent	Weak	Moderate	Strong
1a. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4.5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	0	(0.5)	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75 OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

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Soils = Int
USGS = NP

JM 11/21/2022

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

TOA 4_ upstream

Date: 9/29/22	Project/Site: Uwharrie - EU	Latitude: 35.701476
Evaluator: SM/KM	County: Uwharrie	Longitude: -79.83539
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 4.5	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other Apex *e.g. Quad Name:*

A. Geomorphology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

artificial ditches are not rated; see discussions in manual

B. Hydrology				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int
USGS = NP

SM 10/31/2022

TOA 4 Downstream below

NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 9/29/22	Project/Site: Vericlea - LEV	Latitude: 39.701532
Evaluator: SB3/KM	County: Wake	Longitude: 78.83550
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19.5	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other Apex e.g. Quad Name:

A. Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal =)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = NP

JM 10/31/2022

NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1 TOA 5- upstream

Date: 9/29/22	Project/Site: Vereden - LV	Latitude: 35.69974
Evaluator: SB/KM	County: Wake	Longitude: -78.839869
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 17	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other e.g. Quad Name: Apex

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1a. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel (artificial ditches are not rated; see discussions in manual)	No = 0		Yes = 3	

B. Hydrology (Subtotal = 4)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = NP

JM 10/31/2022

Below TOT & Downstream

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 9/29/22	Project/Site: Vendue - EV	Latitude: 35.694426
Evaluator: SB/KM	County: Wake	Longitude: -78.83[illegible]23
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 21.75	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other Apex *e.g. Quad Name:*

A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong
1a. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	(2)	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel *artificial ditches are not rated; see discussions in manual*	No = (0)		Yes = 3	

B. Hydrology (5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(0.5)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4.75)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	0	0.5	1	(1.5)
26. Wetland plants in streambed	FACW = (0.75); OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int
USGS = NP

JM 10/31/2022

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

TOA 6 - upstream

Date: 9/29/22	Project/Site: Vanden - EV	Latitude: 35.648558
Evaluator: SB/KM	County: Wake	Longitude: -78.841210
Total Points: 14 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other Apex e.g. Quad Name:

A. Geomorphology (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (3.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = NP

JM 10/31/2022

FoA 6 Below / Downstream

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 9/29/22	Project/Site: Veridea-LV	Latitude: 35.648274
Evaluator: SB/KM	County: Iredell	Longitude: -88.842114
Total Points: (20) *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Apex *e.g. Quad Name:*

A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong
1st Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	1	(1)	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = 0 (0)		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5.0)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	(1)	1.5
16. Organic debris lines or piles	0	(0.5)	(1)	1.5
17. Soil-based evidence of high water table?	No = 0 (0)		Yes = 3 (3)	

C. Biology (Subtotal = 4.5)				
18. Fibrous roots in streambed	3	(2)	(1)	0
19. Rooted upland plants in streambed	3	(1)	(2)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	0.5	1	1.5
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int
USGS = NP

SM 10/31/2022

Stream Form. W
Feature - S ?

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 9/29/22	Project/Site: Meridian EV	Latitude: 35.701029
Evaluator: SB KM	County: Wake	Longitude: -78.843825
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other Apex *e.g. Quad Name:*

A. Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 4.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = InT
USGS = NP

Jm 11/21/2022

8

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

Stream Form X-Feature 8

NC DWQ Stream Identification Form Version 4.1

Date: 9/30/22	Project/Site: Veridea - EV	Latitude: 35.70089
Evaluator: SB/KM	County: Wake	Longitude: -78.49436
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 13	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other *e.g. Quad Name:* Apex

A. Geomorphology (Subtotal = 4)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = INT
USGS = NP

10/31/2022

~~Do not need to see~~
~~in field~~ → OM

9

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

Stream form Z-Feature 9

NC DWQ Stream Identification Form Version 4.1

Date: 9/29/22	Project/Site: Vendela -EV	Latitude: 35.648238
Evaluator: SB/KM	County: Wake	Longitude: -78.84806
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 18	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: Apex

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure; ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel (artificial ditches are not rated; see discussions in manual)	No = (0)		Yes = 3	

B. Hydrology (5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0*
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = NP

JM 10/31/2022

10

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

Stream form Y-Feature 10

NC DWQ Stream Identification Form Version 4.1

Date: 9/29/22	Project/Site: Vulcan LEV	Latitude: 35.6953
Evaluator: SB/VM	County: Wake	Longitude: -78.84584
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 15	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel artificial ditches are not rated; see discussions in manual	No = (0)		Yes = 3	

B. Hydrology (5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int
USGS = NP

JM 10/31/2022

Stream Form [illegible] - Feature 11

11-I

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 12/7/22	Project/Site: Verida EV	Latitude: 35.70463
Evaluator: SBell	County: Wake	Longitude: -78.843506
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 26.5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: Apex

A. Geomorphology (Subtotal = 15)	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = (3)	

ª artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	(0)	1	0
19. Rooted upland plants in streambed	3	(0)	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

USGS = Present

JM 12/8/2022

Stream Form [illegible]
11-P

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 12/7/22	Project/Site: Veridea LV	Latitude: 35.704339
Evaluator: SDgill	County: Wake	Longitude: -78.84395
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 32	Stream Determination (circle one) Ephemeral Intermittent (Perennial)	Other Apex *e.g. Quad Name:*

A. Geomorphology (Subtotal = 18)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = (3)	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes (3)	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	0	(0.5)	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial
USGS = present

JM 12/8/2022

Veridea EAST FEATURE 12

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 12/5/2022	Project/Site: VERIDEA EAST	Latitude: 35.705799
Evaluator: SHEC - JOSHUA HARVEY	County: WAKE	Longitude: -78.847135
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12.5	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

ª artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = Present

JM 12/8/2022

Veridea East FEATURE 13 E

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 12/5/2022	Project/Site: VERIDEA EAST	Latitude: 35.702822
Evaluator: SREC - JOSHUA HARVEY	County: WAKE	Longitude: -78.847666
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 15.5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 2)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	(No = 0)		Yes = 3	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Int

USGS = Present

12/8/2022

Veridea East FEATURE 13 I

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 12/5/2022	Project/Site: VERIDEA EAST	Latitude: 35.702124
Evaluator: SEE - JOSHUA HARVEY	County: WAKE	Longitude: -78.846123
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 21	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 9.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 0)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

41

Soils = Int

USGS = Present JM 12/6/2022

Verdea EAST FEATURE 14

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 12/5/2022	Project/Site: VERIDEA EAST	Latitude: 35.700972
Evaluator: SCC. JOSHUA HARVEY	County: WAKE	Longitude: -78.748283
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** No Scoreable Feature	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1ª. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

ª artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal =)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal =)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

No Scoreable Feature JM

SOILS = Int

US62 = NP

12/8/2022

12/8/2022 CH

Project Number: 11065.W4	Map Title: SS Map Veridea Wake County, NC	Source: Wake County Soil Survey Sheets 74, 75, 82 & 83
Project Manager: DS		
Scale: 1" = 1750'		
Date: 09/10/2021		

S&EC Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone: (919) 846-5900 • Fax: (919) 846-9467
soilsinc.com

CM 12/8/2022

Project No.
11065.VA6
Scale:
1" = 200'
NO Overlap
Wake County GIS
Project Mgr:
SB
12/7/22
Prepared by: JH
East Village Buffer Map
Verlidea
S&EC
Soil & Environmental Consultants, PA
0
205
410
820
Feet
Legend
Verlidea East Village Buffer Review Boundary
Verlidea Property Boundary
Perennial Stream
Intermittent Stream
50' Town of Apex Buffer
100' Town of Apex Buffer

SM 11/22/2022

Project No.
11665.WS
Project Mgr.:
SB
Scale:
1" = 150'
NC OneMap
Wake County GIS
11/22/22
Prepared by: JH
Southeast Village Buffer Map
Verdiea
S&EC
Soil & Environmental Consultants, PA
0
100
200
400
Feet
Legend
Town of Apex Perennial Stream
Town of Apex Intermittent Stream
50' Town of Apex Buffer
100' Town of Apex Buffer
Property Boundary

JM 10/5/2022

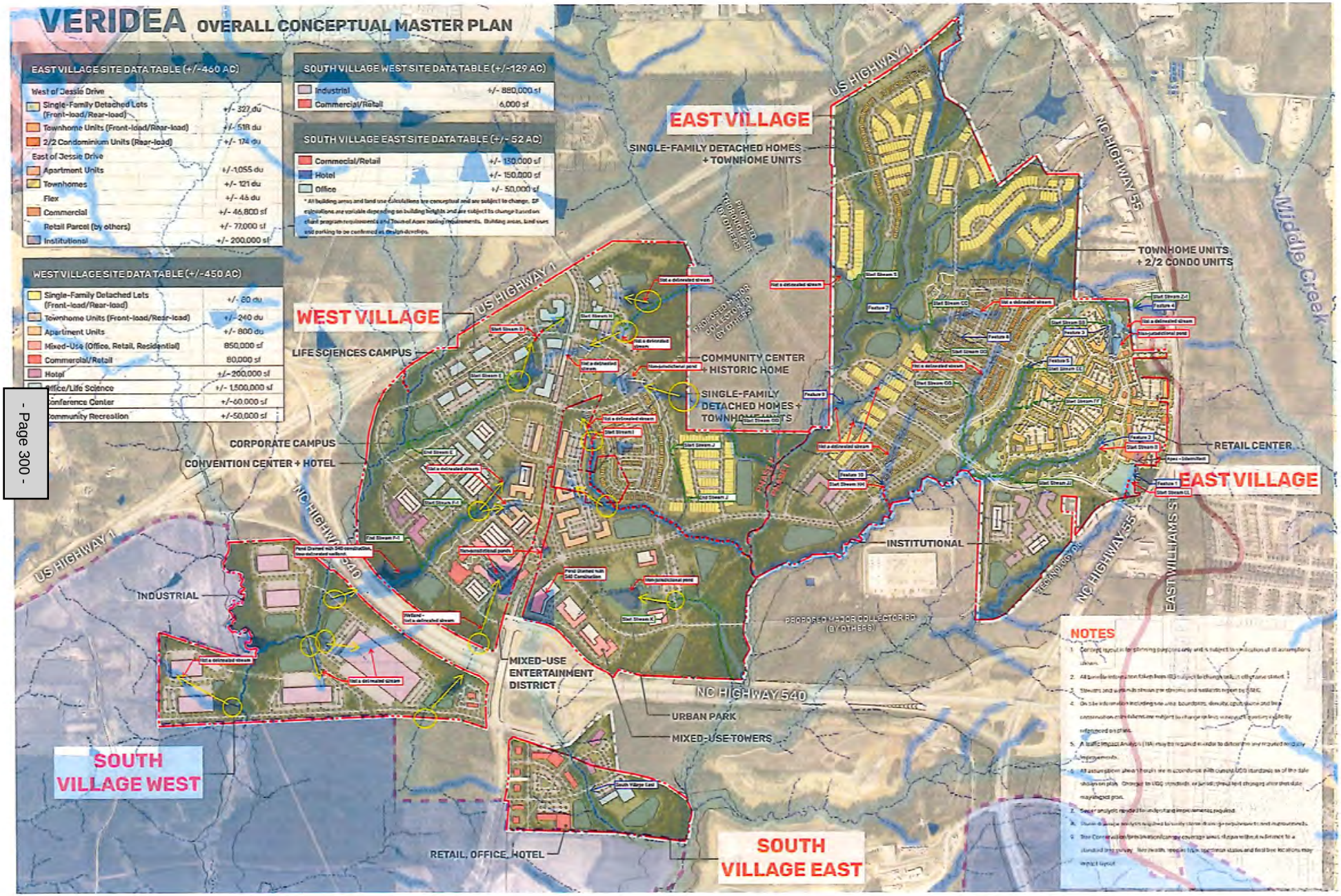
JM 10/14/2022

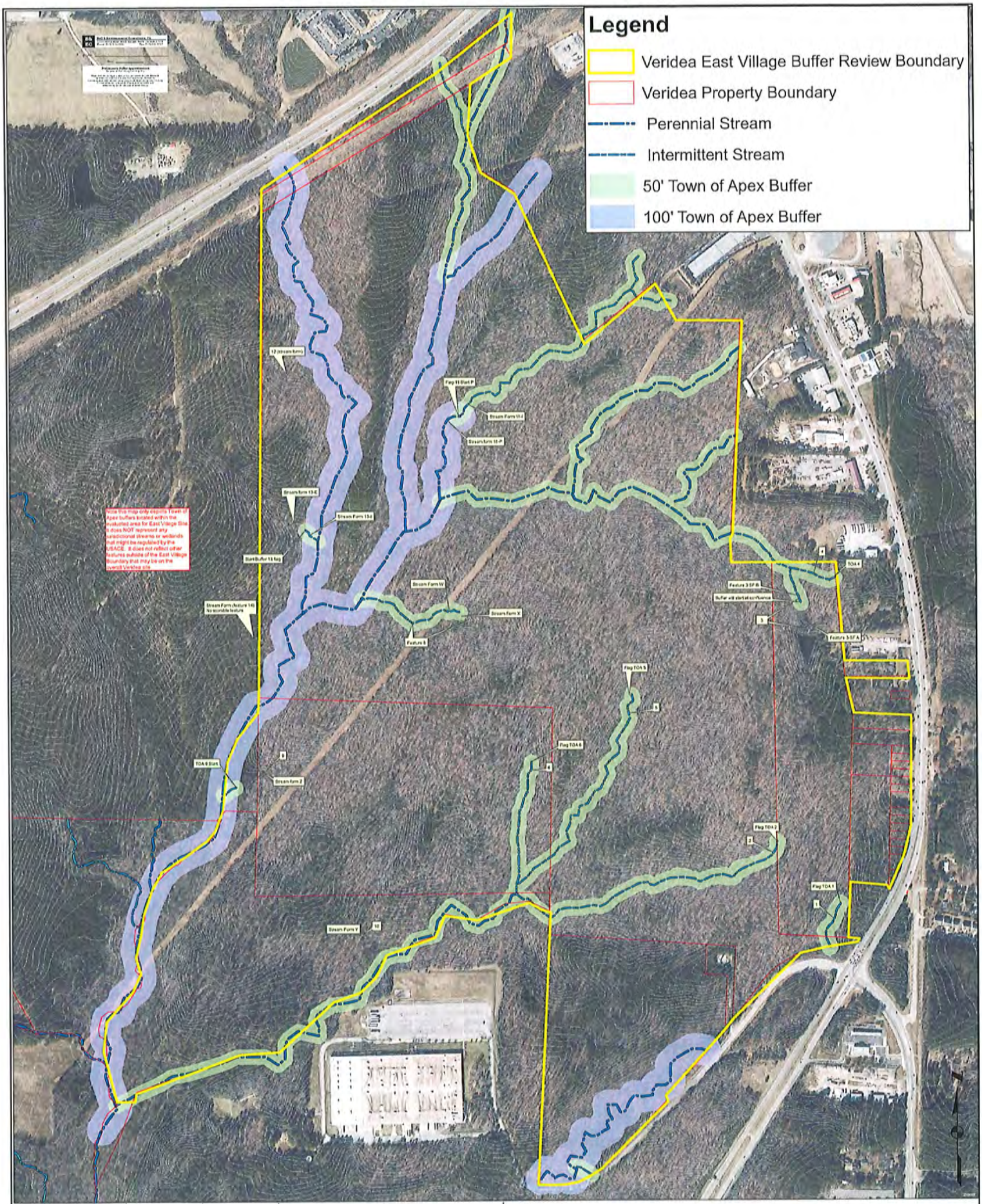
Project Number: 11065.W4	Map Title: USGS Map Verlidea Wake County, NC	Soil & Environmental Consultants, PA
Project Manager: DS		
Scale: 1" = 2000'	Source:USGS Wake County Apex & New Hill Quad	
Date: 09/10/2021		

N

0 2,000 4,000

Feet


VERIDEA OVERALL CONCEPTUAL MASTER PLAN
EAST VILLAGE SITE DATA TABLE (+/-460 AC)
West of Jessie Drive
Single-Family Detached Lots (Front-load/Rear-load) +/- 327 du
Townhome Units (Front-load/Rear-load) +/- 518 du
2/2 Condominium Units (Rear-load) +/- 174 du
East of Jessie Drive
Apartment Units +/-1,055 du
Townhomes +/- 121 du
Flex +/- 46 du
Commercial +/- 46,800 sf
Retail Parcel (by others) +/- 77,000 sf
Institutional +/- 200,000 sf
SOUTH VILLAGE WEST SITE DATA TABLE (+/-129 AC)
Industrial +/- 880,000 sf
Commercial/Retail 6,000 sf
SOUTH VILLAGE EAST SITE DATA TABLE (+/- 52 AC)
Commercial/Retail +/- 130,000 sf
Hotel +/- 150,000 sf
Office +/- 50,000 sf
* All building areas and land use calculations are conceptual and are subject to change. SF calculations are variable depending on building heights and are subject to change based on client program requirements and Town of Apex zoning requirements. Building areas, land uses and parking to be confirmed as design develops.
WEST VILLAGE SITE DATA TABLE (+/-450 AC)
Single-Family Detached Lots (Front-load/Rear-load) +/- 80 du
Townhome Units (Front-load/Rear-load) +/- 240 du
Apartment Units +/- 800 du
Mixed-Use (Office, Retail, Residential) 850,000 sf
Commercial/Retail 80,000 sf
Hotel +/- 200,000 sf
Office/Life Science +/- 1,500,000 sf
Conference Center +/-60,000 sf
Community Recreation +/-50,000 sf
EAST VILLAGE
SINGLE-FAMILY DETACHED HOMES + TOWNHOME UNITS
TOWNHOME UNITS + 2/2 CONDO UNITS
COMMUNITY CENTER + HISTORIC HOME
SINGLE-FAMILY DETACHED HOMES + TOWNHOME UNITS
RETAIL CENTER
EAST VILLAGE
INSTITUTIONAL
WEST VILLAGE
LIFE SCIENCES CAMPUS
CORPORATE CAMPUS
CONVENTION CENTER + HOTEL
INDUSTRIAL
MIXED-USE ENTERTAINMENT DISTRICT
URBAN PARK
MIXED-USE TOWERS
RETAIL, OFFICE, HOTEL
SOUTH VILLAGE WEST
SOUTH VILLAGE EAST
US HIGHWAY 1
NC HIGHWAY 55
NC HIGHWAY 540
EAST WILLIAMS ST
Middle Creek
PROPOSED MAJOR COLLECTOR RD (BY OTHERS)
NOTES



Project No. 11065.W5	Scale: 1" = 200'	NC OneMap Wake County GIS	East Village Buffer Map Veridea	Soil & Environmental Consultants, PA	0 205 410 820 Feet
Project Mgr.: SB	12/7/22	Prepared by: JH			

January 27, 2023

Steven Ball, RF, PWS
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104
Raleigh, NC 27615

Subject: Stream Buffer Determination
Veridea West Village Ph II
Apex, NC
Cape Fear River Basin

Apex 22-017

Dear Mr. Ball,

On January 20th and 27th, 2023, we met with your staff AJ and Kevin Murphrey at the subject sites to evaluate forty (40) drainage features and determine if they are subject to the Town of Apex (Town) riparian buffer rules. Based on the information obtained during the evaluations and per the requirements set forth in Section 6.1.11 of the Town Unified Development Ordinance (UDO), I concur with the stream classifications as shown on the attached sketch dated 12-02-2022.

Drainage Feature	Shown as on USGS	Shown as on Soil Survey	Determination made in the field	Determined Buffer Width
Feature B – West SF14	Not Present	Intermittent	Ephemeral	0 feet
Feature C – West SF1	Present	Perennial	Intermittent	50 feet
Feature C – West SF16	Not Present	Intermittent	Ephemeral	0 feet
Feature C – West SF5	Not Present	Perennial	Ephemeral	0 feet
Feature E – West SF4	Not Present	Intermittent	Ephemeral	0 feet
Feature G – West SF40	Not Present	Intermittent	Ephemeral	0 feet
Feature H – West SF3	Not Present	Intermittent	Ephemeral	0 feet
Feature J – West SF2	Not Present	Intermittent	Ephemeral	0 feet
Feature K – West SF28	Not Present	Intermittent	Ephemeral	0 feet

Feature K – West SF29	Not Present	Intermittent	Intermittent	50 feet
Feature K – West SF30	Not Present	Intermittent	Ephemeral	0 feet
Feature K – West SF31	Not Present	Intermittent	Ephemeral	0 feet
Feature K – West SF32	Not Present	Intermittent	Intermittent	50 feet
Feature L – West SF15	Not Present	Intermittent	Ephemeral	0 feet
Feature AA – West SF6	Present	Perennial	Ephemeral	0 feet
Feature O – West SF13	Present	Perennial	Intermittent	50 feet
Pond 6	Present	Present	Intermittent	50 feet
Feature O – West SF12	Present	Perennial	Ephemeral	0 feet
Feature O – West SF10	Present	Perennial	Ephemeral	0 feet
Feature O – West SF11	Present	Perennial	Intermittent	50 feet
Feature O – West SF9	Present	Perennial	Ephemeral	0 feet
Feature O – West SF8	Present	Perennial	Intermittent	50 feet
Feature P – West SF37	Not Present	Intermittent	Ephemeral	0 feet
Feature Q – West SF7	Not Present	Intermittent	Ephemeral	0 feet
Feature R – West SF27	Not Present	Intermittent	Ephemeral	0 feet
Feature R – West SF25	Not Present	Intermittent	Intermittent	50 feet
Feature S – West SF26	Not Present	Intermittent	Ephemeral	0 feet
Feature T – West SF24	Not Present	Perennial	Ephemeral	0 feet
Feature T – West SF20	Not Present	Perennial	Intermittent	50 feet
Feature U – West SF23	Not Present	Intermittent	Ephemeral	0 feet

Feature V – West SF35	Not Present	Intermittent	Ephemeral	0 feet
Feature V – West SF36	Not Present	Intermittent	Intermittent	50 feet
Feature V – West SF34	Not Present	Intermittent	Perennial *Intermittent on Soils	50 feet
Feature W – West SF17	Not Present	Intermittent	Ephemeral	0 feet
Feature X – West SF22	Not Present	Intermittent	Ephemeral	0 feet
Feature X – West SF21	Not Present	Intermittent	Intermittent	50 feet
Feature X – West SF41	Not Present	Intermittent	Ephemeral	0 feet
Feature Y – West SF18	Not Present	Perennial	Ephemeral	0 feet
Feature Y – West SF19	Not Present	Perennial	Intermittent	50 feet
Feature BB – West SF38	Not Present	Intermittent	Ephemeral	0 feet
Feature CC – West SF39	Not Present	Intermittent	Ephemeral	0 feet

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the Division of Water Resources (DWR) or Delegated Local Authority in the Jordan Lake watershed may request a determination by the DWR Director.

An appeal request must be made within sixty (60) days of date of this letter or from the date the affected party (including downstream and/or adjacent owners) is notified of this letter. A request for a determination by the Director shall be referred to in writing c/o Paul Wojoski, DWR – 401 & Buffer Permitting Branch; 1617 Mail Service Center, Raleigh, NC 27699-1617. Otherwise the appeal procedure will be in accordance with UDO Section 6.1.11.

If you dispute the Director's determination, you may file a petition for an administrative hearing. You must file the petition with the Office of Administrative Hearings within sixty (60) days of receipt of this notice of decision. A petition is considered filed when it is received in the Office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official State holidays.

To request a hearing, send the original and one (1) copy of the petition to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. A copy of the petition must also be served

to the Department of Natural Resources, c/o Bill Lane, General Counsel, 1601 Mail Service Center, Raleigh, NC 27699-1601.

This determination is final and binding unless, as detailed above, you ask for a hearing or appeal within sixty (60) days. This project may require a Section 404/401 Permit for the proposed activity. Any inquiries should be directed to the US Army Corp of Engineers (Raleigh Regulator Field Office) at (919) 554-4884. If you have any questions, please do not hesitate to contact me at (919) 372-7470.

Sincerely,

James Misciagno, CES, CPESC
Stormwater Field Services Supervisor

Riparian Buffer Call
Application

This application is required to be fully completed and submitted to Town staff prior to conducting a buffer call. Please submit the application package electronically to james.misciagno@apexnc.org .

PROPERTY INFORMATION

Owner(s): *See attached table

Site Address: 3012 Veridea Parkway, Apex, North Carolina 27539

CONSULTANT INFORMATION (If applicable)

Name: Joshua Harvey

Address: 8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615

Email: jharvey@sandec.com

Phone: 919.760.9622

CHECKLIST

Please place a checkmark in the spaces provided below to indicate that the required information has been provided with this submittal.

Right of Entry Form	X
NCDEQ Stream Identification Forms (v. 4.11)	X
Sketch Map*	X

Topo Map (most recent version)	X
1970 Wake County Soil Survey Map	X

*Sketch map should show all drainage features on the property with all applicable riparian buffers shown. Please clearly indicate or list which features are being called with this application.

NOTES

SIGNATURE (Consultant or Responsible Party)

By my signature below, I certify that the information provided with this application is accurate and truthful.

Joshua Harvey Digitally signed by Joshua Harvey Date: 2023.01.23 08:55:39 -05'00'

Date: 01/04/2023

NORTH CAROLINA
WAKE COUNTY

RIGHT OF ENTRY

This Right of Entry is executed this _____ day of _____, 20____ by Town of Apex and PRINCE, FRANK D SR TRUSTEE (the "owner").

WHEREAS, the Town of Apex ("Town") is seeking to make a stream buffer determination across the property known as Veridea - Phase 2 in the Town of Apex, North Carolina and designated as PIN # 0740191376, 0730996270 by the Wake County Revenue Department (the "**Subject Property**");

WHEREAS, the owner are agreeable to provide the Town with this Right of Entry under the terms and conditions stated herein so that the above referenced determination may proceed.

NOW THEREFORE in light of the above premises, the owner do hereby grant and give freely and without coercion, the right of access and entry to the Subject Property on the terms and conditions as stated below:

1. The Town of Apex and its contractors may enter the Subject Property for the purpose of conducting on-site environmental investigations and issuing a determination based on those investigations as it relates to stream buffer determination.
2. This Right of Entry does not convey to the Town any title or ownership interest in the Subject Property.
3. The Town and its employees, contractors, agents and representatives enter upon the Subject Property at their own risk and assume all risks related to the property.
4. The undersigned agrees and warrants to hold harmless the Town of Apex, its agencies, departments, contractors, and subcontractors, and discharges and waives any action, either equitable or legal that arise from the activities described above on the property except in the case of negligence by the Town.

Witness: _____ Joseph Spagnoy

By: _____ POA

By: N/A

NORTH CAROLINA
WAKE COUNTY

RIGHT OF ENTRY

This Right of Entry is executed this _____ day of _____, 20____ by Town of Apex and WHITEHOUSE, BRENDA P (the "owner").

WHEREAS, the Town of Apex ("Town") is seeking to make a stream buffer determination across the property known as Veridea - Phase 2 in the Town of Apex, North Carolina and designated as PIN # 0740287376 by the Wake County Revenue Department (the "**Subject Property**");

WHEREAS, the owner are agreeable to provide the Town with this Right of Entry under the terms and conditions stated herein so that the above referenced determination may proceed.

NOW THEREFORE in light of the above premises, the owner do hereby grant and give freely and without coercion, the right of access and entry to the Subject Property on the terms and conditions as stated below:

1. The Town of Apex and its contractors may enter the Subject Property for the purpose of conducting on-site environmental investigations and issuing a determination based on those investigations as it relates to stream buffer determination.
2. This Right of Entry does not convey to the Town any title or ownership interest in the Subject Property.
3. The Town and its employees, contractors, agents and representatives enter upon the Subject Property at their own risk and assume all risks related to the property.
4. The undersigned agrees and warrants to hold harmless the Town of Apex, its agencies, departments, contractors, and subcontractors, and discharges and waives any action, either equitable or legal that arise from the activities described above on the property except in the case of negligence by the Town.

Witness: _____ By: Brenda P Whitehouse

By: Brenda P Whitehouse Trustee

NORTH CAROLINA
WAKE COUNTY

RIGHT OF ENTRY

This Right of Entry is executed this _____ day of _____, 20____ by Town of Apex and HH TRINITY APEX INVESTMENTS LLC (the "owner").

WHEREAS, the Town of Apex ("Town") is seeking to make a stream buffer determination across the property known as South Village East in the Town of Apex, North Carolina and designated as PIN # 0730971141,0730852539,0740052449 by the Wake County Revenue Department (the "**Subject Property**");

WHEREAS, the owner are agreeable to provide the Town with this Right of Entry under the terms and conditions stated herein so that the above referenced determination may proceed.

NOW THEREFORE in light of the above premises, the owner do hereby grant and give freely and without coercion, the right of access and entry to the Subject Property on the terms and conditions as stated below:

1. The Town of Apex and its contractors may enter the Subject Property for the purpose of conducting on-site environmental investigations and issuing a determination based on those investigations as it relates to stream buffer determination.
2. This Right of Entry does not convey to the Town any title or ownership interest in the Subject Property.
3. The Town and its employees, contractors, agents and representatives enter upon the Subject Property at their own risk and assume all risks related to the property.
4. The undersigned agrees and warrants to hold harmless the Town of Apex, its agencies, departments, contractors, and subcontractors, and discharges and waives any action, either equitable or legal that arise from the activities described above on the property except in the case of negligence by the Town.

Witness: _____

HH Trinity Apex Investments LLC
HRCF IV - Trinity Apex Investments LLC

By: _____

By: _____
Richard A. Ortiz
Authorized Signatory

NORTH CAROLINA
WAKE COUNTY

RIGHT OF ENTRY

This Right of Entry is executed this _____ day of _____, 20____ by Town of Apex and HH TRINITY APEX INVESTMENTS LLC (the "owner").

WHEREAS, the Town of Apex ("Town") is seeking to make a stream buffer determination across the property known as Veridea - Phase 2 in the Town of Apex, North Carolina and designated as PIN # See Attached by the Wake County Revenue Department (the "**Subject Property**");

WHEREAS, the owner are agreeable to provide the Town with this Right of Entry under the terms and conditions stated herein so that the above referenced determination may proceed.

NOW THEREFORE in light of the above premises, the owner do hereby grant and give freely and without coercion, the right of access and entry to the Subject Property on the terms and conditions as stated below:

1. The Town of Apex and its contractors may enter the Subject Property for the purpose of conducting on-site environmental investigations and issuing a determination based on those investigations as it relates to stream buffer determination.
2. This Right of Entry does not convey to the Town any title or ownership interest in the Subject Property.
3. The Town and its employees, contractors, agents and representatives enter upon the Subject Property at their own risk and assume all risks related to the property.
4. The undersigned agrees and warrants to hold harmless the Town of Apex, its agencies, departments, contractors, and subcontractors, and discharges and waives any action, either equitable or legal that arise from the activities described above on the property except in the case of negligence by the Town.

Witness: _____

By: HH Trinity Apex Investments LLC
HRCF IV - Trinity Apex Investments LLC

By: _____
Richard A. Ortiz
Authorized Signatory

Phase 2	Owner
0740180331	HH TRINITY APEX INVESTMENTS LLC
0740360895	HH TRINITY APEX INVESTMENTS LLC
0740386384	HH TRINITY APEX INVESTMENTS LLC
0740078021	HH TRINITY APEX INVESTMENTS LLC
0740167653	HH TRINITY APEX INVESTMENTS LLC

NORTH CAROLINA
WAKE COUNTY

RIGHT OF ENTRY

This Right of Entry is executed this _____ day of _____, 20____ by Town of Apex and VERIDEA HOLDINGS LLC (the "owner").

WHEREAS, the Town of Apex ("Town") is seeking to make a stream buffer determination across the property known as Veridea - Phase 2 in the Town of Apex, North Carolina and designated as PIN # 0740180091, 0741203157 by the Wake County Revenue Department (the "**Subject Property**");

WHEREAS, the owner are agreeable to provide the Town with this Right of Entry under the terms and conditions stated herein so that the above referenced determination may proceed.

NOW THEREFORE in light of the above premises, the owner do hereby grant and give freely and without coercion, the right of access and entry to the Subject Property on the terms and conditions as stated below:

1. The Town of Apex and its contractors may enter the Subject Property for the purpose of conducting on-site environmental investigations and issuing a determination based on those investigations as it relates to stream buffer determination.
2. This Right of Entry does not convey to the Town any title or ownership interest in the Subject Property.
3. The Town and its employees, contractors, agents and representatives enter upon the Subject Property at their own risk and assume all risks related to the property.
4. The undersigned agrees and warrants to hold harmless the Town of Apex, its agencies, departments, contractors, and subcontractors, and discharges and waives any action, either equitable or legal that arise from the activities described above on the property except in the case of negligence by the Town.

Witness: _____

Veridea Holdings LLC
HRCF IV - Trinity Apex Investments LLC

By: _____

By: _____

Richard A. Ortiz
Authorized Signatory

PIN_NUM	DEED_ACRES	OWNER	ADDR1	ADDR2	ADDR3	SITE_ADDRESS	FULL_STREET_NAME
740188440	1.38	FIELDS, W J FIELDS, CATHERINE A	3125 VERIDEA PKWY	APEX NC 27539-9202		3125 VERIDEA PKWY	VERIDEA PKWY
730852539	54.65	HH TRINITY APEX INVESTMENTS LLC	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837	0 OLD HOLLY SPRINGS APEX RD	OLD HOLLY SPRINGS APEX RD
730971141	98.72	HH TRINITY APEX INVESTMENTS LLC	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837	0 VERIDEA PKWY	VERIDEA PKWY
740287376	27.26	WHITEHOUSE, BRENDA P WHITEHOUSE, BRENDA P	3109 VERIDEA PKWY	APEX NC 27539-9202		0 VERIDEA PKWY	VERIDEA PKWY
740191376	75.63	PRINCE, FRANK D SR TRUSTEE	8405 AMANDA CASSIE LN	FUQUAY VARINA NC 27526-9635		3012 VERIDEA PKWY	VERIDEA PKWY
740180331	1.66	HH TRINITY APEX INVESTMENTS LLC	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837	0 VERIDEA PKWY	VERIDEA PKWY
740386384	64.67	HH TRINITY APEX INVESTMENTS LLC	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837	3009 VERIDEA PKWY	VERIDEA PKWY
741207566	32.06	WVPRINCE PROPERTIES LLC	444 AUGUSTA DR	ROCKPORT TX 78382-6945		2901 VERIDEA PKWY	VERIDEA PKWY
740167653	27.29	HH TRINITY APEX INVESTMENTS LLC	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837	0 VERIDEA PKWY	VERIDEA PKWY
740052449	17.36	HH TRINITY APEX INVESTMENTS LLC	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837	0 VERIDEA PKWY	VERIDEA PKWY
740078021	32.28	HH TRINITY APEX INVESTMENTS LLC	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837	0 VERIDEA PKWY	VERIDEA PKWY
730996270	16.42	PRINCE, F D SR TRUSTEE	FRANK PRINCE JR	8405 AMANDA CASSIE LN	FUQUAY VARINA NC 27526-9635	0 US 1 HWY	US 1 HWY
740360895	82.24	HH TRINITY APEX INVESTMENTS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837		3229 VERIDEA PKWY	VERIDEA PKWY
740180091	12.57	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837		3200 VERIDEA PKWY	VERIDEA PKWY
740188176	3	BUSHEE, ROGER W BUSHEE, GLENDA K	3137 VERIDEA PKWY	APEX NC 27539-9202		3137 VERIDEA PKWY	VERIDEA PKWY
740189737	1.03	WHITEHOUSE, GREGORY HENRY	3109 VERIDEA PKWY	APEX NC 27539-9202		3109 VERIDEA PKWY	VERIDEA PKWY
741203157	1.84	VERIDEA HOLDINGS LLC	570 LEXINGTON AVE STE 2200	NEW YORK NY 10022-6837		2937 VERIDEA PKWY	VERIDEA PKWY
740283126	5	LANGLEY, DAVID K LANGLEY, RENEE M	6300 KING DAVID CT	APEX NC 27539-6897		6300 KING DAVID CT	KING DAVID CT
740188680	1.3	WHITEHOUSE ASSETS MANAGEMENT LLC	3109 VERIDEA PKWY	APEX NC 27539-9202		3117 VERIDEA PKWY	VERIDEA PKWY
740189999	2.49	WHITEHOUSE ASSETS MANAGEMENT LLC	3109 VERIDEA PKWY	APEX NC 27539-9202		3105 VERIDEA PKWY	VERIDEA PKWY
740070950	0.52	HUDSON, KARL GRIER IV	824 BRYAN ST	RALEIGH NC 27605-1104		3134 VERIDEA PKWY	VERIDEA PKWY
740293940	1.8	WVPRINCE PROPERTIES LLC	444 AUGUSTA DR	ROCKPORT TX 78382-6945		2945 VERIDEA PKWY	VERIDEA PKWY
740081019	2.16	APA VERIDEA INVESTMENTS LLC	2000 BEAR CAT WAY STE 102	MORRISVILLE NC 27560-6620		3138 VERIDEA PKWY	VERIDEA PKWY
730977967	10.27	APA VERIDEA INVESTMENTS LLC	2000 BEAR CAT WAY STE 102	MORRISVILLE NC 27560-6620		3142 VERIDEA PKWY	VERIDEA PKWY
740082199	2.09	WANG, YIFEI MEI, HUA	111 BRIDGEGATE DR	CARY NC 27519-7184		3130 VERIDEA PKWY	VERIDEA PKWY

West CP4 West SF 14

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.704010
Evaluator: SREC – JH	County: Wake	Longitude: -78.886215
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 4	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other B *e.g. Quad Name:*

A. Geomorphology (Subtotal = 1)	Absent	Weak	Moderate	Strong
1a. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel *artificial ditches are not rated; see discussions in manual	No = 0		Yes = 3	

B. Hydrology (3)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 0)				
18. Fibrous roots in streambed	3	2	1	0.5
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JM 12/15/2022

West SF 1

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.688108
Evaluator: S+EC – AJK + JA + KM	County: Wake	Longitude: -78.864747
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 22 23 JM	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other C *e.g. Quad Name:*

A. Geomorphology (Subtotal = 11)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (6.5)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 5.5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

USGS = Present

JM

022

West SF16

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.694123
Evaluator: SFEC - AJK + JH + KM	County: Wake	Longitude: -78.859020
Total Points: Non-Scoreable Feature *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other C e.g. Quad Name:

A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology ( )				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal =)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods, See p. 35 of manual.

Notes:

Sketch: Non-Scoreable Feature

Soils = Intermittent

USGS = Not Present

JM 12/15/2022

West SF5

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35691656
Evaluator: S+EC – AJK+ KW	County: Wake	Longitude: -78.862456
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12.25	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other C *e.g. Quad Name:*

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (3.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 3.75)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = (0.75) OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial
USGS = Not Present

11/15/2022

West SF4

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.688188
Evaluator: SEC - AJK, JH, KM	County: Wake	Longitude: -78.874638
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 11.5	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other E *e.g. Quad Name:*

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

VSCS = Not Present

JM 12/15/2022

WEST SFHD (FEATURE G)

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/02/2022	Project/Site: Heridan	Latitude: 35.602574
Evaluator: SBEC - JOSHUA HARVEY	County: WAKE	Longitude: -78.789561
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** NO SIGNIFICANT FEATURE	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other G *e.g. Quad Name:*

A. Geomorphology (Subtotal = ✓)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel artificial ditches are not rated; see discussions in manual	No = 0		Yes = 3	

B. Hydrology (Subtotal = ✓)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = ✓)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soil = Intermittent

USGS = Not Present

JM 11/10/2022

West SF3

JM 1/20/2023

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.689827
Evaluator: SHEC-AJK + KM+JH	County: Wake	Longitude: -78.869936
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 9.5	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other H *e.g. Quad Name:*

A. Geomorphology (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	(2) JM	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	0	(1) JM	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (3)				
12. Presence of Baseflow	(0)	(1) JM	2	3
13. Iron oxidizing bacteria	(0)	1 JM	2	3
14. Leaf litter	1.5	(1) JM	0.5	(0)
15. Sediment on plants or debris	(0)	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

VSCS = Not Present

12/15/2022

West SF2

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.689824
Evaluator: S+EC - AJK + JH + KM	County: Wake	Longitude: -78.868594
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 14	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other J *e.g. Quad Name:*

A. Geomorphology (Subtotal = 6)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No (= 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes (= 3)	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other (= 0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

12/15/2022

West
SF28 JM 11/30/2022

NC Division of Water Quality --Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/22	Project/Site: Veridea	Latitude: 35.695273
Evaluator: S+EC-AJK	County: Wake	Longitude: -78.862219
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 15	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other e.g. Quad Name: K

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (4)				
12. Presence of Baseflow	(0)	(1) JM	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	(1) JM	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent
USGS = Not Present

JM 12/15/2022

West

SF29 NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/22	Project/Site: Veridea	Latitude: 35.694757
Evaluator: SEC - AJK	County: Wake	Longitude: -78.862695
Total Points: 22.5 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other K *e.g. Quad Name:*

A. Geomorphology (Subtotal = 14)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (4.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent,
USGS = Not Present

JM 10/13/2022

West

SF30

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/22	Project/Site: Veridea	Latitude: 35.694807
Evaluator: S+EC – AJK	County: Wake	Longitude: -78.863007
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 10	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other R *e.g. Quad Name:*

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (0)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JM 12/15/2022

JM 1/20/2023

West

SF31 NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/2022	Project/Site: Veridea	Latitude: 35.694541
Evaluator: S+EC-AJK	County: Wake	Longitude: -78.863163
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other *e g Quad Name:* K

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7 Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0 5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (3)				
12 Presence of Baseflow	(0)	(1) JM	2	3
13 Iron oxidizing bacteria	(0)	1	2	3
14 Leaf litter	1.5	1	0.5	(0)
15 Sediment on plants or debris	(0)	0.5	(1) JM	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17 Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0 75; OBL = 1,5 Other = (0)			

*perennial streams may also be identified using other methods See p 35 of manual

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JM 12/15/2022

West

SF32 NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/22	Project/Site: Veridea	Latitude: 35.694109
Evaluator: SFEC – AJK	County: Wake	Longitude: -78.863801
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 24	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other e.g. Quad Name: R

A. Geomorphology (Subtotal = 14)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual

Notes:

Sketch:

Soils = Intermittent

VSBS = Not Present

JH 10/20/2022

West SF 15

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.694785
Evaluator: SHEC - AJK + KM	County: Wake	Longitude: -78.861676
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other L *e.g. Quad Name:*

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (4)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes (= 3)	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other (= 0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

5/2022

West SFB

NC DWQ Stream Identification Form Version 4.11

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.700631
Evaluator: StEC – JH	County: Wake	Longitude: -78.860357
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 13.5	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other AA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

USGS = Present

JM 12/1/22

West SF 13

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/02/2022	Project/Site: Vendeu	Latitude: 35.648832
Evaluator: JH	County: Wake	Longitude: -78.861887
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 10.5)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

USGS = Present

JM 12/15/2022

WBT SP12

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/12/2022	Project/Site: Wampler	Latitude: 35.693448
Evaluator: JH	County: Wayne	Longitude: -78.362660
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 11.5	**Stream Determination (circle one)** Ephemeral **Intermittent** Perennial	Other ○ *e.g. Quad Name:*

A. Geomorphology (Subtotal = 4)	Absent	Weak	Moderate	Strong
1st. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel artificial ditches are not rated; see discussions in manual	No = 0		Yes = 3	

B. Hydrology (Subtotal = 2.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

USGS = Present

JM 11/12/2022

West 5 10

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/02/2022	Project/Site: Lewellen	Latitude: 35.647567
Evaluator: JH	County: Lenoir	Longitude: -78.864030
Total Points: 16 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other 0 *e.g. Quad Name:*

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 4)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

USGS = Present

JM 12/

West SF11

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/02/2022	Project/Site: Weidon	Latitude: 35.697734
Evaluator: JH	County: Wake	Longitude: -78.86369
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 21	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other e.g. Quad Name: —

A. Geomorphology (Subtotal = 11)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (4)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 9)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial
USGS = Present

JM 11/15/2022

West SF#9

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/02/2020	Project/Site: Vendeen	Latitude: 35.697070
Evaluator: JH - SEC	County: Carteret	Longitude: -78.86535
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12.5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other 0 *e.g. Quad Name:* —

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1 SM	2	3
5. Active/relict floodplain	(0)	(1) SM	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (3.5)				
12. Presence of Baseflow	(0)	1	2	(3) SM
13. Iron oxidizing bacteria	(0)	1	2 SM	3
14. Leaf litter	1.5	SM 1	(0.5)	(0)
15. Sediment on plants or debris	(0)	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

USGS = Present

trest SF8

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/02/2022	Project/Site: Verdun	Latitude: 35.697098
Evaluator: JH ~ SEC	County: ~~Durham~~ Wake	Longitude: -78.865711
Total Points: 21.5 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other ○ *e.g. Quad Name:*

A. Geomorphology (Subtotal = 11)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel [a]artificial ditches are not rated; see discussions in manual	(No = 0)		Yes = 3	

B. Hydrology (4.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 10)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial
USGS = Present

JM 11/2/2022

WEST SF37

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/2022	Project/Site: Veridea	Latitude: 35.696[illegible]
Evaluator: SHEC - JOSINA HARVEY	County: WAKE	Longitude: -78.5[illegible]
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 8	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other P *e.g. Quad Name:*

A. Geomorphology (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel ~~artificial ditches are not rated; see discussions in manual~~	(No = 0)		Yes = 3	

B. Hydrology (Subtotal = 0.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	(0.5)	1	1.5
17. Soil-based evidence of high water table?	(No = 0)		Yes = 3	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

11/20/2022

Lower SF 7

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/27/2022	Project/Site: Verdue	Latitude: 35.699659
Evaluator: SH	County: Craven	Longitude: -78.864028
Total Points: 16 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Q *e.g. Quad Name:*

A. Geomorphology (Subtotal = 6)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent
USGS = Not Present

12/15/2022

West SF27

NC DWQ Stream Identification Form Version 4.11

Date: 11/2/22	Project/Site: Verides	Latitude: 35.701121
Evaluator: S+EL-JH	County: Wake	Longitude: -78.856460
Total Points: 9 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other R *e.g. Quad Name:*

A. Geomorphology (Subtotal = 4)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel		No = 0	Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 2)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?		No = 0	Yes = 3	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent
USGS = Not Present

JM 11/7/2022

West SF 25

NC DWQ Stream Identification Form Version 4.11

Date: 11/2/22	Project/Site: Verdea	Latitude: 35.702162
Evaluator: S+EC - JH	County: Wake	Longitude: -78.854496
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 21.75	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other R *e.g. Quad Name:*

A. Geomorphology (Subtotal = 10)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	(2)	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 6.75)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JH 11/2/2022

West SF26

NC DWQ Stream Identification Form Version 4.11

Date: 11/2/22	Project/Site: Verdea	Latitude: 35.701807
Evaluator: STEC-JH	County: Wake	Longitude: -78.855554
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 10.25	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other 5 *e.g. Quad Name:*

A. Geomorphology (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 3)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4.75)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JM 11/2022

West
SF 24

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.698569
Evaluator: SHEC - AJK + JH + KM	County: Wake	Longitude: -78.854833
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 18	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other T *e.g. Quad Name:*

A. Geomorphology (Subtotal = 10)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (3)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial
VSCS = Not Present

12/15/2022

West SF20

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Verides	Latitude: 35.696709
Evaluator: SH-EC - AJK + JH + KM	County: Wake	Longitude: -78.852141
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19.5	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other T *e.g. Quad Name:*

A. Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2) →	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (4)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial
USGS = Not Present

JH 11/15/2022

West SF23

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Verideo	Latitude: 35.698339
Evaluator: StEC – AJK & KM	County: Wake	Longitude: -78.855074
Total Points: Non-Scoreable Feature, *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other U *e.g. Quad Name:*

A. Geomorphology (Subtotal = _____)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (_____)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = _____)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Non-Scoreable Feature

Soils = Intermittent
USGS = Not Present

JM 10/19/2022

West SF 35

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/22	Project/Site: Veridea	Latitude: 35.697154
Evaluator: S+EC - AJK	County: Wake	Longitude: -78.858121
Total Points: 6 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other e.g. Quad Name: ✓

A. Geomorphology (Subtotal = 1)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (3)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JM 12/20/2022

West SF36

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/22	Project/Site: Veridea	Latitude: 35.696363
Evaluator: SFEC-AJK	County: Wake	Longitude: -78.858198
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 23	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other ✓ *e.g. Quad Name:*

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (6.5)				
12. Presence of Baseflow	0	(1)	2	3
13 Iron oxidizing bacteria	(0)	1	2	3
14 Leaf litter	1.5	(1)	0.5	0
15 Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17 Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22 Fish	(0)	0 5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0 75; OBL = 1,5 Other = 0			

*perennial streams may also be identified using other methods. See p 35 of manual

Notes:

Sketch:

Soils = Intermittent
USGS = Not Present

JM 12/20/2022

West SF 34

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/3/2022	Project/Site: Verideа	Latitude: 35.694766
Evaluator: S+EC - AJK	County: Wake	Longitude: -78.856375
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 32	Stream Determination (circle one) Ephemeral Intermittent (Perennial)	Other *e.g. Quad Name:* ✓

A. Geomorphology (Subtotal = 18)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	(3)
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (8)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 0)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphiblans	0	0.5	(1)	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JM 12/20/2022

West
SF17

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.694829
Evaluator: StEC - AJK, JH, KM	County: Wake	Longitude: -78.859124
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 14	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other W *e.g. Quad Name:*

A. Geomorphology (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (4)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4.5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = (1.5) Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent
USGS = Not Present

JH 12/15/2022

West SF22 NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.696773
Evaluator: S+EC - AJK + JH + km	County: Wake	Longitude: -78.854816
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 7	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other X *e.g. Quad Name:*

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (0)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = (0)		Yes = 3	

C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	1	(0)
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent

USGS = Not Present

JM 12/13/2022

West SF21

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.695789
Evaluator: S+EC - AJK + JH + KM	County: Wake	Longitude: -78.854435
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19.75	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other X *e.g. Quad Name:*

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (3.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	(0)
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4.75)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	(FACW = 0.75) OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent
USGS = Not Present

JM 12/15/2022

WEST SF41

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/02/2022	Project/Site: Verdea	Latitude: 35.694461
Evaluator: SAEC - JOSHUA HARVEY	County: Wake	Longitude: -78.854206
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 15	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other X *e.g. Quad Name:*

A. Geomorphology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel *artificial ditches are not rated; see discussions in manual	No = 0		Yes = 3	

B. Hydrology (Subtotal = 5.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream originates in wetland Drainage

Sketch:

Soils = Intermittent

USGS = Not Present

JH 11/10/2022

West SF1B

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.691433
Evaluator: S+EC - AJK+JH + km	County: Wake	Longitude: -78.855344
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 13.5	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other Y *e.g. Quad Name:*

A. Geomorphology (Subtotal = 6)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (4.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial

VSCS = Not Present

JMT 12/15/2022

West
SF 19

NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/22	Project/Site: Veridea	Latitude: 35.690966
Evaluator: SHEC – AJK + KM	County: Wake	Longitude: -78.852807
Total Points: 21.5 23.5 JM *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other Y *e.g. Quad Name:*

A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1*. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (6)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Perennial
USGS = Not Present

JM 11/15/2022

WFST SF38 (FEATURE BB)

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/2022	Project/Site: Veridea	Latitude: 35.688992
Evaluator: SEC - Joshua Harvey	County: WAKE	Longitude: -78.751202
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** No Scoreable Feature	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other BB *e.g. Quad Name:*

A. Geomorphology (Subtotal = /)	Absent	Weak	Moderate	Strong
1a. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel artificial ditches are not rated; see discussions in manual	No = 0		Yes = 3	

B. Hydrology (Subtotal = /)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = /)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	/	FACW = 0.75; OBL = 1.5 Other = 0		

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Soils = Intermittent
USGS = Not Present

JM 10/2022

WEST SF 39 ([redacted]) [illegible] Ditch

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.1

NC DWQ Stream Identification Form Version 4.1

Date: 11/2/2022	Project/Site: Verdea	Latitude: 35.703025
Evaluator: SEC - Joshua HARVEY	County: WAKE	Longitude: -78.859370
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** No Scorable Feature	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other CC *e.g. Quad Name:*

A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel *artificial ditches are not rated; see discussions in manual	No = 0		Yes = 3	

B. Hydrology (Subtotal =)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal =)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

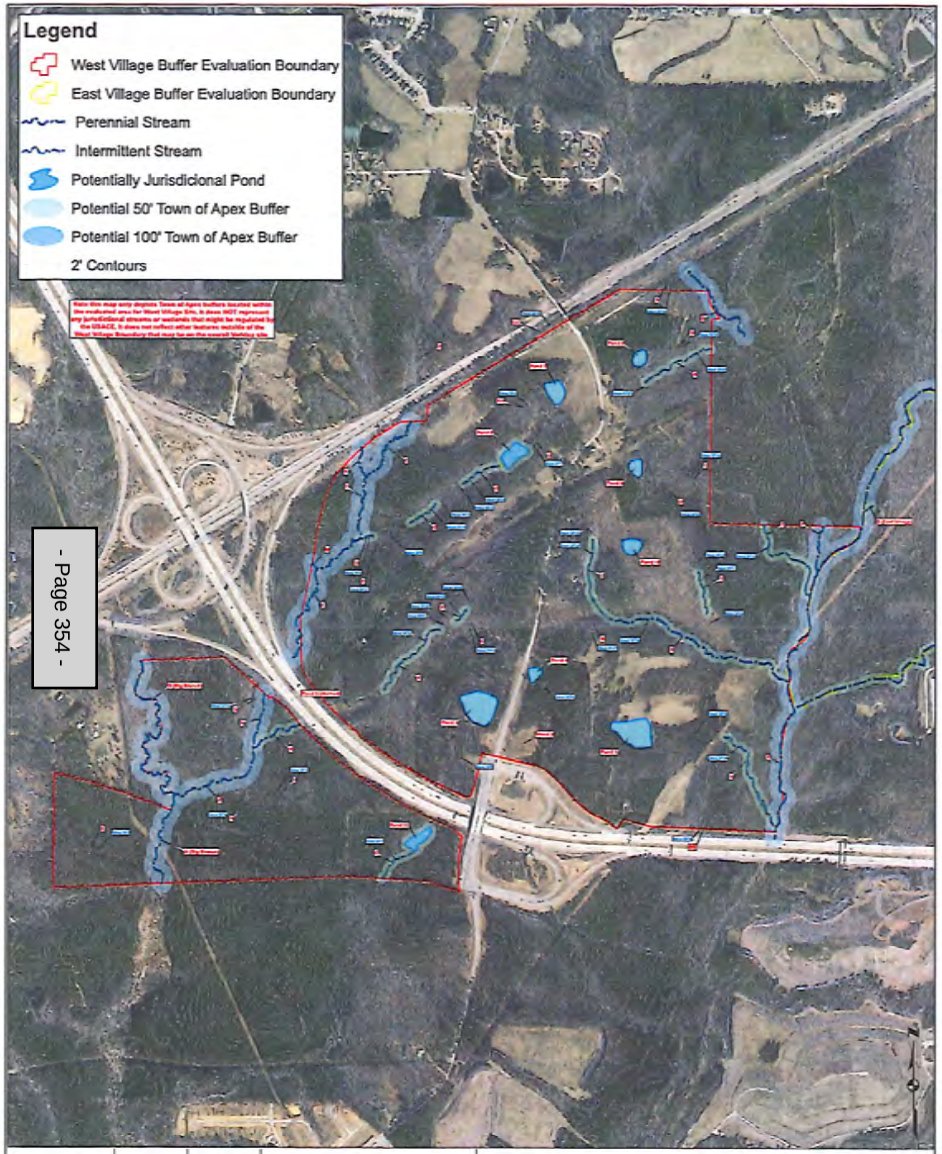
Notes:

Sketch:

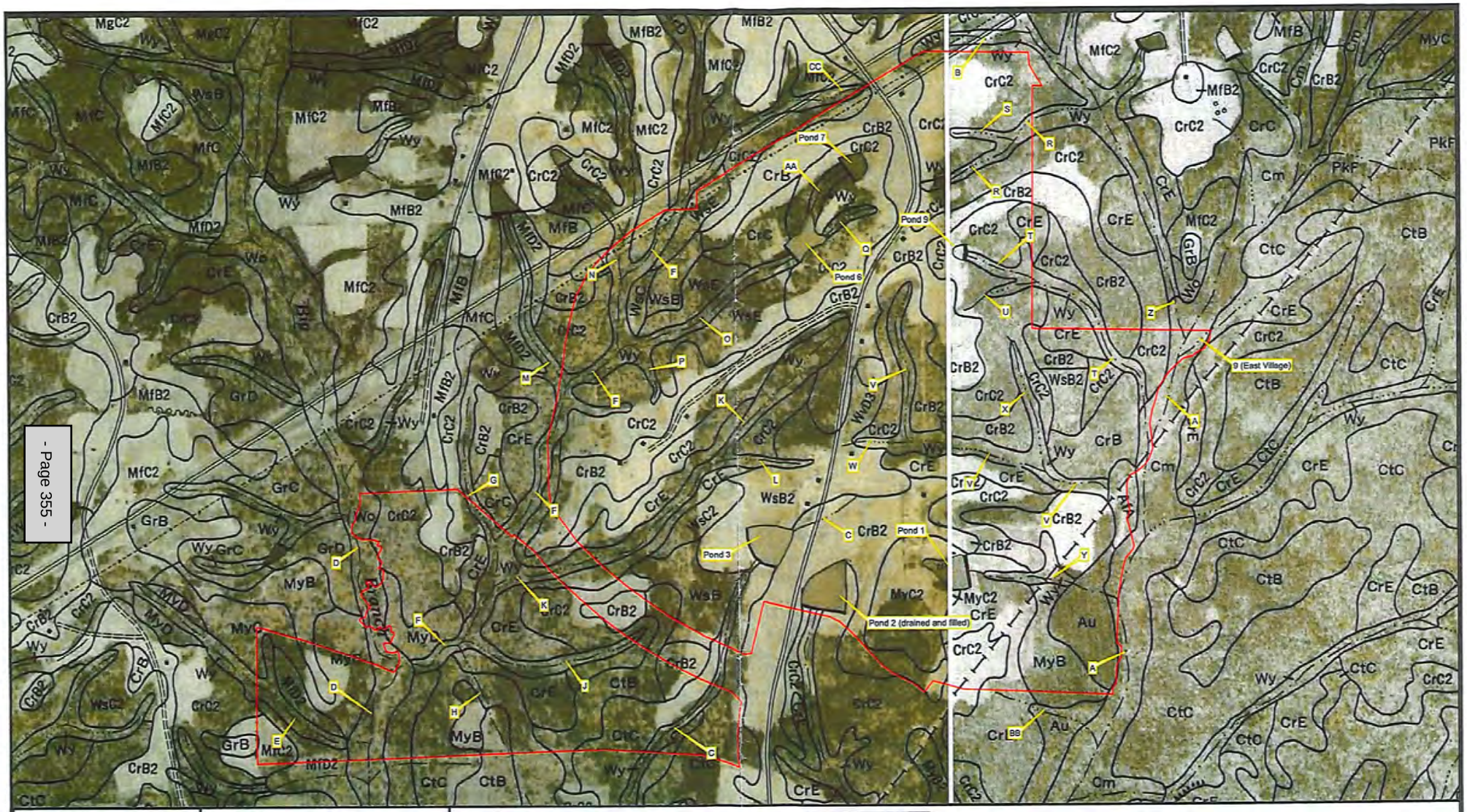
Soils = Intermittent

USGS = Not Present

JM 10/20/2022


Legend
West Village Buffer Evaluation Boundary
East Village Buffer Evaluation Boundary
Perennial Stream
Intermittent Stream
Potentially Jurisdicional Pond
Potential 50' Town of Apex Buffer
Potential 100' Town of Apex Buffer
2' Contours
West Village Buffer Map
Veridea
S&EC
Soil & Environmental Consultants, PA
0 300 600 1,200
Feet

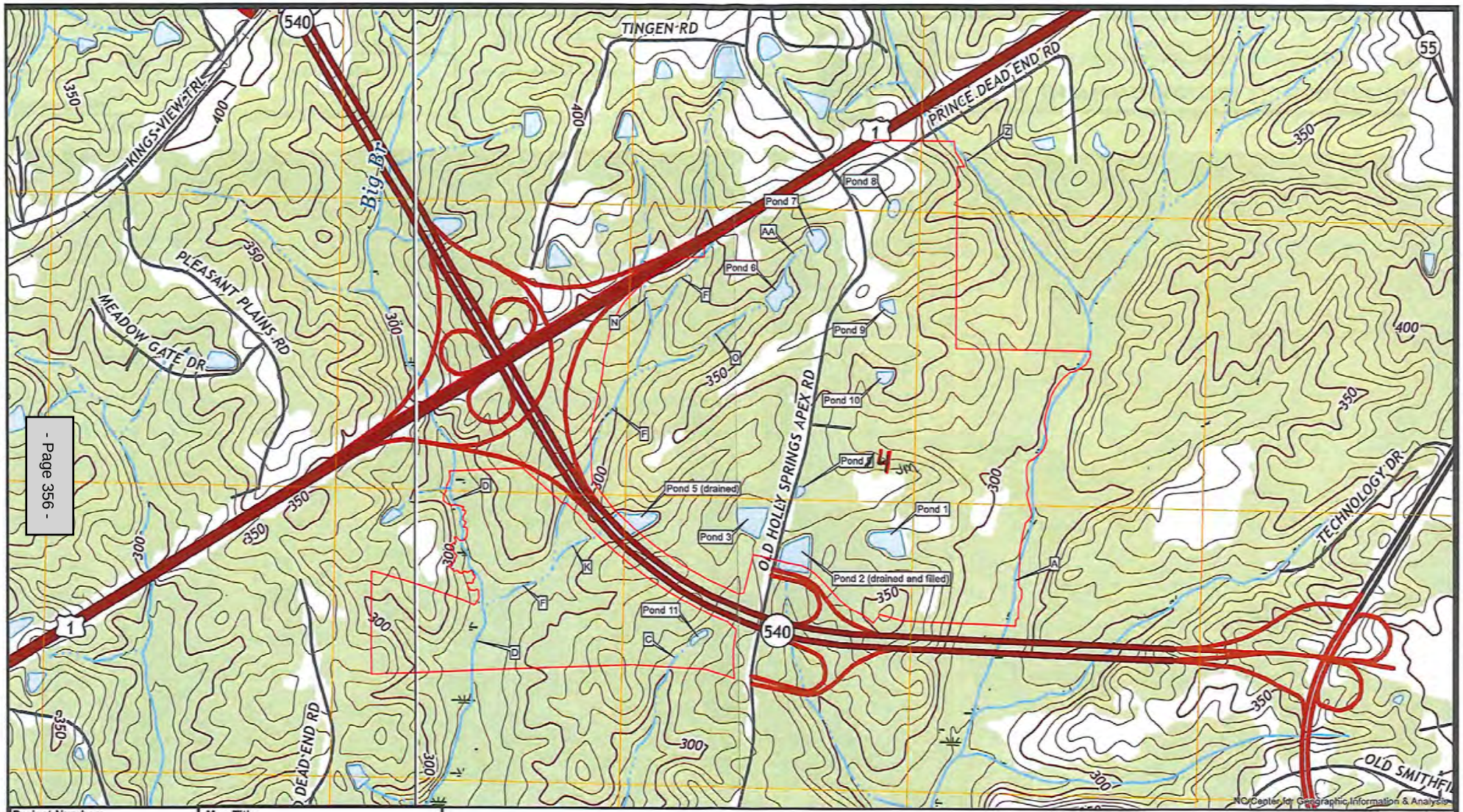
JM 12/15/2022



Project Number: 11065.W28	Map Title: Figure 2 - Soil Survey	
Project Manager: SB	Veridea West Village	
Scale: 1" = 750'	Source: Wake County Soil Survey Sheets 74 & 75	
Date: 12/02/2022		

JM 12/15/2022

S&EC
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone: (919) 846-5900 • Fax: (919) 846-9467
sandec.com



- Page 356 -

Project Number:	11065.W28
Project Manager:	SB
Scale:	1" = 1000'
Date:	12/02/2022

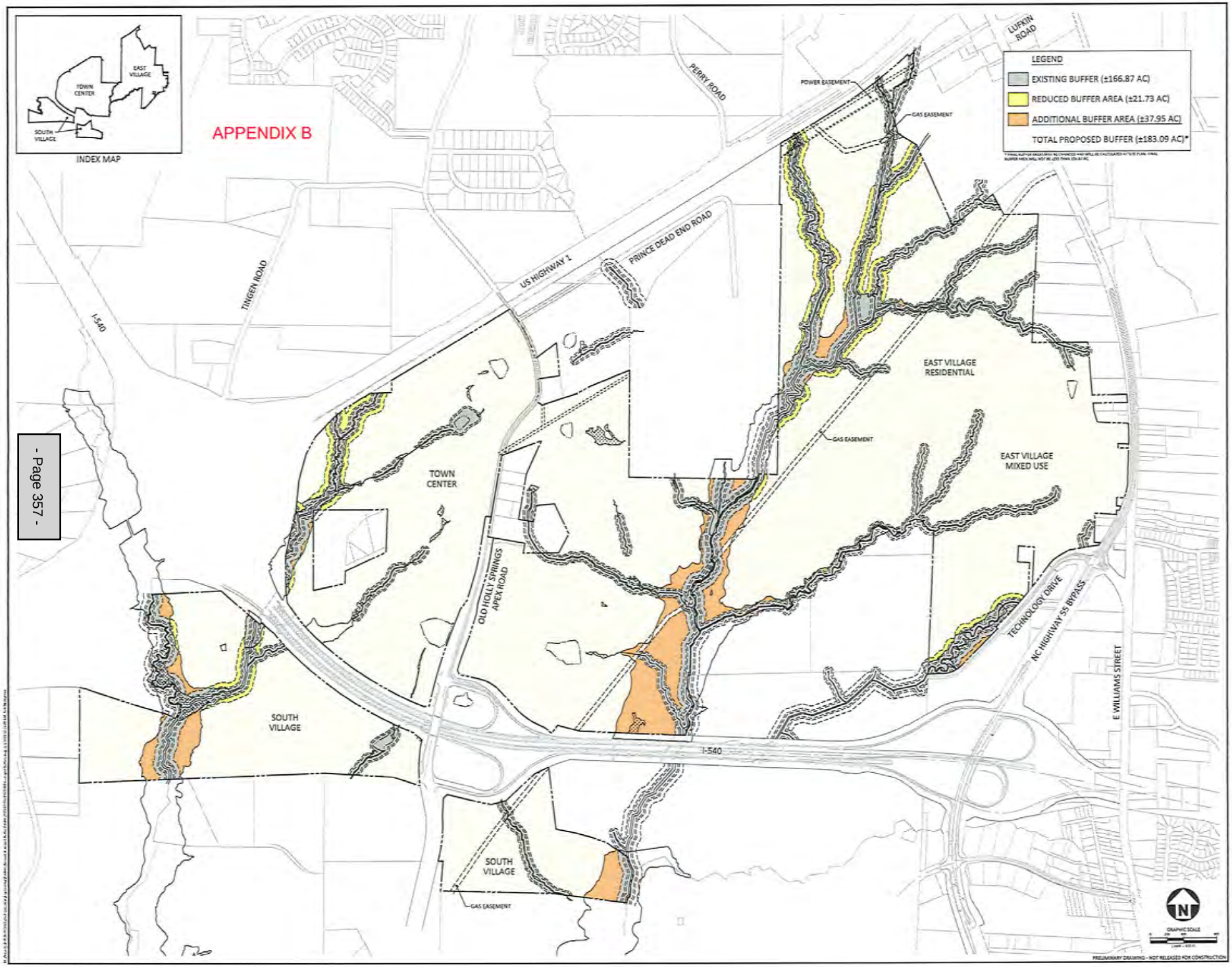
Map Title: Figure 1 - USGS Map
Veridea
West Village

Source: 2019 NC New Hill & Apex Quads

0 1,000 2,000
Feet

N

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Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone: (919) 846-5900 • Fax: (919) 846-9467
sandec.com



McAdams
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2905 Meridian Parkway
Durham, NC 27713
phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187
www.mcadamsco.com

VERIDEA
AVERAGED STREAM BUFFER EXHIBIT
APEX, NORTH CAROLINA

REVISIONS

PLAN INFORMATION
PROJECT NO. RKR-22001
FILENAME RKR22001-S1
CHECKED BY WHD
DRAWN BY RLH
SCALE 1"=400'
DATE JUL 20 2023

SHEET
AVERAGED STREAM BUFFER EXHIBIT
E1.00

Attachment D

ORD-2024-068

AN ORDINANCE TO ADOPT ADDITIONAL SUSTAINABILITY STANDARDS FOR VERIDEA

BE IT ORDAINED by the Town Council of the Town of Apex as follows:

Section 1. The Veridea Pattern Book for Veridea is hereby adopted in accordance with Section 2.3.16.F.3 of the Unified Development Ordinance and Section 5.13 of the Sustainable Development Plan adopted for Veridea by Rezoning #09CZ07 ("Veridea SD Plan").

Section 2. The lands that are the subject of the Ordinance are those certain lands described in Attachment "A" – Legal Description which is incorporated herein by reference.

Section 3. Pursuant to Section 3.3.4 of the Veridea SD Plan, the Veridea Pattern Book in Attachment "B" is hereby incorporated into the Veridea SD Plan and is applicable to the land described in Attachment "A" and to any lands subsequently rezoned to be included in the Veridea SD Plan.

Section 4. The ordinance shall be effective upon enactment on the 27th day of August 2024.

Introduced by Council Member Killingsworth

Seconded by Council Member Zegerman

Attest:

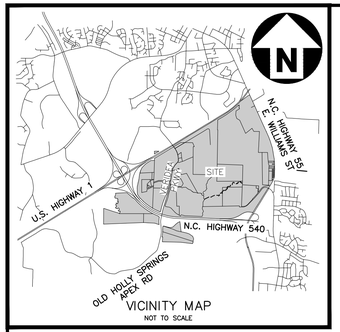
Allen Coleman, CMC, NCCCC
Town Clerk

TOWN OF APEX

Edward Gray
Mayor Pro-Tempore

Approved As To Form:

Laurie L. Hohe
Town Attorney



VICINITY MAP
NOT TO SCALE

GENERAL NOTES

1. THIS IS AN ALTA/NSPS LAND TITLE SURVEY.
2. BEARINGS FOR THIS SURVEY ARE BASED ON THE LOCAL SITE DATUM.
3. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
4. ZONING: VARIES ACCORDING TO TOWN OF APEX ZONING MAP AMENDED 2/22/2022, ZONING FOR EACH PARCEL SHOWN ON MAP. NO ZONING REPORT PROVIDED.
5. AREA BY COORDINATE GEOMETRY.
6. FLOOD NOTE: THIS PROPERTY IS LOCATED IN A SPECIAL FLOOD HAZARD ZONE. IT IS PARTIALLY LOCATED IN ZONES "X" AND "AE" AS DEFINED BY F.E.M.A F.I.R.M COMMUNITY PANELS 3720077410OJ DATED 5/2/2006, 3720074000K DATED 7/19/2022, AND 3720073000K DATED 7/19/2022.
7. REFERENCES: AS SHOWN
8. UTILITY STATEMENT
   THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
10. NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS, RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK.
11. NO FIELD DELINEATION OF WETLANDS WAS PERFORMED AS A PART OF THIS SURVEY AND NO MARKERS FOR SUCH WERE OBSERVED
12. NO PARTY WALLS WERE LOCATED AS PART OF THIS SURVEY
13. THE SURVEYED PROPERTY SHOWN AND DESCRIBED IN THE COMMITMENT DESCRIPTION IS THE SAME PROPERTY DESCRIBED IN SCHEDULE A OF THE TITLE COMMITMENT.
14. PROPERTY HAS VEHICULAR ACCESS TO VERIDEA PARKWAY, OLD HOLLY SPRINGS APEX ROAD, AND E WILLIAMS STREET
15. BUFFERS AND STREAM TAKEN FROM B.M. 2008, PG. 436. NOT FIELD LOCATED
16. ARCHAEOLOGICAL EVIDENCE SHOWN PER "ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED VERIDEA DEVELOPMENT TRACT, BY LUAN CAO, DATED OCTOBER 2021
17. CEMETERIES SHOWN BASED ON PHYSICAL EVIDENCE. SURVEYOR DOES NOT CERTIFY THAT THE EXTENTS OF THE CEMETERY SHOWN ON THE SURVEY ARE THE FULL EXTENT OF BURIAL GROUND OR REPRESENTATIVE OF ALL RIGHTS TO USE OR ACCESS
18. PORTIONS OF EASTERN PROPERTIES SHOWN USING PLANIMETRIC FEATURES PROVIDED BY AVIOIMAGE AERIAL SURVEY.

NOT TO SCALE

TO RXR REALTY VERIDEA HOLDINGS LLC, A DELAWARE LIMITED LIABILITY COMPANY; LENNAR CAROLINAS, LLC; RXR LEN APEX OWNER LLC, A DELAWARE LIMITED LIABILITY COMPANY; PRIME X SETTLEMENT SERVICES LLC; AMTRUST TITLE INSURANCE COMPANY; AND OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 6(a)(b), 8, 9, 11(a), 13, 15, 16, 17, 18, AND 19 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED ON 3/25/2022
DATE OF PLAT OR MAP: 4/1/2022
LAST REVISED: 1/23/2023

DAVID J. MILLS, P.L.S. L-5477 — DATE 2/14/2023

PRELIMINARY

McADAMS
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Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

www.mcadamsco.com

CLIENT

RXR REALTY
75 ROCKEFELLER PLAZA, SUITE 1300
NEW YORK, NY 10019

VERIDEA
ALTA/NSPS LAND TITLE SURVEY
VERIDEA PARKWAY
TOWN OF APEX, WAKE COUNTY, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL L-5477 PRELIMINARY NOT FOR CONSTRUCTION OR RECORDATION OF ANY KIND REGISTERED LAND SURVEYOR DAVID J. MILLS
2/14/2023

REVISIONS

NO.	DATE	
1	1/17/2023	ADDITIONAL SURVEY DESCRIPTIONS
2	1/31/2023	ADDITIONAL SURVEY DESCRIPTIONS
3	2/08/2023	ADDITIONAL SURVEY DESCRIPTIONS

PLAN INFORMATION

PROJECT NO.	RXR22001
FILENAME	RXR22001-AT1
CHECKED BY	JBT
DRAWN BY	DJM/CJS
SCALE	NOT TO SCALE
DATE	01/20/2023

SHEET

1-26

M:\Projects\RXR\RXR22001\02-Geomatics\Survey\ALTA\RXR22001-AT1.dwg, 7/16/2024 12:17:45 PM, Connor Skarins

TRACTS 1, 2, 3, 4, 5, 6, 7 NORTH, 8-1, 8-4, 9-1, 9-2-1, 9-2-2, 9-2-3, 9-3-1, 9-3-2, 9-3-4, 10-1, 10-2, 10-3, 10-7A&C, 10-7B NORTH, 11, 13-1, 13-2, 14

BEGINNING AT A POINT ON THE SOUTHERN RIGHT OF WAY OF U.S. HIGHWAY 1, SAID POINT BEING THE NORTHWEST CORNER OF TRACT I-A, AS SHOWN ON BOOK OF MAPS 2003, PAGE 398 OF THE WAKE COUNTY REGISTRY; THENCE WITH SAID RIGHT OF WAY NORTH 58°51'35" EAST A DISTANCE OF 406.60 FEET TO A CONCRETE MONUMENT; THENCE NORTH 58°00'23" EAST A DISTANCE OF 434.93 FEET TO A POINT; THENCE WITH A CURVE TO THE LEFT A RADIUS OF 5,860.99 FEET, AN ARC LENGTH OF 1,031.97 FEET, A CHORD BEARING OF NORTH 51°39'15" EAST, A CHORD LENGTH OF 1,030.63 FEET TO A POINT; THENCE SOUTH 41°41'54" EAST A DISTANCE OF 29.56 FEET TO A POINT; THENCE NORTH 46°57'49" EAST A DISTANCE OF 79.93 FEET TO A POINT, THE COMMON CORNER OF LOT 2 A SHOWN ON BOOK OF MAPS 1996, PAGE 667; THENCE WITH SAID COMMON LINE SOUTH 08°18'39" WEST A DISTANCE OF 74.71 FEET TO A POINT; THENCE SOUTH 03°57'01" EAST A DISTANCE OF 106.42 FEET TO A POINT ON THE COMMON LINE OF JUSTIN STANLEY; THENCE WITH SAID COMMON LINE SOUTH 58°19'32" WEST A DISTANCE OF 25.09 FEET TO A POINT; THENCE SOUTH 31°28'08" EAST A DISTANCE OF 99.98 FEET TO A POINT IN THE NORTH LINE OF THE TRACT SHOWN ON BOOK OF MAPS 1999, PAGE 1145; THENCE WITH SAID COMMON LINE SOUTH 58°37'43" WEST A DISTANCE OF 311.61 FEET TO A POINT; THENCE SOUTH 05°32'28" WEST A DISTANCE OF 311.05 FEET TO A POINT; THENCE SOUTH 18°18'17" EAST A DISTANCE OF 266.26 FEET TO A POINT; THENCE SOUTH 58°02'56" EAST A DISTANCE OF 253.73 FEET TO AN IRON PIPE; THENCE SOUTH 24°13'34" EAST A DISTANCE OF 1064.47 FEET TO AN IRON PIPE; THENCE NORTH 51°40'44" EAST A DISTANCE OF 610.52 FEET TO A POINT, THE COMMON CORNER OF FTPA STORAGE APEX LLC; THENCE WITH SAID COMMON LINE SOUTH 29°10'43" EAST A DISTANCE OF 276.67 FEET TO A POINT, THE SOUTHWEST CORNER OF THE TRACT SHOWN ON BOOK OF MAPS 2004, PAGE 593; THENCE WITH SAID COMMON LINE NORTH 89°42'08" EAST A DISTANCE OF 414.38 FEET TO AN IRON PIPE, THE NORTHWEST CORNER OF TRACT B, AS SHOWN ON BOOK OF MAPS 1986, PAGE 855; THENCE WITH SAID COMMON LINE SOUTH 02°52'31" WEST A DISTANCE OF 576.07 FEET TO AN IRON PIPE, THE NORTHWEST CORNER OF PPTAPEX LLC; THENCE WITH SAID COMMON LINE SOUTH 03°02'31" WEST A DISTANCE OF 260.47 FEET TO AN IRON PIPE, THE NORTHWEST CORNER OF JAMES IRVIN RIGSBEE; THENCE WITH SAID COMMON LINE SOUTH 03°08'36" WEST A DISTANCE OF 288.05 FEET TO AN IRON PIPE; THENCE SOUTH 02°21'58" WEST A DISTANCE OF 72.79 FEET TO AN AXLE, THE NORTHWEST CORNER OF KENAN TRANSPORT CO; THENCE WITH SAID COMMON LINE SOUTH 02°22'52" WEST A DISTANCE OF 365.20 FEET TO AN IRON PIPE; THENCE SOUTH 89°54'31" EAST A DISTANCE OF 270.03 FEET TO A POINT; THENCE SOUTH 89°55'44" EAST A DISTANCE OF 403.93 FEET TO A POINT, THE NORTHWEST CORNER OF DAVID RAYMER; THENCE WITH SAID COMMON LINE SOUTH 04°23'01" EAST A DISTANCE OF 445.52 FEET TO AN IRON PIPE, THE NORTHWEST CORNER OF THOMPSON GAS-SMOKIES LLC; THENCE WITH SAID COMMON LINE SOUTH 05°37'02" EAST A DISTANCE OF 199.93 FEET TO AN IRON PIPE; THENCE NORTH 89°21'15" EAST A DISTANCE OF 417.22 FEET TO A POINT ON THE WESTERN RIGHT OF WAY OF NORTH CAROLINA HIGHWAY 55; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE RIGHT, A RADIUS OF 5,633.75 FEET, AN ARC LENGTH OF 101.71 FEET, A CHORD BEARING OF SOUTH 04°07'50" EAST, A CHORD LENGTH OF 101.71 FEET TO AN IRON PIPE, THE COMMON CORNER OF DEXTER RAY; THENCE WITH SAID COMMON LINE AND THE LINE OF DAVID PAGE HEIRS, SOUTH 89°36'58" WEST A DISTANCE OF 414.74 FEET TO A POINT; THENCE SOUTH 05°37'02" EAST A DISTANCE OF 100.00 FEET TO A POINT, THE NORTHWEST CORNER OF CROWN BUILDERS AND DEVELOPERS OF NC, LLC; THENCE WITH SAID COMMON LINE SOUTH 17°12'56" EAST A DISTANCE OF 140.08 FEET TO AN IRON PIPE; THENCE SOUTH 87°06'10" EAST A DISTANCE OF 374.27 FEET TO AN IRON PIPE ON THE WESTERN RIGHT OF WAY OF SAID

HIGHWAY 55; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE RIGHT A RADIUS OF 5,633.75 FEET, AN ARC LENGTH OF 100.26 FEET, A CHORD BEARING OF SOUTH 00°30'27" EAST, A CHORD LENGTH OF 100.26 FEET TO A POINT; THENCE SOUTH 01°41'54" EAST A DISTANCE OF 100.29 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 49.94 FEET TO A POINT ON THE NORTH LINE OF LOT 22 AS SHOWN ON BOOK OF MAPS 1948, PAGE 18; THENCE WITH SAID COMMON LINE NORTH 87°04'26" WEST A DISTANCE OF 127.90 FEET TO A POINT; THENCE SOUTH 01°28'23" WEST A DISTANCE OF 50.04 FEET TO A POINT; THENCE SOUTH 87°06'47" EAST A DISTANCE OF 127.65 FEET TO A POINT ON THE WEST RIGHT OF WAY OF SAID HIGHWAY 55; THENCE WITH SAID RIGHT OF WAY SOUTH 01°45'44" WEST A DISTANCE OF 49.94 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 49.94 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 49.94 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 49.94 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 49.94 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 49.79 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 50.00 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 50.00 FEET TO A POINT; THENCE SOUTH 01°45'44" WEST A DISTANCE OF 50.00 FEET TO A POINT; THENCE SOUTH 12°49'18" WEST A DISTANCE OF 50.78 FEET TO A POINT; THENCE SOUTH 14°56'39" WEST A DISTANCE OF 51.10 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 17°33'36" WEST A DISTANCE OF 51.76 FEET TO A CONCRETE MONUMENT ON THE NORTH LINE OF LOT 9, AS SHOWN ON BOOK OF MAPS 1948, PAGE 18; THENCE WITH SAID COMMON LINE NORTH 86°43'05" WEST A DISTANCE OF 89.07 FEET TO A POINT; THENCE SOUTH 01°28'00" WEST A DISTANCE OF 100.88 FEET TO A POINT; THENCE SOUTH 87°17'00" EAST A DISTANCE OF 51.62 FEET TO A POINT ON THE WESTERN RIGHT OF WAY OF SAID HIGHWAY 55; THENCE WITH SAID RIGHT OF WAY SOUTH 22°15'24" WEST A DISTANCE OF 53.04 FEET TO A POINT ON THE NORTHERN LINE OF LOT 6 AS SHOWN ON BOOK OF MAPS 1948, PAGE 18; THENCE WITH SAID COMMON LINE NORTH 87°17'00" WEST A DISTANCE OF 32.79 FEET TO A POINT; THENCE SOUTH 01°28'00" WEST A DISTANCE OF 48.52 FEET TO A POINT ON THE NORTHERN LINE OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION; THENCE WITH SAID COMMON LINE NORTH 87°21'16" WEST A DISTANCE OF 259.05 FEET TO A POINT; THENCE SOUTH 01°23'44" WEST A DISTANCE OF 347.79 FEET TO AN IRON PIPE; THENCE SOUTH 86°24'46" EAST A DISTANCE OF 74.06 FEET TO A POINT ON THE WESTERN RIGHT OF WAY OF SAID HIGHWAY 55; THENCE WITH SAID RIGHT OF WAY SOUTH 34°48'30" WEST A DISTANCE OF 35.57 FEET TO A CONCRETE MONUMENT ON THE NORTHERN RIGHT OF WAY OF TECHNOLOGY DRIVE, AS SHOWN ON BOOK OF MAPS 2003, PAGE 398; THENCE WITH SAID RIGHT OF WAY SOUTH 81°05'32" WEST A DISTANCE OF 355.21 FEET TO A POINT; THENCE SOUTH 60°43'09" WEST A DISTANCE OF 132.34 FEET TO A POINT; THENCE A CURVE TO THE LEFT, A RADIUS OF 426.43 FEET, AN ARC LENGTH OF 181.19 FEET, A CHORD BEARING OF SOUTH 49°06'58" WEST, A CHORD LENGTH OF 179.83 FEET TO A POINT; THENCE SOUTH 36°56'38" WEST A DISTANCE OF 162.54 FEET TO A POINT; THENCE SOUTH 37°44'51" WEST A DISTANCE OF 163.20 FEET TO A POINT ON THE EASTERN LINE OF THE BREGMAN TRACT SHOWN ON BOOK OF MAPS 2002, PAGE 165; THENCE WITH SAID COMMON LINE NORTH 02°38'53" EAST A DISTANCE OF 477.63 FEET TO AN IRON PIPE; THENCE NORTH 86°17'11" WEST A DISTANCE OF 191.04 FEET TO AN IRON PIPE; THENCE SOUTH 02°37'54" WEST A DISTANCE OF 192.78 FEET TO AN IRON PIPE; THENCE SOUTH 87°21'03" EAST A DISTANCE OF 144.87 FEET TO A POINT; THENCE SOUTH 02°38'53" WEST A DISTANCE OF 351.16 FEET TO A POINT ON THE NORTHER RIGHT OF WAY OF SAID TECHNOLOGY DRIVE; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE RIGHT, A RADIUS OF 5,840.02 FEET, AN ARC LENGTH OF 578.81 FEET, A CHORD BEARING OF SOUTH 42°11'18" WEST, A CHORD LENGTH OF 578.57 FEET TO A POINT; THENCE SOUTH 45°24'35" EAST A DISTANCE OF 26.85 FEET TO A POINT; THENCE

SOUTH 44°12'36" WEST A DISTANCE OF 620.76 FEET TO A POINT; THENCE A CURVE TO THE RIGHT, A RADIUS OF 351.98 FEET, AN ARC LENGTH OF 268.88 FEET, A CHORD BEARING OF SOUTH 67°02'07" WEST, A CHORD LENGTH OF 262.39 FEET TO A POINT; THENCE SOUTH 88°52'01" WEST A DISTANCE OF 164.86 FEET TO A POINT THE SOUTHEAST CORNER OF THE TRACT SHOWN ON BOOK OF MAPS 2000, PAGE 1920; THENCE WITH SAID COMMON LINE NORTH 02°16'22" EAST A DISTANCE OF 50.18 FEET TO AN IRON PIPE; THENCE NORTH 02°17'00" EAST A DISTANCE OF 1,402.38 FEET TO A POINT; THENCE NORTH 02°17'00" EAST A DISTANCE OF 163.32 FEET TO AN IRON PIPE ON THE EASTERN LINE OF TRACT 1, AS SHOWN ON BOOK OF MAPS 2009, PAGE 884; THENCE WITH SAID COMMON LINE NORTH 02°11'42" EAST A DISTANCE OF 120.99 FEET TO A POINT NEAR THE CREEK AS SHOWN ON THE AFORE SAID MAP; THENCE GENERALLY WITH THE COURSE OF SAID CREEK AS SHOWN ON THE AFORE SAID MAP, NORTH 82°46'29" WEST A DISTANCE OF 59.32 FEET TO A POINT; THENCE NORTH 38°01'48" WEST A DISTANCE OF 154.60 FEET TO A POINT; THENCE NORTH 84°02'09" WEST A DISTANCE OF 86.70 FEET TO A POINT; THENCE SOUTH 20°44'56" WEST A DISTANCE OF 18.43 FEET TO A POINT; THENCE SOUTH 79°18'34" WEST A DISTANCE OF 39.77 FEET TO A POINT; THENCE SOUTH 13°19'46" EAST A DISTANCE OF 38.31 FEET TO A POINT; THENCE SOUTH 76°35'49" WEST A DISTANCE OF 53.23 FEET TO A POINT; THENCE SOUTH 26°54'51" WEST A DISTANCE OF 42.90 FEET TO A POINT; THENCE SOUTH 33°19'02" EAST A DISTANCE OF 29.87 FEET TO A POINT; THENCE SOUTH 51°46'22" WEST A DISTANCE OF 61.75 FEET TO A POINT; THENCE NORTH 64°34'50" WEST A DISTANCE OF 58.31 FEET TO A POINT; THENCE SOUTH 29°34'47" WEST A DISTANCE OF 47.94 FEET TO A POINT; THENCE SOUTH 71°40'28" WEST A DISTANCE OF 23.79 FEET TO A POINT; THENCE NORTH 39°32'53" WEST A DISTANCE OF 102.73 FEET TO A POINT; THENCE NORTH 69°26'41" WEST A DISTANCE OF 124.25 FEET TO A POINT; THENCE SOUTH 57°24'05" WEST A DISTANCE OF 82.87 FEET TO A POINT; THENCE SOUTH 07°43'11" WEST A DISTANCE OF 131.15 FEET TO A POINT; THENCE SOUTH 83°27'25" WEST A DISTANCE OF 147.78 FEET TO A POINT; THENCE SOUTH 00°36'20" EAST A DISTANCE OF 95.70 FEET TO A POINT; THENCE SOUTH 80°37'14" WEST A DISTANCE OF 210.03 FEET TO A POINT; THENCE SOUTH 21°46'20" WEST A DISTANCE OF 110.71 FEET TO A POINT; THENCE SOUTH 78°48'03" EAST A DISTANCE OF 41.76 FEET TO A POINT; THENCE SOUTH 32°29'11" WEST A DISTANCE OF 93.04 FEET TO A POINT; THENCE NORTH 66°26'02" WEST A DISTANCE OF 45.02 FEET TO A POINT; THENCE SOUTH 47°52'32" WEST A DISTANCE OF 34.12 FEET TO A POINT; THENCE SOUTH 00°28'52" WEST A DISTANCE OF 71.12 FEET TO A POINT; THENCE SOUTH 79°33'24" WEST A DISTANCE OF 96.46 FEET TO A POINT; THENCE NORTH 52°02'42" WEST A DISTANCE OF 30.57 FEET TO A POINT; THENCE SOUTH 81°23'08" WEST A DISTANCE OF 60.05 FEET TO A POINT; THENCE SOUTH 41°39'40" WEST A DISTANCE OF 186.48 FEET TO A POINT; THENCE SOUTH 44°48'01" EAST A DISTANCE OF 60.58 FEET TO A POINT; THENCE SOUTH 20°16'03" WEST A DISTANCE OF 35.02 FEET TO A POINT; THENCE NORTH 76°32'52" WEST A DISTANCE OF 126.07 FEET TO A POINT; THENCE SOUTH 34°49'57" WEST A DISTANCE OF 90.84 FEET TO A POINT; THENCE NORTH 41°34'57" WEST A DISTANCE OF 26.79 FEET TO A POINT; THENCE SOUTH 44°48'57" WEST A DISTANCE OF 69.31 FEET TO A POINT; THENCE SOUTH 28°17'36" EAST A DISTANCE OF 74.29 FEET TO A POINT; THENCE SOUTH 47°29'27" WEST A DISTANCE OF 92.11 FEET TO A POINT; THENCE NORTH 49°33'56" WEST A DISTANCE OF 78.37 FEET TO A POINT; THENCE SOUTH 87°17'25" WEST A DISTANCE OF 290.72 FEET TO A POINT; THENCE SOUTH 11°44'33" WEST A DISTANCE OF 20.66 FEET TO A POINT; THENCE SOUTH 64°16'17" WEST A DISTANCE OF 220.45 FEET TO A POINT; THENCE SOUTH 82°21'19" WEST A DISTANCE OF 72.19 FEET TO A POINT; THENCE NORTH 36°16'44" WEST A DISTANCE OF 42.40 FEET TO A POINT; THENCE SOUTH 69°36'51" WEST A DISTANCE OF 126.77 FEET TO A POINT; THENCE SOUTH 62°06'56" WEST A DISTANCE OF 316.17 FEET TO A POINT IN THE CENTERLINE OF WHITE OAK CREEK; THENCE WITH SAID CREEK SOUTH

17°45'27" WEST A DISTANCE OF 29.26 FEET TO A POINT; THENCE SOUTH 26°24'46" WEST A DISTANCE OF 31.72 FEET TO A POINT; THENCE SOUTH 40°05'18" WEST A DISTANCE OF 78.74 FEET TO A POINT; THENCE SOUTH 07°45'39" WEST A DISTANCE OF 35.25 FEET TO A POINT; THENCE SOUTH 42°06'24" WEST A DISTANCE OF 57.16 FEET TO A POINT; THENCE SOUTH 01°06'28" WEST A DISTANCE OF 351.89 FEET TO AN IRON PIE ON THE NORTHERN LINE OF GREENWAY WASTE SOLUTIONS OF APEX LLC; THENCE WITH SAID COMMON LINE SOUTH 88°51'48" WEST A DISTANCE OF 28.47 FEET TO A POINT; THENCE SOUTH 03°52'45" WEST A DISTANCE OF 158.77 FEET TO A POINT; THENCE SOUTH 23°38'07" EAST A DISTANCE OF 210.79 FEET TO A POINT; THENCE SOUTH 30°01'31" WEST A DISTANCE OF 156.29 FEET TO A POINT; THENCE SOUTH 11°48'54" EAST A DISTANCE OF 104.71 FEET TO A POINT; THENCE SOUTH 19°26'04" WEST A DISTANCE OF 147.77 FEET TO A POINT ON THE NORTHERN RIGHT OF WAY OF NORTH CAROLINA HIGHWAY 540; THENCE WITH SAID RIGHT OF WAY NORTH 87°35'38" WEST A DISTANCE OF 1,273.34 FEET TO AN IRON PIPE; THENCE NORTH 75°03'53" WEST A DISTANCE OF 276.59 FEET TO AN IRON PIPE; THENCE SOUTH 36°13'41" WEST A DISTANCE OF 120.37 FEET TO AN IRON PIPE; THENCE NORTH 49°31'49" WEST A DISTANCE OF 105.40 FEET TO AN IRON PIPE; THENCE NORTH 65°24'12" WEST A DISTANCE OF 112.48 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE RIGHT, A RADIUS OF 865.00 FEET, AN ARC LENGTH OF 261.30 FEET, A CHORD BEARING OF NORTH 54°43'51" WEST, A CHORD LENGTH OF 260.31 FEET TO A CONCRETE MONUMENT; THENCE NORTH 42°11'22" WEST A DISTANCE OF 182.87 FEET TO A CONCRETE MONUMENT; THENCE NORTH 40°19'02" WEST A DISTANCE OF 35.61 FEET TO A POINT; THENCE NORTH 44°05'45" WEST A DISTANCE OF 184.73 FEET TO A CONCRETE MONUMENT; THENCE WITH A CURVE TO THE LEFT A RADIUS OF 534.00 FEET, AN ARC LENGTH OF 249.50 FEET, A CHORD BEARING OF NORTH 64°32'31" WEST, A CHORD LENGTH OF 247.24 FEET TO A CONCRETE MONUMENT; THENCE NORTH 77°55'37" WEST A DISTANCE OF 220.93 FEET TO A CONCRETE MONUMENT; THENCE NORTH 25°05'55" WEST A DISTANCE OF 60.93 FEET TO A CONCRETE MONUMENT ON THE RIGHT OF WAY OF VERIDEA PARKWAY; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE RIGHT, A RADIUS OF 5,930.50 FEET, AN ARC LENGTH OF 363.87 FEET, A CHORD BEARING OF NORTH 18°48'19" EAST, A CHORD LENGTH OF 363.81 FEET TO A POINT; THENCE NORTH 20°49'17" EAST A DISTANCE OF 59.37 FEET TO A POINT; THENCE NORTH 17°36'52" EAST A DISTANCE OF 299.95 FEET TO A POINT; THENCE NORTH 07°20'42" EAST A DISTANCE OF 127.17 FEET TO A POINT; THENCE NORTH 16°56'54" EAST A DISTANCE OF 296.14 FEET TO A POINT; THENCE A CURVE TO THE LEFT, A RADIUS OF 2,067.50 FEET, AN ARC LENGTH OF 227.29 FEET, A CHORD BEARING OF NORTH 13°47'56" EAST, A CHORD LENGTH OF 227.18 FEET TO A POINT; THENCE NORTH 09°16'52" EAST A DISTANCE OF 6.98 FEET TO A POINT; THENCE NORTH 09°16'52" EAST A DISTANCE OF 31.69 FEET TO A POINT; THENCE NORTH 09°28'48" EAST A DISTANCE OF 166.90 FEET TO A POINT; THENCE NORTH 09°28'48" EAST A DISTANCE OF 13.32 FEET TO A POINT; THENCE NORTH 09°28'48" EAST A DISTANCE OF 17.71 FEET TO A POINT; THENCE NORTH 09°28'48" EAST A DISTANCE OF 55.05 FEET TO A POINT ON THE SOUTHERN LINE OF ROGER BUSHEE; THENCE WITH SAID COMMON LINE SOUTH 80°05'31" EAST A DISTANCE OF 386.35 FEET TO AN IRON PIPE, AS SHOWN ON THE WESTERN LINE OF THE 5.00 ACRE TRACT SHOWN ON BOOK OF MAPS 1998, PAGE 1052; THENCE WITH SAID COMMON LINE SOUTH 09°53'16" WEST A DISTANCE OF 120.00 FEET TO AN IRON PIPE; THENCE NORTH 89°42'24" EAST A DISTANCE OF 427.65 FEET TO AN IRON PIPE; THENCE NORTH 28°17'19" EAST A DISTANCE OF 258.03 FEET TO A POINT; THENCE NORTH 25°29'27" WEST A DISTANCE OF 398.53 FEET TO A POINT; THENCE SOUTH 85°22'14" WEST A DISTANCE OF 220.54 FEET TO A POINT; THENCE SOUTH 09°39'36" WEST A DISTANCE OF 200.09 FEET TO A POINT, THE NORTHEAST CORNER OF ROGER BUSHEE; THENCE WITH SAID COMMON LINE NORTH 80°09'19" WEST A DISTANCE OF 185.05 FEET TO A POINT, THE SOUTHWEST CORNER OF WJ FIELDS; THENCE WITH

SAID COMMON LINE OF FIELDS AND OTHERS NORTH 09°58'01" EAST A DISTANCE OF 550.14 FEET TO A POINT, THE SOUTHEAST CORNER OF WHITEHOUSE ASSETS MANAGEMENT, LLC; THENCE WITH SAID COMMON LINE NORTH 24°25'22" EAST A DISTANCE OF 442.30 FEET TO A POINT; THENCE SOUTH 69°45'18" WEST A DISTANCE OF 509.98 FEET TO A REBAR IN THE CENTERLINE OF VERIDEA PARKWAY; THENCE WITH SAID LINE SOUTH 09°52'33" WEST A DISTANCE OF 171.70 FEET TO A POINT; THENCE SOUTH 09°57'23" WEST A DISTANCE OF 550.24 FEET TO A POINT; THENCE SOUTH 09°26'46" WEST A DISTANCE OF 21.55 FEET TO A POINT; THENCE NORTH 89°10'45" WEST A DISTANCE OF 68.12 FEET TO A POINT ON THE WESTERN RIGHT OF WAY OF VERIDEA PARKWAY; THENCE WITH SAID RIGHT OF WAY SOUTH 09°28'47" WEST A DISTANCE OF 60.77 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 09°28'45" WEST A DISTANCE OF 430.91 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 09°46'52" WEST A DISTANCE OF 74.87 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE RIGHT, A RADIUS OF 1,933.03 FEET, AN ARC LENGTH OF 173.41 FEET, A CHORD BEARING OF SOUTH 14°22'33" WEST, A CHORD LENGTH OF 173.35 FEET TO A POINT; THENCE SOUTH 16°56'46" WEST A DISTANCE OF 296.14 FEET TO A POINT; THENCE SOUTH 36°46'38" WEST A DISTANCE OF 128.94 FEET TO A POINT; THENCE SOUTH 21°28'31" WEST A DISTANCE OF 304.38 FEET TO A POINT; THENCE SOUTH 20°42'10" WEST A DISTANCE OF 61.19 FEET TO A POINT; THENCE A CURVE TO THE LEFT, A RADIUS OF 6,150.50 FEET, AN ARC LENGTH OF 428.45 FEET, A CHORD BEARING OF SOUTH 18°25'23" WEST, A CHORD LENGTH OF 428.36 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE LEFT, A RADIUS OF 6,150.50 FEET, AN ARC LENGTH OF 203.98 FEET, A CHORD BEARING OF SOUTH 15°28'40" WEST, A CHORD LENGTH OF 203.97 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE LEFT A RADIUS OF 6,150.50 FEET, AN ARC LENGTH OF 244.84 FEET, A CHORD BEARING OF SOUTH 13°23'14" WEST, A CHORD LENGTH OF 244.82 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 82°34'50" WEST A DISTANCE OF 63.94 FEET TO A CONCRETE MONUMENT ON THE NORTHERN RIGHT OF WAY OF NORTH CAROLINA HIGHWAY 540; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE RIGHT, A RADIUS OF 4,035.00 FEET, AN ARC LENGTH OF 584.49 FEET, A CHORD BEARING OF NORTH 63°59'55" WEST, A CHORD LENGTH OF 583.98 FEET TO A POINT; THENCE A CURVE TO THE RIGHT, A RADIUS OF 4,035.00 FEET, AN ARC LENGTH OF 857.09 FEET, A CHORD BEARING OF NORTH 53°42'27" WEST, A CHORD LENGTH OF 855.48 FEET TO AN IRON PIPE; THENCE A CURVE TO THE RIGHT, A RADIUS OF 4,054.26 FEET, AN ARC LENGTH OF 326.65 FEET, A CHORD BEARING OF NORTH 45°18'10" WEST, A CHORD LENGTH OF 326.56 FEET TO AN IRON PIPE; THENCE NORTH 36°43'15" WEST A DISTANCE OF 102.76 FEET TO AN IRON PIPE; THENCE NORTH 35°20'20" WEST A DISTANCE OF 237.13 FEET TO AN IRON PIPE; THENCE NORTH 07°47'12" WEST A DISTANCE OF 131.08 FEET TO AN IRON PIPE; THENCE NORTH 00°34'29" WEST A DISTANCE OF 436.11 FEET TO AN IRON PIPE; THENCE NORTH 12°52'53" EAST A DISTANCE OF 565.14 FEET TO AN IRON PIPE; THENCE NORTH 05°57'15" EAST A DISTANCE OF 356.74 FEET TO AN IRON PIPE; THENCE NORTH 15°26'08" EAST A DISTANCE OF 134.33 FEET TO A POINT; THENCE NORTH 15°26'08" EAST A DISTANCE OF 200.01 FEET TO AN IRON PIPE; THENCE NORTH 28°28'53" EAST A DISTANCE OF 237.21 FEET TO AN IRON PIPE; THENCE NORTH 45°14'54" EAST A DISTANCE OF 75.20 FEET TO AN IRON PIPE; THENCE NORTH 42°51'55" EAST A DISTANCE OF 241.20 FEET TO AN IRON PIPE; THENCE NORTH 50°43'55" EAST A DISTANCE OF 160.95 FEET TO AN IRON PIPE ON THE SOUTHERN RIGHT OF WAY US HIGHWAY 1; THENCE WITH SAID RIGHT OF WAY NORTH 58°37'05" EAST A DISTANCE OF 364.36 FEET TO A POINT ON THE SOUTHERN LINE OF YMCA OF THE TRIANGLE; THENCE WITH SAID COMMON LINE NORTH 87°38'44" EAST A DISTANCE OF 265.82 FEET TO A POINT; THENCE NORTH 00°27'33" WEST A DISTANCE OF 149.91 FEET TO A POINT ON THE SOUTHERN RIGHT OF WAY OF SAID US HIGHWAY 1; THENCE WITH SAID RIGHT OF WAY NORTH 58°41'20" EAST A DISTANCE OF 1,668.68 FEET TO A POINT IN

THE CENTERLINE OF VERIDEA PARKWAY, THE COMMON CORNER OF TRACT 2 AS SHOWN ON BOOK OF MAPS 1978, PAGE 731; THENCE WITH SAID CENTERLINE SOUTH 34°51'52" EAST A DISTANCE OF 160.69 FEET TO A POINT; THENCE SOUTH 34°51'52" EAST A DISTANCE OF 29.87 FEET TO A POINT; THENCE WITH A CURVE TO THE RIGHT A RADIUS OF 1,153.78 FEET, AN ARC LENGTH OF 159.25 FEET, A CHORD BEARING OF SOUTH 29°56'17" EAST, A CHORD LENGTH OF 159.12 FEET TO A POINT; THENCE A CURVE TO THE RIGHT, A RADIUS OF 1,410.24 FEET, AN ARC LENGTH OF 237.39 FEET, A CHORD BEARING OF SOUTH 21°35'10" EAST, A CHORD LENGTH OF 237.11 FEET TO A POINT; THENCE A CURVE TO THE RIGHT, A RADIUS OF 1,412.80 FEET, AN ARC LENGTH OF 95.19 FEET, A CHORD BEARING OF SOUTH 15°10'37" EAST, A CHORD LENGTH OF 95.17 FEET TO A POINT, THE COMMON CORNER OF WVPRINCE PROPERTIES LLC; THENCE WITH SAID COMMON LINE NORTH 53°12'16" EAST A DISTANCE OF 324.19 FEET TO A POINT; THENCE SOUTH 05°04'58" EAST A DISTANCE OF 406.22 FEET TO A POINT; THENCE SOUTH 82°04'14" WEST A DISTANCE OF 262.30 FEET TO A POINT IN THE CENTERLINE OF VERIDEA PARKWAY; THENCE WITH SAID LINE SOUTH 04°53'25" EAST A DISTANCE OF 109.42 FEET TO A POINT; THENCE A CURVE TO THE RIGHT, A RADIUS OF 253.36 FEET, AN ARC LENGTH OF 164.05 FEET, A CHORD BEARING OF SOUTH 13°00'27" WEST, A CHORD LENGTH OF 161.20 FEET TO AN IRON PIPE ON THE EASTERN RIGHT OF WAY OF VERIDEA PARKWAY; THENCE SOUTH 53°16'50" EAST A DISTANCE OF 31.10 FEET TO AN IRON PIPE ON THE EASTERN RIGHT OF WAY OF VERIDEA PARKWAY; THENCE SOUTH 53°16'50" EAST A DISTANCE OF 60.76 FEET TO A POINT; THENCE NORTH 71°42'44" EAST A DISTANCE OF 274.98 FEET TO A POINT; THENCE NORTH 71°42'44" EAST A DISTANCE OF 170.75 FEET TO AN IRON PIPE; THENCE NORTH 61°11'36" EAST A DISTANCE OF 171.72 FEET TO AN IRON PIPE; THENCE NORTH 67°24'08" EAST A DISTANCE OF 526.30 FEET TO AN IRON PIPE ON THE WESTERN LINE OF THE TRACT SHOWN ON PLAT BOOK 1985, PAGE 64; THENCE WITH SAID COMMON LINE SOUTH 00°33'48" WEST A DISTANCE OF 1,301.27 FEET TO AN IRON PIPE; THENCE SOUTH 88°56'50" EAST A DISTANCE OF 1,524.31 FEET TO AN IRON PIPE; THENCE NORTH 42°37'27" EAST A DISTANCE OF 84.50 FEET TO A POINT; THENCE SOUTH 87°51'02" EAST A DISTANCE OF 208.48 FEET TO AN IRON PIPE; THENCE NORTH 00°58'38" EAST A DISTANCE OF 3,283.09 FEET TO AN IRON PIPE; THENCE SOUTH 89°46'05" WEST A DISTANCE OF 25.90 FEET TO A POINT, THE SOUTHEAST CORNER OF TRACT C-2, AS SHOWN ON BOOK OF MAPS 1989, PAGE 59; THENCE WITH SAID COMMON LINE NORTH 01°31'12" EAST A DISTANCE OF 572.91 FEET TO A POINT; THENCE NORTH 01°28'31" EAST A DISTANCE OF 119.73 FEET TO A POINT; THENCE NORTH 01°30'44" EAST A DISTANCE OF 41.12 FEET TO THE POINT OF BEGINNING; CONTAINING 37,222,488 SQUARE FEET OR 854.51 ACRES.

THIS INCLUDES THE RECOMBINED PARCELS SHOWN ON B.M. 2024, PG. 630 RECORDED IN THE WAKE COUNTY REGISTER OF DEEDS.

LESS AND EXCEPT THE FOLLOWING

BEING ALL OF THE JENKS, MILBY, AND POE TRACTS SHOWN ON BOOK OF MAPS 2014, PAGE 1223 OF THE WAKE COUNTY REGISTRY. MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT A POINT ON THE SOUTHERN RIGHT OF WAY OF U.S. HIGHWAY 1, SAID POINT BEING THE NORTHWEST CORNER OF TRACT I-A, AS SHOWN ON BOOK OF MAPS 2003, PAGE 398 OF THE WAKE COUNTY REGISTRY, THE POINT OF COMMENCEMENT; THENCE SOUTH 47°02'19" WEST A DISTANCE OF 6,484.14 FEET TO AN IRON PIPE, THE NORTHEAST CORNER OF THE MILBY TRACT, AS SHOWN ON BOOK OF MAPS 2014, PAGE 1223, THE POINT OF BEGINNING; THENCE WITH THE EASTERN LINE OF THE MILBY

TRACT SOUTH 02°19'40" WEST A DISTANCE OF 199.14 FEET TO A POINT, THE NORTHWEST CORNER OF THE 1.710 ACRE TRACT SHOWN ON BOOK OF MAPS 2002, PAGE 109; THENCE WITH SAID COMMON LINE SOUTH 02°19'40" WEST A DISTANCE OF 64.13 FEET TO AN IRON PIPE; THENCE SOUTH 02°13'53" WEST A DISTANCE OF 189.40 FEET TO AN IRON PIPE; THENCE SOUTH 02°17'48" WEST A DISTANCE OF 67.39 FEET TO AN IRON PIPE; THENCE SOUTH 65°19'45" WEST A DISTANCE OF 538.99 FEET TO A POINT; THENCE SOUTH 01°27'55" WEST A DISTANCE OF 148.65 FEET TO A POINT; THENCE SOUTH 77°54'05" WEST A DISTANCE OF 389.22 FEET TO AN IRON PIPE; THENCE NORTH 00°01'19" WEST A DISTANCE OF 967.73 FEET TO A POINT; THENCE NORTH 89°58'41" EAST A DISTANCE OF 616.26 FEET TO AN IRON PIPE; THENCE NORTH 89°58'41" EAST A DISTANCE OF 133.87 FEET TO AN IRON PIPE; THENCE NORTH 87°19'22" EAST A DISTANCE OF 145.34 FEET TO THE POINT OF BEGINNING; CONTAINING 668,038 SQUARE FEET OR 15.34 ACRES.

BEING A PORTION OF THE PROGRESS ENERGY, LYNA, AND REEVES TRACTS SHOWN ON BOOK OF MAPS 2007, PAGE 1132 OF THE WAKE COUNTY REGISTRY. MORE PARTICULARLY DESCRIBED AS:

BEGINNING AT AN EXISTING IRON PIPE ON THE EAST LINE OF TRACT A, AS SHOWN ON BOOK OF MAPS 1998, PAGE 782 OF THE WAKE COUNTY REGISTRY, BEING ALSO THE NORTHWEST CORNER OF TRACT 2, AS SHOWN ON BOOK OF MAPS 2016, PAGE 1428; THENCE WITH SAID TRACT A, NORTH 04°58'10" EAST A DISTANCE OF 362.56 FEET TO A POINT; THENCE SOUTH 89°45'44" WEST A DISTANCE OF 59.47 FEET TO A POINT ON THE EASTERN RIGHT OF WAY OF VERIDEA PARKWAY, AS DESCRIBED IN DEED BOOK 15539, PAGE 1885; THENCE WITH SAID RIGHT OF WAY NORTH 13°15'47" EAST A DISTANCE OF 53.04 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE LEFT, A RADIUS OF 1,700.00 FEET, AN ARC LENGTH OF 338.32 FEET, A CHORD BEARING OF NORTH 07°33'43" EAST, A CHORD LENGTH OF 337.77 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE LEFT, A RADIUS OF 1,900.00 FEET, AN ARC LENGTH OF 76.93 FEET, A CHORD BEARING OF NORTH 01°06'08" WEST, A CHORD LENGTH OF 76.92 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE LEFT, A RADIUS OF 1,900.00 FEET, AN ARC LENGTH OF 63.33 FEET, A CHORD BEARING OF NORTH 01°01'01" WEST, A CHORD LENGTH OF 63.33 FEET TO A CONCRETE MONUMENT; THENCE A CURVE TO THE LEFT, A RADIUS OF 1,900.00 FEET, AN ARC LENGTH OF 31.67 FEET, A CHORD BEARING OF NORTH 02°26'58" WEST, A CHORD LENGTH OF 31.67 FEET TO A CONCRETE MONUMENT; THENCE NORTH 02°54'23" EAST A DISTANCE OF 203.97 FEET TO A CONCRETE MONUMENT ON THE SOUTHERN RIGHT OF WAY OF NORTH CAROLINA HIGHWAY 540; THENCE WITH SAID RIGHT OF WAY NORTH 48°17'55" EAST A DISTANCE OF 64.35 FEET TO A POINT; THENCE NORTH 48°17'55" EAST A DISTANCE OF 3.48 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 76°02'09" EAST A DISTANCE OF 316.69 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 77°42'22" EAST A DISTANCE OF 224.13 FEET TO A CONCRETE MONUMENT; THENCE NORTH 74°21'52" EAST A DISTANCE OF 186.60 FEET TO A CONCRETE MONUMENT; THENCE NORTH 46°45'41" EAST A DISTANCE OF 297.04 FEET TO A CONCRETE MONUMENT; THENCE NORTH 47°49'13" EAST A DISTANCE OF 182.30 FEET TO A CONCRETE MONUMENT; THENCE NORTH 64°40'03" EAST A DISTANCE OF 179.28 FEET TO A POINT, THE NORTHWEST CORNER OF GREENWAY WASTE SOLUTIONS AS DESCRIBED IN DEED BOOK 9099, PAGE 1039; THENCE WITH SAID COMMON LINE SOUTH 06°34'16" EAST A DISTANCE OF 760.63 FEET TO AN IRON PIPE; THENCE SOUTH 79°02'49" EAST A DISTANCE OF 220.90 FEET TO A POINT; THENCE SOUTH 75°06'07" EAST A DISTANCE OF 218.69 FEET TO AN IRON PIPE; THENCE SOUTH 70°32'46" EAST A DISTANCE OF 183.78 FEET TO AN IRON PIPE; THENCE SOUTH 55°38'24" EAST A DISTANCE OF 327.19 FEET TO A POINT IN WHITE OAK CREEK; THENCE WITH SAID CREEK SOUTH 07°50'07" EAST A DISTANCE OF 31.18 FEET TO A POINT; THENCE SOUTH 24°25'22" EAST A DISTANCE OF 138.13 FEET TO A POINT, THE COMMON CORNER OF WAKE COUNTY FELTONVILLE LANDFILL, AS SHOWN ON BOOK OF MAPS 2016, PAGE 1427; THENCE WITH SAID CREEK, THE COMMON LINE, SOUTH 04°34'33" WEST A DISTANCE OF 63.94 FEET TO A POINT; THENCE SOUTH 18°23'05" WEST A DISTANCE OF 94.25 FEET TO A POINT; THENCE SOUTH 00°53'17" WEST A DISTANCE OF 65.12 FEET TO A POINT; THENCE SOUTH 00°53'17" WEST A DISTANCE OF 39.71 FEET TO A POINT; THENCE SOUTH 12°47'10" WEST A DISTANCE OF 52.16 FEET TO A POINT; THENCE SOUTH 58°49'54" WEST A DISTANCE OF 25.88 FEET TO A POINT; THENCE SOUTH 13°29'07" WEST A DISTANCE OF 65.67 FEET TO A POINT, THE NORTHEAST CORNER OF TRACT 2 AS SHOWN ON BOOK OF MAPS 2016, PAGE 1428; THENCE WITH SAID COMMON LINE NORTH 82°38'31"

WEST A DISTANCE OF 877.31 FEET TO AN IRON PIPE; THENCE NORTH 88°36'32" WEST A DISTANCE OF 1370.01 FEET TO THE POINT OF BEGINNING; CONTAINING 2,282,096 SQUARE FEET OR 52.39 ACRES.

TRACTS 8-3, 10-6, 10-7B SOUTH

BEGINNING AT A CONCRETE MONUMENT ON THE WESTERN RIGHT OF WAY OF VERIDEA PARKWAY, SAID MONUMENT BEING ON THE NORTHERN LINE OF THE TRACT SHOWN ON BOOK OF MAPS 1986, PAGE 1865, THE POINT OF BEGINNING; THENCE NORTH 71°59'15" WEST A DISTANCE OF 337.68 FEET TO AN IRON PIPE; THENCE NORTH 86°29'50" WEST A DISTANCE OF 829.07 FEET TO AN IRON PIPE, THE NORTHEAST CORNER OF TRACT 3 AS SHOWN ON BOOK OF MAPS 2022, PAGE 3; THENCE WITH SAID COMMON LINE SOUTH 87°43'51" WEST A DISTANCE OF 2,965.86 FEET TO AN IRON PIPE ON THE EASTERN LINE OF TRACT F, AS SHOWN ON BOOK OF MAPS 1974, PAGE 228; THENCE WITH SAID COMMON LINE NORTH 00°24'36" EAST A DISTANCE OF 1,161.04 FEET TO A POINT ON THE SOUTHERN LINE OF TRACT B, AS SHOWN ON BOOK OF MAPS 1979, PAGE 686; THENCE WITH SAID COMMON LINE SOUTH 78°13'36" EAST A DISTANCE OF 73.65 FEET TO A POINT; THENCE SOUTH 70°13'09" EAST A DISTANCE OF 113.59 FEET TO A POINT; THENCE SOUTH 71°57'54" EAST A DISTANCE OF 121.73 FEET TO A POINT; THENCE SOUTH 70°58'13" EAST A DISTANCE OF 114.09 FEET TO A POINT; THENCE SOUTH 72°14'11" EAST A DISTANCE OF 343.92 FEET TO A POINT; THENCE SOUTH 74°17'38" EAST A DISTANCE OF 315.81 FEET TO A POINT; THENCE SOUTH 65°13'58" EAST A DISTANCE OF 138.23 FEET TO A POINT; THENCE SOUTH 65°10'08" EAST A DISTANCE OF 10.00 FEET TO A POINT IN BIG BRANCH; THENCE WITH SAID BRANCH NORTH 19°49'58" EAST A DISTANCE OF 52.46 FEET TO A POINT; THENCE NORTH 27°34'56" EAST A DISTANCE OF 25.74 FEET TO A POINT; THENCE NORTH 62°53'48" EAST A DISTANCE OF 26.76 FEET TO A POINT; THENCE NORTH 29°01'04" WEST A DISTANCE OF 21.84 FEET TO A POINT; THENCE NORTH 05°59'14" WEST A DISTANCE OF 34.25 FEET TO A POINT; THENCE NORTH 49°53'01" EAST A DISTANCE OF 15.65 FEET TO A POINT; THENCE NORTH 35°50'22" EAST A DISTANCE OF 26.00 FEET TO A POINT; THENCE NORTH 57°56'55" WEST A DISTANCE OF 27.74 FEET TO A POINT; THENCE SOUTH 77°56'49" WEST A DISTANCE OF 70.86 FEET TO A POINT; THENCE NORTH 69°25'39" WEST A DISTANCE OF 55.42 FEET TO A POINT; THENCE NORTH 16°13'12" WEST A DISTANCE OF 54.07 FEET TO A POINT; THENCE NORTH 47°24'29" EAST A DISTANCE OF 30.81 FEET TO A POINT; THENCE SOUTH 76°52'37" EAST A DISTANCE OF 46.52 FEET TO A POINT; THENCE NORTH 23°54'47" EAST A DISTANCE OF 15.13 FEET TO A POINT; THENCE NORTH 10°53'04" EAST A DISTANCE OF 79.33 FEET TO A POINT; THENCE NORTH 70°48'08" WEST A DISTANCE OF 21.80 FEET TO A POINT; THENCE NORTH 13°57'57" WEST A DISTANCE OF 44.13 FEET TO A POINT; THENCE NORTH 54°45'55" WEST A DISTANCE OF 48.38 FEET TO A POINT; THENCE SOUTH 57°21'14" WEST A DISTANCE OF 58.90 FEET TO A POINT; THENCE SOUTH 44°33'39" WEST A DISTANCE OF 46.68 FEET TO A POINT; THENCE NORTH 46°24'21" WEST A DISTANCE OF 39.79 FEET TO A POINT; THENCE NORTH 72°29'35" WEST A DISTANCE OF 36.60 FEET TO A POINT; THENCE SOUTH 47°15'35" WEST A DISTANCE OF 18.92 FEET TO A POINT; THENCE NORTH 74°35'59" WEST A DISTANCE OF 21.22 FEET TO A POINT; THENCE NORTH 28°54'22" WEST A DISTANCE OF 20.74 FEET TO A POINT; THENCE NORTH 42°54'07" WEST A DISTANCE OF 46.75 FEET TO A POINT; THENCE NORTH 06°55'02" EAST A DISTANCE OF 26.65 FEET TO A POINT; THENCE NORTH 88°27'17" EAST A DISTANCE OF 37.67 FEET TO A POINT; THENCE NORTH 27°00'55" EAST A DISTANCE OF 19.39 FEET TO A POINT; THENCE NORTH 01°16'06" EAST A DISTANCE OF 31.60 FEET TO A POINT; THENCE NORTH 45°55'37" EAST A DISTANCE OF 50.02 FEET TO A POINT; THENCE NORTH 01°23'54" EAST A DISTANCE OF 14.01 FEET TO A POINT; THENCE NORTH 65°17'04" WEST A DISTANCE OF 42.02 FEET TO A POINT; THENCE NORTH 01°21'12" EAST A DISTANCE OF 32.19 FEET TO A POINT; THENCE NORTH 46°19'10" WEST A DISTANCE OF 51.21 FEET TO A POINT; THENCE NORTH 06°48'02" EAST A DISTANCE OF 35.97 FEET TO A POINT; THENCE NORTH 69°34'03" EAST A DISTANCE OF 41.13 FEET TO A POINT; THENCE NORTH 39°27'36" EAST A DISTANCE OF 39.13 FEET TO A POINT; THENCE NORTH 15°04'34" WEST A DISTANCE OF 20.63 FEET TO

A POINT; THENCE NORTH 51°45'25" WEST A DISTANCE OF 25.88 FEET TO A POINT; THENCE NORTH 30°03'26" EAST A DISTANCE OF 27.95 FEET TO A POINT; THENCE SOUTH 60°17'18" EAST A DISTANCE OF 30.79 FEET TO A POINT; THENCE SOUTH 36°34'38" EAST A DISTANCE OF 34.28 FEET TO A POINT; THENCE SOUTH 78°45'43" EAST A DISTANCE OF 52.43 FEET TO A POINT; THENCE NORTH 41°36'19" EAST A DISTANCE OF 15.36 FEET TO A POINT; THENCE NORTH 04°43'43" EAST A DISTANCE OF 44.44 FEET TO A POINT; THENCE NORTH 30°37'30" EAST A DISTANCE OF 51.77 FEET TO A POINT; THENCE NORTH 05°00'41" EAST A DISTANCE OF 35.48 FEET TO A POINT; THENCE SOUTH 62°04'45" WEST A DISTANCE OF 33.82 FEET TO A POINT; THENCE NORTH 44°58'03" WEST A DISTANCE OF 39.84 FEET TO A POINT; THENCE NORTH 44°37'02" EAST A DISTANCE OF 21.58 FEET TO A POINT; THENCE NORTH 53°05'19" EAST A DISTANCE OF 60.88 FEET TO A POINT; THENCE NORTH 61°15'57" WEST A DISTANCE OF 39.17 FEET TO A POINT; THENCE NORTH 50°49'25" WEST A DISTANCE OF 23.78 FEET TO A POINT; THENCE NORTH 10°03'59" WEST A DISTANCE OF 28.54 FEET TO A POINT; THENCE NORTH 38°48'29" EAST A DISTANCE OF 55.95 FEET TO A POINT; THENCE NORTH 43°08'07" WEST A DISTANCE OF 60.59 FEET TO A POINT; THENCE NORTH 42°28'11" EAST A DISTANCE OF 31.74 FEET TO A POINT; THENCE NORTH 70°54'18" WEST A DISTANCE OF 69.18 FEET TO A POINT; THENCE NORTH 86°35'18" WEST A DISTANCE OF 111.94 FEET TO A POINT; THENCE NORTH 47°58'54" WEST A DISTANCE OF 68.58 FEET TO A POINT; THENCE NORTH 30°52'49" EAST A DISTANCE OF 32.56 FEET TO A POINT; THENCE NORTH 21°24'56" WEST A DISTANCE OF 54.07 FEET TO A POINT; THENCE NORTH 55°25'47" EAST A DISTANCE OF 39.27 FEET TO A POINT; THENCE NORTH 03°25'23" WEST A DISTANCE OF 46.46 FEET TO A POINT; THENCE NORTH 31°42'04" EAST A DISTANCE OF 54.96 FEET TO A POINT; THENCE NORTH 18°30'38" EAST A DISTANCE OF 44.10 FEET TO A POINT; THENCE NORTH 01°10'29" WEST A DISTANCE OF 65.77 FEET TO A POINT; THENCE NORTH 22°17'56" WEST A DISTANCE OF 29.93 FEET TO A POINT; THENCE NORTH 19°15'09" EAST A DISTANCE OF 2.52 FEET TO A POINT ON THE SOUTH LINE OF ROBERT BEREMAN; THENCE WITH SAID COMMON LINE NORTH 87°19'40" EAST A DISTANCE OF 837.86 FEET TO A POINT ON THE SOUTHERN RIGHT OF WAY OF NORTH CAROLINA HIGHWAY 540; THENCE WITH SAID RIGHT OF WAY SOUTH 48°51'19" EAST A DISTANCE OF 616.60 FEET TO AN IRON PIPE; THENCE NORTH 44°43'56" EAST A DISTANCE OF 25.00 FEET TO AN IRON PIPE; THENCE SOUTH 50°09'33" EAST A DISTANCE OF 205.32 FEET TO AN IRON PIPE; THENCE SOUTH 39°54'37" EAST A DISTANCE OF 212.61 FEET TO AN IRON PIPE; THENCE A CURVE TO THE LEFT A RADIUS OF 4,375.00 FEET, AN ARC LENGTH OF 311.61 FEET, A CHORD BEARING OF SOUTH 45°34'54" EAST, A CHORD LENGTH OF 311.54 FEET TO AN IRON PIPE; THENCE A CURVE TO THE LEFT, A RADIUS OF 4,375.00 FEET, AN ARC LENGTH OF 1,106.45 FEET, A CHORD BEARING OF SOUTH 54°52'03" EAST, A CHORD LENGTH OF 1,103.50 FEET TO A POINT; THENCE A CURVE TO THE LEFT, A RADIUS OF 4,375.00 FEET, AN ARC LENGTH OF 456.34 FEET, A CHORD BEARING OF SOUTH 65°10'37" EAST, A CHORD LENGTH OF 456.13 FEET TO A CONCRETE MONUMENT; THENCE SOUTH 49°00'55" EAST A DISTANCE OF 133.17 FEET TO A POINT ON THE WESTERN RIGHT OF WAY OF VERIDEA PARKWAY; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE LEFT, A RADIUS OF 1,680.00 FEET, AN ARC LENGTH OF 355.38 FEET, A CHORD BEARING OF SOUTH 05°50'57" WEST, A CHORD LENGTH OF 354.72 FEET TO A POINT; THENCE WITH A CURVE TO THE LEFT A RADIUS OF 1,680.00 FEET, AN ARC LENGTH OF 205.93 FEET, A CHORD BEARING OF SOUTH 03°43'21" EAST, A CHORD LENGTH OF 205.80 FEET TO THE POINT OF BEGINNING; CONTAINING 5,629,803 SQUARE FEET OR 129.24 ACRES.

TRACT 9-3-3

COMMENCING AT A POINT ON THE SOUTHERN RIGHT OF WAY OF U.S. HIGHWAY 1, SAID POINT BEING THE NORTHWEST CORNER OF TRACT I-A, AS SHOWN ON BOOK OF MAPS 2003, PAGE 398 OF THE WAKE COUNTY REGISTRY, THE POINT OF COMMENCEMENT; THENCE SOUTH 51°39'05" EAST A DISTANCE OF 5331.68 FEET TO AN IRON PIPE ON THE WESTERN RIGHT OF WAY OF NORTH CAROLINA HIGHWAY 55, SAID PIPE BEING THE NORTHEAST CORNER OF CROWN BUILDERS AND DEVELOPERS OF NC, LLC, THE POINT OF BEGINNING; THENCE WITH SAID COMMON LINE SOUTH 89°40'44" WEST A DISTANCE OF 123.48 FEET TO AN IRON PIPE; THENCE NORTH 02°18'46" WEST A DISTANCE OF 50.01 FEET TO AN IRON PIPE ON THE SOUTH LINE OF DEXTER MONK; THENCE WITH SAID COMMON LINE NORTH 89°43'19" EAST A DISTANCE OF 123.46 FEET TO AN IRON PIPE ON THE WESTERN RIGHT OF WAY OF SAID HIGHWAY 55; THENCE WITH SAID RIGHT OF WAY, A CURVE TO THE RIGHT A RADIUS OF 5,633.75 FEET, AN ARC LENGTH OF 49.92 FEET, A CHORD BEARING OF SOUTH 02°20'20" EAST, A CHORD LENGTH OF 49.92 FEET TO THE POINT OF BEGINNING; CONTAINING 6,168 SQUARE FEET OR 0.14 ACRES.

TRACT 12

BEING A PORTION OF TRACT 8 AS SHOWN ON BOOK OF MAPS 1978, PAGE 731 OF THE WAKE COUNTY REGISTRY. MORE PARTICULARLY DESCRIBED AS:

BEGINNING AT AN IRON PIPE, THE SOUTHWEST CORNER OF TRACT 1 AS SHOWN ON BOOK OF MAPS 2015, PAGE 14 OF THE WAKE COUNTY REGISTRY; THENCE WITH SAID COMMON LINE NORTH 89°09'31" EAST A DISTANCE OF 343.45 FEET TO AN IRON PIPE ON THE NORTHERN RIGHT OF WAY OF US HIGHWAY 1; THENCE WITH SAID RIGHT OF WAY SOUTH 61°02'59" WEST A DISTANCE OF 67.94 FEET TO AN IRON PIPE; THENCE SOUTH 58°43'55" WEST A DISTANCE OF 105.62 FEET TO AN IRON PIPE; THENCE SOUTH 58°47'35" WEST A DISTANCE OF 224.31 FEET TO AN IRON PIPE, THE SOUTHEAST CORNER OF TRACT 1 AS SHOWN ON BOOK OF MAPS 2016, PAGE 344; THENCE WITH SAID COMMON LINE NORTH 00°31'47" WEST A DISTANCE OF 198.89 FEET TO THE POINT OF BEGINNING; CONTAINING 33,722 SQUARE FEET OR 0.77 ACRES.

Veridea

SITE DESIGN PATTERN BOOK

Apex, North Carolina

"INSIST ON THE RIGHT OF HUMANITY AND NATURE TO COEXIST IN A HEALTHY SUPPORTIVE, DIVERSE, AND SUSTAINABLE CONDITION"

- The Hannover Principles, Principle No. 1

ACKNOWLEDGMENTS

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Last Updated: August 2024

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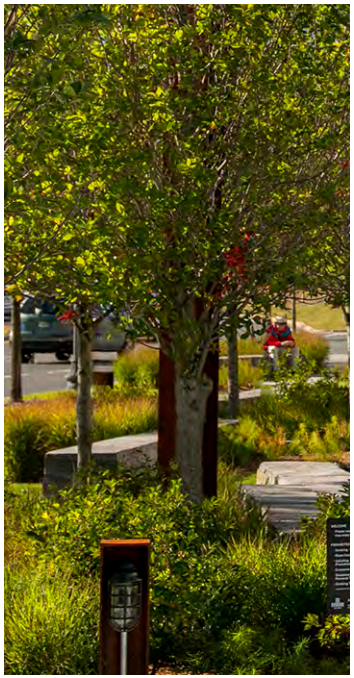
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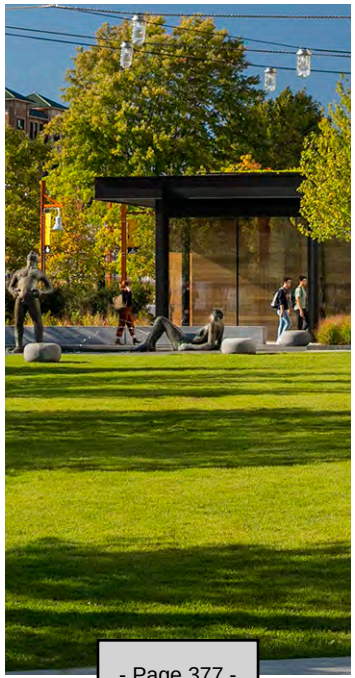
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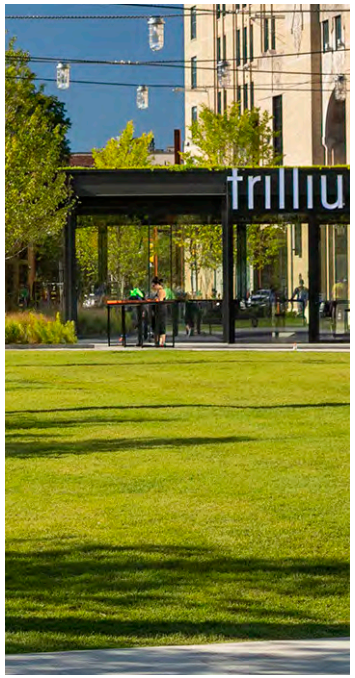




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SECTION 1

Purpose + Vision

Purpose + Application

Vision

Owner's Associations + ARC



SECTION 1.1

PURPOSE + APPLICATION

Veridea is a new, sustainable, mixed-use development in Apex, North Carolina. It is envisioned as a dynamic community where users can live, work, and play within a contemporary and ecologically-friendly context. Within the boundaries of the development there will be a variety of housing options, employment opportunities, entertainment, and recreation. This forward-thinking community will be an icon of sustainable design and construction that balances nature and development.





1.1: PURPOSE

This Pattern Book was developed by the project team for the Veridea Development, located at the conjunction of Claude E. Pope Memorial Highway (Route 1), East Williams Street (Highway 55), and Western Wake Freeway (Interstate 540) in Apex, North Carolina. The purpose of this Pattern Book is to ensure that the quality and character of development within the boundaries of Veridea is designed to a high caliber and centered around a cohesive and sustainably-focused design theme. The elements outlined within this document will provide a framework of the design intent, theme, and style of this mixed-use community. This will be used to assist property owners, developers, home builders, architects, engineers, landscape architects, planners, and other consultants in their decision-making as this project is designed and developed over time.





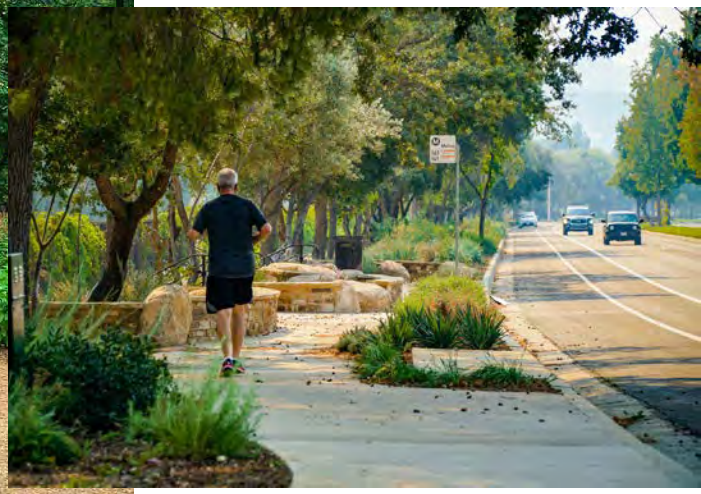
The vision of Veridea is to establish a contemporary, progressive, and healthy mixed-use community that balances innovative design with a conservation mindset.



1.1: APPLICATION

The Pattern Book is intended to be used in conjunction with the Town of Apex's Unified Development Ordinance, the Sustainable Development Plan, and the Environmental Enhancement Plan. The Pattern Book applies to the entirety of Veridea. It identifies design elements that represent a higher quality of design for Veridea than would otherwise be required. A combination of narratives and imagery are utilized to convey caliber of design, overall quality of materials, and the character and relationship of design elements. These design elements may be used and combined to create a unique and special sense of place. As a result of this Pattern Book, the actual design of Veridea will naturally vary from the Town of Apex architectural standards and will look and feel closer to the imagery found within this document.







Imagery is intended to convey high quality materials and design envisioned fo

As a part of fostering creative, unique, and innovative outcomes, the guidelines found within the Pattern Book are intended to provide a flexible framework that can respond to changing conditions as Veridea is developed over time. The pictures, illustrations, and descriptions are contextual examples of the high-quality materials and design standards envisioned for the project. Materials, architectural features, signage, hardscape, and landscape components depicted herein are not intended to be an exclusive or exhaustive list of elements to be included in design or construction. Instead, these elements are intended to convey acceptable design approaches that foster a unique sense of place through variety, high quality, and a focus on sustainably-focused development.

Unless specifically addressed in the Sustainable Development Plan and Environmental Enhancement Plan for Veridea, any materials and design-related aspects that are not addressed in this Pattern Book are subject to the requirements of the Town of Apex UDO, the Town of Apex Design and Development Manual, and other applicable laws, standards, policies, and guidelines.

SECTION 1.2

VISION

The vision of Veridea is to establish a contemporary, progressive, and healthy mixed-use community that balances innovative design with a conservation mindset. By leveraging natural features, crafting high-quality open spaces, and promoting a sustainable ethic, this development will offer community members a place to gather, work, connect, and engage with nature.







V ed to leverage a variety of natural elements to create unique and impactful placemaking.

1.2: GOALS



Veridea will accomplish this design vision by:

- Creating a diverse mix of uses within a cohesive framework
- Utilizing a variety of contemporary architectural and landscape styles to create an authentic, high-quality, and vibrant built environment that appears to have evolved over time
- Including a high level of sophistication in style and character in a manner that accentuates individual uses and spaces while weaving an overall fabric that speaks to the natural world, unique amenities, and beautiful architecture
- Leveraging natural amenities such as streams, forested areas, open spaces, trails, and parks to frame and enhance the built environment
- Providing opportunities to engage with the environment in both built and natural conditions
- Setting forth a vision for high-quality pedestrian-oriented streetscapes and trail networks that include a variety of public and civic spaces interspersed throughout the development
- Incorporating attractive and diverse hardscape and landscape materials to construct elements within the development - thoughtfully integrating the ground plane throughout well-designed community gathering areas
- Leveraging infrastructure as amenities, such as stormwater control measures, that complement the built environment while promoting ecological diversity and natural ecosystems
- Promoting a sustainable ethos by practicing techniques and methodologies that take into account issues of climate change, carbon emissions, water availability, renewable energies, and wildlife conservation







SECTION 1.3

OWNER'S ASSOCIATIONS + ARC

In order for Veridea to maintain a high caliber of design and sense of place, the development will establish a Master Association (MA). The MA will then establish the Veridea Homeowner's Association (HOA), the Veridea Commercial Owners Association (COA), the Veridea Residential Architectural Review Committee (RARC), and the Veridea Commercial Architectural Review Committee (CARC) - as required by the approved Sustainable Development Plan.





Owner's A Architectural Review Committees assist in maintaining Veridea's vision over time.

1.3: OWNER'S ASSOCIATIONS

Veridea Master Association

As required by the approved Sustainable Development Plan, there shall be one mandatory Master Association (MA) for all residential and commercial areas within Veridea. The MA shall be responsible for the execution, performance, administration and enforcement of the recorded Declaration of Covenants, Conditions and Restrictions (Declaration), including managing and maintaining the common areas and common improvements within both residential and commercial areas. The MA shall be permitted to oversee the formation and management of sub-associations within Veridea - one for residential areas (HOA) and the other for commercial areas (COA) - as detailed below.





Owner's associations are responsible for maintaining common areas and common

Veridea Homeowner's Association

There shall be one mandatory Homeowner's Association (HOA) for all of the residential areas within Veridea, subject to the MA. The Veridea HOA will be responsible for managing and maintaining the common areas and common improvements within residential areas. The association's responsibility will be outlined in the filed Declaration of Covenants, Conditions, and Restrictions (Declaration) and shall at minimum include maintenance of entrance signs, screening walls, trails, landscaping, landscape buffers, and open spaces.

Veridea Commercial Owner's Association

There shall be one mandatory Commercial Owner's Association (COA) for the commercial and non-residential areas within Veridea. The Veridea COA shall be required to manage and maintain the common areas and common improvements within commercial and non-residential areas, subject to the MA. The association's responsibility will be outlined in the filed Declaration and shall at minimum include maintenance of ground signs, screening walls, landscaping, landscape buffers, trails, and open spaces.

1.3: ARCHITECTURAL REVIEW COMMITTEE

Veridea Architectural Review Committee

There shall be a mandatory Residential Architectural Review Committee (RARC) for all the residential areas within Veridea. The RARC is responsible for the oversight and review of residential development within residential areas. This committee shall be established by the HOA as described in the filed Declaration. The purpose, administration, and responsibilities of this committee will be described in detail in the Declaration.

The RARC is responsible for the following:

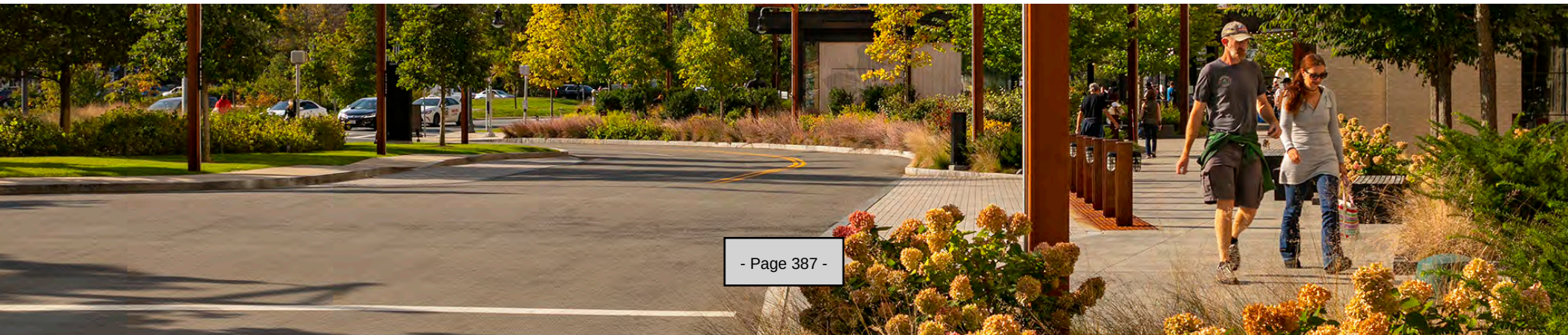
- To ensure the Pattern Book is being followed
- To encourage high-quality construction of residences
- To oversee, review, and approve the exterior elevations and building materials in a manner that is consistent with the Pattern Book
- To preserve the common community areas and features within the Residential Areas

Veridea Commercial Architectural Review Committee

There shall be a mandatory Commercial Architectural Review Committee (CARC) for all of the commercial and non-residential areas within Veridea. The CARC is responsible for the oversight and review of commercial and non-residential development within these areas. This committee shall be established by the COA as described in the filed Declaration, which outlines in detail the committee's purpose, administration, and responsibilities.

The CARC is responsible for the following:

- To ensure the Pattern Book is being followed as each commercial or non-residential development is being proposed
- To encourage the construction of high-quality improvements within commercial and non-commercial areas
- To oversee, review, and approve building elevations, building materials, and site improvements in a manner that is consistent with the Pattern Book
- To preserve the common areas and features within the commercial and non-commercial areas



SECTION 2

Sustainable Development Plan

Sustainable Development Plan

Pillars of Sustainable Thought

Application of Pillars



SECTION 2.1

SUSTAINABLE DEVELOPMENT PLAN

The Sustainable Development Plan ("SD Plan") is a document submitted by the Responsible Party and approved by the Town of Apex Town Council as part of the zoning conditions set forth for the property known as Veridea. The SD Plan establishes a flexible framework of development standards that seeks to anticipate the evolution of future technology, trends, and practices as they apply to the development of Veridea.



The SD Plan was adopted to facilitate Veridea's development in accordance with sustainable principals. The SD Plan identifies four guiding principles that are derived from ***The Hanover Principals: Design for Sustainability,*** authored by William McDonough and Michael Braungart. The guiding principles are as follows:

- Eliminate the concept of waste
- Insist on a renewable future
- Create delightful urban places
- Integrate nature throughout the community

This Pattern Book is intended to complement the SD Plan by further defining the principles of design that fulfill sustainability standards and goals. Unless specifically addressed in the Pattern Book for Veridea, any materials and design-related aspects that are not addressed shall be subject to the SD Plan, the Veridea Environmental Enhancement Plan (EEP), the Town of Apex UDO, the Town of Apex Design and Development Manual, and other applicable laws, standards, policies and guidelines. Refer to the approved map of Sustainable Development Zones on file with the Town of Apex Planning Department as needed. Development requirements, intensity, uses, and other design guidelines vary by zone and are defined in the SD Plan.

SECTION 2.2

PILLARS OF SUSTAINABLE THOUGHT

The Pillars of Sustainable Thought offer a flexible framework to define Veridea's site and program design. Unique, thoughtful, and authentic spaces can be fostered by applying a combination of programs and design elements found within each Pillar.





2.2: PILLARS OF SUSTAINABLE THOUGHT

Taking inspiration from The Hanover Principals and the Guiding Principles set forth in the Sustainable Development Plan, this Pattern Book provides guidelines to further define principles of design for Veridea, including characteristic form, massing, composition, style, method, and materials. Identified as the Pillars of Sustainable Thought, this expansion on the SD Plan's Guiding Principles can assist property owners, developers, home builders, architects, engineers, landscape architects, planners, and other consultants in their decision-making as Veridea is designed and developed over time.

There are four Pillars of Sustainable Thought:

- *Eliminate the concept of waste*
- *Insist on a renewable future*
- *Create delightful urban places*
- *Integrate nature throughout the community*

Together, the four pillars uphold Veridea's three values of sustainability: People, Planet, and Economy. Integrated together, these values are the framework of the next generation of sustainable development.



2.2: APPLICATION OF PILLARS

A suggestive list of design principals and applications associated with each Pillar of Sustainable Thought can be found in the chart below. The characteristics, features, or development approaches described are not intended to be an exclusive or exhaustive list to be implemented in every design or construction. Instead, these principals are intended to convey acceptable design approaches that promote sustainability and meet the intent of the Sustainable Development Plan and the Environmental Enhancement Plan of Veridea.

Eliminate the Concept of Waste

- Sustainable or reclaimed materials for site elements
- Site design approaches that compress programming to limit disturbed area and preserve existing open spaces
- Locally sourced materials and partnerships with local non-profits or businesses (mountain biking clubs, small scale nurseries, etc.)
- Mill lumber from trees taken down on-site
- Utilize found materials on site for placemaking through mediums such as art, nature play, or historical monumentation
- Incorporate recycled content into products and furnishings
- Use passive design elements such as natural ventilation, daylighting, and thermal mass
- Optimize efficiency in material use by minimizing offcuts, using standard sizes, and utilizing prefabricated components or modular construction

A Sustainable Future

- Native and adaptive plantings
- Solar energy and solar lighting
- Permaculture or permanent agriculture, community gardens or garden plots (orchards, fruit groves, nut trees, garden spaces for growing food)
- Pervious paving
- Green roof and green wall design
- Encourage micro-transit options (scooters, bicycles, e-bikes) with bicycle storage, repair stations, and charging
- Electrical charging stations for vehicles and bicycles

Integration of Nature

- Pollinator and wildlife gardens
- Community tree canopy goals
- Plant unprogrammed open space, such as landscape medians
- Preserve mature tree growth
- Naturalized, informal planting design in edge conditions
- Artful, organized planting design in urban spaces
- Easy access to natural areas
- Create wildlife corridors and connected natural areas
- Minimize turf and mulched areas with groundcover planting
- Protected Audubon Community
- Educational signage about environmentalism and natural systems being experienced
- Create a reforestation schedule for long-term canopy maturity
- Micro-groves of native ecosystems
- Low-impact trails, such as single track, mountain biking, and gravel with tact

Delightful Urban Places

- Strong visuals – physical and visual connections between spaces
- Create a sense of place with memorable structures and art
- Repetition of materials and planting design to create themes
- Connected open space through walkability
- Variety of scale in structures and visual openness of vistas
- Reflect the site's history through found site elements, preservation of structures, and active cultural programming
- Infrastructure becomes amenities that go beyond basic functions such as streetscapes and stormwater features
- Sense of discovery and creativity for users
- Designate an overall landscape theme
- Attractive play and recreational spaces including natural play areas

SECTION 3

Streetscapes

Streetscape Character

Streetscape Design Standards



SECTION 3.1

STREETSCAPE CHARACTER

Each development pod of Veridea is framed by major roadways. The overall intent of this section is to aid in creating a street network with variety in character through the use of dynamic hardscape materials, plantings, and furnishings. The character of each streetscape section will vary depending on site context and adjacent development programming as the landscape transitions from one development pod to another. The following streetscape character descriptions are to be applied to the major road network to provide dynamic user experience throughout the entirety of Veridea.

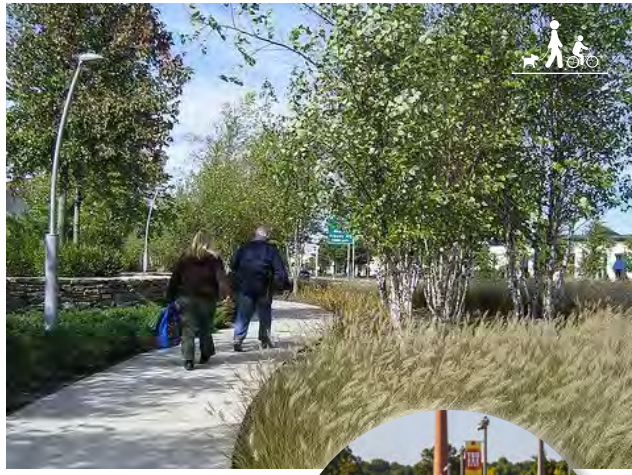


*This Section describes the design intent for hardscape and landscape treatment of major roadway streetscapes within the public right of way only. Refer to Sections 5-8 for specific design guidelines on site amenities, hardscape, and landscape guidelines for privately developed open spaces and streetscapes. Streetscapes internal to development pods do not have a designated streetscape character; however, internal streetscapes shall also follow the guidelines set forth in Sections 5-8. Streetscape character of major roadways may be applied to internal streetscapes as is fitting with adjacent development program and uses.

*All streetscape designs, layouts, dimensioning and landscape standards shall comply with the streetscape requirements set forth in the SD Plan and the Town of Apex UDO. Where enhanced hardscape and landscape is located in the public right of way, a developer's agreement regarding maintenance shall be defined between the Town of Apex and the developer/responsible party.



3.1: STREETSCAPE CHARACTER



The Contoured Streetscape

Applies to major thoroughfares with adjoining naturalized landscapes or designed open spaces

- Informal, large, meandering masses of individual focal species
- Ornamental grasses in mass planting
- Low-creeping or low-massing shrubs
- High percentage of native plants
- Defined open spaces and parks
- Mowed turf areas to define larger planting masses
- Landscape mounds as art form
- Meandering planting design in landscape medians
- Alternating street tree species
- A combination of pedestrian and roadway lighting may be used - refer to Section 8: Lighting









3.1: STREETSCAPE CHARACTER

The Residential Streetscape

Applies to major collector roads in residential area

- Low-maintenance and drought-tolerant shrub and groundcover massing
- Encourage use of planting and groundcover in lieu of mulch or turf to cover ground
- Intentional use of lawn to provide clear sight lines and define planting areas
- Open viewsheds for vehicles and pedestrians
- Use of color and landscape to define high impact areas and amenities
- Planted landscape strips and medians where possible
- Meandering pedestrian zones where possible
- Pedestrian roadway lighting may be used - refer to Section 8: Lighting
- Singular street tree species with one species spanning no more than 30 trees









3.1: STREETSCAPE CHARACTER

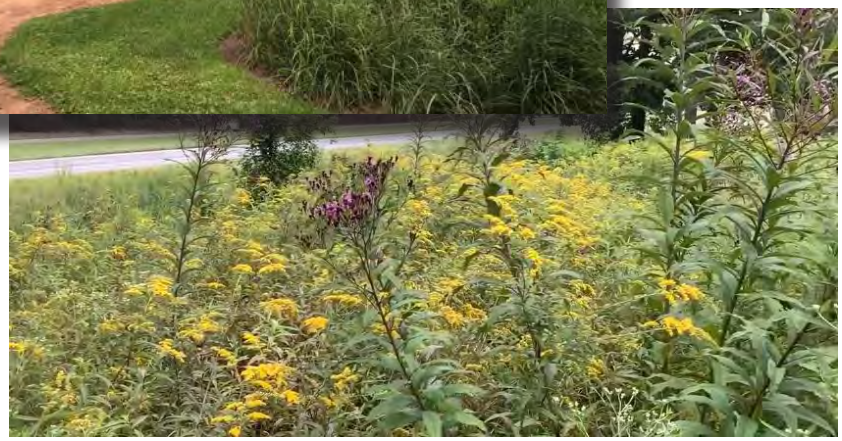


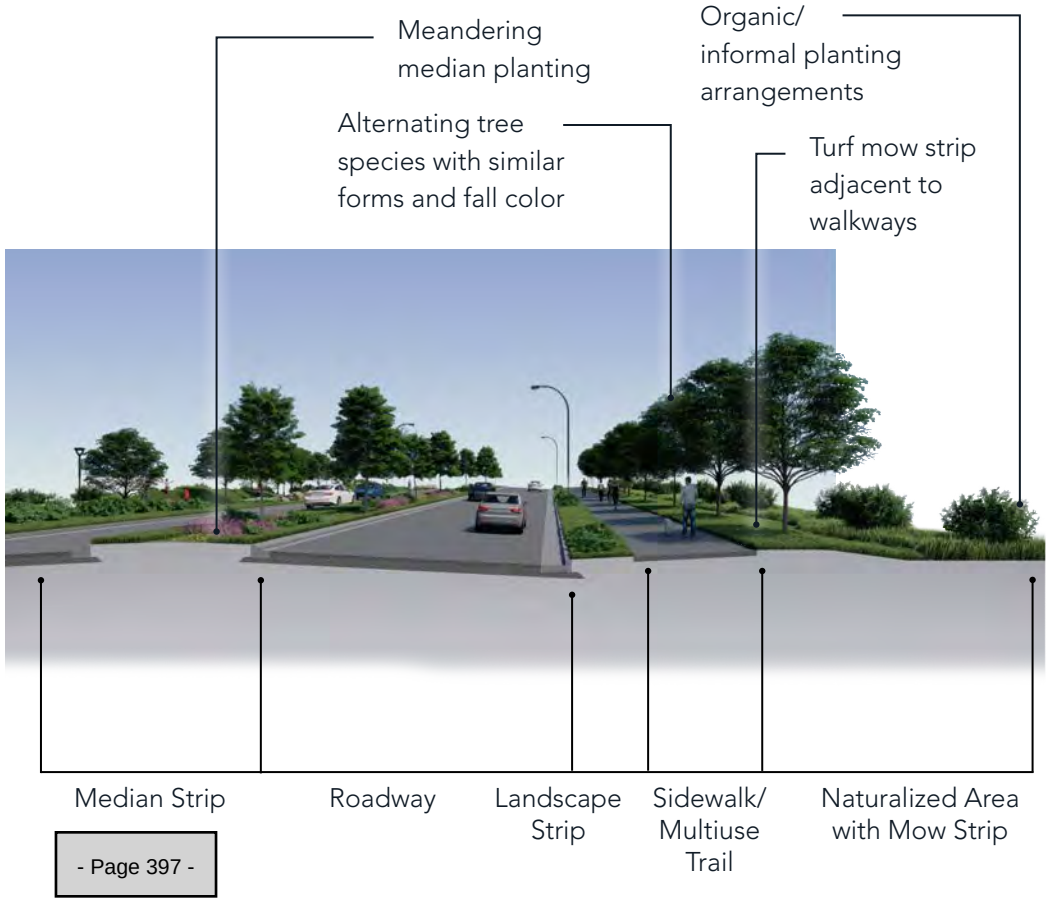
The Naturalized Landscape

Applies to major thoroughfare and collector roads in undeveloped and buffered zones

- Naturalized areas with meadow mixes and no-mow planted areas
- Organic forms
- Large planting masses that are undefined and sporadic
- Informal planting arrangements
- High percentage of native plants
- NCDOT Wildflower Program integration
- Perennial and native grass mixes
- Informal transitions between turf meadows, shrubland, and forest
- Meandering pedestrian zones permitted
- Utilize pedestrian and roadway lighting that minimizes light spillover into naturalized areas
- Alternating street tree species







3.1: STREETSCAPE CHARACTER



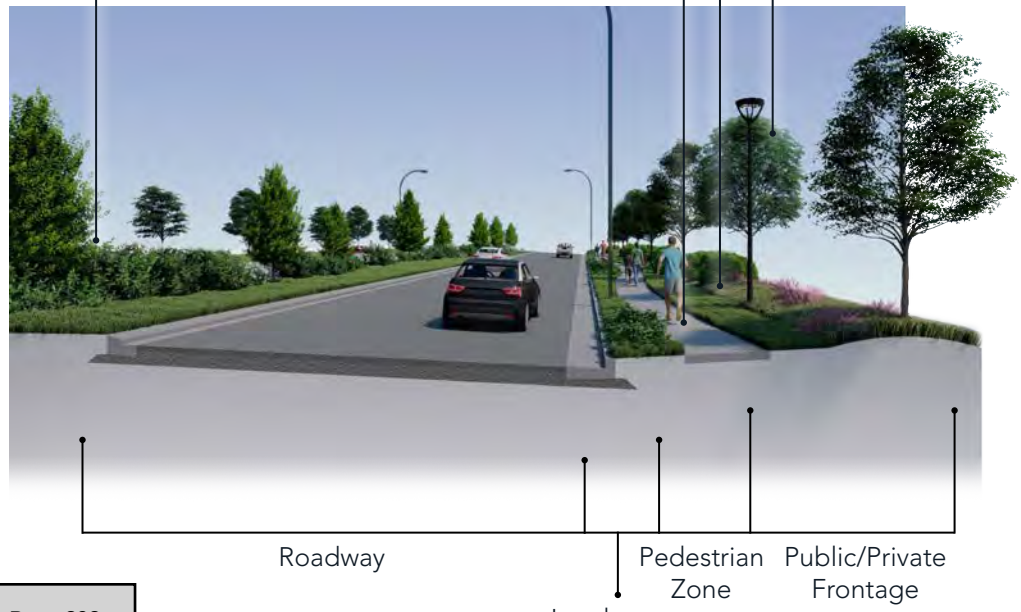
The Innovative Streetscape

Applies to major collector roads at campus- or technology-driven developments

- Large shrub and groundcover massing
- Open viewsheds for vehicles and pedestrians
- Landscape used to separate and define pedestrians from vehicles
- Intentional use of lawn
- Legibility from a wayfinding perspective
- Meandering pedestrian zones where possible
- Utilize a combination of pedestrian and roadway lighting - refer to Section 8: Lighting
- Singular street tree species with one species spanning no more than 30 trees







3.1: STREETSCAPE CHARACTER

The Urban Streetscape

Applies to major collector roads at urban and mixed-use developments

- Manicured and formal landscape arrangements with defined rhythms, colors, and textures
- Use of focal flowering plantings as a defining plant species
- Urban-tolerant species
- Contained landscape within defined planter zones with curbing and/or fencing
- Wayfinding legibility from a pedestrian and vehicular perspective
- Singular street tree species with one species spanning no more than 30 trees









SECTION 3.2

STREETSCAPE DESIGN STANDARDS

The streetscapes within Veridea are meant to be context-sensitive, inviting, and dynamic. Standards of design should be incorporated without losing sight of overall streetscape characters detailed in the previous section. Hardscape, landscape, and site furnishing selections will aid in differentiating each character zone while maintaining a thread of high-end design that runs throughout the entirety of Veridea. These standards should be viewed as a means to create seamless transitions between each streetscape character zone.







*This Section describes the intentions for material compatibility between hardscapes, landscapes, and furnishings found on major roadway streetscapes within the public right of way. Refer to Sections 5-8 for specific design guidelines on site amenities, hardscape, and landscape.

*All streetscape designs, layouts, dimensioning and landscape standards shall comply with the streetscape requirements set forth in the SD Plan and the Town of Apex UDO. Where enhanced hardscape and landscape is located in the public right of way, a developer's agreement regarding maintenance shall be defined between the Town of Apex and the developer/ responsible party.

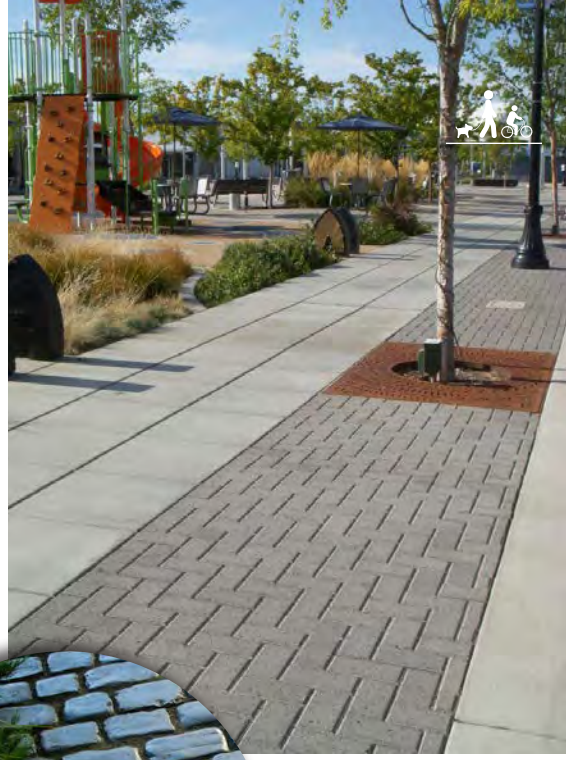
3.2: STREETSCAPE DESIGN STANDARDS

Hardscape



Hardscape materials within and adjacent to major streetscapes should include a variety of materials that create a unique visual character for Veridea. These hardscape materials should include a range of finishes that complement the streetscape character categories described in Section 3.1. Enhanced paving materials should be utilized to strategically complement standard finishes, reinforce the importance of certain pedestrian nodes, and amplify the overall design aesthetic of Veridea streetscapes.

- Applies to hardscapes within the landscape and pedestrian zones of the streetscape section only
- Standard hardscapes may include concrete and asphalt
- Enhanced hardscape may include pavers, decorative concrete, planter curbs, and seat walls
- Enhanced hardscapes within public the right-of-way must be included as part of a maintenance agreement between the Town and the developer/ responsible party

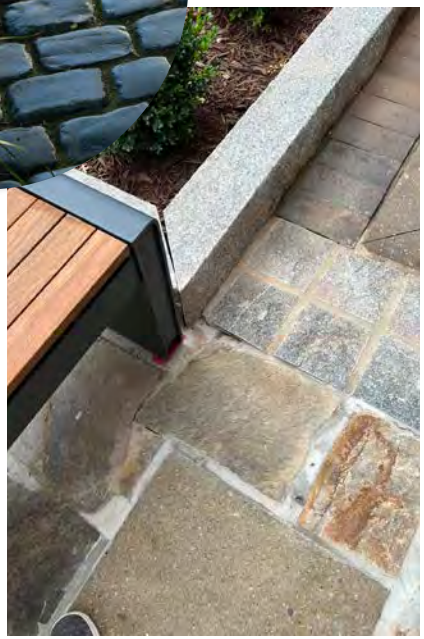




Grade-separated pedestrian crossings and decorative crosswalks may be utilized at major pedestrian intersections for safety. Crosswalks can be enhanced with high visibility thermoplastic applications that meet Town Transportation and NCDOT standards.







