STAFF REPORT
Rezoning #25CZ24 N. Salem Street Mixed Use PUD
October 13, 2026 Town Council Meeting

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 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

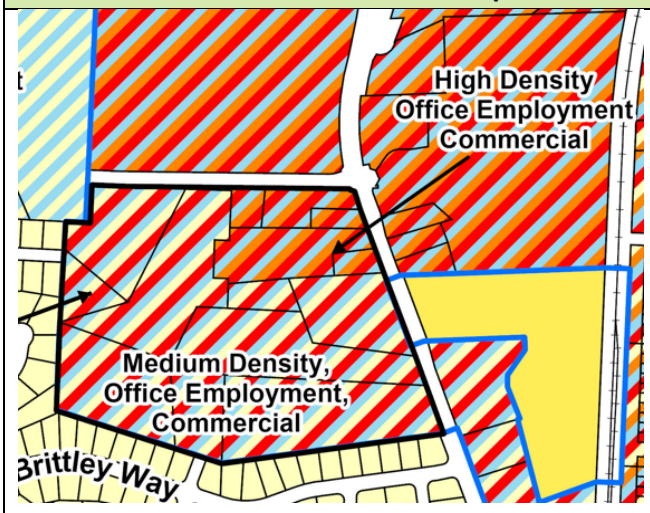
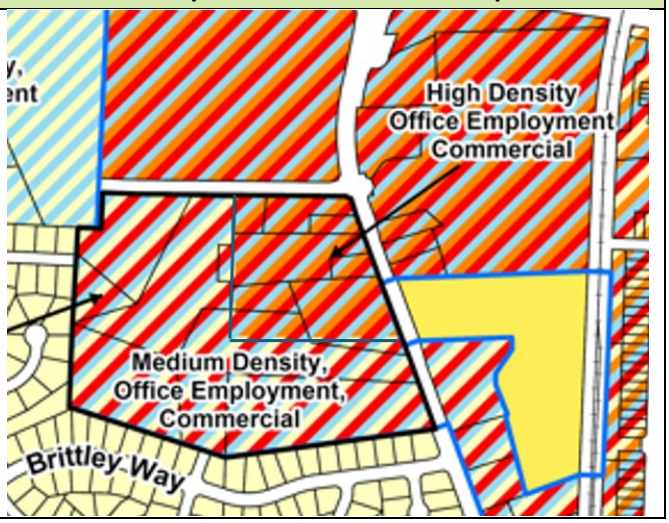

	

Figure 2: Current 2045 Land Use Map	**Figure 3: Proposed 2045 Land Use Map**

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).

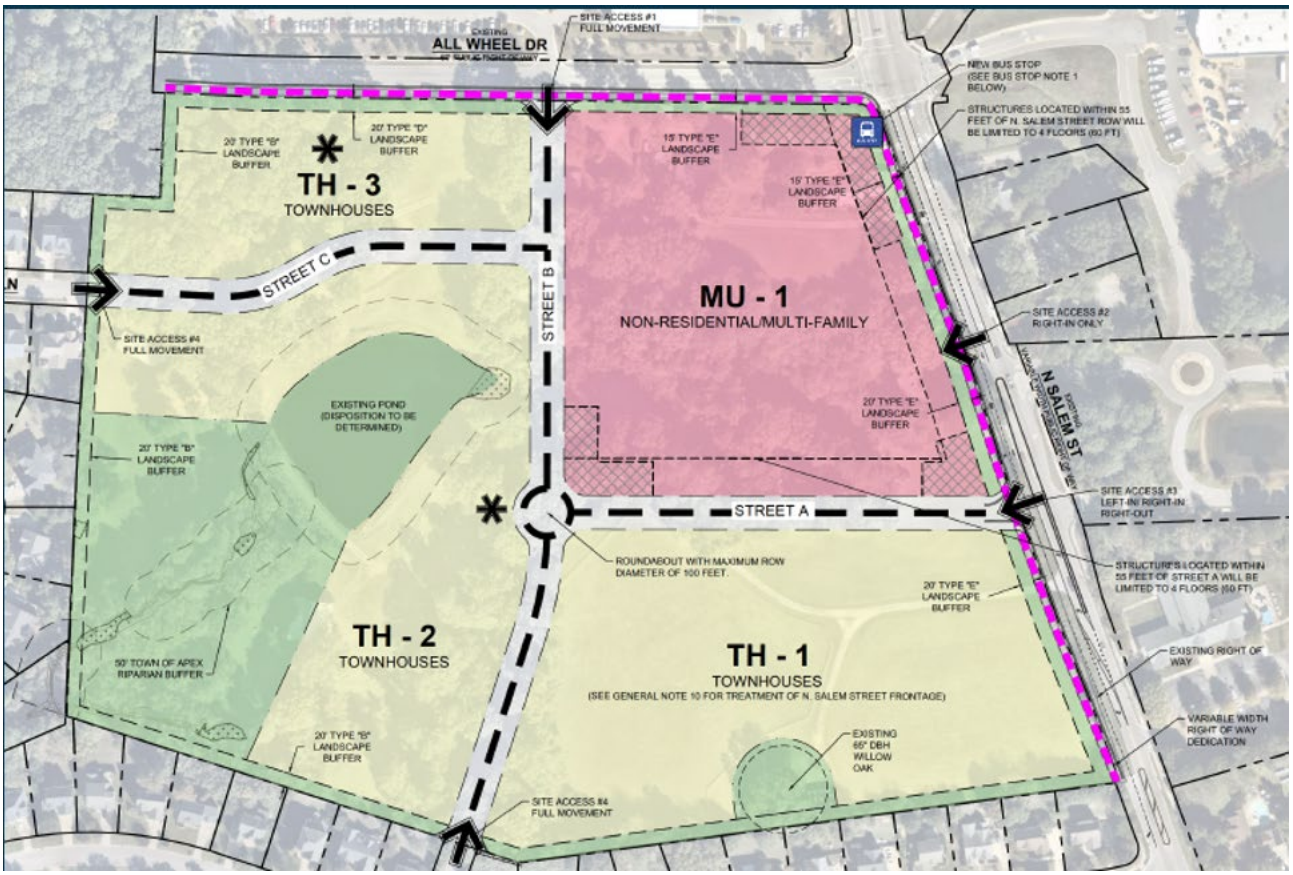


Figure 4: Proposed PUD Master Plan

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.

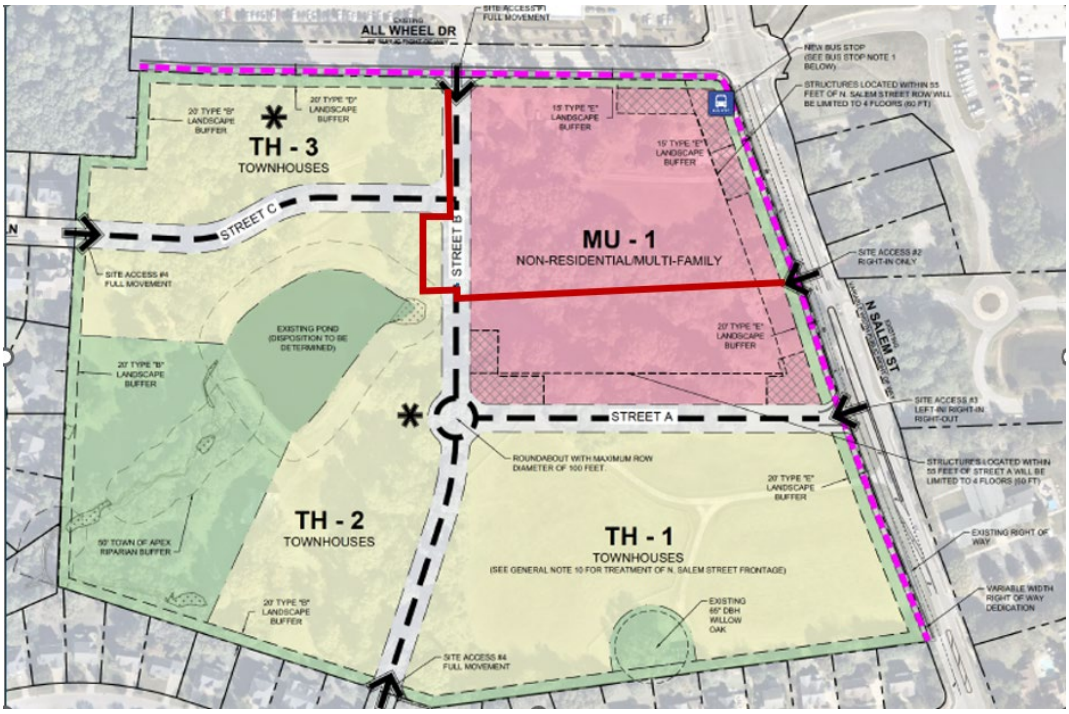


Figure 5: Existing Land Use Boundary (High Density Residential/Office Employment/Commercial Services) on Proposed PUD Plan

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
Recreation facility, private	P	P	P	P

	MU-1 District	TH-1 District	TH-2 District	TH-3 District
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
   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 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.

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.

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

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.

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).

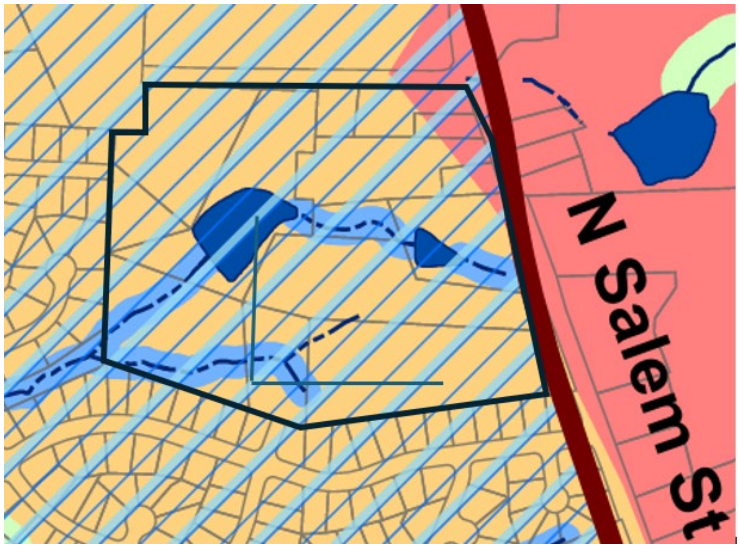


Figure 7: Town of Apex Watershed Protection Overly District Map

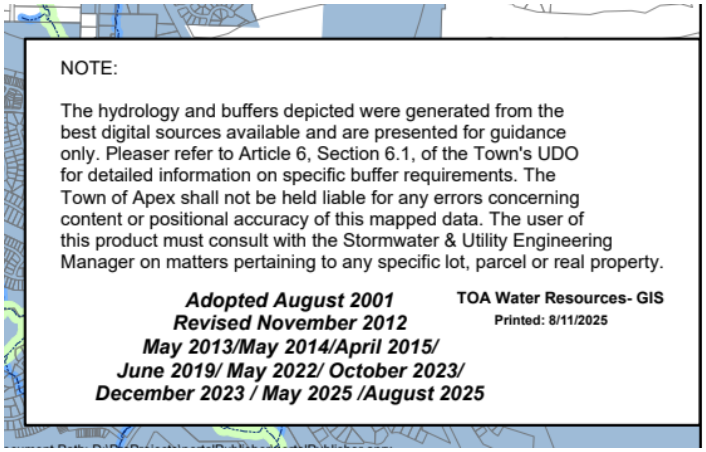


Figure 8: Watershed Map Disclaimer

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).

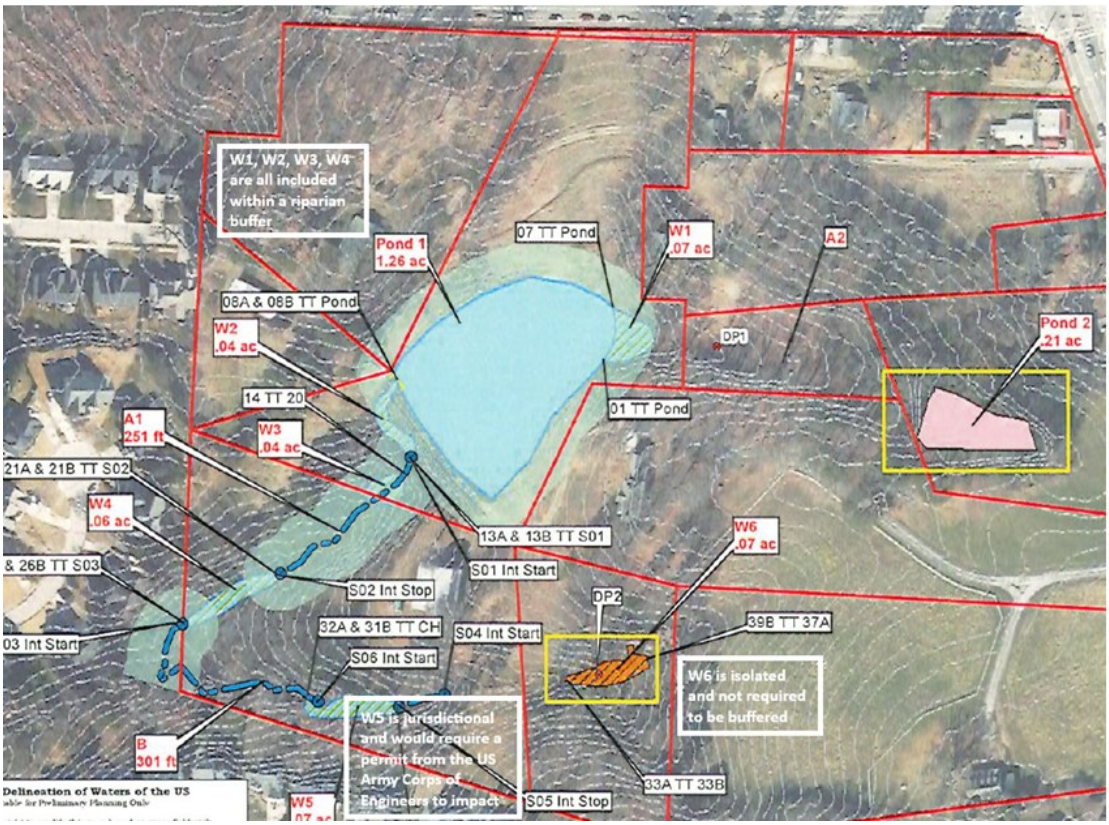
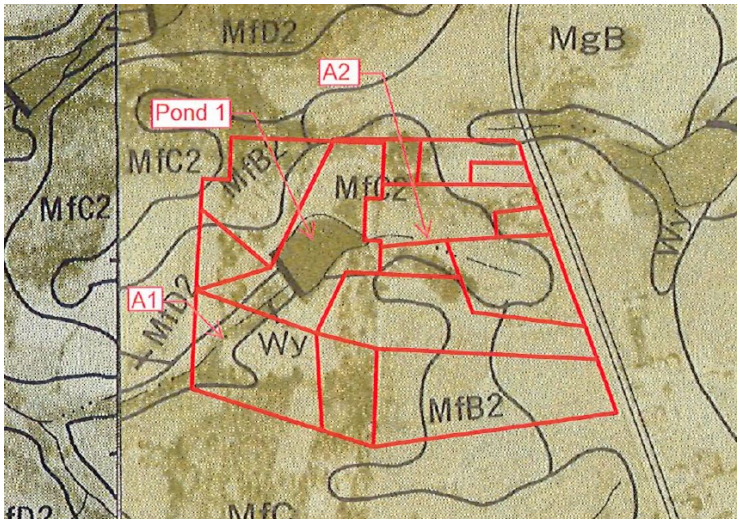


Figure 9: Project Buffer and Wetland Map

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.

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 Study Intersections 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 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.

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 waste station shall be installed.	Yes
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

	EAB Suggested Conditions	Applicant's Response
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 as proposed by the applicant.

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."

PUD TEXT REVISIONS AFTER PLANNING BOARD MEETING:

The applicant submitted 2 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."

Both 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.

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 for PUD-CZ shall provide architectural elevations representative of the residential structures to be built to ensure the Standards of this Section are met.

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

c) *RCA*. The PD Plan for PUD-CZ shall demonstrate compliance with Sec. 8.1.2 Resource Conservation Area, except that the percentage of RCA required under Sec. 8.1.2 may be reduced by the Town Council by no more than 10% provided that the PD Plan for PUD-CZ includes one or more of the following:

(i) A non-residential component; (ii) An overall density of 7 residential units per acre or more; or (iii) Environmental measures including but not limited to the following:

a. The installation of a solar photovoltaic (PV) system on a certain number or percentage of single-family or townhouse lots or on a certain number or percentage of multifamily, mixed-use, or nonresidential buildings. All required solar installation shall be completed or under construction prior to 90% of the building permits being issued for the approved number of lots or buildings. For single-family or townhouse installations, the lots on which these homes are located shall be identified on the

Master Subdivision Plat, which may be amended;

b. The installation of a geothermal system for a certain number or percentage of units within the development; or

c. Energy efficiency standards that exceed minimum Building Code requirements (i.e. SEER rating for HVAC).

d) *Landscaping*. The PD Plan for PUD-CZ shall demonstrate compliance with the standards of Sec. 8.2 *Landscaping, Buffering and Screening*, except that variations from these standards may be permitted where it is demonstrated that the proposed landscaping sufficiently buffers uses from each other, ensures compatibility with land uses on surrounding properties, creates attractive streetscapes and parking areas and is consistent with the character of the area. In no case shall a buffer be less than one half of the width required by Sec. 8.2 or 10 feet in width, whichever is greater.

e) *Signs.* Signage in the PD Plan for PUD-CZ shall demonstrate compliance with Sec. 8.7 *Signs*, except that the standards can be varied if a master signage plan is submitted for review and approval concurrent with the PD plan and is determined by the Town Council to be suitable for the PUD-CZ and generally consistent with the intent and purpose of the sign standards of the UDO. The master signage plan shall have design standards that are exceptional and provide for higher quality signs than those in routine developments and shall comply with Sec. 8.7.2 *Prohibited Signs*.

f) *Public facilities.* The improvements standards and guarantees applicable to the public facilities that will serve the site shall comply with Article 7: *Subdivision and* Article 14: *Parks, Recreation, Greenways, and Open Space*.

(i) The PD Plan for PUD-CZ demonstrates a safe and adequate on-site transportation circulation system. The on-site transportation circulation system shall be integrated with the off-site transportation circulation system of the Town. The PD Plan for PUD-CZ shall be consistent with the Apex Transportation Plan and the *Town of Apex Standard Specifications and Standard Details* and show required right-of-way widths and road sections. A Traffic Impact Analysis (TIA) shall be required per Sec. 13.19.

(ii) The PD Plan for PUD-CZ demonstrates a safe and adequate on-site system of potable water and wastewater lines that can accommodate the proposed development, and are efficiently integrated into off-site potable water and wastewater public improvement plans. The PD Plan shall include a proposed water and wastewater plan.

(iii) Adequate off-site facilities for potable water supply, sewage disposal, solid waste disposal, electrical supply, fire protection and roads shall be planned and programmed for the development proposed in the PD Plan for PUD-CZ, and the development is conveniently located in relation to schools and police protection services.

(iv) The PD Plan shall demonstrate compliance with the parks and recreation requirements of Sec. Article 14: *Parks, Recreation, Greenways, and Open Space* and Sec. 7.3.1 *Privately-owned Play Lawns* if there is a residential component in the PUD-CZ.

g) *Natural resource and environmental protection.* The PD Plan for PUD-CZ demonstrates compliance with the current regulatory standards of this Ordinance related to natural resource and environmental protection in Sec. 6.1 *Watershed Protection Overlay District*, Sec. 6.2 *Flood Damage Prevention Overlay District*, and Sec. 8.1 *Resource Conservation*.

h) *Storm water management.* The PD Plan shall demonstrate that the post-development rate of on-site storm water discharge from the entire site shall not exceed pre-development levels in accordance with Sec. 6.1.7 of the UDO.

i) *Phasing.* The PD Plan for PUD-CZ shall include a phasing plan for the development. If development of the PUD-CZ is proposed to occur in more than one phase, then guarantees shall be provided that project improvements and amenities that are necessary and desirable for residents of the project,

or that are of benefit to the Town, are constructed with the first phase of the project, or, if this is not possible, then as early in the project as is technically feasible.

j) *Consistency with 2045 Land Use Map.* The PD Plan for PUD-CZ demonstrates consistency with the goals and policies established in the Town's 2045 Land Use.

k) *Complies with the UDO.* The PD Plan for PUD-CZ demonstrates compliance with all other relevant portions of the UDO.

Legislative Considerations

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

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

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

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

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

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

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

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

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

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

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:

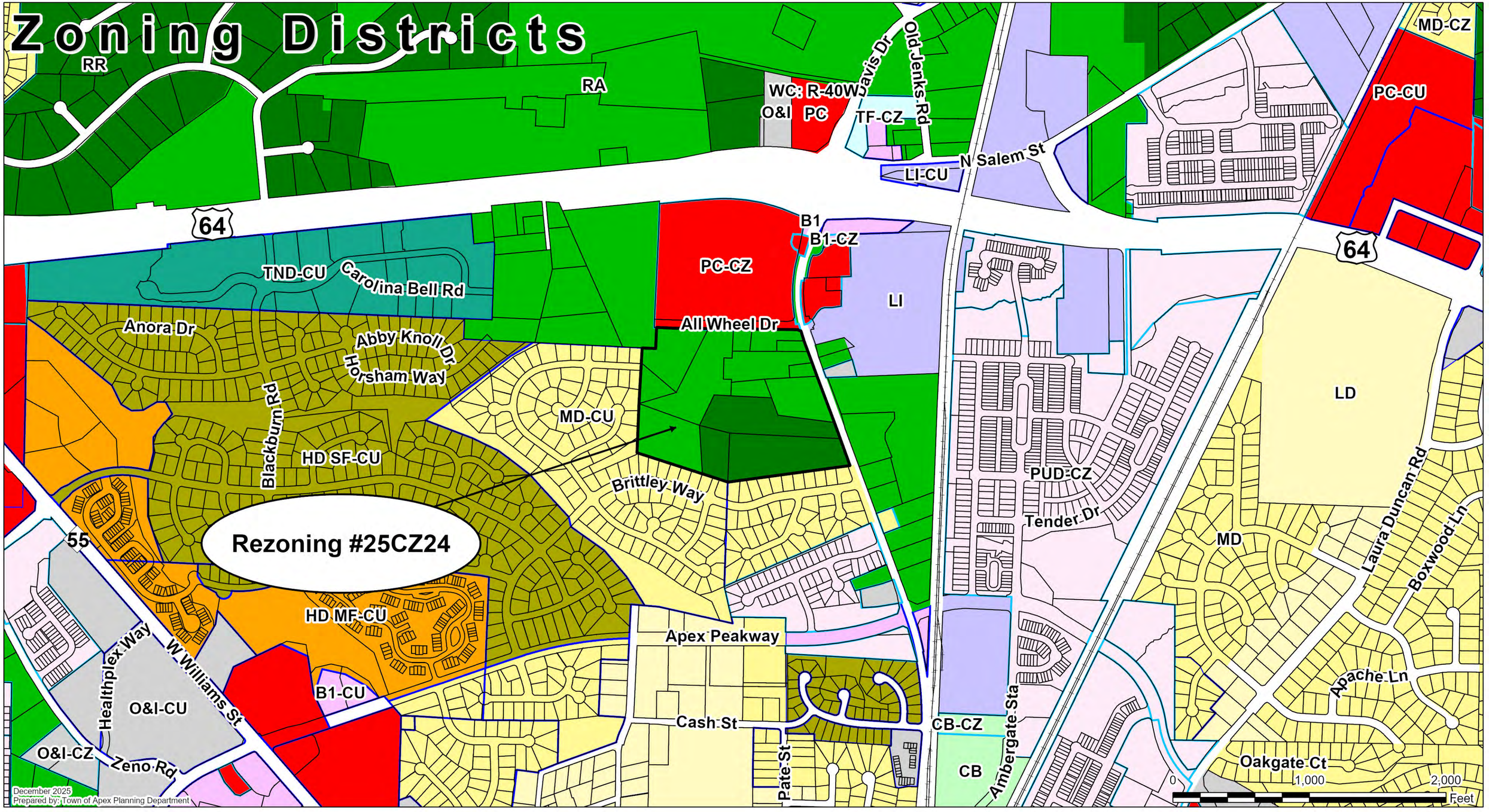
Apex staff concur with the TIA. This signal is anticipated to operate at an overall LOS D or better under all conditions analyzed. The westbound approach currently operates at LOS E and F with long queues and is anticipated to operate at LOS F under future conditions, with or without the site. Site traffic 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
Rexhill Ct
Thales Academy
N Salem St
Wandle Ln
Branch Line Ln
Windy Rd
Swandon Ct
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
PUD-CZ
Tender Dr
LD
MD
Laura Duncan Rd
Boxwood Ln
Apache Ln
Rezoning #25CZ24
55
HD MF-CU
Apex Peakway
Healthplex Way
W Williams St
O&I-CU
B1-CU
Cash St
CB-CZ
Ambergate Sta
O&I-CZ
Zeno Rd
Pate St
CB
Oakgate Ct
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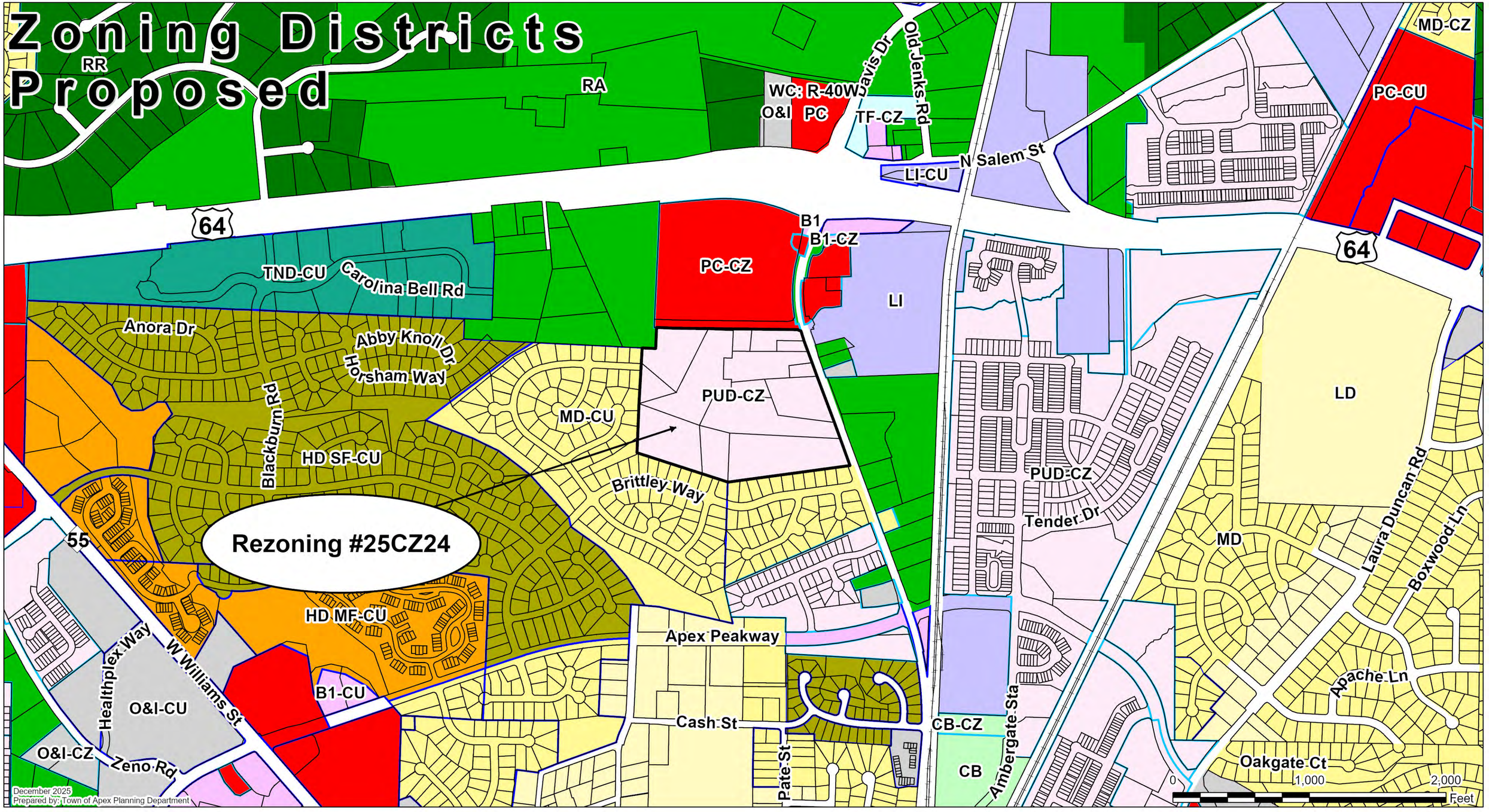
Feet
December 2025
Prepared by: Town of Apex Planning Department


Zoning Districts
Proposed
RR
RA
WC: R-40W
O&I
PC
TF-CZ
Javis Dr
Old Jenks Rd
N Salem St
LI-CU
MD-CZ
PC-CU
64
B1
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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
O&I-CZ
Zeno Rd
Cash St
Pate St
CB-CZ
CB
Ambergate Sta
PUD-CZ
Tender Dr
LD
MD
Laura Duncan Rd
Boxwood Ln
Apache Ln
Oakgate Ct
December 2025
Prepared by: Town of Apex Planning Department
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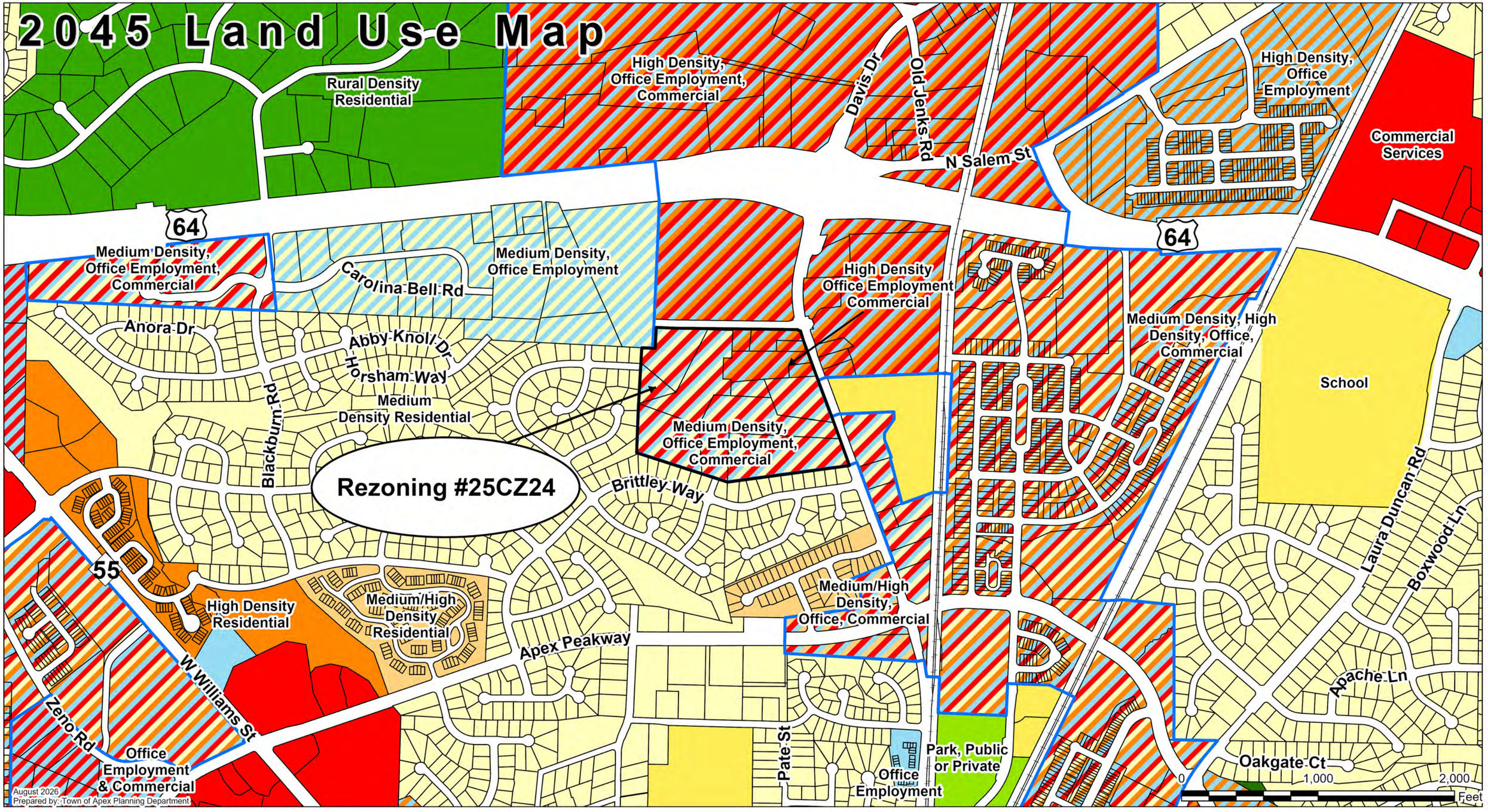
2045 Land Use Map
Rural Density Residential
High Density, Office Employment, Commercial
Davis Dr
Old Jenks Rd
N Salem St
High Density, Office Employment
Commercial Services
64
64
Medium Density, Office Employment, Commercial
Carolina Bell Rd
Medium Density, Office Employment
High Density Office Employment 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
August 2026
Prepared by: Town of Apex Planning Department
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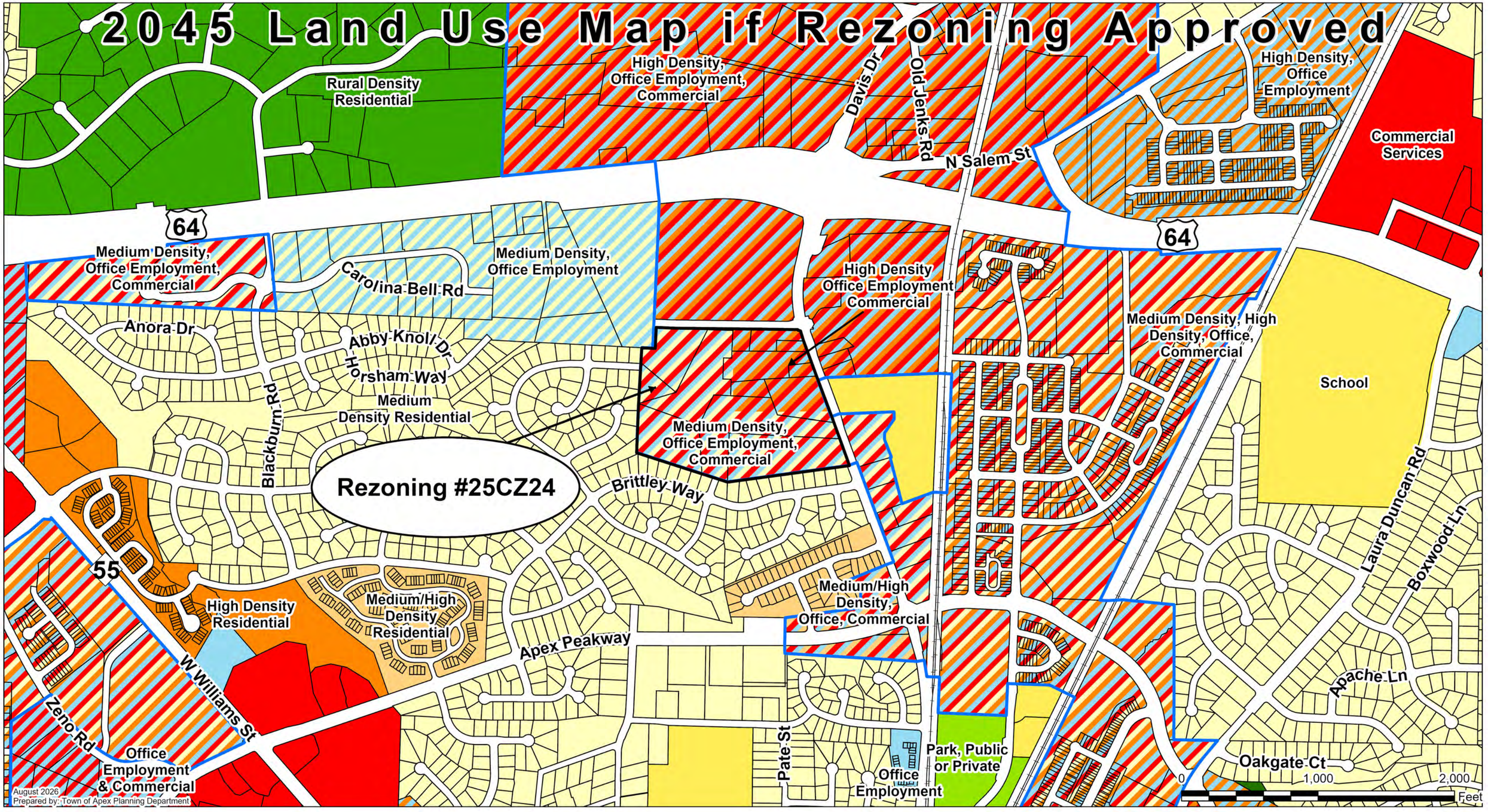
Feet


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
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School
Rezoning #25CZ24
Brittley Way
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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

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,

Matthew Carpenter

0/0/0/0/0/0/1201/1205/1207/1301/1303/1401/1403/ 1405/1409 N. Salem Street; & 0 Charlion Downs Lane

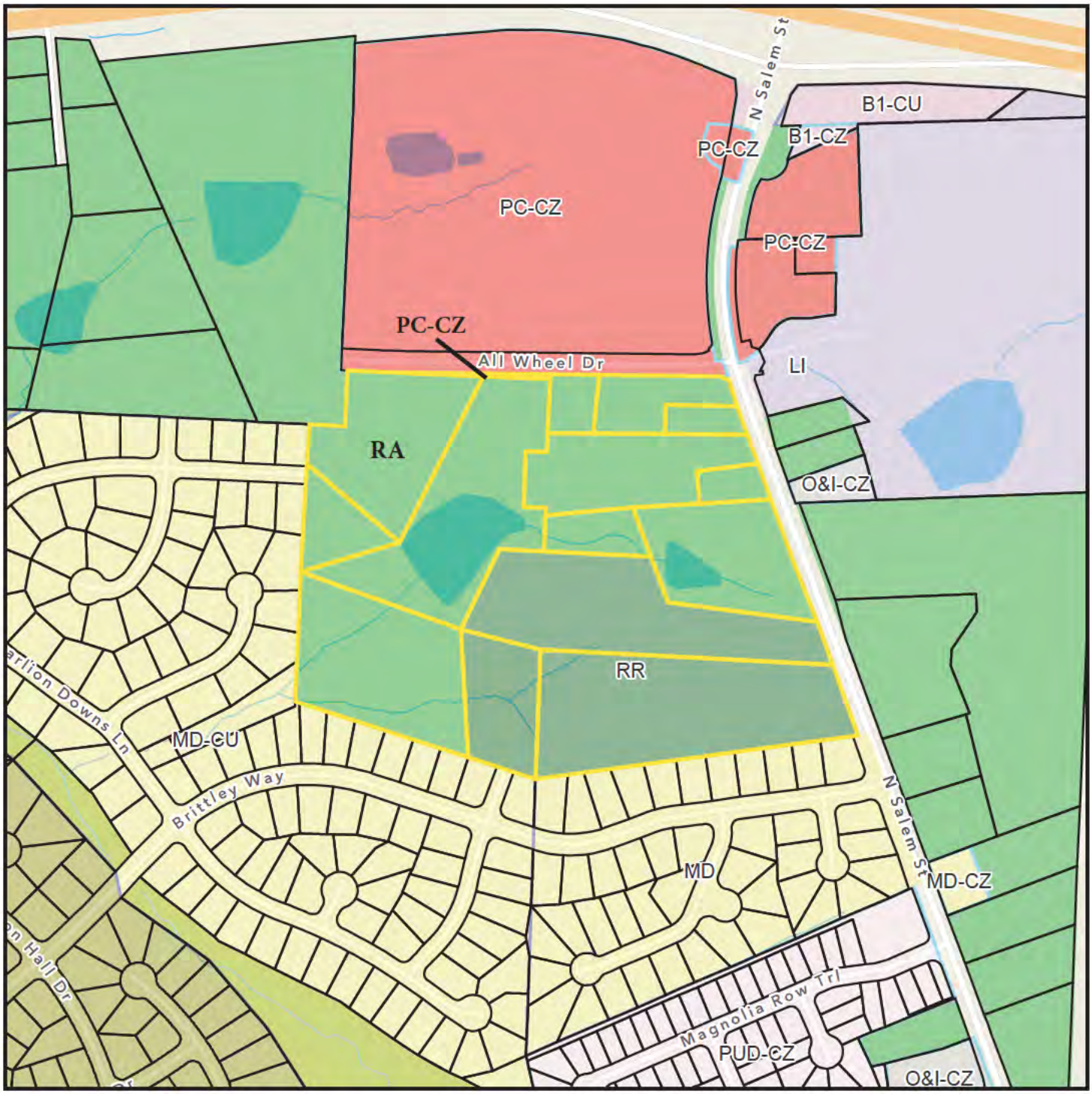
N

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.*

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
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: [signature]

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

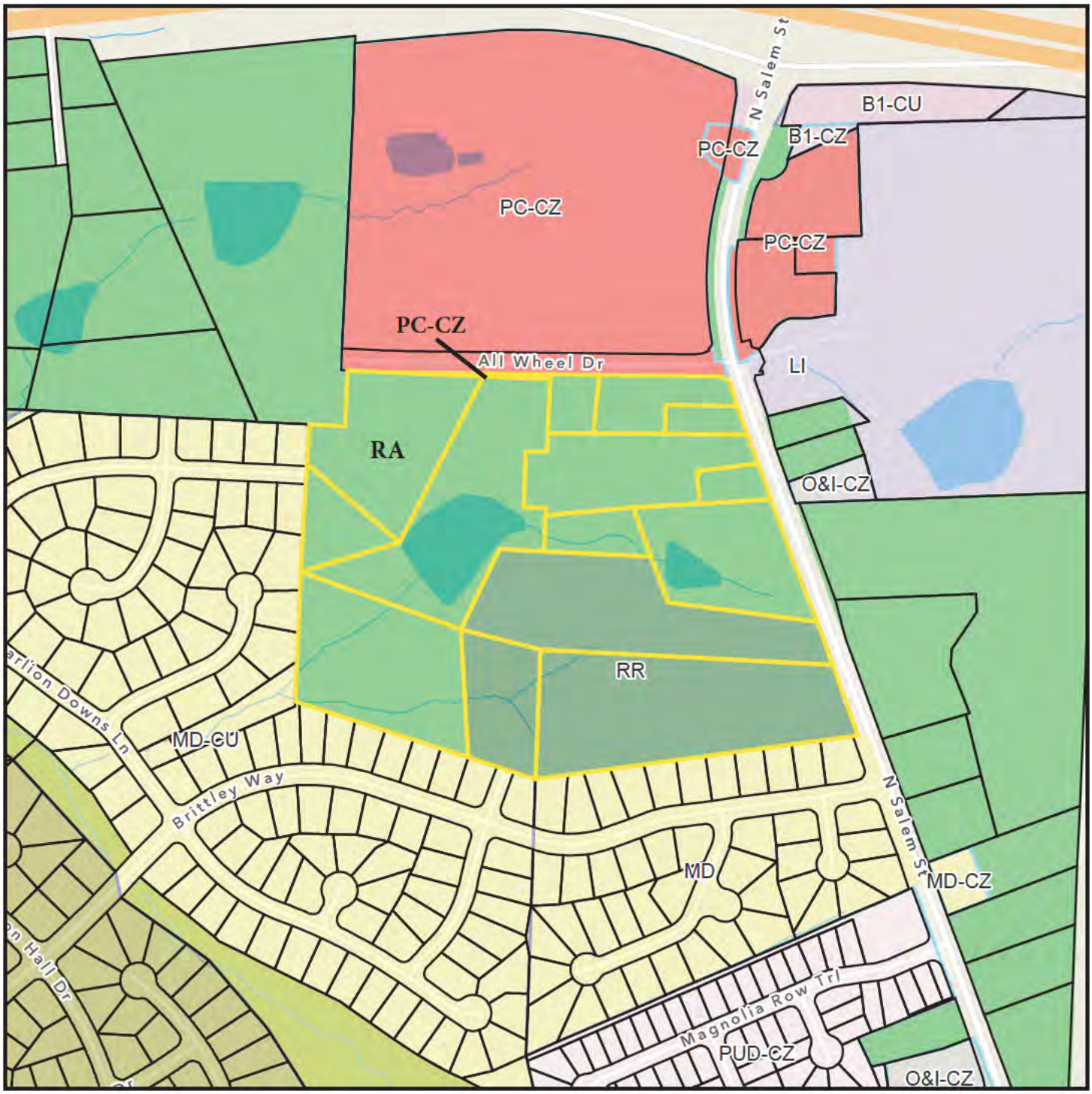
Vicinity Map

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.*



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

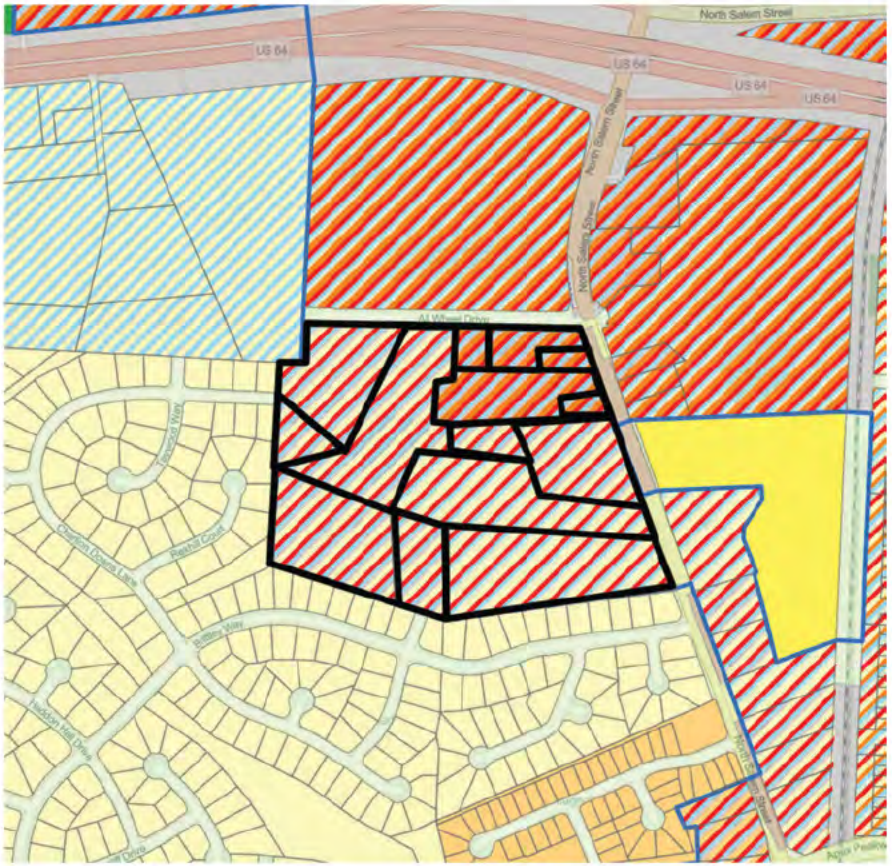
0 200 400 800 ft

1 inch equals 400 feet

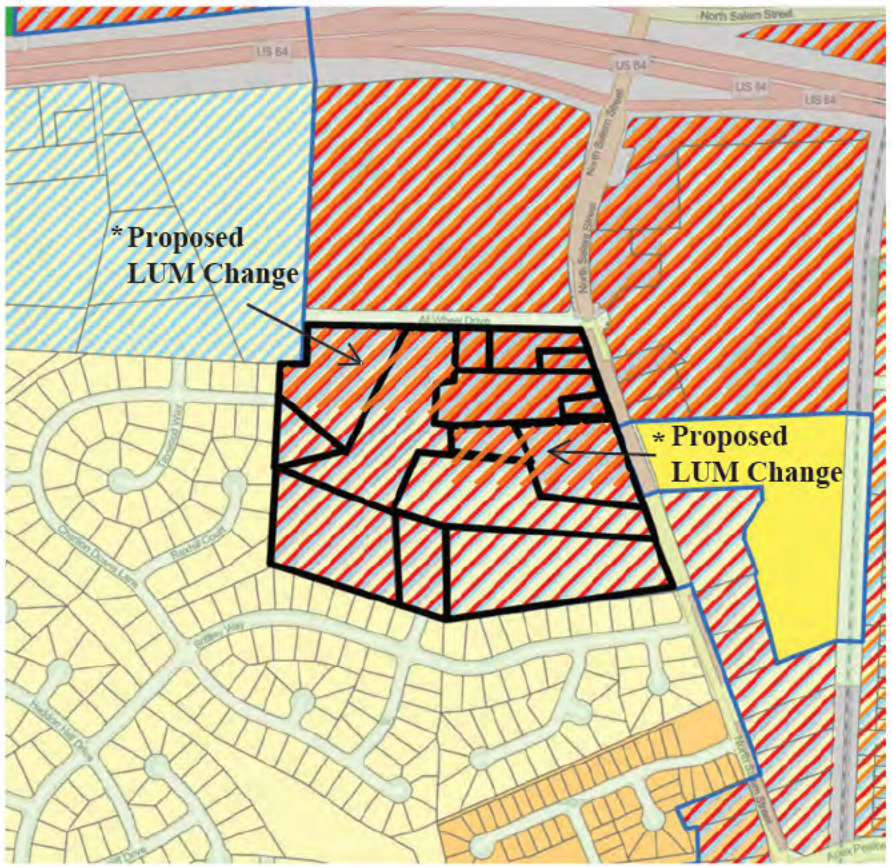
Current Zoning: RA, RR, PC-CZ

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.*

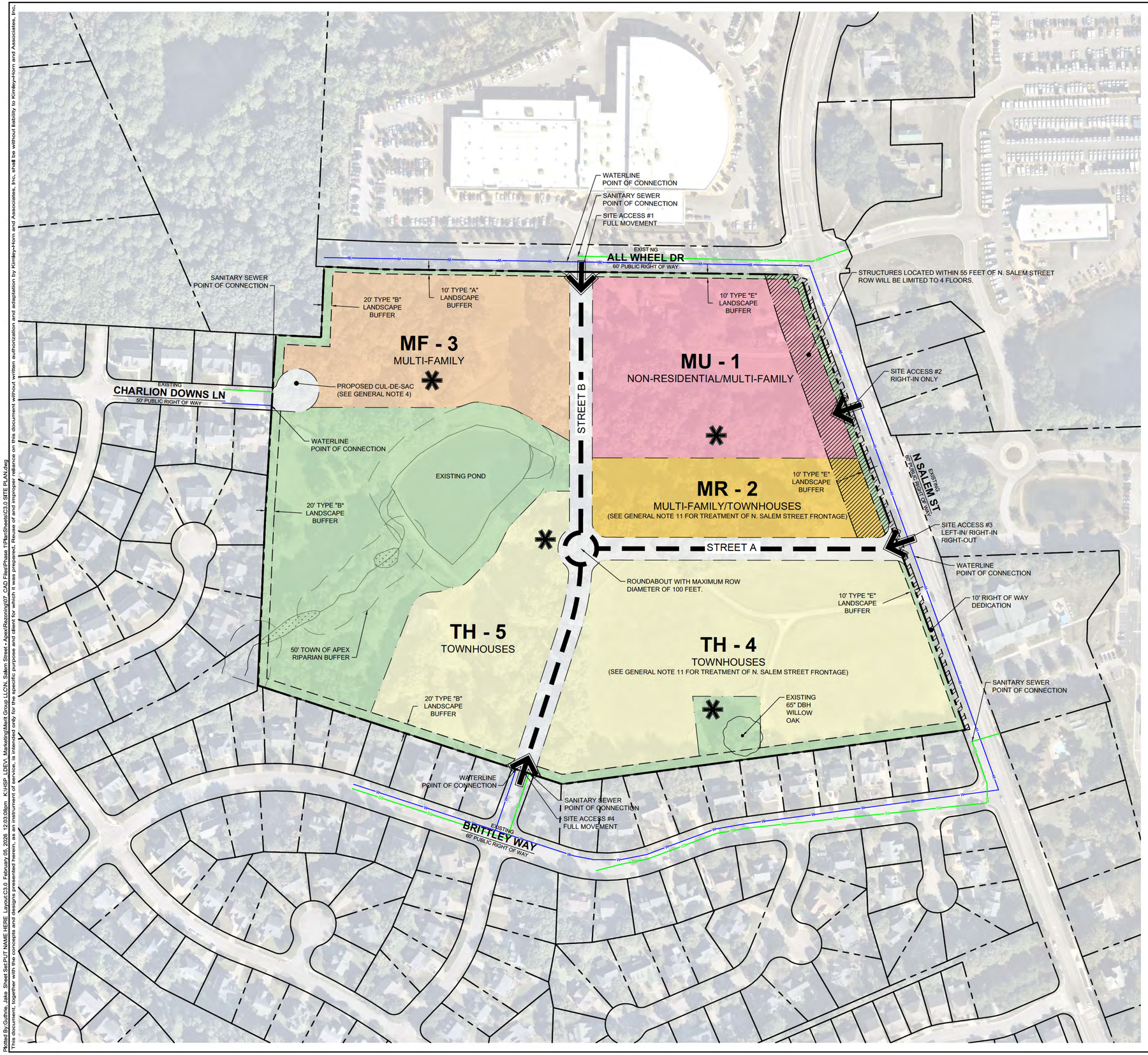
2045 Land Use Map Exhibit



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 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 1531 C. ZIMMATT
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