3.2: STREETSCAPE DESIGN STANDARDS

Furnishings

A variety of furnishings will be required within the public right-of-way for public use, safety, and comfort. These furnishings are meant to create a sense of place and provide a strong emphasis on the pedestrian experience. Furnishings are aimed at providing comfortable areas of rest, safe storage of alternative transportation modes, proper containment of waste, and visual stimulation for a wide range of users.

- Applies to furnishings within the landscape zones of the streetscape section only
- Furnishings may include trash and recycling receptacles, bicycle racks, seating, bollards, and decorative landscape features such as boulders, seat walls, and potted planters
- Furnishings within the public right-of-way that differ from the Town Standard must be included as part of a maintenance agreement between the Town and the developer/responsible party

















3.2: STREETSCAPE DESIGN STANDARDS

Landscapes

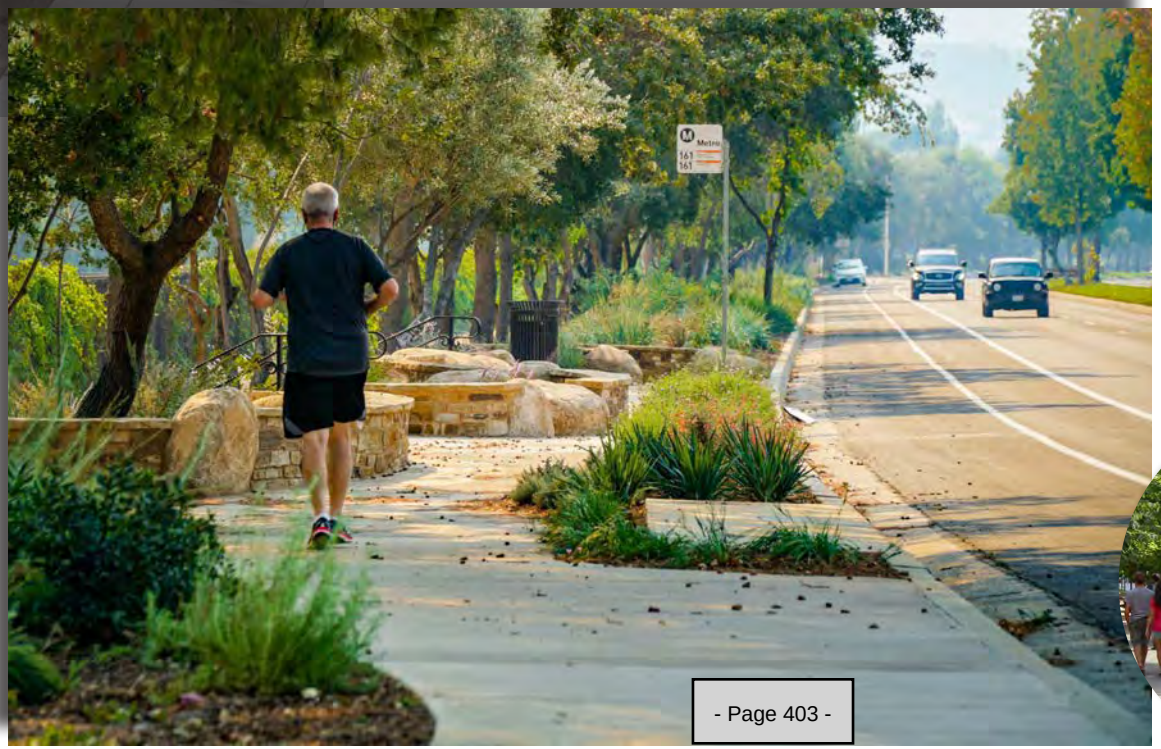
Landscaping of streetscape areas should correspond directly with the streetscape character categories described in Section 3.1. Each streetscape character category emphasizes landscaping as a critical component of successfully establishing a unique user experience while moving throughout Veridea. Dependent upon which streetscape character is being utilized, plant species will vary in form, shape, pattern, and distribution.

- Applies to landscape and planted areas within the landscape zone of the streetscape section only
- Planting within public the right-of-way that is elevated over the Town Standard must be included as part of a maintenance agreement between the Town and the developer/responsible party













SECTION 4

Open Spaces, Parks + Trails

Character + Intent

Passive Open Spaces

Active Open Spaces



SECTION 4.1

CHARACTER + INTENT

Veridea is committed to providing a variety of high-impact parks and open spaces. Passive landscapes and preserved natural ecosystems intertwined with active, programmed parks will provide a uniquely diverse landscape experience for users to explore and engage with. The nature of park spaces will range from small urban gardens to large recreational playfields to naturally preserved areas - each with individual sustainability goals.



*Each park and open space shall comply with the design standards and requirements listed in the SD Plan and the Environmental Enhancement Plan. Park facilities that are owned and operated by the Town of Apex may follow Town standards but are encouraged to comply with the Pattern Book and Veridea branding.

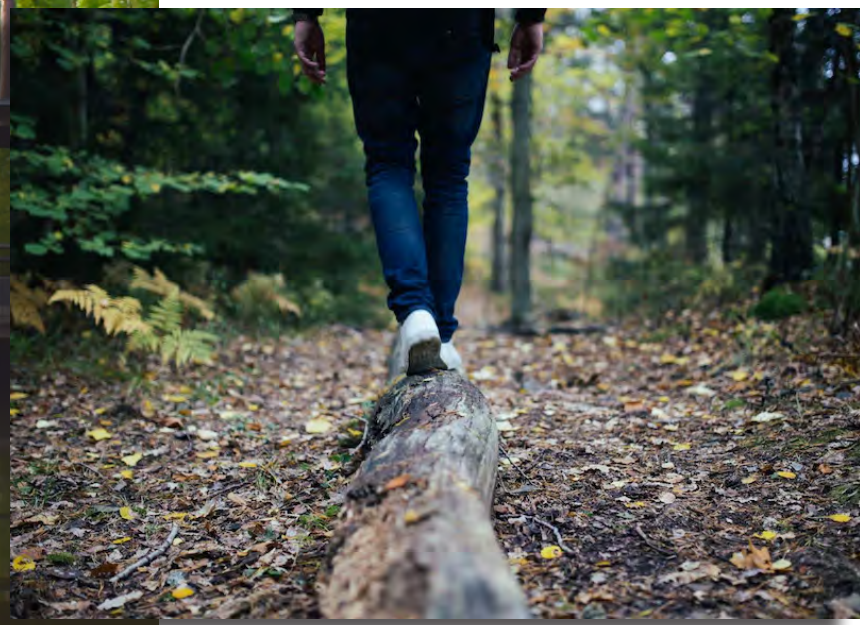


SECTION 4.2

PASSIVE OPEN SPACES

Passive open spaces emphasize a low level of urban development with a focus on preservation, conservation, and natural habitat.





4.2: PASSIVE OPEN SPACES

Perimeter Buffers + Stormwater Infrastructure

Where perimeter buffers are disturbed and required to be re-vegetated, the design approach shall include stabilizing the boundaries of the site, enhancing appearance, and encouraging native plant communities and ecosystems. A high percentage of native plant species with a variety of color, texture, and visual interest is encouraged. Planting arrangement shall be an informal design with rhythm and repetition while still providing biodiversity and legibility. All landscape buffers must meet standards set forth by the Town of Apex, the SD Plan and the Environmental Enhancement Plan.



Informal buffers with a variety of texture, color, and visual interest reinforce naturalistic lands





Infrastructure associated with stromwater, such as outfall structures and trash racks, shall be screened with vegetation and/or enhanced with decorative masonry applications.

Stormwater management is a critical component of responsible development. While stormwater control measures primarily function to collect stormwater runoff and remove sediment and pollutants, they can also become critical wildlife habitats and beautiful landscaped areas. Where possible, stormwater infrastructure should be designed with organic forms to mimic a more naturalistic condition. The use of stormwater control measures that mimic natural ecosystems, such as stormwater wetlands, is encouraged. Associated man-made infrastructure, such as concrete outfall structures, can be located in less visible areas, surrounded with taller plant material, and adorned with decorative masonry finishes. Where planting is required, provide a wide variety of plant species that are complementary in color, texture, and height. A mixture of native grasses, perennials, shrubs, and trees promotes a biodiverse ecosystem and establishes habitat.

SECTION 4.3

ACTIVE OPEN SPACES

Active open spaces encourage users to gather and engage within designed, developed, and landscaped park spaces. The emphasis is on placemaking that promotes health, happiness, and well-being.





4.3: ACTIVE OPEN SPACES



Linear Parks + Trails

Minimum requirements:

- One waste receptacle
- One bench at major trailheads

Linear parks are longer than they are wide - typically following roadways, streams, rivers, and utility corridors. Pocket parks, overlooks, gathering areas, and public art are examples of design opportunities that can be located along trails and within open spaces. Linear parks can also be dedicated to wildlife, such as a continuous pollinator corridors. Linear parks shall be designed to connect nodes of gathering and parks. Winding or meandering alignments of trails are preferred to create visual interest and provide areas of relief from vehicular traffic. Where possible, trails and greenways should follow previously disturbed areas, such as utility easements and roadways, to minimize removal or destruction of conserved landscape. Avoid steep slopes to natural conditions directly adjacent to trail systems. Where trails meander through wooded or natural conditions, adjust trail alignments as necessary to avoid impacting the critical root zones of large, mature vegetation. All greenways and trails shall be constructed to the standards set forth in the SD Plan, EEP, and Town standard.



Large, multi-use trails shall accommodate both pedestrians and bicycles. Provide changes in hardscape, texture and landscape to highlight nodes and trailheads.

Pedestrian-oriented amenities shall be located at intervals along the trail and at major trailheads. Such amenities include but are not limited to entry markers, educational signage, decorative lighting, street furnishings, outdoor fitness stations, bicycle repair stations and fountains. Art, entrance markers, monumentation, signage, waste receptacles and distance markers shall follow Veridea branding and signage standards set forth in Section 7. Pedestrian lighting may be provided and shall follow the Veridea lighting standards set forth in Section 8.



Major trailheads are defined as a main entry to a trail network that intersects with the public right-of-way.



Gathering areas and small plazas that contain a variety of seating and programming may be provided along trails at major nodes, at trailheads, and within linear parks.

4.3: ACTIVE OPEN SPACES

Stormwater Parks

Minimum requirements:

- One waste receptacle
- One seating opportunity

Stormwater and Green Stormwater Infrastructure parks can foster and enhance urban development by harmoniously combining infrastructure and recreation. Stormwater parks can be either natural or urban in nature and may contain both passive and active program elements. Stormwater facilities shall meet the requirements set forth by the North Carolina Stormwater Design Manual, but shall be designed to mimic natural environments with organic forms and a wide variety of plant species. Exploration and engagement can be encouraged with the use of walkways, gathering areas, a variety of seating options, overlooks, docks, and naturalistic planting strategies. Dedicated gathering areas shall be safely lit according to Town of Apex standards and comply with the standards set forth in Section 8. Public art or landform art can be incorporated to established nodes or points of interest and shall comply with the standards set forth in Section 7. Educational signage that highlights stormwater engineering or green stormwater infrastructure is encouraged.







Trails integrated within stormwater infrastructure are encouraged.



4.3: ACTIVE OPEN SPACES

Urban Parks

Minimum requirements:

- One waste receptacle
- One seating opportunity

Parks and open spaces located within urban development offer residents and visitors access to nature and green space. Urban parks can be a variety of sizes and are easily accessible, often nestled around and between urban structures and buildings. Urban parks should contain a variety of greenspaces, including lawn areas, planted areas, and garden spaces. Provide a variety of seating opportunities for large and small gatherings in both fixed and flexible conditions. Amenities such as fire pits, screens, and displays shall be oriented so as not to impact vehicular trafficways or produce light intrusion into buildings. Shade is a critical component and is encouraged to be provided via shelters, shade structures, vegetation or other methods.







Urban [illegible] a combination hardscape areas, open lawn, planted areas, shade and seating opportunities.

4.3: ACTIVE OPEN SPACES

Residential Parks

Residential communities shall have a network of parks and open spaces that provide a variety of amenities to residents. Parks and open spaces should embrace a variety of passive and active components, with each community providing at least one common open space for active programming. Community centers, pools, playgrounds, play fields, dog parks, and community gardens are examples of active community amenities that offer opportunities to gather, play, and engage. All parks and open spaces shall be connected by a pedestrian and multi-modal transit network, such as sidewalks and trails, to allow access to open space areas without needing a vehicle. Furnishings, such as benches and waste receptacles, are required in each residential park.

Minimum requirements:

- One waste receptacle
- One seating opportunity











Open turf lawns provide opportunities for flexible play.



Natural elements, such as boulders and logs, are sustainable elements found on-site that can be reused for play and increased landscape aesthetics.

4.3: ACTIVE OPEN SPACES



Athletic Parks

Athletic parks are open spaces that contain facilities for sports and team-oriented recreation. Community centers, multi-purpose fields, baseball or softball diamonds, sports courts or pitches, and related infrastructure where users can assemble to engage in physical exercise, participate in sports competitions, or witness sports are encouraged. The siting and orientation of sports facilities should thoughtfully consider intended use, environmental conditions such as wind and sun, and the site's topography in order to minimize large scale impacts to natural resources. Site furnishings, such as benches and waste receptacles, are required in large gathering or viewing areas. Providing easy access to water fountains, shade, and restrooms is important for users.

Minimum requirements:

- One waste receptacle
- One seating opportunity
- Access to public restrooms provided within the athletic park or at a public facility within a 0.25 mile distance from the athletic park



Tennis courts shall be in keeping with the standards of the United States Tennis Association (USTA).







Softball fields shall be in keeping with the standards of the American Softball Association (ASA) Men's Slow-Pitch Open Division.

4.3: ACTIVE OPEN SPACES

Dog Parks

Minimum requirements:

- One waste receptacle
- One bench

Dog parks offer dedicated open space areas for dogs to exercise and play in an off-leash, controlled, supervised environment. These park spaces can contain a variety of designed conditions including large unencumbered open spaces, naturalized forested areas, and/or urban spaces with artificial turf. Dog parks should be fully fenced and accessed via a double-gated entry and exit point. Additional controlled maintenance gates are also encouraged. Dog parks may have dedicated large and small dog areas or one large general use area. Avoid creating acute angles or spaces with fencing, landscape or structures. Shade structures and site furnishings, such as benches, agility furniture, pet waste stations, and fountains, are encouraged for the comfort of pets and their owners. At a minimum, dog parks shall have one bench and one pet waste station. Landscaped areas shall contain plant material that is low maintenance, durable, and does not pose health or safety risks to pets. Wherever possible, incorporate dog parks into the site's natural environment, such as gently sloped areas that contain high canopy trees with limited undergrowth.



Artificial turf and shade structures provide comfort for pets and owners.



Wooded areas provide opportunities for shade. Naturally sloped site conditions shall not exceed 5% for dog parks.







Dog parks shall have double entry gates with fencing a minimum of 5' in height Puppy panels provide additional security for smaller dogs.

SECTION 5

Landscape Standards

Introduction + Intent
Public Right-of-Way Landscaping
Private Development Landscaping



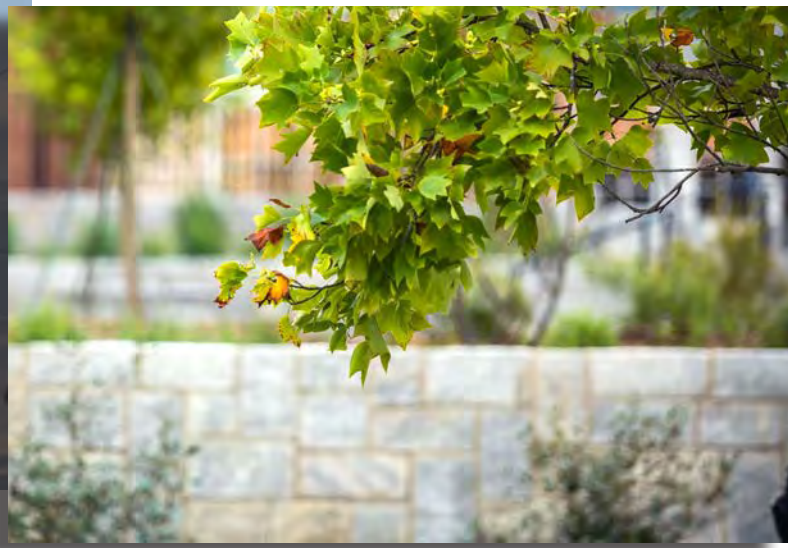
SECTION 5.1

INTRODUCTION +INTENT

Veridea is committed to providing a planting design strategy that provides unity between spaces and enhances its users' experience. Consistency, repetition, scale, and texture are important components that speak to the site's character by influencing how users interpret and navigate a landscape. This section will describe planting design guidelines for landscapes within the public right-of-way and private spaces to establish a cohesive and organic landscape approach.



*This Pattern Book does not overrule landscape standards otherwise required by the SD Plan, the Environmental Enhancement Plan, the UDO, or any other Town of Apex standard. The key elements listed within this Section are intended to complement and provide a framework for the design approach of landscaped areas. Landscape areas within the public right-of-way that are enhanced above Town Standards may be included as part of a maintenance agreement between the Town and the Responsible Party/Developer.



5.1: INTRODUCTION + INTENT

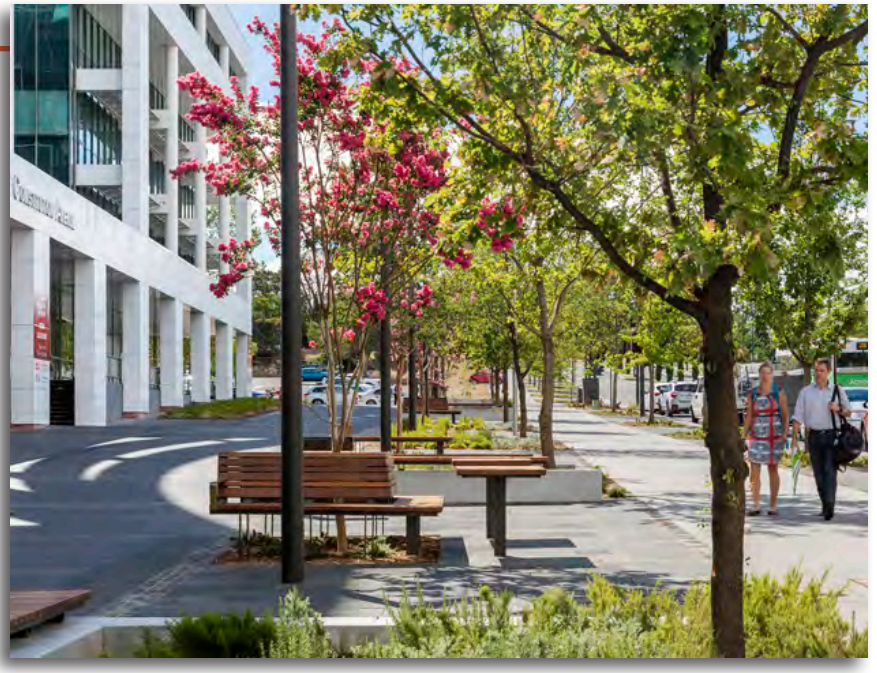
Key Elements



- Provide year-round presence and a variety of textures; seasonal color is encouraged
- For non-residential areas with a high pedestrian presence, or in areas where landscape may need additional protection, plantings to be bordered by a curb, low planter fence, and/or other type of border
- For residential areas, a combination of shrubs, grasses, groundcover, and perennials should be utilized for enhanced aesthetics
- A focal species, or highlight plant, may be utilized to define special areas or nodes
- Planter pots and living walls may be used as accents. For streetside non-residential areas, planters may be utilized as a form of foundation planting
- Native and adaptable plant species are required for assurance of landscape success. Per the Environmental Enhancement Plan and SD Plan, 80% of landscape shall be drought tolerant and consist of native or locally adaptive species. Invasive species are prohibited.
- Species diversity is encouraged, with the intention that a singular species shall account for no more than 20% of the overall plantings provided
- Minimum soil volume for trees to meet Town of Apex standards. Soil in landscape areas to be amended to provide healthy planting soils
- If turf grass is provided, it should be a locally adaptive and drought-tolerant species as defined by the Environmental Enhancement Plan to limit the need for extensive irrigation
- Practice Crime Prevention Through Environmental Design (CPTED) principles.
- Consider horticultural zones, microclimates, temperature, moisture, soils, and other physical contexts to create landscapes complementary to the southeastern United States
- The developer may enter into a maintenance agreement with the Town of Apex where right of way enhan roposed. All enhancements within the public right of way shall be privately maintained by the Veridea Owner's Associations.

5.2: PUBLIC RIGHT-OF-WAY

Street Trees

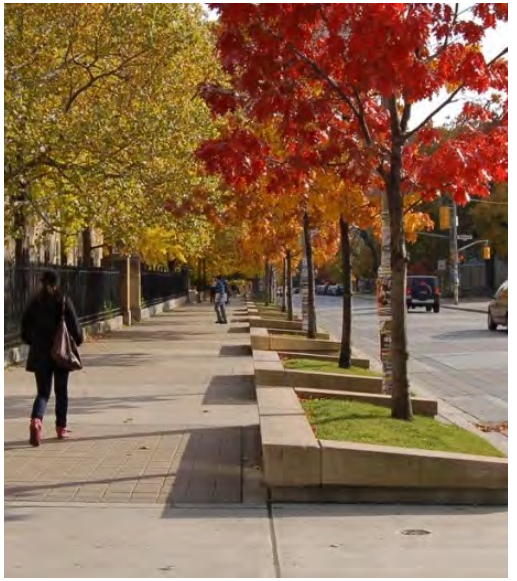


- Trees may be continuous species or alternating species, but should be grouped according to similar or complement street tree shapes as indicated in the public planting section in the SD plan. Refer to streetscape character for determining alternating or singular species and a naturalized or manicured planting arrangement.

- Street trees to be planted in site conditions that allow for healthy, sustainable growth.

- Street trees shall be located outside of the AASHTO sight distance easement. If a conflict exists or there is a desire to maintain landscape uniformity, one single stem street tree with no foliage between 2′ and 6′ in height at the time of planting and remains that way through maturity will be permitted within the AASHTO sight distance easement.

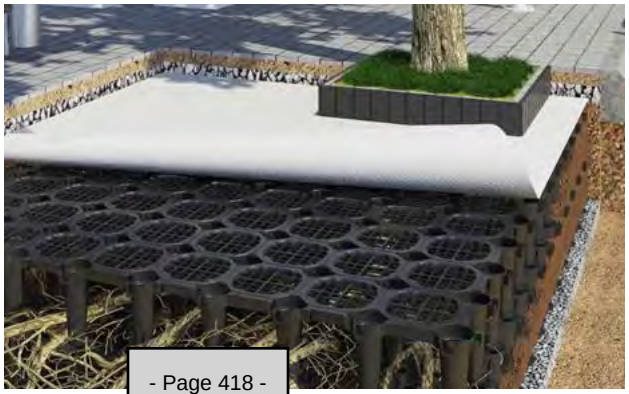
- Street trees shall maintain a minimum of 10′ of separation from utility main lines and 5′ of separation from utility service laterals and storm lines. A root barrier shall be provided where minimum separation cannot be achieved.



If alternating street tree species is proposed, species selection shall have similar or complementary forms and fall colors.



Ensure street trees can maintain healthy, sustainable growth by providing optimal growing conditions, such as increasing rootable soil volume through structural soil or soil containment systems where softscape area is limited.



Landscape Strip Planting

The landscape strip is the planted zone between the sidewalk or walking path and the curb and gutter. The landscape strip can be a combination of turf, shrubs, groundcover, ornamental grasses, perennials, and groundcovers - in addition to trees.

- In a commercial- or retail-oriented streetscapes, provide a variety of shrubs, ornamental grasses, groundcovers, and perennials - in addition to trees. Plantings may be protected with curbs, 18" height planter fencing, and/or other barriers
- Plantings shall mature to heights less than 36" to maintain visibility.
- Stepstones integrated into plantings, such as flagstone or brick pavers, may be provided where pedestrian crossing is anticipated but no pathway is provided
- Groundcover planting is encouraged in place of mulching
- Adding colorful planting to highlight important intersections, such as nodes or pedestrian crossings, is encouraged
- Turf may be utilized in residential, institutional, and campus locations. Groundcover and shrub planting is preferred in commercial and retail locations.



In commercial or retail streetscapes, utilize shrubs, grasses, groundcover, and perennials where possible.



Limit planting heights to 36" at maturity for clear visibility.





Hedgerows may be utilized where there is clear and necessary separation of vehicles and pedestrians.

Landscape Medians

- All planting shall be in compliance with NCDOT and Town of Apex design standards
- Where space allows, planting shall be in a meandering style
- A consistent open viewshed between 24" and 7' in height shall be provided for vehicular and pedestrian safety with the exception of narrow, evergreen understory trees that reach a maximum caliper size of 4"
- Drought-tolerant species capable of withstanding hot, urban conditions shall be provided. A combination of understory trees, shrubs, ornamental grasses, groundcover, perennials, and turf provides visual interest
- Provide locations for annual seasonal color at high impact intersections
- Pavers may be utilized at median endcaps, pedestrian crossings, or other areas that require a hardscape application. Pavers shall be a vehicular-rated brick style in a herringbone pattern and shall be mortared to concrete
- If reinforced turf is required, a below-grade grass reinforcement grid shall be utilized





Planting form shall meander where space allows.



nt massing for legibility.



5.3: PRIVATE DEVELOPMENT

Private Frontages

Private frontages exist where edgeyards and sideyards are provided between building and rights-of-way, such as Common Yard, Porch, Terrace/Lightwell and Forecourts - as described in the SD plan.

- Provide a variety of understory trees, shrubs, ornamental grasses, and perennials for texture and enhanced aesthetics
- Evergreen plant material should be provided - particularly around foundations - for year-round presence and interest



Where buildings occupy the boundaries of the lot, green walls and vertical vegetation provide visual interest.





Provide a variety of trees, shrubs, perennials, and ornamental grasses for enhanced aesthetics.

Where buildings occupy the boundaries of a lot, such as Stoops, Shopfronts, Gallery facades, and Arcade facades (as described in the SD plan):

- A minimum of 25% of hardscape perimeters shall be planted
- Planter pots may be utilized where foundation planting cannot be achieved with in-grade landscape area, such as commercial or storefront retail
- Green walls are a unique vertical application of landscape where distance is limited



5.3: PRIVATE DEVELOPMENT

Parking Lots

- Supplemental planting, in addition to required tree canopy planting, in landscape islands is encouraged. Ornamental grasses, low creeping shrubs, and groundcovers that mature under 36" are preferred. Species selected must be tolerant of drought and urban pollution

- Curb cuts, overflow areas, or other green stormwater infrastructure solutions may be provided to capture and treat stormwater





Capturing and treating stormwater within landscape islands is encouraged.





Capturing and treating stormwater within landscape areas is encouraged.



Coverage of landscape islands with shrubs and groundcover is preferred.

5.3: PRIVATE DEVELOPMENT

Naturalized Areas + Meadows

Meadows and naturalized areas shall be primarily located adjacent to naturally-occurring landscapes, existing riparian buffers, or along easements. If meadows are located in an urban condition, they shall be designed to facilitate education.

- Where meadows are adjacent to pedestrian zones, provide a minimum 3' wide turf border between the pedestrian area and naturalized planting area
- Shrubs, posts, signs or other identifying features shall be provided at meadow edges to clearly indicate mowed and non-mown areas
- All educational or public-facing meadows shall follow a defined maintenance schedule.
- Non-landscape features, such as boulders, bird houses, and insect houses are encouraged for additional landscape diversity



A mowed edge shall be provided between meadows and pedestrian areas.





Meadows can be utilized for education and environmental healing in campus, educational, and residential uses. Avoid meadows in commercial and urban uses.



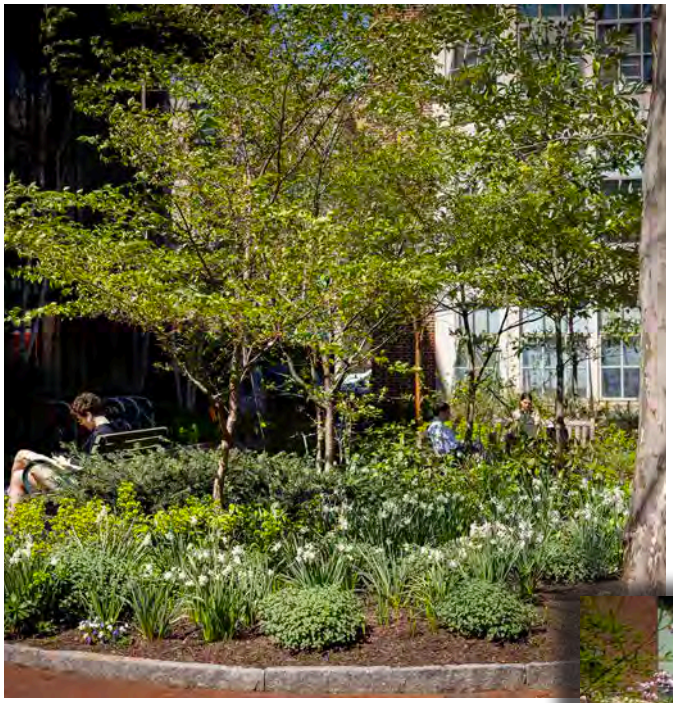
Boulders are complementary landscape elements.

5.3: PRIVATE DEVELOPMENT

Open Space, Parks + Trails

- Employ ecological planting techniques such as companion planting, analysis of microclimates, biodiversity, and native species selection
- Per the Environmental Enhancement Plan and SD Plan, 80% of landscape shall be drought-tolerant and consist of native and locally adaptive species. Invasive species are prohibited. Species diversity is encouraged with one species accounting for no more than 20% of the total number of plants.
- Provide intentional lawn space for recreation and active play. Separate play lawns from vehicular traffic with shrubs and other plantings
- Employ Crime Prevention Through Environmental Design (CPTED) principles, such as sight lines, natural access control, activity support, and maintenance
- Natural resources, such as boulders found on site and logs milled from felled trees, can enhance aesthetics in addition to providing natural play or art opportunities







Provide intentional lawn space for active recreation and play.





Boulders and other natural elements enhance landscape aesthetics and provide art opportunities.



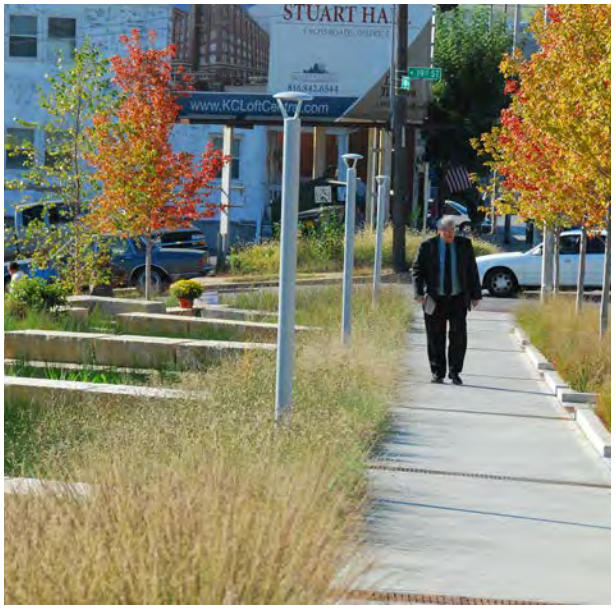
Separate intentional lawn gathering areas from vehicles with shrubs and pedestrian walking zones.

5.3: PRIVATE DEVELOPMENT

Green Stormwater Infrastructure + Pollinator Gardens

GSI is encouraged as an approach to amenitize stormwater infrastructure. Opportunities may include rain gardens, bioretention, vegetated swales or bioswales, infiltration basins, green roofs, and tree wells.

- Utilize planting species appropriate for stormwater conditions. Refer to the NCDEQ stormwater manual for species suggestions
- Where bioretention infrastructure is adjacent to pedestrian walking zones, ensure that the depth of bioretention does not exceed 24" to avoid fall concerns







GSI integrated into streetscapes and parking areas is encouraged.





Educational signage for pollinator gardens and stormwater infrastructure is encouraged.

Certified Pollinator Gardens should follow the National Wildlife Federation standards:

- Pollinator gardens shall meet the minimum requirements set by NWF
- Pollinator gardens can be certified and approved by NWF. Signage for certified gardens may be displayed

SECTION 6

Site Amenities

Introduction
Hardscapes
Site Furnishings
Program Amenities



SECTION 6.1

INTRODUCTION

The implementation of a wide range of site amenities will aid in creating an impactful user experience. Features detailed in this section, such as enhanced paving materials, seating, and shade structures, should be included in a thoughtful and purposeful manner. In order to distinguish the visual and functional aesthetic of Veridea, site furnishing selections can be unique to each designed space depending on program and intended use. However, when contemplating Veridea holistically, furnishing styles and colors should articulate a coherent design language that reverberates throughout the development.



Site amenities can be categorized as hardscapes, furnishings, architectural features, or amenity elements and may include:

- Walking surfaces
- Walls
- Seating
- Bollards
- Planters
- Fencing
- Bike Racks
- Shade structures
- Program amenities

The pictures, illustrations, and descriptions included are contextual examples of the high quality materials and design envisioned for the project. Materials, hardscape, and landscape components depicted herein are not intended to be an exclusive or exhaustive list to be required in every design or construction. Instead, these elements are intended to convey acceptable design approaches that promote variability, high quality, and sustainably-focused development in order to foster a unique sense of place.

SECTION 6.2

HARDSCAPES

A wide variety of hardscape materials should be utilized to a create an aesthetic entirely unique to Veridea. These hardscape materials should include a range of finishes that are both manufactured and naturally occurring. Enhanced paving materials should be utilized strategically to complement standard finishes, reinforce the importance of certain pedestrian nodes, and amplify the overall design aesthetic Enhanced hardscape materials should be used where necessary to facilitate a safe and legible pedestrian experience.







Key elements include:

- Multiple materials colors, textures, and patterns to create a dynamic visual experience.
- Changes in material and color can be utilized to highlight and define spaces.
- Decorative crosswalks and pedestrian corridors
- Raised curbing around planters.
- A variety of site and retaining wall types.
- Use of locally-sourced materials.
- Use of recycled or sustainably-sourced materials.
- Use of standard sizes to limit construction waste, maximize efficiency and reduce offcuts.

Locally-sourced materials can embed sites with a strong sense of place and support local eco

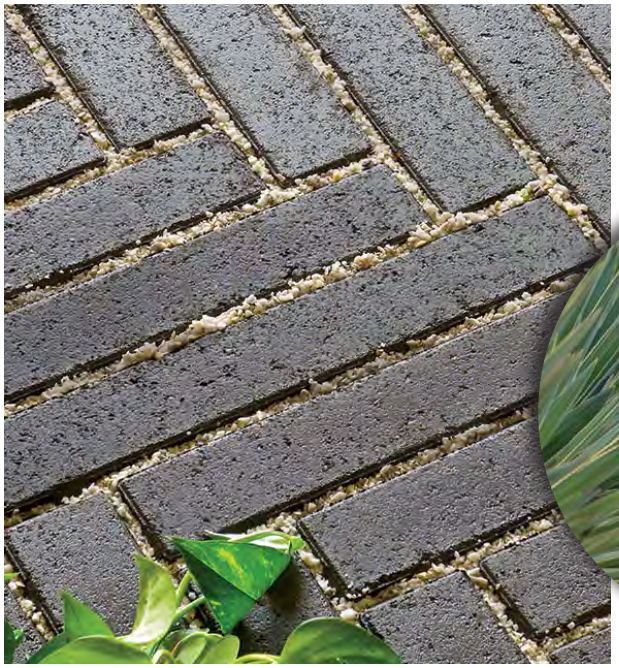
6.2: HARDSCAPES

Enhanced Paving + Surfaces

Hardscape enhancements may include, but are not limited to, the following:

- Concrete applications - decorative scoring patterns, broom finish, sandblasted, integral color, exposed aggregate, stamped
- Pavers - brick pavers, permeable pavers, precast pavers
- Natural Stone - flagstone, bluestone, granite cobble, granite screenings, stone mulch
- Tree grates - metal or iron with decorative designs
- Wood decking
- Decorative thermoplastic applications

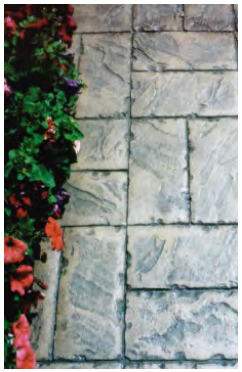




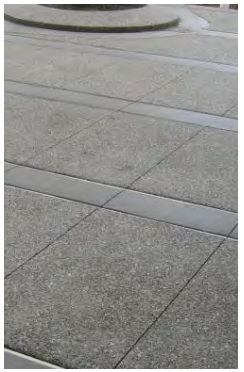
Permeable pavers in decorative herringbone pattern.



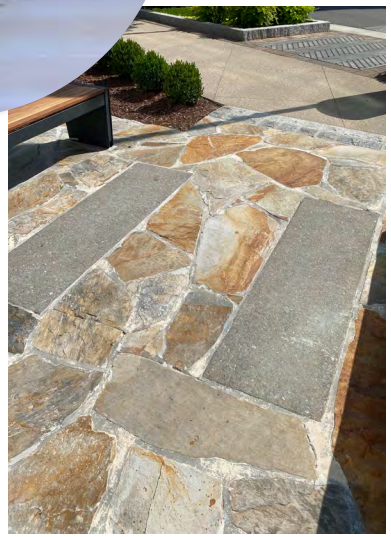
Natural wood decking allows for additional water infiltration for canopy trees. Wood shall be FSC certified.







Stamped concrete may contain integral color with a release agent for additio[n] [e]xposed aggregate may contain integral color.



Natural pavers shall be sourced locally when possible.

6.2: HARDSCAPES

Walls + Curbs

Materials may include, but are not limited to, the following:

- Curbs - cast-in-place concrete, precast concrete, granite, upturned brick
- Freestanding site walls - precast concrete, masonry, granite block
- Retaining site walls - decorative segmental block, cast-in-place with precast veneer, masonry, gabion
- Elements that retain soil or are otherwise directly exposed to soil runoff shall contain brown and tan tones to reduce visual staining effect of the natural clay soils



Segmental retaining walls with lower visibility shall contain multiple sizes of block and a provide a natural variation in color.





Site and seat walls with a stone or wood veneer provide a more naturalistic appearance.



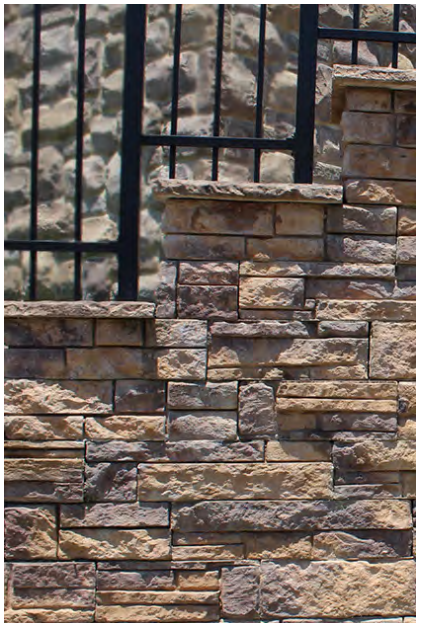
Precast concrete planter curb.



Granite seat block with split face sides and smooth top. May include mounted seating.



Granite planter c… face sides.



Segmental retaining walls with high visibility should have a decorative, natural stone appearance and coloring.



Gabion walls shall use large sized, brown and tan toned, smoothed aggregate. Use of gabion walls subject to the approval of the Town of Apex.

SECTION 6.3

SITE FURNISHINGS

Courtyards, park spaces, retail patios, linear parks, streetscapes and informal seating areas will utilize an array of site furnishings that meet Veridea's branding standard. The furnishings included in the design program will exemplify a modern and refined aesthetic while providing critical detail and functionality to the wide range of programmed spaces throughout the site. Furnishings that are locally-sourced and use recycled materials or sustainable wood products are encouraged to promote a sustainable future.



Furnishings shall have a modern aesthetic with clean lines.



Furnishings may include:

- Seating
- Bollards
- Planters
- Fencing
- Screening elements
- Waste receptacles
- Bicycle racks
- Shade structures

The guidelines provided in this section are intended to encourage aesthetic and functional consistency as Veridea is developed over time. Park facilities that are owned and operated by the Town of Apex are encouraged to follow the guidelines provided in this Section but are permitted to follow standard Town furnishings.



Swings integrated into overhead structures is a furnishing that can be enjoyed by all age groups.

Permitted colors for fixed elements:

Forms + Surfaces Standard Colors	Anova Furnishings Standard Colors
INK BLUE	CHARCOAL
DARK CORTEN	BRONZE
BLACK	BLACK
CUMARU	CEDAR

6.3: SITE FURNISHINGS

Fixed + Flexible Seating

Providing comfortable, convenient, and safe seating areas for pedestrians is crucial to the overall design of Veridea. By providing simple and refined areas of rest, users will naturally feel more comfortable exploring the many elements of the site. Seating fixtures and product selections should complement and work in harmony with the adjacent hardscape and landscape treatments. Seating that is locally-sourced and uses recycled materials or sustainable wood products is encouraged.

Fixed and flexible seating opportunities can include, but are not limited to, the following examples:

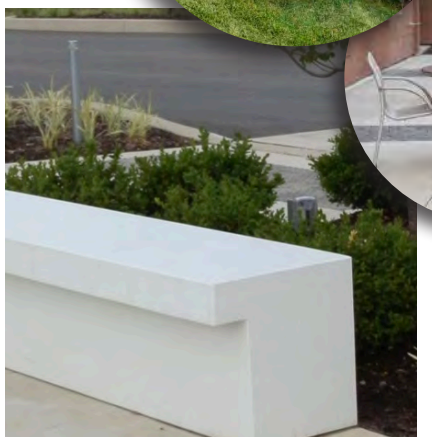
- Seat walls
- Benches
- Seating mounted to site walls
- Tree wrap or planter wrap benches
- Non-permanently mounted or movable furniture including tables and chairs, bar stools, and active seating







Seating should have modern aesthetics with clean lines. Veridea's standard bench is the Vector product family by Forms + Surfaces and the Madison Bench by Anova Furnishings. Alternative bench products that have modern aesthetics and clean lines may be approved.



Precast seat walls shall contain lipped edges for comfortable seating. Anti-skateboarding measures may be applied if appropriate.



Benches mounted to seat walls shall be backed.



Providing inclusive seating and ac space for ADA access is encouraged





Flexible seating, such as Adirondack chairs, provide opportunity for pops of color. Colors shall comply th Veridea standard branded colors.



Town owned and operated facilities are encouraged to comply with the Veridea standard but "... are permitted to utilize the Town standard site furnishing such as the Rendezvous Series bench by Anova.

6.3: SITE FURNISHINGS

Bollards, Planters, + Landscape Features

Bollards, structurally set boulders, or stand-alone planters should be utilized to create a visually appealing design aesthetic while providing safe separation between pedestrians, bicyclists, and vehicles. Bollards shall be vehicular-rated with modern aesthetics. Planters may be located strategically to facilitate vehicular and pedestrian movement. Planters should have seasonal plant selections to create year-round interest throughout the site. Boulders may be integrated into the hardscape to buffer, separate spaces, or provide an alternative vehicular barrier.



Bollards may incorporate lighting.





It is recommended that retail and restaurant dining patios are enclosed by a combination of planters and fencing.



Bollards may be wood or have a wood-like appearance. All wood shall be FSC certified.



Seating integrated within planters is encouraged.



Boulders can be used to buffer or separate spaces.

6.3: SITE FURNISHINGS

Fencing + Screening

A variety of unique and modern fencing and screening styles should be utilized to provide visual interest. Powdercoat aluminum, iron, and wood combined with masonry are complementary materials that can be sourced locally.

Planter fencing selections should be a modern style, visually appealing, provide safety for pedestrians, and prevent damage to planted areas where applicable. Planter fencing selections should include a variety of styles/products, but should work harmoniously together from a visual perspective.

Standard site fencing, such as fall protection fencing, should be commercial-grade aluminum picket or a similar design aesthetic. Panel inserts - used to make picket openings more narrow - is encouraged where an additional level of safety is required. Alternative decorative fencing, such as at dog parks, playgrounds or amenity spaces, may be split-rail fencing painted black.

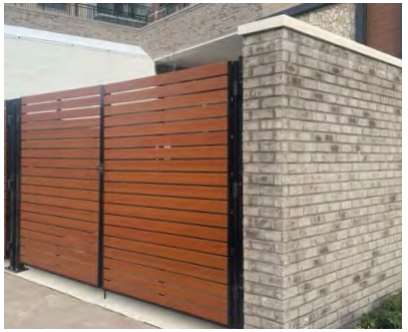




Planter fencing shall be decorative, black and a maximum of 18" in height.



Vegetated green walls shall contain integrated irrigation.



Screen walls and enclosures shall be a decorative stone or brick masonry. Gates shall be wood or aluminum.

Veridea's standard planter fence is the Proto Fence by Ironage. Alternative products that have modern aesthetics and clean lines may be approved. Metal components shall be black.

Utilitarian site elements, such as trash enclosures and mechanical equipment, should be screened with a combination of decorative screen walls, decorative gates, and landscaping. Per the SD Plan and Town UDO use of multiple materials provides visual interest.

Vegetated screens and walls are an innovative vertical application of landscape that can be used as a screening opportunity.

6.3: SITE FURNISHINGS

Waste Receptacles

Waste and recycling receptacles should be of a modern approach that is visually appealing and complementary to other furnishing selections throughout the site. Special care should be given to where and how these are located and how they function given programming and level of user activity. Waste receptacles should be conveniently located but should not present a visual, physical, or odor impediment.

A variety of waste receptacles should be provided throughout Veridea:

- Trash receptacles
- Recycling receptacles
- Pet waste receptacles
- Composting opportunities with applicable maintenance programs

Waste receptacles that include both trash and recycling containment are encouraged. Where appropriate, composting centers provide a unique and sustainable option for disposing of food waste. Large scale waste containers, such as dumpsters, shall be fully screened with masonry walls, gates, and landscape per the Town of Apex UDO and the SD Plan.





Town owned and operated facilities are encouraged to comply with the Veridea standard but are permitted to utilize the Town standard site furnishing such as the Rendezvous Series bench by Anova.

Waste receptacles shall contain both trash and recycling options and include a rain bonnet. Veridea's standard waste receptacle are the Tonyo family by Forms + Surfaces and the Madison series with visor hood by Anova Furnishings. Alternative products that have modern aesthetics and clean lines may be approved.





Pet waste stations shall contain trash receptacle and shall be in the color black.



Compost locations shall be located in communal areas or dedicated community garden spaces. Avoid compost stations near to residential homes.

6.3: SITE FURNISHINGS

Bicycle Racks

Bicycle racks are essential to all pedestrian and multi-modal focused developments. Bicycle rack selections should complement other furnishing selections and should be placed as needed throughout the site. Areas of heavy pedestrian activity, park and open space areas, pedestrian nodes, residential communities, and commercial nodes should be equipped with adequate bicycle parking to facilitate and encourage bicycle use throughout Veridea. Trailheads to large greenways dedicated to both pedestrians and cyclists are prime locations for bicycle stations that include repair stations with both short- and long-term bicycle storage.



Bike racks may be colored to match Veridea branding colors.







Bike racks shall have modern, aesthetic designs. Veridea's standard bicycle racks are the Bay City Bike Rack by Forms + Surfaces and the Tandem Bike Rack by Anova Furnishings Alternative products that have modern aesthetics and clean lines may be approved.





Bicycle storage lockers shall have modern aesthetic.

6.3: SITE FURNISHINGS

Shade Structures

A variety of shade-creating features should be implemented as needed throughout Veridea in order to facilitate a comfortable environment for various programmed spaces. Formal structures can be utilized where practicable, while less formal shade sails and umbrellas can be utilized in tandem with flexible tables and chairs to create more a desirable user experience. The design, shape, and materials of shade structures should be complementary to adjacent structures and may include metal, aluminum, or wood.









Shade structures may be trellises with open slats or fully roofs. Bioclimactic ceilings, ceiling fans, convenience outlets, and comfortable furnishings all contribute to the structure's aesthetic and utility.



Shelters provide a space for large-scale community gathering. Where s opportunity to be used as a stage - upfit with convenience outlets. Speakers, audio/visua d integrated pull-down projector screens provide additional opportunities for use.



SECTION 6.4

PROGRAM AMENITIES

Additional miscellaneous components of site design can be included to enhance the overall aesthetic of Veridea. Products like fire pits and outdoor games will enrich the user experience through both active and passive means of interaction and community-building. Additionally, retail patio spaces with seating, planters, and enhanced hardscape elements will aid in creating both functionality and memorable experiences throughout Veridea. These program amenities shall be limited to private property and not included as part of the public right-of-way.

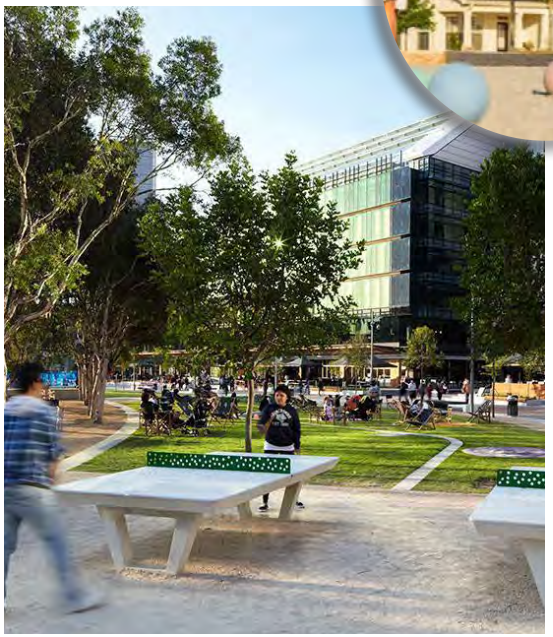


Programmed amenity elements may include:

- Fire pits, fire tables
- Outdoor televisions
- Retail patio spaces with seating, planters, and dedicated hardscapes
- Outdoor games such as chess tables, cornhole, ping pong, and shuffleboard
- Water bottle fillers
- Sculptures and public art



Dedicated outdoor dining spaces shall be enclosed with raised planters and fencing where possible.



Gaming tables shall be surface-mounted. Storage for gaming components is encouraged.



Sculptures, artwork, and murals are opportunities for placemaking. Geocaching, "find the sculpture," or other scavenger hunt games are encouraged throughout communities.



Where connected to natural gas or propane, fire pits shall contain timers and emergency shut-offs.



Outdoor televisions shall be located a minimum of 25' from the public right-of-way and screens shall be oriented away from vehicular traffic

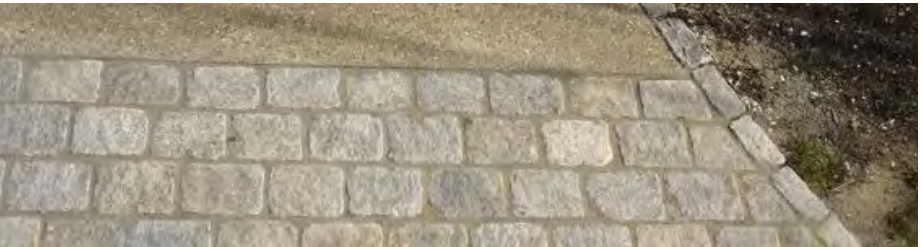
Bus Stops

Bus stops shall be provided throughout Veridea to connect residents and users to various locations within Veridea and also to adjoining communities and destinations. Bus stops and associated furnishings shall be installed by the developer prior to the 2,000th dwelling building permit. In the event the Town has not approved funding for a bus route to serve Veridea by the 2,000th dwelling building permit, the developer may provide a fee-in-leiu to the Town for the Town standard bus stop at that time.

Each bus stop shall include the following:

- A bus stop pad with a minimum size of 10'x30'
- Bus stop pads shall be a standard broom finish concrete bordered with a granite cobble or brick paver band
- One waste receptacle
- One bench or seating opportunity
- 2 bicycle racks
- 1 shade structure with a roof and sheltered on a minimum of 1 side

Seating opportunities may be integrated into the shade structure or installed as surface mounted fixtures. Furnishings provided are required to match the Veridea standard, see pages 54, 57, and 58. Furnishings within the public right of way or public transit easement that differ from the Town Standard must be included as part of a maintenance agreement between the Town and the Responsible Party.





The base shade structure is the 10' Signa Sunset-60 by Tolar Manufacturing. Features include a welded roof structure, rear and end wall panels, and integrated LED solar security lighting

Public art, provided by either the Town or the Responsible Party, may be incorporated into the bus stop or within 15' of the bus stop. Art may include, but is not limited to, three-dimensional art, sidewalk art or decorative shelter wraps.

Supplemental lighting in the form of pedestrian-scale area lights, bollard lights, or path lights may be provided. Lighting must meet standards set forth in Section 8.





COBALT BLUE BLACK

The standard colors are Cobalt Blue for the framework and Black for the roof.





Public art may be provided at bus stops as an opportunity to engage the public. All public art designs must be approved by the Town and the Responsible Party prior to installation.

SECTION 7

Signage

Introduction
Master Signage Plan
Modifications



SECTION 7.1

INTRODUCTION

Veridea aims to maintain a unique brand identity while staying compliant with local regulations and jurisdictional guidelines. This section of the Pattern Book identifies modifications to the Town of Apex signage requirements as outlined in Chapter 8 of the Town's UDO, carefully tailored to strike the perfect balance between adherence to Town requirements and commitment to exceptional design.





7.1: INTRODUCTION

Key Goals



Veridea's key goals for site signage include:

- ***Brand Integration:*** We propose incorporating the Veridea brand's unique visual elements into the signage. By infusing the brand colors, typography, and logo, Veridea will have a consistent and memorable brand experience, bolstering recognition and leaving a lasting impression.
- ***Signage Flexibility:*** Recognizing that different sites and locations may have varying requirements, introducing a degree of flexibility into signage design allows for adaptations that complement specific architectural nuances of each site, ensuring a harmonious blend with the surroundings while adhering to the essential guidelines.
- ***Sustainability Initiatives:*** Veridea advocates for sustainability initiatives into signage designs, aligning with commitment to eco-conscious practices. By utilizing environmentally friendly materials and energy-efficiency lighting options, Veridea will contribute positively to the community and bolster the development's reputation as an environmentally responsible entity.
- ***Digital and Interactive Elements:*** Incorporating digital and interactive elements into Veridea's site signage can enhance engagement and elevate the overall user experience. Introducing touch-screen displays or QR codes for more information can offer visitors valuable insights and foster a stronger connection to the site.
- ***Universal Accessibility:*** To ensure inclusivity, incorporating features that enhance accessibility for all individuals is encouraged. This may involve integrating Braille, clear pictograms, and ensuring appropriate font sizes to facilitate readability for those with visual impairments.
- ***Artistic Expression:*** The integration of artistic expression is encouraged. By collaborating with local artists or incorporating unique architecture features, signage can be captivating and culturally significant.
- ***Safety Considerations:*** Signage modifications will prioritize clear visibility, optimal placement for wayfinding and legible instructions to ensure the well-being of all visitors.

SECTION 7.2

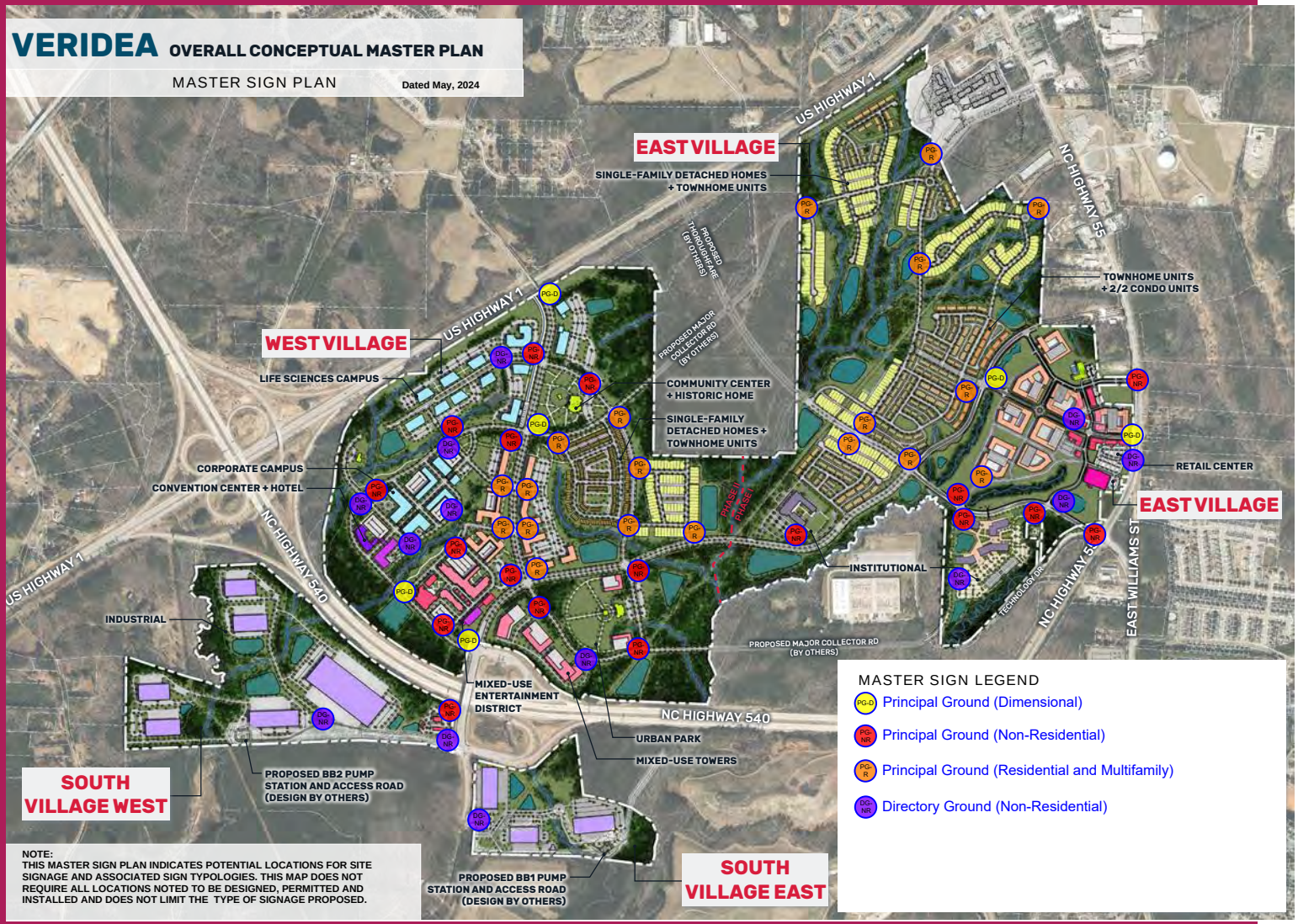
MASTER SIGNAGE PLAN

The Master Sign Plan is intended to provide a comprehensive and strategic blueprint for the effective and cohesive implementation of ground monumentation signage within Veridea. It serves as a guiding document that outlines the overall vision, design guidelines, and specifications for all signage elements to ensure consistency, brand identity, and functional clarity.

The Master Sign Plan identifies ground signage only. Additional signage, such as building-mounted signage traffic control devices, digital directories and trail markers, can be further defined on the project level.

Standards for other types of signs, such as wall and building signs, are further defined in this Section. Refer to Sections 7.2 and 7.3 for definitions, example imagery and allowable modifications.

This map indicates signage opportunities as determined at the time of this publication and is for reference only.



7.2: MASTER SIGNAGE PLAN

Principal Ground (Dimensional)

- A sign type specific to Veridea and is not a standard Town of Apex sign typology.
- Defined as a sign supported permanently upon the ground by a continuous base or two or more support features, not attached to any building, that includes a three-dimensional or artistic element.
- Intended to be visible and experienced by both vehicles and pedestrians as an artistic approach to placemaking and signage.
- Signage may be integrated into the three-dimensional element or adjacent to, but no further than 10 feet from, the three-dimensional element.



Lighting may be incorporated. See Section 08.



Signage may be integrated or adjacent to the dimensional art element







Use of structure and material selection to mimic natural landscapes and forms

7.2: MASTER SIGNAGE PLAN

Principal Ground (Non-residential, residential, multifamily)

- Per the Town UDO Definition: A sign supported permanently upon the ground by a continuous base or two (2) or more supported posts at the outside edge, not attached to any building.
- Applies to non-residential, residential and multifamily uses.







Mounted to retaining wall



Use of mulitple levels and layers





Use of natural materials such as stone and wood



Freestanding letters

7.2: MASTER SIGNAGE PLAN

Directory Ground (Non-Residential, Multifamily)

- Per the Town UDO Definition: A ground sign with a continuous base for a building or development that is intended to support wayfinding.
- Applies to non-residential and multifamily uses.

If digital signage is provided, it shall meet the following:

- Digital signage cannot face the public right of way.
- The display area of the sign shall remain static for at least 30 seconds unless a person is actively using any interactive features of the display area.
- Digital signs shall be equipped with automatic dimming technology that adjusts the sign's brightness in direct correlation with natural ambient light conditions.
- The brightness shall not exceed six (6) footcandles from dusk to dawn when measured one (1) foot from the center of the display area.







Use of natural materials and layers



Utilization of height for visibility





Integration of art

7.2: MASTER SIGNAGE PLAN

Wall Sign

- Per the Town UDO Definition: A sign attached parallel to a wall, professionally painted on the wall surface or erected and confined within the limits of an outside wall of any building or structure, which is supported by such wall or building.
- Applies to non-residential uses.



Projection from building face



Back lit box lettering





Side mounted to building wall

Painted wall mural signage

SECTION 7.3

MODIFICATIONS: PERMANENT SIGNS

Sign Type (Permanent)	Definition (Abbreviated definition provided, refer to Town of Apex UDO for full definition and requirements.)	Modification Request (If no modification provided, follow the Town of Apex UDO)
Awning	A material such as fabric, metal, flexible plastic, or vinyl that is supported by or attached to a frame and that extends from the exterior wall of a building without ground-mounted support	No modifications.
Home Occupation	Advertising home occupations permitted only where a home occupation has been approved	No modifications.
Building Marker	A plaque, plate or seal placed on a building to signify origin	Quantity - Maximum 1 per building facade, not to exceed 2 per building Sign Area - Maximum 4 square feet
Directory (Building)	A wall sign mounted to a building for the purpose of wayfinding or navigation.	Quantity - 1 per building entrance, not to exceed 3 per building Sign area - Maximum 6 square feet Material - Digital permitted. Refer to digital standards on page 68.
Directory (Ground) - Non-residential	A ground sign with a continuous base less than two (2) feet in height for the purpose of wayfinding, navigation or directional information.	Maximum height - 8 feet Maximum base height - 4 feet Maximum sign area - 10 square feet Material - Digital permitted. Refer to digital standards on page 68.
Directory (Ground) -Residential (multifamily)	A ground sign with a continuous base less than two (2) feet in height for the purpose of wayfinding, navigation or directional information.	Maximum height - 6 feet Maximum base height - 4 feet Maximum sign area - 10 square feet Material - Digital permitted. Refer to digital standards on page 68.
Flags	A fabric, usually rectangular or triangular in shape, designed to be flown from a flag pole	No modifications.
Gasoline Sales	A service station sign advertising fuel prices in accordance with North Carolina General Statutes	No modifications.
Governmental	A temporary or permanent sign erected and maintained by or required by the city, county, state or federal government	No modifications.
Health/Hospital	Permanent signs erected and maintained by an Ambulatory Healthcare Facility with Emergency Department or a Hospital	No modifications.
Incidental	A sign, generally informational, that is directory as to the use of the subject property on which it is located.	No modifications.
Marquee	A theater wall sign designed to have changeable copy	Digital theatre marquee signs permitted. A singular image must be static for a minimum of 30 seconds. Digital cannot face the public right of way.
Menu Board	An accessory sign providing associated with a drive-through window or walk-up window	No modifications.

This table indicates signage typologies identified in the Town of Apex UDO and associated modifications allowed within the limits of Veridea. The Town of Apex UDO shall apply to any standard or sign typology not listed. Any revisions to modifications, up to a 10% deviation from listed, must be approved by the Planning Director. Any re[illegible]cations that exceed a 10% deviation are subject to a revision to the Pattern Book and approval by Town Council

Signage less than 1 square foot located on permanent site elements other than buildings is exempt from sign standards.

SECTION 7.3

MODIFICATIONS: PERMANENT SIGNS

Sign Type (Permanent)	**Definition (Abbreviated definition provided, refer to Town of Apex UDO for full definition and requirements.)**	**Modification Request (If no modification provided, follow the Town of Apex UDO)**
Parapet Building Sign	A sign extending above the parapet or placed on a roof surface	Permitted only within non-residential districts of Veridea. Quantity - 1 per commercial district Maximum height - 15 feet Sign area - Maximum 80 square feet
Principal Ground (Dimensional) *Non-standard sign type*	A sign supported permanently upon the ground by a continuous base or two or more support features, not attached to any building, that includes a three-dimensional or artistic element.	Permitted only within non-residential districts of Veridea. Quantity - 1 per major full service vehicular intersection Maximum height - 15 feet Maximum sign area - 50 square feet Three dimension or artistic element excluded from sign area calculation. Not permitted within landscape medians. Must be located within 30 feet of the public right of way.
Principal Ground (Non-residential)	A sign supported permanently upon the ground by a continuous base or two (2) or more support posts at the outside edge, not attached to any building	Quantity - 2 permitted at each full service vehicular entrance Height - maximum 8 feet on major collector or thoroughfare roads; maximum 6 feet on local streets Sign area - maximum 50 square feet on major collector or thoroughfare roads; maximum 30 square feet on local streets May be located on a retaining wall that does not exceed 10 feet in height
Principal Ground (Residential and Multifamily)	A sign supported permanently upon the ground by a continuous base or two (2) or more support posts at the outside edge, not attached to any building	Quantity - 2 permitted at each full service vehicular entrance Height - maximum 8 feet on major collector or thoroughfare roads; maximum 6 feet on local streets Sign area - maximum 50 square feet on major collector or thoroughfare roads; 30 square feet on local streets May be located on a retaining wall that does not exceed 10 feet in height
Projecting Sign	A sign affixed to a building or wall in such a manner that its leading edge extends more than 12 inches beyond the surface of said building or wall.	No modifications.
Suspended	A sign that is suspended from the underside of a horizontal plane surface and is supported by such surface	No modifications.
Wall	A sign attached parallel to a wall, professionally painted on the wall surface or erected and confined within the limits of an outside wall of any building or structure, which is supported by such wall or building	No modifications.
Interior Sign	A ground or sign located adjacent to parking spaces that is directory as to the use of the parking area.	No modifications.

^ This table indicates signage typologies identified in the Town of Apex UDO and associated modifications allowed within the limits of Veridea. The Town of Apex UDO shall apply to any standard or sign typology not listed. Any revisions to modifications, up to a 10% deviation from listed, must be approved by the Planning Director. Any re[illegible]cations that exceed a 10% deviation are subject to a revision to the Pattern Book and approval by Town Council

^ Signage less than 1 square foot located on permanent site elements other than buildings is exempt from sign standards.

SECTION 7.3

MODIFICATIONS: TEMPORARY SIGNS

Sign Type (Temporary)	Definition (Abbreviated definition provided, refer to Town of Apex UDO for full definition and requirements.)	Modification Request (If no modification provided, follow the Town of Apex UDO)
On-premise, non-commercial temporary signs	A temporary sign with non-commercial messaging that is not associated with an event not located on residential property	No modifications.
Banners *Non standard sign type*	A lightweight sign that is temporarily installed on a streetlight in the public right-of-way for decorative or informational purposes	Quantity - 1 per streetlight pole Size - Maximum 24 inches wide by 60 inches height Maximum Sign Area - 10 square feet Changeable when desired and allowed year-round.
Construction Sites	An on-premise, freestanding temporary sign erected during the construction of a development project	No modifications.
Event (Commercial)	Temporary on-premise signs erected during commercial events	No modifications.
Event (Non-commercial)	Temporary on-premise signs erected during non-commercial events	No modifications.
Sandwich Board Sign	Consisting of two panels joined together at the top and configured into the shade of an inverted "V" so that the bottom of the sign rests upon the ground	No modifications.
Seasonal Outdoor Sales	Outdoor temporary signs not located on a farm permitted with a temporary use permit allowing seasonal outdoor sales	No modifications.
Window	Any sign that is placed on the outside or inside of a window or door and is visible from the exterior	No modifications.

- This table indicates signage typologies identified in the Town of Apex UDO and associated modifications allowed within the limits of Veridea. The Town of Apex UDO shall apply to any standard or sign typology not listed. Any revisions to modifications, up to a 10% deviation from listed, must be approved by the Planning Director. Any revisions to modifications that exceed a 10% deviation are subject to a revision to the Pattern Book and approval by Town Council.
- Signage less than 1 square foot located on permanent site elements other than buildings is exempt from sign standards.

SECTION 8

Lighting

Introduction
Site Lighting



SECTION 8.1

INTRODUCTION

Street and landscape lighting is an important component for not only safety but also aids in orientation, highlights the identity of an area, and creates a sense of drama. Veridea is committed to providing a site lighting strategy that is complementary to each street's character and creates a delightful sense of place during evening hours.



Site lighting shall comply with the following:

- Incorporate the latest energy-efficiency technology for directing light, reducing glare and limiting light pollution.
- Street fixture shall be consistent for entire roadway lengths.
- This Pattern Book does not overrule lighting standards otherwise required by the Town of Apex UDO, the SD Plan or the Environmental Enhancement Plan. The key elements listed within this Section are intended to complement and provide framework for the design approach of site lighting. Lighting that is an alternative from the Town standard located within the public right of way may be included as part of a maintenance agreement between the Town and the Responsible Person/ Developer.



8.3: SITE LIGHTING

Streetscape Lighting

Streetscape and roadway lighting within the public right of way shall follow the Town of Apex UDO standards, including the following:

- Pedestrian scale poles shall be between 12′ and 18′ mounting height with a black fiberglass pole.
- Vehicular scale poles shall be between 20′ and 35′ mounting height with a black fiberglass pole.
- Post top luminaries shall be the Town standard or a contemporary, round form style, consistent with the ARB Arbor Post Top by Cooper Lighting, the Pacifica family by Architectural Area Lighting, or similar.
- Cobra head luminaries shall follow the Town of Apex standard LED shoebox, or similar.
- All fixtures and poles shall be black.
- Structural footings shall be direct burial with foundations conceals. Footings shall be sized sufficiently to accommodate attachment arms for banners and hanging planter pots.
- Poles located within urban streetscapes shall accommodate electrical outlets for holiday lighting.
- Fixtures shall meet dark sky requirements.



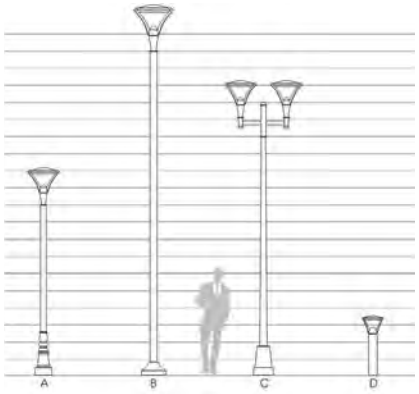
At urban streetscape locations and along major thoroughfares, pole foundations shall be structurally engineered to accommodate attachments such as banners, planter pots and holiday decorations.



The Town's standard fixture or ARB Arbor Post Top by Cooper Lighting (or similar) is permitted for use in the public right of way.



Post top fixtures are permitted to follow differing assemblies, such as single-mounted, double-mounted or wall mounted. Where applicable, utilization of the entire family product line of post tops, bollards and wall-mounted lighting is encouraged.





The Pacifica family by Architectural Area Lighting is permitted in the public right-of-way but subject to be included as part of a developer's maintenance agreement.



Cobra style lighting shall follow Town of Apex standard shoebox fixture, or similar.

8.3: SITE LIGHTING

Site and Area Lighting

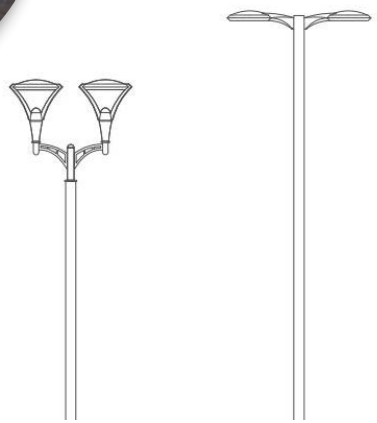
Site and area lighting within private and Town owned and operated developments shall be utilized for safety lighting, large-scale spatial lighting, and vehicular roadway and pedestrian lighting. Fixtures mounted to poles should meet the following requirements:

- Pedestrian scale poles shall have a mounting height between 12’ and 18’.
- Vehicular scale poles shall have a mounting height between 20’ and 35’.
- All fixtures shall be black. All poles shall be black fiberglass.
- Fixture and post top styles shall be of the same style as streetscape and right of way fixtures (see page 75).
- Utilization of the entire family line of products is encouraged for consistency.
- Structural footings shall be direct burial with foundation conceals.
- Poles located within urban plazas and open spaces dedicated to public large scale gatherings shall accommodate electrical outlets for holiday lighting.
- Cobra fixtures for parking lot lighting shall follow the Town standard shoebox fixture, or similar.

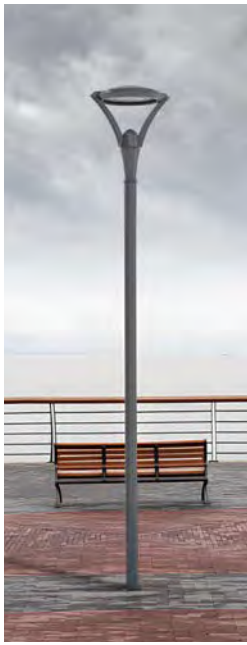




Veridea’s standard lighting products are contemporary, round form style, including the Pacifica Family by Architectural Area Lighting and the Arbor Family by Cooper Lighting, or similar.



Fixtures may be double-headed to accommodate both vehicular and pedestrian needs.









Utilization of the entire family product line of post tops, bollards and wall-mounted lighting is encouraged.

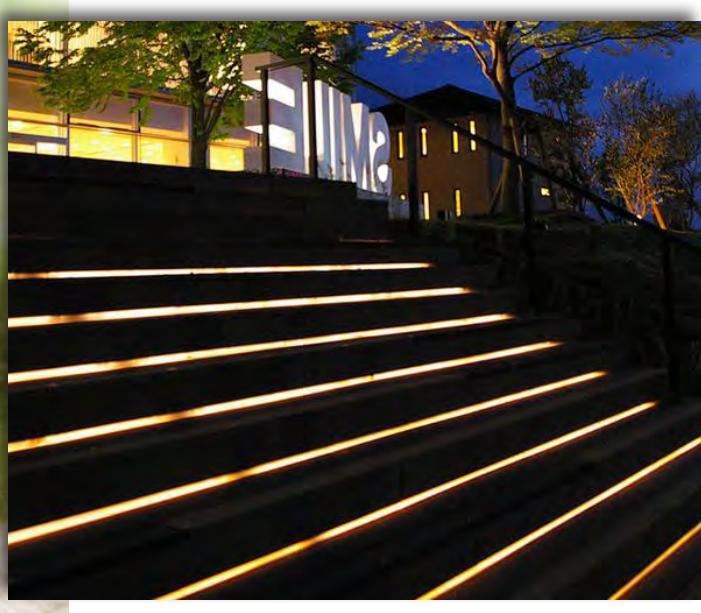
8.3: SITE LIGHTING

Pathway Lighting

Pathway lighting includes bollard lights, step and wall lights, strip lighting and handrail illumination. Pathway lighting shall comply with the following:

- Bollards shall be no taller than 3’ in height.
- In-grade lighting shall be direct burial with foundations concealed.
- Step or wall lighting shall be flush with adjacent materials.
- Fixtures shall be LED and a modern style.
- Fixtures shall be black or bronze in color.
- Integrated lighting, such as in handrails, shall be hidden.



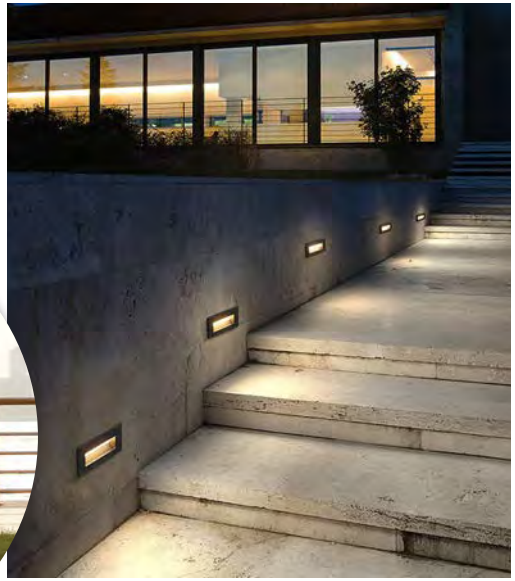


Bollards and pathway lighting shall have a modern style and no taller than 3’ in height.









Wall mounted and step lights shall be flush with adjacent materials.

8.3: SITE LIGHTING

Landscape Lighting

Landscape lighting should be utilized as a way to enhance landscape aesthetics, highlight important elements, and provide soft, safe lighting. This style of lighting shall be limited to high impact gathering areas, plazas and streetscapes to reduce light pollution. All landscape lighting shall be low-voltage.

Landscape lighting may include:

- Tree and landscape uplights.
- String lighting/catenary lighting.
- Artistic light applications.
- In-grade hardscape lighting.



Artistic lighting applications are encouraged.





In non-residential, urban gathering areas, be uplight or adorned with tree wrap lights for decorative purposes. uplighting to reduce light pollution.



Utilize downlighting mounted to building walls and structures to reduce light pollution and provide an aesthetic experience.



String and catenary lighting at public gathering areas provide opportunities for aesthetic lighting and holiday applications.

APPENDIX

SUPPLEMENTAL DOCUMENTATION

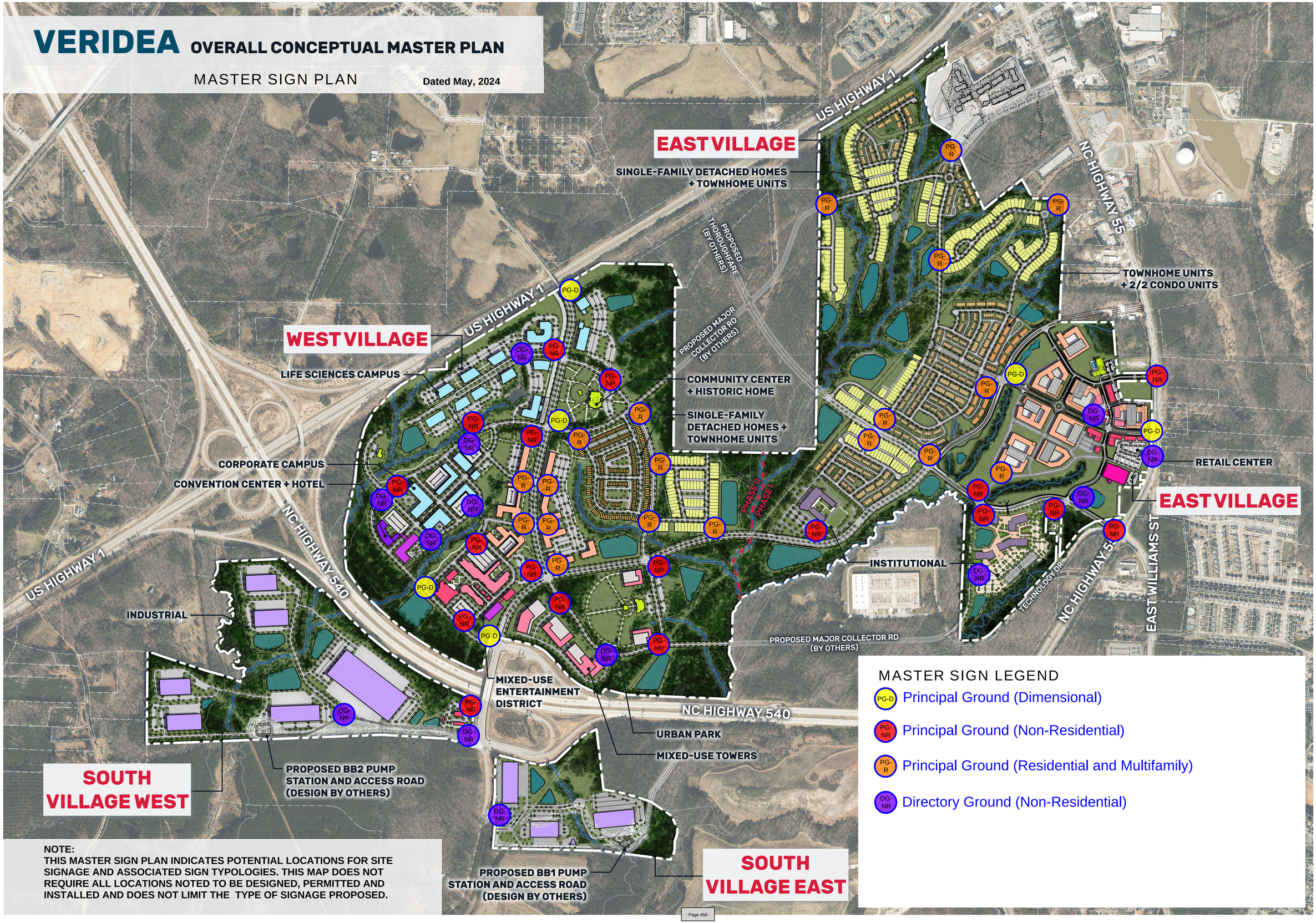
i. Master Signage Plan



VERIDEA OVERALL CONCEPTUAL MASTER PLAN

MASTER SIGN PLAN

Dated May, 2024



NOTE:
THIS MASTER SIGN PLAN INDICATES POTENTIAL LOCATIONS FOR SITE SIGNAGE AND ASSOCIATED SIGN TYPOLOGIES. THIS MAP DOES NOT REQUIRE ALL LOCATIONS NOTED TO BE DESIGNED, PERMITTED AND INSTALLED AND DOES NOT LIMIT THE TYPE OF SIGNAGE PROPOSED.

MASTER SIGN LEGEND

- PG-D — Principal Ground (Dimensional)
- PG-NR — Principal Ground (Non-Residential)
- PG-R — Principal Ground (Residential and Multifamily)
- DG-NR — Directory Ground (Non-Residential)

McADAMS

PREPARED FOR:
RXR REALTY

VERIDEA CONCEPTUAL MASTER PLAN
APEX, NORTH CAROLINA

10' 500'
SCALE: 1" = 500'

RXR-22001
09. 07. 2023

01

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Allen Coleman, Town Clerk

Department(s): Town Clerk's Office

Requested Motion

Motion to approve the Apex Tax Report dated October 15, 2026.

Approval Recommended?

Yes

Item Details

The Wake County Board of Commissioners, in regular session on November 2, 2026, approved and accepted the enclosed tax report for the Town of Apex, dated October 15, 2026, for the period of September 01, 2026 through September 30, 2026.

Attachments

- CN7-A1: Tax Report for September 2026

WAKE COUNTY
NORTH CAROLINA

Board of Commissioners
P.O. Box 550 • Raleigh, NC 27602

TEL 919 856 6180
FAX 919 856 5699

DON MIAL, CHAIR
SAFIYAH JACKSON, VICE-CHAIR
VICKIE ADAMSON
SUSAN P. EVANS
CHERYL STALLINGS
SHINICA THOMAS
TARA WATERS

November 3, 2026

Mr. Allen Coleman
Town Clerk
Town of Apex
Post Office Box 250
Apex, North Carolina 27502

Dear Mr. Coleman:

The Wake County Board of Commissioners, in regular session on November 2, 2026, approved and accepted the enclosed tax report for the Town of Apex.

The attached adopted actions are submitted for your review; no local board action is required.

Sincerely,

Yvonne Gilyard
Clerk to the Board
Wake County Board of Commissioners

Enclosure(s)

WAKE COUNTY TAX ADMINISTRATION

09/01/2026 - 09/30/2026

Rebate Detail Report

DATE 10/15/2026 TIME 3:56:58 PM

APEX

REBATE NUM	PROPERTY	CITY TAG	LATE LIST	BILLED INTEREST	TOTAL REBATED	PROCESS DATE	ACCOUNT NUMBER	TAX YEAR	YEAR FOR	BILLING TYPE	OWNER
BUSINESS REAL ESTATE ACCOUNTS											
982169	4,797.94	0.00	0.00	0.00	4,797.94	9/28/2026	0000234606	2024	2024	000000	VISION DRIVE PARTNERS LLC
982368	5,270.69	0.00	0.00	0.00	5,270.69	9/29/2026	0000234606	2026	2026	000000	VISION DRIVE PARTNERS LLC
982174	5,023.73	0.00	0.00	0.00	5,023.73	9/28/2026	0000234606	2025	2025	000000	VISION DRIVE PARTNERS LLC
SUBTOTALS FOR BUSINESS REAL ESTATE ACCOUNTS	**15,092.36**	**0.00**	**0.00**	**0.00**	**15,092.36**	**15,092.36**		**3 Properties Rebated**			
INDIVIDUAL PROPERTY ACCOUNTS											
979895	4.27	0.00	0.43	0.00	4.70	9/16/2026	0006955417	2025	2025	000000	BURGESS, TRANSPORTATION, LLC.
981392	3.56	0.00	0.36	0.00	3.92	9/22/2026	0006984514	2025	2025	000000	CAMPOS, WAUNA ANN
980819	3.56	0.00	0.36	0.00	3.92	9/22/2026	0006773404	2025	2025	000000	CURRY, CHAD EDWARD
979893	7.04	0.00	0.70	0.00	7.74	9/16/2026	0006955417	2023	2023	000000	BURGESS, TRANSPORTATION, LLC.
979921	3.56	0.00	0.36	0.00	3.92	9/16/2026	0006926240	2025	2025	000000	FEE, MICHAEL MORGAN
978809	162.82	30.00	0.00	0.00	192.82	9/4/2026	0007087337	2026	2025	000000	BURNS, KRISTY ELAINE
978630	1,868.51	30.00	373.70	0.00	2,272.21	9/1/2026	0007085233	2026	2025	000000	WELLS FARGO EQUIPMENT FINANCE INC
979920	3.40	0.00	0.34	0.00	3.74	9/16/2026	0006926240	2024	2024	000000	FEE, MICHAEL MORGAN
979894	4.76	0.00	0.48	0.00	5.24	9/16/2026	0006955417	2024	2024	000000	BURGESS, TRANSPORTATION, LLC.
SUBTOTALS FOR INDIVIDUAL PROPERTY ACCOUNTS	**2,061.48**	**60.00**	**376.73**	**0.00**	**2,498.21**	**2,498.21**		**9 Properties Rebated**			

INDIVIDUAL REAL ESTATE ACCOUNT

981398	347.10	0.00	0.00	0.00	347.10	9/22/2026	0000520242	2026	2026	000000	ESTELL, CHARLES MERRITT
981580	108.35	0.00	0.00	0.00	108.35	9/29/2026	0000508738	2026	2026	000000	JERMYN-KALEY, PAMELA A
979924	168.07	0.00	0.00	0.00	168.07	9/11/2026	0000503943	2026	2026	000000	ABEL, ELISHA MALCOLM III
SUBTOTALS FOR INDIVIDUAL REAL ESTATE ACCOUNTS	**623.52**	**0.00**	**0.00**	**0.00**	**623.52**	**623.52**		**3 Properties Rebated**			

WILDLIFE BOAT ACCOUNTS

978977	231.55	0.00	0.00	0.00	231.55	9/4/2026	0004222019	2026	2026	000000	MATTES, THE KIET
SUBTOTALS FOR WILDLIFE BOAT ACCOUNTS	**231.55**	**0.00**	**0.00**	**0.00**	**231.55**	**231.55**		**1 Properties Rebated**			
TOTAL REBATED FORAPEX	**18,008.91**	**60.00**	**376.73**	**0.00**	**18,445.64**	**18,445.64**		**16 Properties Rebated for City**			

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: TOWN COUNCIL COMMITTEE REPORTS

Meeting Date: November 10, 2026

Item Details

Presenter(s): Mayor Jacques K. Gilbert, Public Safety Committee Chair
Edward Gray, Public Safety Committee Member

Department(s): Governing Body

Requested Motion

Receive as information the Public Safety Committee's November 5, 2026, meeting report, including the Committee's recommendation for Town staff to prepare minor e-bike ordinance amendments for consideration at the December 17, 2026, Town Council Meeting.

Approval Recommended?

Informational Only.

Item Details

The Public Safety Committee, consisting of Mayor Jacques K. Gilbert (Chair) and Councilmember Edward Gray, met on Thursday, November 5, 2026, to continue its review of public safety policies and matters referred by the Town Council. The Committee adopted its October 1, 2026, meeting minutes without objection and received a presentation from Assistant Town Attorney Seth Kandl regarding recent changes to North Carolina's electric bicycle (e-bike) legislation, existing Town regulations, and potential ordinance amendments.

Electric Bicycle (E-Bike) Regulations: Effective December 1, 2026, changes to North Carolina law establish three classifications of e-bikes and provide municipalities with additional authority to regulate their operation. Staff presented three potential approaches: maintaining existing regulations, adopting minor amendments to clarify current ordinance provisions, or developing a comprehensive regulatory framework. Following discussion, the Committee recommended that Town staff proceed with drafting potential ordinance amendments consistent with the "Minor Action" approach. These amendments would focus on incorporating an e-bike definition, clarifying that existing references to bicycles include qualifying e-bikes, and addressing the applicability of current restrictions on motorized vehicles in parks and greenways. This approach would provide greater regulatory clarity while allowing the Town to monitor

implementation of the new state law and determine whether additional measures are warranted. The proposed amendments are anticipated to return to the full Town Council for consideration on December 17, 2026.

Automated License Plate Reader (ALPR) Program: Although not discussed during the November 5 meeting, the ALPR Program remains an ongoing Committee referral from the Town Council. During its October 1 meeting, the Committee requested additional information concerning external data-sharing policies, internal data management and accountability, program effectiveness, technology and vendor alternatives, and community privacy concerns. These areas of review are intended to inform future recommendations regarding the program, particularly ahead of the current Flock Safety contract's expiration on January 31, 2027. The ALPR Program is scheduled to return to the Committee on December 3, 2026, with a potential Town Council Work Session on December 15, 2026, to facilitate further discussion and policy direction.

Attachments

- TR1-A1: Public Safety Committee Agenda Packet – November 05, 2026

AGENDA | REGULAR MEETING
PUBLIC SAFETY COMMITTEE

Thursday, November 05, 2026 at 3:00 pm

Apex Town Hall
3rd Floor Training Room A
73 Hunter Street, Apex, NC

Town Council Committee Members and Senior Executive Leadership

Mayor Jacques K. Gilbert, Chair | Councilmember Edward Gray, Committee Member
Town Manager: Randal E. Vosburg
Deputy Town Managers: Demetria John, Marty Stone, Shawn Purvis
Town Clerk: Allen Coleman | Interim Town Attorney: Brian Meyer

Public Safety Committee Objective: *Public safety policy direction in areas of interest including police, fire, EMS, and emergency management.*

1) **Call to Order, Welcome, and Review of Agenda**
   Mayor Jacques K. Gilbert, Chair

2) **Adoption of Special Public Safety Committee Meeting Minutes – October 01, 2026**
   JP Parris, Public Records Coordinator

3) **Discussion of e-Bikes and potential future ordinance amendments**
   Seth Kandl, Assistant Town Attorney, Town Attorney's Office

4) **Closing Remarks and Adjournment**

DRAFT MINUTES

TOWN OF APEX
SPECIAL PUBLIC SAFETY COMMITTEE MEETING
THURSDAY, OCTOBER 01, 2026
3:00 PM

The Public Safety Council Committee of the Apex Town Council met for a Special Meeting on Thursday, October 01, 2026, at 3:00 p.m. in the 3rd Floor Training Room at Apex Town Hall, located at 73 Hunter Street in Apex, North Carolina.

This meeting was open to the public. Members of the public were able to attend this meeting in-person.

[ATTENDANCE]
Elected Body
Mayor Jacques K. Gilbert, Chair
Councilmember Ed Gray

Town Staff
Town Manager Randy Vosburg
Interim Town Attorney Brian Meyer
Town Clerk Allen Coleman
Deputy Town Manager Shawn Purvis
Assistant Town Manager Marty Stone
Assistant Town Manager Demetria John
Police Chief Ryan Johansen
Fire Chief Tim Herman
Emergency Management Coordinator Taylor Sanchez
Public Records Coordinator JP Parris
All other staff members will be identified appropriately below

[CALL TO ORDER]

Mayor Gilbert called the meeting to order **3:00 p.m.** and led in the Pledge of Allegiance.

[OBJECTIVE/CHARTER OF THE COMMITTEE]

Mayor Gilbert noted this was the first meeting of the committee and went over the agenda. He said it was important to clarify for those in the room and the media that the Committee was not making a formal recommendation to Council regarding the Automated License Plate Reader Program (ALPR) during the meeting today.

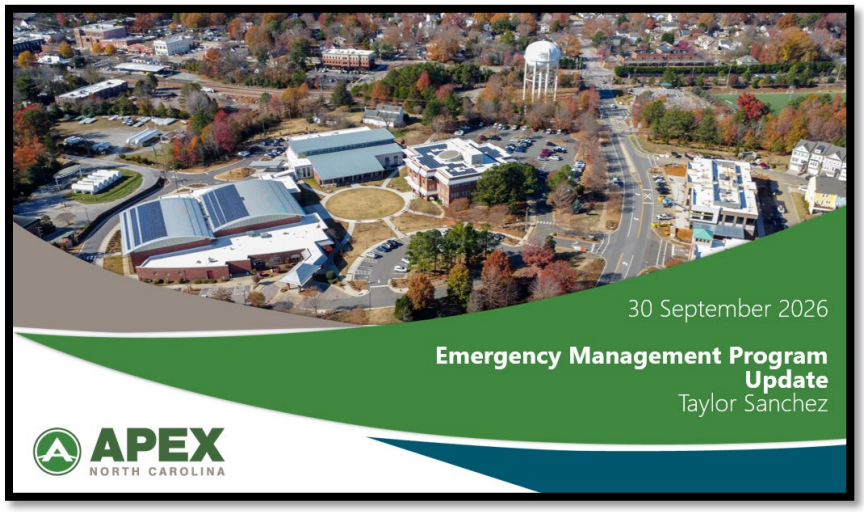
Councilmember Gray said he was excited to see interest in this meeting. He noted that the role of the elected body was to balance public safety policy with resident feedback. He said this committee would be focusing on how to ensure operations and resources are adequate for public safety and that it was important to help figure out how to maintain public safety advantages. He mentioned that a recent article had listed the Town of Apex as one of the safest communities in the state and he wanted to continue efforts in this direction. He said the committee will be helping to refine issues that will go back to Council for further development and echoed the Mayor's sentiments that aside from the Axon Drone Agreement, no other Committee recommendations would be made.

Town Clerk Coleman noted the objective of the Public Safety Committee and discussed the revised committee structure Council adopted in March of 2025. He said the purpose is to review policy recommendations related to police, fire, and emergency management. He noted the committee is broad in scope and not centered on specific topics but rather all items related to public safety as a whole.

[EMERGENCY MANAGEMENT PROGRAM UPDATE]

Emergency Management Coordinator, Taylor Sanchez, provided the following presentation:

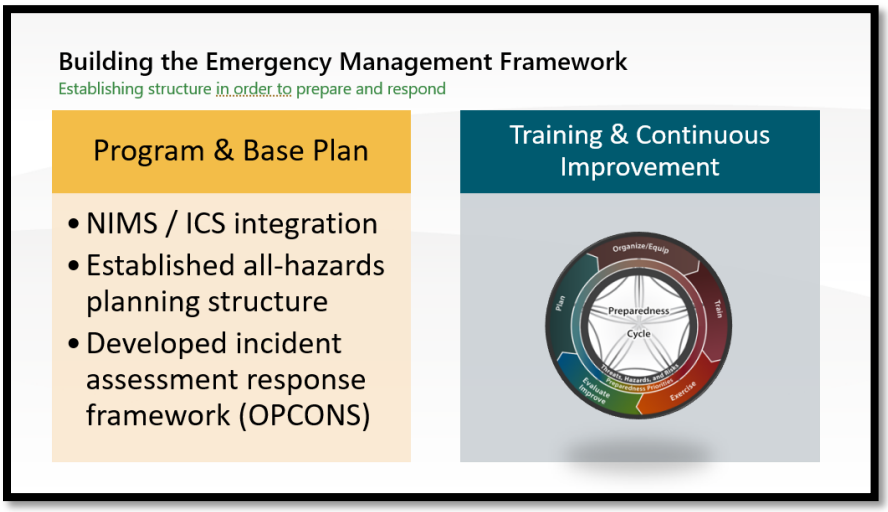
[SLIDE 1]



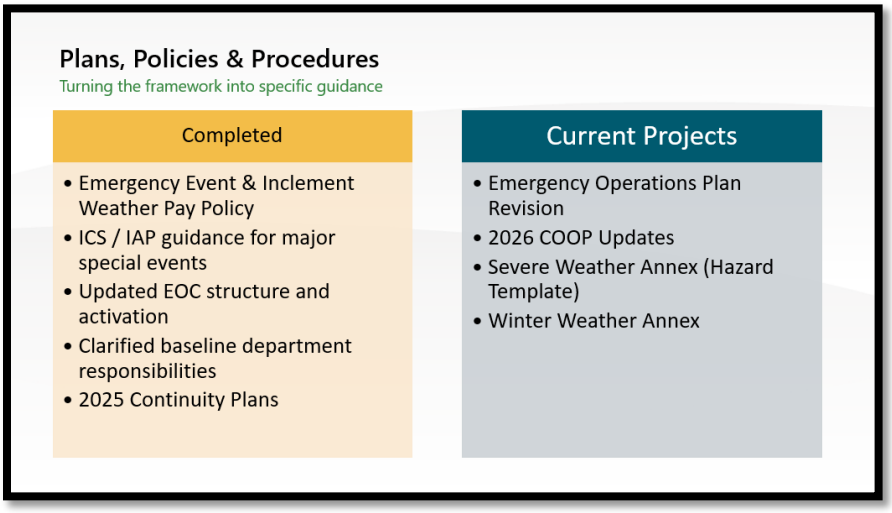
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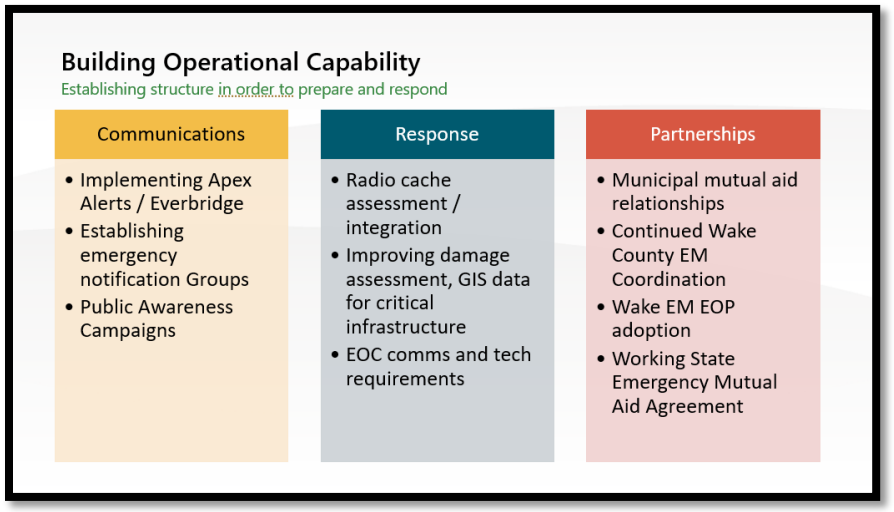
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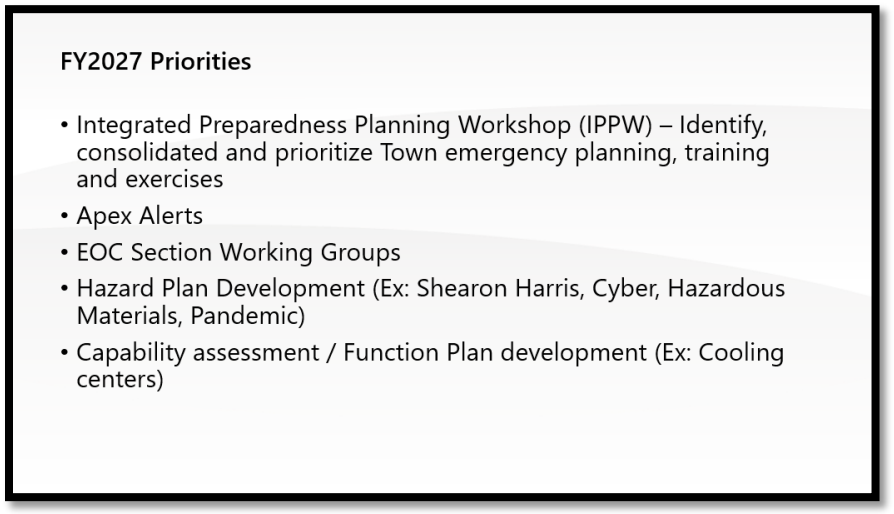
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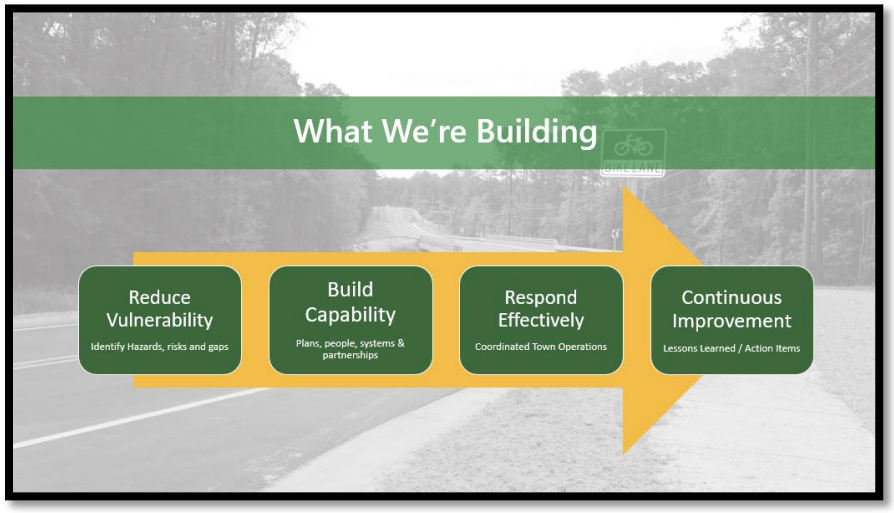
[SLIDE 5]



[SLIDE 6]



[SLIDE 7]



Town Manager Vosburg noted there were a lot of foundational plans, and the emphasis moving forward is training staff and keeping these plans in motion so that all applicable team members were aware of the Emergency Management Plans.

Mr. Sanchez mentioned various methods of communication, such as Ready Wake Alerts, Apex Alerts, and the Nixle registry, which would allow registration to receive emergency information for specific events.

Town Manager Vosburg said the Town began working with the Risk Management Division of Human Resources after a safety review was conducted last year. He said there was a special project focused on potential safety gaps in facilities and looking at security and safety upgrades. The project also looked at smaller solutions, such as peepholes, glass upgrades, and after-hours building security.

Mayor Gilbert asked how much time goes into planning for a special event.

Mr. Sanchez said it depended on the event. He said some events constitute additional planning, particularly if the event involves groups who have historically suffered violence, or roads need to be blocked off, or there will be large amount of people present. He said Incident Action Plans (IAP's) are also developed, which outline response structure, communications plans, and assist with coordinating with local partners to integrate if needed.

Town Manager Vosburg said a lot goes on in the background for most events, and the Emergency Operations Center (EOC) is typically activated at a low level to help monitor and respond if elevation is needed.

Councilmember Gray said a tough part of the job is planning for every aspect. He said it requires thinking of anything that can happen, contingencies, what each response would be, and then ultimately hoping to never have to put the plans in motion. He was excited about the reorganization of the EOC and clarifying lines of accountability. He asked where the function of Public Information or Townwide Communications fit in the structure.

Mr. Sanchez said that they would be part of the joint communications center. He said it would sometimes be the Public Information Officer for Public Safety, and sometimes the Communications Director with the primary factor being the type of incident or event.

Councilmember Gray asked about budget planning for Emergency Management.

Town Manager Vosburg said the current budget moved some of the line items out of the Fire Department and into the Town Manager's Office, some things were still with Fire, and some were moved to the Parks, Recreation, and Cultural Resources budget for items relating to special events, which is where the special events team currently resides.

Councilmember Gray said he wanted to make sure Emergency Management doesn't fall behind other priorities, because it can't be done after the fact. He said this was a good time to look at planning for the next budget, with the Strategic Plan next Thursday, October 08.

Mayor Gilbert asked if there was room for tabletop exercises specifically related to emergency management response techniques and education.

Mr. Sanchez said FEMA has trainings for elected officials, and he could tailor something similar for a future training for elected officials if that would be helpful.

Mayor Gilbert said that he had went through a variety of emergency management trainings during his time at the Apex Police Department (APD) and said other elected officials would likely benefit from similar education and training.

Assistant Town Manager John said this was the first year of Emergency Management under the Town Manager's Office, and this would be a good time to get a year in review and look back on things as well.

[DISCUSSION OF E-BIKES AND POTENTIAL FUTURE ORDINANCE AMENDMENTS]

Mayor Gilbert said there's a lot of e-bikes around the community, and he hears concerns from community members frequently.

Chief Johansen said the purpose of this discussion was to talk about some state law changes and get an idea of where the committee wants to go from here and what next steps may look like to ensure the Town remains compliant while also meeting the needs and vision of the elected body.

Town Manager Vosburg said some neighboring communities have passed ordinances regarding e-bikes, and recent state law defined the different levels of e-bikes. He said some laws govern e-bikes depending on where they are, and there are challenges as to what can be enforced and what resources would need to be dedicated to it.

Chief Johansen said a big change is that e-bike regulations will fall to municipalities in December. He said he was glad the Police Department was brought to the table to help pass ordinances that increase safety while understanding enforcement and capacity challenges. He added most folks on e-bikes are minors and may not stop when asked to by Police Officers, which presents additional challenges and concerns.

Councilmember Gray said there are a lot of questions from the community about the kids they see around town on e-bikes. He said with a lot of enforcement legislation being passed down, this may be a good time to figure out the way forward including education and awareness. He said while some laws may not require additional legislation, they may require input on getting ahead of problems that may arise. He said the job of Council is to think ahead, because if not they will run into problems quickly. He said this is an example of something where not figuring it out could turn into a larger problem.

Town Manager Vosburg said this was a time to get the ball rolling and get some general directions on things and see if there was a need for potential ordinance changes. He said the plan was to focus on communication and education within the community.

Councilmember Gray said he would like any advice from the Police Department (APD) on how they feel the problem should be addressed. He said he hears questions about e-bikes often.

Mayor Gilbert said he likes the community engagement aspect, there's a lot of unknowns and there's also safety issues. He said it's important to find a way to meet the need of transportation for kids while keeping safety at the front of the issue. He said it was also important not to put officers in bad positions regarding enforcement.

Councilmember Gray said for the committee, he would ask staff to provide a survey of municipalities' ordinances/regulations regarding e-bikes, including age of operation requirements, speed, and differences between rules for different e-bike classes. He said a framework would be good to get an assessment of what is within Council's legal authority, and it would be good to look at options.

Assistant Town Manager John said the legal framework would be led by the Police Department (APD) and the Town Attorney's Office (Legal).

Town Manager Vosburg asked if the Committee would like for this topic to return at a future committee meeting.

Councilmember Gray said yes, it's important to narrow down what the conversations should be at the Council level, and the committee structure was changed to help the conversation flow where staff could address questions and data points before it all comes to the full elected body. He said in his opinion the focus could be narrowed down so that things can be more productive and can lead to a decision. He said Council trusts staff to bring them the information they need. He said it could be a future meeting, and not the November meeting, unless staff feels like that meeting would provide enough time. He added it is important to see other ideas and ways other communities are addressing the issues and did not want to rush the product.

Chief Johansen said there are some other things that will need to be addressed sooner rather than later. He said beginning in December, e-bikes would be considered and allowable mode of transportation on any Town Roadways and/or Greenways unless Town Ordinances prohibited them specifically. He said the issue from his view was more so from a liability perspective verse enforcement. He said that helmets would not be required for Class 1 and Class 2 Drivers unless an ordinance was passed specifying otherwise.

Councilmember Gray said to bring any urgent items such as ordinances need to comply with new legislation, and other related policies to the Committee as quickly as possible. He said there are some things that Council is more comfortable taking additional time to gather more information on and make the right decision.

Town Manager Vosburg said they could gauge the next committee dates at the end of the meeting.

Mayor Gilbert asked about the next steps.

Assistant Town Manager John said Town staff could bring this item back in November and have other aspects presented at a later date if that was the desire of the committee.

Town Manager Vosburg said they will also work on a Communications plan regarding what the town would be doing in response to the December 1st changes as set by the State Legislature.

[DISCUSSION OF TOWN COUNCIL REFERRED ITEMS]

[a. AUTOMATED LICENSE PLATE READER (ALPR) PROGRAM]

Councilmember Gray said it was important to understand that there is a history on this item already. He said the idea began in 2023, with Council authorizing a pilot program to see the issues and test it out. Council had heard from Chief Johansen several times, and when referring this matter to committee, the elected body was trying to figure out the policy issues for things that haven't had a chance to be addressed, and Council has not had the opportunity to ask all of their questions.

Councilmember Gray said it seemed similar to courts addressing the fourth amendment. He said this issue was about balancing public safety and privacy. He said he was a public defender and former prosecutor, and the Mayor has law enforcement experience and that their combined experience equipped them to review and provide recommendations on this matter. He said he didn't know if there was a perfect balance to privacy vs. public safety benefit, but automated license plate readers does solve crimes and has been proven in our community even recently.

Councilmember Gray said the ALPR software can also provide closure to victims and assist with loss of property. He said a big issue for a lot of people is if this is "over-surveillance" and the Town having overreaching authority. He said during his conversations with the Chief of Police, it is his opinion that he understands the concerns presented and is not trying to minimize them but that the Chief is trying to balance, similar to the elected body, the public safety benefits.

Councilmember Gray said residents and community members speak often at Council meetings about their concerns, and those concerns are legitimate. He said the Council is working to refine set policy guidelines that would be in place at the end of the Town's trail period. He said it was important to remember that when this item was presented originally, it was presented as a trail and that it was always the intention that policies would be adopted to govern the usage if that was the direction desired by Council.

Councilmember Gray said the first area of policy should be facing outward, such as how to manage access to the information and data being gathered. He said it was important to understand who can get the data and how. He said he has had meetings with individuals

with concerns and that is one of their main points – who has access to the data. He said addressing this item in a policy, with a defined scope of what is given away and who has external access, might be a start to addressing some of the concerns presented.

Councilmember Gray said the second component was the internal management of data and information. He said this could be centered on gathering the data, use of data, and evaluating procedures already in place. He said the internal side is also very important. He said concerns about false arrests from ALPR are also attributable to human error. He said there's also concerns about using ALPR for illicit personal reasons, and it's important to use examples like that as a way to build the proper checks.

Councilmember Gray said it was also important to ensure the policy, while providing the appropriate checks and balances, also did not create additional hurdles for law enforcement and public safety officials in investigating matters of significance. He said those are the two main areas where this should be focusing. He said it was also a transparency issue, regarding what is being used in the investigations. He said recently one of his clients was accused of a crime he did not commit, and ALPR assisted in securing the acquittal. He said while the cameras are on everyone, they also capture valuable evidence for law enforcement.

Councilmember Gray said the direction of whether to continue using Flock and/or ALPR software was not a simple question, and the issue is not easy. He said it was a balance of public safety verses privacy rights. He said resident and community members' privacy rights are something that he is very passionate about, and fights about them professionally every day in his day-job. He added there was no greater responsibility of the Apex Police Department than using everything at their disposal to solve crimes and bring victims closure.

Councilmember Gray said these decisions are tough, and that's why they come to Council. He said it was important to receive advice and recommendations from staff on the ways to proceed, especially regarding the internal and external data and use policies, including refining existing ones. He said without a policy to answer the scope, the Council could not determine if they need ALPR.

Councilmember Gray said ALPR is also in squad cars, and those are also going to be used to determine license plate registration. He said to him there isn't a difference between an ALPR camera on a parked car and one mounted on a pole. He also mentioned that Home Owner's Association (HOA)'s had asked questions about the placement of potential ALPR or other visual cameras facing into or out of the neighborhood to provide greater safety measures. He said these are all real questions that can be used to determine the path forward.

Councilmember Gray said he would have office hours on October 22nd at Apex Town Hall to hear the communities' comments on Flock and ALPR. He wanted to hear all of the perspectives. He said he had not made up his mind and also wanted to wait for policy recommendations. He said cops in Apex hate bad cops more than anything. He said he wants

to know how to identify a bad cop in this system and also address the privacy concerns. He said once those answers were presented and the recommendations were refined, then it could all be voted on. He said the subject matter experts in Law Enforcement should be at the table providing those recommendations and assisting Council with determining the best path forward.

Mayor Gilbert said it comes down to public trust regarding a tool used by the Police Department. He said he was thankful that the Council had chosen to send this to the public safety committee for further research and recommendation. He said other communities had no followed that process and it was important to not only hear from the Police Department but also the community to get thoughts and perspectives. He said it was important to go on record and not that just because he was a former employee at Apex Police Department (APD) did not mean he would automatically side with them or support the recommendation of staff. He said he understands ALPR is a public safety tool, one of many, and was optimistic that a middle ground could be found here in Apex. He said there is not enough information to determine one way or another if the program was good to continue or not. He said it was also important to the separate the software from the vendor, too.

Councilmember Gray said he recognizes there is an implicit bias from everyone, and his door mat says, "comes back with a warrant". He said Council may have a bias, but at the end of the day they still have to do the right thing. He said doing this is not easy, and a lot of people are going to be mad either way. He said no matter what, they would do the right thing by balancing public safety and privacy interests and needed more time to receive information and all perspectives. He said doing that would allow Apex to remain high in the rankings of great and safe places to live as recently announced by a media outlet.

Town Manager Vosburg said it was important to zoom out to discuss timeframe and look at decision points. He said the current contract was scheduled to expire on January 31st, 2027, and that that would be the first checkpoint to be mindful of as the committee determines next steps. He said the first possibility would be to continue the program as is, and that would have to come before Council for authorization. He said staff could end the program as another option. He said a third alternative could be to switch to another vendor, but that decision may need to be made quicker if they wanted to ensure continuity within the Police Department's field operations. He said an additional option was to look for an in-house solution, but there were many questions about if that was possible. He said the role of the public safety committee was to provide information on what they needed from staff in order to make a recommendation on either of the options mentioned or even others that have not been mentioned or thought of.

Councilmember Gray said Chief Johansen has been able to help with the data points. He said it's important to know the crimes being solved, and data (such as 60% lower motor vehicle theft as an example). He said he also wanted to know the reason behind those data points, and what the underlying reason for those reductions would be. He said the concern to answer is if the improvements are worth the use of the system. He said community

members in the "DeFlock" mindset understand it does help with crime, but may not believe it is worth the privacy loss. He said understanding more on the benefits from the Apex Police Department could help bring the conversation to the middle. He said Chief Johansen has a desire to protect the community, not police the community, and that he believes this could be accomplished. He said it's important to understand the dynamics of the problem and have the time to figure out these issues. He said once they have those additional data points and facts the Committee would be in a position to make a recommendation to the full Council.

Mayor Gilbert said he personally has heard a lot of concerns from the community. He said it may help to have a list of concerns from the community, and have the Town respond regarding their specific relevant to Apex. He said he wants to find a solution and that many of the concerns presented seem to be more national issues that may or may not be applicable to Apex.

Chief Johansen said there was a lot of the Police Department's officers present today at the meeting beause this is rare opportunity. He said this is a tool that enables Police Officers to deliver on their mission of providing safety and solving crime. He said taking it away would make their jobs harder. He said a middle ground is usually the best way, but the solution does not exist in a vacuum. He said the community, elected officials, and officers needs and concerns will evolve over time. He said the Police Department has done their best to balance the issues, but they continually work on how the department uses these tools and balance their use.

Chief Johansen said he looks at this as two different components, alerts and database. He said alerts flag a car that is already in a state database, which means it flagged a vehicle already associated with a crime. He said the Police Department is tasked with protecting Apex, and this helps Police Officers to do just that. He said the centralized database is where most of the concerns are that he has heard and seen. He said the evidence is critical in solving crime, but there are concerns about data retention, vendor, usage and access, etc. He said time is of the essence, so they will bring back information on all components necessary so that the community can make an informed recommendation. He noted that the usage of ALPR has created lots of good in the community from his viewpoint.

Councilmember Gray said he wanted to note that he did not get a photo of a car when he used it during an investigation to get an acquittal, but rather only the picture of a license plate. He said there is a difference between the cameras and the software programs utilized. He added that anything to help them answer questions would be of great value and looked forward to receiving more information from the Police Department.

Town Manager Vosburg said the focus seemed to be on the database and how to move forward with that. He said Chief Johansen can provide some additional information regarding what the committee has requested, and they can determine the next steps at the end when planning the future meetings.

[AXON AGREEMENT]

Mayor Gilbert noted this was not Flock, and the interview room cameras are required by law, so a decision is needed. He asked Chief Johansen for further information.

Chief Johansen said this is not purchasing drones; the town has had a drone program for many years. He said this allows easier tracking of the drones and would allow more transparency regarding use of drones. He said managing so many events requires technology and that the drones are used for monitoring large crowds.

Chief Johansen said it was important to note that the drone software also a "fresh pursuit" aspect of them, to assist in chasing suspects, which is safer for all parties. He added they are also used for missing person searches. He said the drones are not used for surveillance, and all flights are logged and categorized by the police department.

Town Manager Vosburg said it was important for Council and the Committee to recognize that everything the Chief mentioned would still happen regardless on whether the Council supported approval. He said the software would help with easier tracking of flights, which is currently done manually. He said the use of drones by more than just the Police Department would not be changed by this contract.

Mayor Gilbert said the drone program was needed.

Councilmember Gray said he uses trust, but verify, and there was a need for the camera in interview rooms in the name of justice. He said records and logs of the flights are also important for investigations. He said this is about making the processes efficient to help answer questions. He said the flight logs can confirm whether a drone is a public or private operator and if it wasn't Axon there may not have been a concern either by any of Council. He said Axon also does the Town's body cameras and this was an important resource for the Town. He said he would recommend Council approve this contract and hoped this conversation would clarify what the contract is actually for and the various components of it.

Councilmember Gray recommended full approval of the Agreement, and **Mayor Gilbert** concurred.

CLERK NOTE: The item will be sent back to the full Council on October 13, 2026 under Town Council Committee Reports and Recommendations.

[LEGISLATIVE UPDATES]

Town Clerk Coleman noted a few major legislative updates from the recent session of the North Carolina General Assembly. He said the first item to report on was the 2026 Appropriations Act, which was the state's budget bill for those that may be unfamiliar with that term or reference. He stated that piece of legislation included a $1,750 one-time bonus

for eligible Law Enforcement Officers, changes to license plate readers, and the repeal of the traffic stop data reporting requirement.

Town Clerk Coleman said their were two additional provisions included in the appropriations act which may have town budget implications. He said more specifically there was language included that would allow municipalities to provide local salary supplements to the Administrative Office of the Courts or their local District Attorney's Office. He referenced a situation earlier in the budget cycle where a candidate for District Attorney had submitted a request to the Town for funding a position in the District Attorney's Office. He said this language would allow the Town to consider such a proposal, however, this was not mandatory and the Town would not be required to provide a supplement.

Town Clerk Coleman continued by stating additional laws were enacted that were more operational in nature including changes to the Special Separation Allowance for Law Enforcement Officers, when criminal background checks would be required for certain employees working with children, personnel-file review requirements when hiring law enforcement officers, and changes to the involuntary commitment process.

Town Clerk Coleman also stated there were several pieces of legislation that were filed as potential impacts but those should not be interpreted as current law. He said the House Bill No. 42 "Back the Blue Act", which had not become law, but proposed additional law enforcement bonuses, which may come back in the future. He said House Bill 437 regarding public camping was vetoed by Governor Stein, so it does not impose any requirements on the Town unless future legislation occurs.

Mayor Gilbert said he appreciated the updates and wanted to see the traffic stop data still being collected, even with Senate Bill 257 (state appropriations bill) repealing that required reporting.

Chief Johansen confirmed the Apex Police Department would still collect that data.

Councilmember Gray said the funding for staff at the Administrative Office of the Courts was something that came out of a very different bill. He added he was happy it was still permissive, as the data is very relevant for the municipality.

[FUTURE MEETING DATES DISCUSSION AND POSSIBLE ADOPTION]

Town Clerk Coleman asked if the Committee wished to establish a regular meeting schedule, and if so, how they would like to schedule it.

Councilmember Gray said with the policy questions and development for the Automated License Plate Reader (ALPR) conversation, he didn't want to have it be rushed. He said a meeting in November may be appropriate.

Mayor Gilbert said they have asked for a lot of information and staff need to be given time.

Town Clerk Coleman said that other committees were starting to establish standard meeting dates and times at least through the fiscal year (June 2027) and that given the committees follow-up items it may be appropriate for the committee to meet monthly until some of the time sensitive items are resolved. He said the current meeting was being held on the First Thursday of the month and suggested that the First Thursday may be a starting point.

Town Manager Vosburg said the first checkpoint is the e-bike piece for December 1st. He said their best option to adopt anything prior to that would be the November 10th Regular Meeting. He said this item could be the things that needed to be determined prior to December 1st, and other aspects could come back later. He said the first Thursday would be November 5th.

Chief Johansen asked if the Committee wanted the e-bike recommendations to come back to the committee or be scheduled for a Council Work Session.

Councilmember Gray said yes, so staff should prepare to bring back any policy recommendations related to e-bikes to the Committee before a recommendation was made to the full Council.

Interim Town Attorney Meyer said without a definition for e-bikes the ordinances may not have the necessary teeth, but they could bring those recommendations to the November 5th committee meeting as well.

Town Clerk Coleman asked if there would be another meeting in November for ALPR recommendations.

Town Manager Vosburg said it may be best to bring that item back to committee after November. He said it could be pushed from committee to Council in December or January.

Town Clerk Coleman confirmed the recommendation of a standing meeting the first Thursday each month at 3:00 p.m. at Town Hall. He stated that it was his understanding the e-bikes topic and research would be on the November agenda, and ALPR would tentatively be on the December agenda. He said the dates of those committee meetings would be: November 5, 2026, December 3, 2026, January 7, 2027, and so forth being the first Thursday of each month.

Town Manager Vosburg said the Committee may want to eventually adjust and have it be every other month, which is what other committees are doing. He said at present he concurred with the Town Clerk and the points already made that their were several timely items they needed to be addressed. He said funding was going to be the next big thing, which would be coming up soon after the new year at the start of the budget process.

Town Clerk Coleman said the schedule can be amended, but wanted to get to a set schedule when possible to help with planning.

Town Manager Vosburg said staff would bring what they have regarding ALPR on December 3rd.

Chief Johansen asked for any further clarification regarding what staff should bring back to those meetings.

Councilmember Gray said there would probably be more questions as they work through these conversations and that those could be shared with the Town Clerk or Town Manager for distribution.

Town Clerk Coleman said there would be a recap sent with follow-up items to ensure everything that needs to be there is included.

[CLOSING REMARKS AND ADJOURNMENT]

Mayor Gilbert said that concluded the Town's first public safety committee meeting and appreciated the turnout by the public and Town staff.

Town Clerk Coleman asked for members of the media to go downstairs to the Council Chambers where they would have opportunities to conduct interviews with Public Safety Committee members and staff.

Mayor Gilbert adjourned the meeting at 4:32 p.m.

Jacques K. Gilbert
Mayor

JP Parris
Public Records Coordinator

Reviewed and submitted for approval by Town Clerk Allen Coleman.
Minutes approved on _____.



Public Safety Committee
November 5, 2026

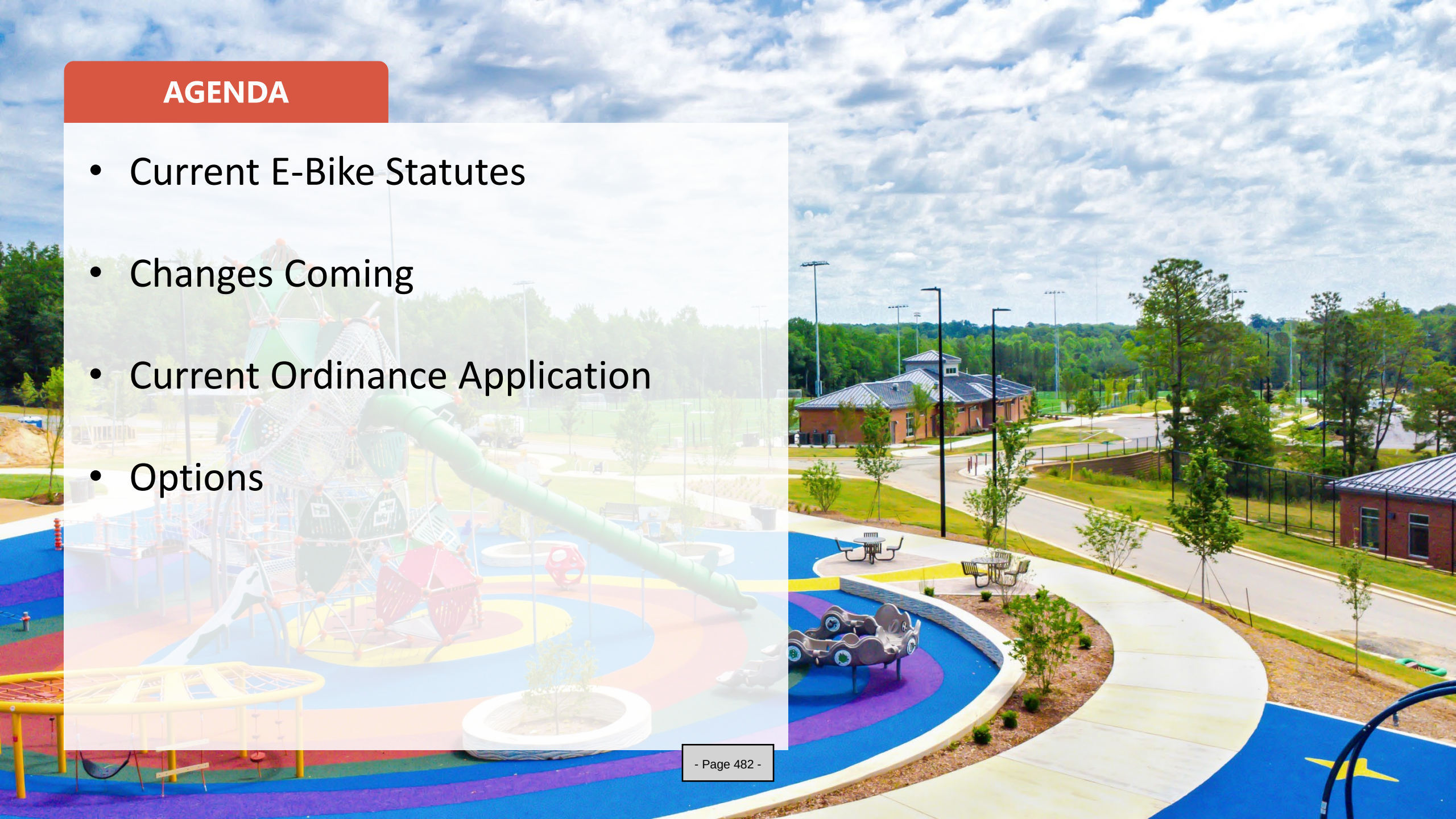
E-Bike Legislation

Current Landscape and Changes on the Horizon

APEX
NORTH CAROLINA

AGENDA

- Current E-Bike Statutes
- Changes Coming
- Current Ordinance Application
- Options



Where We Stand



Where We Stand - Current Landscape

- Current definition: through November 30
  - Two or three wheels; seat or saddle for the rider.
  - Fully operable pedals for human propulsion.
  - Electric motor of no more than 750 watts.
  - Maximum speed on a level surface, powered solely by the motor: no greater than 20 mph.

Where We Stand - Why Classification Matters Today

- A qualifying e-bike is excluded from “motor vehicle,” unless a provision specifically says otherwise.
- A device outside the e-bike definition requires analysis under the moped / motorcycle definitions.
- If it is a moped: operator must be at least 16; DMV registration and liability insurance apply.
  - Moped operators and passengers must wear required helmets.
  - Operators must comply with N.C.G.S. Chapter 20.

Where We're Going



Where We're Going – Statutory Changes

- Two or three wheels; seat or saddle for the rider.
- Fully operable pedals for human propulsion.
- Electric motor of no more than 750 watts **AND meets one of the three statutory classes**.
- ~~Maximum speed on a level surface, powered solely by the motor: no greater than 20 mph.~~

Where We're Going – Three Classes

- CLASS 1 | Pedal assistance only; motor assistance ceases at 20 mph.
- CLASS 2 | Motor may propel without pedaling; assistance ceases at 20 mph.
- CLASS 3 | Pedal assistance only; motor assistance ceases at 28 mph.

Where We're Going – Statutory Requirements

- Existing bicycle rule: G.S. 20-171.9 addresses parents/guardians knowingly permitting riders or passengers under 16 without a helmet on specified public facilities.

- New Class 3 rule: every operator or passenger UNDER 18 must wear a helmet meeting federal safety standards.

Where We're Going – Location Access

- Default permission: all roadways, bicycle lanes, and multiuse paths.
  - State parks, historical sites, and other DNCR properties may have separate restrictions.

- Sidewalks: not automatically given access as blanket statewide sidewalk authorization.

Where We're Going – What This Means

- This is both a deregulation and a local regulation authority bill:
  - It removes class 3 e-bikes from being regulated as mopeds/motorcycles.
  - Pushes regulation of e-bikes to local government control.

Ordinance Application



Ordinance Application – What Already Applies

- Apex Ord. 20-3 - 16 and under required to wear helmet when riding bicycle on public property (roads, greenways, sidewalks).

- Apex Ord. Chapter 20 prohibitions for riding in public streets:
  - On handlebars,
  - With no hands on handlebars,
  - more than two abreast.

Ordinance Application – Speed Limits

- Apex Ord. 20-143 - Bicycles on sidewalks/paths 5 feet or less must:
  - Operate at a speed no greater than 10 MPH.
  - Operate with due caution .
  - Yield to pedestrians.

- Apex Ord. 15-7 - Motorized vehicles prohibited in public parks or greenways unless specifically authorized by signage.
  - Current signage restricts speed to 10 MPH.

What We Can Do



What We Can Do – Municipal Authority

- Express authority to regulate e-bikes on multiuse paths and sidewalks within municipal limits.

- May restrict one or more e-bike classes on sidewalks/pathways and establish speed limits.

- Local governments may require helmets for operators/passengers under 18 on Class 1 and Class 2 e-bikes.

What We Can Do – Learn From Our Neighbors

Jurisdiction	Reported / published approach	Review significance
Cary	Greenways permit e-bikes while partly human-propelled; 15 mph greenway limit; sidewalks with caution and pedestrian yielding.	Pedaling condition, speed cap, sidewalk conduct.
Holly Springs	June 2026 rules permit qualifying lower-speed e-bikes on sidewalks/greenways; 15 mph limit; exclude e-motos.	Distinction between e-bikes and motor vehicles; prior 20-mph descriptions may require updating.
Wake Forest	January 2026 ordinance bars covered devices from sidewalks; allows greenways and multiuse paths at 10 mph; helmets under 16.	Different rules for sidewalks versus greenways.
Huntersville	September 2026 ordinance includes helmets for riders/passengers under 18 and a $50 local citation provision.	Example of a newer age-based helmet and penalty framework.

- **Speed limits for attribution versus enforcement**
- **Juvenile prosecution challenges and civil penalty options (parent/guardian focused)**
- **Helmets as a critical protection for vehicle drivers**

What We Can Do - Options

No Action:

Hold what we have… Our current ordinances already apply to bicycles and motor vehicles where needed.

- Benefits: Allows resources to be concentrated where imminently needed while allowing us to monitor the new environment for needs.
- Risks: Confusion about expectations and applicability.

What We Can Do - Options

Minor Action:

Make minor ordinance amendments such as definitions and references to clarify applicability. E.g. add e-bike definition, references to bicycle is inclusive of e-bikes, and clarify Ord. 15-7 motor vehicle restriction.

- Benefits: Makes expectations clear while still being responsive to changing environment. Opportunity to learn and monitor without straining resources.
- Risks: May omit a needed response.

What We Can Do - Options

Major Action:

Create full ordinance scheme applicable to e-bikes.

- Benefits: Comprehensive response that can be applied in a single legislative change.
- Risks: Resource intensive. May over regulate or unnecessarily regulate areas. Can create expectations of enforcement or other enforcement issues. May still require follow-up due to omitted or uncontemplated needs.

What We Can Do – Aim Small, Miss Small

Discussion.

Questions?

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: TOWN MANAGER'S REPORT

Meeting Date: November 10, 2026

Item Details

Presenter(s): Will Norton (External)

Department(s): Apex Rotary Club (External)

Requested Motion

Receive as information a formal invitation for the Mayor and Town Council to participate in the Apex Christmas Parade held on Saturday, December 5, 2026.

Approval Recommended?

Informational only.

Item Details

The Annual Apex Rotary Christmas Parade, organized by the Apex Rotary Club, will take place on Saturday, December 5, 2026, at 5:00 p.m. along Salem Street in Downtown Apex. Traditionally held on the first Saturday in December, the parade is recognized as the only nighttime holiday parade in Wake County and serves as a longstanding community tradition celebrating the holiday season. Proceeds from the event benefit numerous local charitable organizations, with Western Wake Crisis Ministry serving as the primary beneficiary.

Attachments

- N/A

"The Peak of Good Living"

TOWN OF APEX DRAFT NORTH CAROLINA

Proclamation

Honoring the 50th Anniversary of the Wake County Public School System

from the Office of the Mayor

WHEREAS, Public education serves as a cornerstone of strong and thriving communities, providing students with the knowledge, skills, and opportunities necessary to achieve their potential and contribute meaningfully to society; and,

WHEREAS, On July 1, 1976, Raleigh City Schools and Wake County Schools merged to establish the Wake County Public School System, bringing together approximately 53,000 students under a unified school district committed to expanding educational opportunities throughout Wake County; and,

WHEREAS, Over the past five decades, the Wake County Public School System has grown to serve approximately 160,000 students across 204 schools, reflecting the tremendous growth of Wake County and the continued importance of investing in quality public education; and,

WHEREAS, throughout its 50-year history, the Wake County Public School System has helped shape generations of students, fostered educational opportunities, and contributed to the economic vitality, diversity, and overall quality of life of the communities it serves; and,

WHEREAS, the Town of Apex proudly recognizes its local Wake County public schools for their vital role in educating and inspiring students, strengthening neighborhoods, supporting families, and contributing to the continued growth and vitality of our community; and,

WHEREAS, the Mayor and Town Council stand in appreciation and support of the dedicated teachers, administrators, support staff, and educational professionals whose commitment to student success, academic excellence, and lifelong learning continues to shape future generations and strengthen the communities they serve.

NOW, THEREFORE, I, Jacques K. Gilbert, Mayor of Apex, North Carolina, do hereby recognize and commemorate the "The 50th Anniversary of the Wake County Public School System", in the Town of Apex and encourage all residents to join in celebrating this historic milestone, honoring five decades of educational achievement, and recognizing the enduring contributions of public education to the success and prosperity of our community.

I hereby set my hand and have caused the Seal of the Town of Apex, North Carolina, to be affixed this the 10th day of November, 2026

Jacques Gilbert, Mayor

"The Peak of Good Living"

TOWN OF APEX DRAFT
NORTH CAROLINA

Proclamation

National Family Caregivers Appreciation Month 2026

from the Office of the Mayor

WHEREAS, Each November, the Town of Apex joins communities nationwide in recognizing and honoring family caregivers who provide essential care and support to aging parents, spouses, children, and other loved ones, helping them maintain their independence, dignity, and quality of life; and,

WHEREAS, Family caregivers in Apex are among millions of Americans who devote significant time, energy, and personal resources to caring for their loved ones, serving as an essential part of North Carolina's long-term care system; and,

WHEREAS, Caregiving responsibilities often extend beyond daily household tasks to include managing medical needs, coordinating appointments, providing transportation, overseeing finances, and assisting with personal care, requiring considerable dedication, patience, and compassion; and,

WHEREAS, Family caregivers frequently balance these responsibilities with employment, family obligations, and personal needs, often facing emotional, physical, and financial challenges while ensuring the well-being of those entrusted to their care; and,

WHEREAS, the Town of Apex recognizes the invaluable contributions of family caregivers throughout our community and encourages greater awareness, appreciation, and access to resources and support services that help sustain them in their vital roles.

NOW, THEREFORE, I, Jacques K. Gilbert, Mayor of Apex, North Carolina, do hereby proclaim the Month of November 2026, "National Family Caregivers Month", in the Town of Apex and encourage all residents to recognize, appreciate, and support family caregivers for their selfless dedication and the meaningful difference they make in the lives of others.

I hereby set my hand and have caused the Seal of the Town of Apex, North Carolina, to be affixed this the 10th day of November, 2026

Jacques Gilbert, Mayor

"The Peak of Good Living"

TOWN OF APEX DRAFT NORTH CAROLINA

Proclamation

Small Business Saturday 2026

from the Office of the Mayor

WHEREAS, The Town of Apex is excited to once again celebrate Small Business Saturday and recognize the invaluable contributions of local small businesses to our economy and the unique character of our vibrant community; and,

WHEREAS, Small businesses play a vital role in creating jobs, fostering innovation, supporting local entrepreneurs, and strengthening the economic vitality and quality of life of our communities; and,

WHEREAS, Small businesses are the backbone of North Carolina's economy, representing 99.6% of all businesses statewide and employing approximately 1.8 million people, or 44.2% of the state's private-sector workforce; and,

WHEREAS, 68% of all money spent at small businesses remains in the local community and contributes to the economic vitality of our community by creating local jobs, providing unique goods and services, and reinvesting in the neighborhoods and communities they serve; and,

WHEREAS, Small Business Saturday encourages consumers to shop at small, independently owned businesses during the holiday shopping season, helping local businesses reach new customers and strengthen their connections with the community; and,

WHEREAS, The Town of Apex is proud to have such a strong and diverse small business community and encourages residents to explore all that have to offer for this very exciting day.

NOW, THEREFORE, I, Jacques K. Gilbert, Mayor of Apex, North Carolina, do hereby proclaim Saturday, November 28th, 2026, "Small Business Saturday" in the Town of Apex, and encourage all residents to shop small on this day and every day, and support the small businesses here in Apex and the residents they employ.

I hereby set my hand and have caused the Seal of the Town of Apex, North Carolina, to be affixed this the 10th day of November, 2026

Jacques Gilbert, Mayor

Office of Honorable Mayor Jacques K. Gilbert

Town of Apex

PO Box 250 | 73 Hunter Street
Apex, North Carolina 27502
919.249.1260

October 24, 2026

Ms. Lauren Grace Updyke
Apex, NC 27502

RE: Mayoral Honor of Excellence Award and Mayoral Golden Shoe Leadership of Honor

Dear Ms. Updyke,

On behalf of the Town of Apex, it is my distinct honor and privilege to formally recognize you for your exceptional leadership, vision, and unwavering commitment to community through your instrumental role in bringing the inaugural Apex Half Marathon to life on October 24, 2026.

Through your dedication and collaboration with Alaina Money-Garman, you have accomplished far more than organizing a race. You have helped establish the foundation for what promises to become a cherished Apex tradition—one that brings neighbors together, promotes health and wellness, celebrates perseverance, and strengthens the sense of community that makes Apex so special.

The overwhelming enthusiasm surrounding this inaugural event speaks volumes about your efforts. Reaching the race's full capacity of 1,000 runners, with hundreds more expressing interest in participating, is a remarkable achievement and a testament to the excitement and community spirit you have inspired.

Organizing an event of this magnitude is no small feat. Your impact extends well beyond the 13.1-mile course, inspiring others to embrace new challenges and pursue goals they may have never imagined possible. On a personal note, your efforts have even inspired me to take on my very first half marathon—an experience I will proudly associate with this historic occasion.

In recognition of your visionary leadership, dedication to community, and extraordinary efforts to bring people together, it is my privilege to present you with the Mayoral Golden Shoe Leadership of Honor, a symbolic recognition representing peace, unity, compassion, and perseverance. These values are reflected in your efforts to create an experience that celebrates not only individual achievement but also the collective strength and spirit of our community.

Lauren, your leadership embodies the very best of Apex and demonstrates that when people come together with vision, determination, and a shared purpose, extraordinary things can happen. Your contributions have helped Apex make history while laying the foundation for a lasting community tradition.

With sincere admiration and gratitude, I thank you for your commitment to our community and for inspiring others to reach new heights, one step at a time.

Very truly yours,

Jacques K. Gilbert
Mayor, Town of Apex

Office of Honorable Mayor Jacques K. Gilbert

Town of Apex

PO Box 250 | 73 Hunter Street
Apex, North Carolina 27502
919.249.1260

October 24, 2026

Ms. Alaina Money-Garman
Apex, NC 27502

RE: Mayoral Honor of Excellence Award and Mayoral Golden Shoe Leadership of Honor

Dear Ms. Money-Garman,

On behalf of the Town of Apex, it is my distinct honor and privilege to formally recognize you for your exceptional leadership, vision, and unwavering commitment to community through your instrumental role in bringing the inaugural Apex Half Marathon to life on October 24, 2026.

Through your dedication and collaboration with Lauren Grace Updyke, you have accomplished far more than organizing a race. You have helped establish the foundation for what promises to become a cherished Apex tradition—one that brings neighbors together, promotes health and wellness, celebrates perseverance, and strengthens the sense of community that makes Apex so special.

The overwhelming enthusiasm surrounding this inaugural event speaks volumes about your efforts. Reaching the race's full capacity of 1,000 runners, with hundreds more expressing interest in participating, is a remarkable achievement and a testament to the excitement and community spirit you have inspired.

Organizing an event of this magnitude is no small feat. Your impact extends well beyond the 13.1-mile course, inspiring others to embrace new challenges and pursue goals they may have never imagined possible. On a personal note, your efforts have even inspired me to take on my very first half marathon—an experience I will proudly associate with this historic occasion.

In recognition of your visionary leadership, dedication to community, and extraordinary efforts to bring people together, it is my privilege to present you with the Mayoral Golden Shoe Leadership of Honor, a symbolic recognition representing peace, unity, compassion, and perseverance. These values are reflected in your efforts to create an experience that celebrates not only individual achievement but also the collective strength and spirit of our community.

Alaina, your leadership embodies the very best of Apex and demonstrates that when people come together with vision, determination, and a shared purpose, extraordinary things can happen. Your contributions have helped Apex make history while laying the foundation for a lasting community tradition.

With sincere admiration and gratitude, I thank you for your commitment to our community and for inspiring others to reach new heights, one step at a time.

Very truly yours,

Jacques K. Gilbert
Mayor, Town of Apex

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: PRESENTATION

Meeting Date: November 10, 2026

Item Details

Presenter(s): Jenna Shouse, Senior Planner – Long Range
Lauren Triebert, P.E., Project Development Lead

Department(s): Planning
VHB Engineering (external)

Requested Motion

Receive as information an update on the first round of public engagement for the Pleasant Park Access Study and provide an opportunity for Council questions and discussion.

Approval Recommended?

Informational only.

Item Details

Pleasant Park serves as a significant recreational destination for the Apex community, offering athletic fields, courts, playgrounds, shelters, and other amenities that attract residents and visitors throughout the year. As park usage continues to grow, the existing single point of vehicular access presents challenges related to traffic circulation, accessibility, and emergency response. Recognizing the importance of improving connectivity and ensuring adequate access to the park, the need to evaluate additional access opportunities was previously identified in the Western Big Branch Area Plan.

On March 10, 2026, the Apex Town Council approved an Interlocal Agreement with the Capital Area Metropolitan Planning Organization (CAMPO) to advance the Pleasant Park Access Study. Led by CAMPO in partnership with the Town of Apex, the study will evaluate the feasibility of up to five (5) potential new vehicular access points, including opportunities to enhance multimodal connectivity for pedestrians and bicyclists. The study will consider potential access improvements through an established evaluation framework, incorporating community feedback and other planning considerations.

Upon completion, the study will provide potential access improvement concepts, preliminary construction cost estimates, and recommendations for implementation priorities. This effort is a feasibility study only, and funding **has not been** identified for the design or construction of additional access points at this time.

Public engagement is an important component of the study process, providing residents and other stakeholders an opportunity to share perspectives and help inform the evaluation of potential alternatives. The first public engagement meeting was held on September 3, 2026, at Apex Town Hall to introduce the study, provide an overview of its objectives, and gather community input on the performance measures that will be used to evaluate potential access locations.

The purpose of this agenda item is to introduce the Pleasant Park Access Study to the Town Council, provide a summary of the first round of public engagement, and outline the next steps in the study process. This item is intended to be informational and provide Councilmembers an opportunity to ask questions and engage in discussion as the study progresses. No formal action or approval of a proposed access alternative is requested at this stage.

Additional information, including study materials and opportunities for public participation, is available on the project website at www.apexnc.org/pleasantparkaccess.

Attachments

- PR5-A1: Public Meeting No. 1 Public Engagement Summary

Pleasant Plains Access Study – Public Outreach Round #1

CAMPO/Town of Apex

Public Comments Received and Responses

Public Comments Received at Public Meeting #1

During Public Meeting #1, attendees were invited to complete hard copy comment forms that solicited input on the meeting stations, including existing conditions and the proposed performance metrics as presented. Twenty-four (24) comment forms were completed and submitted at the public meeting.

Online Public Comment

A web-based public comment form was available on the project's Public Input website (apexnc.org/pleasantparkaccess), which was linked from the Town of Apex website. Comments were accepted from September 2nd to 16th, 2026. A total of 29 responses were received via the online comment form.

Other Comments

The project team also received one email, two (2) hard-copy letters, and one (1) petition with 46 signatories. These submittals were also considered for response.

Public Meeting #1 Comments and Responses

Below is a summary of all comments received and responses to comments, as needed.

Major comment themes:

1. Concerns regarding neighborhood impacts, including:
    a. Detriment to the general character of the nearby neighborhoods,
    b. Concern over potential cut through traffic created by a new access,
    c. And, extent of property impacts (impact to septic fields, full property takes).
2. Questions or concerns regarding multimodal safety and comfort.
3. Questions or concerns regarding the cost of a new access point.
4. Questions or concerns regarding environmental impacts, including flooding and tree coverage/loss.
5. Comments on the overall traffic congestion at the existing park entrance
6. Questions or concerns regarding the emergency response operations of a new access.
7. Comments on the history and process of the park's development.
8. Question about the design of the alignments for access options being considered.
9. Comments about preferences among the access options being considered.
10. Comments on the infrastructure of the park itself.

1. Neighborhood Impacts (*27 comment mentions*)

a. Comments included concerns that the park has degraded the overall character of the nearby neighborhoods, which most described as rural, quiet and safe. There is concern that additional access to the park, specifically in the vicinity of Pleasant Plains Road, will continue this pattern of degradation. Local residents described their nearby properties as family owned and stated that they were long-time residents. (*8 comment mentions*)

The Pleasant Plains Access Study uses performance measures for each potential alternative to establish the final prioritization of the access options. These performance measures include neighborhood impacts, a measure which captures overall likely impacts on the character of the neighborhoods around the park, such as property impacts and increased traffic on neighborhood roads. The study will consider these impacts for each potential access alternative in the prioritization process.

The Access Study also considers the impact of additional access in relation to the classifications on the 2045 Land Use Map and prioritizes alternatives that connect to future land uses that are planned to serve higher population densities. The primary future land use classifications in the Pleasant Plains and Friendship Road areas are Low Density Residential, Rural Transition Residential, and Rural Residential, to reflect and protect the existing rural and agricultural character of these areas. This makes additional access options into these areas less of a priority when compared to those options that directly serve higher density future land uses.

b. Comments included concerns over the potential "cut-through" traffic that a new access to the park could encourage. There is a concern that making a new connection between surrounding roadways would create an attractive route those that may not even be visiting the park, further increasing the number of vehicles using the local roads. (*12 comment mentions*)

The alternatives evaluation process will include projections for this potential new traffic for each access option considered, building on the traffic analysis that is already complete. The likelihood and magnitude of this potential cut-through traffic will thus be considered in the overall evaluation and scoring of a given access option.

c. Comments included concerns over the potential impacts to private property near the proposed improvements, specifically along Pleasant Plains Road and Friendship Road. Many were concerned about the eminent domain process and potential impacts to existing septic fields. (*7 comment mentions*)

This study will determine the feasibility of various new access options, but it is not meant to be a full impact analysis of any given alternative. A future access point is not funded for design or construction. If funding becomes available to further develop an access point alternative, future project phases would further develop the design and evaluate impacts in more detail. Detailed studies of septic fields and well locations are typically conducted in the next planning and design phase, commonly referred to as "preliminary design." For this study, however, the project team has confirmed the presence of both gravity and pump septic systems in the vicinity of potential access

options. The known presence of septic fields along Pleasant Plains Road and along the potential collector street between Pleasant Plains and Friendship Roads and the complications associated with impacts to these systems will be included as a risk factor when evaluating the access options.

Following preliminary design, the project selected to move forward would then go into "final design." At that point, if a project's design requires acquisition of any private property for construction, efforts would be made to minimize those impacts through design. Where unavoidable, responsible government agencies' right-of-way teams will work with property owners individually to complete any purchases. This purchase could include a narrow strip along the frontage of a property or a more significant amount of area; however, in any case, the property owner is paid fair market value for the property.

2. Multimodal Safety and Comfort *(4 comment mentions*)

Comments included concerns that the introduction of additional traffic through a second park access route could create an unsafe environment for pedestrians and cyclists. Commenters also noted that multimodal users should be comfortable on the facilities, requesting wide paths if possible.

The Town of Apex and the Capital Area Metropolitan Planning Organization (CAMPO) are committed to encouraging safe and connected multimodal options for its residents, with special emphasis in this study because the access options being evaluated connect to a park. Design concepts for each option will include multimodal facilities such as sidewalk, side path, or bike lanes based on road type and context. Additionally, the potential benefits to transit access for each alternative will also be considered.

3. Costs *(3 comment mentions)*

Comments raised concerns about the expected costs of the alternatives and asked questions about potential benefits, including increased tax revenue, that development along these alternatives might bring to the town.

The study is developing planning-level cost estimates for the potential access alternatives being considered. These cost estimates will be a major part of assessing the feasibility and prioritization of each access alternative.

It is possible that additional access to the park will benefit other government entities and developers. The Pleasant Park Access Study is considering these potential benefits by considering potential funding partnerships with developers along each alternative.

4. Environmental Impacts *(4 comment mentions)*

a. Comments mentioned the potential for the project to negatively impact the environment due to tree clearing. *(3 comment mentions)*

Tree clearing is an impact of many roadway construction projects. The Pleasant Park Access Study seeks to minimize the potential impact of tree clearing by including Environmental Impacts as a

performance measure, which considers acreage of tree clearing, in the alternative evaluation process.

b. A comment stated that the potential access options are located in the 100-year flood zone. *(1 comment mention)*

All potential access options for the Pleasant Park Access Study are located outside of existing floodplains; future design phases would incorporate stormwater management best practices along with considerations for green-infrastructure inclusions.

5. Traffic Congestion *(19 comment mentions)*

Many commentors mentioned experiencing congestion at the entrance to the park and at the Pleasant Plains Road and Old US 1 Highway intersection; there were multiple specific mentions about the potential to turn right-on-red from Pleasant Plains Road onto Old US 1 Highway and the overall operations of this intersection.

This study considers known locations that experience congestion and will evaluate congestion relief in the alternative prioritization process. This includes the potential for new traffic to be introduced into or shifted within the roadway network as a result of an additional access to the park, such as cut-through traffic or expected changes in trip patterns.

However, the Pleasant Plains Access Study will not conduct a comprehensive traffic analysis. It is focused on identifying and evaluating viable access options, with consideration given to an option's potential to exacerbate or mitigate the known traffic congestion hotspots. It will not include direct recommendations on how to improve traffic flow on existing roads. Input directly related to traffic operations is being shared with the appropriate Town departments and NCDOT for their consideration.

6. Emergency Access *(12 comment mentions)*

Comments mentioned the pressing need for an additional emergency access option, given the potential for a CSX train to block the current sole access point to the park and specified that additional emergency access needs to avoid the known congestion at the Pleasant Plains Road and Old US 1 Highway intersection.

The Pleasant Plains Access Study's mission is to evaluate additional access in the event of an emergency at Pleasant Park, including ingress for emergency vehicles and egress for park users. The study is being conducted in consultation with input from emergency services including the Town of Apex Fire Department and Police Department. The study will consider the effectiveness of emergency ingress and egress at the park as an important part of the evaluation and prioritization process. Barriers to access, such as congestion at the park entrance, potential blockage by a CSX train or CSX track maintenance, and total route distance from emergency services facilities to the park are all considered in the evaluation process.

7. Process Concerns *(6 comment mentions)*

Comments noted a history of miscommunications and general disagreement between the Town of Apex and the residents of Pleasant Plains Road, Friendship Road and the Kirkwood neighborhood regarding the vision and construction of Pleasant Park. Comments especially expressed frustration that previously stated concerns about the park lacking secondary entrance are only now being addressed, leading these residents to feel that their opinions have not been heard or heeded as part of the decision-making process.

Pleasant Park provides beneficial recreational facilities for Apex residents. However, the Town acknowledges that its operations do attract volumes of park user traffic to the surrounding roadway network, including Pleasant Plains Road. The Town of Apex appreciates the input that has been provided, now and in the past, by those who live near the park and is committed to continue engagement with the public. Specifically in this study, public input is being directly incorporated into the methodology and metrics used to develop performance measures and to inform the alternative evaluation process. Public input will be a major factor in the performance measures evaluation process, which is the basis for comparing the effectiveness and viability of the potential access options.

8. Roadway Network Connection for NC 540 Crossing Alternative *(1 comment)*

One comment asked for clarification on the alignment for the access option that connects across NC 540.

The alignment location for the access option that crosses NC 540, along with all other options, is currently in development. These concept designs will minimize, when possible, impacts to streams and wetlands and will tie to the existing or planned roadway network. The access alternatives presented on maps during the September 2026 public comment period were intended to reflect general locations of where potential alternatives are being considered, rather than representing actual alignments.

9. Comments and Opinions on the Potential Access Options *(3 comments)*

Several comments expressed opinions and preferences about the potential access options or about the park in general.

The September 2026 public engagement phase of the study was intended to gather input on what people think is important when considering a new access option in terms of performance measures and the evaluation process. Once conceptual designs for the alternatives have been developed, the project team will conduct another round of public involvement and will solicit public feedback on which specific alternative(s) the public prefers. These opinions voiced during this comment period will help to inform the alternative development process as the study progresses but are not being tallied and reported at this time.

10. Issues Related to the Operations and Infrastructure of Pleasant Park *(8 comments)*

Several comments mentioned issues related to the infrastructure of the park itself, including the need for shade, traffic circulation and parking concerns; others commented on the operations of the park, such as holding large sporting events.

The Pleasant Park Access Study is designed specifically to evaluate additional access options to Pleasant Park. It does not evaluate the infrastructure or general operations of the park itself. These comments, though, will be shared with the Pleasant Park management staff in the Town's Parks, Recreation & Cultural Resources department.

TOWN OF APEX, NORTH CAROLINA
Municipality No. 333

After recording, please return to: Town Clerk, Town of Apex, P.O. Box 250, Apex, NC 27502

ORDINANCE NO. 2026-____
ANNEXATION PETITION NO. 839
APEX MEDICAL CENTER
1405 AND 1407 ZENO ROAD – 3.60 ACRES

AN ORDINANCE TO EXTEND THE CORPORATE LIMITS
OF THE TOWN OF APEX, NORTH CAROLINA
P.O. Box 250, Apex, North Carolina 27502

WHEREAS, the Apex Town Council has been petitioned under G.S.§160A-31, as amended, to annex the area described herein; and

WHEREAS, the Apex Town Council has by Resolution directed the Town Clerk to investigate the sufficiency of said petition; and

WHEREAS, the Town Clerk has certified the sufficiency of said petition and a public hearing on the question of this annexation was held at Apex Town Hall at 6:00 p.m. on November 10, 2026, after due notice by posting to the Town of Apex website, http://www.apexnc.org/news/public-notices-legal-ads; and

WHEREAS, the Apex Town Council does hereby find as a fact that said petition meets the requirements of G.S.§160A-31, as amended.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of Apex, North Carolina:

Section 1. By virtue of the authority granted by G.S.§160A-31, as amended, the territory described on the below identified survey plat, also property PIN No. 0732834782 and PIN No. 0732836597, is hereby annexed and made part of the Town of Apex, North Carolina, as of the date of adoption of this Ordinance on November 10, 2026. The survey plat that describes the annexed territory is that certain survey plat entitled "ANNEXATION MAP FOR THE TOWN OF APEX". The survey plat printed date is October 15, 2026, certified by the Land Surveyor on October 15, 2026, and recorded in Book of Maps book number 2026 and page numbers _____, Wake County Registry.

Section 2. Upon and after the adoption of this ordinance, the territory described herein and its citizens and property shall be subject to all debts, laws, ordinances and regulations in force in the Town of Apex, North Carolina, and shall be entitled to the same privileges and benefits as other parts of the Town of Apex. Said territory shall be subject to municipal taxes according to G.S.§160A-58.10, as amended.

Section 3. The Clerk of the Town of Apex, North Carolina shall cause to be recorded in the Office of the Register of Deeds of Wake County and in the Office of the Secretary of State at Raleigh, North Carolina and in the Office of the Wake County Board of Elections an accurate map of the annexed territory, described in Section 1 hereof, together with a duly certified copy of this Ordinance.

Adopted this the 10th day of November, 2026.

_____
Jacques K. Gilbert
Mayor | Town of Apex

ATTEST:

_____
Allen L. Coleman, CMC
Town Clerk | Town of Apex

APPROVED AS TO FORM:

_____
Brian Meyer
Interim Town Attorney | Town of Apex

Legal Description

ANNEXATION AREA DESCRIPTION
TOWN OF APEX
ANNEXATION PETITION NO. 839
APEX MEDICAL CENTER
1405 and 1407 ZENO ROAD – 3.60+/- ACRES

BEGINNING AT AN IRON PIPE HAVING NCGS COORDINATES NORTHING 723,633.56' AND EASTING 2,038,842.16' ON THE SOUTHERN RIGHT OF WAY AT THE INTERSECTION OF THE COMMON PROPERTY LINE OF WAKEMED PROPERTY SERVICE, THENCE LEAVING SAID RIGHT OF WAY WITH SAID COMMON PROPERTY LINE SOUTH 02 DEGREES 19 MINUTES 20 SECONDS WEST FOR A DISTANCE OF

222.34 FEET TO A REBAR AT THE INTERSECTION OF THE COMMON PROPERTY LINE OF CARL THOMAS GRAY, THENCE NORTH 66 DEGREES 45 MINUTES 59 SECONDS WEST FOR A DISTANCE OF 378.23 FEET TO AN IRON ROD, THENCE NORTH 66 DEGREES 45 MINUTES 59 SECONDS WEST FOR A DISTANCE OF 235.00 FEET TO A POINT AT THE INTERSECTION OF THE COMMON PROPERTY LINE OF RUSSELL J. AND SHARON R. MILES, THENCE WITH SAID COMMON PROPERTY LINE NORTH 49 DEGREES 21 MINUTES 24 SECONDS EAST FOR A DISTANCE OF 385.11 FEET TO AN IRON PIPE ON THE SOUTHERN RIGHT OF WAY OF ZENO ROAD, THENCE CROSSING SAID RIGHT OF WAY NORTH 49 DEGREES 21 MINUTES 24 SECONDS EAST FOR A DISTANCE OF 63.91 FEET TO POINT ON THE NORTHERN RIGHT OF WAY OF ZENO ROAD, THENCE WITH SAID RIGHT OF WAY SOUTH 39 DEGREES 44 MINUTES 21 SECONDS EAST FOR A DISTANCE OF 198.69 FEET TO A POINT, THENCE SOUTH 50 DEGREES 34 MINUTES 51 SECONDS EAST FOR A DISTANCE OF 139.37 FEET TO AN IRON PIPE, THENCE LEAVING SAID RIGHT OF WAY SOUTH 02 DEGREES 19 MINUTES 20 SECONDS WEST A DISTANCE OF 71.00 FEET TO THE POINT OF BEGINNING, CONTAINING 156,833 SQUARE FEET OR 3.60 ACRES.

****

ORDINANCE NO. 2026-____
ANNEXATION PETITION NO. 839
APEX MEDICAL CENTER
1405 AND 1407 ZENO ROAD – 3.60 ACRES

STATE OF NORTH CAROLINA

COUNTY OF WAKE

CLERK'S CERTIFICATION

I, Allen L. Coleman, Town Clerk, Town of Apex, North Carolina, do hereby certify the foregoing is a true and correct copy of Annexation Ordinance No. 2026_____, adopted at a meeting of the Town Council, on the 10th day of November, 2026, the original of which will be on file in the Office of the Town Clerk of Apex, North Carolina.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official Seal of the Town of Apex, North Carolina, this the 10th day of November, 2026.

_____
Allen L. Coleman, CMC
Town Clerk

(SEAL)

ANNEXATION DESCRIPTION

BEGINNING AT AN IRON PIPE HAVING NCGS COORDINATES NORTHING 723,633.56’ AND EASTING 2,038,842.16’ ON THE SOUTHERN RIGHT OF WAY AT THE INTERSECTION OF THE COMMON PROPERTY LINE OF WAKEMED PROPERTY SERVICE, THENCE LEAVING SAID RIGHT OF WAY WITH SAID COMMON PROPERTY LINE SOUTH 02 DEGREES 19 MINUTES 20 SECONDS WEST FOR A DISTANCE OF 222.34 FEET TO A REBAR AT THE INTERSECTION OF THE COMMON PROPERTY LINE OF CARL THOMAS GRAY, THENCE NORTH 66 DEGREES 45 MINUTES 59 SECONDS WEST FOR A DISTANCE OF 378.23 FEET TO AN IRON ROD, THENCE NORTH 66 DEGREES 45 MINUTES 59 SECONDS WEST FOR A DISTANCE OF 235.00 FEET TO A POINT AT THE INTERSECTION OF THE COMMON PROPERTY LINE OF RUSSELL J. AND SHARON R. MILES, THENCE WITH SAID COMMON PROPERTY LINE NORTH 49 DEGREES 21 MINUTES 24 SECONDS EAST FOR A DISTANCE OF 385.11 FEET TO AN IRON PIPE ON THE SOUTHERN RIGHT OF WAY OF ZENO ROAD, THENCE CROSSING SAID RIGHT OF WAY NORTH 49 DEGREES 21 MINUTES 24 SECONDS EAST FOR A DISTANCE OF 63.91 FEET TO POINT ON THE NORTHERN RIGHT OF WAY OF ZENO ROAD, THENCE WITH SAID RIGHT OF WAY SOUTH 39 DEGREES 44 MINUTES 21 SECONDS EAST FOR A DISTANCE OF 198.69 FEET TO A POINT, THENCE SOUTH 50 DEGREES 34 MINUTES 51 SECONDS EAST FOR A DISTANCE OF 139.37 FEET TO AN IRON PIPE, THENCE LEAVING SAID RIGHT OF WAY SOUTH 02 DEGREES 19 MINUTES 20 SECONDS WEST A DISTANCE OF 71.00 FEET TO THE POINT OF BEGINNING, CONTAINING 156,833 SQUARE FEET OR 3.60 ACRES.