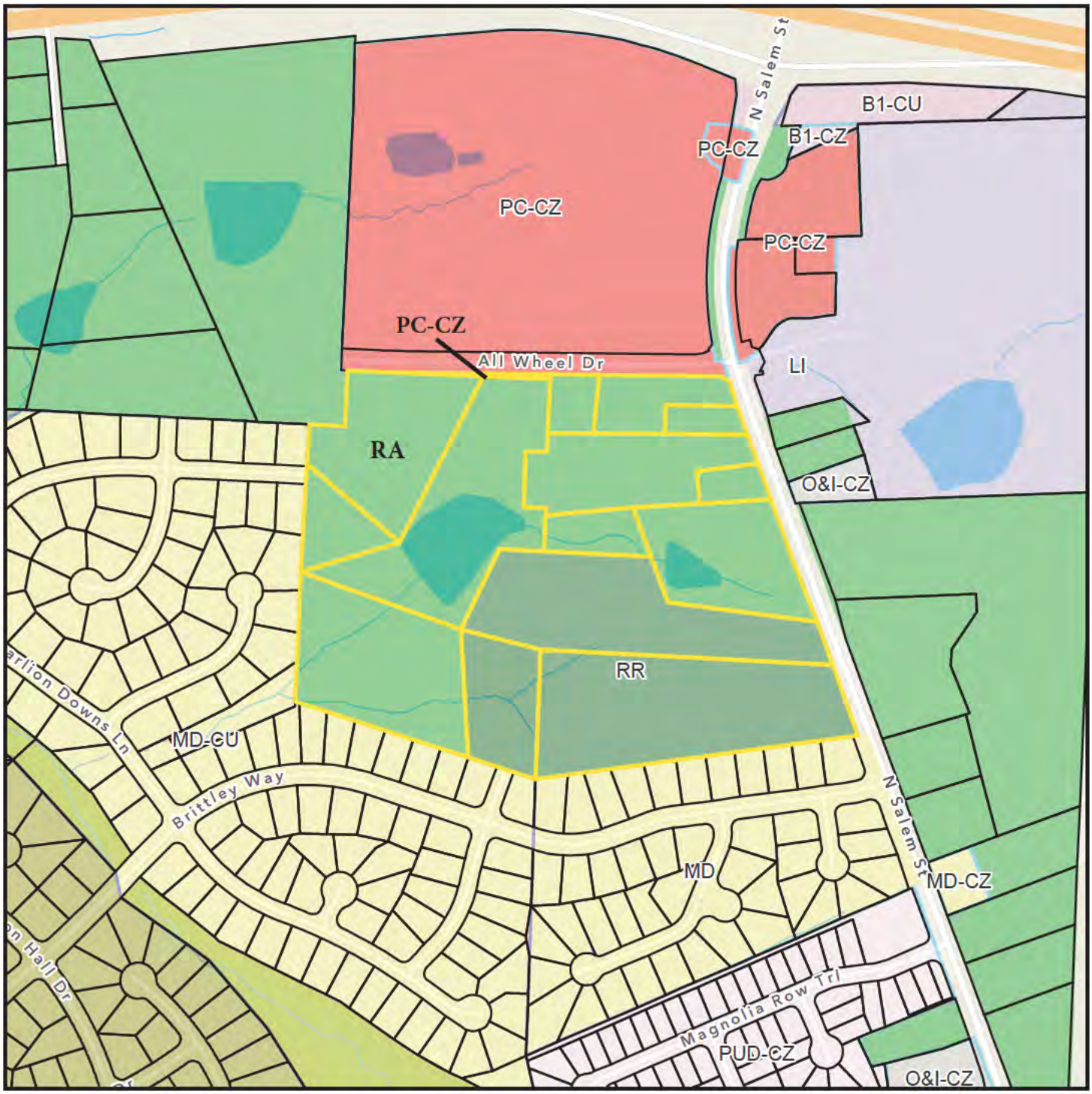
Vicinity Map

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

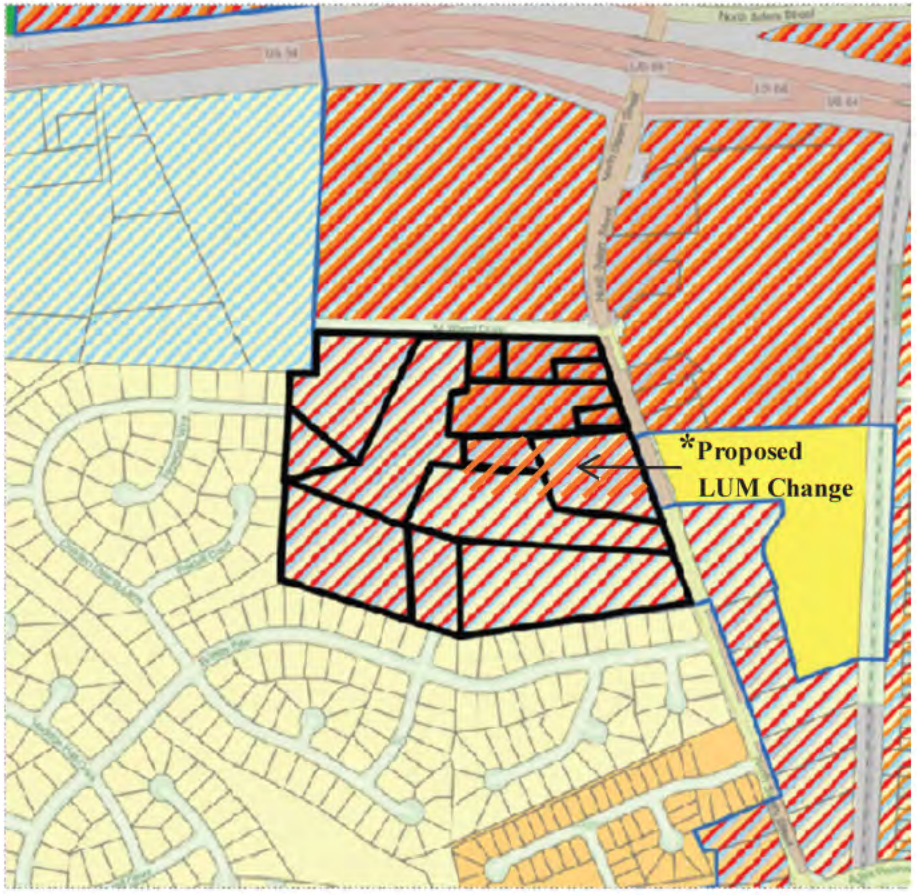
1 inch equals 400 feet

Current Zoning: RA, RR, PC-CZ

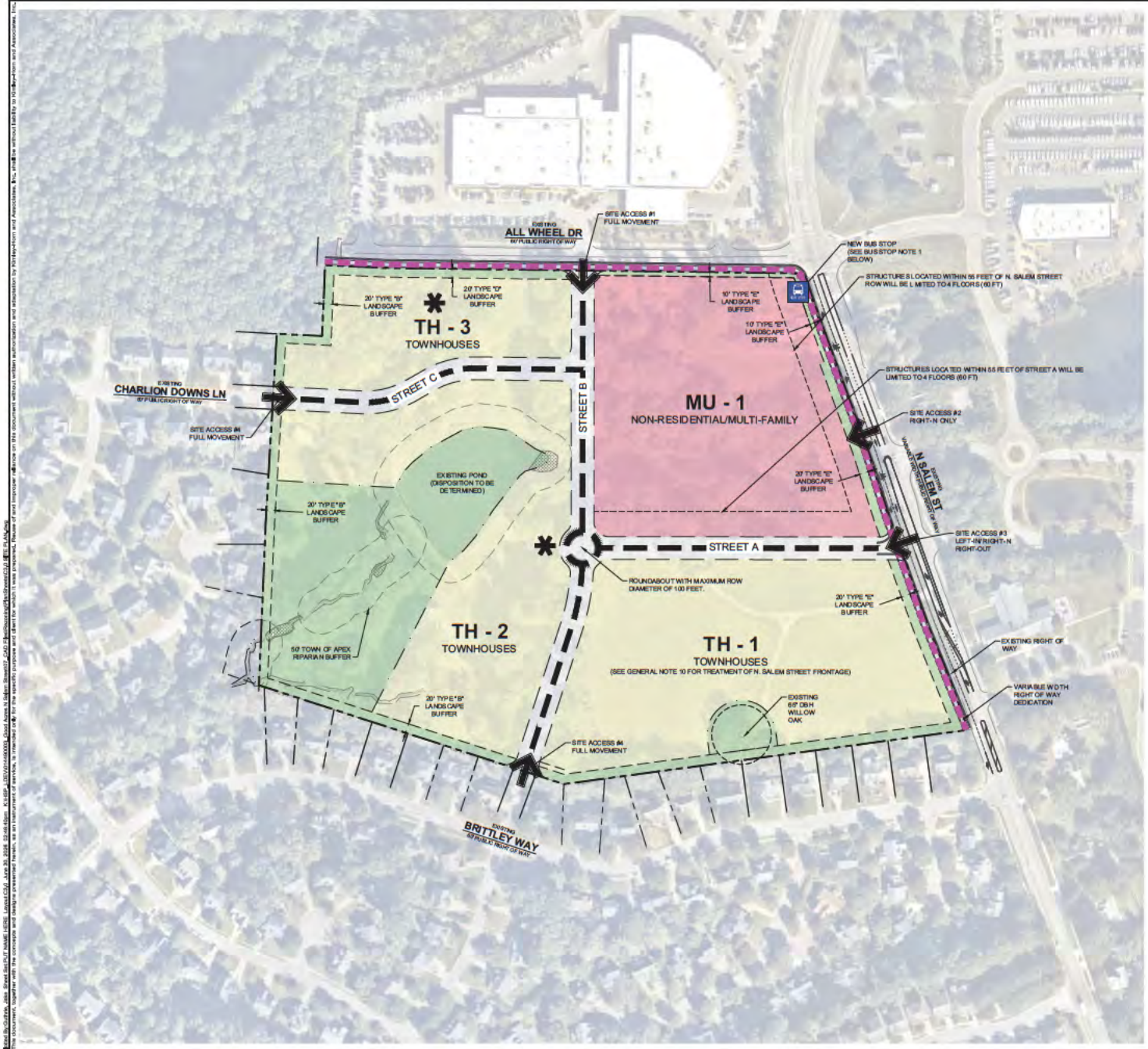
Disclaimer
*iMaps makes every effort to produce and publish the most current and accurate information possible. However, the maps are produced for information purposes, and are **NOT** surveys. No warranties, expressed or implied ,are provided for the data therein, its use,or its interpretation.*

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
© 2026 KIMLEY-HORN AND ASSOCIATES, INC.
421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
1070 SOUTH MAIN STREET, SUITE 250, HOLLY SPRINGS, NC 27540
PHONE: 984-271-4572
WWW.KIMLEY-HORN.COM

NORTH CAROLINA
PRELIMINARY
NOT FOR CONSTRUCTION
2026

KHA PROJECT	000000000
DATE	APRIL 2026
SCALE	AS SHOWN
DESIGNED BY	RCZ
DRAWN BY	JTG
CHECKED BY	RCZ

N. SALEM STREET MIXED USE

PREPARED FOR
MERIT GROUP LLC

APEX NORTH CAROLINA

PRELIMINARY SITE LAYOUT PLAN

SHEET NUMBER
C3.0

Plotted By: Rutledge, Jake Sheet Set/SUP NAME HERE Layout/C3.0 June 29, 2026 03:49:49pm K:\APX_LDD\069444000\Cad Apex N Salem Street\SUP_CAD Files\Planning\Site 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 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.

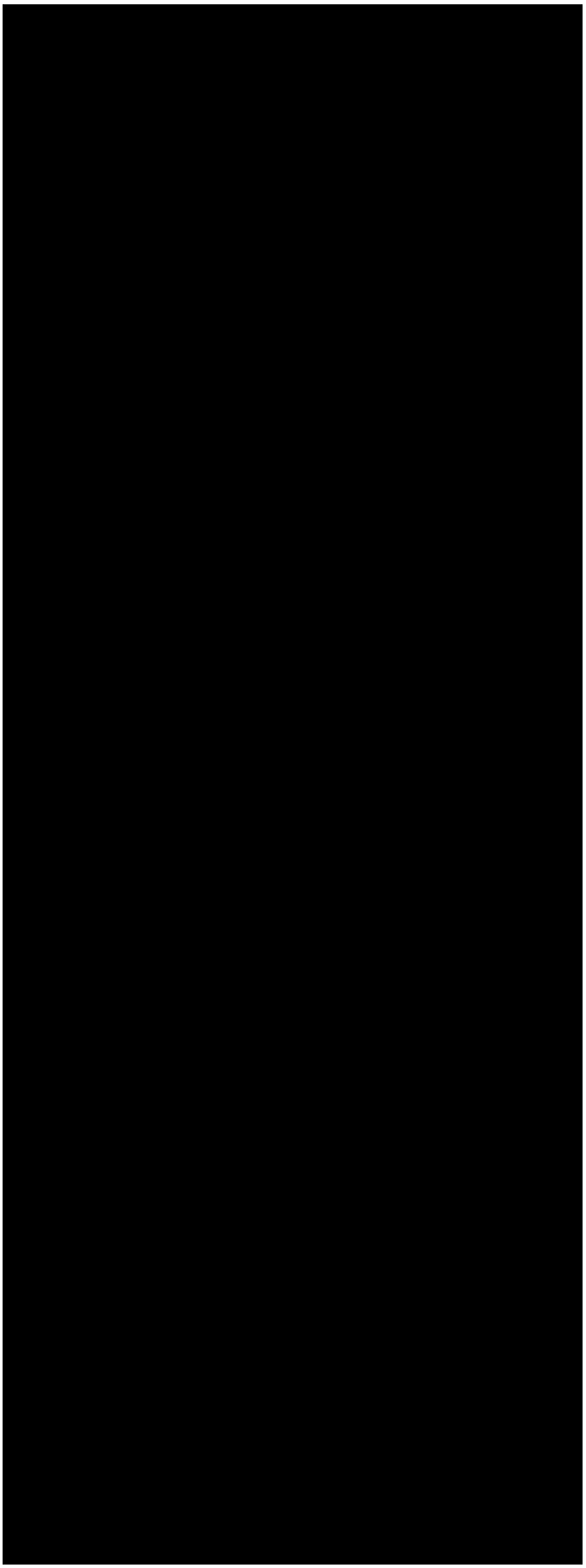
	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	See attached Attendee List				☐
2.					☐
3.					☐
4.					☐
5.					☐
6.					☐
7.					☐
8.					☐
9.					☐
10.					☐
11.					☐
12.					☐
13.					☐
14.					☐

Use additional sheets, if necessary.

NEIGHBORHOOD MEETING ATTENDEE LIST

Name (original name)	E	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

Developer
Merit Group, LLC
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VICINITY MAP

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.

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.

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.

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.

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

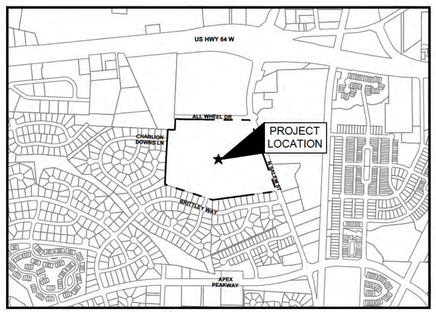
APEX, NORTH CAROLINA 27502

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
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HOLLY SPRINGS, NC 27540
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PAUL.MERITGROUPNC@GMAIL.COM

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LANDSCAPE ARCHITECT
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SURVEYOR
CANOY SURVEYING
ADAM CANOY
1154 SHONELE LN
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ADAM.CANOY@CANOYSURVEYING.COM

LAND USE ATTORNEY
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MATTHEW CARPENTER
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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 BOB ZUMWALT
PRELIMINARY NOT FOR CONSTRUCTION
ISSUED

KHA PROJECT 014490003
DATE AUGUST 2026
SCALE AS SHOWN
DESIGNED BY RCZ
DRAWN BY JTG
CHECKED BY RCZ

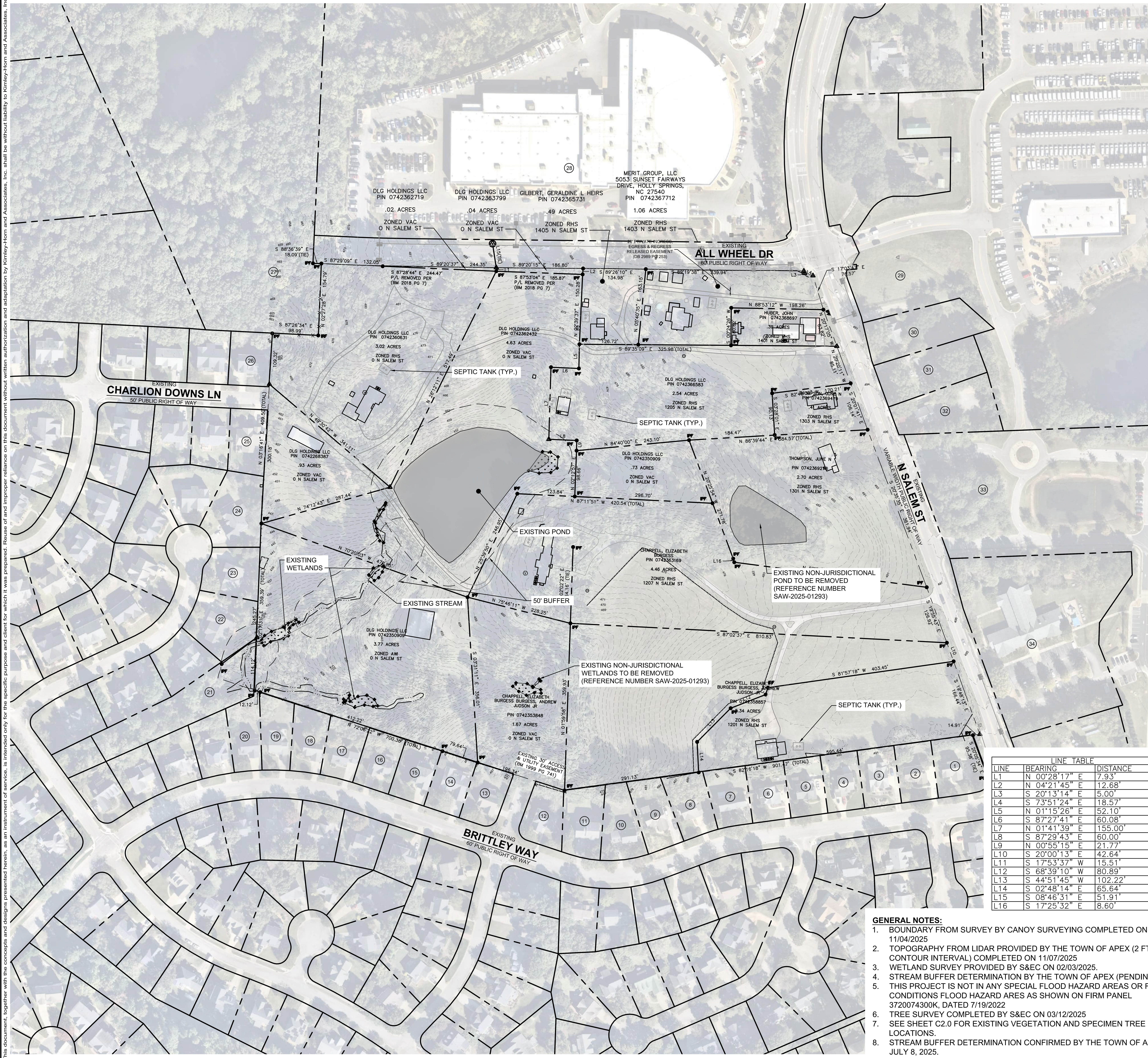
COVER SHEET

N. SALEM STREET MIXED USE
PREPARED FOR
MERIT GROUP LLC
APEX NORTH CAROLINA

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.

Plotted By:Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C1.0 August 27, 2026 08:58:48am K:\HSP_LDEV\014490003_Good Acres N Salem Street\07_CAD Files\Rezoning\PlanSheets\C1.0 EXISTING CONDITIONS AND DEMOLITION 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.



LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 00°28'17" E	7.93'
L2	N 04°21'45" E	12.68'
L3	S 20°13'14" E	5.00'
L4	S 73°51'24" E	18.57'
L5	N 01°15'26" E	52.10'
L6	S 87°27'41" E	60.08'
L7	N 01°41'39" E	155.00'
L8	S 87°29'43" E	60.00'
L9	N 00°55'15" E	21.77'
L10	S 20°00'13" E	42.64'
L11	S 17°53'37" W	15.51'
L12	S 68°39'10" W	80.89'
L13	S 44°51'45" W	102.22'
L14	S 02°48'14" E	65.64'
L15	S 08°46'31" E	51.91'
L16	S 17°25'32" E	8.60'

GENERAL NOTES:

1. BOUNDARY FROM SURVEY BY CANOY SURVEYING COMPLETED ON 11/04/2025
2. TOPOGRAPHY FROM LIDAR PROVIDED BY THE TOWN OF APEX (2 FT CONTOUR INTERVAL) COMPLETED ON 11/07/2025
3. WETLAND SURVEY PROVIDED BY S&EC ON 02/03/2025.
4. STREAM BUFFER DETERMINATION BY THE TOWN OF APEX (PENDING)
5. THIS PROJECT IS NOT IN ANY SPECIAL FLOOD HAZARD AREAS OR FUTURE CONDITIONS FLOOD HAZARD ARES AS SHOWN ON FIRM PANEL 3720074300K, DATED 7/19/2022
6. TREE SURVEY COMPLETED BY S&EC ON 03/12/2025
7. SEE SHEET C2.0 FOR EXISTING VEGETATION AND SPECIMEN TREE LOCATIONS.
8. STREAM BUFFER DETERMINATION CONFIRMED BY THE TOWN OF APEX JULY 8, 2025.

ADJACENT PROPERTY OWNER INFORMATION

1. PIN: 0742452783
D.B.019253 PG.02532
JAJ, YADVINDER SINGH KAUR, SANDEEP, 1108 BRITTLEY WAY, APEX NC 27502-2400
2. PIN: 0742451792
D.B.019990 PG.01957
PENG, HAO QIN, WU, 1106 BRITTLEY WAY, APEX NC 27502-2400
3. PIN: 0742451710
D.B.016611 PG.01790
SANDFORD, TARA SANDFORD, STEPHEN, 1104 BRITTLEY WAY, APEX NC 27502-2400
4. PIN: 0742450730
D.B.011141 PG.00250
HAUTEKEETE, CINDY JO GALLIMORE, VICKIE SUE, 1102 BRITTLEY WAY, APEX NC 27502-2400
5. PIN: 0742359659
D.B.012905 PG.01946
CARISTO, DOMINIC J II CARISTO, KAREN E, 1100 BRITTLEY WAY, APEX NC 27502-2400
6. PIN: 0742358688
D.B.018034 PG. 01158
DITOMASSO, WALTER DITOMASSO, KATRINA D, 1016 BRITTLEY WAY, APEX NC 27502-2423
7. PIN: 0742358607
D.B.019835 PG. 00857
MULLINS, ELIZABETH MULLINS, DANIEL, 1014 BRITTLEY WAY, APEX NC 27502-2423
8. PIN: 0742357615
D.B.016399 PG. 02244
FAUGHTENBERRY, JASON C FAUGHTENBERRY, LAURA M, 1012 BRITTLEY WAY, APEX NC 27502-2423
9. PIN: 0742356633
D.B.007114 PG. 00814
FISHER, MICHAEL J FISHER, VICKIE S, 1010 BRITTLEY WAY, APEX NC 27502-2423
10. PIN: 0742355661
D.B.019902 PG. 00303
POVSE, MAX POVSE, KELSEY, 1008 BRITTLEY WAY, APEX NC 27502-2423
11. PIN: 0742354691
D.B.015341 PG. 00105
HORNACK, THOMAS R HORNACK, ANN, 1006 BRITTLEY WAY, APEX NC 27502-2423
12. PIN: 0742353691
D.B.016044 PG. 00885
BLACK, BRANDON L BLACK, JESSICA, 1004 BRITTLEY WAY, APEX NC 27502-2423
13. PIN: 0742352665
D.B.011388 PG. 01001
FONG, RICHARD FONG, KAREN HANG, 920 BRITTLEY WAY, APEX NC 27502-6438
14. PIN: 0742351698
D.B.014765 PG. 00698
JAEGER, FRED H JR JAEGER, GERARDINE, 918 BRITTLEY WAY, APEX NC 27502-6438
15. PIN: 0742351710
D.B.017784 PG. 00084
BRAVO, JAVIER BRAVO, SASHA E, 916 BRITTLEY WAY, APEX NC 27502-6438
16. PIN: 0742350743
D.B.016110 PG. 01098
RUSHER, MICHAEL JAMES RUSHER, DANIELLE RENEE, 914 BRITTLEY WAY, APEX NC 27502-6438
17. PIN: 0742259765
D.B.017420 PG. 00895
KOLANDER, ANGELA MARIE EVANS, ROBERT M, 912 BRITTLEY WAY, APEX NC 27502-6438
18. PIN: 0742258797
D.B.015478 PG. 00756
OLIVER, TERRY W, 910 BRITTLEY WAY, APEX NC 27502-6438
19. PIN: 0742258729
D.B.014419 PG. 01103
SUDAR, PATRICIA M, 908 BRITTLEY WAY, APEX NC 27502-6438
20. PIN: 0742257759
D.B.017772 PG. 00840
CLARK, KRISTIN ZENISEK CLARK, SHAWN LOREN, 906 BRITTLEY WAY, APEX NC 27502-6438
21. PIN: 0742256826
D.B.007200 PG. 00153
EMPIRE DEVELOPMENT INC, 304 GRAND HELTON CT, APEX NC 27502-4101
22. PIN: 0742267004
D.B.019752 PG. 00140
ORELIEN, VALERY E, 1010 REXHILL CT, APEX NC 27502-6491
23. PIN: 0742267125
D.B.019709 PG. 01345
CHAKRA, AL TRUSTEE THE CHAKRA LIVING TRUST /BY TR, 1012 REXHILL CT, APEX NC 27502-6491
24. PIN: 0742267237
D.B.009250 PG. 02071
ARNOLD, DAVID B ARNOLD, ANCHUN, 1014 REXHILL CT, APEX NC 27502-6491
25. PIN: 0742267462
D.B. 016263 PG. 01857
CHINGWE, CLAUDE CHINGWE, JENNIFER, 1691 CHARLION DOWNS LN, APEX NC 27502-4751
26. PIN: 0742267661
D.B.010861 PG. 02199
MCDANIEL, TROY MCDANIEL, MICHELLE, 1690 CHARLION DOWNS LN, APEX NC 27502-4750
27. PIN: 0742277043
D.B. PG.
HUANG, JOY CHIU YIN, 1605 US 64 HWY W, APEX NC 27523-8992
28. PIN: 0742374226
D.B.016325 PG. 00398
CROSSROADS HOLDINGS, LLC, PO BOX 911, HENDERSON NC 27536-0911
29. PIN: 0742466928
D.B.019057 PG. 00609
CROSSROADS HOLDINGS LLC, 1730 GRAHAM AVE, HENDERSON NC 27536-2904
30. PIN: 0742461696
D.B.016547 PG. 01445
SOUTHSIDE ACQUISITION LLC, 1730 GRAHAM AVE, HENDERSON NC 27536-2904
31. PIN: 0742462517
D.B.015890 PG. 00005
GUEVARA, JOSE RIGOBERTO ARGUETA, GILMA ROSIBEL, 100 OAKEN PL, APEX NC 27539-7773
32. PIN: 0742462489
D.B.015476 PG. 02267
K-JIVE ENTERPRISE LLC, 46 GOLDEN HEATHER, CHAPEL HILL NC 27517-7625
33. PIN: 0742466191
D.B.013685 PG. 00061
THALES ACADEMY, 4641 PARAGON PARK RD, RALEIGH NC 27616-3406
34. PIN: 0742464071
D.B.017232 PG. 02334
THE BOARD OF TRUSTEES OF PEAK UMC, THE UNITED METHODIST CHURCH, 1200 N SALEM ST, APEX NC 27502-2926
35. PIN: 0742455733
D.B.015458 PG.01816
CARMAC, ROBERT JONATHAN CARMAC, ELIZABETH BEAUVAIS, 1020 N SALEM ST, APEX NC 27502-2922

GRAPHIC SCALE IN FEET
0 50 100 200

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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1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

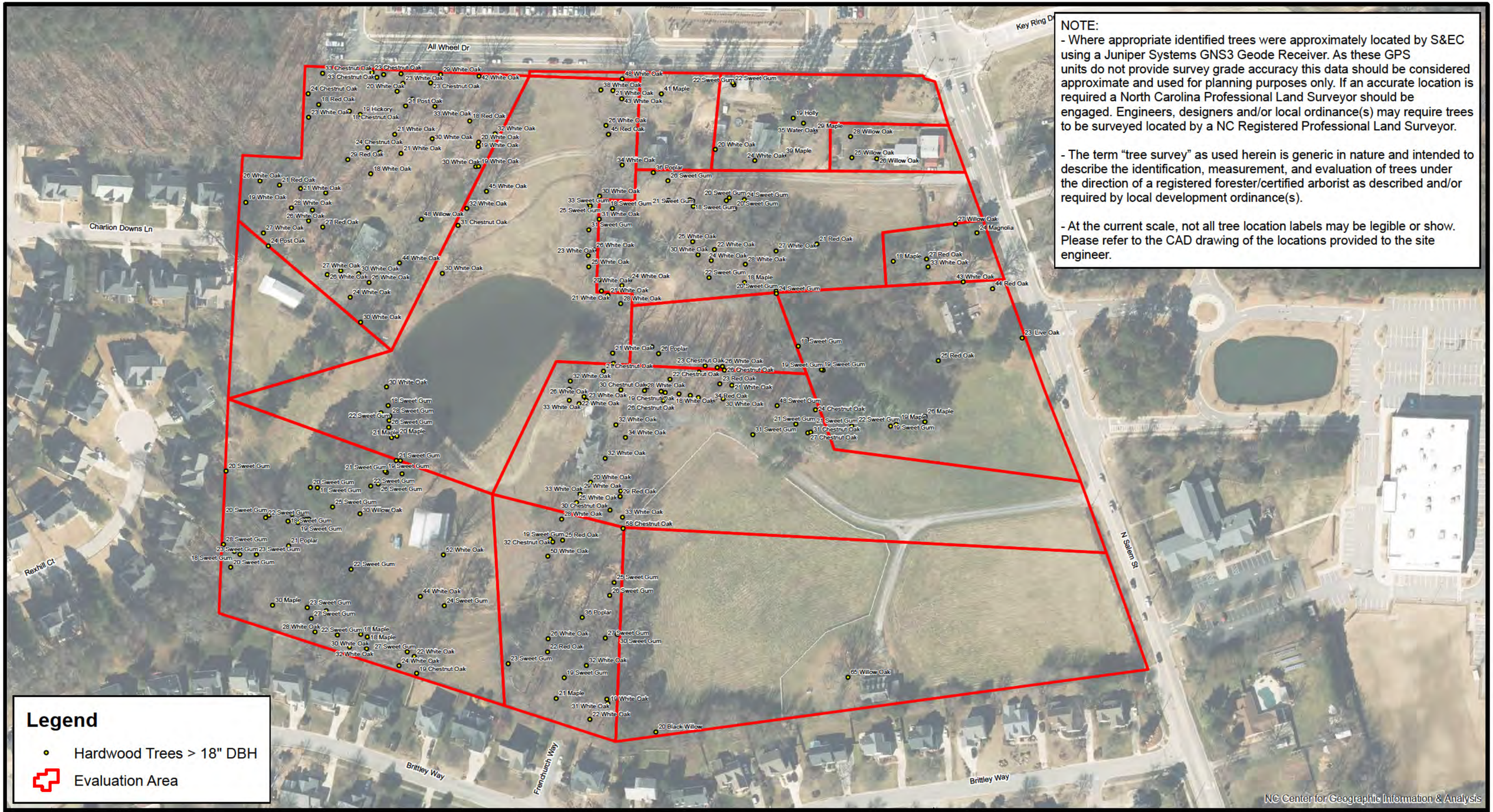
KHA PROJECT 014490003
DATE AUGUST 2026
SCALE AS SHOWN
DESIGNED BY RCZ
DRAWN BY JTG
CHECKED BY RCZ

EXISTING CONDITIONS AND DEMOLITION PLAN

N. SALEM STREET MIXED USE

PREPARED FOR
MERIT GROUP LLC
APEX NORTH CAROLINA

SHEET NUMBER
C1.0



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	

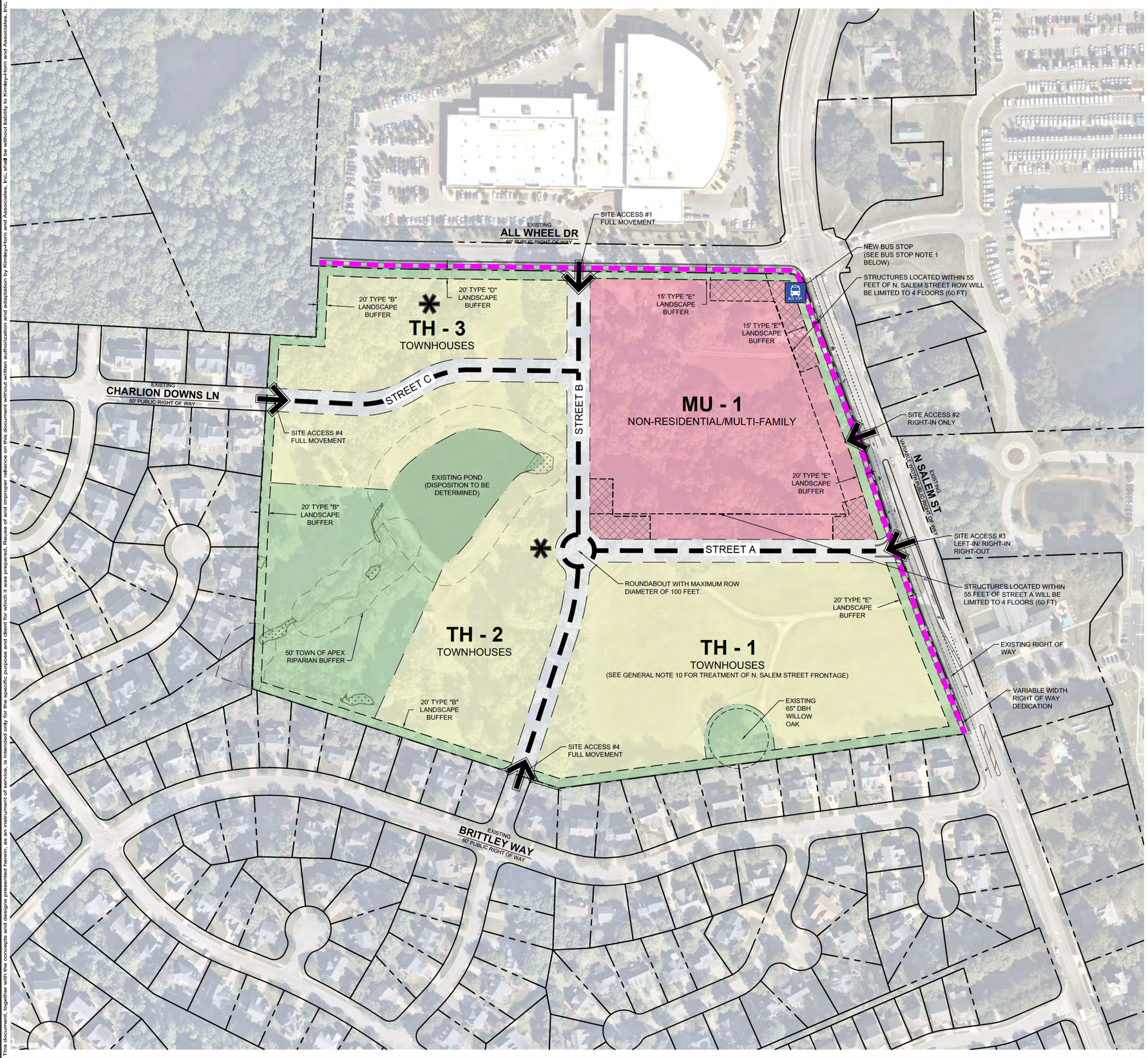
Town of Apex Tree Survey Sketch Map

1301 N Salem Road Assemblage, Apex, NC

Source: Aerials from 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

C2.0



SITE LEGEND

- PROPERTY LINE
- 50' TOWN OF APEX R PARIAN 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/RESOURCE CONSERVATION AREA (MINIMUM OF 20% OF SITE AREA)
- MULTI-RESIDENTIAL (MULTI-FAMILY, TOWNHOUSES
- MULTI-FAMILY APARTMENTS; NON-RES DENTIAL
- TOWNHOUSES
- AREA SUBJECT TO ARCHITECTURAL CONTROLS (SEE ARCHITECTURAL CONTROL NOTES BELOW)

GENERAL NOTES

1. ALL ZON NG PLAN SHEETS ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. FINAL 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 F NALIZED DUR NG THE SITE/SUBDIVISION PLAN APPROVAL PROCESS.
4. TREE PROTECTION FENC NG 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 UNIF ED DEVELOPMENT ORD NANCE EXCEPT AS MOD FIED BY THE PUD NARRATIVE.
6. EXACT LOCATION OF OPEN SPACE AND RESOURCE CONSERVATION AREA TO BE F NALIZED 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 ORD NANCE.
8. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPEC FICATIONS 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, LANDSCAP NG, SCREENING, SITE STABILIZATION (SEEDING), PARKING, AND PAVEMENT MARKING, MUST BE COMPLETED PRIOR TO SCHEDUL NG A FINAL SITE INSPECTION.
10. UNITS LOCATED IN TH-1 ALONG THE FRONTAGE OF N. SALEM STREET W LL 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, NCLUDING:
   - COVERED BUS SHELTER WITH SEATING
   - TRASH RECEPTACLE
   - 2 BIKE RACKS
   - LIGHT NG

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 BU LDING AND STREET WITH N 100 FEET OF THE INTERSECTION OF STREET A AND STREET B, AND THE NTERSECTION OF STREET A AND N. SALEM STREET.
2. THE CORNER OF N. SALEM STREET AND ALL WHEEL DRIVE SHALL BE ANCHORED BY A BUILD NG WITH NO MORE THAN ONE DOUBLE-LOADED (PARKING ON EACH SIDE OF DRIVE AISLE) PARKING BAY AND DRIVE AISLE BETWEEN THE STREET AND BUILD NG.
3. TO FACILITATE OUTDOOR DINING AND GATHERING, MIXED-USE BU LDINGS SHALL NCLUDE A M N MUM 12-FOOT WIDE SIDEWALK WITH LANDSCAP NG ALONG THE FACADES OF NON-RESIDENTIAL USES. LANDSCAP NG MAY NCLUDE, 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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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2021 C. ZUMWALT
PRELIMINARY NOT FOR CONSTRUCTION

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 August 27, 2026 08:56:12am 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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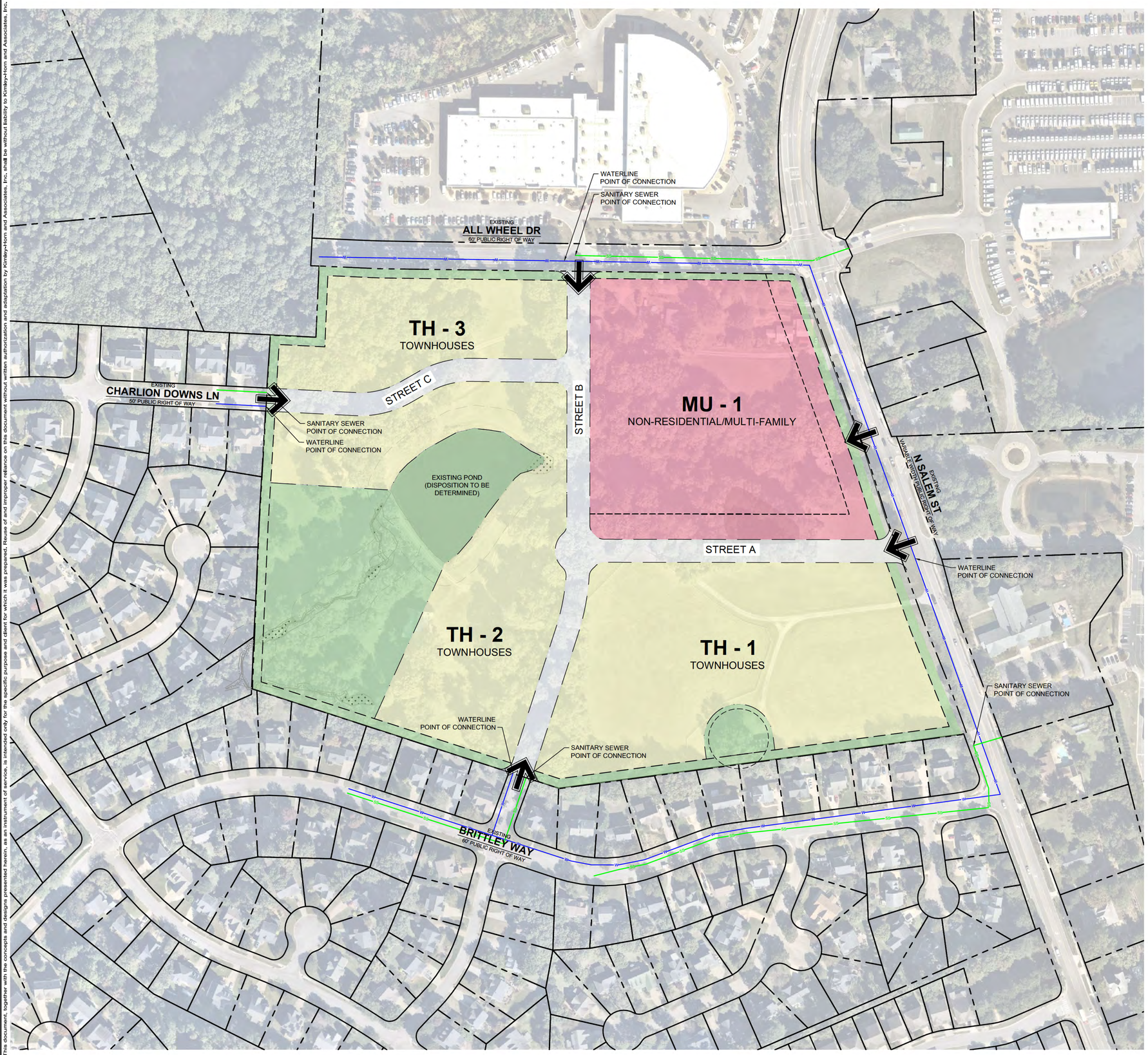

UTILITY LEGEND

- 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
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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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1070 SOUTH MAIN STREET, SUITE 230, HOLLY SPRINGS, NC 27540

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT JOSEPH C. ZUMMALT 3231
PRELIMINARY NOT FOR CONSTRUCTION

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.

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

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

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

C4.8a

kaas wilson architects

Artistic Rendering - Mixed Use Building

North Salem Street Development Apex, NC

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

DAVIS DR.
100'
150'
200'
100'
230'
600'
US 64 WESTBOUND ON-RAMP
N. SALEM ST.
25'
US 64 EASTBOUND OFF-RAMP
US 64 EASTBOUND ON-RAMP
300'
350'
150'
N. SALEM ST.
FORD DEALERSHIP DRWY.
300'
ALL WHEEL DR.
KEY RING DR.
115'
75'(TWLTL)
150'
RIGHT-IN DRWY.
FULL MOVEMENT DRWY.
(TWLTL)100'
SITE
THALES ACADEMY INBOUND DRWY.
100'
FULL MOVEMENT DRWY.
LEFT-IN/RIGHT-IN/ RIGHT-OUT DRWY.
THALES ACADEMY OUTBOUND DRWY.
100'(TWLTL)
BRITTLEY WAY
100'(TWLTL)
FRENCHURCH WAY
(TWLTL)150'
25'
275'
350'
APEX PKWY.
250'
150'
150'

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)

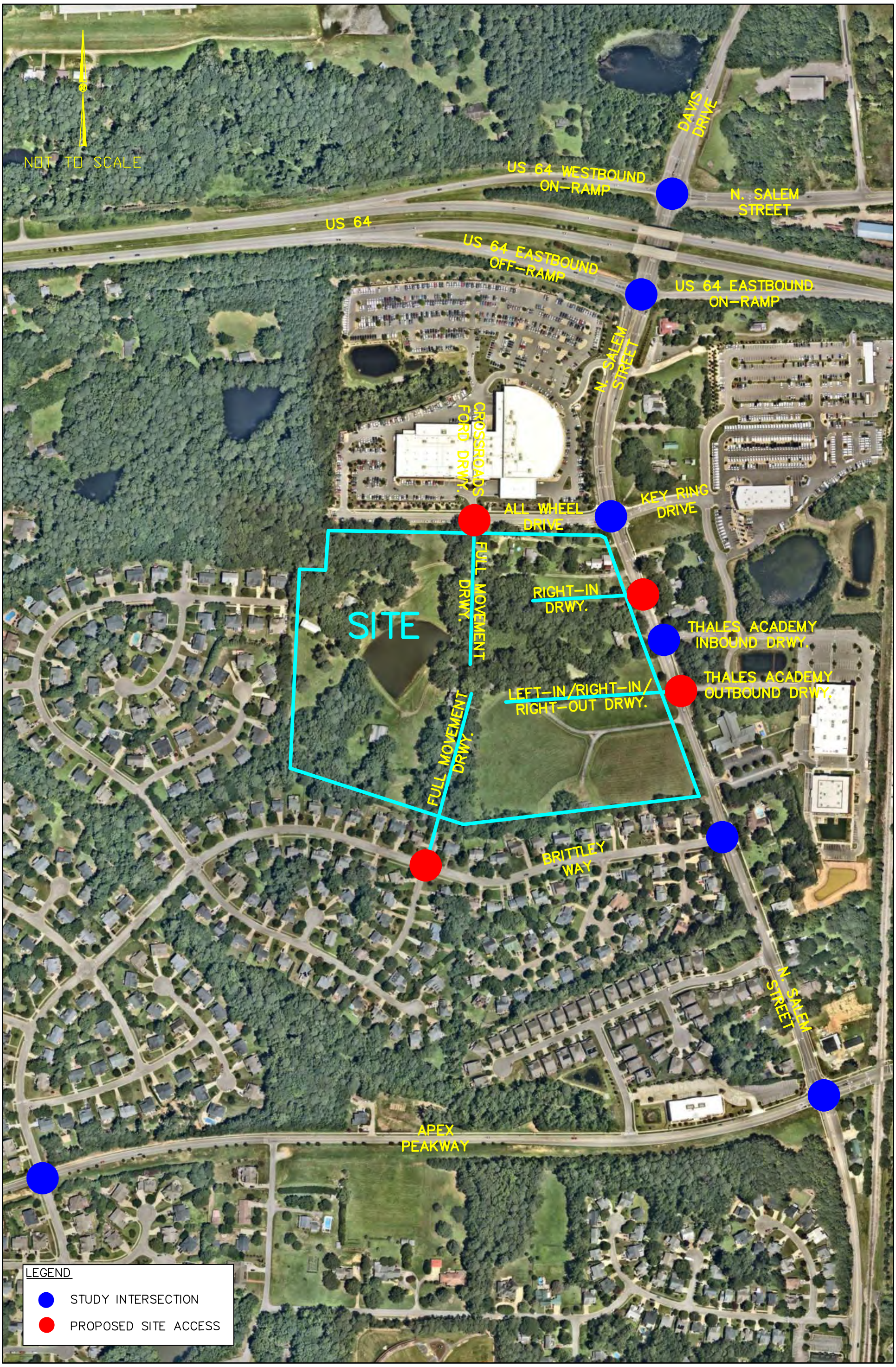
This site location is shown on **Figure 2.1,** the conceptual master plan is shown on **Figure 2.2,** and **Figure 2.3** shows the existing study intersection laneage**.**

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



Kimley»Horn	N. SALEM STREET MIXED-USE APEX, NC TRAFFIC IMPACT ANALYSIS	SITE LOCATION	FIGURE 2.1

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Plotted By:Guthrie, Jake Sheet Set:PUT NAME HERE Layout:C3.0 November 19, 2025 11:06:26am K:\HSP_LDEV_Marketing\Merit Group LLC\N. Salem Street - Apex\Rezoning\07_CAD Files\Phase 1\PlanSheets\C3.0 SITE PLAN.dwg

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Imagery Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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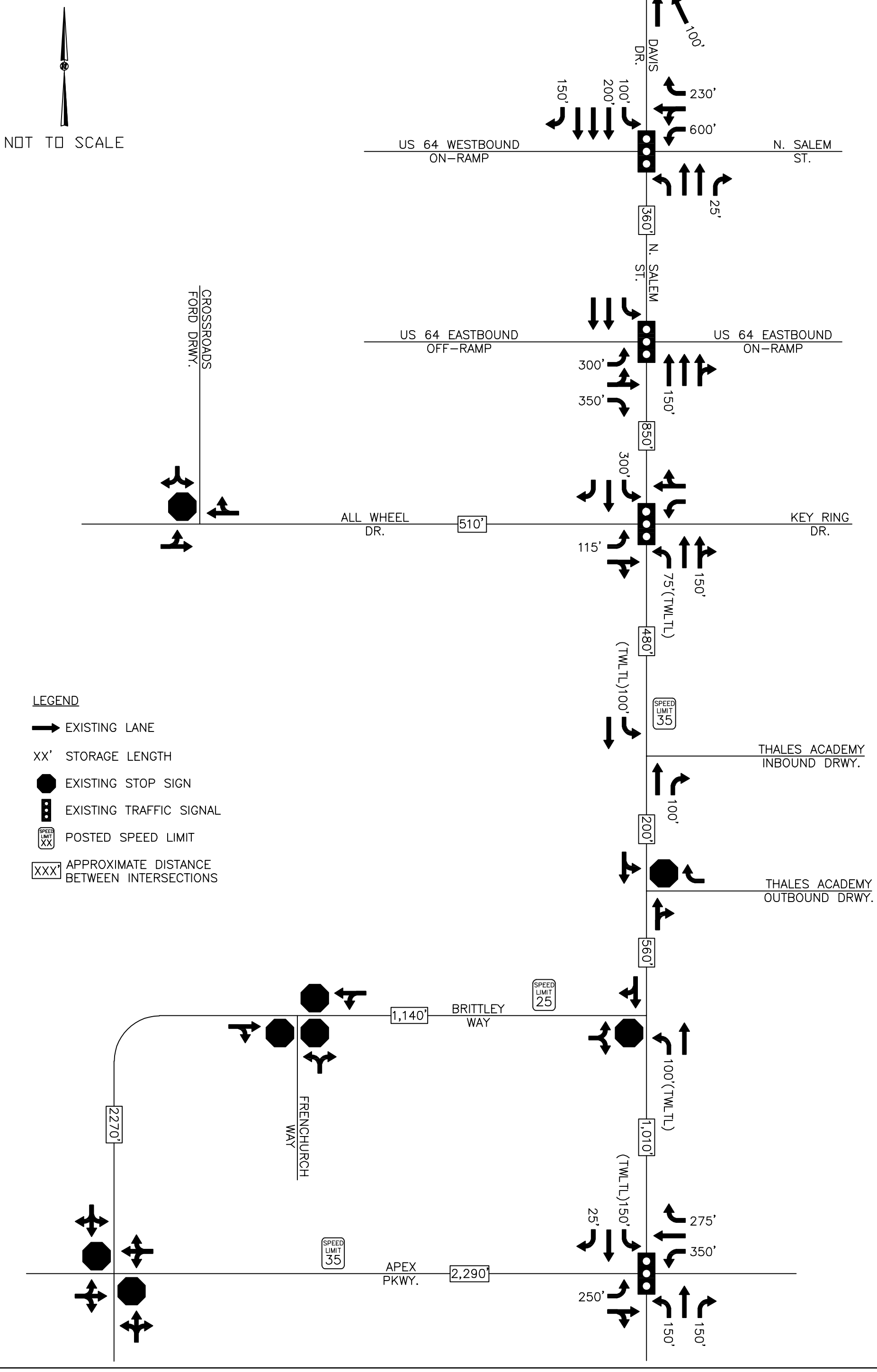

LEGEND

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

Kimley»Horn	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

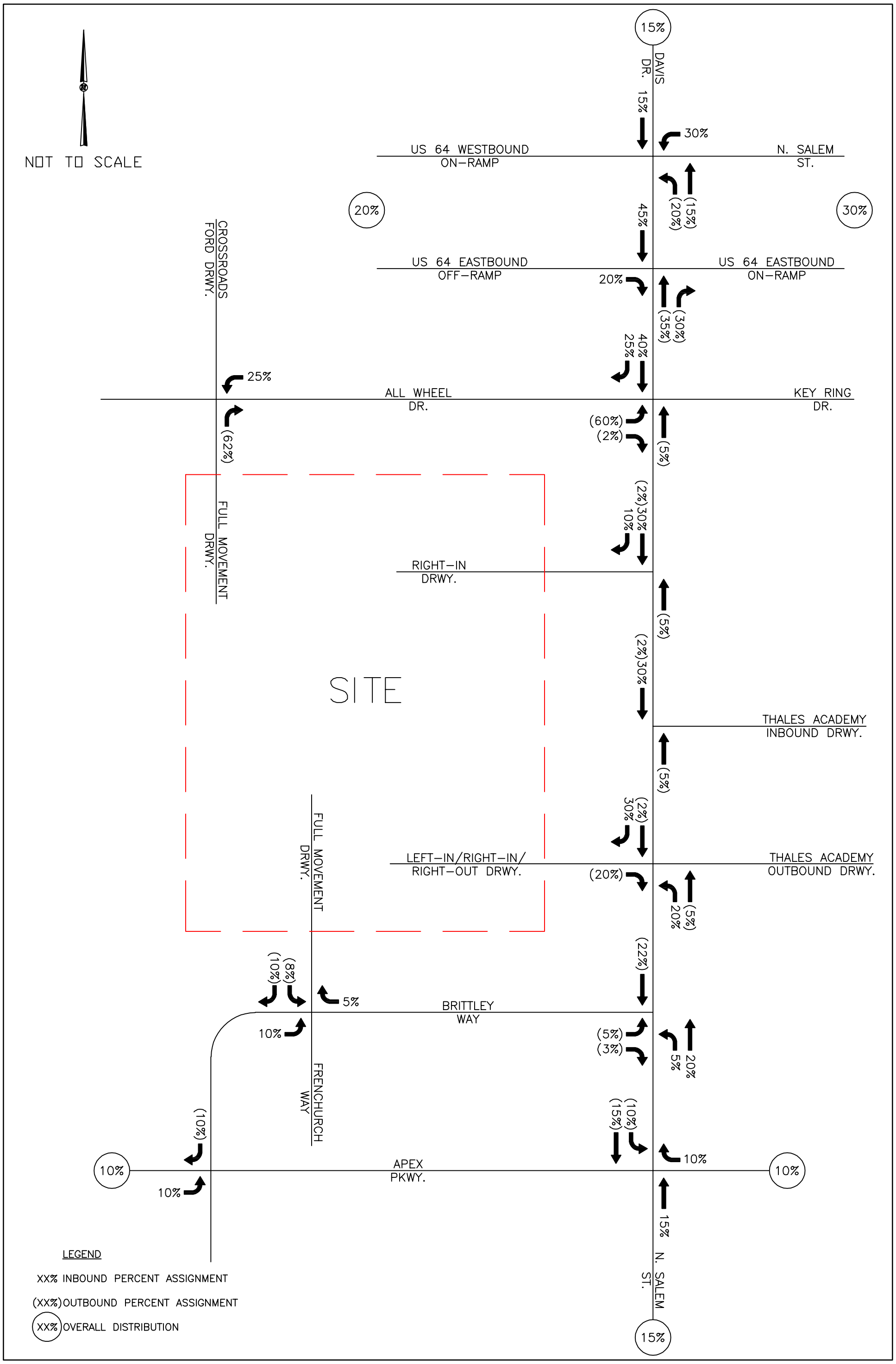
The site traffic distribution and percent assignment for new residential site trips is shown on **Figure 4.1**.