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CONSENT AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Dianne Khin, Director

Department(s): Planning

Requested Motion

Conduct a Public Hearing and consider a possible motion to adopt an ordinance on the Question of Annexation - Apex Town Council's intent to annex 3.60 +/- acres, Apex Medical Center located at 1405 Zeno Road (PIN No. 0732-83-6597 and 1407 Zeno Road PIN No. 0732-83-4782), Annexation No. 839, into the Town Corporate limits.

Approval Recommended?

Yes

Item Details

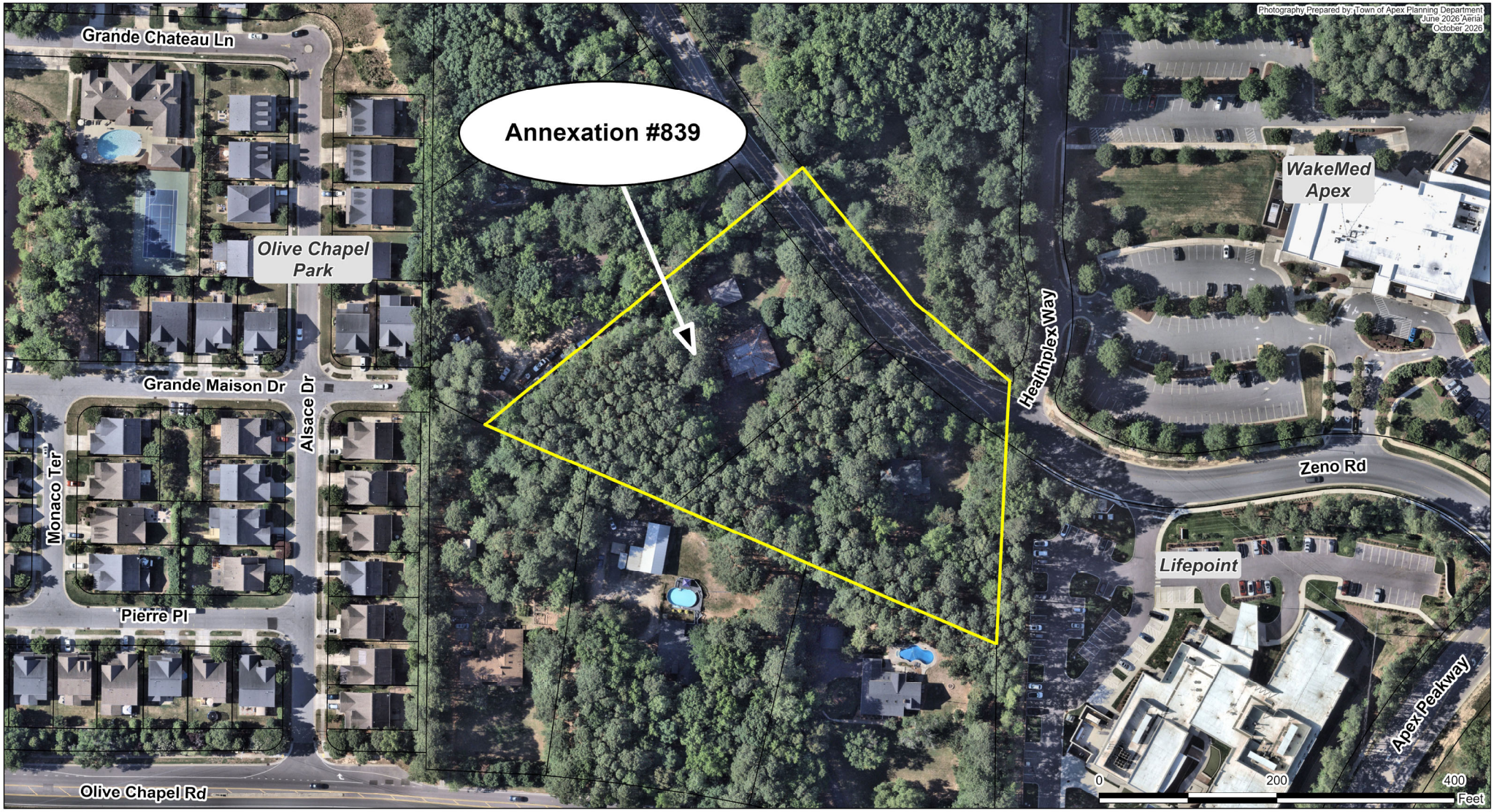
The annexation petition has been certified, and a public hearing notice has been posted.

This annexation is requested to support a development of Apex Medical Center. These two parcels on Zeno Road were rezoned from Residential Agriculture to Office and Institutional Conditional Zoning on August 27, 2024 (5-0) and the statement and ordinance from that approval can be viewed (HERE) and the plat map design layout documents can be viewed (HERE). This property was also known as Annexation Petition 797; however, property ownership changed from the time of the initial application and caused an ownership discrepancy. A new petition has been executed by the appropriate owners.

Attachments

- PH1-A1: Annexation Ordinance - Annexation No. 839 – Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres
- PH1-A2: Legal Description – Annexation No. 839 – Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres
- PH1-A3: Aerial Map – Annexation No. 839 – Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres
- PH1-A4: Plat Map – Annexation No. 839 – Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres
- PH1-A5: Annexation Petition – Annexation No. 839 – Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres

- PH1-A6: Public Hearing Notice - Annexation No. 839 – Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres


Photography Prepared by: Town of Apex Planning Department
June 2026 Aerial
October 2026
Annexation #839
Grande Chateau Ln
Olive Chapel Park
Grande Maison Dr
Alsace Dr
Monaco Ter
Pierre Pl
Olive Chapel Rd
Healthplex Way
WakeMed Apex
Zeno Rd
Lifepoint
Apex Peakway
0
200
400
Feet

NORTH CAROLINA PROFESSIONAL SEAL L-4720 LAND SURVEYOR RONALD T. FREDERICK

CERTIFICATE OF SURVEY AND ACCURACY

I, RONALD T. FREDERICK, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION. DEED DESCRIPTION RECORDED IN REFERENCES AS SHOWN: THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DASHED LINES DRAWN FROM INFORMATION FOUND IN REFERENCES SHOWN; THAT THE RATION OF PRECISION AS CALCULATED IS 1:10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED.

D. THIS SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION.

WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 15TH DAY OF OCTOBER A.D., 2026.

RONALD T. FREDERICK PLS: L-4720 10-15-2026

ANNEXATION #_____

I, ALLEN COLEMAN, CMC, NCCCC, TOWN CLERK, APEX, NORTH CAROLINA CERTIFY THIS A TRUE AND EXACT MAP OF ANNEXATION ADOPTED THE _____ DAY OF _____, 2026, BY THE TOWN COUNCIL. I SET MY HAND AND SEAL OF THE TOWN OF APEX, _____
DAY/MONTH/YEAR

_____
ALLEN COLEMAN, CMC, NCCCC, TOWN CLERK

TOTAL AREA OF ANNEXATION 3.60 AC INCLUDING R/W

N

N.C. GRID NORTH NAD83/2011



VICINITY MAP -NOT TO SCALE

N/F
RUSSELL J. MILES
SHARON R. MILES
DB 3271 PG 150
BM 1983 PG 653
PIN 0732833828

IPS
N49° 21' 24"E 63.91'
S39° 44' 21"E 198.69'
S39° 33' 56"E 99.77'
S41° 45' 29"E 100.90'
S50° 34' 51"E 139.37'
S49° 17' 05"E 104.14'
S54° 26' 25"E 86.80'
S02° 19' 20"W 71.00'
S02° 19' 20"W 222.34'
N49° 21' 24"E 385.11'
N47° 15' 04"E 281.92'
N66° 45' 39"W 235.00'
148.44'
N66° 45' 59"W 378.23'
229.79'

ZENO ROAD
VARIABLE WIDTH PUBLIC RIGHT OF WAY
BM 1983 PG 653
BM 2000 PG 1589
BM 2023 PG 581

TOWN OF APEX CORPORATE LIMITS

N/F
WESTCHESTER COMMERCIAL LLC
DB 19115 PG 898
BM 2023 PG 581
PIN 0732847028

30' DUKE ENERGY EASEMENT
DB 12376 PG 881

30' DUKE ENERGY EASEMENT
DB 12674 PG 1625

EWP ZENO ROAD LLC
DB 20147 PG 1333
BM 1983 PG 653
PIN 0732834782

1.58 ACRES
68,698 SF

1407 ZENO ROAD
ZONED O&I-CZ

EWP ZENO ROAD LLC
DB 20147 PG 1328
BM 1983 PG 653
PIN 0732836597

1.50 ACRES
65,437 SF

1405 ZENO ROAD
ZONED O&I-CZ

HEALTHPLEX WAY
VARIABLE WIDTH PUBLIC RIGHT OF WAY
BM 2023 PG 581

N/F
WAKEMED PROPERTY SERVICES
ATTN: CORPORATE ACCOUNTING
DB 11008 PG 2467
BM 2008 PG 118
PIN 0732942090

NCGS MONUMENT
"JUNCTION 2"
N: 727,401.10
E: 2,036,840.85
ELEV: 347.58'
NAD 83/2011
NAVD88

N81° 41' 13"W
23145.12'(GRID)
23147.51(GROUND)

N88° 50' 46"E
20905.21'(GRID)
20907.43'(GROUND)

IRON PIPE SET
N: 723633.56
E: 2038842.16
NAD 83/2011

NCGS MONUMENT
"DOWNS"
N: 724,054.57
E: 2,059,743.14
ELEV: 377.47'
NAD 83/2011
NAVD88
COMBINED GRID FACTOR:
0.999892675

N/F
WAKEMED PROPERTY SERVICES
DB 11008 PG 2467
BM 2000 PG 1589
PIN 0732930326

EXISTING REBAR WITH CAP & TAC FLUSH WITH GROUND
N: 723411.40
E: 2038833.15
NAD 83/2011
ELEV: 438.46
NAVD88

CALCULATED POINT

1"EIP BENT

1/4"EIR 2'AG

1" EIP

N/F
WAYNE HUI
KUI ZENG
DB 18240 PG 1317
BM 1983 PG 653
PIN 0732832455

N/F
BRANDON TOLER
ELIZABETH TOLER
DB 9932 PG 1370
BM 1983 PG 653
PIN 0732834349

N/F
CARL THOMAS GRAY
PAMELA R. GRAY
DB 7489 PG 94
BM 1983 PG 653
PIN 0732836390

NOTES:

1. THE PURPOSE OF THIS PLAT IS TO ANNEX THE PROPERTY SHOWN INTO THE TOWN OF APEX
2. HORIZONTAL CONTROL ESTABLISHED WITH GPS USING NCGS VRS HORIZONTAL DATUM – NCSPCS (NAD 83/2011)
3. THIS SURVEY AND MAP WAS PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY IS SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
4. AREAS SHOWN ARE BY COORDINATE METHOD.
5. BEARINGS FOR THIS SURVEY ARE BASED ON NC GRID NAD83/2011.

0 40 80 120

ABBREVIATION LEGEND

EIP – EXISTING IRON PIPE
CMF – CONCRETE MONUMENT FOUND
IPS – IRON PIPE SET
N/F – NOW OR FORMERLY
DB – DEED BOOK
PG – PAGE

LINE LEGEND

– PROPERTY LINE
– RIGHT-OF-WAY LINE
– APEX CORPORATE LIMITS

SCALE: 1"=40'
DRAWN BY: TKD
REVIEWED BY: RTF

BGE
5438 WADE PARK BLVD, SUITE 420
RALEIGH NC 27607
WWW.BGEINC.COM
NC LICENSE #C-4397
©2023

SURVEY FOR:
EAST WEST PARTNERS MANAGEMENT CO.

ADDRESS:
1450 ENVIRON WAY, CHAPEL HILL, NC 27517

LOCATED AT:
1405 & 1407 ZENO RD
APEX, NC 27502

ANNEXATION MAP FOR THE TOWN OF APEX

WHITE OAK TOWNSHIP, WAKE COUNTY, NORTH CAROLINA

PROJECT#: 12413-00

FILE NAME: 12413-00_ANNEX

DATE: 10/15/2026

SHEET 1 OF 1

PETITION FOR VOLUNTARY ANNEXATION
Town of Apex, North Carolina

ANNEXATION PETITION SUBMISSION: Applications are due by 12:00 pm on the first business day of each month. See the "Annexation Petition Schedule" on the website for details.

ANNEXATION FEE: $300; $200.00 for well/septic failure
For the complete Town of Apex Fee Schedule visit https://www.apexnc.org/DocumentCenter/View/407.

VOLUNTARY ANNEXATION: Upon receipt of a valid petition signed by all of the owners of real property in the area described therein, the Town may annex an area either contiguous or not contiguous to its primary corporate limits when the area meets the standards set out under North Carolina General Statutes 160A-31 and 160A-58.1. A petition submitted pursuant to North Carolina General Statute 160A-58.1 need not be signed by the owners of real property that is wholly exempt from property taxation under the Constitution and laws of North Carolina, nor by railroad companies, public utilities as defined in G.S. 62-3(23), or electric or telephone membership corporations.

HARD COPY SUBMITTAL REQUIREMENTS:

- Town of Apex Petition for Annexation with original wet ink signatures. No photocopies or scanned images.
- Petition Fee by one of the following forms of payment:
  - Visa or Master Card (online only);
  - In person: Cash (exact amount only); or
  - Check payable to 'Town of Apex'

ELECTRONIC SUBMITTAL REQUIREMENTS: GEOCIVIX (IDT)

- Town of Apex Petition for Annexation
- Written Metes and Bounds Legal Description: Submit original PDF. Scanned documents will not be accepted.
- Electronic plat submittal (18" x 24")

REVIEW AND APPROVAL PROCESS:

- **SUBMITTAL:** Submit hard copy application with original wet signatures (no photo copies or scanned images) and fee to the Planning Department and upload an electronic copy of the application, legal description and Annexation Plat via GeoCivix.
- **REVIEW BY STAFF:** The Planning Department and Development Services Department review the annexation submission. Comments will be sent to the applicant via email.
- **DESIGNATION OF ANNEXATION NUMBER:** The application is assigned an annexation number once the annexation petition is received.
- **ANNEXATION PLAT SUBMISSION**: After the map and legal description are deemed sufficient by the Town of Apex, the applicant is required to submit three (3) 18"x24" Mylar annexation plats to the Planning Department by the due date on the attached Annexation Schedule.
- **1ST TOWN COUNCIL MEETING:** This Town Council Meeting is typically held the second Tuesday of each month. The Town Council will pass a resolution directing the Town Clerk to investigate the annexation petition. The Town Clerk will present to the Town Council a Certificate of Sufficiency indicating that the annexation petition is complete. A resolution setting the date of the public hearing is then approved.
- **LEGAL ADVERTISEMENT**: A legal advertisement will be published on the Town of Apex's website no more than 25 days and no less than 10 days prior to the date of the public hearing.
- **2ND TOWN COUNCIL MEETING/PUBLIC HEARING:** This Town Council Meeting is typically held the fourth Tuesday of each month. The Town Council will either adopt or deny an ordinance to extend the corporate limits of the Town of Apex.
- **RECORDATION:** If the annexation is approved by the Town Council, the Town Clerk will have the Annexation Plats recorded at the Wake County or Chatham County Register of Deeds, as appropriate. Wake County or Chatham County will keep one of the recorded plats, one copy will be returned to the Planning Department, and the surveying company is given the remaining recorded Annexation Plat.

FOR WELL AND/OR SEPTIC FAILURES:

If the purpose of the petition is to connect to public water and/or sewer, contact Water Resources Program Coordinator Jessica Sloan at 919-372-7478 or jessica.sloan@apexnc.org to confirm that public water and/or sewer is available to the property. In order to receive public water and/or sewer services from the Town of Apex, refer to the checklist of items below to assist with obtaining one or both of these services:

- Apply for a plumbing permit with the Building Inspections and Permitting Department.
- The plumbing permit and associated costs for water and/or sewer will be included with the permit.

PETITION FOR VOLUNTARY ANNEXATION

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 #:		Submittal Date:	
Fee Paid	$	Check #	

TO THE TOWN COUNCIL APEX, NORTH CAROLINA

1. We, the undersigned owners of real property, respectfully request that the area described in Part 4 below be annexed to the Town of Apex, ☒ Wake County, ☐ Chatham County, North Carolina.
2. The area to be annexed is ☒ contiguous, ☐ non-contiguous (satellite) to the Town of Apex, North Carolina and the boundaries are as contained in the metes and bounds description attached hereto.
3. If contiguous, this annexation will include all intervening rights-of-way for streets, railroads, and other areas as stated in G.S. 160A-31(f), unless otherwise stated in the annexation amendment.

OWNER INFORMATION

EWP Zeno Road LLC	0732836597
Owner Name (Please Print)	Property PIN or Deed Book & Page #
919-904-7803	lperry@ewpnc.com
Phone	E-mail Address
EWP Zeno Road LLC	0732834782
Owner Name (Please Print)	Property PIN or Deed Book & Page #
919-904-7803	lperry@ewpnc.com
Phone	E-mail Address
N/A	N/A
Owner Name (Please Print)	Property PIN or Deed Book & Page #
N/A	N/A
Phone	E-mail Address

SURVEYOR INFORMATION

Surveyor:	Ronald Frederick (BGE, Inc.)		
Phone:	(919) 276-0111	Fax:	N/A
E-mail Address:	rfrederick@bgeinc.com		

ANNEXATION SUMMARY CHART

Property Information		Reason(s) for annexation (select all that apply)	
Total Acreage to be annexed:	3.60	Need water service due to well failure	☐
Population of acreage to be annexed:	0	Need sewer service due to septic system failure	☐
Existing # of housing units:	2	Water service (new construction)	☑
Proposed # of housing units:	0	Sewer service (new construction)	☑
Zoning District*:	O&I-CZ	Receive Town Services	☑

*If the property to be annexed is not within the Town of Apex's Extraterritorial Jurisdiction, the applicant must also submit a rezoning application with the petition for voluntary annexation to establish an Apex zoning designation. Please contact the Planning Department with questions.

Application #: _____ Submittal Date: _____

COMPLETE IF SIGNED BY INDIVIDUALS:

All individual owners must sign. (If additional signatures are necessary, please attach an additional sheet.)

_____ _____
Please Print Signature

_____ _____
Please Print Signature

_____ _____
Please Print Signature

_____ _____
Please Print Signature

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, _____, a Notary Public for the above State and County, this the _____day of, _____, 20____.

_____
Notary Public

SEAL

My Commission Expires: _____

COMPLETE IF A CORPORATION:

In witness whereof, said corporation has caused this instrument to be executed by its President and attested by its Secretary by order of its Board of Directors, this the _____ day of _____, 20_____.

Corporate Name _____

SEAL

By: _____
President (Signature)

Attest:

_____
Secretary (Signature)

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, _____, a Notary Public for the above State and County, this the _____day of _____, 20____.

_____
Notary Public

SEAL

My Commission Expires: _____

PETITION FOR VOLUNTARY ANNEXATION

Application #: _____ Submittal Date: _____

COMPLETE IF IN A LIMITED LIABILITY COMPANY

In witness whereof, EWP Zeno Road LLC a limited liability company, caused this instrument to be executed in its name by a member/manager pursuant to authority duly given, this the 13th day of October, 2026

Name of Limited Liability Company EWP Zeno Road LLC

By: _____
Signature of Member/Manager

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, PATRICIA F. MUELLER, a Notary Public for the above State and County, this the 13th day of October, 2026.

SEAL

PATRICIA F. MUELLER NOTARY PUBLIC WAKE COUNTY, N.C.

_____
Notary Public

My Commission Expires: 4.14.2029

COMPLETE IF IN A PARTNERSHIP

In witness whereof, _____, a partnership, caused this instrument to be executed in its name by a member/manager pursuant to authority duly given, this the _____ day of _____, 20____.

Name of Partnership _____

By: _____
Signature of General Partner

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, _____, a Notary Public for the above State and County, this the _____day of _____, 20____.

_____
Notary Public

SEAL

My Commission Expires: _____

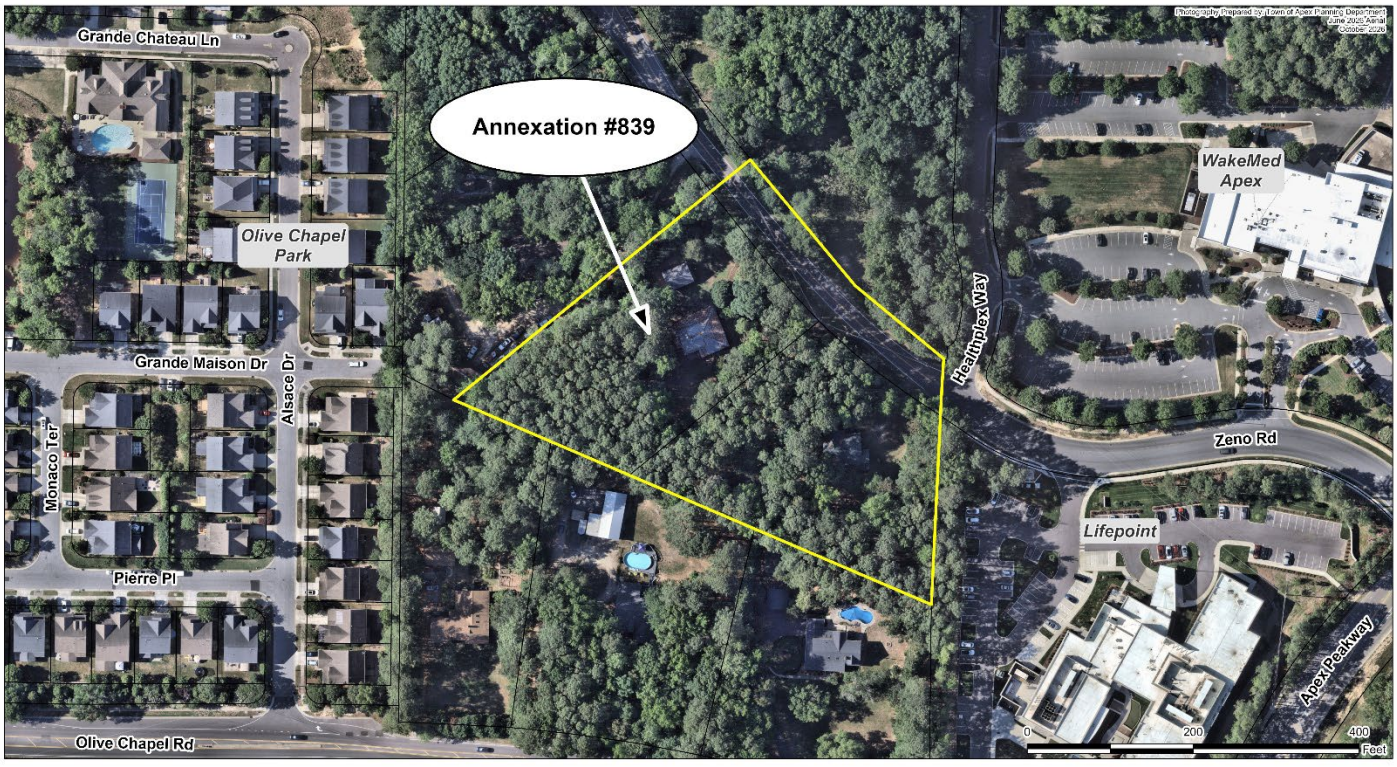
Media Contact:
Allen Coleman, Town Clerk to the Apex Town Council

FOR IMMEDIATE RELEASE

PUBLIC NOTICE – PUBLIC HEARING

APEX, N.C. (October 30, 2026) – The Town Council of Apex, North Carolina has scheduled a Public Hearing to be held at **6:00 p.m.** at Apex Town Hall, 73 Hunter Street, on the **10th day of November, 2026**, on the question of annexation of the following property requested by petition filed pursuant to G.S. 160A-31:

Annexation Petition No. 839
Apex Medical Center – 1405 and 1407 Zeno Road – 3.60 acres



Continued on next page

PUBLIC NOTICE – PUBLIC HEARING

Residents may submit written comments to the Town Council with attention marked to the Town Clerk Allen Coleman; P.O. Box 250; Apex, NC 27502 or by email at public public.hearing@apexnc.org. Please use subject line "Annexation Petition No. 839" and include your first and last name, your address, and your phone number in your written statements. Written comments will be accepted until 3:00 PM on Tuesday, November 10, 2026.

Members of the public can access and view the meeting on the Town's YouTube Channel https://www.youtube.com/c/TownofApexGov or attend in-person.

Anyone needing special accommodations to attend this meeting and/or if this information is needed in an alternative format, please contact the Town Clerk's Office. The Town Clerk is located at 73 Hunter Street in Apex Town Hall on the 2nd Floor, (email) allen.coleman@apexnc.org or (phone) 919-249-1260. We request at least 48 hours' notice prior to the meeting to make the appropriate arrangements.

Questions should be directed to the Town Clerk's Office.

###

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: PUBLIC HEARING

Meeting Date: November 10, 2026

Item Details

Presenter(s): Taylor Wray, Cultural Arts Center Manager

Department(s): Parks, Recreation and Cultural Resources

Requested Motion

Conduct a public hearing and consider a possible motion to approve the purchase of "Butterfly Enchanter," a sculpture by Aldo Muzzarelli and the 2026–2027 Brett Gantt Sculpture Walk People's Choice Winner, for an amount not to exceed $5,500, and authorize the relocation of the sculpture from The Depot in Downtown Apex to Apex Nature Park, near the playground, in April 2027.

Approval Recommended?

Yes

Item Details

The Culture & Arts Advisory Board would like to present "Butterfly Enchanter" to the Apex Town Council for purchase and future relocation. "Butterfly Enchanter" created by Aldo Muzzarelli, was the 2026-2027 Sculpture Walk Peoples' Choice Winner. The price of this sculpture is $5,500. "Butterfly Enchanter" is currently sitting in front of The Depot with the proposed location near the playground at the Apex Nature Park. Timeframe for relocation: Early April 2027.

Attachments

- PH2-A1: PowerPoint - Butterfly Enchanter Sculpture Purchase Request - $5,500

Sculpture Purchase

Culture & Arts Advisory Board

November 2026

Purchase

"Butterfly Enchanter"
By Aldo Muzzarelli

Appraisal: $8,000

Our Price: $5,500







2026-2027 Peoples' Choice Award Winner

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: PUBLIC HEARING

Meeting Date: November 10, 2026

Item Details

Presenter(s): Taylor Wray, Cultural Arts Center Manager

Department(s): Parks, Recreation and Cultural Resources

Requested Motion

Conduct a Public Hearing and consider a possible motion to approve the installation of the mural designed by artist Amy Cruz, as recommended by the Culture and Arts Advisory Board and informed by public feedback, on the base structure of the Apex Nature Park Amphitheatre, with painting anticipated in November 2026.

Approval Recommended?

Yes

Item Details

The Culture & Arts Advisory Board would like to present the mural created by artist, Amy Cruz, to the Apex Town Council for installation on the Apex Nature Park Amphitheatre base structure. This mural was commissioned by the Culture & Arts Advisory Board with feedback from a 30-day public feedback survey. The Culture & Arts Advisory Board and artist, Amy Cruz, reviewed the feedback and adjusted the mural to accommodate several of the suggestions from the public. Timeframe for painting: November 2026.

Attachments

- PH3-A1: PowerPoint - Nature Park Amphitheatre Base Structure Mural Design

Mural Designs

Culture & Arts Advisory Board

November 2026

Nature Park Amphitheatre - Location





Amy Cruz, artist







Proposed Design *(prior to public feedback)*

FRONT



BACK



Proposed Design *(prior to public feedback)*

SIDES





Proposed Design *(after public feedback)*

FRONT



BACK



Saunders Street Retaining Wall- Location



Britt Flood, artist



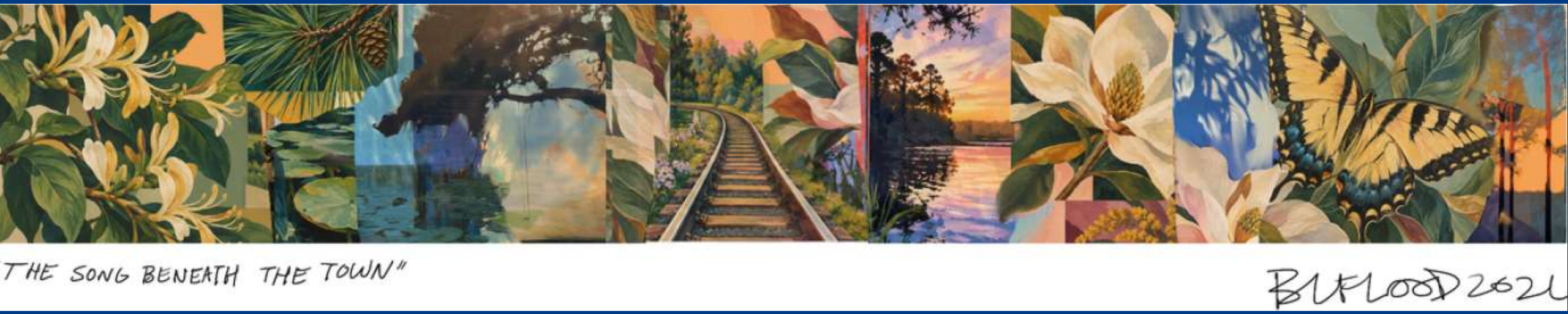




Proposed Design *(prior to public feedback)*



Proposed Design *(after public feedback)*



| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: PUBLIC HEARING

Meeting Date: November 10, 2026

Item Details

Presenter(s): Taylor Wray, Cultural Arts Center Manager

Department(s): Parks, Recreation and Cultural Resources

Requested Motion

Conduct a Public Hearing and consider a possible motion to approve the installation of the mural designed by artist Britt Flood, as recommended by the Culture and Arts Advisory Board and informed by feedback from downtown businesses and the public, on a portion of the retaining wall along the Saunders Street Parking Lot, with painting anticipated in November 2026.

Approval Recommended?

Yes

Item Details

The Culture & Arts Advisory Board would like to present the mural created by artist, Britt Flood, to the Apex Town Council for installation on part of the retaining wall along the Saunders Street Parking Lot. This mural was commissioned by the Culture & Arts Advisory Board with feedback from the Downtown businesses and a 30-day public feedback survey. The Culture & Arts Advisory Board and artist, Britt Flood, reviewed the feedback and adjusted the mural to accommodate several of the suggestions from the public. Timeframe for painting: November 2026.

Attachments

- P4-A1: PowerPoint - Saunders Street Parking Lot Retaining Wall Mural Design

Mural Designs

Culture & Arts Advisory Board

November 2026

Nature Park Amphitheatre - Location





Amy Cruz, artist







Proposed Design *(prior to public feedback)*

FRONT



BACK



Proposed Design *(prior to public feedback)*

SIDES





Proposed Design *(after public feedback)*

FRONT



BACK



Saunders Street Retaining Wall- Location



Britt Flood, artist



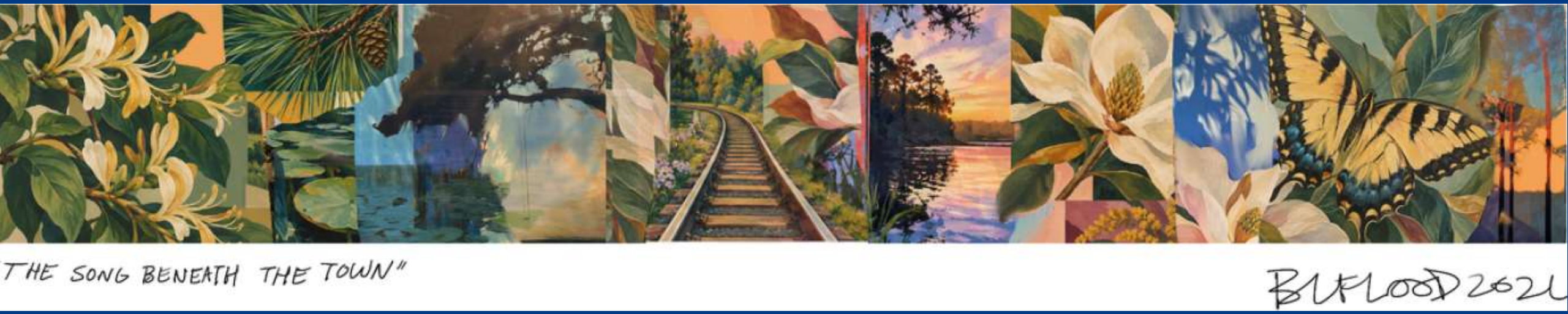




Proposed Design *(prior to public feedback)*



Proposed Design *(after public feedback)*



| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: PUBLIC HEARING

Meeting Date: November 10, 2026

Item Details

Presenter(s): June Cowles, Senior Planner

Department(s): Planning

Requested Motion

The project was continued by the applicant from October 13, 2026, Town Council Meeting.

Public hearing and possible motion concerning Rezoning Application No. 25CZ24 N. Salem Street Mixed-Use PUD. The applicants, Merit Group, LLC and Matthew Carpenter, Parker Poe, seek to rezone approximately ±32.35 acres from Residential Agricultural (RA), Rural Residential (RR), & Planned Commercial-Conditional Zoning (PC-CZ #15CZ02) to Planned Unit Development-Conditional Zoning (PUD-CZ). The proposed rezoning is located at 0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St. & 0 Charlion Downs Ln.

Approval Recommended?

The Planning Department recommends approval.

The Planning Board held a Public Hearing on September 14, 2026 and by a vote of 6 to 2 recommended approval of the rezoning with the condition that the applicant consider a wider buffer along the southern property and PUD plan transportation condition 9c be revised as "At Site Access #3 on N. Salem Street align with Thales outbound driveway, with an exclusive northbound left turn lane on N. Salem Street and a channelized concrete median between them to prohibit left turns from both sides of N. Salem Street."

Item Details

The properties to be rezoned are identified as PINs 0742367712, 0742368697, 0742365731, 0742366583, 0742369479, 0742369278, 0742350909, 0742362432, 0742366306, 0742268387, 0742360631, 0742363169, 0742358857, 0742353848, 0742362719, & 0742363799.

Attachments

- PH5-A1: Staff Report - Rezoning Case No. 25CZ24 - North Salem Street Mixed Use PUD
  - Vicinity Map
  - Application
- PH5-A2: Planning Board Report to Town Council - Rezoning Case No. 25CZ24 - North Salem Street Mixed Use PUD

All property owners, tenants, and neighborhood associations within 500 feet of this rezoning have been notified per UDO Sec. 2.2.11 *Public Notification*.

BACKGROUND INFORMATION:	
Location:	0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St.; 0 Charlion Downs Ln.
Applicant:	Merit Group, LLC
Authorized Agents:	Matthew Carpenter, Parker Poe, LLP & Paul Munana, Merit Group, LLC
Owner:	Merit Group, LLC, Geraldine Gilbert Heirs, DLG Holdings LLC, June Thompson, and Elizabeth Burgess Chappell
PROJECT DESCRIPTION:	
Acreage:	±32.35 acres
PINs:	0742367712, 0742368697, 0742365731, 0742366583, 0742369479, 0742369278, 0742350909, 0742362432, 0742366306, 0742268387, 0742360631, 0742363169, 0742358857, 0742353848, 0742362719, & 0742363799
Current Zoning:	Residential Agricultural (RA), Rural Residential (RR), & Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
Proposed Zoning:	Planned Unit Development-Conditional Zoning (PUD-CZ)
Current 2045 Land Use Map:	Mixed Use: High Density Residential/Office Employment/Commercial Services (±4.92 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (±27.38 acres)
If rezoned as proposed, the 2045 Land Use Map Designation will change to:	Mixed Use: High Density Residential/Office Employment/Commercial Services (±8.27 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (±24.03 acres)
Town Limits:	Inside Corporate Limits and ETJ

ADJACENT ZONING & LAND USES:		
	Zoning	**Land Use**
North:	Planned Commercial-Conditional Zoning (PC-CZ #15CZ02); Residential Agricultural (RA)	All Wheel Drive; Vehicle sales and rental light (Crossroad Ford Auto Dealership); Single-family Residential
South:	Medium Density Residential-Conditional Use (MD-CU #93CU11); Medium Density Residential (MD)	Single-family Residential (Haddon Place and Haddon Hall Subdivisions)
East:	Light Industrial (LI); Residential Agricultural (RA); Office & Institutional-Conditional Zoning (O&I-CZ #07CZ02)	N. Salem Street; Vehicle sales and rental light (Crossroad Ford Auto Dealership); Single-family Residential; Office; School, private (Thales Academy); Church (The Peak Church)
West:	Medium Density Residential-Conditional Use (MD-CU #93CU11)	Single-family Residential (Haddon Hall Subdivision)

EXISTING CONDITIONS:

The project site includes 16 parcels totaling +/-32.35 acres (See Figure 1: Existing Site Conditions). The project site includes the following:

- Several single-family homes, outbuildings, and barn structures
- 2 ponds
- Several streams
- Open fields
- Mature trees



Figure 1: Existing Site Conditions

BACKGROUND:

The project, at the request of the applicant, was continued from October 13th Town Council meeting to the November 10th Town Council meeting.

The following is a history of the future Land Use Map (LUM) designations for the subject properties:

Land Use Map Adopted Date	Project Site Land Use Designation
2010 Land Use Map December 5, 1989	Low Density Residential
2025 Land Use Map May 18, 2004	Mixed Use: Medium Density Residential/Office & Institutional/Commercial

Land Use Map Adopted Date	Project Site Land Use Designation
2030 Land Use Map August 6, 2013	Mixed Use Not Outlined (No requirement for mixed use): Northeast area: High Density Residential/Office Employment/Commercial Services (4.92 acres) Remaining Area: Medium Density Residential/Office Employment/Commercial Services (27.38 acres)
2030 Land Use Map June 7, 2016	Mixed Use Outlined (≥30% Nonresidential) symbol was added to the map and legend (Requirement for mixed use)

2045 LAND USE MAP:

The 2045 Land Use Map (LUM) designation for the subject properties includes two areas of Mixed Use (See Figure 2: Current 2045 Land Use Map).

Current LUM:

- Mixed Use: High Density Residential/Office Employment/Commercial Services (+/-4.92 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (+/-27.38 acres)

Proposed LUM:

The proposed project includes expansion of the High Density Residential part of the designation to the south and realignment along the west. If the properties are rezoned as proposed, the 2045 LUM will automatically be amended as per NCGS 160D-605(a) to Mixed Use: High Density Residential/Office Employment/Commercial Services (+/-8.27 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (+/-24.03 acres). (See Figure 3: Proposed 2045 Land Use Map).

The proposed rezoning includes a +/-8.0-acre Mixed Use district, which is 25% of the area to be rezoned. The 20.31-acre Crossroads Ford property to the north is entirely commercial and is included in the mixed-use area south of US 64 as shown on the LUM. If the proposed rezoning and the Crossroads Ford property are considered together, then 53% of the area (28.31 acres) south of US 64 and west of N. Salem Street will be non-residential. Additional non-residential land uses are located on the east side of N. Salem Street.

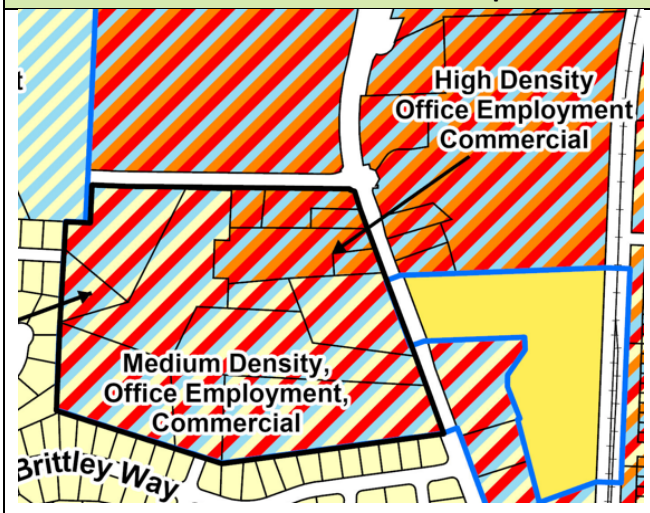
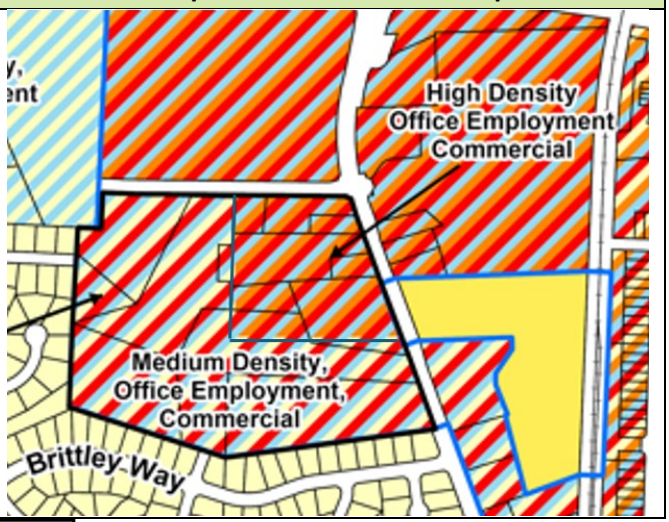
Current 2045 Land Use Map	Proposed 2045 Land Use Map
	

Figure 2: Current 2045 Land Use Map

Figure 3: Proposed 2045 Land Use Map

NEIGHBORHOOD MEETINGS:

The applicant conducted three neighborhood meetings on November 20, 2025, March 3, 2026 and July 23, 2026. The neighborhood meeting reports are attached to the staff report.

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 all grade levels within the current assignment area for this rezoning/development are anticipated to have sufficient capacity for future students.

PROPOSED PLANNED UNIT DEVELOPMENT PLAN:

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

The N. Salem Street Mixed-Use PUD Master Plan establishes 4 district locations (See Figure 4: Proposed PUD Master Plan).

- TH-1, TH-2, and TH-3 are Townhome Districts.
- MU-1 is a Mixed Use District (Non-residential and Multi-family uses).

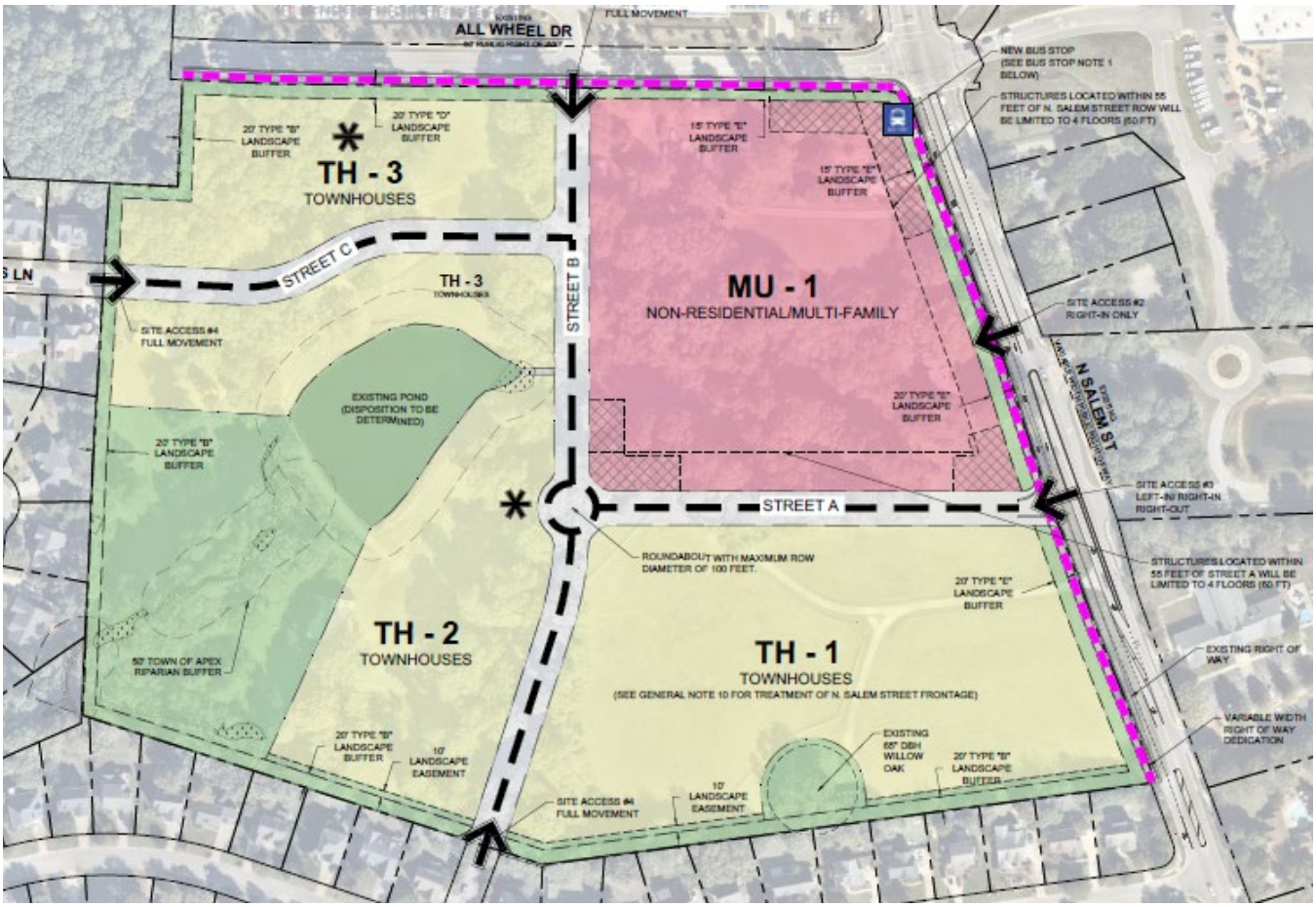


Figure 4: Proposed PUD Master Plan

The existing High Density Residential/Office Employment/Commercial Services 2045 Land Use Map classification (+/-4.92 acres) is shown below as a red-lined boundary on the proposed PUD plan. (See Figure 5: Existing Land Use Boundary (High Density Residential/Office Employment/Commercial Services on Proposed PUD Plan). If the rezoning is approved as proposed, the High Density Residential component of the classification will increase to +/-8.27 acres.

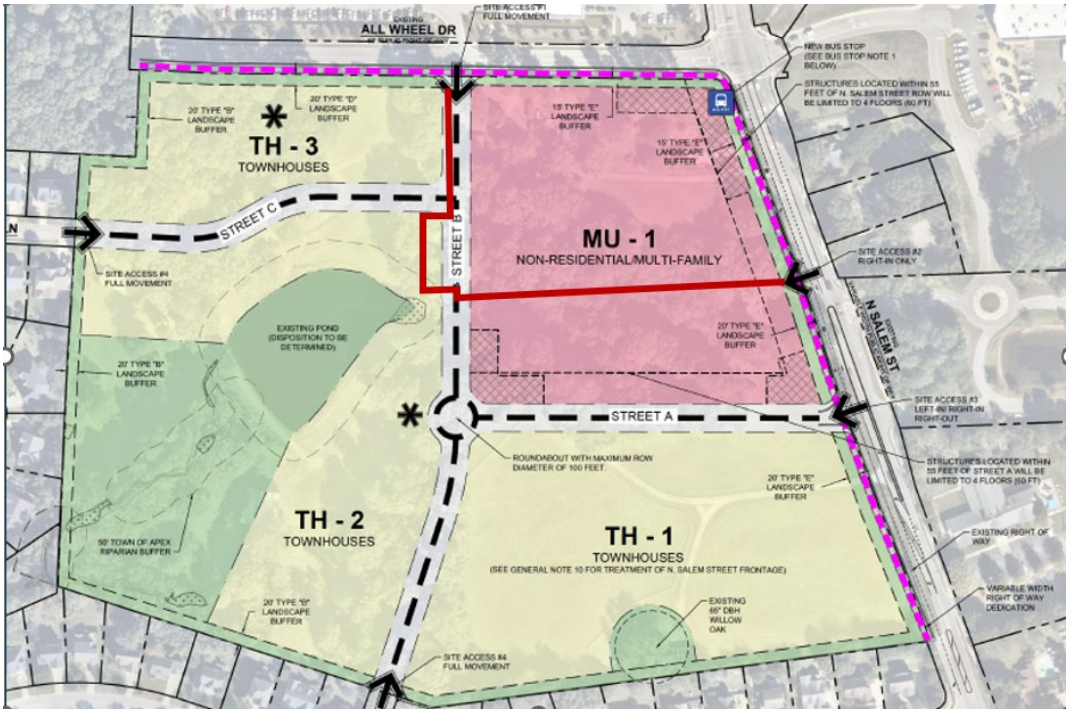


Figure 5: Existing Land Use Boundary (High Density Residential/Office Employment/Commercial Services) on Proposed PUD Plan

Permitted Uses:

The Rezoned Lands may be used for, and only for, the uses listed immediately below. The permitted uses are subject to the limitations and regulations stated in the UDO and any additional limitations or regulations stated below. 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.

	MU-1 District	TH-1 District	TH-2 District	TH-3 District
Residential				
Townhouse		P	P	P
Townhouse, detached		P	P	P
Small-scale multi-family*	P			
Multi-family or apartment	P			
Accessory apartment	P	P	P	P
Recreational Uses				
Park, active	P	P	P	P
Greenway	P	P	P	P
Park, passive	P	P	P	P

	MU-1 District	TH-1 District	TH-2 District	TH-3 District
Recreation facility, private	P	P	P	P
Utility, minor	P	P	P	P
Non-Residential Uses				
Restaurant, general	P			
Medical or dental office or clinic	P			
Medical or dental laboratory	P			
Office, business or professional	P			
Research facility	P			
Parking garage, public	P			
Artisan Studio	P			
Barber and beauty shop	P			
Book store	P			
Convenience store	P			
Dry cleaners and laundry service	P			
Farmer's market	P			
Financial institution, no drive-through	P			
Floral shop	P			
Grocery, specialty	P			
Health/fitness center or spa**	P			
Newsstand or gift shop	P			
Personal service	P			
Pharmacy	P			
Printing and copying service	P			
Real estate sales	P			
Retail sales, general	P			
Studio for art	P			
Tailor shop	P			
Pet services	P			
Drop-in or short-term day care	P			
Veterinary clinic or hospital	P			
Utility, minor	P			
Microbrewery	P			
Microdistillery	P			
Bar, nightclub, wine bar, or taproom***	P			

*Small scale multi-family shall be defined as: A building constructed to accommodate between two and ten dwelling units that are vertically or horizontally integrated. Multiple small-scale multi-family buildings may be located on one Lot.

**Health/fitness center or spa uses shall not exceed 10,000 sf in the aggregate and shall not exceed 4,000 sf per individual use. The 10,000 sf maximum shall not include Health/fitness center or spa uses that are accessory to Multi-family or apartment, or other residential uses.

***Hours of operation Sunday through Thursday shall close by 12 AM and hours of operation Friday through Sunday shall close by 2 AM.

Design Controls:

Acreages for each district are approximate and may increase or decrease by up to 20% based on updated surveys at Master Subdivision Plan.

Development shall comply with the following minimum design controls:

ALL DISTRICTS	
Maximum Total Units	460
Maximum Multi-Family Units	285
Maximum Townhouse/Small Scale Multi-Family Units	175 TH-1 District and TH-2 District combined shall not exceed 120 units
Maximum Non-Residential Square Footage	22,000 sf
Minimum Non-Residential Square Footage	10,000 sf

ALL DISTRICTS					
	Small Scale Multi-family	Front Loaded Townhouse	Rear Loaded Townhouse*	Multi-Family	Mixed-Use***
Minimum Lot Size	None	None	None	None	None
Minimum Lot Width	18 ft	18 ft	18 ft	None	None
Minimum Setbacks					
Front	10 ft	5 ft (building façade); 20 ft (garage)	5 ft (building façade)	10 ft	10 ft
Corner Side	8 ft	8 ft	8 ft	10 ft	10 ft
Rear	10 ft	10 ft	4 ft (to edge of alley)	10 ft	10 ft
Minimum Building Separation	10 ft	10 ft	10 ft	30 ft	20 ft
Maximum Building Height	3 stories: 45 ft	3 stories: 45 ft	3 stories: 45 ft	4-story buildings: 60 ft 4/5 story split buildings: 70 ft	Vertically Mixed-Use building: Maximum 5 stories, 75 ft **
Minimum Buffer/RCA Setbacks	Buildings: 10 ft Parking: 5 ft	Buildings: 10 ft Parking: 5 ft	Buildings: 10 ft Parking: 5 ft	Buildings: 10 ft Parking: 5 ft.	Buildings: 10 ft. Parking: 5 ft.

*Townhouses in TH-1 and Small-scale multi-family in MU-1 along the N. Salem Street frontage shall address N. Salem Street and have alley access from the rear.

**As shown on the PUD Preliminary Site Plan Layout Plan, structures located within 55 feet of the N. Salem Street right of way shall have a maximum of four stories and a maximum height of 60 feet and structures located within 55 feet of Street A shall have a maximum of four stories and a maximum height of 60 feet.

***Standalone non-residential buildings (buildings with no residential uses where the only uses are non-residential) shall be prohibited.

The following building placement controls shall apply in the MU-1 district:

- Within 100 feet of the intersection of Street A and Street B and the intersection of Street A and N. Salem Street, no parking bays or drive aisles shall be permitted between a building's front façade and the adjoining street.
- The corner of N. Salem Street and All Wheel Drive shall be anchored by a building with no more than one double-loaded (parking on each side of drive aisle) parking bay and drive aisle between the street and building.
- To facilitate outdoor dining and gathering, mixed-use buildings shall include a minimum 12-foot wide sidewalk along the facades of non-residential uses. This sidewalk shall include landscaping features (by way of example tree walls, planting beds, potted plants, and similar amenity elements), provided that no portion of such sidewalk serving as a pedestrian travel path shall be less than 6 feet wide.

ARCHITECTURAL CONDITIONS:

The proposed N. Salem Street Mixed-Use PUD offers the following architectural controls to ensure a consistency of character throughout the development, while allowing for enough variety to create interest and avoid monotony. Elevations included are conceptual examples. Final elevations must comply with these architectural standards but may vary from the conceptual elevations. Further details may be provided at the time of Residential Master Subdivision Plan submittal.

The residential design guidelines are divided into areas based on location as follows:

Townhomes:

- Along North Salem Street
- Adjacent to Single family homes
- Interior (Not along North Salem Street or adjacent to Single-family homes).

Small Scale Multi-family buildings:

- Along North Salem Street
- Interior (Not along North Salem Street or adjacent to Single-family homes).

Multi-family and Mixed-Use Buildings:

- Northeast PUD project area

RESIDENTIAL DESIGN GUIDELINES

Townhouses along/facing N. Salem Street:

1. Townhouse buildings shall not exceed 5 townhouse units per building.
2. Townhouse buildings shall have a roof break every townhouse unit.
3. Townhouse units shall include a minimum of 3 steps to the front porch.
4. Townhouse front facades shall have a varied setback for each unit.
5. Townhouse building facades shall have horizontal relief achieved by the use of recesses and projections.
6. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
7. Front entrances shall include an architecture covered porch/stoop area leading to the door.
8. The front, side, and rear elevations of the units facing public right-of-way shall have trim around the windows.
9. The visible side of a townhouse building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, or dormer.

10. The visible side of a townhouse building on a corner lot facing the public street shall include a wrap-around porch or bay window pop-out.
11. Townhouse buildings shall have no more than one unadorned side-gabled roof in a row within a single building.
12. 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. Colors shall be varied from adjacent unit.
13. Side entry townhouses (townhouses where the primary entrance is on the side) shall have an architectural cover popout on the side elevation above the primary entrance.

Townhouses adjacent to single-family homes:

1. Townhouse buildings where the front facades or rear facades of townhouses are parallel with the southern shared property line with lots in Haddon Hall, shall not exceed 4 townhouse units per building. Townhouse buildings where the front facades or townhouses are not parallel with the southern shared property line with lots in Haddon Hall shall not exceed 6 townhouse units per building.
2. Townhouse units shall have a roof break every townhouse unit or every other townhome unit
3. Building facades shall have horizontal relief achieved by the use of recesses and projections.
4. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
5. Front entrances shall include a covered porch/stoop area leading to the door.
6. The front, side, and rear elevation of units facing public right-of-way shall have trim around the windows.
7. The visible side of a townhouse building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, or dormer.
8. Townhouse buildings shall have no more than one unadorned side-gabled roof in a row within a single building.
9. Front facing garage doors must have windows, decorative details or carriage-style adornments on them.
10. The garage shall not protrude more than 1 foot out from the front façade or front porch. Living space above a garage shall not be considered part of the front façade.
11. 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. Colors shall be varied from adjacent unit.
12. Side entry townhouses (townhouses where the primary entrance is on the side) shall have an architectural cover popout on the side elevation above the primary entrance. Side entry townhouses with front facing garages shall include windows on the front elevation adjacent to the garage.

Small Scale Multi-Family buildings along N. Salem Street:

1. Building entrances shall face N. Salem Street.
2. Buildings shall include a minimum of 3 steps to the front porch.
3. Building facades shall have horizontal relief achieved by the use of recesses and projections.
4. Vinyl siding is not permitted; however, vinyl windows, decorative elements, and trim are permitted.
5. Front entrances shall include an architectural covered porch/stoop area leading to the door.
6. The front, side, and rear elevations of units facing public right-of-way shall have trim around the windows.
7. The visible side of a Small-scale Multi-family building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, or dormer.
8. The visible side of the Small-scale Multi-family building on a corner lot facing the public street shall include a wrap-around porch or bay window pop-out.

Townhouse and Small Scale Multi-family Interior (not along N. Salem Street or adjacent to Single-family homes):

1. Townhouse buildings shall not exceed 6 Townhome units per building.
2. Townhouse units shall have a roof break every townhouse unit or every other townhouse unit.
3. Building facades shall have horizontal relief achieved by the use of recesses and projections.
4. Vinyl siding is not permitted; however vinyl windows, decorative elements and trim are permitted.
5. Front entrances shall include a covered porch/stoop area leading to the door.
6. The front, side, and rear elevations of units facing public right-of-way shall have trim around the windows.
7. The visible side of a townhouse or small scale Multi-family building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, or dormer.
8. Townhouse buildings shall have no more than one unadorned side-gabled roof in a row within a single building.
9. Front facing garage doors must have windows or decorative details with carriage-style adornments on them.
10. The garage shall not protrude more than 1 foot out from the front façade or front porch. Living space above a garage shall not be considered part of the front façade.
11. 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 a varied trim, shutter, and accent colors complementing the siding color. Colors shall be varied from adjacent unit.
12. Side entry townhouses (townhouses where the primary entrance is on the side) shall have an architectural cover popout on the side elevation above the primary entrance. Side entry townhouses with front facing garages shall include windows on the front elevation adjacent to the garage.

Multi-Family and Mixed-Use Buildings:

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements, and trim are permitted.
2. Rear and side elevations of units that have right-of-way frontage shall have trim around the windows.
3. A minimum of four of the following decorative features shall be used on each building:
   a. Decorative shake
   b. Board and batten
   c. Decorative porch railing/posts
   d. Shutters
   e. Decorative/functional air vents on roof or foundation
   f. Recessed windows
   g. Decorative windows
   o. features that differentiate the building
   h. Decorative brick/stone
   i. Decorative gables
   j. Decorative cornices
   k. Tin/metal roof
   l. Decorative store front
   m. Building entries defined by a canopy or other entry detail
   n. Other architectural
4. Windows must vary in size and/or type.
5. Windows that are not recessed must be trimmed.
6. To reduce the Urban Heat Island Effect and conserve energy, for multi-family buildings, all flat roofs shall be light or with colored or utilize a cool roof material, only if doing so does not impact shingled sloped roofs.
7. 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 façade.
8. Building facades that are public street facing shall have variation in wall plane, with vertical bays or articulated architectural façade features which may include, but not limited to offsets, projections, recesses, banding and change in materials or colors.

9. The following design guidelines shall only apply to mixed-use buildings:
   a. All reasonable effort shall be taken for loading, service, or mechanical units to be placed at the rear of the structure on non-street facing sides. If any of these features have to be located along a public street front facade, they will be screened in accordance with the UDO.
   b. Building facades that are public street facing shall have variation in wall plane, with vertical bays or articulated architectural facade features which may include, but not limited to offsets, projections, recesses, banding and change in materials or colors.
   c. Large blank walls shall not be greater in 25' in length or height, and shall be broken up with architectural features to reduce visual impacts.
   d. Differences of roof height, pitch, ridgelines and materials shall be used to create visual interest and avoid repetition.
   e. Roof features may include flat roofs with parapet, hip roofs, shed roofs, gables, or awnings with metal or canvas material.

The applicant provided a conceptual streetscape showing a view from the corner of N. Salem Street and All Wheel Drive (See Figure 6: Concept Streetscape View from N. Salem St. and All Wheel Dr. Corner). The conceptual streetscape shows the following features:

1. View of the building height in relation to North Salem Street.
2. View of the 10 ft wide sidepath with a 15 ft wide Type E buffer (trees are shown ghosted) and a 7 ft wide parking setback.
3. 92 ft from the proposed North Salem and All Wheel Drive right-of-way to the building
4. 5-story building at 75 ft height with a 12 ft wide pedestrian walkway along the building.
5. Pedestrian connection from North Salem Street 10 ft sidepath and bus stop to the building.



Figure 6: Concept Streetscape View from N. Salem St. and All Wheel Dr. corner

RESOURCE CONSERVATION AREA AND BUFFERS

RCA:

UDO Section 8.1.2 requires a minimum Resource Conservation Area (RCA) of 20% for development in this area. The proposed rezoning includes designated RCA areas that are consistent with UDO Section 8.1.2.B;

- Preserved streams, wetlands, and associated riparian buffers provide the primary RCA throughout the Property.
- Additional RCA may include portions of the stormwater control measures permitted by the UDO, specimen trees, and perimeter buffers.

Buffers:

Buffer Location:	UDO Requirement:	Proposed:
Along N. Salem Street	30 ft. Type E	15 ft. Type E (MU-1); 20 ft Type E (TH-1)*
Along the South side of All Wheel Drive adjacent to MU-1 District	10 ft. Type D	15 ft. Type E
Adjacent to South side of All Wheel Drive adjacent to TH-3 District	20 ft. Type D	20 ft. Type D
Along the southern perimeter adjacent to the Haddon Hall and Haddon Place single-family residential neighborhoods.	15 ft. Type A	20 ft. Type B**
Along the western perimeter adjacent to the Haddon Hall single-family residential neighborhoods	15 ft. Type A	20 ft. Type B

* See PUD Preliminary Site Layout Plan for location of buffers.

(Text in bold proposed after Planning Board meeting.)

****A 10 ft landscape easement shall be provided adjacent and parallel to the 20 ft Type B buffer outside of any Resource Conservation Areas. The easement may be graded but shall be planted and revegetated with a mix of deciduous and evergreen shrubs planted a minimum of 10 feet on center, with a minimum installation heigh of 24-30 inches. Plantings shall consist of a minimum of 60% evergreen shrubs.**

HISTORIC RESOURCES:

Historic Structures:

The single family house at 1303 N. Salem Street is listed on the Historic Registry (WA0789). Capital Area Preservation (CAP) performed an evaluation of the house and issued a report dated August 7, 2025 that deemed the house not worthy of preservation. The PUD Plan includes the following condition:

- Before demolition of the house, the developer will work with CAP to identify historic elements, including 2/2 windows and original doors, to be saved for use by CAP in other historic preservation projects.

ENVIRONMENTAL CONDITIONS:

1. The project shall install one (1) sign per Stormwater Control Measure to reduce pet waste and prohibit fertilizer, in locations that are publicly accessible, such as adjacent to amenity centers, sidewalks, greenways, or side paths.
2. The project shall install signage adjacent to wooded or natural condition Resource Conservation Area. The signage shall indicate the area is RCA. The signage shall indicate the area is RCA and is to be preserved in perpetuity and not disturbed.

3. The project shall ensure that 75% of the landscaping shall be native species, which shall provide diverse and abundant pollinator and bird food sources. Special attention shall be paid to providing diverse and abundant pollinator and bird food sources, including plants that bloom in succession from spring to fall. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.
4. The project shall install at least four (4) pet waste stations total across the townhouse districts (TH-1, TH-2, and TH-3) and two (2) pet waste stations in the MU-1 district in locations that are publicly accessible, such as adjacent to amenity centers, SCMs, sidewalks, greenways or side paths.
5. HOA covenants, conditions, and restrictions shall not prohibit solar PV installation by individual homeowners.
6. HOA covenants, conditions, and restrictions shall not prohibit properly maintained pollinator habitats and naturalistic landscapes on the lots or in common areas.
7. No single species of native or adaptive vegetation shall constitute more than 20% of the plant material of its type within a single development site.
8. Five (5) additional feet of buffer width to that required by the UDO along the perimeter of the property shall be required along the southern and western property lines (see perimeter buffer table).
9. Multi-family buildings shall be designed to meet the requirements for one of following green building certifications LEED, EnergyStar, BREEAM, Green Globes, NGBS Green, NAHB, or GreenGuard. A third-party consultant shall be hired to evaluate the project and certify to the Town of Apex that the project meets the standards for the certification. The applicant shall forward a copy of the certification application to the Town of Apex Planning Department to verify that the application has been submitted. The application shall be submitted prior to the issuance of a certificate of occupancy for the multi-family building.
10. To reduce irrigation requirements, the project shall select and plant warm season grasses.
11. All townhouse garages shall be wired with a 220/240-volt electric outlet that supports electric vehicle charging.
12. The developer shall construct a bus stop with landing and amenity pad to Town Standards including a shelter with bench seating, trash receptacle, and two bike racks, subject to review and approval at the time of Master Subdivision or Site Plan, south of All Wheel Drive in front of the proposed MU-1 District.

(Text in bold proposed after Planning Board meeting.)

13. **To encourage environmentally sustainable site design, the project shall incorporate a minimum of two of the following Low Impact Development (LID) techniques (per design considerations as defined by NCDEQ in the NC Stormwater Design Manual): bioretention areas, bioswales, infiltration, rain gardens, green roofs, permeable pavement, and rainwater harvesting systems. The two LID techniques shall be included in construction drawings for the project.**

Tree Protection

The PUD Plan includes protection of the existing Willow Oak tree located along the southern property line, as identified on the Master Plan. The PUD Plan includes the following condition:

- The existing Willow Oak tree shall be preserved unless an arborist determines that the tree is diseased or dying. An arborist's report evaluating the health and structural condition of the tree, including recommendations for any protective or mitigation measures necessary to preserve the tree during construction, shall be submitted with the initial Master Subdivision Plan application.

Proposed PUD Plan Stormwater Management

(Text in bold proposed after Planning Board meeting.)

The post development peak runoff rate shall be limited to the pre-development peak runoff rate for the 1-year, 24-hour, the 10-year, 24-hour, the 25-year, 24-hour, **and the 50-year, 24-hour storms**. Otherwise, stormwater management shall comply with the UDO.

To encourage environmentally sustainable site design, the project shall incorporate a minimum of two of the following Low Impact Development (LID) techniques (per design considerations as defined by NCDEQ in the NC Stormwater Design Manual): bioretention areas, bioswales, infiltration, rain gardens, green roofs, permeable pavement, and rainwater harvesting systems. The two LID techniques shall be included in construction drawings for the project.

After being detained onsite, stormwater from the project is expected to drain to two existing culverts located at Charlion Downs Lane and Blackburn Road (each, a "Culvert" and together, the "Culverts"). The need for repairs or improvements to the Culverts and other stormwater infrastructure in Haddon Hall/Haddon Place will be evaluated in the stormwater impact statement and downstream analysis (the "Downstream Analysis") required at Site Plan by UDO Section 6.1.7.A.3. If the Downstream Analysis determines improvements to the Culverts or other stormwater infrastructure in Haddon Hall/Haddon Place are required, Developer shall upgrade the infrastructure as determined by the Downstream Analysis and contribute $10,000 (the "Contribution") for additional on-going maintenance to the Tow of Apex for such improvements. The Contribution shall be made prior to issuance of the first Master Subdivision Final Plat or Site Plan Final Plat for the project.

Additional stormwater management requirements for quality and quantity treatment as outlined in UDO Section 6.1.7 states the following:

- Acceptable stormwater structures shall include wet detention ponds, constructed wetlands, bio-retention areas, or other approved devices consistent with the NC DEQ Stormwater Design Manual and the Town of Apex UDO**.**
- No clearing or land disturbance shall be permitted within the riparian buffer, except the minimum necessary to install required road and utility infrastructure and SCM outlets. The SCM water storage and treatment area shall not be permitted within the riparian buffer. Sewer infrastructure shall be designed to minimize impacts to riparian buffers.

Water Resources Staff Analysis

The Town of Apex's Watershed Protection Overlay District Map shows streams across the site (See Figure 7: Town of Apex Watershed Protection Overly District Map). The Watershed Protection Overlay District map is for illustrative purposes only and is not listed in the UDO as a regulatory map. A disclaimer is stated on the Watershed map (See Figure 8: Watershed Map Disclaimer).

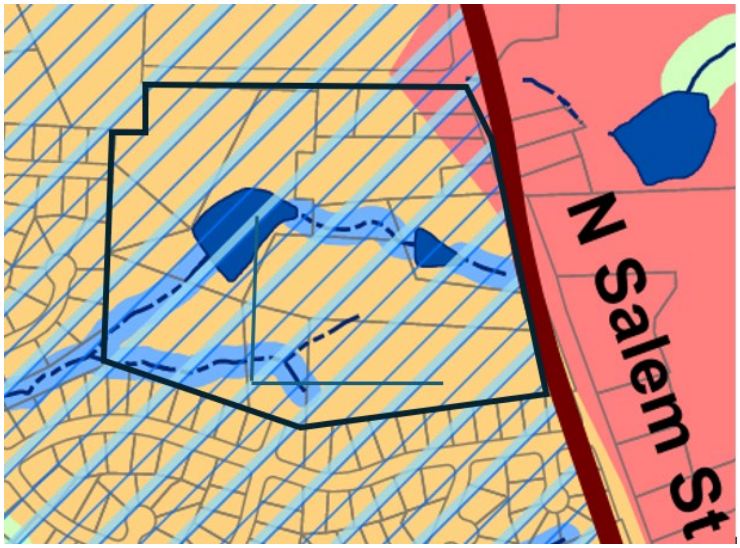


Figure 7: Town of Apex Watershed Protection Overly District Map

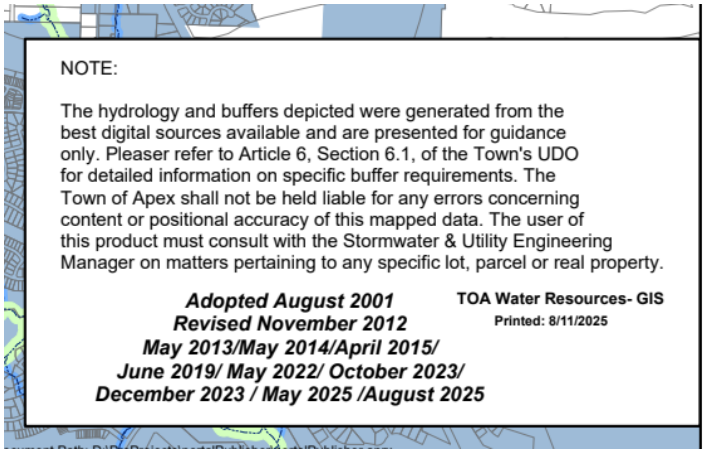


Figure 8: Watershed Map Disclaimer

If a stream is not on the USGS or Soil Survey map, the UDO does not apply. UDO Section 6.1.11. C states:

C) ***Classification of Surface Waters on Property***
Riparian buffers shall be maintained for all perennial and intermittent streams, lakes, and ponds as set forth in Sec. 6.1.6 *Low-Density Development Option*, and Sec. 6.1.7 *High-Density Development Option* of this Ordinance. Classifications of surface waters as perennial or intermittent streams, as ephemeral streams (a classification requiring no buffer under the requirements of Sec. 6.1 *Watershed Protection Overlay Districts*), or as a lake or pond shall be as indicated on the most recent version of the U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps, the most recent version of the soil survey map prepared by the Natural Resources Conservation Service of the United States Department of Agriculture, or a map approved by the Geographic Information Coordinating Council and the Environmental Management Commission. In the event that there exists a discrepancy among any of these maps that would affect a required buffer, the classification requiring the most stringent buffer shall be applied. However, an alternative map approved by the Environmental Management Commission shall not be used for buffer delineation on projects that are existing and ongoing within the meaning of Sec. 6.1.11.J.

The language in UDO Section 6.1.11.C is from North Carolina Department Environmental Quality:

> **In the Jordan Lake Watershed** the buffer applies to: intermittent streams, perennial streams, lakes, ponds and reservoirs that are depicted only on the following maps: the most recent printed version of the soil survey map prepared by the Natural Resources Conservation Service OR the 1:24,000 scale quadrangle topographic map prepared by the U.S. Geologic Survey OR a map approved by the Geographic Information Coordinating Council and by the N.C. Environmental Management Commission.

All of the buffered features on the project site drain to the Jordan Lake watershed. North Salem Street is the dividing line between the Jordan and Neuse Basin and no flow from the proposed development is shown to go to the Neuse.

The 2023 Supreme Court ruling and per the subsequent North Carolina Farm Act of 2023 states: isolated wetlands (surrounded by dry upland areas) are no longer protected and would not need a permit to be drained. One of the wetlands, "W6" would be considered isolated since it is not connected to a buffered waterway. Wetlands "W1, W2, W3, W4," are included within a riparian buffer. Wetland "W5" is jurisdictional and located within the RCA (See Figure 9: Project Buffer and Wetland Map).

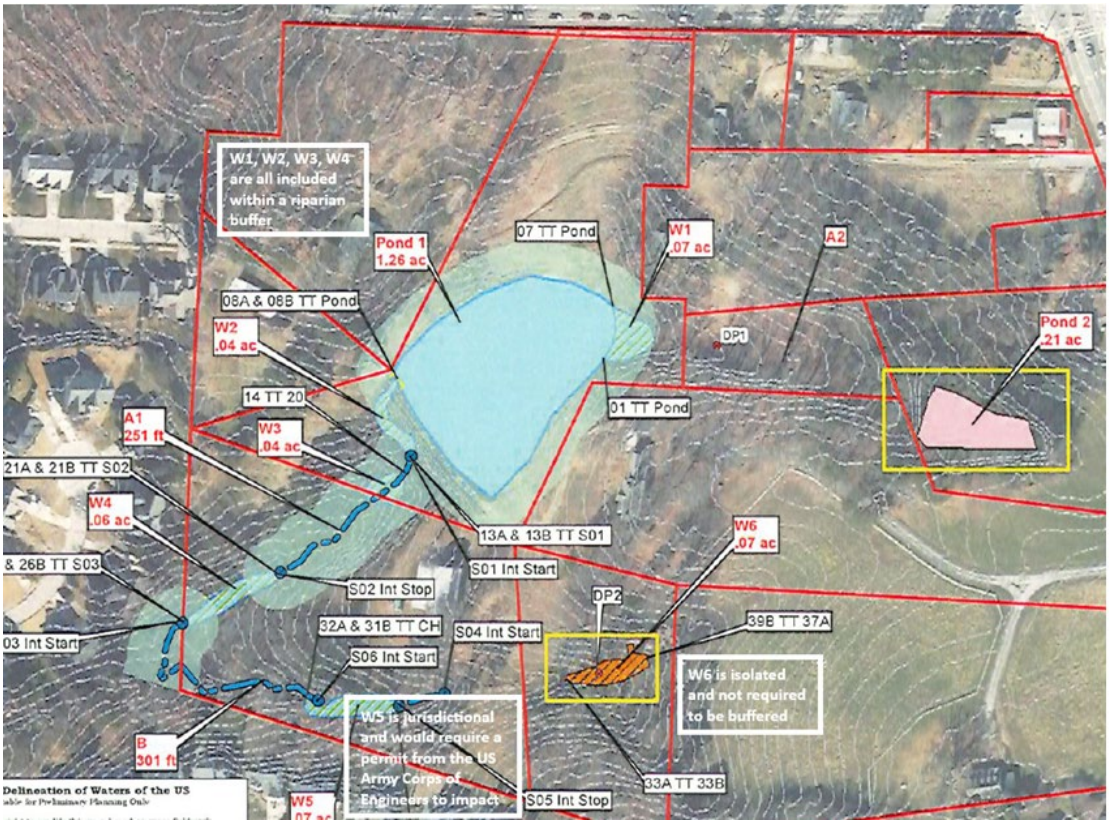
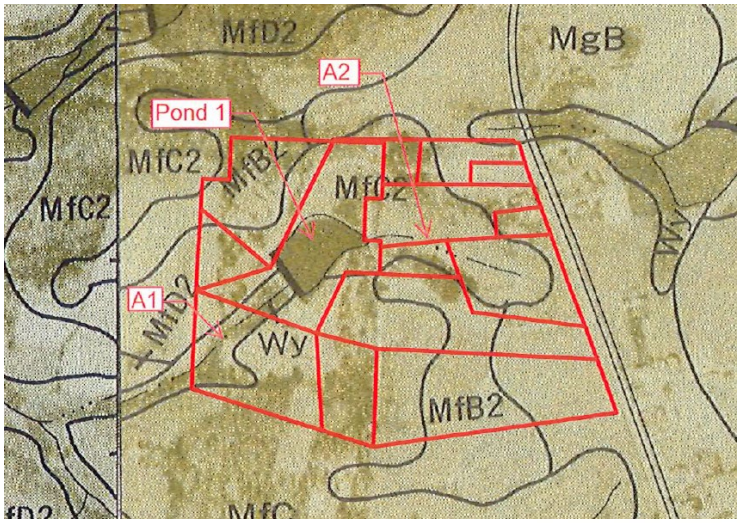


Figure 9: Project Buffer and Wetland Map

Stream Buffer Determination:

On July 1, 2025, Soil & Environmental Consultant, Inc staff and Town Water Resources staff met at the project site to evaluate 3 drainage features to determine if they are subject to the Town of Apex (Town) riparian buffer rules. (See Attachment: Buffer Determination Letter dated July 8, 2025). It was determined that "Pond 1" and Stream "A1" require a buffer (See Figure 10: Buffer Determination Map and Table).



Drainage Feature	Shown as on USGS	Shown as on Soil Survey	Determination made in the field	Determined Buffer Width
A1	Intermittent	Perennial	Intermittent	50 feet
A2	Not Present	Intermittent	Ephemeral	0 feet
Pond 1	Present	Present	Jurisdictional	50 feet

Figure 10: Buffer Determination Map and Table

The proposed buffers and wetlands, located within RCA, meets all Federal, State, and local requirements.

Intent to drain Pond 1:
The applicant submitted the following documents related to the larger of the two ponds onsite (Pond 1) and its associated dam:

- Hydrologic Analysis Memo, a study of what would happen if the dam failed.
- Request to North Carolina Department of Environmental Quality (NCDEQ) for Pond Dam Hazard Determination which requests NCDEQ's concurrence that the dam is high hazard- Class C.
- NCDEQ determination letter, dated September 8, 2026 which determined that a Class-C high hazard classification is presently warranted.

All documents are included in the staff report packet. The applicant proposes draining the pond due to the high hazard classification. Therefore, the PUD concept plan does not designate most of the riparian buffer around that pond as RCA. Any proposed impacts to riparian buffers associated with draining of this pond will be evaluated during the buffer authorization process as part of construction drawing plan review.

Summary of UDO Stormwater Requirements:

Per UDO Section 6.1.7.A.3, applicants for Site Plans and Subdivision Plans are required to submit a Stormwater Impact Statement evaluating potential downstream impacts from the development. For the N. Salem Street PUD, the Stormwater Impact Statement will include modeling design storms through the two immediate downstream culverts in Haddon Hall (See Figure 11: Haddon Hall Downstream Culverts) and shall:

- Be prepared by a qualified professional engineer showing the impacts from the development site to the confluence point downstream where the area of the proposed development is less than 10% of the total drainage area.

- Verify the effects of detention on the downstream hydrographs to ensure that the peaks do not increase for a given storm.
- List the infrastructure (ditches, culverts, etc.) and indicate all the adverse effects and impacts (to roads, culverts, businesses, homes, lawns, etc.) from the development to the 10% point. If backwater from detention appears to be a problem, then the impact statement shall also consider potential effects on upstream properties for the 100-year, 24-hour storm.
- A map that clearly shows the drainage area, the site, affected infrastructure downstream, and the 10% point.



Figure 11: Haddon Hall Downstream Culverts

Pre/post attenuation for 1, 10, and 25-year storms (Upper Beaver Creek basin):

- The post-development peak runoff rate shall be limited to the pre-development peak runoff rate for the 1 year, 24-hour and the 10-year, 24-hour storms.
- Within the upper northwest tributary to Williams Creek basin and the Upper Beaver Creek basin (as shown on the Watershed Protection Overlay District Map), the post-development peak runoff rate for the 25-year, 24-hour storm. Additionally, within those basins, runoff volume for the 10-year, 24-hour storm shall be detained.
- Detention volumes stored for peak flow attenuation and volume control shall drain within 72 hours to allow for subsequent storms.

Pond Draining:

- Submit a pond draining plan for review. The applicant will need to wait 6 months after the draining of the pond to see what type of channel re-forms.
- After those 6 months, the applicant will need to hire an environmental consultant to conduct a stream determination (buffer call) on the feature.

<u>Text in bold proposed after Planning Board meeting.)</u>

Lighting:

- **Exterior lighting shall have a maximum color temperature of 3,000K.**
- **No pole lights shall be placed within 50 ft of the shared property lines with Haddon Hall and Haddon Place.**

PUBLIC FACILITIES:

Water, Sewer, and Electric Systems:
The proposed N. Salem Street Mixed-Use PUD will be served by Town of Apex water, sanitary sewer, and electric systems. The utility design will be finalized at Master Subdivision Plan review. A conceptual Utility Plan is included in the PUD Plan for reference. The ultimate design for the utilities shall meet the current Town of Apex Master Water and Sewer Plans for approval.

Proposed Transportation Improvements:
Kimley-Horn and Associates prepared a Traffic Impact Analysis (TIA) for the proposed N. Salem Street Mixed-Use PUD. The TIA included trip generation, distribution, traffic analyses and recommendations for transportation improvements required to meet anticipated project traffic demands. The report examined the existing traffic condition, the projected background traffic condition and the projected build-out traffic condition.

The following conditions regarding transportation improvements apply and shall be phased consistent with the Traffic Impact Analysis, attached to the staff report, that has been performed for this rezoning. All proposed driveway access and improvements on state maintained roadways are subject to both Apex and NCDOT review and approval (See Figure 12: Site Access Locations). Except as set forth herein, all proposed roadway infrastructure and right-of-way dedications will be consistent with the Town of Apex Transportation Plan.



Figure 12: Site Access Location*
(*Note that not all the Stu ns are shown in the aerial)

The developer shall construct the following, consistent with the Thoroughfare and Collector Street Plan Map and the Bicycle and Pedestrian Plan Map, subject to Town of Apex and NCDOT review and approval at the time of site and subdivision plans:

1. Developer shall construct a 10 foot wide side path on the south side of All Wheel Drive for the length of the project frontage.
2. Developer shall widen N. Salem Street and dedicate public right-of-way for the extent of the project frontage for the western half of a minimum 41-foot back-to-back 3-lane thoroughfare typical section including a 10 foot wide side path on the west side within an 80-foot typical section right of way.
3. Extend the stub street of Charlion Downs Lane as a public street through the proposed TH-3 district.
4. Sidewalks shall be provided on both sides of internal public streets, subject to Town of Apex review and approval at the time of site and subdivision plans.
5. Subject to Town approval, developer shall construct a 5-foot concrete sidewalk, on the west side of Frenchurch Way along the frontage of PIN 0742352665 to connect the project sidewalk to the existing sidewalk on the south side of Brittley Way including ramps to accommodate crossing of Brittley Way at the western leg of the intersection with Frenchurch Way (collectively, the "Offsite Frenchurch Sidewalk"). If the Offsite Frenchurch Sidewalk requires acquisition of offsite rights-of-way and/or easements, and the Developer is unable to acquire the necessary easements and right-of-way to construct the Offsite Frenchurch Sidewalk through good faith negotiations with the property owner, Developer shall provide an engineer's estimate for the total cost of the sidewalk plus easement acquisition to be reviewed and approved by the Town and pay a fee-in-lieu in that amount.
6. Developer shall extend the 10-foot side path along the project's N. Salem Street frontage, south along the frontage of PIN 0742452783 to Brittley Way (the "Offsite Side Path"). If the Offsite Side Path requires relocation of utilities, including, but not limited to, electric poles, developer shall pay a fee in lieu for the Offsite Side Path. Developer may modify the N. Salem Street section to locate the Offsite Side Path in the existing right of way. For example, the Offsite Side Path could extend to the back of curb without a landscape strip between the path and curb. If the Offsite Side Path requires acquisition of offsite rights of way and/or easements, and the Developer is unable to acquire the necessary easements and right-of-way to construct the Offsite Side Path through good faith negotiations with the property owner, Developer shall provide an engineer's estimate for the total cost of the sidewalk plus easement acquisition to be reviewed and approved by the Town and pay a fee-in-lieu in that amount.
7. N. Salem Street at All Wheel Drive/Key Ring Drive intersection and N. Salem Street site frontage:
    a. Restripe the southbound right turn lane on N. Salem St. at All Wheel Dr. as a though-right shared lane to terminate at Brittley Way.
    b. Modify the traffic signal at all Wheel Dr. to accommodate the new southbound through lane.
8. N. Salem Street at Brittley Way:
    a. Construct a second southbound through lane from north of All Wheel Drive which shall drop as a right turn lane at Brittley Way.
    b. Provided NCDOT and Town of Apex approve such relocation, relocate and/or reconfigure the high-visibility crosswalk across N. Salem St. If NCDOT or the Town do not approve the relocation and/or reconfiguration, this condition shall be deemed satisfied. If the Town and NCDOT approve the relocation, developer shall construct a high-visibility median-divided crosswalk across N. Salem St. on the north side of site Access #3 and a Rectangular Rapid Flashing Beacon (RRFB) system meeting Town of Apex standards, subject to Apex and NCDOT approval. If NCDOT will not permit a RRFB system then the crosswalk may be installed with non-flashing school crosswalk warning signs.
9. External Site Access:
    a. Construct an extension of Frenchurch Way to All Wheel Drive ("Street B").

b. Construct the northernmost driveway on N. Salem St. (Site Access #2) as a channelized right-in only at least 300 feet south of All Wheel Drive.
c. Construct the southernmost driveway (Site Access #3) on N. Salem St. as a left-in/right-in/right-out aligned with the Thales outbound driveway, with an exclusive northbound left turn lane on N. Salem St. and a channelized concrete median between them to prohibit left turns from both sides of N. Salem St.

10. Internal Site Access:
    a. Construct a mini-roundabout or roundabout at the intersection of the extension of Frenchurch Way ("Street B") and the street connection to the southernmost N. Salem St, site driveway ("Street A"). Extend the stub street of Charlion Downs Ln as a public street through the proposed "TH-3" District to Street B.
11. The developer shall construct a bus stop with landing and amenity pad to Town Standards including a shelter with bench seating, trash receptacle, and two bike racks, subject to review and approval at the time of Master Subdivision or Site Plan, south of All Wheel Drive in front of the proposed MU-1 District.
12. A pedestrian connection shall be included from the N. Salem St. side path to the Mixed-Use Building through the parking area in the MU-1 District. The connection will be a designated pedestrian path such as but not limited to, sidewalk, change in pavement color or pattern, or other design determined by the developer and staff at Master Subdivision or Site Plan. A pedestrian area with a minimum size of 300 square feet shall be provided at or near the corner of N. Salem St. and All Wheel Dr.
13. If any of the committed transportation improvements require acquisition of offsite rights of way, easements, or other property interests (the "Offsite ROW"), Developer shall make good to acquire the Offsite ROW. If the developer is unable to acquire any offsite ROW through private negotiation and the Town is unwilling or unable to assist in the acquisition, the developer shall pay a fee in lieu for the transportation improvement that cannot be completed, including estimated cost of acquisition, permitting fees, and construction plus 15% contingency, subject to Town review and approval of an engineer's estimate provided by the Developer.

Construction Traffic:

All heavy-duty construction traffic shall enter and exit the site via N. Salem St. and/or All Wheel Dr. "No Construction Traffic" signs shall be posted along Frenchurch Way and Charlion Downs Lane. Provided, however, that equipment and vehicles shall be permitted on Charlion Downs Lane to construct the extension of Charlion Downs Lane, pedestrian connection, and related infrastructure, and on Frenchurch Way to construct the street, utility connections/extensions, and related infrastructure as required by the PUD and the UDO.

Transportation and Infrastructure Staff Analysis:

Transportation and Infrastructure Development staff have reviewed the Traffic Impact Analysis and proposed zoning conditions and are in agreement with the proposed access and transportation improvements offered by the applicant to mitigate anticipated development traffic impacts based on Section 13.19 of the UDO.

PARKING:

Multi-Family and mixed-use buildings shall provide the following minimum parking spaces per dwelling unit based on the number of bedrooms:

Bedrooms per unit	Minimum ratio
1 or 2	1.3 spaces per dwelling unit
3	1.8 spaces per dwelling unit

Parking for townhomes and non-residential uses shall comply with the UDO and state law (to the extent state law modifies the UDO requirement), except that street[illegible] count towards the total number of parking spaces

for guest parking for required for townhomes, and developer may pursue parking reductions and/or other relief allowed in the UDO at Master Subdivision/Site Plan.

AFFORDABLE HOUSING

Proposed PUD Plan Affordable Housing:

A minimum of ten percent (10%) of the total units shall be affordable housing units. The affordable units shall be for sale or for rent units, at the election of developer prior to the issuance of building permits for the affordable units. The affordable units may be all townhouses, detached townhouses, small-scale multi-family, multi-family or apartment, or a combination thereof, at the discretion of the developer. Final affordable housing unit floor plan selection which includes unit size and bedroom size will be at the discretion of the developer. If the affordable units calculation results in a fraction between 0.50 and 0.99, the affordable units shall be rounded up to the nearest whole number. If the affordable units calculation results in a fraction between 0.01 and 0.49, the affordable units shall be rounded down to the nearest whole number.

For sale affordable units shall be subject to the following terms and conditions:

- The For Sale Units shall be constructed on-site and sold (includes unit price and lot price) at a mutually agreeable maximum affordable median income ownership initial sales price.
- The For Sale Units shall be occupied households earning no more than 120% of the Raleigh NC Metropolitan Statistical Area (MSA), Area Median Income (AMI) as most recently published by HUD (the "Income Limit"). For purposes of calculating the Initial Sales Price for the For Sale Units, affordable shall mean a reasonable down payment and monthly housing costs expected during the first calendar year of occupancy, including utilities or utility allowances, mortgage loan principal and interest, mortgage insurance, property taxes, homeowner's insurance, homeowner's association dues, if any, and all other property assessments, dues and fees assessed as a condition of property ownership (the "Housing Costs"). For purposes of the calculation, monthly Housing Costs shall not exceed 30% of the Income Limit divided by twelve (12).
- A restrictive covenant (i.e. resale deed restriction) with a minimum affordability period of 20 years (the "Affordability Period") shall be recorded in the Wake County Registry against the For Sale Units concurrently at the close of escrow upon the sale of each For Sale Unit.
- Following the first sale of the For Sale Units to a buyer for use as a residence, Developer shall not be responsible for managing the For Sale Units or performing marketing, applicant screening, and selection related to future sales of the For Sale Units.

For rent affordable units (the "Rental Units) shall be subject to the following terms and conditions:

- The Rental Units shall be occupied by low-income households earning no more than 80 % of the Raleigh, NC MSA as most recently published by the U.S. Department HUD for a period of 30 years starting from the date of issuance of the first residential Certificate of Occupancy (the "Affordability Period").
- Prior to issuance of the first Certificate of Occupancy for the Rental Units, a restrictive covenant between the Town and property owner shall be executed and recorded in the Wake County Registry to memorialize the affordable housing terms and conditions.
- During the Affordable Period, the property owner shall submit annual compliance reports to the Town verifying compliance with the affordable housing terms and conditions.
- Following expiration of the Affordable Period, this affordable housing condition shall expire, and the property owner shall be relived of all obligations set forth in this affordable housing condition, and the Rental Units may be freely marketed and leased at market-rate rents.

Housing Staff Analysis:

The Town of Apex Housing Division states that the proposed N. Salem Street Mixed-Use PUD Affordable Housing conditions are consistent with the Town's Affordable Housing Incentive Zoning Policy, which requests that 10% of the total proposed dwelling units be provided as affordable housing. Under the policy, affordable units are restricted to households earning up to 120% of Area Median Income (AMI) for for-sale units with a 20-year affordability period, or up to 80% AMI for rental units with a 30-year affordability period.

ENVIRONMENTAL ADVISORY BOARD (EAB)

The Apex Environmental Advisory Board (EAB) reviewed the proposed N. Salem Street Mixed-Use PUD at their February 19, 2026 meeting. The zoning conditions suggested by the EAB are listed below along with the applicant's response to each condition. Out of 12 recommended conditions, 7 were provided. Note: The EAB only provided suggested zoning conditions for this rezoning. The current requirement for the EAB to make a recommendation on the rezoning based on legislative condition #5 went into effect on July 1, 2026.

	EAB Suggested Conditions	Applicant's Response
1	No clearing or land disturbance shall be permitted within the riparian buffer, except the minimum necessary to install required sewer infrastructure and SCM outlets. The SCM water storage and treatment area shall not be permitted within the riparian buffer. The sewer shall be designed to minimize impacts to the riparian buffer.	No
2	The project shall replace any large type trees, that measure 18-inches in caliper size or larger, and small type trees, that measure 8-inches in caliper size or larger, that are removed as a part of the development. The ratio of replacement shall be 1 large tree to 1 replacement tree. The UDO's required landscaping may be used to satisfy this requirement. To determine the number of trees that must be replaced, a tree survey for the full property shall be provided to the Planning Department. The survey shall be independently verified by a third-party licensed arborist. No further clearing shall be conducted for replacement planting if there is insufficient space.	No
3	The project shall ensure that 75% of the landscaping shall be native species, which shall provide diverse and abundant pollinator and bird food sources. Special attention shall be paid to providing diverse and abundant pollinator and bird food sources, including plants that bloom in succession from spring to fall. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.	Yes
4	To reduce irrigation requirements, the project shall select and plant only warm season grasses.	Yes
5	Increase perimeter buffer requirements, especially in transitional areas, (non-residential to residential areas), the project shall provide additional feet of buffer width to that required by the UDO along the perimeter property. EAB wants to see 30 ft buffer in front of townhomes along N. Salem Street.	Yes & No: additional 5 ft along southern & western property lines; 15 and 20 ft buffers along N. Salem St.
6	If single family, the project shall install at least two (2) pet waste station per 25 residential units/townhomes and at least two (2) pet waste stations per apartment building throughout the community in locations that are publicly accessible, such as adjacent to amenity centers, SCMs, sidewalks, greenways or side paths. If there are fewer than 25 homes, at least one (1) pet wa[illegible]hall be installed.	Yes

	EAB Suggested Conditions	Applicant's Response
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 2kW/1,000 heated sq ft of building floor area.	No
8	6% (12) townhomes and one home have 3.5 kW solar PV system before 50% of the building permits being issued for the development.	No
9	HOA covenants, conditions, and restrictions shall not prohibit individual solar PV installations.	Yes
10	Commercial: Solar PV installations on commercial and high-density rental housing shall be sized to provide 50% of the electrical energy for common areas.	No
11	Covenants shall not prohibit properly maintained pollinator habitats and naturalistic landscapes on the lots or in common areas.	Yes
12	A minimum of one public transit stop shall be provided within the development and shall include a shelter with benches.	Yes

PARKS AND RECREATION ADVISORY BOARD RECOMMENDATION:

On July 29, 2026, the Parks and Recreation Advisory Board recommended a fee-in-lieu of dedication for a maximum combination of 175 single-family attached and 285 multi-family residential units. The fee-in-lieu rate will be set at the time of Town Council action on the rezoning and run for the life of the project. The total fee-in-lieu (based on final unit count) will be calculated at Major Site Plan/Master Subdivision Plan and Construction Document review.

PLANNING STAFF RECOMMENDATION:

Planning staff recommends approval of Rezoning #25CZ24 N. Salem Street Mixed-Use PUD if the proposed condition shown below is removed from the PUD Text:

> "After being detained onsite, stormwater from the project is expected to drain to two existing culverts located at Charlion Downs Lane and Blackburn Road (each, a "Culvert" and together, the "Culverts"). The need for repairs or improvements to the Culverts and other stormwater infrastructure in Haddon Hall/Haddon Place will be evaluated in the stormwater impact statement and downstream analysis (the "Downstream Analysis") required at Site Plan by UDO Section 6.1.7.A.3. If the Downstream Analysis determines improvements to the Culverts or other stormwater infrastructure in Haddon Hall/Haddon Place are required, Developer shall upgrade the infrastructure as determined by the Downstream Analysis and contribute $10,000 (the "Contribution") for additional on-going maintenance to the Tow of Apex for such improvements. The Contribution shall be made prior to issuance of the first Master Subdivision Final Plat or Site Plan Final Plat for the project."

PLANNING BOARD RECOMMENDATION:

The Planning Board held a public hearing on September 14, 2026 and recommended approval by a vote of 6 to 2 with the conditions as follows:

- The applicant considers a wider buffer along the southern property;
- PUD Plan transportation condition 9c be revised as "At site access #3 on N. Salem Street align with Thales outbound driveway, with an exclusive northbound left turn lane on N. Salem Street and a channelized concrete median between them to prohibit left turns from both sides of N. Salem Street."

SUMMARY OF PUD TEXT REVISIONS AFTER PLANNING BOARD MEETING:

The applicant submitted revisions to the N. Salem Street Mixed Use PUD Text after the September 14th Planning Board meeting as follows:

- Corrected transportation condition 9c as stated at the Planning Board meeting: "At site access #3 on N. Salem Street align with Thales outbound driveway, with an exclusive northbound left turn lane on N. Salem Street and a channelized concrete median between them to prohibit left turns from both sides of N. Salem Street."
- Added Stormwater language: "The post development peak runoff rate shall be limited to the pre-development peak runoff rate for the 1-year, 24-hour, the 10-year, 24-hour, the 25-year, 24-hour, and the 50-year, 24-hour storms. Otherwise, stormwater management shall comply with the UDO." Added Condition #13 and LID condition, as stated on page 19 of the staff report. And added a condition regarding a contribution for maintenance to the Town of Apex, as stated on page 19 of the staff report.
- Added 10 ft landscape easement along the southern perimeter.
- Added Lighting restrictions, as stated on page 19 of the staff report.

All revisions are included in the PUD Plan text within the staff report packet.

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 area to be rezoned as Mixed Use: High Density Residential/Office Employment/Commercial Services (+/-4.92 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (+/-27.38 acres). The proposed Planned Unit Development-Conditional Zoning (PUD-CZ) district includes residential density at approximately 7 units/acre in the southern and western sections closest to existing single-family and a mixed-use area with the higher density housing and non-residential uses at the corner of All Wheel Drive and N. Salem Street. If the subject properties are rezoned as proposed, the 2045 Land Use Map will automatically be amended to Mixed Use: High Density Residential/Office Employment/Commercial Services (+/-8.27 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (+/-24.03 acres) per NCGS 160D-605(a). The proposed rezoning to Planned Unit Development-Conditional Zoning (PUD-CZ) will provide the flexibility to accommodate the growth in population, infrastructure, and a coordinated master-planned development pattern consistent with the contemplated by the 2045 Land Use Map.

If the requested zoning condition is removed as requested by staff, the proposed rezoning is reasonable and is in the public interest for the following reasons:

- A minimum of 10% of the units will be restricted for affordable housing,
- Increased buffers are provided along the western and southern project boundaries,
- Permitted commercial uses are limited to those that are more compatible with surrounding residential uses,
- Enhanced architectural design conditions are provided for all uses,
- A bus stop with amenities will be constructed at the site,
- Vehicular and pedestrian connectivity for the existing Haddon Hall and Haddon Place subdivisions are improved with the required extension of Frenchurch Way (Street B) to All Wheel Drive which provides access to the light at the intersection of N. Salem Street and All Wheel Drive and the extension of Charlion Downs Lane (Street C) to Street B, and
- The standards for the post development peak runoff rate is improved to the 50-year, 24-hour storm.

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.

Planned Unit Development (PUD-CZ) District

1. 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 fo[illegible]ll 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. 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 natur

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.

February 5, 2026

Kevin Dean, PE.
Kimley-Horn and Associates
1070 S. Main St, Ste 230
Holly Springs, NC 27540

Subject: Staff summary and comments for N Salem St Mixed-use PUD (Good Acres) TIA, 11/25/2025

Mr. Dean:

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 studies the proposed N Salem St Mixed-use development to be located west of N. Salem Street between All Wheel Drive and Brittley Way. Access is proposed via four (4) site driveways:

- N. Salem Street and North Site Driveway (right-in only)
- N. Salem Street and South Site Driveway/Thales Academy Outbound Driveway (left-in / right-in / right-out)
- All Wheel Drive and Site Driveway/Crossroads Ford Driveway (full movement)
- Brittley Way and Site Driveway/Frenchurch Way (full movement)

Additionally, the following seven (7) intersections were included for analysis in the TIA study area:

- N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street
- N. Salem Street at US 64 Eastbound Ramps
- N. Salem Street at All Wheel Drive/Key Ring Drive
- N. Salem Street at Thales Academy Inbound Driveway
- N. Salem Street at Brittley Way
- N. Salem Street at Apex Peakway
- Apex Peakway at Brittley Way

Trip Generation

The site is anticipated to consist of the following land uses and intensities:

- 200 single-family attached dwelling units
- 250 mid-rise apartments
- 22,000 square feet (s.f.) of commercial space

The site is projected to generate 74 new trips entering and 164 new trips exiting during the weekday AM peak hour (238 trips total); 97 new trips entering and 80 new trips exiting the site during the weekday school PM peak hour (177 trips total); and 161 new trips entering and 121 new trips exiting the site during the weekday PM peak hour (282 trips total). The site is expected to add 3,294 new daily trips to the adjacent roadway network.

	Enter	Exit	Total
Weekday AM Peak Hour	74	164	**238**
School PM Peak Hour	97	80	**177**
Weekday PM Peak Hour	161	121	**282**
Weekday Daily	1,647	1,647	**3,294**

Background traffic

Background traffic consists of 3% annual non-specific background traffic growth compounded to build out year 2032. No growth was applied to volumes turning on/off of All Wheel Drive/Key Ring Drive, Brittley Way, Frenchurch Way, or the Thales Academy driveways as those volumes would not experience growth without explicit developments.

No approved adjacent development projects were identified to be included.

Trip Distribution and Assignment

The trip distribution for the residential trips is as follows:

- 30% to/from the east on N. Salem Street
- 20% to/from the west on US 64
- 15% to/from the north on Davis Drive
- 15% to/from the south on N. Salem Street
- 10% to/from the east on Apex Peakway
- 10% to/from the west on Apex Peakway

The trip distribution for the retail trips is as follows:

- 25% to/from the north on Davis Drive
- 15% to/from the south on N. Salem Street
- 15% to/from surrounding neighborhoods via Brittley Way
- 15% to/from the east on Apex Peakway
- 10% to/from the west on Apex Peakway
- 10% to/from the east on N. Salem Street
- 10% 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 based on the average delay experienced by drivers. 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).

The weekday morning (AM) and weekday afternoon (PM) peak hours were analyzed for all intersections. For some intersections, the school PM peak hour was also analyzed to determine what impact, if any, the development may have on carpool operations. These intersections are identified with a "*School PM peak LOS" note.

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

- **2025 Existing** - Existing year 2025 traffic.
- **2032 No Build** - Projected year (2032) with background traffic growth and background developments.
- **2032 Build** - Projected year (2032) with background traffic and site build-out.

All Wheel Drive at Crossroads Ford Driveway / Site Driveway

Table 1. AM / PM Unsignalized Peak Hour Levels of Service All Wheel Drive at Crossroads Ford Driveway / Site Driveway			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	NA	NA	NA
Eastbound (All Wheel Dr)	A / A[2]	A / A[2]	A / A[2]
Westbound (All Wheel Dr)	NA	NA	A / A[2]
Northbound (Site Dwy)	NA	NA	A / A[1]
Southbound (Crossroads Dwy)	A / A[1]	A / A[1]	A / A[1]

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

TIA recommendations:

- Construct the northbound Site Driveway with one ingress lane and one egress lane. Provide stop control.

Apex staff recommendations:

Apex staff concur with the TIA. The minor approaches and major-street left-turns are expected to operate at LOS A under all conditions analyzed. Maximum queues are anticipated to be three vehicles or less. This connection to the proposed site will allow drivers wanting to turn left from Brittley Way onto N. Salem Street to access the signalized left-turn movement at the All Wheel Drive and N. Salem Street traffic signal.

N. Salem Street at North Site Driveway (Inbound Only)
There is no level of service or delay associated with an inbound only driveway as there are no conflicting movements.

TIA recommendations:

- Construct the North Site Driveway approximately 330 feet south of All Wheel Drive with one ingress lane.

Apex staff recommendations:

Apex staff recommend extending a second southbound lane, as a shared through/right-turn lane from the All Wheel Drive signal through this intersection to the second site driveway south.

N. Salem Street at Thales Academy Outbound Driveway / South Site Driveway

Table 2. AM / PM Unsignalized Peak Hour Levels of Service N. Salem Street at Thales Academy Outbound Driveway / South Site Driveway			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	NA	NA	NA
Eastbound (South Site Dwy)	NA	NA	C / C* / D[1]
Westbound (Thales Exit)	F / F* / C [1]	F / F*/ C [1]	F / F* / C[1]
Southbound (N. Salem St)	NA	NA	NA
Northbound Left-turn (N. Salem St)	NA	NA	A / C* / C[2]

*School PM peak hour

Note: LOS reported from SimTraffic

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

TIA recommendations:

- Construct the eastbound site driveway as a restricted access drive allowing left-in/right-in/right-in/right-out movements. Provide one ingress lane and one egress lane.
- Construct a two-way left-turn lane on N. Salem Street marked with 100’ of storage for the northbound left-turn movement.

Apex staff recommendations:

In addition to the recommendations in the TIA, Apex staff recommend terminating a second southbound lane as a right-turn only lane at this driveway. Staff also recommend a concrete median to channelize the northbound left-turn movement and restrict other movements as identified.

Under existing conditions, Apex Police provide traffic control at this intersection to create breaks in northbound traffic on N. Salem Street to allow Thales school traffic to exit. The analysis models this scenario using a signalized intersection for the AM and School PM peak hours. For consistent reporting, the table above shows the levels of service for typical stop-control at this intersection. Under Build conditions, with the access restrictions in place, the site driveway approach and northbound left-turn movement are anticipated to operate at LOS D or better. The Thales exit driveway continues to operate at LOS F without considering police traffic control. Thales driveway operations should be reviewed by the Town once roadway improvements are complete to assess if police traffic control is still required.

Brittley Way at Frenchurch Way / Site Access

Table 3. AM / PM Unsignalized (All-way Stop-control) Peak Hour Levels of Service Brittley Way at Frenchurch Way			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	A / A	A / A	A / A
Eastbound (Brittley Way)	A / A	A / A	A / A
Westbound (Brittley Way)	A / A	A / A	A / A
Northbound (Frenchurch Way)	A / A	A / A	A / A
Southbound (Frenchurch Way / Site Access)	A / A	A / A	A / A

TIA recommendations:

- No improvements by the developer are recommended at this intersection.

Apex staff recommendations:

Apex staff concur with the TIA. This all-way stop-control intersection is expected to operate at LOS A under all conditions analyzed. Maximum queues are anticipated to be less than three vehicles. This connection to the proposed site will allow drivers wanting to turn left from Brittley Way onto N. Salem Street to access the signalized left-turn movement at the All Wheel Drive and N. Salem Street traffic signal.

Apex Peakway at Brittley Way

Table 4. AM / PM Unsignalized Peak Hour Levels of Service Apex Peakway at Brittley Way			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	NA	NA	NA
Eastbound (Apex Peakway)	A / A[2]	A / A[2]	A / A[2]
Westbound (Apex Peakway)	A / A[2]	A / A[2]	A / A[2]
Southbound (Brittley Way)	C / C[1]	C / D[1]	C / D[1]
Northbound (Brittley Way)	B / C[1]	C / C[1]	C / C[1]

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

TIA recommendations:

- No improvements by the developer are recommended at this intersection.

Apex staff recommendations:

Apex staff concur with the TIA. The Brittley Way approaches are anticipated to operate at LOS D or better under all conditions analyzed. The southbound queue is projected to increase from approximately 2 vehicles to 6 vehicles during the AM peak hour between No Build and Build conditions. The delay on the minor approaches is expected to be less than a two second increase between No Build and Build conditions.

N. Salem Street at Apex Peakway

Table 5. AM / PM Signalized Peak Hour Levels of Service N. Salem Street at Apex Peakway			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	C / C	C / D	C / D
Eastbound (Apex Peakway)	D / E	D / E	D / E
Westbound (Apex Peakway)	C / C	C / C	C / C
Southbound (N. Salem St)	B / C	C / D	C / D
Northbound (N. Salem St)	C / C	C / D	C / D

TIA recommendations:

- No improvements by the developer are recommended at this intersection.

Apex staff recommendations:

Apex staff concur with the TIA. The signal is expected to operate at LOS D or better overall during the AM and PM peak hours. Overall delay is expected to increase by approximately two seconds between No Build and Build conditions. Site traffic accounts for less than 3% over the overall traffic at this intersection under Build conditions.

N. Salem Street at Brittley Way

Table 6. AM / PM Unsignalized Peak Hour Levels of Service N. Salem Street at Brittley Way			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	NA	NA	NA
Eastbound (Brittley Way)	C / C[1]	C / D[1]	C / D[1]
Southbound (N. Salem St)	NA	NA	NA
Northbound (N. Salem St)	A / B[2]	A / B[2]	A / B[2]

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

TIA recommendations:

- No improvements by the developer are recommended at this intersection.

Apex staff recommendations:

Apex staff recommend a 50’ southbound right-turn lane with 100’ of taper on N. Salem Street to provide access around the southbound queues for vehicles turning onto Brittley Way. SimTraffic shows the southbound traffic queue from the Apex Peakway signal extends to or beyond this intersection multiple times during the peak hours.

The Brittley Way approach is anticipated to operate at LOS D or better under all conditions analyzed. Based on SimTraffic results, the eastbound queue is projected to increase from approximately 2 vehicles to 7 vehicles during the AM peak hour between No Build and Build conditions. The delay on the minor approach is expected to be less than a two second increase between No Build and Build conditions for AM and PM peak hours.

Connectivity through the proposed development will allow access to the signalized eastbound left-turn movement at All Wheel Drive and N. Salem Street as an alternative to the unsignalized eastbound left-turn movement on Brittley Way at N. Salem St currently.

There is a high-visibility crosswalk planned on N. Salem Street at Brittley Way. The developer should work with the Town and NCDOT to determine if there is a more desirable midblock location for this crossing while frontage improvements are under design.

N. Salem Street at Thales Academy Inbound Driveway

Table 7. AM / PM Unsignalized Peak Hour Levels of Service N. Salem Street at Thales Academy Inbound Driveway			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	NA	NA	NA
Southbound (N. Salem St)	A / A* / A[1]	B / A* / B[1]	B / B* / A[1]

*School PM peak hour

1. Level of service for left turn movements on free-flowing major street approaches.

Note: LOS reported from SimTraffic

TIA recommendations:

- No improvements by the developer are recommended at this intersection.

Apex staff recommendations:

Apex staff recommend carrying a second southbound through lane through this intersection from All Wheel Drive to the second site driveway.

The southbound left-turn movement into Thales campus experiences long queues under existing conditions. This is expected to continue under No Build and Build conditions with or without the site. The proposed site will only add trips to the through movements at this intersection and account for less than 2% of the overall traffic.

N. Salem Street at All Wheel Drive / Key Ring Drive

Table 8. AM / PM Signalized Peak Hour Levels of Service N. Salem Street at All Wheel Drive / Key Ring Drive			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	C / C* / B	C / C* / B	C / C* / D
Eastbound (All Wheel Dr)	D / D* / D	D / D* / D	D / D* / D
Westbound (Key Ring Dr)	E / C* / D	D / C* / D	D / C* / D
Northbound (N. Salem St)	C / C* / A	C / C* / A	C / C* / A
Southbound (N. Salem St)	C / B* / B	C / C* / C	C / D* / E

*School PM peak hour

TIA recommendations:

- Remove protected phasing for eastbound and westbound left-turn movements.

Apex staff recommendations:

Staff do not recommend removal of east/west protected phasing. Staff instead recommend restriping the southbound right-turn lane as a shared through/right-turn lane and constructing a second receiving lane south of the intersection that continues until the second site driveway on N. Salem Street, across from the Thales school exit driveway. This will help offset the projected 40 second increase in delay for the southbound movements during the PM peak hour. This will improve the overall signal operation to LOS C or better during the peak hours analyzed and maintain the protected phasing for the eastbound and westbound left-turn movements.

N. Salem Street at US 64 Eastbound Ramps

Table 9. AM / PM Signalized Peak Hour Levels of Service N. Salem Street at US 64 Eastbound Ramps			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	C / C	D / D	D / D
Eastbound (US 64 EB Off-ramp)	E / D	F / F	F / F
Northbound (N. Salem St)	C / C	C / C	D / C
Southbound (N. Salem St)	A / A	A / A	A / A

TIA recommendations:

- No improvements by the developer are recommended at this intersection.

Apex staff recommendations:

Apex staff concur with the TIA. This signal is anticipated to operate at an overall LOS D or better under all conditions analyzed. The eastbound approach currently operates at LOS D and E with long queues and is anticipated to operate at LOS F under future conditions, with or without the site. Site trips account for 5% of the overall traffic at this intersection; according to the Town's UDO Section 13.19, improvements are not required.

N. Salem Street / Davis Drive at US 64 Westbound On-ramp/N. Salem Street

Table 10. AM / PM Signalized Peak Hour Levels of Service N. Salem Street / Davis Drive at US 64 Westbound On-ramp			
	2025 Existing	**2032 No Build**	**2032 Build**
Overall	B / C	C / D	C / D
Westbound (N. Salem St)	E / F	F / F	F / F
Northbound (N. Salem St)	A / A	A / A	A / A
Southbound (Davis Dr)	C / C	C / C	C / C

TIA recommendations:

- No improvements by the developer are recommended at this intersection.

Apex staff recommendations:

Apex staff concur with the TIA. This signal is anticipated to operate at an overall LOS D or better under all conditions analyzed. The westbound approach currently operates at LOS E and F with long queues and is anticipated to operate at LOS F under future conditions, with or without the site. Site traffic accounts for 3% of the overall traffic at this intersection; according to the Town's UDO Section 13.19, improvements are not required.

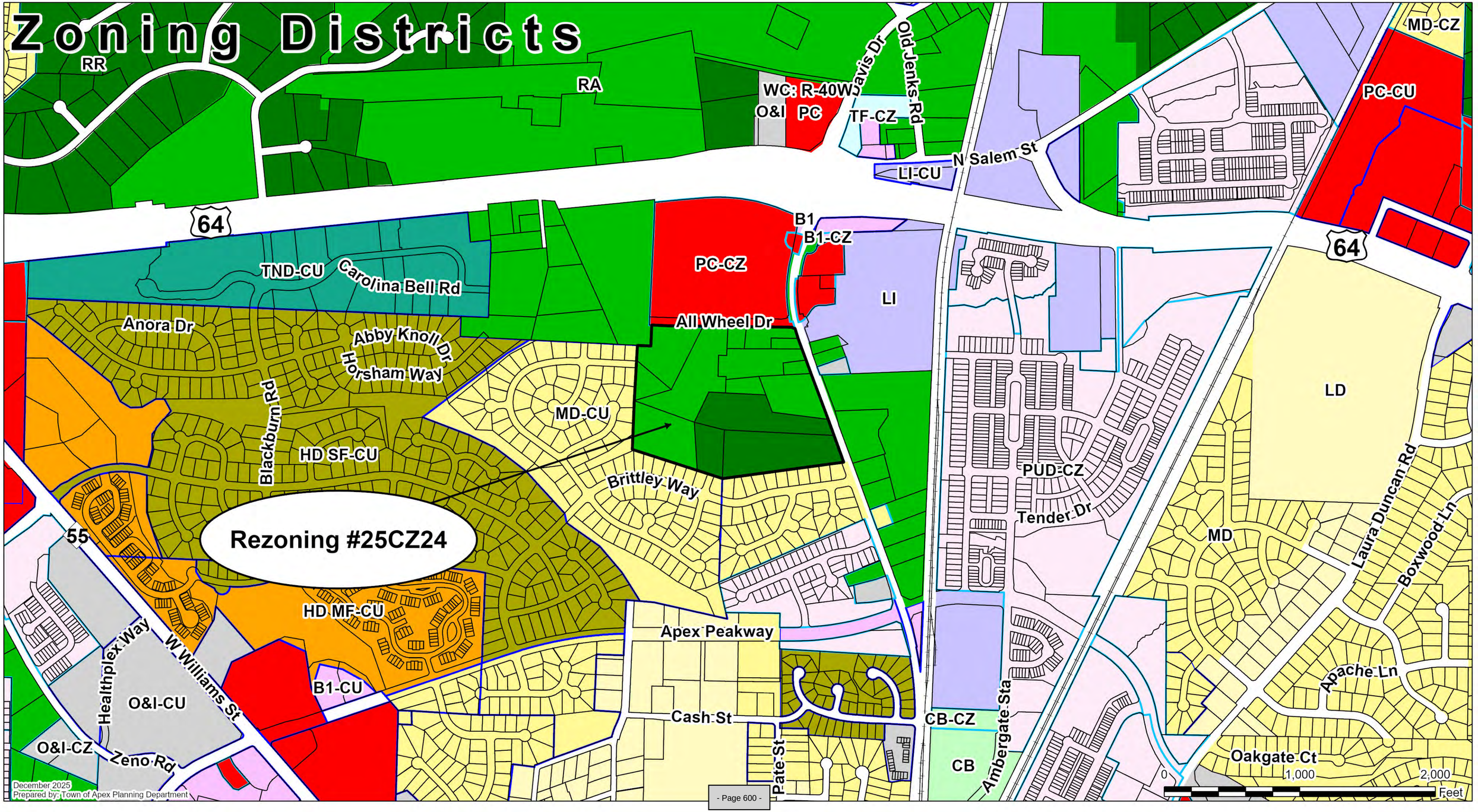
Please coordinate with the NCDOT District Engineer's Office concerning any recommendations on NCDOT facilities. Town staff will be available for meetings to discuss recommendations as needed.

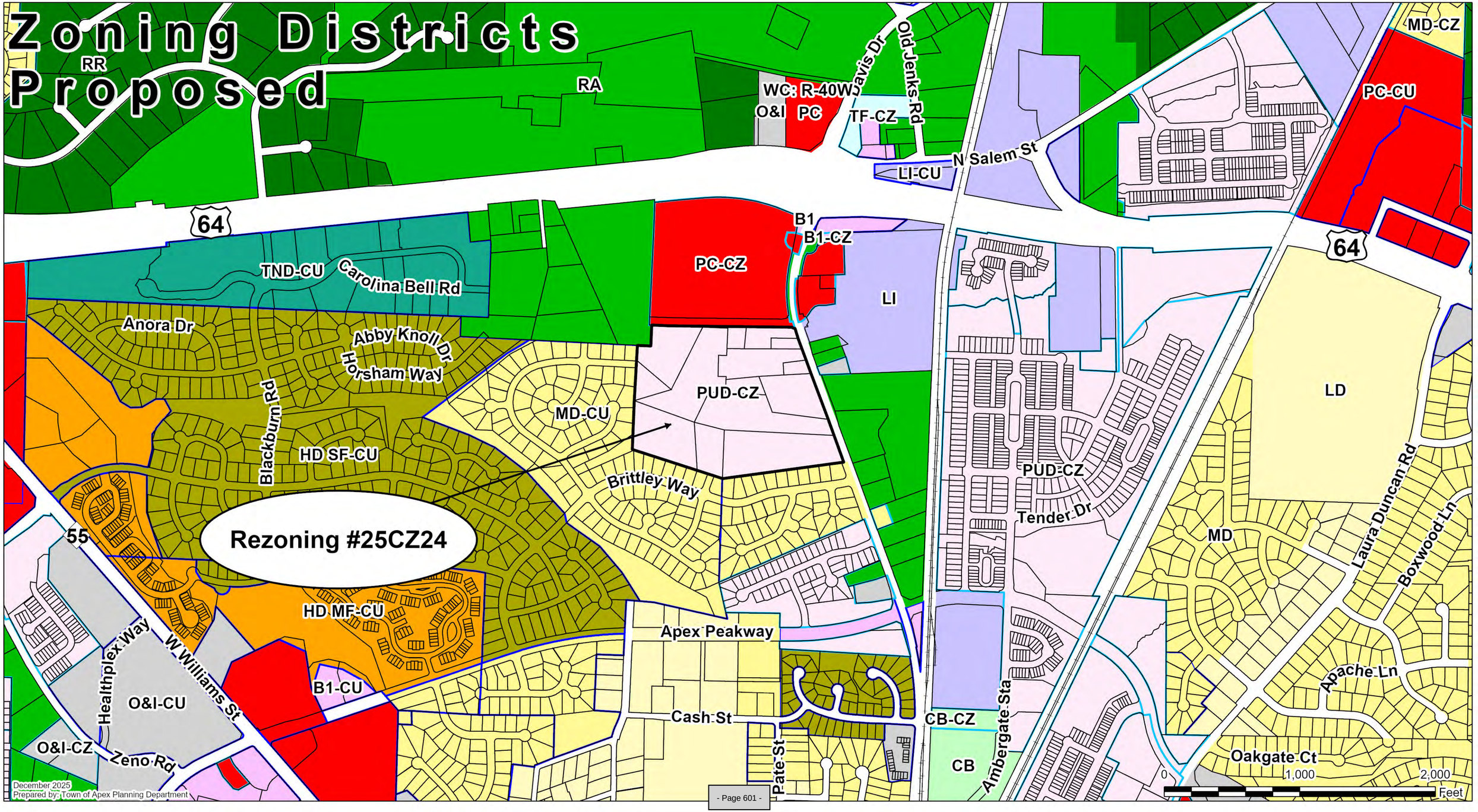
Sincerely,

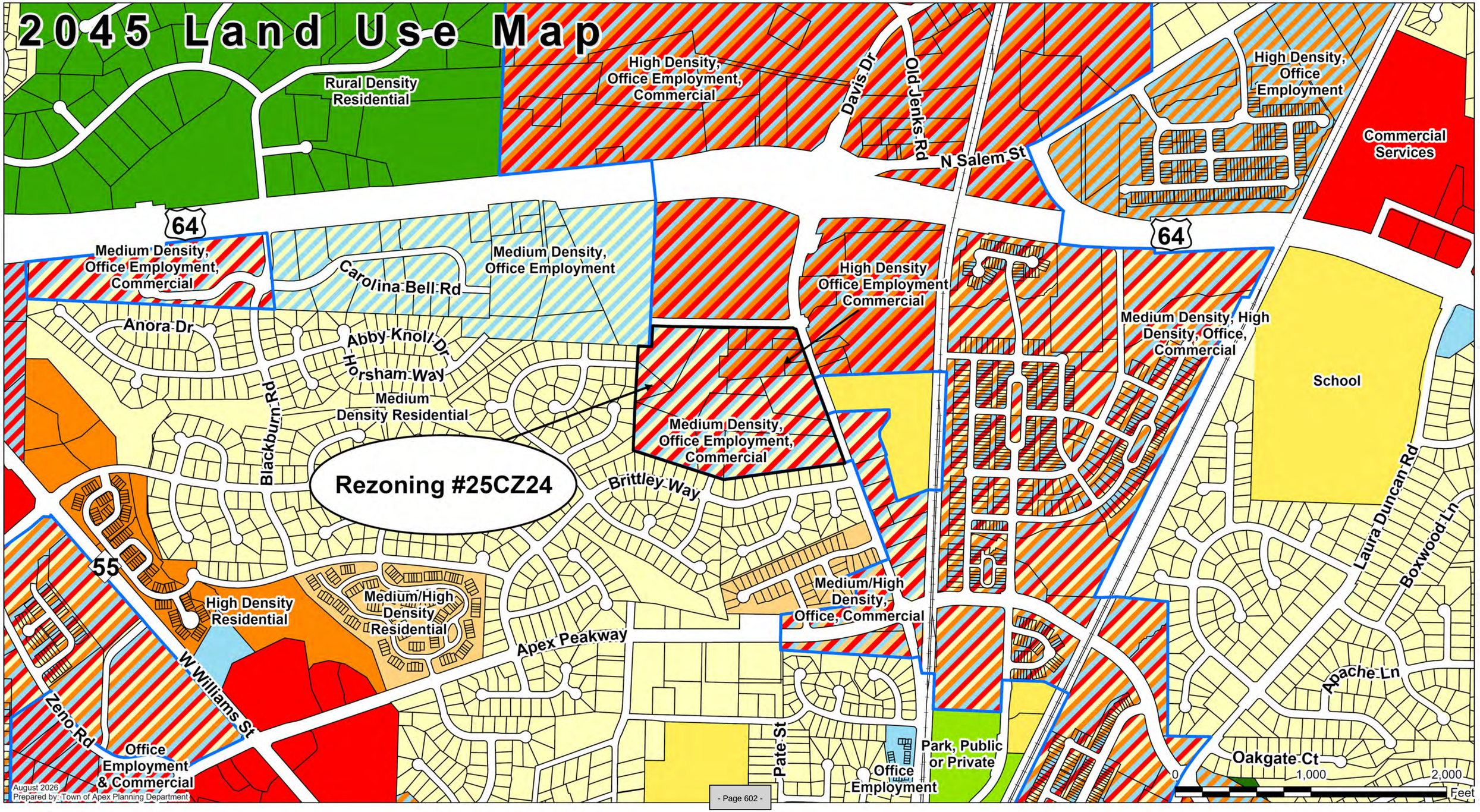


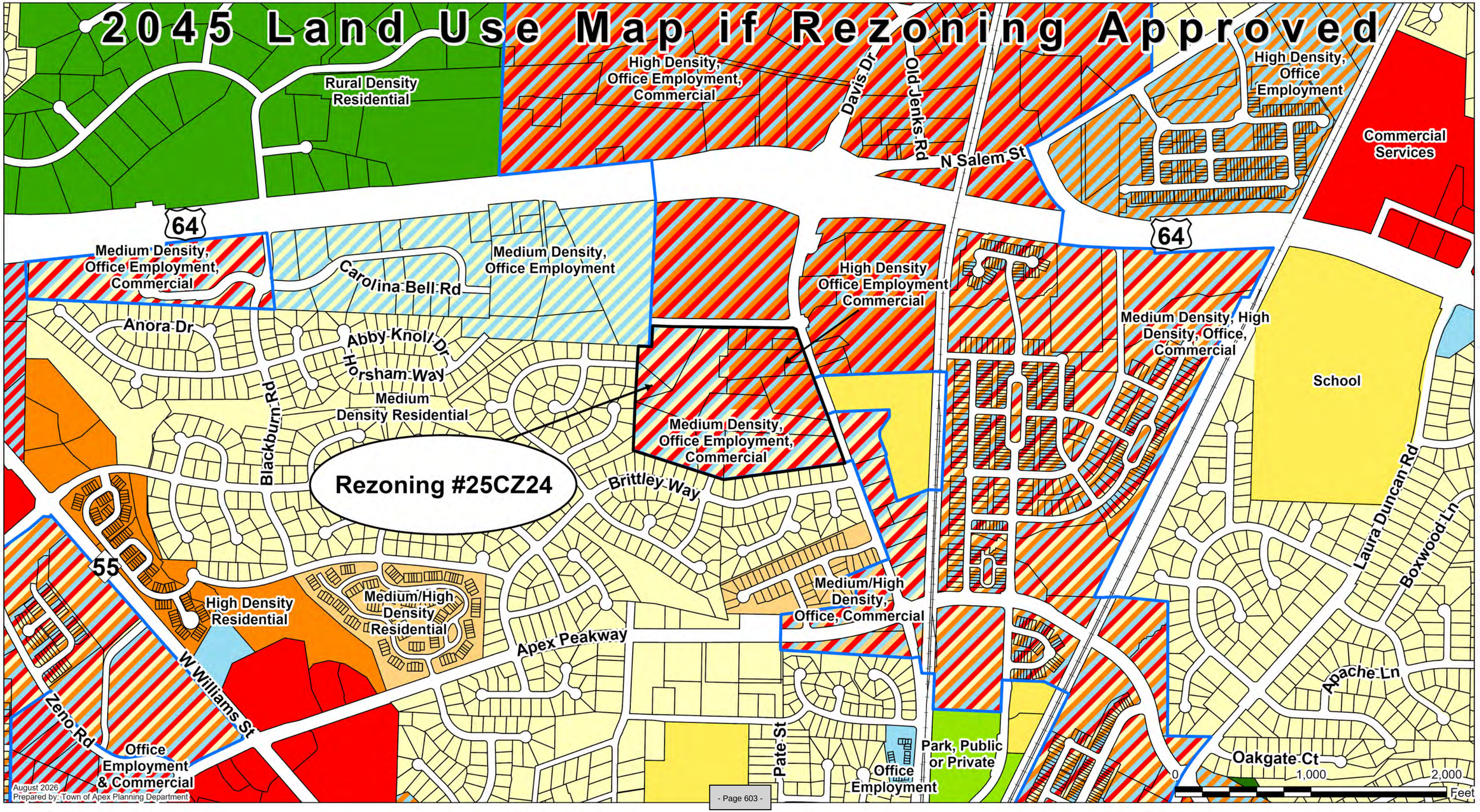
Jessica McClure, PE
Traffic Safety Engineer | 919-372-7448


Rezoning #25CZ24
Crossroads Ford
Crossroads Ford Truck Center
Boxcar Way
Ambergate Sta
All Wheel Dr
Key Ring Dr
Marker Dr
Villages of Apex
Charlion Downs Ln
Taywood Way
Thales Academy
N Salem St
Wandle Ln
Rexhill Ct
Branch Line Ln
Swandon Ct
Windy Rd
Brittley Way
Haddon Hall
Haddon Hall Dr
Frenchurch Way
Tribayne Ct
Railhead Aly
0
500
1,000
Feet
August 2026
June 2026 Aerial
Photography Prepared by: Town of Apex Planning Department


Zoning Districts
RR
RA
WC: R-40W
O&I
PC
TF-CZ
Davis Dr
Old Jenks Rd
N Salem St
LI-CU
MD-CZ
PC-CU
64
B1
B1-CZ
PC-CZ
LI
All Wheel Dr
TND-CU
Carolina Bell Rd
Anora Dr
Abby Knoll Dr
Horsham Way
Blackburn Rd
HD SF-CU
MD-CU
Brittley Way
Rezoning #25CZ24
PUD-CZ
Tender Dr
LD
MD
Laura Duncan Rd
Boxwood Ln
Apache Ln
55
HD MF-CU
Apex Peakway
Healthplex Way
W Williams St
O&I-CU
B1-CU
Cash St
CB-CZ
Ambergate Sta
Pate St
CB
O&I-CZ
Zeno Rd
Oakgate Ct
0
1,000
2,000
Feet
December 2025
Prepared by: Town of Apex Planning Department


Zoning Districts
Proposed
RR
RA
WC: R-40W
O&I
PC
TF-CZ
Davis Dr
Old Jenks Rd
MD-CZ
PC-CU
N Salem St
LI-CU
64
B1
B1-CZ
PC-CZ
LI
TND-CU
Carolina Bell Rd
Anora Dr
Abby Knoll Dr
Horsham Way
Blackburn Rd
HD SF-CU
MD-CU
PUD-CZ
Brittley Way
Rezoning #25CZ24
55
HD MF-CU
Apex Peakway
Healthplex Way
W Williams St
O&I-CU
B1-CU
Cash St
O&I-CZ
Zeno Rd
Pate St
CB-CZ
CB
Ambergate Sta
PUD-CZ
Tender Dr
LD
MD
Laura Duncan Rd
Boxwood Ln
Apache Ln
Oakgate Ct
0
1,000
2,000
Feet
December 2025
Prepared by: Town of Apex Planning Department


2045 Land Use Map
Rural Density Residential
High Density, Office Employment, Commercial
Davis Dr
Old Jenks Rd
N Salem St
High Density, Office Employment
Commercial Services
64
64
Medium Density, Office Employment, Commercial
Carolina Bell Rd
Medium Density, Office Employment
High Density Office Employment Commercial
Medium Density, High Density, Office, Commercial
Anora Dr
Abby Knol Dr
Horsham Way
Medium Density Residential
Blackburn Rd
Medium Density, Office Employment, Commercial
School
Rezoning #25CZ24
Brittley Way
Laura Duncan Rd
Boxwood Ln
55
High Density Residential
Medium/High Density Residential
Medium/High Density, Office, Commercial
Apex Peakway
W Williams St
Apache Ln
Zeno Rd
Pate St
Office Employment & Commercial
Park, Public or Private
Office Employment
Oakgate Ct
0
1,000
2,000
Feet
August 2026
Prepared by: Town of Apex Planning Department


2045 Land Use Map if Rezoning Approved
Rural Density Residential
High Density, Office Employment, Commercial
Davis Dr
Old Jenks Rd
N Salem St
High Density, Office Employment
Commercial Services
64
64
Medium Density, Office Employment, Commercial
Carolina Bell Rd
Medium Density, Office Employment
High Density Office Employment Commercial
Medium Density, High Density, Office, Commercial
Anora Dr
Abby Knoll Dr
Horsham Way
Medium Density Residential
Blackburn Rd
Medium Density, Office Employment, Commercial
School
Rezoning #25CZ24
Brittley Way
Laura Duncan Rd
Boxwood Ln
55
High Density Residential
Medium/High Density Residential
Medium/High Density, Office, Commercial
Apex Peakway
W Williams St
Apache Ln
Zeno Rd
Pate St
Park, Public or Private
Office Employment
Office Employment & Commercial
Oakgate Ct
0
1,000
2,000
Feet
August 2026
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 #: 25CZ24 Submittal Date: 12/1/25

Fee Paid $ Check #

PETITION TO AMEND THE OFFICIAL ZONING DISTRICT MAP

Project Name: N. Salem Street Mixed-Use

Address(es): 0, 1201, 1205, 1207, 1301, 1303, 1405, 1409, N. Salem Street; 0 Charlion Downs Lane

PIN(s) 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697

0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712 Acreage: 32.35 acres

Current Zoning: Residential Agricultural (RA), Rural Residential (RR), Planned Commercial (PC-CZ) Proposed Zoning: Planned Unit Development Conditional (PUD-CZ)

Current 2045 LUM Designation: Commercial Services/Office Employment/Medium Density Residential; Commercial Services/Office Employment/High Density Residential

Is the proposed rezoning consistent with the 2045 LUM Classification(s)?

Although the majority of the PUD layout is consistent with the LUM classifications, the PUD proposes multi-family in a small section of the northwest corner of the site which the LUM designates as Office Employment/Commercial Services/Medium Density Residential

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: 32.13

Area proposed as non-residential development: Acreage: 5.0

Percent of mixed use area proposed as non-residential: Percent: 15.56%

Applicant Information

Name: Merit Group, LLC c/o Matthew Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: 919-835-4032 E-mail: matthewcarpenter@parkerpoe.com

Owner Information

Name: See attached

Address:

City: State: Zip:

Phone: E-mail:

Agent Information

Name: Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: 919-835-4032 E-mail: matthewcarpenter@parkerpoe.com

Other contacts: Bob Zumwalt; bobzumwalt@kimley-horn.com 919-677-2000

PLANNED UNIT DEVELOPMENT APPLICATION

Application #: 25CZ24 Submittal Date: 12/1/25

PLANNED UNIT DEVELOPMENT DISTRICT 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. The PD text and plan should demonstrate how the standards of Sec. 2.3.4.F are met be the proposed rezoning.

LEGISLATIVE CONSIDERATIONS - CONDITIONAL ZONING

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. Use additional pages as needed.

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.

See attached.

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

See attached.

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

See attached.

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.

See attached.

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.

See attached.

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.

See attached.

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.

See attached.

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

See attached.

PETITION PROCESS INFORMATION

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.

See attached.

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.

See attached.

Owner Information
N. Salem Street Mixed-Use

PIN 0742367712
Address: 1403 N. Salem St.
Owner: Merit Group, LLC
Acreage: 1.06 acre
Current Zoning: Residential Agricultural

PIN 0742368697
Address: 1401 N. Salem St.
Owner: Merit Group, LLC
Acreage: 0.39 acre
Current Zoning: Residential Agricultural

PIN 0742365731
Address: 1405 N. Salem St.
Owner: Geraldine Gilbert Heirs
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742366583
Address: 1205 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 2.54 acres
Current Zoning: Residential Agricultural

PIN 0742369479
Address: 1303 N. Salem St.
Owner: June Thompson
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742369278
Address: 1301 N. Salem St.
Owner: June Thompson
Acreage: 2.80 acres
Current Zoning: Residential Agricultural

PIN 0742363169
Address: 1207 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 4.46 acres
Current Zoning: Rural Residential

PIN 0742358857
Address: 1201 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 5.34 acres
Current Zoning: Rural Residential

PIN 0742353848
Address: 0 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 1.67 acres
Current Zoning: Rural Residential

PIN 0742350909
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.77 acres
Current Zoning: Residential Agricultural

PIN 0742362432
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 4.59 acres
Current Zoning: Residential Agricultural

PIN 0742366306
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.73 acre
Current Zoning: Residential Agricultural

PIN 0742268387
Address: 0 Charlion Downs Ln
Owner: DLG HOLDINGS LLC
Acreage: 0.93 acre
Current Zoning: Residential Agricultural

PIN 0742360631
Address: 1409 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.06 acres
Current Zoning: Residential Agricultural

PIN 0742362719
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.02 acre

Current Zoning: PC-CZ

PIN 0742363799
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.04 acre
Current Zoning: PC-CZ

Legislative Considerations - Conditional Zoning

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. Use additional pages as needed.

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.**

   Response: The LUM designates the property as Mixed-Use which includes Commercial Services, Medium Density Residential, High Density Residential, and Office Employment. The LUM is clear about where more intense uses should be located on the property; it recommends the highest residential density - together with commercial services - at the intersection of All Wheel Drive and N. Salem Street. In areas closer to existing residential neighborhoods to the south and west, it recommends Medium Density which calls for townhomes. The proposed PUD-CZ achieves this layout across four districts. MU-1 is placed at the corner of All Wheel Drive and N. Salem Street and permits integrated high density multi-family and commercial uses to activate the corner. The remaining districts, TH-1, TH-2, and TH-3 only permit townhomes adjacent to existing single-family neighborhoods.

   Overall, the proposed PUD-CZ is consistent with Advance Apex, the 2045 Land Use Map Update (the "Update") and the 2045 Land Use Map ("LUM"). The Update identifies the property as underdeveloped. The LUM recommends a mix of housing types and densities across the Property with the highest density housing and non-residential uses at the corner of All Wheel Drive and N. Salem Street. It recommends residential density transition down approaching existing single-family neighborhoods to the west and south. The proposed PUD-CZ meets these recommendations by permitting a vibrant, dense, mixed-use area at the intersection with townhouses at approximately 7 units/acre (density recommended by LUM Medium Density category) in the southern and western sections closest to existing single-family. The project only proposes two minor changes to the LUM, to slightly extend the High Density Residential designation south along N. Salem Street and to straighten the western boundary of the High-Density Residential area to match the western boundary of the proposed MU-1 District (the current boundary follows the tax parcel lot line which will be recombined when the property is redeveloped). Although the LUM recommends multi-family (high density residential) at the intersection without a height limit, staff have requested multi-family buildings be limited to 4/5 stories, particularly along N. Salem Street. The area the LUM currently identifies for High Density Residential does not provide sufficient land area to design, park, and operate a multi-family community with buildings under 4/5 stories. The proposed LUM changes slightly extend the high density residential designation south to allow sufficient land to deliver multi-family with the height transition restrictions recommended by staff. Even

with this change, townhouses at the recommended density remain in the TH-1, TH-2 and TH-3 districts.

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

   Response: As discussed above, the proposed PUD districts are designed to meet the density and layout recommendations of the LUM, but be appropriate for the property's location and compatible with existing surrounding land uses. Adjacent properties to the south and west are existing single-family homes on small, less than 0.5 acre lots. Notably, neither of the existing single-family neighborhoods have existing perimeter buffers. All Wheel Drive borders the property to the north and Crossroads Ford is located north of All Wheel Drive. High density residential and commercial uses are placed at the corner, away from existing single-family homes, to create a vibrant mixed-use destination. As shown on the Concept Plan, the majority of existing single-family homes will be adjacent to townhomes, riparian buffers, or open space/RCAs.

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

   Response: The proposed uses will comply with all applicable Supplemental Standards.

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.**

   Response: As discussed above, the proposed PUD layout is designed to minimize adverse visual impacts on adjacent properties. A traffic impact analysis has been conducted and submitted to the Town to determine recommended road improvements to mitigate the project's traffic impacts. The PUD text commits to numerous transportation improvements which will improve N. Salem Street frontage, manage site access through designated turning movements, extend internal street connections, provide sidewalks and side paths to improve pedestrian connectivity, and add a bus stop along N. Salem Street. Construction traffic will also be directed to N. Salem Street and/or All Wheel Drive to reduce impacts on nearby residential streets. Additionally, the PUD is designed to respect the natural area, pond, and riparian buffers on the southwestern portion of the property. If structurally sound, one of the existing ponds will be preserved and used as an amenity. Finally, the project will meet all UDO requirements for buffers, trash, traffic, service delivery, parking and loading, odors, noise, glare, and vibration.

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.**

   Response: The project will meet all local, state, and federal environmental regulations. There is an existing farm pond, stream, and wetlands located on the southwestern portion of the Property. As shown on the PUD Concept Plan this stream and a jurisdictional wetland will be preserved as RCA. No structures will be located in riparian buffers. The project will meet the UDO RCA requirement.

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.**

   Response: The proposed district will not have an adverse impact on public facilities and services.

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.**

   Response: The proposed use will not have adverse effects on health, safety, or welfare of residents of the Town or its ETJ. Rather, it will add to the housing supply and increase commercial uses in an area which the Town envisions as a mixed-use area while providing adequate transitions to single-family uses to the south.

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

   Response: The proposed district is not substantially detrimental to adjacent properties. As discussed above the proposed project will permit commercial and higher-density residential on the north side near Crossroads Ford, and the lower-density townhouses on the south side. A 20-foot Type "B" landscaped buffer is also proposed along the southern and western boundary line.

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.**

   Response: The proposed district will not constitute a nuisance or hazard due to traffic impact, noise, or because of the number of persons using the district. The PUD limits the allowed multi-family density to a maximum of 285 units, townhouses/small scale multi-family units to a maximum of 175 units, incorporate open space, and will comply with all UDO required buffers.

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.**

    Response: The project will comply with all other applicable standards of the UDO.

DEVELOPMENT NAME APPROVAL APPLICATION

Application #: 25CZ24 Submittal Date: 12/1/2025

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 #: 25CZ24 Submittal Date: 12/1/25

Proposed Subdivision/Development Information

Description of location: N. Salem Street/All Wheel Drive

Nearest intersecting roads: N. Salem Street/All Wheel Drive

Wake County PIN(s): 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712

Township: White Oak

Contact Information (as appropriate)

Contact person: Merit Group, LLC c/o Matthew Carpenter

Phone number: 919-835-4032 Fax number:

Address: 301 Fayetteville Street, Suite 1400, Raleigh NC

E-mail address: matthewcarpenter@parkerpoe.com

Owner: See attached Exhibit A

Phone number: N/A Fax number: N/A

Address: N/A

E-mail address: N/A

Proposed Subdivision/Development Name

1st Choice: TBD

2nd Choice *(Optional)*:

Town of Apex Staff Approval:

Town of Apex Planning Department Staff Date

STREET NAME APPROVAL APPLICATION

Application #: 25CZ25 Submittal Date: 12/1/25

Wake County Approval Date: _____

Guidelines:

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

Information:

Description of location: N. Salem Street/All Wheel Drive

Nearest intersecting roads: N. Salem Street/All Wheel Drive

Wake County PIN(s): 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712

Township: White Oak

Contact information (as appropriate)

Contact person: Matthew Carpenter

Phone number: 919-835-4032 Fax number: 919-834-4564

Address: 301 Fayetteville Street, Suite 1400, Raleigh, NC 27601

E-mail address: matthewcarpenter@parkerpoe.com

Owner: See attached

Phone number: _____ Fax number: _____

Address: _____

E-mail address: _____

STREET NAME APPROVAL APPLICATION

Application #: 25CZ24 Submittal Date: 12/1/25

# of roads to be named: TBD

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

Example:	Road Name	Suffix
	Hunter	Street

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

TOWN OF APEX STAFF APPROVAL

Town of Apex Staff Approval Date

WAKE COUNTY STAFF APPROVAL:

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

Comments:

Wake County GIS Staff Approval Date

TOWN OF APEX UTILITIES OFFER AND AGREEMENT

Application #: 25CZ24 Submittal Date: 12/1/25

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

WAKE COUNTY, NORTH CAROLINA CUSTOMER SELECTION AGREEMENT

0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697

0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712

(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.

Merit Group, 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: Merit Group, LLC	TOWN OF APEX
BY: _____ Authorized Agent	BY: _____ Authorized Agent
DATE: _____	DATE: _____

AGENT AUTHORIZATION FORM

Application #: 25CZ24 Submittal Date: 12/1/25

David L. Goodwin is signing on behalf of the owners* of the properties for which the attached application is being submitted pursuant to Power of Attorney recorded in Deed Book 19916, Page 2530, Wake County Registry.

☑ 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

☐

The property address is: 1207 N. Salem St. (0742363169); 1201 N. Salem St. (0742358857); 0 N. Salem St. (0742353848); 1405 N. Salem St. (0742365731); 1303 N. Salem St. (0742369479); 1301 N. Salem St. (0742369278)

The agent for this project is: Matthew J. Carpenter and Paul Munana

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

Agent Name: Matthew J. Carpenter and Paul Munana

Address: 301 Fayetteville Street, Suite 1400, Raleigh, NC 27601

Telephone Number: 919-835-4032

E-Mail Address: MatthewCarpenter@parkerpoe.com

Signature(s) of Owner(s)*

Signed by:
David L. Goodwin
EA9E940B546F473...

David L. Goodwin

Type or print name Date

Type or print name Date

Attach additional sheets if there are additional owners.

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

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

AGENT AUTHORIZATION FORM

Application #: 25CZ24 Submittal Date: 12/1/25

DLG Holdings, LLC is the owner* of the property for which the attached application is being submitted:

- ☑ 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, 1205, & 1409 N. Salem Street; 0 Charlion Downs Ln (PINS: 0742366583, 0742350909, 0742362432, 0742366306, 0742268387, 0742360631, 0742362719, 0742363799)

The agent for this project is: Matthew Carpenter and Paul Munana

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

Agent Name: Matthew Carpenter and Paul Munana

Address: 301 Fayetteville Street, Suite 1400, Raleigh, NC 27601

Telephone Number: 919-835-4032

E-Mail Address: MatthewCarpenter@parkerpoe.com

Signature(s) of Owner(s)*

DLG Holdings, LLC,
a North Carolina limited liability company

By: Signed by: David L. Goodwin EA9E940B5A0F473... David L. Goodwin, Manager

Attach additional sheets if there are additional owners.

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

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

AGENT AUTHORIZATION FORM

Application #: 25CZ24 Submittal Date:

Merit Group, LLC is the owner* of the property for which the attached application is being submitted:

- ☑ 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: 1401 N. Salem Street (PIN 0742368697)

The agent for this project is: Matthew Carpenter and Paul Munana

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

Agent Name: Matthew Carpenter and Paul Munana

Address: 301 Fayetteville Street, Suite 1400, Raleigh, NC 27601

Telephone Number: 919-835-4032

E-Mail Address: MatthewCarpenter@parkerpoe.com

Signature(s) of Owner(s)*

Paul Munana

Paul Munana

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 #: 25CZ24 Submittal Date: _____

The undersigned, Matthew J. Carpenter (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 Affiaor is the authorized agent of all owners of the property 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. Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).
4. To Affiant's actual knowledge, no claim or action has been brought against owners which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owners in court regarding possession of the Property.

This the 25th day of August, 2026

_____ (seal)
Matthew J. Carpenter
Type or print name

STATE OF NORTH CAROLINA
COUNTY OF Wake

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

RYANN M GRIFFIN
NOTARY PUBLIC
Wake County
North Carolina
My Commission Expires September 17, 2028
[NOTARY SEAL]

Ryann M. Griffin
Notary Public
State of North Carolina
My Commission Expires: 9/17/2028

Last Updated: August 30, 2019

Exhibit A
to
Affidavit of Ownership

PIN 0742368697 (1401 N. Salem Street)

BEGINNING at a piece of rebar found in the northwestern right of way of N. Salem Street (60 foot public right of way), said rebar found being a common corner with the northeastern corner of the property of Williams S. Goodwin ("Goodwin") (now or formerly) as shown in Deed Book 12399, Page 1196, Wake County Registry, said rebar BEING THE POINT AND PLACE OF BEGINNING; thence running with the northern property line of Goodwin (now or formerly)North 85-30-00 West 227.82 feet to an iron pipe found; thence leaving the northern property line of Goodwin (now or formerly) North 04-28-36 East 80.70 feet to an iron pipe found; thence South 84-49-48 East 198.16 feet to an iron pipe found, said iron pipe being located in the northwestern right of way of N. Salem Street (60 foot public right of way); thence running with the northwestern right of way of N. Salem Street, South 16-15-36 feet East 83.82 feet to a piece of rebar, said rebar BEING THE TRUE POINT AND PLACE OF BEGINNING, tract containing 0.389 acres, 16,923.8 square feet per survey prepared by Chance Surveying Company, P.A. dated April 23, 2014 entitled "Final Survey for John Huber".

AGENT AUTHORIZATION FORM

Application #: 25CZ24 Submittal Date:

Merit Group, LLC is the owner* of the property for which the attached application is being submitted:

- ☑ 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: 1403 N. Salem Street (PIN 0742367712)

The agent for this project is: Matthew Carpenter and Paul Munana

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

Agent Name: Matthew Carpenter and Paul Munana

Address: 301 Fayetteville Street, Suite 1400, Raleigh, NC 27601

Telephone Number: 919-835-4032

E-Mail Address: MatthewCarpenter@parkerpoe.com

Signature(s) of Owner(s)* DocuSigned by: Paul Munana 080E1504F7D6B44A...

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 #: 25CZ24 Submittal Date: _____

The undersigned, Matthew J. Carpenter (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 Affiaor is the authorized agent of all owners of the property 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. Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).

4. To Affiant's actual knowledge, no claim or action has been brought against owners which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owners in court regarding possession of the Property.

This the 24th day of November, 2025.

_____ (seal)
Matthew J. Carpenter
Type or print name

STATE OF NORTH CAROLINA
COUNTY OF Wake

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

DAITWAN HARDY NOTARY PUBLIC WAKE COUNTY, NC My Comm. Exp. 2ND SEPT 2030 [NOTARY SEAL]

_____
Notary Public
State of North Carolina
My Commission Expires: 2nd Sept. 2030

AFFIDAVIT OF OWNERSHIP: EXHIBIT A – LEGAL DESCRIPTION

Application #: 25CZ24 Submittal Date:

Insert legal description below.

See attached

Canoy Surveying
Adam Canoy, PLS
1154 Shonele Ln
Stem, NC 27581
984.377.2626
canoysurveying@gmail.com

Metes and bounds description of lands located in White Oak Township in Wake County, 1409-1201 N Salem St, Apex, NC

Beginning at an iron pipe found, being the northwest corner of DLG Holdings LLC property as described in deed book 17929, at page 1179 and along the right of way of All Wheel Drive, as described in book of maps 2019, at page 1330 in the Wake County registry, beginning point having NC GRID NAD83(2011) coordinates of, N: 726,807.83 E: 2,042,917.78';

Thence from said point of beginning along and with the right of way of All Wheel Drive, S 87°29'09" E a distance of 132.05' to an iron pipe found;

Thence along and with said right of way, S 89°20'15" E a distance of 244.31' to a computed point;

Thence along and with said right of way, S 89°20'15" E a distance of 186.80' to an iron pipe found, being the northeast corner of DLG Holdings LLC and the northwest corner of Geraldine L Gilbert Heirs as described in book of maps 2019, at page 1330 at the Wake County Registry;

thence along with said right of way, S 89°26'05" E a distance of 134.93' to an iron pipe found, the northeast corner of Gilbert heirs and the northwest corner of Merit Group LLC property as described in deed book 20042, at page 1629 at the Wake County Registry;

thence along and with said right of way, S 89°19'38" E a distance of 339.94' to a computed point near the intersection of All Wheel Drive and N Salem St, as described in book of maps 2019 at page 1330 at the Wake County Registry;

thence along and with said right of way, S 20°13'14" E a distance of 5.00' to a computed point at the aforementioned intersection;

thence along and with said right of way, S 73°51'24" E a distance of 18.57' to a computed point at along the right of way of N Salem St at the aforementioned intersection;

thence along and with the right of way of N Salem St, S 17°03'47" E a distance of 76.57' to an iron pipe found, being the southeast corner of Merit Group LLC property and the Northeast corner of John Huber property as described in deed book 20042, at page 1629;

Canoy Surveying
Adam Canoy, PLS
1154 Shonele Ln
Stem, NC 27581
984.377.2626
canoysurveying@gmail.com

thence along and with said right of way, S 20°17'05" E a distance of 83.82' to a computed point, being the southeast corner of John Huber property and the Northeast corner of DLG Holdings LLC property as described in book of maps 1982, at page 145 at the Wake County Registry;

thence along and with said right of way, S 20°20'11" E a distance of 85.11' to an iron pipe found, the northeast corner of June N Thompson property and the southeast corner of DLG Holdings LLC property as described in book of maps 1982, at page 145 at the Wake County Registry;

thence along and with said right of way, S 20°01'41" E a distance of 106.14' to an iron pipe found;

thence along and with said right of way, S 20°35'35" E a distance of 361.94' to an iron pipe found, the southeast corner of June N Thompson property and the northeast corner of Andrew Burgess Jr and Elizabeth Burgess Chappell property;

thence along and with said right of way, S 19°55'43" E a distance of 126.92' to an iron pipe found;

thence along and with said right of way, S 20°00'13" E a distance of 42.64' to an iron pipe found;

thence along and with said right of way S 19°48'13" E a distance of 166.44' to a computed point;

thence leaving the right of way of N Salem St, along and with the southern property line of Andrew Burgess Jr and Elizabeth Burgess Chappell property and the northern line of the Haddon Place subdivision, as described in book of maps 1995, at page 1420, S 82°16'18" W a distance of 901.47' to an iron pipe found;

thence along and with the line of Haddon Place subdivision, Burgess and Chappell property, and DLG Holdings LLC property as described in book of maps 1999, at page 741 in the Wake County Registry, N 72°06'22" W a distance of 700.32' to an iron pipe found;

thence along the eastern line of Haddon Hall phase VIII and the western line of DLG Holdings LLC as described in book of maps 2000, at page 2110 in the Wake County Registry, N 02°17'31" E a distance of 359.39' to an iron pipe found;

thence continuing along the Haddon Hall subdivision and DLG Holdings LLC property, N 03°16'41" E a distance of 409.50' to an iron pipe found;

Canoy Surveying
Adam Canoy, PLS
1154 Shonele Ln
Stem, NC 27581
984.377.2626
canoysurveying@gmail.com

thence along the southern line of Joy Chiu Yin Huang property as described in deed 17443 at page 357 and the northern line of DLG Holdings LLC property, S 87°26'34" E a distance of 98.99' to an iron rebar found;

thence along the eastern line of Huang property and DLG Holdings LLC property N 02°27'28" E a distance of 154.79' to an iron pipe found;

which is the point of beginning,

having an area of 1408960 square feet, 32.34 acres

For further description see the following book of maps, BM 2019, PG 1330; BM 2009, PG 240; BM 2003, PG 1415; BM 2001, PG 1365; BM 2000, PG 2110; 1999, PG 741; BM 1997, PG 1683; BM 1989, PG 1113; BM 1982, PG 145; all in the Wake County register of deeds. Said properties being bounded on the north by All Wheel Drive, On the East by N Salem St, on the South by Haddon Place subdivision, and on the West by Haddon Hall phase VIII subdivision.

REIDS: 0032695, 0024908, 0089492, 0453258, 0453257, 0025769, 0365408, 0365407, 0365406, 0024401, 0031293, 0365409, 0025706, 0025767, 0256583, 0184158

PINS: 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712

WAKE COUNTY PUBLIC SCHOOL SYSTEM

Wake County Residential Development Notification

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

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

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

Developer Company *Information*	
Company *Name*	Merit Group, LLC c/o Matthew Carpenter
Company Phone *Number*	919-835-4032
Developer Representative *Name*	Matthew Carpenter
Developer Representative *Phone Number*	919-835-4032
Developer Representative *Email*	matthewcarpenter@parkerpoe.com

New Residential Subdivision *Information*	
Date of Application for Subdivision	TBD
City, Town or Wake County Jurisdiction	White Oak
Name of Subdivision	TBD
Address of Subdivision (if unknown enter nearest cross streets)	N. Salem Street/All Wheel Drive
REID(s)	See attached
PIN(s)	See attached

Projected Dates *Information*	
Subdivision *Completion Date*	
Subdivision *Projected First Occupancy Date*	

Lot by Lot Development *Information*

Unit Type	Total # of Units	Senior Living	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom	Square Foot Range		Price Range		Anticipated Completion Units & Dates					
								Min	Max	Low	High	Year	# Units	Year	# Units	Year	# Units
Single Family																	
Townhomes	175				87	88								2029			
Condos																	
Apartments	285			95	95	95								2029			
Other																	

Revised 08/10/2018

NOTICE OF NEIGHBORHOOD MEETING

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

November 6, 2025

Date

Dear Neighbor:

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

See attached Exhibit A | See attached Exhibit A

Address(es) | PIN(s)

in accordance with the Town of Apex Neighborhood Meeting procedures. This meeting is intended to be a way for the applicant to discuss the project and review the proposed plans with adjacent neighbors and neighborhood organizations before the submittal of an application to the Town. This provides neighbors an opportunity to raise questions and discuss any concerns about the impacts of the project before it is officially submitted. If you are unable to attend, please refer to the Project Contact Information page for ways to contact the applicant. Notified neighbors may request that the applicant provide updates and send plans via email or mail. 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 http://www.apexnc.org/180. Applications for Rezoning must hold a second Neighborhood Meeting in the month prior to the anticipated public hearing date.

A 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	Technical Review Committee (staff)
☐	Minor Site Plan for the uses "Day care facility", "Government service", "School, public or private", "Restaurant, drive-through", or "Convenience store with gas sales"	Technical Review Committee (staff)
☐	Special Use Permit	Board of Adjustment (QJPH*)
☐	Residential Master Subdivision Plan (excludes exempt subdivisions)	Technical Review Committee (staff)

*Quasi-Judicial Public Hearing: The Board of Adjustment cannot discuss the project prior to the public hearing.

The following is a description of the proposal including any proposed long range plan amendments (also see attached map(s) and/or plan sheet(s)):

The proposal is to rezone the property to Planned Unit Development Conditional (PUD-CZ) to permit a mixed-use development with a mix of housing types and non-residential uses as shown on the Preliminary Concept Plan.

Estimated submittal date: December 1, 2025

MEETING INFORMATION:

Property Owner(s) name(s):	See attached Exhibit A
Applicant(s):	Merit Group, LLC c/o Matthew J. Carpenter
Contact information (email/phone):	matthewcarpenter@parkerpoe.com; (919) 835-4032
Meeting Address:	Virtual (Zoom) - See attached notice letter
Date/Time of meeting**:	November 20, 2025

Welcome: 5:30 PM Project Presentation: between 5:30 - 6:30 PM Question & Answer: between 5:30 - 6:30 PM

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

Parker Poe
Attorneys & Counselors at Law

To: Neighboring Property Owners and Tenants
From: Matthew J. Carpenter
Date: November 6, 2025

Re: Notice of Virtual Neighborhood Meeting

You are invited to attend a virtual neighborhood meeting on November 20, 2025 at 5:30 PM to discuss an upcoming application to rezone an approximately 32.3-acre assemblage located at 0 N. Salem Street (PIN: 0742362719), 0 N. Salem Street (PIN: 0742366306), 0 N. Salem Street (PIN: 0742362432), 0 N. Salem Street (PIN: 0742350909), 0 N. Salem Street (PIN: 0742353848), 0 N. Salem Street (PIN: 0742363799), 1201 N. Salem Street (PIN: 0742358857), 1205 N. Salem Street (PIN: 0742366583), 1207 N. Salem Street (PIN: 0742363169), 1301 N. Salem Street (PIN: 0742369278), 1303 N. Salem Street (PIN: 0742369479), 1401 N. Salem Street (PIN: 0742368697), 1403 N. Salem Street (PIN: 0742367712), 1405 N. Salem Street (PIN: 0742365731), 1409 N. Salem Street (PIN: 0742360631), and 0 Charlion Downs Lane (PIN: 0742268387) from Residential Agricultural (RA), Rural Residential (RR), and Planned Commercial-Conditional Zoning (PC-CZ) to Planned Unit Development-Conditional Zoning (PUD-CZ) to permit a mixed-use development with a mix of housing types and non-residential uses.

During the meeting, the applicant will describe the nature of the rezoning request and field any questions from the public. Enclosed are: (1) a vicinity map outlining the location of the property; (2) a zoning map of the area; (3) a preliminary PUD concept plan; (4) a project contact information sheet; and (5) a common construction issues & who to call information sheet.

The meeting will be held virtually. You can participate online via Zoom or by telephone. To participate in the online Zoom meeting:

Visit:	https://zoom.us./join
Enter the following meeting ID:	892 4774 4167
Enter the following password:	149281

To participate by telephone:

Dial:	1 929 205 6099
Enter the following meeting ID:	892 4774 4167 #
Enter the Participant ID:	#
Enter the Meeting password:	149281 #

If you have any questions about this rezoning, please contact me at (919) 835-4032 or via email at matthewcarpenter@parkerpoe.com.