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**.



Kimley»Horn	N. SALEM STREET MIXED-USE APEX, NC TRAFFIC IMPACT ANALYSIS	RESIDENTIAL SITE DISTRIBUTION AND PERCENT ASSIGNMENT	FIGURE 4.1

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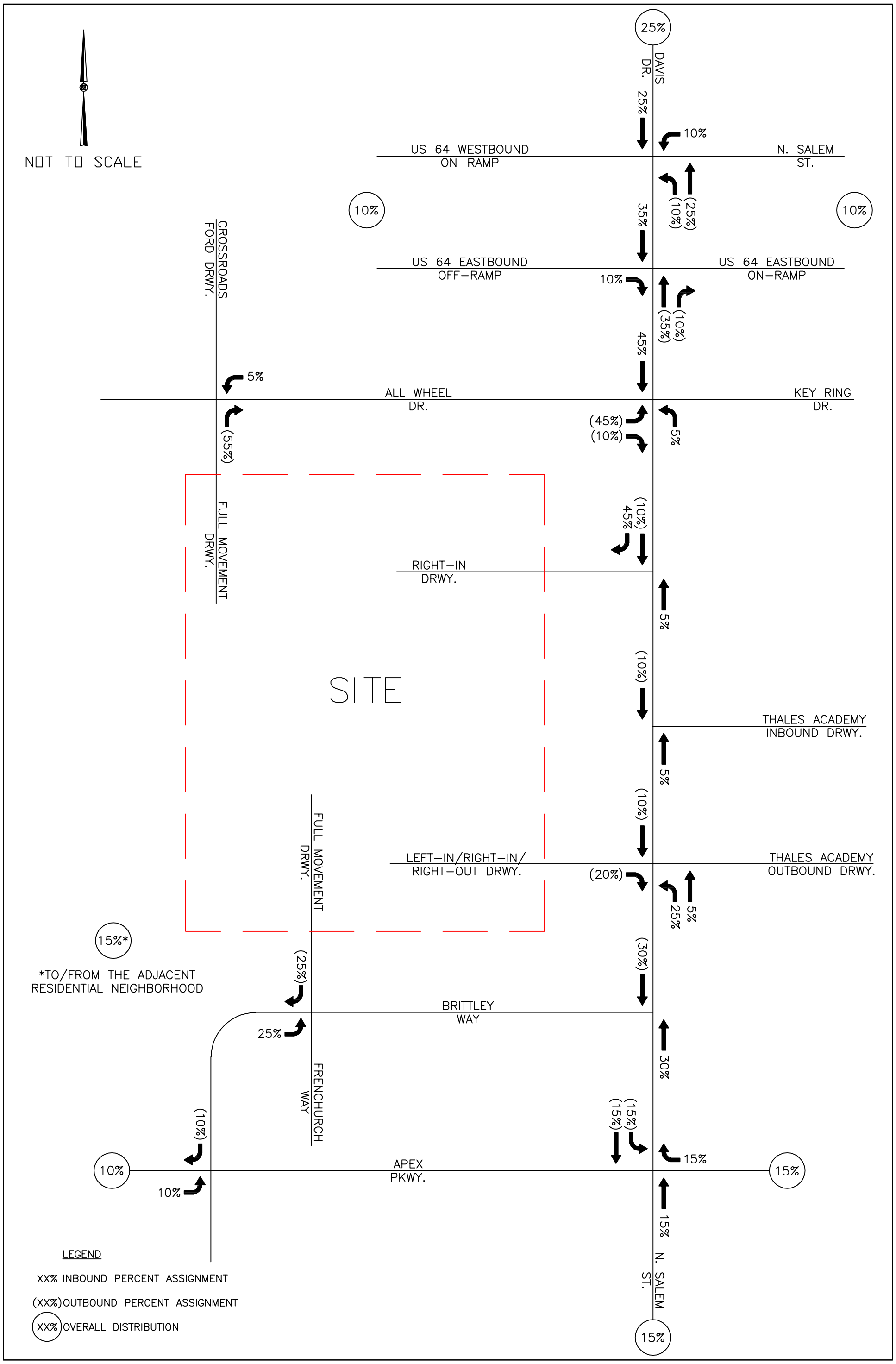

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N. SALEM STREET MIXED-USE
APEX, NC
TRAFFIC IMPACT ANALYSIS

COMMERCIAL SITE DISTRIBUTION
AND PERCENT ASSIGNMENT

FIGURE
4.2

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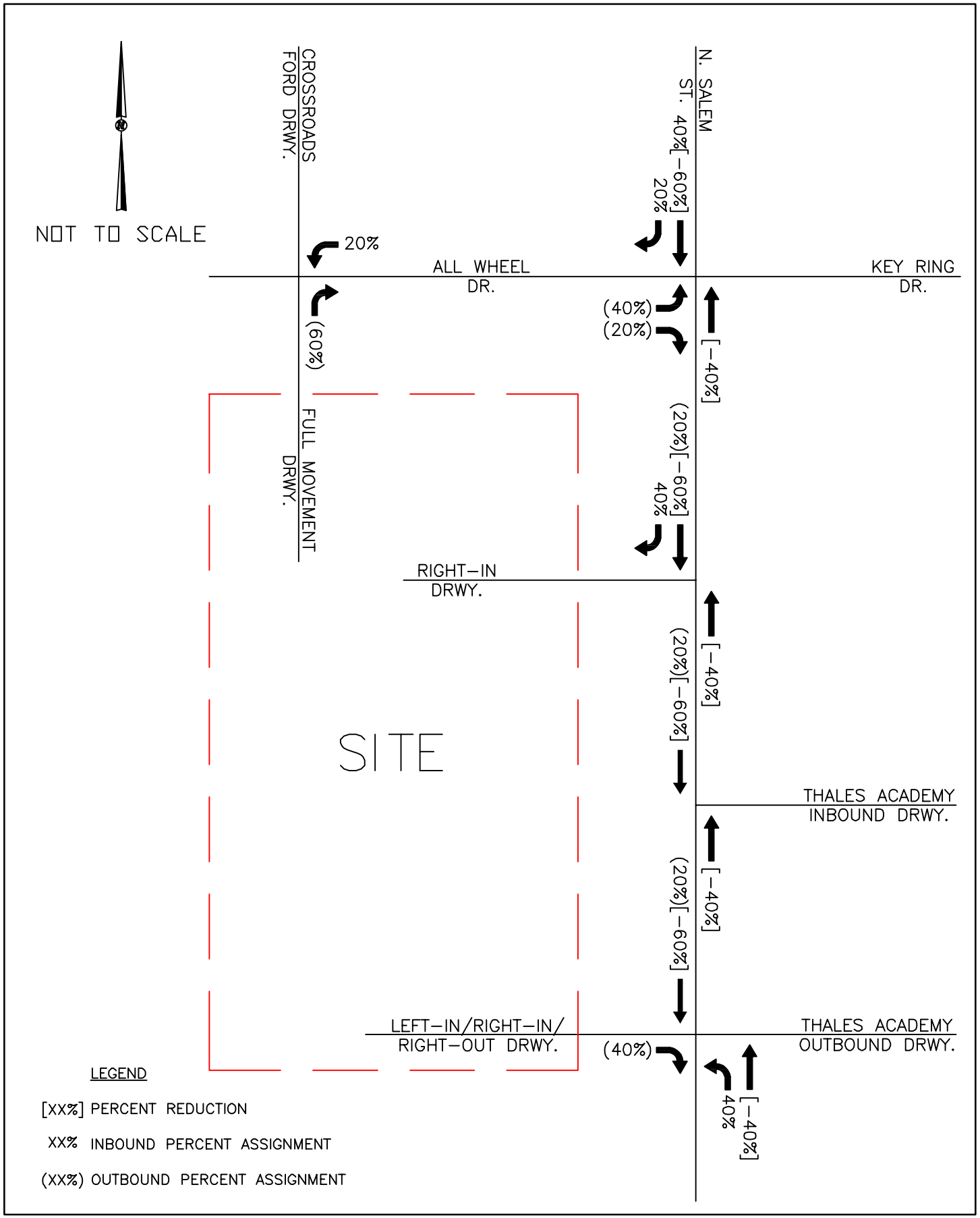

Kimley»Horn	N. SALEM STREET MIXED-USE APEX, NC TRAFFIC IMPACT ANALYSIS	RETAIL PASS-BY ASSIGNMENT: SCHOOL PM & PM PEAKS	FIGURE 4.3

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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*

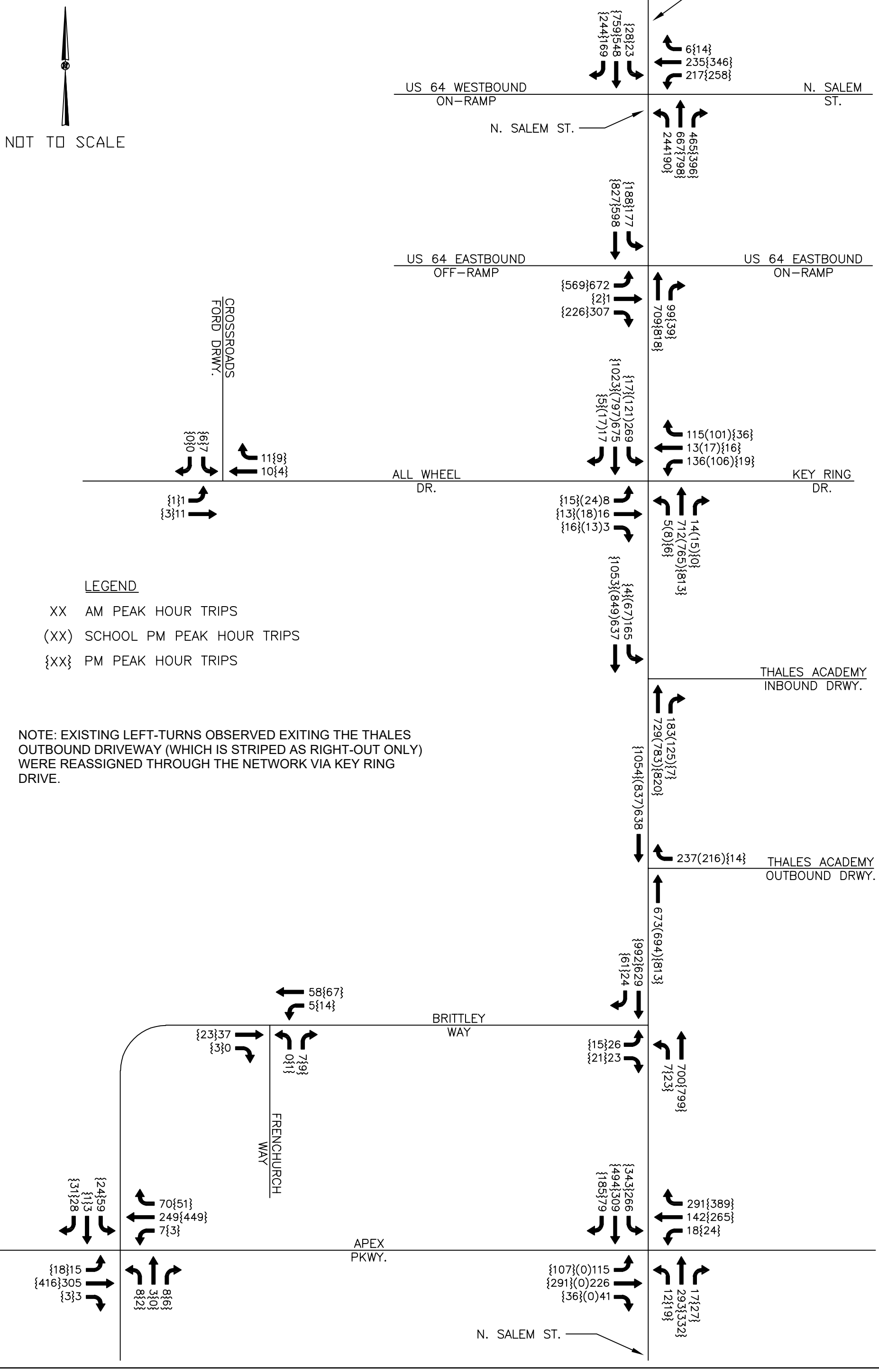
Traffic diversions are anticipated at select study intersections with the addition of internal development connectivity and site access. While no access modifications are proposed at the

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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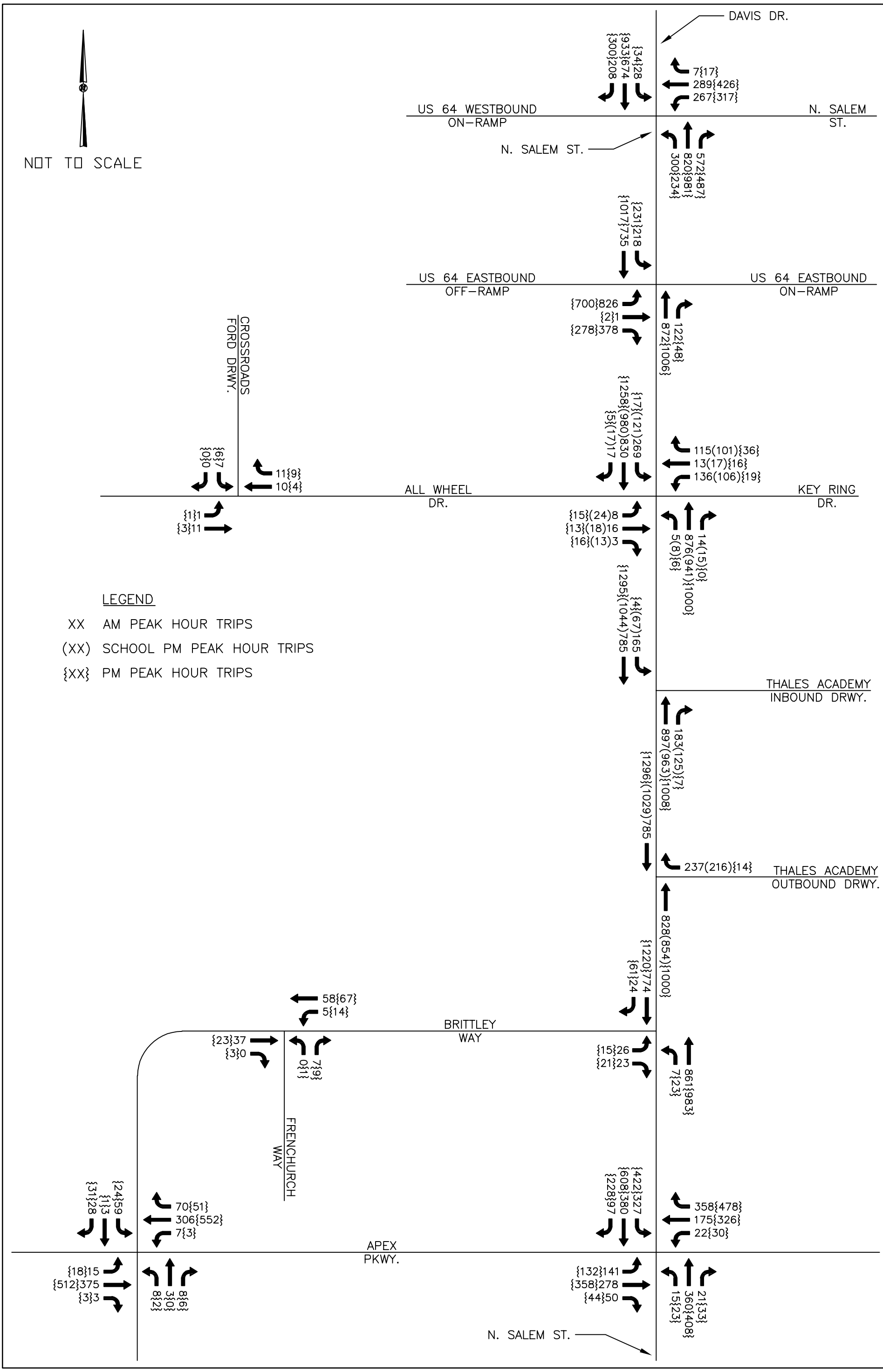

Kimley»Horn	N. SALEM STREET MIXED-USE APEX, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2032) BACKGROUND PEAK HOUR TRAFFIC VOLUMES	FIGURE 5.2

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NOT TO SCALE

LEGEND

XX AM PEAK HOUR TRIPS

(XX) SCHOOL PM PEAK HOUR TRIPS

{XX} PM PEAK HOUR TRIPS

DAVIS DR.

{30}14

17{38}

US 64 WESTBOUND ON-RAMP

N. SALEM ST.

27{22}
31{20}

{68}30

US 64 EASTBOUND OFF-RAMP

US 64 EASTBOUND ON-RAMP

{27}12

46{28}
57{42}

N. SALEM ST.

CROSSROADS FORD DRWY.

{65}(66)31
{30}(29)12

13{33}

ALL WHEEL DR.

KEY RING DR.

{70}(68)96
{8}(7)5

7(1)1
1(3)3

101{79}

{34}(36)19
{39}(37)17

FULL MOVEMENT DRWY.

RIGHT-IN DRWY.

8(4)2

{34}(36)19

SITE

THALES ACADEMY INBOUND DRWY.

8(4)2

{1}(3)5
{33}(33)14

FULL MOVEMENT DRWY.

LEFT-IN/RIGHT-IN/ RIGHT-OUT DRWY.

THALES ACADEMY OUTBOUND DRWY.

{28}(26)33

8(4)2
16(38)40

{6}12
{18}20

2{6}

{30}37

BRITTLEY WAY

{24}12

{4}7
{2}4

17{37}
2{6}

FRENCHURCH WAY

{12}17

{14}18
{18}25

9{19}

{16}8

11{25}

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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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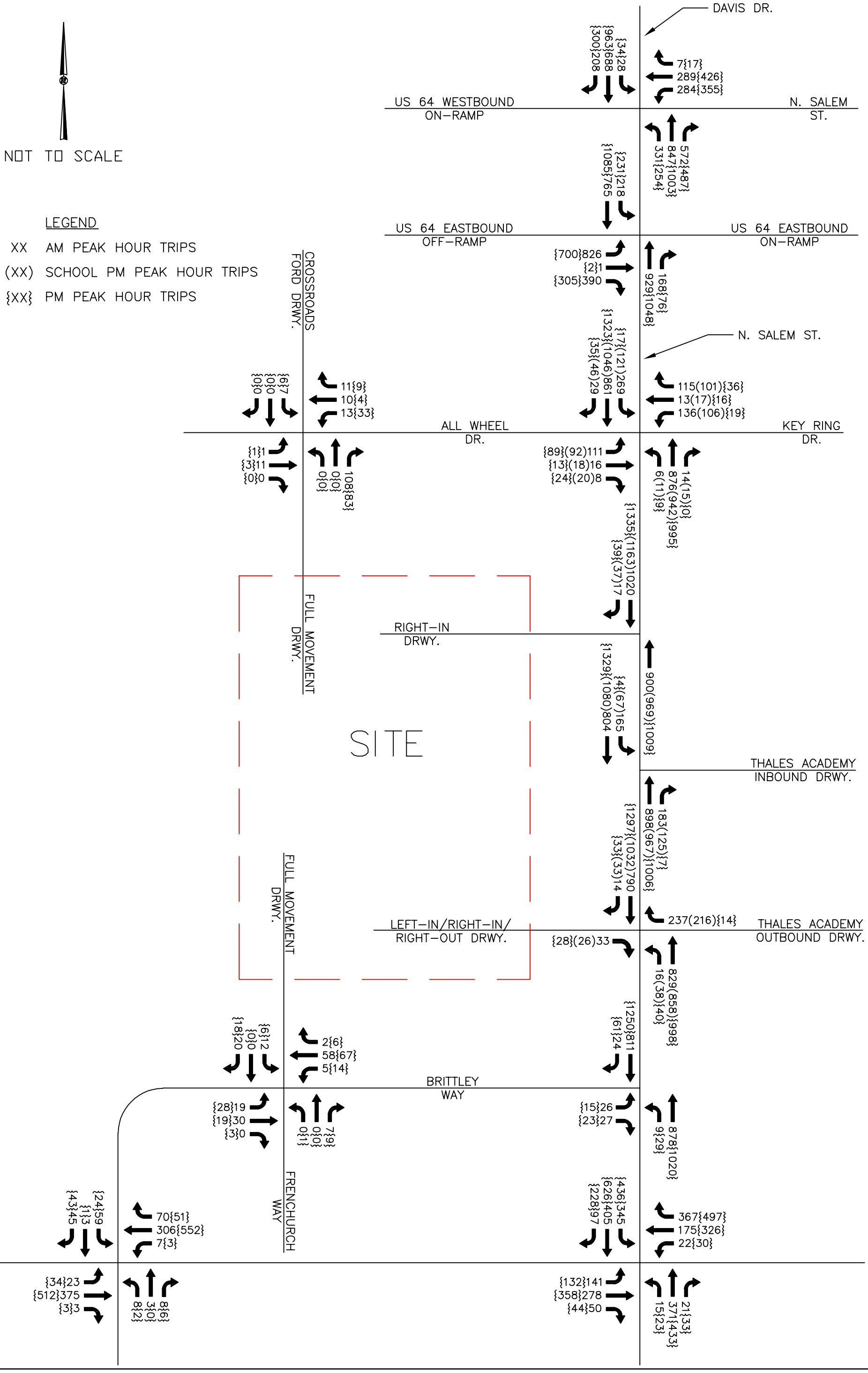

Kimley»Horn	N. SALEM STREET MIXED-USE APEX, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2032) BUILD-OUT PEAK HOUR TRAFFIC VOLUMES	FIGURE 5.4

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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

DAVIS DR.
100'
150'
200'
100'
230'
600'
US 64 WESTBOUND ON-RAMP
N. SALEM ST.
25'
US 64 EASTBOUND OFF-RAMP
US 64 EASTBOUND ON-RAMP
300'
350'
150'
N. SALEM ST.
FORD DEALERSHIP DRWY.
300'
ALL WHEEL DR.
KEY RING DR.
115'
75'(TWLTL)
150'
RIGHT-IN DRWY.
FULL MOVEMENT DRWY.
(TWLTL)100'
SITE
THALES ACADEMY INBOUND DRWY.
100'
FULL MOVEMENT DRWY.
LEFT-IN/RIGHT-IN/ RIGHT-OUT DRWY.
THALES ACADEMY OUTBOUND DRWY.
100'(TWLTL)
BRITTLEY WAY
100'(TWLTL)
FRENCHURCH WAY
(TWLTL)150'
25'
275'
350'
APEX PKWY.
250'
150'
150'