Sincerely,





0/0/0/0/0/0/1201/1205/1207/1301/1303/1401/1403/ 1405/1409 N. Salem Street; & 0 Charlion Downs Lane

N

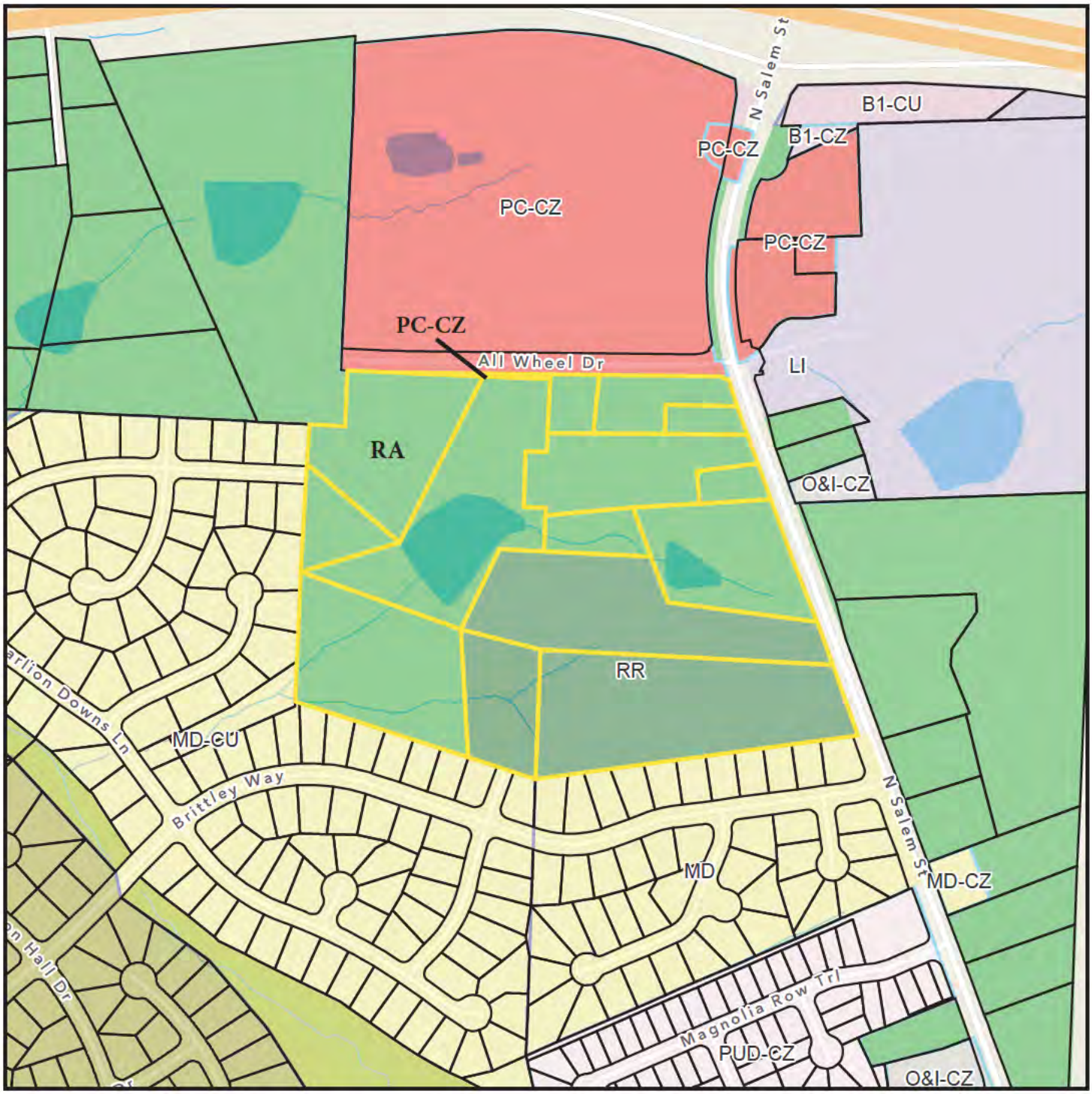
Vicinity Map

0 200 400 800 ft

1 inch equals 400 feet

Disclaimer

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



0/0/0/0/0/0/1201/1205/1207/1301/1303/1401/1403/
1405/1409 N. Salem Street; & 0 Charlion Downs Lane

N

0 200 400 800 ft

1 inch equals 400 feet

Zoning Map

Current Zoning: RA, RR, PC-CZ

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.*



SITE LEGEND

- PROPERTY L NE
- SETBACK/BUFFER L NE
- 50' TOWN OF APEX RIPARIAN BUFFER
- LOCAL STREET
- ACTIVE RECREATION AREA/PLAY LAWN
- VEHICULAR ACCESS
- 10' ROW DEDICATION
- EXISTING WELAND
- RESOURCE CONSERVATION AREA (MINIMUM OF 20% OF SITE AREA)
- ACTIVE RECREATION AREA
- MULTI-FAMILY (APARTMENTS)
- MULTI-FAMILY APARTMENTS; NON-RESIDENTIAL
- TOWNHOUSES

NOTES

1. ALL ZONING PLAN SHEETS ARE INTENDED FOR LLUSTRATIVE PURPOSES ONLY. FINAL DESIGN COMPONENTS SHALL BE DETERMINED DURING THE M NOR SITE PLAN APPROVAL PROCESS.
2. REFER TO THE PUD TEXT DOCUMENTS FOR ALLOWABLE USES, ZON NG CONDITIONS, AND OTHER DESIGN STANDARDS.
3. ALL VEHICULAR ACCESS LOCATIONS AND PEDESTRIAN C RCULATION ARE CONCEPTUAL AND SHALL BE FINALIZED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
4. TREE PROTECTION FENCING SHALL BE PLACED IN ACCORDANCE WITH THE TOWN OF APEX'S UN FIED DEVELOPMENT ORDINANCE.
5. ALL PARK NG STANDARDS SHALL COMPLY WITH THE TOWN OF APEX'S UN FIED DEVELOPMENT ORDINANCE.
6. EXACT LOCATION OF OPEN SPACE AND RESOURCE CONSERVATION AREA TO BE FINALIZED DURING THE SITE/SUBDIVISION APPROVAL PROCESS.
7. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTA NED N ACCORDANCE WITH THE TOWN OF APEX'S UN FIED DEVELOPMENT ORDINANCE.
8. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS MUST MEET ANY APPLICABLE STANDARDS FOUND N THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQU REMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
9. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHT NG, LANDSCAPING, SCREENING, SITE STABILIZATION (SEEDING), PARKING, AND PAVEMENT MARK NG, MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.

UTILITY NOTES

1. THIS PROJECT IS REQUEST NG FULL TOWN SERVICES, INCLUDING BUT NOT LIMITED TO, WATER, SEWER AND ELECTRICITY.
2. THE SITE WILL NOT UTILIZE PRIVATE SEWAGE DISPOSAL SYSTEMS.
3. ALL UTILITY EASEMENTS SHALL BE PROVIDED AS NECESSARY. EXACT LOCATION SHALL BE DETERM NED AT THE T ME OF CONSTRUCTION DRAW NGS.
4. ALL CONSTRUCTION SHALL COMPLY WITH THE TOWN OF APEX STANDARDS AND SPECIFICATIONS.
5. ALL WATER AND SEWER MAINS WITHIN THE PUBLIC EASEMENTS SHALL BE OWNED, OPERATED, AND MA NTAINED BY THE TOWN OF APEX.

GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

No.	REVISIONS	DATE	BY
7		----	
6			
5			
4			
3			
2		----	
1		----	

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
#F-0102 WWW.KIMLEY-HORN.COM PHONE 984-212-4572
1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT C. ZUMMALT
PRELIMINARY NOT FOR CONSTRUCTION

KHA PROJECT	000000000
DATE	12/01/2025
SCALE	AS SHOWN
DESIGNED BY	RCZ
DRAWN BY	JTG
CHECKED BY	RCZ

PRELIMINARY SITE LAYOUT

N. SALEM STREET MIXED USE
PREPARED FOR
MERIT GROUP LLC
APEX NORTH CAROLINA

SHEET NUMBER
C3.0

Plotted By:Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C3.0 October 21, 2025 02:21:22pm K:\HSP_LDEV_Marketing\Merit Group LLC\N. Salem Street - Apex\Rezoning\07_CAD Files\Phase 1\Plan Sheets\C3.0 SITE PLAN.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley»Horn and Associates, Inc. shall be without liability to Kimley»Horn and Associates, Inc.

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: N. Salem Street Mixed-Use Zoning: Residential Agricultural (RA); Rural Residential (RR); & Planned Commercial-Conditional Zoning (PC-CZ)

Location: See attached Exhibit A

Property PIN(s): See attached Exhibit A Acreage/Square Feet: 32.36 acres

Property Owner: See attached Exhibit A

Address:

City: State: Zip:

Phone: Email:

Developer: Merit Group, LLC c/o Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: n/a Email: matthewcarpenter@parkerpoe.com

Engineer: Kimley-Horn; attn. Bob Zumwalt

Address: 1070 S. Main Street, Suite 230

City: Holly Springs State: NC Zip: 27540

Phone: (919) 475-7314 Fax: n/a Email: bob.zumwalt@kimley-horn.com

Builder (if known): Merit Group, LLC c/o Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: n/a Email: matthewcarpenter@parkerpoe.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 Planning Manager	(919) 372-7468
Transportation & Infrastructure Development Russell Dalton, Traffic Engineering Manager	(919) 249-3358
Water Resources Department Jessica Bolin, Environmental Engineering Manager (Stormwater, Sedimentation & Erosion Control) Matt Reker, Utility Engineer/FOG Program Manager (Water & Sewer)	(919) 249-3537 (919) 946-4394
Electric Utilities Division Jared Harris, Electric Technical Services Manager	(919) 372-7466

Exhibit A

N. Salem Street Mixed-Use
Owner Information Addendum

PIN 0742367712
Address: 1403 N. Salem St.
Owner: Ronald & Jody Keye
Acreage: 1.06 acre
Current Zoning: Residential Agricultural

PIN 0742368697
Address: 1401 N. Salem St.
Owner: John Huber
Acreage: 0.39 acre
Current Zoning: Residential Agricultural

PIN 0742365731
Address: 1405 N. Salem St.
Owner: Geraldine Gilbert Heirs
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742366583
Address: 1205 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 2.54 acres
Current Zoning: Residential Agricultural

PIN 0742369479
Address: 1303 N. Salem St.
Owner: June Thompson
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742369278
Address: 1301 N. Salem St.
Owner: June Thompson
Acreage: 2.80 acres
Current Zoning: Residential Agricultural

PIN 0742363169
Address: 1207 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 4.46 acres
Current Zoning: Rural Residential

PIN 0742358857
Address: 1201 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 5.34 acres
Current Zoning: Rural Residential

PIN 0742353848
Address: 0 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 1.67 acres
Current Zoning: Rural Residential

PIN 0742350909
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.77 acres
Current Zoning: Residential Agricultural

PIN 0742362432
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 4.59 acres
Current Zoning: Residential Agricultural

PIN 0742366306
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.73 acre
Current Zoning: Residential Agricultural

PIN 0742268387
Address: 0 Charlion Downs Ln
Owner: DLG HOLDINGS LLC
Acreage: 0.93 acre
Current Zoning: Residential Agricultural

PIN 0742360631
Address: 1409 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.06 acres
Current Zoning: Residential Agricultural

PIN 0742362719
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.02 acre
Current Zoning: PC-CZ

PIN 0742363799
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.04 acre
Current Zoning: PC-CZ

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 am to 8:30 pm 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-Friday from 8:00 am to 5:00 pm. Report violations of construction hours and other noise complaints to the Non-Emergency Police phone number at 919-362-8661.

Construction Traffic:	**Infrastructure Inspections**	**919-249-3386**

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:	**Infrastructure Inspections**	**919-249-3386**

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 Transportation & Infrastructure Development – Infrastructure Inspections at 919-249-1109. 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:	**Water Resources**	**919-362-8166**

Sediment (dirt) and mud gets into the existing roads due to rain events and/or vehicle traffic. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleaning of the roadways with the developer.

Dirt on Properties or in Streams:	**Water Resources**	**919-362-8166**

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 by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the appropriate repairs with the developer.

Dust:	**Water Resources**	**919-362-8166**

During dry weather dust often becomes a problem blowing into existing neighborhoods or roadways. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the use of water trucks onsite with the grading contractor to help control the dust.

Trash:	**Water Resources**	**919-362-8166**

Excessive garbage and construction debris can blow around on a site or even off of the site. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleanup and trash collection with the developer/home builder.

Temporary Sediment Basins:	**Water Resources**	**919-362-8166**

Temporary sediment basins during construction (prior to the conversion to the final stormwater pond) are often quite unattractive. Concerns should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that he can coordinate the cleaning and/or mowing of the slopes and bottom of the pond with the developer.

Stormwater Control Measures:	**Water Resources**	**919-362-8166**

Post-construction concerns related to Stormwater Control Measures (typically a stormwater pond) such as conversion and long-term maintenance should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed.

Electric Utility Installation:	**Electric Utilities**	**919-249-3531**

Concerns with electric utility installation can be addressed by the Apex Electric Utilities Department.

NEIGHBORHOOD MEETING SIGN-IN SHEET

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

Meeting Address: Virtual via Zoom

Date of meeting: November 20, 2025 Time of meeting: 5:30

Property Owner(s) name(s): See Exhibit A

Applicant(s): Merit Group, LLC

Please print your name below, state your address and/or affiliation with a neighborhood group, and provide your phone number and email address. Providing your name below does not represent support or opposition to the project; it is for documentation purposes only. For virtual meetings, applicants must include all known participants and request the information below.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	See Attached				☐
2.					☐
3.					☐
4.					☐
5.					☐
6.					☐
7.					☐
8.					☐
9.					☐
10.					☐
11.					☐
12.					☐
13.					☐
14.					☐

Use additional sheets, if necessary.

Neighborhood Meeting Attendee List
N. Salem Street Mixed Use PUD

Name (original name)	Email
[redacted]	
Allison Keelor	[redacted]
Ann Hornack	
Ann Marie Taepke	
Bill Goss	
Bob Muzzi	
Bob Zumwalt	
Brandon Black	
Brian Adkins	
Bryan J (Bryan's iphone)	
Carolyn Facemire	
cherri	
Cheryl Stallings	
Christine Jensen	
Christine Wilson	
Christopher A	
Dean Sourial	
Emily F	
Frances Williams	
Francisco	
Glen Deal	
Hunter Forstchen	
iPhone (8)	
J Hall	
Jasmine Fong	
Jason Stanko	
Javier Bravo	
Jessica Conklin	
John Huber	
Karen Caristo	
Karen La	
kim wise	
Konrad Wisniewski	
Korene Alaimo	
L F	
Laura Buffington	
Laura Steinkellner	
Lindsay Keane	
Liz	
Liz Mullins	
Lyn Lowery	
Marcie Longo	
Mark Henderson	
Matt Jaquillard	
Matthew J. Carpenter (PPAB Land Use) (Host)	
Michael Keefe	
Patricia Sudar	
Paul Munana	
Paul Murray	
Rick Felice	
Robert Evans	
Ron Melzer	
Rosemary Trakadas	
Ryann Griffin	
Sasha and Javier Bravo	
scott	
Shawn Clark	
Steve Lane	
Stuart Hurwitz	
Tamara Merkouris	
Terry Oliver	
Tina	
Tom Green	
Troy McDaniel	
Victoria C	

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

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

Property Owner(s) name(s): See Exhibit A

Applicant(s): Merit Group, LLC

Contact information (email/phone): _____

Meeting Address: Virtual via Zoom

Date of meeting: November 20, 2025 Time of meeting: 5:30

Please summarize the questions/comments and your responses from the Neighborhood Meeting or emails/phone calls received 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:
See attached

Applicant's Response:
See attached

Question/Concern #2:
See attached

Applicant's Response:
See attached

Question/Concern #3:
See attached

Applicant's Response:
See attached

Question/Concern #4:
See attached

Applicant's Response:
See attached

Summary of Neighborhood Meeting
N. Salem Street Mixed Use PUD
November 20, 2025

I. WELCOME
   a. Introduction of Development Team
      i. Matthew Carpenter w/Parker Poe
      ii. Paul Munana and Rick Felice, w/ Merit Group, LLC, the developer
      iii. Bob Zumwalt w/ Kimley-Horn, our landscape architect
   b. Explanation of process. This is the pre-filing neighborhood meeting for a potential rezoning request, the very first step in a long development process. So, the purpose of tonight's meeting is to explain our plans and take your feedback into consideration as we put together our rezoning application.

II. PRESENTATION
   a. Site Overview - location, environmental constraints of the site, and existing uses adjacent.
   b. Existing and Proposed Zoning
      i. The current zoning is Residential Agricultural, Rural Residential, and Planned Commercial Conditional. The proposed zoning district is Planned Unit Development Conditional (PUD-CZ).
      ii. The purpose of the PUD district is to provide - especially for large mixed-use projects - site specific zoning conditions that result in a high quality project.
   c. 2045 Land Use Map (LUM) Designation
      i. The LUM is the primary policy document the Town uses to evaluate rezoning requests. This property is designated as Mixed Use since it has multicolor striped areas with three or more uses. These uses include Office Employment, Commercial Services, Medium Density Residential, and High Density Residential. The LUM recommends higher density residential uses to be located in the northern portion of the assemblage.
      ii. Here, we started with the LUM designations and worked backwards from there to develop our PUD Concept Plan.
   d. Current PUD Plan
      i. The current plan is to have five districts, each with different permitted uses and development standards. The MU-1 district will permit non-residential and multi-family residential. The MF-3 district will permit multi-family residential. The MR-2 district will permit multi-family and townhomes. While the districts TH-4 and TH-5 district will only permit townhomes.
      ii. The goal is to transition density and intensity down across the site from the intersection of All Wheel Drive and N. Salem Street to the existing single-family neighborhoods to the west and south.
      iii. On the west side, there is a large existing pond that may remain and a stream and riparian buffer. This area will likely remain undeveloped (other than stormwater and utility infrastructure) which will provide some separation between the project and existing neighborhoods.

iv. We're showing a vehicular connection to the stub at Frenchurch Way which is required by the Town's UDO. At Charlion Downs Ln, we're proposing to terminate the street into a cul-de-sac and provide a pedestrian connection through the site. The baseline UDO requirement is that connectivity is required, so we are asking the Town for a modification to permit the cul-de-sac.

e. Rezoning Process and Timeline
   i. As I mentioned, this is the very first step in the rezoning process.
   ii. After this meeting, the next step is application submittal which will likely be December 1, 2025.
   iii. After submittal, the application will be reviewed by Town staff from each department. Staff will provide comments and we will revise our application and resubmit until all staff comments have been addressed.
   iv. After staff comments have been addressed, the case will go to Planning Board. Planning Board will hold a public hearing, review the case, and make a recommendation to Town Council.
   v. Following the Planning Board meeting, Town Council will hold a public hearing and make the final decision on the rezoning. The full process will likely take six months or more.

III. QUESTION AND ANSWER SESSION

a. What is the intended height of these structures?

i. The tallest structures will be located in the MU-1 district and will likely be 5 to 6 stories. The TH-4 and TH-5 districts will likely have a maximum height of 3 stories with the intention being for a transition to the single-family homes in Haddon Place. The MF-3 district will likely have a maximum height of 4 or 5 stories depending on grade, and the MR-2 district will likely be 3 stories. These heights have not been finalized, but will be included in the PUD Text when we submit the rezoning application.

b. I noticed that the zone labeled "TH-5" on this map does not have an area labeled as "wetland" on it but the one we got in the mail did. Why did that change?

i. As part of the rezoning we are required to have an environmental consultant evaluate the streams and wetlands on the property and request a determination from the US Army Corps of Engineers in collaboration with Town staff. The Corps and Town staff will determine whether the streams and wetlands are jurisdictional (need to be preserved) or non-jurisdictional (do not need to be preserved). Until then we are relying on the environmental features shown on GIS, which are not always accurate, so we removed the wetland label to avoid confusion.

c. What do those oval areas with dots in the green area represent?

i. These are likely wetlands as shown on GIS.

d. Who determines impact to traffic on Salem and through Haddon Hall

i. The applicant is required to pay a transportation engineer to prepare a Traffic Impact Analysis (TIA). The TIA is scoped with Town staff and NCDOT before it is completed. It analyzes the expected trips generated by the project, the likely location of those trips, and their interaction with existing traffic in the area. The TIA recommends road improvements to be completed by the developer to mitigate traffic generated by the project. After the TIA is complete, Town staff and NCDOT review the TIA and recommend road improvements to be completed and paid for by the developer. Those improvements are then included in the rezoning as rezoning conditions.

e. Do you have any idea on the number of units that will be built.

i. The current proposed number of units is 270 townhomes and 205 apartments. This is the maximum number of units in the zoning. The final unit count cannot be higher than the zoning maximums, but may be reduced at Site Plan/Master Subdivision when the site layout is engineered and all UDO requirements are accounted for (RCA, play lawns, parking, etc.).

f. On the map we received in the mail, along the Haddon Place area, it states the green square as an "active recreation area." Has the plan for that changed? What does an "active recreation area" mean?

i. The plan still includes open space in that area but is now generally labeled Resource Conservation Area. We're still working out exactly how this area will be designed. Also, it's important to note that this is just the preliminary concept plan. The plans will change and evolve as we work through the rezoning process.

g. Any consideration for larger single family homes which we are lacking in Apex vs townhomes in area TH 4 and TH 5.

i. Townhomes are required to achieve the density recommended by the 2045 Land Use Map. We likely could not meet the recommended density with just single-family homes. Although it feels like there are a ton of townhomes in Apex because townhomes have been constructed recently, Apex is still characterized by primarily single-family neighborhoods.

h. Does multifamily include 2 to 4 family homes?

i. When our plans refer to multifamily residential we mean apartment buildings.

i. Is the land already sold? If not, is sale contingent on rezoning?

i. The developer and owners of the parcels have executed a purchase and sale agreement.

j. What are the plans to accommodate traffic?

i. Under the UDO, we will have to widen the frontage along N. Salem Street and possibly All Wheel Drive to the ultimate section shown on the Town's long range Transportation Plan. And as discussed, we will have more required traffic improvements once the Town has reviewed the TIA. Overall, we will have to mitigate our traffic impacts.

k. Considering the current traffic from Thales, are there plans to expand or improve the roads to support this growth?

i. Thales queuing issues will be included in our TIA and our improvements might help to mitigate that. As shown on the plan, Street B could be a new route for Haddon Hall residents to get to the light at All Wheel Drive/N. Salem Street and avoid Thales traffic.

l. Is there a maximum height restriction associated with each zone? MU-1? MR-2? MF-3? TH-4? TH-5?

i. As mentioned previously, the MU-1 district and will likely be 5 to 6 stories, TH-4 and TH-5 districts will likely have a maximum height of 3 stories, MF-3 district will likely have a maximum height of 4 or 5 stories depending on grade, and the MR-2 district will likely be 3 stories.

m. Clarification on right-in and right-out to Street A from N. Salem Street.

i. This means that traffic existing onto N. Salem Street from Street A will only be able to turn right onto N. Salem Street. There will likely be a left turn lane install on N. Salem Street for northbound traffic to turn left into the development. These right-in and right-out traffic patterns help to prevent traffic congestion when driveways are proposed near existing driveways.

n. How will you work to address housing needs for people with different incomes in Apex (e.g., young families, seniors, teachers, public safety workers, health care workers, or Town employees)?

i. One way we are addressing affordability is by incorporating a mix product types, including townhomes with different square footages and pricing, and multifamily. Townhomes and apartments are inherently more affordable than single-family homes. As part of the rezoning process, we will also work with Town housing staff to discuss potential affordable housing conditions.

o. Why apartments and townhomes versus ranch style single homes?

i. As mentioned earlier, apartments and townhomes are the only residential options to achieve the density that the LUM recommends.

p. How do you intend to protect and preserve the existing old growth trees on the property?

i. As part of the rezoning process we will do a tree survey which will inform our decisions related to protecting existing trees. As mentioned the UDO requires 20% RCA and we pick this area based on the amount of tree coverage.

q. What do you intend to do to protect and preserve the existing wildlife on the property, particularly given that there have been numerous sightings of protected species on the property?

i. As we go through the rezoning process we will complete more studies related to the current environmental features of the site. The site is not undeveloped, it is cleared with several homes.

r. Concern related to the impact on property values on Brittley Way?

i. As part of the plan we have tried to transition down density and intensity near existing single-family homes on Brittley way. It is unclear that property values increase or decrease with adjacent development.

s. Why is the proposed buffer between Haddon Hall and the development only 20 feet? This is the bare minimum requirement.

i. The minimum required by the UDO is only 15 ft and we are currently committing to a 20 ft buffer. There are also stream buffers, ponds, and potential wetlands that will increase separation between existing homes in Haddon Hall and the project. Note that Haddon Hall was developed with no perimeter buffers; the single-family lots go all the way to the shared property line.

t. What is the impetus to alter the current zoning?

i. The 2045 LUM designates the site as mixed-use, with commercial over the whole site. We are requesting a change in the zoning district in order to achieve the density and mix of uses the LUM recommends while also being mindful of the existing adjacent uses.

u. Are all these units going to have the option to use our HOA amenities since the proposal has them connected to our neighborhood?

i. The residents of the proposed development cannot use neighboring HOA amenities without the HOA's permission. We are not trying to disturb neighboring HOAs or their amenities.

v. How will the current layout curtail people cutting through the neighborhood to avoid traffic?

i. The street connections through Haddon Hall are public rights of way and anyone can use them. Since they are public rights of ways traffic calming measures can be installed. However, we do not anticipate traffic from the site will cut through Haddon Hall since it will generally be quicker and easier to go to N. Salem Street and US-64.

w. What information can you provide on the buffer zones for TH-4 and TH-5.

i. As mentioned previously, the UDO requirement is 15 ft and we are currently committing to a 20 ft buffer.

x. What type of buffer and how large of a buffer for back of TH 4 and TH 5?

i. A 20 ft type "B" landscape buffer is currently proposed.

y. Timeline for excavating

i. It will likely be at least 2-3 years before any dirt is moved.

z. Concerns related to blasting.

i. Blasting will only be done of the site if it is determined that there is rock on site. It is too early in the process to know if there is rock on the site. There are strict requirements and regulations for blasting we must follow. However, we do not foresee the need for blasting.

aa. Will construction trucks be utilizing Brittley way Haddon Place as path to construction?

i. No, we intend to use All Wheel Drive for construction and we will not open the stub road to Brittley way until construction is finished. Additionally, we can discuss adding language to the PUD which will prohibit construction traffic on Brittley Way.

bb. What commitments are you willing to make on quality of materials, architecture, and long-term durability beyond the bare minimum?

i. As part of the rezoning process, Town staff will review the project and suggest certain architectural commitments as rezoning conditions. Staff typically recommends conditions that require high quality building materials. However, it should be noted that affordability and high architectural standards do not align and we have to account for this when committing to additional architectural standards.

cc. What is the proposed timeline to complete construction?

i. We expect the rezoning to take approximately 6-10 months. The next step is site plan review and subdivision plan review which will take an additional 6-7 months. Then we will have to complete construction drawings. Given this timeline and additional processes/permitting we anticipate it being at least 3 years before structures are built.

dd. How far down will N. Salem Street be widen?

i. We will widen just our frontage. If we were to go down and widen more of N. Salem it would require that land be taken from other owners whose property fronts N. Salem Street. As we widen N. Salem Street we will match frontage of Haddon Hall at the minimum.

ee. Will the Apartments will be condos or leased via an apartment management company? If the latter, has one been selected?

i. This is still undetermined.

ff. What type of assessment do you plan to conduct to account for school capacity

i. This has been an issue for several years and the county has made big strides in opening new schools in Apex which has taken some pressure off school capacity. As part of our rezoning application we will complete and submit a form to the Town which outlines the amount of our proposed residential uses. The Town will

give this form to the county who will review an issue a letter evaluating school capacity.

gg. There is some historic significance to Apex for certain properties in this site. Will that be considered in naming streets/complexes, etc.

i. The street naming process is completed later but we will take this into consideration during that time.

hh. How does your plan meet the intent to ensure compatibility with surrounding land uses and neighborhood character, rather than just maximizing unit count?

i. Surrounding land uses is why we have proposed townhomes on the southern portion of the site and the commercial uses on the northeast portion of the site. It is our intent to place the more intense uses near the Crossroads Ford and the less intense uses near surrounding residential neighborhoods to serve as a transition.

ii. What type of commercial businesses would you expect to be in those commercial offices?

i. We do not have a plan yet for the commercial businesses and no leases have been entered into. The developer will chose quality tenants over quantity. Additionally, in the PUD text we will have a list of non-residential uses that are permitted. The Town will review and give comments which may result in the number of permitted uses decreasing.

jj. Is there a chance the green areas will change or will those remain environmental sanction?

i. There is a possibility that they may change slightly throughout rezoning process. The final RCA is not platted until subdivision approval. However, given the existing pond we do not foresee it changing.

kk. Does the town requirement include sidewalks on the west side of the Salem Street?

i. Yes, the Town will require we construct a 10 ft side path on N. Salem Street and All Wheel Drive.

ll. Please explain why you are proposing placing multi-family homes (MF-3) adjacent to single family homes on Charlion Downs Lane.

i. This portion of the site is an interesting area because of intense use of Crossroads to the north and the less intense single-family homes to the west. We placed the multi-family use here since there is only 1 shared property line with this district. Additionally, there will be a 100 ft diameter from cul-de-sac where no buildings can be built.

mm. If the pond is found to be structurally unsound, would the land still remain part of the 20-25% conservation area?

i. Yes, our intent is to keep the pond because it is an amenity to the development. If the pond cannot remain, the area where it is located would not be developed given the environmental conditions.

nn. Will there be a meeting where we as residents have an actual input on these plans?

i. That is the intent of the meeting tonight. Another neighborhood meeting is required after we submit our rezoning application. Residents can also contact the development team with any questions.

oo. Who is responsible for rezoning approval for this development?

i. Apex Town Council.

pp. If Council asked you to reduce density or preserve more open space and wetlands, what specific changes could you commit to tonight?

i. We could not cannot commit to anything tonight because it is the start of process. Throughout the process will commit to things which met the policies of the Town while still making the project viable.

qq. Concern related to privacy of single-family homes.

i. We will take this into consideration when designing the layout of the townhomes.

rr. Are the townhomes going to be built exactly 15 feet from the property line?

i. No, the lot lines will start after perimeter buffer, which is currently 20 ft. There will also be a rear setback from the lot line in which no structures can be built.

ss. How do you plan to match the current aesthetic of the existing neighborhood?

i. Architectural and design standards are important to the Town and we will work with staff on these.

tt. How many traffic lights will be installed and where?

i. We are not sure yet as this is part of the TIA and Town will recommend signalization during review of the TIA.

uu. Has this developer does other areas near Apex that we can see, so we know what his developments look like?

i. The developer is Merit Group and we can compile and present some examples at the next meeting.

vv. Are you planning to pave over the streams shown on GIS?

i. No, we cannot pave over streams and there are also stream buffers. Additionally, not all streams shown on GIS are jurisdictional and we will work with the Army Corp and wetland consultant as part of the process to determine this.

ww. Is there any requirement to have any amount of common green space?

i. Yes, the UDO requires 25% of RCA and a play lawn where neighbors can assemble. This site will meet these requirements.

xx. Concerns related to lighting.

i. Town has updated lighting ordinance and which is very granular. We will meet all of these requirements.

yy. Concern related to impact on emergency response times.

i. All Town departments will coordinate and give feedback as part of the process. We cannot get this project approved without adequate emergency access.

zz. How many units will there be total? How many cars are being planned for with each unit?

i. The current proposed number of units is 270 townhomes and 205 apartments. We are unsure of the number of cars planned for each unit, but this is the unit count being used for the TIA.

aaa. What post construction monitoring will you support, for stormwater performances traffic, and environmental impacts, and what remedies will you consider if those impacts are worse than predicted?

i. Stormwater ponds have significant inspections and are continuously monitored after they are constructed. The Town can issue fines if a stormwater pond is out of compliance. We are not aware of ongoing traffic monitoring but will commitment to traffic improvements which must be completed before we can obtain a certificate of occupancy.

bbb. Are you able to share how is this development being funded?

i. We are unaware of how the development is being funded.

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

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

I, Matthew J. Carpenter, do hereby declare as follows:
Print Name

1. I have conducted a Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Minor Site Plan, Residential Master Subdivision Plan, or Special Use Permit in accordance with UDO Sec. 2.2.7.B *Neighborhood Meeting*.

2. The meeting invitations were mailed to the Apex Planning Department, all property owners and tenants abutting and within 500 feet of the subject property and any neighborhood association that represents citizens in the notification area via first class mail a minimum of 14 days in advance of the Neighborhood Meeting.

3. The meeting was conducted at virtually via Zoom (location/address) on 11/20/2025 (date) from 5:30PM (start time) to 7:00 PM (end time).

4. I have included the mailing list, meeting invitation, sign-in sheet, issue/response summary, and zoning map/reduced plans with the application.

5. I have prepared these materials in good faith and to the best of my ability.

11/24/2025
Date

By: _____

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Matthew Carpenter, a Notary Public for the above State and County, on this the 24th day of September, 2025.

SEAL

DAITWAN HARDY NOTARY PUBLIC WAKE COUNTY, NC My Comm. Exp. 2ND SEPT 2030

_____
Notary Public

Daitwan Hardy
Print Name

My Commission Expires: 2nd Sept 2025

Part I – Residential AND Non-Residential For Apartment Buildings

The following apply to both Residential **and** Non-Residential developments:

	STORMWATER AND WATER CONSERVATION – WATER QUALITY	YES
1.	The project shall increase the riparian buffer width by at least ____ feet above the minimum required by the Unified Development Ordinance. The additional buffer width shall be measured from the top of bank on each side of the stream.	☐
2.	No clearing or land disturbance shall be permitted within the riparian buffer, except the minimum necessary to install required greenway and sewer infrastructure and SCM outlets. The SCM water storage and treatment area shall not be permitted within the riparian buffer. The infrastructure shall be designed to minimize impacts to the riparian buffer.	☐
3	No buffer averaging shall be allowed for Zone 3 of the riparian buffers.	☐
4.	The project shall install one (1) sign per SCM to reduce pet waste and prohibit fertilizer, in locations that are publicly accessible, such as adjacent to amenity centers, sidewalks, greenways, or side paths.	☑
5.	The project shall install a minimum of _____Low Impact Development Technique as defined and approved by the NC Department of Environmental Quality. The specific type of LID technique shall be reviewed and approved by the Water Resources Department at site or subdivision plan review.	☐
6.	At least ___SCM shall be designed and constructed to provide irrigation to the surrounding landscaping on site. The design shall be reviewed and approved by the Water Resources Department at site plan.	☐
7.	A ___-foot buffer shall be provided along existing, delineated wetlands that are to be preserved.	☐
8.	**Each option below is intended to be used as an improvement to the minimum UDO requirements. If an area is already required to mitigate the 25-year storm, option 7.b should not be selected.** a. Post-development peak runoff shall not exceed pre-development peak runoff for the 24-hour, 1-year, 10-year, 25-year and 100-year storm events in accordance with the Unified Development Ordinance. **OR** b. Post-development peak runoff shall not exceed pre-development peak runoff for the 24-hour, 1-year, 10-year, and 25-year storm events in accordance with the Unified Development Ordinance.	☐ ☐
	PLANTING AND LANDSCAPING Note: Invasive species are prohibited. Please see the Town's Design and Development Manual for a link to the list of prohibited species and for a list of suggested native species..	YES
9.	Preserve existing trees (percentage-based). Numbers shown may be changed based on project. The EAB's preference is for a minimum of 50%. The project shall preserve a minimum of _____% of the existing tree canopy. Where the project abuts adjacent developments, special effort shall be taken to locate the preserved trees adjacent to areas of existing preserved open space, including but not limited to, RCA, perimeter landscape buffers, riparian buffers, and/or HOA maintained open spaces.	☐

10.	Replace canopy (percentage- or DBH size-based) The project shall replace any large type trees, that measure 18-inches in caliper size or larger, and small type trees, that measure 8-inches in caliper size or larger, that are removed as a part of the development. The ratio of replacement shall be 1 large tree to 1 replacement tree. The UDO's required landscaping may be used to satisfy this requirement. To determine the number of trees that must be replaced, a tree survey for the full property shall be provided to the Planning Department. The survey shall be independently verified by a third-party licensed arborist. No further clearing shall be conducted for replacement planting if there is insufficient space.	☐
11.	To improve energy efficiency by providing shading, a combination of large and small deciduous shade trees shall be planted on the southern side of any buildings.	☐
12.	To improve energy efficiency, the project shall plant evergreen trees on the northern side of all buildings to act as a windbreak.	☐
13.	The project shall ensure that 70 % of the landscaping shall be native species, which shall provide diverse and abundant pollinator and bird food sources. Special attention shall be paid to providing diverse and abundant pollinator and bird food sources, including plants that bloom in succession from spring to fall. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.	☑
14.	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 canopy, understory and shrub levels. A minimum of _____% of the species selected shall be native to the eastern United States or a native of North Carolina.	☐
15.	No single species of native or adaptive vegetation shall constitute more than 20% of the plant material of its type within a single development site.	☑
16.	HOA covenants, conditions, and restrictions shall not prohibit clover or native grass mixed species lawns.	☐
17.	In order to support nesting and overwintering wildlife and pollinators, HOA covenants shall not require that fallen leaves or dormant plants be removed during the winter on areas without turf grass, including individual homes and HOA owned common areas.	☐
18.	To preserve and protect existing species, existing ponds shall be preserved if structurally sound. One pond to be preserved	☑
19.	Implements xeriscaping in design, which will use landscaping that requires less irrigation and chemical use. Contact Planning for assistance, if needed. The project commits to planting ___% drought tolerant plants, of which ___% of the plants selected shall be native. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.	☐
20.	To reduce irrigation requirements, the project shall select and plant only warm season grasses.	☐

21.	Improve soil quality for a variety of native and non-invasive plantings, reduce fertilizers, and reduce stormwater runoff, topsoil shall be retained on site and a minimum of 4 inches of topsoil shall be placed on each lot and within disturbed common areas.	☐
22.	Increase perimeter buffer requirements, especially in transitional areas (non-residential to residential areas), the project shall provide 5 additional feet of buffer width to that required by the UDO along the perimeter of the property. Along southern and western property lines	☑
23.	Reduce impacts to Resource Conservation Areas (RCAs). a. The project shall install signage adjacent to wooded or natural condition Resource Conservation Area. The signage shall indicate that the area is RCA and is to be preserved in perpetuity and not disturbed. A sign shall be installed every 100 linear feet along the boundary of the Resource Conservation Area, with each sign measuring at least 6 inches by 6 inches and mounted at a height of 4 feet above the ground. **OR** b. A farm-style split rail fence shall be installed where wooded or natural condition Resource Conservation Area (RCA) abuts individual residential lots.	☐ ☑
SUSTAINABLE BUILDINGS		**YES**
24.	The project shall be designed to meet the requirements for one of the green building certifications listed above. A third-party consultant shall be hired to evaluate the project and certify to the Town of Apex that the project meets the standards for the certification. The applicant shall forward a copy of the certification application to the Town of Apex Planning Department to verify that the application has been submitted.	☑ For Apartment Buildings

Part II – Residential

Residential applies to single-family dwellings and townhome subdivisions, but does not include the parking lots, exterior building lights, or exterior architecture.

	STORMWATER AND WATER CONSERVATION – WATER QUALITY The Transportation & Infrastructure Development Department does not currently support these options within the right-of-way (ROW). These may be done on private sites, but not within the public ROW.	YES
25.	The project shall utilize pervious pavement when constructing the parking spaces for parking lot-style townhomes. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review. The selected system shall be maintained by the developer and/or owner's association.	☐
26.	The project shall utilize pervious pavement when constructing the driveways for residential units. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review. The selected system shall be maintained by the developer and/or homeowner's association.	☐
	WASTE MANAGEMENT	**YES**
27.	If single family, the project shall install at least one (1) pet waste station per 25 residential units/townhomes and at least two (2) pet waste stations per apartment building throughout the community in locations that are publicly accessible, such as adjacent to amenity centers, SCMs, sidewalks, greenways or side paths. If there are fewer than 25 homes, at least one (1) pet waste station shall be installed.	☐
	CLEAN ENERGY	**YES**
28.	A solar PV system of at least 3.5kW shall be installed on at least _____homes within the development. All solar installation required by this condition shall be completed or under construction prior to 90% of the building permits being issued for the development. The lot(s) on which this home/these homes is/are located shall be identified on the Master Subdivision Plat, which may be amended from time to time.	☐
29.	A solar PV system shall be installed on a minimum of _____model home. All solar installation required by this condition shall be completed or under construction prior to _____% of the building permits being issued for the development. The lot(s) on which this home/these homes is/are located shall be identified on the Master Subdivision Plat, which may be amended from time to time.	☐
30.	Wire all garages with 220-volt outlets at the exterior to provide for EV charging stations in SF and Townhomes.	☑

Part III – Non- Residential

Non-residential includes condominiums, apartments, and multi-family, common areas in residential developments (e.g. amenity areas, parking lots, exterior building lights, and exterior architecture), commercial, office, and industrial areas. Your development may include elements of each part.

	STORMWATER AND WATER CONSERVATION – WATER QUALITY The Transportation & Infrastructure Development Department does not currently support these options within the ROW. These may be done on private sites, but not within the public ROW. Note that number 36 is an exception that can be done in the public ROW.	YES
31.	The project shall utilize pervious pavement when constructing parking spaces that are in excess of the minimum parking requirement. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review.	☐
32.	The project shall utilize pervious pavement for all of the parking spaces provided. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review.	☐
33.	To increase stormwater infiltration and evaporation, the project shall use modified curb and gutter designs to direct driveway runoff to one or more stormwater device, such as, but not limited to, bioswales, Silva cells, or rain gardens. The specific type and design shall be selected at site or subdivision plan review. The proposal shall be reviewed and approved by the Water Resources Department and Department of Public Works and Transportation.	☐
34.	May be done within the public ROW if it's in the form of a bioretention cell within a landscaped median or large roundabout. Will require approval by the Department of Public Works and Transportation. The project shall design and install one or more bioretention cells within the landscape median or roundabout along the primary road. The specific type and design shall be determined at site or subdivision plan review. The proposal shall be reviewed and approved by the Water Resources Department and Transportation and Infrastructure Development Department.	☐
	WASTE MANAGEMENT	**YES**
35.	The project shall install at least 4 pet waste stations throughout the community, in locations that are publicly accessible, such as adjacent to amenity centers, SCMs, sidewalks, greenways or side paths. Four pet waste stations across entire project. Final locations to be determined at Master Subdivision/Site Plan.	☑

	CLEAN ENERGY	YES
36.	a. 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. **OR** b. A solar PV system of at least 3.5kW shall be installed on at least _____% of or _____buildings within the development. All solar installation required by this condition shall be completed or under construction prior to _____% of the building permits being issued for the development. The buildings on which these PV systems are located shall be identified on the Site Plan, which may be amended from time to time.	☐ ☐
37.	The developer shall provide ____% or ____more EV charging spaces than required by the UDO.	☐
38.	The amenity center for the project shall include a rooftop solar PV system with a capacity of at least 3.5kW.	☐
39.	The project shall install conduits for solar energy systems for all non-residential buildings	☐
	LIGHTING EFFICIENCY	**YES**
40.	On the lighting plan, the average footcandle measurement for parking, building lighting and driveways shall be at least 0.5 footcandles lower than the UDO requires.	☐
41.	The project shall use full cutoff LED fixtures that have a maximum color temperature of 3,000K for all exterior lighting, including, but not limited to, parking lot and building mounted fixtures.	☐

Applicant Clarification/Additional Language:

Additional Board Recommendations:

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

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

I, Matthew J. Carpenter, do hereby declare as follows:
Print Name

1. I have conducted a Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Minor Site Plan, Residential Master Subdivision Plan, or Special Use Permit in accordance with UDO Sec. 2.2.7.B *Neighborhood Meeting*.

2. The meeting invitations were mailed to the Apex Planning Department, all property owners and tenants abutting and within 500 feet of the subject property and any neighborhood association that represents citizens in the notification area via first class mail a minimum of 14 days in advance of the Neighborhood Meeting.

3. The meeting was conducted at virtually via zoom (location/address) on 3/3/2026 (date) from 5:30pm (start time) to 6:30pm (end time).

4. I have included the mailing list, meeting invitation, sign-in sheet, issue/response summary, and zoning map/reduced plans with the application.

5. I have prepared these materials in good faith and to the best of my ability.

3/10/2026
Date

By: _____

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Matthew J. Carpenter, a Notary Public for the above State and County, on this the 10 day of March, 20 26.

SEAL

RYANN M GRIFFIN
NOTARY PUBLIC
Wake County
North Carolina
My Commission Expires September 17, 2028

Ryann M. Griffin
Notary Public

Ryann M. Griffin
Print Name

My Commission Expires: 9/17/2028

NOTICE OF NEIGHBORHOOD MEETING

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

February 17, 2026
Date

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

See attached Exhibit A	See attached Exhibit A
Address(es)	PIN(s)

in accordance with the Town of Apex Neighborhood Meeting procedures. This meeting is intended to be a way for the applicant to discuss the project and review the proposed plans with adjacent neighbors and neighborhood organizations before the submittal of an application to the Town. This provides neighbors an opportunity to raise questions and discuss any concerns about the impacts of the project before it is officially submitted. If you are unable to attend, please refer to the Project Contact Information page for ways to contact the applicant. Notified neighbors may request that the applicant provide updates and send plans via email or mail. 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 http://www.apexnc.org/180. Applications for Rezoning must hold a second Neighborhood Meeting in the month prior to the anticipated public hearing date.

A 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	Technical Review Committee (staff)
☐	Minor Site Plan for the uses "Day care facility", "Government service", "School, public or private", "Restaurant, drive-through", or "Convenience store with gas sales"	Technical Review Committee (staff)
☐	Special Use Permit	Board of Adjustment (QJPH*)
☐	Residential Master Subdivision Plan (excludes exempt subdivisions)	Technical Review Committee (staff)

*Quasi-Judicial Public Hearing: The Board of Adjustment cannot discuss the project prior to the public hearing.

The following is a description of the proposal including any proposed long range plan amendments (also see attached map(s) and/or plan sheet(s)):

The proposal is to rezone the property to Planned Unit Development Conditional (PUD-CZ) to permit a mixed-use development with a mix of housing types and non-residential uses as shown on the Preliminary Concept Plan.

Estimated submittal date: Submitted December 1, 2025

MEETING INFORMATION:

Property Owner(s) name(s):	See attached Exhibit A
Applicant(s):	Merit Group, LLC c/o Matthew J. Carpenter
Contact information (email/phone):	matthewcarpenter@parkerpoe.com; (919) 835-4032
Meeting Address:	Virtual (Zoom) - See attached notice letter
Date/Time of meeting**:	March 3, 2026

Welcome: 5:30 PM Project Presentation: between 5:30 - 6:30 PM Question & Answer: between 5:30 - 6:30 PM

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



0/0/0/0/0/0/1201/1205/1207/1301/1303/1401/1403/ 1405/1409 N. Salem Street; & 0 Charlion Downs Lane

N

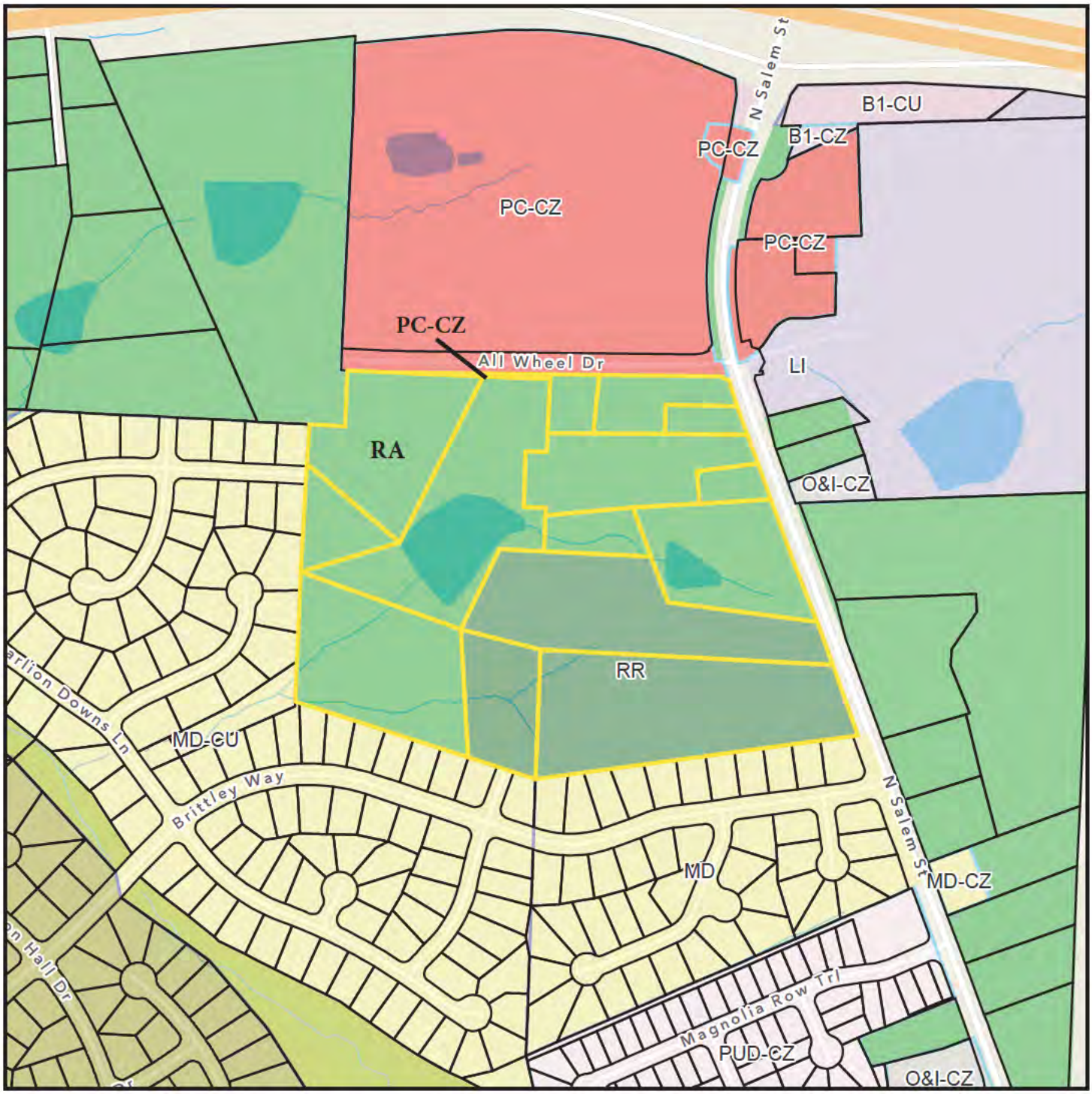
Vicinity Map

0 200 400 800 ft

1 inch equals 400 feet

Disclaimer

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



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1405/1409 N. Salem Street; & 0 Charlion Downs Lane

N

Zoning Map

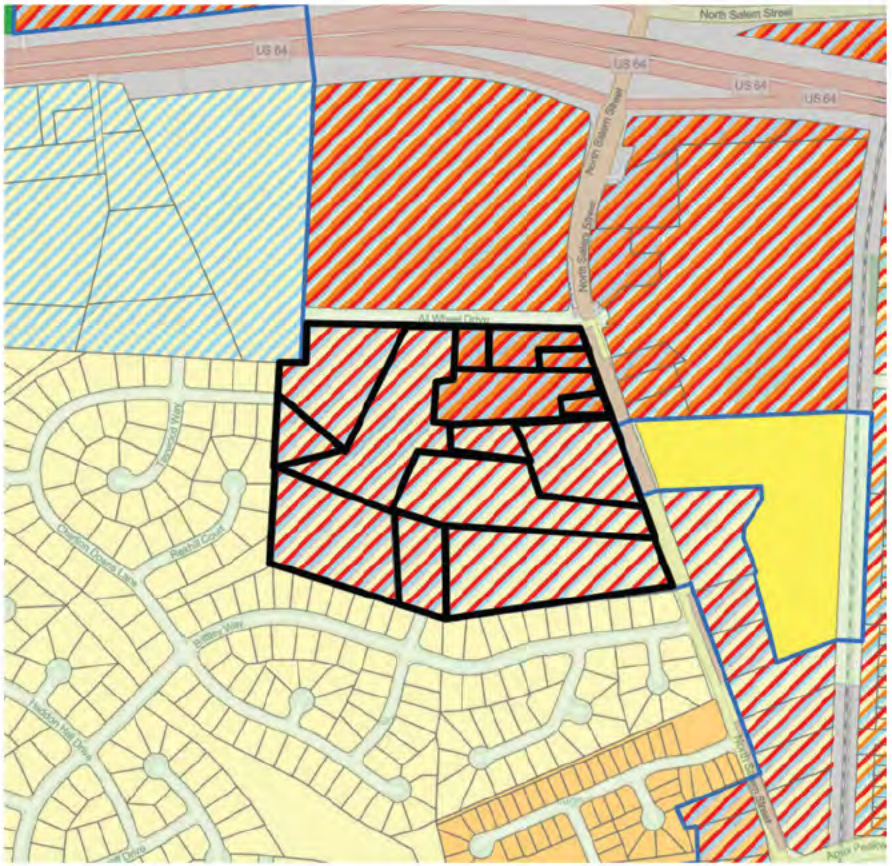
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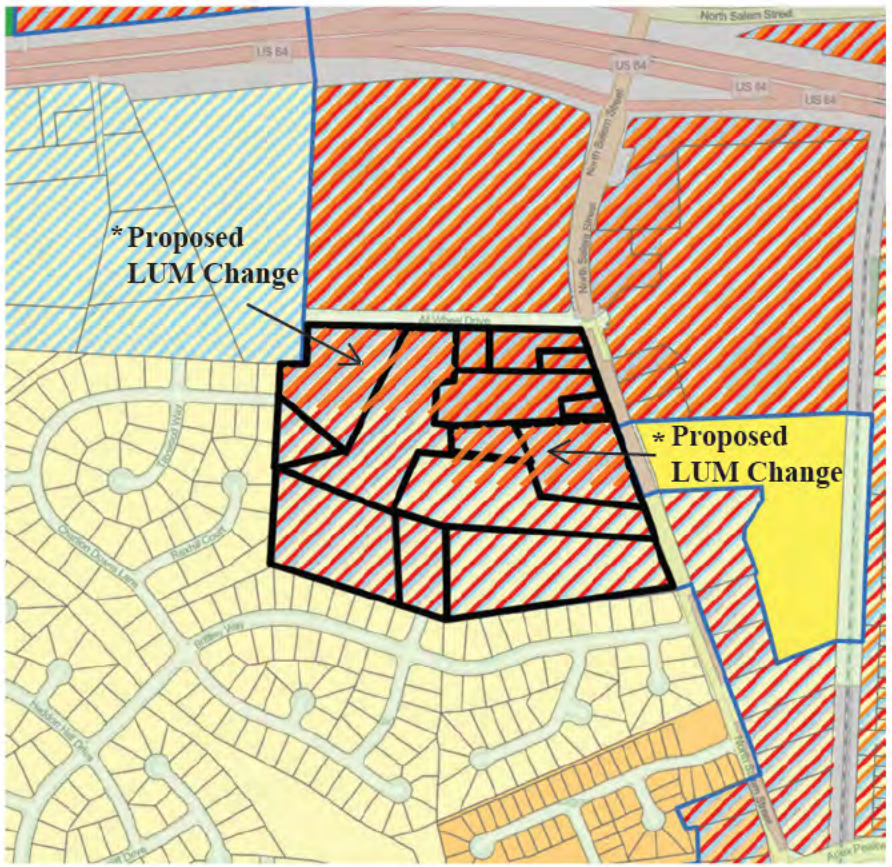
Current Zoning: RA, RR, PC-CZ

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.*

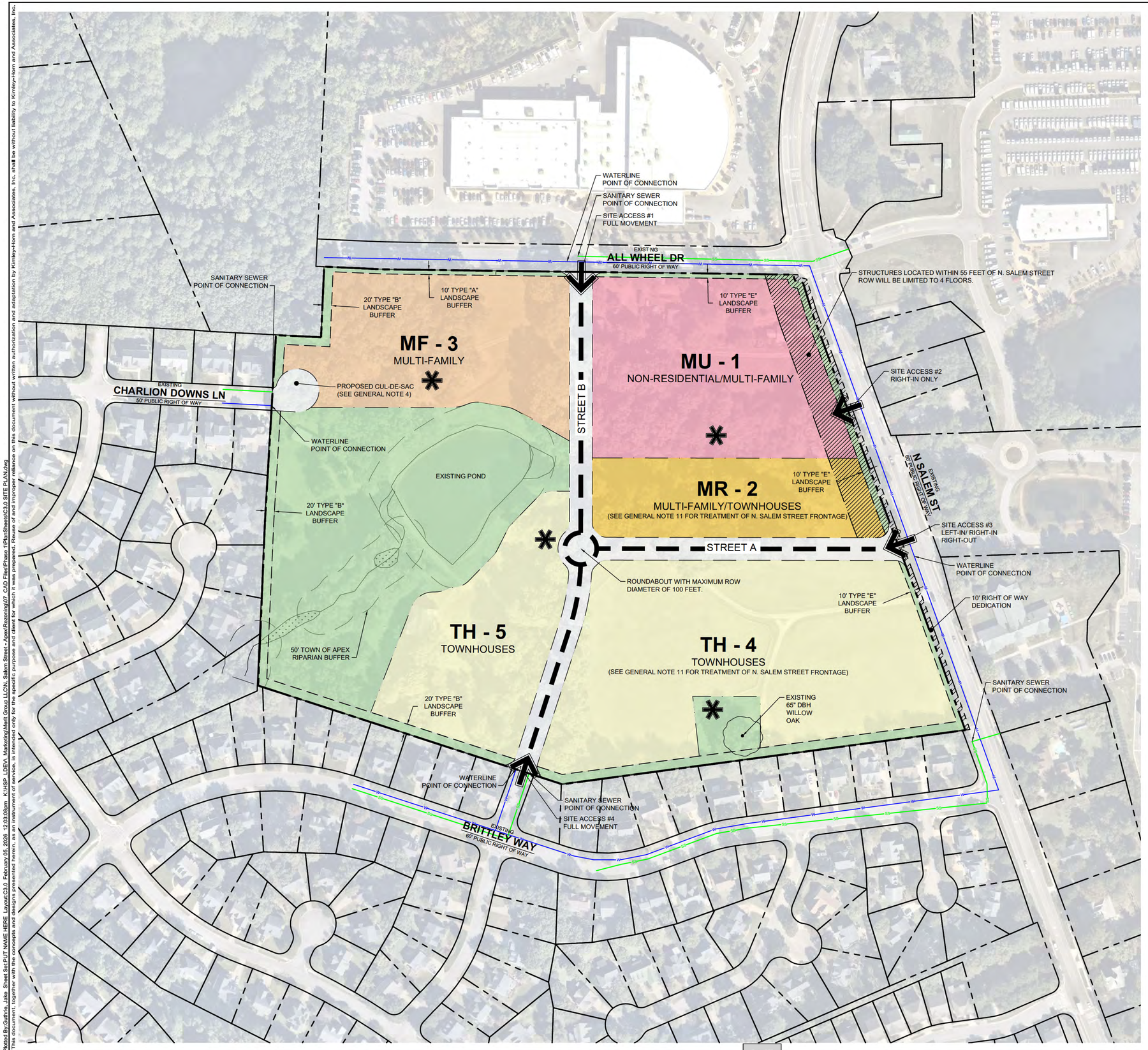
2045 Land Use Map Exhibit



Current LUM Designation:
Medium Density Residential/Office Employment/
Commercial Services; &
High Density Residential/Office Employment
Commercial Services



Proposed LUM Designation:
Medium Density Residential/Office Employment/
Commercial Services; &
High Density Residential/Office Employment
Commercial Services



SITE LEGEND

- PROPERTY L NE
- 50' TOWN OF APEX RIPARIAN BUFFER
- LOCAL STREET
- 10' S DEPATH
- ACTIVE RECREATION AREA/PLAY LAWN
- VEHICULAR ACCESS
- 10' ROW DEDICATION
- BUILDINGS N THIS AREA SHALL BE L MITED TO 4 FLOORS (60 FT) SEE PLAN FOR LOCATION
- EXISTING WETLAND
- PER METER BUFFER/RESOURCE CONSERVATION AREA (M N MUM OF 20% OF SITE AREA)
- MULTI-RESIDENTIAL (MULTI-FAM LY, TOWNHOUSES
- MULTI-FAMILY (APARTMENTS)
- MULTI-FAMILY APARTMENTS; NON-RESIDENTIAL
- TOWNHOUSES

GENERAL NOTES

1. ALL ZONING PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. F NAL DESIGN COMPONENTS SHALL BE DETERM NED DUR NG THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
2. REFER TO THE PUD TEXT DOCUMENTS FOR ALLOWABLE USES, ZONING CONDITIONS, AND OTHER DESIGN STANDARDS.
3. ALL VEHICULAR ACCESS LOCATIONS AND PEDESTRIAN CIRCULATION ARE CONCEPTUAL AND SHALL BE FINALIZED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
4. A PUBLIC PEDESTRIAN ACCESS EASEMENT W LL BE PROV DED FROM THE CUL-DE-SAC ON CHARLION DOWNS LANE TO STREET B. EXACT LOCATION TO BE DETERMINED AT THE T ME OF SITE/SUBDIVISION PLAN APPROVAL PROCESS.
5. TREE PROTECTION FENC NG SHALL BE PLACED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORD NANCE.
6. ALL PARKING STANDARDS SHALL COMPLY WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
7. EXACT LOCATION OF OPEN SPACE AND RESOURCE CONSERVATION AREA TO BE FINALIZED DURING THE SITE/SUBDIVISION APPROVAL PROCESS.
8. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTAINED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
9. SITE ELEMENTS REQU RED TO SATISFY RECREATIONAL REQU REMENTS MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETA LS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
10. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING, SCREEN NG, SITE STAB LIZATION (SEED NG), PARKING, AND PAVEMENT MARKING, MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.
11. UNITS LOCATED N TH-4 AND MR-2 ALONG THE FRONTAGE OF N. SALEM STREET WILL FACE N. SALEM STREET AND TAKE ACCESS FROM THE REAR.

UTILITY NOTES

1. THIS PROJECT IS REQUESTING FULL TOWN SERVICES, NCLUDING BUT NOT LIMITED TO, WATER, SEWER AND ELECTRICITY.
2. THE SITE W LL NOT UTILIZE PRIVATE SEWAGE DISPOSAL SYSTEMS.
3. ALL UT LITY EASEMENTS SHALL BE PROVIDED AS NECESSARY. EXACT LOCATION SHALL BE DETERMINED AT THE TIME OF CONSTRUCTION DRAWINGS.
4. ALL CONSTRUCTION SHALL COMPLY WITH THE TOWN OF APEX STANDARDS AND SPECIFICATIONS.
5. ALL WATER AND SEWER MAINS WITH N THE PUBLIC EASEMENTS SHALL BE OWNED, OPERATED, AND MAINTA NED BY THE TOWN OF APEX.

GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

No.	REVISIONS	DATE	BY
7		-----	-----
6		-----	-----
5		-----	-----
4		-----	-----
3		-----	-----
2		-----	-----
1		-----	-----

Kimley»Horn
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#F-0102 WWW.KIMLEY-HORN.COM PHONE: 984-212-4572
1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 3321 C. ZIMMERLY
PRELIMINARY NOT FOR CONSTRUCTION

KHA PROJECT	000000000
DATE	12/01/2025
SCALE	AS SHOWN
DESIGNED BY	RCZ
DRAWN BY	JTG
CHECKED BY	RCZ

PRELIMINARY SITE LAYOUT AND UTILITY PLAN

N. SALEM STREET MIXED USE

PREPARED FOR
MERIT GROUP LLC
NORTH CAROLINA
APEX

SHEET NUMBER
C3.0

Plotted By:Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C3.0 February 05, 2026 12:03:09pm K:\HSP_LDEV_Marketing\Merit Group LLC\N. Salem Street - Apex\Rezoning\07 CAD Files\Phase 1\PlanSheets\C3.0 SITE PLAN.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley»Horn and Associates, Inc. shall be without liability to Kimley»Horn and Associates, Inc.

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: N. Salem Street Mixed-Use Zoning: Residential Agricultural (RA); Rural Residential (RR); & Planned Commercial-Conditional Zoning (PC-CZ)

Location: See attached Exhibit A

Property PIN(s): See attached Exhibit A Acreage/Square Feet: 32.36 acres

Property Owner: See attached Exhibit A

Address:

City: State: Zip:

Phone: Email:

Developer: Merit Group, LLC c/o Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: n/a Email: matthewcarpenter@parkerpoe.com

Engineer: Kimley-Horn c/o Bob Zumwalt

Address: 1070 S. Main Street, Suite 230

City: Holly Springs State: NC Zip: 27540

Phone: (919) 475-7314 Fax: n/a Email: bob.zumwalt@kimley-horn.com

Builder (if known): Merit Group, LLC c/o Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: n/a Email: matthewcarpenter@parkerpoe.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 Planning Manager	(919) 372-7468
Transportation & Infrastructure Development Russell Dalton, Traffic Engineering Manager	(919) 249-3358
Water Resources Department Jessica Bolin, Environmental Engineering Manager (Stormwater, Sedimentation & Erosion Control) Matt Reker, Utility Engineer/FOG Program Manager (Water & Sewer)	(919) 249-3537 (919) 946-4394
Electric Utilities Division Jared Harris, Electric Technical Services Manager	(919) 372-7466

Exhibit A

N. Salem Street Mixed-Use
Owner Information Addendum

PIN 0742367712
Address: 1403 N. Salem St.
Owner: Ronald & Jody Keye
Acreage: 1.06 acre
Current Zoning: Residential Agricultural

PIN 0742368697
Address: 1401 N. Salem St.
Owner: John Huber
Acreage: 0.39 acre
Current Zoning: Residential Agricultural

PIN 0742365731
Address: 1405 N. Salem St.
Owner: Geraldine Gilbert Heirs
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742366583
Address: 1205 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 2.54 acres
Current Zoning: Residential Agricultural

PIN 0742369479
Address: 1303 N. Salem St.
Owner: June Thompson
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742369278
Address: 1301 N. Salem St.
Owner: June Thompson
Acreage: 2.80 acres
Current Zoning: Residential Agricultural

PIN 0742363169
Address: 1207 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 4.46 acres
Current Zoning: Rural Residential

PIN 0742358857
Address: 1201 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 5.34 acres
Current Zoning: Rural Residential

PIN 0742353848
Address: 0 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 1.67 acres
Current Zoning: Rural Residential

PIN 0742350909
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.77 acres
Current Zoning: Residential Agricultural

PIN 0742362432
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 4.59 acres
Current Zoning: Residential Agricultural

PIN 0742366306
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.73 acre
Current Zoning: Residential Agricultural

PIN 0742268387
Address: 0 Charlion Downs Ln
Owner: DLG HOLDINGS LLC
Acreage: 0.93 acre
Current Zoning: Residential Agricultural

PIN 0742360631
Address: 1409 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.06 acres
Current Zoning: Residential Agricultural

PIN 0742362719
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.02 acre
Current Zoning: PC-CZ

PIN 0742363799
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.04 acre
Current Zoning: PC-CZ

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 am to 8:30 pm 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-Friday from 8:00 am to 5:00 pm. Report violations of construction hours and other noise complaints to the Non-Emergency Police phone number at 919-362-8661.

Construction Traffic:	Infrastructure Inspections	919-249-3386

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:	Infrastructure Inspections	919-249-3386

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 Transportation & Infrastructure Development – Infrastructure Inspections at 919-249-1109. 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:	Water Resources	919-362-8166

Sediment (dirt) and mud gets into the existing roads due to rain events and/or vehicle traffic. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleaning of the roadways with the developer.

Dirt on Properties or in Streams:	Water Resources	919-362-8166

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 by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the appropriate repairs with the developer.

Dust:	Water Resources	919-362-8166

During dry weather dust often becomes a problem blowing into existing neighborhoods or roadways. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the use of water trucks onsite with the grading contractor to help control the dust.

Trash:	Water Resources	919-362-8166

Excessive garbage and construction debris can blow around on a site or even off of the site. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleanup and trash collection with the developer/home builder.

Temporary Sediment Basins:	Water Resources	919-362-8166

Temporary sediment basins during construction (prior to the conversion to the final stormwater pond) are often quite unattractive. Concerns should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that he can coordinate the cleaning and/or mowing of the slopes and bottom of the pond with the developer.

Stormwater Control Measures:	Water Resources	919-362-8166

Post-construction concerns related to Stormwater Control Measures (typically a stormwater pond) such as conversion and long-term maintenance should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed.

Electric Utility Installation:	Electric Utilities	919-249-3531

Concerns with electric utility installation can be addressed by the Apex Electric Utilities Department.

NEIGHBORHOOD MEETING SIGN-IN SHEET

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

Meeting Address: Virtual via ZOOM

Date of meeting: March 3, 2026 Time of meeting: 5:30 p.m. to 6:30 P.M.

Property Owner(s) name(s): See above Exhibit A

Applicant(s): Merit Group, LLC c/o Matthew J. Carpenter

Please print your name below, state your address and/or affiliation with a neighborhood group, and provide your phone number and email address. Providing your name below does not represent support or opposition to the project; it is for documentation purposes only. For virtual meetings, applicants must include all known participants and request the information below.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	See attached Attendee List				☐
2.					☐
3.					☐
4.					☐
5.					☐
6.					☐
7.					☐
8.					☐
9.					☐
10.					☐
11.					☐
12.					☐
13.					☐
14.					☐

Use additional sheets, if necessary.

NEIGHBORHOOD MEETING ATTENDEE LIST

Name (original name)	Email	Join time	Leave time	Duration (minutes)	Guest
Matthew Carpenter (PPAB Land Use)	[redacted]	3/3/2026 17:19	3/3/2026 18:41	82	No
Munshi Chaye In		3/3/2026 17:22	3/3/2026 17:30	8	Yes
Stuart Hurwitz		3/3/2026 17:26	3/3/2026 17:30	5	Yes
Jessica Conklin		3/3/2026 17:26	3/3/2026 17:30	4	Yes
William Goss		3/3/2026 17:27	3/3/2026 17:30	4	Yes
Terry Oliver		3/3/2026 17:27	3/3/2026 17:30	3	Yes
Morgan Roeske		3/3/2026 17:27	3/3/2026 17:30	3	Yes
Bob Zumwalt		3/3/2026 17:27	3/3/2026 17:29	2	Yes
Trish		3/3/2026 17:28	3/3/2026 17:30	2	Yes
Mike Rusher		3/3/2026 17:28	3/3/2026 17:30	2	Yes
Bryan Johnson		3/3/2026 17:28	3/3/2026 17:30	2	Yes
Casey Angel		3/3/2026 17:28	3/3/2026 17:30	2	Yes
Eric Leblanc		3/3/2026 17:29	3/3/2026 17:30	2	Yes
Nicholas A Livy		3/3/2026 17:29	3/3/2026 17:30	2	Yes
Sasha Bravo		3/3/2026 17:29	3/3/2026 17:30	2	Yes
Paul Munana		3/3/2026 17:29	3/3/2026 17:29	1	Yes
Tyler Haeberle		3/3/2026 17:29	3/3/2026 17:30	1	Yes
Ron M		3/3/2026 17:29	3/3/2026 17:30	1	Yes
		3/3/2026 17:29	3/3/2026 18:41	72	Yes
Brandon Black		3/3/2026 17:30	3/3/2026 17:30	1	Yes
Eric Roeske		3/3/2026 17:30	3/3/2026 17:30	1	Yes
Sara Mohammed		3/3/2026 17:30	3/3/2026 18:41	72	Yes
Matt Gilson		3/3/2026 17:31	3/3/2026 18:33	63	Yes
pat ryan hunt		3/3/2026 17:31	3/3/2026 18:34	64	Yes
William Gilbert		3/3/2026 17:31	3/3/2026 18:41	71	Yes
		3/3/2026 17:31	3/3/2026 18:41	70	Yes
Holly Groce		3/3/2026 17:31	3/3/2026 18:36	66	Yes
Suna Tercioglu		3/3/2026 17:31	3/3/2026 18:41	70	Yes
Scott McCloskey		3/3/2026 17:32	3/3/2026 18:41	70	Yes
Marcie Longo		3/3/2026 17:32	3/3/2026 17:43	11	Yes
		3/3/2026 17:33	3/3/2026 18:24	52	Yes
Teresa Moore		3/3/2026 17:33	3/3/2026 18:06	33	Yes
Javier Bravo		3/3/2026 17:33	3/3/2026 18:41	68	Yes
Bill Kohler		3/3/2026 17:33	3/3/2026 18:07	34	Yes
iPhone		3/3/2026 17:33	3/3/2026 18:41	68	Yes
Lindsay Bray		3/3/2026 17:33	3/3/2026 18:41	68	Yes
Chris Heimel (Chris H)		3/3/2026 17:33	3/3/2026 18:41	68	Yes
Chantal's iPhone (2)		3/3/2026 17:34	3/3/2026 18:42	68	Yes
Imran Khan		3/3/2026 17:34	3/3/2026 17:45	11	Yes
Ryann Griffin		3/3/2026 17:34	3/3/2026 18:41	67	Yes
Dama, Nikhil		3/3/2026 17:35	3/3/2026 18:02	28	Yes
Orhan Tercioglu		3/3/2026 17:35	3/3/2026 17:41	6	Yes
Ann Marie		3/3/2026 17:35	3/3/2026 18:19	44	Yes
Srilakshmi Alla		3/3/2026 17:35	3/3/2026 18:30	55	Yes
Cherri Arnett		3/3/2026 17:36	3/3/2026 18:41	65	Yes
Christine Wilson		3/3/2026 17:36	3/3/2026 18:41	65	Yes
Daniel Husbandds		3/3/2026 17:37	3/3/2026 18:41	64	Yes
Rahan Khozein		3/3/2026 17:37	3/3/2026 18:42	65	Yes
		3/3/2026 17:39	3/3/2026 17:56	18	Yes
Orhan Tercioğlu		3/3/2026 17:41	3/3/2026 18:42	61	Yes
Michelle Owens		3/3/2026 17:42	3/3/2026 18:10	29	Yes
JP Patel		3/3/2026 17:43	3/3/2026 18:38	56	Yes
Erin		3/3/2026 17:50	3/3/2026 18:02	13	Yes
Christine Lennon		3/3/2026 17:50	3/3/2026 18:42	52	Yes
Brian Adkins		3/3/2026 17:50	3/3/2026 18:41	51	Yes
Shawn Clark		3/3/2026 17:51	3/3/2026 18:41	50	Yes
Nathan Pinsker		3/3/2026 17:59	3/3/2026 18:41	43	Yes
John Huber		3/3/2026 18:01	3/3/2026 18:42	41	Yes
Blake Hardin		3/3/2026 18:04	3/3/2026 18:42	38	Yes
Laurie Stella		3/3/2026 18:21	3/3/2026 18:37	17	Yes
Rebecca Olson		3/3/2026 18:35	3/3/2026 18:42	7	Yes

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

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

Property Owner(s) name(s): See above Exhibit A

Applicant(s): Merit Group, LLC c/o Matthew J. Carpenter

Contact information (email/phone): matthewcarpenter@parkerpoe.com; (919) 835-4032

Meeting Address: Virtual via ZOOM

Date of meeting: March 3, 2026 Time of meeting: 5:30 p.m. to 6:30 p.m.

Please summarize the questions/comments and your responses from the Neighborhood Meeting or emails/phone calls received 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:
See attached

Applicant's Response:
See attached

Question/Concern #2:
See attached

Applicant's Response:
See attached

Question/Concern #3:
See attached

Applicant's Response:
See attached

Question/Concern #4:
See attached

Applicant's Response:
See attached

Summary of Neighborhood Meeting
LUM Change
N. Salem Street Mixed Use PUD
March 3, 2026

I. WELCOME
   a. Introduction of Development Team
      i. Matthew Carpenter w/Parker Poe
      ii. Paul Munana and Rick Felice, w/ Merit Group, LLC, the developer
      iii. Bob Zumwalt w/ Kimley-Horn, our landscape architect
   b. Explanation of process. This is the pre-filing neighborhood meeting for a potential rezoning request, the very first step in a long development process. So, the purpose of tonight's meeting is to explain our plans and take your feedback into consideration as we put together our rezoning application.

II. PRESENTATION
   a. Site Overview - location, environmental constraints of the site, and existing uses adjacent.
   b. Existing and Proposed Zoning
      i. The current zoning is Residential Agricultural, Rural Residential, and Planned Commercial Conditional. The proposed zoning district is Planned Unit Development Conditional (PUD-CZ).
      ii. The purpose of the PUD district is to provide - especially for large mixed-use projects - site specific zoning conditions that result in a high quality project.
   c. 2045 Land Use Map (LUM) Designation
      i. The LUM is the primary policy document the Town uses to evaluate rezoning requests. This property is designated as Mixed Use since it has multicolor striped areas with three or more uses. These uses include Office Employment, Commercial Services, Medium Density Residential, and High Density Residential. The LUM recommends higher density residential uses to be located in the northern portion of the assemblage.
      ii. Here, we started with the LUM designations and worked backwards from there to develop our PUD Concept Plan.
   d. Current PUD Plan
      i. The current plan is to have five districts, each with different permitted uses and development standards. The MU-1 district will permit non-residential and multi-family residential. The MR-2 district will permit multi-family and townhomes. The MF-3 district will permit multi-family residential. While the districts TH-4 and TH-5 district will only permit townhomes. The goal is to transition density and intensity down across the site from the intersection of All Wheel Drive and N. Salem Street to the existing single-family neighborhoods to the west and south.
      ii. On the west side, there is a large existing pond that may remain and a stream and riparian buffer. This area will likely remain undeveloped (other than stormwater and utility infrastructure) which will provide some separation between the project and existing neighborhoods.

iii. We're showing a vehicular connection to the stub at Frenchurch Way which is required by the Town's UDO. At Charlion Downs Lane, we're proposing to terminate the street into a cul-de-sac and provide a pedestrian connection through the site. The baseline UDO requirement is that connectivity is required, so we are asking the Town for a modification to permit the cul-de-sac.

e. Rezoning Process and Timeline
   i. Since the first neighborhood meeting we have submitted our rezoning application and have been through two reviews with the Town, and have submitted for a third review. During these reviews we have worked with staff to revise our application to address their comments.
   ii. After all staff comments have been addressed, the case will go to Planning Board. Planning Board will hold a public hearing, review the case, and make a recommendation to Town Council.
   iii. Following the Planning Board meeting, Town Council will hold a public hearing and make the final decision on the rezoning.

III. QUESTION AND ANSWER SESSION

a. Please elaborate on what it means that streams will be "generally untouched?"

i. The State requires a 50-foot stream buffer, and the Town requires additional buffering. Only stormwater infrastructure for drainage may be located within the buffer; no lots, buildings, or streets are allowed.

b. Traffic concerns

i. We understand the concern, and this development includes significant traffic improvements recommended by staff that are intended to improve overall circulation.

c. There are two ponds on the property and several wetlands that are not depicted on this map. Both can be seen on the Apex and Wake County's GIS maps. What are the plans for the second pond and the protected wetlands not on this map?

i. We have completed a jurisdictional determination with the Army Corps of Engineers and the Town. The farm pond will be drained, and two small wetlands located in the southwestern quadrant. All areas required to be buffered will be appropriately buffered.

d. When will the Town Council approve the rezoning request?

i. There is no Town Council date scheduled yet, but it is anticipated to be in late spring.

e. You mentioned 7 units per acre. I'm not sure I understand how the math adds up there. You've proposed 200 units plus 250 apartments. The 200 units alone would be projected to take over 28 acres, and that's without the commercial/residential portion being proposed.

i. A total of 450 units are permitted across the site, including up to 285 multi-family units and 165 townhomes. The TH-4 and TH-5 districts are limited to a combined maximum of 120 units. These two districts reflects an overall density of approximately 7 units per acre, which is consistent with the Medium Density designation in the Land Use Map.

f. Why is the request proposing to amend the LUM?

i. Yes, we are proposing a slight expansion of the orange multi-family designation, with no changes in the southern portion of the site. While the LUM recommends high-density residential at the intersection of N. Salem Street and All Wheel Drive, staff has requested building heights be limited to four to five stories along N. Salem Street. The existing LUM does not provide sufficient land area to accommodate multi-family development with these height limitations, so the proposed LUM amendment modestly extends the designation west and south to allow a feasible layout consistent with staff-recommended transitions.

g. Are the riparian buffers being complied with?

i. Yes, all UDO-required riparian buffers will be met and are accurately shown on the concept plan.

h. What are the permitted heights?

i. Townhomes are limited to a maximum height of three stories (45 feet). Stand-alone multi-family buildings are limited to four stories (55 feet). Non-residential and mixed-use buildings are limited to a maximum of five stories (75 feet) and are only permitted at the corner of All Wheel Drive and N. Salem Street.

i. What happens if the town denies the request to increase the LUM density per your plans?

i. If the rezoning is approved, the LUM will be automatically amended. If the rezoning is denied, the LUM will not be amended.

j. There are intermittent streams on that property that you aren't showing on these maps. Why?

i. Streams shown on GIS maps are not always jurisdictional and therefore are not always required to be buffered. Only streams, ponds, and riparian buffers identified through the Army Corps of Engineers and Town determination are shown.

k. Will traffic increase in Haddon Hall by making Brittley a cut through to Apex Peakway?

i. If a stub street exists, we are typically required to connect to it, and the Town prefers connectivity. Using N. Salem Street is expected to be faster than cutting through Brittley Way, and traffic-calming measures, including a roundabout, are planned to reduce cut-through traffic.

l. Is TIA publicly available?

i. The TIA is on file with the Town of Apex and is available upon request. Staff recommends traffic improvements based on the TIA and are incorporated into the PUD document.

m. Are there plans to build on wetlands in bottom left of the site?

i. Yes, these wetlands are not protected and development is permitted.

n. Can you clarify what the "20 foot type B buffer" is that separates the land from Haddon Hall? What exactly is that- is it a retaining wall or metal fence and trees, etc?

i. This is a Type B perimeter buffer, which preserves existing trees where possible and supplements them with Type B plantings.

o. When was the determination made with the Army Corps of Engineers and the Town of Apex? You all say it very casually that those wetlands and riparian buffers will be "impacted and developed", but that's not addressing the impacts to existing developments, runoff from impermeable surfaces, etc. On the first call, this was "we live in this area as well and want this to be additive", but this feels more like just plowing forward regardless of impact.

i. The Army Corps determination is a written decision based on a field investigation completed in July 2025, and this work is undertaken early in the development process. This is not a casual process, and the plans are designed to consider and mitigate impacts to environmental features based on this written decision.

p. What are the road improvements?

i. Traffic improvements proposed to date include the addition of a right-turn lane on N. Salem Street, an additional through lane along the site's entire frontage on N. Salem Street with a lane drop at Street A as shown on the concept plan, signal modifications at All Wheel Drive, right-of-way dedication with curb and gutter improvements, and a 10-foot side path along the N. Salem Street frontage.

q. Will it only be Townhomes or mix or townhouse, apartments, simple family ?Any commercial ?

i. There will be a mix of townhomes, apartments, and commercial uses which are designed to meet the LUM designation. The current plan is to have five districts, each with different permitted uses and development standards. The MU-1 district will permit non-residential and multi-family residential. The MR-2 district will permit multi-family and townhomes. The MF-3 district will permit multi-family residential. While the districts TH-4 and TH-5 district will only permit townhomes.

r. Concern related to stormwater run-off issues

i. There are currently no stormwater control measures on the site, and runoff is not being controlled. As part of the development, all runoff will be required to be managed and released at specified rates. The installation of curb and gutter and stormwater control measures is expected to improve conditions, and two stormwater ponds are proposed.

s. Who paid for the wetland analysis of the property?

i. The developer pays the consultants to complete the environmental survey, and the Army Corps and the Town each review it independently.

t. Has any town staff yet reviewed and accepted the stream and wetland elimination plan that you are proposing in SW quadrant and eastern (N. Salem St) side? The determination that the streams in the southwest corner (TH-5) do not meet intermittent stream definition is interesting, as there is flowing water moving through there year round.

i. Yes, both the Town and the Army Corps have reviewed the environmental survey and determined that only the streams shown on the concept plan are subject to buffering requirements.

u. Any discussion not to attach to Brittney?

i. We raised this idea with staff, but they did not support it because the Town prefers connectivity and the UDO requires the stub street connection.

v. Please describe your proposed tree replacement program as part of this proposal.

i. The project is required to provide a Resource Conservation Area covering 20% of the gross site area, which will largely consist of wooded open space, primarily in the southwest portion of the site.

w. Please describe topographical changes that will need to take place at TH-5 and TH-4 as it relates to the homes along Brittley Way, and how stormwater runoff will be directed away from Haddon Hall property as part of your plan.

i. Currently, stormwater runoff flows to the southwest. The topography sheet shown on the concept plan reflects existing site conditions and does not represent post-grading conditions.

x. In the MU-1 District, how tall will those apartment buildings be?

i. Non-residential and mixed-use buildings are limited to a maximum of five stories (75 feet) in the MU-1 District. Stand-alone multi-family buildings are limited to four stories (55 feet).

y. This project offers an opportunity to improve connectivity of the street network. Charlion Downs Lane should be extended through to Street B, separating orange MF-3 from the green open space. Without that street connection, the green open space is hidden behind housing when it should be a visual public amenity.

i. We have received mixed feedback regarding a connection to Charlion Downs Lane, with some supporting connectivity and others opposing it. The plan seeks to balance these perspectives by providing pedestrian access without full vehicular connectivity.

z. Does anyone that stands to benefit monetarily actually live in Apex?

i. Bob Zumwalt, the landscape architect working on the project lives in Apex. Matthew Carpenter, land use attorney, grew up in Apex. Additionally, a number of stakeholders are involved.

aa. When construction begins, will the building supplies and heavy equipment use Brittley Way or an alternative road or pathway to the construction site?

i. No, the PUD document includes language requiring all heavy-duty construction traffic to enter and exit the site via N. Salem Street and/or All Wheel Drive.

bb. Who are developers?

i. Merit Group who operates out of Wake County.

cc. Concerns on how N. Salem Street will be widened.

i. N. Salem Street can be widened using additional right-of-way that will be dedicated by the developer.

dd. How close to the 20 foot buffer along TH-4 and TH-5 will structures be built, ie - how far away will buildings be placed from the 20ft buffer line?

i. The buffer will be owned by the HOA, provide extra separation beyond required setbacks, and must remain undisturbed.

ee. Will you be connecting to the existing stormwater system in Haddon Hall?

i. Storm drainage will not be connected. The site will manage all stormwater on site as required by the Town.

ff. Are you saying town staff has reviewed and approved this stream plan (elimination/determinations). To help, this is a photo from your submission. The streams/wetlands in SW quadrant.

i. This is the existing conditions sheet, and the Town has reviewed it to determine which streams and wetlands are required to be buffered.

gg. Will this new development be a part of Haddon Hall HOA.

i. No, the development will have its own HOA. Any addition of properties to the Haddon Hall HOA would most likely require approval by a vote of that HOA.

hh. How will the widening of Salem Street with additional turn lanes improve the pedestrian experience along Salem? It will make it feel more like a highway than a comfortable, walkable main street.

i. We have discussed this with staff as part of the rezoning process. The goal is to improve walkability while still addressing traffic concerns, and the plan tries to balance both, including the use of rear-loaded townhomes.

ii. Are you talking about widening Salem all the way to Apex Peakway?

i. No, widening will occur only along the site's frontage.

jj. Why not single-family homes?

i. Proposing single-family homes would be inconsistent with the LUM designation, which recommends higher-density housing types such as townhomes and apartments, as well as non-residential uses.

kk. What is the easiest way to follow project and meetings?

i. The applicant provided a link to the Apex development map. Neighbors can also reach out to Matthew, Bob, or Town planning staff.

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

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

I, Matthew J. Carpenter, do hereby declare as follows:
Print Name

1. I have conducted a Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Minor Site Plan, Residential Master Subdivision Plan, or Special Use Permit in accordance with UDO Sec. 2.2.7.B *Neighborhood Meeting*.

2. The meeting invitations were mailed to the Apex Planning Department, all property owners and tenants abutting and within 500 feet of the subject property and any neighborhood association that represents citizens in the notification area via first class mail a minimum of 14 days in advance of the Neighborhood Meeting.

3. The meeting was conducted at virtually via Zoom (location/address) on July 23, 2026 (date) from 5:30 pm (start time) to 7:00 pm (end time).

4. I have included the mailing list, meeting invitation, sign-in sheet, issue/response summary, and zoning map/reduced plans with the application.

5. I have prepared these materials in good faith and to the best of my ability.

8/5/2026
Date

By: _____

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Matthew J. Carpenter, a Notary Public for the above State and County, on this the 5 day of August, 2026.

SEAL

Ryann M. Griffin
Notary Public

Ryann M. Griffin
Print Name

RYANN M GRIFFIN
NOTARY PUBLIC
Wake County
North Carolina
My Commission Expires September 17, 2028

My Commission Expires: 9/17/2028

NOTICE OF NEIGHBORHOOD MEETING

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

July 8, 2026

Date

Dear Neighbor:

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

See attached Exhibit A | See attached Exhibit A

Address(es) | PIN(s)

in accordance with the Town of Apex Neighborhood Meeting procedures. This meeting is intended to be a way for the applicant to discuss the project and review the proposed plans with adjacent neighbors and neighborhood organizations before the submittal of an application to the Town. This provides neighbors an opportunity to raise questions and discuss any concerns about the impacts of the project before it is officially submitted. If you are unable to attend, please refer to the Project Contact Information page for ways to contact the applicant. Notified neighbors may request that the applicant provide updates and send plans via email or mail. 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 http://www.apexnc.org/180. Applications for Rezoning must hold a second Neighborhood Meeting in the month prior to the anticipated public hearing date.

A 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	Technical Review Committee (staff)
☐	Minor Site Plan for the uses "Day care facility", "Government service", "School, public or private", "Restaurant, drive-through", or "Convenience store with gas sales"	Technical Review Committee (staff)
☐	Special Use Permit	Board of Adjustment (QJPH*)
☐	Residential Master Subdivision Plan (excludes exempt subdivisions)	Technical Review Committee (staff)

*Quasi-Judicial Public Hearing: The Board of Adjustment cannot discuss the project prior to the public hearing.

The following is a description of the proposal including any proposed long range plan amendments (also see attached map(s) and/or plan sheet(s)):

The proposal is to rezone the property to Planned Unit Development Conditional (PUD-CZ) to permit a mixed-use development with a mix of housing types and non-residential uses as shown on the attached PUD Preliminary Site Layout Plan.

Estimated submittal date: Submitted December 1, 2025

MEETING INFORMATION:

Property Owner(s) name(s):	See attached Exhibit A
Applicant(s):	Merit Group, LLC c/o Matthew J. Carpenter
Contact information (email/phone):	matthewcarpenter@parkerpoe.com; (919) 835-4032
Meeting Address:	Virtual (Zoom) - See attached notice letter
Date/Time of meeting**:	July 23, 2026

Welcome: 5:30 PM Project Presentation: between 5:30 - 6:30 PM Question & Answer: between 5:30 - 6:30 PM

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

Parker Poe
Attorneys & Counselors at Law

To: Neighboring Property Owners and Tenants
From: Matthew J. Carpenter
Date: July 8, 2026

Re: Notice of Second Required Virtual Neighborhood Meeting

You are invited to attend a neighborhood meeting on July 23, 2026 at 5:30 PM to discuss 25CZ24, the requested rezoning of an approximately 32.3-acre assemblage located at 0 N. Salem Street (PIN: 0742362719), 0 N. Salem Street (PIN: 0742366306), 0 N. Salem Street (PIN: 0742362432), 0 N. Salem Street (PIN: 0742350909), 0 N. Salem Street (PIN: 0742353848), 0 N. Salem Street (PIN: 0742363799), 1201 N. Salem Street (PIN: 0742358857), 1205 N. Salem Street (PIN: 0742366583), 1207 N. Salem Street (PIN: 0742363169), 1301 N. Salem Street (PIN: 0742369278), 1303 N. Salem Street (PIN: 0742369479), 1401 N. Salem Street (PIN: 0742368697), 1403 N. Salem Street (PIN: 0742367712), 1405 N. Salem Street (PIN: 0742365731), 1409 N. Salem Street (PIN: 0742360631), and 0 Charlion Downs Lane (PIN: 0742268387) from Residential Agricultural (RA), Rural Residential (RR), and Planned Commercial-Conditional Zoning (PC-CZ) to Planned Unit Development-Conditional Zoning (PUD-CZ) to permit a mixed-use development with a mix of housing types and non-residential uses.

During the meeting, the applicant will describe the nature of the rezoning request, provide updates since the previous neighborhood meetings, and field any questions from the public. Enclosed are: (1) a vicinity map outlining the location of the subject parcels; (2) a zoning map of the subject area; (3) an updated Land Use Map exhibit; (4) an updated PUD plan; (5) a project contact information sheet; and (6) a common construction issues & who to call information sheet.

The meeting will be held virtually. You can participate online via Zoom or by telephone. To participate in the Zoom online meeting:

Visit:	https://zoom.us./join
Enter the following meeting ID:	820 1105 6332
Enter the following password:	028232

To participate by telephone:

Dial:	1 929 205 6099
Enter the following meeting ID:	820 1105 6332 #
Enter the Participant ID:	#
Enter the Meeting password:	028232 #

If you have any questions about this rezoning, please contact me at (919) 835-4032 or via email at matthewcarpenter@parkerpoe.com.

Sincerely,

Matthew Carpenter



0/0/0/0/0/0/1201/1205/1207/1301/1303/1401/1403/ 1405/1409 N. Salem Street; & 0 Charlion Downs Lane

N

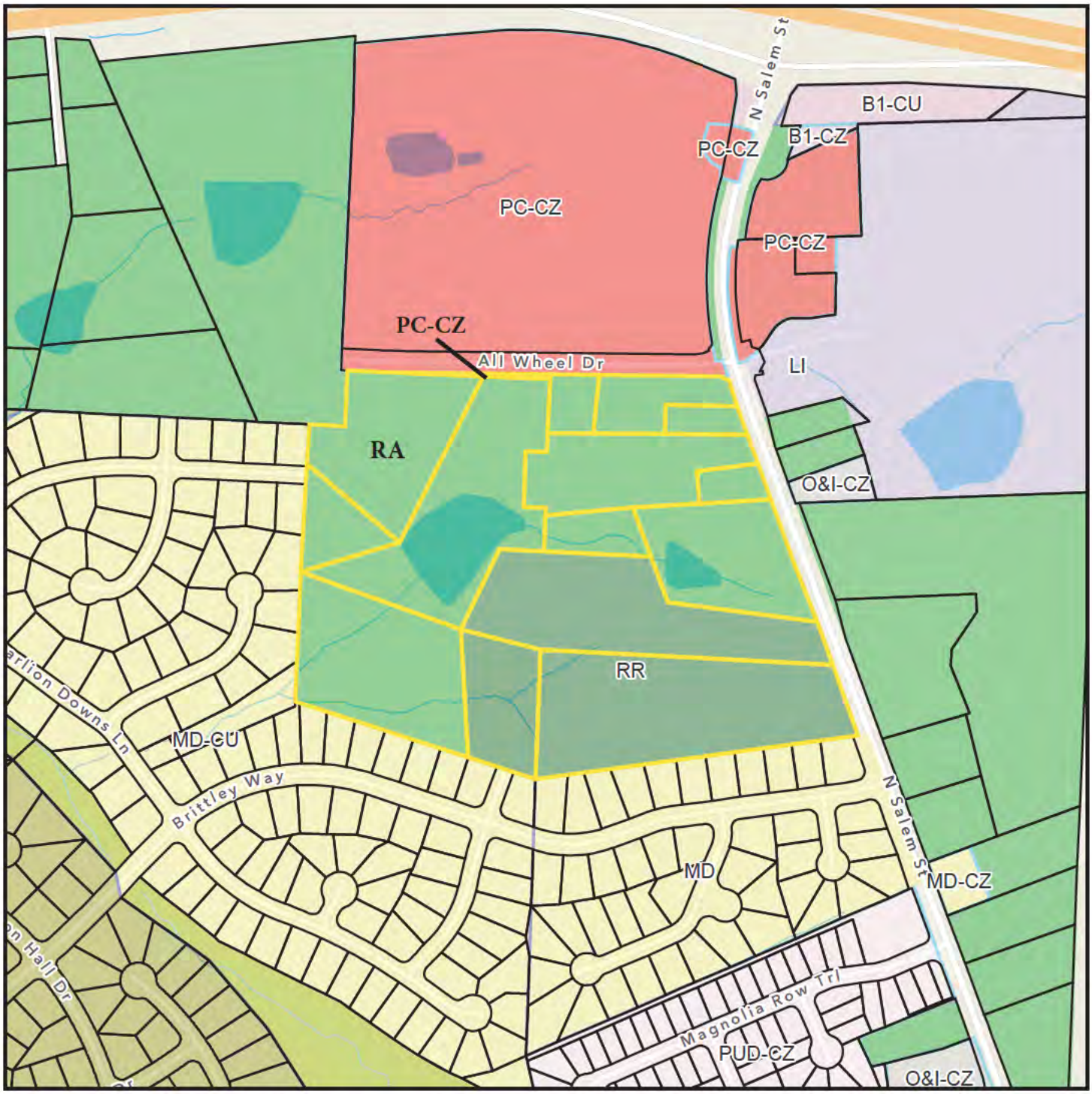
Vicinity Map

0 200 400 800 ft

1 inch equals 400 feet

Disclaimer

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



0/0/0/0/0/0/1201/1205/1207/1301/1303/1401/1403/
1405/1409 N. Salem Street; & 0 Charlion Downs Lane

N

Zoning Map

0 200 400 800 ft

1 inch equals 400 feet

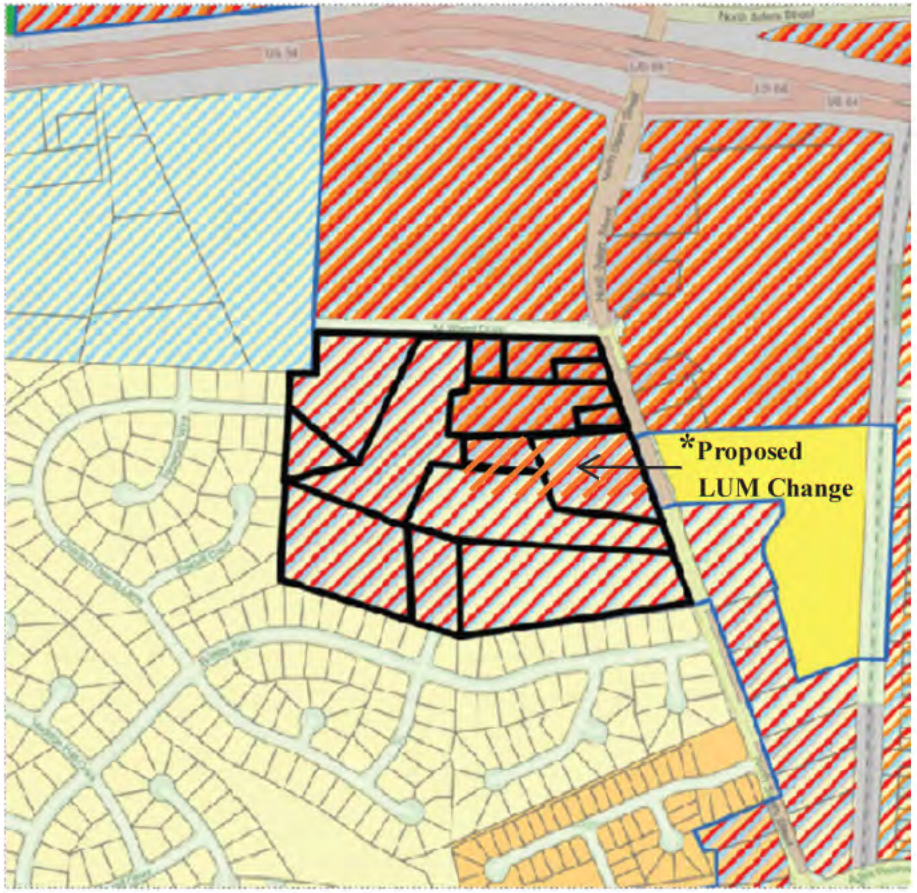
Current Zoning: RA, RR, PC-CZ

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.*

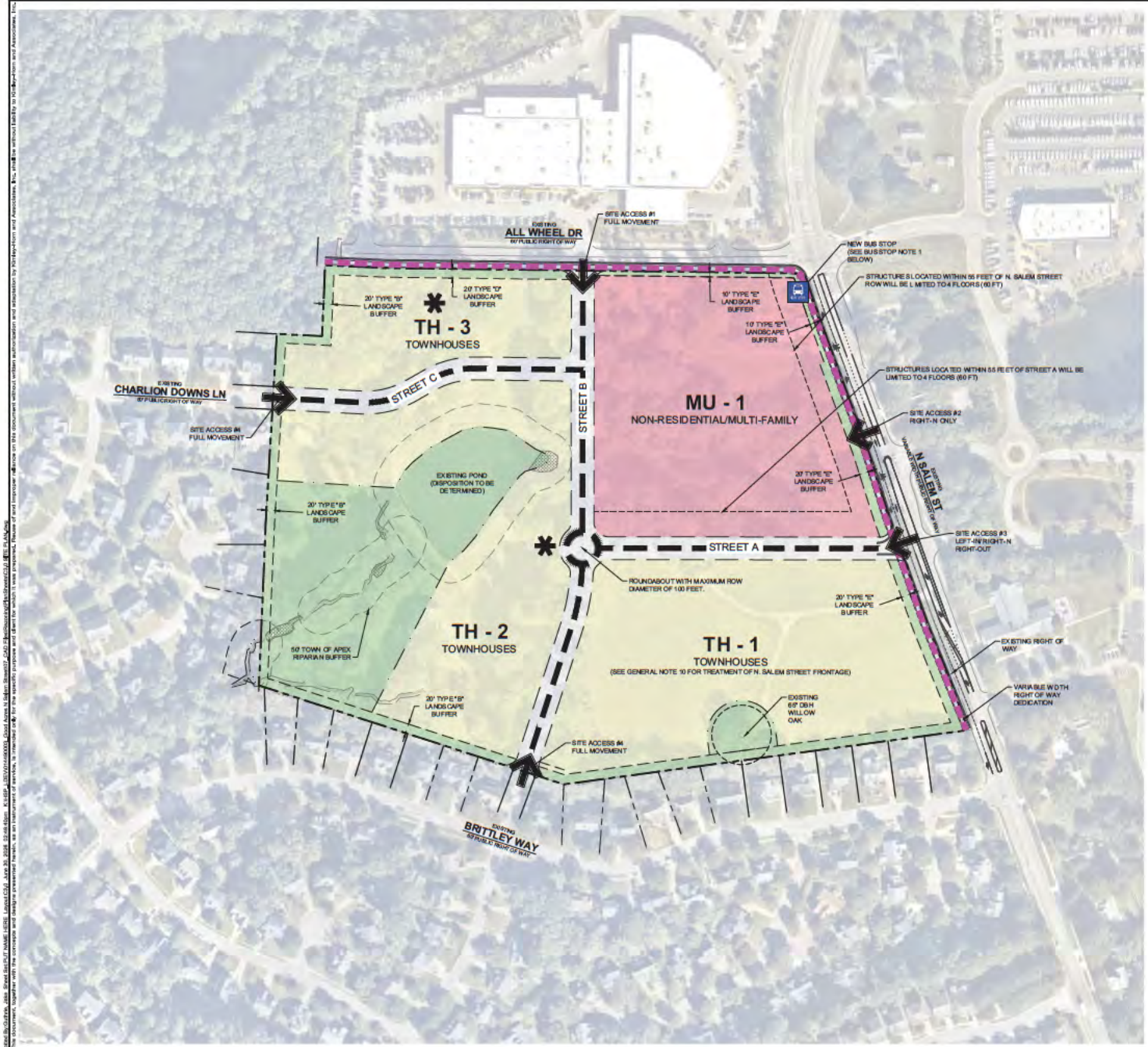
2045 Land Use Map Exhibit



Current LUM Designation:
Medium Density Residential/Office Employment/
Commercial Services; &
High Density Residential/Office Employment/
Commercial Services



Proposed LUM Designation:
Medium Density Residential/Office Employment/
Commercial Services; &
High Density Residential/Office Employment/
Commercial Services



SITE LEGEND

- PROPERTY LINE
- 50' TOWN OF APEX RIPARIAN BUFFER
- LOCAL STREET
- 10' SIDEPATH
- NEW BUS STOP (SEE BUS STOP NOTE 1 BELOW)
- ACTIVE RECREATION AREA/PLAYLAWN
- VEHICULAR ACCESS
- EXISTING WETLAND
- PERIMETER BUFFER/RESOURCE CONSERVATION AREA (MINIMUM OF 20% OF SITE AREA)
- MULTI-RESIDENTIAL (MULTI-FAMILY, TOWNHOUSES
- MULTI-FAMILY APARTMENTS; NON-RESIDENTIAL
- TOWNHOUSES

GENERAL NOTES:

1. ALL ZONING PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. FINAL DESIGN COMPONENTS SHALL BE DETERMINED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
2. REFER TO THE PUD TEXT DOCUMENTS FOR ALLOWABLE USES, ZONING CONDITIONS, AND OTHER DESIGN STANDARDS.
3. ALL VEHICULAR ACCESS LOCATIONS AND PEDESTRIAN CIRCULATION ARE CONCEPTUAL AND SHALL BE FINALIZED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
4. TREE PROTECTION FENCING SHALL BE PLACED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
5. ALL PARKING STANDARDS SHALL COMPLY WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE EXCEPT AS MODIFIED BY THE PUD NARRATIVE.
6. EXACT LOCATION OF OPEN SPACE AND RESOURCE CONSERVATION AREA TO BE FINALIZED DURING THE SITE/SUBDIVISION APPROVAL PROCESS.
7. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTAINED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
8. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX'S STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
9. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING, SCREENING, SITE STABILIZATION (SEEDING, PAVING, AND PAVEMENT MARKING, MUST BE COMPLETED PRIOR TO SCHEDULING AFINAL SITE INSPECTION.
10. UNTIL LOCATED IN TH-1 ALONG THE FRONTAGE OF N. SALEM STREET WILL FACE N. SALEM STREET AND TAKE ACCESS FROM THE REAR.

BUS STOP

1. SUBJECT TO NCDOT APPROVAL, A SOUTHBOUND BUS STOP SHALL BE CONSTRUCTED ALONG N. SALEM STREET, SOUTH OF ALL WHEEL DRIVE ALONG THE FRONTAGE OF MU-1. THE BUS STOP WILL BE CONSTRUCTED TO TOWN STANDARDS AS WELL AS ADA AND PROWAG STANDARDS, INCLUDING:
   - COVERED BUS SHELTER WITH SEATING
   - TRASH RECEPTACLE
   - 2 BIKE RACKS
   - LIGHTING

GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

No.	REVISIONS	DATE	BY
1	REVISIONS PER TOWN COMMENTS	07/02/2026	JTG
2	REVISIONS PER TOWN COMMENTS	06/05/2026	JTG
3	REVISIONS PER TOWN COMMENTS	05/01/2026	JTG
4	REVISIONS PER TOWN COMMENTS	03/05/2026	JTG
5	REVISIONS PER TOWN COMMENTS	02/05/2026	JTG

Kimley»Horn
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421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
1070 SOUTH MAIN STREET, SUITE 250, HOLLY SPRINGS, NC 27540
WWW.KIMLEY-HORN.COM PHONE: 984-271-4572

NOT FOR CONSTRUCTION
PRELIMINARY
NOT FOR CONSTRUCTION

KHA PROJECT 000000000
DATE APRIL 2026
SCALE AS SHOWN
DESIGNED BY RCZ
DRAWN BY JTG
CHECKED BY RCZ

PRELIMINARY SITE LAYOUT PLAN

N. SALEM STREET MIXED USE

PREPARED FOR
MERIT GROUP LLC
APEX NORTH CAROLINA

SHEET NUMBER
C3.0

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

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: N. Salem Street Mixed-Use Zoning: Residential Agricultural (RA); Rural Residential (RR); & Planned Commercial-Conditional Zoning (PC-CZ)

Location: See attached Exhibit A

Property PIN(s): See attached Exhibit A Acreage/Square Feet: 32.36 acres

Property Owner: See attached Exhibit A

Address:

City: State: Zip:

Phone: Email:

Developer: Merit Group, LLC c/o Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: n/a Email: matthewcarpenter@parkerpoe.com

Engineer: Kimley-Horn c/o Bob Zumwalt

Address: 1070 S. Main Street, Suite 230

City: Holly Springs State: NC Zip: 27540

Phone: (919) 475-7314 Fax: n/a Email: bob.zumwalt@kimley-horn.com

Builder (if known): Merit Group, LLC c/o Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: n/a Email: matthewcarpenter@parkerpoe.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 Planning Manager	(919) 372-7468
Transportation & Infrastructure Development Russell Dalton, Traffic Engineering Manager	(919) 249-3358
Water Resources Department Jessica Bolin, Environmental Engineering Manager (Stormwater, Sedimentation & Erosion Control) Matt Reker, Utility Engineer/FOG Program Manager (Water & Sewer)	(919) 249-3537 (919) 946-4394
Electric Utilities Division Jared Harris, Electric Technical Services Manager	(919) 372-7466

Exhibit A

N. Salem Street Mixed Use
Owner Information Addendum

PIN 0742367712
Address: 1403 N. Salem St.
Owner: Merit Group, LLC
Acreage: 1.06 acre
Current Zoning: Residential Agricultural

PIN 0742368697
Address: 1401 N. Salem St.
Owner: Merit Group, LLC
Acreage: 0.39 acre
Current Zoning: Residential Agricultural

PIN 0742365731
Address: 1405 N. Salem St.
Owner: Geraldine Gilbert Heirs
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742366583
Address: 1205 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 2.54 acres
Current Zoning: Residential Agricultural

PIN 0742369479
Address: 1303 N. Salem St.
Owner: June Thompson
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742369278
Address: 1301 N. Salem St.
Owner: June Thompson
Acreage: 2.80 acres
Current Zoning: Residential Agricultural

PIN 0742363169
Address: 1207 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 4.46 acres
Current Zoning: Rural Residential

PIN 0742358857
Address: 1201 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 5.34 acres
Current Zoning: Rural Residential

PIN 0742353848
Address: 0 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 1.67 acres
Current Zoning: Rural Residential

PIN 0742350909
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.77 acres
Current Zoning: Residential Agricultural

PIN 0742362432
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 4.59 acres
Current Zoning: Residential Agricultural

PIN 0742366306
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.73 acre
Current Zoning: Residential Agricultural

PIN 0742268387
Address: 0 Charlion Downs Ln
Owner: DLG HOLDINGS LLC
Acreage: 0.93 acre
Current Zoning: Residential Agricultural

PIN 0742360631
Address: 1409 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.06 acres
Current Zoning: Residential Agricultural

PIN 0742362719
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.02 acre
Current Zoning: PC-CZ

PIN 0742363799
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.04 acre
Current Zoning: PC-CZ

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 am to 8:30 pm 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-Friday from 8:00 am to 5:00 pm. Report violations of construction hours and other noise complaints to the Non-Emergency Police phone number at 919-362-8661.

Construction Traffic:	**Infrastructure Inspections**	**919-249-3386**

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:	**Infrastructure Inspections**	**919-249-3386**

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 Transportation & Infrastructure Development – Infrastructure Inspections at 919-249-1109. 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:	**Water Resources**	**919-362-8166**

Sediment (dirt) and mud gets into the existing roads due to rain events and/or vehicle traffic. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleaning of the roadways with the developer.

Dirt on Properties or in Streams:	**Water Resources**	**919-362-8166**

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 by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the appropriate repairs with the developer.

Dust:	**Water Resources**	**919-362-8166**

During dry weather dust often becomes a problem blowing into existing neighborhoods or roadways. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the use of water trucks onsite with the grading contractor to help control the dust.

Trash:	**Water Resources**	**919-362-8166**

Excessive garbage and construction debris can blow around on a site or even off of the site. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleanup and trash collection with the developer/home builder.

Temporary Sediment Basins:	**Water Resources**	**919-362-8166**

Temporary sediment basins during construction (prior to the conversion to the final stormwater pond) are often quite unattractive. Concerns should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that he can coordinate the cleaning and/or mowing of the slopes and bottom of the pond with the developer.

Stormwater Control Measures:	**Water Resources**	**919-362-8166**

Post-construction concerns related to Stormwater Control Measures (typically a stormwater pond) such as conversion and long-term maintenance should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed.

Electric Utility Installation:	**Electric Utilities**	**919-249-3531**

Concerns with electric utility installation can be addressed by the Apex Electric Utilities Department.

NEIGHBORHOOD MEETING SIGN-IN SHEET

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

Meeting Address: Virtual via ZOOM

Date of meeting: July 23, 2026 Time of meeting: 5:30 p.m. to 7:00 p.m.

Property Owner(s) name(s): See above Exhibit A

Applicant(s): Merit Group, LLC c/o Matthew J. Carpenter

Please print your name below, state your address and/or affiliation with a neighborhood group, and provide your phone number and email address. Providing your name below does not represent support or opposition to the project; it is for documentation purposes only. For virtual meetings, applicants must include all known participants and request the information below.

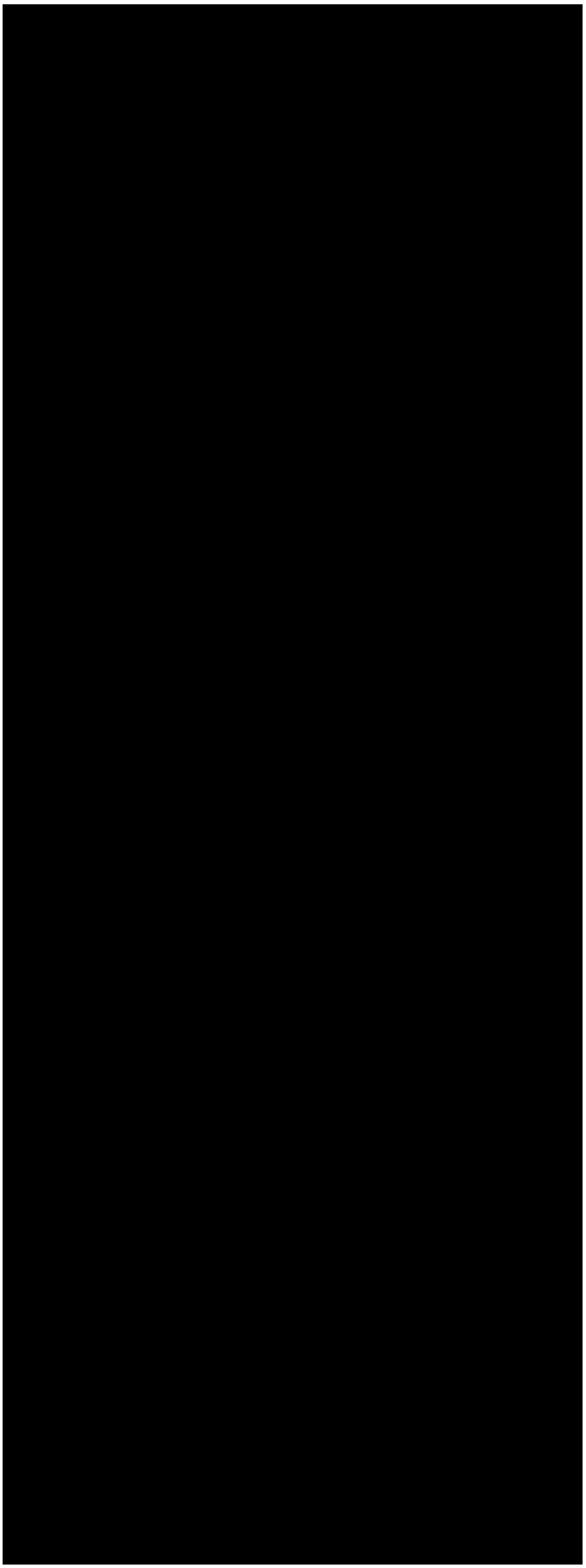
	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	See attached Attendee List				☐
2.					☐
3.					☐
4.					☐
5.					☐
6.					☐
7.					☐
8.					☐
9.					☐
10.					☐
11.					☐
12.					☐
13.					☐
14.					☐

Use additional sheets, if necessary.

NEIGHBORHOOD MEETING ATTENDEE LIST

Name (original name)	F i
PPAB Land Use	[redacted]
Matthew J. Carpenter (PPAB Land Use	
Fred Engel	
Mike & Vickie Fisher	
F E	
Ryann Griffin	
Sasha Bravo	
Nancy Cowan	
Hunter Forstchen	
Karen Caristo	
Sonia Lai	
Paul Munana	
Lindsay Keane	
Mike & Vickie Fisher	
	1
Randy Roland	
Cheryl Stallings	
Michael Hite	
Rob Baber	
Jessica Conklin	
Lindsay Keane	
Fred Engel	
Michael Hite	
Sonia Lai	
Cheryl Stallings	
Randy Roland	
Rob Baber	
Jessica Conklin	
Hunter Forstchen	
Steven Ball	
Lindsay Keane	
Karen Caristo	
F E	
Nancy Cowan	
Terry Oliver	
Scott McCloskey	
S. Hurwitz	
Kristin S	
S. Hurwitz	
Unlicensed room	
Scott McCloskey	
Kristin S	
Allison Keelor	

Trish S
Unlicensed room
Troy McDaniel
Danielle Livy
Bob Zumwalt
Danielle Livy
Bob Zumwalt
A Zygmuntowicz
Troy McDaniel
Shawn Clark
Allison Keelor
S V
Shawn Clark
Lizette Linares
Mayo Carrington
Karen La
brian adkins
Nicholas Livy
Sarah Gray
Kirk Winkelman
Pam Stewart
B J
Trish S
George Waters
iPhone (63)
Dan Husbands
Carrie Pinsker
Robin's iPhone
ashlee taylor
Uwatu Atcher
Zoom user
Dr. Randall Janka
Eva’s phone ‘24
Laura Tolbert
Zoom user
Michele Kroepers iphone (2)
brian adkins
Nathan Pinsker
Vincent Simorelli
Mike Rusher
Paul Murray
Matt Buffington



SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

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

Property Owner(s) name(s): See above Exhibit A

Applicant(s): Merit Group, LLC c/o Matthew J. Carpenter

Contact information (email/phone): matthewcarpenter@parkerpoe.com; (919) 835-4032

Meeting Address: Virtual via ZOOM

Date of meeting: July 23, 2026 Time of meeting: 5:30 p.m. to 7:00 p.m.

Please summarize the questions/comments and your responses from the Neighborhood Meeting or emails/phone calls received 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:
See attached

Applicant's Response:
See attached

Question/Concern #2:
See attached

Applicant's Response:
See attached

Question/Concern #3:
See attached

Applicant's Response:
See attached

Question/Concern #4:
See attached

Applicant's Response:
See attached

Summary of Neighborhood Meeting

N. Salem Street Mixed Use PUD

July 23, 2026

I. WELCOME
   a. Introduction of Development Team
      i. Matthew Carpenter w/Parker Poe
      ii. Paul Munana and Rick Felice, w/ Merit Group, LLC, the developer
      iii. Bob Zumwalt w/ Kimley-Horn, our landscape architect
   b. Explanation of process. This is the third neighborhood meeting for a potential rezoning request. So, the purpose of tonight's meeting is to explain the changes we have made to the plans during staff review and to get feedback on the revised plan.

II. PRESENTATION
   a. Site Overview - location, environmental constraints of the site, and existing uses adjacent. Goodwin family owns and has long history in Apex.
   b. Existing and Proposed Zoning
      i. The current zoning is Residential Agricultural, Rural Residential, and Planned Commercial Conditional. The proposed zoning district is Planned Unit Development Conditional (PUD-CZ).
      ii. The purpose of the PUD district is to provide - especially for large mixed-use projects - site specific zoning conditions that result in a high quality project.
      iii. Our PUD document is numerous pages which details conditions that will guide the development of the Property.
   c. 2045 Land Use Map (LUM) Designation
      i. The LUM is the primary policy document the Town uses to evaluate rezoning requests. This property is designated as Mixed Use since it has multicolor striped areas with three or more uses. These uses include Office Employment, Commercial Services, Medium Density Residential, and High Density Residential. The LUM recommends higher density residential uses to be located in the northern portion of the assemblage.
      ii. When we developed the plan we started the recommendations on the LUM for this property.
   d. Current PUD Plan
      i. The current plan is to have five districts, each with different permitted uses and development standards. The MU-1 district will permit non-residential and multi-family residential. While the TH-3, TH-4 and TH-5 districts will only permit townhomes.
      ii. The goal is to transition density and intensity down across the site from the intersection of All Wheel Drive and N. Salem Street to the existing single-family neighborhoods to the west and south.
      iii. On the west side, there is a large existing pond that may remain and a stream and riparian buffer. This area will likely remain undeveloped (other than stormwater and utility infrastructure) which will provide some separation between the project and existing neighborhoods.

iv. Changes made to the PUD:
    1. MU-1 = Mixed-Use w/ ground floor retail
    2. Maximum of 285 apartments and 175 townhomes
    3. 10% of units as affordable housing
    4. Buildings limited to 4-stories within 55' of Street A and N. Salem Street.
    5. Called out buffers
    6. Pedestrian Improvements
        a. Bus stop
        b. Pedestrian area with public art at corner of N. Salem and All Wheel Drive
        c. 10 foot side path along All Wheel Drive, N. Salem Street extending to Brittley Way
        d. Off-site sidewalk extension to Brittley Way from internal street B.
        e. Signalized pedestrian crossing from Street A across N. Salem Street
    7. Road Improvements
        a. Stub street connections from Charlion Downs and Frenchchurch Way required by Town
        b. No heavy duty construction traffic through Haddon Hall
        c. Widen N. Salem St. to 3-Lane Thoroughfare Section
        d. Construct second southbound through lane to drop as right turn lane at Brittley Way

e. <u>Streams and Wetlands on Site</u>
    i. Pond 1 (larger one) to be drained and wetland determination at Site Plan
    ii. Pond 2 (farm pond) non-jurisdictional per Town of Apex and US Army Corps, to be drained
    iii. W6, non-jurisdictional per Town of Apex and US Army Corps
    iv. W5 TBD at Site Plan

III. QUESTION AND ANSWER SESSION

1. ***When was the traffic study completed? Did it happen to be when Thales was in session or out for break? This would make a major difference in results of the study and be inaccurate depending on the timing.***
    i. The Town requires that traffic counts be taken while school is in session and was done so here.

2. ***Is there consideration of Townhome 3 being single family homes to keep continuity with the neighborhood?***
    i. We have looked at different options and single-family homes would be difficult here given the land area and would be inconsistent with the LUM. What we are proposing here is more consistent with the LUM, makes more sense for the affordable commitment, and the property's infill location.

3. ***How many apartments are reduced by moving from 5 stories to 4 stories? It looks like you just expanded the footprint on the MU1 to keep the same number of apartments***
    i. We are just moving the apartments, not reducing the number of apartments. The height limitation is in relation to N. Salem Street and Street A.

4. ***There are now two connection points to the neighborhood. Based on the unit numbers and an average of two cars per a unit that's approximately 900 cars that could be routed through Haddon Hall (not even including traffic to commercial space). The safety of the neighborhood is a huge concern with this connection.***
    i. Understood. The development will produce more traffic and we are not hiding from that. Traffic through Haddon Hall was studied in the TIA. Here, given that the site has good access and it will be more efficient for future residents to ingress and egress through these points then take the long way through Haddon Hall.

5. ***This is a terrible idea in this space. Why not single family and townhouses, no apartments. Apex is a residential community, not a large commuter city. So many new apartments buildings sitting vacant around apex.***
    i. The LUM shows apartments here. That plan was adopted around 2021 and was based on stakeholder feedback, council input, and staff review and feedback. There is still a demand for apartments in this area close to downtown, given its central location. Additionally, will include affordable units that will provide an option for people who cannot afford the rising rents.

6. ***Are you also going to commit to putting up no thru traffic signs in Haddon Hall/Place since you think that everyone in this proposed development are going to use a proposed traffic light on Salem to the Peakway to make their way to Hwy 55?***
    i. There will be no construction traffic signs. There will likely not be signs once the construction is completed. The Town views stub streets as providing connection to overall traffic grid and requires new development to connect to these stub streets. Once construction is completed, these completed streets will be public streets and there will likely not be signs prohibiting traffic either way. If you do have specific concerns about how to slow traffic through your neighborhood, there is a separate process for traffic calming that is conducted through the Town.

7. ***What does the phrase non-jurisdictional mean on the wetlands slide?***
    i. It is a technical term and means "not waters of the United States" and is not regulated by the Federal Government and therefore the Town of Apex. When we say that we have a "jurisdictional determination" that means a consultant, in this case Steven Ball, reviews the streams on the property and submit a written request to the Town and U.S. Army Corp explaining why they believe the streams are jurisdictional or non-jurisdictional. The Town's and U.S. Army Corp engineers review the written request and consult together. If needed, they will go to the site and look at the streams and wetland. Then they issue the determination.

8. ***What kickback are you getting from Town Council on this?***

i. The Town Council will review the case and make the final vote.

9. It looks like the updated plan has reduced the overall green space as compared to the original plan. What is the justification for doing that?

i. Our initial plan showed green space around the pond. At that time we were planning to keep the pond in its existing condition. As we have done further studies about the integrity of the dam we have decided the safer decision is to drain the pond. Some of that green was the required buffer around the pond. We will need a new determination after the pond is drained to know if that area becomes wetlands and still must be buffered. Not reducing the amount of RCA, play lawns, and open space are not being reduced. This just gives us the flexibility to add homes below Street C if the drained pond does not become wetlands.

10. There is also a large project with apartments, townhomes and high density housing coming just down the road on Salem Street at Apex Peakway where the bridge is being constructed. Has this been taken into account, in addition to similar zoned recent construction. How much high density housing is too much?

i. It has been taken into account from a market perspective. No developer would undertake the cost of permitting and engineering for a use where the demand is not there for the type of housing. The Town also looks at where higher density is appropriate based on what has been approved, planned population growth, location to major transportation corridors, and places designations on the LUM where high density should be. So, this site has that designation given its proximity to Crossroad Ford, on N. Salem Street, and near a major corridor (US 64).

11. The density of the apartments and townhouses concerns me. How close are these buildings, what parking density looks like?

i. There are setback along N. Salem Street and All Wheel Drive. There will only be one bay of parking between N. Salem Street and All Wheel Drive. Parking will meet Town of Apex minimum requirements.

12. So cutting through Brittley and Charlion Downs is going to become a primary access route for hundreds of residents and shoppers from the Peakway?

i. Neither of those streets will be the development's primary points of access.

13. What types of commercial are planned for that zone?

i. The goal for that area is neighborhood-serving commercial uses. So things like, restaurants (potentially with outdoor dining), retail, boutique gyms. The goal along N. Salem street is to create a pedestrian streetscape with uses that activate the area. There is a longer list in the PUD text document. The list of permitted uses in the PUD document are the only uses we can use and these uses have been wilted down based on staff review.

14. A left turn (and right run as well) out of Brittley onto Salem is terrible and it's not just at morning and evening commute. Why not a stoplight here?

i. If the traffic signal at Brittley was deemed warranted by the Traffic Impact Analysis then we would have been required to construct it. Additionally, NCDOT prepares a minimum separation of 1,200 feet between signals. The separation between Brittley and the Peakway is about 960 feet which is less than what NCDOT likes to see. The traffic signal could be warranted later with other development or the Town.

15. ***How can we find more information about how the runoff from the development may impact the drainage into Haddon hall via the non-jurisdictional streams?***
    i. The UDO requires us to retain all of our stormwater runoff on site. As part of this project, the developer willl be installing stormwater retention ponds that will hold and slow down the stormwater on site. Currently, the property has no engineered stormwater drainage and when it rains the stormwater is not channeled anywhere. We expect the drainage situation to improve based on the stormwater retention ponds the developer will be required to construct.

16. ***Have u considered a greenway improvement or easement / dedication to connect into the Haddon hall greenway that is on the books to be expanded. If not maybe consider as it could be big draw and benefit to all.***
    i. We did discuss different greenway connections with staff. Where those conversations ultimately landed was that 10-foot separated side paths on N. Salem and All Wheel Drive will meet the same connectivity goal as the greenway connection would. There will also be sidewalks along the internal streets.

17. ***Is the plan to put townhomes in the section of TH-2 south of street c and north of the streams?***
    i. Potentially. The zoning would allow it but ultimately the ability to place townhomes there depends on the determination after the pond is drained and whether that area becomes wetlands.

18. ***Have you considered permit/zoned parking for the residents of the development?***
    i. For the townhomes, they will either be rear-loaded, where they have parking behind, or front-loaded where they have a garage. The mixed-use area will have a parking lot that will serve the residents and commercial spaces.

19. ***How many actual apartment buildings can fit in MU-1?***
    i. Still in zoning so do not have a final site plan, but have done sketches and will have 3 or 4 buildings at the most.

20. ***Are there measures in place so residents have first priority to purchase a unit as opposed to investors? Wondering how this works in Apex in general as this impacts the feeling in our community.***
    i. Apartments project will be rental units, most likely. The townhomes will most likely be for sale. There is not a process to exclude corporate buyers but this is not a build to rent project at this point. Also, there was a recent US law change regarding corporate ownership of homes that include some limitations.

21. In addition to the 400+ MU1 units, how many more townhomes will be on TH1, 2 and 3?

i. The total number of units is 450 across the entire site, not just MU-1, only 285 apartments would be permitted MU-1. Only 175 townhomes would be permitted in TH-1, TH-2, and TH-3 districts.

22. How can we view the results of the traffic study?

i. The TIA is on file with the Town, and can request a copy from them. The case planner is June Cowles. If have questions about the TIA can reach out to Matthew.

23. Will residents of Haddon Hall still be able to turn left out of the neighborhood (from Brittley onto N Salem)?

i. Yes, there is not a median proposed on N. Salem Street with this project that would prevent left-turns off Brittley. Additionally, with this development residents from Haddon hall could go through the site, through the roundabout, to access the signal.

24. So basically everything that is wetland is going to be drained? what is the point of wetland protection?

i. We have received some concerns about the non-jurisdictional wetland and farm pond that are not shown on the plans and will be drained. There are jurisdictional wetlands and a stream on the site that will be buffer and not disturbed. One wetland and the large pond will need further study at site plan. Again, we cannot do anything without the guidance and stream determination of the U.S. Army Corp.

25. Does the recent change in parking minimums law impact this project?

i. There was a bill that eliminated parking minimums in almost all municipalities in NC, but that does not mean this project, or future project, would be built without parking. Parking will still be needed for the apartments, townhomes, and retail to function and be marketable. So, even if the UDO no longer requires a specific minimum number of spaces, the amount of parking provided will still be driven by market demand, tenant needs, and practical site design.

26. How many trees are you planning to plant in this development?

i. Don't have a specific number yet because early in the design stage. There is a required density of trees required for parking, buffers, and RCA outlined in the UDO.

27. For the W5 in the bottom left, what specifically will they be reviewing?.

i. The Army Corp would be reviewing additional documentation provided by the developer demonstrating why the wetland is non-jurisdictional. This will likely involve a site visit from the Army Corp as well.

28. ***You keep mentioning land use has been approved. What's been approved and by who? I didn't think the rezoning was approved yet.***
    i. Correct, the rezoning is not approved. Had mentioned that the LUM was approved by the Town Council around 2021.

29. ***What percentage of storm water from the site will be drained down the creek that runs behind Charlion Downs Lane flowing west***
    i. Not sure of the specific percentage but, all stormwater from the site will be captured, treated, and slowly released overtime into the creek in the southwest of the site.

30. ***What are these new townhomes and apartments going to look like? boring all-one color boxes?***
    i. No, we have an extensive list of architectural conditions in the PUD text which were recommended by staff. Also have elevations that were submitted with the project and ultimately approved by the Town Council. Elevations are photo examples of types of architectural styles could build.

31. ***I understand there is a certain percentage noted for the environmental protection and that percentage is a requirement. Is there a chance the location of that green zone specific to around the current housing is going to change?***
    i. The current green area shown on the PUD plan will not change and likely to remain. Some green areas near the pond may change which is why we have shown it with the dashed line now. If remove RCA for one area of the site, then we have to show it somewhere else on site.

32. ***Who decided it was "safer" to drain the pond?***
    i. After reviewing the pond conditions, including what it looks like underwater, and having consultants study the dam, the development team determined that draining the pond was the safer option. The main concern is the potential for the dam to fail, which could send water downstream toward the existing homes.

33. ***Does that stormwater control engineering plan for extreme circumstances such as hurricanes?***
    i. It must meet Town's engineering and UDO requirements, including design standards for specified storm events. The standards look at different storm frequencies and how runoff is captured, treated, and released. Reach out to Matthew for a follow up with the exact storm event criteria, but the intent is that the stormwater system will be engineered to meet the Town's required standards.

34. ***What will a FOUR story home look like? Any pictures?***
    i. The four stories will be apartments and townhomes will be 3 stories. We have elevations of what the apartment buildings will look like that will also be approved with the rezoning.

35. ***They are going to let tax payers pay for the greenway, no need for them to take on extra cost.***

i. We have agreed to many additional conditions that are not required and will cost the developer money. As discussed, off-site sidewalk construction, off-site side path construction, architectural conditions, constructing a bus stop, widening of N. Salem for length frontage. Also, are required to do a number of improvements now which Haddon Hall was not required to do when it developed. For example, perimeter buffers.

36. When you say affordable housing, what is the predicted rents of apartments & sales price of townhomes?

i. Don't have the exact rental and for sale prices, but it will be based on Average Median Income which is published by HUD every quarter. The calculation for rental is 80% divided by 12 (each month) and then assume 30% of income on rent. For sale is more difficult calculation and more complicated because have to consider additional things like interest rates on homes.

37. What is the maximum height allowed (in feet or stories) for the tallest building within the MU-1 area? What is your target building height?

i. 5 stories and 70 feet.

38. There is water running down W5 right now after all this rain so recipe for disaster if changed

i. The way water drains now is natural and will change after we install stormwater controls.

39. Copy of recording?

i. Yes, email Matthew and will provide.

40. What is the proposed height /stories of the Townhomes, and how close will they be built to existing homes in Haddon Hall?

i. Maximum height for townhomes will be 3 stories, with a maximum height of 45 feet. Along the edge near Haddon Hall, there will be a 20-foot Type B buffer owned and maintained by the HOA, which cannot be disturbed. The townhomes will also be subject to a setback, which will provide additional separation from the existing homes.

41. What are you doing that goes beyond "the minimum required"?

i. Basically, everything in the PUD text if approved would be conditions on the property that go above and beyond what the UDO would require. This includes pedestrian improvements: public art, pedestrian area, bus stop that the developer will construct and then dedicate to the town, signalized pedestrian crossing, 10foot side paths along frontage of the property, internal streets and offsite side path construction that were not done by the developers of Haddon Hall. Road improvements include widening of N. Salem street and right turn lane Brittley. Also, all the architectural conditions, environmental commitments, and 10% affordable housing.

42. Did the developer ever consider a data center?

i. No, given the proximity to downtown and the LUM designation that use would not be appropriate for the site.

43. If the town would allow, would you consider turning the Road C back to All Wheel Drive instead of connecting to Charlion. Giving two exits onto All Wheel Drive.

i. We are required to connect to Charlion Down because of the stub street. Also, not due to the topographical change the only connection to All Wheel Drive that is feasible is the current location.

44. Can you identify the income ranges so people understand what 80% of AMI is and 120% of AMI is?

i. Don't have those numbers right now but can follow up on that. Want to make sure pulling up most up to date.

45. By what multiple does the total amount of runoff created by the site increase with the conversion from farmland to hard surface?

i. Stormwater impact analysis will have to show that the before and post-development runoff are the same.

46. Will this look like Sweetwater east?

i. This is a different developer and not designed to look like it. We have looked at some examples from Sweetwater that Town Staff has liked that we have tried to incorporate into this project like wider sidewalks, landscaping, retail uses, and restaurant uses to allow outdoor dining.

47. Hear complaints about limited parking from the residents at the townhomes at the front of the neighborhood. I am curious if those were built under the same parking standards and if the residents of this new development will have the same issues.

i. Not sure what the parking standard was when those townhomes were constructed but were likely a different standard. There is a lot more market data that developers have so these townhomes will likely have adequate parking. There will be townhomes with garages, at least a parking space in front of the garage, and guest parking.

48. Why not change the MU-1 to more townhomes instead? Why are so many apartments needed in this area?

i. Again, we are trying to follow what is shown on the LUM and other people think this a mixed-use development which higher density residential does fit the area.

49. If it does get approved would the developer consider adding additional speed bumps on connecting streets in Haddon Hall as part of their improvements.

i. Unfortunately, I don't think we can do those improvements as neighborhood traffic calming measures are a process that must go through the Town since they are public streets.

50. So the developer is paying for the widening of Salem Street, not the taxpayers? Along with a bus stop and sidewalks? And the pedestrian safety crosswalk?

i. Correct. All paid for by the developer and dedicated to the town and without cost to taxpayers.

51. When is CC?

i. Planned for September.

52. What will be at those recreational markers on the map (playgrounds? Or what?) and will Haddon Hall residents / public be allowed to use? Similarly will the Haddon hub peeps seek to use our amenities? Could consider a reasonable charge

i. Most likely if there is community center or amenity area constructed with this project it will be owned and maintained by the HOA, just like Haddon Hall. The play lawns, not shown on the plan now but during site plan would be not be restricted.

53. Who are the other people that agree this is the best plan? Terry, King of Council?

i. No one from Town Council has approved these plans. They still have to hold a public hearing and hold a vote on it, so no decisions have been made yet.

54. Is there any chance the rezoning will fail? and if so, what is the developers plan, will they come back with a plan the community doesn't dislike to this level?

i. We don't know what the outcome of this rezoning will be like yet. If the rezoning is denied the property won't be developed by this PUD plan but the Goodwin Family, who was been in Apex for over 100 years, wants to sell the land and worked with neighbors to assemble and sell the property. This plan is generally consistent with LUM and a host of public benefits. There would likely be another project in the future and not know what that would look like and if it would commit to the same things.

55. Apologies if this detail has been answered about stormwater discharge, given the amount of impermeable surface being installed, and the two streams shown in the southwestern quadrant feeding onto and into Haddon Hall property, what specific measures was Bob Zumwalt referring to that will ensure the additional stormwater collected will not increase the downstream flow into and onto Haddon Hall property? There already is flooding occurring during normal rainfall events, and the impact will be quite obvious.

The Town has ordinances and requirements in place that requires the development to capture and retain stormwater the hits impervious surfaces. The stormwater is then slowly released at a rate equal to or less than before development.

56. Does the developer already own the land?

i. No, the developer is under contract to purchase the land.

57. What all influence does city council have on this process?

i. They approve or deny the request.

58. Did the developer get any input from the neighbors before telling them what they are building? It seems they chose to build as many units as possible without consulting those whom it impacts.

i. This is the 3rd neighborhood meeting we have held to consultant with the neighborhood. After these meetings we have tried to revise our request to more consistent with both the Town's plans and neighborhood feedback.

59. How does the land use plan get changed? Town council? A vote? Highest bidder?

i. LUM adoption is a very long process and takes over a year. The Town runs the process and not a developer. Staff works on the plan then there are a number of meetings for community members to give their options. The plan is then revised, numerous times before it is finalized. Then the LUM gets voted on and adopted by Town Council.

60. Where will the retention ponds be located?

i. Because we don't have a subdivision plan finalized yet we don't know exact location but generally near the lowest areas on the site which is where the water drains. The general location will be in the southern part of TH-2 and on the northern side of the riparian buffer.

N. SALEM STREET MIXED-USE

Planned Unit Development

Apex, North Carolina

Submittal Dates
First Submittal: December 1, 2025
Second Submittal: February 6, 2026
Third Submittal: March 6, 2026
Fourth Submittal: May 1, 2026
Fifth Submittal: June 5, 2026
Sixth Submittal: July 2, 2026
Seventh Submittal: August 7, 2026
Eight Submittal: October 30, 2026

Developer
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PROJECT DATA

Name of Project:	N. Salem Street Mixed-Use
Property Owner:	See attached **Exhibit A**
Developer:	Merit Group, LLC 5053 Sunset Fairways Drive Holly Springs, NC 27540
Prepared by:	Parker Poe Adams & Bernstein LLP 301 Fayetteville Street, Suite 1400 Raleigh, NC 27601 Kimley-Horn 1070 S. Main Street, Suite 230 Holly Springs, NC 27540
Current Zoning:	Residential Agricultural (PINS 0742367712, 0742368697, 0742365731, 0742366583, 0742369479, 0742369278, 0742350909, 0742362432, 0742366306, 0742268387, 0742360631); Rural Residential (PINS 0742363169, 0742358857, 0742353848); Planned Commercial Conditional (PINS 0742362719, 0742363799)
Proposed Zoning:	Planned Unit Development Conditional Zoning (PUD-CZ)
Current 2045 LUM Designations:	Mixed-Use (Office Employment, Commercial Services, Medium Density Residential, High Density Residential)
Proposed 2045 LUM Designations:	Mixed-Use (Office Employment, Commercial Services, Medium Density Residential, Increase of High Density Residential)
Site Address:	See attached **Exhibit A**
Property Identification Number:	See attached **Exhibit A**

Total Acreage:	32.35 acres
Area Designated as Mixed Use on LUM:	32.13 acres
Area Proposed as Non-Residential:	8.0 acres of the 32.35-acre Property (MU-1 to centerline of Streets A and B)(25.0%). Note the 20.31-acre Crossroads Ford property (PIN 0742374226) is entirely commercial and included in the mixed-use area south of US 64 shown on the LUM. For purposes of evaluating LUM consistency, if the Property and the Crossroads Ford property are considered together, 53% of the area south of US 64 and west of N. Salem Street will be non-residential (28.31 acres non-residential) (8 acres + 20.31-acre Crossroads Ford property)/52.66 total acres).

PURPOSE STATEMENT

This document and the accompanying exhibits (collectively, the "PUD") are provided pursuant to the Town of Apex Unified Development Ordinance ("UDO") Planned Unit Development provisions.

The N. Salem Street Mixed-Use PUD affects the vision of the 2045 Land Use Map for a vibrant 32-acre mixed-use community at the northern entrance to downtown Apex. The four districts shown on the attached Concept Plan are designed to place higher density apartments and integrated commercial uses at the corner of N. Salem Street and All Wheel Drive to create a walkable community, with density and intensity transitioning down towards existing single-family neighborhoods to the south and west.

CONSISTENCY WITH PLANNED UNIT DEVELOPMENT STANDARDS

(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

RESPONSE: The uses permitted within this PUD are permitted within this designation in the UDO Section 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 the 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.

RESPONSE: The N. Salem Street Mixed-Use PUD includes a mix of housing types and non-residential uses. All parcels in the PUD have three stripes on the LUM and the PUD provides an 8-acre mixed-use district (MU-1) that integrates apartments and a minimum of 10,000 square feet of vertically integrated non-residential uses.

(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.

RESPONSE: This PUD specifies intensity and dimensional standards for the project. The proposed PUD is consistent with the UDO Planned Unit Development standards – to provide site specific, high-quality neighborhoods that preserve natural features and exhibit compatibility with, and connectivity to, surrounding land uses. Except as specifically stated

in this PUD, the development will comply with all requirements of the UDO and all applicable requirements of the North Carolina Building Code and the 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 Advance Apex: The 2045 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 Advance Apex: The 2045 Transportation Plan. In addition, sidewalks shall be provided on both sides of all streets for single-family detached homes.

RESPONSE: The PUD includes construction of 10-foot side paths on All Wheel Drive and N. Salem Street as shown on the Transportation Plan. Additionally, the project will include sidewalks on both sides of internal streets. The project will also close two important offsite pedestrian connectivity gaps left Haddon Hall; it will construct a 5-foot sidewalk along Frenchurch Way to connect to existing sidewalk on Brittley Way and a 10-foot side path along N. Salem Street to the intersection of N. Salem St. and Brittley Way.

(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.

RESPONSE: The proposed street layout has been designed to enhance pedestrian and vehicular connectivity while protecting sensitive environmental features and being mindful of existing residential development. The development will complete cross-access connections by connecting to the existing stub street at Frenchurch Way. Additionally, the proposed PUD will connect to All Wheel Drive and N. Salem Street. Charlion Downs Lane will be finished as a public street which will provide both a vehicular and sidewalk connection through the proposed TH-3 district.

(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.

RESPONSE: The proposed development is compatible with the character of the existing and planned uses in the surrounding area. This area of the Town is considered the gateway to downtown and is primed for mixed-use developments to serve as a transition from single-

family housing to downtown higher-density residential and commercial uses. As recommended by the LUM, higher density multi-family is concentrated at the intersection of All Wheel Drive and N. Salem Street with townhomes and/or RCA/open space adjacent to existing single-family homes in Haddon Hall.

(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.

RESPONSE: The development will feature high quality and thoughtful design. Architectural standards, design controls, and conceptual elevations are included in this PUD.

CONSISTENCY WITH CONDITIONAL ZONING STANDARDS

N. Salem Street Mixed-Use PUD is consistent with the conditional zoning standards set forth in UDO Section 2.3.3.F.1-10. Please see the accompanying PUD-CZ Application for the statements of consistency addressing each standard.

PERMITTED USES

The Property may be used for the uses listed 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 other sections of the UDO do not apply. Homeowners Association covenants shall not restrict the construction of accessory dwelling units.

	MU-1 District	***TH-1 District***	***TH-2 District***	***TH-3 District***
Residential				
Townhouse		P	P	P
Townhouse, detached		P	P	P
Small-scale multi-family*	P			
Multi-family or apartment	P			
Accessory apartment	P	P	P	P
Recreational Uses				
Park, active	P	P	P	P
Greenway	P	P	P	P
Park, passive	P	P	P	P
Recreation facility, private	P	P	P	P
Utility, minor	P	P	P	P
Non-Residential Uses				
Restaurant, general	P			
Medical or dental office or clinic	P			
Medical or dental laboratory	P			
Office, business or professional	P			

	MU-1 District	***TH-1 District***	***TH-2 District***	***TH-3 District***
Research facility	P			
Parking garage, public	P			
Artisan Studio	P			
Barber and beauty shop	P			
Book store	P			
Convenience store	P			
Dry cleaners and laundry service	P			
Farmer's market	P			
Financial institution, no drive-through	P			
Floral shop	P			
Grocery, specialty	P			
Health/fitness center or spa**	P			
Newsstand or gift shop	P			
Personal service	P			
Pharmacy	P			
Printing and copying service	P			
Real estate sales	P			
Retail sales, general	P			
Studio for art	P			
Tailor shop	P			
Pet services	P			

	MU-1 District	***TH-1 District***	***TH-2 District***	***TH-3 District***
Drop-in or short-term day care	P			
Veterinary clinic or hospital	P			
Utility, minor	P			
Microbrewery	P			
Microdistillery	P			
Bar, nightclub, wine bar, or taproom***	P			

*Small scale multi-family shall be defined as a building constructed to accommodate between two and ten dwelling units that are vertically or horizontally integrated. Multiple small-scale multi-family buildings may be located on one lot.

**Health/fitness center or spa uses shall not exceed 10,000 sf in the aggregate and shall not exceed 4,000 sf per individual use. The 10,000 sf maximum shall not include Health/fitness center or spa uses that are accessory to Multi-family or apartment, or other residential uses.

*** Hours of operation Sunday through Thursday shall close by 12 AM and hours of operation Friday through Saturday shall close by 2 AM.

AFFORDABLE HOUSING

A minimum of ten percent (10%) of the total units on the property shall be affordable housing units. The affordable units shall be for sale or for rent units, at the election of developer prior to issuance of building permits for the affordable units. The affordable units may be all townhouses, detached townhouses, small-scale multi-family, multi-family or apartment, or a combination thereof, at the discretion of the developer. Final affordable housing unit floor plan selection which includes unit size and bedroom size will be at the discretion of the developer. If the affordable units calculation results in a fraction between 0.50 and 0.99, the affordable units shall be rounded up to the nearest whole number. If the affordable units calculation results in a fraction between 0.01 and 0.49, the affordable units shall be rounded down to the nearest whole number.

For sale affordable units (the “For Sale Units”) shall be subject to the following terms and conditions:

- The For Sale Units shall be constructed on-site and sold (includes unit price and lot price) at a mutually agreeable maximum affordable median income ownership initial sales price (the “Initial Sales Price”).
- The For Sale Units shall be occupied by households earning no more than one-hundred twenty (120%) of the Raleigh NC Metropolitan Statistical Area (MSA), Area Median Income (AMI) as most recently published by HUD (the “Income Limit"). For purposes of calculating the Initial Sales Price for the For Sale Units, affordable shall mean a reasonable down payment and monthly housing costs expected during the first calendar year of occupancy, including utilities or utility allowances, mortgage loan principal and interest, mortgage insurance, property taxes, homeowner’s insurance, homeowner’s association dues, if any, and all other property assessments, dues and fees assessed as a condition of property ownership (the “Housing Costs”). For purposes of the calculation, monthly Housing Costs shall not exceed thirty percent (30%) of the Income Limit divided by twelve (12).
- A restrictive covenant (i.e. resale deed restriction) with a minimum affordability period of twenty (20) years (the “Affordability Period”) shall be recorded in the Wake County Registry against the For Sale Units concurrently at the close of escrow upon the sale of each For Sale Unit.
- Following the first sale of the For Sale Units to a buyer for use as a residence, Developer shall not be responsible for managing the For Sale Units or performing marketing, applicant screening, and selection related to future sales of the For Sale Units.

For rent affordable units (the "Rental Units") shall be subject to the following terms and conditions:

- The Rental Units shall be occupied by low-income households earning no more than eighty percent (80%) of the Raleigh, NC Metropolitan Statistical Area (MSA) Area Median Income, as most recently published by the U.S. Department of Housing and Urban Development (HUD) for a period of thirty (30) years starting from the date of issuance of the first residential Certificate of Occupancy (the "Affordability Period").
- Prior to issuance of the first Certificate of Occupancy for the Rental Units, a restrictive covenant between the Town and property owner shall be executed and recorded in the Wake County Registry to memorialize the affordable housing terms and conditions.
- During the Affordability Period, the property owner shall submit annual compliance reports to the Town to verify compliance with the affordable housing terms and conditions.
- Following expiration of the Affordability Period, this affordable housing condition shall expire, and the property owner shall be relieved of all obligations set forth in this affordable housing condition, and the Rental Units may be freely marketed and leased at market rate rents.

DESIGN CONTROLS

Acreages for each district are approximate and may increase or decrease by up to 20% based on updated surveys at Master Subdivision Plan.

Development shall comply with the following minimum design controls:

ALL DISTRICTS	
Maximum Total Units	460
Maximum Multi-Family Units	285
Maximum Townhouse/Small Scale Multi-Family Units	175 TH-1 District and TH-2 District combined shall not exceed 120 units.
Maximum Non-Residential Square Footage	22,000 sf
Minimum Non-Residential Square Footage	10,000 sf

	Small Scale Multi-family	**Front Loaded Townhouses**	**Rear Loaded Townhouses***	**Multi-Family**	**Mixed-Use*****
Minimum Lot Size	None	None	None	None	None
Minimum Lot Width	18 ft.	18 ft.	18 ft.	None	None
Minimum Setbacks					
Front	10 ft.	5 ft. (building façade); 20 ft. (garage)	5 ft. (building façade)	10 ft.	10 ft.

	Small Scale Multi-family	**Front Loaded Townhouses**	**Rear Loaded Townhouses***	**Multi-Family**	**Mixed-Use*****
Corner Side	8 ft.	8 ft.	8 ft.	10 ft.	10 ft.
Rear	10 ft.	10 ft.	4 ft. (to edge of alley)	10 ft.	10 ft.
Minimum Building Separation	10 ft.	10 ft.	10 ft.	30 ft.	20 ft.
Minimum from Buffer/RCA	Buildings: 10 ft. Parking: 5 ft.	Buildings: 10 ft. Parking: 5 ft.	Buildings: 10 ft. Parking: 5 ft.	Buildings: 10 ft. Parking: 5 ft.	Buildings: 10 ft. Parking: 5 ft.
Maximum Building Height	3 stories; 45 ft.	3 stories; 45 ft.	3 stories; 45 ft.	4-story buildings: 60 ft.; 4/5-story split buildings: 70 ft.	Vertically Mixed-Use Building: maximum of 5-stories/75 ft.**

*Townhouses in TH-1 and Small Scale Multi-family within MU-1 along the N. Salem Street frontage shall address N. Salem Street and have alley access from the rear.

**As shown on the PUD Preliminary Site Layout Plan, structures located within 55 feet of the N. Salem Street right of way shall have a maximum of four stories and a maximum height of 60 feet and structures located within 55 feet of Street A shall have a maximum of four stories and a maximum height of 60 feet

***Standalone non-residential buildings (buildings with no residential uses where the only uses are non-residential) shall be prohibited.

The following building placement controls shall apply in the MU-1 district:

- Within 100 feet of the intersection of Street A and Street B and the intersection of Street A and N. Salem Street, no parking bays or drive aisles shall be permitted between a building's front façade and the adjoining street.
- The corner of N. Salem Street and All Wheel Drive shall be anchored by a building with no more than one double-loaded (parking on each side of drive aisle) parking bay and drive aisle between the street and building.
- To facilitate outdoor dining and gathering, mixed-use buildings shall include a minimum 12-foot wide sidewalk along the facades of non-residential uses. This sidewalk shall include landscaping features (by way of example, tree walls, planting beds, potted plants, and similar amenity elements), provided that no portion of such sidewalk serving as a pedestrian travel path shall be less than 6 feet wide.

LANDSCAPING, BUFFERING, AND SCREENING

Perimeter buffers shall be built and planted to the following lot width and planting standards:

Location:	**Buffer Size & Type:**
Along N. Salem Street	15 ft. Type E and 20 ft. Type E*
Along the south side of All Wheel Drive adjacent to MU-1 District	15 ft. Type E
Along the south side of All Wheel Drive adjacent to TH-3 District	20 ft. Type D
Along the southern perimeter adjacent to the Haddon Hall and Haddon Place single-family residential neighborhoods	20 ft. Type B**
Along the western perimeter adjacent to the Haddon Hall and Haddon Place single-family residential neighborhoods	20 ft. Type B

* See PUD Preliminary Site Layout Plan for location of buffers.

**A 10 ft. landscape easement shall be provided adjacent and parallel to the 20 ft. Type B buffer outside of any Resource Conservation Areas. The easement may be graded but shall be planted and revegetated with a mix of deciduous and evergreen shrubs planted a minimum of 10 feet on center, with a minimum installation height of 24-30 inches. Plantings shall consist of a minimum of 60% evergreen shrubs.

Community Amenities

In addition to the permitted Community Amenities described in UDO sec. 8.4.3., one of the required Community Amenities for MU-1 shall be public art. The public art shall be reviewed and approved by the Planning Director as set forth in UDO Section 8.4.5 and the location shall be determined by developer during Site plan review, but must be located within the public view.

ARCHITECTURAL STANDARDS

N. Salem Street Mixed-Use PUD offers the following architectural controls to ensure a consistency of character throughout the development, while allowing for enough variety to create interest and avoid monotony. Elevations included are conceptual examples. Final elevations must comply with these architectural standards but may vary from the conceptual elevations. Further details may be provided at the time of Residential Master Subdivision Plan submittal.

RESIDENTIAL DESIGN GUIDELINES

Townhouses along/facing N. Salem Street:

1. Townhouse buildings shall not exceed 5 townhouse units per building.
2. Townhouse buildings shall have a roof break every townhouse unit.
3. Townhouse units shall include a minimum of 3 steps to the front porch.
4. Townhouse front facades shall have a varied setback for each unit.
5. Townhouse building facades shall have horizontal relief achieved by the use of recesses and projections.
6. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
7. Front entrances shall include a architecture covered porch/stoop area leading to the door.
8. The front, side, and rear elevations of the units facing public right-of-way shall have trim around the windows.
9. The visible side of a townhouse building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, or dormer.
10. The visible side of a townhouse building on a corner lot facing the public street shall include a wrap-around porch or bay window pop-out.
11. Townhouse buildings shall have no more than one unadorned side-gabled roof in a row within a single building.
12. 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. Colors shall be varied from adjacent unit.

13. Side entry townhouses (townhouses where the primary entrance is on the side) shall have an architectural cover popout on the side elevation above the primary entrance.

Townhouses adjacent to single-family homes:

1. Townhouse buildings where the front facades or rear facades of townhouses are parallel with the southern shared property line with lots in Haddon Hall, shall not exceed 4 townhouse units per building. Townhouse buildings where the front facades or rear facades of townhouses are not parallel with the southern shared property line with lots in Haddon Hall shall not exceed 6 townhouse units per building.
2. Townhouse units shall have a roof break every townhouse unit or every other Townhome unit.
3. Building facades shall have horizontal relief achieved by the use of recesses and projections
4. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
5. Front entrances shall include a covered porch/stoop area leading to the door.
6. The front, side, and rear elevations of units facing public right-of-way shall have trim around the windows.
7. The visible side of a townhouse building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, or dormer.
8. Townhouse buildings shall have no more than one unadorned side-gabled roof in a row within a single building.
9. Front facing garage doors must have windows or decorative details with carriage-style adornments on them.
10. The garage shall not protrude more than 1 foot out from the front façade or front porch. Living space above a garage shall not be considered part of the front façade.
11. 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. Colors shall be varied from adjacent unit.
12. Side entry townhouses (townhouses where the primary entrance is on the side) shall have an architectural cover popout on the side elevation above the primary entrance. Side entry townhouses with front facing garages shall include windows on the front elevation adjacent to the garage.

Small Scale Multi-Family buildings along N. Salem Street:

1. Building entrances shall face N. Salem Street.

2. Buildings shall include a minimum of 3 steps to the front porch.
3. Building facades shall have horizontal relief achieved by the use of recesses and projections.
4. Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.
5. Front entrances shall include an architecture covered porch/stoop area leading to the door.
6. The front, side, and rear elevations of units facing public right-of-way shall have trim around the windows.
7. The visible side of a Small Scale Multi-Family building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, dormer.
8. The visible side of the small-scale multi-family building on a corner lot facing the public street shall include a wrap-around porch or bay window pop-out.

Townhouse and Small Scale Multi-Family not along N. Salem Street and not adjacent to single-family homes:

1. Townhouse buildings shall not exceed 6 Townhome units per building.
2. Townhouse units shall have a roof break every townhouse unit or every other townhouse unit.
3. Building facades shall have horizontal relief achieved by the use of recesses and projections.
4. Vinyl siding is not permitted; however vinyl windows, decorative elements and trim are permitted.
5. Front entrances shall include a covered porch/stoop area leading to the door.
6. The front, side, and rear elevations of units facing public right-of-way shall have trim around the windows.
7. The visible side of a townhouse or Small Scale Multi-Family building on a corner lot facing the public street shall contain at least 3 decorative elements such as, but not limited to, the following elements: windows, bay window, two or more building materials, decorative brick/stone, decorative shake, decorative gable, balcony, dormer.
8. Townhouse buildings shall have no more than one unadorned side-gabled roof in a row within a single building.
9. Front facing garage doors must have windows or decorative details with carriage-style adornments on them.
10. The garage shall not protrude more than 1 foot out from the front facade or front porch. Living space above a garage shall not be considered part of the front facade.
11. 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. Colors shall be varied from adjacent unit.

12. Side entry townhouses (townhouses where the primary entrance is on the side) shall have an architectural cover popout on the side elevation above the primary entrance. Side entry townhouses with front facing garages shall include windows on the front elevation adjacent to the garage.

Multi-Family and Mixed-Use Buildings:

1. Vinyl siding is not permitted; however, vinyl windows, decorative elements, and trim are permitted.
2. Rear and side elevations of units that have right-of-way frontage shall have trim around the windows.
3. A minimum of four of the following decorative features shall be used on each building:
    a. Decorative shake
    b. Board and batten
    c. Decorative porch railing/posts
    d. Shutters
    e. Decorative/functional air vents on roof or foundation
    f. Recessed windows
    g. Decorative windows
    h. Decorative brick/stone
    i. Decorative gables
    j. Decorative cornices
    k. Tin/metal roof
    l. Decorative store front
    m. Building entries defined by a canopy or other entry detail
    n. Other architectural features that differentiate the building
4. Windows must vary in size and/or type.
5. Windows that are not recessed must be trimmed.
6. To reduce the Urban Heat Island Effect and conserve energy, for multi-family buildings, all flat roofs shall be light or white colored or utilize a cool roof material, only if doing so does not impact shingled sloped roofs.
7. 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 façade.
8. Building facades that are public street facing shall have variation in wall plane, with vertical bays or articulated architectural façade features which may include, but not limited to offsets, projections, recesses, banding and change in materials or colors.
9. The following design guidelines shall only apply to mixed-use buildings:
    a. All reasonable effort shall be taken for loading, service, or mechanical units to be placed at the rear of the structure on non-street facing sides. If any of these features have to be located along a public street front facade, they will be screened in accordance with the UDO.
    b. Building facades that are public street facing shall have variation in wall plane, with vertical bays or articulated architectural façade features which may

include, but not limited to offsets, projections, recesses, banding and change in materials or colors.

c. Large blank walls shall not be greater in 25' in length or height, and shall be broken up with architectural features to reduce visual impacts.

d. Differences of roof height, pitch, ridgelines and materials shall be used to create visual interest and avoid repetition.

e. Roof features may include flat roofs with parapet, hip roofs, shed roofs, gables, or awnings with metal or canvas material.

PARKING AND LOADING

Multi-family and mixed-use buildings shall provide the following minimum parking spaces per dwelling unit based on the number of bedrooms:

Bedrooms per unit	**Minimum ratio**
1 or 2	1.3 spaces per dwelling unit
3	1.8 spaces per dwelling unit

Parking for townhouses and non-residential uses shall comply with the UDO and state law (to the extent state law modifies the UDO requirement), except that street parking shall count towards the total number of parking spaces for guest parking for required for Townhomes, and developer may pursue parking reductions and/or other relief allowed in the UDO at Master Subdivision/Site Plan.

SIGNAGE

Signage shall comply with UDO Section 8.7.

LIGHTING

Exterior lighting shall have a maximum color temperature of 3,000K.

No pole lights shall be placed within 50 ft. of the shared property lines with Haddon Hall and Haddon Place.

NATURAL RESOURCES AND ENVIRONMENTAL DATA

Resource Conservation Areas (RCA)

The Property is located east of NC 540 and is outside Apex Peakway. UDO Section 8.1.2 requires minimum Resource Conservation Area ("RCA") of 20% for the Property.

Floodplain

The Property does not sit within a designated current or future 100-year floodplain as shown on the Town of Apex Watershed & FEMA Map dated April 2015. FIRM Panel 3720074200J dated May 2, 2006 does not include a floodplain within the property boundary.

Tree Protection

The existing 65-inch Willow Oak tree located along the southern property line, as identified on the Master Plan, shall be preserved and protected unless an arborist determines that the tree is diseased or dying. An arborist's report evaluating the health and structural condition of the tree, including recommendations for any protective or mitigation measures necessary to preserve the tree during construction, shall be submitted with the initial Master Subdivision Plan application. The Critical Root Zone (CRZ) shown on the Master Plan is representative only. The actual limits of the CRZ may vary and may be field-adjusted based on the recommendations of the project arborist to reflect the tree's actual root system.

Historic Structures

WA0789 (the "House") appears on the Historic Registry. Capital Area Preservation ("CAP") report dated August 7, 2025 deemed not worthy of preservation. Before demolition of the House, the developer will work with CAP to identify historic elements of the House, including 2/2 windows and original 5-panel doors, to be saved for use by CAP in other historic preservation projects.

Environmental Commitments Summary

1. The project shall install one (1) sign per Stormwater Control Measure to reduce pet waste and prohibit fertilizer, in locations that are publicly accessible, such as adjacent to amenity centers, sidewalks, greenways, or side paths.

2. The project shall install signage adjacent to wooded or natural condition Resource Conservation Area. The signage shall indicate the area is RCA and is to be preserved in perpetuity and not disturbed.

3. The project shall ensure that 75% of the landscaping shall be native species, which shall provide diverse and abundant pollinator and bird food sources. Special attention shall be paid to providing diverse and abundant pollinator and bird food sources, including plants that bloom in succession from spring to fall. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.

4. The project shall install at least four (4) pet waste stations total across the townhouse districts (TH-1, TH-2, and TH-3) and two (2) pet waste stations in the MU-1 district in locations that are publicly accessible, such as adjacent to amenity centers, SCMs, sidewalks, greenways or side paths.

5. HOA covenants, conditions, and restrictions shall not prohibit solar PV installation by individual homeowners.

6. HOA covenants, conditions, and restrictions shall not prohibit properly maintained pollinator habitats and naturalistic landscapes on the lots or in common areas.

7. No single species of native or adaptive vegetation shall constitute more than 20% of the plant material of its type within a single development site.

8. Five (5) additional feet of buffer width to that required by the UDO along the perimeter of the property shall be required along the southern and western property lines (see perimeter buffer table above).

9. Multi-family buildings shall be designed to meet the requirements for one of the following green building certifications: LEED, EnergyStar, BREEAM, Green Globes, NGBS Green, NAHB, or GreenGuard. A third-party consultant shall be hired to evaluate the project and certify to the Town of Apex that the project meets the standards for the certification. The applicant shall forward a copy of the certification application to the Town of Apex Planning Department to verify that the application has been submitted. The application shall be submitted prior to the issuance of a certificate of occupancy for the multi-family building.

10. To reduce irrigation requirements, the project shall select and plant warm season grasses.

11. All townhouse garages shall be wired with a 220/240-volt electric outlet that supports electric vehicle charging.

12. The developer shall construct a bus stop with landing and amenity pad to Town Standards including a shelter with bench seating, trash receptacle, and two bike racks, subject to review and approval at the time of Master Subdivision or Site Plan, south of All Wheel Drive in front of the proposed MU-1 District.

13. To encourage environmentally sustainable site design, the project shall incorporate a minimum of two of the following Low Impact Development (LID) techniques (per design considerations as defined by NCDEQ in the NC Stormwater Design Manual): bioretention areas, bioswales, infiltration, rain gardens, green roofs, permeable pavement, and rainwater harvesting systems. The two LID techniques shall be included in construction drawings for the project.

STORMWATER MANAGEMENT

The post development peak runoff rate shall be limited to the pre-development peak runoff rate for the 1-year, 24-hour, the 10-year, 24-hour, the 25-year, 24-hour, and the 50-year, 24-hour storms. Otherwise, stormwater management shall comply with the UDO.

To encourage environmentally sustainable site design, the project shall incorporate a minimum of two of the following Low Impact Development (LID) techniques (per design considerations as defined by NCDEQ in the NC Stormwater Design Manual): bioretention areas, bioswales, infiltration, rain gardens, green roofs, permeable pavement, and rainwater harvesting systems. The two LID techniques shall be included in construction drawings for the project.

After being detained onsite, stormwater from the project is expected to drain to two existing culverts located at Charlion Downs Lane and Blackburn Road (each, a "Culvert" and together, the "Culverts"). The need for repairs or improvements to the Culverts and other stormwater infrastructure in Haddon Hall/Haddon Place will be evaluated in the stormwater impact statement and downstream analysis (the "Downstream Analysis") required at Site Plan by UDO Section 6.1.7.A.3. If the Downstream Analysis determines improvements to the Culverts or other stormwater infrastructure in Haddon Hall/Haddon Place are required, Developer shall upgrade the infrastructure as ddetermined by the Donwstream Analysis and contribute $10,000 (the "Contribution") for additional on-going maintenance to the Town of Apex for such improvements. The Contribution shall be made prior to issuance of the first Master Subdivision Final Plat or Site Plan Final Plat for the project.

PARKS AND RECREATION

On July 29, 2026, the Parks and Recreation Advisory Board recommended a fee-in-lieu of dedication for a maximum combination of 175 single-family attached and 285 multi-family residential units. The fee-in-lieu rate will be set at the time of Town Council action on the rezoning and run for the life of the project. The total fee-in-lieu (based on final unit count) will be calculated at Major Site Plan/Master Subdivision Plan and Construction Document review.

PUBLIC FACILITIES

The proposed PUD shall meet all Public Facilities requirements as set forth in UDO Section 2.3.4(F)(1)(f) and be designed to comply with the Town's Sewer and Water Master Plan and Standards and Specifications.

TRANSPORTATION IMPROVEMENTS

The following conditions regarding transportation improvements apply and shall be phased consistent with the Traffic Impact Analysis that has been performed for this rezoning, which is on file with the Town of Apex. All proposed driveway access and improvements on state-maintained roadways are subject to both Apex and NCDOT review and approval. Except as set forth herein, all proposed roadway infrastructure and right-of-way dedications will be consistent with the Town of Apex Comprehensive Transportation Plan,

The Developer shall construct the following, consistent with the Thoroughfare and Collector Street Plan Map and the Bicycle and Pedestrian Plan Map, subject to Town of Apex and NCDOT review and approval at the time of site and subdivision plans:

1. Developer shall construct a 10-foot wide side path on the south side of All Wheel Drive for the length of the project frontage.

2. Developer shall widen N. Salem Street and dedicate public right-of-way for the extent of the project frontage for the western half of a minimum 41-foot back-to-back 3-lane thoroughfare typical section including a 10-foot side path on the west side within an 80-foot typical section right of way.

3. Extend the stub street of Charlion Downs Lane as a public street through the proposed TH-3 district.

4. Sidewalks shall be provided on both sides of internal public streets, subject to Town of Apex review and approval at the time of site and subdivision plans.

5. Subject to Town approval, Developer shall construct a 5-foot concrete sidewalk, on the west side of Frenchurch Way along the frontage of PIN 0742352665 to connect the project sidewalk to the existing sidewalk on the south side of Brittley Way including ramps to accommodate crossing of Brittley Way at the western leg of the intersection with Frenchurch Way (collectively, the “Offsite Frenchurch Sidewalk”). If the Offsite Frenchurch Sidewalk requires acquisition of offsite rights of way and/or easements, and the Developer is unable to acquire the necessary easements and right-of-way to construct the Offsite Frenchurch Sidewalk through good faith negotiations with the property owner, Developer shall provide an engineer's estimate for the total cost of the sidewalk plus easement acquisition to be reviewed and approved by the Town and pay a fee-in-lieu in that amount.

6. Developer shall extend the 10-foot side path along the project’s N. Salem Street frontage, south along the frontage of PIN 0742452783 to Brittley Way (the “Offsite Side Path”). If the Offsite Side Path requires relocation of utilities, including, but not limited to, electric poles, developer shall pay a fee in lieu for the Offsite Side Path. Developer may modify the N. Salem Street section to locate the Offsite Side Path in the existing right of way. For example, the Offside Side Path could extend to the back

of curb without a landscape strip between the path and curb. If the Offsite Side Path requires acquisition of offsite rights of way and/or easements, and the Developer is unable to acquire the necessary easements and right-of-way to construct the Offsite Side Path through good faith negotiations with the property owner, Developer shall provide an engineer's estimate for the total cost of the sidewalk plus easement acquisition to be reviewed and approved by the Town and pay a fee-in-lieu in that amount.

7. N. Salem Street at All Wheel Drive/Key Ring Drive Intersection and N. Salem Street Site Frontage:

    a. Restripe the southbound right turn lane on N Salem St at All Wheel Dr as a though-right shared lane to terminate at Brittley Way.

    b. Modify the traffic signal at All Wheel Drive to accommodate the new southbound through lane.

8. N. Salem Street at Brittley Way:

    a. Construct a second southbound through lane from north of All Wheel Drive which shall drop as a right turn lane at Brittley Way.

    b. Provided NCDOT and the Town of Apex approve such relocation, relocate and/or reconfigure the high-visibility crosswalk across N Salem St, planned for installation by Town of Apex in 2026. If NCDOT or the Town do not approve the relocation and/or reconfiguration, this condition shall be deemed satisfied and the Town shall construct the crosswalk as currently planned. If the Town and NCDOT approve the relocation, developer shall construct a high-visibility median-divided crosswalk across N Salem Street on the north side of Site Access #3 and a Rectangular Rapid Flashing Beacon (RRFB) system meeting Town of Apex standards, subject to Apex and NCDOT approval. If NCDOT will not permit an RRFB system then the crosswalk may be installed with non-flashing school crosswalk warning signs.

9. External Site Access:

    a. Construct an extension of Frenchurch Way to All Wheel Drive (“Street B”).

    b. Construct the northernmost driveway on N Salem St (Site Access #2) as a channelized right-in only at least 300 feet south of All Wheel Drive

    c. Construct the southernmost driveway (Site Access #3) on N Salem St as a left-in/right-in/right-out aligned with the Thales outbound driveway, with an exclusive northbound left turn lane on N Salem St and a channelized concrete median between them to prohibit left turns from both sides of N Salem St.

10. Internal Site Access:

    a. Construct a mini-roundabout or roundabout at the intersection of the extension of Frenchurch Way ("Street B") and the street connecting to the southernmost N Salem St site driveway ("Street A").

    b. Extend the stub street of Charlion Downs Ln as a public street through the proposed "TH-3" District to Street B.

11. The developer shall construct a bus stop with landing and amenity pad to Town Standards including a shelter with bench seating, trash receptacle, and two bike racks, subject to review and approval at the time of Master Subdivision or Site Plan, south of All Wheel Drive in front of the proposed MU-1 District.

12. A pedestrian connection shall be included from the N. Salem Street side path to the Mixed Use Building through the parking area in the MU-1 District. The connection will be a designated pedestrian path such as but not limited to, sidewalk, change in pavement color or pattern, or other design determined by the developer and staff at Master Subdivision or Site Plan. A pedestrian area with a minimum size of 300 square feet shall be provided at or near the corner of N. Salem Street and All Wheel Drive.

13. If any of the committed transportation improvements require acquisition of offsite rights of way, easements, or other property interests (the "Offsite ROW"), Developer shall make good faith efforts to acquire the Offsite ROW. If Developer is unable to acquire any Offsite ROW through private negotiation and the Town is unwilling or unable to assist in the acquisition, Developer shall pay a fee in lieu for the transportation improvement that cannot be completed, including estimated cost of acquisition, permitting fees, and construction plus 15% contingency, subject to Town review and approval of an engineer's estimate provided by the Developer.

CONSTRUCTION TRAFFIC

All heavy duty construction traffic shall enter and exit the site via N. Salem Street and/or All Wheel Drive. "No Construction Traffic" signs shall be posted along Frenchurch Way and Charlion Downs Lane. Provided, however, that equipment and vehicles shall be permitted on Charlion Downs Lane to construct the extension of Charlion Downs Lane, pedestrian connection, and related infrastructure, and on Frenchurch Way to construct the street, utility connections/extensions, and related infrastructure as required by this PUD and the UDO.

WATER AND SANITARY SEWER

All lots within the Development will be served by Town of Apex water and sanitary sewer. The utility design will be finalized at the time of Master Subdivision Plan or Site Plan approval and be based on available facilities adjacent to the site at that time. The design will meet the

current Town of Apex Sewer and Water Master Plan and Standards and Specifications. A conceptual utility plan is included in the PUD Concept Plan for reference.

OTHER UTILITIES

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

PHASING

The Development will be completed in phases. Final locations of phases will be determined at the time of Master Subdivision Review and Approval.

CONSISTENCY WITH LAND USE PLAN

Overall, the proposed Development is consistent with Advance Apex, the 2045 Land Use Map Update (the "Update") and the 2045 Land Use Map ("LUM"). The Update identifies the property as underdeveloped. The LUM recommends a mix of housing types and densities across the Property with the highest density housing and non-residential uses at the corner of All Wheel Drive and N. Salem Street. It recommends residential density transition down approaching existing single-family neighborhoods to the west and south. The proposed PUD meets these recommendations by permitting a vibrant, dense, mixed-use area at the intersection with townhouses at approximately 7 units/acre (density recommended by LUM Medium Density category) in the southern and western sections closest to existing single-family. The project only proposes two minor changes to the LUM, to slightly extend the High Density Residential designation south along N. Salem Street and to straighten the western boundary of the High-Density Residential area to match the western boundary of the proposed MU-1 District (the current boundary follows the tax parcel lot line which will be recombined when the property is redeveloped). Although the LUM recommends multi-family (high density residential) at the intersection without a height limit, staff have requested multi-family buildings be limited to 4/5 stories, particularly along N. Salem Street. The area the LUM currently identifies for High Density Residential does not provide sufficient land area to design, park, and operate a multi-family community with buildings under 4/5 stories. The proposed LUM changes slightly extend the high density residential designation south to allow sufficient land to deliver multi-family with the height transition restrictions recommended by staff. Even with this change, townhouses at the recommended density remain in the TH-1, TH-2 and TH-3 districts.

COMPLIANCE WITH UDO

The development standards proposed for this PUD comply with those set forth in the Town's Unified Development Ordinance (UDO). This PUD shall be the primary governing document for the development of N. Salem Street Mixed-Use PUD. All standards and regulations in

this PUD shall control over general standards of the UDO. Provided, however, that if a specific regulation is not addressed in this PUD, UDO regulations shall control.

EXHIBIT A

PIN 0742367712
Address: 1403 N. Salem St.
Owner: Merit Group, LLC
Acreage: 1.06 acre
Current Zoning: Residential Agricultural

PIN 0742368697
Address: 1401 N. Salem St.
Owner: Merit Group, LLC
Acreage: 0.39 acre
Current Zoning: Residential Agricultural

PIN 0742365731
Address: 1405 N. Salem St.
Owner: Geraldine Gilbert Heirs
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742366583
Address: 1205 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 2.54 acres
Current Zoning: Residential Agricultural

PIN 0742369479
Address: 1303 N. Salem St.
Owner: June Thompson
Acreage: 0.50 acre
Current Zoning: Residential Agricultural

PIN 0742369278
Address: 1301 N. Salem St.
Owner: June Thompson
Acreage: 2.80 acres
Current Zoning: Residential Agricultural

PIN 0742363169
Address: 1207 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 4.46 acres
Current Zoning: Rural Residential

PIN 0742358857
Address: 1201 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 5.34 acres
Current Zoning: Rural Residential

PIN 0742353848
Address: 0 N. Salem St.
Owner: Elizabeth Burgess Chappell
Acreage: 1.67 acres
Current Zoning: Rural Residential

PIN 0742350909
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.77 acres
Current Zoning: Residential Agricultural

PIN 0742362432
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 4.59 acres
Current Zoning: Residential Agricultural

PIN 0742366306
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.73 acre
Current Zoning: Residential Agricultural

PIN 0742268387
Address: 0 Charlion Downs Ln
Owner: DLG HOLDINGS LLC
Acreage: 0.93 acre
Current Zoning: Residential Agricultural

PIN 0742360631
Address: 1409 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 3.06 acres
Current Zoning: Residential Agricultural

PIN 0742362719
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.02 acre
Current Zoning: PC-CZ

PIN 0742363799
Address: 0 N. Salem St.
Owner: DLG HOLDINGS LLC
Acreage: 0.04 acre
Current Zoning: PC-CZ

EXHIBIT B
Legal Description of the Property

Beginning at an iron pipe found, being the northwest corner of DLG Holdings LLC property as described in deed book 17929, at page 1179 and along the right of way of All Wheel Drive, as described in book of maps 2019, at page 1330 in the Wake County registry, beginning point having NC GRID NAD83(2011) coordinates of, N: 726,807.83 E: 2,042,917.78';

Thence from said point of beginning along and with the right of way of All Wheel Drive, S 87°29'09" E a distance of 132.05' to an iron pipe found;

Thence along and with said right of way, S 89°20'15" E a distance of 244.31' to a computed point;

Thence along and with said right of way, S 89°20'15" E a distance of 186.80' to an iron pipe found, being the northeast corner of DLG Holdings LLC and the northwest corner of Geraldine L Gilbert Heirs as described in book of maps 2019, at page 1330 at the Wake County Registry;

thence along with said right of way, S 89°26'05" E a distance of 134.93' to an iron pipe found, the northeast corner of Gilbert heirs and the northwest corner of Merit Group LLC property as described in deed book 20042, at page 1629 at the Wake County Registry;

thence along and with said right of way, S 89°19'38" E a distance of 339.94' to a computed point near the intersection of All Wheel Drive and N Salem St, as described in book of maps 2019 at page 1330 at the Wake County Registry;

thence along and with said right of way, S 20°13'14" E a distance of 5.00' to a computed point at the aforementioned intersection;

thence along and with said right of way, S 73°51'24" E a distance of 18.57' to a computed point at along the right of way of N Salem St at the aforementioned intersection;

thence along and with the right of way of N Salem St, S 17°03'47" E a distance of 76.57' to an iron pipe found, being the southeast corner of Merit Group LLC property and the Northeast corner of John Huber property as described in deed book 20042, at page 1629;

thence along and with said right of way, S 20°17'05" E a distance of 83.82' to a computed point, being the southeast corner of John Huber property and the Northeast corner of DLG Holdings LLC property as described in book of maps 1982, at page 145 at the Wake County Registry;

thence along and with said right of way, S 20°20'11" E a distance of 85.11' to an iron pipe found, the northeast corner of June N Thompson property and the southeast corner of DLG Holdings LLC property as described in book of maps 1982, at page 145 at the Wake County Registry;

thence along and with said right of way, S 20°01'41" E a distance of 106.14' to an iron pipe found;

thence along and with said right of way, S 20°35'35" E a distance of 361.94' to an iron pipe found, the southeast corner of June N Thompson property and the northeast corner of Andrew Burgess Jr and Elizabeth Burgess Chappell property;

thence along and with said right of way, S 19°55'43" E a distance of 126.92' to an iron pipe found;

thence along and with said right of way, S 20°00'13" E a distance of 42.64' to an iron pipe found;

thence along and with said right of way S 19°48'13" E a distance of 166.44' to a computed point;

thence leaving the right of way of N Salem St, along and with the southern property line of Andrew Burgess Jr and Elizabeth Burgess Chappell property and the northern line of the Haddon Place subdivision, as described in book of maps 1995, at page 1420, S 82°16'18" W a distance of 901.47' to an iron pipe found;

thence along and with the line of Haddon Place subdivision, Burgess and Chappell property, and DLG Holdings LLC property as described in book of maps 1999, at page 741 in the Wake County Registry, N 72°06'22" W a distance of 700.32' to an iron pipe found;

thence along the eastern line of Haddon Hall phase VIII and the western line of DLG Holdings LLC as described in book of maps 2000, at page 2110 in the Wake County Registry, N 02°17'31" E a distance of 359.39' to an iron pipe found;

thence continuing along the Haddon Hall subdivision and DLG Holdings LLC property, N 03°16'41" E a distance of 409.50' to an iron pipe found;

thence along the southern line of Joy Chiu Yin Huang property as described in deed 17443 at page 357 and the northern line of DLG Holdings LLC property, S 87°26'34" E a distance of 98.99' to an iron rebar found;

thence along the eastern line of Huang property and DLG Holdings LLC property N 02°27'28" E a distance of 154.79' to an iron pipe found;

which is the point of beginning,

having an area of 1408960 square feet, 32.34 acres

For further description see the following book of maps, BM 2019, PG 1330; BM 2009, PG 240; BM 2003, PG 1415; BM 2001, PG 1365; BM 2000, PG 2110; 1999, PG 741; BM 1997, PG 1683; BM 1989, PG 1113; BM 1982, PG 145; all in the Wake County register of deeds. Said properties being bounded on the north by All Wheel Drive, On the East by N Salem St, on the South by Haddon Place subdivision, and on the West by Haddon Hall phase VIII subdivision.

PLANNED DEVELOPMENT PLAN FOR PUD-CZ

N. SALEM STREET MIXED USE

NORTH SALEM STREET AND ALL WHEEL DRIVE

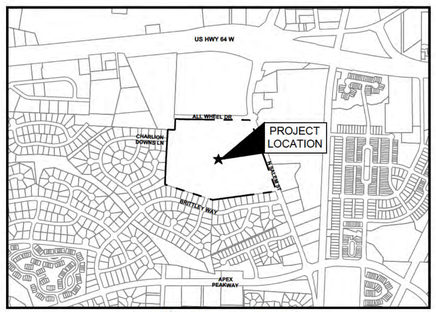
APEX, NORTH CAROLINA 27502

FIRST SUBMITTAL: DECEMBER 1, 2025
SECOND SUBMITTAL: FEBRUARY 6, 2026
THIRD SUBMITTAL: MARCH 5, 2026
FOURTH SUBMITTAL: MAY 1, 2026
FIFTH SUBMITTAL: JUNE 5, 2026
SIXTH SUBMITTAL: JULY 2, 2026
SEVENTH SUBMITTAL: AUGUST 7, 2026

SITE DATA		
OWNERS	DLG HOLDINGS LLC; GERALDINE L. GILBERT HEIRS; MERIT GROUP, LLC: JUNE N. THOMPSON; ELIZABETH CHAPPELL; ELIZABETH BURGESS BURGESS AND ANDREW JUDSON JR. CHAPPELL;	
DEVELOPER	MERIT GROUP LLC 5053 SUNSET FAIRWAYS DRIVE HOLLY SPRINGS, NC 27540	
PARCELS	0742360631; 0742268387; 0742362719; 0742363799; 0742362432; 0742350909; 0742353848; 0742358857; 0742363169; 0742369278; 0742366306; 0742366583;0742369479; 0742368697; 0742368697; 0742365731	
SITE AREA	GROSS	32.35 AC
	R/W DEDICATION	0.22 AC
	NET	32.13 AC
EXISTING ZONING	RR, RA	
PROPOSED ZONING	PUD-CZ	
RIVER BASIN	CAPE FEAR	
WATERHSED OVERLAY	BEAVER CREEK SECONDARY WATERSHED PROTECTION OVERLAY DISTRICT; WILLIAMS CREEK PRIMARY WATERSHED PROTECTION OVERLAY DISTRICT	
HISTORIC STRUCTURES	WA0789 HOUSE APPEARS ON HISTORIC REGISTRY (CAP REPORT DATE 8/7/2025 DEEMED NOTE WORTHY OF HISTORIC STRUCTURE)	
MAX BUILT UPON AREA (IMPERVIOUS)	22.49 AC (70%)	
2045 LAND USE MAP DESIGNATION	MEDIUM DENSITY RESIDENTIAL; HIGH DENSITY RESIDENTIAL; OFFICE EMPLOYMENT; COMMERCIAL SERVICES	
AREA DESIGNATED AS MIXED-USE ON 2045 FLUM	32.13 AC	
AREA OF MIXED-USE PROPOSED AS NON-RESIDENTIAL	8.0 AC (MU-1 TO THE CENTERLINE OF STREETS A AND B)	
PERCENT OF MIXED-USE PROPOSED AS NON-RESIDENTIAL	25.00%	
PROPOSED USE	MULTI-FAMILY APARTMENTS; TOWNHOUSE; NON-RESIDENTIAL	
MAXIMUM DENSITY/SF	TOTAL UNITS: 460 (14.32 UNITS/AC) - MULTI-FAMILY APARTMENTS: 285 UNITS - TOWNHOUSE: 175 UNITS - NON-RESIDENTIAL: MINIMUM - 5,000 SF MAXIMUM - 22,000 SF	
BUFFER CALL IDENTIFICATION NUMBER	APEX 25-26-001 (JULY 8, 2025)	
EXISTING SF OF BUILDINGS	16,534 SF	
REQUIRED/PROVIDED PARKING SPACES	SHALL COMPLY WITH THE UDO AND ANY ALLOWABLE REDUCTIONS. SEE PUD NARRATIVE FOR REDUCTION IN MULTI-FAMILY PARKING RATE.	
REQUIRED RESOURCE CONSERVATION AREA	6.43 AC (20%)	
TOWNHOMES (FRONT ACCESS)		
SETBACKS	FRONT	5 FEET (BUILDING FAÇADE); 18 FEET (GARAGE)
	CORNER SIDE	8 FEET
	REAR	10 FEET
	BUILDING SEPERATION	10 FEET
MAXIMUM BUILDING HEIGHT	3-STORY	45 FEET
BUILDING HEIGHT AND SETBACKS		
TOWNHOMES (ALLEY ACCESS)		
SETBACKS	FRONT	5 FEET (BUILDING FAÇADE)
	CORNER SIDE	8 FEET
	REAR	4 FEET (TO EDGE OF ALLEY)
	BUILDING SEPERATION	10 FEET
MAXIMUM BUILDING HEIGHT	3-STORY	45 FEET
MULTI-FAMILY		
SETBACKS	FRONT	10 FEET
	CORNER SIDE	10 FEET
	REAR	10 FEET
	BUILDING SEPERATION	30 FEET
MAXIMUM BUILDING HEIGHT	4-STORY	60 FEET
	4/5-STORY SPLIT	70 FEET
NON-RESIDENTIAL / MIXED-USE		
SETBACKS	FRONT	10 FEET
	CORNER SIDE	10 FEET
	REAR	10 FEET
	BUILDING SEPERATION	20 FEET
MAXIMUM BUILDING HEIGHT	VERTICAL MIXED-USE BUILDING (5 FLOORS)	75 FEET

SHEET INDEX

Sheet Number	Sheet Title
C0 0	COVER SHEET
C1 0	EXISTING CONDITIONS AND DEMOLITION PLAN
C2 0	SPECIMEN TREE SURVEY
C3 0	PRELIMINARY SITE LAYOUT PLAN
C4.0	PRELIMINARY UTILITY PLAN
C4.1-C4.9	ARCHITECTURAL PRECEDENT IMAGERY



VICINITY MAP

SCALE: 1" = 500'

PROJECT OWNERS & CONSULTANTS

OWNER/DEVELOPER
MERIT GROUP LLC
PAUL MUNANA
5053 SUNSET FAIRWAYS DR.
HOLLY SPRINGS, NC 27540
(919) 608-8324
PAUL.MERITGROUPNC@GMAIL.COM

CIVIL ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.
AUST N JACKSON
1070 S MA N ST SUITE 230,
HOLLY SPRINGS, NC 27540
(919) 678-4178
AUST N JACKSON@KIMLEY-HORN.COM

LANDSCAPE ARCHITECT
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CHARLOTTE, NC, 28208
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LINKW@KAASWILSON.COM

SURVEYOR
CANOY SURVEYING
ADAM CANOY
1154 SHONELE LN
STEM, NC 27581
(984) 377-2626
ADAM.CANOY@CANOYSURVEYING.COM

LAND USE ATTORNEY
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MATTHEW CARPENTER
301 FAYETTEVILLE ST SUITE 1400
RALEIGH, NC 27601
(919) 835-4032
MATTHEWCARPENTER@PARKER-POE.COM

No.	REVISIONS	DATE	BY
7	REVISIONS PER TOWN COMMENTS	08/27/2026	JTG
6	REVISIONS PER TOWN COMMENTS	08/07/2026	JTG
5	REVISIONS PER TOWN COMMENTS	07/22/2026	JTG
4	REVISIONS PER TOWN COMMENTS	06/05/2026	JTG
3	REVISIONS PER TOWN COMMENTS	05/01/2026	JTG
2	REVISIONS PER TOWN COMMENTS	03/05/2026	JTG
1	REVISIONS PER TOWN COMMENTS	02/06/2026	JTG

Kimley»Horn
© 2026 KIMLEY-HORN AND ASSOCIATES, INC.
#F-0102 WWW.KIMLEY-HORN.COM PHONE: 984-212-4572
1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT PRELIMINARY NOT FOR CONSTRUCTION 1931 ROBERT C. ZUMWALT

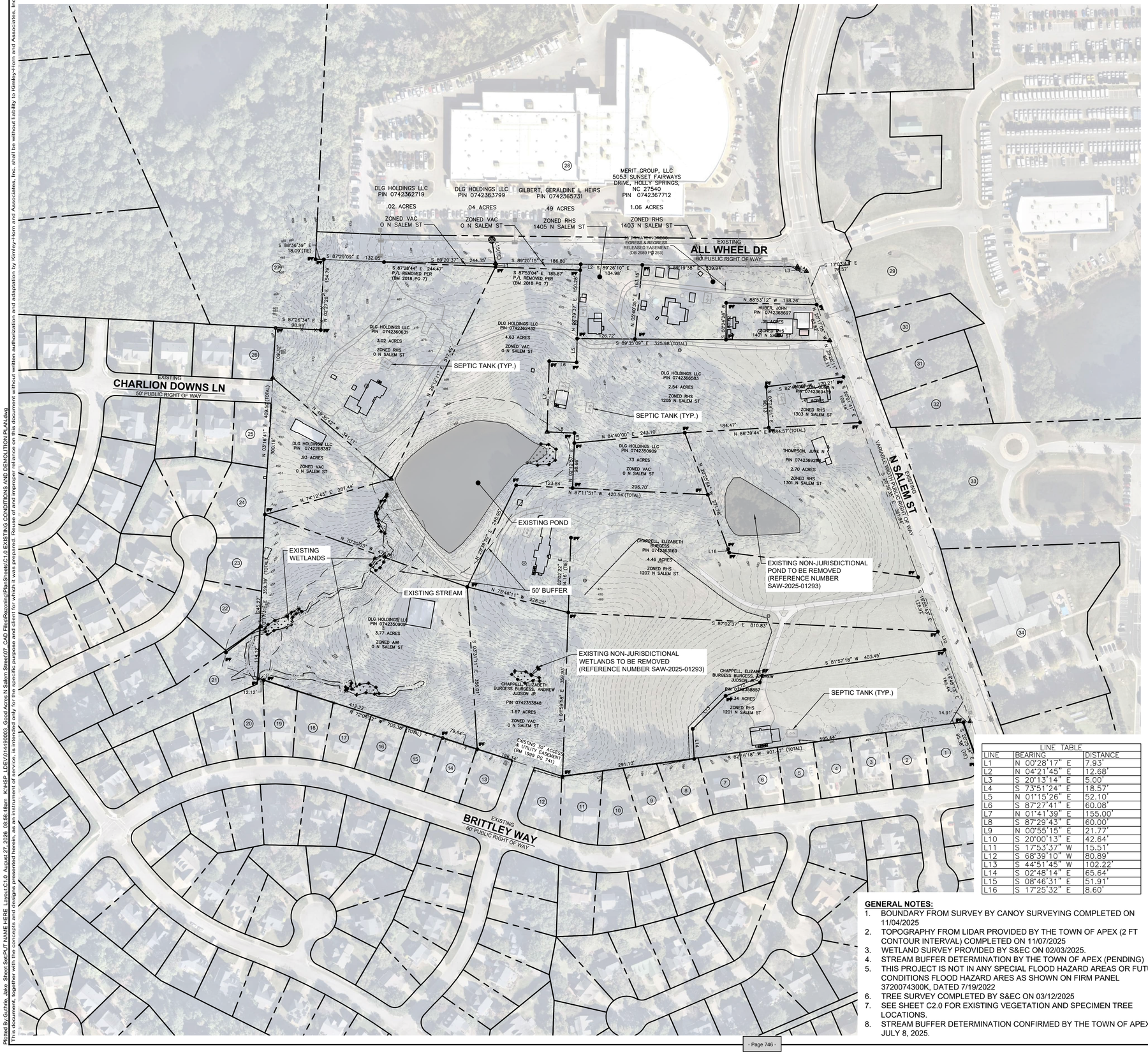
KHA PROJECT	014490003
DATE	AUGUST 2026
SCALE	AS SHOWN
DESIGNED BY	RCZ
DRAWN BY	JTG
CHECKED BY	RCZ

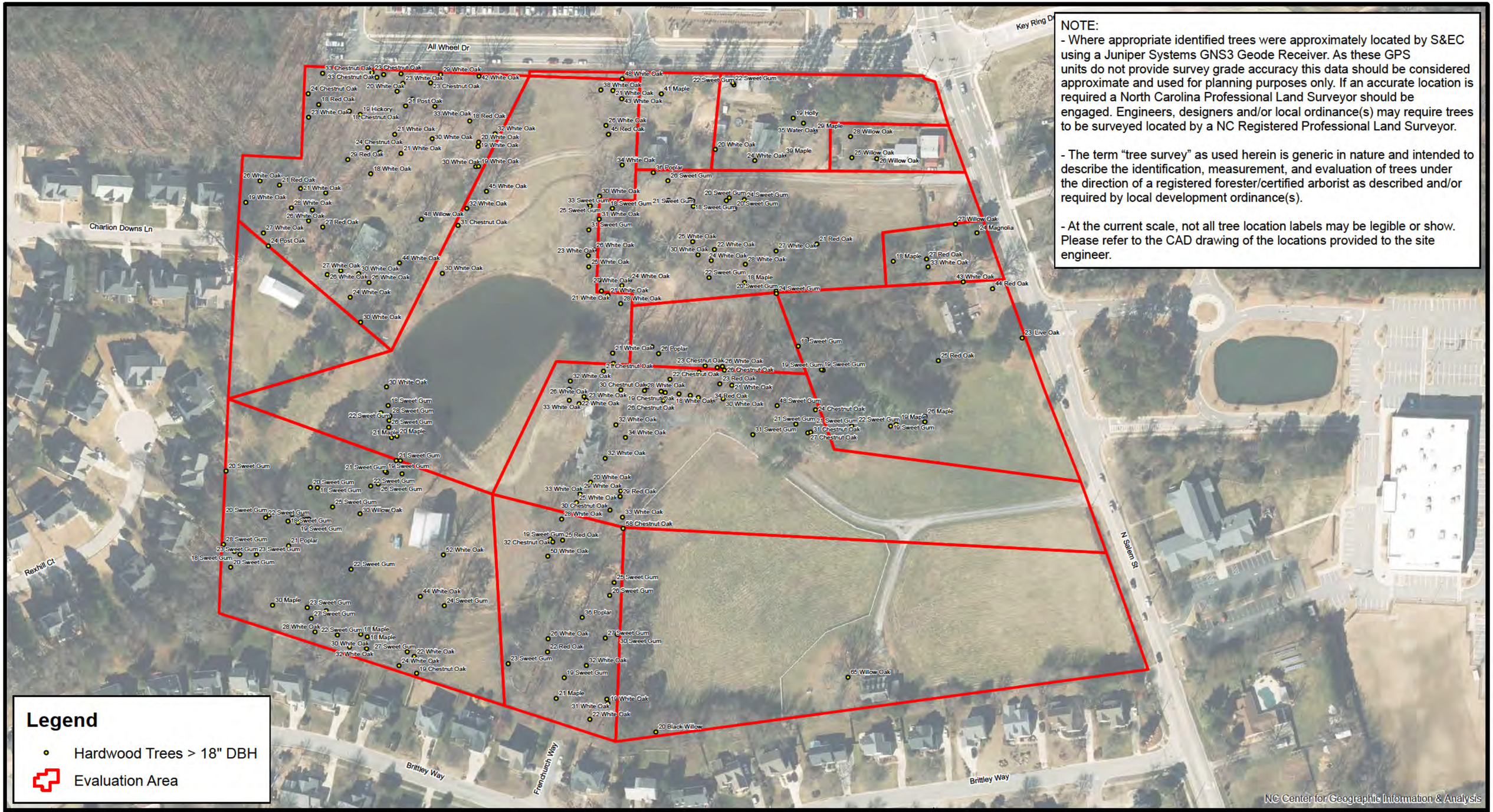
COVER SHEET

N. SALEM STREET MIXED USE
PREPARED FOR
MERIT GROUP LLC
NORTH CAROLINA
APEX

SHEET NUMBER
C0.0

Plotted By:Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C0.0 August 27, 2026 09:58:38am K:\HSP_LDEV\014490003_Good Acres N Salem Street\07_CAD Files\Rezoning\PlanSheets\C0.0 COVER SHEET.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.


EXISTING
CHARLION DOWNS LN
50' PUBLIC RIGHT OF WAY
EXISTING
ALL WHEEL DR
60' PUBLIC RIGHT OF WAY
EXISTING
BRITTLEY WAY
60' PUBLIC RIGHT OF WAY
EXISTING
N SALEM ST
VARIABLE WIDTH PUBLIC RIGHT OF WAY
DLG HOLDINGS LLC
PIN 0742362719
.02 ACRES
ZONED VAC
O N SALEM ST
DLG HOLDINGS LLC
PIN 0742363799
.04 ACRES
ZONED VAC
O N SALEM ST
GILBERT, GERALDINE L HEIRS
PIN 0742365731
.49 ACRES
ZONED RHS
1405 N SALEM ST
MERIT GROUP, LLC
5053 SUNSET FAIRWAYS
DRIVE, HOLLY SPRINGS,
NC 27540
PIN 0742367712
1.06 ACRES
ZONED RHS
1403 N SALEM ST
20' PRIVATE ACCESS, EGRESS & REGRESS RELEASED EASEMENT (DB 2989 PG 253)
DLG HOLDINGS LLC
PIN 0742360631
3.02 ACRES
ZONED RHS
O N SALEM ST
DLG HOLDINGS LLC
PIN 0742362432
4.63 ACRES
ZONED VAC
O N SALEM ST
DLG HOLDINGS LLC
PIN 0742366583
2.54 ACRES
ZONED RHS
1205 N SALEM ST
HUBER, JOHN
PIN 0742368697
.38 ACRES
ZONED RHS
1401 N SALEM ST
DLG HOLDINGS LLC
PIN 0742268387
.93 ACRES
ZONED VAC
O N SALEM ST
DLG HOLDINGS LLC
PIN 0742350909
.73 ACRES
ZONED VAC
O N SALEM ST
DLG HOLDINGS LLC
PIN 0742350909
3.77 ACRES
ZONED AIM
O N SALEM ST
CHAPPELL, ELIZABETH BURGESS
PIN 0742356169
4.46 ACRES
ZONED RHS
1207 N SALEM ST
CHAPPELL, ELIZABETH BURGESS, ANDREW JUDSON JR
PIN 0742353848
1.67 ACRES
ZONED VAC
O N SALEM ST
CHAPPELL, ELIZABETH BURGESS, ANDREW JUDSON JR
PIN 0742358857
.34 ACRES
ZONED RHS
1201 N SALEM ST
THOMPSON, JUNE N
PIN 0742369218
2.70 ACRES
ZONED RHS
1301 N SALEM ST
SEPTIC TANK (TYP.)
EXISTING WETLANDS
EXISTING STREAM
50' BUFFER
EXISTING POND
EXISTING NON-JURISDICTIONAL WETLANDS TO BE REMOVED (REFERENCE NUMBER SAW-2025-01293)
EXISTING NON-JURISDICTIONAL POND TO BE REMOVED (REFERENCE NUMBER SAW-2025-01293)
EXISTING 30' ACCESS & UTILITY EASEMENT (BM 1999 PG 741)
S 88°36'39" E 18.09'(TIE)
S 87°29'09" E 132.09'
S 87°28'44" E 244.47'
P/L REMOVED PER (BM 2018 PG 7)
S 89°20'37" E 244.35'
S 89°20'15" E 186.80'
S 87°53'04" E 185.87'
P/L REMOVED PER (BM 2018 PG 7)
S 87°26'14" E 98.99'
N 02°27'25" E 154.78'
N 26°23'11" E 514.24'
N 03°18'41" E 409.55'(TOTAL)
N 69°50'40" W 34.11'
N 74°12'43" E 287.44'
N 70°20'03" W 179.46'
N 75°46'11" W 228.25'
N 72°08'13" W 700.38'(TOTAL)
S 87°16'18" W 901.17'(TOTAL)
S 89°35'09" E 325.98'(TOTAL)
N 84°40'00" E 243.10'
N 87°11'51" W 420.54'(TOTAL)
N 86°39'44" E 584.57'(TOTAL)
S 81°57'18" W 403.45'
S 17°03'14" E 76.57'
S 73°51'24" E 18.57'
S 20°13'14" E 5.00'
S 17°53'37" W 15.51'
S 68°39'10" W 80.89'
S 44°51'45" W 102.22'
S 02°48'14" E 65.64'
S 08°46'31" E 51.91'
S 17°25'32" E 8.60'
N 00°28'17" E 7.93'
N 04°21'45" E 12.68'
N 01°15'26" E 52.10'
S 87°27'41" E 60.08'
N 01°41'39" E 155.00'
S 87°29'43" E 60.00'
N 00°55'15" E 21.77'
S 20°00'13" E 42.64'
409.55'(TOTAL)
359.39'(TOTAL)
300.18'
359.53'
359.53'
359.53



NOTE:
- Where appropriate identified trees were approximately located by S&EC using a Juniper Systems GNS3 Geode Receiver. As these GPS units do not provide survey grade accuracy this data should be considered approximate and used for planning purposes only. If an accurate location is required a North Carolina Professional Land Surveyor should be engaged. Engineers, designers and/or local ordinance(s) may require trees to be surveyed located by a NC Registered Professional Land Surveyor.

- The term "tree survey" as used herein is generic in nature and intended to describe the identification, measurement, and evaluation of trees under the direction of a registered forester/certified arborist as described and/or required by local development ordinance(s).

- At the current scale, not all tree location labels may be legible or show. Please refer to the CAD drawing of the locations provided to the site engineer.

Legend

- Hardwood Trees > 18" DBH
- Evaluation Area

Project No. 13759.W7	
Project Mgr.: SB	
Scale: 1" = 150'	0 150 300 600 Feet
03/12/2025	

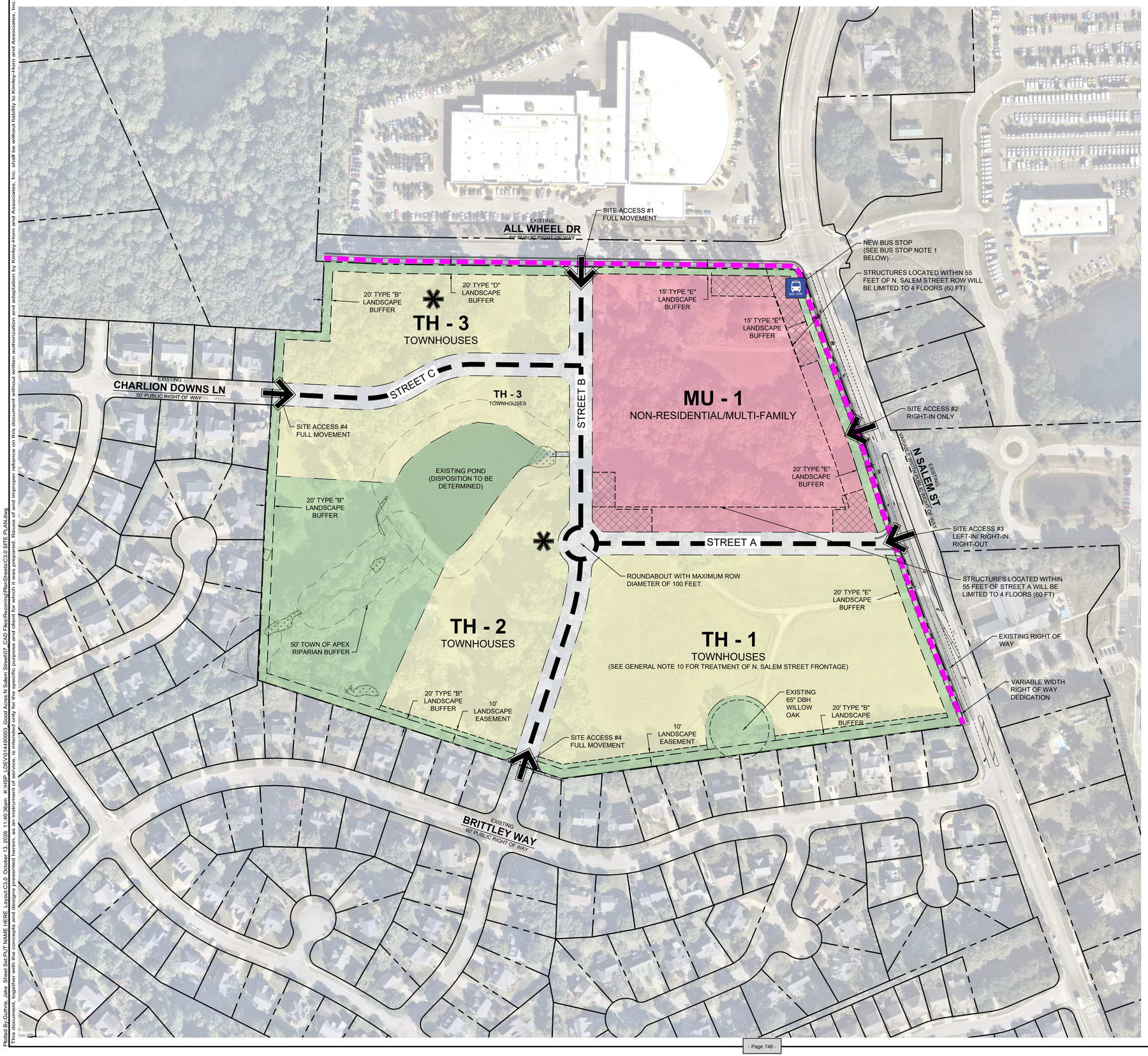
Town of Apex Tree Survey Sketch Map

1301 N Salem Road Assemblage, Apex, NC

Source: Aerials from [illegible]aps

S&EC
Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 ● Phone (919) 846-5900 ● Fax (919) 846-9467
sandec.com

C2.0



SITE LEGEND

- PROPERTY LINE
- 50' TOWN OF APEX RIPARIAN BUFFER
- LOCAL STREET
- 10' SIDEPATH
- NEW BUS STOP (SEE BUS STOP NOTE 1 BELOW)
- ACTIVE RECREATION AREA/PLAY LAWN
- VEHICULAR ACCESS
- EXISTING WETLAND
- PERIMETER BUFFER/LANDSCAPE EASEMENT/RESOURCE CONSERVATION AREA (MINIMUM OF 20% OF SITE AREA)
- MULTI-RESIDENTIAL (MULTI-FAMILY, TOWNHOUSES
- MULTI-FAMILY APARTMENTS; NON-RESIDENTIAL
- TOWNHOUSES
- AREA SUBJECT TO ARCHITECTURAL CONTROLS (SEE ARCHITECTURAL CONTROL NOTES BELOW)

GENERAL NOTES:

1. ALL ZONING PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. FINAL DESIGN COMPONENTS SHALL BE DETERMINED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
2. REFER TO THE PUD TEXT DOCUMENTS FOR ALLOWABLE USES, ZONING CONDITIONS, AND OTHER DESIGN STANDARDS.
3. ALL VEHICULAR ACCESS LOCATIONS AND PEDESTRIAN CIRCULATION ARE CONCEPTUAL AND SHALL BE FINALIZED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
4. TREE PROTECTION FENCING SHALL BE PLACED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
5. ALL PARKING STANDARDS SHALL COMPLY WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE EXCEPT AS MODIFIED BY THE PUD NARRATIVE.
6. EXACT LOCATION OF OPEN SPACE AND RESOURCE CONSERVATION AREA TO BE FINALIZED DURING THE SITE/SUBDIVISION APPROVAL PROCESS.
7. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTAINED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
8. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
9. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING, SCREENING, SITE STABILIZATION (SEEDING), PARKING, AND PAVEMENT MARKING, MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.
10. UNITS LOCATED IN TH-1 ALONG THE FRONTAGE OF N. SALEM STREET WILL FACE N. SALEM STREET AND TAKE ACCESS FROM THE REAR.

BUS STOP

1. SUBJECT TO NCDOT APPROVAL, A SOUTHBOUND BUS STOP SHALL BE CONSTRUCTED ALONG N. SALEM STREET, SOUTH OF ALL WHEEL DRIVE ALONG THE FRONTAGE OF MU-1. THE BUS STOP WILL BE CONSTRUCTED TO TOWN STANDARDS AS WELL AS ADA AND PROWAG STANDARDS, INCLUDING:
   - COVERED BUS SHELTER WITH SEATING
   - TRASH RECEPTACLE
   - 2 BIKE RACKS
   - LIGHTING

ARCHITECTURAL CONTROL NOTES

THE FOLLOWING BUILDING PLACEMENT CONTROLS SHALL APPLY IN THE MU-1 DISTRICT:

1. NO PARKING BAYS OR DRIVE AISLES SHALL BE PERMITTED BETWEEN THE BUILDING AND STREET WITHIN 100 FEET OF THE INTERSECTION OF STREET A AND STREET B, AND THE INTERSECTION OF STREET A AND N. SALEM STREET.
2. THE CORNER OF N. SALEM STREET AND ALL WHEEL DRIVE SHALL BE ANCHORED BY A BUILDING WITH NO MORE THAN ONE DOUBLE-LOADED (PARKING ON EACH SIDE OF DRIVE AISLE) PARKING BAY AND DRIVE AISLE BETWEEN THE STREET AND BUILDING.
3. TO FACILITATE OUTDOOR DINING AND GATHERING, MIXED-USE BUILDINGS SHALL INCLUDE A MINIMUM 12-FOOT WIDE SIDEWALK WITH LANDSCAPING ALONG THE FACADES OF NON-RESIDENTIAL USES. LANDSCAPING MAY INCLUDE, BUT IS NOT LIMITED TO, TREE WELLS, PLANTING BEDS, POTTED PLANTS, ETC.

GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

No.	REVISIONS	DATE	BY
7	REVISIONS PER TOWN COMMENTS	08/27/2026	JTG
6	REVISIONS PER TOWN COMMENTS	08/07/2026	JTG
5	REVISIONS PER TOWN COMMENTS	07/02/2026	JTG
4	REVISIONS PER TOWN COMMENTS	06/05/2026	JTG
3	REVISIONS PER TOWN COMMENTS	05/01/2026	JTG
2	REVISIONS PER TOWN COMMENTS	03/05/2026	JTG
1	REVISIONS PER TOWN COMMENTS	02/06/2026	JTG

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#F-0102 WWW.KIMLEY-HORN.COM PHONE: 984-212-4572
1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

NORTH CAROLINA
REGISTERED LANDSCAPE ARCHITECT
PRELIMINARY
NOT FOR CONSTRUCTION
JOSEPH T. ZUMWALT

KHA PROJECT	014490003
DATE	AUGUST 2026
SCALE	AS SHOWN
DESIGNED BY	RCZ
DRAWN BY	JTG
CHECKED BY	RCZ

PRELIMINARY SITE LAYOUT PLAN

N. SALEM STREET MIXED USE

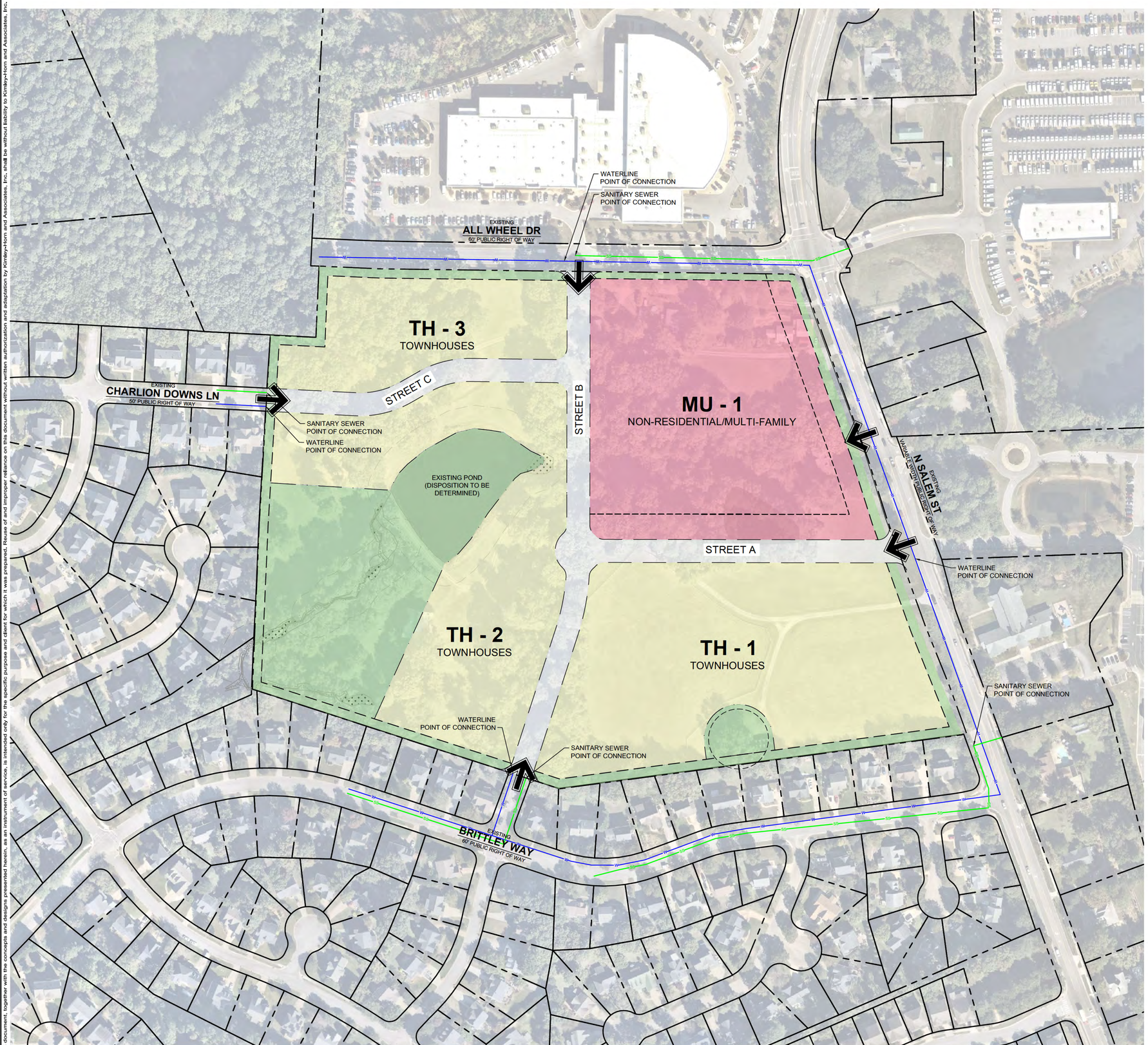
PREPARED FOR
MERIT GROUP LLC

APEX NORTH CAROLINA

SHEET NUMBER
C3.0

Plotted By:Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C3.0 October 13, 2026 11:40:38am K:\HSP_LDEV\014490003_Good Acres N Salem Street\07_CAD Files\Rezoning\PlanSheets\C3.0 SITE PLAN.dwg
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Plotted By:Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C4.0 August 27, 2026 08:59:25am K:\HSP_LDEV\014490003_Good Acres N Salem Street\07_CAD Files\Rezoning\PlanSheets\C4.0 UTILITY PLAN.dwg
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UTILITY LEGEND

- PROPERTY LINE
- W — WATER LINE
- SS — SANITARY SEWER LINE

UTILITY NOTES

1. THIS PROJECT IS REQUEST NG FULL TOWN SERVICES, INCLUDING BUT NOT LIMITED TO, WATER, SEWER AND ELECTRICITY.
2. THE SITE WILL NOT UTILIZE PRIVATE SEWAGE DISPOSAL SYSTEMS.
3. ALL UTILITY EASEMENTS SHALL BE PROVIDED AS NECESSARY. EXACT LOCATION SHALL BE DETERM NED AT THE T ME OF CONSTRUCTION DRAW NGS.
4. ALL CONSTRUCTION SHALL COMPLY WITH THE TOWN OF APEX STANDARDS AND SPECIFICATIONS.
5. ALL WATER AND SEWER MAINS WITHIN THE PUBLIC EASEMENTS SHALL BE OWNED, OPERATED, AND MA NTAINED BY THE TOWN OF APEX.

GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

No.	REVISIONS	DATE	BY
7	REVISIONS PER TOWN COMMENTS	08/27/2026	JTG
6	REVISIONS PER TOWN COMMENTS	08/07/2026	JTG
5	REVISIONS PER TOWN COMMENTS	07/02/2026	JTG
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3	REVISIONS PER TOWN COMMENTS	05/01/2026	JTG
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1	REVISIONS PER TOWN COMMENTS	02/06/2026	JTG

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NORTH CAROLINA
REGISTERED LANDSCAPE ARCHITECT
PRELIMINARY
NOT FOR CONSTRUCTION
RYAN C. ZUMWALT

KHA PROJECT 014490003
DATE AUGUST 2026
SCALE AS SHOWN
DESIGNED BY RCZ
DRAWN BY JTG
CHECKED BY RCZ

PRELIMINARY UTILITY PLAN

N. SALEM STREET MIXED USE

PREPARED FOR
MERIT GROUP LLC

APEX NORTH CAROLINA

SHEET NUMBER
C4.0

FRONT ELEVATIONS - REAR ACCESS











FRONT ELEVATIONS - FRONT ACCESS











SIDE ELEVATIONS





REAR ELEVATIONS - FRONT AND REAR ACCESS




N. SALEM STREET MIXED-USE

PRECEDENT IMAGERY - TOWNHOMES

NOTE:
PRECEDENT IMAGES ARE REPRESENTATIVE OF ARCHITECTURAL DETAILS AND TREATMENT. ALL TOWNHOME ELEVATIONS MUST COMPLY WITH ALL ARCHITECTURAL STANDARDS OF THE PUD DOCUMENT, INCLUDING COLOR VARIATION.

C4.1

4/30/2026 10:58:29 AM

75' MAX BUILDING HEIGHT



1 Salem St - Elevation
3/32" = 1'-0"

75' MAX BUILDING HEIGHT



2 All Wheel Dr - Elevation
3/32" = 1'-0"

CONCEPT IMAGES -
DESIGN SUBJECT TO CHANGE

C4.2

kaas wilson architects

Bldg Type I - Exterior Elevations

North Salem Street Development Apex, NC

Apex, NC 27502 26075 04/30/2026

4/30/2026 10:52:37 AM



1 Parking Side - Elevation 1
3/32" = 1'-0"



2 Retail End Bay - Elevation
3/32" = 1'-0"



3 Residential End Bay - Elevation
3/32" = 1'-0"



4 Parking Side - Elevation 2
3/32" = 1'-0"

CONCEPT IMAGES -
DESIGN SUBJECT TO CHANGE

C4.3

4/30/2026 10:53:34 AM

CONCEPT IMAGES -
DESIGN SUBJECT TO CHANGE



4 Building Type II - 4 Story Elevation - Court Side Middle
3/32" = 1'-0"



3 Building Type II - 4 Story Elevation - Interior Court Side 1
3/32" = 1'-0"



2 Building Type II - 4 Story Elevation - End
3/32" = 1'-0"



1 Building Type II - 4 Story Elevation - Left Side
3/32" = 1'-0"

C4.4

kaas wilson architects

Bldg Type II - Exterior Elevations

North Salem Street Development Apex, NC

Apex, NC 27502 26075 04/30/2026

4/30/2026 10:56:34 AM

CONCEPT IMAGES -
DESIGN SUBJECT TO CHANGE



9 Building Type II - 4 Story Elevation - Front Right Side 2
3/32" = 1'-0"



8 Building Type II - 4 Story Elevation - Front Side Right 1
3/32" = 1'-0"



7 Building Type II - 4 Story Elevation - End
3/32" = 1'-0"



6 Building Type II - 4 Story Elevation - Exterior Back Side
3/32" = 1'-0"



5 Building Type II - 4 Story Elevation - Interior Court Side 2
3/32" = 1'-0"

C4.5

4/30/2026 10:56:34 AM

CONCEPT IMAGES -
DESIGN SUBJECT TO CHANGE



10 Building Type II - 4 Story Elevation - Front Side
3/32" = 1'-0"

C4.6

4/30/2026 10:58:34 AM



MIXED-USE BUILDING EXAMPLE



MULTI-FAMILY BUILDING EXAMPLE



MULTI-FAMILY BUILDING EXAMPLE



MULTI-FAMILY BUILDING EXAMPLE





MIXED-USE BUILDING EXAMPLES

C4.7



C4.8

kaas wilson architects

Artistic Rendering - Mixed Use Building

North Salem Street Development Apex, NC

Apex, NC 27502 26075 04/30/2026

20250911154 AM



C4.8a

Traffic Impact Analysis

N. Salem Street Mixed-Use

Apex, NC

Prepared for:

Merit Group, LLC

Kimley»Horn

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Traffic Impact Analysis for

N. Salem Street Mixed-Use

Apex, North Carolina

Prepared for:

Merit Group, LLC

Holly Springs, North Carolina

Prepared by:

Kimley-Horn and Associates, Inc.
NC License #F-0102
1070 S. Main Street, Suite 230
Holly Springs, NC 27540
(919) 677-2000

November 2025

014490003



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Executive Summary

Kimley-Horn and Associates has prepared a Traffic Impact Analysis (TIA) for the proposed N. Salem Street Mixed-Use (Good Acres) development, which will be located west of N. Salem Street between All Wheel Drive and Brittley Way in Apex, North Carolina. As currently envisioned the development is expected to consist of approximately 200 single-family attached dwelling units (assumed to potentially include a mix of traditional townhomes and "2-over-2" dwelling units), 250 mid-rise apartments, and 22,000 square feet (SF) of commercial space. Site access is proposed via new driveways along N. Salem Street and All Wheel Drive along with cross-access to Brittley Way at Frenchurch Way. Project build-out is anticipated in 2032.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated project traffic demands. This report examines the existing (2025) traffic condition, the projected (2032) background traffic condition, and the projected (2032) build-out traffic condition.

Study Intersections

The study area for this development included the following intersections:

- N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street
- N. Salem Street at US 64 Eastbound Ramps
- N. Salem Street at All Wheel Drive/Key Ring Drive
- N. Salem Street at Thales Academy Inbound Driveway
- N. Salem Street at Thales Academy Outbound Driveway/South Site Drive (left-in/right-in/right-out)
- N. Salem Street at Brittley Way
- N. Salem Street at Apex Peakway
- Apex Peakway at Brittley Way
- Brittley Way at Frenchurch Way/Site Drive (full-movement)
- All Wheel Drive at Crossroads Ford Driveway/Site Drive (full-movement)
- N. Salem Street at North Site Drive (right-in only)

Existing Traffic Data

Weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak hour turning movement counts at the existing study intersections on October 21, 2025, while area schools were in session. School PM (2:00 to 4:00 PM) peak hour counts were also collected at the Thales Academy driveways and at All Wheel Drive/Key Ring Drive.

Future No-Build Traffic Volumes

To calculate projected (2032) background traffic volumes a 3% annual growth rate was applied to the existing traffic up to the study year 2032, though no growth was applied to traffic volumes onto/off of All Wheel Drive/Key Ring Drive, Brittley Way, Frenchurch Way, or the Thales Academy driveways.

Based on TIA scoping discussions, no area approved developments were identified for inclusion in this analysis as background traffic.

Trip Generation

The traffic generation potential of the proposed development was determined using the traffic generation data published in the 11th Edition of the ITE *Trip Generation Manual.* For these calculations, site traffic for both townhomes and "2-over-2" dwelling units was generated using data for ITE land use code 215 (single-family attached) since that methodology provides more-conservative results than separating some units as low-rise multifamily dwelling units. The commercial space was generated as land use code 822 (strip retail plaza). As shown in Table ES-1, the development has the potential to generate 3,294 net new trips on a typical weekday, with 238 trips during the AM peak hour, 177 net new trips during the school PM peak hour, and 282 net new trips during the PM peak hour. A pass-by reduction of 20% was used in the school PM and PM peak hours for strip retail plaza trips even though ITE suggests higher pass-by reduction capture for similar retail uses.

Table ES-1
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				Total	In	Out	In	Out	In	Out
215	Single-Family Attached Housing	200	d.u.	1,474	25	73	50	40	68	48
221	Multifamily Housing (Mid-Rise)	250	d.u.	1,146	23	75	29	21	60	38
822	Strip Retail Plaza (<40k)	22,000	s.f.	1,158	29	19	39	39	68	68
Subtotal				3,778	77	167	118	100	196	154
Internal Capture				*388*	*3*	*3*	*14*	*14*	*23*	*23*
Pass-by Capture				*96*	*0*	*0*	*7*	*6*	*12*	*10*
Total Net New External Trips				**3,294**	**74**	**164**	**97**	**80**	**161**	**121**

Capacity Analyses

Capacity analyses were performed using Synchro/SimTraffic Version 12 software. Table ES-2 summarizes the operation of the study intersections for the AM, school PM (where applicable), and PM peak hour traffic conditions. As an Apex Police officer serves as traffic control at the Thales Academy Outbound Driveway in the AM and school PM peak hours, that intersection was analyzed as a signalized intersection for the northbound Salem Street and Thales driveway approaches with free-flow operation for southbound Salem Street to model the impacts of that operation. The PM peak hour for that intersection, along with this development's proposed South Site Driveway, were modeled as unsignalized intersections.

Table ES-2
Intersection Levels of Service

Intersection	Existing Year (2025)			Future Year (2032)					
				Background			Build-out		
	AM Peak Hour LOS (Delay)	School PM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	AM Peak Hour LOS (Delay)	School PM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	AM Peak Hour LOS (Delay)	School PM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street	B (18.2)	-	C (34.0)	C (29.9)	-	D (45.2)	C (32.2)	-	D (48.3)
N. Salem Street at US 64 Eastbound Ramps	C (33.3)	-	C (26.2)	D (52.2)	-	D (41.8)	D (53.9)	-	D (41.9)
N. Salem Street at All Wheel Drive/Key Ring Drive	C (28.6)	C (22.9)	B (13.1)	C (31.9)	C (27.3)	B (19.6)	C (33.7)	C (32.1)	Unimp.: D (43.9) Imp.: C (26.9)
N. Salem Street at Thales Academy Inbound Driveway^	SBL - A (9.8)	SBL - A (6.5)	SBL - A (4.4)	SBL - B (13.0)	SBL - A (9.3)	SBL - B (11.1)	SBL - B (15.0)	SBL - B (11.3)	SBL - A (9.6)
N. Salem Street at Thales Academy Outbound Driveway/ South Site Driveway (LI/RI/RO)*	Thales Acad. w/ PO - C (24.6)	Thales Acad. w/ PO - C (23.6)	Thales Acad. WB - C (15.5)	Thales Acad. w/ PO - D (40.9)	Thales Acad. w/ PO - D (39.0)	Thales Acad. WB - C (18.8)	Thales Acad. w/ PO - D (40.9)	Thales Acad. w/ PO - D (39.4)	Thales Acad. WB - C (18.8)
	-	-	-	-	-	-	EB - C (16.4)	EB - C (21.7)	EB - D (29.8)
	-	-	-	-	-	-	NBL - A (5.2)	NBL - C (16.3)	NBL - C (22.2)
N. Salem Street at Brittley Way	EB - C (17.2)	-	EB - C (23.9)	EB - C (20.9)	-	EB - D (32.7)	EB - C (21.8)	-	EB - D (34.9)
	NBL - A (9.0)	-	NBL - B (10.9)	NBL - A (9.6)	-	NBL - B (12.4)	NBL - A (9.8)	-	NBL - B (12.7)
N. Salem Street at Apex Peakway	C (27.2)	-	C (33.1)	C (30.1)	-	D (41.2)	C (30.6)	-	D (43.5)
Apex Peakway at Brittley Way	NB - B (13.8)	-	NB - C (17.7)	NB - C (15.7)	-	NB - C (22.2)	NB - C (16.2)	-	NB - C (23.7)
	SB - C (16.8)	-	SB - C (19.5)	SB - C (20.3)	-	SB - D (25.9)	SB - C (20.3)	-	SB - D (26.5)
	EBL - A (8.0)	-	EBL - A (8.6)	EBL - A (8.2)	-	EBL - A (9.0)	EBL - A (8.2)	-	EBL - A (9.0)
	WBL - A (8.0)	-	WBL - A (8.2)	WBL - A (8.2)	-	WBL - A (8.5)	WBL - A (8.2)	-	WBL - A (8.5)
Brittley Way at Frenchurch Way (All-Way Stop)^^	Overall - A (7.3)	-	Overall - A (7.4)	Overall - A (7.3)	-	Overall - A (7.4)	Overall - A (7.4)	-	Overall - A (7.5)
All Wheel Drive at Crossroads Ford Drwy./Site Drwy.	-	-	-	-	-	-	NB - A (9.0)	-	NB - A (8.9)
	SB - A (8.8)	-	SB - A (8.7)	SB - A (8.8)	-	SB - A (8.7)	SB - A (9.5)	-	SB - A (9.4)
	EBL - A (7.3)	-	EBL - A (7.6)	EBL - A (7.3)	-	EBL - A (7.6)	EBL - A (7.3)	-	EBL - A (7.6)
	-	-	-	-	-	-	WBL - A (7.3)	-	WBL - A (7.3)

^Delays reported from SimTraffic

*Thales Academy Outbound Drwy. analyzed as siganlized intersection in AM and School PM peak hours to model police officer ("PO") traffic management. Site Driveway analyzed as unsignalized LI/RI/RO in each peak.

^^Delays reported for overall AWSC intersection.

Recommended Improvements

Other than the construction of site driveways (each with one ingress lane and one egress lane), the following improvements are recommended as part of the N. Salem Street Mixed-Use development:

N. Salem Street at All Wheel Drive/Key Ring Drive:

- If approved by the Town and NCDOT, modify signal phasing in the PM peak hour to eliminate the protected phases for the eastbound and westbound left-turn movements

N. Salem Street at Thales Academy Outbound Driveway/South Site Driveway:

- Construct the South Site Driveway as a directional crossover (left-in/right-in/right-out) access with one ingress lane and one egress lane
- Provide a northbound left-turn lane on N. Salem Street with 100 feet of storage and appropriate tapers
- Coordinate with the Town and NCDOT on appropriate driveway channelization for this site access and to limit the Thales Academy Outbound Driveway to right-out only

Figure ES-1 shows the recommended roadway laneage at project build-out.

Conclusions

Analyses indicate that with the recommended improvements in place, all of the signalized study intersections are expected to operate at overall acceptable LOS at project build-out.

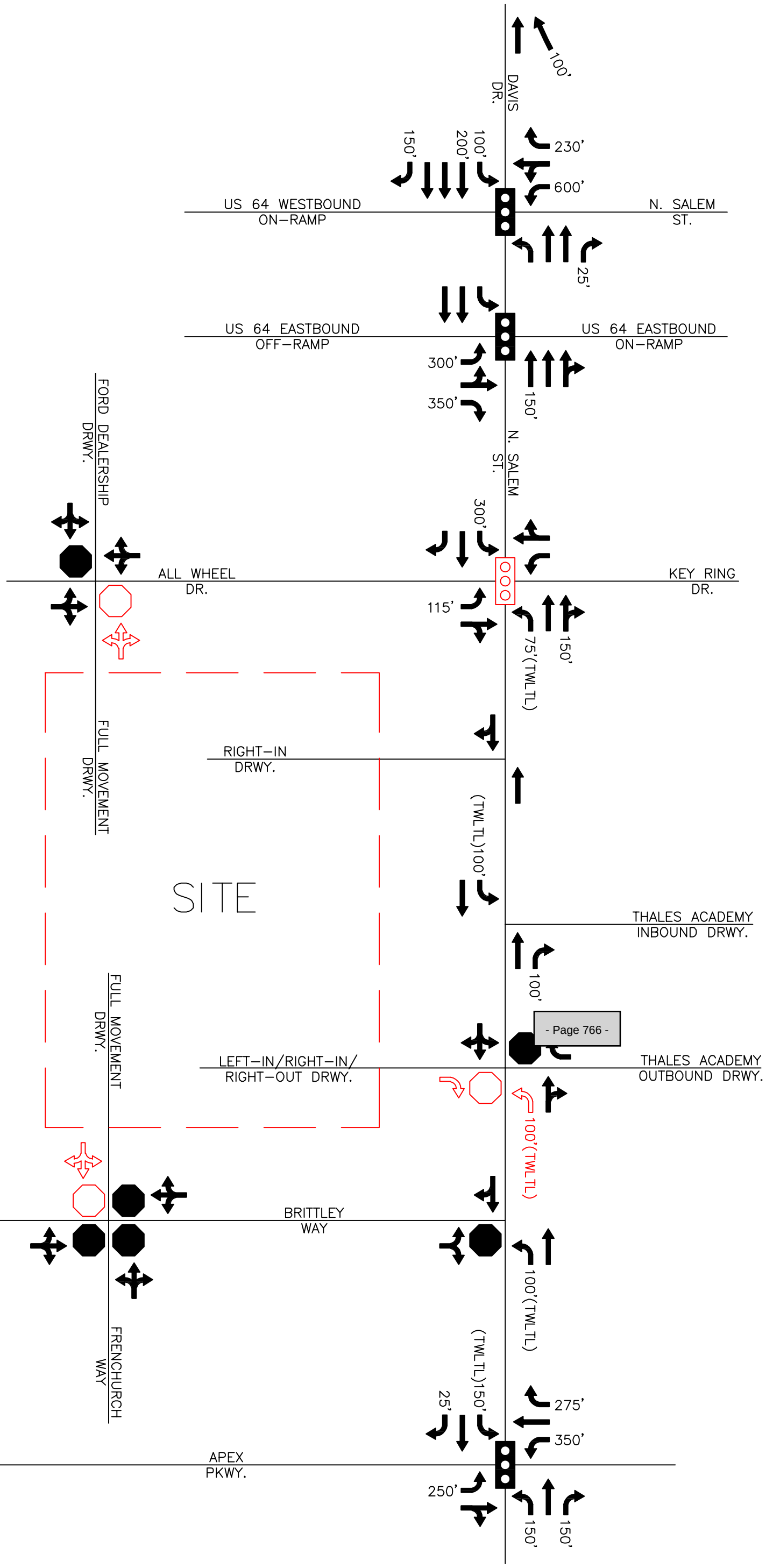
At the unsignalized intersection of N. Salem Street at Brittley Way, moderate delays are anticipated on the minor street approach (Brittley Way) in the PM peak hour in the study year 2032 with or without the proposed development in place. However, it is typical for stop sign controlled side streets and 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. As this development is expected to have minimal impacts on this intersection, and since the on-site street network will provide connectivity to the traffic signal at All Wheel Drive, which is expected to result in a diversion of some existing traffic off of Brittley Way, no improvements are recommended to be performed at this intersection.

Long queues observed in the existing traffic condition at several study intersections (including the Thales Academy driveways and the US 64 ramps) are expected to continue in the future traffic conditions. However, site traffic impacts on intersection volumes and delays are relatively minimal at most intersections, and the proposed access configuration results in little additional traffic added to N. Salem Street through the Thales Academy driveways in the AM and school PM peak hours. Therefore, no additional improvements are recommended to be performed as part of this development.

NOT TO SCALE

LEGEND

- EXISTING LANE
- XX' STORAGE LENGTH
- EXISTING STOP SIGN
- EXISTING TRAFFIC SIGNAL
- RECOMMENDED LANEAGE
- RECOMMENDED STOP SIGN
- RECOMMENDED TRAFFIC SIGNAL MODIFICATION



Kimley»Horn

N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

RECOMMENDED ROADWAY LANEAGE

FIGURE
ES-1

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1.0 Introduction

Kimley-Horn and Associates has prepared a Traffic Impact Analysis (TIA) for the proposed N. Salem Street Mixed-Use (Good Acres) development, which will be located west of N. Salem Street between All Wheel Drive and Brittley Way in Apex, North Carolina. As currently envisioned the development is expected to consist of approximately 200 single-family attached dwelling units (assumed to potentially include a mix of traditional townhomes and "2-over-2" dwelling units), 250 mid-rise apartments, and 22,000 square feet (SF) of commercial space. Site access is proposed via new driveways along N. Salem Street and All Wheel Drive along with cross-access to Brittley Way at Frenchurch Way. Project build-out is anticipated in 2032.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated project traffic demands. This report examines the existing (2025) traffic condition, the projected (2032) background traffic condition, and the projected (2032) build-out traffic condition.

The Town of Apex and the North Carolina Department of Transportation (NCDOT) provided background information and were consulted regarding the elements to be covered in this analysis. The study Memorandum of Understanding is included in the Appendix of this report.

2.0 Inventory

2.1 *Study Area*

The study area for this development includes the following intersections:

- N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street
- N. Salem Street at US 64 Eastbound Ramps
- N. Salem Street at All Wheel Drive/Key Ring Drive
- N. Salem Street at Thales Academy Inbound Driveway
- N. Salem Street at Thales Academy Outbound Driveway/South Site Drive (left-in/right-in/right-out)
- N. Salem Street at Brittley Way
- N. Salem Street at Apex Peakway
- Apex Peakway at Brittley Way
- Brittley Way at Frenchurch Way/Site Drive (full-movement)
- All Wheel Drive at Crossroads Ford Driveway/Site Drive (full-movement)
- N. Salem Street at North Site Drive (right-in only)

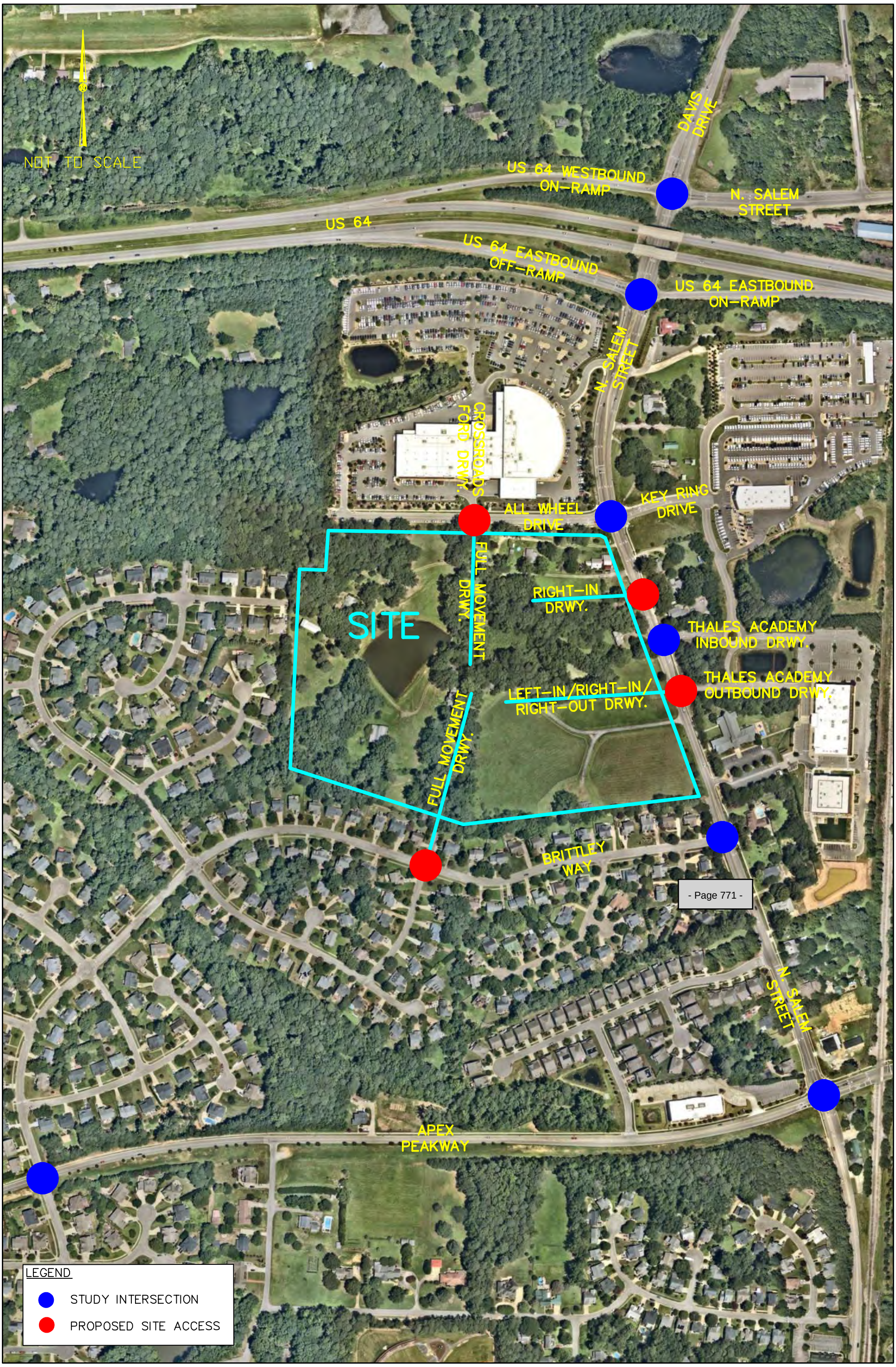
This site location is shown on **Figure 2.1,** the conceptual master plan is shown on **Figure 2.2,** and **Figure 2.3** shows the existing study intersection laneage**.**

2.2 *Existing Conditions*

The proposed development is located generally southwest of the N. Salem Street – All Wheel Drive/Key Ring Drive intersection. Roadway network elements (speed limit, estimated average daily traffic volume, existing configuration, and Town of Apex Thoroughfare and Collector Street Plan designation) of study area roadways are summarized in Table 2.1.

Table 2.1
Roadway Network Summary

Roadway	Speed Limit	Estimated 2025 ADT Volume	Typical Existing Configuration	Future Section per Thoroughfare & Collector Street Plan
US 64 Business	55 mph	54,500 vpd west of N. Salem Street	4-Lane Divided	-
N. Salem Street	35 mph	18,800 vpd north of Brittley Way	2-Lane to 3-Lane Undivided	3-Lane Undivided Thoroughfare
Apex Peakway	35 mph	9,500 vpd west of N. Salem Street	2-Lane Undivided	4-Lane Divided Thoroughfare
Brittley Way	25 mph	2,800 vpd west of N. Salem Street	2-Lane Undivided	Local Street



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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

SITE LOCATION

FIGURE
2.1

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SITE LEGEND

- PROPERTY LINE
- 50' TOWN OF APEX RIPARIAN BUFFER
- LOCAL STREET
- 10' SIDEPATH
- ACTIVE RECREATION AREA/PLAY LAWN
- VEHICULAR ACCESS
- 10' ROW DEDICATION
- BUILDINGS IN THIS AREA SHALL BE LIMITED TO 4 FLOORS (55FT) SEE PLAN FOR LOCATION
- EXISTING WETLAND
- PERIMETER BUFFER/RESOURCE CONSERVATION AREA (MINIMUM OF 20% OF SITE AREA)
- MULTI RESIDENTIAL (MULTI-FAMILY, TOWNHOUSES)
- MULTI FAMILY (APARTMENTS)
- MULTI-FAMILY APARTMENTS, NON-RESIDENTIAL
- TOWNHOUSES

GENERAL NOTES

1. ALL ZONING PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. FINAL DESIGN COMPONENTS SHALL BE DETERMINED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS
2. REFER TO THE PUD TEXT DOCUMENTS FOR ALLOWABLE USES, ZONING CONDITIONS, AND OTHER DESIGN STANDARDS.
3. ALL VEHICULAR ACCESS LOCATIONS AND PEDESTRIAN CIRCULATION ARE CONCEPTUAL AND SHALL BE FINALIZED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
4. A PUBLIC PEDESTRIAN ACCESS EASEMENT WILL BE PROVIDED FROM THE CUL-DE-SAC ON CHARLION DOWNS LANE TO STREET B EXACT LOCATION TO BE DETERMINED AT THE TIME OF SITE/SUBDIVISION PLAN APPROVAL PROCESS
5. TREE PROTECTION FENCING SHALL BE PLACED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
6. ALL PARKING STANDARDS SHALL COMPLY WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE
7. EXACT LOCATION OF OPEN SPACE AND RESOURCE CONSERVATION AREA TO BE FINALIZED DURING THE SITE/SUBDIVISION APPROVAL PROCESS.
8. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTAINED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE
9. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
10. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING, SCREENING, SITE STABILIZATION (SEEDING), PARKING, AND PAVEMENT MARKING, MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.

UTILITY NOTES:

1. THIS PROJECT IS REQUESTING FULL TOWN SERVICES, INCLUDING BUT NOT LIMITED TO, WATER, SEWER AND ELECTRICITY.
2. THE SITE WILL NOT UTILIZE PRIVATE SEWAGE DISPOSAL SYSTEMS.
3. ALL UTILITY EASEMENTS SHALL BE PROVIDED AS NECESSARY. EXACT LOCATION SHALL BE DETERMINED AT THE TIME OF CONSTRUCTION DRAWINGS.
4. ALL CONSTRUCTION SHALL COMPLY WITH THE TOWN OF APEX STANDARDS AND SPECIFICATIONS.
5. ALL WATER AND SEWER MAINS WITHIN THE PUBLIC EASEMENTS SHALL BE OWNED, OPERATED, AND MAINTAINED BY THE TOWN OF APEX

GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

No	REVISIONS	DATE	BY
7	-	-	-
6	-	-	-
5	-	-	-
4	-	-	-
3	-	-	-
2	-	-	-
1	-	-	-

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#F-0102 WWW.KIMLEY-HORN.COM PHONE: 984-212-4572
1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

PRELIMINARY
NOT FOR CONSTRUCTION

KHA PROJECT 000000000
DATE 12/01/2025
SCALE AS SHOWN
DESIGNED BY RCZ
DRAWN BY JTG
CHECKED BY RCZ

PRELIMINARY SITE LAYOUT

N. SALEM STREET MIXED USE
PREPARED FOR
MERIT GROUP LLC
NORTH CAROLINA
APEX

SHEET NUMBER
C3.0

FIGURE 2.2

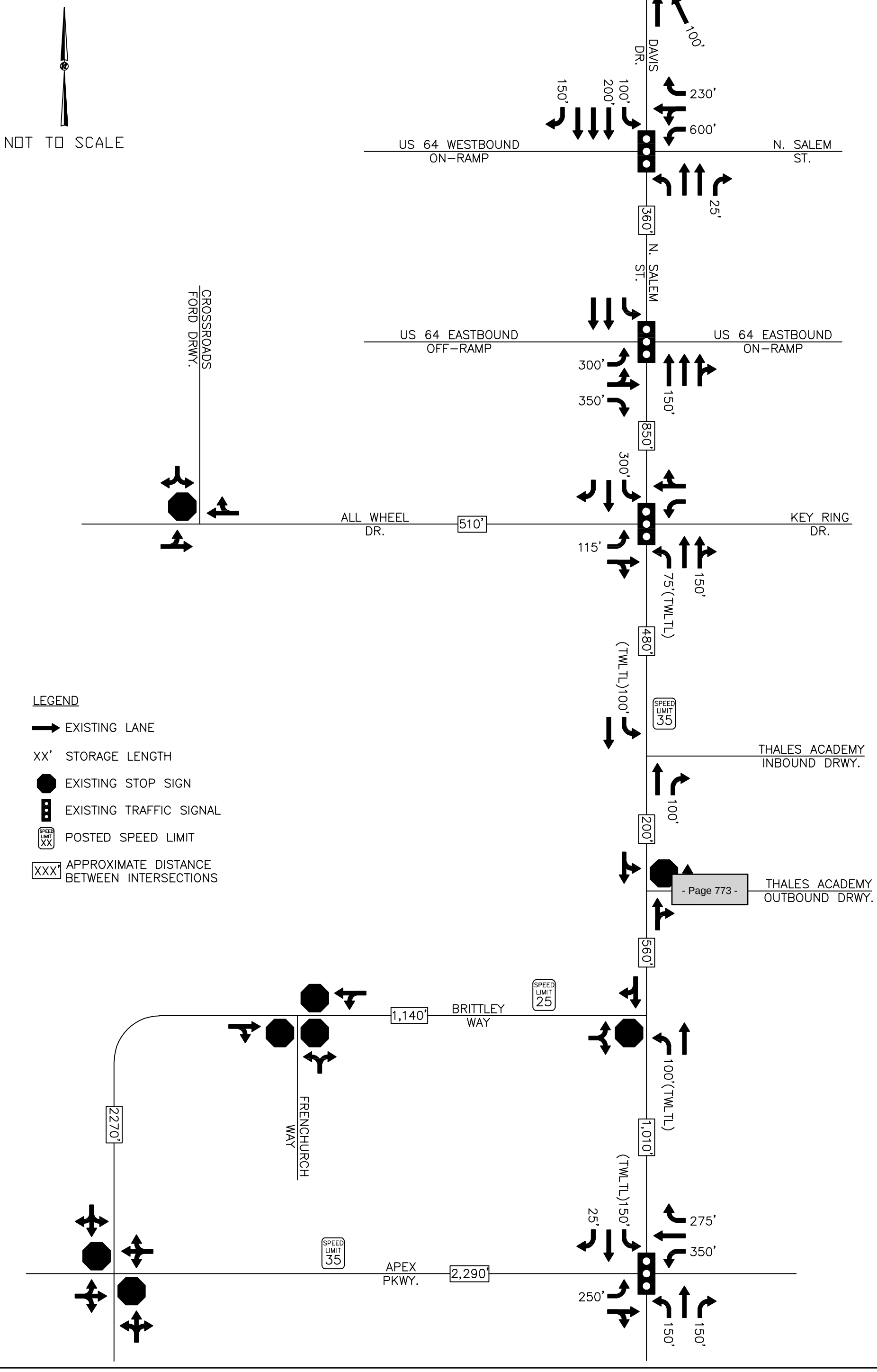
CONCEPTUAL SITE PLAN

N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

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NOT TO SCALE



LEGEND

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

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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

EXISTING ROADWAY LANEAGE

FIGURE
2.3

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3.0 Traffic Generation

The traffic generation potential of the proposed development was determined using the traffic generation data published in *Trip Generation* (Institute of Transportation Engineers, Eleventh Edition, 2021). As currently envisioned the development is expected to consist of approximately 200 single-family attached dwelling units (assumed to potentially include a mix of traditional townhomes and "2-over-2" dwelling units), 250 mid-rise apartments, and 25,000 square feet (SF) of strip retail plaza space. For these calculations, site traffic for both townhomes and "2-over-2" dwelling units was generated using data from ITE land use code 215 (single-family attached) since that methodology provides more-conservative results than separating some units as low-rise multifamily dwelling units. The commercial space was generated as land use code 822 (strip retail plaza). Detailed trip generation calculations are included in the Appendix of this report.

Table ES-1
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				Total	In	Out	In	Out	In	Out
215	Single-Family Attached Housing	200	d.u.	1,474	25	73	50	40	68	48
221	Multifamily Housing (Mid-Rise)	250	d.u.	1,146	23	75	29	21	60	38
822	Strip Retail Plaza (<40k)	22,000	s.f.	1,158	29	19	39	39	68	68
Subtotal				3,778	77	167	118	100	196	154
Internal Capture				*388*	*3*	*3*	*14*	*14*	*23*	*23*
Pass-by Capture				*96*	*0*	*0*	*7*	*6*	*12*	*10*
Total Net New External Trips				**3,294**	**74**	**164**	**97**	**80**	**161**	**121**

As shown in Table 3.1, the development has the potential to generate 3,294 net new trips on a typical weekday, with 238 trips during the AM peak hour, 177 net new trips during the school PM peak hour, and 282 net new 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. Based on ITE data, internal capture between the proposed uses will be approximately 2% in the AM peak hour and 13% in the school PM and PM peak hours.

Pass-by trips are trips already on the roadway network that will make a trip to the site as they pass by on the adjacent street. A pass-by reduction of 20% was used in the school PM and PM peak hours for strip retail plaza trips even though ITE suggests higher pass-by reduction capture for similar retail uses. Pass-by trips in the school PM and PM peak hours were assigned to study intersections based on existing traffic patterns.

4.0 Site Traffic Distribution

The projected site-generated trips were assigned to the surrounding roadway network consistent with discussions with NCDOT and the Town. Based on the surrounding roadway network and access configurations surrounding the site, separate distributions were developed for the residential and retail uses.

The following overall distribution was used for new residential site trips:

- 30% to/from east on I-64 Eastbound On-Ramp/N. Salem Street
- 20% to/from west on I-64 Westbound On-Ramp/Eastbound Off-Ramp
- 15% to/from north on Davis Drive
- 15% to/from south on N. Salem Street
- 10% to/from east on Apex Parkway
- 10% to/from west on Apex Parkway

The site traffic distribution and percent assignment for new residential site trips is shown on **Figure 4.1**.

The following overall distribution was used for net new retail site trips:

- 25% to/from north on Davis Drive
- 15% to/from south on N. Salem Street
- 15% to/from surrounding neighborhoods via Brittley Way (not assigned beyond the Brittley Way – Frenchurch Way/Site Driveway intersection)
- 15% to/from east on Apex Parkway
- 10% to/from west on Apex Parkway
- 10% to/from east on I-64 Eastbound On-Ramp/N. Salem Street
- 10% to/from west on I-64 Westbound On-Ramp/Eastbound Off-Ramp

The site traffic distribution and percent assignment for net new retail site trips is shown on **Figure 4.2**.

Pass-by reductions and percent assignment used in the school PM and PM peak hours are shown on **Figure 4.3**.

NOT TO SCALE

15%

DAVIS DR.

15%

30%

US 64 WESTBOUND ON-RAMP

N. SALEM ST.

20%

45%

(15%) (20%)

30%

CROSSROADS FORD DRWY.

US 64 EASTBOUND OFF-RAMP

US 64 EASTBOUND ON-RAMP

20%

(30%) (35%)

40% 25%

25%

ALL WHEEL DR.

KEY RING DR.

(62%)

(60%) (2%)

(5%)

FULL MOVEMENT DRWY.

(2%) 30% 10%

RIGHT-IN DRWY.

(5%)

(2%) 30%

SITE

THALES ACADEMY INBOUND DRWY.

(5%)

FULL MOVEMENT DRWY.

(2%) 30%

LEFT-IN/RIGHT-IN/ RIGHT-OUT DRWY.

THALES ACADEMY OUTBOUND DRWY.

(20%)

(5%) 20%

(22%)

(10%) (8%)

5%

BRITTLEY WAY

10%

(5%) (3%)

5% 20%

FRENCHURCH WAY

(10%) (15%)

(10%)

10%

APEX PKWY.

10%

10%

10%

15%

N. SALEM ST.

15%

LEGEND

XX% INBOUND PERCENT ASSIGNMENT

(XX%) OUTBOUND PERCENT ASSIGNMENT

XX% OVERALL DISTRIBUTION

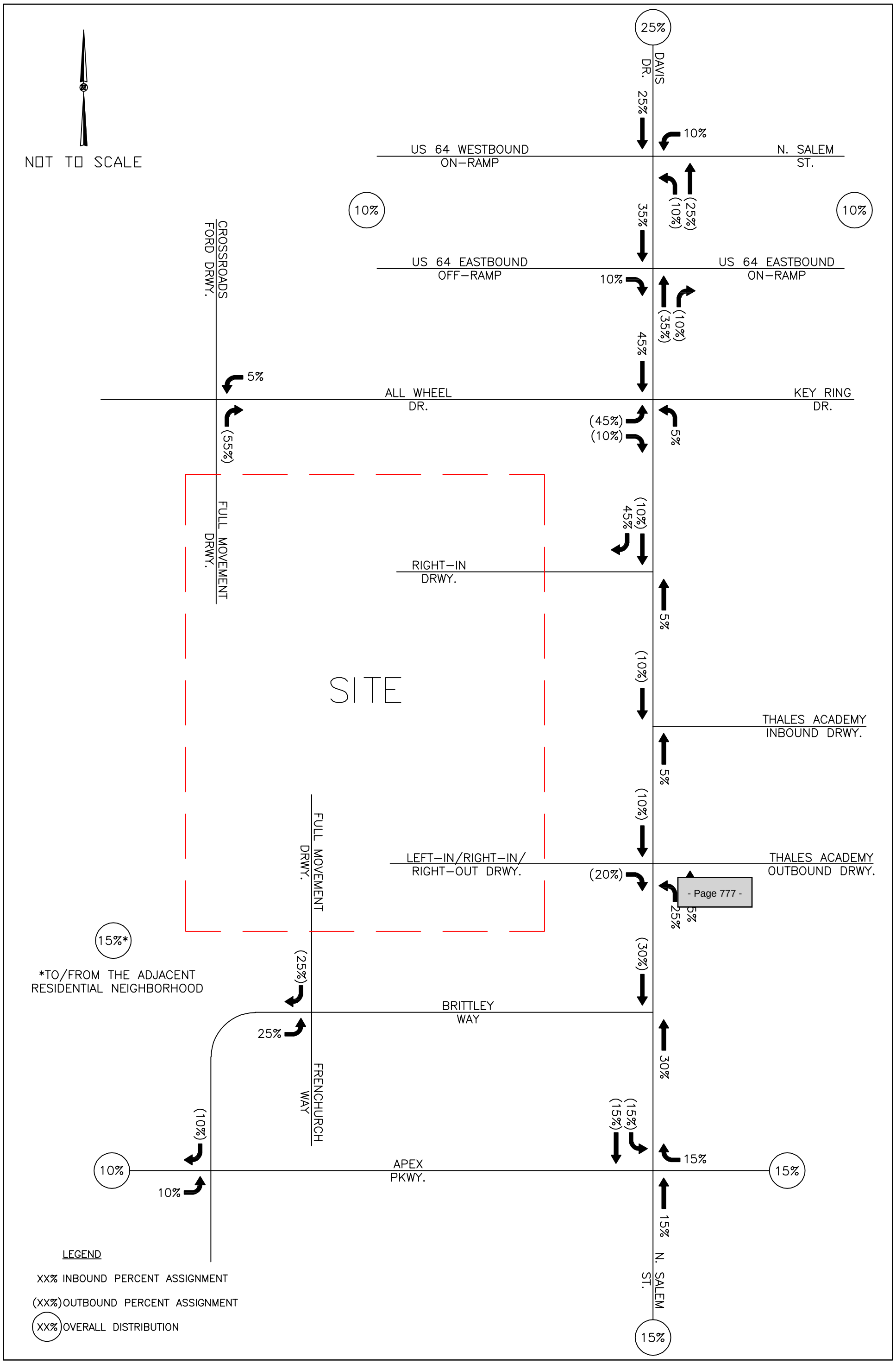
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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

RESIDENTIAL SITE DISTRIBUTION
AND PERCENT ASSIGNMENT

FIGURE
4.1

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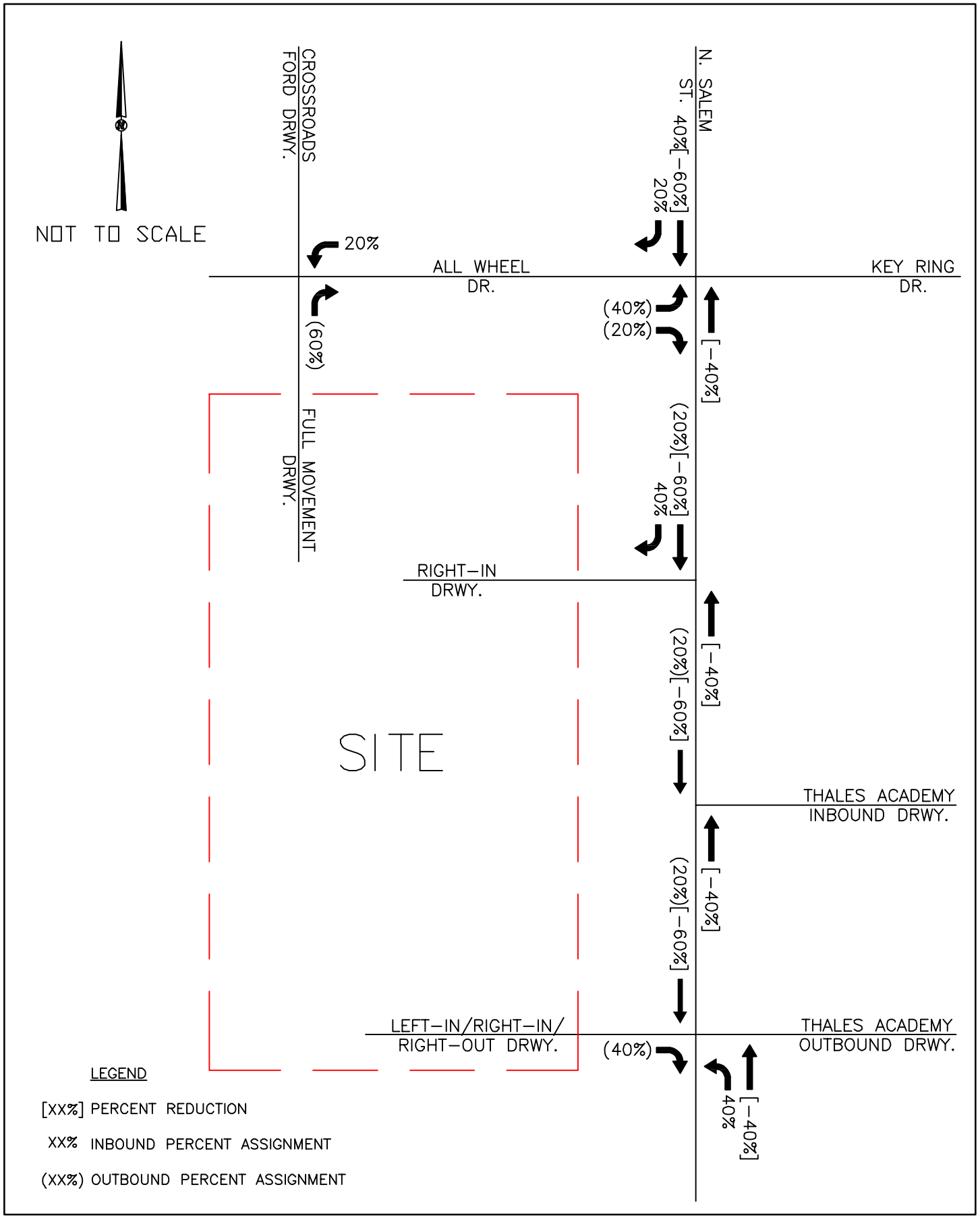
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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

COMMERCIAL SITE DISTRIBUTION
AND PERCENT ASSIGNMENT

FIGURE
4.2

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N. SALEM STREET
MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALY

RETAIL PASS-BY ASSIGNMENT:
SCHOOL PM & PM PEAKS

FIGURE
4.3

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5.0 Study Traffic Volumes

5.1 *Existing Traffic*

AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were collected at each of the existing study intersections on October 21, 2025 while area public schools were in session. School PM peak hour (2:00 to 4:00 PM) peak hour turning movement counts were also performed along N. Salem Street at the intersections of All Wheel Drive/Key Ring Drive, the Thales Academy Inbound Driveway, and the Thales Academy Outbound Driveway. Existing left-turn traffic exiting at the Thales Academy Outbound Driveway was reassigned to the westbound approach of Key Ring Drive (and southbound along N. Salem Street) as that driveway is intended to be right-out only. No other adjustments were applied to existing traffic volumes.

The existing AM, school PM, and PM peak-hour traffic volumes are shown on **Figure 5.1**. Traffic count data is included in the Appendix.

5.2 *Historic Growth Traffic*

Historic growth traffic is the increase in traffic due to usage increases and non-specific growth throughout the area. Based on discussions with the Town of Apex, a 3% annual growth rate was applied to the existing traffic to calculate background traffic volumes expected in 2032, though no growth was applied onto/off of the Thales Academy driveways, All Wheel Drive/Key Ring Drive, Brittley Way, or Frenchurch Way since development on those roadways is complete.

5.3 *Approved Development Traffic*

Based on TIA scoping discussions, no area approved developments were identified for inclusion in this analysis as background traffic.

5.4 *Background Traffic*

Total background traffic volumes, consisting of existing and historic growth traffic, are shown on **Figure 5.2**.

5.5 *Site Traffic*

Traffic from the proposed development was generated and assigned to the adjacent roadway network per the distribution described in *Section 4.0*. Study peak hour site traffic volumes are shown on **Figure 5.3.**

5.6 *Background Traffic Volume Diversions*

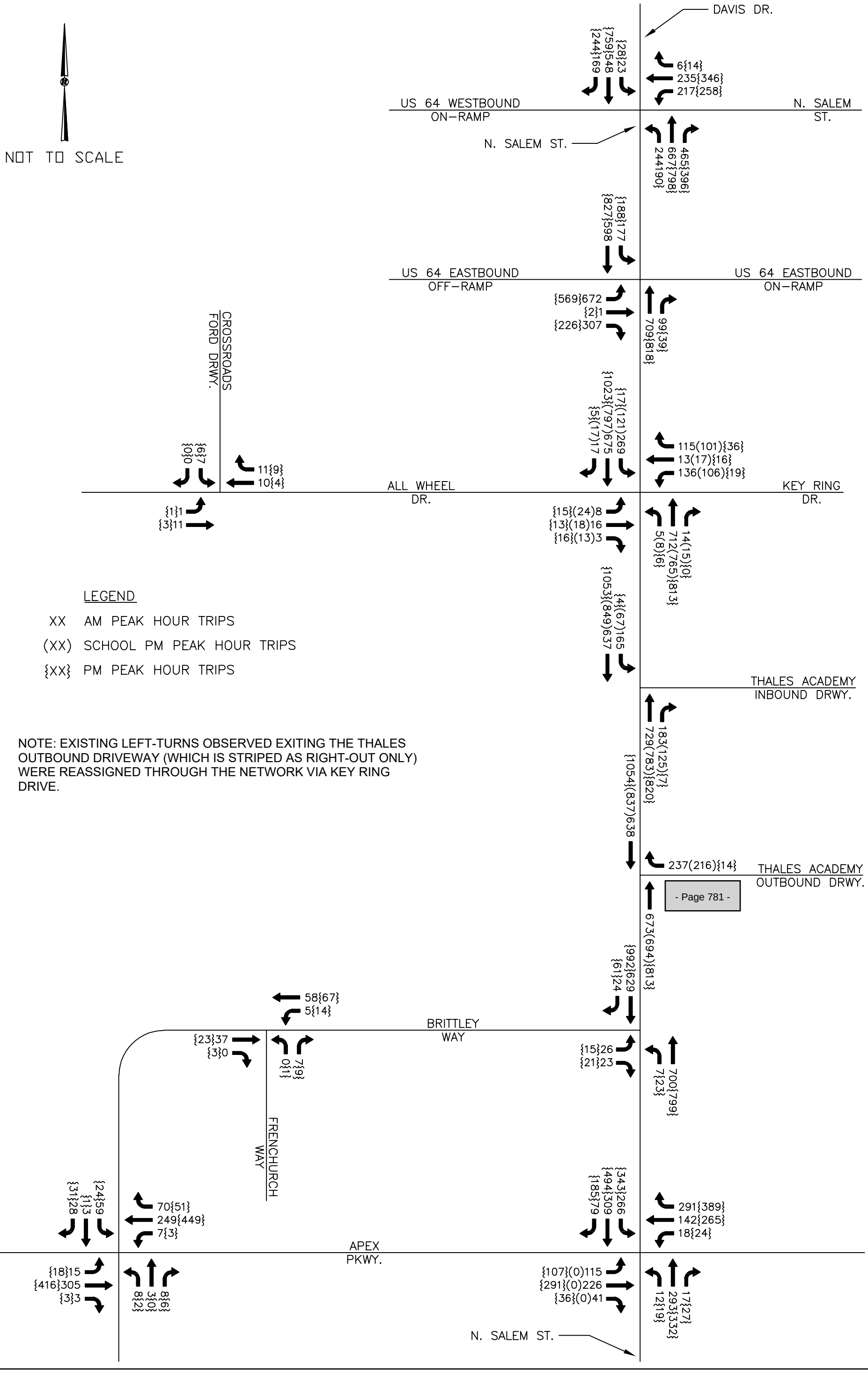
Traffic diversions are anticipated at select study intersections with the addition of internal development connectivity and site access. While no access modifications are proposed at the

intersection of N. Salem Street at Brittley Way, internal connectivity provided as part of this development will provide an option for existing left-turn traffic from Brittley Way to make that same maneuver at the traffic signal at All Wheel Drive. For this analysis, 25% of existing eastbound left-turn traffic at the intersection of Brittley Way at N. Salem Street was reassigned to All Wheel Drive.

Volume diversions are reflected in the attached volume development worksheets.

5.7 *Build-out Traffic*

To obtain the 2032 build-out traffic volumes, the projected site traffic was added to the projected (2032) background traffic. Traffic volume calculations are detailed in intersection spreadsheets in the Appendix of this report. **Figure 5.4** show the total AM, school PM, and PM peak hour build-out traffic volumes at the study intersections.



LEGEND

XX AM PEAK HOUR TRIPS

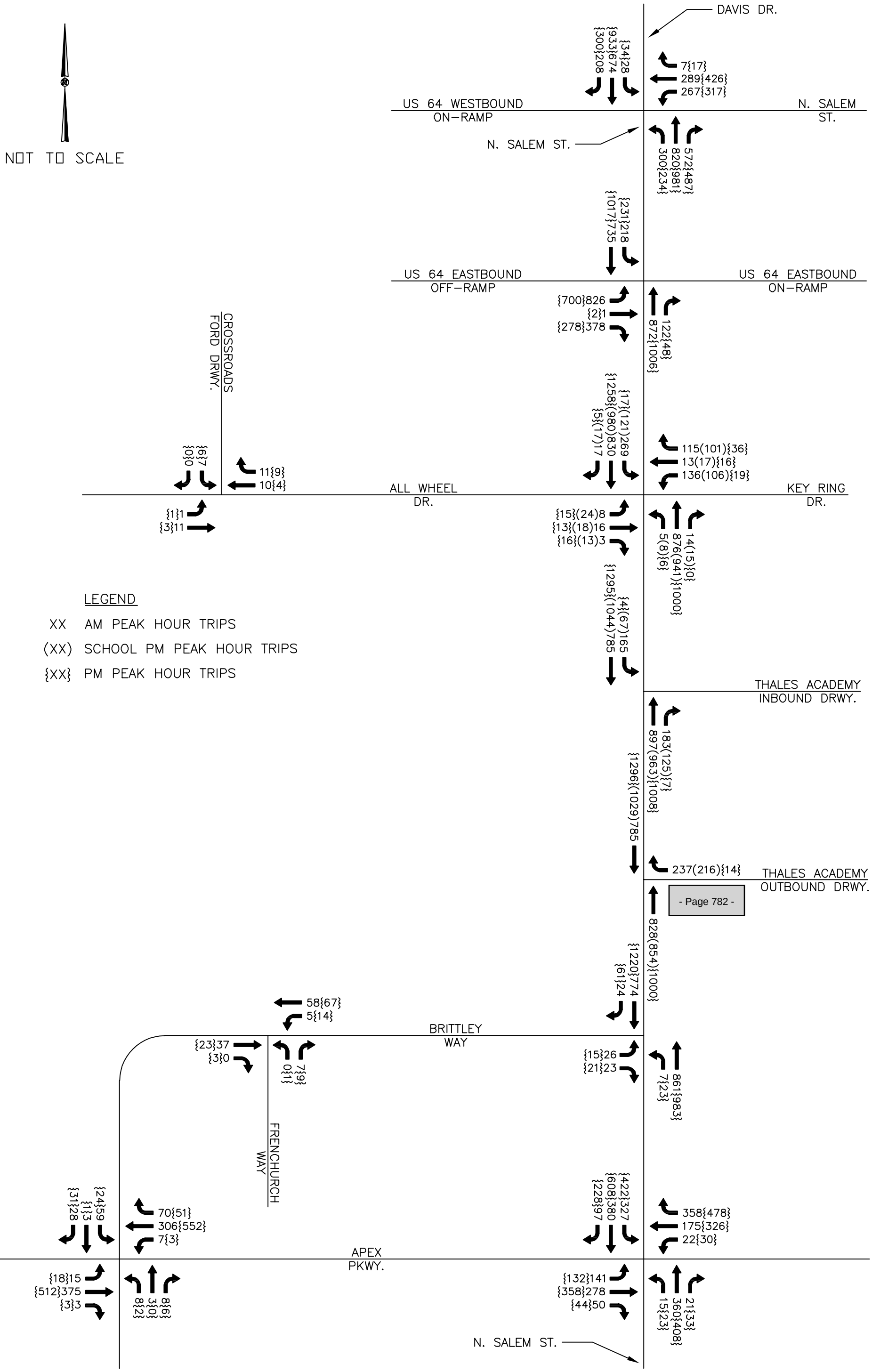
(XX) SCHOOL PM PEAK HOUR TRIPS

{XX} PM PEAK HOUR TRIPS

NOTE: EXISTING LEFT-TURNS OBSERVED EXITING THE THALES OUTBOUND DRIVEWAY (WHICH IS STRIPED AS RIGHT-OUT ONLY) WERE REASSIGNED THROUGH THE NETWORK VIA KEY RING DRIVE.

Kimley»Horn	N. SALEM STREET MIXED-USE APEX, NC TRAFFIC IMPACT ANALYSIS	EXISTING (2025) PEAK HOUR TRAFFIC VOLUMES	FIGURE 5.1

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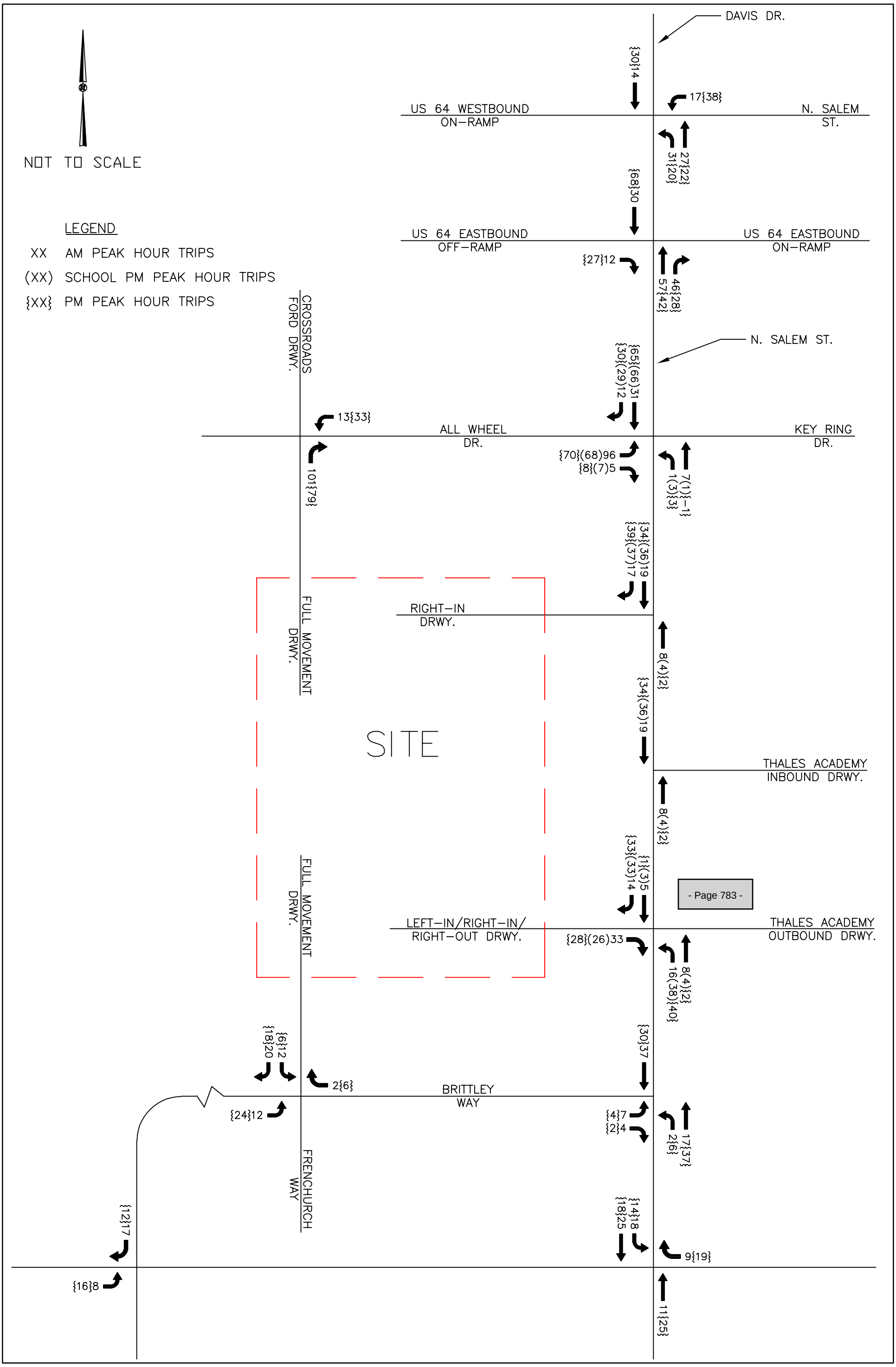
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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

PROJECTED (2032) BACKGROUND
PEAK HOUR TRAFFIC VOLUMES

FIGURE
5.2

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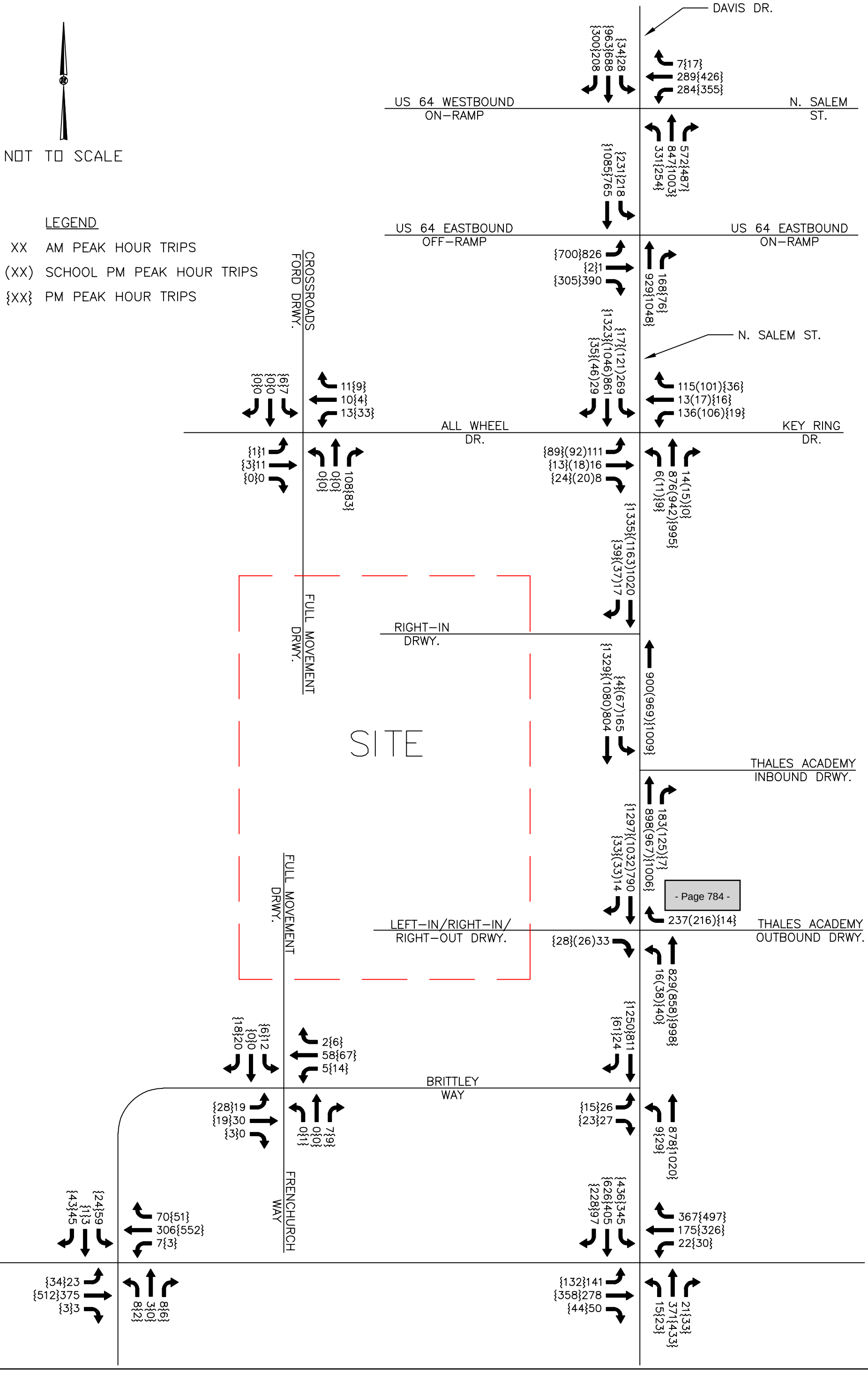
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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

TOTAL SITE TRIP VOLUMES

FIGURE
5.3

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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

PROJECTED (2032) BUILD-OUT
PEAK HOUR TRAFFIC VOLUMES

FIGURE
5.4

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6.0 Capacity Analysis

Capacity analyses (see Appendix) were performed for the AM, school PM, and PM peak hours for the existing (2025) traffic condition and the projected (2032) background and build-out traffic conditions using Synchro/SimTraffic Version 12 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 particular 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 12 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 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

Where count or projected volumes were less than 4 vehicles, a minimum volume of 4 was used in the Synchro analysis to be conservative, though volume figures and volume development spreadsheets reflect actual volumes for all movements. Existing peak hour factors (PHF) were analyzed by-movement at Thales Academy driveways and the Key Ring Drive/All Wheel Drive intersections in the existing and background conditions for the AM and school PM peak, while a weighted PHF (using a PHF of 0.90) was calculated for the build-out condition. A PHF of 0.50

was used for turns into and out of the Thales Academy driveways in each study condition even when count data indicates higher values. A PHF of 0.90 was used for turning movements at new intersections in the build-out condition.

Right-turns on red (RTOR) and permitted + protected left-turn phasing were included in the analysis where currently permitted, and existing signal timings were obtained from signal cabinets during a field visit.

As an Apex Police officer serves as traffic control at the Thales Academy Outbound Driveway in the AM and school PM peak hours, that intersection was analyzed as a signalized intersection to model the impacts of that operation. The PM peak hour for that intersection, along with this development's proposed South Site Driveway, were modeled as unsignalized intersection approaches.

It should be noted that the intersection of N. Salem Street at the North Site Driveway (right-in only) intersection was analyzed much closer to All Wheel Drive in Synchro analyses to better reflect the left-turn storage utilization along N. Salem Street between All Wheel Drive and the Thales Academy Inbound Driveway (as the addition of the driveway creates a node in Synchro that otherwise would not exist once constructed).

6.1 *N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street*

Analyses indicate that the signalized intersection of N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street currently operates at LOS B in the AM peak hour and LOS C in the PM peak hour. The intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour in the study year 2032 with or without the proposed development in place. In the studied peak hours, project site traffic is expected to account for only 3% of overall intersection traffic. Occasional long queues observed in the existing condition on the westbound approach of N. Salem Street are expected to continue in future traffic conditions, though site traffic is expected to have a relatively small impact.

Therefore, based on the relatively minimal impacts associated with the addition of project site traffic, no improvements are recommended to be performed at this intersection as part of this development.

Table 6.1 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.1
Level-of-Service
N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	B (18.2)	C (34.0)
Projected (2032) Background Traffic	C (29.9)	D (45.2)
Projected (2032) Build-out Traffic	C (32.2)	D (48.3)

6.2 *N. Salem Street at US 64 Eastbound Ramps*

Analyses indicate that the signalized intersection of N. Salem Street at the US 64 Eastbound Ramps currently operates at LOS C in both the AM and PM peak hours. The intersection is expected to operate at LOS D in both peak in the study year 2032 with or without the proposed development in place. In the studied peak hours, project site traffic is expected to account for less than 5% of overall intersection traffic and less than 10% of any intersection approach. Occasional long queues observed in the existing condition on the east approach of the US 64 Eastbound Off-Ramp are expected to continue in future traffic conditions, though site traffic is expected to have a relatively small impact.

Therefore, based on the relatively minimal impacts associated with the addition of project site traffic, no improvements are recommended to be performed at this intersection as part of this development.

Table 6.2 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.2
Level-of-Service
N. Salem Street at US 64 Eastbound Ramps (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	C (33.3)	C (26.2)
Projected (2032) Background Traffic	D (52.2)	D (41.8)
Projected (2032) Build-out Traffic	D (53.9)	D (41.9)

6.3 *N. Salem Street at All Wheel Drive/Key Ring Drive*

Analyses indicate that the signalized intersection of N. Salem Street at All Wheel Drive/Key Ring Drive currently operates at LOS C in the AM and school PM peak hours and LOS B in the PM peak hour. The intersection is expected to continue to operate at those same LOS in each of the studied peak hours in the projected (2032) background traffic condition. In the projected (2032) build-out condition, the intersection is expected to continue to operate at LOS C in the AM and school PM peak hours and operate at LOS D in the PM peak hour if no modifications are made. In the studied peak hours, project site traffic is expected to account for less than 8% of overall intersection traffic and less than 10% of intersection approaches with the exception of the eastbound approach of All Wheel Drive.

While there are no reasonably-constructible geometric improvements at this intersection, it was determined that shorter overall intersection delays could be achieved if the existing permitted+protected phasing for the eastbound and westbound left-turn movements were revised to permitted-only in the PM peak hour given the relatively low volume of side-street volumes in that peak. Based on this finding, and subject to Town and NCDOT approval, it is recommended that time-of-day modifications be made to eliminate the protected phase for those movements in the PM peak hour. With this modification in place, the intersection is expected to operate at LOS C in the PM peak hour.

Long queues observed on the southbound left-turn movement and westbound approach in the AM and school PM peak hours are expected to continue in the future traffic conditions, though no site traffic is proposed to be added to those movements.

Table 6.3 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.3
Level-of-Service
N. Salem Street at All Wheel Drive/Key Ring Drive (Signalized)

Condition	AM Peak Hour LOS (Delay)	School PM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	C (28.6)	C (22.9)	B (13.1)
Projected (2032) Background Traffic	C (31.9)	C (27.3)	B (19.6)
Projected (2032) Build-out Traffic	C (33.7)	C (32.1)	Unimp.: D (43.9) Imp.: C (26.9)

6.4 *N. Salem Street at Thales Academy Inbound Driveway*

Analyses indicate that the unsignalized intersection of N. Salem Street at the Thales Academy Inbound Driveway currently operates with short delays for the southbound left-turn movement in each of the study peak hours, though long queues were observed in the field and in SimTraffic simulations. Relatively minor increases in movement delays are anticipated in the study year 2032 with or without the proposed development in place, and project site traffic (which will only be added to major-street through movements) is expected to account for less than 2% of overall intersection traffic and less than 4% of any intersection approach.

Long queues for the southbound left-turn movement were noted in the existing traffic condition, and it is anticipated that those will continue in the future traffic conditions. However, given that few site trips will be added to the northbound through movement at this intersection, and since the on-site street network will provide connectivity to the traffic signal at All Wheel Drive that allows existing traffic along Brittley Way to bypass this section of N. Salem Street, no improvements are recommended to be performed at this intersection.

Table 6.4 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions. Note that the major-street left-turn delay was reported from SimTraffic as Synchro software does not report delays for unsignalized intersections without a stop-controlled approach.

Table 6.4
Level-of-Service
N. Salem Street at Thales Academy Inbound Driveway (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	School PM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	SBL – A (9.8)	SBL – A (6.5)	SBL – A (4.4)
Projected (2032) Background Traffic	SBL – B (13.0)	SBL – A (9.3)	SBL – B (11.1)
Projected (2032) Build-out Traffic	SBL – B (15.0)	SBL – B (11.3)	SBL – A (9.6)

6.5 *N. Salem Street at Thales Academy Outbound Driveway/South Site Driveway*

A Town of Apex police officer directs traffic at this intersection in the AM and school PM peak hours stopping northbound Salem Street traffic to allow Thales Academy traffic to exit the school. Therefore, the intersection was modeled as a traffic signal for the northbound Salem Street and Thales driveway approaches (the officer does occasionally allow exiting left-turns) with free-flow operation for southbound Salem Street for those peak hours. The intersection was analyzed as unsignalized in the PM peak hour. Analyses indicate that the intersection of N. Salem Street at the Thales Academy Outbound Driveway currently operates at LOS C in the AM and school PM peak hours and short delays for the minor street approach (Thales Academy Driveway) in the PM peak hour. This intersection is expected to operate at LOS D in the projected (2032) background condition in the AM and school PM peak hours and with short delays for the Thales Academy Driveway approach in the PM peak hour.

The following improvements are recommended to be performed as part of this development:

- Construct the South Site Driveway as a directional crossover (left-in/right-in/right-out) access with one ingress lane and one egress lane
- Provide a northbound left-turn lane on N. Salem Street with 100 feet of storage and appropriate tapers
- Coordinate with the Town and NCDOT on appropriate driveway channelization for this site access, and to limit the Thales Academy Outbound Driveway to right-out only

With the provision of a concrete median constructed to channelize South Site Driveway movements, outbound left-turns from the Thales Academy driveway will be diverted through the school site to Key Ring Drive. Analyses indicate that with the recommended improvements in place, northbound Salem Street and the Thales Academy Driveway are projected to continue to operate at LOS D in the AM and school PM peak hours and with short delays for the Thales Academy Driveway approach in the PM peak hour. The South Site Driveway and northbound left-turn on Salem Street are expected to operate with short delays and the AM and school PM peak hours and moderate delays in the PM peak hour.

Table 6.5 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions. Note that the northbound left-turn delay was reported from SimTraffic as Synchro software does not report delays for the configuration required to model this overall intersection.

Table 6.5 Level-of-Service N. Salem Street at Thales Academy Inbound Driveway (Unsignalized)			
Condition	**AM Peak Hour LOS (Delay)**	**School PM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Existing (2025) Traffic	C (24.6)	C (23.6)	WB – C (15.5)
Projected (2032) Background Traffic	D (40.9)	D (39.0)	WB – C (18.8)
Projected (2032) Build-out Traffic	Thales - D (40.9) EB - C (16.4) NBL - A (5.2)	Thales - D (39.4) EB - C (21.7) NBL - C (16.3)	Thales WB - C (18.8) EB - D (29.8) NBL - C (22.2)

6.6 *N. Salem Street at Brittley Way*

Analyses indicate that the unsignalized intersection of N. Salem Street at Brittley Way currently operates with short delays on the minor street approach (Brittley Way) in the AM and PM peak hours. In the study year 2032, short delays are anticipated to continue in the AM peak hour and moderate delays are anticipated in the PM peak hour with or without the proposed development in place. In the studied peak hours, project site traffic is expected to account for less than 4% of overall intersection traffic and less than 5% of the northbound and southbound approaches of N. Salem Street. While some queues along N. Salem Street have been observed during the AM peak hour, site traffic is expected to have relatively minimal impacts on those volumes and queues.

While some project site traffic is expected to use Brittley Way to access the development, the provision of connectivity through the project will provide an opportunity for non-site traffic on Brittley Way to access the existing traffic signal at All Wheel Drive instead of being limited to an unsignalized approach.

Therefore, based on the relatively minimal impacts associated with the addition of project site traffic and accommodations for traffic diversions, no improvements are recommended to be performed at this intersection as part of this development.

Table 6.6 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.6
Level-of-Service
N. Salem Street at Brittley Way (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	EB – C (17.2) NBL – A (9.0)	EB – C (23.9) NBL – B (10.9)
Projected (2032) Background Traffic	EB – C (20.9) NBL – A (9.6)	EB – D (32.7) NBL – B (12.4)
Projected (2032) Build-out Traffic	EB – C (21.8) NBL – A (9.8)	EB – D (34.9) NBL – B (12.7)

6.7 *N. Salem Street at Apex Peakway*

Analyses indicate that the signalized intersection of N. Salem Street at Apex Peakway currently operates at LOS C in both the AM and PM peak hours. The intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour in the study year 2032 with or without the proposed development in place. In the studied peak hours, project site traffic is expected to account for less than 3% of overall intersection traffic and less than 6% of all intersection approaches, and the addition of site traffic results in increases in overall intersection delays of less than 3 seconds. While some long queues are anticipated in the peak hours, site traffic is expected to have relatively minimal impacts on queues and delays.

Therefore, based on the relatively minimal impacts associated with the addition of project site traffic, no improvements are recommended to be performed at this intersection as part of this development.

Table 6.7 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.7
Level-of-Service
N. Salem Street at Apex Peakway (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	C (27.2)	C (33.1)
Projected (2032) Background Traffic	C (30.1)	D (41.2)
Projected (2032) Build-out Traffic	C (30.6)	D (43.5)

6.8 *Apex Peakway at Brittley Way*

Analyses indicate that the unsignalized intersection of Apex Peakway at Brittley Way currently operates with short delays on the minor street approaches (Brittley Way) in the AM and PM peak hours. In the study year 2032, short delays are anticipated in the AM peak hour and short-to-moderate delays are anticipated in the PM peak hour with or without the proposed development in place. In the studied peak hours, project site traffic is expected to account for less than 3% of overall intersection traffic and less than 3% of the eastbound and westbound approaches of Apex Peakway, and the addition of site traffic results in delay increases of less than 2 seconds on the minor street approaches.

Therefore, based on the relatively minimal impacts associated with the addition of project site traffic and accommodations for traffic diversions, no improvements are recommended to be performed at this intersection as part of this development.

Table 6.8 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.8
Level-of-Service
Apex Peakway at Brittley Way (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	NB – B (13.8) SB – C (16.8) EBL – A (8.0) WBL – A (8.0)	NB – C (17.7) SB – C (19.5) EBL – A (8.6) WBL – A (8.2)
Projected (2032) Background Traffic	NB – C (15.7) SB – C (20.3) EBL – A (8.2) WBL – A (8.2)	NB – C (22.2) SB – D (25.9) EBL – A (9.0) WBL – A (8.5)
Projected (2032) Build-out Traffic	NB – C (16.2) SB – C (20.3) EBL – A (8.2) WBL – A (8.2)	NB – C (23.7) SB – D (26.5) EBL – A (9.0) WBL – A (8.5)

6.9 *Brittley Way at Frenchurch Way*

Analyses indicate that the all-way stop-controlled intersection of Brittley Way at Frenchurch Way currently operates at an overall LOS A in the AM and PM peak hours. The intersection is expected to continue to operate at an overall LOS A in the AM and PM peak hours in the study year 2032 with or without the proposed development in place.

No queuing or delay issues are anticipated at this intersection. Therefore, no improvements are recommended to be performed at this intersection as part of this development.

Table 6.9 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.9
Level-of-Service
Brittley Way at Frenchurch Way (Unsignalized, All-Way Stop)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic	Overall – A (7.3)	Overall – A (7.4)
Projected (2032) Background Traffic	Overall – A (7.3)	Overall – A (7.4)
Projected (2032) Build-out Traffic	Overall – A (7.4)	Overall – A (7.5)

6.10 *All Wheel Drive at Crossroads Ford Driveway/Site Driveway*

Analyses indicate that the unsignalized intersection of All Wheel Drive at the Crossroads Ford Central Driveway currently operates with short delays on the minor street approach (Crossroads Ford Driveway) in the AM and PM peak hours. Short delays on the minor-street approach are expected to continue in the projected (2032) background traffic condition.

A full-movement site driveway with one ingress lane and one egress lane is proposed to be added as the southern leg at this intersection as part of this development. Analyses indicate that at project build-out, this intersection is expected to continue to operate with short delays on the minor street approaches in both the AM and PM peak hours.

No queuing or delay issues are anticipated at this intersection. Therefore, no improvements are recommended to be performed at this intersection as part of this development.

Table 6.10 summarizes the operation of the intersection for the existing (2025) and projected (2032) background and build-out traffic conditions.

Table 6.10
Level-of-Service
All Wheel Drive at Crossroads Ford Driveway/Site Driveway

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2025) Traffic – Unsignalized	SB – A (8.8) EBL – A (7.3)	SB – A (8.7) EBL – A (7.6)
Projected (2032) Background Traffic	SB – A (8.8) EBL – A (7.3)	SB – A (8.7) EBL – A (7.6)
Projected (2032) Build-out Traffic	NB – A (9.0) SB – A (9.5) EBL – A (7.3) WBL – A (7.3)	NB – A (8.9) SB – A (9.4) EBL – A (7.6) WBL – A (7.3)

6.11 *N. Salem Street at North Site Driveway (Inbound Only)*

An inbound-only site driveway is proposed to be constructed on N. Salem Street approximately 330 feet south of All Wheel Drive. As there are no stop-controlled movements at the intersection there are no delays to report, and no improvements are recommended to be performed as part of this development.

7.0 Recommendations and Conclusions

Recommended Improvements

Other than the construction of site driveways (each with one ingress lane and one egress lane), the following improvements are recommended as part of the N. Salem Street Mixed-Use development:

N. Salem Street at All Wheel Drive/Key Ring Drive:

- If approved by the Town and NCDOT, modify signal phasing in the PM peak hour to eliminate the protected phases for the eastbound and westbound left-turn movements

N. Salem Street at Thales Academy Outbound Driveway/South Site Driveway:

- Construct the South Site Driveway as a directional crossover (left-in/right-in/right-out) access with one ingress lane and one egress lane
- Provide a northbound left-turn lane on N. Salem Street with 100 feet of storage and appropriate tapers
- Coordinate with the Town and NCDOT on appropriate driveway channelization for this site access and to limit the Thales Academy Outbound Driveway to right-out only

Figure 7.1 shows the recommended roadway laneage at project build-out.

Conclusions

Analyses indicate that with the recommended improvements in place, all of the signalized study intersections are expected to operate at overall acceptable LOS at project build-out.

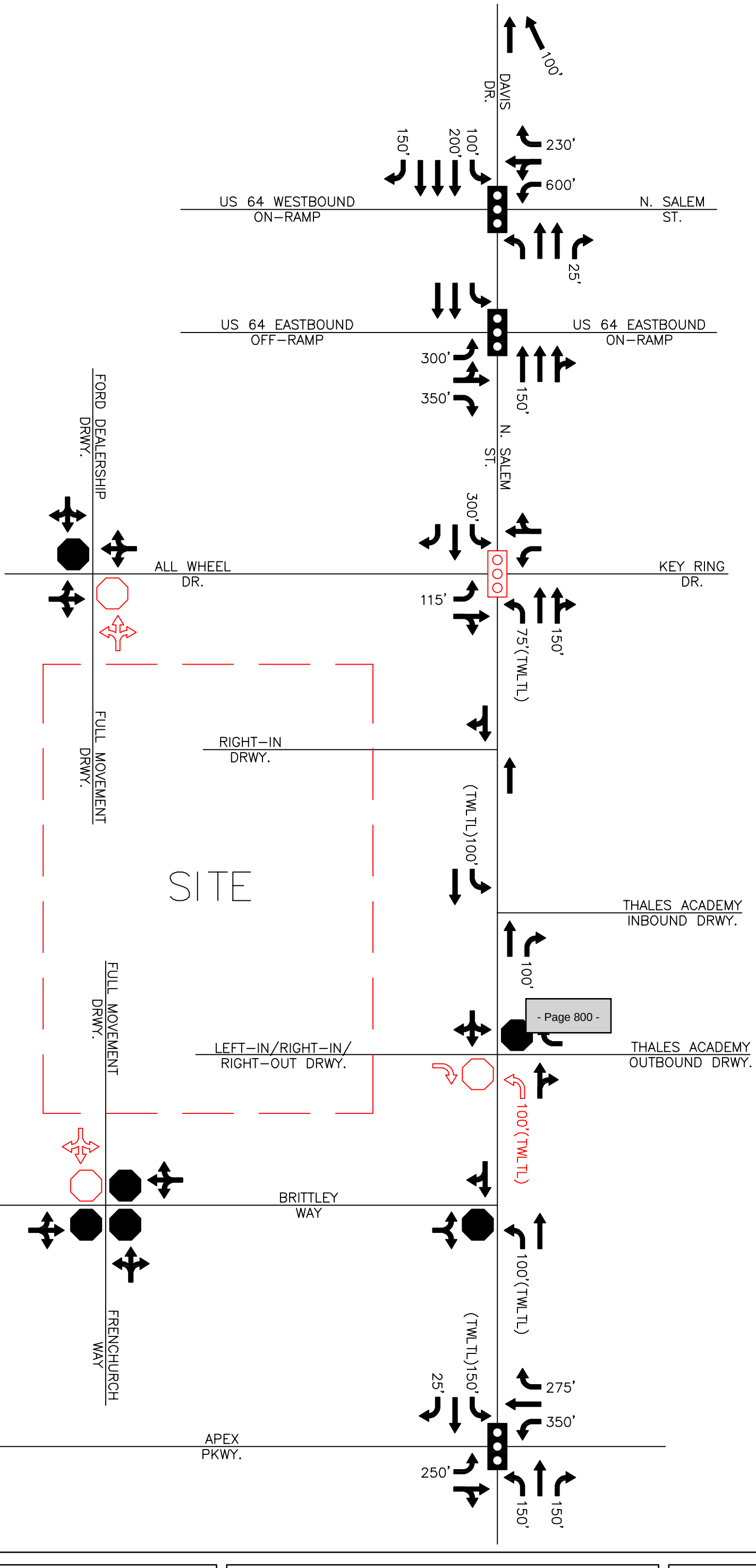
At the unsignalized intersection of N. Salem Street at Brittley Way, moderate delays are anticipated on the minor street approach (Brittley Way) in the PM peak hour in the study year 2032 with or without the proposed development in place. However, it is typical for stop sign controlled side streets and 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. As this development is expected to have minimal impacts on this intersection, and since the on-site street network will provide connectivity to the traffic signal at All Wheel Drive, which is expected to result in a diversion of some existing traffic off of Brittley Way, no improvements are recommended to be performed at this intersection.

Long queues observed in the existing traffic condition at several study intersections (including the Thales Academy driveways and the US 64 ramps) are expected to continue in the future traffic conditions. However, site traffic impacts on intersection volumes and delays are relatively minimal at most intersections, and the proposed access configuration results in little additional traffic added to N. Salem Street through the Thales Academy driveways in the AM and school PM peak hours. Therefore, no additional improvements are recommended to be performed as part of this development.

NOT TO SCALE

LEGEND

- EXISTING LANE
- XX' STORAGE LENGTH
- EXISTING STOP SIGN
- EXISTING TRAFFIC SIGNAL
- RECOMMENDED LANEAGE
- RECOMMENDED STOP SIGN
- RECOMMENDED TRAFFIC SIGNAL MODIFICATION



Kimley»Horn	N. SALEM STREET MIXED-USE APEX, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE	FIGURE 7.1

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

Appendix

Appendix A:
TIA Assumptions Memorandum

Preliminary TIA Assumptions
Good Acres at N. Salem Street – Apex, North Carolina

Kimley-Horn will perform a traffic impact analysis for the Good Acres development, which is proposed to be located west of N. Salem Street between All Wheel Drive and Brittley Way in Apex, NC. The project is proposed to consist of approximately 185 single-family attached dwelling units, 270 mid-rise multifamily dwelling units, and 25,000 square-feet (SF) of commercial space. Site access is proposed via one full-movement driveway on All Wheel Drive, a connection to Brittley Way via a stub street aligned with Frenchurch Way, a directional crossover (left-in/right-in/right-out) driveway aligning with the Thales Academy Outbound Driveway, and a right-in only driveway north of the Thales Academy Inbound Driveway. Project build-out is anticipated in 2032. The following assumptions will be used in the analysis based on TIA scoping discussions with representatives from the Town of Apex and North Carolina Department of Transportation (NCDOT) on October 10, 2025:

Study Traffic Conditions

Weekday AM (7-9am), school PM (2-4pm), and PM (4-6pm) peak hour analyses will be performed for the following traffic conditions:

- Existing Year (2025)
- Future Year (2032) Background
- Future Year (2032) Build-out

Per discussions with the Town and NCDOT, school PM peak hour analyses will only be performed for the intersections of N. Salem Street at All Wheel Drive/Key Ring Drive, Thales Academy Inbound Driveway, and Thales Academy Outbound Driveway/Directional Crossover Site Access.

Study Intersections

The following study intersections will be included in this analysis:

- N. Salem Street/Davis Drive at US 64 Westbound On-Ramp/N. Salem Street
- N. Salem Street at US 64 Eastbound Ramps
- N. Salem Street at All Wheel Drive/Key Ring Drive
- N. Salem Street at Thales Academy Inbound Driveway
- N. Salem Street at Thales Academy Outbound Driveway/South Site Drive (directional crossover)
- N. Salem Street at Brittley Way
- N. Salem Street at Apex Peakway
- Apex Peakway at Brittley Way
- Brittley Way at Frenchurch Way/Site Drive (full-movement)
- All Wheel Drive at Crossroads Ford Driveway/Site Drive (full-movement)
- N. Salem Street at North Site Drive (right-in only)

Existing Volume Development

Weekday AM, school PM peak hour (as applicable), and PM peak hour turning movements will be collected while Wake County Public Schools are in session for use in this analysis. No adjustments to existing traffic volumes are proposed.

Background Traffic Growth

Based on discussions with the Town and NCDOT, a 3% annual growth rate will be applied to existing traffic count volumes up to the future study year. However, no growth will be applied to volumes onto/off All Wheel Drive, Key Ring Drive, the Thales Academy Driveways, Brittley Way, Frenchurch Way, or the Crossroads Ford Driveway as development is generally built-out on those roadways.

Approved Developments

No area approved developments were identified for inclusion in this analysis as background traffic.

Trip Generation

Trip generation calculations will be performed based on data from the 11th Edition of the ITE *Trip Generation Manual*. For the school PM peak hour, site traffic will be calculated using hourly distribution data for the 2-4pm time period in hourly distribution data provided by ITE. Further, only a 20% pass-by capture rate (instead of 40%) will be used in the school PM and PM peak hours to be conservative.

Trip Distribution

The following overall directional distribution will be used for residential project site trips:

- 30% to/from east on I-64 Eastbound On-Ramp/N. Salem Street
- 20% to/from west on I-64 Westbound On-Ramp/Eastbound Off-Ramp
- 15% to/from north on N. Salem Street
- 15% to/from south on N. Salem Street
- 10% to/from east on Apex Parkway
- 10% to/from west on Apex Parkway

The following overall directional distribution will be used for commercial project site trips:

- 10% to/from east on I-64 Eastbound On-Ramp/N. Salem Street
- 10% to/from west on I-64 Westbound On-Ramp/Eastbound Off-Ramp
- 25% to/from north on N. Salem Street
- 15% to/from south on N. Salem Street
- 15% to/from east on Apex Parkway
- 10% to/from west on Apex Parkway
- 15% to/from surrounding neighborhoods via Brittley Way (not assigned beyond the Brittley Way – Frenchurch Way/Site Driveway intersection)

Traffic Diversion

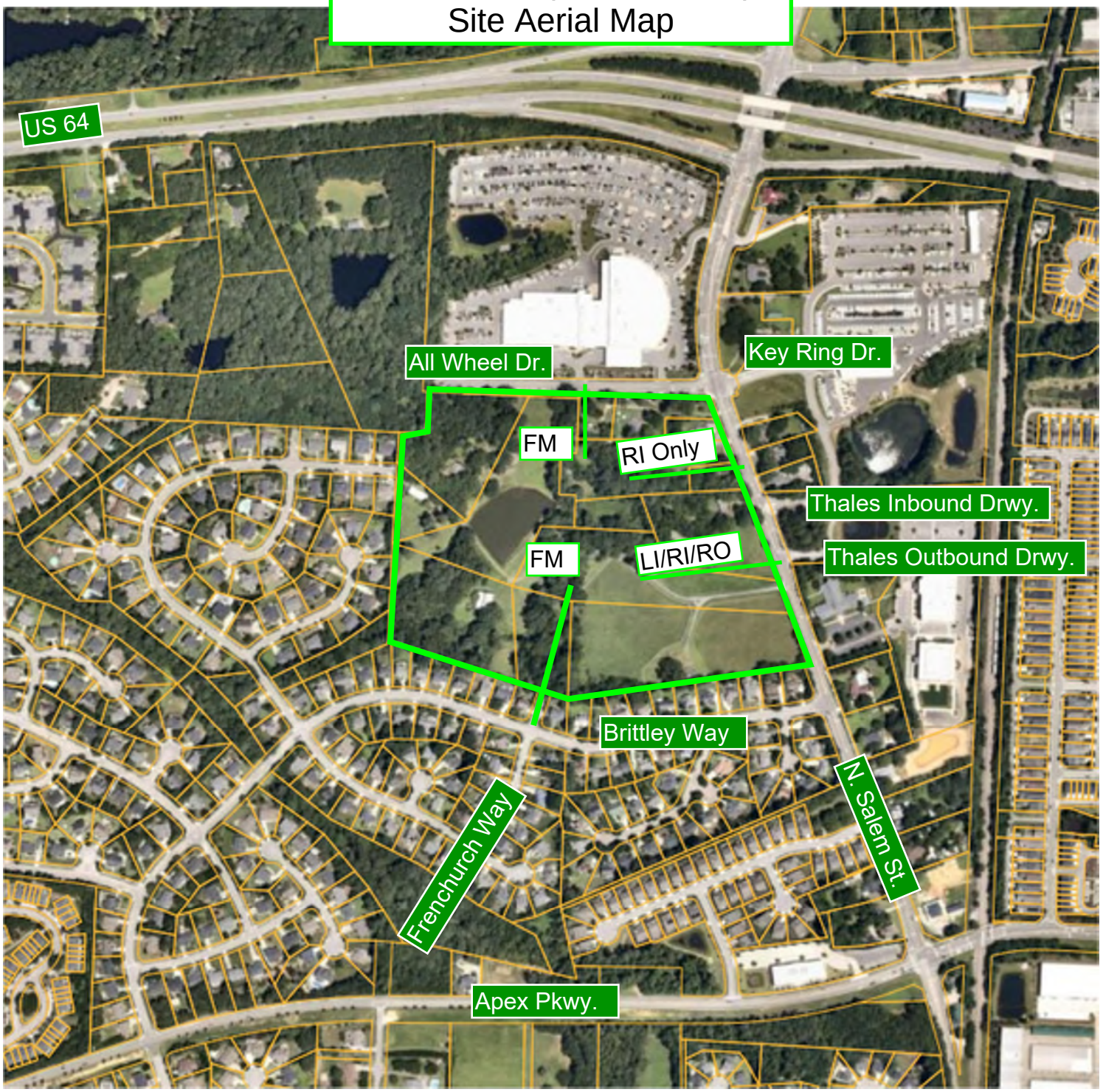
Once turning movement count data is reviewed, it is anticipated that traffic diversions will be applied to projected background traffic volumes to account for:

- Restriction of Thales Academy Outbound Driveway to right-out only via channelization
  - Existing exiting left-turn traffic would be diverted to Key Ring Drive
- Brittley Way left-turn traffic rerouting to All Wheel Drive
  - With connectivity, it is anticipated that some left-turn traffic will divert to the signal

Other Study Assumptions

- Existing peak hour factors (PHF) will be analyzed by-movement at Thales Academy driveways and the Key Ring Drive/All Wheel Drive intersection in the existing and background conditions for the AM and school PM peak, while a weighted PHF (using a PHF of 0.90) will be calculated for the build-out condition. A PHF of 0.90 will be used for turning movements at new intersections in the build-out condition.
- Where U-turn volumes are less than 10 vehicles, those trips will be analyzed as left-turns.
- A minimum volume of 4 vehicles will be analyzed on study intersection movements even when existing or projected volumes are lower.
- Right-turns on red (RTOR) and permitted + protected left-turn phasing will be permitted in the analysis where currently permitted in the field.
- Signal timings will be obtained from the Town of Apex or NCDOT.

Good Acres (N. Salem St.)
Site Aerial Map



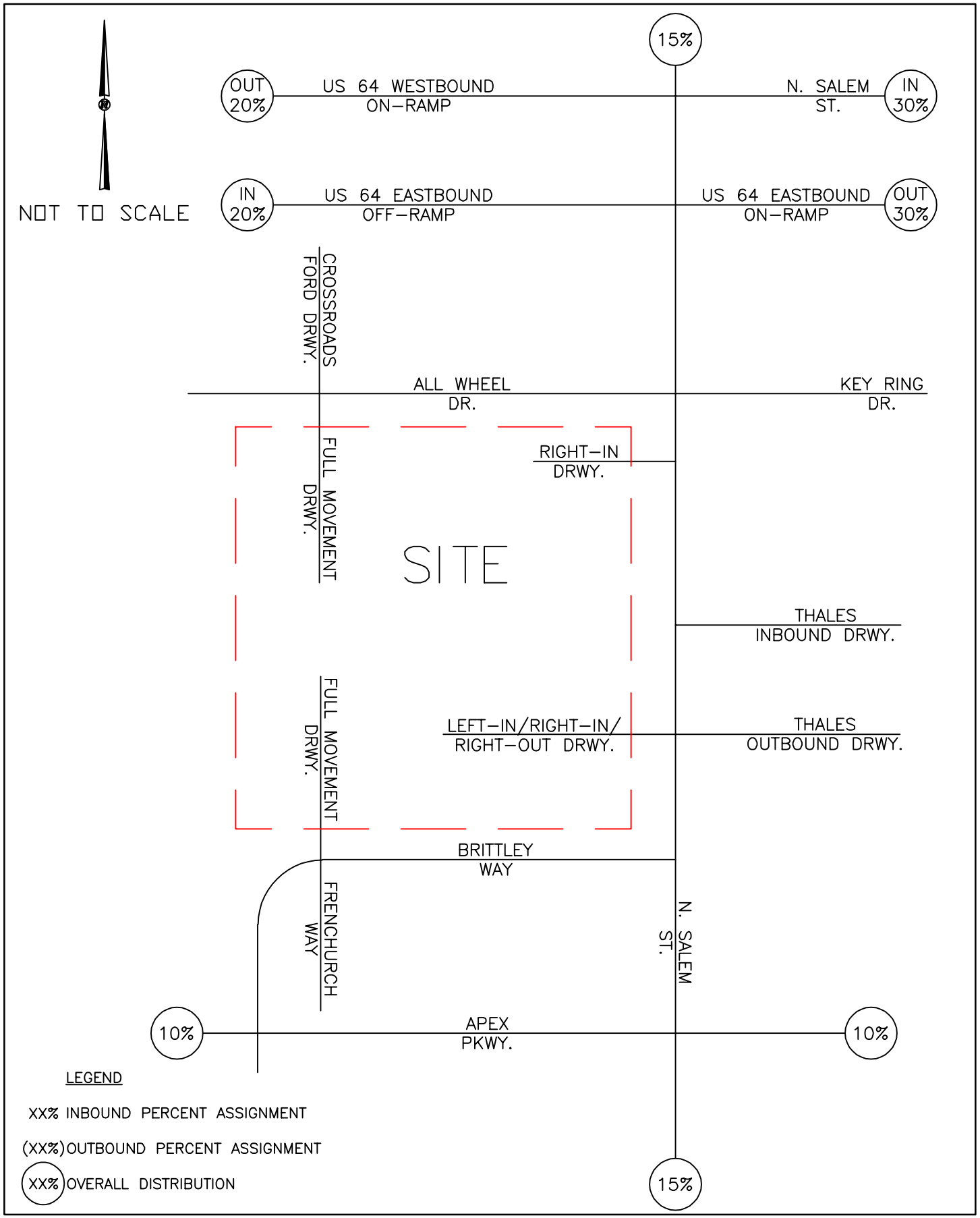
Good Acres (N. Salem St.)

Table 1 - Trip Generation (11th Edition)

Land Use	Intensity		Daily			AM Peak Hour			School PM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
215 Single Family Attached Housing	180	d.u.	1,322	661	661	88	22	66	81	45	36	104	61	43
221 Multifamily Housing (Mid-Rise)	265	d.u.	1,218	609	609	105	24	81	53	30	23	104	63	41
822 Strip Retail Plaza (<40K)	25,000	s.f.	1,286	643	643	53	32	21	87	44	43	149	75	74
Subtotal			**3,826**	**1,913**	**1,913**	**246**	**78**	**168**	**221**	**119**	**102**	**357**	**199**	**158**
Internal Capture														
215 Single Family Attached Housing			112	67	45	1	0	1	10	7	3	12	9	3
221 Multifamily Housing (Mid-Rise)			104	62	42	2	1	1	7	5	2	13	10	3
822 Strip Retail Plaza (<40K)			216	87	129	3	2	1	15	4	11	25	6	19
Internal Capture Total	2.44%	14.01%	*432*	*216*	*216*	*6*	*3*	*3*	*32*	*16*	*16*	*50*	*25*	*25*
Total External Trips			**3,394**	**1,697**	**1,697**	**240**	**75**	**165**	**189**	**103**	**86**	**307**	**174**	**133**
Pass-By Capture	AM	PM												
822 Strip Retail Plaza (<40K)	0%	20%	107	54	53	0	0	0	14	8	6	25	14	11
Total Net New External Trips			**3,287**	**1,643**	**1,644**	**240**	**75**	**165**	**175**	**95**	**80**	**282**	**160**	**122**

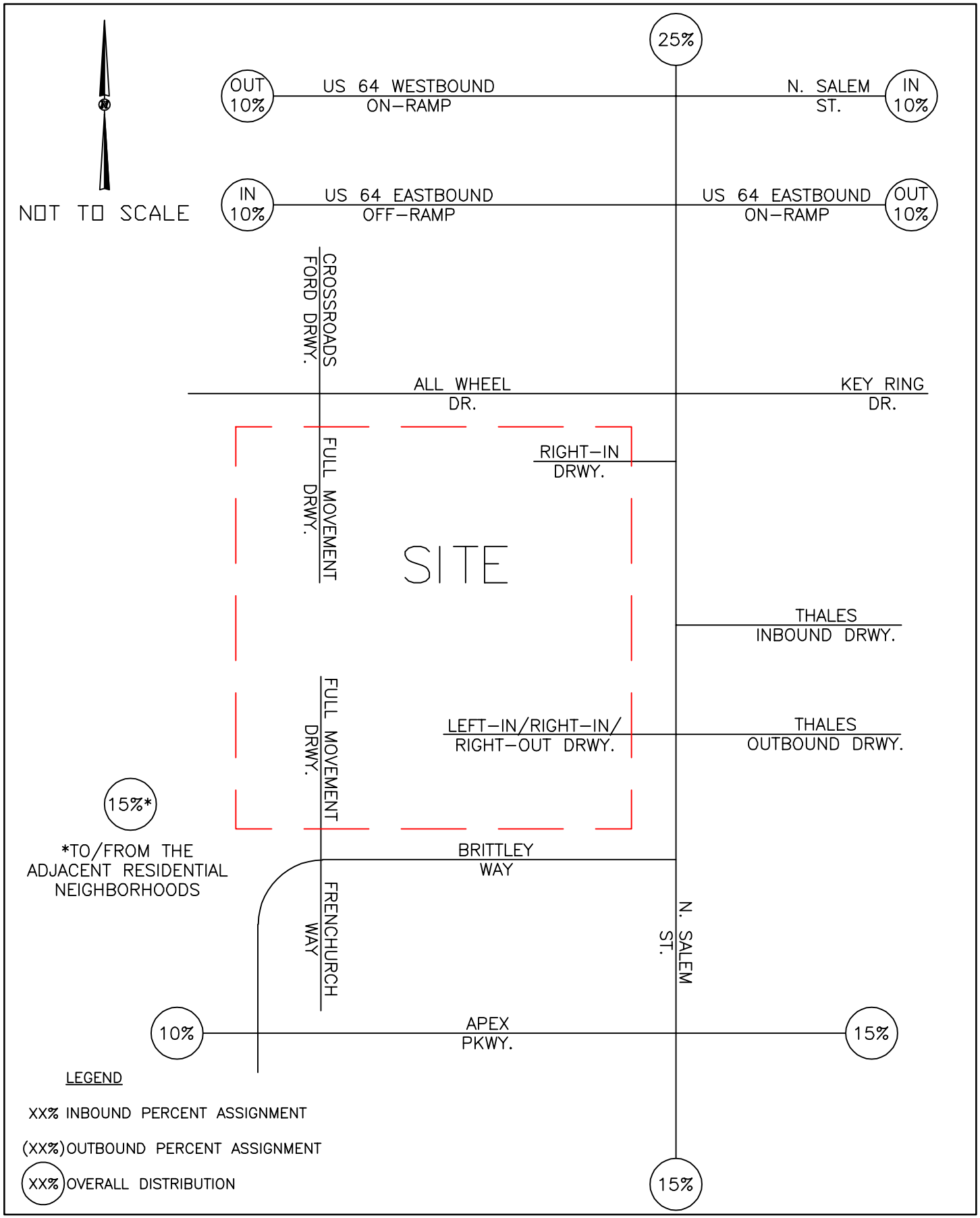
School PM peak hour trip generation based on average of ITE hourly distribution data for the 2-4pm timeframe and applied to daily trip generation

Only a 20% pass-by capture rate (instead of 40%) will be used in the school PM and PM peak hours to be conservative.