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

10/15/2025

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

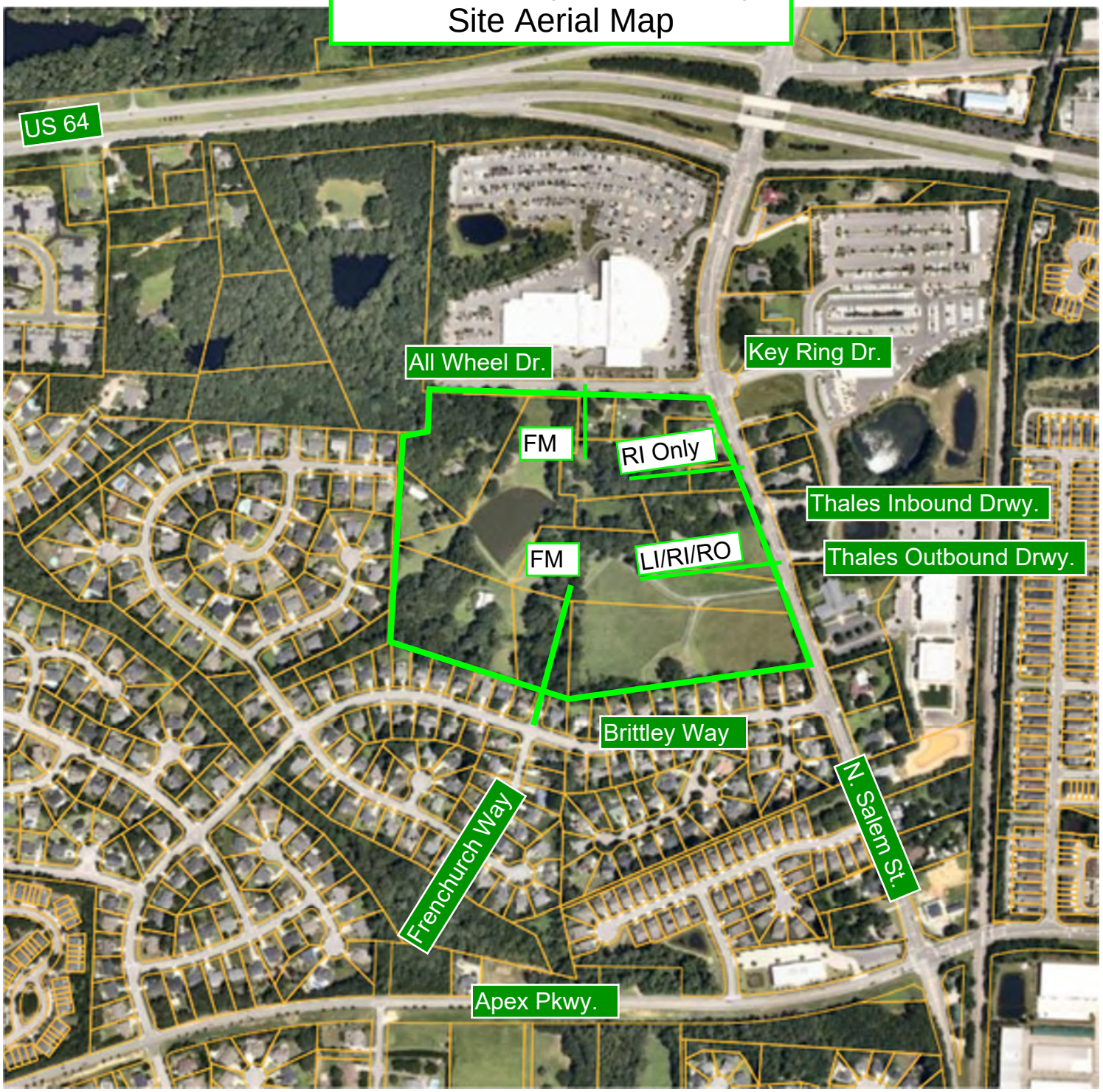
Once turning movement count data is reviewed, it is anticipated that traffic diversions will be applied to projected background traffic volumes to account for:

- 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



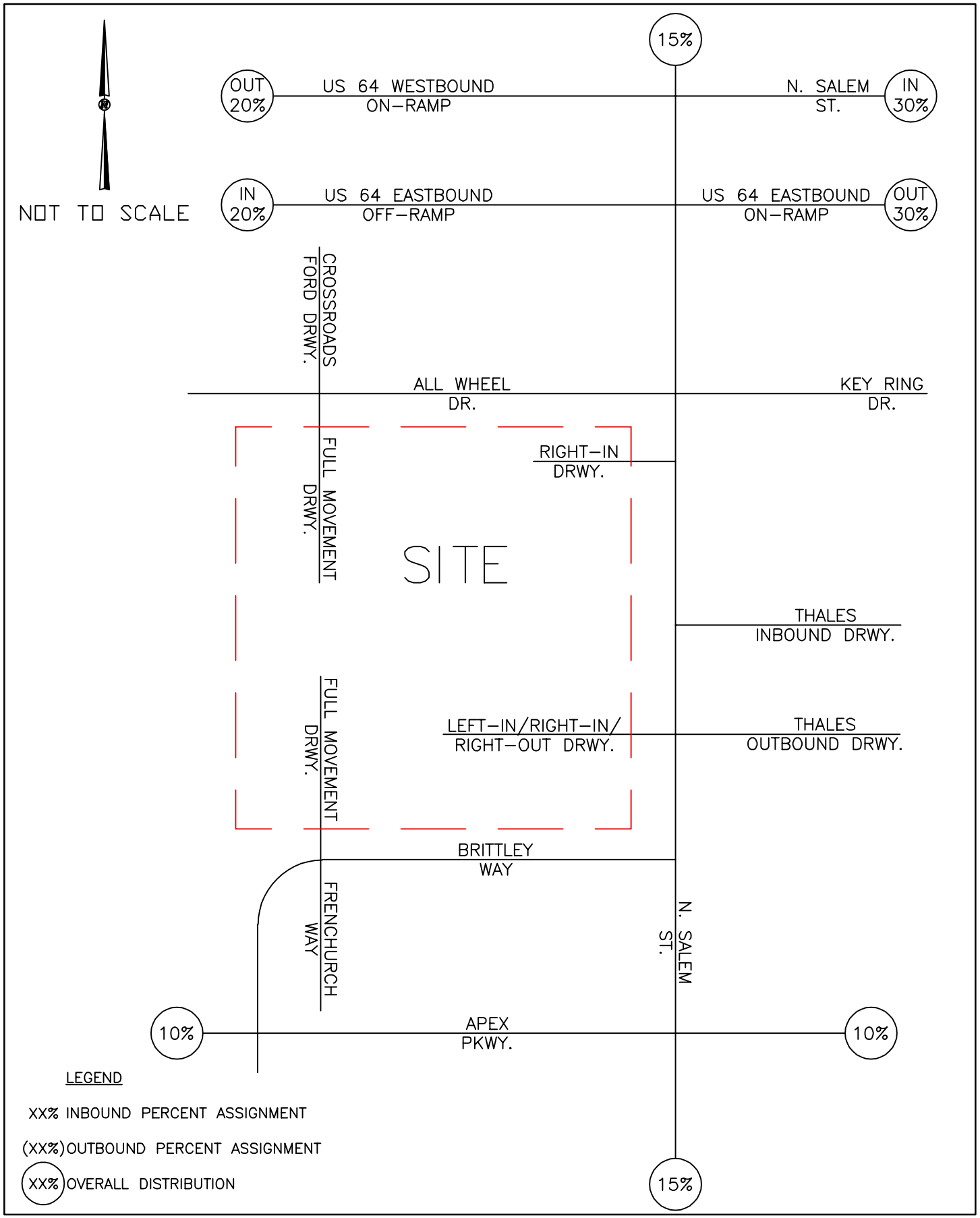
Good Acres (N. Salem St.)

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**

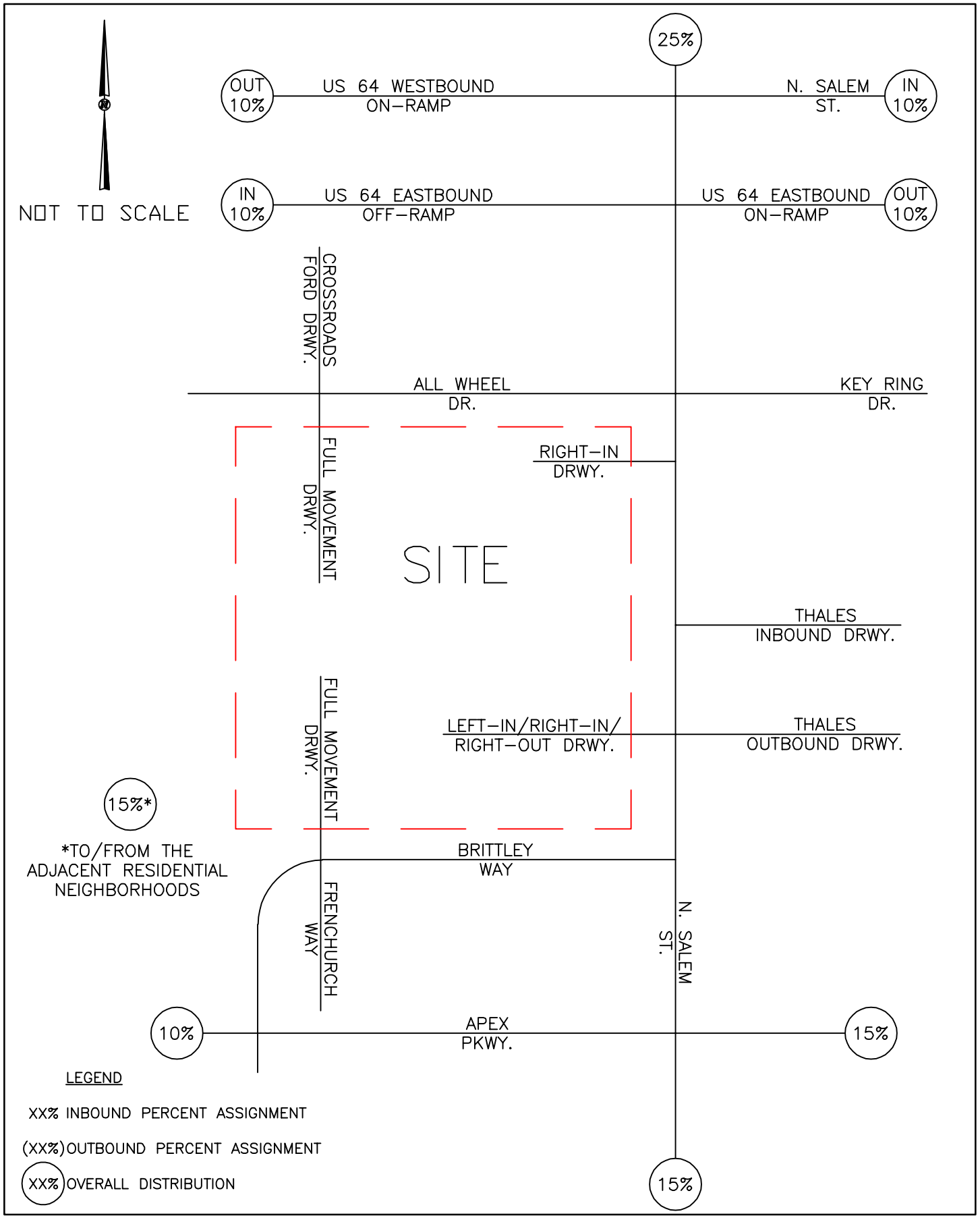
School PM peak hour trip generation based on average of ITE hourly distribution data for the 2-4pm timeframe and applied to daily trip generation

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 ANALYSIS	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 ANALYSIS	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

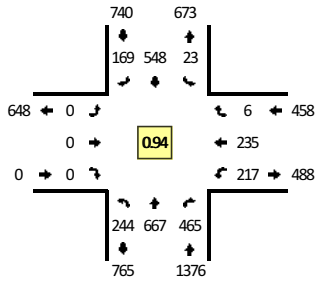
CITY/STATE: Wake, NC

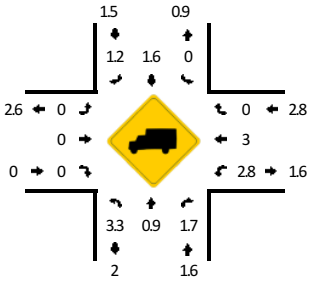
QC JOB #: 17294601

DATE: Tue, Oct 21 2025

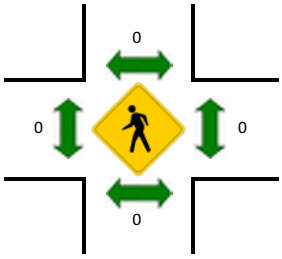
Peak-Hour: 7:15 AM -- 8:15 AM

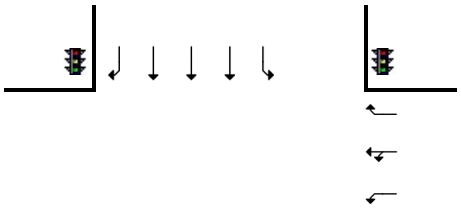
Peak 15-Min: 7:30 AM -- 7:45 AM

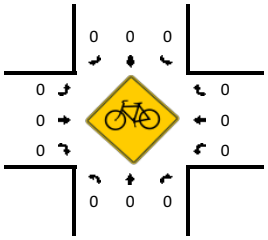


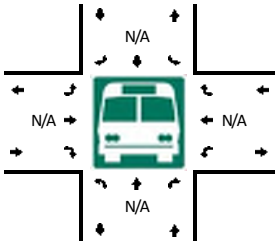


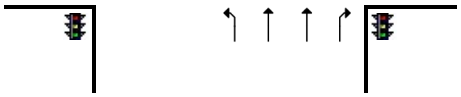
TRUE DATA TO IMPROVE MOBILITY

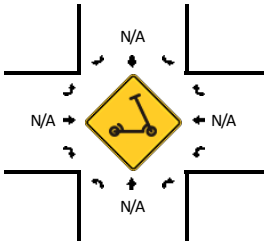












15-Min Count Period Beginning At	N Salem St/Davis Dr (Northbound)				N Salem St/Davis Dr (Southbound)				N Salem St/US 64 WB On-Ramp (Eastbound)				N Salem St/US 64 WB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	37	132	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

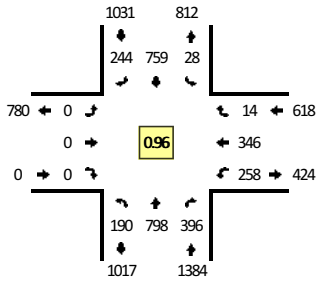
CITY/STATE: Wake, NC

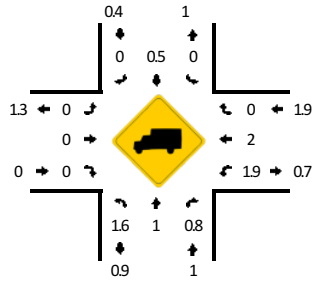
QC JOB #: 17294602

DATE: Tue, Oct 21 2025

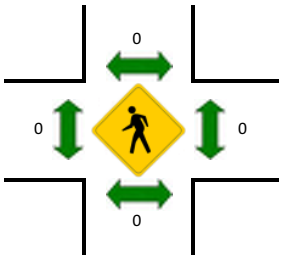
Peak-Hour: 5:00 PM -- 6:00 PM

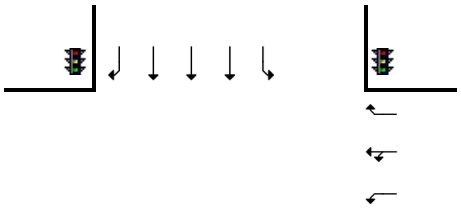
Peak 15-Min: 5:15 PM -- 5:30 PM

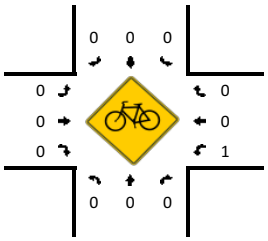


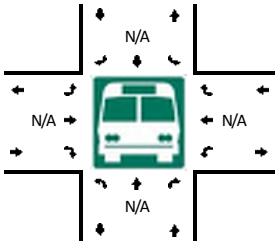


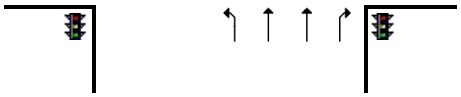
TRUE DATA TO IMPROVE MOBILITY

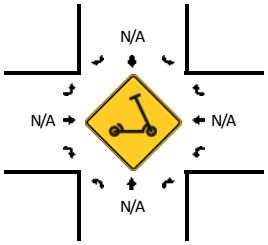












15-Min Count Period Beginning At	N Salem St/Davis Dr (Northbound)				N Salem St/Davis Dr (Southbound)				N Salem St/US 64 WB On-Ramp (Eastbound)				N Salem St/US 64 WB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	43	136	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

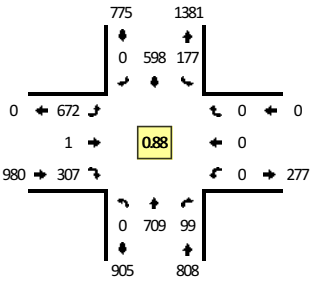
Type of peak hour being reported: Intersection Peak

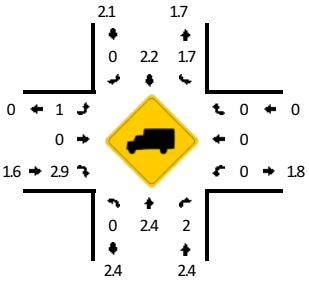
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- US 64 EB Ramps
CITY/STATE: Wake, NC

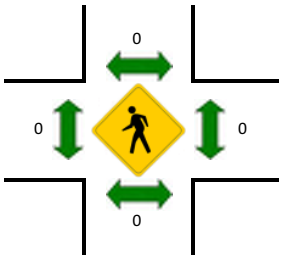
QC JOB #: 17294603
DATE: Tue, Oct 21 2025

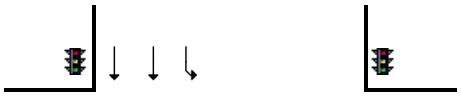
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

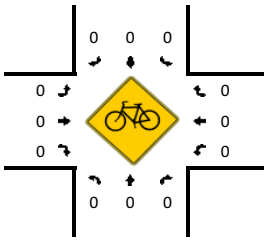


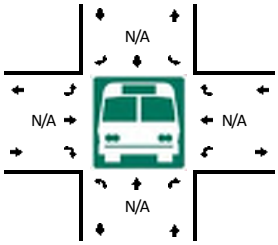


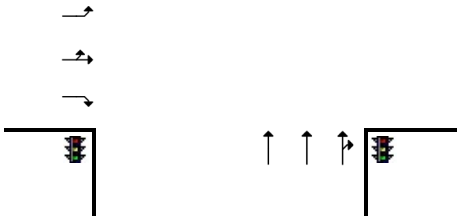
TRUE DATA TO IMPROVE MOBILITY

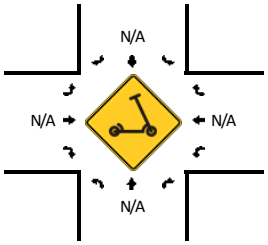












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				US 64 EB Ramps (Eastbound)				US 64 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	165	23	0	50	143	0	0	79	1	89	0	0	0	0	0	550	
7:15 AM	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:

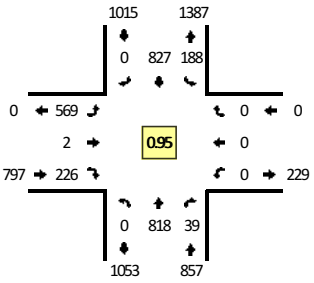
Report generated on 10/27/2025 8:15 AM

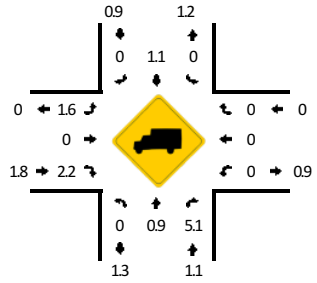
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

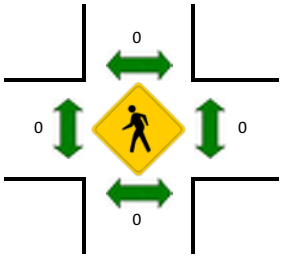
LOCATION: N Salem St -- US 64 EB Ramps | **QC JOB #:** 17294604
CITY/STATE: Wake, NC | **DATE:** Tue, Oct 21 2025

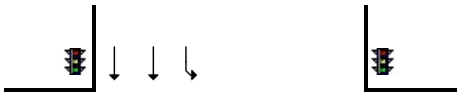
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

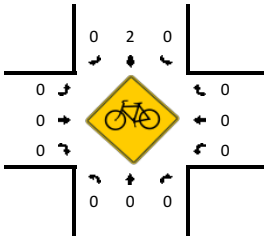


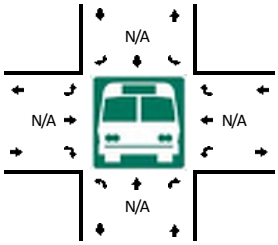


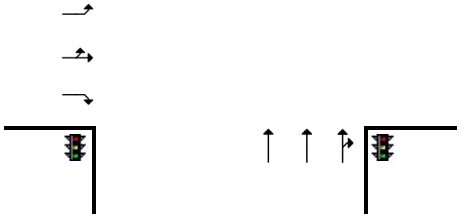
TRUE DATA TO IMPROVE MOBILITY

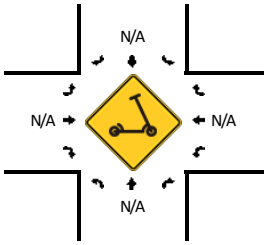












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				US 64 EB Ramps (Eastbound)				US 64 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	164	20	0	51	178	0	0	102	0	44	0	0	0	0	0	559	
4:15 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

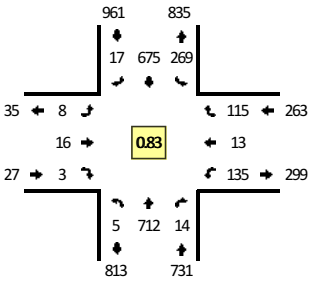
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

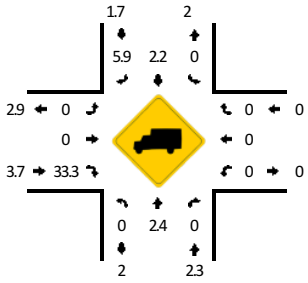
LOCATION: N Salem St -- All Wheel Dr/Key Ring Dr
CITY/STATE: Apex, NC

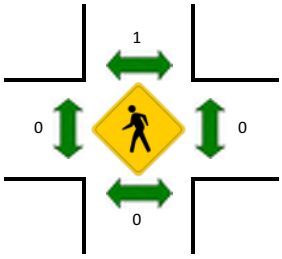
QC JOB #: 17294615
DATE: Tue, Oct 21 2025

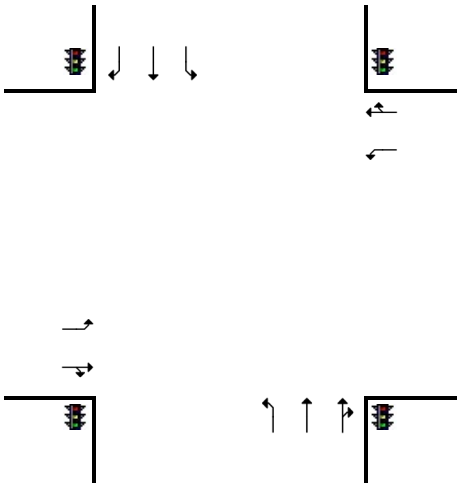
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

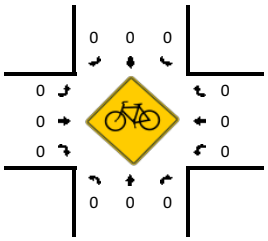


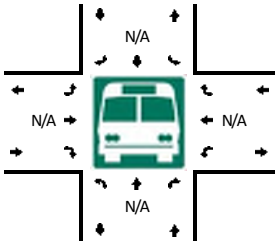
TRUE DATA TO IMPROVE MOBILITY

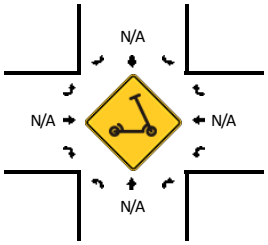












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				All Wheel Dr/Key Ring Dr (Eastbound)				All Wheel Dr/Key Ring Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	157	2	0	63	151	1	0	0	4	0	0	25	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:

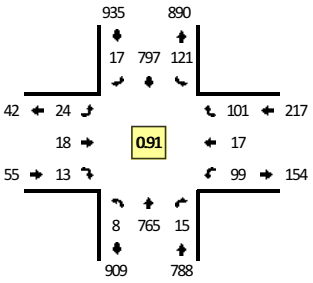
Report generated on 10/27/2025 8:15 AM

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

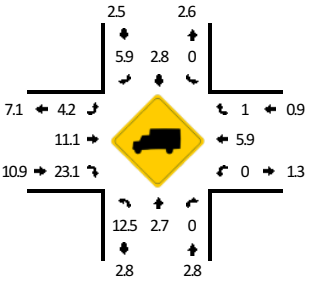
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

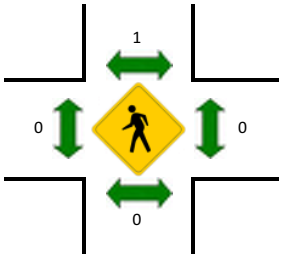
LOCATION: N Salem St -- All Wheel Dr/Key Ring Dr | **QC JOB #:** 17294616
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

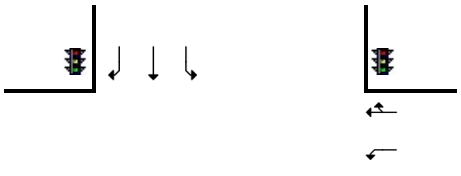
Peak-Hour: 2:45 PM -- 3:45 PM
Peak 15-Min: 3:15 PM -- 3:30 PM

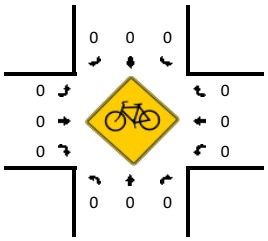


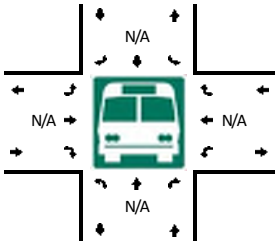
TRUE DATA TO IMPROVE MOBILITY

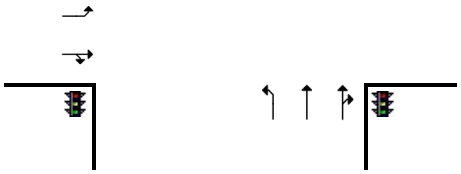


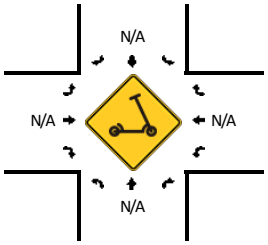












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				All Wheel Dr/Key Ring Dr (Eastbound)				All Wheel Dr/Key Ring Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	3	123	2	0	6	136	6	0	5	8	2	0	1	4	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