Kimley»Horn	GOOD ACRES APEX, NC TRAFFIC IMPACT ANALY	RESIDENTIAL SITE DISTRIBUTION AND PERCENT ASSIGNMENT	FIGURE 1

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Kimley»Horn	GOOD ACRES APEX, NC TRAFFIC IMPACT ANALY	COMMERCIAL SITE DISTRIBUTION AND PERCENT ASSIGNMENT	FIGURE 2

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

Appendix B:
Traffic Count Data

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St/Davis Dr -- N Salem St/US 64 WB On-Ramp

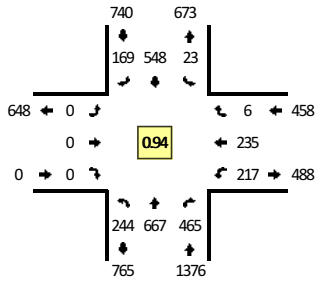
CITY/STATE: Wake, NC

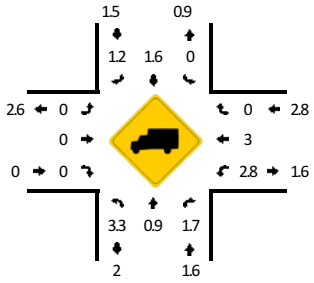
QC JOB #: 17294601

DATE: Tue, Oct 21 2025

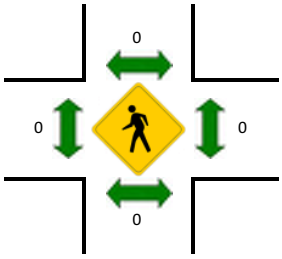
Peak-Hour: 7:15 AM -- 8:15 AM

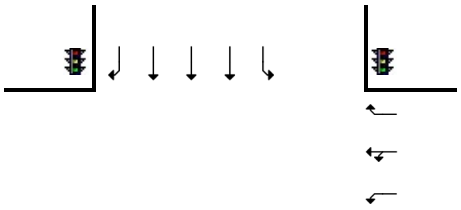
Peak 15-Min: 7:30 AM -- 7:45 AM

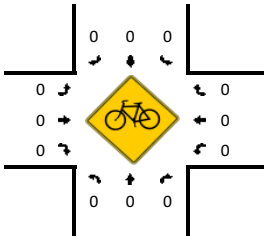


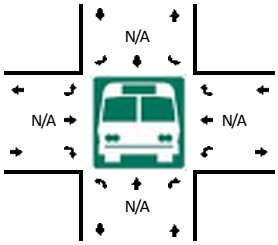


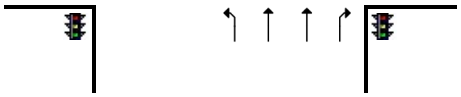
TRUE DATA TO IMPROVE MOBILITY

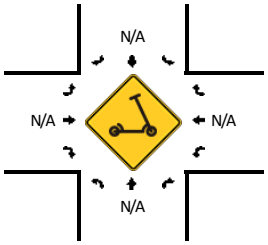












15-Min Count Period Beginning At	N Salem St/Davis Dr (Northbound)				N Salem St/Davis Dr (Southbound)				N Salem St/US 64 WB On-Ramp (Eastbound)				N Salem St/US 64 WB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	37	132	80	0	1	167	19	0	0	0	0	0	37	21	3	0	497	
7:15 AM	68	113	85	0	3	189	35	0	0	0	0	0	78	49	4	0	624	
7:30 AM	78	188	120	0	7	152	40	0	0	0	0	0	51	48	1	0	685	
7:45 AM	62	187	139	0	8	106	42	0	0	0	0	0	47	75	0	0	666	2472
8:00 AM	36	179	121	0	5	101	52	0	0	0	0	0	41	63	1	0	599	2574
8:15 AM	42	173	134	0	4	117	37	0	0	0	0	0	37	49	3	0	596	2546
8:30 AM	35	193	124	0	7	111	34	0	0	0	0	0	42	55	2	0	603	2464
8:45 AM	32	201	148	0	4	158	24	0	0	0	0	0	33	41	5	0	646	2444

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	312	752	480	0	28	608	160	0	0	0	0	0	204	192	4	0	2740
Heavy Trucks	12	4	8		0	16	0		0	0	0		4	8	0		52
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St/Davis Dr -- N Salem St/US 64 WB On-Ramp

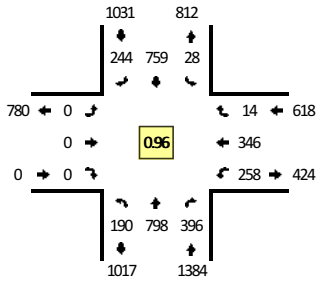
QC JOB #: 17294602

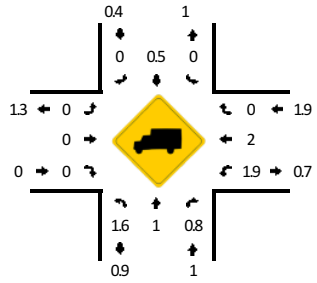
CITY/STATE: Wake, NC

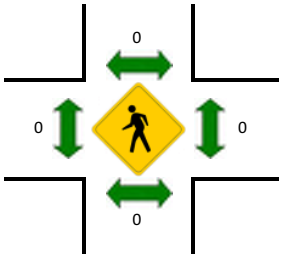
DATE: Tue, Oct 21 2025

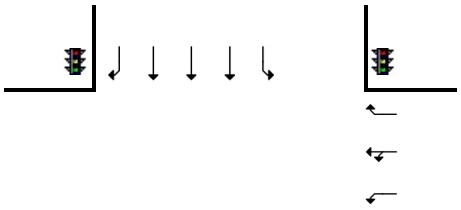
Peak-Hour: 5:00 PM -- 6:00 PM

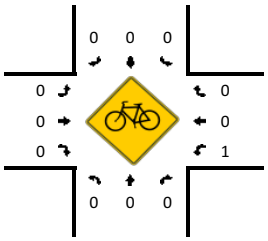
Peak 15-Min: 5:15 PM -- 5:30 PM

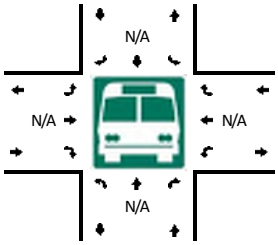


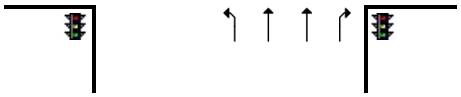


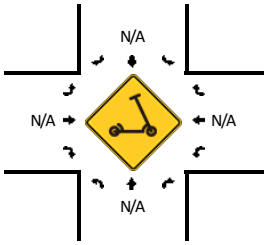












15-Min Count Period Beginning At	N Salem St/Davis Dr (Northbound)				N Salem St/Davis Dr (Southbound)				N Salem St/US 64 WB On-Ramp (Eastbound)				N Salem St/US 64 WB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	43	136	86	0	3	168	68	0	0	0	0	0	67	74	3	0	648	
4:15 PM	50	137	97	0	3	156	61	0	0	0	0	0	90	87	3	0	684	
4:30 PM	64	177	95	0	2	182	72	0	0	0	0	0	57	78	3	0	730	
4:45 PM	38	140	108	0	5	183	71	0	0	0	0	0	61	94	4	0	704	2766
5:00 PM	35	210	102	0	7	186	62	0	0	0	0	0	61	89	6	0	758	2876
5:15 PM	55	216	114	0	7	184	62	0	0	0	0	0	62	85	4	0	789	2981
5:30 PM	60	186	102	0	10	190	56	0	0	0	0	0	71	89	1	0	765	3016
5:45 PM	40	186	78	0	4	199	64	0	0	0	0	0	64	83	3	0	721	3033

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	220	864	456	0	28	736	248	0	0	0	0	0	248	340	16	0	3156
Heavy Trucks	0	8	4		0	4	0		0	0	0		4	12	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

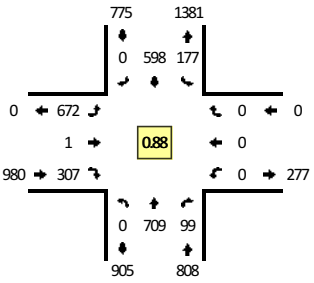
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

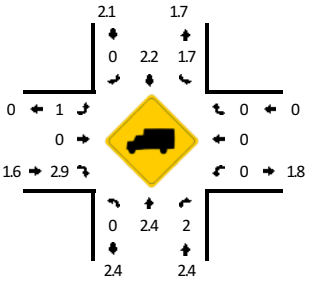
LOCATION: N Salem St -- US 64 EB Ramps
CITY/STATE: Wake, NC

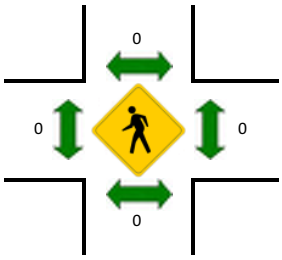
QC JOB #: 17294603
DATE: Tue, Oct 21 2025

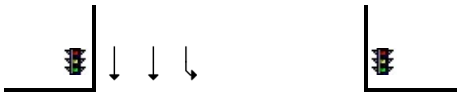
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

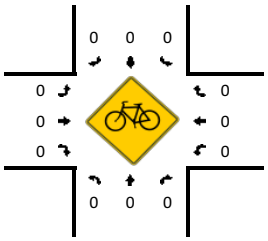


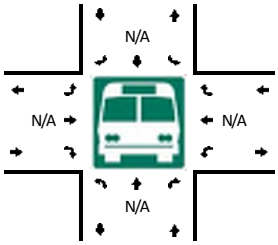


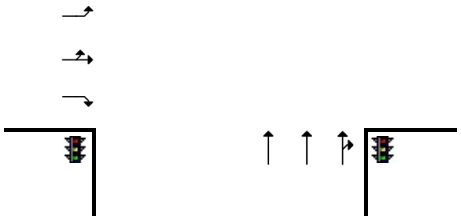


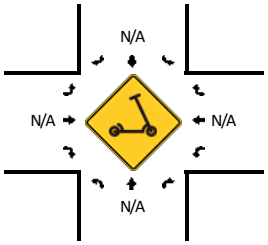












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				US 64 EB Ramps (Eastbound)				US 64 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	165	23	0	50	143	0	0	79	1	89	0	0	0	0	0	550	
7:15 AM	0	168	44	0	64	214	0	0	103	0	91	0	0	0	0	0	684	
7:30 AM	0	218	42	0	56	140	0	0	178	0	96	0	0	0	0	0	730	
7:45 AM	0	179	9	0	29	127	0	0	193	1	58	0	0	0	0	0	596	2560
8:00 AM	0	144	4	0	28	117	0	0	198	0	62	0	0	0	0	0	553	2563
8:15 AM	0	188	13	0	34	117	0	0	156	0	61	0	0	0	0	0	569	2448
8:30 AM	0	171	4	0	39	118	0	0	184	0	55	0	0	0	0	0	571	2289
8:45 AM	0	194	9	0	45	139	0	0	182	0	60	0	0	0	0	0	629	2322

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	872	168	0	224	560	0	0	712	0	384	0	0	0	0	0	2920
Heavy Trucks	0	20	0		4	12	0		0	0	8		0	0	0		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

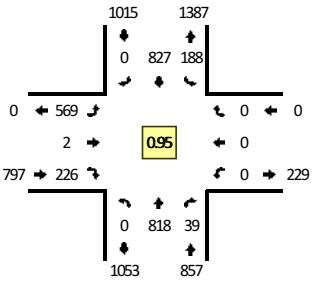
Report generated on 10/27/2025 8:15 AM

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

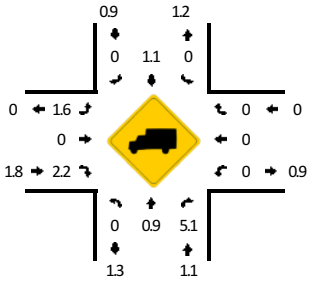
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

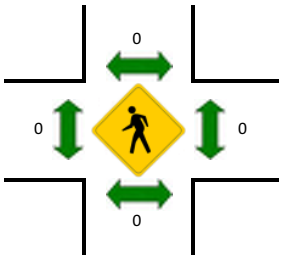
LOCATION: N Salem St -- US 64 EB Ramps | **QC JOB #:** 17294604
CITY/STATE: Wake, NC | **DATE:** Tue, Oct 21 2025

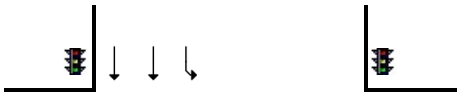
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

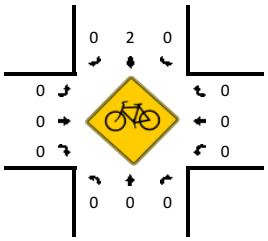


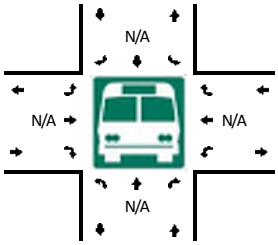


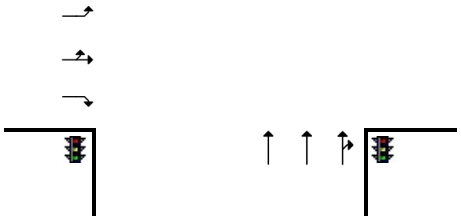


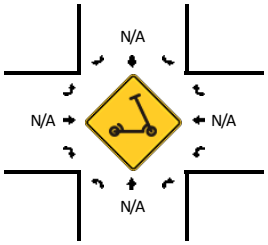












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				US 64 EB Ramps (Eastbound)				US 64 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	164	20	0	51	178	0	0	102	0	44	0	0	0	0	0	559	
4:15 PM	0	171	14	0	47	202	0	0	108	0	58	0	0	0	0	0	600	
4:30 PM	0	212	14	0	35	198	0	0	121	1	50	0	0	0	0	0	631	
4:45 PM	0	172	19	0	64	183	0	0	112	0	48	0	0	0	0	0	598	2388
5:00 PM	0	203	13	0	49	202	0	0	151	0	48	0	0	0	0	0	666	2495
5:15 PM	0	223	12	0	36	210	0	0	158	2	60	0	0	0	0	0	701	2596
5:30 PM	0	210	11	0	46	213	0	0	138	0	47	0	0	0	0	0	665	2630
5:45 PM	0	182	3	0	57	202	0	0	122	0	71	0	0	0	0	0	637	2669

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	892	48	0	144	840	0	0	632	8	240	0	0	0	0	0	2804
Heavy Trucks	0	8	4		0	8	0		4	0	12		0	0	0		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

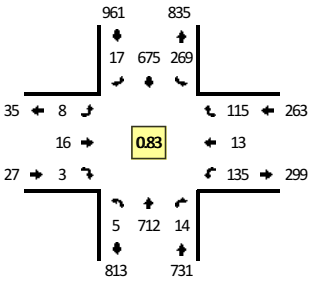
Comments:

Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

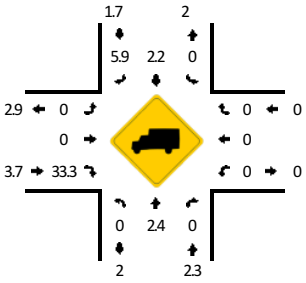
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

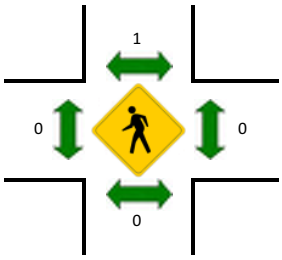
LOCATION: N Salem St -- All Wheel Dr/Key Ring Dr | **QC JOB #:** 17294615
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

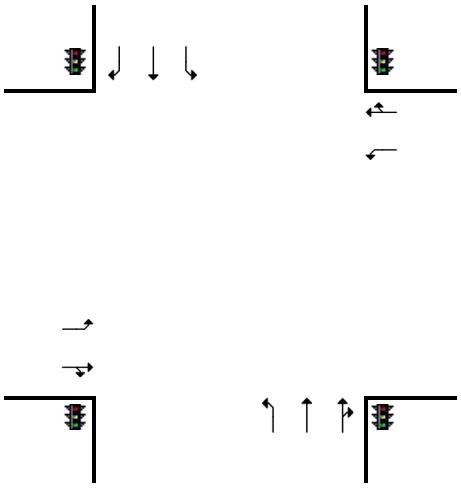
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

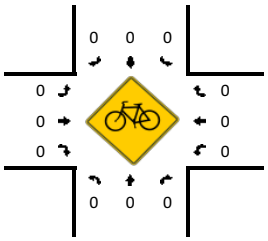


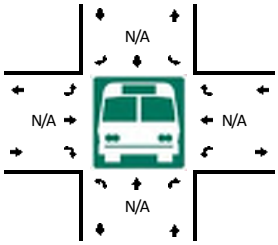


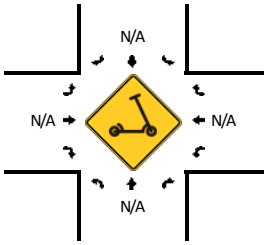












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				All Wheel Dr/Key Ring Dr (Eastbound)				All Wheel Dr/Key Ring Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	157	2	0	63	151	1	0	0	4	0	0	25	4	17	0	425	
7:15 AM	0	193	10	0	101	180	3	0	1	3	0	0	67	3	37	0	598	
7:30 AM	2	210	1	0	94	160	10	0	3	4	1	0	43	3	53	0	584	
7:45 AM	2	152	1	0	11	184	3	0	4	5	2	0	0	3	8	0	375	1982
8:00 AM	0	162	3	0	10	164	8	0	1	5	3	0	0	1	4	0	361	1918
8:15 AM	2	185	1	0	7	163	2	0	2	4	2	0	0	1	1	0	370	1690
8:30 AM	2	186	2	0	10	157	7	0	3	4	3	0	0	4	1	0	379	1485
8:45 AM	0	179	4	0	6	172	10	0	7	6	2	0	2	0	4	0	392	1502

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	772	40	0	404	720	12	0	4	12	0	0	268	12	148	0	2392
Heavy Trucks	0	8	0		0	8	0		0	0	0		0	0	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

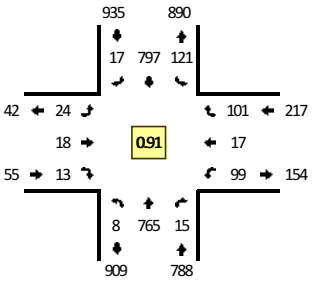
Comments:

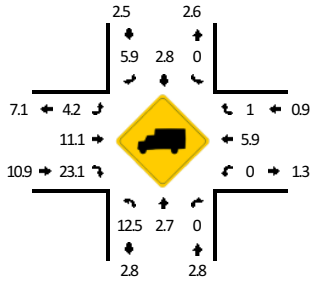
Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

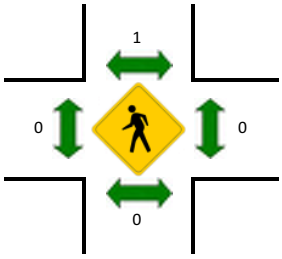
LOCATION: N Salem St -- All Wheel Dr/Key Ring Dr | **QC JOB #:** 17294616
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

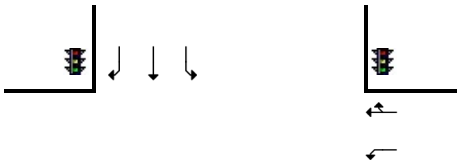
Peak-Hour: 2:45 PM -- 3:45 PM
Peak 15-Min: 3:15 PM -- 3:30 PM

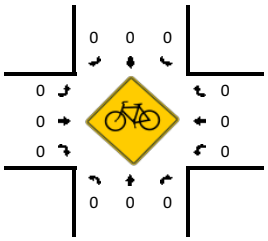


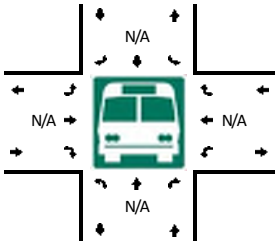


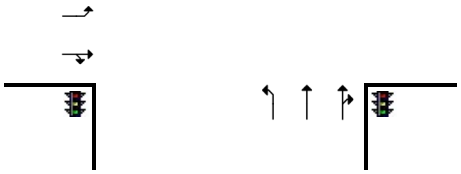
TRUE DATA TO IMPROVE MOBILITY

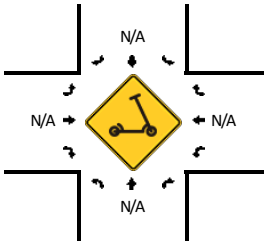












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				All Wheel Dr/Key Ring Dr (Eastbound)				All Wheel Dr/Key Ring Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	3	123	2	0	6	136	6	0	5	8	2	0	1	4	7	0	303	
2:15 PM	2	134	1	0	9	171	7	0	6	3	2	0	1	8	7	0	351	
2:30 PM	5	158	2	0	18	187	4	0	4	3	10	0	11	4	12	0	418	
2:45 PM	2	188	1	0	43	215	3	0	7	3	5	0	16	2	15	0	500	1572
3:00 PM	0	162	9	0	46	178	3	0	2	7	1	0	14	6	23	0	451	1720
3:15 PM	6	208	5	0	25	201	5	0	8	5	4	0	38	2	40	0	547	1916
3:30 PM	0	207	0	0	7	203	6	0	7	3	3	0	31	7	23	0	497	1995
3:45 PM	1	172	0	0	5	235	5	0	4	2	2	0	9	5	8	0	448	1943

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	832	20	0	100	804	20	0	32	20	16	0	152	8	160	0	2188
Heavy Trucks	4	8	0		0	16	0		0	4	4		0	0	0		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- All Wheel Dr/Key Ring Dr

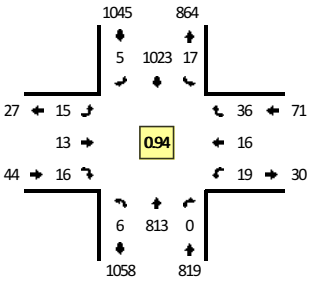
CITY/STATE: Apex, NC

QC JOB #: 17294617

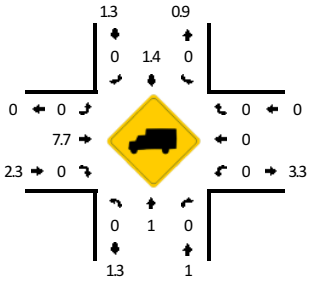
DATE: Tue, Oct 21 2025

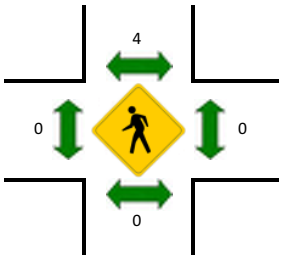
Peak-Hour: 5:00 PM -- 6:00 PM

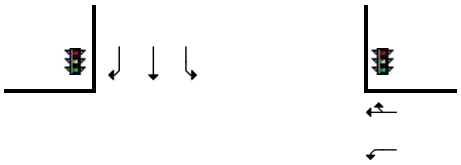
Peak 15-Min: 5:15 PM -- 5:30 PM

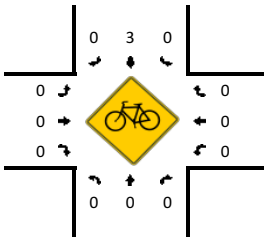


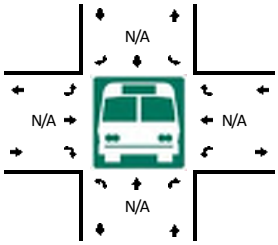
TRUE DATA TO IMPROVE MOBILITY

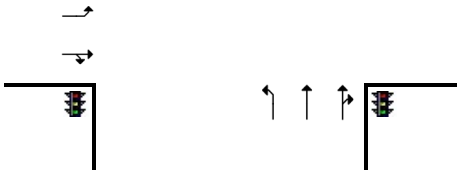


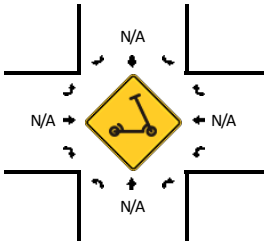












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				All Wheel Dr/Key Ring Dr (Eastbound)				All Wheel Dr/Key Ring Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	166	0	0	7	209	1	0	5	6	3	0	5	3	5	0	411	
4:15 PM	0	188	1	0	16	229	3	0	4	3	1	0	4	4	10	0	463	
4:30 PM	0	196	1	0	7	238	2	0	4	6	2	0	24	8	17	0	505	
4:45 PM	3	171	0	0	2	223	1	0	4	5	0	0	1	5	14	0	429	1808
5:00 PM	3	203	0	0	5	241	1	0	4	5	5	0	6	3	13	0	489	1886
5:15 PM	2	230	0	0	3	261	1	0	5	5	3	0	6	5	7	0	528	1951
5:30 PM	0	214	0	0	5	262	3	0	5	3	6	0	6	7	9	0	520	1966
5:45 PM	1	166	0	0	4	259	0	0	1	0	2	0	1	1	7	0	442	1979

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	920	0	0	12	1044	4	0	20	20	12	0	24	20	28	0	2112
Heavy Trucks	0	12	0		0	20	0		0	4	0		0	0	0		36
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

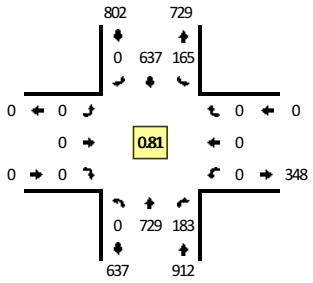
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Thales Academy Inbound Dwy
CITY/STATE: Apex, NC

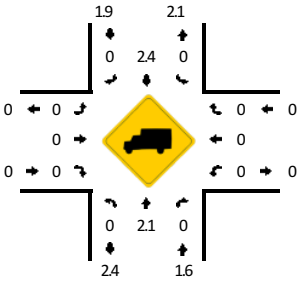
QC JOB #: 17294618
DATE: Tue, Oct 21 2025

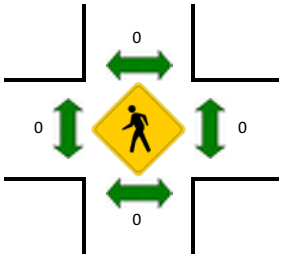
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM



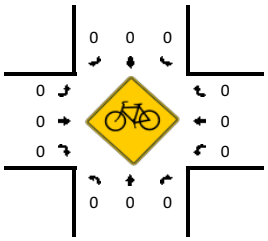


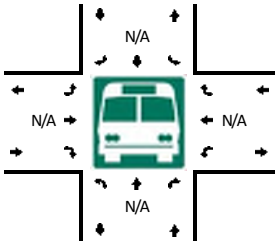
TRUE DATA TO IMPROVE MOBILITY



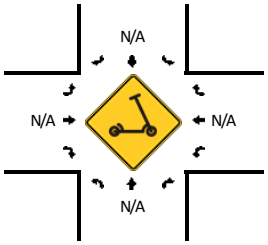












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Inbound Dwy (Eastbound)				Thales Academy Inbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	167	54	0	42	128	0	0	0	0	0	0	0	0	0	0	391	
7:15 AM	0	194	90	0	73	172	0	0	0	0	0	0	0	0	0	0	529	
7:30 AM	0	218	38	0	47	164	0	0	0	0	0	0	0	0	0	0	467	
7:45 AM	0	150	1	0	3	173	0	0	0	0	0	0	0	0	0	0	327	1714
8:00 AM	0	167	0	0	0	157	0	0	0	0	0	0	0	0	0	0	324	1647
8:15 AM	0	190	0	0	2	163	0	0	0	0	0	0	0	0	0	0	355	1473
8:30 AM	0	191	0	0	1	159	0	0	0	0	0	0	0	0	0	0	351	1357
8:45 AM	0	181	2	0	1	176	0	0	0	0	0	0	0	0	0	0	360	1390

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	776	360	0	292	688	0	0	0	0	0	0	0	0	0	0	2116
Heavy Trucks	0	8	0		0	16	0		0	0	0		0	0	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

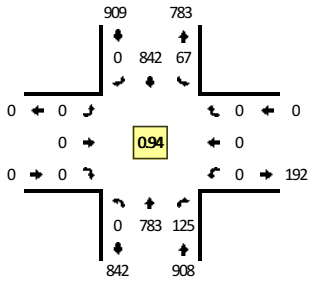
Type of peak hour being reported: Intersection Peak

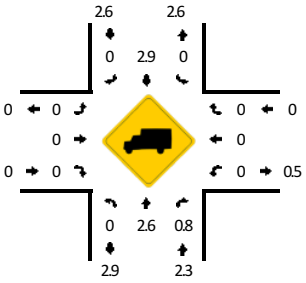
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Thales Academy Inbound Dwy
CITY/STATE: Apex, NC

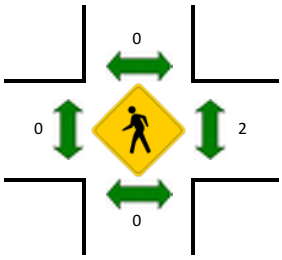
QC JOB #: 17294619
DATE: Tue, Oct 21 2025

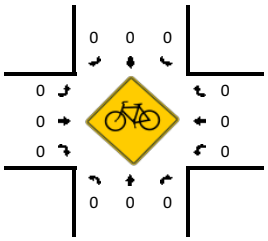
Peak-Hour: 2:45 PM -- 3:45 PM
Peak 15-Min: 3:15 PM -- 3:30 PM

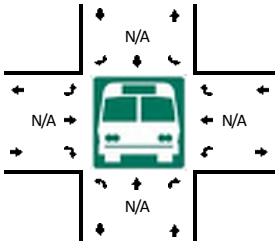


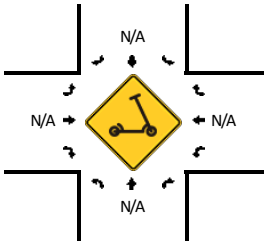


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Inbound Dwy (Eastbound)				Thales Academy Inbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	126	2	0	1	135	0	0	0	0	0	0	0	0	0	0	264	
2:15 PM	0	140	7	0	5	163	0	0	0	0	0	0	0	0	0	0	315	
2:30 PM	0	170	15	0	10	206	0	0	0	0	0	0	0	0	0	0	401	
2:45 PM	0	187	62	0	27	207	0	0	0	0	0	0	0	0	0	0	483	1463
3:00 PM	0	175	31	0	15	178	0	0	0	0	0	0	0	0	0	0	399	1598
3:15 PM	0	217	25	0	14	229	0	0	0	0	0	0	0	0	0	0	485	1768
3:30 PM	0	204	7	0	11	228	0	0	0	0	0	0	0	0	0	0	450	1817
3:45 PM	0	173	2	0	0	244	0	0	0	0	0	0	0	0	0	0	419	1753

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	868	100	0	56	916	0	0	0	0	0	0	0	0	0	0	1940
Heavy Trucks	0	12	0		0	16	0		0	0	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

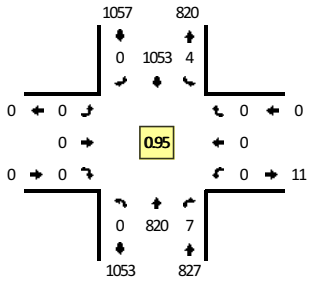
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Thales Academy Inbound Dwy
CITY/STATE: Apex, NC

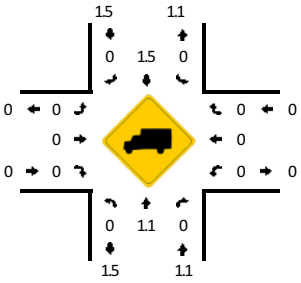
QC JOB #: 17294620
DATE: Tue, Oct 21 2025

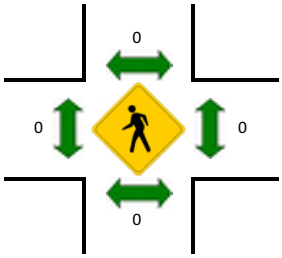
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



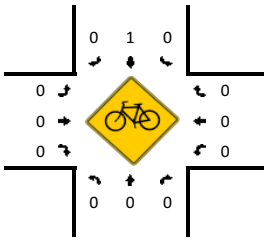


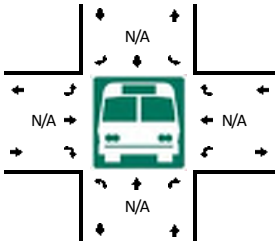
TRUE DATA TO IMPROVE MOBILITY



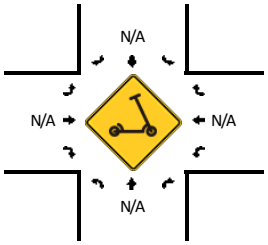












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Inbound Dwy (Eastbound)				Thales Academy Inbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	165	3	0	2	213	0	0	0	0	0	0	0	0	0	0	383	
4:15 PM	0	189	16	0	5	225	0	0	0	0	0	0	0	0	0	0	435	
4:30 PM	0	200	6	0	7	260	0	0	0	0	0	0	0	0	0	0	473	
4:45 PM	0	176	2	0	1	226	0	0	0	0	0	0	0	0	0	0	405	1696
5:00 PM	0	218	1	0	2	250	0	0	0	0	0	0	0	0	0	0	471	1784
5:15 PM	0	223	4	0	2	268	0	0	0	0	0	0	0	0	0	0	497	1846
5:30 PM	0	215	1	0	0	275	0	0	0	0	0	0	0	0	0	0	491	1864
5:45 PM	0	164	1	0	0	260	0	0	0	0	0	0	0	0	0	0	425	1884

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	892	16	0	8	1072	0	0	0	0	0	0	0	0	0	0	1988
Heavy Trucks	0	12	0		0	20	0		0	0	0		0	0	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

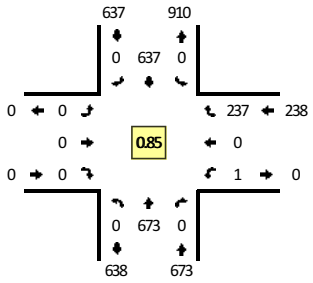
Report generated on 10/27/2025 8:15 AM

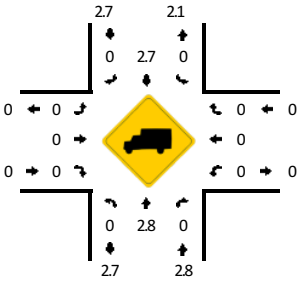
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

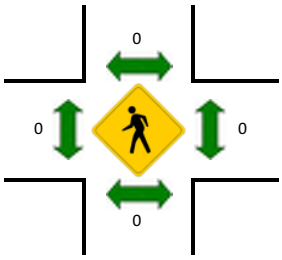
LOCATION: N Salem St -- Thales Academy Outbound Dwy | **QC JOB #:** 17294621
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

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

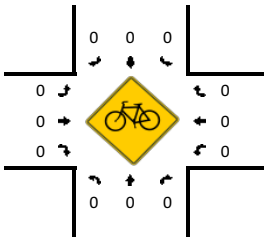


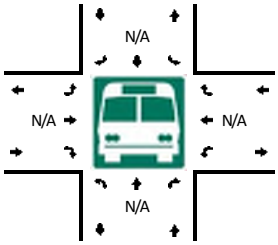


TRUE DATA TO IMPROVE MOBILITY

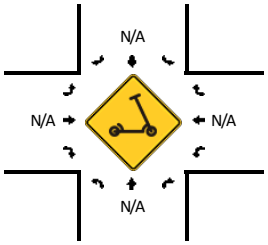












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Outbound Dwy (Eastbound)				Thales Academy Outbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	195	0	0	0	127	0	0	0	0	0	0	0	0	28	0	350	
7:15 AM	0	187	0	0	0	171	0	0	0	0	0	0	0	0	97	0	455	
7:30 AM	0	146	0	0	0	165	0	0	0	0	0	0	0	0	108	0	419	
7:45 AM	0	145	0	0	0	174	0	0	0	0	0	0	1	0	4	0	324	1548
8:00 AM	0	163	0	0	0	156	0	0	0	0	0	0	0	0	2	0	321	1519
8:15 AM	0	187	0	0	0	164	0	0	0	0	0	0	0	0	3	0	354	1418
8:30 AM	0	190	0	0	0	158	0	0	0	0	0	0	0	0	0	0	348	1347
8:45 AM	0	183	0	0	0	176	0	0	0	0	0	0	0	0	1	0	360	1383

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	748	0	0	0	684	0	0	0	0	0	0	0	0	388	0	1820
Heavy Trucks	0	12	0		0	8	0		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Thales Academy Outbound Dwy

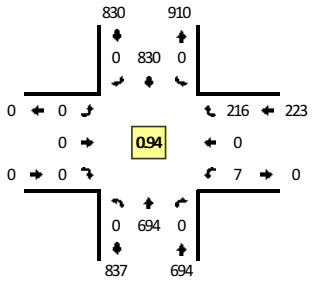
CITY/STATE: Apex, NC

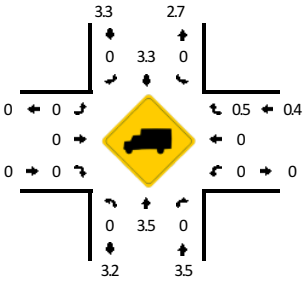
QC JOB #: 17294622

DATE: Tue, Oct 21 2025

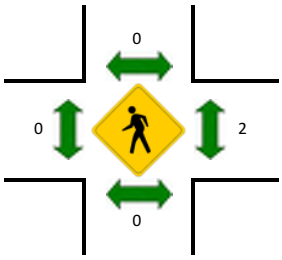
Peak-Hour: 2:45 PM -- 3:45 PM

Peak 15-Min: 3:15 PM -- 3:30 PM

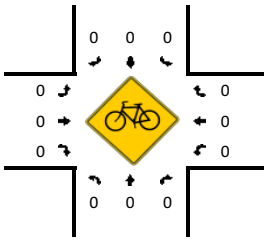


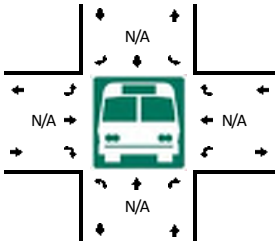


TRUE DATA TO IMPROVE MOBILITY

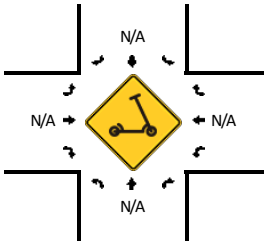












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Outbound Dwy (Eastbound)				Thales Academy Outbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	126	0	0	0	133	0	0	0	0	0	0	0	0	1	0	260	
2:15 PM	0	149	0	0	0	163	0	0	0	0	0	0	0	0	0	0	312	
2:30 PM	0	158	0	0	0	207	0	0	0	0	0	0	0	0	27	0	392	
2:45 PM	0	219	0	0	0	203	0	0	0	0	0	0	1	0	31	0	454	1418
3:00 PM	0	181	0	0	0	179	0	0	0	0	0	0	1	0	31	0	392	1550
3:15 PM	0	148	0	0	0	222	0	0	0	0	0	0	1	0	92	0	463	1701
3:30 PM	0	146	0	0	0	226	0	0	0	0	0	0	4	0	62	0	438	1747
3:45 PM	0	156	0	0	0	244	0	0	0	0	0	0	0	0	18	0	418	1711

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	592	0	0	0	888	0	0	0	0	0	0	4	0	368	0	1852
Heavy Trucks	0	8	0		0	20	0		0	0	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

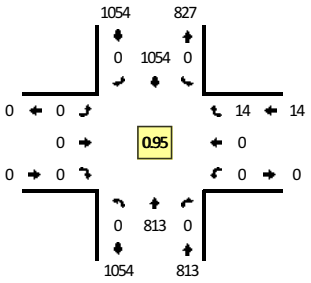
Report generated on 10/27/2025 8:15 AM

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

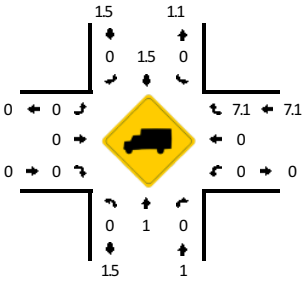
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

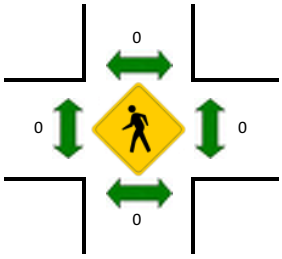
LOCATION: N Salem St -- Thales Academy Outbound Dwy | **QC JOB #:** 17294623
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

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

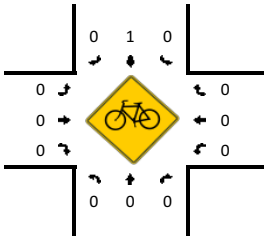


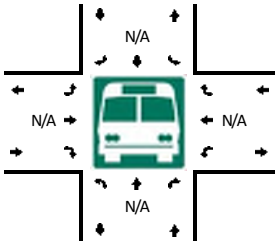
TRUE DATA TO IMPROVE MOBILITY



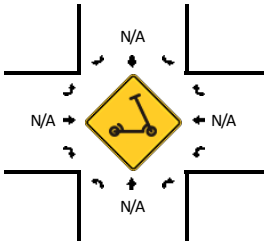












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Outbound Dwy (Eastbound)				Thales Academy Outbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	166	0	0	0	214	0	0	0	0	0	0	0	0	3	0	383	
4:15 PM	0	202	0	0	0	223	0	0	0	0	0	0	2	0	5	0	432	
4:30 PM	0	178	0	0	0	261	0	0	0	0	0	0	0	0	27	0	466	
4:45 PM	0	165	0	0	0	227	0	0	0	0	0	0	0	0	11	0	403	1684
5:00 PM	0	215	0	0	0	251	0	0	0	0	0	0	0	0	4	0	470	1771
5:15 PM	0	222	0	0	0	268	0	0	0	0	0	0	0	0	4	0	494	1833
5:30 PM	0	213	0	0	0	275	0	0	0	0	0	0	0	0	4	0	492	1859
5:45 PM	0	163	0	0	0	260	0	0	0	0	0	0	0	0	2	0	425	1881

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	888	0	0	0	1072	0	0	0	0	0	0	0	0	16	0	1976
Heavy Trucks	0	12	0		0	20	0		0	0	0		0	0	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

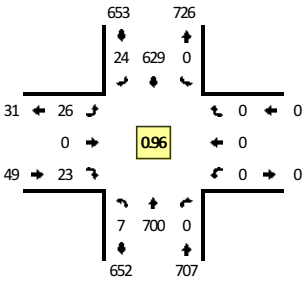
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

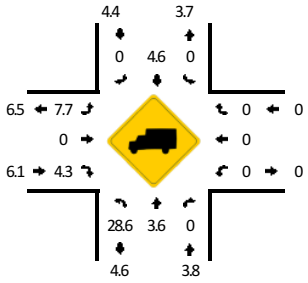
LOCATION: N Salem St -- Brittley Way
CITY/STATE: Apex, NC

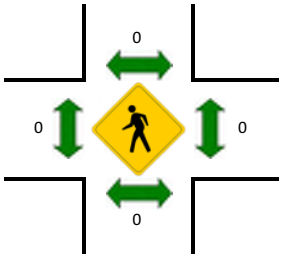
QC JOB #: 17294605
DATE: Tue, Oct 21 2025

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

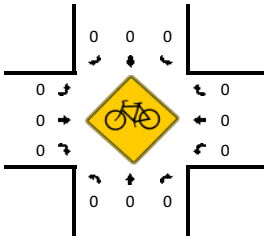


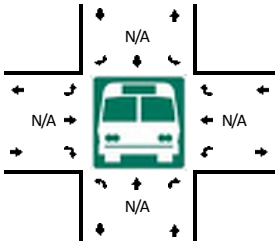




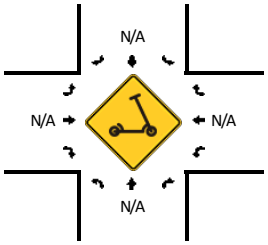












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Brittley Way (Eastbound)				Brittley Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	200	0	0	0	122	6	0	10	0	10	0	0	0	0	0	350	
7:15 AM	4	187	0	0	0	162	7	0	3	0	7	0	0	0	0	0	370	
7:30 AM	1	129	0	0	0	144	22	0	7	0	10	0	0	0	0	0	313	
7:45 AM	3	135	0	0	0	156	16	0	8	0	5	0	0	0	0	0	323	1356
8:00 AM	2	157	0	0	0	152	6	0	8	0	4	0	0	0	0	0	329	1335
8:15 AM	0	179	0	0	0	162	4	0	4	0	9	0	0	0	0	0	358	1323
8:30 AM	3	186	0	0	0	150	4	0	4	0	7	0	0	0	0	0	354	1364
8:45 AM	2	178	0	0	0	165	10	0	10	0	3	0	0	0	0	0	368	1409

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	712	0	0	0	660	40	0	40	0	12	0	0	0	0	0	1472
Heavy Trucks	8	20	0		0	40	0		4	0	0		0	0	0		72
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

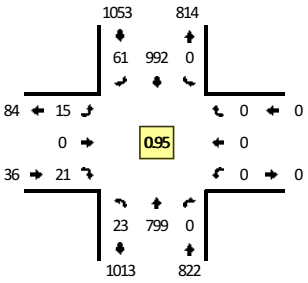
Report generated on 10/27/2025 8:15 AM

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

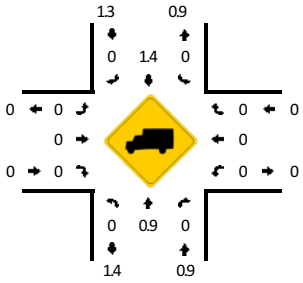
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

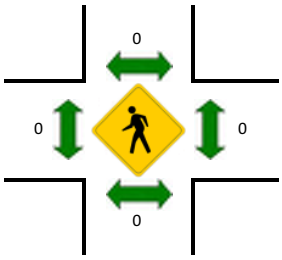
LOCATION: N Salem St -- Brittley Way | **QC JOB #:** 17294606
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

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

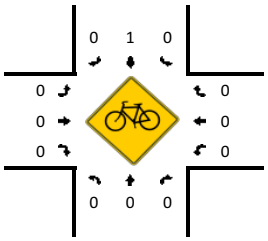


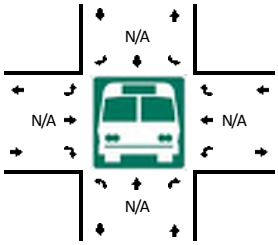




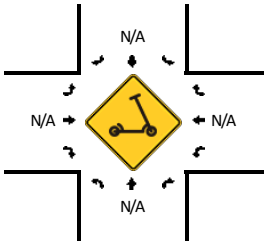












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Brittley Way (Eastbound)				Brittley Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	160	0	0	0	197	18	0	4	0	4	0	0	0	0	0	390	
4:15 PM	4	196	0	0	0	217	11	0	6	0	7	0	0	0	0	0	441	
4:30 PM	6	171	0	0	0	239	24	0	9	0	1	0	0	0	0	0	450	
4:45 PM	4	157	0	0	0	215	14	0	7	0	2	0	0	0	0	0	399	1680
5:00 PM	8	213	0	0	0	234	16	0	2	0	4	0	0	0	0	0	477	1767
5:15 PM	6	219	0	0	0	247	16	0	5	0	8	0	0	0	0	0	501	1827
5:30 PM	6	207	0	0	0	258	16	0	6	0	3	0	0	0	0	0	496	1873
5:45 PM	3	160	0	0	0	253	13	0	2	0	6	0	0	0	0	0	437	1911

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	876	0	0	0	988	64	0	20	0	32	0	0	0	0	0	2004
Heavy Trucks	0	12	0		0	24	0		0	0	0		0	0	0		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

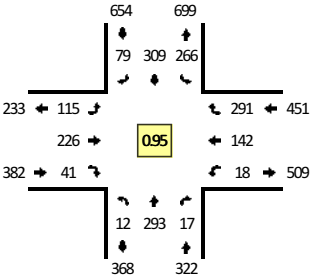
Type of peak hour being reported: Intersection Peak

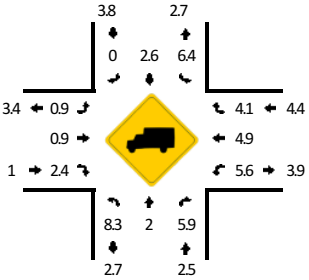
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Apex Peakway
CITY/STATE: Apex, NC

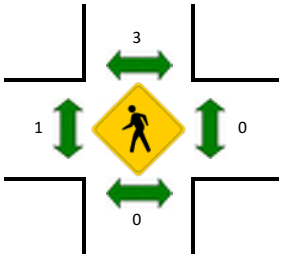
QC JOB #: 17294607
DATE: Tue, Oct 21 2025

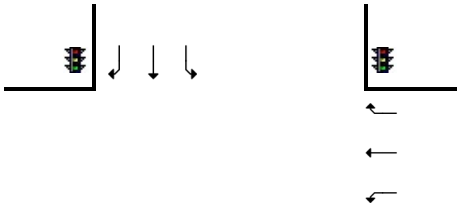
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

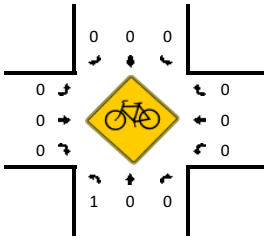


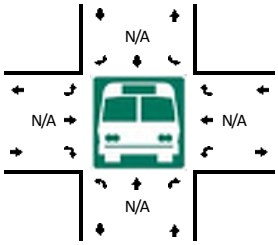


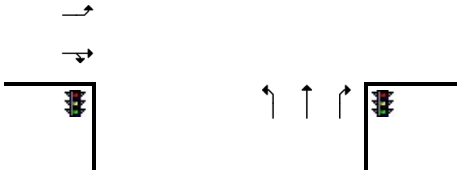
TRUE DATA TO IMPROVE MOBILITY

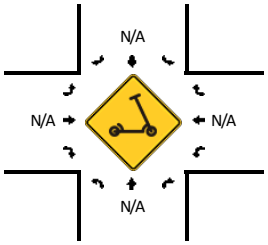












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	90	7	0	62	55	8	0	24	48	5	0	4	46	103	0	456	
7:15 AM	17	60	10	0	69	92	11	0	32	52	10	0	5	69	94	0	521	
7:30 AM	10	36	2	0	50	86	22	0	10	35	8	0	1	64	62	0	386	
7:45 AM	6	54	18	0	51	89	19	0	24	63	12	0	8	38	58	0	440	1803
8:00 AM	5	73	3	0	55	77	21	0	27	67	14	0	2	24	60	0	428	1775
8:15 AM	0	74	3	0	71	86	22	0	18	41	9	0	3	36	81	0	444	1698
8:30 AM	6	72	3	0	72	73	13	0	28	49	9	0	9	35	91	0	460	1772
8:45 AM	1	74	8	0	68	73	23	0	42	69	9	0	4	47	59	0	477	1809

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	296	32	0	272	292	92	0	168	276	36	0	16	188	236	0	1908
Heavy Trucks	0	0	4		12	16	0		4	0	4		0	12	12		64
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

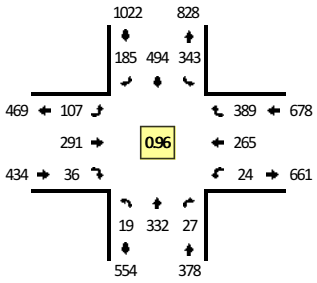
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

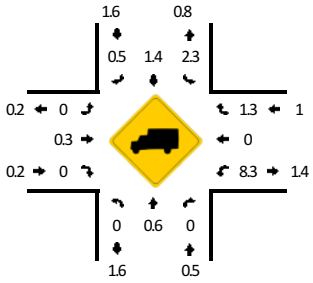
LOCATION: N Salem St -- Apex Peakway
CITY/STATE: Apex, NC

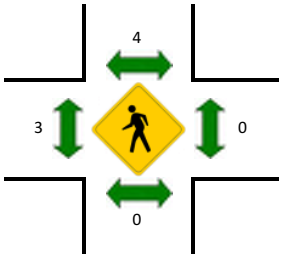
QC JOB #: 17294608
DATE: Tue, Oct 21 2025

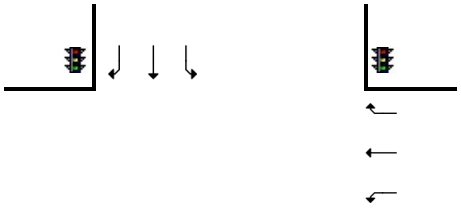
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

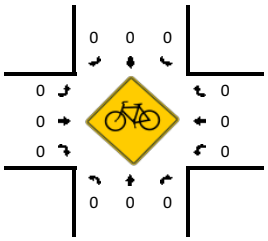


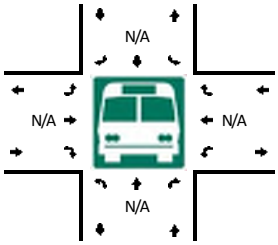
TRUE DATA TO IMPROVE MOBILITY

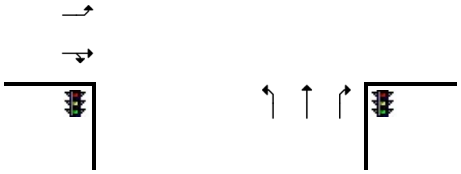


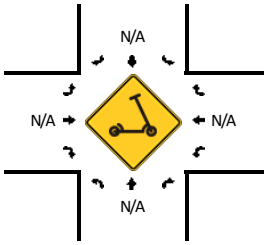












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	61	7	0	59	108	36	0	32	61	11	0	6	74	74	0	533	
4:15 PM	1	89	3	0	78	105	37	0	26	58	6	0	3	58	86	0	550	
4:30 PM	9	66	8	0	71	115	46	0	23	63	14	0	7	70	87	0	579	
4:45 PM	1	64	8	0	58	111	36	0	26	60	10	0	5	79	67	0	525	2187
5:00 PM	6	90	8	0	76	121	49	0	35	76	11	0	7	67	95	0	641	2295
5:15 PM	5	98	5	0	84	118	43	0	34	75	8	0	8	74	100	0	652	2397
5:30 PM	4	75	8	0	94	117	57	0	19	67	10	0	6	66	114	0	637	2455
5:45 PM	4	69	6	0	89	138	36	0	19	73	7	0	3	58	80	0	582	2512

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	392	20	0	336	472	172	0	136	300	32	0	32	296	400	0	2608
Heavy Trucks	0	4	0		8	12	0		0	0	0		4	0	8		36
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

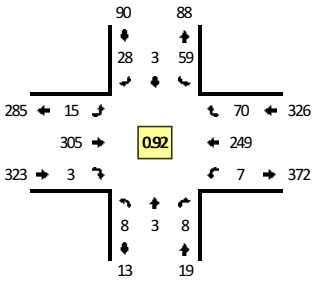
Type of peak hour being reported: Intersection Peak

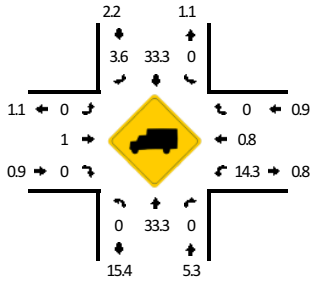
Method for determining peak hour: Total Entering Volume

LOCATION: Brittley Way -- Apex Peakway
CITY/STATE: Apex, NC

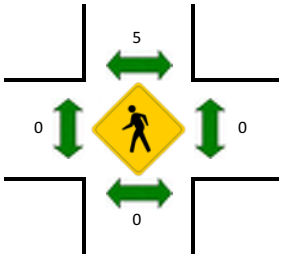
QC JOB #: 17294609
DATE: Tue, Oct 21 2025

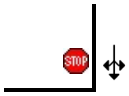
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

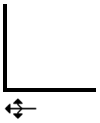


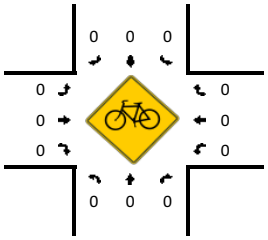


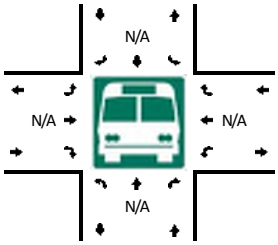
TRUE DATA TO IMPROVE MOBILITY

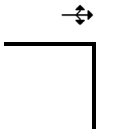


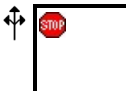


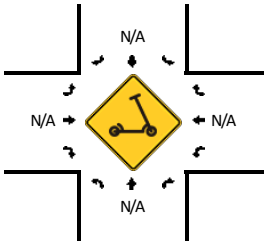












15-Min Count Period Beginning At	Brittley Way (Northbound)				Brittley Way (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	5	0	6	0	3	0	1	68	0	0	0	50	7	0	141	
7:15 AM	2	2	1	0	10	1	5	0	2	79	1	0	1	79	23	0	206	
7:30 AM	2	1	3	0	14	0	14	0	2	53	0	0	2	73	28	0	192	
7:45 AM	2	0	1	0	24	1	6	0	6	96	0	0	1	55	11	0	203	742
8:00 AM	2	0	3	0	11	1	3	0	5	77	2	0	3	42	8	0	157	758
8:15 AM	0	0	5	0	12	0	4	0	2	70	0	0	0	52	3	0	148	700
8:30 AM	3	1	0	0	7	0	2	0	3	74	1	0	0	48	4	0	143	651
8:45 AM	0	0	2	0	12	0	5	0	1	96	0	0	2	57	10	0	185	633

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	8	4	0	40	4	20	0	8	316	4	0	4	316	92	0	824
Heavy Trucks	0	4	0		0	4	4		0	4	0		0	8	0		24
Buses																	
Pedestrians		0				12				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

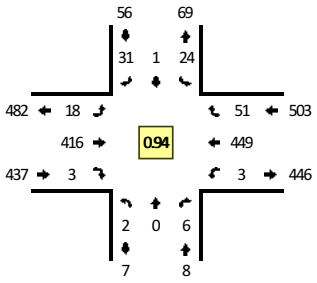
Report generated on 10/27/2025 8:15 AM

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

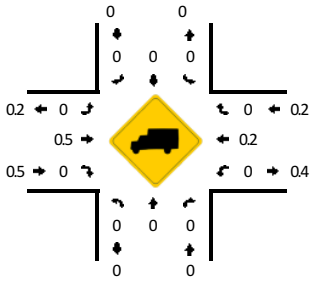
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

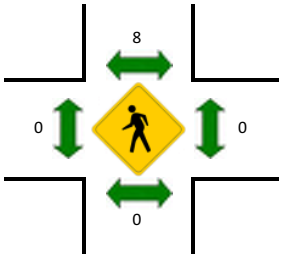
LOCATION: Brittley Way -- Apex Peakway | **QC JOB #:** 17294610
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

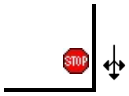
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

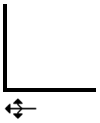


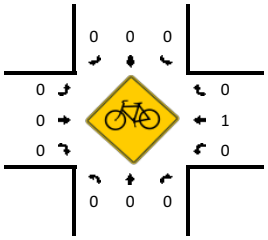


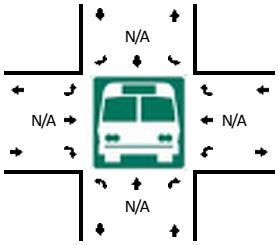


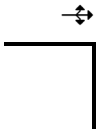


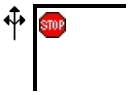


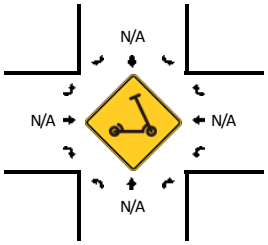












15-Min Count Period Beginning At	Brittley Way (Northbound)				Brittley Way (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	8	0	5	0	7	93	0	0	2	103	11	0	230	
4:15 PM	0	0	0	0	6	0	7	0	3	86	3	0	3	94	10	0	212	
4:30 PM	0	0	1	0	7	1	3	0	6	83	0	0	0	114	5	0	220	
4:45 PM	0	0	1	0	3	1	5	0	2	100	1	0	0	97	15	0	225	887
5:00 PM	1	0	4	0	3	0	6	0	6	112	0	0	2	122	12	0	268	925
5:15 PM	1	0	0	0	12	0	10	0	1	107	1	0	1	111	13	0	257	970
5:30 PM	0	0	1	0	6	0	10	0	9	97	1	0	0	119	11	0	254	1004
5:45 PM	0	0	3	0	9	0	3	0	8	88	3	0	0	89	8	0	211	990

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	16	0	12	0	24	0	24	448	0	0	8	488	48	0	1072
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	0		8
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

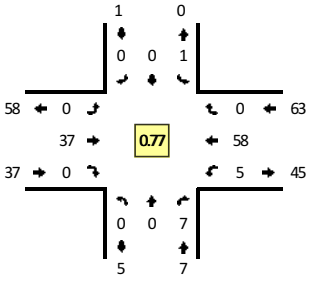
Type of peak hour being reported: Intersection Peak

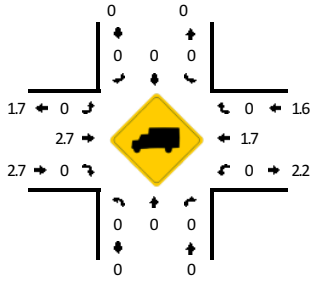
Method for determining peak hour: Total Entering Volume

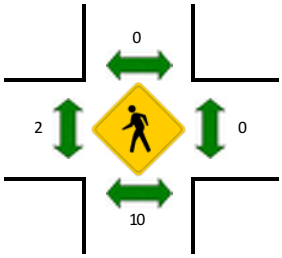
LOCATION: Frenchurch Way -- Brittley Way
CITY/STATE: Apex, NC

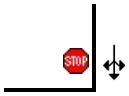
QC JOB #: 17294611
DATE: Tue, Oct 21 2025

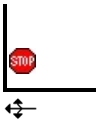
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

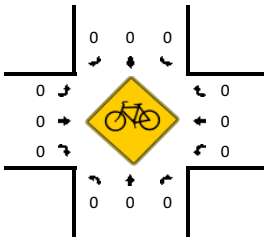


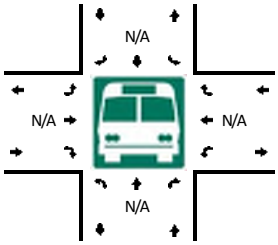


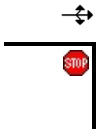


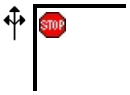


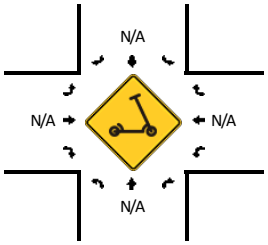












15-Min Count Period Beginning At	Frenchurch Way (Northbound)				Frenchurch Way (Southbound)				Brittley Way (Eastbound)				Brittley Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	1	0	0	0	0	13	0	0	0	6	0	0	21	
7:15 AM	0	0	3	0	0	0	0	0	0	6	0	0	1	10	0	0	20	
7:30 AM	0	0	3	0	0	0	0	0	0	7	0	0	4	21	0	0	35	
7:45 AM	0	0	0	0	0	0	0	0	0	11	0	0	0	21	0	0	32	108
8:00 AM	0	0	2	0	0	0	0	0	0	10	0	0	1	5	0	0	18	105
8:15 AM	0	0	1	0	0	0	0	0	0	8	0	0	0	4	0	0	13	98
8:30 AM	0	0	0	0	1	0	0	0	0	9	0	0	0	5	0	0	15	78
8:45 AM	0	0	0	0	1	0	0	0	0	10	0	0	1	9	0	0	21	67

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	12	0	0	0	0	0	0	28	0	0	16	84	0	0	140
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		16				0				8				0			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

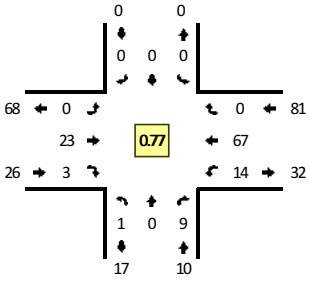
Type of peak hour being reported: Intersection Peak

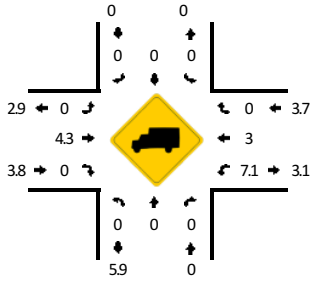
Method for determining peak hour: Total Entering Volume

LOCATION: Frenchurch Way -- Brittley Way
CITY/STATE: Apex, NC

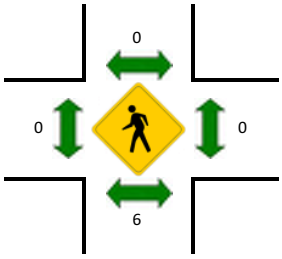
QC JOB #: 17294612
DATE: Tue, Oct 21 2025

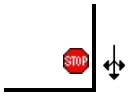
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

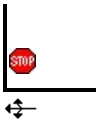


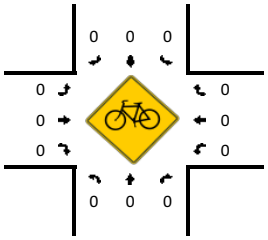


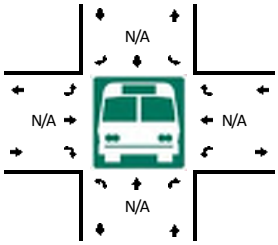
TRUE DATA TO IMPROVE MOBILITY

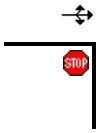


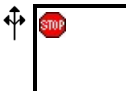


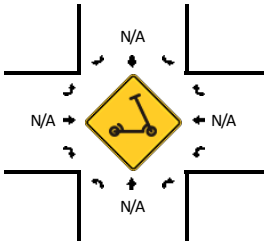












15-Min Count Period Beginning At	Frenchurch Way (Northbound)				Frenchurch Way (Southbound)				Brittley Way (Eastbound)				Brittley Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	6	0	0	0	0	0	0	4	2	0	7	18	0	0	38	
4:15 PM	0	0	1	0	0	0	0	0	0	11	1	0	0	8	0	0	21	
4:30 PM	0	0	2	0	0	0	0	0	0	4	0	0	3	24	0	0	33	
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	4	17	0	0	25	117
5:00 PM	0	0	0	0	0	0	0	0	0	6	0	0	2	17	0	0	25	104
5:15 PM	1	0	2	0	1	0	0	0	0	7	1	0	2	16	0	0	30	113
5:30 PM	0	0	1	0	0	0	0	0	0	5	0	0	1	16	0	0	23	103
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	2	10	1	0	15	93

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	24	0	0	0	0	0	0	16	8	0	28	72	0	0	152
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	4	0		8
Buses																	
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

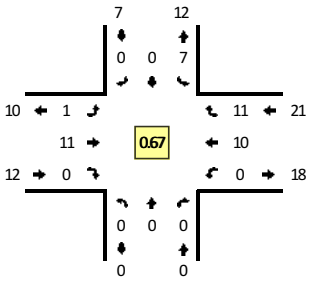
Type of peak hour being reported: Intersection Peak

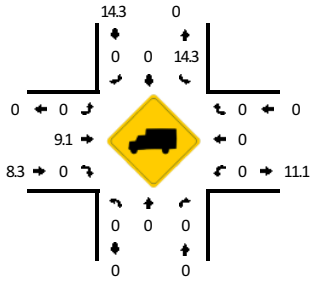
Method for determining peak hour: Total Entering Volume

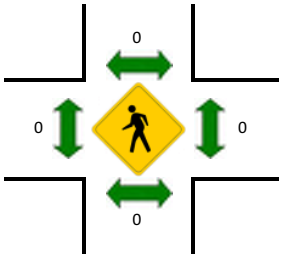
LOCATION: Crossroads Ford of Apex Central Dwy -- All Wheel Dr
CITY/STATE: Apex, NC

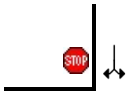
QC JOB #: 17294613
DATE: Tue, Oct 21 2025

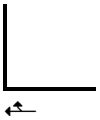
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

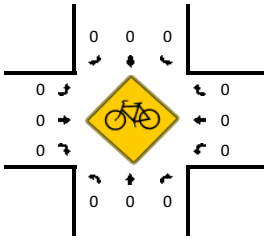


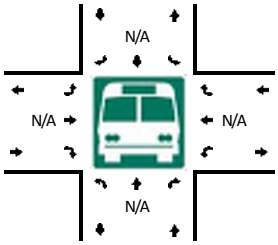


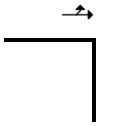




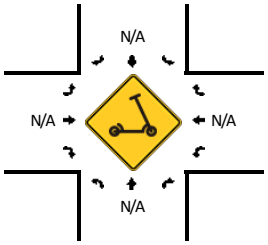












15-Min Count Period Beginning At	Crossroads Ford of Apex Central Dwy (Northbound)				Crossroads Ford of Apex Central Dwy (Southbound)				All Wheel Dr (Eastbound)				All Wheel Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	2	1	0	0	0	0	1	0	4	
7:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	2	0	5	
7:30 AM	0	0	0	0	3	0	0	0	1	2	0	0	0	3	2	0	11	
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	1	2	0	5	25
8:00 AM	0	0	0	0	1	0	0	0	1	4	0	0	0	1	3	0	10	31
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	28
8:30 AM	0	0	0	0	2	0	0	0	0	2	0	0	0	6	3	0	13	30
8:45 AM	0	0	0	0	3	0	0	0	0	5	0	0	0	3	4	0	15	40

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	0	0	0	0	20	0	0	0	12	16	0	60
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

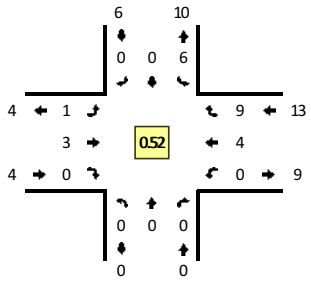
Type of peak hour being reported: Intersection Peak

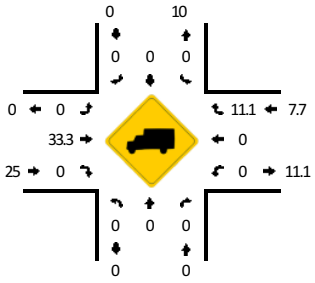
Method for determining peak hour: Total Entering Volume

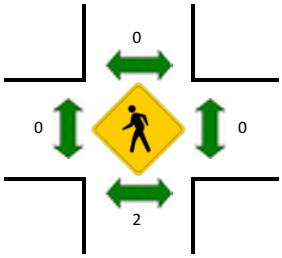
LOCATION: Crossroads Ford of Apex Central Dwy -- All Wheel Dr
CITY/STATE: Apex, NC

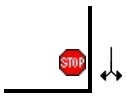
QC JOB #: 17294614
DATE: Tue, Oct 21 2025

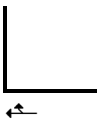
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

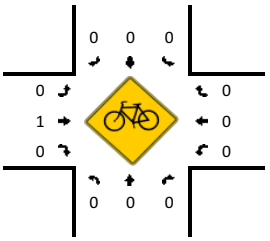


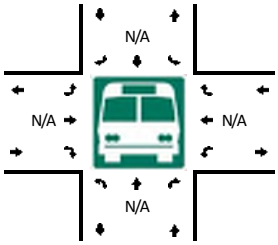


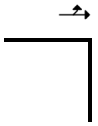




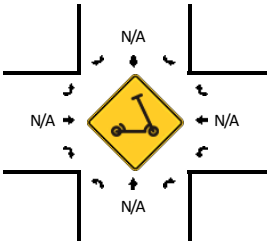












15-Min Count Period Beginning At	Crossroads Ford of Apex Central Dwy (Northbound)				Crossroads Ford of Apex Central Dwy (Southbound)				All Wheel Dr (Eastbound)				All Wheel Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	4	
4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
4:30 PM	0	0	0	0	3	0	0	0	1	1	0	0	0	0	6	0	11	
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	0	4	21
5:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	1	2	0	5	22
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3	23
5:30 PM	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0	0	4	16
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	13

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	0	0	0	4	4	0	0	0	0	24	0	44
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/27/2025 8:15 AM

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

Appendix C:
Trip Generation

Good Acres (N. Salem St.)

Table 1 - Trip Generation (11th Edition)

Land Use	Intensity		Daily			AM Peak Hour			School PM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
215 Single Family Attached Housing	200	d.u.	1,474	737	737	98	25	73	90	50	40	116	68	48
221 Multifamily Housing (Mid-Rise)	250	d.u.	1,146	573	573	98	23	75	50	29	21	98	60	38
822 Strip Retail Plaza (<40K)	22,000	s.f.	1,158	579	579	48	29	19	78	39	39	136	68	68
Subtotal			**3,778**	**1,889**	**1,889**	**244**	**77**	**167**	**218**	**118**	**100**	**350**	**196**	**154**
Internal Capture														
215 Single Family Attached Housing			109	65	44	2	1	1	9	7	2	12	9	3
221 Multifamily Housing (Mid-Rise)			85	51	34	1	0	1	6	4	2	11	8	3
822 Strip Retail Plaza (<40K)			194	78	116	3	2	1	13	3	10	23	6	17
Internal Capture Total	2.46%	13.14%	*388*	*194*	*194*	*6*	*3*	*3*	*28*	*14*	*14*	*46*	*23*	*23*
Total External Trips			**3,390**	**1,695**	**1,695**	**238**	**74**	**164**	**190**	**104**	**86**	**304**	**173**	**131**
Pass-By Capture	AM	PM												
822 Strip Retail Plaza (<40K)	0%	20%	96	48	48	0	0	0	13	7	6	22	12	10
Total Net New External Trips			**3,294**	**1,647**	**1,647**	**238**	**74**	**164**	**177**	**97**	**80**	**282**	**161**	**121**

School PM peak hour trip generation based on average of ITE hourly distribution data for the 2-4pm timeframe and applied to daily trip generation

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Good Acres (N. Salem St.)	**Organization:**	Kimley-Horn
Project Location:	Apex, NC	**Perormed By:**	KH
Scenario Description:	Full Build	**Date:**	10/8/2025
Analysis Year:	2032	**Checked By:**	
Analysis Period:	**AM Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office		0	SF	0	0	0
Retail	822	22,000	SF	48	29	19
Restaurant		0	SF	0	0	0
Cinema/Entertainment		0	SF	0	0	0
Residential	215,221	450	units	196	48	148
Hotel		0	rooms	0	0	0
All Other Land Uses[2]		0	SF	0	0	0
				244	**77**	**167**

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.1	0%	0%	1.1	0%	0%
Retail	1.1	0%	0%	1.1	0%	0%
Restaurant	1.1	0%	0%	1.1	0%	0%
Cinema/Entertainment	1.1	0%	0%	1.1	0%	0%
Residential	1.1	0%	0%	1.1	0%	0%
Hotel	1.1	0%	0%	1.1	0%	0%
All Other Land Uses[2]	1.1	0%	0%	1.1	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	269	85	184
Internal Capture Percentage	2%	4%	2%
External Vehicle-Trips[5]	238	74	164
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	0%	0%
Retail	6%	5%
Restaurant	0%	0%
Cinema/Entertainment	0%	0%
Residential	2%	1%
Hotel	0%	0%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE).
[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).
4Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mized-use project, manual adjustments must be made
5Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
[6]Person-Trips
*Indicates computaton that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D) Entering Trips			Table 7-A (O) Exiting Trips		
	Veh. Occ.[4]	Vehicle Trips	Person-Trips*	Veh. Occ.[4]	Vehicle Trips	Person-Trips*
Office	1.1	0	0	1.1	0	0
Retail	1.1	29	32	1.1	19	21
Restaurant	1.1	0	0	1.1	0	0
Cinema/Entertainment	1.1	0	0	1.1	0	0
Residential	1.1	48	53	1.1	148	163
Hotel	1.1	0	0	1.1	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	6		3	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	2	33	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		10	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	3		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	5	0	0		0
Hotel	0	1	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	% Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	2	30	32	27	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	52	53	47	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[2]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	% Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	20	21	18	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	161	163	146	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[2]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
[2]Person-Trips
[3]Total estimate for all other land uses at mixed use development site is not subject to internal capture computations in this estimator.
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Good Acres (N. Salem St.)	**Organization:**	Kimley-Horn
Project Location:	Apex, NC	**Perormed By:**	KH
Scenario Description:	Full Build	**Date:**	10/8/2025
Analysis Year:	2032	**Checked By:**	
Analysis Period:	**PM Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office		0	SF	0	0	0
Retail	822	22,000	SF	136	68	68
Restaurant		0	SF	0	0	0
Cinema/Entertainment		0	SF	0	0	0
Residential	215,221	450	units	214	128	86
Hotel		0	rooms	0	0	0
All Other Land Uses[2]		0	SF	0	0	0
				350	**196**	**154**

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.1	0%	0%	1.1	0%	0%
Retail	1.1	0%	0%	1.1	0%	0%
Restaurant	1.1	0%	0%	1.1	0%	0%
Cinema/Entertainment	1.1	0%	0%	1.1	0%	0%
Residential	1.1	0%	0%	1.1	0%	0%
Hotel	1.1	0%	0%	1.1	0%	0%
All Other Land Uses[2]	1.1	0%	0%	1.1	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					600	
Restaurant						
Cinema/Entertainment						
Residential		600				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	19	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	7	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	385	216	169
Internal Capture Percentage	14%	12%	15%
External Vehicle-Trips[5]	304	173	131
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	0%	0%
Retail	9%	25%
Restaurant	0%	0%
Cinema/Entertainment	0%	0%
Residential	13%	7%
Hotel	0%	0%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE).
[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).
[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mized-use project, manual adjustments must be made
[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
[6]Person-Trips
*Indicates computaton that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D) Entering Trips			Table 7-P (O) Exiting Trips		
	Veh. Occ.[4]	Vehicle Trips	Person-Trips*	Veh. Occ.[4]	Vehicle Trips	Person-Trips*
Office	1.1	0	0	1.1	0	0
Retail	1.1	68	75	1.1	68	75
Restaurant	1.1	0	0	1.1	0	0
Cinema/Entertainment	1.1	0	0	1.1	0	0
Residential	1.1	128	141	1.1	86	95
Hotel	1.1	0	0	1.1	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		22	3	19	4
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	35	20	0		3
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		6	0	0	6	0
Retail	0		0	0	65	0
Restaurant	0	37		0	23	0
Cinema/Entertainment	0	3	0		6	0
Residential	0	7	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	% Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	7	68	75	62	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	19	122	141	111	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[2]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	% Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	19	56	75	51	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7	88	95	80	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[2]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
[2]Person-Trips
[3]Total estimate for all other land uses at mixed use development site is not subject to internal capture computations in this estimator.
*Indicates computation that has been rounded to the nearest whole number.

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	579	579	29	19	68	68
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,310	1,310	48	148	128	86
Hotel	0	0	0	0	0	0
	1,889	1,889	77	167	196	154

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	78	116	1	1	7	18
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	116	78	1	1	18	7
Hotel	0	0	0	0	0	0
	194	194	2	2	25	25
% Reduction	10.3%		1.6%		14.3%	

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	501	463	28	18	61	50
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,194	1,232	47	147	110	79
Hotel	0	0	0	0	0	0
	1,695	1,695	75	165	171	129

Appendix D:
Intersection Spreadsheets

INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	US 64 WB On-Ramp/N. Salem Street
N/S Street:	N. Salem Street/Davis Drive

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025
Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR
PHF =0.94

Description	US 64 WB On-Ramp Eastbound				N. Salem Street Westbound				N. Salem Street Northbound				Davis Drive Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	0	0	0	0	217	235	6	0	244	667	465	0	23	548	169
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	0	0	0	0	217	235	6	0	244	667	465	0	23	548	169
Growth Factor (0.03 per year)	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
2032 Background Growth	0	0	0	0	0	50	54	1	0	56	153	107	0	5	126	39
2032 Background Traffic	0	0	0	0	0	267	289	7	0	300	820	572	0	28	674	208
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(20%)	(15%)	(0%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	0	0	0	0	14	0	0	0	29	22	0	0	0	7	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(25%)	(0%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	3	0	0	0	2	5	0	0	0	7	0
Total Project Traffic	0	0	0	0	0	17	0	0	0	31	27	0	0	0	14	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	284	289	7	0	331	847	572	0	28	688	208
Approach Percent Impact	-				2.93%				3.31%				1.52%			
Overall Percent Impact	2.7%															

PM PEAK HOUR
PHF = 0.96

Description	US 64 WB On-Ramp Eastbound				N. Salem Street Westbound				N. Salem Street Northbound				Davis Drive Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	0	0	0	0	258	346	14	0	190	798	396	0	28	759	244
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	0	0	0	0	258	346	14	0	190	798	396	0	28	759	244
Growth Factor (0.03 per year)	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
2032 Background Growth	0	0	0	0	0	59	80	3	0	44	183	91	0	6	174	56
2032 Background Traffic	0	0	0	0	0	317	426	17	0	234	981	487	0	34	933	300
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(20%)	(15%)	(0%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	0	0	0	0	33	0	0	0	16	12	0	0	0	17	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(25%)	(0%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	5	0	0	0	4	10	0	0	0	13	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	38	0	0	0	20	22	0	0	0	30	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	355	426	17	0	254	1003	487	0	34	963	300
Approach Percent Impact	-				4.76%				2.41%				2.31%			
Overall Percent Impact	2.9%															

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INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	US 64 EB Ramps
N/S Street:	N. Salem Street

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025

Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR

PHF = 0.88

Description	US 64 EB Ramps Eastbound U-Turn	Left	Through	Right	US 64 EB Ramps Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	N. Salem Street Southbound U-Turn	Left	Through	Right
2025 Traffic Count	0	672	1	307	0	0	0	0	0	0	709	99	0	177	598	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	672	1	307	0	0	0	0	0	0	709	99	0	177	598	0
Growth Factor (0.03 per year)	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
2032 Background Growth	0	154	0	71	0	0	0	0	0	0	163	23	0	41	137	0
2032 Background Traffic	0	826	1	378	0	0	0	0	0	0	872	122	0	218	735	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(35%)	(30%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	0	0	9	0	0	0	0	0	0	51	44	0	0	21	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(35%)	(10%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	0	0	3	0	0	0	0	0	0	6	2	0	0	9	0
Total Project Traffic	0	0	0	12	0	0	0	0	0	0	57	46	0	0	30	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	826	1	390	0	0	0	0	0	0	929	168	0	218	765	0
Approach Percent Impact		0.99%				-				9.39%				3.05%		
Overall Percent Impact	4.4%															

PM PEAK HOUR

PHF = 0.95

Description	US 64 EB Ramps Eastbound U-Turn	Left	Through	Right	US 64 EB Ramps Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	N. Salem Street Southbound U-Turn	Left	Through	Right
2025 Traffic Count	0	569	2	226	0	0	0	0	0	0	818	39	0	188	827	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	569	2	226	0	0	0	0	0	0	818	39	0	188	827	0
Growth Factor (0.03 per year)	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
2032 Background Growth	0	131	0	52	0	0	0	0	0	0	188	9	0	43	190	0
2032 Background Traffic	0	700	2	278	0	0	0	0	0	0	1006	48	0	231	1017	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(35%)	(30%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	0	0	22	0	0	0	0	0	0	28	24	0	0	50	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(35%)	(10%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	0	0	5	0	0	0	0	0	0	14	4	0	0	18	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	27	0	0	0	0	0	0	42	28	0	0	68	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	700	2	305	0	0	0	0	0	0	1048	76	0	231	1085	0
Approach Percent Impact		2.68%				-				6.23%				5.17%		
Overall Percent Impact	4.8%															

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INTERSECTION ANALYSIS SHEET

			AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Project:	Good Acres (N. Salem St.)	**Res. New Trips:**	47	146	68	57	111	80
Location:	Apex, NC	**Non-Res. New Trips:**	27	18	29	23	50	41
Ct. Date	10/21/2025	**Pass-By Trips:**	0	0	7	6	12	10
E/W Street:	All Wheel Drive/Key Ring Drive	**Annual Growth Rate:**	3.0%		**Existing Year:**	2025		
N/S Street:	N. Salem Street	**Growth Factor:**	0.230		**Buildout Year:**	2032		

AM PEAK HOUR

	All Wheel Drive Eastbound				Key Ring Drive Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Existing PHF	0.00	0.50	0.80	0.38	0.00	0.50	0.81	0.54	0.00	0.63	0.85	0.35	0.00	0.67	0.92	0.43
Background PHF	0.00	0.50	0.80	0.38	0.00	0.50	0.81	0.54	0.00	0.63	0.85	0.35	0.00	0.67	0.92	0.43
Build-out PHF	0.90	0.87	0.80	0.70	0.90	0.50	0.81	0.54	0.90	0.67	0.85	0.35	0.90	0.67	0.92	0.62
2025 Traffic Count	0	8	16	3	0	135	13	115	0	5	712	14	0	269	675	17
Count Balancing	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	8	16	3	0	136	13	115	0	5	712	14	0	269	675	17
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	164	0	0	0	155	0
2032 Background Traffic	0	8	16	3	0	136	13	115	0	5	876	14	0	269	830	17
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	25%
Percent Assignment Outbound	(0%)	(60%)	(0%)	(2%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	88	0	3	0	0	0	0	0	0	7	0	0	0	19	12
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	45%	0%
Percent Assignment Outbound	(0%)	(45%)	(0%)	(10%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	8	0	2	0	0	0	0	0	1	0	0	0	0	12	0
Total Project Traffic	0	96	0	5	0	0	0	0	0	1	7	0	0	0	31	12
Traffic Diversions	0	7	0	0	0	0	0	0	0	0	-7	0	0	0	0	0
2032 Buildout Total	0	111	16	8	0	136	13	115	0	6	876	14	0	269	861	29
Approach Percent Impact		74.81%				0.00%				0.89%				3.71%		
Overall Percent Impact	6.2%															

SCHOOL PM PEAK HOUR

	All Wheel Drive Eastbound				Key Ring Drive Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Existing PHF	0.00	0.75	0.64	0.65	0.00	0.65	0.61	0.63	0.00	0.33	0.92	0.42	0.00	0.66	0.93	0.71
Background PHF	0.00	0.75	0.64	0.65	0.00	0.65	0.61	0.63	0.00	0.33	0.92	0.42	0.00	0.66	0.93	0.71
Build-out PHF	0.90	0.86	0.64	0.74	0.90	0.65	0.61	0.63	0.90	0.49	0.92	0.42	0.90	0.66	0.93	0.83
2025 Traffic Count	0	24	18	13	0	99	17	101	0	8	765	15	0	121	797	17
Count Balancing	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	24	18	13	0	106	17	101	0	8	765	15	0	121	797	17
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	176	0	0	0	183	0
2032 Background Traffic	0	24	18	13	0	106	17	101	0	8	941	15	0	121	980	17
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	25%
Percent Assignment Outbound	(0%)	(60%)	(0%)	(2%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	48	0	2	0	0	0	0	0	0	4	0	0	0	44	28
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	45%	0%
Percent Assignment Outbound	(0%)	(45%)	(0%)	(10%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	18	0	4	0	0	0	0	0	3	0	0	0	0	23	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	-4	0
Pass-By Capture Assignment	0	2	0	1	0	0	0	0	0	0	0	0	0	0	3	1
Total Pass-By Traffic	0	2	0	1	0	0	0	0	0	0	-3	0	0	0	-1	1
Total Project Traffic	0	68	0	7	0	0	0	0	0	3	1	0	0	0	66	29
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	92	18	20	0	106	17	101	0	11	942	15	0	121	1046	46
Approach Percent Impact		57.69%				0.00%				0.41%				7.83%		
Overall Percent Impact	6.9%															

PM PEAK HOUR

PHF = 0.94

	All Wheel Drive Eastbound				Key Ring Drive Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	15	13	16	0	19	16	36	0	6	813	0	0	17	1023	5
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	15	13	16	0	19	16	36	0	6	813	0	0	17	1023	5
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	187	0	0	0	235	0
2032 Background Traffic	0	15	13	16	0	19	16	36	0	6	1000	0	0	17	1258	5
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	25%
Percent Assignment Outbound	(0%)	(60%)	(0%)	(2%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	48	0	2	0	0	0	0	0	0	4	0	0	0	44	28
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	45%	0%
Percent Assignment Outbound	(0%)	(45%)	(0%)	(10%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	18	0	4	0	0	0	0	0	3	0	0	0	0	23	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-5	0	0	0	-7	0
Pass-By Capture Assignment	0	4	0	2	0	0	0	0	0	0	0	0	0	0	5	2
Total Pass-By Traffic	0	4	0	2	0	0	0	0	0	0	-5	0	0	0	-2	2
Total Project Traffic	0	70	0	8	0	0	0	0	0	3	-1	0	0	0	65	30
Traffic Diversions	0	4	0	0	0	0	0	0	0	0	-4	0	0	0	0	0
2032 Buildout Total	0	89	13	24	0	19	16	36	0	9	995	0	0	17	1323	35
Approach Percent Impact		61.90%				0.00%				0.20%				6.91%		
Overall Percent Impact	6.8%															

INTERSECTION ANALYSIS SHEET

			AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Project:	Good Acres (N. Salem St.)	**Res. New Trips:**	47	146	68	57	111	80
Location:	Apex, NC	**Non-Res. New Trips:**	27	18	29	23	50	41
Ct. Date	10/21/2025	**Pass-By Trips:**	0	0	7	6	12	10
E/W Street:	Thales Inbound Driveway	**Annual Growth Rate:**	3.0%		**Existing Year:**		2025	
N/S Street:	N. Salem Street	**Growth Factor:**	0.230		**Buildout Year:**		2032	

AM PEAK HOUR

	Eastbound				Thales Inbound Driveway Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Existing PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.51	0.00	0.57	0.92	0.00
Background PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.51	0.00	0.57	0.92	0.00
Build-out PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.84	0.51	0.90	0.57	0.92	0.90
2025 Traffic Count	0	0	0	0	0	0	0	0	0	0	729	183	0	165	637	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
2025 Existing Traffic	0	0	0	0	0	0	0	0	0	0	729	183	0	165	638	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	168	0	0	0	147	0
2032 Background Traffic	0	0	0	0	0	0	0	0	0	0	897	183	0	165	785	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	7	0	0	0	17	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0	0	0	19	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	-7	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	0	0	0	0	0	898	183	0	165	804	0
Approach Percent Impact		-				-				0.74%				1.96%		
Overall Percent Impact	1.3%															

SCHOOL PM PEAK HOUR

	Eastbound				Thales Inbound Driveway Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Existing PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.50	0.00	0.62	0.92	0.00
Background PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.50	0.00	0.62	0.92	0.00
Build-out PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.50	0.90	0.62	0.92	0.90
2025 Traffic Count	0	0	0	0	0	0	0	0	0	0	783	125	0	67	842	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
2025 Existing Traffic	0	0	0	0	0	0	0	0	0	0	783	125	0	67	849	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	180	0	0	0	195	0
2032 Background Traffic	0	0	0	0	0	0	0	0	0	0	963	125	0	67	1044	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0	0	0	35	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	-4	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	-3	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0	0	0	36	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	0	0	0	0	0	967	125	0	67	1080	0
Approach Percent Impact		-				-				0.37%				3.14%		
Overall Percent Impact	1.8%															

PM PEAK HOUR

PHF = 0.95

	Eastbound				Thales Inbound Driveway Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	0	0	0	0	0	0	0	0	0	820	7	0	4	1053	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	0	0	0	0	0	0	0	0	0	820	7	0	4	1053	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	188	0	0	0	242	0
2032 Background Traffic	0	0	0	0	0	0	0	0	0	0	1008	7	0	4	1295	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0	0	0	35	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-5	0	0	0	-7	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	-5	0	0	0	-5	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	2	0	0	0	34	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	-4	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	0	0	0	0	0	1006	7	0	4	1329	0
Approach Percent Impact		-				-				0.20%				2.55%		
Overall Percent Impact	1.5%															

INTERSECTION ANALYSIS SHEET

		AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Project:	**Good Acres (N. Salem St.)**	**Res. New Trips:**	47	146	68	57	111	80
Location:	**Apex, NC**	**Non-Res. New Trips:**	27	18	29	23	50	41
Ct. Date	**10/21/2025**	**Pass-By Trips:**	0	0	7	6	12	10
E/W Street:	**South Site Drive (LI/RI/RO)/Thales Outbound Drwy.**	**Annual Growth Rate:**	3.0%		**Existing Year:**	2025		
N/S Street:	**N. Salem Street**	**Growth Factor:**	0.230		**Buildout Year:**	2032		

AM PEAK HOUR

	South Site Drive (LI/RI/RO) Eastbound				Thales Outbound Drwy. Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Existing PHF	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.55	0.00	0.00	0.86	0.00	0.00	0.00	0.92	0.00
Background PHF	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.55	0.00	0.00	0.86	0.00	0.00	0.00	0.92	0.00
Build-out PHF	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.55	0.90	0.90	0.86	0.90	0.90	0.90	0.92	0.90
2025 Traffic Count	0	0	0	0	0	1	0	237	0	0	673	0	0	0	637	0
Thales WBL Reassignment	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	1	0
2025 Existing Traffic	0	0	0	0	0	0	0	237	0	0	673	0	0	0	638	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	155	0	0	0	147	0
2032 Background Traffic	0	0	0	0	0	0	0	237	0	0	828	0	0	0	785	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	30%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(20%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	29	0	0	0	0	0	9	7	0	0	0	3	14
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	5%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(20%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	4	0	0	0	0	0	7	1	0	0	0	2	0
Total Project Traffic	0	0	0	33	0	0	0	0	0	16	8	0	0	0	5	14
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	-7	0	0	0	0	0
2032 Buildout Total	0	0	0	33	0	0	0	237	0	16	829	0	0	0	790	14
Approach Percent Impact	100.00%				0.00%				2.84%				2.36%			
Overall Percent Impact	4.0%															

SCHOOL PM PEAK HOUR

	South Site Drive (LI/RI/RO) Eastbound				Thales Outbound Drwy. Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Existing PHF	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.59	0.00	0.00	0.79	0.00	0.00	0.00	0.92	0.00
Background PHF	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.59	0.00	0.00	0.79	0.00	0.00	0.00	0.92	0.00
Build-out PHF	0.90	0.90	0.90	0.90	0.90	0.44	0.90	0.59	0.90	0.90	0.79	0.90	0.90	0.90	0.92	0.90
2025 Traffic Count	0	0	0	0	0	7	0	216	0	0	694	0	0	0	830	0
Thales WBL Reassignment	0	0	0	0	0	-7	0	0	0	0	0	0	0	0	7	0
2025 Existing Traffic	0	0	0	0	0	0	0	216	0	0	694	0	0	0	837	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	160	0	0	0	192	0
2032 Background Traffic	0	0	0	0	0	0	0	216	0	0	854	0	0	0	1029	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	30%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(20%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	16	0	0	0	0	0	22	4	0	0	0	2	33
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	5%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(20%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	8	0	0	0	0	0	13	3	0	0	0	4	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	-4	0
Pass-By Capture Assignment	0	0	0	2	0	0	0	0	0	3	0	0	0	0	1	0
Total Pass-By Traffic	0	0	0	2	0	0	0	0	0	3	-3	0	0	0	-3	0
Total Project Traffic	0	0	0	26	0	0	0	0	0	38	4	0	0	0	3	33
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	0	0	26	0	0	0	216	0	38	858	0	0	0	1032	33
Approach Percent Impact	100.00%				0.00%				4.69%				3.38%			
Overall Percent Impact	4.7%															

PM PEAK HOUR

PHF = 0.95

	South Site Drive (LI/RI/RO) Eastbound				Thales Outbound Drwy. Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
Description	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	0	0	0	0	0	0	14	0	0	813	0	0	0	1054	0
Thales WBL Reassignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	0	0	0	0	0	0	14	0	0	813	0	0	0	1054	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	187	0	0	0	242	0
2032 Background Traffic	0	0	0	0	0	0	0	14	0	0	1000	0	0	0	1296	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	30%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(20%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	16	0	0	0	0	0	22	4	0	0	0	2	33
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	5%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(20%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	8	0	0	0	0	0	13	3	0	0	0	4	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-5	0	0	0	-7	0
Pass-By Capture Assignment	0	0	0	4	0	0	0	0	0	5	0	0	0	0	2	0
Total Pass-By Traffic	0	0	0	4	0	0	0	0	0	5	-5	0	0	0	-5	0
Total Project Traffic	0	0	0	28	0	0	0	0	0	40	2	0	0	0	1	33
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	-4	0	0	0	0	0
2032 Buildout Total	0	0	0	28	0	0	0	14	0	40	998	0	0	0	1297	33
Approach Percent Impact	100.00%				0.00%				4.05%				2.56%			
Overall Percent Impact	4.3%															

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INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	Brittley Way
N/S Street:	N. Salem Street

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025
Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR
PHF =0.96

Description	Brittley Way Eastbound U-Turn	Left	Through	Right	- Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	N. Salem Street Southbound U-Turn	Left	Through	Right
2025 Traffic Count	0	26	0	23	0	0	0	0	0	7	700	0	0	0	629	24
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	26	0	23	0	0	0	0	0	7	700	0	0	0	629	24
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	161	0	0	0	145	0
2032 Background Traffic	0	26	0	23	0	0	0	0	0	7	861	0	0	0	774	24
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(5%)	(0%)	(3%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(22%)	(0%)
Residential Project Traffic	0	7	0	4	0	0	0	0	0	2	9	0	0	0	32	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(30%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0	0	0	5	0
Total Project Traffic	0	7	0	4	0	0	0	0	0	2	17	0	0	0	37	0
Traffic Diversions	0	-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	26	0	27	0	0	0	0	0	9	878	0	0	0	811	24
Approach Percent Impact		20.75%				-				2.14%				4.43%		
Overall Percent Impact	3.8%															

PM PEAK HOUR
PHF = 0.95

Description	Brittley Way Eastbound U-Turn	Left	Through	Right	- Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	N. Salem Street Southbound U-Turn	Left	Through	Right
2025 Traffic Count	0	15	0	21	0	0	0	0	0	23	799	0	0	0	992	61
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	15	0	21	0	0	0	0	0	23	799	0	0	0	992	61
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	184	0	0	0	228	0
2032 Background Traffic	0	15	0	21	0	0	0	0	0	23	983	0	0	0	1220	61
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(5%)	(0%)	(3%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(22%)	(0%)
Residential Project Traffic	0	4	0	2	0	0	0	0	0	6	22	0	0	0	18	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(30%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	15	0	0	0	12	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	4	0	2	0	0	0	0	0	6	37	0	0	0	30	0
Traffic Diversions	0	-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	15	0	23	0	0	0	0	0	29	1020	0	0	0	1250	61
Approach Percent Impact		15.79%				-				4.10%				2.29%		
Overall Percent Impact	3.3%															

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INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	Apex Peakway
N/S Street:	N. Salem Street

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025
Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR
PHF =0.95

Description	Apex Peakway Eastbound				Apex Peakway Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	115	226	41	0	18	142	291	0	12	293	17	0	266	309	79
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	115	226	41	0	18	142	291	0	12	293	17	0	266	309	79
Growth Factor (0.03 per year)	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
2032 Background Growth	0	26	52	9	0	4	33	67	0	3	67	4	0	61	71	18
2032 Background Traffic	0	141	278	50	0	22	175	358	0	15	360	21	0	327	380	97
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	15%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(15%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	5	0	0	7	0	0	15	22	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	15%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(15%)	(15%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	4	0	0	4	0	0	3	3	0
Total Project Traffic	0	0	0	0	0	0	0	9	0	0	11	0	0	18	25	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	141	278	50	0	22	175	367	0	15	371	21	0	345	405	97
Approach Percent Impact		0.00%				1.60%				2.70%				5.08%		
Overall Percent Impact	2.8%															

PM PEAK HOUR
PHF = 0.96

Description	Apex Peakway Eastbound				Apex Peakway Westbound				N. Salem Street Northbound				N. Salem Street Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	107	291	36	0	24	265	389	0	19	332	27	0	343	494	185
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	107	291	36	0	24	265	389	0	19	332	27	0	343	494	185
Growth Factor (0.03 per year)	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
2032 Background Growth	0	25	67	8	0	6	61	89	0	4	76	6	0	79	114	43
2032 Background Traffic	0	132	358	44	0	30	326	478	0	23	408	33	0	422	608	228
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	15%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(15%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	11	0	0	17	0	0	8	12	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	15%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(15%)	(15%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	8	0	0	8	0	0	6	6	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	19	0	0	25	0	0	14	18	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	132	358	44	0	30	326	497	0	23	433	33	0	436	626	228
Approach Percent Impact		0.00%				2.23%				5.11%				2.48%		
Overall Percent Impact	2.4%															

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INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	Apex Peakway
N/S Street:	Brittley Way

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025
Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR
PHF =0.92

Description	Apex Peakway Eastbound				Apex Peakway Westbound				Brittley Way Northbound				Brittley Way Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	15	305	3	0	7	249	70	0	8	3	8	0	59	3	28
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	15	305	3	0	7	249	70	0	8	3	8	0	59	3	28
Growth Factor (0.03 per year)	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032 Background Growth	0	0	70	0	0	0	57	0	0	0	0	0	0	0	0	0
2032 Background Traffic	0	15	375	3	0	7	306	70	0	8	3	8	0	59	3	28
Project Traffic																
Residential																
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)
Residential Project Traffic	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Non-Residential																
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)
Non-Residential Project Traffic	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Project Traffic	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	23	375	3	0	7	306	70	0	8	3	8	0	59	3	45
Approach Percent Impact	2.00%				0.00%				0.00%				15.89%			
Overall Percent Impact	2.7%															

PM PEAK HOUR
PHF = 0.94

Description	Apex Peakway Eastbound				Apex Peakway Westbound				Brittley Way Northbound				Brittley Way Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	18	416	3	0	3	449	51	0	2	0	6	0	24	1	31
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	18	416	3	0	3	449	51	0	2	0	6	0	24	1	31
Growth Factor (0.03 per year)	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032 Background Growth	0	0	96	0	0	0	103	0	0	0	0	0	0	0	0	0
2032 Background Traffic	0	18	512	3	0	3	552	51	0	2	0	6	0	24	1	31
Project Traffic																
Residential																
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)
Residential Project Traffic	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Non-Residential																
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)
Non-Residential Project Traffic	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	34	512	3	0	3	552	51	0	2	0	6	0	24	1	43
Approach Percent Impact	2.91%				0.00%				0.00%				17.65%			
Overall Percent Impact	2.3%															

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INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	Brittley Way
N/S Street:	Frenchurch Way/Site Drive

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025
Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR
PHF =0.77

Description	Brittley Way Eastbound				Brittley Way Westbound				Frenchurch Way Northbound				Site Drive Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	0	37	0	0	5	58	0	0	0	0	7	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	0	37	0	0	5	58	0	0	0	0	7	0	0	0	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Background Traffic	0	0	37	0	0	5	58	0	0	0	0	7	0	0	0	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(8%)	(0%)	(10%)
Residential Project Traffic	0	5	0	0	0	0	0	2	0	0	0	0	0	12	0	15
Non-Residential																
Percent Assignment Inbound	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(25%)
Non-Residential Project Traffic	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total Project Traffic	0	12	0	0	0	0	0	2	0	0	0	0	0	12	0	20
Traffic Diversions	0	7	-7	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	19	30	0	0	5	58	2	0	0	0	7	0	12	0	20
Approach Percent Impact		24.49%				3.08%				0.00%				100.00%		
Overall Percent Impact	30.1%															

PM PEAK HOUR
PHF = 0.77

Description	Brittley Way Eastbound				Brittley Way Westbound				Frenchurch Way Northbound				Site Drive Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	0	23	3	0	14	67	0	0	1	0	9	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	0	23	3	0	14	67	0	0	1	0	9	0	0	0	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Background Traffic	0	0	23	3	0	14	67	0	0	1	0	9	0	0	0	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(8%)	(0%)	(10%)
Residential Project Traffic	0	11	0	0	0	0	0	6	0	0	0	0	0	6	0	8
Non-Residential																
Percent Assignment Inbound	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(25%)
Non-Residential Project Traffic	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	24	0	0	0	0	0	6	0	0	0	0	0	6	0	18
Traffic Diversions	0	4	-4	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	28	19	3	0	14	67	6	0	1	0	9	0	6	0	18
Approach Percent Impact		48.00%				6.90%				0.00%				100.00%		
Overall Percent Impact	31.6%															

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INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	All Wheel Drive
N/S Street:	Site Drive/Crossroads Ford Drwy.

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025
Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR
PHF = 0.67

Description	All Wheel Drive Eastbound				All Wheel Drive Westbound				Site Drive Northbound				Crossroads Ford Drwy. Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	1	11	0	0	0	10	11	0	0	0	0	0	7	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	1	11	0	0	0	10	11	0	0	0	0	0	7	0	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Background Traffic	0	1	11	0	0	0	10	11	0	0	0	0	0	7	0	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(62%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	0	0	0	0	12	0	0	0	0	0	91	0	0	0	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(55%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	1	0	0	0	0	0	10	0	0	0	0
Total External Site Traffic	0	0	0	0	0	13	0	0	0	0	0	101	0	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	13	0	0	0	0	0	101	0	0	0	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0
2032 Buildout Total	0	1	11	0	0	13	10	11	0	0	0	108	0	7	0	0
Approach Percent Impact	0.00%				38.24%				93.52%				0.00%			
Overall Percent Impact	70.8%															

PM PEAK HOUR
PHF = 0.52

Description	All Wheel Drive Eastbound				All Wheel Drive Westbound				Site Drive Northbound				Crossroads Ford Drwy. Southbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
2025 Traffic Count	0	1	3	0	0	0	4	9	0	0	0	0	0	6	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025 Existing Traffic	0	1	3	0	0	0	4	9	0	0	0	0	0	6	0	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Background Traffic	0	1	3	0	0	0	4	9	0	0	0	0	0	6	0	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(62%)	(0%)	(0%)	(0%)	(0%)
Residential Project Traffic	0	0	0	0	0	28	0	0	0	0	0	50	0	0	0	0
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(55%)	(0%)	(0%)	(0%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	3	0	0	0	0	0	23	0	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	2	0	0	0	0	0	6	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	2	0	0	0	0	0	6	0	0	0	0
Total Project Traffic	0	0	0	0	0	33	0	0	0	0	0	79	0	0	0	0
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
2032 Buildout Total	0	1	3	0	0	33	4	9	0	0	0	83	0	6	0	0
Approach Percent Impact	0.00%				71.74%				95.18%				0.00%			
Overall Percent Impact	80.6%															

k:\hsp_ldev\014490003_good acres n salem street\t4 - analysis\[goodacressalemstreetapex-tiadata.xlsx]int 10-allwheel,ford,site *11/24/25*

INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	North Site Drive (RI)
N/S Street:	N. Salem Street

	AM In	AM Out	School PM In	School PM Out	PM In	PM Out
Res. New Trips:	47	146	68	57	111	80
Non-Res. New Trips:	27	18	29	23	50	41
Pass-By Trips:	0	0	7	6	12	10

Annual Growth Rate: 3.0% **Existing Year:** 2025
Growth Factor: 0.230 **Buildout Year:** 2032

AM PEAK HOUR
PHF =

Description	North Site Drive (RI) Eastbound U-Turn	Left	Through	Right	Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	N. Salem Street Southbound U-Turn	Left	Through	Right
2025 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	731	0	0	0	814	0
2025 Existing Traffic	0	0	0	0	0	0	0	0	0	0	731	0	0	0	814	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	168	0	0	0	187	0
2032 Background Traffic	0	0	0	0	0	0	0	0	0	0	899	0	0	0	1001	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	10%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	7	0	0	0	17	5
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	45%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	12
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0	0	0	19	17
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	-7	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	0	0	0	0	0	900	0	0	0	1020	17
Approach Percent Impact		-				-				0.89%				3.47%		
Overall Percent Impact	2.3%															

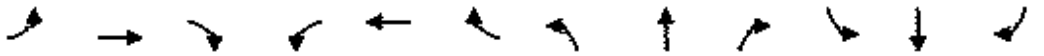
SCHOOL PM PEAK HOUR
PHF =

Description	North Site Drive (RI) Eastbound U-Turn	Left	Through	Right	0 Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	N. Salem Street Southbound U-Turn	Left	Through	Right
2025 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	788	0	0	0	916	0
2025 Existing Traffic	0	0	0	0	0	0	0	0	0	0	788	0	0	0	916	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	181	0	0	0	211	0
2032 Background Traffic	0	0	0	0	0	0	0	0	0	0	969	0	0	0	1127	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	10%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0	0	0	35	11
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	45%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	23
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	-4	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	-3	3
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0	0	0	36	37
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	-4	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	0	0	0	0	0	969	0	0	0	1163	37
Approach Percent Impact		-				-				0.41%				6.08%		
Overall Percent Impact	3.6%															

PM PEAK HOUR
PHF =

Description	North Site Drive (RI) Eastbound U-Turn	Left	Through	Right	Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	N. Salem Street Southbound U-Turn	Left	Through	Right
2025 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	819	0	0	0	1058	0
2025 Existing Traffic	0	0	0	0	0	0	0	0	0	0	819	0	0	0	1058	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.230	0.000
2032 Background Growth	0	0	0	0	0	0	0	0	0	0	188	0	0	0	243	0
2032 Background Traffic	0	0	0	0	0	0	0	0	0	0	1007	0	0	0	1301	0
Project Traffic																
Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	10%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(5%)	(0%)	(0%)	(0%)	(2%)	(0%)
Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0	0	0	35	11
Non-Residential																
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	45%
Percent Assignment Outbound	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(10%)	(0%)
Non-Residential Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	23
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	-5	0	0	0	-7	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	-5	0	0	0	-5	5
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	2	0	0	0	34	39
Traffic Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2032 Buildout Total	0	0	0	0	0	0	0	0	0	0	1009	0	0	0	1335	39
Approach Percent Impact		-				-				0.20%				5.31%		
Overall Percent Impact	3.1%															

Appendix E:
Synchro & SimTraffic Output:
Existing (2025)



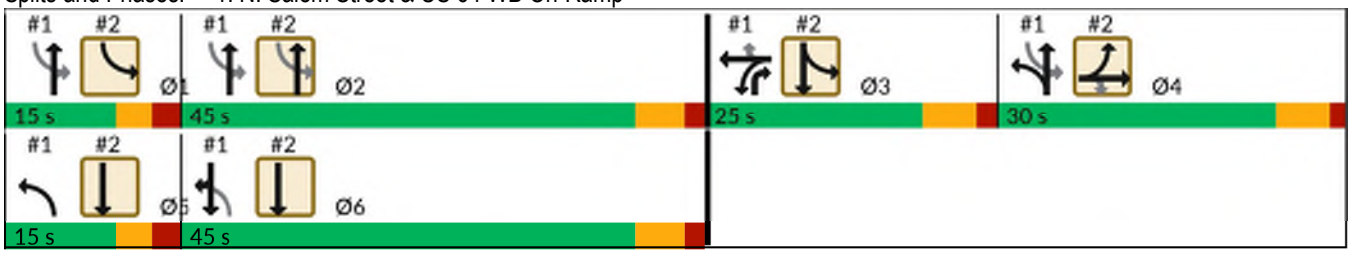
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	217	235	6	244	667	465	23	548	169
Future Volume (vph)	0	0	0	217	235	6	244	667	465	23	548	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			-1%			-1%			1%	
Storage Length (ft)	0		0	600		225	0		25	100		115
Storage Lanes	0		0	1		1	1		1	1		1
Taper Length (ft)	25			50			25			125		
Satd. Flow (prot)	0	0	0	1673	1754	1576	1778	3557	1591	1761	5060	1575
Flt Permitted				0.950	0.996		0.349			0.359		
Satd. Flow (perm)	0	0	0	1673	1754	1576	653	3557	1591	665	5060	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137						180
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		1167			1014			369			397	
Travel Time (s)		22.7			15.4			7.2			7.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.92	0.90	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	208	273	6	260	710	495	24	583	180
Turn Type				Split	NA	Perm	D.P+P	NA	pm+ov	D.Pm	NA	Prot
Protected Phases				3	3		4 5	1 2 4	3		6	6
Permitted Phases						3	6		1 2 4	1 2 4		
Detector Phase				3	3	3	4 5	1 2 4	3	1 2 4	6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0			7.0		12.0	12.0
Minimum Split (s)				13.2	13.2	13.2			13.2		18.0	18.0
Total Split (s)				25.0	25.0	25.0			25.0		45.0	45.0
Total Split (%)				21.7%	21.7%	21.7%			21.7%		39.1%	39.1%
Yellow Time (s)				4.6	4.6	4.6			4.6		4.4	4.4
All-Red Time (s)				1.6	1.6	1.6			1.6		1.6	1.6
Lost Time Adjust (s)				-1.2	-1.2	-1.2			-1.2		-1.0	-1.0
Total Lost Time (s)				5.0	5.0	5.0			5.0		5.0	5.0
Lead/Lag				Lead	Lead	Lead			Lead		Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes			Yes		Yes	Yes
Recall Mode				None	None	None			None		Min	Min
Act Effct Green (s)				19.4	19.4	19.4	68.1	74.7	104.6	74.7	30.1	30.1
Actuated g/C Ratio				0.19	0.19	0.19	0.65	0.71	1.00	0.71	0.29	0.29
v/c Ratio				0.67	0.84	0.01	0.31	0.28	0.31	0.05	0.40	0.31
Control Delay (s/veh)				53.3	65.9	0.0	2.5	1.2	0.4	4.7	30.4	5.4
Queue Delay				0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
Total Delay (s/veh)				53.3	65.9	0.0	2.8	1.4	0.4	4.7	30.4	5.4

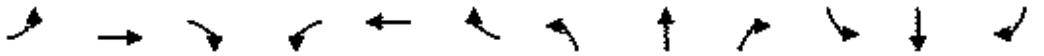
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				D	E	A	A	A	A	A	C	A
Approach Delay (s/veh)					59.7			1.3			23.9	
Approach LOS					E			A			C	
Queue Length 50th (ft)				140	190	0	8	11	0	4	117	0
Queue Length 95th (ft)				#268	#383	0	m10	m12	m0	12	150	48
Internal Link Dist (ft)		1087			934			289			317	
Turn Bay Length (ft)				600		225			25	100		115
Base Capacity (vph)				322	338	414	850	2819	1585	527	1950	717
Starvation Cap Reductn				0	0	0	214	1198	0	0	0	0
Spillback Cap Reductn				0	0	0	0	0	0	0	0	0
Storage Cap Reductn				0	0	0	0	0	0	0	0	0
Reduced v/c Ratio				0.65	0.81	0.01	0.41	0.44	0.31	0.05	0.30	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 104.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 18.2		Intersection LOS: B	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-1408			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N. Salem Street & US 64 WB On-Ramp





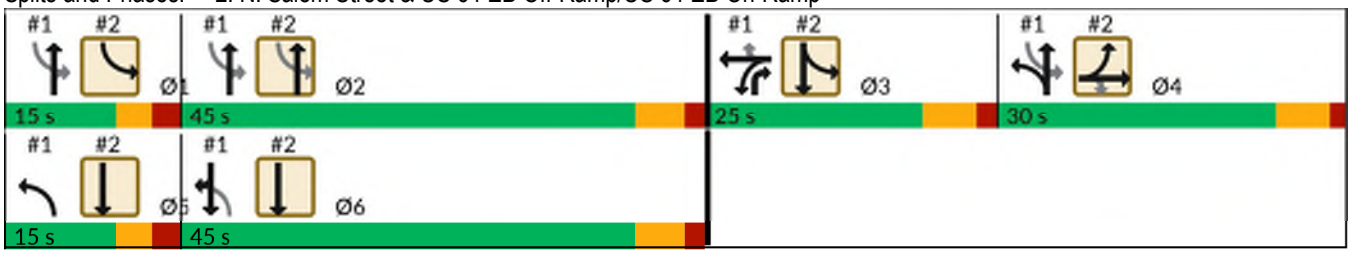
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	672	4	307	0	0	0	0	709	99	177	598	0
Future Volume (vph)	672	4	307	0	0	0	0	709	99	177	598	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		350	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	250			25			100			25		
Satd. Flow (prot)	1681	1686	1583	0	0	0	0	4994	0	1770	3539	0
Flt Permitted	0.950	0.953								0.177		
Satd. Flow (perm)	1681	1686	1583	0	0	0	0	4994	0	330	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			300					24				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1002			738			851			369	
Travel Time (s)		19.5			14.4			16.6			7.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	382	387	349	0	0	0	0	919	0	201	680	0
Turn Type	Split	NA	Perm					NA		D.P+P	NA	
Protected Phases	4	4						2		1 3	3 5 6	
Permitted Phases			4							2		
Detector Phase	4	4	4					2		1 3	3 5 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					12.0				
Minimum Split (s)	13.0	13.0	13.0					18.0				
Total Split (s)	30.0	30.0	30.0					45.0				
Total Split (%)	26.1%	26.1%	26.1%					39.1%				
Yellow Time (s)	4.6	4.6	4.6					4.4				
All-Red Time (s)	1.4	1.4	1.4					1.6				
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0				
Total Lost Time (s)	5.0	5.0	5.0					5.0				
Lead/Lag	Lag	Lag	Lag					Lag				
Lead-Lag Optimize?	Yes	Yes	Yes					Yes				
Recall Mode	None	None	None					Min				
Act Effct Green (s)	25.2	25.2	25.2					30.5		58.0	68.1	
Actuated g/C Ratio	0.24	0.24	0.24					0.29		0.55	0.65	
v/c Ratio	0.94	0.95	0.57					0.62		0.35	0.30	
Control Delay (s/veh)	74.2	76.1	11.4					32.9		13.6	3.2	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.1	
Total Delay (s/veh)	74.2	76.1	11.4					32.9		13.6	3.3	

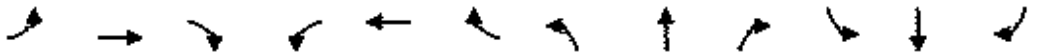
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E	B					C		B	A	
Approach Delay (s/veh)		55.3						32.9			5.7	
Approach LOS		E						C			A	
Queue Length 50th (ft)	270	275	26					195		43	14	
Queue Length 95th (ft)	#514	#522	114					232		m93	45	
Internal Link Dist (ft)		922			658			771			289	
Turn Bay Length (ft)	300		350									
Base Capacity (vph)	405	406	609					1940		593	2265	
Starvation Cap Reductn	0	0	0					0		0	555	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.94	0.95	0.57					0.47		0.34	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 104.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 33.3		Intersection LOS: C	
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			
Description: 05-1408			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: N. Salem Street & US 64 EB Off-Ramp/US 64 EB On-Ramp



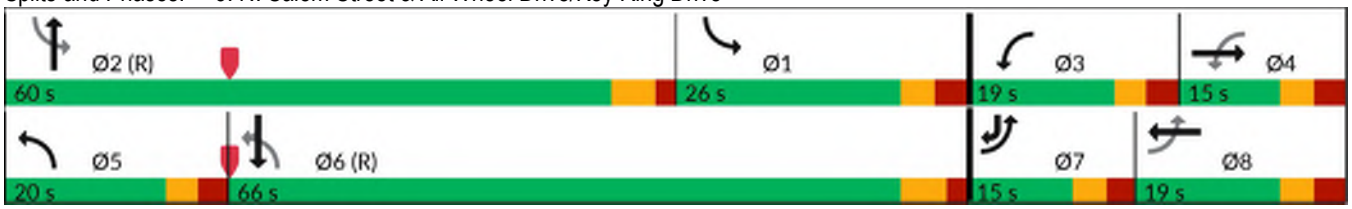


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	16	4	136	13	115	5	712	14	269	675	17
Future Volume (vph)	8	16	4	136	13	115	5	712	14	269	675	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1710	1704	0	1734	1570	0	1787	3550	0	1787	1881	1599
Flt Permitted	0.282			0.755			0.264			0.216		
Satd. Flow (perm)	507	1704	0	1378	1570	0	497	3550	0	406	1881	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			213			5				77
Link Speed (mph)		15			25			25			35	
Link Distance (ft)		506			667			465			851	
Travel Time (s)		23.0			18.2			12.7			16.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.80	0.38	0.50	0.81	0.54	0.63	0.85	0.35	0.67	0.92	0.43
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	31	0	272	229	0	8	878	0	401	734	40
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	15.0	15.0		19.0	19.0		20.0	60.0		26.0	66.0	15.0
Total Split (%)	12.5%	12.5%		15.8%	15.8%		16.7%	50.0%		21.7%	55.0%	12.5%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	19.3	8.2		20.3	13.4		85.7	60.7		81.7	84.2	96.6
Actuated g/C Ratio	0.16	0.07		0.17	0.11		0.71	0.51		0.68	0.70	0.81
v/c Ratio	0.10	0.24		0.98	0.63		0.02	0.49		0.78	0.56	0.03
Control Delay (s/veh)	37.9	43.2		95.3	16.5		6.2	21.3		36.6	12.7	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.4	0.0
Total Delay (s/veh)	37.9	43.2		95.3	16.5		6.2	21.3		36.6	13.1	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		F	B		A	C		D	B	A
Approach Delay (s/veh)		41.4			59.3			21.2			20.7	
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	10	15		198	11		2	245		113	263	0
Queue Length 95th (ft)	16	42		145	61		5	289		114	527	0
Internal Link Dist (ft)		426			587			385			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	190	152		278	378		520	1797		517	1319	1334
Starvation Cap Reductn	0	0		0	0		0	0		0	188	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.08	0.20		0.98	0.61		0.02	0.49		0.78	0.65	0.03

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay (s/veh): 28.6		Intersection LOS: C	
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1989			

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	729	183	165	638
Future Volume (vph)	0	0	729	183	165	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1770	1863
Link Speed (mph)	15		25			25
Link Distance (ft)	205		162			465
Travel Time (s)	9.3		4.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.84	0.50	0.50	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	868	366	330	693
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.7	1.8	9.8	1.1	2.0

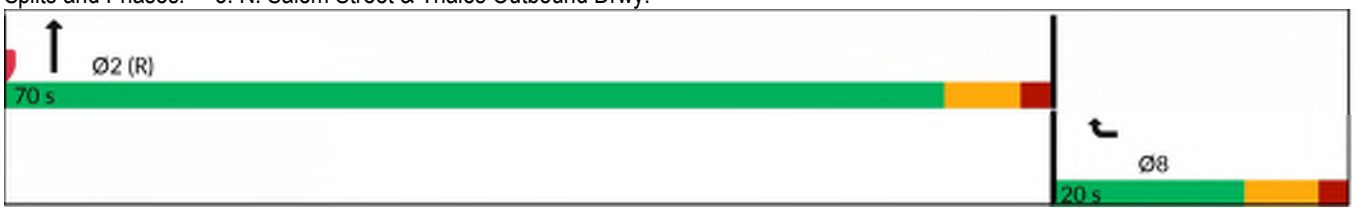


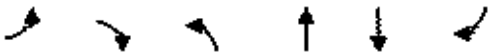
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	237	673	0	0	0
Future Volume (vph)	0	237	673	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1845	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1845	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		266				
Link Speed (mph)	25		25			25
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.25	0.50	0.86	0.86	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	474	783	0	0	0
Turn Type		Prot	NA			
Protected Phases		8	2			
Permitted Phases						
Detector Phase		8	2			
Switch Phase						
Minimum Initial (s)		7.0	10.0			
Minimum Split (s)		14.0	25.0			
Total Split (s)		20.0	70.0			
Total Split (%)		22.2%	77.8%			
Yellow Time (s)		5.0	5.0			
All-Red Time (s)		2.0	2.0			
Lost Time Adjust (s)		-2.0	-2.0			
Total Lost Time (s)		5.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max			
Act Effct Green (s)		15.0	65.0			
Actuated g/C Ratio		0.17	0.72			
v/c Ratio		0.97	0.59			
Control Delay (s/veh)		51.5	8.3			
Queue Delay		0.0	0.0			
Total Delay (s/veh)		51.5	8.3			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		D	A			
Approach Delay (s/veh)	51.5		8.3			
Approach LOS	D		A			
Queue Length 50th (ft)		128	184			
Queue Length 95th (ft)		44	250			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		490	1332			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.97	0.59			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay (s/veh): 24.6		Intersection LOS: C	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: N. Salem Street & Thales Outbound Drwy.





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	23	7	700	629	24
Future Volume (vph)	26	23	7	700	629	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1634	0	1736	1827	1818	0
Flt Permitted	0.974		0.950			
Satd. Flow (perm)	1634	0	1736	1827	1818	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1132			1013	385	
Travel Time (s)	30.9			27.6	10.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	4%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	7	729	680	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

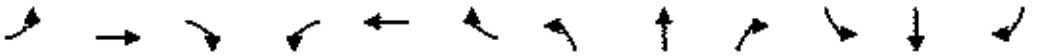
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	23	7	700	629	24
Future Vol, veh/h	26	23	7	700	629	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	6	4	4	4	4
Mvmt Flow	27	24	7	729	655	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1411	668	680	0	-	0
Stage 1	668	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.14	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.236	-	-	-
Pot Cap-1 Maneuver	149	451	903	-	-	-
Stage 1	502	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	451	903	-	-	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	498	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	17.21	0.09	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	903	-	346	-	-
HCM Lane V/C Ratio	0.008	-	0.148	-	-
HCM Ctrl Dly (s/v)	9	-	17.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-



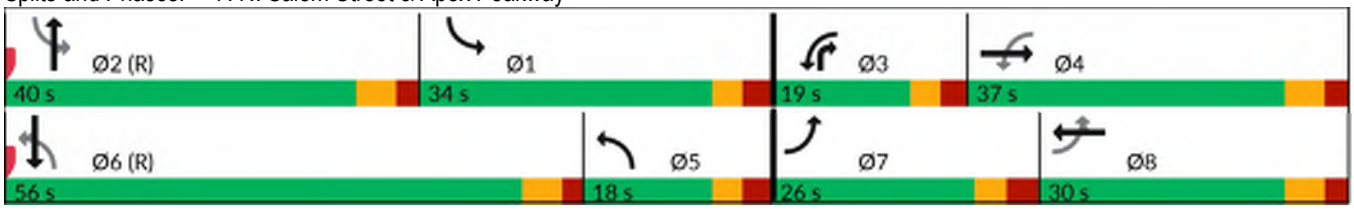
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	226	41	18	142	291	12	293	17	266	309	79
Future Volume (vph)	115	226	41	18	142	291	12	293	17	266	309	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-1%			1%	
Storage Length (ft)	250		0	375		275	135		150	300		25
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	175			50			75			50		
Satd. Flow (prot)	1752	1802	0	1718	1809	1537	1761	1854	1576	1727	1818	1545
Flt Permitted	0.501			0.290			0.508			0.472		
Satd. Flow (perm)	918	1802	0	525	1809	1493	940	1854	1576	858	1818	1510
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				306			174			170
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1619			1013			1214			1013	
Travel Time (s)		31.5			19.7			23.6			19.7	
Confl. Peds. (#/hr)	3					3	1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	281	0	19	149	306	13	308	18	280	325	83
Turn Type	D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	pm+ov	D.P+P	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	8			4		8	6		2	2		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0
Minimum Split (s)	13.1	13.1		12.4	28.1	28.1	12.6	15.9	12.4	12.6	26.9	26.9
Total Split (s)	26.0	37.0		19.0	30.0	30.0	18.0	40.0	19.0	34.0	56.0	56.0
Total Split (%)	20.0%	28.5%		14.6%	23.1%	23.1%	13.8%	30.8%	14.6%	26.2%	43.1%	43.1%
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.9	3.0	3.0	3.9	3.9
All-Red Time (s)	3.1	2.4		2.4	2.4	2.4	2.6	2.0	2.4	2.6	2.0	2.0
Lost Time Adjust (s)	-1.1	-1.1		-0.4	-1.1	-1.1	-0.6	-0.9	-0.4	-0.6	-0.9	-0.9
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effct Green (s)	30.6	28.1		32.6	18.1	18.1	87.0	62.8	70.2	79.4	79.4	79.4
Actuated g/C Ratio	0.24	0.22		0.25	0.14	0.14	0.67	0.48	0.54	0.61	0.61	0.61
v/c Ratio	0.41	0.71		0.10	0.59	0.65	0.02	0.34	0.02	0.44	0.29	0.08
Control Delay (s/veh)	39.2	56.4		31.7	61.3	12.0	10.3	25.5	0.1	16.9	15.7	0.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.2	56.4		31.7	61.3	12.0	10.3	25.5	0.1	16.9	15.7	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	B	B	C	A	B	B	A
Approach Delay (s/veh)		51.2			28.3			23.6			14.3	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	79	226		12	121	0	3	160	0	100	118	0
Queue Length 95th (ft)	121	306		30	188	86	14	296	0	175	253	0
Internal Link Dist (ft)		1539			933			1134			933	
Turn Bay Length (ft)	250			375		275	135		150	300		25
Base Capacity (vph)	385	451		272	347	534	750	895	1001	799	1110	988
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.62		0.07	0.43	0.57	0.02	0.34	0.02	0.35	0.29	0.08

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 2 (2%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay (s/veh): 27.2 Intersection LOS: C
Intersection Capacity Utilization 67.0% ICU Level of Service C
Analysis Period (min) 15
Description: 05-2347

Splits and Phases: 7: N. Salem Street & Apex Peakway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	305	4	7	249	70	8	4	8	59	4	28
Future Volume (vph)	15	305	4	7	249	70	8	4	8	59	4	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1855	0	0	1807	0	0	1676	0	0	1729	0
Flt Permitted		0.998			0.999			0.980			0.968	
Satd. Flow (perm)	0	1855	0	0	1807	0	0	1676	0	0	1729	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1183			1283			422			1177	
Travel Time (s)		23.0			25.0			11.5			32.1	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	352	0	0	355	0	0	22	0	0	98	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	305	4	7	249	70	8	4	8	59	4	28
Future Vol, veh/h	15	305	4	7	249	70	8	4	8	59	4	28
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	2	2	2
Mvmt Flow	16	332	4	8	271	76	9	4	9	64	4	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	352	0	0	336	0	0	654	733	334	695	697	314
Stage 1	-	-	-	-	-	-	366	366	-	329	329	-
Stage 2	-	-	-	-	-	-	288	367	-	366	368	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1207	-	-	1223	-	-	376	344	701	357	365	727
Stage 1	-	-	-	-	-	-	647	617	-	684	646	-
Stage 2	-	-	-	-	-	-	713	617	-	653	621	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1201	-	-	1223	-	-	347	334	701	338	354	723
Mov Cap-2 Maneuver	-	-	-	-	-	-	347	334	-	338	354	-
Stage 1	-	-	-	-	-	-	636	607	-	676	638	-
Stage 2	-	-	-	-	-	-	673	609	-	630	611	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.37	0.17	13.8	16.75
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	431	83	-	-	37	-	-	405
HCM Lane V/C Ratio	0.05	0.014	-	-	0.006	-	-	0.244
HCM Ctrl Dly (s/v)	13.8	8	0	-	8	0	-	16.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.9

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	37	4	5	58	4	7
Future Volume (vph)	37	4	5	58	4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1821	0	0	1855	1670	0
Flt Permitted				0.996	0.982	
Satd. Flow (perm)	1821	0	0	1855	1670	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1160			1132	467	
Travel Time (s)	31.6			30.9	12.7	
Confl. Peds. (#/hr)		10	10		2	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	81	14	0
Sign Control	Stop			Stop	Stop	

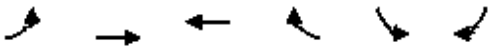
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	37	4	5	58	4	7
Future Vol, veh/h	37	4	5	58	4	7
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	3	3	2	2	2	2
Mvmt Flow	48	5	6	75	5	9
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	7.2	7.4	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	8%
Vol Thru, %	0%	90%	92%
Vol Right, %	64%	10%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	11	41	63
LT Vol	4	0	5
Through Vol	0	37	58
RT Vol	7	4	0
Lane Flow Rate	14	53	82
Geometry Grp	1	1	1
Degree of Util (X)	0.015	0.059	0.091
Departure Headway (Hd)	3.856	3.979	4.015
Convergence, Y/N	Yes	Yes	Yes
Cap	920	901	895
Service Time	1.914	1.998	2.029
HCM Lane V/C Ratio	0.015	0.059	0.092
HCM Control Delay, s/veh	7	7.2	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.2	0.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	11	10	11	7	4
Future Volume (vph)	4	11	10	11	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1736	1732	0	1534	0
Flt Permitted		0.987			0.970	
Satd. Flow (perm)	0	1736	1732	0	1534	0
Link Speed (mph)		15	15		15	
Link Distance (ft)		510	506		550	
Travel Time (s)		23.2	23.0		25.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	2%	2%	14%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	31	0	16	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	11	10	11	7	4
Future Vol, veh/h	4	11	10	11	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	8	8	2	2	14	14
Mvmt Flow	6	16	15	16	10	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	31	0	-	0	51	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	4.18	-	-	-	6.54	6.34
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	2.272	-	-	-	3.626	3.426
Pot Cap-1 Maneuver	1543	-	-	-	928	1020
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1543	-	-	-	924	1020
Mov Cap-2 Maneuver	-	-	-	-	924	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	964	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.96	0	8.83
HCM LOS			A

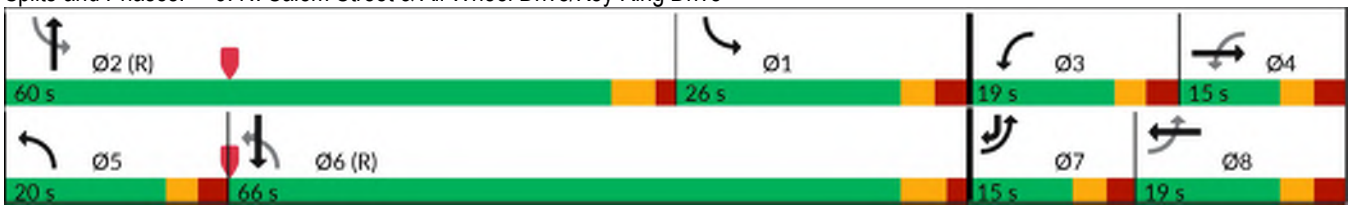
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	480	-	-	-	957
HCM Lane V/C Ratio	0.004	-	-	-	0.017
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	18	13	106	17	101	8	765	15	121	797	17
Future Volume (vph)	24	18	13	106	17	101	8	765	15	121	797	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1602	1580	0	1734	1592	0	1770	3519	0	1770	1863	1584
Flt Permitted	0.303			0.726			0.180			0.231		
Satd. Flow (perm)	511	1580	0	1325	1592	0	335	3519	0	430	1863	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			160			5				77
Link Speed (mph)		15			25			25			35	
Link Distance (ft)		506			667			465			851	
Travel Time (s)		23.0			18.2			12.7			16.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.64	0.65	0.65	0.61	0.63	0.33	0.92	0.42	0.66	0.93	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	11%	11%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	48	0	163	188	0	24	868	0	183	857	24
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	15.0	15.0		19.0	19.0		20.0	60.0		26.0	66.0	15.0
Total Split (%)	12.5%	12.5%		15.8%	15.8%		16.7%	50.0%		21.7%	55.0%	12.5%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	20.0	8.5		20.0	13.6		83.0	60.0		81.0	78.5	91.3
Actuated g/C Ratio	0.17	0.07		0.17	0.11		0.69	0.50		0.68	0.65	0.76
v/c Ratio	0.21	0.37		0.62	0.58		0.07	0.49		0.35	0.70	0.02
Control Delay (s/veh)	39.5	43.2		51.8	19.0		6.8	22.0		13.8	20.4	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.5	43.2		51.8	19.0		6.8	22.0		13.8	20.4	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		D	B		A	C		B	C	A
Approach Delay (s/veh)		41.8			34.2			21.6			18.8	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	22	23		111	20		5	243		45	492	0
Queue Length 95th (ft)	41	41		121	21		5	315		53	714	0
Internal Link Dist (ft)		426			587			385			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	182	150		279	333		419	1763		524	1218	1250
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.32		0.58	0.56		0.06	0.49		0.35	0.70	0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 22.9		Intersection LOS: C	
Intersection Capacity Utilization 72.8%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1989			

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	783	125	67	849
Future Volume (vph)	0	0	783	125	67	849
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1752	1845
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1752	1845
Link Speed (mph)	15		25			25
Link Distance (ft)	205		162			465
Travel Time (s)	9.3		4.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.50	0.50	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	870	250	134	923
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.6%		ICU Level of Service A	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0	0.1
Total Del/Veh (s)	0.5	1.6	6.5	1.3	1.3

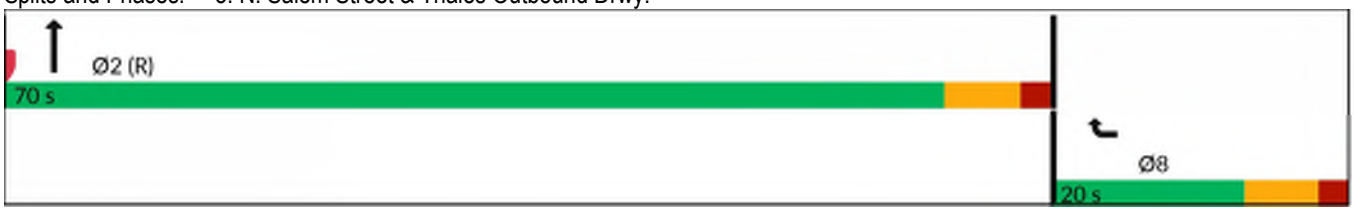


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	216	694	0	0	0
Future Volume (vph)	0	216	694	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1827	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1827	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		223				
Link Speed (mph)	25		25			25
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.44	0.50	0.79	0.79	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	432	878	0	0	0
Turn Type		Prot	NA			
Protected Phases		8	2			
Permitted Phases						
Detector Phase		8	2			
Switch Phase						
Minimum Initial (s)		7.0	10.0			
Minimum Split (s)		14.0	25.0			
Total Split (s)		20.0	70.0			
Total Split (%)		22.2%	77.8%			
Yellow Time (s)		5.0	5.0			
All-Red Time (s)		2.0	2.0			
Lost Time Adjust (s)		-2.0	-2.0			
Total Lost Time (s)		5.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max			
Act Effct Green (s)		15.0	65.0			
Actuated g/C Ratio		0.17	0.72			
v/c Ratio		0.95	0.67			
Control Delay (s/veh)		51.5	9.8			
Queue Delay		0.0	0.0			
Total Delay (s/veh)		51.5	9.8			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		D	A			
Approach Delay (s/veh)	51.5		9.8			
Approach LOS	D		A			
Queue Length 50th (ft)		126	231			
Queue Length 95th (ft)		53	263			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		454	1319			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.95	0.67			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 23.6		Intersection LOS: C	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: N. Salem Street & Thales Outbound Drwy.



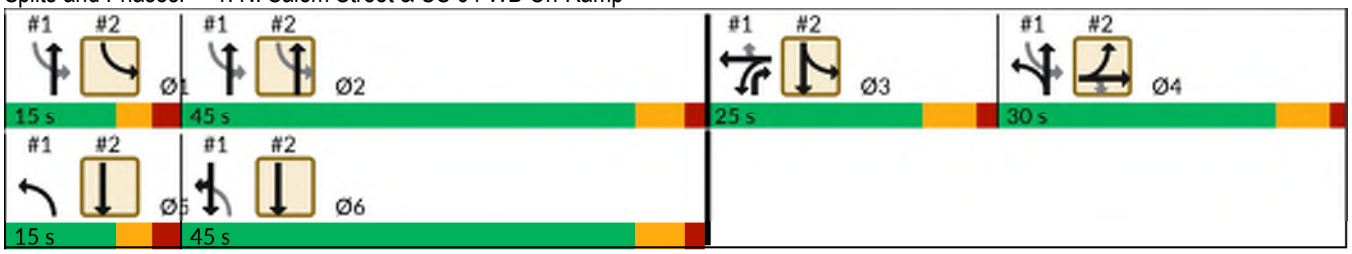
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	258	346	14	190	798	396	28	759	244
Future Volume (vph)	0	0	0	258	346	14	190	798	396	28	759	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			-1%			-1%			1%	
Storage Length (ft)	0		0	600		225	0		25	100		115
Storage Lanes	0		0	1		1	1		1	1		1
Taper Length (ft)	25			50			25			125		
Satd. Flow (prot)	0	0	0	1690	1773	1591	1778	3557	1591	1761	5060	1575
Flt Permitted				0.950	0.997		0.254			0.309		
Satd. Flow (perm)	0	0	0	1690	1773	1591	476	3557	1591	573	5060	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137						235
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		1167			1014			369			397	
Travel Time (s)		22.7			15.4			7.2			7.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	242	387	15	198	831	413	29	791	254
Turn Type				Split	NA	Perm	D.P+P	NA	pm+ov	D.Pm	NA	Prot
Protected Phases				3	3		4 5	1 2 4	3		6	6
Permitted Phases						3	6		1 2 4	1 2 4		
Detector Phase				3	3	3	4 5	1 2 4	3	1 2 4	6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0			7.0		12.0	12.0
Minimum Split (s)				13.2	13.2	13.2			13.2		18.0	18.0
Total Split (s)				25.0	25.0	25.0			25.0		45.0	45.0
Total Split (%)				21.7%	21.7%	21.7%			21.7%		39.1%	39.1%
Yellow Time (s)				4.6	4.6	4.6			4.6		4.4	4.4
All-Red Time (s)				1.6	1.6	1.6			1.6		1.6	1.6
Lost Time Adjust (s)				-1.2	-1.2	-1.2			-1.2		-1.0	-1.0
Total Lost Time (s)				5.0	5.0	5.0			5.0		5.0	5.0
Lead/Lag				Lead	Lead	Lead			Lead		Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes			Yes		Yes	Yes
Recall Mode				None	None	None			None		Min	Min
Act Effct Green (s)				20.1	20.1	20.1	74.9	81.5	112.0	81.5	37.6	37.6
Actuated g/C Ratio				0.18	0.18	0.18	0.67	0.73	1.00	0.73	0.34	0.34
v/c Ratio				0.80	1.22	0.04	0.26	0.32	0.26	0.07	0.47	0.37
Control Delay (s/veh)				65.6	164.4	0.1	5.0	1.4	0.3	4.7	30.2	6.1
Queue Delay				0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay (s/veh)				65.6	164.4	0.1	5.0	1.6	0.3	4.7	30.2	6.1

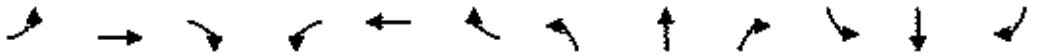
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				E	F	A	A	A	A	A	C	A
Approach Delay (s/veh)					123.4			1.7			23.9	
Approach LOS					F			A			C	
Queue Length 50th (ft)				186	~384	0	14	14	0	5	167	9
Queue Length 95th (ft)				#329	#588	0	m32	16	m0	14	207	67
Internal Link Dist (ft)		1087			934			289			317	
Turn Bay Length (ft)				600		225			25	100		115
Base Capacity (vph)				302	317	397	755	2618	1591	421	1813	715
Starvation Cap Reductn				0	0	0	0	982	0	0	0	0
Spillback Cap Reductn				0	0	0	0	0	0	0	0	0
Storage Cap Reductn				0	0	0	0	0	0	0	0	0
Reduced v/c Ratio				0.80	1.22	0.04	0.26	0.51	0.26	0.07	0.44	0.36

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 112	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay (s/veh): 34.0	Intersection LOS: C
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 15	
Description: 05-1408	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N. Salem Street & US 64 WB On-Ramp





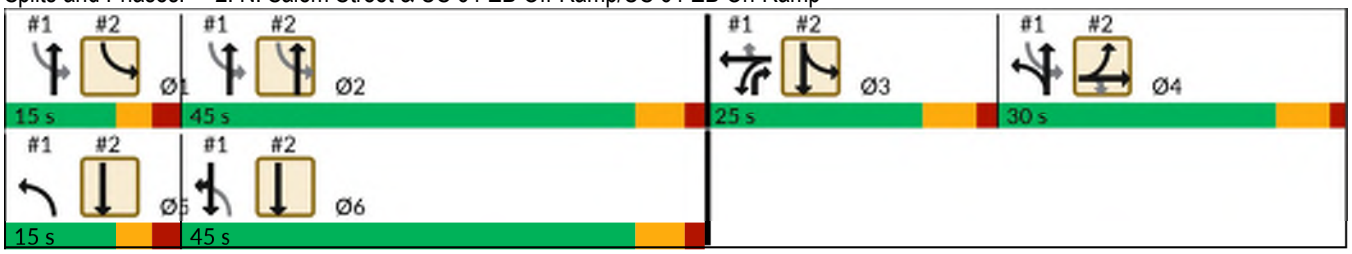
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	569	4	226	0	0	0	0	818	39	188	827	0
Future Volume (vph)	569	4	226	0	0	0	0	818	39	188	827	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		350	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	250			25			100			25		
Satd. Flow (prot)	1681	1686	1583	0	0	0	0	5050	0	1770	3539	0
Flt Permitted	0.950	0.953								0.208		
Satd. Flow (perm)	1681	1686	1583	0	0	0	0	5050	0	387	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207					7				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1002			738			851			369	
Travel Time (s)		19.5			14.4			16.6			7.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	299	304	238	0	0	0	0	902	0	198	871	0
Turn Type	Split	NA	Perm					NA		D.P+P	NA	
Protected Phases	4	4						2		1 3	3 5 6	
Permitted Phases			4							2		
Detector Phase	4	4	4					2		1 3	3 5 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					12.0				
Minimum Split (s)	13.0	13.0	13.0					18.0				
Total Split (s)	30.0	30.0	30.0					45.0				
Total Split (%)	26.1%	26.1%	26.1%					39.1%				
Yellow Time (s)	4.6	4.6	4.6					4.4				
All-Red Time (s)	1.4	1.4	1.4					1.6				
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0				
Total Lost Time (s)	5.0	5.0	5.0					5.0				
Lead/Lag	Lag	Lag	Lag					Lag				
Lead-Lag Optimize?	Yes	Yes	Yes					Yes				
Recall Mode	None	None	None					Min				
Act Effct Green (s)	24.3	24.3	24.3					38.0		66.5	76.5	
Actuated g/C Ratio	0.22	0.22	0.22					0.34		0.59	0.68	
v/c Ratio	0.82	0.83	0.47					0.53		0.34	0.36	
Control Delay (s/veh)	61.8	62.9	11.2					30.8		12.3	3.7	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.1	
Total Delay (s/veh)	61.8	62.9	11.2					30.8		12.3	3.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E	B					C		B	A	
Approach Delay (s/veh)		47.9						30.8			5.3	
Approach LOS		D						C			A	
Queue Length 50th (ft)	227	231	19					194		45	29	
Queue Length 95th (ft)	#377	#387	91					237		m88	m47	
Internal Link Dist (ft)		922			658			771			289	
Turn Bay Length (ft)	300		350									
Base Capacity (vph)	376	377	515					1814		592	2417	
Starvation Cap Reductn	0	0	0					0		0	368	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.80	0.81	0.46					0.50		0.33	0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 112			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay (s/veh): 26.2		Intersection LOS: C	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			
Description: 05-1408			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: N. Salem Street & US 64 EB Off-Ramp/US 64 EB On-Ramp



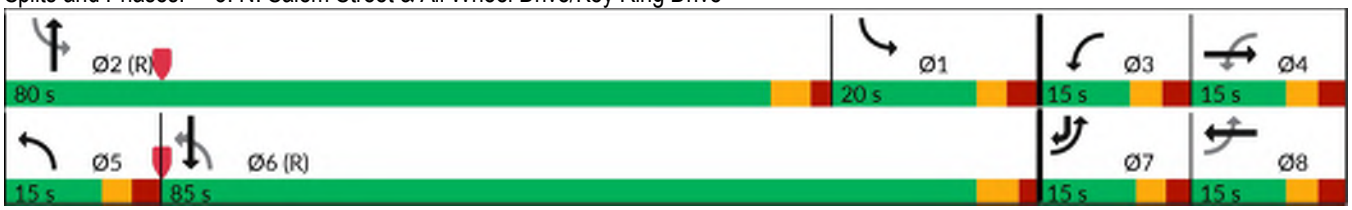
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	13	16	19	16	36	6	813	4	17	1023	5
Future Volume (vph)	15	13	16	19	16	36	6	813	4	17	1023	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1743	1684	0	1734	1615	0	1787	3571	0	1787	1881	1599
Flt Permitted	0.721			0.737			0.135			0.294		
Satd. Flow (perm)	1316	1684	0	1345	1615	0	254	3571	0	553	1881	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			38			1				71
Link Speed (mph)		15			25			35			35	
Link Distance (ft)		506			667			465			851	
Travel Time (s)		23.0			18.2			9.1			16.6	
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	31	0	20	55	0	6	869	0	18	1088	5
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	15.0	15.0		15.0	15.0		15.0	80.0		20.0	85.0	15.0
Total Split (%)	11.5%	11.5%		11.5%	11.5%		11.5%	61.5%		15.4%	65.4%	11.5%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	12.9	10.8		14.0	8.6		105.5	99.5		105.5	105.0	115.0
Actuated g/C Ratio	0.10	0.08		0.11	0.07		0.81	0.77		0.81	0.81	0.88
v/c Ratio	0.10	0.20		0.12	0.39		0.02	0.32		0.03	0.72	0.00
Control Delay (s/veh)	47.8	35.7		48.3	33.2		4.2	8.3		4.2	13.4	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	1.0	0.0
Total Delay (s/veh)	47.8	35.7		48.3	33.2		4.2	8.3		4.2	14.4	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		D	C		A	A		A	B	A
Approach Delay (s/veh)		39.8			37.2			8.3			14.2	
Approach LOS		D			D			A			B	
Queue Length 50th (ft)	12	10		15	14		1	103		3	443	0
Queue Length 95th (ft)	34	45		39	58		5	247		10	#1118	0
Internal Link Dist (ft)		426			587			385			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	189	171		191	161		324	2734		587	1519	1446
Starvation Cap Reductn	0	0		0	0		0	0		0	206	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.08	0.18		0.10	0.34		0.02	0.32		0.03	0.83	0.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 116 (89%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 13.1		Intersection LOS: B	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1989			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	820	7	4	1053
Future Volume (vph)	0	0	820	7	4	1053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1770	1863
Link Speed (mph)	15		35			35
Link Distance (ft)	205		162			465
Travel Time (s)	9.3		3.2			9.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	863	7	4	1108
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.8%		ICU Level of Service B	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.3	1.7	4.4	2.2	1.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	14	813	0	0	0
Future Volume (vph)	0	14	813	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1863	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1863	0	0	0
Link Speed (mph)	25		25			30
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	856	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.6%		ICU Level of Service C	
Analysis Period (min) 15			

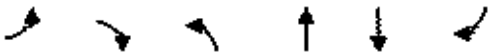
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	813	0	0	0
Future Vol, veh/h	0	14	813	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	856	0	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	856	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.22	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.318	-	-
Pot Cap-1 Maneuver	0	358	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %			-	
Mov Cap-1 Maneuver	-	358	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Ctrl Dly, s/v	15.5	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	WBLn1
Capacity (veh/h)	-	358
HCM Lane V/C Ratio	-	0.041
HCM Ctrl Dly (s/v)	-	15.5
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	21	23	799	992	61
Future Volume (vph)	15	21	23	799	992	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1681	0	1770	1863	1848	0
Flt Permitted	0.979		0.950			
Satd. Flow (perm)	1681	0	1770	1863	1848	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	1132			1013	385	
Travel Time (s)	30.9			19.7	7.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	24	841	1108	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

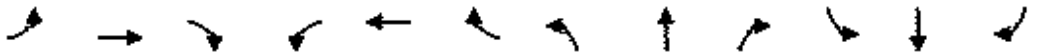
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	21	23	799	992	61
Future Vol, veh/h	15	21	23	799	992	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	22	24	841	1044	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1966	1076	1108	0	-	0
Stage 1	1076	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	69	266	630	-	-	-
Stage 1	327	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	266	630	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	315	-	-	-	-	-
Stage 2	401	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	23.85	0.31	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	630	-	229	-	-
HCM Lane V/C Ratio	0.038	-	0.166	-	-
HCM Ctrl Dly (s/v)	10.9	-	23.8	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-



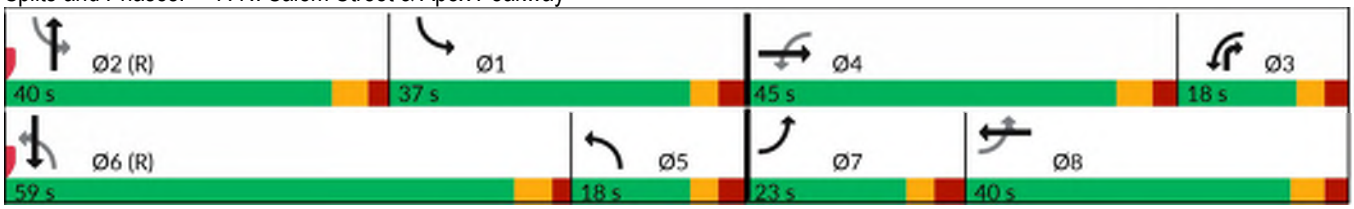
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	291	36	24	265	389	19	332	27	343	494	185
Future Volume (vph)	107	291	36	24	265	389	19	332	27	343	494	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-1%			1%	
Storage Length (ft)	250		0	375		275	135		150	300		25
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	175			50			75			50		
Satd. Flow (prot)	1752	1813	0	1752	1844	1568	1778	1872	1591	1761	1853	1575
Flt Permitted	0.266			0.216			0.334			0.389		
Satd. Flow (perm)	488	1813	0	398	1844	1517	625	1872	1591	721	1853	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				405			161			163
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1619			1013			1214			1013	
Travel Time (s)		31.5			19.7			23.6			19.7	
Confl. Peds. (#/hr)	4					4	3					3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	341	0	25	276	405	20	346	28	357	515	193
Turn Type	D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	pm+ov	D.P+P	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	8			4		8	6		2	2		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0
Minimum Split (s)	13.1	13.1		12.4	28.1	28.1	12.6	15.9	12.4	12.6	26.9	26.9
Total Split (s)	23.0	45.0		18.0	40.0	40.0	18.0	40.0	18.0	37.0	59.0	59.0
Total Split (%)	16.4%	32.1%		12.9%	28.6%	28.6%	12.9%	28.6%	12.9%	26.4%	42.1%	42.1%
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.9	3.0	3.0	3.9	3.9
All-Red Time (s)	3.1	2.4		2.4	2.4	2.4	2.6	2.0	2.4	2.6	2.0	2.0
Lost Time Adjust (s)	-1.1	-1.1		-0.4	-1.1	-1.1	-0.6	-0.9	-0.4	-0.6	-0.9	-0.9
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effct Green (s)	39.0	33.3		40.3	26.9	26.9	85.7	56.4	68.6	81.0	77.0	77.0
Actuated g/C Ratio	0.28	0.24		0.29	0.19	0.19	0.61	0.40	0.49	0.58	0.55	0.55
v/c Ratio	0.45	0.78		0.13	0.78	0.66	0.04	0.46	0.03	0.60	0.51	0.21
Control Delay (s/veh)	39.3	62.4		33.9	68.5	9.5	14.0	36.9	0.1	28.2	25.5	5.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.3	62.4		33.9	68.5	9.5	14.0	36.9	0.1	28.2	25.5	5.8

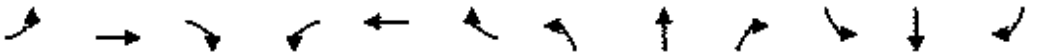
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	A	B	D	A	C	C	A
Approach Delay (s/veh)		56.7			33.4			33.1			22.9	
Approach LOS		E			C			C			C	
Queue Length 50th (ft)	75	299		16	246	0	7	239	0	152	305	13
Queue Length 95th (ft)	111	388		35	327	91	22	404	0	264	526	68
Internal Link Dist (ft)		1539			933			1134			933	
Turn Bay Length (ft)	250			375		275	135		150	300		25
Base Capacity (vph)	313	521		254	461	683	506	754	863	693	1019	913
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.65		0.10	0.60	0.59	0.04	0.46	0.03	0.52	0.51	0.21

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay (s/veh): 33.1 Intersection LOS: C
Intersection Capacity Utilization 76.5% ICU Level of Service D
Analysis Period (min) 15
Description: 05-2347

Splits and Phases: 7: N. Salem Street & Apex Peakway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	416	4	4	449	51	4	4	6	24	4	31
Future Volume (vph)	18	416	4	4	449	51	4	4	6	24	4	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1857	0	0	1837	0	0	1730	0	0	1696	0
Flt Permitted		0.998						0.986			0.980	
Satd. Flow (perm)	0	1857	0	0	1837	0	0	1730	0	0	1696	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1183			1283			422			1177	
Travel Time (s)		23.0			25.0			11.5			32.1	
Confl. Peds. (#/hr)	8					8						
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	466	0	0	536	0	0	14	0	0	63	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.0%		ICU Level of Service A	
Analysis Period (min) 15			

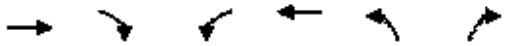
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	416	4	4	449	51	4	4	6	24	4	31
Future Vol, veh/h	18	416	4	4	449	51	4	4	6	24	4	31
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	443	4	4	478	54	4	4	6	26	4	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	540	0	0	447	0	0	971	1031	445	1004	1006	513
Stage 1	-	-	-	-	-	-	483	483	-	521	521	-
Stage 2	-	-	-	-	-	-	488	548	-	483	485	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1029	-	-	1113	-	-	232	233	613	220	241	561
Stage 1	-	-	-	-	-	-	565	553	-	538	531	-
Stage 2	-	-	-	-	-	-	561	517	-	565	551	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1021	-	-	1113	-	-	208	224	613	206	232	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	208	224	-	206	232	-
Stage 1	-	-	-	-	-	-	551	539	-	531	524	-
Stage 2	-	-	-	-	-	-	521	510	-	541	538	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.35	0.07	17.68	19.45
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	299	74	-	-	14	-	-	312
HCM Lane V/C Ratio	0.05	0.019	-	-	0.004	-	-	0.201
HCM Ctrl Dly (s/v)	17.7	8.6	0	-	8.2	0	-	19.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.7



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	23	4	14	67	4	9
Future Volume (vph)	23	4	14	67	4	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1792	0	0	1812	1662	0
Flt Permitted				0.992	0.986	
Satd. Flow (perm)	1792	0	0	1812	1662	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1160			1132	467	
Travel Time (s)	31.6			30.9	12.7	
Confl. Peds. (#/hr)		6	6			
Confl. Bikes (#/hr)						
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	105	17	0
Sign Control	Stop			Stop	Stop	

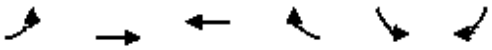
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	4	14	67	4	9
Future Vol, veh/h	23	4	14	67	4	9
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	30	5	18	87	5	12
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	7.2	7.6	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	31%	0%	17%
Vol Thru, %	0%	85%	83%
Vol Right, %	69%	15%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	13	27	81
LT Vol	4	0	14
Through Vol	0	23	67
RT Vol	9	4	0
Lane Flow Rate	17	35	105
Geometry Grp	1	1	1
Degree of Util (X)	0.018	0.039	0.119
Departure Headway (Hd)	3.822	3.988	4.058
Convergence, Y/N	Yes	Yes	Yes
Cap	927	897	886
Service Time	1.885	2.015	2.071
HCM Lane V/C Ratio	0.018	0.039	0.119
HCM Control Delay, s/veh	7	7.2	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0.4



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	4	4	9	6	4
Future Volume (vph)	4	4	4	9	6	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1394	1597	0	1711	0
Flt Permitted		0.976			0.971	
Satd. Flow (perm)	0	1394	1597	0	1711	0
Link Speed (mph)		15	15		15	
Link Distance (ft)		510	506		550	
Travel Time (s)		23.2	23.0		25.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	33%	8%	8%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	25	0	20	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	4	4	9	6	4
Future Vol, veh/h	4	4	4	9	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	52	52	52	52	52	52
Heavy Vehicles, %	33	33	8	8	2	2
Mvmt Flow	8	8	8	17	12	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	25	0	-	0	39	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.43	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.497	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1410	-	-	-	972	1063
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1410	-	-	-	967	1063
Mov Cap-2 Maneuver	-	-	-	-	967	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	1000	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.78	0	8.66
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	900	-	-	-	1003
HCM Lane V/C Ratio	0.005	-	-	-	0.019
HCM Ctrl Dly (s/v)	7.6	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix F:
Synchro & SimTraffic Output:
Background (2032)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	267	289	7	300	820	572	28	674	208
Future Volume (vph)	0	0	0	267	289	7	300	820	572	28	674	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			-1%			-1%			1%	
Storage Length (ft)	0		0	600		225	0		25	100		115
Storage Lanes	0		0	1		1	1		1	1		1
Taper Length (ft)	25			50			25			125		
Satd. Flow (prot)	0	0	0	1673	1754	1576	1778	3557	1591	1761	5060	1575
Flt Permitted				0.950	0.996		0.286			0.297		
Satd. Flow (perm)	0	0	0	1673	1754	1576	535	3557	1591	550	5060	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137						221
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		1167			1014			369			397	
Travel Time (s)		22.7			15.4			7.2			7.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.92	0.90	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	256	335	7	319	872	609	30	717	221
Turn Type				Split	NA	Perm	D.P+P	NA	pm+ov	D.Pm	NA	Prot
Protected Phases				3	3		4 5	1 2 4	3		6	6
Permitted Phases						3	6		1 2 4	1 2 4		
Detector Phase				3	3	3	4 5	1 2 4	3	1 2 4	6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0			7.0		12.0	12.0
Minimum Split (s)				13.2	13.2	13.2			13.2		18.0	18.0
Total Split (s)				23.0	23.0	23.0			23.0		45.0	45.0
Total Split (%)				20.0%	20.0%	20.0%			20.0%		39.1%	39.1%
Yellow Time (s)				4.6	4.6	4.6			4.6		4.4	4.4
All-Red Time (s)				1.6	1.6	1.6			1.6		1.6	1.6
Lost Time Adjust (s)				-1.2	-1.2	-1.2			-1.2		-1.0	-1.0
Total Lost Time (s)				5.0	5.0	5.0			5.0		5.0	5.0
Lead/Lag				Lead	Lead	Lead			Lead		Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes			Yes		Yes	Yes
Recall Mode				None	None	None			None		Min	Min
Act Effct Green (s)				18.0	18.0	18.0	76.1	82.7	111.2	82.7	36.0	36.0
Actuated g/C Ratio				0.16	0.16	0.16	0.68	0.74	1.00	0.74	0.32	0.32
v/c Ratio				0.94	1.18	0.02	0.39	0.33	0.38	0.07	0.44	0.34
Control Delay (s/veh)				90.1	153.0	0.1	5.3	1.0	0.4	4.2	30.3	5.0
Queue Delay				0.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	0.0
Total Delay (s/veh)				90.1	153.0	0.1	5.9	1.5	0.4	4.2	30.3	5.0

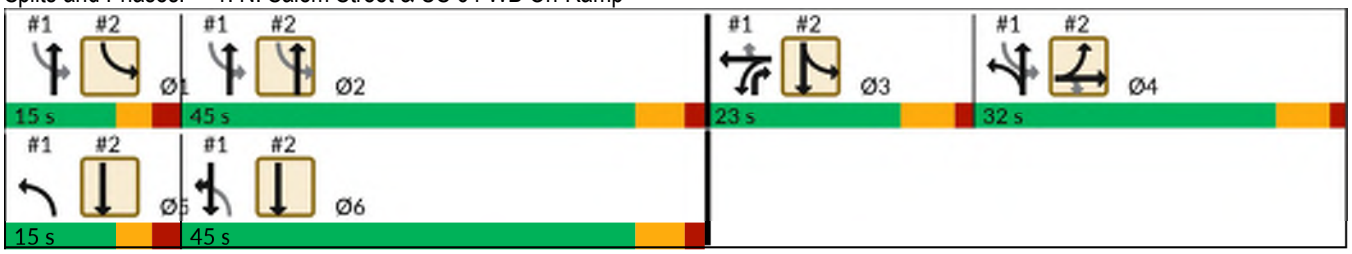
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				F	F	A	A	A	A	A	C	A
Approach Delay (s/veh)					124.3			1.9			23.7	
Approach LOS					F			A			C	
Queue Length 50th (ft)				206	~328	0	23	13	0	5	148	0
Queue Length 95th (ft)				#386	#525	0	m27	m13	m0	13	186	53
Internal Link Dist (ft)		1087			934			289			317	
Turn Bay Length (ft)				600		225			25	100		115
Base Capacity (vph)				271	284	370	825	2737	1591	423	1824	708
Starvation Cap Reductn				0	0	0	223	1258	0	0	0	0
Spillback Cap Reductn				0	0	0	0	0	0	0	0	0
Storage Cap Reductn				0	0	0	0	0	0	0	0	0
Reduced v/c Ratio				0.94	1.18	0.02	0.53	0.59	0.38	0.07	0.39	0.31

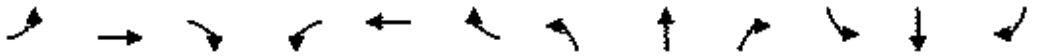
Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 111.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay (s/veh): 29.9 Intersection LOS: C
Intersection Capacity Utilization 58.2% ICU Level of Service B
Analysis Period (min) 15
Description: 05-1408

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N. Salem Street & US 64 WB On-Ramp





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	826	4	378	0	0	0	0	872	122	218	735	0
Future Volume (vph)	826	4	378	0	0	0	0	872	122	218	735	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		350	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	250			25			100			25		
Satd. Flow (prot)	1681	1686	1583	0	0	0	0	4994	0	1770	3539	0
Flt Permitted	0.950	0.953								0.122		
Satd. Flow (perm)	1681	1686	1583	0	0	0	0	4994	0	227	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			213					24				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1002			738			851			369	
Travel Time (s)		19.5			14.4			16.6			7.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	469	475	430	0	0	0	0	1130	0	248	835	0
Turn Type	Split	NA	Perm					NA		D.P+P	NA	
Protected Phases	4	4						2		1 3	3 5 6	
Permitted Phases			4							2		
Detector Phase	4	4	4					2		1 3	3 5 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					12.0				
Minimum Split (s)	13.0	13.0	13.0					18.0				
Total Split (s)	32.0	32.0	32.0					45.0				
Total Split (%)	27.8%	27.8%	27.8%					39.1%				
Yellow Time (s)	4.6	4.6	4.6					4.4				
All-Red Time (s)	1.4	1.4	1.4					1.6				
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0				
Total Lost Time (s)	5.0	5.0	5.0					5.0				
Lead/Lag	Lag	Lag	Lag					Lag				
Lead-Lag Optimize?	Yes	Yes	Yes					Yes				
Recall Mode	None	None	None					Min				
Act Effct Green (s)	27.1	27.1	27.1					36.2		62.9	72.9	
Actuated g/C Ratio	0.24	0.24	0.24					0.33		0.57	0.66	
v/c Ratio	1.15	1.16	0.79					0.69		0.49	0.36	
Control Delay (s/veh)	130.9	134.8	31.7					34.1		20.9	5.0	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.1	
Total Delay (s/veh)	130.9	134.8	31.7					34.1		20.9	5.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F	C					C		C	A	
Approach Delay (s/veh)		101.2						34.1			8.7	
Approach LOS		F						C			A	
Queue Length 50th (ft)	~448	~456	160					254		84	51	
Queue Length 95th (ft)	#644	#654	#305					296		m128	m58	
Internal Link Dist (ft)		922			658			771			289	
Turn Bay Length (ft)	300		350									
Base Capacity (vph)	408	410	546					1815		506	2313	
Starvation Cap Reductn	0	0	0					0		0	433	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.15	1.16	0.79					0.62		0.49	0.44	

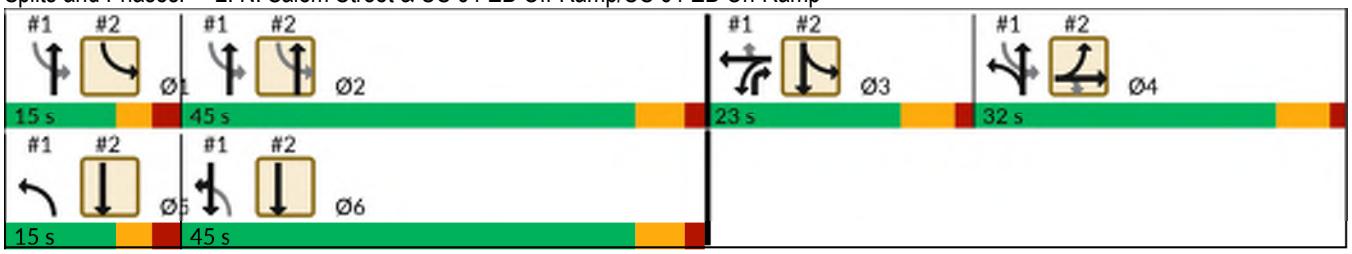
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 111.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay (s/veh): 52.2		Intersection LOS: D	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1408			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: N. Salem Street & US 64 EB Off-Ramp/US 64 EB On-Ramp



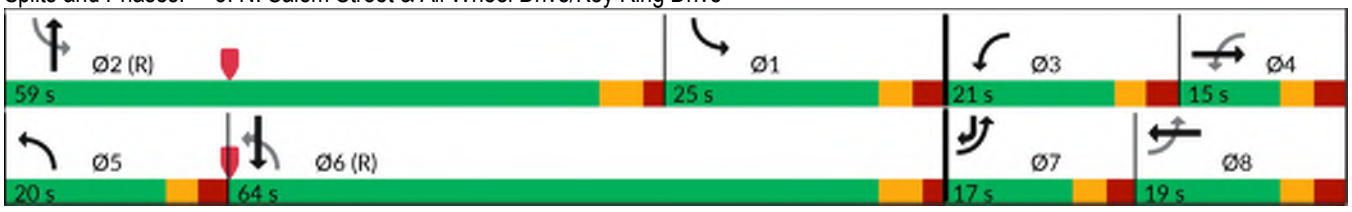
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	16	4	136	13	115	5	876	14	269	830	17
Future Volume (vph)	8	16	4	136	13	115	5	876	14	269	830	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1710	1704	0	1734	1570	0	1787	3553	0	1787	1881	1599
Flt Permitted	0.253			0.755			0.157			0.139		
Satd. Flow (perm)	455	1704	0	1378	1570	0	295	3553	0	262	1881	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			213			4				77
Link Speed (mph)		15			25			25			35	
Link Distance (ft)		506			667			465			851	
Travel Time (s)		23.0			18.2			12.7			16.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.80	0.38	0.50	0.81	0.54	0.63	0.85	0.35	0.67	0.92	0.43
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	31	0	272	229	0	8	1071	0	401	902	40
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	17.0	15.0		21.0	19.0		20.0	59.0		25.0	64.0	17.0
Total Split (%)	14.2%	12.5%		17.5%	15.8%		16.7%	49.2%		20.8%	53.3%	14.2%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	20.9	8.2		21.9	15.0		84.1	60.1		80.1	82.6	95.0
Actuated g/C Ratio	0.17	0.07		0.18	0.13		0.70	0.50		0.67	0.69	0.79
v/c Ratio	0.10	0.24		0.90	0.60		0.03	0.60		0.93	0.70	0.03
Control Delay (s/veh)	36.4	43.2		77.1	14.9		6.8	24.1		65.4	17.4	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.7	0.0
Total Delay (s/veh)	36.4	43.2		77.1	14.9		6.8	24.1		65.4	18.1	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		E	B		A	C		E	B	A
Approach Delay (s/veh)		40.9			48.7			23.9			31.7	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	10	15		194	11		2	328		209	403	0
Queue Length 95th (ft)	16	42		142	59		5	379		201	#814	0
Internal Link Dist (ft)		426			587			385			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	218	152		301	396		395	1780		429	1294	1339
Starvation Cap Reductn	0	0		0	0		0	0		0	144	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.07	0.20		0.90	0.58		0.02	0.60		0.93	0.78	0.03

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 114 (95%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 31.9	Intersection LOS: C
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	
Description: 05-1989	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	897	183	165	785
Future Volume (vph)	0	0	897	183	165	785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1770	1863
Link Speed (mph)	15		25			25
Link Distance (ft)	205		162			465
Travel Time (s)	9.3		4.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.84	0.50	0.50	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1068	366	330	853
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.8	1.7	13.0	1.2	2.3



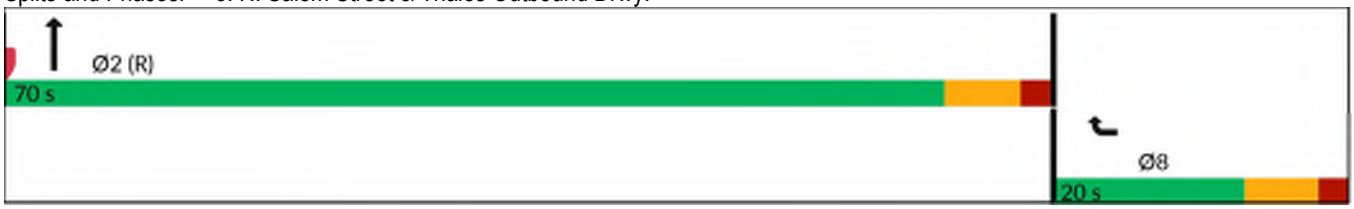
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	237	828	0	0	0
Future Volume (vph)	0	237	828	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1845	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1845	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		190				
Link Speed (mph)	25		25			25
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.25	0.50	0.86	0.86	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	474	963	0	0	0
Turn Type		Prot	NA			
Protected Phases		8	2			
Permitted Phases						
Detector Phase		8	2			
Switch Phase						
Minimum Initial (s)		7.0	10.0			
Minimum Split (s)		14.0	25.0			
Total Split (s)		20.0	70.0			
Total Split (%)		22.2%	77.8%			
Yellow Time (s)		5.0	5.0			
All-Red Time (s)		2.0	2.0			
Lost Time Adjust (s)		-2.0	-2.0			
Total Lost Time (s)		5.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max			
Act Effct Green (s)		15.0	65.0			
Actuated g/C Ratio		0.17	0.72			
v/c Ratio		1.11	0.72			
Control Delay (s/veh)		101.2	11.3			
Queue Delay		0.0	0.0			
Total Delay (s/veh)		101.2	11.3			

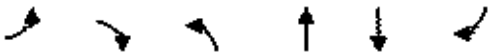
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		F	B			
Approach Delay (s/veh)	101.2		11.3			
Approach LOS	F		B			
Queue Length 50th (ft)		~217	273			
Queue Length 95th (ft)		90	374			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		426	1332			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		1.11	0.72			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay (s/veh): 40.9		Intersection LOS: D	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Splits and Phases: 5: N. Salem Street & Thales Outbound Drwy.