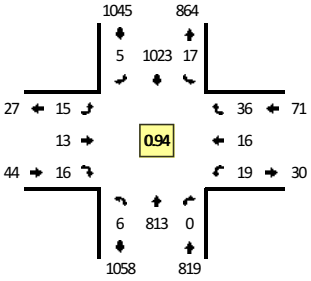
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

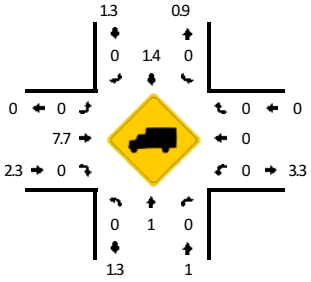
LOCATION: N Salem St -- All Wheel Dr/Key Ring Dr | **QC JOB #:** 17294617

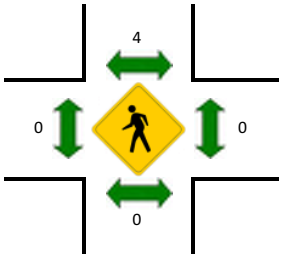
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

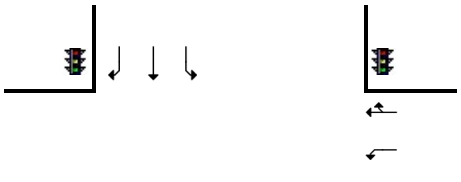
Peak-Hour: 5:00 PM -- 6:00 PM

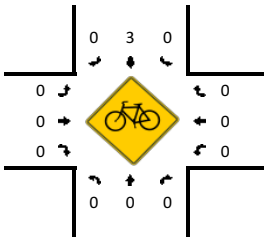
Peak 15-Min: 5:15 PM -- 5:30 PM

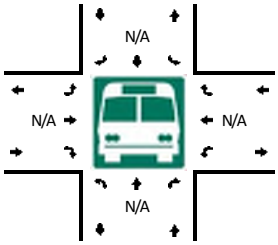


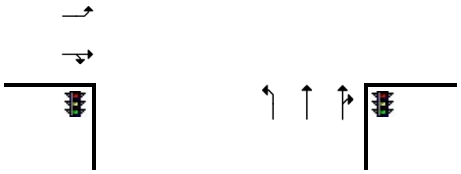


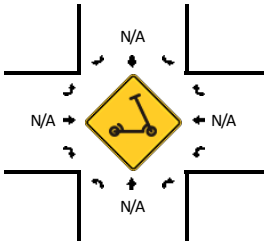












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				All Wheel Dr/Key Ring Dr (Eastbound)				All Wheel Dr/Key Ring Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	166	0	0	7	209	1	0	5	6	3	0	5	3	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

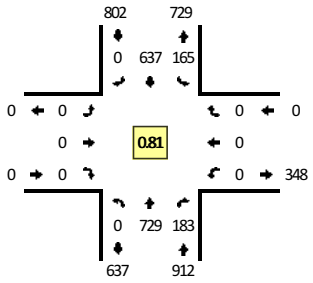
Type of peak hour being reported: Intersection Peak

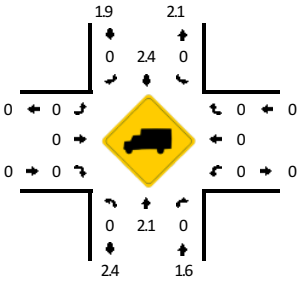
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Thales Academy Inbound Dwy
CITY/STATE: Apex, NC

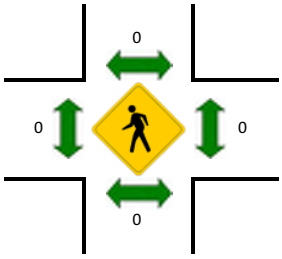
QC JOB #: 17294618
DATE: Tue, Oct 21 2025

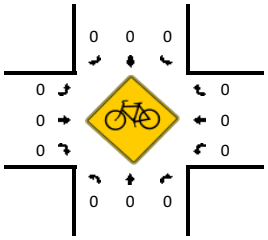
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

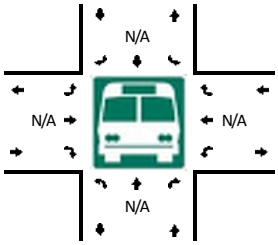


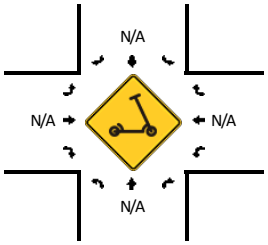


TRUE DATA TO IMPROVE MOBILITY









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

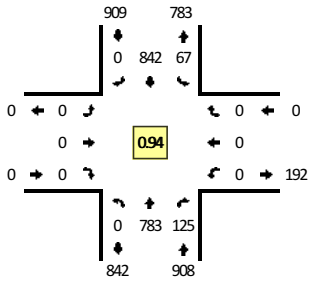
Method for determining peak hour: Total Entering Volume

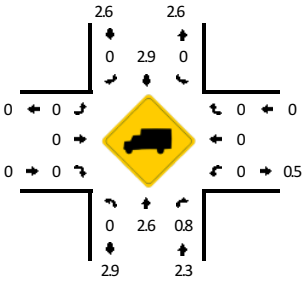
LOCATION: N Salem St -- Thales Academy Inbound Dwy
CITY/STATE: Apex, NC

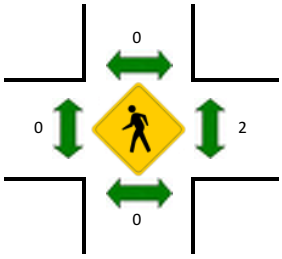
QC JOB #: 17294619
DATE: Tue, Oct 21 2025

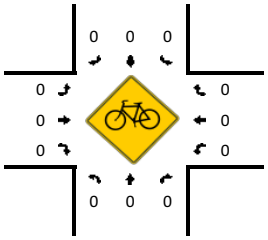
Peak-Hour: 2:45 PM -- 3:45 PM
Peak 15-Min: 3:15 PM -- 3:30 PM

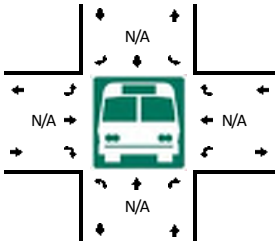
TRUE DATA TO IMPROVE MOBILITY

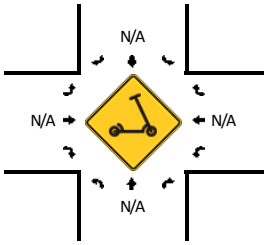












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Inbound Dwy (Eastbound)				Thales Academy Inbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	126	2	0	1	135	0	0	0	0	0	0	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

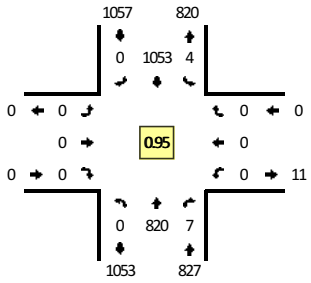
Method for determining peak hour: Total Entering Volume

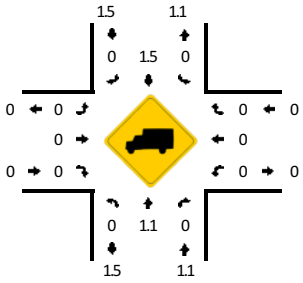
LOCATION: N Salem St -- Thales Academy Inbound Dwy
CITY/STATE: Apex, NC

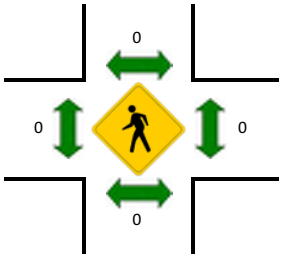
QC JOB #: 17294620
DATE: Tue, Oct 21 2025

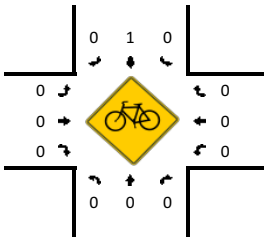
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

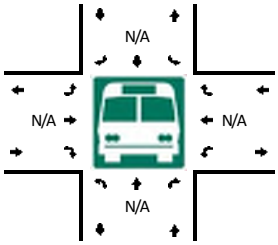
TRUE DATA TO IMPROVE MOBILITY

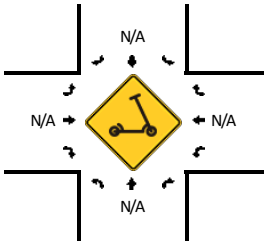












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Thales Academy Inbound Dwy (Eastbound)				Thales Academy Inbound Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	165	3	0	2	213	0	0	0	0	0	0	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

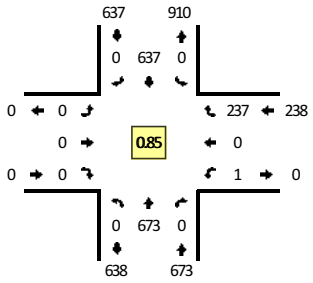
Type of peak hour being reported: Intersection Peak

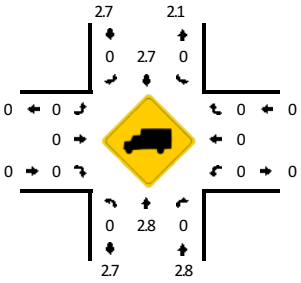
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Thales Academy Outbound Dwy
CITY/STATE: Apex, NC

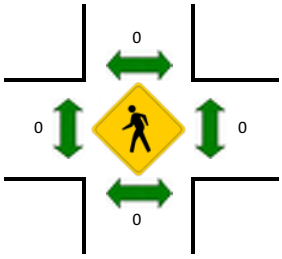
QC JOB #: 17294621
DATE: Tue, Oct 21 2025

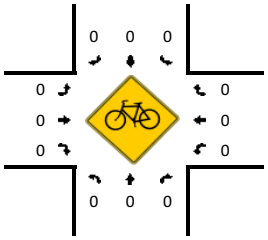
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

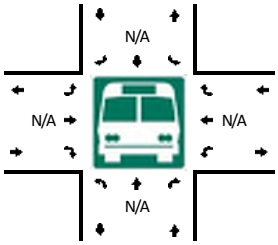


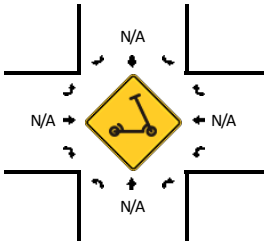


TRUE DATA TO IMPROVE MOBILITY









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

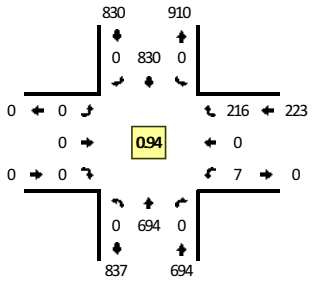
CITY/STATE: Apex, NC

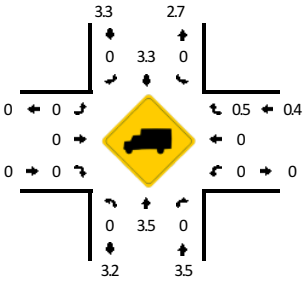
QC JOB #: 17294622

DATE: Tue, Oct 21 2025

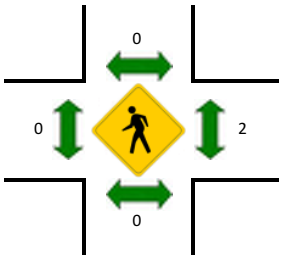
Peak-Hour: 2:45 PM -- 3:45 PM

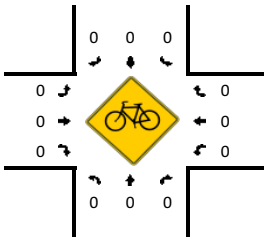
Peak 15-Min: 3:15 PM -- 3:30 PM

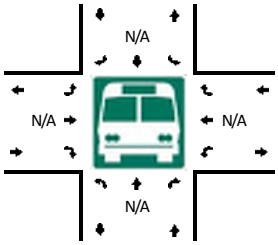


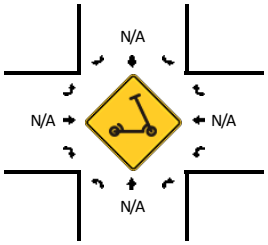


TRUE DATA TO IMPROVE MOBILITY









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:

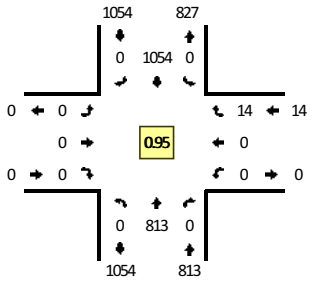
Report generated on 10/27/2025 8:15 AM

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

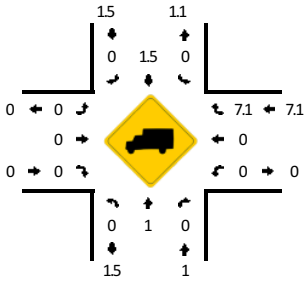
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

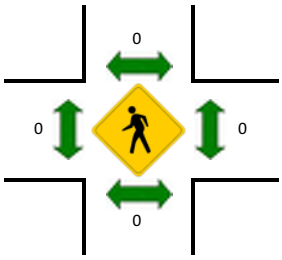
LOCATION: N Salem St -- Thales Academy Outbound Dwy | **QC JOB #:** 17294623
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

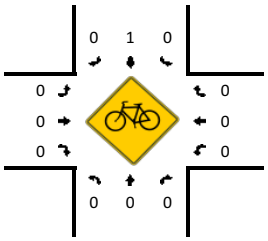
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

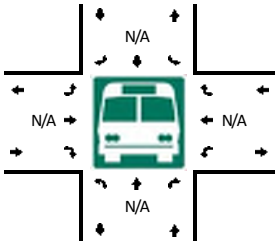


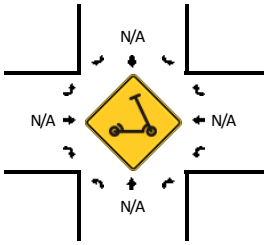
TRUE DATA TO IMPROVE MOBILITY











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

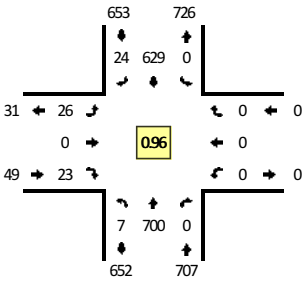
Type of peak hour being reported: Intersection Peak

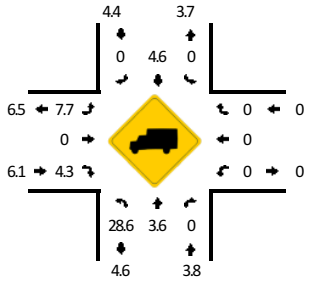
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Brittley Way
CITY/STATE: Apex, NC

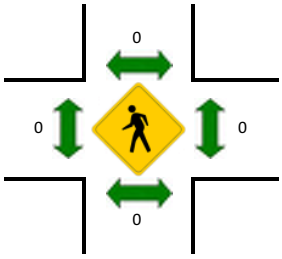
QC JOB #: 17294605
DATE: Tue, Oct 21 2025

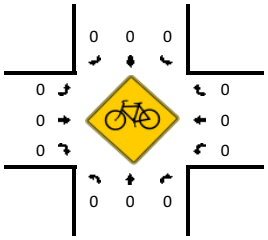
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

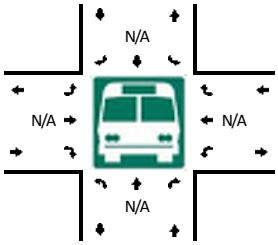


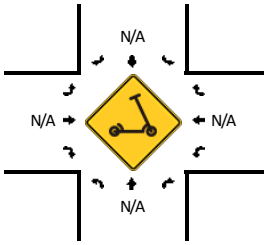


TRUE DATA TO IMPROVE MOBILITY









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

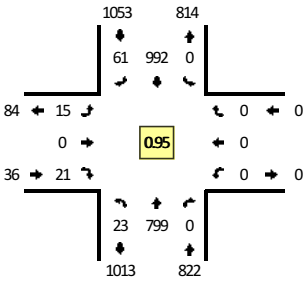
Type of peak hour being reported: Intersection Peak

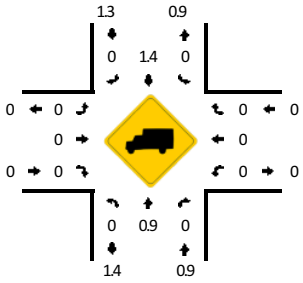
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Brittley Way
CITY/STATE: Apex, NC

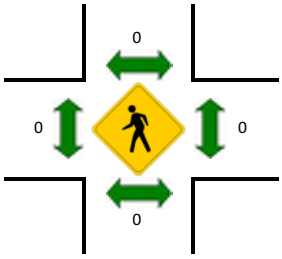
QC JOB #: 17294606
DATE: Tue, Oct 21 2025

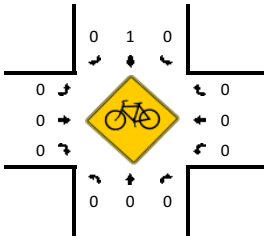
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

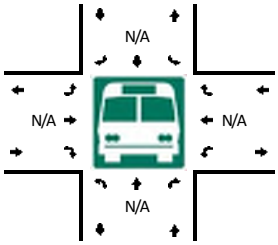


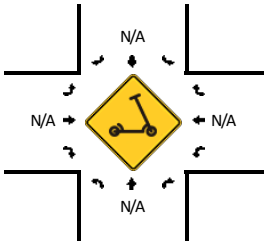


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				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

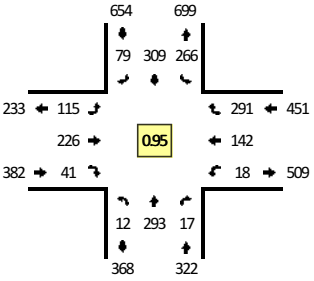
Type of peak hour being reported: Intersection Peak

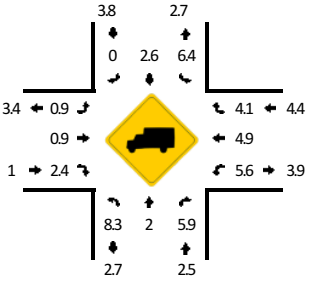
Method for determining peak hour: Total Entering Volume

LOCATION: N Salem St -- Apex Peakway
CITY/STATE: Apex, NC

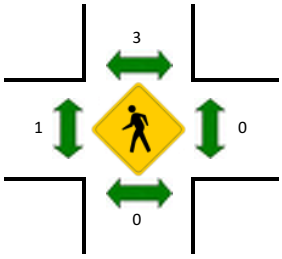
QC JOB #: 17294607
DATE: Tue, Oct 21 2025

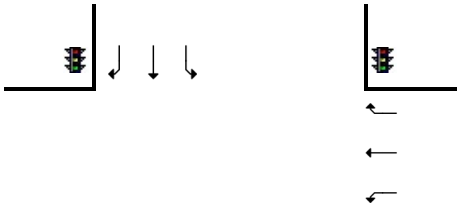
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

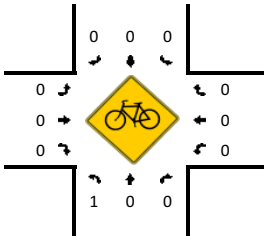


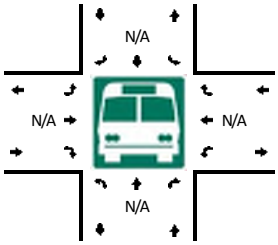


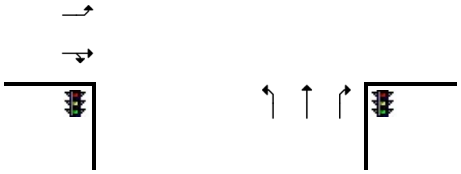
TRUE DATA TO IMPROVE MOBILITY

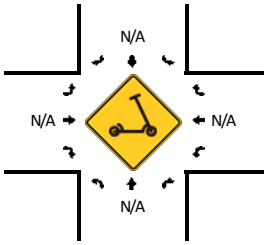












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	90	7	0	62	55	8	0	24	48	5	0	4	46	103	0	456	
7:15 AM	17	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

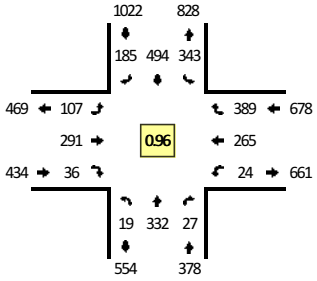
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

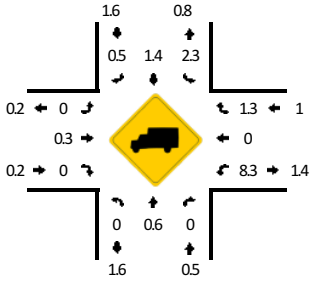
LOCATION: N Salem St -- Apex Peakway
CITY/STATE: Apex, NC

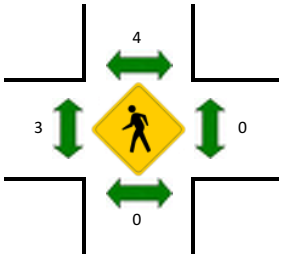
QC JOB #: 17294608
DATE: Tue, Oct 21 2025

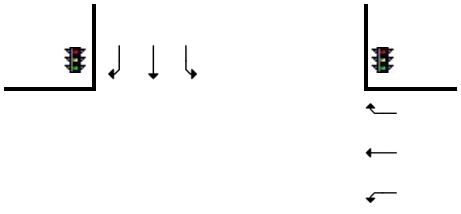
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

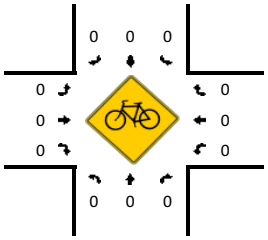


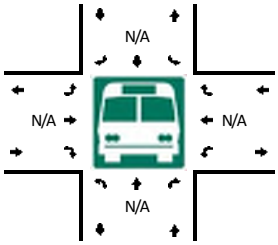
TRUE DATA TO IMPROVE MOBILITY

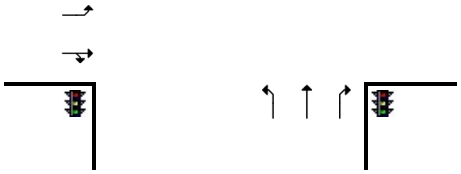


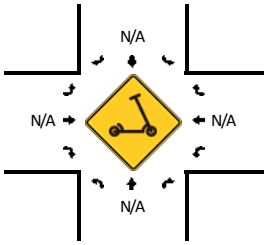












15-Min Count Period Beginning At	N Salem St (Northbound)				N Salem St (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	61	7	0	59	108	36	0	32	61	11	0	6	74	74	0	533	
4:15 PM	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

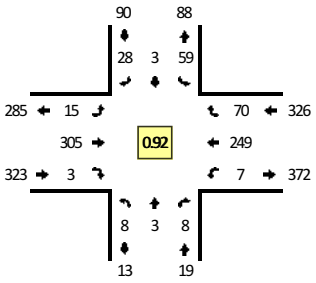
Type of peak hour being reported: Intersection Peak

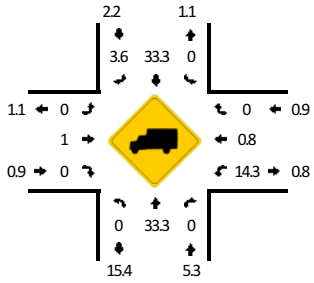
Method for determining peak hour: Total Entering Volume

LOCATION: Brittley Way -- Apex Peakway
CITY/STATE: Apex, NC

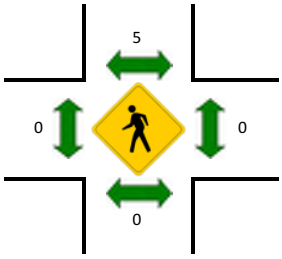
QC JOB #: 17294609
DATE: Tue, Oct 21 2025

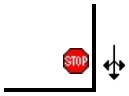
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

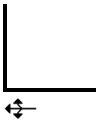


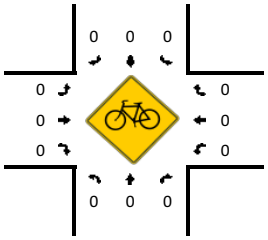


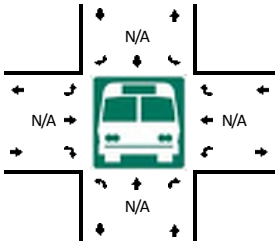
TRUE DATA TO IMPROVE MOBILITY

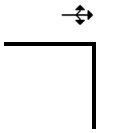


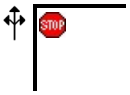


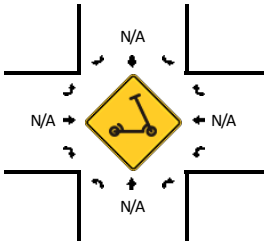












15-Min Count Period Beginning At	Brittley Way (Northbound)				Brittley Way (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	5	0	6	0	3	0	1	68	0	0	0	50	7	0	141	
7:15 AM	2	2	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:

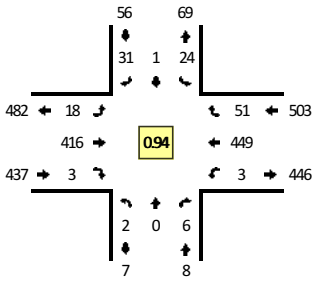
Report generated on 10/27/2025 8:15 AM

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

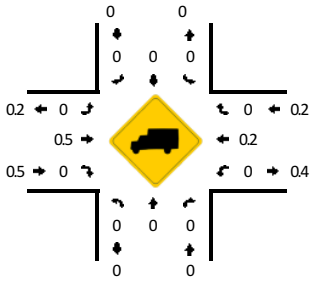
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

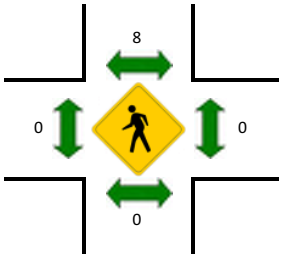
LOCATION: Brittley Way -- Apex Peakway | **QC JOB #:** 17294610
CITY/STATE: Apex, NC | **DATE:** Tue, Oct 21 2025

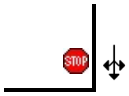
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