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	23	7	861	774	24
Future Volume (vph)	26	23	7	861	774	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1634	0	1736	1827	1820	0
Flt Permitted	0.974		0.950			
Satd. Flow (perm)	1634	0	1736	1827	1820	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1132			1013	385	
Travel Time (s)	30.9			27.6	10.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	4%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	7	897	831	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.3%		ICU Level of Service B	
Analysis Period (min) 15			

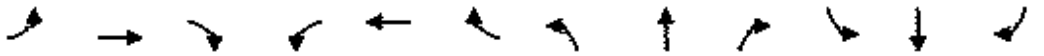
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	23	7	861	774	24
Future Vol, veh/h	26	23	7	861	774	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	6	4	4	4	4
Mvmt Flow	27	24	7	897	806	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1730	819	831	0	-	0
Stage 1	819	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.14	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.236	-	-	-
Pot Cap-1 Maneuver	95	369	792	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	94	369	792	-	-	-
Mov Cap-2 Maneuver	227	-	-	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	386	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	20.91	0.08	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	792	-	277	-	-
HCM Lane V/C Ratio	0.009	-	0.184	-	-
HCM Ctrl Dly (s/v)	9.6	-	20.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

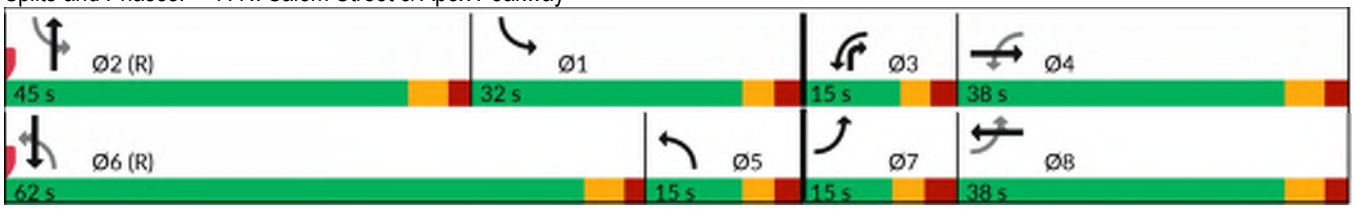


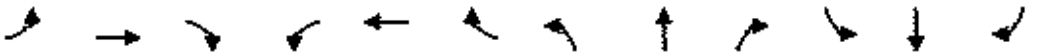
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	278	50	22	175	358	15	360	21	327	380	97
Future Volume (vph)	141	278	50	22	175	358	15	360	21	327	380	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-1%			1%	
Storage Length (ft)	250		0	375		275	135		150	300		25
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	175			50			75			50		
Satd. Flow (prot)	1752	1802	0	1718	1809	1537	1761	1854	1576	1727	1818	1545
Flt Permitted	0.461			0.228			0.433			0.363		
Satd. Flow (perm)	845	1802	0	412	1809	1493	802	1854	1576	660	1818	1510
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				377			123			124
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1619			1013			1214			1013	
Travel Time (s)		31.5			19.7			23.6			19.7	
Confl. Peds. (#/hr)	3					3	1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	346	0	23	184	377	16	379	22	344	400	102
Turn Type	D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	pm+ov	D.P+P	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	8			4		8	6		2	2		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0
Minimum Split (s)	13.1	13.1		12.4	28.1	28.1	12.6	15.9	12.4	12.6	26.9	26.9
Total Split (s)	15.0	38.0		15.0	38.0	38.0	15.0	45.0	15.0	32.0	62.0	62.0
Total Split (%)	11.5%	29.2%		11.5%	29.2%	29.2%	11.5%	34.6%	11.5%	24.6%	47.7%	47.7%
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.9	3.0	3.0	3.9	3.9
All-Red Time (s)	3.1	2.4		2.4	2.4	2.4	2.6	2.0	2.4	2.6	2.0	2.0
Lost Time Adjust (s)	-1.1	-1.1		-0.4	-1.1	-1.1	-0.6	-0.9	-0.4	-0.6	-0.9	-0.9
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effct Green (s)	34.4	31.9		36.4	22.7	22.7	82.7	55.9	63.4	75.6	75.1	75.1
Actuated g/C Ratio	0.26	0.25		0.28	0.17	0.17	0.64	0.43	0.49	0.58	0.58	0.58
v/c Ratio	0.49	0.77		0.12	0.58	0.66	0.03	0.48	0.03	0.63	0.38	0.11
Control Delay (s/veh)	38.7	57.1		29.7	55.3	9.9	12.1	32.7	0.0	28.8	19.4	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.7	57.1		29.7	55.3	9.9	12.1	32.7	0.0	28.8	19.4	2.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	A	B	C	A	C	B	A
Approach Delay (s/veh)		51.6			25.0			30.1			21.1	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	93	278		14	147	0	5	240	0	143	171	0
Queue Length 95th (ft)	141	375		33	208	87	17	401	0	230	346	23
Internal Link Dist (ft)		1539			933			1134			933	
Turn Bay Length (ft)	250			375		275	135		150	300		25
Base Capacity (vph)	306	472		220	459	660	595	797	859	642	1050	924
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.73		0.10	0.40	0.57	0.03	0.48	0.03	0.54	0.38	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 2 (2%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 30.1		Intersection LOS: C	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	
Analysis Period (min) 15			
Description: 05-2347			

Splits and Phases: 7: N. Salem Street & Apex Peakway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	375	4	7	306	70	8	4	8	59	4	28
Future Volume (vph)	15	375	4	7	306	70	8	4	8	59	4	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1857	0	0	1814	0	0	1676	0	0	1729	0
Flt Permitted		0.998			0.999			0.980			0.968	
Satd. Flow (perm)	0	1857	0	0	1814	0	0	1676	0	0	1729	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1183			1283			422			1177	
Travel Time (s)		23.0			25.0			11.5			32.1	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	0	0	417	0	0	22	0	0	98	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	375	4	7	306	70	8	4	8	59	4	28
Future Vol, veh/h	15	375	4	7	306	70	8	4	8	59	4	28
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	2	2	2
Mvmt Flow	16	408	4	8	333	76	9	4	9	64	4	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	414	0	0	412	0	0	792	871	410	833	835	376
Stage 1	-	-	-	-	-	-	442	442	-	391	391	-
Stage 2	-	-	-	-	-	-	350	429	-	442	445	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1145	-	-	1147	-	-	303	286	635	288	303	671
Stage 1	-	-	-	-	-	-	588	571	-	633	607	-
Stage 2	-	-	-	-	-	-	660	579	-	594	575	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1140	-	-	1147	-	-	277	277	635	271	294	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	277	277	-	271	294	-
Stage 1	-	-	-	-	-	-	577	560	-	625	599	-
Stage 2	-	-	-	-	-	-	620	571	-	571	564	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.31	0.15	15.71	20.33
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	358	68	-	-	32	-	-	333
HCM Lane V/C Ratio	0.061	0.014	-	-	0.007	-	-	0.297
HCM Ctrl Dly (s/v)	15.7	8.2	0	-	8.2	0	-	20.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.2



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	37	4	5	58	4	7
Future Volume (vph)	37	4	5	58	4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1821	0	0	1855	1670	0
Flt Permitted				0.996	0.982	
Satd. Flow (perm)	1821	0	0	1855	1670	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1160			1132	467	
Travel Time (s)	31.6			30.9	12.7	
Confl. Peds. (#/hr)		10	10		2	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	81	14	0
Sign Control	Stop			Stop	Stop	

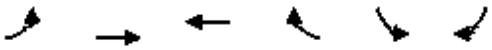
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	37	4	5	58	4	7
Future Vol, veh/h	37	4	5	58	4	7
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	3	3	2	2	2	2
Mvmt Flow	48	5	6	75	5	9
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	7.2	7.4	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	8%
Vol Thru, %	0%	90%	92%
Vol Right, %	64%	10%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	11	41	63
LT Vol	4	0	5
Through Vol	0	37	58
RT Vol	7	4	0
Lane Flow Rate	14	53	82
Geometry Grp	1	1	1
Degree of Util (X)	0.015	0.059	0.091
Departure Headway (Hd)	3.856	3.979	4.015
Convergence, Y/N	Yes	Yes	Yes
Cap	920	901	895
Service Time	1.914	1.998	2.029
HCM Lane V/C Ratio	0.015	0.059	0.092
HCM Control Delay, s/veh	7	7.2	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.2	0.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	11	10	11	7	4
Future Volume (vph)	4	11	10	11	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1736	1732	0	1534	0
Flt Permitted		0.987			0.970	
Satd. Flow (perm)	0	1736	1732	0	1534	0
Link Speed (mph)		15	15		15	
Link Distance (ft)		510	506		550	
Travel Time (s)		23.2	23.0		25.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	2%	2%	14%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	31	0	16	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.1%		ICU Level of Service A	
Analysis Period (min) 15			

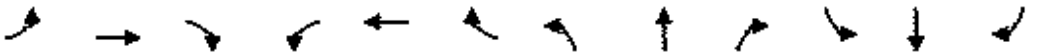
Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	11	10	11	7	4
Future Vol, veh/h	4	11	10	11	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	8	8	2	2	14	14
Mvmt Flow	6	16	15	16	10	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	31	0	-	0	51	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	4.18	-	-	-	6.54	6.34
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	2.272	-	-	-	3.626	3.426
Pot Cap-1 Maneuver	1543	-	-	-	928	1020
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1543	-	-	-	924	1020
Mov Cap-2 Maneuver	-	-	-	-	924	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	964	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.96	0	8.83
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	480	-	-	-	957
HCM Lane V/C Ratio	0.004	-	-	-	0.017
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



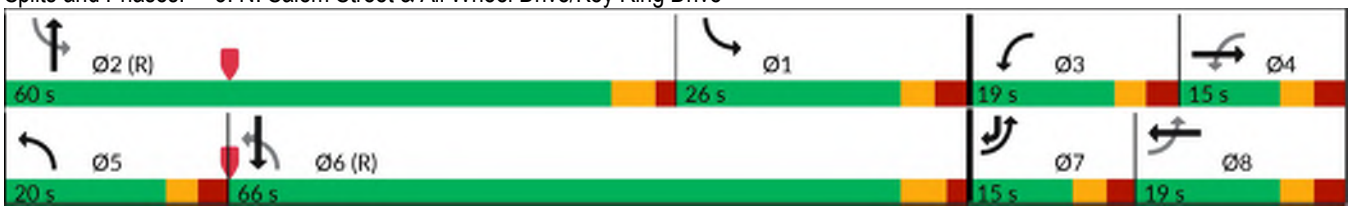
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	18	13	106	17	101	8	941	15	121	980	17
Future Volume (vph)	24	18	13	106	17	101	8	941	15	121	980	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1602	1580	0	1734	1592	0	1770	3522	0	1770	1863	1584
Flt Permitted	0.303			0.726			0.063			0.158		
Satd. Flow (perm)	511	1580	0	1325	1592	0	117	3522	0	294	1863	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			160			4				77
Link Speed (mph)		15			25			25			25	
Link Distance (ft)		506			667			465			851	
Travel Time (s)		23.0			18.2			12.7			23.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.64	0.65	0.65	0.61	0.63	0.33	0.92	0.42	0.66	0.93	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	11%	11%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	48	0	163	188	0	24	1059	0	183	1054	24
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	15.0	15.0		19.0	19.0		20.0	60.0		26.0	66.0	15.0
Total Split (%)	12.5%	12.5%		15.8%	15.8%		16.7%	50.0%		21.7%	55.0%	12.5%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	20.0	8.5		20.0	13.6		83.0	60.0		81.0	78.5	91.3
Actuated g/C Ratio	0.17	0.07		0.17	0.11		0.69	0.50		0.68	0.65	0.76
v/c Ratio	0.21	0.37		0.62	0.58		0.13	0.60		0.40	0.87	0.02
Control Delay (s/veh)	39.5	43.2		51.8	19.0		7.8	24.2		20.6	29.2	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	39.5	43.2		51.8	19.0		7.8	24.2		20.6	29.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		D	B		A	C		C	C	A
Approach Delay (s/veh)		41.8			34.2			23.8			27.4	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	22	23		111	20		5	321		45	751	0
Queue Length 95th (ft)	41	41		121	21		5	409		53	#1124	0
Internal Link Dist (ft)		426			587			385			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	182	150		279	333		290	1764		456	1218	1250
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.32		0.58	0.56		0.08	0.60		0.40	0.87	0.02

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 114 (95%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 27.3	Intersection LOS: C
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	
Description: 05-1989	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	963	125	67	1044
Future Volume (vph)	0	0	963	125	67	1044
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1752	1845
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1752	1845
Link Speed (mph)	15		25			25
Link Distance (ft)	205		162			465
Travel Time (s)	9.3		4.4			12.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.50	0.50	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1070	250	134	1135
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.0%		ICU Level of Service B	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.0	0.5	0.2	0.2
Total Del/Veh (s)	0.6	1.6	9.3	1.8	1.6



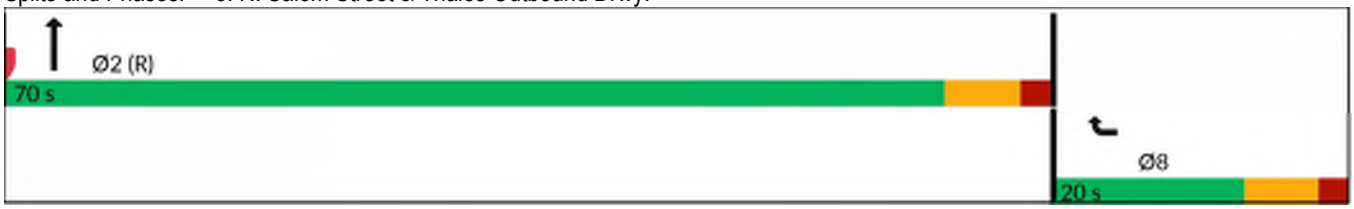
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	216	854	0	0	0
Future Volume (vph)	0	216	854	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1827	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1827	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		152				
Link Speed (mph)	25		25			25
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.50	0.79	0.79	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	432	1081	0	0	0
Turn Type		Prot	NA			
Protected Phases		8	2			
Permitted Phases						
Detector Phase		8	2			
Switch Phase						
Minimum Initial (s)		7.0	10.0			
Minimum Split (s)		14.0	25.0			
Total Split (s)		20.0	70.0			
Total Split (%)		22.2%	77.8%			
Yellow Time (s)		5.0	5.0			
All-Red Time (s)		2.0	2.0			
Lost Time Adjust (s)		-2.0	-2.0			
Total Lost Time (s)		5.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max			
Act Effct Green (s)		15.0	65.0			
Actuated g/C Ratio		0.17	0.72			
v/c Ratio		1.09	0.82			
Control Delay (s/veh)		98.2	15.3			
Queue Delay		0.0	0.0			
Total Delay (s/veh)		98.2	15.3			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		F	B			
Approach Delay (s/veh)	98.2		15.3			
Approach LOS	F		B			
Queue Length 50th (ft)		~205	361			
Queue Length 95th (ft)		97	398			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		395	1319			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		1.09	0.82			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay (s/veh): 39.0		Intersection LOS: D	
Intersection Capacity Utilization 67.0%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Splits and Phases: 5: N. Salem Street & Thales Outbound Drwy.



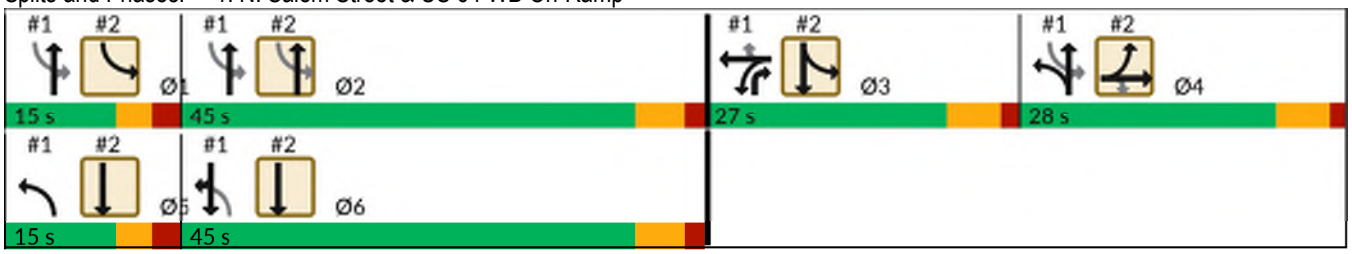
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	317	426	17	234	981	487	34	933	300
Future Volume (vph)	0	0	0	317	426	17	234	981	487	34	933	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			-1%			-1%			1%	
Storage Length (ft)	0		0	600		225	0		25	100		115
Storage Lanes	0		0	1		1	1		1	1		1
Taper Length (ft)	25			50			25			125		
Satd. Flow (prot)	0	0	0	1690	1773	1591	1778	3557	1591	1761	5060	1575
Flt Permitted				0.950	0.997		0.185			0.239		
Satd. Flow (perm)	0	0	0	1690	1773	1591	346	3557	1591	443	5060	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137						236
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		1167			1014			369			397	
Travel Time (s)		22.7			15.4			7.2			7.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	297	477	18	244	1022	507	35	972	313
Turn Type				Split	NA	Perm	D.P+P	NA	pm+ov	D.Pm	NA	Prot
Protected Phases				3	3		4 5	1 2 4	3		6	6
Permitted Phases						3	6		1 2 4	1 2 4		
Detector Phase				3	3	3	4 5	1 2 4	3	1 2 4	6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0			7.0		12.0	12.0
Minimum Split (s)				13.2	13.2	13.2			13.2		18.0	18.0
Total Split (s)				27.0	27.0	27.0			27.0		45.0	45.0
Total Split (%)				23.5%	23.5%	23.5%			23.5%		39.1%	39.1%
Yellow Time (s)				4.6	4.6	4.6			4.6		4.4	4.4
All-Red Time (s)				1.6	1.6	1.6			1.6		1.6	1.6
Lost Time Adjust (s)				-1.2	-1.2	-1.2			-1.2		-1.0	-1.0
Total Lost Time (s)				5.0	5.0	5.0			5.0		5.0	5.0
Lead/Lag				Lead	Lead	Lead			Lead		Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes			Yes		Yes	Yes
Recall Mode				None	None	None			None		Min	Min
Act Effct Green (s)				22.0	22.0	22.0	76.0	82.6	115.0	82.6	40.0	40.0
Actuated g/C Ratio				0.19	0.19	0.19	0.66	0.72	1.00	0.72	0.35	0.35
v/c Ratio				0.92	1.41	0.04	0.35	0.40	0.32	0.11	0.55	0.45
Control Delay (s/veh)				79.7	235.8	0.2	12.6	1.4	0.3	5.9	31.7	9.7
Queue Delay				0.0	0.0	0.0	0.7	0.5	0.0	0.0	0.0	0.0
Total Delay (s/veh)				79.7	235.8	0.2	13.3	1.9	0.3	5.9	31.7	9.7

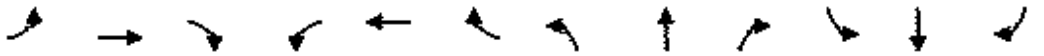
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				E	F	A	B	A	A	A	C	A
Approach Delay (s/veh)					171.9			3.0			25.8	
Approach LOS					F			A			C	
Queue Length 50th (ft)				232	~507	0	40	17	0	7	214	39
Queue Length 95th (ft)				#409	#726	0	m64	m18	m0	18	260	115
Internal Link Dist (ft)		1087			934			289			317	
Turn Bay Length (ft)				600		225			25	100		115
Base Capacity (vph)				323	339	415	689	2522	1591	314	1760	701
Starvation Cap Reductn				0	0	0	198	953	0	0	0	0
Spillback Cap Reductn				0	0	0	0	0	0	0	0	0
Storage Cap Reductn				0	0	0	0	0	0	0	0	0
Reduced v/c Ratio				0.92	1.41	0.04	0.50	0.65	0.32	0.11	0.55	0.45

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay (s/veh): 45.2	Intersection LOS: D
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	
Description: 05-1408	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N. Salem Street & US 64 WB On-Ramp





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	4	278	0	0	0	0	1006	48	231	1017	0
Future Volume (vph)	700	4	278	0	0	0	0	1006	48	231	1017	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		350	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	250			25			100			25		
Satd. Flow (prot)	1681	1686	1583	0	0	0	0	5050	0	1770	3539	0
Flt Permitted	0.950	0.953								0.139		
Satd. Flow (perm)	1681	1686	1583	0	0	0	0	5050	0	259	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			147					7				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1002			738			851			369	
Travel Time (s)		19.5			14.4			16.6			7.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	368	373	293	0	0	0	0	1110	0	243	1071	0
Turn Type	Split	NA	Perm					NA		D.P+P	NA	
Protected Phases	4	4						2		1 3	3 5 6	
Permitted Phases			4							2		
Detector Phase	4	4	4					2		1 3	3 5 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					12.0				
Minimum Split (s)	13.0	13.0	13.0					18.0				
Total Split (s)	28.0	28.0	28.0					45.0				
Total Split (%)	24.3%	24.3%	24.3%					39.1%				
Yellow Time (s)	4.6	4.6	4.6					4.4				
All-Red Time (s)	1.4	1.4	1.4					1.6				
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0				
Total Lost Time (s)	5.0	5.0	5.0					5.0				
Lead/Lag	Lag	Lag	Lag					Lag				
Lead-Lag Optimize?	Yes	Yes	Yes					Yes				
Recall Mode	None	None	None					Min				
Act Effct Green (s)	23.0	23.0	23.0					40.0		70.8	80.8	
Actuated g/C Ratio	0.20	0.20	0.20					0.35		0.62	0.70	
v/c Ratio	1.10	1.11	0.68					0.63		0.43	0.43	
Control Delay (s/veh)	120.6	124.1	29.4					33.0		17.8	3.8	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.1	
Total Delay (s/veh)	120.6	124.1	29.4					33.0		17.8	3.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F	C					C		B	A	
Approach Delay (s/veh)		96.0						33.0			6.5	
Approach LOS		F						C			A	
Queue Length 50th (ft)	~329	~336	101					251		87	39	
Queue Length 95th (ft)	#532	#540	203					302		m136	m50	
Internal Link Dist (ft)		922			658			771			289	
Turn Bay Length (ft)	300		350									
Base Capacity (vph)	336	337	434					1763		569	2486	
Starvation Cap Reductn	0	0	0					0		0	403	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.10	1.11	0.68					0.63		0.43	0.51	

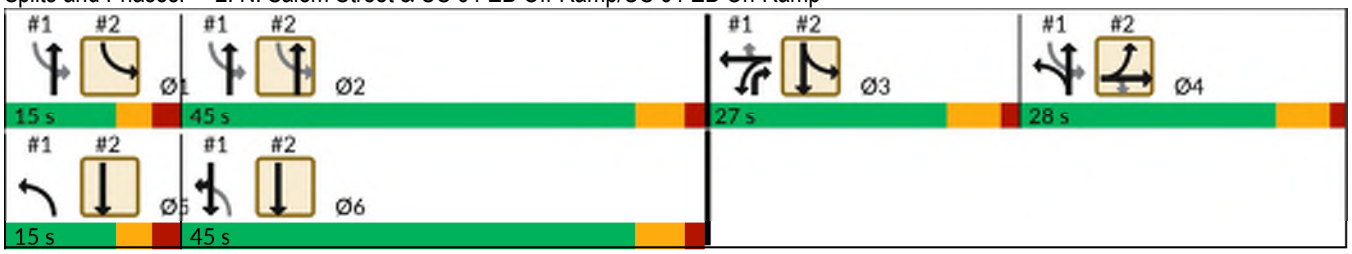
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.41			
Intersection Signal Delay (s/veh): 41.8		Intersection LOS: D	
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1408			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: N. Salem Street & US 64 EB Off-Ramp/US 64 EB On-Ramp



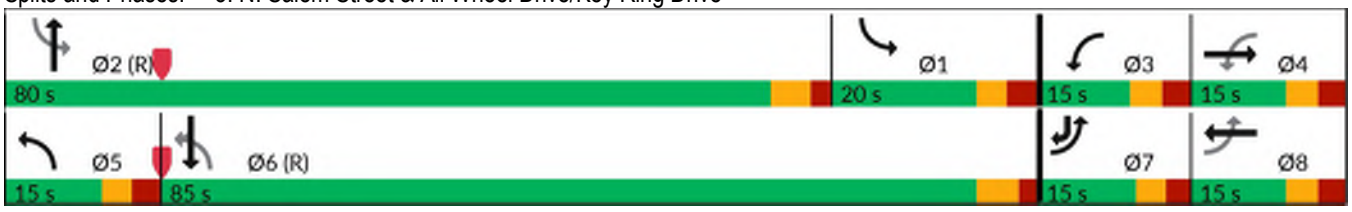
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	13	16	19	16	36	6	1000	4	17	1258	5
Future Volume (vph)	15	13	16	19	16	36	6	1000	4	17	1258	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1743	1684	0	1734	1615	0	1787	3571	0	1787	1881	1599
Flt Permitted	0.721			0.737			0.042			0.228		
Satd. Flow (perm)	1316	1684	0	1345	1615	0	79	3571	0	429	1881	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			38							71
Link Speed (mph)		15			25			35			35	
Link Distance (ft)		506			667			465			851	
Travel Time (s)		23.0			18.2			9.1			16.6	
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	31	0	20	55	0	6	1068	0	18	1338	5
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	15.0	15.0		15.0	15.0		15.0	80.0		20.0	85.0	15.0
Total Split (%)	11.5%	11.5%		11.5%	11.5%		11.5%	61.5%		15.4%	65.4%	11.5%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	12.9	10.8		14.0	8.6		105.5	99.5		105.5	105.0	115.0
Actuated g/C Ratio	0.10	0.08		0.11	0.07		0.81	0.77		0.81	0.81	0.88
v/c Ratio	0.10	0.20		0.12	0.39		0.04	0.39		0.04	0.88	0.00
Control Delay (s/veh)	47.8	35.7		48.3	33.2		4.5	9.0		4.4	21.6	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	5.0	0.0
Total Delay (s/veh)	47.8	35.7		48.3	33.2		4.5	9.0		4.4	26.6	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		D	C		A	A		A	C	A
Approach Delay (s/veh)		39.8			37.2			9.0			26.2	
Approach LOS		D			D			A			C	
Queue Length 50th (ft)	12	10		15	14		1	137		3	795	0
Queue Length 95th (ft)	34	45		39	58		5	324		10	#1568	0
Internal Link Dist (ft)		426			587			385			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	189	171		191	161		195	2734		501	1519	1446
Starvation Cap Reductn	0	0		0	0		0	0		0	135	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.08	0.18		0.10	0.34		0.03	0.39		0.04	0.97	0.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 116 (89%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 19.6		Intersection LOS: B	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			
Description: 05-1989			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	1008	7	4	1295
Future Volume (vph)	0	0	1008	7	4	1295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1770	1863
Link Speed (mph)	15		35			35
Link Distance (ft)	205		162			465
Travel Time (s)	9.3		3.2			9.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1061	7	4	1363
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.5	1.6	11.1	2.6	1.6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	14	1000	0	0	0
Future Volume (vph)	0	14	1000	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1863	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1863	0	0	0
Link Speed (mph)	25		25			30
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	1053	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

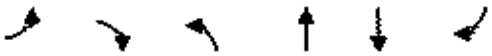
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	1000	0	0	0
Future Vol, veh/h	0	14	1000	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	1053	0	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	1053	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.22	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.318	-	-
Pot Cap-1 Maneuver	0	275	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %			-	
Mov Cap-1 Maneuver	-	275	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Ctrl Dly, s/v	18.83	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	WBLn1
Capacity (veh/h)	-	275
HCM Lane V/C Ratio	-	0.054
HCM Ctrl Dly (s/v)	-	18.8
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	21	23	983	1220	61
Future Volume (vph)	15	21	23	983	1220	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1681	0	1770	1863	1852	0
Flt Permitted	0.979		0.950			
Satd. Flow (perm)	1681	0	1770	1863	1852	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	1132			1013	385	
Travel Time (s)	30.9			19.7	7.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	24	1035	1348	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.9%		ICU Level of Service D	
Analysis Period (min) 15			

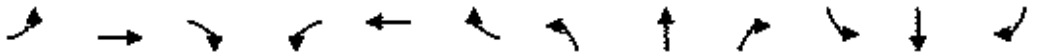
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	21	23	983	1220	61
Future Vol, veh/h	15	21	23	983	1220	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	22	24	1035	1284	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2399	1316	1348	0	-	0
Stage 1	1316	-	-	-	-	-
Stage 2	1083	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	37	193	511	-	-	-
Stage 1	251	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	35	193	511	-	-	-
Mov Cap-2 Maneuver	141	-	-	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	325	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	32.72	0.28	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	511	-	167	-	-
HCM Lane V/C Ratio	0.047	-	0.227	-	-
HCM Ctrl Dly (s/v)	12.4	-	32.7	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-



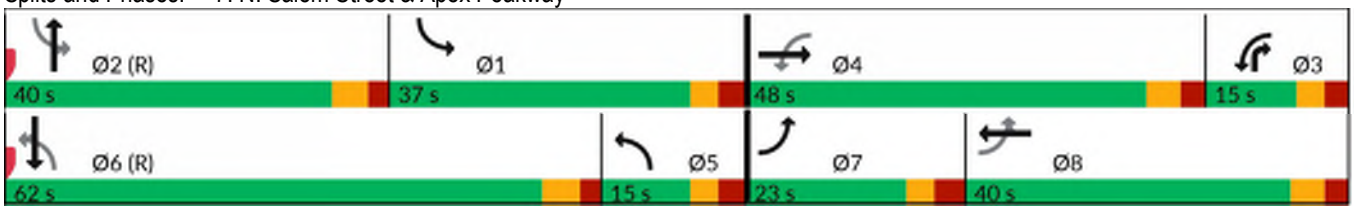
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	358	44	30	326	478	23	408	33	422	608	228
Future Volume (vph)	132	358	44	30	326	478	23	408	33	422	608	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-1%			1%	
Storage Length (ft)	250		0	375		275	135		150	300		25
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	175			50			75			50		
Satd. Flow (prot)	1752	1815	0	1752	1844	1568	1778	1872	1591	1761	1853	1575
Flt Permitted	0.204			0.164			0.215			0.190		
Satd. Flow (perm)	375	1815	0	302	1844	1517	402	1872	1591	352	1853	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				498			161			163
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1619			1013			1214			1013	
Travel Time (s)		31.5			19.7			23.6			19.7	
Confl. Peds. (#/hr)	4					4	3					3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	419	0	31	340	498	24	425	34	440	633	238
Turn Type	D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	pm+ov	D.P+P	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	8			4		8	6		2	2		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0
Minimum Split (s)	13.1	13.1		12.4	28.1	28.1	12.6	15.9	12.4	12.6	26.9	26.9
Total Split (s)	23.0	48.0		15.0	40.0	40.0	15.0	40.0	15.0	37.0	62.0	62.0
Total Split (%)	16.4%	34.3%		10.7%	28.6%	28.6%	10.7%	28.6%	10.7%	26.4%	44.3%	44.3%
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.9	3.0	3.0	3.9	3.9
All-Red Time (s)	3.1	2.4		2.4	2.4	2.4	2.6	2.0	2.4	2.6	2.0	2.0
Lost Time Adjust (s)	-1.1	-1.1		-0.4	-1.1	-1.1	-0.6	-0.9	-0.4	-0.6	-0.9	-0.9
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effct Green (s)	44.2	38.5		45.4	30.9	30.9	77.8	44.1	56.2	75.8	71.8	71.8
Actuated g/C Ratio	0.32	0.28		0.32	0.22	0.22	0.56	0.32	0.40	0.54	0.51	0.51
v/c Ratio	0.56	0.83		0.17	0.84	0.69	0.08	0.72	0.05	0.86	0.67	0.28
Control Delay (s/veh)	39.3	62.3		33.3	69.9	8.9	17.3	52.2	0.1	59.3	33.0	9.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.3	62.3		33.3	69.9	8.9	17.3	52.2	0.1	59.3	33.0	9.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	A	B	D	A	E	C	A
Approach Delay (s/veh)		56.6			33.7			46.8			37.5	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	89	366		19	301	0	9	353	0	280	468	38
Queue Length 95th (ft)	129	477		39	406	102	27	#582	0	#508	#706	107
Internal Link Dist (ft)		1539			933			1134			933	
Turn Bay Length (ft)	250			375		275	135		150	300		25
Base Capacity (vph)	305	560		205	465	754	322	589	723	513	950	863
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.75		0.15	0.73	0.66	0.07	0.72	0.05	0.86	0.67	0.28

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay (s/veh): 41.2 Intersection LOS: D
Intersection Capacity Utilization 88.9% ICU Level of Service E
Analysis Period (min) 15
Description: 05-2347
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: N. Salem Street & Apex Peakway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	512	4	4	552	51	4	4	6	24	4	31
Future Volume (vph)	18	512	4	4	552	51	4	4	6	24	4	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1857	0	0	1842	0	0	1730	0	0	1696	0
Flt Permitted		0.998						0.986			0.980	
Satd. Flow (perm)	0	1857	0	0	1842	0	0	1730	0	0	1696	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1183			1283			422			1177	
Travel Time (s)		23.0			25.0			11.5			32.1	
Confl. Peds. (#/hr)	8					8						
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	568	0	0	645	0	0	14	0	0	63	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	512	4	4	552	51	4	4	6	24	4	31
Future Vol, veh/h	18	512	4	4	552	51	4	4	6	24	4	31
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	545	4	4	587	54	4	4	6	26	4	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	649	0	0	549	0	0	1183	1243	547	1216	1218	622
Stage 1	-	-	-	-	-	-	585	585	-	631	631	-
Stage 2	-	-	-	-	-	-	598	658	-	585	587	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	937	-	-	1021	-	-	166	174	537	158	180	486
Stage 1	-	-	-	-	-	-	497	497	-	469	474	-
Stage 2	-	-	-	-	-	-	489	461	-	497	496	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	929	-	-	1021	-	-	146	167	537	146	173	483
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	167	-	146	173	-
Stage 1	-	-	-	-	-	-	482	483	-	462	468	-
Stage 2	-	-	-	-	-	-	448	455	-	472	482	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.3	0.06	22.24	25.94
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	224	61	-	-	12	-	-	234
HCM Lane V/C Ratio	0.067	0.021	-	-	0.004	-	-	0.268
HCM Ctrl Dly (s/v)	22.2	9	0	-	8.5	0	-	25.9
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	23	4	14	67	4	9
Future Volume (vph)	23	4	14	67	4	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1792	0	0	1812	1662	0
Flt Permitted				0.992	0.986	
Satd. Flow (perm)	1792	0	0	1812	1662	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1160			1132	467	
Travel Time (s)	31.6			30.9	12.7	
Confl. Peds. (#/hr)		6	6			
Confl. Bikes (#/hr)						
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	105	17	0
Sign Control	Stop			Stop	Stop	

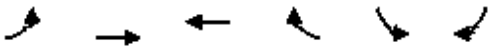
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	4	14	67	4	9
Future Vol, veh/h	23	4	14	67	4	9
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	30	5	18	87	5	12
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	7.2	7.6	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	31%	0%	17%
Vol Thru, %	0%	85%	83%
Vol Right, %	69%	15%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	13	27	81
LT Vol	4	0	14
Through Vol	0	23	67
RT Vol	9	4	0
Lane Flow Rate	17	35	105
Geometry Grp	1	1	1
Degree of Util (X)	0.018	0.039	0.119
Departure Headway (Hd)	3.822	3.988	4.058
Convergence, Y/N	Yes	Yes	Yes
Cap	927	897	886
Service Time	1.885	2.015	2.071
HCM Lane V/C Ratio	0.018	0.039	0.119
HCM Control Delay, s/veh	7	7.2	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0.4



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	4	4	9	6	4
Future Volume (vph)	4	4	4	9	6	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1394	1597	0	1711	0
Flt Permitted		0.976			0.971	
Satd. Flow (perm)	0	1394	1597	0	1711	0
Link Speed (mph)		15	15		15	
Link Distance (ft)		510	506		550	
Travel Time (s)		23.2	23.0		25.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.52	0.52	0.52	0.52	0.52	0.52
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	33%	8%	8%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	25	0	20	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.8

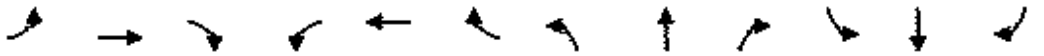
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	4	4	9	6	4
Future Vol, veh/h	4	4	4	9	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	52	52	52	52	52	52
Heavy Vehicles, %	33	33	8	8	2	2
Mvmt Flow	8	8	8	17	12	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	25	0	-	0	39	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.43	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.497	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1410	-	-	-	972	1063
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1410	-	-	-	967	1063
Mov Cap-2 Maneuver	-	-	-	-	967	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	1000	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.78	0	8.66
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	900	-	-	-	1003
HCM Lane V/C Ratio	0.005	-	-	-	0.019
HCM Ctrl Dly (s/v)	7.6	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix G:
Synchro & SimTraffic Output:
Build-Out (2032)



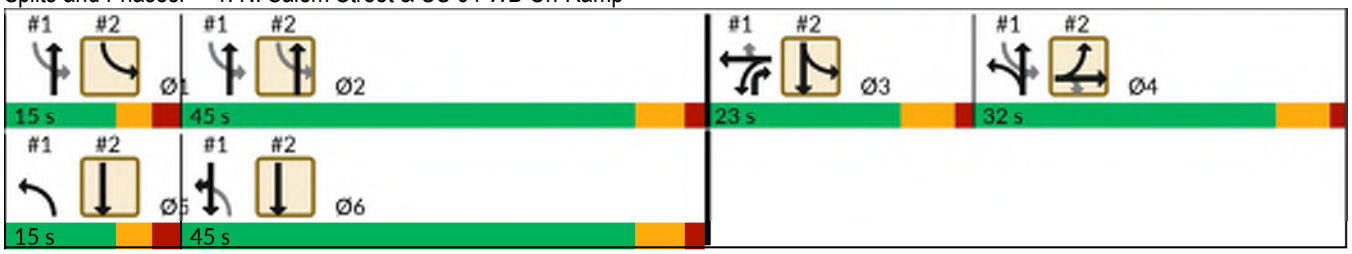
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	284	289	7	331	847	572	28	688	208
Future Volume (vph)	0	0	0	284	289	7	331	847	572	28	688	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			-1%			-1%			1%	
Storage Length (ft)	0		0	600		225	0		25	100		115
Storage Lanes	0		0	1		1	1		1	1		1
Taper Length (ft)	25			50			25			125		
Satd. Flow (prot)	0	0	0	1673	1754	1576	1778	3557	1591	1761	5060	1575
Flt Permitted				0.950	0.996		0.281			0.287		
Satd. Flow (perm)	0	0	0	1673	1754	1576	526	3557	1591	532	5060	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137						221
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		1167			1014			369			397	
Travel Time (s)		22.7			15.4			7.2			7.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.92	0.90	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	272	337	7	352	901	609	30	732	221
Turn Type				Split	NA	Perm	D.P+P	NA	pm+ov	D.Pm	NA	Prot
Protected Phases				3	3		4 5	1 2 4	3		6	6
Permitted Phases						3	6		1 2 4	1 2 4		
Detector Phase				3	3	3	4 5	1 2 4	3	1 2 4	6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0			7.0		12.0	12.0
Minimum Split (s)				13.2	13.2	13.2			13.2		18.0	18.0
Total Split (s)				23.0	23.0	23.0			23.0		45.0	45.0
Total Split (%)				20.0%	20.0%	20.0%			20.0%		39.1%	39.1%
Yellow Time (s)				4.6	4.6	4.6			4.6		4.4	4.4
All-Red Time (s)				1.6	1.6	1.6			1.6		1.6	1.6
Lost Time Adjust (s)				-1.2	-1.2	-1.2			-1.2		-1.0	-1.0
Total Lost Time (s)				5.0	5.0	5.0			5.0		5.0	5.0
Lead/Lag				Lead	Lead	Lead			Lead		Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes			Yes		Yes	Yes
Recall Mode				None	None	None			None		Min	Min
Act Effct Green (s)				18.0	18.0	18.0	77.6	84.2	112.6	84.2	37.5	37.5
Actuated g/C Ratio				0.16	0.16	0.16	0.69	0.75	1.00	0.75	0.33	0.33
v/c Ratio				1.02	1.20	0.02	0.43	0.34	0.38	0.08	0.43	0.33
Control Delay (s/veh)				107.9	161.7	0.1	7.0	1.1	0.3	4.3	30.0	4.9
Queue Delay				0.0	0.0	0.0	0.8	0.6	0.0	0.0	0.0	0.0
Total Delay (s/veh)				107.9	161.7	0.1	7.7	1.6	0.3	4.3	30.0	4.9

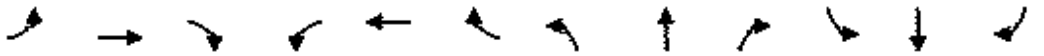
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				F	F	A	A	A	A	A	C	A
Approach Delay (s/veh)					136.1			2.3			23.6	
Approach LOS					F			A			C	
Queue Length 50th (ft)				~234	~332	0	32	14	0	5	152	0
Queue Length 95th (ft)				#417	#528	0	m49	m14	m0	13	190	53
Internal Link Dist (ft)		1087			934			289			317	
Turn Bay Length (ft)				600		225			25	100		115
Base Capacity (vph)				267	280	367	818	2701	1591	403	1799	702
Starvation Cap Reductn				0	0	0	219	1279	0	0	0	0
Spillback Cap Reductn				0	0	0	0	0	0	0	0	0
Storage Cap Reductn				0	0	0	0	0	0	0	0	0
Reduced v/c Ratio				1.02	1.20	0.02	0.59	0.63	0.38	0.07	0.41	0.31

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 112.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay (s/veh): 32.2	Intersection LOS: C
Intersection Capacity Utilization 60.4%	ICU Level of Service B
Analysis Period (min) 15	
Description: 05-1408	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N. Salem Street & US 64 WB On-Ramp





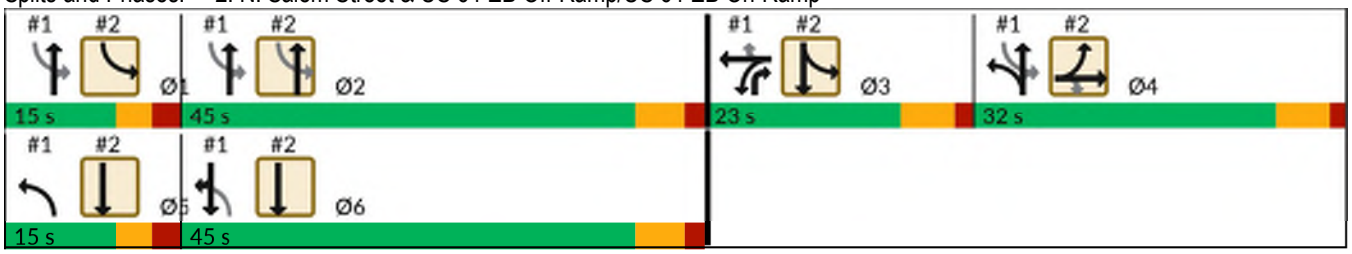
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	826	4	390	0	0	0	0	929	168	218	765	0
Future Volume (vph)	826	4	390	0	0	0	0	929	168	218	765	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		350	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	250			25			100			25		
Satd. Flow (prot)	1681	1686	1583	0	0	0	0	4968	0	1770	3539	0
Flt Permitted	0.950	0.953								0.109		
Satd. Flow (perm)	1681	1686	1583	0	0	0	0	4968	0	203	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199					34				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1002			738			851			369	
Travel Time (s)		19.5			14.4			16.6			7.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	469	475	443	0	0	0	0	1247	0	248	869	0
Turn Type	Split	NA	Perm					NA		D.P+P	NA	
Protected Phases	4	4						2		1 3	3 5 6	
Permitted Phases			4							2		
Detector Phase	4	4	4					2		1 3	3 5 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					12.0				
Minimum Split (s)	13.0	13.0	13.0					18.0				
Total Split (s)	32.0	32.0	32.0					45.0				
Total Split (%)	27.8%	27.8%	27.8%					39.1%				
Yellow Time (s)	4.6	4.6	4.6					4.4				
All-Red Time (s)	1.4	1.4	1.4					1.6				
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0				
Total Lost Time (s)	5.0	5.0	5.0					5.0				
Lead/Lag	Lag	Lag	Lag					Lag				
Lead-Lag Optimize?	Yes	Yes	Yes					Yes				
Recall Mode	None	None	None					Min				
Act Effct Green (s)	27.0	27.0	27.0					37.7		64.4	74.4	
Actuated g/C Ratio	0.24	0.24	0.24					0.33		0.57	0.66	
v/c Ratio	1.16	1.18	0.84					0.74		0.50	0.37	
Control Delay (s/veh)	137.2	141.2	37.6					35.2		21.9	5.3	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.1	
Total Delay (s/veh)	137.2	141.2	37.6					35.2		21.9	5.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F	D					D		C	A	
Approach Delay (s/veh)		106.8						35.2			9.0	
Approach LOS		F						D			A	
Queue Length 50th (ft)	~448	~456	185					288		85	55	
Queue Length 95th (ft)	#644	#654	#346					332		m130	m61	
Internal Link Dist (ft)		922			658			771			289	
Turn Bay Length (ft)	300		350									
Base Capacity (vph)	403	404	530					1788		495	2307	
Starvation Cap Reductn	0	0	0					0		0	399	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.16	1.18	0.84					0.70		0.50	0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 112.6			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay (s/veh): 53.9		Intersection LOS: D	
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1408			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: N. Salem Street & US 64 EB Off-Ramp/US 64 EB On-Ramp



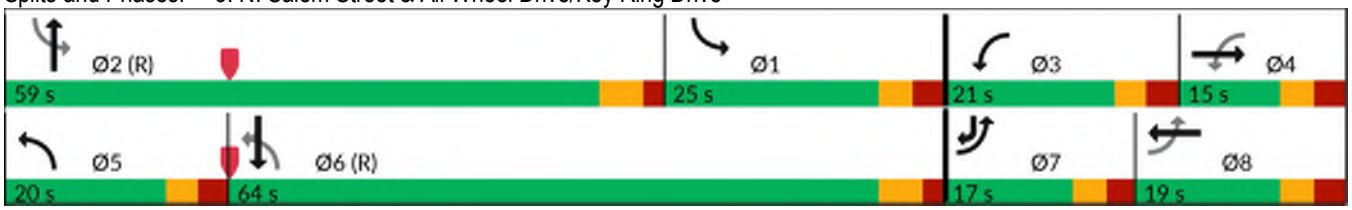
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	16	8	136	13	115	6	876	14	269	861	29
Future Volume (vph)	111	16	8	136	13	115	6	876	14	269	861	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1710	1704	0	1734	1570	0	1787	3553	0	1787	1881	1599
Flt Permitted	0.320			0.741			0.126			0.132		
Satd. Flow (perm)	576	1704	0	1353	1570	0	237	3553	0	248	1881	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			213			4				77
Link Speed (mph)		15			25			25			25	
Link Distance (ft)		506			667			171			851	
Travel Time (s)		23.0			18.2			4.7			23.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.80	0.70	0.50	0.81	0.54	0.67	0.85	0.35	0.67	0.92	0.62
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	31	0	272	229	0	9	1071	0	401	936	47
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	17.0	15.0		21.0	19.0		20.0	59.0		25.0	64.0	17.0
Total Split (%)	14.2%	12.5%		17.5%	15.8%		16.7%	49.2%		20.8%	53.3%	14.2%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	21.6	8.3		23.6	10.7		82.4	58.4		78.4	80.9	96.8
Actuated g/C Ratio	0.18	0.07		0.20	0.09		0.69	0.49		0.65	0.67	0.81
v/c Ratio	0.62	0.24		0.84	0.69		0.03	0.62		0.96	0.74	0.04
Control Delay (s/veh)	52.0	42.9		66.0	19.8		7.0	25.1		71.9	19.3	0.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	1.0	0.0
Total Delay (s/veh)	52.0	42.9		66.0	19.8		7.0	25.1		71.9	20.4	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		E	B		A	C		E	C	A
Approach Delay (s/veh)		50.2			44.9			25.0			34.6	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	84	15		194	12		2	328		216	434	0
Queue Length 95th (ft)	135	42		141	62		6	383		209	#934	0
Internal Link Dist (ft)		426			587			91			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	222	152		324	371		358	1731		418	1267	1318
Starvation Cap Reductn	0	0		0	0		0	0		0	137	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.58	0.20		0.84	0.62		0.03	0.62		0.96	0.83	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay (s/veh): 33.7		Intersection LOS: C	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			
Description: 05-1989			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	898	183	165	804
Future Volume (vph)	0	0	898	183	165	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1770	1863
Link Speed (mph)	15		25			25
Link Distance (ft)	205		162			295
Travel Time (s)	9.3		4.4			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.84	0.50	0.50	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1069	366	330	874
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	0.3	0.2	0.1	0.3
Total Del/Veh (s)	1.5	1.9	15.0	0.7	2.5



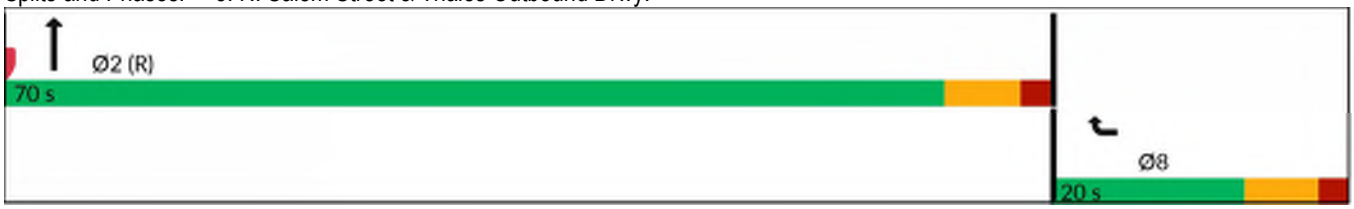
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	237	829	0	0	0
Future Volume (vph)	0	237	829	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1845	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1845	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		190				
Link Speed (mph)	25		25			25
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.50	0.86	0.86	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	474	964	0	0	0
Turn Type		Prot	NA			
Protected Phases		8	2			
Permitted Phases						
Detector Phase		8	2			
Switch Phase						
Minimum Initial (s)		7.0	10.0			
Minimum Split (s)		14.0	25.0			
Total Split (s)		20.0	70.0			
Total Split (%)		22.2%	77.8%			
Yellow Time (s)		5.0	5.0			
All-Red Time (s)		2.0	2.0			
Lost Time Adjust (s)		-2.0	-2.0			
Total Lost Time (s)		5.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max			
Act Effct Green (s)		15.0	65.0			
Actuated g/C Ratio		0.17	0.72			
v/c Ratio		1.11	0.72			
Control Delay (s/veh)		101.2	11.3			
Queue Delay		0.0	0.0			
Total Delay (s/veh)		101.2	11.3			

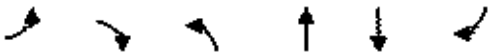
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		F	B			
Approach Delay (s/veh)	101.2		11.3			
Approach LOS	F		B			
Queue Length 50th (ft)		~217	273			
Queue Length 95th (ft)		90	375			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		426	1332			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		1.11	0.72			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay (s/veh): 40.9		Intersection LOS: D	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Splits and Phases: 5: N. Salem Street & Thales Outbound Drwy.





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	27	9	878	811	24
Future Volume (vph)	26	27	9	878	811	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1629	0	1736	1827	1820	0
Flt Permitted	0.976		0.950			
Satd. Flow (perm)	1629	0	1736	1827	1820	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1132			1013	385	
Travel Time (s)	30.9			27.6	10.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	4%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	9	915	870	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.2%		ICU Level of Service B	
Analysis Period (min) 15			

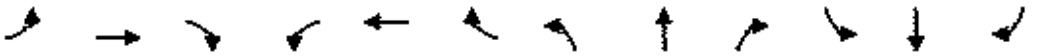
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	27	9	878	811	24
Future Vol, veh/h	26	27	9	878	811	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	6	6	4	4	4	4
Mvmt Flow	27	28	9	915	845	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1791	857	870	0	-	0
Stage 1	857	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.14	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.236	-	-	-
Pot Cap-1 Maneuver	87	351	766	-	-	-
Stage 1	409	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	86	351	766	-	-	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	404	-	-	-	-	-
Stage 2	376	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	21.78	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	766	-	269	-	-
HCM Lane V/C Ratio	0.012	-	0.205	-	-
HCM Ctrl Dly (s/v)	9.8	-	21.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-



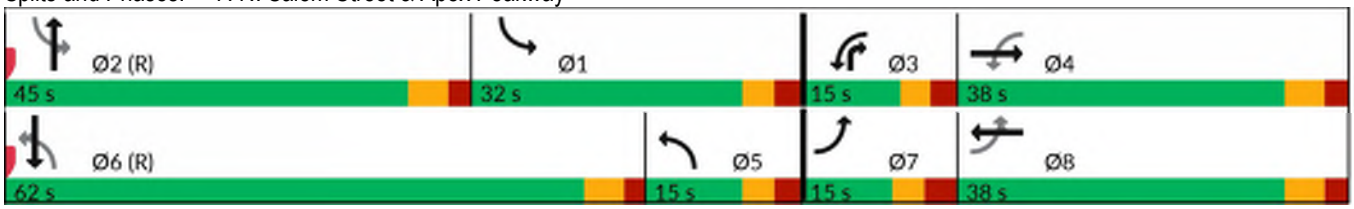
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	278	50	22	175	367	15	371	21	345	405	97
Future Volume (vph)	141	278	50	22	175	367	15	371	21	345	405	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-1%			1%	
Storage Length (ft)	250		0	375		275	135		150	300		25
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	175			50			75			50		
Satd. Flow (prot)	1752	1802	0	1718	1809	1537	1761	1854	1576	1727	1818	1545
Flt Permitted	0.461			0.228			0.412			0.345		
Satd. Flow (perm)	845	1802	0	412	1809	1493	763	1854	1576	627	1818	1510
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				386			123			124
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1619			1013			1214			1013	
Travel Time (s)		31.5			19.7			23.6			19.7	
Confl. Peds. (#/hr)	3					3	1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	346	0	23	184	386	16	391	22	363	426	102
Turn Type	D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	pm+ov	D.P+P	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	8			4		8	6		2	2		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0
Minimum Split (s)	13.1	13.1		12.4	28.1	28.1	12.6	15.9	12.4	12.6	26.9	26.9
Total Split (s)	15.0	38.0		15.0	38.0	38.0	15.0	45.0	15.0	32.0	62.0	62.0
Total Split (%)	11.5%	29.2%		11.5%	29.2%	29.2%	11.5%	34.6%	11.5%	24.6%	47.7%	47.7%
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.9	3.0	3.0	3.9	3.9
All-Red Time (s)	3.1	2.4		2.4	2.4	2.4	2.6	2.0	2.4	2.6	2.0	2.0
Lost Time Adjust (s)	-1.1	-1.1		-0.4	-1.1	-1.1	-0.6	-0.9	-0.4	-0.6	-0.9	-0.9
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effct Green (s)	34.4	31.9		36.4	22.7	22.7	82.2	55.1	62.5	75.6	75.0	75.0
Actuated g/C Ratio	0.26	0.25		0.28	0.17	0.17	0.63	0.42	0.48	0.58	0.58	0.58
v/c Ratio	0.49	0.77		0.12	0.58	0.67	0.03	0.50	0.03	0.68	0.41	0.11
Control Delay (s/veh)	38.7	57.1		29.7	55.3	10.0	12.3	33.7	0.0	31.8	19.9	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.7	57.1		29.7	55.3	10.0	12.3	33.7	0.0	31.8	19.9	2.4

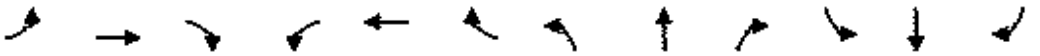
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	A	B	C	A	C	B	A
Approach Delay (s/veh)		51.6			24.8			31.1			22.7	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	93	278		14	147	0	5	257	0	153	185	0
Queue Length 95th (ft)	141	375		33	208	87	17	416	0	244	374	23
Internal Link Dist (ft)		1539			933			1134			933	
Turn Bay Length (ft)	250			375		275	135		150	300		25
Base Capacity (vph)	305	472		220	459	667	570	785	850	624	1049	924
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.73		0.10	0.40	0.58	0.03	0.50	0.03	0.58	0.41	0.11

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 2 (2%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay (s/veh): 30.6 Intersection LOS: C
Intersection Capacity Utilization 78.8% ICU Level of Service D
Analysis Period (min) 15
Description: 05-2347

Splits and Phases: 7: N. Salem Street & Apex Peakway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	375	4	7	306	70	8	4	8	59	4	45
Future Volume (vph)	23	375	4	7	306	70	8	4	8	59	4	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1855	0	0	1814	0	0	1676	0	0	1709	0
Flt Permitted		0.997			0.999			0.980			0.973	
Satd. Flow (perm)	0	1855	0	0	1814	0	0	1676	0	0	1709	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1183			1283			422			1177	
Travel Time (s)		23.0			25.0			11.5			32.1	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	437	0	0	417	0	0	22	0	0	117	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			

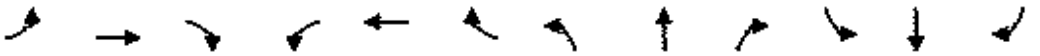
Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	375	4	7	306	70	8	4	8	59	4	45
Future Vol, veh/h	23	375	4	7	306	70	8	4	8	59	4	45
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	2	2	2
Mvmt Flow	25	408	4	8	333	76	9	4	9	64	4	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	414	0	0	412	0	0	810	889	410	851	853	376
Stage 1	-	-	-	-	-	-	460	460	-	391	391	-
Stage 2	-	-	-	-	-	-	350	429	-	460	462	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1145	-	-	1147	-	-	295	279	635	280	296	671
Stage 1	-	-	-	-	-	-	576	561	-	633	607	-
Stage 2	-	-	-	-	-	-	660	579	-	581	565	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1140	-	-	1147	-	-	259	268	635	261	284	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	259	268	-	261	284	-
Stage 1	-	-	-	-	-	-	559	545	-	625	599	-
Stage 2	-	-	-	-	-	-	602	571	-	553	549	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.47	0.15	16.22	20.33
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	343	103	-	-	32	-	-	351
HCM Lane V/C Ratio	0.063	0.022	-	-	0.007	-	-	0.335
HCM Ctrl Dly (s/v)	16.2	8.2	0	-	8.2	0	-	20.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	30	4	5	58	4	4	4	7	12	4	20
Future Volume (vph)	19	30	4	5	58	4	4	4	7	12	4	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1803	0	0	1844	0	0	1712	0	0	1694	0
Flt Permitted		0.984			0.996			0.986			0.984	
Satd. Flow (perm)	0	1803	0	0	1844	0	0	1712	0	0	1694	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1160			1132			467			766	
Travel Time (s)		31.6			30.9			12.7			20.9	
Confl. Peds. (#/hr)			10	10			2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.77	0.77	0.77	0.77	0.90	0.77	0.90	0.77	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	85	0	0	18	0	0	39	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	30	4	5	58	4	4	4	7	12	4	20
Future Vol, veh/h	19	30	4	5	58	4	4	4	7	12	4	20
Peak Hour Factor	0.90	0.77	0.77	0.77	0.77	0.90	0.77	0.90	0.77	0.90	0.90	0.90
Heavy Vehicles, %	2	3	3	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	39	5	6	75	4	5	4	9	13	4	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.5	7.5	7.2	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	36%	7%	33%
Vol Thru, %	27%	57%	87%	11%
Vol Right, %	47%	8%	6%	56%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	53	67	36
LT Vol	4	19	5	12
Through Vol	4	30	58	4
RT Vol	7	4	4	20
Lane Flow Rate	19	65	86	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.021	0.075	0.097	0.044
Departure Headway (Hd)	4.001	4.13	4.066	3.943
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	883	864	878	896
Service Time	2.079	2.171	2.105	2.018
HCM Lane V/C Ratio	0.022	0.075	0.098	0.045
HCM Control Delay, s/veh	7.2	7.5	7.5	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.3	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	11	4	13	10	11	4	4	108	7	4	4
Future Volume (vph)	4	11	4	13	10	11	4	4	108	7	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1718	0	0	1747	0	0	1623	0	0	1594	0
Flt Permitted		0.989			0.985			0.998			0.976	
Satd. Flow (perm)	0	1718	0	0	1747	0	0	1623	0	0	1594	0
Link Speed (mph)		15			15			30			15	
Link Distance (ft)		510			506			784			550	
Travel Time (s)		23.2			23.0			17.8			25.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.67	0.67	0.90	0.90	0.67	0.67	0.90	0.90	0.90	0.67	0.90	0.67
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	2%	2%	2%	2%	2%	2%	2%	14%	2%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	45	0	0	128	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	11	4	13	10	11	4	4	108	7	4	4
Future Vol, veh/h	4	11	4	13	10	11	4	4	108	7	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	90	90	67	67	90	90	90	67	90	67
Heavy Vehicles, %	8	8	2	2	2	2	2	2	2	14	2	14
Mvmt Flow	6	16	4	14	15	16	4	4	120	10	4	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	31	0	0	21	0	0	77	91	19	83	85	23
Stage 1	-	-	-	-	-	-	31	31	-	52	52	-
Stage 2	-	-	-	-	-	-	46	60	-	31	33	-
Critical Hdwy	4.18	-	-	4.12	-	-	7.12	6.52	6.22	7.24	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.24	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.24	5.52	-
Follow-up Hdwy	2.272	-	-	2.218	-	-	3.518	4.018	3.318	3.626	4.018	3.426
Pot Cap-1 Maneuver	1543	-	-	1595	-	-	913	799	1060	876	805	1020
Stage 1	-	-	-	-	-	-	986	870	-	931	852	-
Stage 2	-	-	-	-	-	-	968	845	-	956	868	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1543	-	-	1595	-	-	891	789	1060	763	795	1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	891	789	-	763	795	-
Stage 1	-	-	-	-	-	-	982	866	-	923	844	-
Stage 2	-	-	-	-	-	-	948	837	-	840	864	-

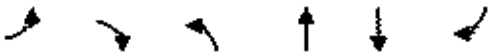
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.63	2.3	8.95	9.45
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1041	384	-	-	514	-	-	830
HCM Lane V/C Ratio	0.124	0.004	-	-	0.009	-	-	0.025
HCM Ctrl Dly (s/v)	8.9	7.3	0	-	7.3	0	-	9.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	900	1020	17
Future Volume (vph)	0	0	0	900	1020	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-2%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	0	0	0	1881	1859	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	1881	1859	0
Link Speed (mph)	15			25	25	
Link Distance (ft)	474			295	171	
Travel Time (s)	21.5			8.0	4.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1000	1152	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	33	16	0	790	14
Future Volume (vph)	0	33	16	0	790	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	0	1611	1770	0	1841	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	0	1841	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	602			174	73	
Travel Time (s)	16.4			4.7	2.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	37	18	0	875	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	33	16	0	790	14
Future Vol, veh/h	0	33	16	0	790	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	92	90
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	37	18	0	859	16

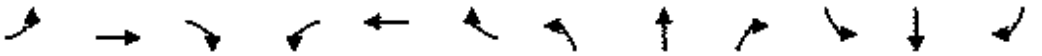
Major/Minor	Minor2		Major2	
Conflicting Flow All	-	866	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.22	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.318	-	-
Pot Cap-1 Maneuver	0	353	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	353	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	SB
HCM Ctrl Dly, s/v	16.39	0
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	353	-	-
HCM Lane V/C Ratio	0.104	-	-
HCM Ctrl Dly (s/v)	16.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

51: South Site Drwy (LI/RI/RO) & N. Salem Street Performance by movement

Movement	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.1	5.2	0.1	0.0	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	18	20	106	17	101	11	942	15	121	1046	46
Future Volume (vph)	92	18	20	106	17	101	11	942	15	121	1046	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1602	1561	0	1734	1592	0	1770	3522	0	1770	1863	1584
Flt Permitted	0.325			0.721			0.055			0.149		
Satd. Flow (perm)	548	1561	0	1316	1592	0	102	3522	0	278	1863	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			160			4				77
Link Speed (mph)		15			25			25			35	
Link Distance (ft)		506			667			171			851	
Travel Time (s)		23.0			18.2			4.7			16.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.64	0.74	0.65	0.61	0.63	0.49	0.92	0.42	0.66	0.93	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	11%	11%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	55	0	163	188	0	22	1060	0	183	1125	55
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	15.0	15.0		19.0	19.0		20.0	60.0		26.0	66.0	15.0
Total Split (%)	12.5%	12.5%		15.8%	15.8%		16.7%	50.0%		21.7%	55.0%	12.5%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	21.0	8.6		22.0	11.6		81.0	58.0		79.0	76.5	90.9
Actuated g/C Ratio	0.18	0.07		0.18	0.10		0.68	0.48		0.66	0.64	0.76
v/c Ratio	0.60	0.40		0.56	0.63		0.13	0.62		0.41	0.95	0.05
Control Delay (s/veh)	53.6	40.4		48.0	21.6		7.8	25.3		22.1	39.2	0.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	53.6	40.4		48.0	21.6		7.8	25.3		22.1	39.2	0.7

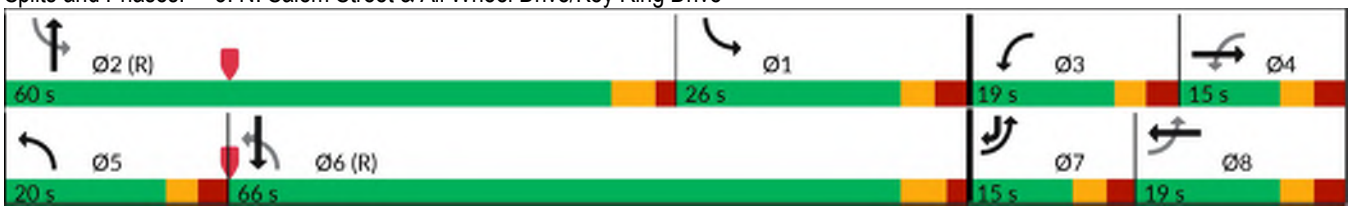
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		D	C		A	C		C	D	A
Approach Delay (s/veh)		49.1			33.8			24.9			35.4	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)	76	23		111	21		5	321		45	~954	0
Queue Length 95th (ft)	124	41		121	22		7	410		53	#1243	5
Internal Link Dist (ft)		426			587			91			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	186	154		296	327		280	1704		444	1186	1225
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.58	0.36		0.55	0.57		0.08	0.62		0.41	0.95	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 114 (95%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 32.1	Intersection LOS: C
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	
Description: 05-1989	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	967	125	67	1080
Future Volume (vph)	0	0	967	125	67	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1752	1845
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1752	1845
Link Speed (mph)	15		25			25
Link Distance (ft)	205		162			295
Travel Time (s)	9.3		4.4			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.50	0.50	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1074	250	134	1174
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	0.2	0.0	0.2	0.3
Total Del/Veh (s)	2.2	2.0	11.3	1.0	2.0



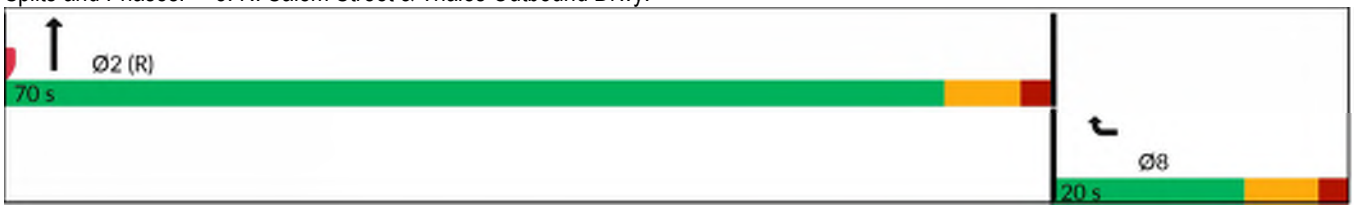
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	216	858	0	0	0
Future Volume (vph)	0	216	858	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1827	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1827	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		151				
Link Speed (mph)	25		25			25
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.50	0.79	0.79	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	432	1086	0	0	0
Turn Type		Prot	NA			
Protected Phases		8	2			
Permitted Phases						
Detector Phase		8	2			
Switch Phase						
Minimum Initial (s)		7.0	10.0			
Minimum Split (s)		14.0	25.0			
Total Split (s)		20.0	70.0			
Total Split (%)		22.2%	77.8%			
Yellow Time (s)		5.0	5.0			
All-Red Time (s)		2.0	2.0			
Lost Time Adjust (s)		-2.0	-2.0			
Total Lost Time (s)		5.0	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max			
Act Effct Green (s)		15.0	65.0			
Actuated g/C Ratio		0.17	0.72			
v/c Ratio		1.10	0.82			
Control Delay (s/veh)		99.2	15.5			
Queue Delay		0.0	0.0			
Total Delay (s/veh)		99.2	15.5			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		F	B			
Approach Delay (s/veh)	99.2		15.5			
Approach LOS	F		B			
Queue Length 50th (ft)		~206	365			
Queue Length 95th (ft)		97	404			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		394	1319			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		1.10	0.82			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay (s/veh): 39.4		Intersection LOS: D	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

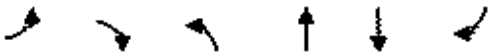
Splits and Phases: 5: N. Salem Street & Thales Outbound Drwy.





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	969	1163	37
Future Volume (vph)	0	0	0	969	1163	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-2%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	0	0	0	1881	1855	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	1881	1855	0
Link Speed (mph)	15			25	25	
Link Distance (ft)	474			295	171	
Travel Time (s)	21.5			8.0	4.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1077	1333	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	26	38	0	1032	33
Future Volume (vph)	0	26	38	0	1032	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	0	1611	1770	0	1838	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	0	1838	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	602			174	73	
Travel Time (s)	16.4			4.7	2.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	29	42	0	1159	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.3%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	26	38	0	1032	33
Future Vol, veh/h	0	26	38	0	1032	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	92	90
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	29	42	0	1122	37

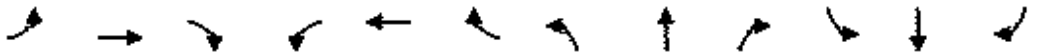
Major/Minor	Minor2		Major2	
Conflicting Flow All	-	1140	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.22	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.318	-	-
Pot Cap-1 Maneuver	0	245	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	245	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	SB
HCM Ctrl Dly, s/v	21.68	0
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	245	-	-
HCM Lane V/C Ratio	0.118	-	-
HCM Ctrl Dly (s/v)	21.7	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-

51: South Site Drwy (LI/RI/RO) & N. Salem Street Performance by movement

Movement	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	20.2	16.3	0.3	0.0	1.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	355	426	17	254	1003	487	34	963	300
Future Volume (vph)	0	0	0	355	426	17	254	1003	487	34	963	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			-1%			-1%			1%	
Storage Length (ft)	0		0	600		225	0		25	100		115
Storage Lanes	0		0	1		1	1		1	1		1
Taper Length (ft)	25			50			25			125		
Satd. Flow (prot)	0	0	0	1690	1771	1591	1778	3557	1591	1761	5060	1575
Flt Permitted				0.950	0.996		0.174			0.232		
Satd. Flow (perm)	0	0	0	1690	1771	1591	326	3557	1591	430	5060	1575
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137						229
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		1167			1014			369			397	
Travel Time (s)		22.7			15.4			7.2			7.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	333	481	18	265	1045	507	35	1003	313
Turn Type				Split	NA	Perm	D.P+P	NA	pm+ov	D.Pm	NA	Prot
Protected Phases				3	3		4 5	1 2 4	3		6	6
Permitted Phases						3	6		1 2 4	1 2 4		
Detector Phase				3	3	3	4 5	1 2 4	3	1 2 4	6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0			7.0		12.0	12.0
Minimum Split (s)				13.2	13.2	13.2			13.2		18.0	18.0
Total Split (s)				27.0	27.0	27.0			27.0		45.0	45.0
Total Split (%)				23.5%	23.5%	23.5%			23.5%		39.1%	39.1%
Yellow Time (s)				4.6	4.6	4.6			4.6		4.4	4.4
All-Red Time (s)				1.6	1.6	1.6			1.6		1.6	1.6
Lost Time Adjust (s)				-1.2	-1.2	-1.2			-1.2		-1.0	-1.0
Total Lost Time (s)				5.0	5.0	5.0			5.0		5.0	5.0
Lead/Lag				Lead	Lead	Lead			Lead		Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes			Yes		Yes	Yes
Recall Mode				None	None	None			None		Min	Min
Act Effct Green (s)				22.0	22.0	22.0	76.0	82.6	115.0	82.6	40.0	40.0
Actuated g/C Ratio				0.19	0.19	0.19	0.66	0.72	1.00	0.72	0.35	0.35
v/c Ratio				1.03	1.42	0.04	0.39	0.41	0.32	0.11	0.57	0.45
Control Delay (s/veh)				104.4	242.4	0.2	15.1	1.4	0.3	6.0	32.1	10.3
Queue Delay				0.0	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0
Total Delay (s/veh)				104.4	242.4	0.2	15.8	2.0	0.3	6.0	32.1	10.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				F	F	A	B	A	A	A	C	B
Approach Delay (s/veh)					181.9			3.5			26.3	
Approach LOS					F			A			C	
Queue Length 50th (ft)				~283	~513	0	55	18	0	7	223	43
Queue Length 95th (ft)				#476	#734	0	m82	m18	m0	18	269	120
Internal Link Dist (ft)		1087			934			289			317	
Turn Bay Length (ft)				600		225			25	100		115
Base Capacity (vph)				323	338	415	682	2522	1591	304	1760	697
Starvation Cap Reductn				0	0	0	185	973	0	0	0	0
Spillback Cap Reductn				0	0	0	0	0	0	0	0	0
Storage Cap Reductn				0	0	0	0	0	0	0	0	0
Reduced v/c Ratio				1.03	1.42	0.04	0.53	0.67	0.32	0.12	0.57	0.45

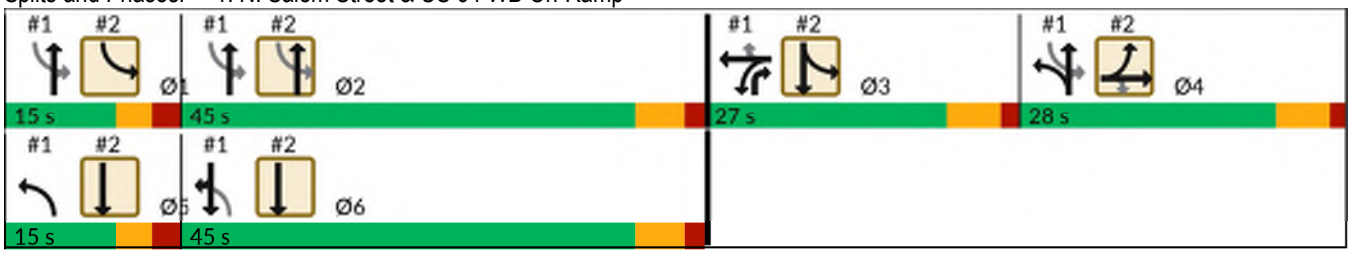
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 48.3	Intersection LOS: D
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	
Description: 05-1408	

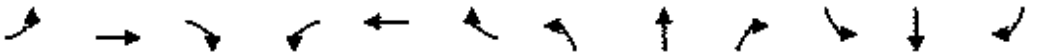
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N. Salem Street & US 64 WB On-Ramp





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	4	305	0	0	0	0	1048	76	231	1085	0
Future Volume (vph)	700	4	305	0	0	0	0	1048	76	231	1085	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		350	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	250			25			100			25		
Satd. Flow (prot)	1681	1686	1583	0	0	0	0	5034	0	1770	3539	0
Flt Permitted	0.950	0.953								0.117		
Satd. Flow (perm)	1681	1686	1583	0	0	0	0	5034	0	218	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138					11				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1002			738			851			369	
Travel Time (s)		19.5			14.4			16.6			7.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	368	373	321	0	0	0	0	1183	0	243	1142	0
Turn Type	Split	NA	Perm					NA		D.P+P	NA	
Protected Phases	4	4						2		1 3	3 5 6	
Permitted Phases			4							2		
Detector Phase	4	4	4					2		1 3	3 5 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					12.0				
Minimum Split (s)	13.0	13.0	13.0					18.0				
Total Split (s)	28.0	28.0	28.0					45.0				
Total Split (%)	24.3%	24.3%	24.3%					39.1%				
Yellow Time (s)	4.6	4.6	4.6					4.4				
All-Red Time (s)	1.4	1.4	1.4					1.6				
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0				
Total Lost Time (s)	5.0	5.0	5.0					5.0				
Lead/Lag	Lag	Lag	Lag					Lag				
Lead-Lag Optimize?	Yes	Yes	Yes					Yes				
Recall Mode	None	None	None					Min				
Act Effct Green (s)	23.0	23.0	23.0					40.0		70.8	80.8	
Actuated g/C Ratio	0.20	0.20	0.20					0.35		0.62	0.70	
v/c Ratio	1.10	1.11	0.75					0.67		0.44	0.46	
Control Delay (s/veh)	120.6	124.1	36.5					33.9		18.8	4.3	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.1	
Total Delay (s/veh)	120.6	124.1	36.5					33.9		18.8	4.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F	D					C		B	A	
Approach Delay (s/veh)		96.4						33.9			7.0	
Approach LOS		F						C			A	
Queue Length 50th (ft)	~329	~336	132					273		89	50	
Queue Length 95th (ft)	#532	#540	#261					326		m137	m55	
Internal Link Dist (ft)		922			658			771			289	
Turn Bay Length (ft)	300		350									
Base Capacity (vph)	336	337	427					1760		555	2486	
Starvation Cap Reductn	0	0	0					0		0	400	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.10	1.11	0.75					0.67		0.44	0.55	

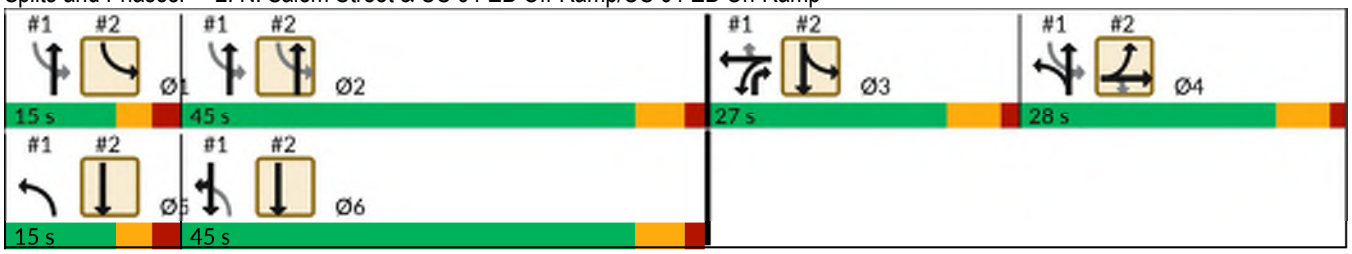
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.42			
Intersection Signal Delay (s/veh): 41.9		Intersection LOS: D	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1408			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: N. Salem Street & US 64 EB Off-Ramp/US 64 EB On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	13	24	19	16	36	9	995	4	17	1323	35
Future Volume (vph)	89	13	24	19	16	36	9	995	4	17	1323	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1743	1655	0	1734	1615	0	1787	3571	0	1787	1881	1599
Flt Permitted	0.721			0.731			0.045			0.222		
Satd. Flow (perm)	1316	1655	0	1334	1615	0	85	3571	0	418	1881	1565
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			38			1				71
Link Speed (mph)		15			25			35			35	
Link Distance (ft)		506			667			171			851	
Travel Time (s)		23.0			18.2			3.3			16.6	
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	40	0	20	55	0	10	1063	0	18	1407	37
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	8			4			6			2		6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	7.0
Minimum Split (s)	12.4	28.9		12.8	31.9		12.6	26.8		12.8	27.8	12.4
Total Split (s)	15.0	15.0		15.0	15.0		15.0	85.0		15.0	85.0	15.0
Total Split (%)	11.5%	11.5%		11.5%	11.5%		11.5%	65.4%		11.5%	65.4%	11.5%
Yellow Time (s)	3.0	3.1		3.0	3.1		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	2.4	2.8		2.8	2.8		2.6	1.8		2.8	1.8	2.4
Lost Time Adjust (s)	-0.4	-0.9		-0.8	-0.9		-0.6	-0.8		-0.8	-0.8	-0.4
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	None
Act Effct Green (s)	16.3	15.0		18.3	8.4		98.7	93.7		97.7	97.2	106.6
Actuated g/C Ratio	0.13	0.12		0.14	0.06		0.76	0.72		0.75	0.75	0.82
v/c Ratio	0.49	0.19		0.09	0.40		0.06	0.41		0.04	1.00	0.03
Control Delay (s/veh)	56.1	29.2		45.2	33.7		5.3	9.4		5.1	42.6	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	29.2	0.0
Total Delay (s/veh)	56.1	29.2		45.2	33.7		5.3	9.4		5.1	71.9	0.2

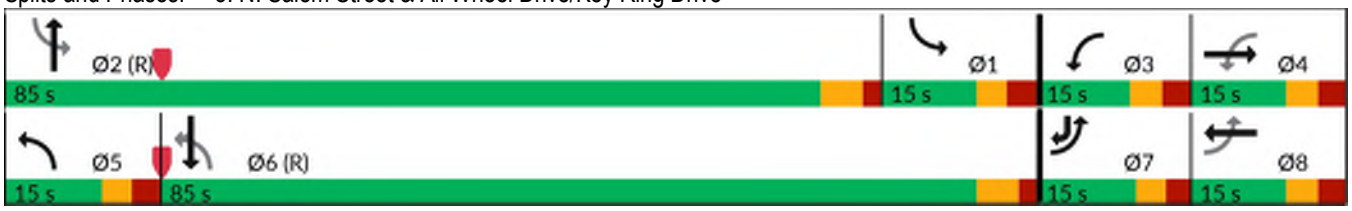
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	C		D	C		A	A		A	E	A
Approach Delay (s/veh)		48.1			36.7			9.4			69.2	
Approach LOS		D			D			A			E	
Queue Length 50th (ft)	72	10		14	14		2	151		4	~1069	0
Queue Length 95th (ft)	124	49		38	58		7	299		11	#1713	2
Internal Link Dist (ft)		426			587			91			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	203	219		230	159		195	2575		419	1406	1305
Starvation Cap Reductn	0	0		0	0		0	0		0	108	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.47	0.18		0.09	0.35		0.05	0.41		0.04	1.08	0.03

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 116 (89%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 43.9	Intersection LOS: D
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	
Description: 05-1989	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	1006	7	4	1329
Future Volume (vph)	0	0	1006	7	4	1329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		85	200	
Storage Lanes	0	0		1	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	0	0	1863	1583	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1863	1583	1770	1863
Link Speed (mph)	15		35			35
Link Distance (ft)	205		162			295
Travel Time (s)	9.3		3.2			5.7
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1059	7	4	1399
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.0%		ICU Level of Service D	
Analysis Period (min) 15			

4: N. Salem Street & Thales Inbound Driveway Performance by movement

Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1
Total Del/Veh (s)	0.7	1.6	9.6	1.8	1.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	14	997	0	0	0
Future Volume (vph)	0	14	997	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	1611	1863	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1863	0	0	0
Link Speed (mph)	25		25			30
Link Distance (ft)	472		179			91
Travel Time (s)	12.9		4.9			2.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.95	0.95	0.86	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	1049	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.5%		ICU Level of Service B	
Analysis Period (min) 15			

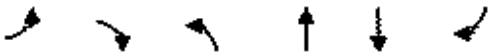
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	997	0	0	0
Future Vol, veh/h	0	14	997	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	95	95	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	1049	0	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	1049	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.22	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.318	-	-
Pot Cap-1 Maneuver	0	276	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %			-	
Mov Cap-1 Maneuver	-	276	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Ctrl Dly, s/v	18.77	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	WBLn1
Capacity (veh/h)	-	276
HCM Lane V/C Ratio	-	0.053
HCM Ctrl Dly (s/v)	-	18.8
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	23	29	1020	1250	61
Future Volume (vph)	15	23	29	1020	1250	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1678	0	1770	1863	1852	0
Flt Permitted	0.980		0.950			
Satd. Flow (perm)	1678	0	1770	1863	1852	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	1132			1013	385	
Travel Time (s)	30.9			19.7	7.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	31	1074	1380	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 79.5%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	23	29	1020	1250	61
Future Vol, veh/h	15	23	29	1020	1250	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	24	31	1074	1316	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2483	1348	1380	0	-	0
Stage 1	1348	-	-	-	-	-
Stage 2	1135	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	33	185	497	-	-	-
Stage 1	242	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	31	185	497	-	-	-
Mov Cap-2 Maneuver	133	-	-	-	-	-
Stage 1	227	-	-	-	-	-
Stage 2	307	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	34.86	0.35	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	497	-	160	-	-
HCM Lane V/C Ratio	0.061	-	0.25	-	-
HCM Ctrl Dly (s/v)	12.7	-	34.9	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

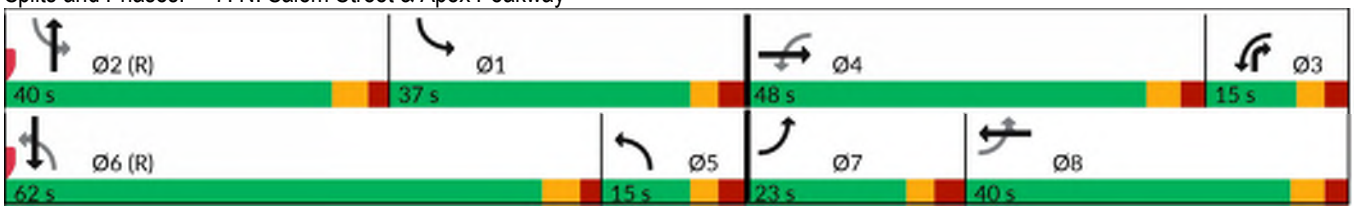
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	358	44	30	326	497	23	433	33	436	626	228
Future Volume (vph)	132	358	44	30	326	497	23	433	33	436	626	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-1%			1%	
Storage Length (ft)	250		0	375		275	135		150	300		25
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	175			50			75			50		
Satd. Flow (prot)	1752	1815	0	1752	1844	1568	1778	1872	1591	1761	1853	1575
Flt Permitted	0.204			0.164			0.200			0.150		
Satd. Flow (perm)	375	1815	0	302	1844	1517	374	1872	1591	278	1853	1528
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				499			161			163
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1619			1013			1214			1013	
Travel Time (s)		31.5			19.7			23.6			19.7	
Confl. Peds. (#/hr)	4					4	3					3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	419	0	31	340	518	24	451	34	454	652	238
Turn Type	D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	pm+ov	D.P+P	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	8			4		8	6		2	2		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0
Minimum Split (s)	13.1	13.1		12.4	28.1	28.1	12.6	15.9	12.4	12.6	26.9	26.9
Total Split (s)	23.0	48.0		15.0	40.0	40.0	15.0	40.0	15.0	37.0	62.0	62.0
Total Split (%)	16.4%	34.3%		10.7%	28.6%	28.6%	10.7%	28.6%	10.7%	26.4%	44.3%	44.3%
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.9	3.0	3.0	3.9	3.9
All-Red Time (s)	3.1	2.4		2.4	2.4	2.4	2.6	2.0	2.4	2.6	2.0	2.0
Lost Time Adjust (s)	-1.1	-1.1		-0.4	-1.1	-1.1	-0.6	-0.9	-0.4	-0.6	-0.9	-0.9
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effct Green (s)	44.1	38.5		45.4	30.9	30.9	77.9	43.9	56.0	75.9	71.9	71.9
Actuated g/C Ratio	0.32	0.28		0.32	0.22	0.22	0.56	0.31	0.40	0.54	0.51	0.51
v/c Ratio	0.56	0.83		0.17	0.84	0.72	0.08	0.77	0.05	0.93	0.69	0.28
Control Delay (s/veh)	39.4	62.4		33.3	69.9	10.6	17.5	54.9	0.1	71.1	33.7	9.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.4	62.4		33.3	69.9	10.6	17.5	54.9	0.1	71.1	33.7	9.0

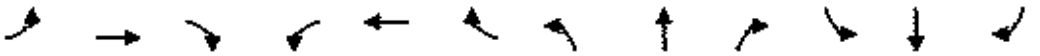
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	B	B	D	A	E	C	A
Approach Delay (s/veh)		56.7			34.1			49.4			42.0	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	89	366		19	301	14	9	381	0	327	490	38
Queue Length 95th (ft)	129	477		39	406	129	27	#635	0	#573	#771	107
Internal Link Dist (ft)		1539			933			1134			933	
Turn Bay Length (ft)	250			375		275	135		150	300		25
Base Capacity (vph)	305	560		205	465	755	308	586	721	489	951	863
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.75		0.15	0.73	0.69	0.08	0.77	0.05	0.93	0.69	0.28

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay (s/veh): 43.5 Intersection LOS: D
Intersection Capacity Utilization 91.0% ICU Level of Service E
Analysis Period (min) 15
Description: 05-2347
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: N. Salem Street & Apex Peakway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	512	4	4	552	51	4	4	6	24	4	43
Future Volume (vph)	34	512	4	4	552	51	4	4	6	24	4	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1855	0	0	1842	0	0	1730	0	0	1681	0
Flt Permitted		0.997						0.986			0.983	
Satd. Flow (perm)	0	1855	0	0	1842	0	0	1730	0	0	1681	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1183			1283			422			1177	
Travel Time (s)		23.0			25.0			11.5			32.1	
Confl. Peds. (#/hr)	8					8						
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	585	0	0	645	0	0	14	0	0	76	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

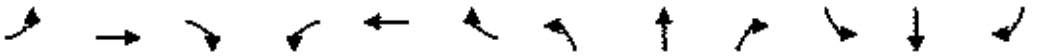
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	512	4	4	552	51	4	4	6	24	4	43
Future Vol, veh/h	34	512	4	4	552	51	4	4	6	24	4	43
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	545	4	4	587	54	4	4	6	26	4	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	649	0	0	549	0	0	1217	1277	547	1250	1252	622
Stage 1	-	-	-	-	-	-	619	619	-	631	631	-
Stage 2	-	-	-	-	-	-	598	658	-	619	621	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	937	-	-	1021	-	-	158	166	537	150	172	486
Stage 1	-	-	-	-	-	-	476	480	-	469	474	-
Stage 2	-	-	-	-	-	-	489	461	-	476	479	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	929	-	-	1021	-	-	130	155	537	134	160	483
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	155	-	134	160	-
Stage 1	-	-	-	-	-	-	449	453	-	462	468	-
Stage 2	-	-	-	-	-	-	436	455	-	440	452	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.56	0.06	23.74	26.46
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	207	111	-	-	12	-	-	242
HCM Lane V/C Ratio	0.072	0.039	-	-	0.004	-	-	0.312
HCM Ctrl Dly (s/v)	23.7	9	0	-	8.5	0	-	26.5
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	19	4	14	67	6	4	4	9	7	4	18
Future Volume (vph)	28	19	4	14	67	6	4	4	9	7	4	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1779	0	0	1800	0	0	1699	0	0	1686	0
Flt Permitted		0.975			0.992			0.988			0.988	
Satd. Flow (perm)	0	1779	0	0	1800	0	0	1699	0	0	1686	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1160			1132			467			766	
Travel Time (s)		31.6			30.9			12.7			20.9	
Confl. Peds. (#/hr)			6	6								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.77	0.77	0.77	0.77	0.90	0.77	0.90	0.77	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	112	0	0	21	0	0	32	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	19	4	14	67	6	4	4	9	7	4	18
Future Vol, veh/h	28	19	4	14	67	6	4	4	9	7	4	18
Peak Hour Factor	0.90	0.77	0.77	0.77	0.77	0.90	0.77	0.90	0.77	0.90	0.90	0.90
Heavy Vehicles, %	2	4	4	4	4	2	2	2	2	2	2	2
Mvmt Flow	31	25	5	18	87	7	5	4	12	8	4	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.5	7.7	7.2	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	55%	16%	24%
Vol Thru, %	24%	37%	77%	14%
Vol Right, %	53%	8%	7%	62%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	51	87	29
LT Vol	4	28	14	7
Through Vol	4	19	67	4
RT Vol	9	4	6	18
Lane Flow Rate	21	61	112	32
Geometry Grp	1	1	1	1
Degree of Util (X)	0.024	0.071	0.127	0.035
Departure Headway (Hd)	3.985	4.175	4.099	3.922
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	883	854	873	898
Service Time	2.077	2.221	2.135	2.013
HCM Lane V/C Ratio	0.024	0.071	0.128	0.036
HCM Control Delay, s/veh	7.2	7.5	7.7	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.4	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	4	4	33	4	9	4	4	83	6	4	4
Future Volume (vph)	4	4	4	33	4	9	4	4	83	6	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1429	0	0	1701	0	0	1629	0	0	1736	0
Flt Permitted		0.980			0.971			0.998			0.976	
Satd. Flow (perm)	0	1429	0	0	1701	0	0	1629	0	0	1736	0
Link Speed (mph)		15			15			30			15	
Link Distance (ft)		510			506			784			550	
Travel Time (s)		23.2			23.0			17.8			25.0	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.52	0.52	0.90	0.90	0.52	0.52	0.90	0.90	0.90	0.52	0.90	0.52
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	33%	2%	2%	8%	8%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	62	0	0	100	0	0	24	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.4%		ICU Level of Service A	
Analysis Period (min) 15			

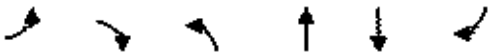
Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	4	4	33	4	9	4	4	83	6	4	4
Future Vol, veh/h	4	4	4	33	4	9	4	4	83	6	4	4
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	52	52	90	90	52	52	90	90	90	52	90	52
Heavy Vehicles, %	33	33	2	2	8	8	2	2	2	2	2	2
Mvmt Flow	8	8	4	37	8	17	4	4	92	12	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	14	0	0	111	126	12	115	119	16
Stage 1	-	-	-	-	-	-	27	27	-	90	90	-
Stage 2	-	-	-	-	-	-	83	98	-	25	30	-
Critical Hdwy	4.43	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.497	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1410	-	-	1604	-	-	868	765	1069	862	771	1063
Stage 1	-	-	-	-	-	-	990	872	-	918	821	-
Stage 2	-	-	-	-	-	-	925	814	-	992	871	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1410	-	-	1601	-	-	830	742	1067	760	748	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	830	742	-	760	748	-
Stage 1	-	-	-	-	-	-	983	866	-	896	801	-
Stage 2	-	-	-	-	-	-	892	795	-	897	864	-

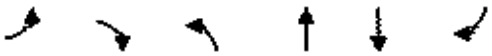
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.94	4.34	8.86	9.44
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1034	651	-	-	940	-	-	835
HCM Lane V/C Ratio	0.098	0.005	-	-	0.023	-	-	0.028
HCM Ctrl Dly (s/v)	8.9	7.6	0	-	7.3	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1009	1335	39
Future Volume (vph)	0	0	0	1009	1335	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-2%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	0	0	0	1881	1855	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	1881	1855	0
Link Speed (mph)	15			35	35	
Link Distance (ft)	474			295	171	
Travel Time (s)	21.5			5.7	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1121	1526	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	28	40	0	1297	33
Future Volume (vph)	0	28	40	0	1297	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	0	1611	1770	0	1855	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	0	1855	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	602			174	73	
Travel Time (s)	16.4			3.4	1.4	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	31	44	0	1402	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	40	0	1297	33
Future Vol, veh/h	0	28	40	0	1297	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	95	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	31	44	0	1365	37

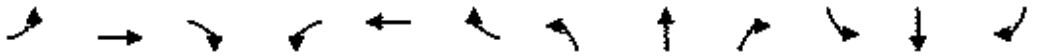
Major/Minor	Minor2		Major2	
Conflicting Flow All	-	1384	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.22	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.318	-	-
Pot Cap-1 Maneuver	0	176	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	176	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	SB
HCM Ctrl Dly, s/v	29.82	0
HCM LOS	D	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	176	-	-
HCM Lane V/C Ratio	0.177	-	-
HCM Ctrl Dly (s/v)	29.8	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.6	-	-

51: South Site Drwy (LI/RI/RO) & N. Salem Street Performance by movement

Movement	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.4	22.2	0.5	0.1	1.7



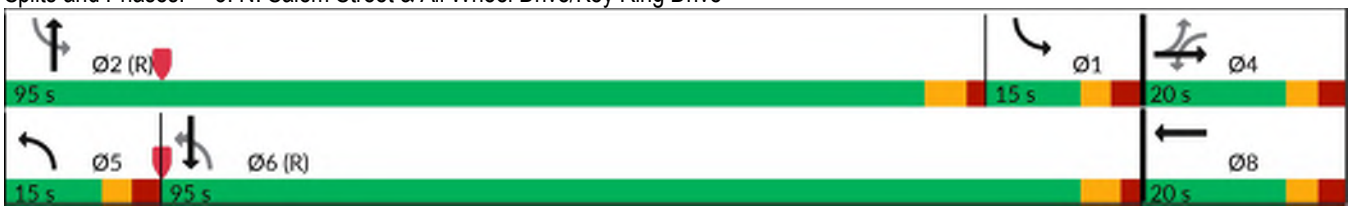
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	13	24	19	16	36	9	995	4	17	1323	35
Future Volume (vph)	89	13	24	19	16	36	9	995	4	17	1323	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		3%			4%			-2%			-2%	
Storage Length (ft)	115		0	250		0	75		150	250		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	85			50			50			125		
Satd. Flow (prot)	1743	1655	0	1734	1615	0	1787	3571	0	1787	1881	1599
Flt Permitted	0.721			0.731			0.040			0.241		
Satd. Flow (perm)	1316	1655	0	1334	1615	0	75	3571	0	453	1881	1565
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			38			1				71
Link Speed (mph)		15			25			35			35	
Link Distance (ft)		506			667			171			851	
Travel Time (s)		23.0			18.2			3.3			16.6	
Confl. Peds. (#/hr)	4					4						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	40	0	20	55	0	10	1063	0	18	1407	37
Turn Type	Perm	NA		D.Pm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			4			6			2		6
Detector Phase	4	4		4	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	10.0
Minimum Split (s)	28.9	28.9		28.9	31.9		12.6	26.8		12.8	27.8	27.8
Total Split (s)	20.0	20.0		20.0	20.0		15.0	95.0		15.0	95.0	95.0
Total Split (%)	15.4%	15.4%		15.4%	15.4%		11.5%	73.1%		11.5%	73.1%	73.1%
Yellow Time (s)	3.1	3.1		3.1	3.1		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.8	2.8		2.8	2.8		2.6	1.8		2.8	1.8	1.8
Lost Time Adjust (s)	-0.9	-0.9		-0.9	-0.9		-0.6	-0.8		-0.8	-0.8	-0.8
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	13.1	13.1		13.1	13.1		105.9	100.9		104.9	104.4	104.4
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.81	0.78		0.81	0.80	0.80
v/c Ratio	0.72	0.21		0.15	0.28		0.06	0.38		0.04	0.93	0.03
Control Delay (s/veh)	85.2	28.8		54.8	26.7		3.2	6.1		2.8	24.3	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	15.1	0.0
Total Delay (s/veh)	85.2	28.8		54.8	26.7		3.2	6.1		2.8	39.4	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	C		D	C		A	A		A	D	A
Approach Delay (s/veh)		68.5			34.2			6.1			38.0	
Approach LOS		E			C			A			D	
Queue Length 50th (ft)	79	11		16	13		1	105		2	744	0
Queue Length 95th (ft)	#151	48		43	55		5	231		7	#1584	2
Internal Link Dist (ft)		426			587			91			771	
Turn Bay Length (ft)	115			250			75			250		
Base Capacity (vph)	151	213		153	219		193	2772		468	1510	1270
Starvation Cap Reductn	0	0		0	0		0	0		0	134	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.63	0.19		0.13	0.25		0.05	0.38		0.04	1.02	0.03

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 116 (89%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay (s/veh): 26.9		Intersection LOS: C	
Intersection Capacity Utilization 89.6%		ICU Level of Service E	
Analysis Period (min) 15			
Description: 05-1989			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: N. Salem Street & All Wheel Drive/Key Ring Drive



Appendix H:
Signal Plan & Timing Data

Intersection: US 64 Ramps _____ **Collected by:** _____

Signal Inventory #: _____ **Date:** _____

AM Peak Hour

Coordinated: Free

Plan #: _____

Duration: _____

Cycle Length: _____

Offset: _____

Phase Seq. Page: _____

Laging Phases: _____

Timing Page: _____

Phase	1	2	3	4	5	6	7	8
Splits/Max								
Min. Green								
Yellow								
Red								
Veh. Ext.								
Walk								
Ped. Clear								
Time B4 Reduce								
Time 2 Reduce								
Min. Gap								
Seconds/Actuation								

PM Peak Hour

Coordinated:

Plan #: _____

Duration: _____

Cycle Length: _____

Offset: _____

Phase Seq. Page: _____

Laging Phases: _____

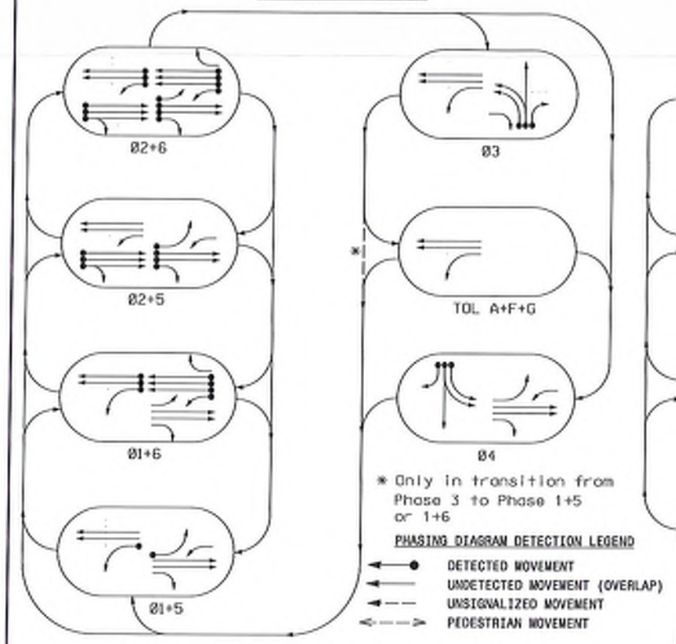
Timing Page: _____

Phase	1	2	3	4	5	6	7	8
Splits/Max								
Min. Green								
Yellow								
Red								
Veh. Ext.								
Walk								
Ped. Clear								
Time B4 Reduce								
Time 2 Reduce								
Min. Gap								
Seconds/Actuation								

Notes:

PROJECT REFERENCE NO.	SHEET NO.
36249.3834	SIG. 11

PHASING DIAGRAM



EV PREEMPT PHASES

(Median Priority)

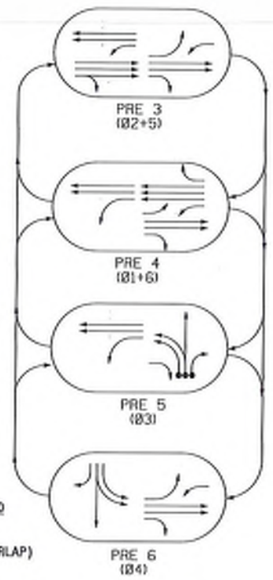


TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3	TOL A+F+G	Ø4	PRE 3	PRE 4	PRE 5	PRE 6	FLASH
11	←-	←-	←Y	←Y	←-	←-	←R	←Y	←-	←R	←R	←Y
21, 22, 25	R	R	G	G	R	R	R	G	R	R	R	Y
23	G	G	G	G	R	R	G	G	G	R	G	Y
24	G	G	G	G	R/Y	R	G	G	G	R/Y	G	Y
31	←R	←R	←R	←R	←-	←R	←R	←R	←R	←-	←R	←R
32	R	R	R	R	G	R	R	R	R	G	R	R
33	R	R	R	R	G	R	R	R	R	G	R	R
41	←R	←R	←R	←R	←R	←R	←-	←R	←R	←R	←-	←R
42	R	R	R	R	R	G	R	R	R	G	R	R
43	R	R	R	R	R	G	R	R	R	G	R	R
51	←-	←Y	←-	←Y	←R	←R	←-	←-	←Y	←R	←-	←Y
61	←Y	←Y	←Y	←Y	←R	←R	←Y	←Y	←Y	←R	←Y	←Y
62,63,66	R	G	R	G	R	R	R	R	G	R	R	Y
64, 65	G	G	G	G	G	G	R	G	G	G	R	Y

OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING					
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	PULSE TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	-	-
					6	Y	Y	Y	-	3	-	-
2A	6X6	70	6	Y	2	Y	Y	-	-	-	-	-
2B	6X6	70	6	Y	2	Y	Y	-	-	-	-	-
2C	6X6	70	6	Y	2	Y	Y	-	-	-	-	-
2D	6X6	70	6	Y	2	Y	Y	-	-	-	-	-
2E	6X6	70	6	Y	2	Y	Y	-	-	-	-	-
3A	6X60	+5	2-4-2	-	3	Y	Y	-	-	3	-	-
3B	6X60	+5	2-4-2	-	3	Y	Y	-	-	-	-	-
3C	6X60	+5	2-4-2	-	3	Y	Y	-	-	15	-	-
4A	6X60	+5	2-4-2	-	4	Y	Y	-	-	-	-	-
4B	6X60	+5	2-4-2	-	4	Y	Y	-	-	-	-	-
4C	6X60	+5	2-4-2	-	4	Y	Y	-	-	15	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	-
					2	Y	Y	Y	-	3	-	-
6A	6X6	300	6	Y	6	Y	Y	-	-	-	-	-
6B	6X6	300	6	Y	6	Y	Y	-	-	-	-	-
6C	6X40	0	2-4-2	Y	6	Y	Y	Y	-	3	-	-
6D	6X6	270	6	Y	6	Y	Y	-	-	-	-	-
6E	6X6	270	6	Y	6	Y	Y	-	-	-	-	-

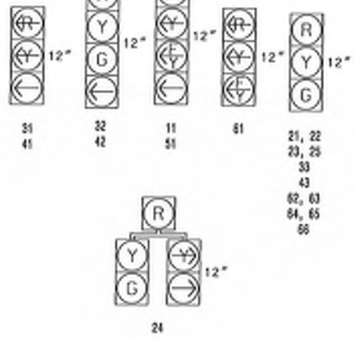
6 Phase
Fully Actuated with/
Emergency Vehicle Preemption
(Salem Street CLS)

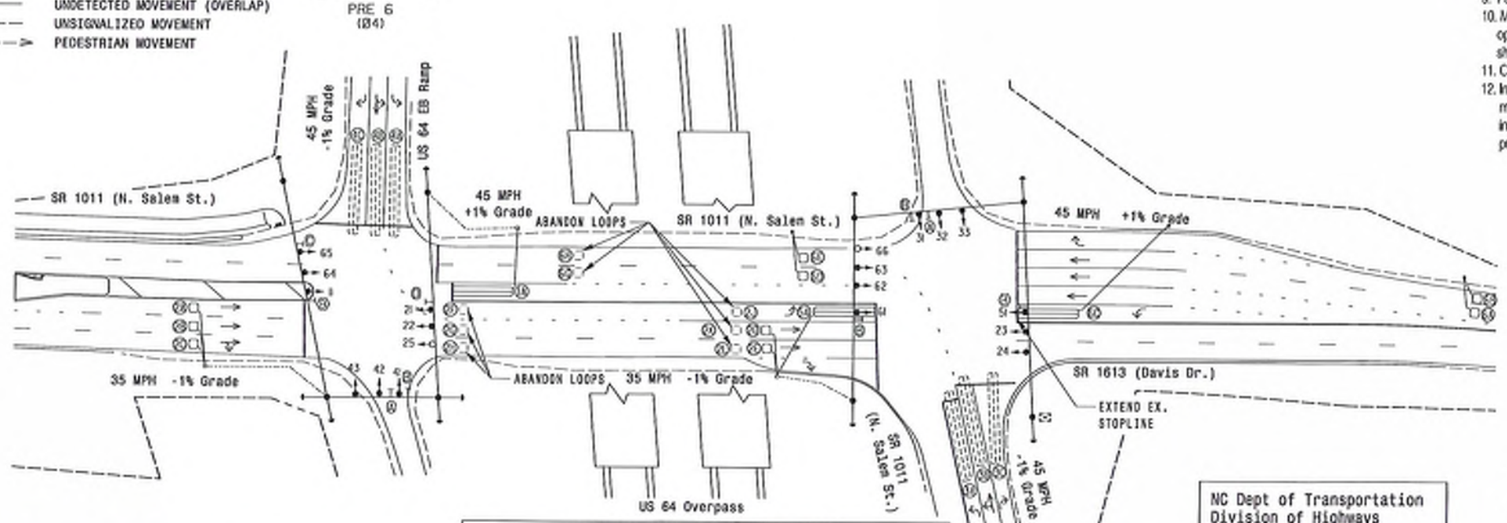
NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Reposition existing signal heads numbered 21, 22, 23, 24, 51, 61, 62 and 63.
6. Abandon existing loops 2F, 2G, 2H, 2J, 2K, 2L, 6G and 6H.
7. Set all detector units to presence mode.
8. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
9. Pavement markings are existing unless otherwise shown.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
11. Closed loop system data: Intersection Number 1408.
12. Install Applied Information GPS emergency preemption system per manufacturers instructions to achieve preemption needed, as shown in phasing diagram. Confirm model with Town Staff prior to purchase.

SIGNAL FACE I.D.

All Heads L.E.D.





LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Guardrail	
Ⓐ	Combined Through and Left Arrow Sign (R3-6L)	Ⓐ
Ⓑ	Left Arrow "ONLY" Sign (R3-5L)	Ⓑ
Ⓒ	No Right Turn Sign (R3-1)	Ⓒ
Ⓓ	No Left Turn Sign (R3-2)	Ⓓ

OASIS 2070L TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	TOL A	TOL F	TOL G
Min Green 1 *	7	10 12	7	7	7	12	7	7	7
Extension 1 *	2.0 3	3.0	2.0 3	2.0 3	2.0 3	6.0			
Max Green 1 *	15	45	25	30 30	15	45			
Yellow Clearance	3.0	4.4	4.6	4.6	3.0	4.4	3.0	4.4	3.0
Red Clearance	2.4	1.6	1.6	1.4	2.4	1.6	2.4	1.6	2.4
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0			
Walk 1 *	-	-	-	-	-	-			
Don't Walk 1	-	-	-	-	-	-			
Seconds Per Actuation *	-	-	-	-	-	1.5			
Max Variable Initial *	-	-	-	-	-	34			
Time Before Reduction *	-	-	-	-	-	15 X			
Time To Reduce *	-	-	-	-	-	45 X			
Minimum Gap	-	-	-	-	-	3.0 X			
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL			
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW			
Dual Entry	-	-	-	-	-	-			
Simultaneous Gap	ON	ON	ON	ON	ON	ON			

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 EV PREEMPT

FUNCTION	PRE 3	PRE 4	PRE 5	PRE 6
Interval 1 – Dwell Green	255	255	255	255
Interval 1 – Dwell Yellow	0.0*	0.0*	0.0*	0.0*
Interval 1 – Dwell Red	0.0*	0.0*	0.0*	0.0*
Interval 5 – Exit Green	1	1	1	1
Interval 5 – Yellow	0.0	0.0	0.0	0.0
Interval 5 – Red	0.0	0.0	0.0	0.0
Exit Phase(s)	2+6	2+6	3	4
Priority	MED	MED	MED	MED
Delay Time	0.0	0.0	0.0	0.0
Min Green Before Pre	1	1	1	1
Ped Clear Before Pre	0	0	0	0
Yellow Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Dwell Min Time	7	7	7	7
Dwell Max Time	120	120	120	120
Enable Backup Protection	N	N	N	N
Ped Clear Through Yellow	N	N	N	N
Omit Overlaps	-	-	-	-
Preempt Extend**	2	2	2	2

* Time defaults to time used
** Program Timing on Optical Detection Unit

NC Dept of Transportation
Division of Highways
Final Drawing Date: 4/19/2018
ITS & Signals Unit

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared For:

PLANS PREPARED IN THE OFFICE OF:
Kimley»Horn
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919)677-2000
750 Kilgrove Field Pkwy, Garner, NC 27529

SR 1011 (N. Salem St.) and
SR 1613 (Davis Dr.)
at
US 64 Ramps

Division 5 | Wake County | Apex

PLAN DATE: January 2018 | REVIEWED BY: SL Phillips
PREPARED BY: SP Pennington | REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE: 0 50, 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 032607 ENGINEER STACY L. PHILLIPS

SIGNATURE | DATE: 4/11/2018

SIG. INVENTORY NO. 05-1408

Intersection: Ave Witosa Dr
Signal Inventory #: _____

Collected by: _____
Date: _____

AM Peak Hour

Coordinated: 1/1
Plan #: ~~7am-4pm~~
Duration: 120
Cycle Length: 114
Offset: 2
Phase Seq. Page: 1
Laging Phases: 1
Timing Page:

Phase	1	2	3	4	5	6	7	8
Splits/Max	26	60	19	15	20	66	15	19
Min. Green								
Yellow								
Red								
Veh. Ext.								
Walk								
Ped. Clear								
Time B4 Reduce								
Time 2 Reduce								
Min. Gap								
Seconds/Actuation								

PM Peak Hour

Coordinated: 2/1
Plan #: 4-7pm
Duration: 130
Cycle Length: 116
Offset: 2
Phase Seq. Page: 1
Laging Phases: 1
Timing Page:

Phase	1	2	3	4	5	6	7	8
Splits/Max	20	80	15	15	15	85	15	15
Min. Green								
Yellow								
Red								
Veh. Ext.								
Walk								
Ped. Clear								
Time B4 Reduce								
Time 2 Reduce								
Min. Gap								
Seconds/Actuation								

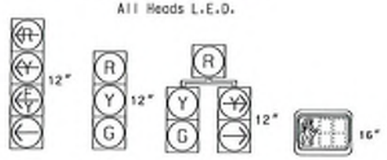
Notes:

PROJECT REFERENCE NO.	SHEET NO.
36249.3834	SIG. 1

8 PHASE FULLY ACTUATED W/ EMERGENCY VEHICLE PREEMPTION (SALEM STREET CLS)

SIGNAL FACE I.D.

All Heads L.E.D.



11	21, 22	62	P21, P22
31	41, 42		P41, P42
51	61		P61, P62
71	81, 82		P81, P82

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

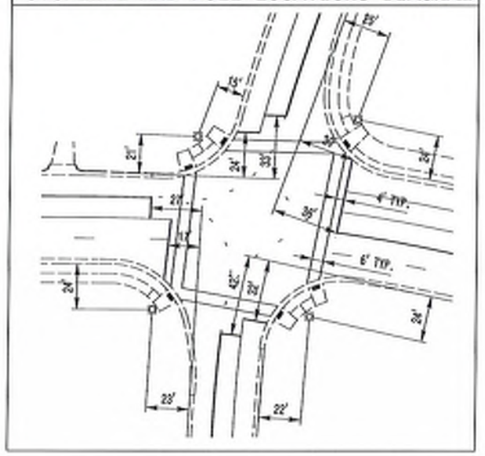
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15*	-	Y
					6**	Y	Y	-	-	-	-	Y
2A/S29	6X6	70	6	Y	2	Y	Y	-	-	-	Y	Y
2B/S30	6X6	70	6	Y	2	Y	Y	-	-	-	Y	Y
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	15*	-	Y
					8**	Y	Y	-	-	3	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	10	-	Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15*	-	Y
					2**	Y	Y	-	-	-	-	Y
6A	6X6	70	6	Y	6	Y	Y	-	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	15*	-	Y
					4**	Y	Y	-	-	3	-	Y
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	10	-	Y
S31	6X6	+120	6	Y	-	Y	Y	-	-	-	Y	Y

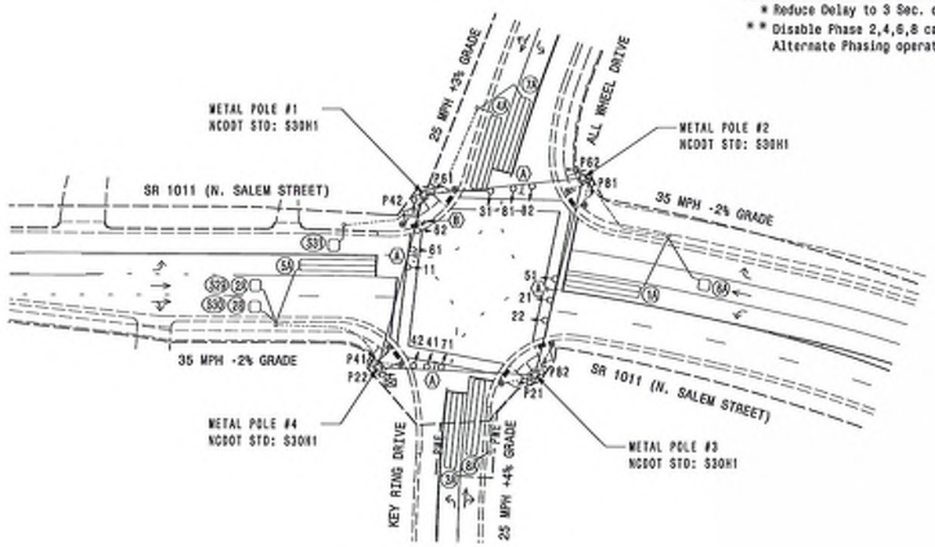
* Reduce Delay to 3 Sec. during Alternate Phasing operation.
** Disable Phase 2,4,6,8 calls for loops 1A,3A,5A,7A during Alternate Phasing operation.

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
10. Pedestrian pedestals are conceptual and shown for reference only. See Roadway Standard Drawings 1705.04 for pushbutton location details.
11. The Division (Town) Traffic Engineer will determine the hours of use for each phasing plan.
12. Closed loop system data: Intersection Number 1989.
13. Install Applied Information GPS emergency preemption system per manufacturers instructions to achieve preemption needed, as shown in phasing diagram. Confirm model with Town Staff prior to purchase.

STOPLINE AND POLE LOCATIONS DIAGRAM





LEGEND

PROPOSED		EXISTING
○►	Traffic Signal Head	●►
◐►	Modified Signal Head	N/A
⊣	Sign	⊣
	Pedestrian Signal Head With Push Button & Sign	
	Type I Pushbutton Post	
	Metal Strain Pole	
	Inductive Loop Detector	
	Controller & Cabinet	
□	Junction Box	■
·····	2-in Underground Conduit	·····
N/A	Right of Way	
— PWE —	Permanent Signal Easement	— PWE —
→	Directional Arrow	→
N/A	Curb Ramp	
Ⓐ	Street Sign (D3-1)	Ⓐ
Ⓑ	Right Arrow "ONLY" Sign (R3-5R)	Ⓑ

OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1 *	7	10	7	7	7	10	7	7
Extension 1 *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max Green 1 *	~~30~~ 35	60	~~20~~ 35	30	20	60	20	~~30~~ 40
Yellow Clearance	3.0	4.0	3.0	3.1	3.0	4.0	3.0	3.1
Red Clearance	2.8	1.8	2.8	2.8	2.6	1.8	2.4	2.8
Walk 1 *	-	7	-	7	-	7	-	7
Don't Walk 1	-	14	-	16	-	15	-	19
Seconds Per Actuation *	-	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 EV PREEMPT

FUNCTION	PRE 3	PRE 4	PRE 5
Interval 1 - Dwell Green	255	255	255
Interval 1 - Dwell Yellow	0.0*	0.0*	0.0*
Interval 1 - Dwell Red	0.0*	0.0*	0.0*
Interval 5 - Exit Green	1	1	1
Interval 5 - Yellow	0.0	0.0	0.0
Interval 5 - Red	0.0	0.0	0.0
Exit Phase(s)	2,6	2,6	4,8
Priority	MED	MED	MED
Delay Time	0.0	0.0	0.0
Min Green Before Pre	1	1	1
Ped Clear Before Pre	10	10	10
Yellow Clear Before Pre	0.0*	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*	0.0*
Dwell Min Time	7	7	7
Dwell Max Time	120	120	120
Enable Backup Protection	N	N	N
Ped Clear Through Yellow	Y	Y	Y
Omit Overlaps	-	-	-
Preempt Extend**	2	2	2

* Time defaults to time used for phase during normal operation
** Program Timing as Optical Detection Unit

NC Dept of Transportation
Division of Highways
Final Drawing Date: 4/19/2018
Approved by
ITS & Signals Unit

PLANS PREPARED IN THE OFFICE OF:
Kimley»Horn
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000

NEW INSTALLATION - SHEET 1 OF 2

Prepared For:
150 N.Greenfield Pkwy,Garner,NC 27529

SR 1011 (N. SALEM STREET)
AT
KEY RING DRIVE/ALL WHEEL DRIVE

DIVISION 5 WAKE COUNTY APEX
PLAN DATE: NOVEMBER 2017 REVIEWED BY: SL PHILLIPS
PREPARED BY: SP PENNINGTON REVIEWED BY: KP BAUMANN

REVISIONS	INIT.	DATE

SCALE 0 40' 1"=40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 032607 ENGINEER STACIE L. PHILLIPS
4/11/2018
SIGNATURE DATE

SIG. INVENTORY NO. 05-1989

4/10/2018 7:25:24 AM austin.pennington K:\RAL_TRTA_STDNLS\05\36249\03 Salem Street Signal\04 - Signal Design\01 05-1989_2017.dgn

Intersection: PARKWAY

Signal Inventory #: _____

Collected by: _____

Date: _____

AM Peak Hour

Coordinated: Plan OFFSET

Plan #: eq4 / 1

Duration: 615 - 915

Cycle Length: 130

Offset: 2

Phase Seq. Page: 2

Laging Phases: 1, 7

Timing Page: 2

Phase	1	2	3	4	5	6	7	8
Splits/Max	34	40	19	37	18	56	26	30
Min. Green								
Yellow								
Red								
Veh. Ext.								
Walk								
Ped. Clear								
Time B4 Reduce								
Time 2 Reduce								
Min. Gap								
Seconds/Actuation								

PM Peak Hour

Coordinated: 5/1

Plan #: 345 - 645

Duration: 140

Cycle Length: 0

Offset: 2

Phase Seq. Page: 1, 3

Laging Phases: 2

Timing Page:

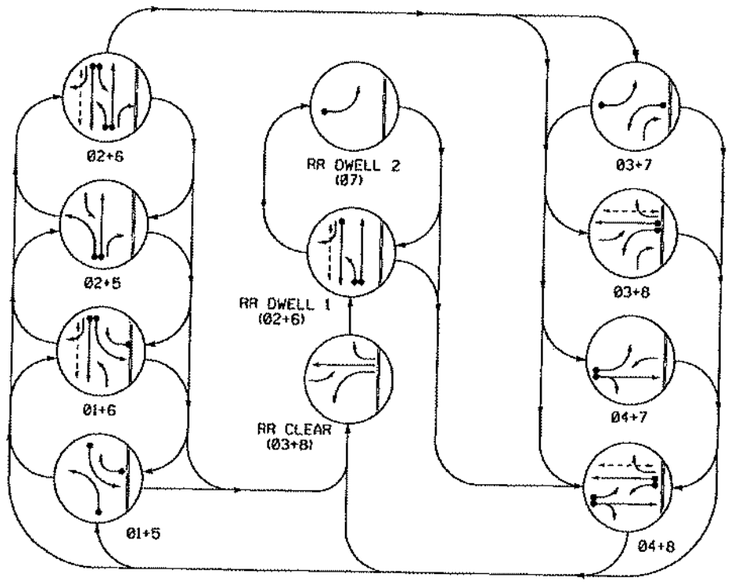
Phase	1	2	3	4	5	6	7	8
Splits/Max	37	40	18	45	18	59	23	40
Min. Green								
Yellow								
Red								
Veh. Ext.								
Walk								
Ped. Clear								
Time B4 Reduce								
Time 2 Reduce								
Min. Gap								
Seconds/Actuation								

Notes:

PROJECT REFERENCE NO.	SHEET NO.
Apex Peakway	Sig. 1

8 Phase w/Railroad Preemption Fully Acutated (Apex CBD Closed Loop System)

PHASING DIAGRAM

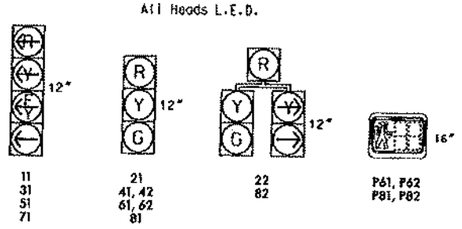


PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.



11, 31, 51, 71 | 21, 41, 42, 61, 62, 81 | 22, 82 | P61, P62, P81, P82

TABLE OF OPERATION

SIGNAL FACE	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3+7	Ø3+8	Ø4+7	Ø4+8	RR CLEAR	RR DWELL 1	RR DWELL 2	FLASH
11	←	←	F	F	R	R	R	R	R	R	R	Y
21	R	R	G	G	R	R	R	R	R	G	R	Y
22	R	R	G	G	R	R	R	R	R	G	R	Y
31	R	R	R	R	←	←	F	F	←	R	R	R
41, 42	R	R	R	R	R	R	G	G	R	R	R	R
51	←	F	←	F	R	R	R	R	F	R	R	Y
61, 62	R	G	R	G	R	R	R	R	G	R	R	Y
71	R	R	R	R	←	F	←	F	F	R	R	R
81	R	R	R	R	G	R	G	R	G	R	R	R
82	R	R	R	R	G	R	G	R	G	R	R	R
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DW	W	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DW	DW	DW	DRK
Sign A	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	*

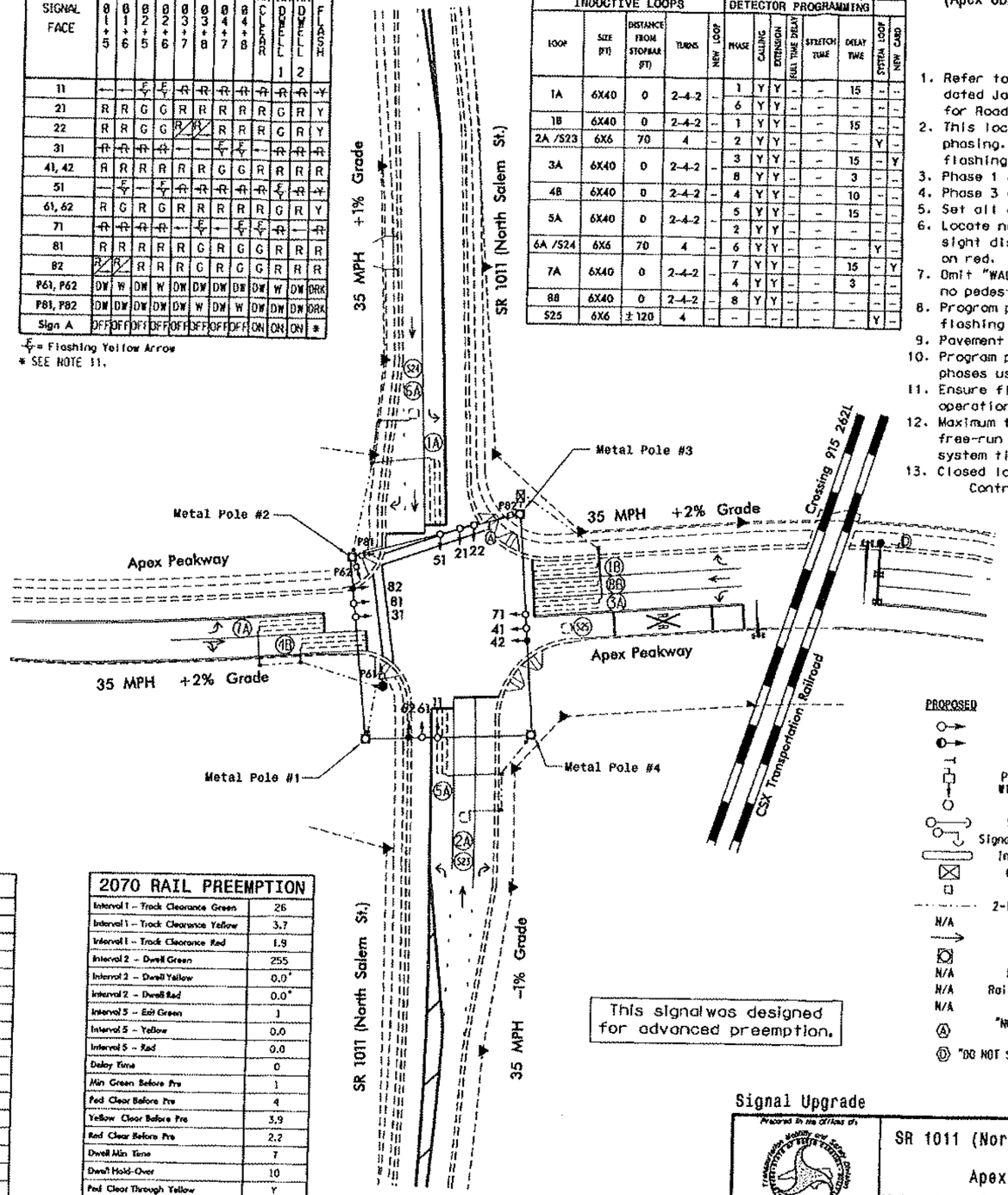
F = Flashing Yellow Arrow
* SEE NOTE 11.

2070L LOOP & DETECTOR INSTALLATION

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING: PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CABD
1A	6X40	0	2-4-2	–	1	Y	Y	–	–	15	–	–
					6	Y	Y	–	–	–	–	–
1B	6X40	0	2-4-2	–	1	Y	Y	–	–	15	–	–
2A /S23	6X6	70	4	–	2	Y	Y	–	–	–	Y	–
3A	6X40	0	2-4-2	–	3	Y	Y	–	–	15	–	Y
4B	6X40	0	2-4-2	–	8	Y	Y	–	–	3	–	–
5A	6X40	0	2-4-2	–	4	Y	Y	–	–	10	–	–
					5	Y	Y	–	–	15	–	–
					2	Y	Y	–	–	–	–	–
6A /S24	6X6	70	4	–	6	Y	Y	–	–	–	Y	–
7A	6X40	0	2-4-2	–	7	Y	Y	–	–	15	–	Y
					4	Y	Y	–	–	3	–	–
8B	6X40	0	2-4-2	–	8	Y	Y	–	–	–	–	–
S25	6X6	± 120	4	–	–	–	–	–	–	–	Y	–

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Pavement markings are existing.
10. Program parent phases for Overlap "P" for all phases used in normal operation.
11. Ensure flashing operation does not alter operation of blackout signs.
12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
13. Closed loop system data:
    Controller Asset #: 2347.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pedestal	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-In Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Metal Strain Pole	
N/A	Railroad Cantilever	
N/A	Railroad Gate and Flasher	
N/A	Railroad Tracks	
Ⓐ	"NO RIGHT TURN - TRAIN" LED Blankout Sign	Ⓐ
Ⓓ	"DO NOT STOP ON TRACKS" Sign (R8-8)	Ⓓ

OASIS 2070L TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green 1 *	7	10	7	7	7	10	7	7
Extension 1 *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max Green 1 *	15	90	15	40	15	90	15	40
Yellow Clearance	3.0	3.9	3.0	3.7	3.0	3.9	3.0	3.7
Red Clearance	2.6	2.0	2.4	2.4	2.6	2.0	3.1	2.4
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	7	-	7
Don't Walk 1	-	-	-	-	-	14	-	15
Seconds Per Actuation *	-	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

2070 RAIL PREEMPTION

Interval 1 – Track Clearance Green	26
Interval 1 – Track Clearance Yellow	3.7
Interval 1 – Track Clearance Red	1.9
Interval 2 – Dwell Green	255
Interval 2 – Dwell Yellow	0.0*
Interval 2 – Dwell Red	0.0*
Interval 5 – Exit Green	1
Interval 5 – Yellow	0.0
Interval 5 – Red	0.0
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	4
Yellow Clear Before Pre	3.9
Red Clear Before Pre	2.2
Dwell Min Time	7
Dwell Hold-Over	10
Ped Clear Through Yellow	Y
Omit Overlaps	

* Time defaults to time used for phase during normal operation

Signal Upgrade

Prepared in the Offices of:
Traffic Engineering, Mobility and Safety Division
Traffic Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

SR 1011 (North Salem Street) at Apex Peakway

Division 5 Wake County Apex

PLAN DATE: June 2012 REVIEWED BY:

PREPARED BY: Q. Watkins REVIEWED BY:

REVISIONS | INIT. | DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA
SIGNATURE DATE 4/15/12

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

PUBLIC NOTIFICATION OF PUBLIC HEARINGS

CONDITIONAL ZONING #25CZ24
North Salem Street Mixed Use 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: Merit Group, LLC
Authorized Agents: Matthew Carpenter, Parker Poe, LLP & Paul Munana, Merit Group, LLC
Property Addresses: 0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlion Downs Ln
Acreage: ±32.35 acres
Property Identification Numbers (PINs): 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712
Current 2045 Land Use Map Designation: Mixed Use: High Density Residential/Office Employment/Commercial Services (4.92 ± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (27.38 ± acres)
If rezoned as proposed, the 2045 Land Use Map Designation will change to: Mixed Use: High Density Residential/Office Employment/Commercial Services (8.27 ± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (24.03± acres)
Existing Zoning of Properties: Residential Agricultural (RA), Rural Residential (RR), Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
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 14, 2026 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.

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, Jeri Pederson (73 Hunter Street or USPS mail - P.O. Box 250, Apex, NC 27502), at least two business days prior to the Planning Board vote. 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.

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 500 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, Planning Department, with questions or for further information. To view the petition and related documents on-line: https://www.apexnc.org/DocumentCenter/View/52723.

Dianne F. Khin, AICP
Planning Director

Published Dates: August 28 – September 14, 2026

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELÉFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS

ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ24
North Salem Street Mixed Use PUD

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: Merit Group, LLC
Agente autorizado: Matthew Carpenter, Parker Poe, LLP & Paul Munana, Merit Group, LLC
Dirección de las propiedades: 0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem Street; 0 Charlion Downs Lane
Superficie: ±32.35 acres
Números de identificación de las propiedades: 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712
Designación actual en el Mapa de Uso Territorial para 2045: Mixed Use: High Density Residential/Office Employment/Commercial Services (4.92± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (27.38 ± acres)
Si se aprueba el cambio de zonificación como se propone, el Mapa de Uso Territorial para el 2045 cambiará a: Mixed Use: High Density Residential/Office Employment/Commercial Services (8.27 ± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (24.03 ± acres)
Ordenamiento territorial existente de las propiedades: Residential Agricultural (RA), Rural Residential (RR), Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
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: 14 de septiembre de 2026 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.

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, Jeri Pederson (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.

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.

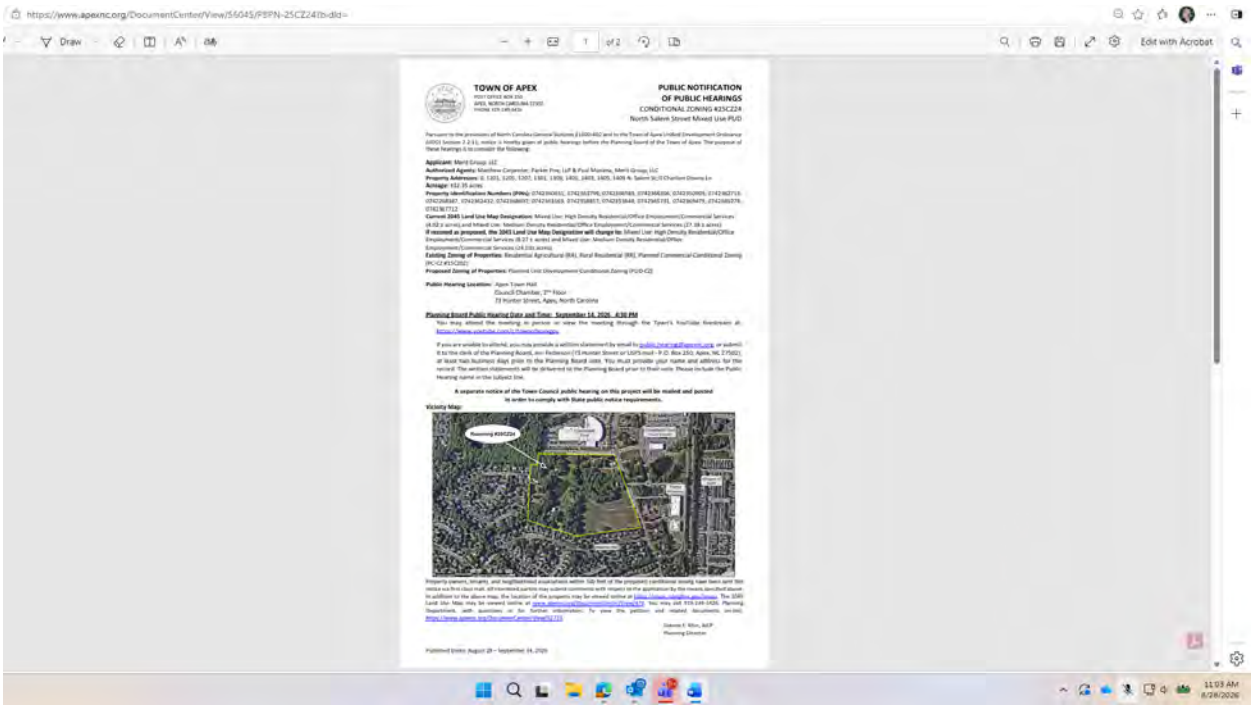
Mapa de las inmediaciones:



Los propietarios, inquilinos y asociaciones de vecinos en un radio de 500 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 al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/52723

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 28 de agosto – 14 de septiembre



TOWN OF APEX

PUBLIC NOTIFICATION OF PUBLIC HEARINGS
CONDITIONAL ZONING #25CZ24
North Salem Street Mixed Use 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: Merit Group, LLC
Authorized Agents: Matthew Carpenter, Parker Poe, LLP & Paul Moreno, Merit Group, LLC
Property Addresses: 0, 1201, 1205, 1207, 1301, 1309, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlton Downs Ln
Acreage: 152.35 acres
Property Identification Numbers (PINs): 0742936551, 0742935795, 0742936783, 0742936306, 0742935909, 0742936719, 0742926437, 0742926433, 0742936497, 0742936169, 0742935857, 0742935848, 0742936551, 0742936479, 0742926437, 0742936378, 0742936712
Current 2045 Land Use Map Designation: Mixed Use; High Density Residential/Office Employment/Commercial Services (4.02± acres) and Mixed Use; Medium Density Residential/Office Employment/Commercial Services (4.22± acres)
If rezoned as proposed, the 2045 Land Use Map Designation will change to: Mixed Use; High Density Residential/Office Employment/Commercial Services (8.27 ± acres) and Mixed Use; Medium Density Residential/Office Employment/Commercial Services (14.22± acres)
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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 14, 2026, 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/townofapex

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, Jen Pederson (73 Hunter Street or USPS mail - P.O. Box 250, Apex, NC 27502), at least two business days prior to the Planning Board date. 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.

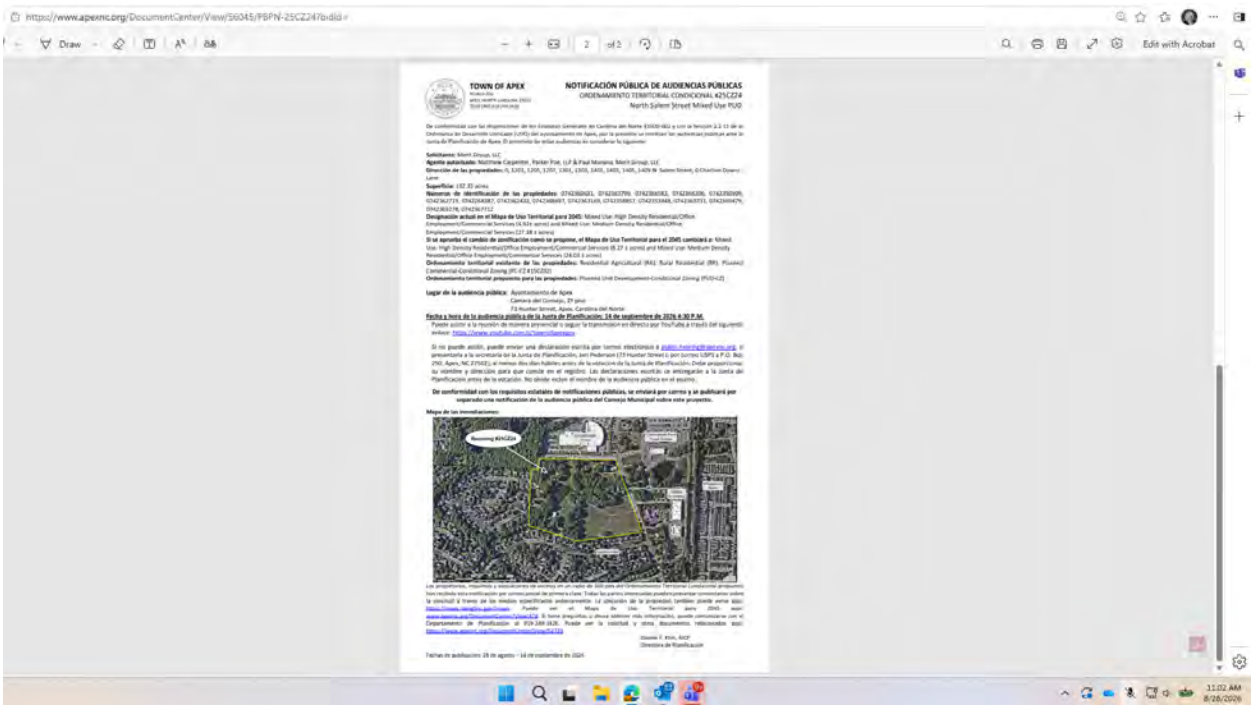
A separate notice of the Town Council public hearing on this project will be mailed and posted to order to comply with State public notice requirements.

Vicinity Map:

Property owners, tenants, and neighborhood associations within 100 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 described above. In addition to the above map, the location of the property may be viewed online at https://maps.apexnc.gov/maps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/21296/LUP. You may call 919-249-3426, Planning Department, with questions or for further information. To view the petition and related documents on-line, https://www.apexnc.org/DocumentCenter/View/21715

Dianne F. Khin, AICP
Planning Director

Published Dates: August 28 – September 04, 2026



TOWN OF APEX

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ24
North Salem Street Mixed Use PUD

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 convocan las audiencias públicas ante la Junta de Planificación de Apex. El propósito de estas audiencias es considerar lo siguiente:

Solicitante: Merit Group, LLC
Agentes autorizados: Matthew Carpenter, Parker Poe, LLP & Paul Moreno, Merit Group, LLC
Dirección de las propiedades: 0, 1201, 1205, 1207, 1301, 1309, 1401, 1403, 1405, 1409 N. Salem Street; 0 Charlton Downs Lane
Superficie: 152.35 acres
Números de identificación de las propiedades: 0742936551, 0742935795, 0742936783, 0742936306, 0742935909, 0742936719, 0742926437, 0742926433, 0742936497, 0742936169, 0742935857, 0742935848, 0742936551, 0742936479, 0742926437, 0742936378, 0742936712
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Si se aprueba el cambio de zonificación como se propone, el Mapa de Uso Territorial para el 2045 cambiará a: Mixed Use; High Density Residential/Office Employment/Commercial Services (8.27 ± acres) and Mixed Use; Medium Density Residential/Office Employment/Commercial Services (14.22 ± acres)
Ordenamiento territorial existente de las propiedades: Residential Agricultural (RA); Rural Residential (RR), Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
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: 14 de septiembre de 2026 A 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/townofapex

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, Jen Pederson (73 Hunter Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la celebración 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.

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:

Las propiedades, inquilinos y asociaciones de vecinos en un radio de 100 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.apexnc.gov/maps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/21296/LUP. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/21715

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 28 de agosto – 14 de septiembre de 2026

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 #25CZ24 North Salem Street Mixed Use Planned Unit Development
Project Location:	0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlion Downs Ln.
Applicant or Authorized Agent:	Paul Munana, Merit Group, LLC Matthew Carpenter, Parker Poe, LLP
Planning Board Public Hearing Date:	September 14, 2026
Project Planner:	June Cowles, Senior Planner

This is to certify that I, as Planning Director, mailed or caused to have mailed by first class postage for the above mentioned project on August 28, 2026, 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 and tenants within 500' of the land subject to notification. I further certify that I relied on information from the Wake County Tax Assessor and the Town of Apex Master Address Repository provided to me by Town of Apex GIS Staff as to accuracy of the list and accuracy of mailing addresses of property owners and tenants within 500' of the land subject to notification.

8/31/2026
Date

Planning Director

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, LAUREN J SISSON, a Notary Public for the above State and County, this the 31st day of AUGUST, 2026.

Notary Public

LAUREN J SISSON
Notary Public - North Carolina
Wake County
My Commission Expires Oct 3, 2027

My Commission Expires: 10/3/2027

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

PUBLIC NOTIFICATION OF PUBLIC HEARINGS

CONDITIONAL ZONING #25CZ24
N. Salem Street Mixed-Use PUD

Pursuant to the provisions of North Carolina General Statutes §160D-602 and to the Town of Apex Unified Development Ordinance (UDO) Section 2.2.11, notice is hereby given of public hearings before the Planning Board and Town Council of the Town of Apex. The purpose of these hearings is to consider the following:

Applicant: Merit Group, LLC
Authorized Agents: Matthew Carpenter, Parker Poe, LLP & Paul Munana, Merit Group, LLC
Property Addresses: 0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlion Downs Ln
Acreage: ±32.35 acres
Property Identification Numbers (PINs): 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712
Current 2045 Land Use Map Designation: Mixed Use: High Density Residential/Office Employment/Commercial Services (±4.92 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (±27.38 acres)
If rezoned as proposed, the 2045 Land Use Map Designation will change to: Mixed Use: High Density Residential/ Office Employment/Commercial Services (±8.27 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (±24.03 acres)
Existing Zoning of Properties: Residential Agricultural (RA), Rural Residential (RR), Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
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: October 13, 2026 6:00 PM

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

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the Office of the Town Clerk (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 prior to their vote. Please include the Public Hearing name in the subject line.

Vicinity Map:



Property owners, tenants, and neighborhood associations within 500 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, Planning Department, with questions or for further information. To view the petition and related documents on-line: https://www.apexnc.org/DocumentCenter/View/52723.

Dianne F. Khin, AICP
Planning Director

Published Dates: September 18 – October 13, 2026

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELÉFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS

ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ24
N. Salem Street Mixed-Use PUD

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: Merit Group, LLC
Agente autorizado: Matthew Carpenter, Parker Poe, LLP & Paul Munana, Merit Group, LLC
Dirección de las propiedades: 0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlion Downs Ln
Superficie: ±32.35 acres
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Si se aprueba el cambio de zonificación como se propone, el Mapa de Uso Territorial para el 2045 cambiará a: Mixed Use: High Density Residential/Office Employment/Commercial Services (±8.27 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (±24.03 acres)
Ordenamiento territorial existente de las propiedades: Residential Agricultural (RA), Rural Residential (RR), Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
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: 13 de octubre de 2026 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.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la oficina del Secretario Municipal (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.

Mapa de las inmediaciones:



Los propietarios, inquilinos y asociaciones de vecinos en un radio de 500 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 al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/52723.

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 18 de septiembre – 13 de octubre

Legal Notice of Public Hearings / AGENDA

https://www.apexnc.org/DocumentCenter/View/56331/25CZ24-TC-Public-Notice-combo?bidId=

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TOWN OF APEX
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PHONE 919-249-3426

PUBLIC NOTIFICATION
OF PUBLIC HEARINGS
CONDITIONAL ZONING #25CZ24
N. Salem Street Mixed-Use PUD

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Town Council Public Hearing Date and Time: October 13, 2026 6:00 PM
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Dianne F. Khin, AICP
Planning Director

Published Dates: September 18 – October 13, 2026

Search | 75°F Partly sunny | 8:31 AM 9/18/2026

Legal Notice of Public Hearings / AGENDA

https://www.apexnc.org/DocumentCenter/View/56331/25CZ24-TC-Public-Notice-combo?bidId=

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Draw | 2 of 2 | Edit with Acrobat

TOWN OF APEX
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TELEFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ24
N. Salem Street Mixed-Use PUD

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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: 13 de octubre de 2026 6:00 P.M.
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Mapa de las inmediaciones:



Los propietarios, inquilinos y asociaciones de vecinos en un radio de 500 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/cmaps. 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 al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/52723.

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 18 de septiembre – 13 de octubre de 2026

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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 #25CZ24 N. Salem Street Mixed-Use Planned Unit Development
Project Location:	0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlion Downs Ln.
Applicant or Authorized Agent:	Paul Munana, Merit Group, LLC Matthew Carpenter, Parker Poe, LLP
Town Council Public Hearing Date:	October 13, 2026
Project Planner:	June Cowles, Senior Planner

This is to certify that I, as Planning Director, mailed or caused to have mailed by first class postage for the above mentioned project on September 18, 2026, 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 and tenants within 500' of the land subject to notification. I further certify that I relied on information from the Wake County Tax Assessor and the Town of Apex Master Address Repository provided to me by Town of Apex GIS Staff as to accuracy of the list and accuracy of mailing addresses of property owners and tenants within 500' of the land subject to notification.

9/21/2026
Date

Planning Director

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, LAUREN J SISSON, a Notary Public for the above State and County, this the 21st day of SEPTEMBER, 2026.

Notary Public

LAUREN J SISSON
Notary Public - North Carolina
Wake County
My Commission Expires Oct 3, 2027

My Commission Expires: 10/3/2027

TOWN OF APEX
POST OFFICE BOX 250
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CONTINUED
PUBLIC NOTIFICATION OF PUBLIC HEARINGS
CONDITIONAL ZONING #25CZ24
N. Salem Street Mixed-Use PUD

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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: ~~**October 13, 2026**~~ **November 10, 2026 6:00 PM**

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

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the Office of the Town Clerk (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 prior to their vote. Please include the Public Hearing name in the subject line.

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Dianne F. Khin, AICP
Planning Director

Published Dates: September 18 – ~~October 13~~, November [illegible]

TOWN OF APEX
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TELÉFONO 919-249-3426

CONTINUADO

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS

ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ24
N. Salem Street Mixed-Use PUD

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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: ~~13 de octubre~~ 10 de noviembre de 2026 6:00 P.M.

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Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 18 de septiembre – ~~13 de octubre~~ re de 2026

AGENDA
https://www.apexnc.org/DocumentCenter/View/56806/25CZ24...
Maps/GIS | Team Apex Landin... | SharePoint Folders | Planning Tools
1 of 2

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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: ~~**October 13, 2026**~~ **November 10, 2026 6:00 PM**

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

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the Office of the Town Clerk (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 prior to their vote. Please include the Public Hearing name in the subject line.

Vicinity Map:



Property owners, tenants, and neighborhood associations within 500 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, Planning Department, with questions or for further information. To view the petition and related documents on-line: https://www.apexnc.org/DocumentCenter/View/52723.

Dianne F. Khin, AICP
Planning Director

Published Dates: September 18 – ~~October 13~~, November 10, 2026

84°F Sunny
8:48 AM 10/14/2026

CONTINUADO

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELÉFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ24
N. Salem Street Mixed-Use PUD

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: Merit Group, LLC
Agente autorizado: Matthew Carpenter, Parker Poe, LLP & Paul Munana, Merit Group, LLC
Dirección de las propiedades: 0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlion Downs Ln
Superficie: ±32.35 acres
Números de identificación de las propiedades: 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712
Designación actual en el Mapa de Uso Territorial para 2045: Mixed Use: High Density Residential/Office Employment/ Commercial Services (±4.92 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (±27.38 acres)
Si se aprueba el cambio de zonificación como se propone, el Mapa de Uso Territorial para el 2045 cambiará a: Mixed Use: High Density Residential/Office Employment/Commercial Services (±8.27 acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (±24.03 acres)
Ordenamiento territorial existente de las propiedades: Residential Agricultural (RA), Rural Residential (RR), Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
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: ~~13 de octubre~~ 10 de noviembre de 2026 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.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la oficina del Secretario Municipal (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.

Mapa de las inmediaciones:



Los propietarios, inquilinos y asociaciones de vecinos en un radio de 500 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 al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/52723.

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 18 de septiembre – ~~13 de octubre~~ 10 de noviembre de 2026


Prepared by: Town of Apex Planning Department
December 2025
October 2025 Aerial Photography
Rezoning #25CZ24
Crossroads Ford
Crossroads Ford Truck Center
All Wheel Dr
Key Ring Dr
N Salem St
Thales Academy
Charlion Downs Ln
Taywood Way
Rexhill Ct
Brittley Way
Charlion Downs Ln
Frenchurch Way
Haddon Hall
Ibayne Ct
0
400
800
Feet
Public Hearing Sign Posted By:
Signature
12/17/2025
Date

WAKE COUNTY
PUBLIC SCHOOL SYSTEM

Office of Student Assignment
5625 Dillard Dr.
Cary, NC 27518
studentassignment@wcpss.net

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

August 05, 2026

Dianne Khin, AICP
Director, Planning Department
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: November 2, 2025
- Name of development: 25CZ24 N. Salem St Mixed Use PUD
- Address of rezoning: 0, 1201, 1205, 1207, 1301, 1303, 1405, 1409, N. Salem Street; 0 Charlion Downs Lane (PINs 0742360631, 0742363799, 0742366583, 0742366306, 0742350909, 0742362719, 0742268387, 0742362432, 0742368697, 2363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742369278, 0742367712)
- Total number of proposed residential units (revised July 2026): 460 (175 max townhomes/small scale multi-family; 285 max apartments)
- Type(s) of residential units proposed: Townhomes, small scale multi- family (2–10-unit buildings), and apartments

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,

Susan W. Pullium, MSA
Senior Director

Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467
sandec.com

January 12, 2026
S&EC Project No: 16759.W8
USFWS Project Code: 2026-0032073

Re: 1301 North Salem Street Assemblage, Apex – Wake County, North Carolina

We have reviewed the referenced project using the USFWS North Carolina Field Office's online project review process and have followed all guidance and instructions in completing the review. We completed our review January 12, 2026, and are submitting our project review package in accordance with the instructions for further review.

Our proposed action consists of: *A planned mixed residential and commercial development with no proposed impacts to jurisdictional waters of the US.*

The location of the project and the action area are identified on the enclosed maps.
1301 North Salem Street Assemblage (35.745764, -78.851684). The site is located at 1301 North Salem Street, Apex – Wake County, North Carolina.

The enclosed project review package provides the information about the species and critical habitat considered in our review. The species conclusions table included in the package identifies our determinations for the resources that may be affected by the project.

For additional information, please contact Mason Montgomery at mmontgomery@sandec.com

Sincerely,
SOIL & ENVIRONMENTAL CONSULTANTS, INC.

Mason Montgomery
Environmental Scientist, Wetlands Department

Enclosures:

1. Project Request Review Package
2. S&EC T&E Species Report
3. Vicinity Maps
4. S&EC Photo Report
5. Concept Plan
6. FWS Official Species List
7. NHP Report
8. FWS Species Conclusion Table
9. FWS Self-Certification Letter

Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 ▪ Phone (919) 846-5900 ▪ Fax (919) 846-9467
sandec.com

January 12, 2026
S&EC Project No.: 13759.W8
USFWS Project Code: 2026-0032073

To: Merit Group, LLC
Paul Muñana
5053 Sunset Fairways Dr.
Holly Springs, NC 27540

Re: **THREATENED & ENDANGERED SPECIES REPORT**
1301 North Salem Street Assemblage (+/- 32.4 acres)
1301 North Salem Street, Apex, Wake County, NC

Paul Muñana:

On January 8, 2026, Soil & Environmental Consultants, Inc. (S&EC) evaluated the 1301 North Salem Street Assemblage site shown on the attached maps for potential endangered species. The property is located at North Salem Street in Wake County, NC and is in the B Everett Jordan Lake-New Hope River watershed (030300020609). Surface waters on-site flow into Beaver Creek in the Cape Fear River Basin, which has been classified in the "Classification and NC DWQ Standards Applicable to Surface Waters and Wetlands of North Carolina" as WS-IV; NSW.

We obtained the attached automatically generated official species list from the U.S. Fish & Wildlife Service (FWS) and N.C. Natural Heritage Program (NHP) report identifying the protected species on or within one mile of the project area that could potentially be affected by the project. The FWS official species list specific to the project was valid as of the date of this report. The official species list is valid for 90 days.

We conducted preliminary habitat assessments to identify suitable habitat for the individual species listed on the official species list. Detailed botanical surveys were not conducted within the optimal

survey windows for the listed plant species. The preliminary habitat assessments included assessing the physical characteristics of the streams, identifying forest types, and looking for evidence of the listed species on-site. This survey did not include any detailed mist netting or acoustic surveys for bat species. The results of the search are discussed below.

RESULTS:

The FWS official species list identified the following species for the Evaluation limits:

- Tricolored Bat, (*Perimyotis subflavus*), Proposed Endangered
- Monarch Butterfly (*Danaus plexippus*), Proposed Threatened
- Michaux's Sumac (*Rhus michauxii*), Endangered

Of the species identified on the official species list, the NHP report did not identify any Federally threatened or endangered species within the project area or within one mile of the project area. Other State listed species were found within one mile of the project area as listed in the attached NHP report. The NHP report identified seven managed areas within one mile of the project area. These are listed out in the attached NHP Report.

TRICOLORED BAT (*Perimyotis subflavus*):

S&EC personnel conducted preliminary surveys of potential suitable habitat for the Tricolored Bat's within the project area. Due to the current status of TCB, consultation with USFWS under section 7 of the Endangered Species Act is not required. Additionally, no federal action is anticipated for this project. Due to the nature of the project being residential and commercial development, which will include tree removal, we concluded that the project will "*May affect, but not likely to jeopardize the existence of the species*" for TCB's. If it is later determined that the project does require a federal action, FWS should be consulted to determine if avoiding tree clearing during winter torpor (mid-December through mid-February) and the summer pup season (May through July) is necessary to reach a "*May affect, not likely to adversely affect*" determination for TCB.

MONARCH BUTTERFLY (*Danaus plexippus*):

The Monarch Butterfly is currently listed as a proposed threatened species. Due to the current status of Monarch Butterfly, consultation with USFWS under section 7 of the Endangered Species Act is not

required. S&EC believes the project will "*May affect, not likely to jeopardize the existence of the species*" for Monarch Butterfly. FWS recommends planting native milkweed and other species that support native pollinators as additional conservation measures.

MICHAUX'S SUMAC (*Rhus michauxii*):

S&EC personnel conducted preliminary surveys of suitable habitat within the project area. We found no individual Michaux's Sumac species within the project area. The NHP report did not list any known element occurrence within the project area or one mile of the project area. We found suitable habitat within the project areas to include primarily disturbed open areas along roads, paths, and pond edges. It should be noted that this preliminary survey was done outside of the optimal survey window (May-October). While we did not find any Michaux's Sumac plants within the project area, our survey was conducted outside of the optimal survey window and as suitable habitat was found it is possible that Michaux's Sumac exists and therefore we concluded the project would "*May affect, not likely to adversely affect*" Michaux's Sumac. We recommend consulting with USFWS and/or conducting follow up surveys within the optimal survey window if the project is determined to have a federal nexus.

BALD EAGLE (*Haliaeetus leucocephalus*):

S&EC personnel conducted preliminary surveys of suitable habitat, nesting sites, and individual Bald Eagles within the project area and 660' from the property boundary. The NHP report did not identify any known nests on-site or within one mile of the site. During our survey, we found no evidence of Bald Eagles or any nesting sites within the project area. There are known Bald Eagle nests +/- 5 miles west at Beaver Creek arm of Jordan Lake, and +/- 7 miles north at Lake Crabtree and Brier Creek Reservoir. Additionally, there are known nests +/- 9 miles east located at Lake Raleigh. Given that there are two ponds on property, and several other ponds and stormwater devices adjacent the property, It is possible Bald Eagles visit this area for foraging. Given the lack of species present, we have concluded that the project is "*Unlikely to disturb nesting bald eagles.*" We believe no Eagle Act Permit is required.

CONCLUSION:

After completing the habitat assessments and preliminary surveys, S&EC completed the attached "Species Conclusion Table" and "Self-Certification Letter." Using language typically used by the FWS in their conclusion letters, we have concluded that ***it appears the proposed project is not likely to adversely affect any federally listed endangered or threatened species, their formally designated critical habitat, or species currently proposed for listing under the Endangered Species Act (ESA).***

Sincerely,
SOIL AND ENVIRONMENTAL CONSULTANTS, INC.

Mason Montgomery
Environmental Scientist, Wetlands Department

Attachments:

1. USGS Vicinity Map
2. Soil Survey Vicinity Map
3. Aerial Map
4. Photo Report
5. Concept Plan
6. FWS Official Species List. January 2, 2026.
7. NHP Report: January 2, 2026.
8. S&EC – FWS Species Conclusion Table. January 12, 2026.
9. S&EC – FWS Self-Certification Letter. January 12, 2026.

References:

-"12 Digit Huc Subwatersheds." *NC DEQ GIS Data*, NCDEQ, data-ncdenr.opendata.arcgis.com/datasets/ncdenr::12-digithucsubwatersheds-1/explore.

-"Bald Eagle (Haliaeetus Leucocephalus): U.S. Fish & Wildlife Service." *FWS.Gov*, USFWS, www.fws.gov/species/baldeaglehaliaeetus- leucocephalus.

-"Monarch (Danaus Plexippus): U.S. Fish & Wildlife Service." *FWS.Gov*, USFWS, www.fws.gov/species/monarch-danaus-plexippus.

-"NC Surface Water Classifications." *Experience*, NCDEQ, experience.arcgis.com/experience/7073e9122ab74588b8c48ded34c3df55.

-North Carolina Natural Heritage Program. 2017. Biotics Database. Department of Environment and Natural Resources, Raleigh, North Carolina.

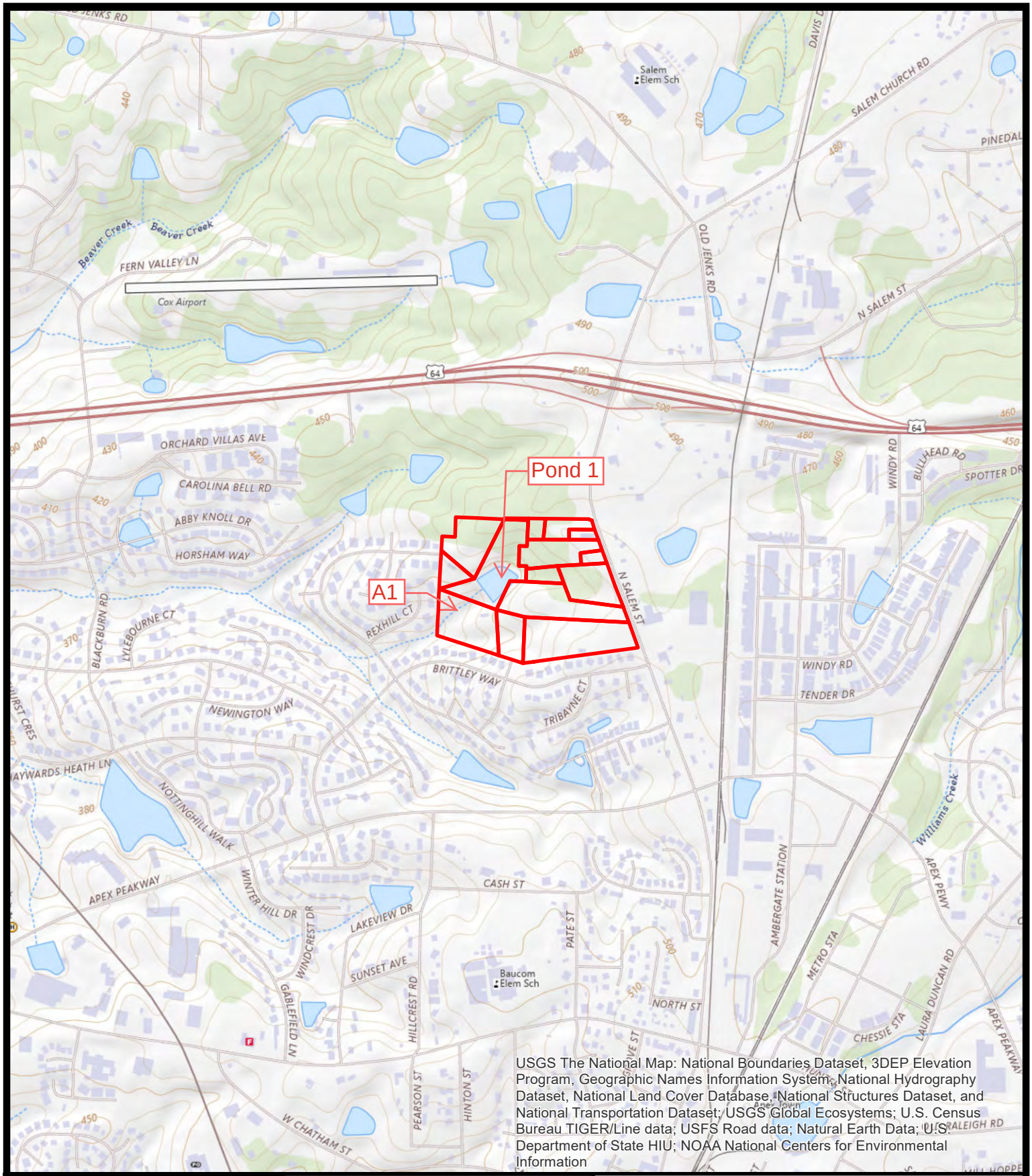
-Reid, Rebekah, and Dale Suiter. "North Carolina's Federally Threatened, Endangered, and at-Risk Plant Species: U.S. Fish & Wildlife Service." *FWS.Gov*, USFWS, 21 Mar. 2022, www.fws.gov/story/2022-03/north-carolinas-federally-threatened-endangered-and-riskplantspecies.

-US Fish and Wildlife Service. Information for Planning and Consultation (IPaC) & Raleigh Ecological Services Field Office Online Project Reviews website.

-U.S. Fish and Wildlife Service. 1993. Michaux's Sumac Recovery Plan. Atlanta, Georgia: U.S. Fish and Wildlife Service. 30pp.

-U.S. Fish and Wildlife Service. 2021. Species Assessment (SSA) Report for the Tricolored Bat (*Perimyotis subflavus*) Version 1.1. Hadley, MA.

-U.S Fish and Wildlife Service. 2022 Recommended Minimum Culvert Dimensions for Bat Roost Surveys in Western North Carolina. Ashville, NC.



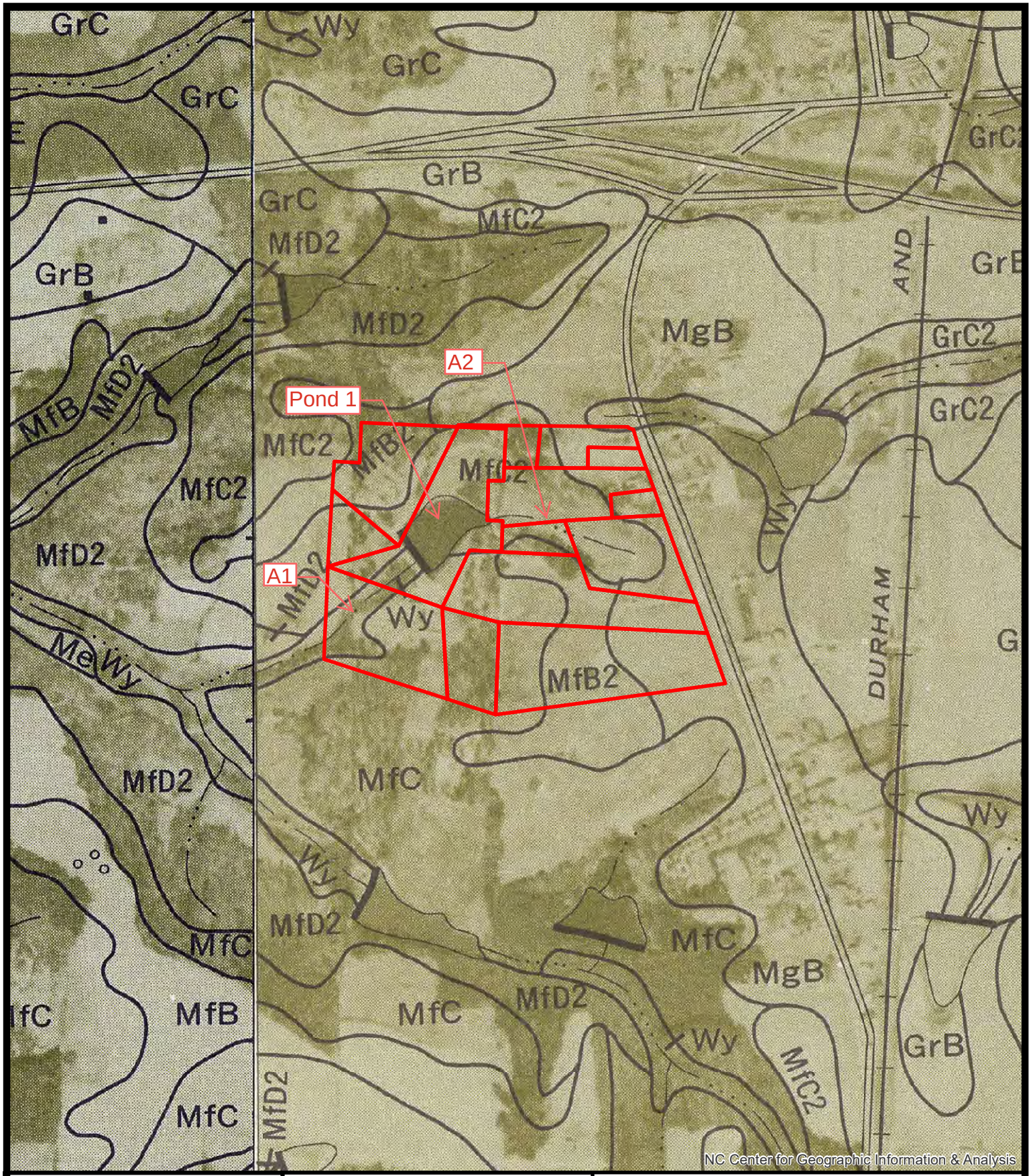
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S. Department of State HIU; NOAA National Centers for Environmental Information

Project Number:	13759.W8
Project Manager:	MM
Scale:	1" = 1000'
Date:	01/12/2026
Map Title:	USGS Map 1301 N. Salem St Assemblage, Apex, NC
Source:	ESRI USGS Na

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S&EC Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467
sandec.com



Project Number:	13759.W8
Project Manager:	MM
Scale:	1" = 500'
Date:	01/12/2026

Map Title:

Soil Survey Map

1301 N. Salem St Assemblage, Apex, NC

Source: Wake Co Survey Sh

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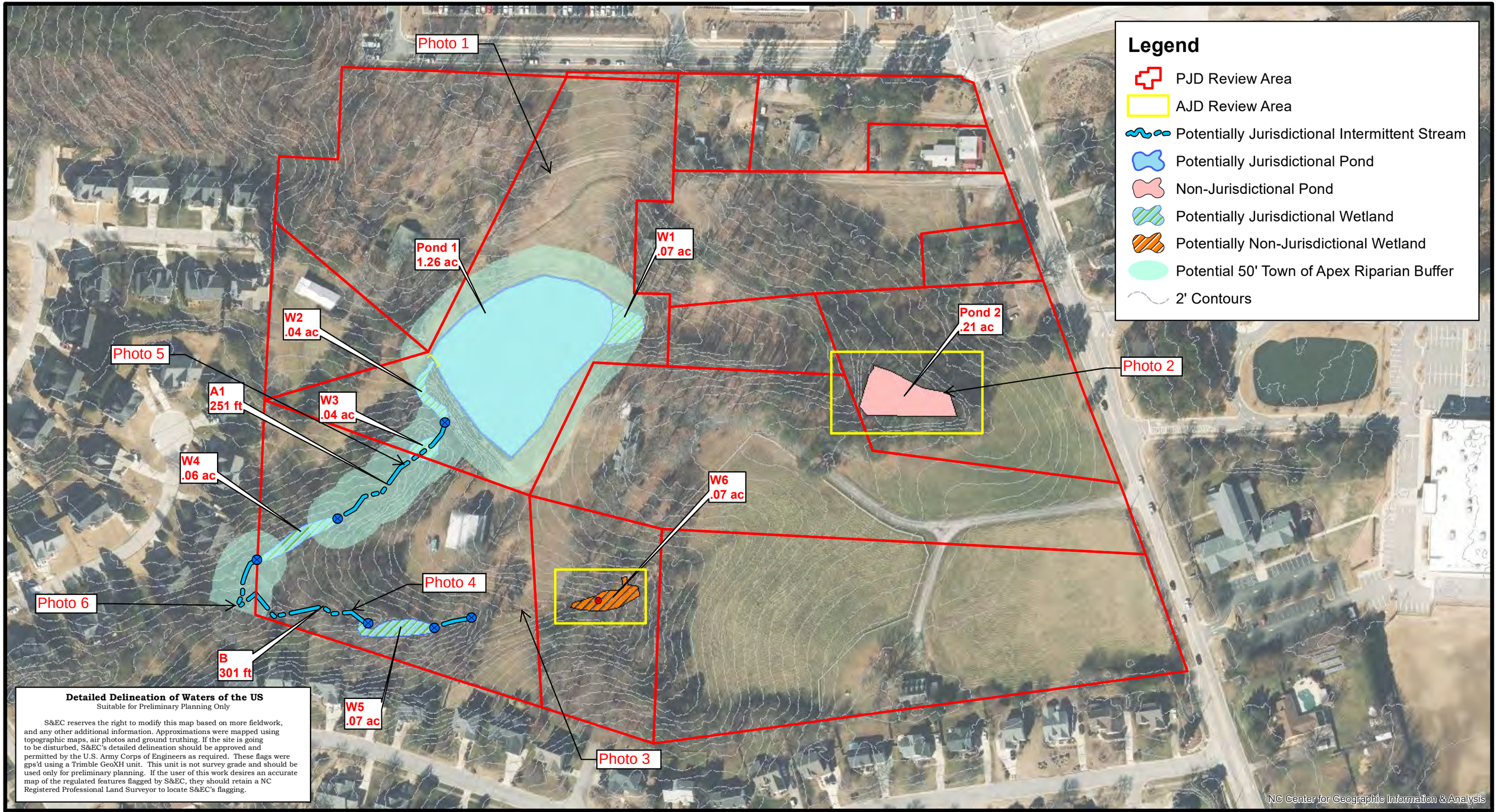


Project Number: 13759.W8	**Map Title:** Bald Eagle Disturbance Limit Map 1301 N. Salem St Assemblage, Apex, NC
Project Manager: MM	
Scale: 1" = 500'	**Source:** NC One
Date: 01/12/2026	

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S&EC Soil & Environmental Consultants, Inc.
9432 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467
seandec.com



Detailed Delineation of Waters of the US
Suitable for Preliminary Planning Only

S&EC reserves the right to modify this map based on more fieldwork, and any other additional information. Approximations were mapped using topographic maps, air photos and ground truthing. If the site is going to be disturbed, S&EC's detailed delineation should be approved and permitted by the U.S. Army Corps of Engineers as required. These flags were gps'd using a Trimble GeoXH unit. This unit is not survey grade and should be used only for preliminary planning. If the user of this work desires an accurate map of the regulated features flagged by S&EC, they should retain a NC Registered Professional Land Surveyor to locate S&EC's flagging.

Project No. 13759.W8	
Project Mgr.: MM	
Scale: 1" = 150'	N / W / E / S; 0 150 300 600 Feet
01/12/2026	

Aerial Photo Map

1301 N. Salem Rd Assemblage,
Apex, NC

Source: Aerials from - Page 1036 - ps

S&EC
Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467
sandec.com

Job #: 13759.W8

Photos taken on January 8, 2026

Threatened and Endangered Species Photo Report for the 1301 North Salem Street Assemblage Project

Photo 1: Pond 1



Photo 2: Pond 2

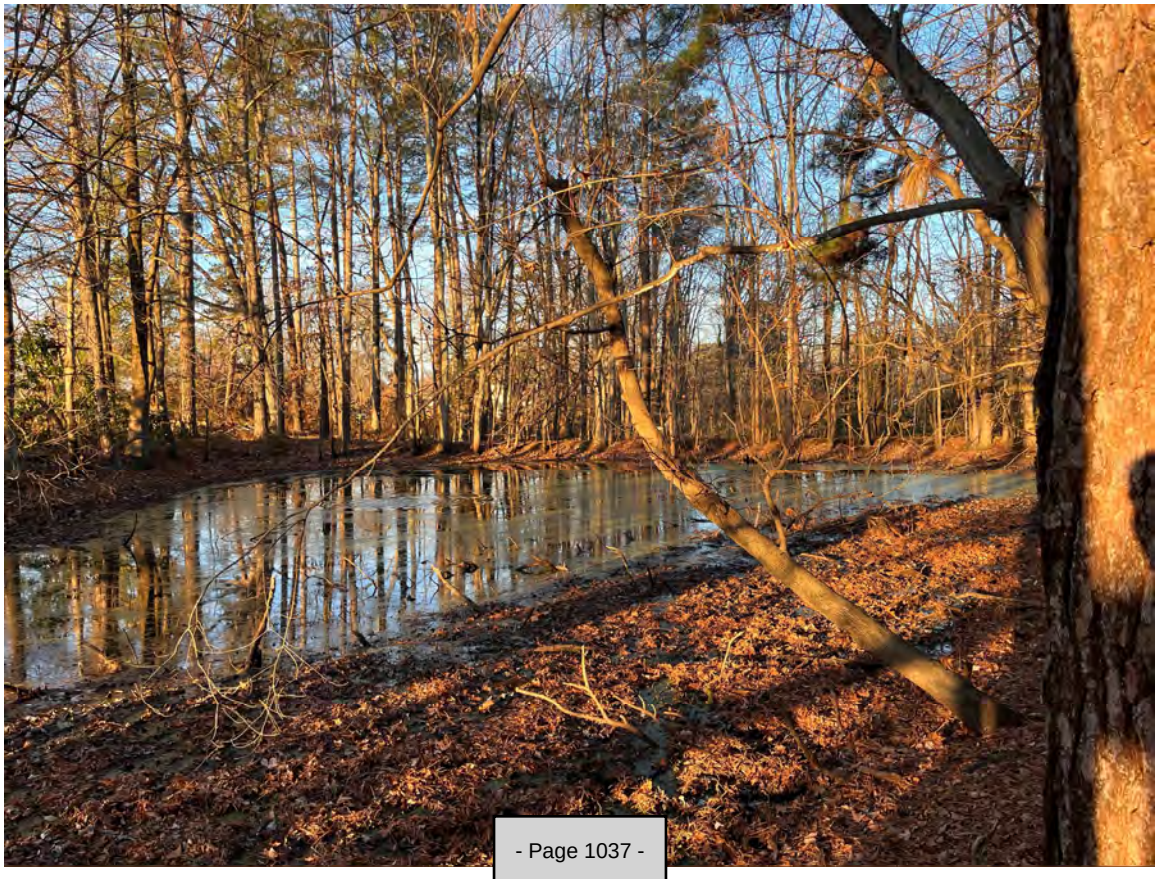


Photo 3: Wetland 6 disconnect



Photo 4: Feature B – Intermittent stream



Photo 5: Feature A – Intermittent stream



Photo 6: below confluence of Features A & B



Plotted By: Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C3.0 December 01, 2025 08:05:18am K:\HSP_LDEV_Marketing\Merit Group LLC\N. Salem Street - Apex\Rezoning\07_CAD Files\Phase 1\Plan\Sheets\C3.0 SITE PLAN.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



SITE LEGEND

- PROPERTY LINE
- 50' TOWN OF APEX RIPARIAN BUFFER
- LOCAL STREET
- 10' SIDEPATH
- ACTIVE RECREATION AREA/PLAY LAWN
- VEHICULAR ACCESS
- 10' ROW DEDICATION
- BUILDINGS IN THIS AREA SHALL BE LIMITED TO 4 FLOORS (55 FT) SEE PLAN FOR LOCATION
- EXISTING WETLAND
- PERIMETER BUFFER/RESOURCE CONSERVATION AREA (MINIMUM OF 20% OF SITE AREA)
- MULTI-RESIDENTIAL (MULTI-FAMILY, TOWNHOUSES
- MULTI-FAMILY (APARTMENTS)
- MULTI-FAMILY APARTMENTS; NON-RESIDENTIAL
- TOWNHOUSES

GENERAL NOTES:

1. ALL ZONING PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. FINAL DESIGN COMPONENTS SHALL BE DETERMINED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
2. REFER TO THE PUD TEXT DOCUMENTS FOR ALLOWABLE USES, ZONING CONDITIONS, AND OTHER DESIGN STANDARDS.
3. ALL VEHICULAR ACCESS LOCATIONS AND PEDESTRIAN CIRCULATION ARE CONCEPTUAL AND SHALL BE FINALIZED DURING THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
4. A PUBLIC PEDESTRIAN ACCESS EASEMENT WILL BE PROVIDED FROM THE CUL-DE-SAC ON CHARLION DOWNS LANE TO STREET B. EXACT LOCATION TO BE DETERMINED AT THE TIME OF SITE/SUBDIVISION PLAN APPROVAL PROCESS.
5. TREE PROTECTION FENCING SHALL BE PLACED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
6. ALL PARKING STANDARDS SHALL COMPLY WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
7. EXACT LOCATION OF OPEN SPACE AND RESOURCE CONSERVATION AREA TO BE FINALIZED DURING THE SITE/SUBDIVISION APPROVAL PROCESS.
8. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ APPROVAL PROCESS. A SEPARATE SIGN PERMIT MUST BE OBTAINED IN ACCORDANCE WITH THE TOWN OF APEX'S UNIFIED DEVELOPMENT ORDINANCE.
9. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.
10. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING, SCREENING, SITE STABILIZATION (SEEDING), PARKING, AND PAVEMENT MARKING, MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.

UTILITY NOTES:

1. THIS PROJECT IS REQUESTING FULL TOWN SERVICES, INCLUDING BUT NOT LIMITED TO, WATER, SEWER AND ELECTRICITY.
2. THE SITE WILL NOT UTILIZE PRIVATE SEWAGE DISPOSAL SYSTEMS.
3. ALL UTILITY EASEMENTS SHALL BE PROVIDED AS NECESSARY. EXACT LOCATION SHALL BE DETERMINED AT THE TIME OF CONSTRUCTION DRAWINGS.
4. ALL CONSTRUCTION SHALL COMPLY WITH THE TOWN OF APEX STANDARDS AND SPECIFICATIONS.
5. ALL WATER AND SEWER MAINS WITHIN THE PUBLIC EASEMENTS SHALL BE OWNED, OPERATED, AND MAINTAINED BY THE TOWN OF APEX.

GRAPHIC SCALE IN FEET
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NORTH

No.	REVISIONS	DATE	BY
7		-----	----
6		-----	----
5		-----	----
4		-----	----
3		-----	----
2		-----	----
1	----	-----	----

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
#F-0102 WWW.KIMLEY-HORN.COM PHONE: 984-212-4572
1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT JOSEPH C. ZUMMITT 5/5/2026
PRELIMINARY NOT FOR CONSTRUCTION

KHA PROJECT	000000000
DATE	12/01/2025
SCALE	AS SHOWN
DESIGNED BY	RCZ
DRAWN BY	JTG
CHECKED BY	RCZ

N. SALEM STREET MIXED USE

PREPARED FOR
MERIT GROUP LLC

NORTH CAROLINA
APEX

PRELIMINARY SITE LAYOUT

SHEET NUMBER
C3.0

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Ecological Services Field Office
3916 Sunset Ridge Rd
Raleigh, NC 27607
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To: 01/02/2026 20:07:42 UTC
Project Code: 2026-0032073
Project Name: 1301 North Salem Street Assemblage

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). If your project area contains suitable habitat for any of the federally-listed species on this species list, the proposed action has the potential to adversely affect those species. If suitable habitat is present, surveys should be conducted to determine the species' presence or absence within the project area. The use of this species list and/or North Carolina Natural Heritage program data should not be substituted for actual field surveys.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Raleigh Ecological Services Field Office
3916 Sunset Ridge Rd
Raleigh, NC 27607
(919) 856-4520

PROJECT SUMMARY

Project Code: 2026-0032073
Project Name: 1301 North Salem Street Assemblage
Project Type: Residential Construction
Project Description: This project is located in Apex, NC
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.7453656,-78.85347865380902,14z



Counties: Wake County, North Carolina

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Michaux's Sumac *Rhus michauxii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5217	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/ activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project

activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

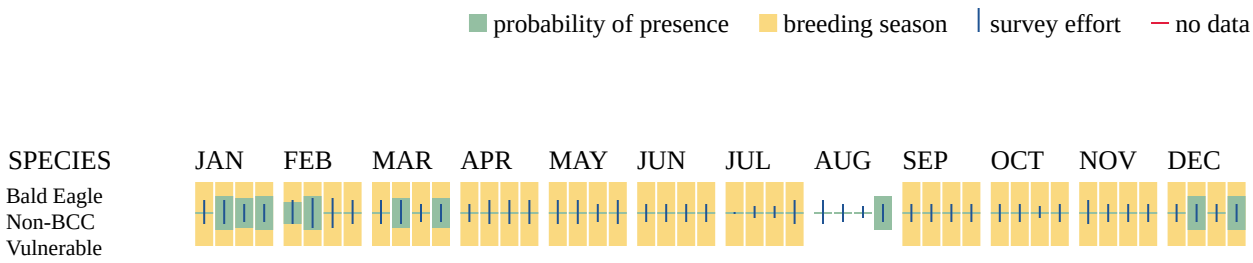
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Grasshopper Sparrow *Ammodramus savannarum perpallidus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Prairie Warbler *Setophaga discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10

NAME	BREEDING SEASON
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

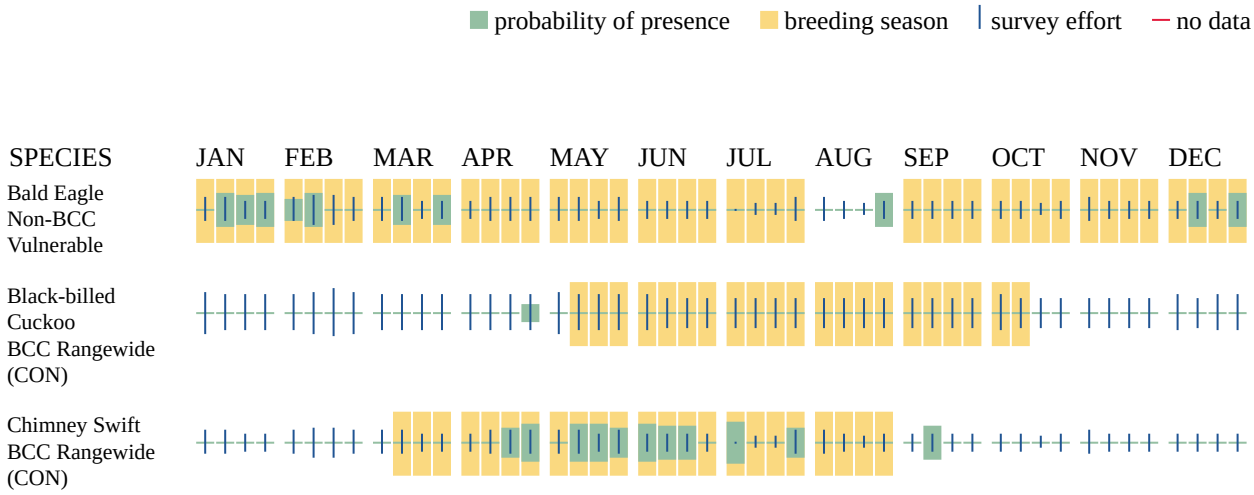
Probability of Presence (■)

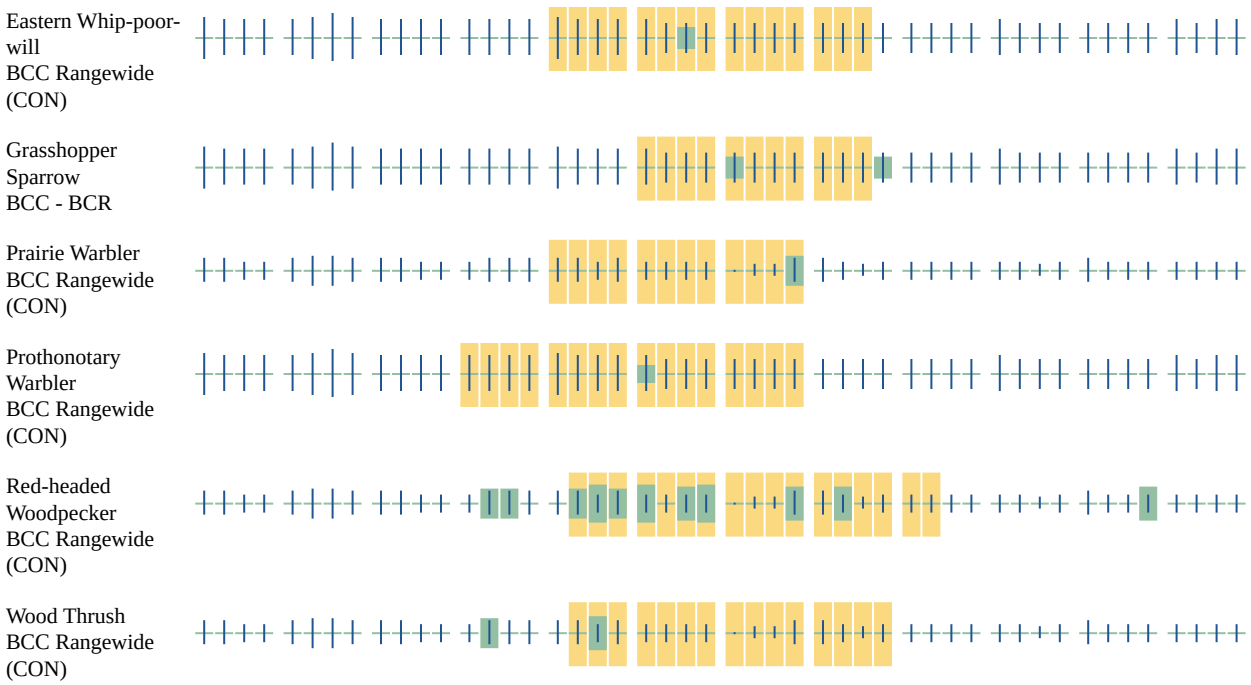
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Emily McCarthy
Address: 8412 Falls of Neuse Road, Suite 104
City: Raleigh
State: NC
Zip: 27615
Email emccarthy@sandec.com
Phone: 9198465900

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Josh Stein, **Governor**
Pamela B. Cashwell
Secretary
Misty Franklin
Deputy Director for Natural Heritage

NCNHDE-33207

January 2, 2026

Mason Montgomery
Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104
Raleigh, NC 27615
RE: 1301 North Salem Street Assemblage; 13759

Dear Mason Montgomery:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: https://www.fws.gov/our-facilities?type=%5B%22Conservation%20Office%22%5D&state_name=%5B%22North%20Carolina%22%5D.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also note that if a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or a NC Land and Water Fund (NCLWF) Project or Conservation Agreement are documented near the project area, NCNHP or NCLWF staff may provide additional correspondence.

If you have questions regarding the information provided in this letter or need additional assistance, please contact the NCNHP at natural.heritage@dncr.nc.gov.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
1301 North Salem Street Assemblage
Project No. 13759
January 2, 2026
NCNHDE-33207

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Reptile	39358	Ophisaurus attenuatus longicaudus	Eastern Slender Glass Lizard	1964-09-14	H	4-Low	---	Special Concern	G5T5	S1

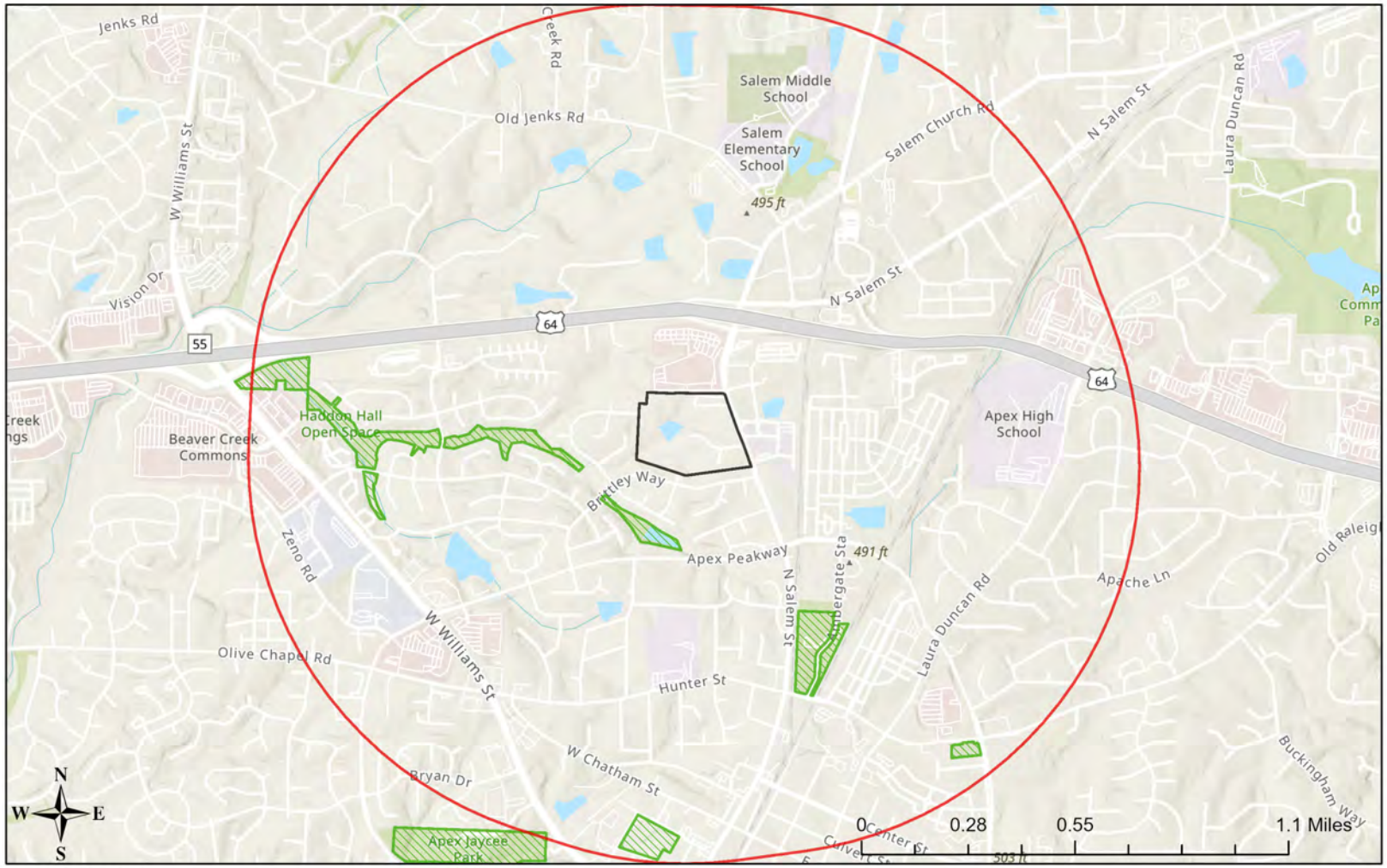
No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
Town of Apex Greenway	Town of Apex	Local Government
Town of Apex Greenway - Hadden Hall Greenway	Town of Apex	Local Government
Town of Apex Open Space	Town of Apex	Local Government
Town of Apex Open Space	Town of Apex	Local Government
Town of Apex Open Space - Hunter Street Park	Town of Apex	Local Government
Town of Apex Open Space - Jaycee Park	Town of Apex	Local Government
Town of Apex Open Space - Jones Park	Town of Apex	Local Government

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on January 2, 2026; source: NCNHP, Fall (October) 2025. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-33207: 1301 North Salem Street Assemblage



January 2, 2026

Managed Area (MAREA)

Buffered Project Boundary

Project Boundary

Esri, NASA, NGA, USGS, FEMA
Duke University, Town of Apex, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Species Conclusions Table

Project Name: 1301 North Salem Street Assemblage

Date: January 12, 2026

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Tricolored Bat (*Perimyotis subflavus*)	Suitable habitat present, no current surveys conducted	May affect, not likely to jeopardize the existence of the species	Preliminary habitat survey completed by S&EC staff on January 8, 2026.
Monarch Butterfly (*Danaus plexippus*)	Suitable habitat present, no current surveys conducted	May affect, not likely to jeopardize the existence of the species	Preliminary habitat survey completed by S&EC staff on January 8, 2026.
Michaux's Sumac (*Rhus michauxii*)	Suitable habitat present, no current surveys conducted	May affect, not likely to adversely affect	Preliminary habitat survey completed by S&EC staff on January 8, 2026. It should be noted this survey took place outside of the optimal survey window (May through October).
Bald Eagle *(Haliaeetus leucocephalus)*	Unlikely to disturb nesting Bald Eagles	No Eagle Act permit required	Preliminary habitat survey completed by S&EC staff on January 8, 2026.
Critical Habitat	No critical habitat present	Not likely to adversely affect	Preliminary habitat survey completed by S&EC staff on January 8, 2026.

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.

Mason Montgomery / Environmental Scientist, Wetlands Department at S&EC, Inc. — January 12, 2026

Signature /Title — Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: January 12, 2026

Self-Certification Letter

Project Name: 1301 North Salem Street Assemblage

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- ☐ "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- ☑ "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- ☐ "may affect, likely to adversely affect" determination for the Northern long-eared bat (Myotis septentrionalis) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- ☑ "no Eagle Act permit required" determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website http://www.fws.gov/raleigh/pp.html. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package

July 8, 2025

AJ Kamal
Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 105
Raleigh, NC 27615

Subject: Stream Buffer Determination
1301 N Salem Street Assemblage
Apex, NC
Cape Fear River Basin

Apex 25-26-001

On July 1, 2025, Steven Ball met with Evan Kirk at 1301 N Salem Street to evaluate three (3) drainage features to determine if they are subject to the Town of Apex (Town) riparian buffer rules. Based on the information obtained during the evaluation and per the requirements set forth in Section 6.1.11 of the Town Unified Development Ordinance (UDO), I concur with the stream classification as shown on the attached sketch dated June 26, 2025.

Drainage Feature	Shown as on USGS	Shown as on Soil Survey	Determination made in the field	Determined Buffer Width
A1	Intermittent	Perennial	Intermittent	50 feet
A2	Not Present	Intermittent	Ephemeral	0 feet
Pond 1	Present	Present	Jurisdictional	50 feet

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the Division of Water Resources (DWR) or Delegated Local Authority in the Jordan Lake watershed may request a determination by the DWR Director.

An appeal request must be made within sixty (60) days of date of this letter or from the date the affected party (including downstream and/or adjacent owners) is notified of this letter. A request for a determination by the Director shall be referred to in writing c/o Paul Wojoski, DWR – 401 & Buffer Permitting Brank; 1617 Mail Service Center, Raleigh, NC 27699-1617. Otherwise the appeal procedure will be in accordance with UDO Section 6.1.11.

If you dispute the Director's determination, you may file a petition for an administrative hearing. You must file the petition with the Office of Administrative Hearings within sixty (60) days of receipt of this notice of decision. A petition is considered filed when it is received in the Office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official State holidays.

To request a hearing, send the original and one (1) copy of the petition to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. A copy of the petition must also be served to the Department of Natural Resources, c/o Bill Lane, General Counsel, 1601 Mail Service Center, Raleigh, NC 27699-1601.

This determination is final and binding unless, as detailed above, you ask for a hearing or appeal within sixty (60) days. This project may require a Section 404/401 Permit for the proposed activity. Any inquiries should be directed to the US Army Corp of Engineers (Raleigh Regulator Field Office) at (919) 554-4884. If you have any questions, please do not hesitate to contact me at (919) 372-7470.

Sincerely,

James Misciagno, CES, CPESC
Stormwater Field Services Supervisor

Riparian Buffer Call
Application

This application is required to be fully completed and submitted to Town staff prior to conducting a buffer call. Please submit the application package electronically to james.misciagno@apexnc.org .

PROPERTY INFORMATION

Owner(s): See Exhibit B: Good Acres Holdings, LLC

Site Address: 1301 N. Salem Road Apex, NC

CONSULTANT INFORMATION (If applicable)

Name: Soil & Environmental Consultants, INC (AJ Kamal)

Address: 8412 Falls of Neuse Road, Suite 104 Raleigh, NC 27615

Email: ajkamal@sandec.com

Phone: 828.320.1959

CHECKLIST

Please place a checkmark in the spaces provided below to indicate that the required information has been provided with this submittal.

Right of Entry Form	X
NCDEQ Stream Identification Forms (v. 4.11)	X
Sketch Map*	X

Topo Map (most recent version)	X
1970 Wake County Soil Survey Map	X

*Sketch map should show all drainage features on the property with all applicable riparian buffers shown. Please clearly indicate or list which features are being called with this application.

NOTES

SIGNATURE (Consultant or Responsible Party)

By my signature below, I certify that the information provided with this application is accurate and truthful.

AJ Kamal

Date: 6/26/2025

S&EC

Soil & Environmental Consultants, Inc.

8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467
sandec.com

PROPERTY OWNER CERTIFICATION / AGENT AUTHORIZATION

Project Name/Description: Good Acres Holdings LLC Assemblage S&EC Project # 13759

Date: 2/24/2025

The Department of the Army
U.S. Army Corps of Engineers, Wilmington District
69 Darlington Avenue
Wilmington, NC 28403

Attn: Lyle Phillips Field Office: Raleigh

I, the undersigned, a duly authorized owner of record of the property/properties identified herein, do authorize representatives of the Wilmington District, U.S. Army Corps of Engineers (Corps) and Soil & Environmental Consultants, Inc. (S&EC) staff (as my agent) to enter upon the property herein described for the purpose of conducting on-site investigations and issuing a determination associated with Waters of the U.S. subject to Federal jurisdiction under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. This document also authorizes S&EC (as my agent) to act on my behalf and take all actions necessary for the processing, issuance and acceptance of a permit or certification and any and all associated standard and special conditions.This notification supersedes any previous correspondence concerning the agent for this project.

NOTICE: This authorization, for liability and professional courtesy reasons, is valid only for government officials to enter the property when accompanied by S&EC staff. You should call S&EC to arrange a site meeting prior to visiting the site.

PARCEL INFORMATION:
Parcel Index Number(s) (PIN): See Attachad - Exhibit B Good Acres Holdings, LLC
Site Address:
City, County, State:

PROPERTY OWNER INFORMATION:
Name: David L Goodwin Manager Good Acres Holdings LLC
Address: 5700 Calton Drive Raleigh NC 27612
Phone No.: Fax No.: Mobile No.: 9197880702
Email: dlkg1996@gmail.com

David L Goodwin LLC Manager
Property Owner (please print)

2/24/2025
Date

Property Owner Signature

We hereby certify the above information submitted in this application is true and accurate to the best of our knowledge.

RIGHT OF ENTRY AGREEMENT

I hereby give permission to Soil & Environmental Consultants, Inc., its employees, agents, contractors, and subcontractors to enter the property described below for the purpose of conducting inspections with respect to the condition of the property as deemed necessary and desirable by the Town of Apex and making such surveys, engineering, topographical, geological, and other tests and measurements, and examinations, as well as the performance of an environmental audit of the property. This Right of Entry does not grant permission to enter any buildings or structures.

The right of entry granted hereunder shall apply to my property located at, or more particularly described as follows: THAT CERTAIN TRACT OF LAND CONTAINING _____ ACRES MORE OR LESS AND FOUND RECORDED IN DEED BOOK _____ AT PAGE _____ OF THE WAKE COUNTY REGISTRY AND FURTHER IDENTIFIED AS TAX PIN #____-__-____ LOCATED IN _____ TOWNSHIP, WAKE COUNTY, NORTH CAROLINA. THE PURPOSE OF THIS RIGHT OF ENTRY IS THE PERFORMANCE OF THE ABOVE LISTED TASKS IN CONJUNCTION WITH THE POSSIBLE WETLAND AND STREAM BUFFER DETERMINATIONS.

See Attached Exhibit B **Good Acres Holdings, LLC**

"INSURANCE CERTIFICATE Required Before SITE ACCESS" DLG

Date: 2/24/2025

BY: _____
(Manager)

Record Owner/Manager: David L Goodwin Good Acres Holdings, LLC Manager
Address: 5700 Calton Drive _____
Raleigh NC 27612_____
Phone#: (919) 788 0702_____
(Please enter a phone number)

Owner: SEE ABOVE

Address: _____

2/24/2025
Date

_____
Representative

Exhibit B
Good Acres Holdings, LLC

Properties Listed for Sale under Good Acres Holdings, LLC

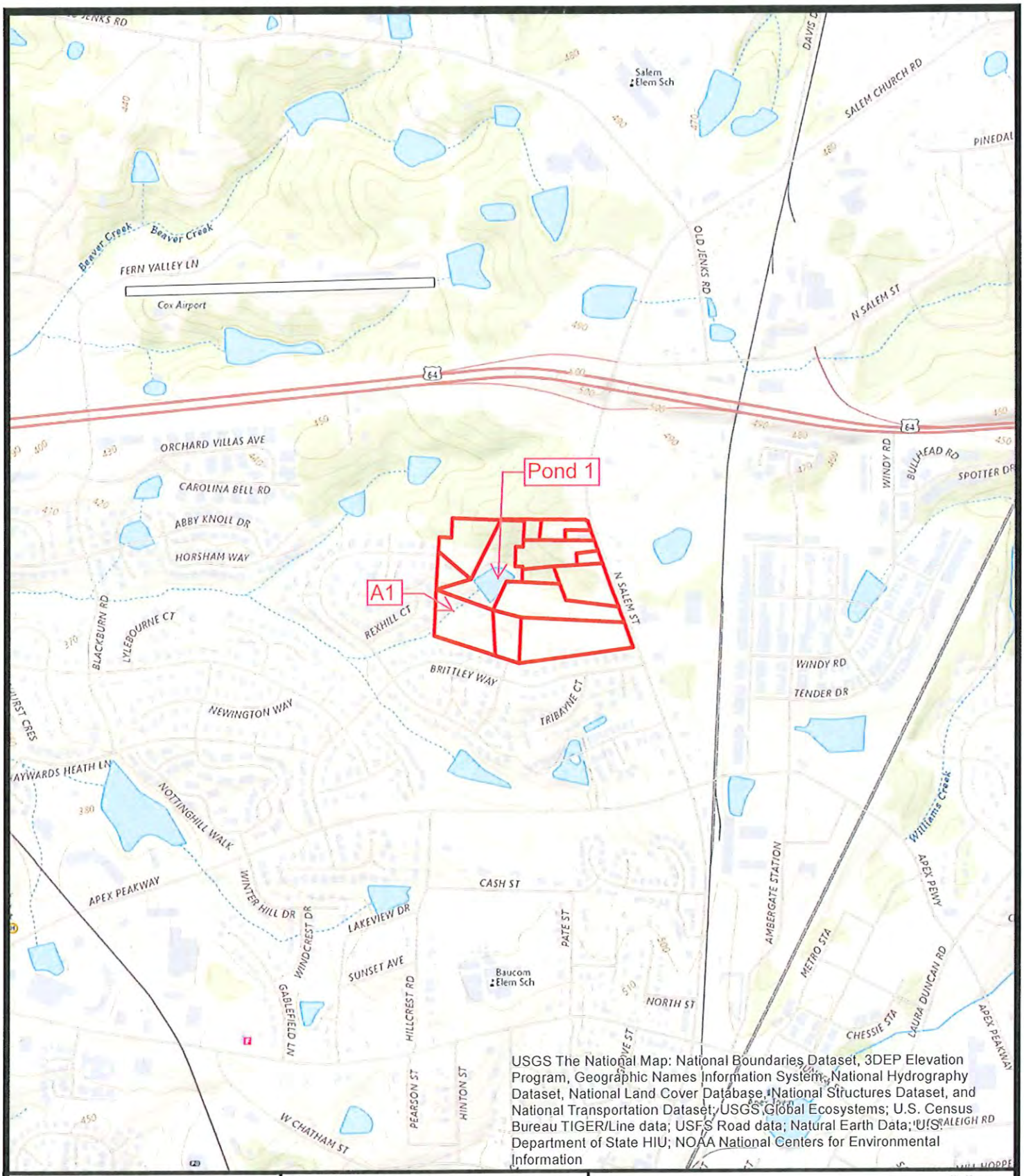
Properties are recorded in the Wake County, NC Register of Deeds under Purchase Contract to Good Acres Holdings, LLC

All properties are in Wake County, NC, in the Town of Apex jurisdiction.

PIN Numbers are Wake County, NC

Deeds are recorded in Wake County NC Register of Deeds

	Underlying Owner Name	PIN #	Acreage	Deed Book/Page
1	DLG Holdings LLC	742360631	3.06 Acres	017929/01179
2	DLG Holdings LLC	742363799	.04 Acres	017929/01179
3	DLG Holdings LLC	742366583	2.54 Acres	017929/01179
4	DLG Holdings LLC	742366306	.73 Acres	017929/01179
5	DLG Holdings LLC	742350909	3.77 Acres	017929/01179
6	DLG Holdings LLC	742362719	.02 Acres	017929/01179
7	DLG Holdings LLC	742268387	.93 Acres	017929/1179
8	DLG Holdings LLC	742362432	4.59 Acres	017929/1179
9	Elizabeth Burgess Chapell	742363169	4.46 Acres	011242/00265
10	Elizabeth Burgess Chapell; Andrew Judson Burgess, Jr.	742358857	5.34 Acres	18-E/4113
11	Elizabeth Burgess Chapell; Andrew Judson Burgess, Jr.	742353848	1.67 Acres	18-E/4113
12	Geraldine L. Gilbert Heirs	742365731	.5 Acres	N/A
13	June N. Thompson Heirs	742369479	.5 Acres	002764/00579
14	June N. Thompson Heirs	742369278	2.8 Acres	002335/00365
			30.95 Total Acres	



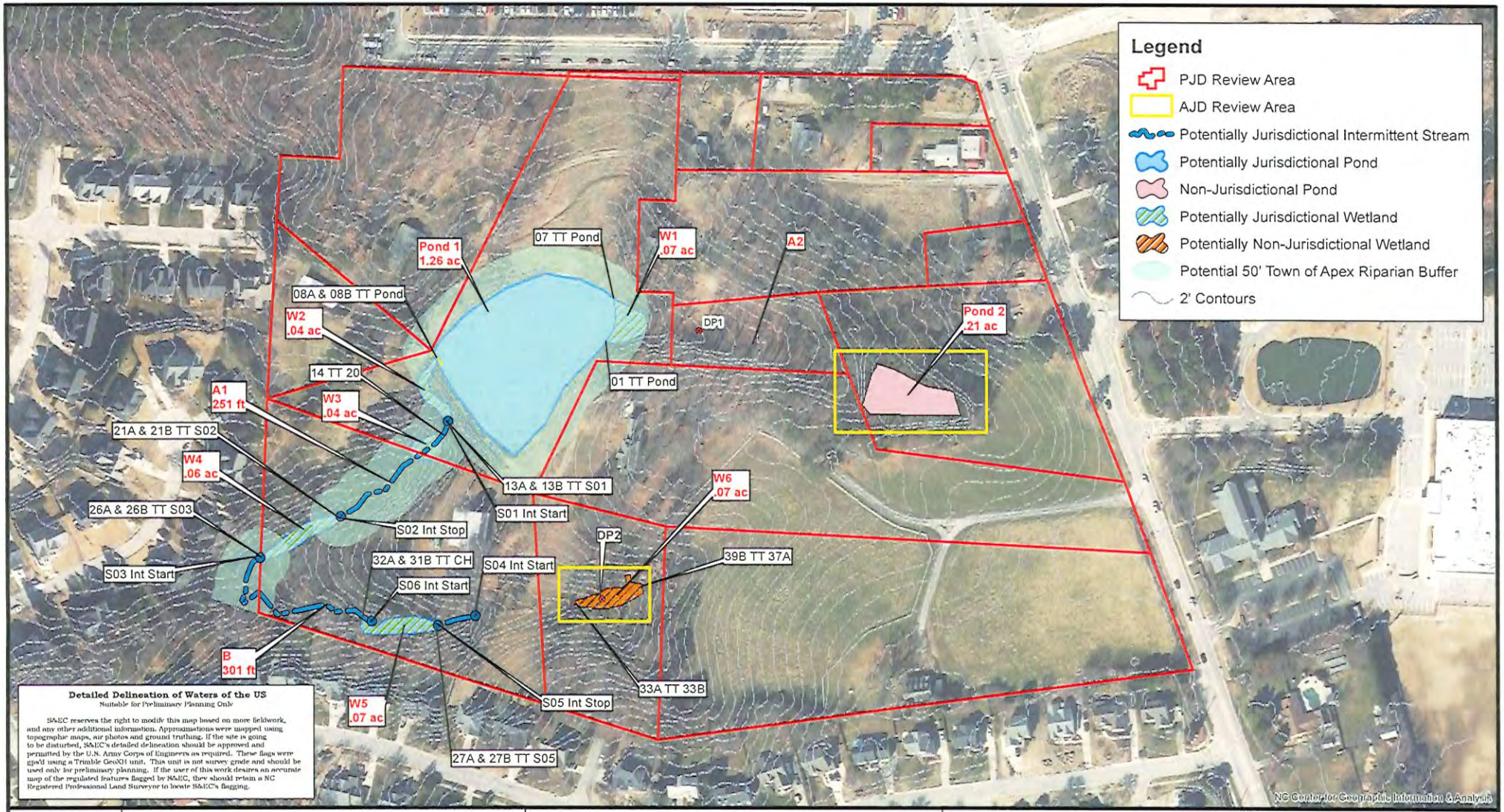
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S. Department of State HIU; NOAA National Centers for Environmental Information

Project Number:	13759.W3
Project Manager:	JH
Scale:	1" = 1000'
Date:	01/20/2025
Map Title:	USGS Map 1301 N. Salem St Assemblage, Apex, NC
Source:	ESRI USGS Na

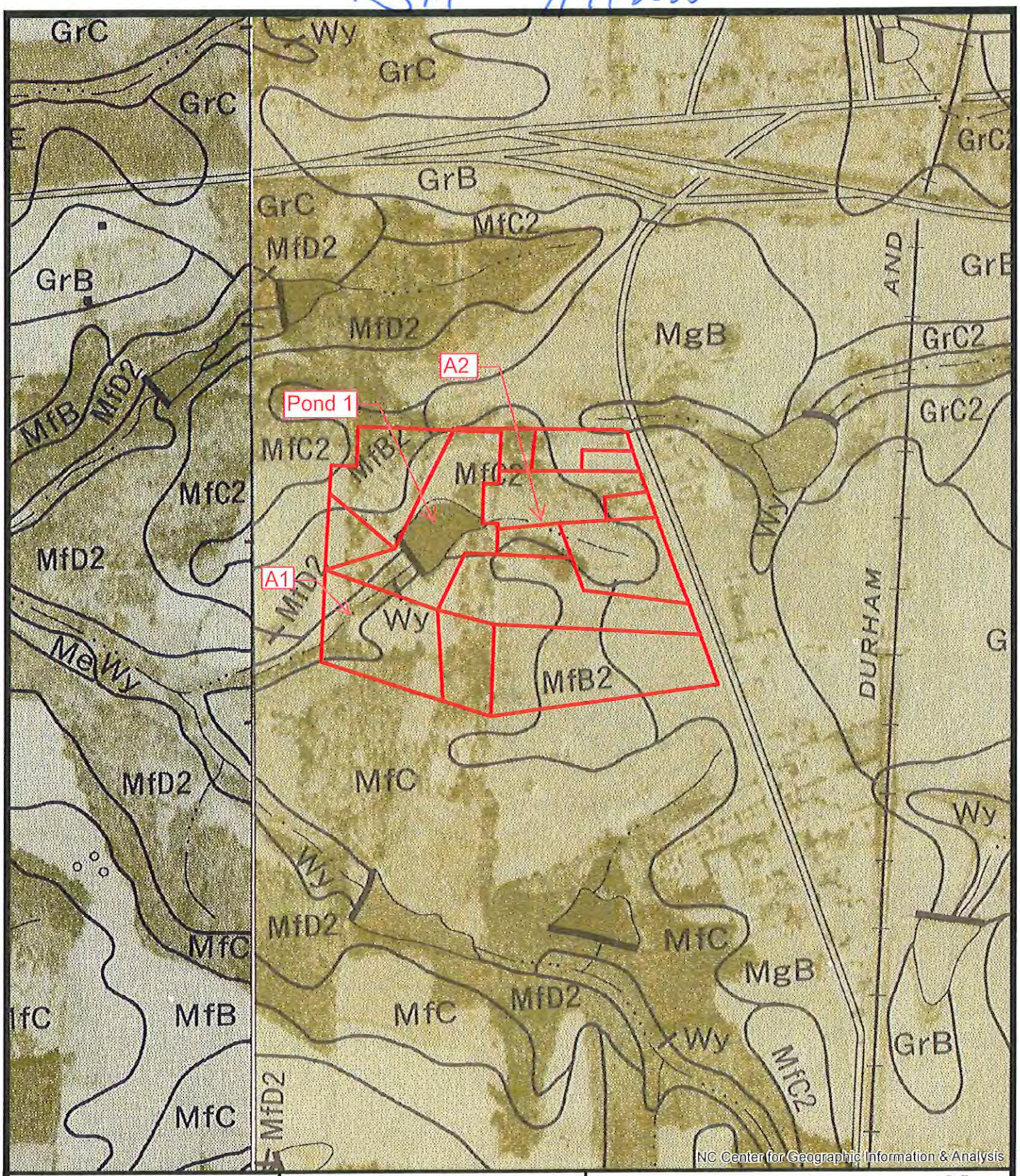
0 1,000 2,000
Feet

N

S&EC Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-5467
saedce.com


Legend
PJD Review Area
AJD Review Area
Potentially Jurisdictional Intermittent Stream
Potentially Jurisdictional Pond
Non-Jurisdictional Pond
Potentially Jurisdictional Wetland
Potentially Non-Jurisdictional Wetland
Potential 50' Town of Apex Riparian Buffer
2' Contours
Pond 1
1.26 ac
07 TT Pond
W1
.07 ac
A2
08A & 08B TT Pond
W2
.04 ac
DP1
Pond 2
.21 ac
14 TT 20
01 TT Pond
A1
251 ft
W3
.04 ac
21A & 21B TT S02
W4
.06 ac
13A & 13B TT S01
W6
.07 ac
26A & 26B TT S03
S01 Int Start
S02 Int Stop
DP2
32A & 31B TT CH
S04 Int Start
39B TT 37A
S03 Int Start
S06 Int Start
B
301 ft
33A TT 33B
W5
.07 ac
S05 Int Stop
27A & 27B TT S05
Detailed Delineation of Waters of the US
Suitable for Preliminary Planning Only
S&EC reserves the right to modify this map based on more fieldwork, and any other additional information. Approximations were mapped using topographic maps, air photos and ground truthing. If the site is going to be disturbed, S&EC's detailed delineation should be approved and permitted by the U.S. Army Corps of Engineers as required. These flags were gps'd using a Trimble GeoXH unit. This unit is not survey grade and should be used only for preliminary planning. If the user of this work desires an accurate map of the regulated features flagged by S&EC, they should retain a NC Registered Professional Land Surveyor to locate S&EC's flagging.
NC Center for Geographic Information & Analysis
Project No.
13759.W3
Project Mgr.:
SB
Scale:
1" = 150'
6/26/2025
N
W
E
S
0
150
300
600
Feet
Wetland Sketch Map
1301 N. Salem Rd Assemblage,
Apex, NC
Source:
Aerials from NC One Maps
S&EC
Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467
sandec.com

JM 7/9/2025



Project Number: 13759.W3	Map Title: Soil Survey Map	0 500 1,000 Feet	N
Project Manager: JH	1301 N. Salem St Assemblage, Apex, NC		
Scale: 1" = 500'	Source: Wake County Soil Survey She	S&EC	Soil & Environmental Consultants, Inc. 8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-5467 sandec.com
Date: 01/20/2025			

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

SF-Feature A2

NC DWQ Stream Identification Form Version 4.11

Date: 1/29/2025	**Project/Site:** 1301 N. Salem Rd	**Latitude:** 35.745616
Evaluator: S&EC - AJ Kamal	**County:** Wake	**Longitude:** -78.853065
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** Non-Scorable Feature	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = _____)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = _____)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = _____)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Non-Scorable Feature

Sketch:

JH Feature not present JM 7/9/2025

Soils = Intermittent

USGS: Not present

EK 6/27/25

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

SF1 - Feature A1

NC DWQ Stream Identification Form Version 4.11

Date: 1/29/2025	**Project/Site:** 1301 N. Salem Rd	**Latitude:** 35.745036
Evaluator: S&EC - AJ Kamal	**County:** Wake	**Longitude:** -78.855083
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 23.5	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 11)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9.5)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	1	2	(3)
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

soils = perennial
USGS = Intermittent

JH

E[illegible]/25

JM 7/9/2025

RiskHydro PLLC
916 East St #1206
Pittsboro, NC 27312
(336) 648-6980

MEMORANDUM

TO: Patrick Smith, PE, LEED AP (Soil & Environmental Consultants, Inc.)

FROM: Matthew Burnette, PG, PH, CFM (RiskHydro PLLC)

DATE: August 4, 2026

SUBJECT: Hydrologic Analysis and Development of Breach Design Flows for North Salem Street Dam (WAKE-649)

---

1 INTRODUCTION AND BACKGROUND

North Salem Street Dam (North Carolina State Dam ID: WAKE-649) is located within the Town of Apex in Wake County, North Carolina (Figure 1). The dam is located on parcel NC PIN 0742362432, approximately 1,400 feet northwest of the intersection of North Salem Street and Brittley Way (latitude 35.7453, longitude -78.8547). The dam is situated on an unnamed tributary to Beaver Creek.

Soil & Environmental Consultants, Inc. (S&EC) is preparing a Jurisdictional Determination/Hazard Classification (JDHC) request for submittal to the North Carolina Department of Environmental Quality (NCDEQ) Dam Safety Program. In support of the JDHC, RiskHydro PLLC performed a sunny-day dam breach analysis to evaluate potential downstream impacts and determine the appropriate hazard classification. The analysis indicated that a dam failure could affect Charlion Downs Lane, Blackburn Road, and a residential structure located at 1902 Charlion Downs Lane. Based on these potential impacts, the analysis supports classification of the dam as a High Hazard (Class C) dam. North Salem Street Dam has a maximum height of approximately 15.3 feet and a maximum impoundment storage capacity of approximately 9.8 acre-feet. Both values were determined from the topographic survey prepared by Canoy Surveying (Canoy, 2025). Both values fall below the small size classification thresholds of 35 feet in height and 750 acre-feet of total storage defined in 15A NCAC 02K (NCDEQ, 2017). The dam is therefore classified as small High Hazard (Class C).

The owner intends to permanently breach the dam by constructing a channel through the existing embankment. The permanent breach channel will allow storm flows to pass through the embankment without re-impounding the former reservoir. In accordance with NCDEQ Dam Safety Program requirements, the channel must safely convey the Spillway Design Flood (SDF) associated with the dam's hazard classification without re-impounding the former reservoir. For a small High Hazard (Class C) dam, the SDF is the flood resulting from the one-third Probable Maximum Precipitation (1/3 PMP) storm event (NCDEQ, 2017). In addition, NCDEQ requires the breach channel to be lined or otherwise stabilized to at least the water surface elevation associated with the peak flow from the 50-year, 24-hour storm event to provide stability during more frequent storm events (NCDEQ, 2026).

To support breach channel sizing and stabilization, a hydrologic analysis was performed to develop inflow design floods (IDFs) for the contributing watershed upstream of North Salem Street Dam. The IDFs provide the inflow hydrographs used to size the breach channel and determine the required extent of channel armoring. The analysis evaluated the watershed under existing land-cover and drainage conditions. Precipitation inputs were developed using rainfall depths and temporal distributions from the 2025 North Carolina Probable Maximum Precipitation Study (Applied Weather Associates [AWA], 2025). Annual exceedance probability (AEP) rainfall depths were also obtained from the study to maintain consistency with current NCDEQ Dam Safety Program hydrologic guidance.

Merit Group, LLC provided a preliminary site plan showing the anticipated development layout (Figure 2). Although the plan is not final, it indicates that most of the existing drainage area upstream of the dam will be rerouted to proposed stormwater control measures located downstream of the dam and will not discharge through the permanent breach channel. Because the anticipated drainage modifications would substantially reduce the area draining to the breach, future conditions were not modeled, and existing conditions were used as the basis for developing the breach flows. The site plan provided by Merit Group, LLC is preliminary and subject to revision. If the final grading and drainage design routes additional area or additional impervious cover to the permanent breach channel, the inflow design floods presented in this memorandum should be revisited and the breach channel sizing and stabilization revised accordingly.

Figure 2. Preliminary North Salem Street Mixed-Use Development Site Plan Prepared by Kimley-Horn for Merit Group, LLC

The following sections describe the methodology, data sources, and results of the hydrologic analysis used to establish the IDFs for North Salem Street Dam. These IDFs provide the basis for sizing and stabilizing the permanent breach channel.

2 HYDROLOGIC MODELING APPROACH

The United States Army Corps of Engineers (USACE) Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) Version 4.13 (USACE, 2026) was used to develop reservoir inflow hydrographs for the 10-year, 25-year, 50-year, and 100-year, 24-hour storm events and the 1/3 PMP design storm. Key inputs and procedures are described in the following sections.

2.1 Precipitation

Basin-average PMP depths were obtained using the Gridded PMP Tool, a Python script executed within the ArcGIS Pro environment. Because the contributing drainage area is relatively small (less than one square mile), only the Local PMP storm type was evaluated. For drainage areas less than 10 square miles, the Tropical Storm and General Storm PMP types are unlikely to control the PMP depths; therefore, the Local Storm PMP is the appropriate governing storm type for this evaluation (AWA, 2025).

PMP depths were evaluated for the Local storm type for the 6-hour and 24-hour durations to determine the governing PMP duration for the watershed. The resulting PMP precipitation depths were reduced by a factor of three to establish the 1/3 PMP design storm in accordance with NCDEQ Dam Safety Program guidance for small High Hazard (Class C) dams. The precipitation depths were distributed using the 90th percentile temporal distribution, which satisfied the interim PMP depth test defined in the 2025 North Carolina PMP Study. The PMP depth-duration relationship is shown in Figure 3.

Basin-average precipitation depths for the 10-year, 25-year, 50-year, and 100-year storm events were obtained from the Basin AEP Tool, a Python script executed within the ArcGIS Pro environment. Reservoir inflow hydrographs were developed using a 24-hour storm duration for all AEP storm events. The 10-year, 25-year, and 50-year storm events were distributed using the NOAA Atlas 14 24-hour temporal distribution (Quartile 1, 50th percentile). The 100-year storm event was distributed using the same 90th percentile temporal distribution applied to the PMP analysis as recommended by the 2025 North Carolina PMP Study. The resulting basin-average precipitation depths for the 24-hour duration are illustrated in Figure 4.

The resulting precipitation hyetographs were applied in the HEC-HMS model to generate reservoir inflow hydrographs for each storm event.

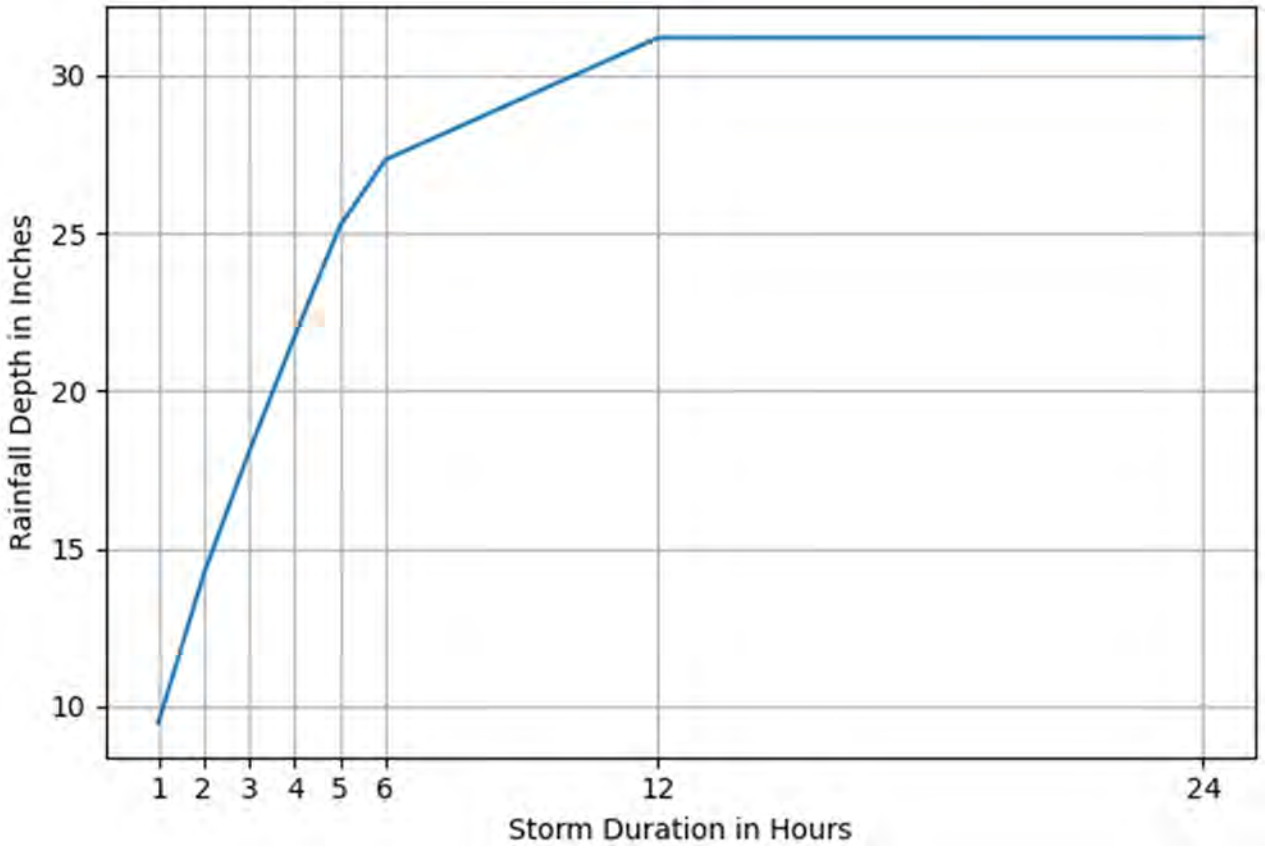


Figure 3. Local Storm PMP Depth-Duration Chart (full PMP values shown)

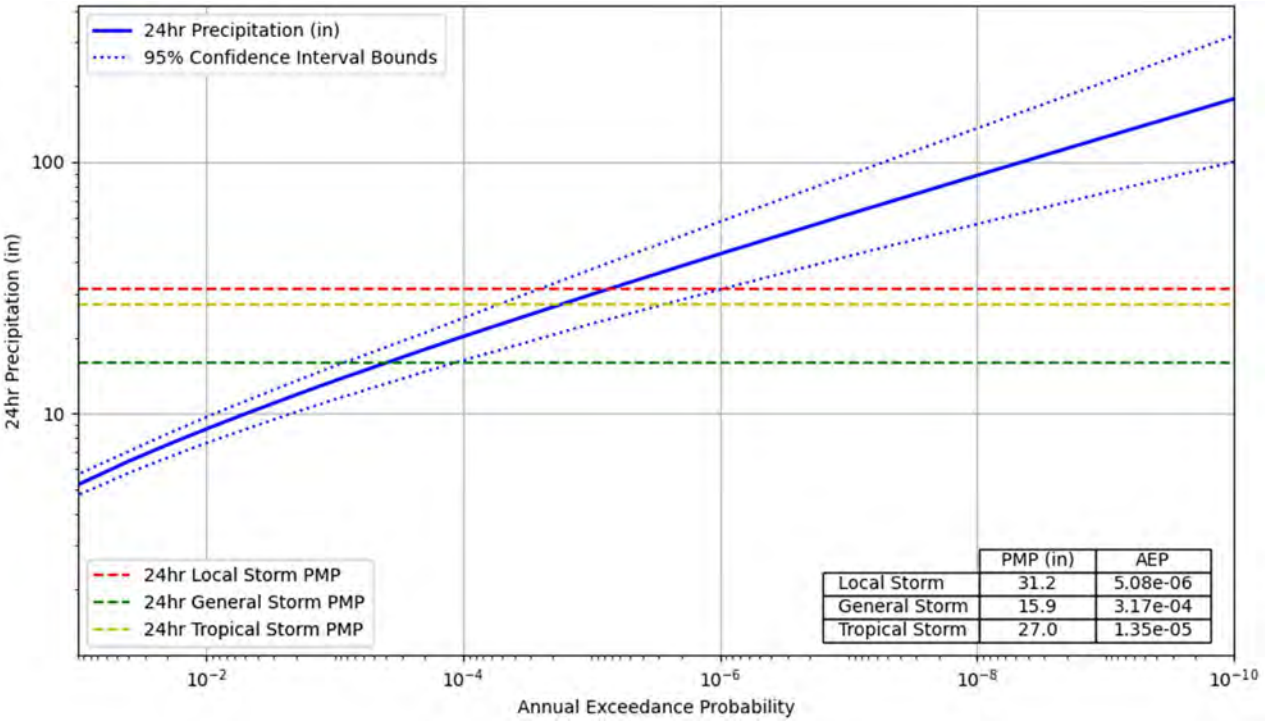


Figure 4. Basin-Average 24-Hour AEP Precipitation Depths

Basin-average precipitation depths for each storm event are summarized in Table 1:

Table 1. Basin Average Precipitation Depth

Storm Event	Precipitation Depth (in)
10 year, 24-hour	5.20
25 year, 24-hour	6.46
50 year, 24-hour	7.51
100 year, 24-hour	8.67
1/3 PMP, 6-hour	9.11
1/3 PMP, 24-hour	10.40

Note: Precipitation depths are reported to the nearest 0.01 inch as computed by the Gridded PMP Tool and Basin AEP Tool.

2.2 Watershed Delineation

The watershed draining to North Salem Street Dam was delineated using the Spatial Analyst tools within ArcGIS Pro and a three-foot digital elevation model (DEM) derived from Quality Level 1 LiDAR obtained from the North Carolina Spatial Data Download Center (NCSDD, 2026). The delineated watershed boundary was visually reviewed to confirm consistency with the surrounding topography and the location of the dam. The resulting drainage area is approximately 14.9 acres (Figure 5).

2.3 Land Cover and Hydrologic Soils

Existing land-cover conditions were characterized using the 2025 National Land Cover Database (NLCD) (USGS, 2026) and reviewed against recent aerial imagery to confirm the mapped classifications and identify any recent changes not reflected in the dataset (Figure 6). As summarized in Table 2, developed open space is the predominant land-cover type, comprising approximately 10.1 acres, or 67.8 percent, of the watershed. The remaining area consists of low- and medium-intensity development, deciduous and mixed forest, and open water.

Table 2. 2025 NLCD Land Cover Summary

2025 NLCD Land Cover	Area (acres)	Percent of Watershed
Open Water	0.22	1.5 %
Developed, Open Space	10.09	67.8 %
Developed, Low Intensity	1.73	11.7 %
Developed, Medium Intensity	0.30	2.0 %
Deciduous Forest	1.64	11.0 %
Mixed Forest	0.89	6.0 %
Total	**14.88**	**100 %**

Note: Areas are reported to the nearest 0.01 acre and percentages to the nearest 0.1 percent. Individual values may not sum to the totals shown due to rounding.

Hydrologic soil group (HSG) data were obtained from the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, n.d.) (Figure 7). As summarized in Table 3, approximately 13.4 acres, or 90.3 percent, of the watershed are mapped as dual HSG C/D. The remaining 1.4 acres, or 9.7 percent, are mapped as water. For Curve Number development, dual HSG C/D soils were assumed to be undrained and were therefore assigned an effective HSG D classification. Areas mapped as water in the HSG dataset were assigned a Curve Number of 100.

Table 3. NRCS Hydrologic Soil Group Summary

NRCS HSG	Area (acres)	Percent of Watershed
C/D	13.44	90.3 %
Water	1.44	9.7 %
Total	**14.88**	**100 %**

Note: Areas are reported to the nearest 0.01 acre and percentages to the nearest 0.1 percent. Percentages are calculated on the total delineated drainage area of 14.88 acres.

Curve Numbers were assigned based on the combination of NLCD land cover, corresponding TR-55 land cover description, and HSG (NRCS, 1986). Curve Numbers were developed assuming antecedent moisture condition II (AMC II), representing average antecedent moisture conditions consistent with NRCS guidance for design storm applications. The Curve Number assignment matrix used for the HEC-HMS model is summarized in Table 4.

Table 4. TR-55 Curve Numbers Assigned to NLCD Land Cover Categories

2025 NLCD Land Cover Description	TR-55 Analog	Curve Number			
		HSG A	HSG B	HSG C	HSG D
Open Water	NA	100	100	100	100
Developed, Open Space	Open Space (Good Condition)	39	61	74	80
Developed, Low Intensity	Residential, 1/4 acre	61	75	83	87
Developed, Medium Intensity	Residential, 1/8 acre	77	85	90	92
Deciduous Forest	Woods (Good Condition)	30	55	70	77
Mixed Forest	Woods (Good Condition)	30	55	70	77

The resulting weighted composite Curve Number for the North Salem Street Dam watershed is 82. This composite value was used in the HEC-HMS model to estimate runoff from the contributing drainage area.

2.4 Hydrologic Methods and Parameters

Runoff was simulated using the NRCS Curve Number (CN) loss method (NRCS, 2010) within HEC-HMS. Excess precipitation was transformed using the SCS Unit Hydrograph method with a peak rate factor of 484. Watershed lag time was estimated using the NRCS lag time equation (Equation 1) (NRCS, 2010).

$$L = \frac{l^{0.8}(S+1)^{0.7}}{1{,}900Y^{0.5}} \quad (1)$$

where L = watershed lag time (hours)
l = length of longest flow path (feet)
S = potential maximum retention (inches) from Equation 2
Y = mean basin slope (percent)

$$S = \frac{1{,}000}{cn'} - 10 \quad (2)$$

where cn' = retardance factor (unitless), approximately the same as Curve Number

The hydrologic parameters used to estimate watershed lag time included a longest flow path length of 1,808 feet, a mean watershed slope of 5.25 percent, and a potential maximum retention of 2.18 inches based on the composite Curve Number. Using the NRCS lag time equation, the watershed lag time was calculated to be approximately 12 minutes.

3 INFLOW DESIGN FLOOD RESULTS

The HEC-HMS model was executed under existing watershed conditions for each evaluated storm event using PMP and AEP rainfall depths from the 2025 North Carolina PMP Study. The HEC-HMS model is provided as a project deliverable. The resulting peak inflows are summarized in Table 5 and are intended for direct use in sizing and stabilizing the permanent breach channel. Modeled peak inflows

range from 5.7 cfs for the 10-year, 24-hour storm event to 27.1 cfs for the 1/3 PMP, 24-hour storm event. The increase in peak inflow between the 50-year and 100-year storm events reflects the change in temporal distribution rather than the increase in rainfall depth alone. The 10-year through 50-year events were distributed using the NOAA Atlas 14 24-hour distribution (Quartile 1, 50th percentile), while the 100-year event was distributed using the 90th percentile distribution recommended by the 2025 North Carolina PMP Study, which concentrates a larger fraction of the total depth near the storm peak.

Table 5. Peak Inflow Discharges to North Salem Street Dam

Storm Event	Peak Discharge (cfs)
10 year, 24-hour	5.7
25 year, 24-hour	7.8
50 year, 24-hour	9.6
100 year, 24-hour	21.6
1/3 PMP, 6-hour	25.9
1/3 PMP, 24-hour	27.1

Note: Peak discharges are reported to the nearest 0.1 cfs and represent unrouted inflow to the dam.

4 SUMMARY AND DESIGN APPLICATION

The hydrologic analysis for North Salem Street Dam was completed in accordance with NCDEQ Dam Safety Program guidance using precipitation data from the 2025 North Carolina PMP Study. Existing watershed conditions were evaluated to develop the inflow hydrographs and peak discharges needed to size and stabilize the permanent breach channel. Future conditions were not evaluated because the preliminary development concept provided by Merit Group, LLC indicates that most of the existing drainage area will be rerouted downstream of the dam and away from the permanent breach channel (Figure 2). Because the site plan is preliminary and subject to revision, the inflow design floods presented in this memorandum should be revisited if the final grading and drainage design routes additional area or additional impervious cover to the permanent breach channel.

As summarized in Table 5, the permanent breach channel should be sized to safely convey the peak inflow of 27.1 cfs associated with the 1/3 PMP, 24-hour storm event without re-impounding the former reservoir. The channel should be lined or otherwise stabilized to at least the peak water-surface elevation associated with the 50-year, 24-hour peak inflow of 9.6 cfs. The final channel configuration should be evaluated hydraulically to confirm conveyance capacity, water-surface elevations, velocities, and the required extent of channel stabilization.

5 REFERENCES

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FIGURES

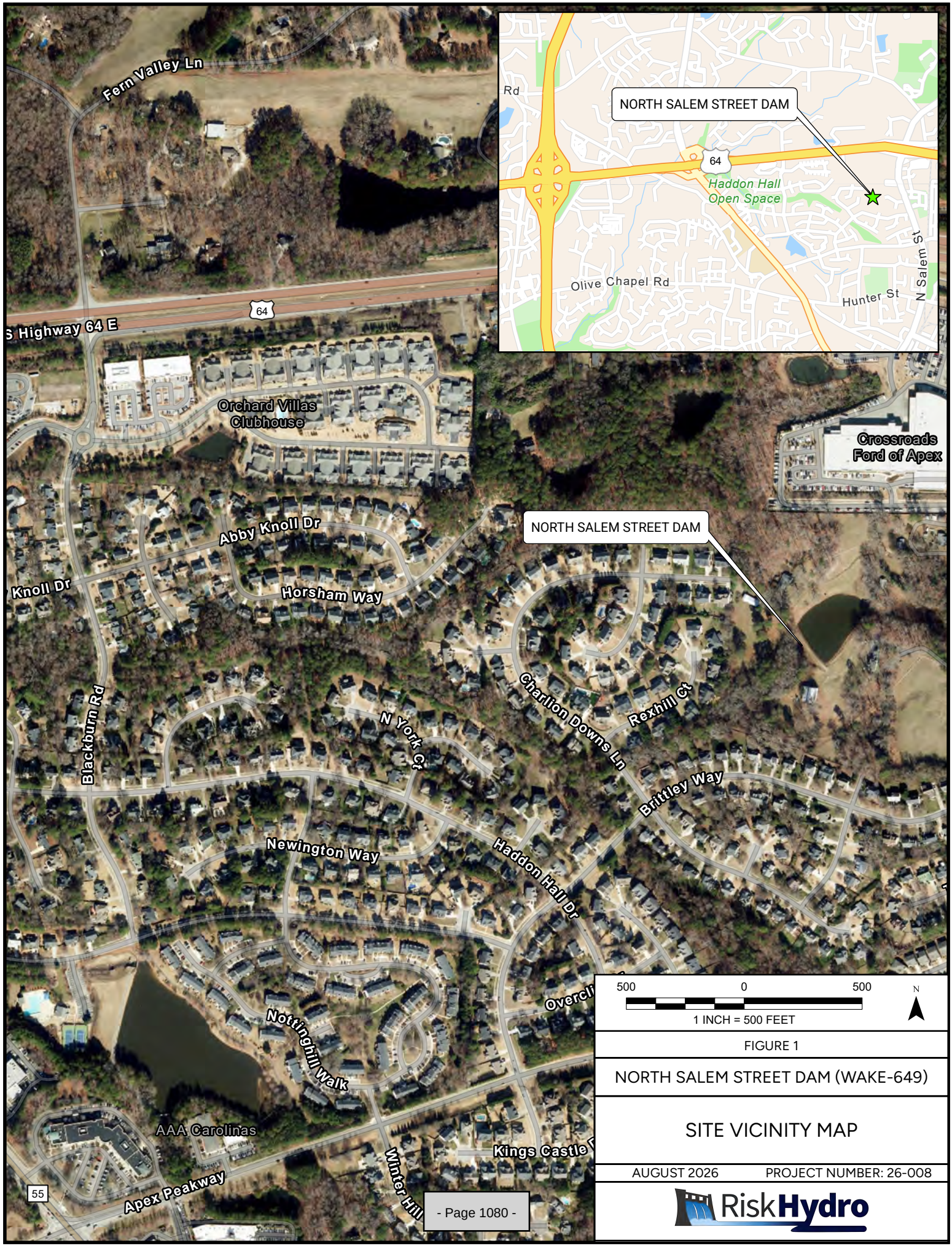


FIGURE 1

NORTH SALEM STREET DAM (WAKE-649)

SITE VICINITY MAP

AUGUST 2026 PROJECT NUMBER: 26-008

RiskHydro

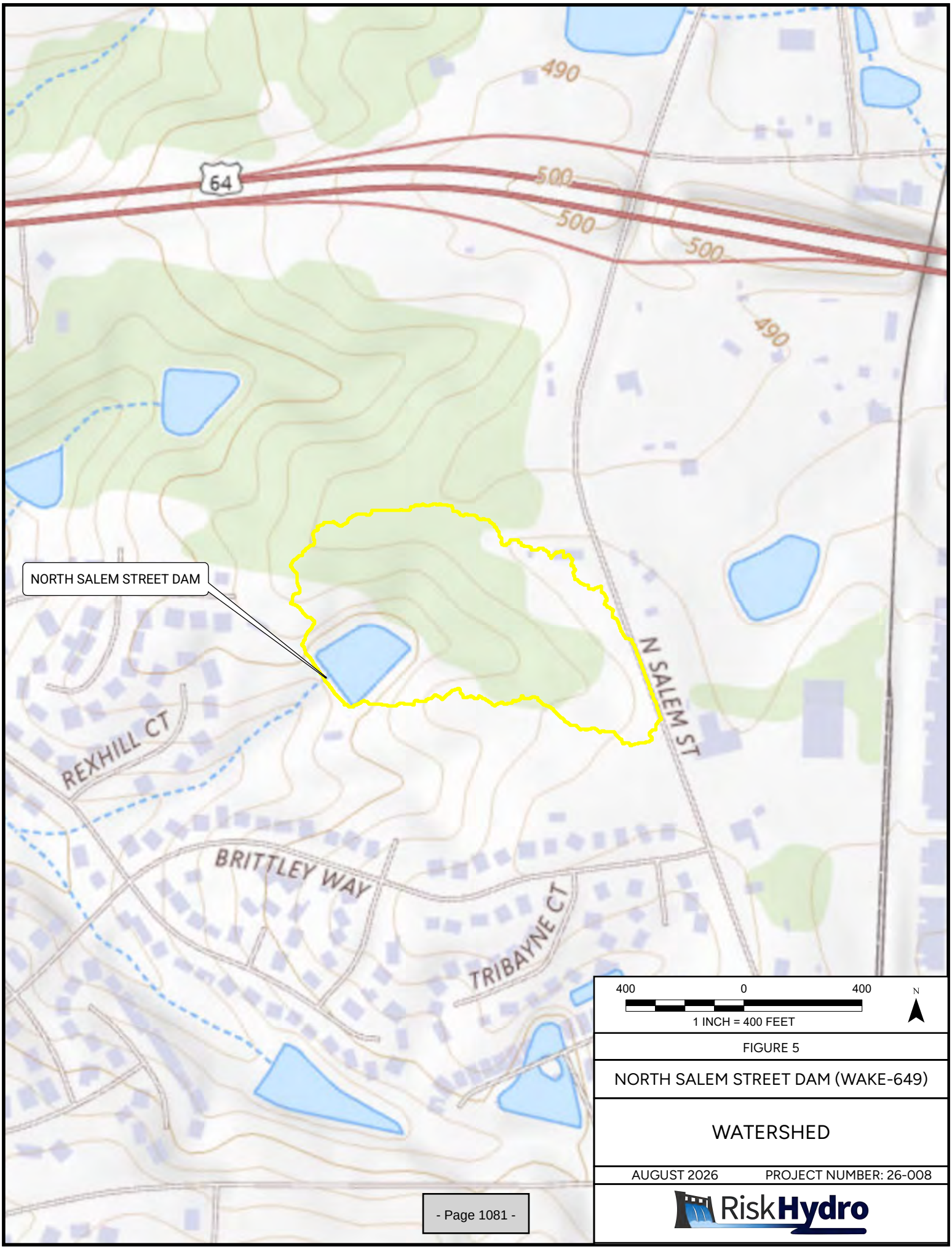


FIGURE 5

NORTH SALEM STREET DAM (WAKE-649)

WATERSHED

AUGUST 2026 PROJECT NUMBER: 26-008

RiskHydro

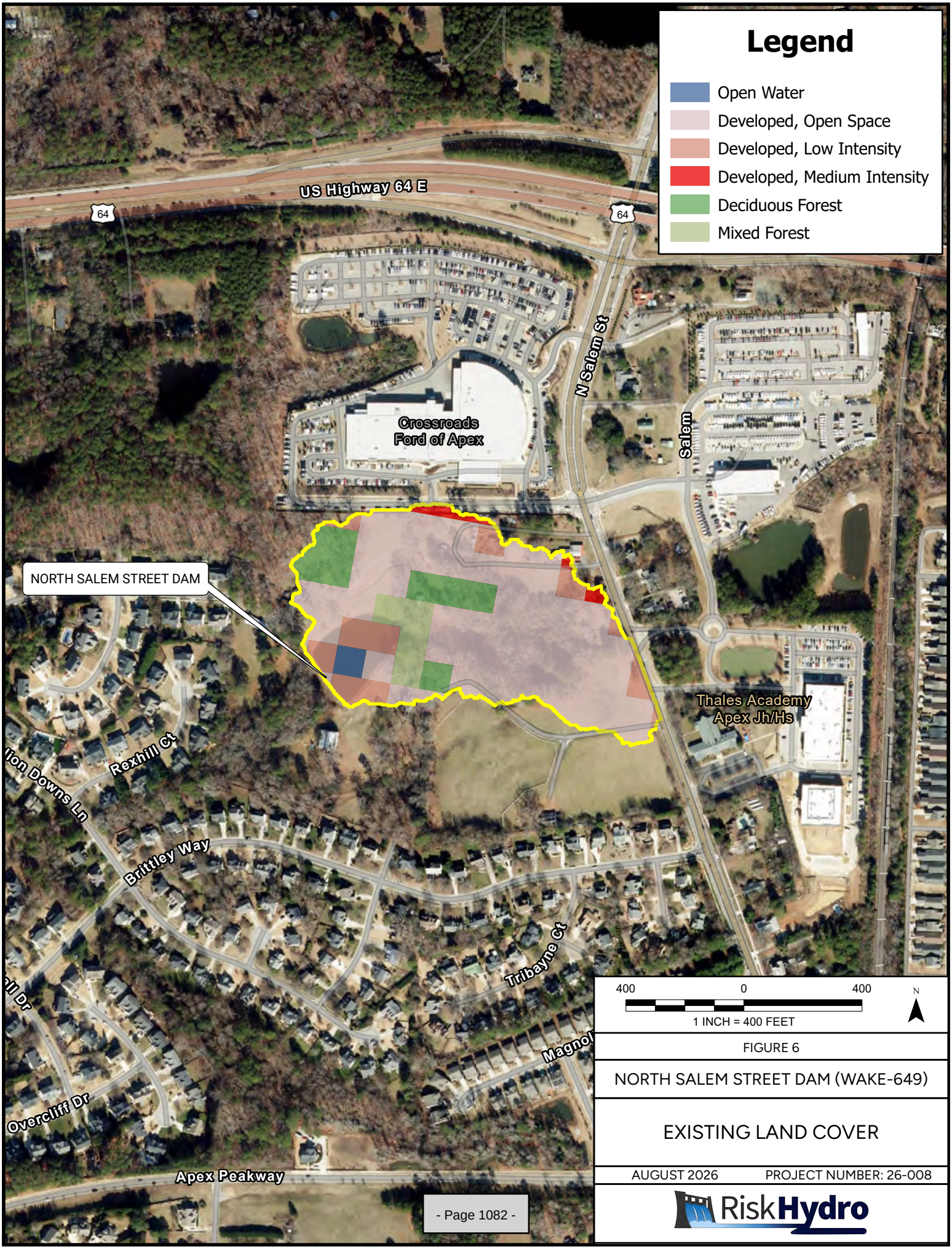


FIGURE 6

NORTH SALEM STREET DAM (WAKE-649)

EXISTING LAND COVER

AUGUST 2026 PROJECT NUMBER: 26-008

RiskHydro

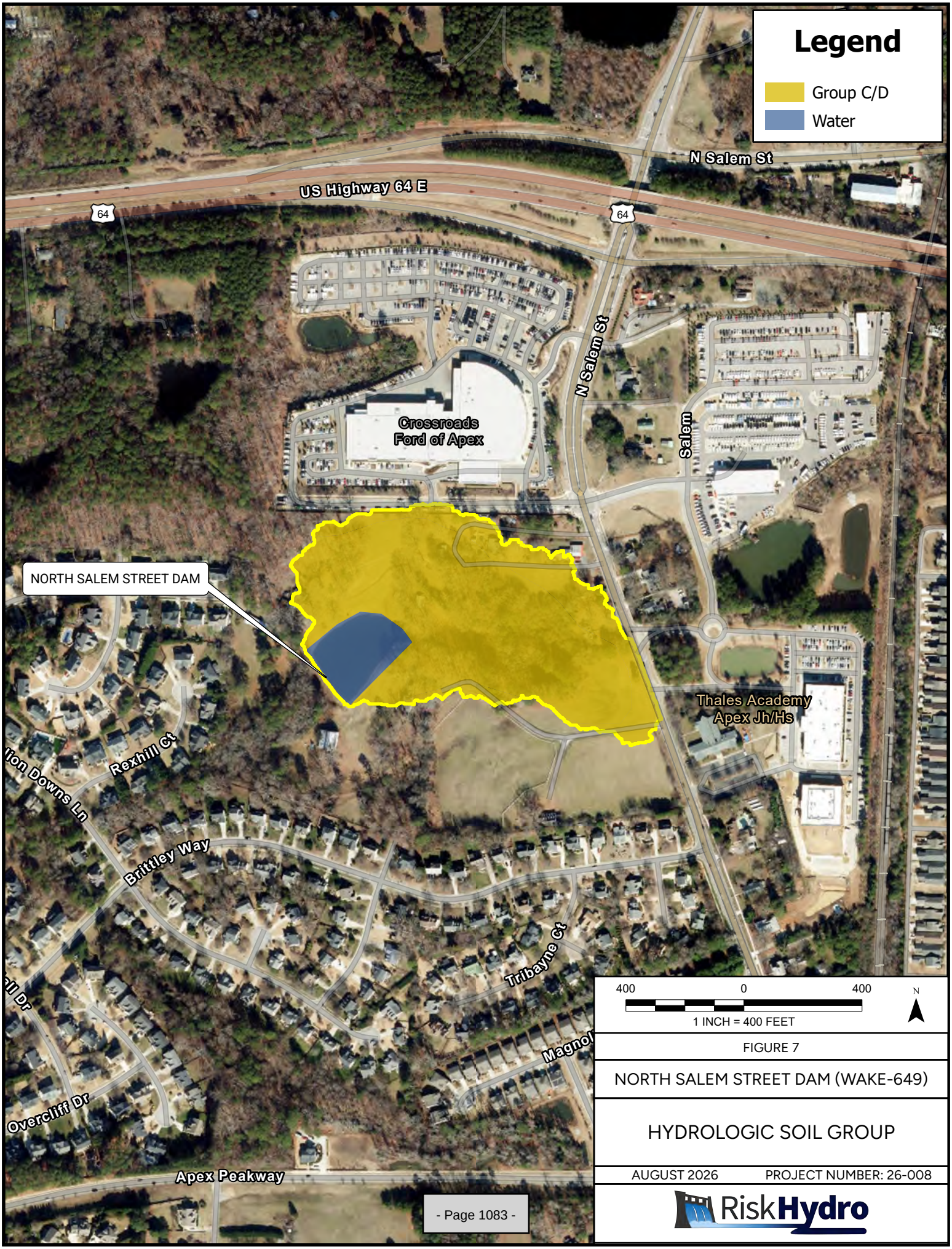


FIGURE 7

NORTH SALEM STREET DAM (WAKE-649)

HYDROLOGIC SOIL GROUP

AUGUST 2026 PROJECT NUMBER: 26-008

RiskHydro

S&EC

Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467
sandec.com

July 28, 2026
S&EC Project No. 13759.D1

North Carolina Department of Environmental Quality (NCDEQ)
Division of Energy, Mineral, and Land Resources (DEMLR)
Dam Safety Program
Attn: Mr. Jordan Pappas, PE
Archdale Building, Fifth Floor
512 North Salisbury Street
Raleigh, NC 27604

RE: Jurisdictional Determination/Hazard Classification Request
North Salem Street Dam (WAKE-TBD)
Wake County, NC

Dear Dam Safety Program:

Soil & Environmental Consultants, Inc. (S&EC) has prepared the attached documentation requesting a Jurisdictional Determination/Hazard Classification (JD/HC) for an existing dam located within the Town of Apex, Wake County, North Carolina. The dam is located on property identified as NC PIN 0742362432, approximately 1,400 feet northwest of the intersection of North Salem Street and Brittley Way, at coordinates 35.7453° latitude and -78.8547° longitude. Refer to the attached figures.

Based on a review of the North Carolina Department of Environmental Quality (NCDEQ) Dam Inventory, the subject dam does not appear to be listed and is therefore not currently regulated by the NCDEQ Dam Safety Program. S&EC is submitting this request on behalf of Merit Group, LLC (Attn: Mr. Paul V. Muñana), which retained S&EC to evaluate the dam and determine its regulatory status in support of the proposed decommission/breach of the existing dam.

On June 18, 2026, S&EC conducted a site visit to perform a preliminary evaluation of the dam and surrounding area. At the time of the site visit, no formal survey of the dam or its appurtenant features had been completed; therefore, the dimensions and

elevations documented during the site visit were estimated in the field and should be considered approximate.

Based on observations made during the June 18, 2026, site visit and available online data, a summary of the dam characteristics is provided below.

Subject Dam:

The dam has an estimated length of approximately 250 feet. The crest width is relatively uniform but varies slightly along the embankment, ranging from approximately 10 to 12 feet. The maximum dam height, measured at the highest crest elevation, was estimated in the field to be approximately 15.3 feet.

The upstream embankment slope varies along the length of the dam and was estimated to range from approximately 2H:1V to 3H:1V. The downstream embankment slope also varies and was estimated to range from approximately 1H:1V to 2H:1V. Refer to the Site Photographs included in Attachment 2.

At the time of the site visit, the water surface elevation (WSE) within the pond appeared to be approximately 30 to 36 inches below the design normal pool elevation, which was estimated in the field to be approximately 2.7 feet below the maximum dam crest elevation. The design normal pool elevation within the impoundment is controlled by a 24-inch-diameter masonry/brick riser with an approximate 15-inch-diameter reinforced concrete pipe (RCP) outlet barrel located near the right abutment of the dam.

Preliminary estimates based on available topographic mapping and aerial imagery indicated a pond surface area of approximately 1.3 acres at the estimated normal pool elevation and approximately 1.6 acres at the maximum embankment crest elevation, with corresponding storage volumes of approximately 6.6 acre-feet and 9.8 acre-feet, respectively. Available topographic data also indicate that the contributing drainage area to the pond is approximately 14.9 acres (see Figure 4).

During the site visit, portions of the unnamed tributary to Beaver Creek downstream of the dam were traversed to observe drainage patterns, floodplain characteristics, and potential downstream hazards. Field observations included the stream crossings at Charlion Downs Lane (approximately 980 feet [0.19 mile] downstream), Blackburn Road (approximately 3,550 feet [0.67 mile] downstream), Haddon Hall Greenway (approximately 4,870 feet [0.92 mile] downstream), and U.S. Highway 64 (approximately 6,860 feet [1.30 miles] downstream), as well as residences located along the unnamed tributary. Refer to the Site Photographs and Figure 5.

Following the site visit and a review of the field observations and available mapping data, S&EC determined that a failure of the subject dam could potentially impact the Charlion Downs Lane roadway crossing and the residence located at 1902 Charlion

Downs Lane. However, additional information was required to evaluate the potential downstream consequences of a dam failure and to support an appropriate hazard classification. Accordingly, RiskHydro, PLLC, of Pittsboro, North Carolina, was retained to perform a dam breach analysis.

To support the hydraulic analysis, Canoy Surveying, PLLC, of Stem, North Carolina, completed a topographic survey of the dam and impoundment. The survey data was provided to RiskHydro, PLLC, for development of the dam breach analysis supporting this Jurisdictional Determination/Hazard Classification request.

The topographic survey data was used to define the dam geometry, reservoir bathymetry, and stage-storage relationship for the hydraulic model. Based on the survey, the normal pool elevation corresponding to the crest of the principal spillway riser was determined to be Elevation 452.8 feet, approximately 1.2 feet higher than our preliminary field estimate, with an estimated storage volume of approximately 7.8 acre-feet, approximately 1.2 acre-feet greater than our preliminary estimate. These survey-derived values were incorporated into the hydraulic model and supersede the preliminary field estimates for purposes of the breach analysis.

Using HEC-RAS 2D Version 7.0, RiskHydro, PLLC, evaluated the potential downstream consequences of a sunny-day failure of the subject dam. The analysis assumed the reservoir to be at the surveyed normal pool elevation of Elevation 452.8 feet with an estimated storage volume of 7.8 acre-feet. No rainfall or downstream inflows were included in the analysis. The hydraulic model incorporated the Canoy Surveying, PLLC, topographic survey, the 2024 North Carolina Quality Level 1 LiDAR terrain, breach parameters estimated using the Froehlich (2008) empirical equations, and roadway crossing information obtained from Town of Apex GIS data.

The hydraulic modeling indicates a maximum overtopping depth of approximately 2.2 feet at the Charlion Downs Lane roadway crossing, inundation extending onto Blackburn Road (further downstream), and a maximum modeled flood depth of approximately 0.5 foot at the residence located at 1902 Charlion Downs Lane. These results indicate that a sunny-day failure of the dam has the potential to impact downstream public infrastructure and an occupied residence. An inundation map depicting the modeled sunny-day breach scenario is included as an attachment for reference.

Based on the results of the sunny-day breach analysis, the potential downstream consequences are sufficient to support a High Hazard classification for the subject dam. Because the sunny-day breach scenario alone demonstrates impacts consistent with a High Hazard classification, a rainy-day breach analysis was not performed.

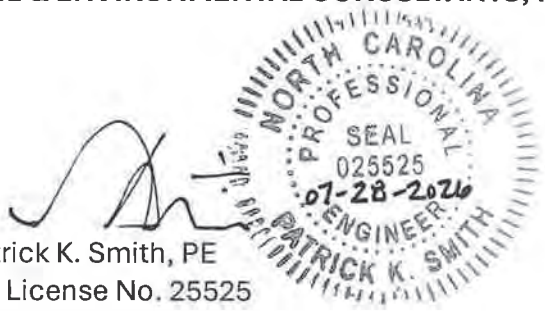
Based on the field observations, available mapping, and the results of the sunny-day dam breach analysis, S&EC concludes that the subject dam meets the criteria for a High Hazard classification under the North Carolina Dam Safety Program. Accordingly, S&EC requests that the NCDEQ Dam Safety Program review the enclosed information

and concur with the requested Jurisdictional Determination and High Hazard Classification for the subject dam.

Enclosed are the completed Jurisdictional Determination/Hazard Classification Request Form, supporting figures, site photographs, and the inundation map depicting the modeled sunny-day breach scenario, supporting the recommended hazard classification.

If you have any questions regarding this letter or require additional information, please do not hesitate to contact us.

Sincerely,
SOIL & ENVIRONMENTAL CONSULTANTS, INC.



Patrick K. Smith, PE
NC License No. 25525
Firm License No. F-1523

Figures:

Figure 1 – Aerial Vicinity Map
Figure 2 – USGS Topographic Map
Figure 3 – Soil Survey Map
Figure 4 – Drainage Area Map
Figure 5 – Potential Hazards Map
Figure 6 – FEMA Floodplain Map

Attachments:

1. Jurisdictional Determination/Hazard Classification Request
2. Site Photographs
3. Inundation Map for Sunny Day Breach

Cc: Mr. Paul V. Muñana, Merit Group, LLC
Mr. David Goodwin, Property Owner
Mr. Rick Felice, Felice Development Group, LLC

FIGURES

Figure 1 - Aerial Vicinity Map

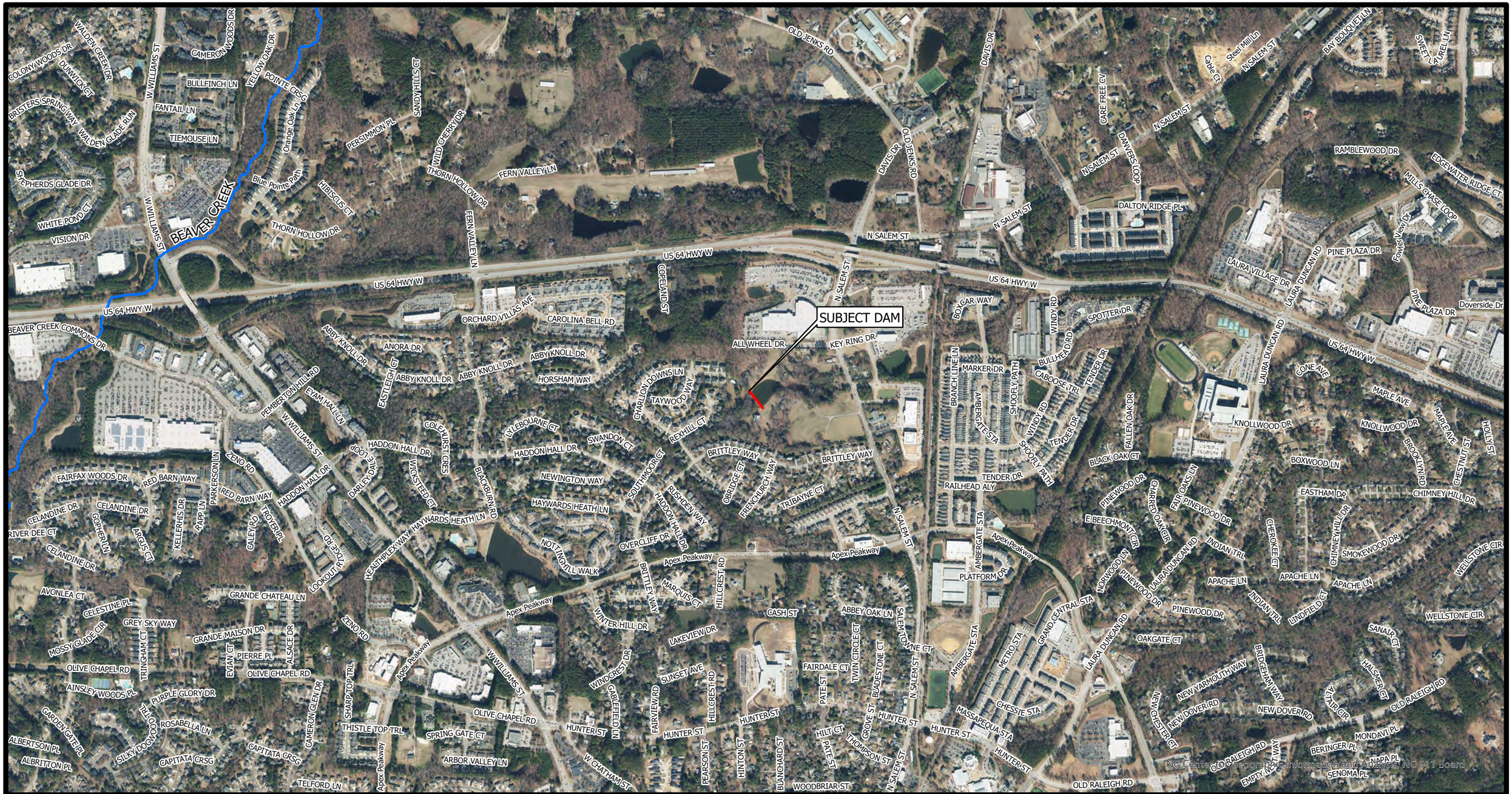
Figure 2 – USGS Topographic Map

Figure 3 – Soil Survey Map

Figure 4 – Drainage Area Map

Figure 5 – Potential Hazards Map

Figure 6 – FEMA Floodplain Map



Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 1,000'
Date:	6/23/2026

Map Title:

Figure 1 - Aerial Vicinity Map

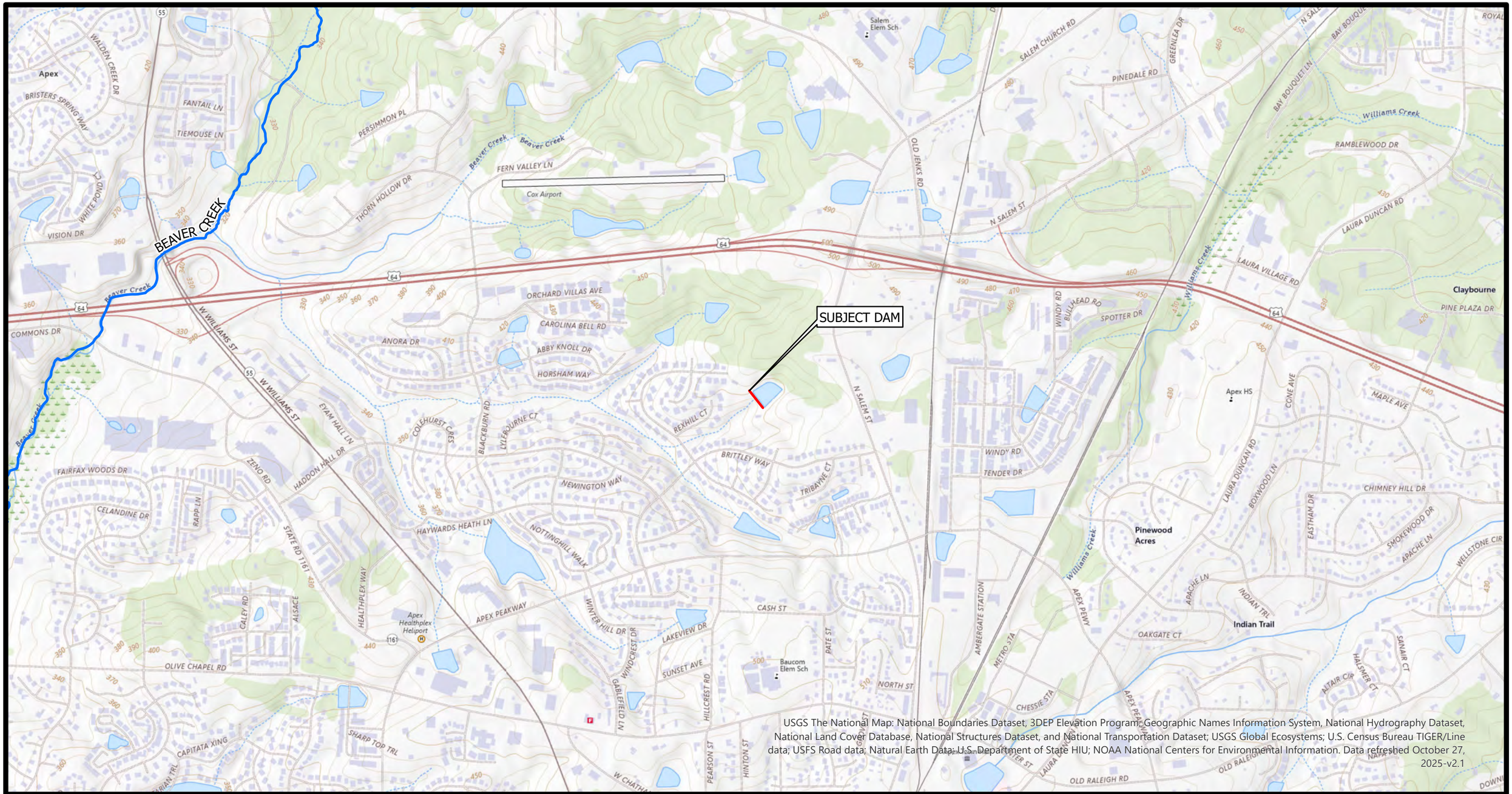
N. Salem St. Dam JD/HC

Source: Aerial Imagery from NC C

N

0 500 1,000 2,000 Feet

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USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S. Department of State HIU; NOAA National Centers for Environmental Information. Data refreshed October 27, 2025-v2.1

Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 1,000'
Date:	6/23/2026

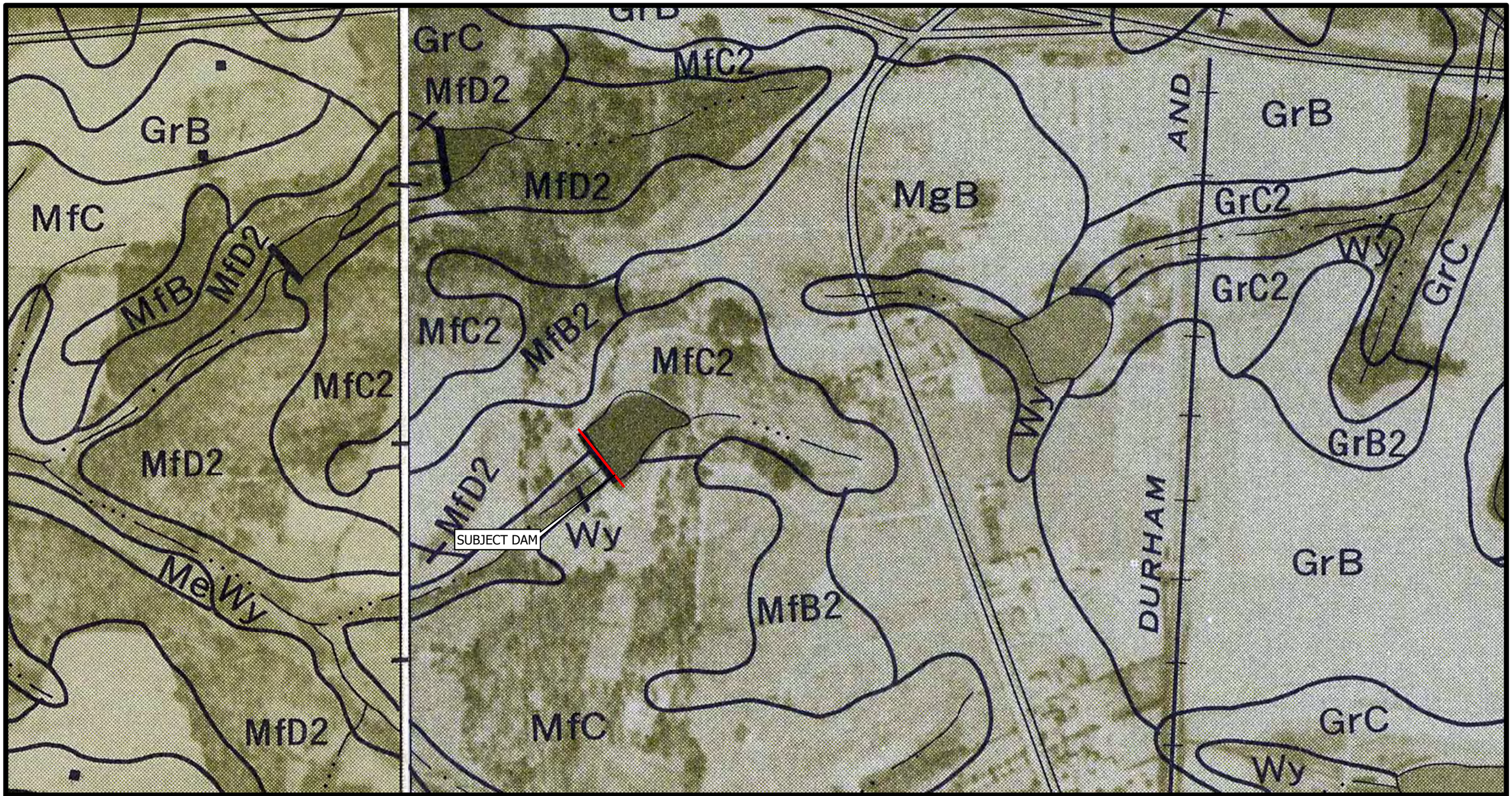
Map Title:

Figure 2 - USGS Topographic Map

N. Salem St. Dam JD/HC

Source: USGS National Ma

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Project Manager:	Patrick K. Smith, PE
Scale:	1" = 300'
Date:	6/23/2026

Map Title:

Figure 3 - Soil Survey Map

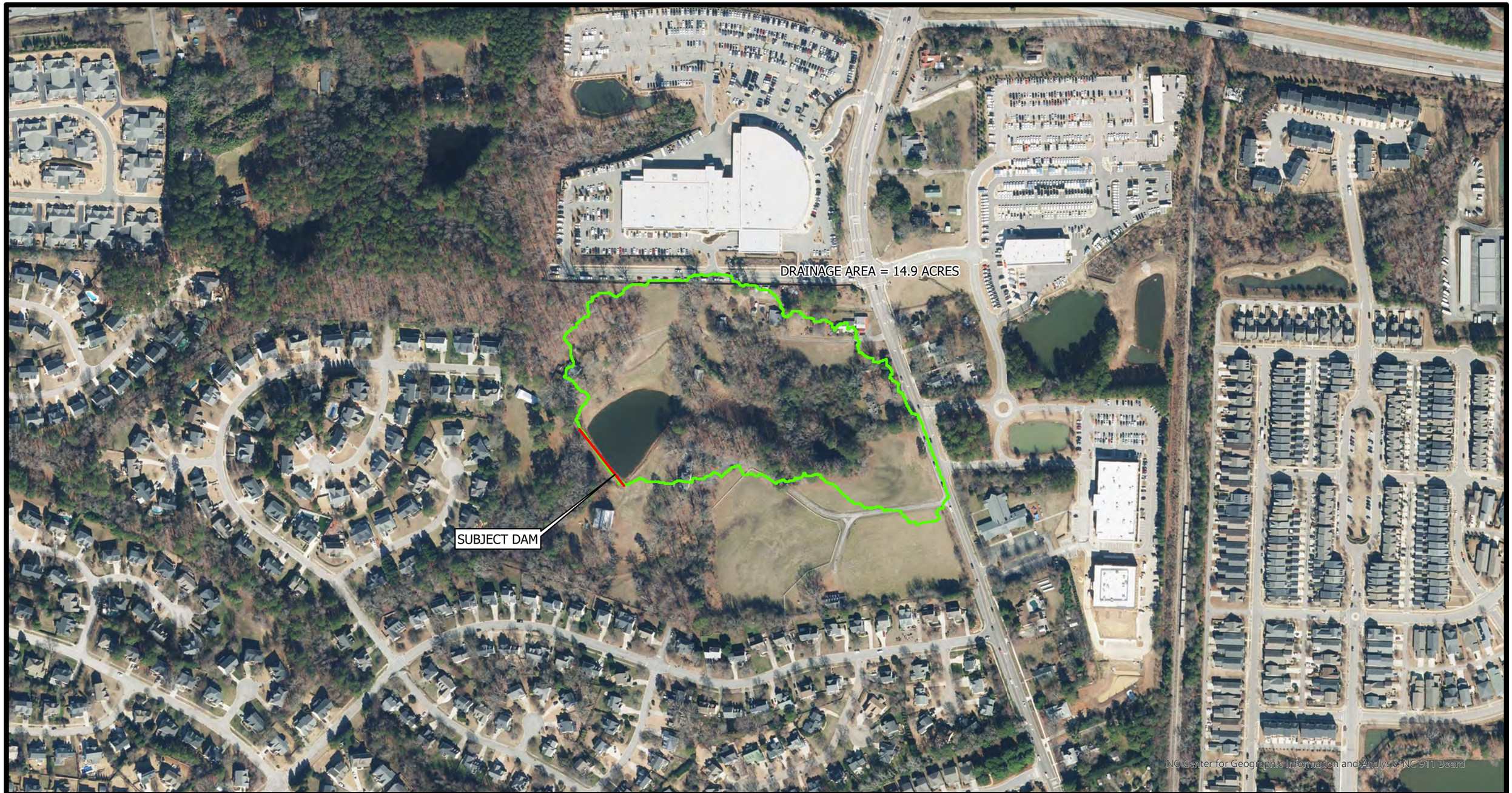
N. Salem St. Dam JD/HC

Source: Wake County Soil Survey Sheet 66

0 150 300 600 Feet

N

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Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 300'
Date:	6/23/2026

Map Title:

Figure 4 - Drainage Area Map

N. Salem St. Dam JD/HC

Source: Aerial Imagery from NC C

0 150 300 600 Feet

N

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Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 1,000'
Date:	6/30/2026

Map Title:

Figure 5 - Potential Hazards Map

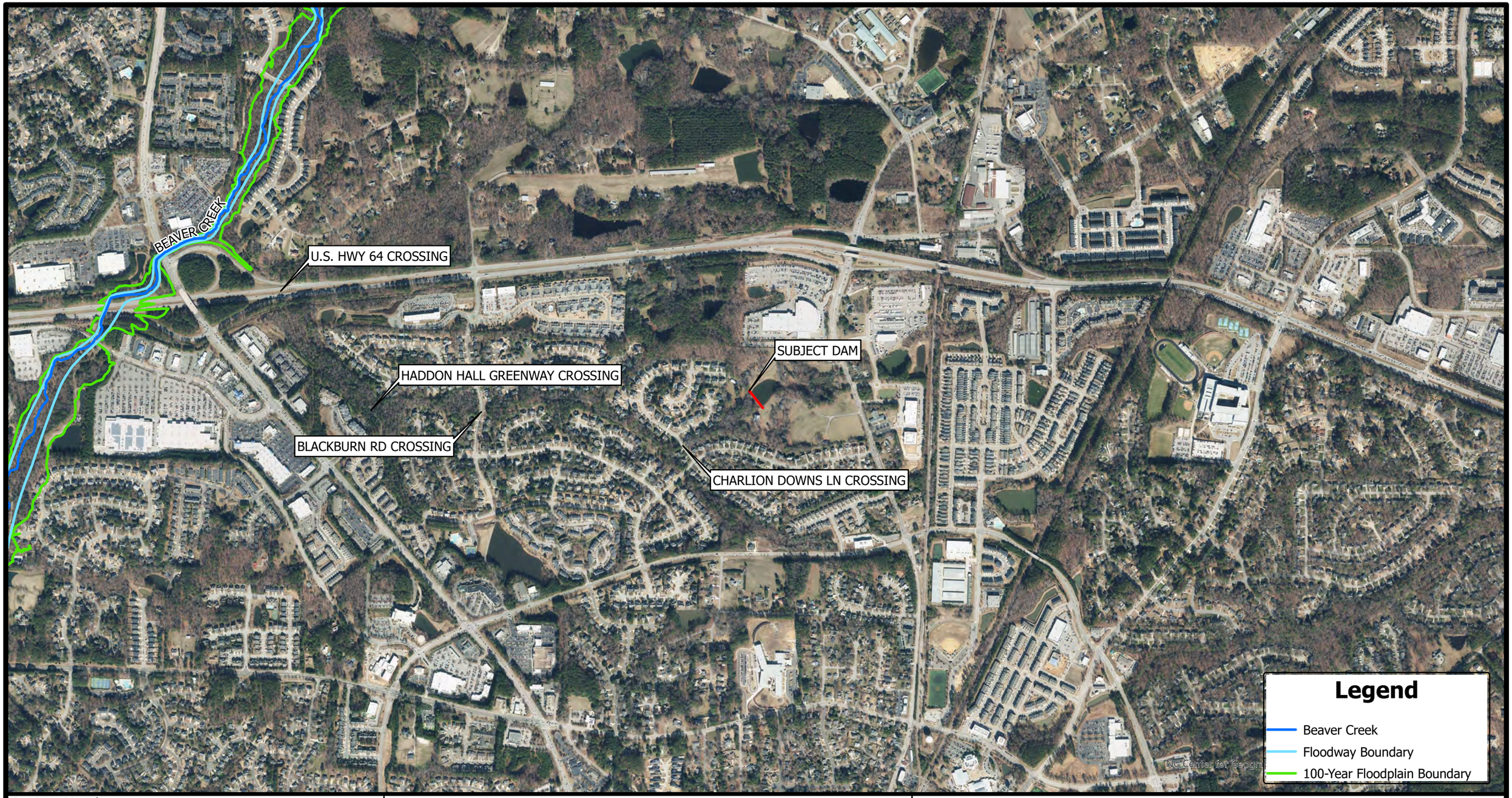
N. Salem St. Dam JD/HC

Source: Aerial Imagery from NC C

0 500 1,000 2,000 Feet

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Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 1,000'
Date:	6/23/2026

Map Title:

Figure 6 - FEMA Floodplain Map

N. Salem St. Dam JD/HC

Source: Aerial Imagery from NC C

0 500 1,000 2,000 Feet

N

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ATTACHMENTS

1. Jurisdictional Determination/Hazard Classification Request
2. Site Photographs
3. Inundation Map for Sunny Day Breach

ATTACHMENT 1

Energy, Mineral and Land Resources
ENVIRONMENTAL QUALITY

Jurisdictional Determination/Hazard Classification Request

To evaluate if a dam is governed by the Dam Safety Law of 1967 (as amended)

If it is your desire to have the Land Quality Section's Dam Safety Program staff determine if your dam is governed by the Dam Safety Law of 1967 (as amended) (General Statute §143-215.23-37),

Please complete this form in its entirety and, if applicable, send an electronic copy of all documents to the Central Office and the appropriate DEMLR Regional Office:

DEMLR Regional Offices:
Asheville Regional Office
Fayetteville Regional Office
Mooresville Regional Office
Raleigh Regional Office
Washington Regional Office
Wilmington Regional Office
Winston-Salem Regional Office

1. Describe any potential hazards for loss of life and environmental or structural property damage to existing and/or potential future downstream developments (i.e. buildings, houses, roads, bridges, major utility lines, etc.): Under existing conditions, potential downstream hazards resulting from a breach of the subject dam include stream crossings along the unnamed tributary to Beaver Creek at Charlion Downs Lane (approximately 0.19 miles downstream), Blackburn Road (approximately 0.67 miles downstream), Haddon Hall Greenway (approximately 0.92 miles downstream), and U.S. Highway 64 (approximately 1.30 miles downstream), as well as residential structures located along the unnamed tributary.

2. Please attach a vicinity map of the dam (Preferably aerial and/or topographic contour map, which shows the premise as well as the concerned downstream areas) and provide a brief description of the location/nearest physical street address: The dam is located on property identified as NC PIN 0742362432, approximately 1,400 feet northwest of the intersection of N. Salem Street and Brittley Way, at coordinates 35.7453° latitude and -78.8547° longitude.

3. General Summary of the Dam:
    a. Name of Owner: DLG Holdings LLC
    b. Address: 5700 Calton Drive
    c. City: Raleigh State: North Carolina Zip: 27612
    d. Phone No.: N/A Email: N/A

Dam Name (STATE- ID, if assigned):	N/A
Latitude (must be in decimal degrees i.e., yy.yyyy): Longitude: (must be in decimal degrees i.e., -xx.xxxx)	35.7453 -78.8547
Nearest State Road Number/Name:	N. Salem St (SR #5878)
County:	Wake
River/Stream:	Beaver Creek
Drainage Area (acres):	14.9
Dam Height (from the highest point on the top of dam to the lowest point on the downstream toe of dam in feet):	15.3
Dam Crest Elevation (ft.) (NAVD88):	454.3
Dam Toe Elevation (ft.) (NAVD88):	439.0
Depth of Water at Normal Pool (ft.):	12.6
Depth of Water at Top of Dam (ft.):	15.3
Impoundment Surface Area at Normal Pool (acres):	1.3
Impoundment Surface Area at Top of Dam (acres):	1.6
Storage Capacity at Normal Pool (acre-feet):	6.6
Maximum Storage Capacity at Top of Dam (acre-feet):	9.8

    e. Please provide any additional engineering documents to validate your assessment (historical records, design drawing plans, rating curves, etc.)

4. General Summary of the Downstream Area(s) [check all boxes that apply]:
    a. Primary Downstream Land Use:

☒ WOODLAND ☐ AGRICULTURAL ☒ RESIDENTIAL ☐ INDUSTRIAL/COMMERCIAL

    b. Existing and/or Future Downstream Developments/Improvements:

☒ DWELLINGS ☒ BUILDINGS ☒ ROADS ☒ UTILITIES ☐ "OTHER"

Existing and/or Future Downstream Development/Improvement(s) Data:

Downstream Hazard/Improvement Type	Distance Downstream from Dam	Floodplain Width	Elevation Relative to Floodplain	Channel Slope	Breach Flood Wave Elevation	Culvert/Bridge Dimensions	Traffic Count	Sight Distance
Charlion Downs Ln Crossing	0.19 miles	35 – 65 feet	Road crest approx. 4 feet above culvert top elevation	-	-	42-inch RCP	-	220 feet north bound / 120 feet south bound
Blackburn Rd Crossing	0.67 miles	50 – 60 feet	Road crest approx. 4 feet above culvert top elevation	-	-	Twin 60-inch RCPs	-	220 feet north bound / 140 feet south bound
Haddon Hall Greenway Crossing	0.92 miles	120 – 200 feet	Trail crest approx. 1 foot above culvert top elevation	-	-	Twin 60-inch RCPs	-	50 feet north bound / 40 feet south bound
U.S. HWY 64 Crossing	1.30 miles	30 – 290 feet	Road crest approx. 3 feet above culvert top elevation	-	-	8 foot span by 6 foot rise concrete box culvert	-	400 feet east bound / >2,000 feet west bound
Residences Along the UT to Beaver Creek	0 - 1.30 miles	30 – 290 feet	Structures appear to be outside estimated floodplain	-	-	-	-	-

In accordance with 15A NCAC 02K .0105, I am providing the following proposed hazard classification:

RECOMMENDED HAZARD CLASSIFICATION: ☐ LOW ☐ INTERMEDIATE ☒ HIGH

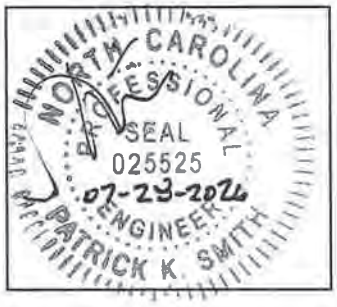
I agree that this form will be used to initiate the Jurisdictional Determination process and/or determine its Hazard Classification based on the current submittal and additionally requested documents, as needed.

NAME OF OWNER/REPRESENTATIVE or PROFESSIONAL ENGINEER: Patrick K. Smith, P.E.

SIGNATURE: ✓

DATE: 07/28/2026

P.E. SEAL:



ATTACHMENT 2

North Salem Street Dam

Site Photographs



Photo 1 – View of Dam (looking Northwest) near Left Abutment of Dam



Photo 2 – View of Existing Pond (looking Northeast) from Center of Dam



Photo 3 – View of Dam (looking Southeast) near Right Abutment of Dam



Photo 4 – View of Dam Crest from near Left Abutment of Dam (looking Northwest)



Photo 5 – View of Dam Crest from near Right Abutment of Dam (looking Southeast)



Photo 6 – Upstream Embankment Slope of Dam, Typical



Photo 7 – Downstream Embankment Slope of Dam, Typical



Photo 8 – Downstream Embankment Slope of Dam (looking Northeast)



Photo 9 – Downstream Embankment Slope (looking North)



Photo 10 – Downstream Embankment Slope of Dam (looking Southeast)



Photo 11 – Observed Seepage near Downstream Toe of Dam



Photo 12 – Existing Masonry/Block Riser Spillway near Right Abutment of Dam



Photo 13 – Existing Concrete Spillway Barrel near Right Abutment of Dam



Photo 14 – View of Spillway Outlet Channel (Looking Upstream)



Photo 15 – View of Spillway Outlet Channel (Looking Downstream)



Photo 16 – View of Floodplain Immediately Downstream of Dam (Looking Southwest)



Photo 17 – View of Floodplain Approximately 100’ Downstream of Dam (Looking Southwest)



Photo 18 – View of Floodplain Approximately 200’ Downstream of Dam (Looking Southwest)

Charlion Downs Lane Crossing

Site Photographs



Photo 19 – Charlion Downs Lane Crossing Sight Distance (Looking Southeast)



Photo 20 – Charlion Downs Lane Crossing Sight Distance (Looking Northwest)



Photo 21 – Charlion Downs Lane 42-inch Reinforced Concrete Pipe (Looking Downstream)



Photo 22 – Charlion Downs Lane 42-inch Reinforced Concrete Pipe (Looking Upstream)



Photo 23 – Charlion Downs Lane Crossing Upstream Floodplain Area (Looking Upstream)



Photo 24 – Charlion Downs Lane Crossing Downstream Floodplain Area (Looking Downstream)

Blackburn Road Crossing

Site Photographs



Photo 25 – Blackburn Road Crossing Sight Distance (Looking North)



Photo 26 – Blackburn Road Crossing Sight Distance (Looking South)



Photo 27 – Blackburn Road Twin 60-inch Reinforced Concrete Pipe (Looking Downstream)



Photo 28 – Blackburn Road Twin 60-inch Reinforced Concrete Pipe (Looking Upstream)



Photo 29 – Blackburn Road Crossing Upstream Floodplain Area (Looking Upstream)



Photo 31 – Blackburn Road Crossing Downstream Floodplain Area (Looking Downstream)

Haddon Hall Greenway Trail

Site Photographs



Photo 31 – Haddon Hall Greenway Trail Crossing Sight Distance (Looking Northeast)



Photo 32 – Haddon Hall Greenway Trail Crossing Sight Distance (Looking Southwest)



Photo 33 – Haddon Hall Greenway Trail Crossing Twin 60-inch Reinforced Concrete Pipe (Looking Downstream)



Photo 34 – Haddon Hall Greenway Trail Crossing Twin 60-inch Reinforced Concrete Pipe (Looking Upstream)



Photo 35 – Haddon Hall Greenway Trail Crossing Downstream Floodplain Area (Looking Downstream)

HWY 64 Eastbound On-Ramp / HWY 64

Site Photographs



Photo 36 – Highway 64 Crossing Sight Distance (Looking East)



Photo 37 – Highway 64 Crossing Sight Distance (Looking West)



Photo 38 – Highway 64 Crossing 8’ x 5’ Reinforced Concrete Box Culvert (Looking Downstream)



Photo 39 – Highway 64 Crossing Upstream Floodplain Area (Looking upstream)

ATTACHMENT 3

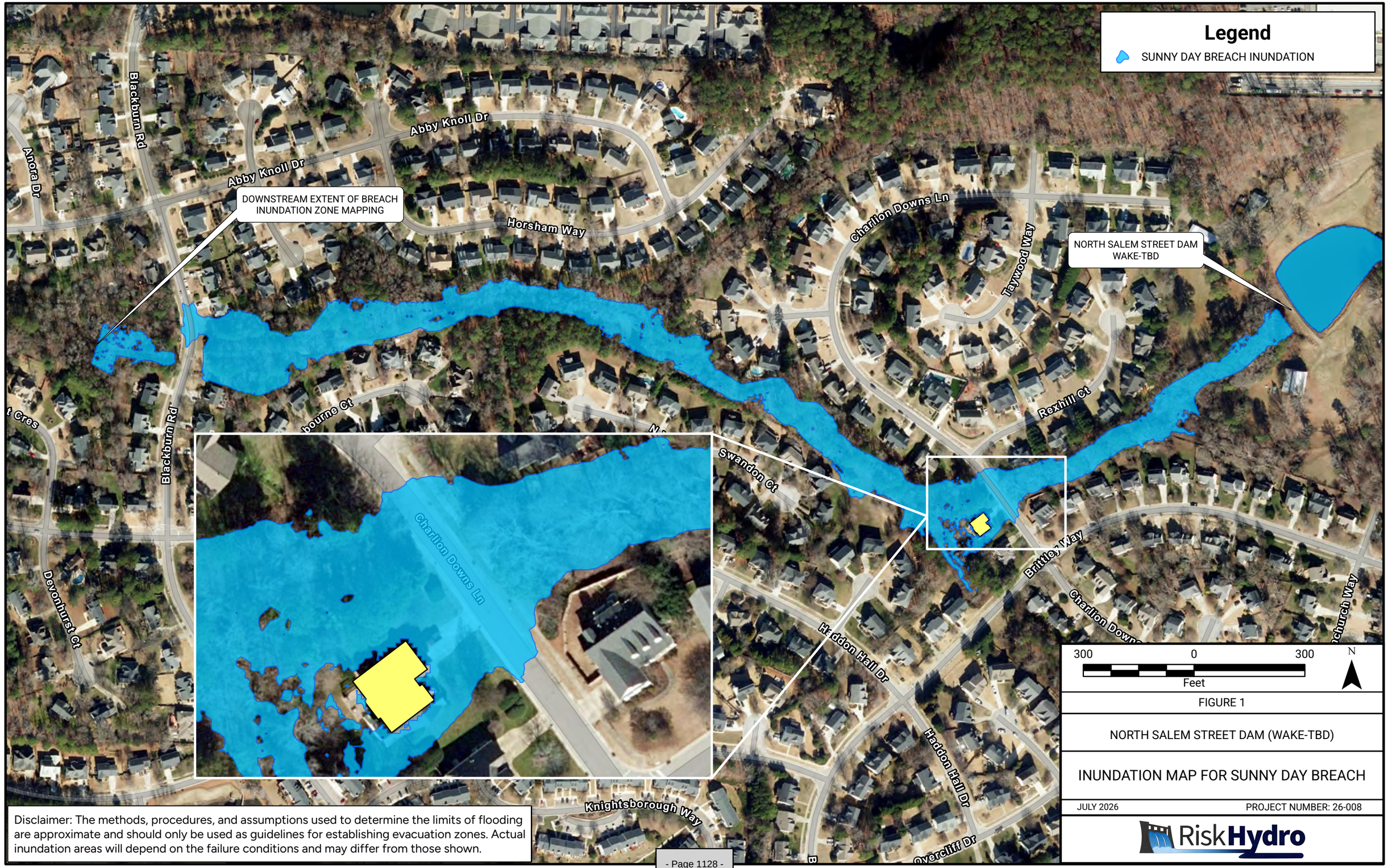


FIGURE 1

NORTH SALEM STREET DAM (WAKE-TBD)

INUNDATION MAP FOR SUNNY DAY BREACH

JULY 2026 PROJECT NUMBER: 26-008

RiskHydro

Disclaimer: The methods, procedures, and assumptions used to determine the limits of flooding are approximate and should only be used as guidelines for establishing evacuation zones. Actual inundation areas will depend on the failure conditions and may differ from those shown.

JOSH STEIN
Governor
D. REID WILSON
Secretary
WILLIAM E. TOBY VINSON, JR
Director

NORTH CAROLINA
Environmental Quality

September 8, 2026

DLG Holdings LLC
5700 Calton Drive
Raleigh, North Carolina 27612

RE: Jurisdictional Determination and Hazard Classification
North Salem Street Dam
Wake County
State Dam ID: WAKE-649

Dam Owner(s):

This is in response to your latest submission dated July 28, 2026 and received on July 30, 2026 of a request for a jurisdictional determination and hazard classification of the existing subject dam. Personnel from the North Carolina Department of Environmental Quality's Division of Energy, Mineral, and Land Resources (DEMLR) reviewed the submitted materials and performed independent analyses to evaluate the subject dam's hazard potential. Additionally, personnel from DEMLR's Raleigh Regional Office conducted an inspection of the existing dam site and downstream areas on August 17, 2026. The existing dam height and maximum storage capacity are approximately 15 feet and 9.8 acre-feet, respectively.

Based on our reviews, analyses and inspections, DEMLR has determined that a Class-C high hazard classification is presently warranted due to the presence of homes and roads downstream from the dam within the potential breach inundation zone(s). Class-C includes dams located where failure will likely cause loss of life or serious damage to homes, industrial and commercial buildings, important public utilities, primary highways, or major railroads.

Due to its high hazard classification, this dam will be subject to the jurisdiction of the Dam Safety Law of 1967 in accordance with NCGS 143-215.25A(a)(6). The Dam Safety Law of 1967 can be found at the following web address: https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permits/dam-safety.

The referenced dam height and maximum storage capacity places this dam in the small size classification according to the criteria table shown in 15A NCAC 02K .0205(e), with the minimum Spillway Design Flood for small sized high hazard dams being the 1/3 Probable Maximum Precipitation.

In the event that future conditions change downstream of the dam, or that the dam height and/or total storage criteria are altered in accordance with approved plans (see 'Construction, Modifications and Repairs'), the dam may be subject to reassessment of its hazard class and/or jurisdictional status.

EMERGENCY ACTION PLAN:
An Emergency Action Plan (EAP) is required for intermediate hazard and high hazard dams in accordance with NCGS 143-215.31(a1)(1), and must be submitted to DEMLR and the North Carolina Department of Public Safety for review and approval within 90 days of receipt of this notification. Owners of dams that are undergoing or planning for construction, modifications or repairs must submit an EAP before final written consent for use of the dam is issued by DEMLR. Furthermore, the EAP must be updated every year and sent to DEMLR for review. EAP's for all dams were required to be provided to DEMLR by December 31, 2015. The EAP must include a downstream inundation map depicting areas affected by a dam failure and sudden release of the impoundment, as well as a list of impacted roads and structures. Failure to submit an EAP may result in enforcement action by DEMLR, which may include, but is not limited to, a Notice of Deficiency or a Dam Safety Order mandating drainage of the impoundment. Please contact this office to communicate your intent to comply with this requirement within 30 days of receipt of this notification, and/or if you need technical assistance and/or a list of consultants that can provide professional help in developing your EAP.

Our office's contact information is: email DamSafety@deq.nc.gov and phone number (919) 707-9220. You can also find documents and templates related to development of your EAP at: https://deq.nc.gov/about/divisions/energy-mineral-and-land-resources/dam-safety/planning-dam-emergency.

OPERATION AND MAINTENANCE PLAN:
An operation and maintenance (O&M) plan is required for all high hazard dams. The O&M plan should be specific to the subject dam and address all routine maintenance, annual operation of the bottom drain to ensure functionality, and the frequency of the following: mowing, tree removal, piezometer readings, lubrication and exercising of valves and gates, rodent control, and inspections by the owner or the owner's representative.

Owners of existing dams that are not undergoing construction, modifications or repairs must submit a copy of the current O&M plan to DEMLR within 90 days. Owners of dams that are undergoing or planning for construction, modifications or repairs must submit an O&M plan before final written consent for use of the dam is issued by DEMLR. For additional guidance on the preparation of an O&M plan, refer to the North Carolina Dam Operations & Maintenance and Inspection Manual: https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Land%20Quality/Dam%20Safety/Dam_O%26M_Insp_Manual_rev_2007.pdf.

We recommend that the reservoir be operated to provide the maximum freeboard feasible, particularly during significant precipitation events. We also recommend that adequate and readily accessible drawdown measures be provided and maintained in the reservoir should emergency conditions arise. We recommend that an engineer knowledgeable of current Dam Safety design and construction requirements evaluate these issues relative to long-term serviceability and overtopping protection.

CONSTRUCTION, MODIFICATIONS AND REPAIRS:
Any construction, breach, modification or repair work to the dam requires prior approval from DEMLR prior to proceeding. Plans, specifications, along with the data and calculations necessary to develop them in accordance with the Dam Safety Law of 1967 as well as North Carolina Administrative Code, Title 15A, Subchapter 02K Dam Safety, must be prepared by a Professional Engineer licensed in the State of North Carolina. The application in paper and electronic format must be submitted to the State Dam Safety Engineer for review and approval. There may be initial and additional application processing fees required to be submitted with the application, depending on the type, nature and cost of the project.

TREES AND WOODY VEGETATION ON DAMS:
All trees, brush and woody vegetation must be removed from the slopes and crest of the dam embankments and the emergency spillway areas. All trees and/or brush less than six inches in diameter at breast height may be removed either by excavation or cutting flush to the ground. All trees larger than six inches in diameter at breast height must be completely removed by excavation, including roots, and the resulting excavations properly backfilled with select fill. All disturbed areas must be immediately revegetated with a good cover of grass adequate to prevent surface erosion. Excavation and backfilling required for tree removal will require engineered plans to be submitted to Dam Safety for review and approval before removal may proceed. FEMA 534 "Technical Manual for Dam Owners, Impacts of Plants on Earthen Dams" should be used as guidance.

MINIMUM STREAM FLOW REQUIREMENTS:
Under 15A NCAC 02K .0502(b)(1), a minimum flow may be required to be released from the subject dam at all times in order to support water quality and aquatic habitat. However, DEMLR has determined that there is currently no required minimum flow for the subject dam. This required minimum flow value may be subject to change in the future.

INSPECTIONS AND ENFORCEMENT:
Personnel from DEMLR's Raleigh Regional Office will schedule and perform regular inspections of the dam to evaluate its safety and condition, and to determine continued compliance with applicable regulations. As the owner of a high hazard dam, you may expect that regular inspections will be performed on approximately a biennial basis.

DEMLR personnel reserve the right to inspect the dam at any time. Whenever an inspection indicates the dam may not perform satisfactorily, the Director may require a detailed investigation at the owner's expense to determine the required remedial actions, if any. If the dam is determined to be unsafe, or is not maintained in good operating

condition, the Director may issue an order directing the owner to take such measures as may be essential, including lowering the level of the impounded water, drainage of the impoundment, and destruction of the dam or reservoir in whole or in part, immediately or within a time limited by the order. Failure to comply with the requirements of the Director's order may result in enforcement actions, which could include criminal charges or civil penalties. Civil penalties may include an assessment of up to $500 per day and/or a request to the North Carolina Attorney General's office for injunctive relief.

OTHER PERMITS:
The Army Corps of Engineers and the Division of Water Resources of this Department should be contacted to determine if additional permits are required. Also, the erosion and sediment control program having jurisdiction should be contacted to determine plan approval requirements. In any case, sediment must be prevented from entering the waters of the state or flowing onto neighboring property.

Should the subject dam change ownership, a "Change of Ownership of a Dam" form must be completed by the new owner of the dam at the time of transfer in order to ensure the new owner receives important information concerning the subject dam, and the former owner be released from liability. The form may be located on the Dam Safety website at https://deq.nc.gov/about/divisions/energy-mineral-and-land-resources/dam-safety/application-forms. The completed form must be submitted via email to DamSafety@deq.nc.gov listing the change of ownership for the subject dam with its applicable state ID in the subject line.

There are additional guidance and resources available on the Dam Safety website at: https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permits/dam-safety. Also, to assist dam owners through outreach and education, the Association of State Dam Safety Officials' Owner Outreach Committee has developed three educational videos as a free resource for owners on critical basics of operating and maintaining a dam safely. The videos are 1) dam inspections, 2) spillways and outlet works, and 3) operation and maintenance plans. All the videos are available at: https://damsafety.org/dam-owners. These videos are the first in a series specific to owner education called the 'Dam Owner Academy.'

For assistance, you may contact William H. Denton, IV, PE, Raleigh Regional Engineer at 3800 Barrett Drive, Raleigh, North Carolina 27609, telephone number (919) 791-4200 or the Dam Safety Program in the Raleigh Central Office at telephone number (919) 707-9220 should you have questions concerning this matter.

Sincerely,

Jacob A. Smith
Environmental Program Supervisor II

JAS/bd

cc:
William Denton, IV, PE, Raleigh Regional Engineer

PLANNING BOARD REPORT TO TOWN COUNCIL

Rezoning Case: 25CZ24 N. Salem Street Mixed Use PUD

Planning Board Meeting Date: September 14, 2026

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:	+32.35 acres
PIN(s):	0742367712, 0742368697, 0742365731, 0742366583, 0742369479, 0742369278, 0742350909, 0742362432, 0742366306, 0742268387,0742360631, 0742363169, 0742358857, 0742353848, 0742362719, & 0742363799
Current Zoning:	Residential Agricultural (RA), Rural Residential (RR), & Planned Commercial-Conditional Zoning (PC-CZ #15CZ02)
Proposed Zoning:	Planned Unit Development-Conditional Zoning (PUD-CZ)
Current 2045 Land Use Map:	Mixed Use: High Den Residential/Office Employment/Commercial Services (+/-4.92 acres) & Mixed Use: Medium Den Residential/Office Employment/Commercial Services (+/-27.38 acres)
If rezoned as proposed, the 2045 Land Use Map Designation will change to:	Mix Use: HD Residential/Office Employment/Comm Services (+/-8.27 acres) & Mix Use: MD Residential/Office Employment/Comm Services (+/-24.03 acres)
Town Limits:	Inside Corporate Limits and 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: _____

If the rezoning is approved, the Land Use Map will be automatically updated per State law.

☑ 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: _____

If the rezoning is approved, the Land Use Map will be automatically updated per State law.

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: Recommend approval with conditions

Introduced by Planning Board member: Kristy Yule

Seconded by Planning Board member: Mark Spanioli

☐ *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:

With condition that the applicant consider a wider buffer along the southern property boundary and Transportation condition 9c be revised to "At site access #3 on N. Salem Street align with Thales outbound driveway, with an exclusive northbound left turn lane on N. Salem Street and a channelized concrete median between them to prohibit left turns from both sides of N. Salem Street."

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

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

With 2 Planning Board Member(s) voting "no"

Reasons for dissenting votes:

See attached forms

This report reflects the recommendation of the Planning Board, this the 14th day of September 2026.

Attest:

Keith Braswell, Planning Board Chair

Amanda Bunce Digitally signed by Amanda Bunce Date: 2026.09.14 19:11:13 -04'00'

Amanda Bunce, Assistant Planning Director

PLANNING BOARD REPORT TO TOWN COUNCIL
Dissenting Member Comments

Planning Board Member Name: Sarah Soh

Meeting Date: 9/14/2026

☒ Rezoning # 25CZ24

☐ Long Range Plan amendment(s)_____

☐ Other_____

Reason(s) for dissenting vote:

I dissent due to several reasons, mainly due to some unknowns and necessity for further decision between the parties, with the understanding that this is a rezone case, not quite a project. I don't oppose to this but feel a further review may assist.
The concern for the current drainage situation was raised by the residents and with the extra proposed impervious surfaces, how will keeping the existing dam and existing pond #1 help? If in the fact that the dam and the existing pond is drained, and two new, modernized ponds are designed with the proper pump/culvert, etc. the footprint of the ponds do change the proposed buildable areas within the area noted as "TH-2." I believe this what-if scenario should be shared with the neighboring residents, in conceptual form in addition to the history and analysis of the dam and ponds.
Per the residents, if the existing traffic congestion has worsen over the years, how will the proposed extra lane constructed only in front of the site area, and connectivities to the existing stubs help with through traffic? If the proposal was a continuous 3-lane street beyond the site area, down the street, perhaps that would solve the congestion? Although the rendering of the proposed parking area in MU-1 parallels Salem Street is attractive, there is a possibility that cars would intentionally use this as a shortcut Salem which poses unsafe situations for those who will be parked and visiting the proposed commercial area. (Just for the record, I am not against the connectivity for Charlion and Street B, for safety reasons, mainly access for emergency vehicles is important for overall planning.) The developer is going beyond the site to propose Salem's widening, hoping to ameliorate the congestion, but will it just push the bottleneck down the street? In my opinion this is a bigger issue.

Lastly, my concern lays with the proposed design of the townhome structure blocks that will be perpendicular to the boundary of Haddon Hall community, esp along the south areas of TH-1 and TH-2. I believe further discussions on privacy should be addressed. Even though the minimum buffer of 20 feet + 10 feet structure setback is met, perpendicular streets will visually open to the rear of these homes at those points.

PLANNING BOARD REPORT TO TOWN COUNCIL
Dissenting Member Comments

Planning Board Member Name: Mary Petersen

Meeting Date: 9/14/26

☒ Rezoning # 25CZ24

☐ Long Range Plan amendment(s)_____

☐ Other_____

Reason(s) for dissenting vote:

I have concerns with the traffic that will be generated, not only along Salem St., but also within Haddon Hall. This section/neighborhood is already congested with Brittley Way being used as a cut through from the Peakway. I don't feel that an increase in traffic protects the citizens of Apex who live in this neighborhood. Traffic calming measures within the neighborhood were not discussed in enough detail for me to be comfortable with this proposal.

Additionally, I feel that a larger buffer is needed between the single-family homes on Brittley and the townhomes that will be constructed in TH1 and TH2. This mixed use development is clearly different than the nature of Haddon Hall and I feel that the residents of Haddon Hall need to have their concerns considered in more detail and their privacy protected.

Of further concern, the proposed mixed-use development, while beautiful, does not fully match the vibe of downtown Apex. If we are presenting this as a gateway to the town, it would be better to match it more to the buildings/character of what already exists in downtown.

I am not opposed to this development, but I do want further considerations made to residential traffic beyond what will certainly increase on Salem St. And larger buffers between the already established neighborhood and the new mixed-use development are needed as noted in the approval of #25CZ24.

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: REGULAR MEETING AGENDA

Meeting Date: November 10, 2026

Item Details

Presenter(s): Mayor Pro Tempore Terry Mahaffey

Department(s): Governing Body

Requested Motion

Discussion and possible motion to adopt a Resolution Establishing the Apex Technology Development and Innovation Task Force and authorizing the Town Clerk, in coordination with the Mayor Pro Tempore and Information Technology Director, to develop the membership application and initiate the recruitment process.

Approval Recommended?

Yes

Item Details

At the request of Mayor Pro Tempore Terry Mahaffey, a resolution has been developed for Town Council consideration to establish the Apex Technology Development and Innovation Task Force as a non-standing resident advisory task force. The proposed Task Force is intended to leverage the technical expertise of community volunteers to assist the Town in identifying opportunities to improve operational efficiency, evaluate existing software applications and licensing practices, explore innovative technology solutions, and identify potential cost savings. The Task Force would operate in an advisory and technical support capacity under the direction of the Information Technology Director, with an emphasis on supporting existing Town operations rather than assuming responsibilities assigned to Town employees.

The proposed resolution establishes the organizational framework for the Task Force, including a membership of up to 20 volunteers, a designated Town Council representative, and a limited term ending June 30, 2028, unless otherwise amended by the Town Council.

Pursuant to the draft resolution, the Town Clerk's Office would coordinate recruitment, with initial appointments subject to Town Council approval – consistent with other Town established Task Forces. Recognizing the technical nature of the group and the importance of protecting Town resources, a separate Membership Agreement will be developed in coordination with the Town Attorney and Information

Technology Director to address cybersecurity, data protection, intellectual property, software licensing, and other applicable legal and operational requirements.

The resolution establishes the Task Force but **does not** independently authorize access to confidential or sensitive Town information, deployment of technology, or expenditure of Town resources. Additional agreements, safeguards, and appropriate approvals will need to be established before substantive technical activities may begin.

Attachments

- RA1-A1: Proposed Resolution Establishing the Apex Technology Development and Innovation Task Force

TOWN OF APEX TOWN COUNCIL
RESOLUTION ESTABLISHING THE
APEX TECHNOLOGY DEVELOPMENT
AND INNOVATION TASK FORCE
RES-2026-_____

WHEREAS, the Town of Apex relies upon a broad range of technology systems, software applications, digital platforms, and licensing agreements to support municipal operations and provide efficient and effective services to the community; and

WHEREAS, advances in software development, automation, artificial intelligence, data management, and other emerging technologies continue to create opportunities for local governments to improve processes, increase organizational efficiency, enhance service delivery, and responsibly reduce operating costs; and

WHEREAS, the Town desires to periodically evaluate its existing software applications and technology resources to identify opportunities to consolidate systems, eliminate duplicative functionality, improve license management, develop internal solutions where appropriate, and maximize the value of existing technology investments; and

WHEREAS, the Apex community includes residents and professionals with substantial expertise in software engineering, application development, artificial intelligence, cybersecurity, data analytics, systems architecture, technology management, and related fields who may provide valuable technical knowledge and perspectives that may support the Town's technology initiatives; and

WHEREAS, collaborative development and evaluation of technology solutions may allow the Town to explore innovative tools and applications tailored to municipal operations while maintaining appropriate safeguards related to cybersecurity, data privacy, intellectual property, software licensing, records retention, accessibility, and responsible use of artificial intelligence; and

WHEREAS, the Town recognizes that any software, application, code, artificial intelligence model, automation, or other technology developed or evaluated through the Task Force must be done in accordance with applicable law, Town policies, contractual requirements, licensing terms, cybersecurity standards, and any agreements approved by the Town Attorney; and

WHEREAS, the Town Council desires to establish a non-standing Apex Technology Development and Innovation Task Force to provide technical expertise, propose potential software options, assist Town staff in evaluating technology opportunities, and provide recommendations intended to improve operational efficiency and responsible stewardship of public resources; and,

NOW, THEREFORE BE IT RESOLVED, by the Town Council of the Town of Apex, a non-standing resident Task Force called the "Apex Technology Development and Innovation Task Force" ("Task Force") is hereby established to advise and assist the Town in identifying, evaluating, designing, developing, prototyping, and testing technology solutions that support municipal operations, improve efficiency, reduce unnecessary costs, and enhance service delivery.

BE IT FURTHER RESOLVED, that the non-standing Apex Technology Development and Innovation Task Force shall have the following composition and regulations:

1) shall be active until June 30, 2028, unless this Resolution is modified by the Town Council to extend or shorten its term, provided that the Task Force shall not continue beyond the period permitted under the Resident Advisory Board Administrative Policy unless otherwise authorized by the Town Council.
2) shall consist of up to twenty (20) official volunteer members selected to provide a dynamic range of professional, technical, and community perspectives. Membership shall, to the extent practicable, include individuals with professional experience or demonstrated expertise in areas such as:
    a. software engineering and application development;
    b. artificial intelligence and machine learning;
    c. information technology architecture and systems integration;
    d. cybersecurity and information security;
    e. data analytics and database management;
    f. cloud infrastructure and technology operations;
    g. user experience and digital service delivery;
    h. software licensing and technology procurement;
    i. project or product management; and
    j. other technology-related disciplines beneficial to the activities of the Task Force
3) Task Force members will only perform duties distinct from that of Town employees and will not fill any Town staff position. There are no mandatory minimum hours or fixed schedules for Task Force members performing any activities pursuant to membership in the Task Force. Current Town employees are not eligible for membership in the Task Force.
4) The Town Council shall designate one member of the Town Council to serve as Council Representative to the Task Force. The Council Representative shall serve as a liaison between the Task Force and Town Council and shall not be counted as one of the twenty (20) appointed Task Force members.
5) The Task Force may, subject to the direction of the Information Technology Director, participate in the following activities:

a. Review existing Town software applications, platforms, and technology systems to identify overlapping functionality, duplicative services, underutilized resources, or opportunities for consolidation;
b. Evaluate software licensing practices and identify potential opportunities to reduce recurring licensing costs, improve license utilization, or transition to alternative solutions where operationally appropriate;
c. Identify opportunities where existing Town systems or internally developed technology could provide functionality currently obtained through separate commercial applications;
d. Design, develop, program, prototype, test, document, and evaluate software applications, automations, integrations, dashboards, artificial intelligence tools, and other technology solutions approved for Task Force development by the Information Technology Director.
e. Evaluate any proposed internally developed technology solution, in coordination with appropriate Town staff, for long-term ownership, documentation, support, maintenance, cybersecurity, continuity, and sustainability prior to implementation or deployment;
f. Recommend standards and best practices related to application development, documentation, interoperability, maintainability, accessibility, cybersecurity, data governance, and responsible artificial intelligence;
g. Provide technical expertise and recommendations when requested by the Information Technology Department; and,
h. Provide periodic reports and recommendations to the Town Council regarding the Task Force's activities, findings, potential cost savings, technology opportunities, and recommendations.

The Information Technology Director shall determine which requests and projects are appropriate for Task Force review or development and may prioritize projects based on organizational need, feasibility, anticipated benefit, cost savings, cybersecurity, available resources, and long-term support requirements.

6) The Task Force shall serve solely in an advisory and technical support capacity, subject the direction of the Information Technology Director, unless the Information Technology Director approves a written project charter authorizing specific technical activities. The scope, content, restrictions, permissions, processes, and requirements of such a project charter shall be in the sole discretion of the Information Technology director. In carrying out their activities, members may participate in the design, development, programming, prototyping, testing, documentation, maintainability/support, and evaluation of technology solutions authorized by

the Information Technology Director. Nothing in this Resolution authorizes the Task Force or an individual member to independently procure or deploy technology, execute contracts, commit Town resources, access Town systems or confidential information without authorization, or otherwise act on behalf of the Town. Final approval for implementation or deployment of any Task Force-developed solution shall remain with the Town. The Town is not under any obligation to accept, pursue, implement, utilize, or continue utilizing, any technological development, solution, operation, program, or recommendation provided by the Task Force.

7) As a condition of membership and prior to participating in the development of any technology solution, each Task Force member shall execute an Information Technology Task Force Membership Agreement approved as to form by the Town Attorney. The agreement shall address, as applicable, intellectual property rights; the Town's rights to use, modify, maintain, reproduce, and deploy anything developed through the Task Force; confidentiality; cybersecurity and data protection; third-party software and licensing; artificial intelligence tools; Bring Your Own Key (BYOK) arrangements; conflicts of interest; and other legal or operational requirements determined appropriate by the Town Attorney and Information Technology Director. If Town systems, data, or information are made accessible in any capacity, the Information Technology Director is authorized to suspend or terminate any Task Force Member's access for any violation of the above referenced agreement or for security purposes.
8) No technology shall be developed, incorporated, or deployed in a manner inconsistent with the applicable Membership Agreement, Town policy, state or federal law, or authorization of the Information Technology Director.
9) Task Force members shall not be provided access to confidential, protected, or sensitive information, as determined by the Information Technology Director..
10) Task Force members shall abide by the following sections of the Resident Advisory Board Administrative Policy:
    a. Code of Ethics.
    b. Conflicts of Interests.
    c. Member Responsibilities.
11) Task Force members shall comply with any professional, ethical, cybersecurity, confidentiality, and technology-use requirements incorporated into the Information Technology Task Force Membership Agreement or otherwise established by the Town
12) Task Force members shall have the authority to select their Chair and Vice-Chair for the duration of the Task Force.
13) Task Force members shall adopt a regular meeting schedule which shall

be filed with the Town Clerk.

14) The Task Force shall be supported by the Town's Information Technology Department and such other departments or staff as may be designated by the Town Manager. The Task Force shall receive administrative support from the Town Clerk's Office.

15) The Task Force may submit an annual report to the Apex Town Council summarizing:
    a. Estimated or realized cost savings and cost avoidance, including licensing savings;
    b. Operational efficiencies identified;
    c. Challenges, cybersecurity considerations, or implementation considerations; and
    d. Recommendations for future projects or Town technology practices.

BE IT FURTHER RESOLVED, that the Town Clerk, in consultation with the Town Council Task Force Representative and Information Technology Director, is authorized to develop and administer an application and recruitment process for membership on the Apex Technology Development and Innovation Task Force, including establishing application questions, recruitment materials, qualification criteria, and recruitment timelines consistent with this Resolution and the Resident Advisory Board Administrative Policy.

BE IT FURTHER RESOLVED, that the Information Technology Director shall review all applications received and recommend individuals, in consultation with the Town Council Representative, Town Manager, and Town Clerk, for membership consistent with the Resident Advisory Board Administrative Policy, and the Town Clerk shall provide the recommended membership to the Town Council for initial appointment.

BE IT FURTHER RESOLVED, following initial appointment, the Town Council Task Force Representative and Information Technology Director, in consultation with the Town Manager and Town Clerk, has the authority to appoint alternate members to the Apex Technology Development and Innovation Task Force if any of the primary members resign or do not fulfil their responsibilities on the Task Force.

BE IT FURTHER RESOLVED, the Town Clerk is hereby requested to notify the governing body for the Town of Apex of any membership and leadership changes on the Apex Technology and Innovation Task Force.

ADOPTED, this the _____ day of _____ 2026.

TOWN OF APEX

_____
Jacques K. Gilbert
Mayor

Attest:

_____
Allen Coleman, CMC
Town Clerk

| Agenda Item | cover sheet

for consideration by the Apex Town Council

Item Type: CLOSED SESSION

Meeting Date: November 10, 2026

Item Details

Presenter(s): Councilmember Edward Gray

Department(s): Governing Body

Requested Motion

Possible motion to enter into closed session pursuant to NCGS § 143-318.11(a)(6) to consider a personnel matter.

Approval Recommended?

N/A

Item Details

NCGS § 143-318.11(a)(6)

"To consider the qualifications, competence, performance, character, fitness, conditions of appointment, or conditions of initial employment of an individual public officer or employee or prospective public officer or employee; or to hear or investigate a complaint, charge, or grievance by or against an individual public officer or employee"

Attachments

- N/A