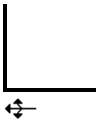


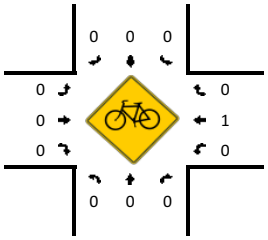
TRUE DATA TO IMPROVE MOBILITY

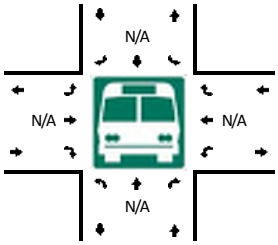


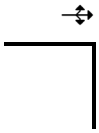


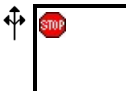


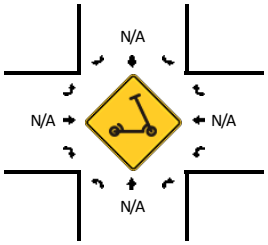












15-Min Count Period Beginning At	Brittley Way (Northbound)				Brittley Way (Southbound)				Apex Peakway (Eastbound)				Apex Peakway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	8	0	5	0	7	93	0	0	2	103	11	0	230	
4:15 PM	0	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:

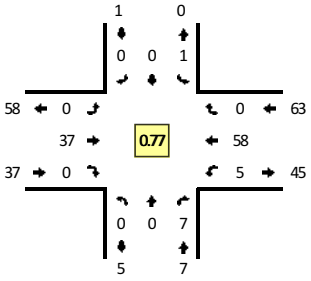
Report generated on 10/27/2025 8:15 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

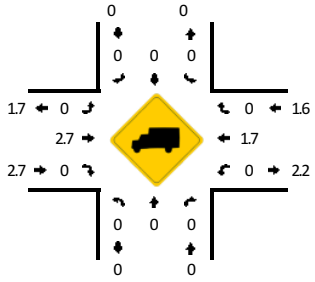
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Frenchurch Way -- Brittley Way
CITY/STATE: Apex, NC

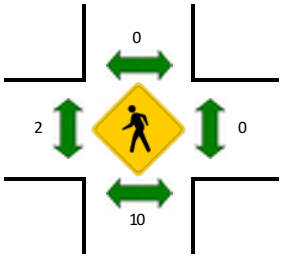
QC JOB #: 17294611
DATE: Tue, Oct 21 2025

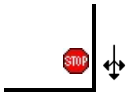
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

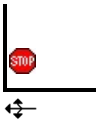


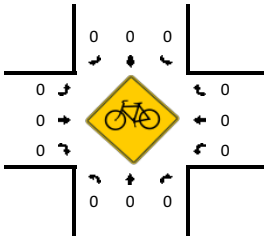


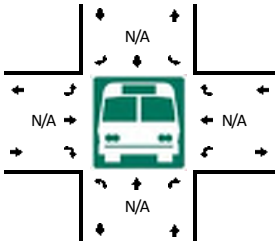
TRUE DATA TO IMPROVE MOBILITY

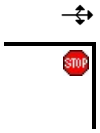


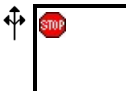


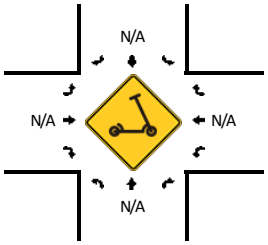












15-Min Count Period Beginning At	Frenchurch Way (Northbound)				Frenchurch Way (Southbound)				Brittley Way (Eastbound)				Brittley Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	1	0	0	0	0	13	0	0	0	6	0	0	21	
7:15 AM	0	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

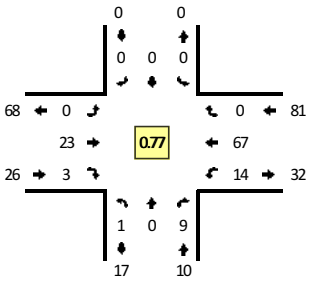
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

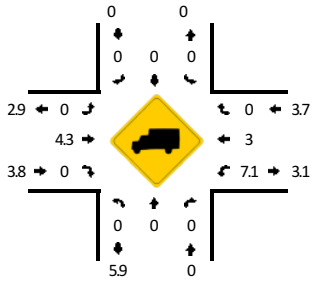
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Frenchurch Way -- Brittley Way
CITY/STATE: Apex, NC

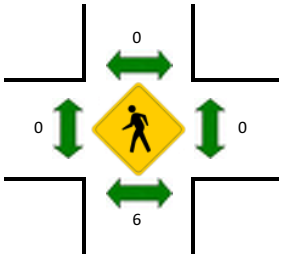
QC JOB #: 17294612
DATE: Tue, Oct 21 2025

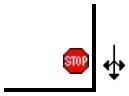
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

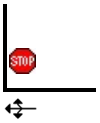


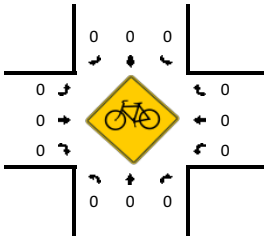


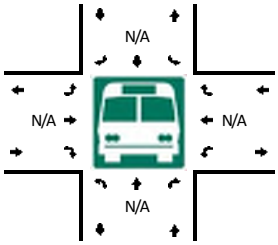
TRUE DATA TO IMPROVE MOBILITY

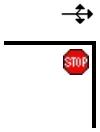


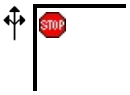


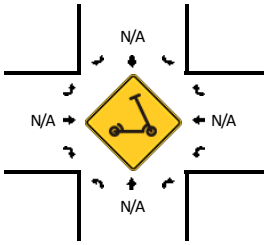












15-Min Count Period Beginning At	Frenchurch Way (Northbound)				Frenchurch Way (Southbound)				Brittley Way (Eastbound)				Brittley Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	6	0	0	0	0	0	0	4	2	0	7	18	0	0	38	
4:15 PM	0	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

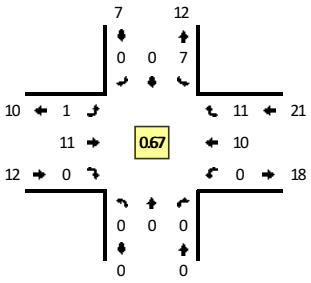
Type of peak hour being reported: Intersection Peak

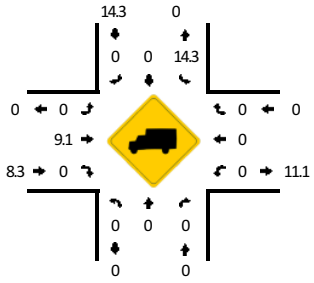
Method for determining peak hour: Total Entering Volume

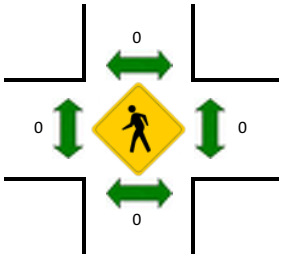
LOCATION: Crossroads Ford of Apex Central Dwy -- All Wheel Dr
CITY/STATE: Apex, NC

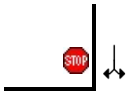
QC JOB #: 17294613
DATE: Tue, Oct 21 2025

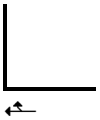
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

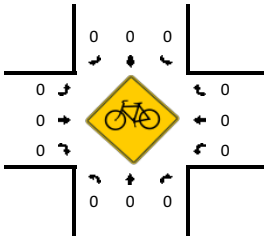


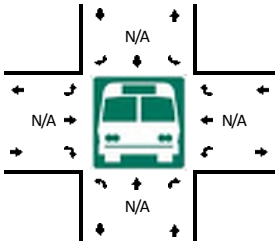


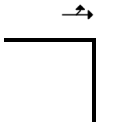


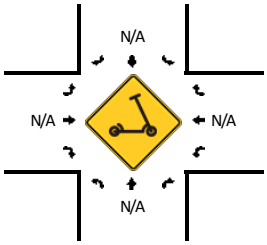












15-Min Count Period Beginning At	Crossroads Ford of Apex Central Dwy (Northbound)				Crossroads Ford of Apex Central Dwy (Southbound)				All Wheel Dr (Eastbound)				All Wheel Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	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

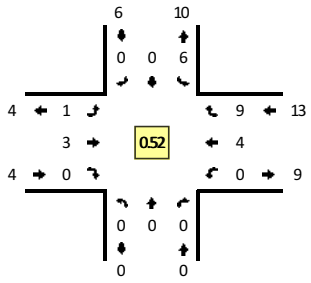
Type of peak hour being reported: Intersection Peak

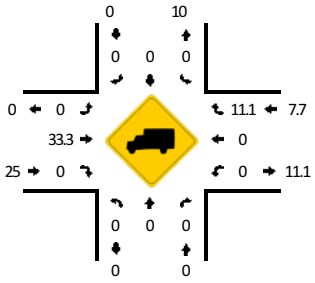
Method for determining peak hour: Total Entering Volume

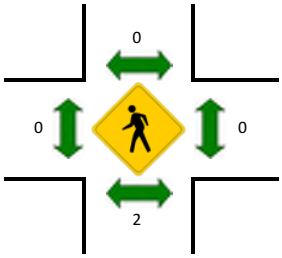
LOCATION: Crossroads Ford of Apex Central Dwy -- All Wheel Dr
CITY/STATE: Apex, NC

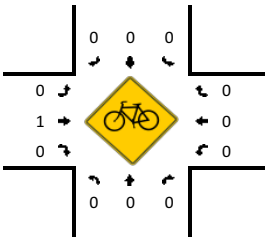
QC JOB #: 17294614
DATE: Tue, Oct 21 2025

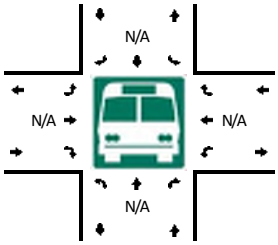
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

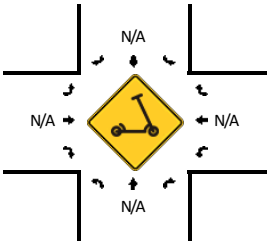












15-Min Count Period Beginning At	Crossroads Ford of Apex Central Dwy (Northbound)				Crossroads Ford of Apex Central Dwy (Southbound)				All Wheel Dr (Eastbound)				All Wheel Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	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 U-Turn	Left	Through	Right	N. Salem Street Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	Davis Drive Southbound 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 U-Turn	Left	Through	Right	N. Salem Street Westbound U-Turn	Left	Through	Right	N. Salem Street Northbound U-Turn	Left	Through	Right	Davis Drive Southbound 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%															

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%															

INTERSECTION ANALYSIS SHEET

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	All Wheel Drive/Key Ring Drive
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

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
	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	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

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
	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	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

Project:	Good Acres (N. Salem St.)
Location:	Apex, NC
Ct. Date	10/21/2025
E/W Street:	South Site Drive (LI/RI/RO)/Thales Outbound Drwy.
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

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

	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	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

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

	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	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%															

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%															

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%															

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%															

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%															

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%															

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)

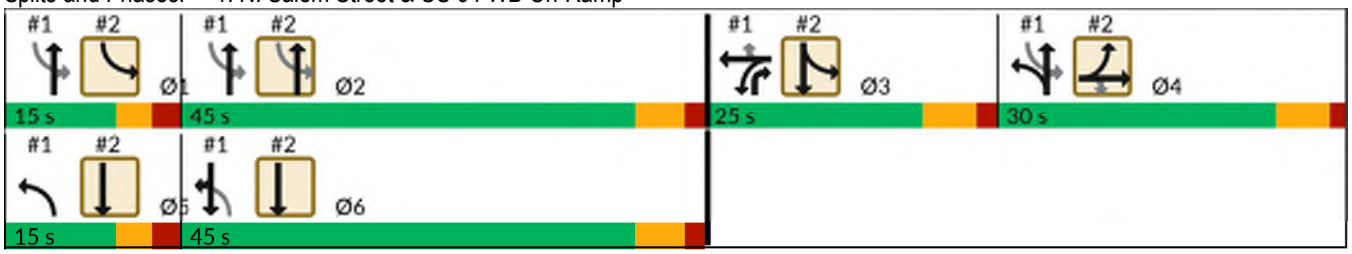
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	217	235	6	244	667	465	23	548	169
Future Volume (vph)	0	0	0	217	235	6	244	667	465	23	548	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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

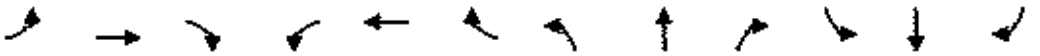
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				D	E	A	A	A	A	A	C	A
Approach Delay (s/veh)					59.7			1.3			23.9	
Approach LOS					E			A			C	
Queue Length 50th (ft)				140	190	0	8	11	0	4	117	0
Queue Length 95th (ft)				#268	#383	0	m10	m12	m0	12	150	48
Internal Link Dist (ft)		1087			934			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





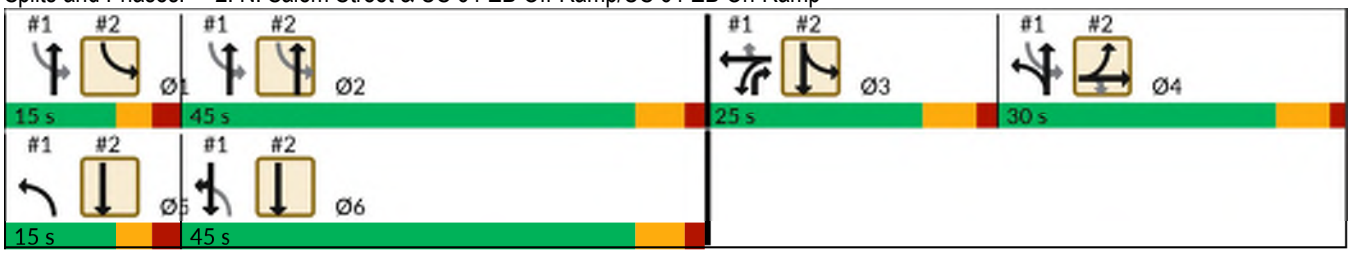
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	672	4	307	0	0	0	0	709	99	177	598	0
Future Volume (vph)	672	4	307	0	0	0	0	709	99	177	598	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	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

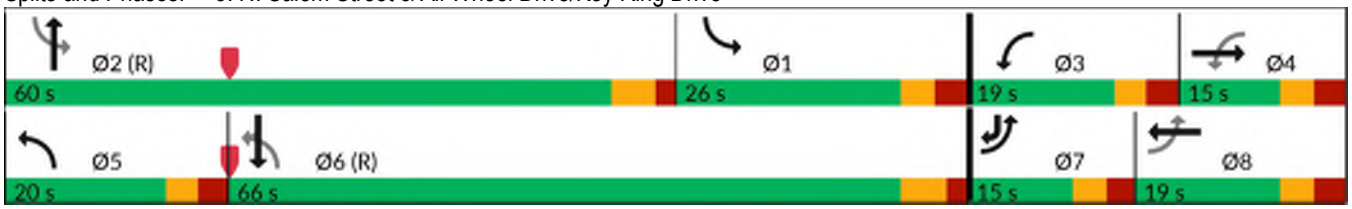


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	16	4	136	13	115	5	712	14	269	675	17
Future Volume (vph)	8	16	4	136	13	115	5	712	14	269	675	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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

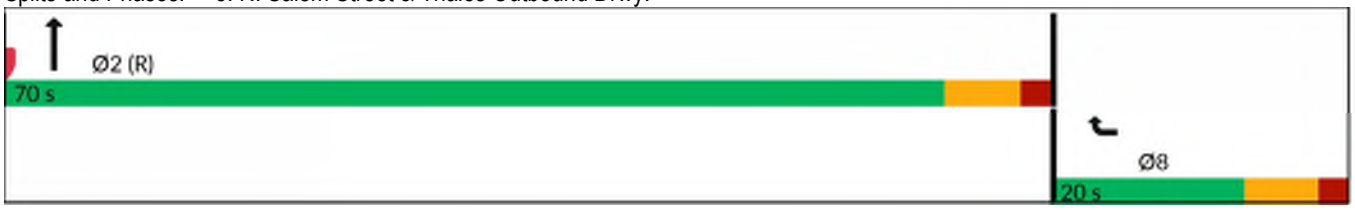
Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.7	1.8	9.8	1.1	2.0

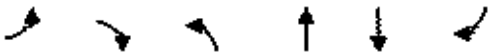
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	237	673	0	0	0
Future Volume (vph)	0	237	673	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (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			

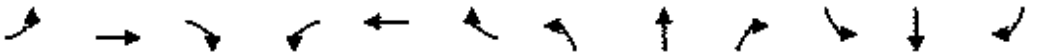
Intersection	
Int Delay, s/veh	0.6

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	-	-



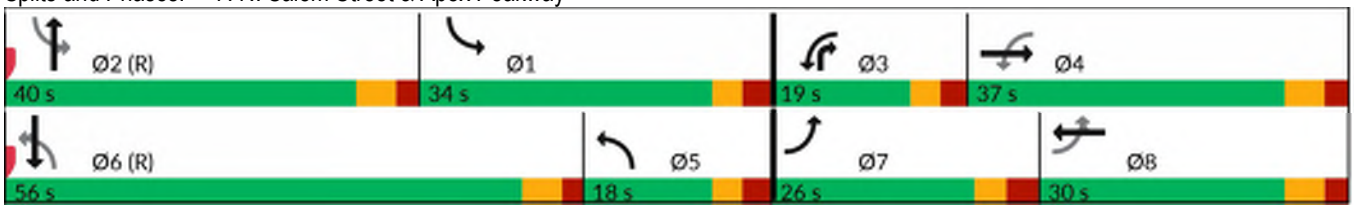
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	226	41	18	142	291	12	293	17	266	309	79
Future Volume (vph)	115	226	41	18	142	291	12	293	17	266	309	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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

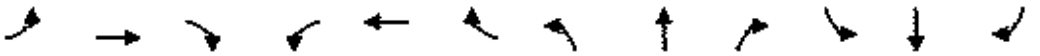
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	B	B	C	A	B	B	A
Approach Delay (s/veh)		51.2			28.3			23.6			14.3	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	79	226		12	121	0	3	160	0	100	118	0
Queue Length 95th (ft)	121	306		30	188	86	14	296	0	175	253	0
Internal Link Dist (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	

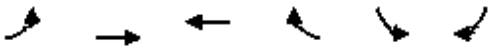
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

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			

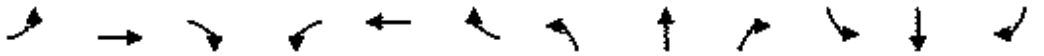
Intersection	
Int Delay, s/veh	2.7

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

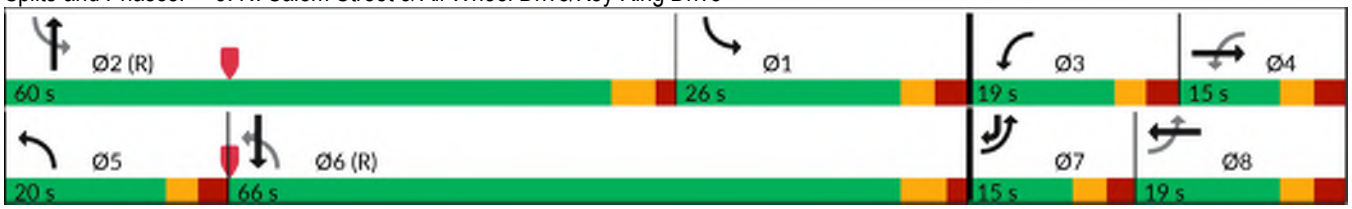


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	18	13	106	17	101	8	765	15	121	797	17
Future Volume (vph)	24	18	13	106	17	101	8	765	15	121	797	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (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

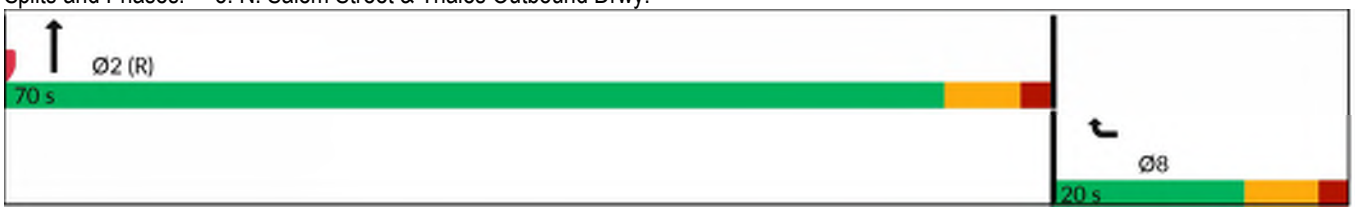
Movement	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0	0.1
Total Del/Veh (s)	0.5	1.6	6.5	1.3	1.3

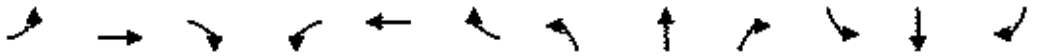
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	216	694	0	0	0
Future Volume (vph)	0	216	694	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (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

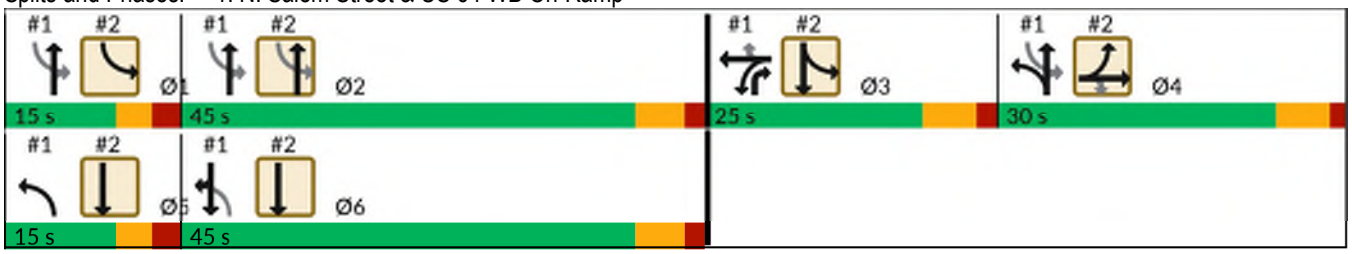
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 112	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay (s/veh): 34.0	Intersection LOS: C
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 15	
Description: 05-1408	

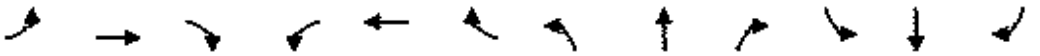
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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





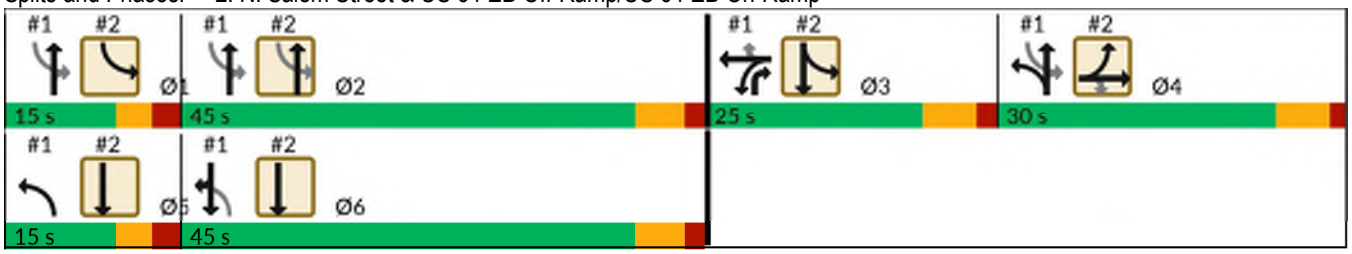
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	569	4	226	0	0	0	0	818	39	188	827	0
Future Volume (vph)	569	4	226	0	0	0	0	818	39	188	827	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	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



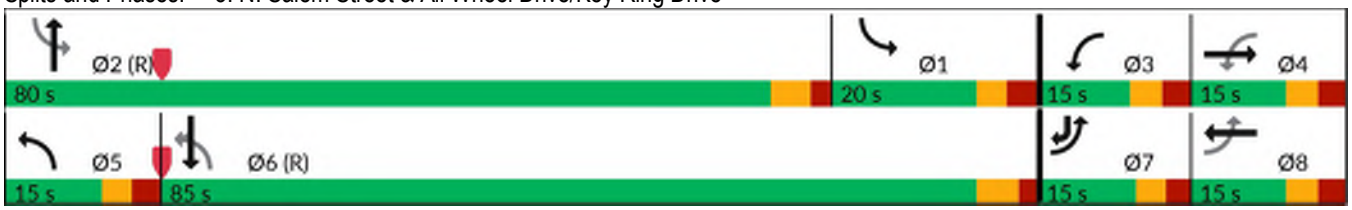
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	13	16	19	16	36	6	813	4	17	1023	5
Future Volume (vph)	15	13	16	19	16	36	6	813	4	17	1023	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	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			

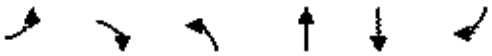
Intersection	
Int Delay, s/veh	0.3

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			

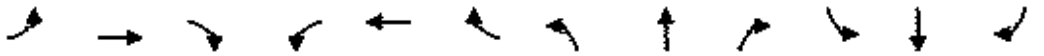
Intersection	
Int Delay, s/veh	0.6

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	-	-



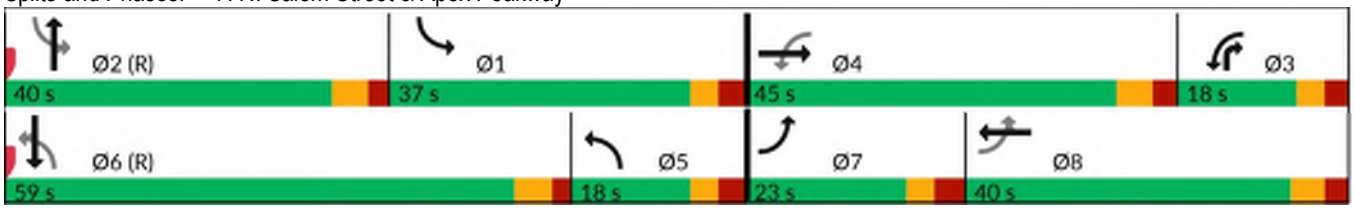
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	291	36	24	265	389	19	332	27	343	494	185
Future Volume (vph)	107	291	36	24	265	389	19	332	27	343	494	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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

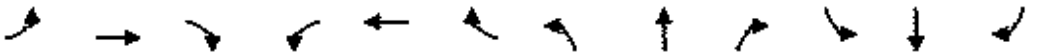
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	A	B	D	A	C	C	A
Approach Delay (s/veh)		56.7			33.4			33.1			22.9	
Approach LOS		E			C			C			C	
Queue Length 50th (ft)	75	299		16	246	0	7	239	0	152	305	13
Queue Length 95th (ft)	111	388		35	327	91	22	404	0	264	526	68
Internal Link 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	

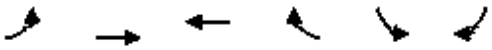
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.0%		ICU Level of Service A	
Analysis Period (min) 15			

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

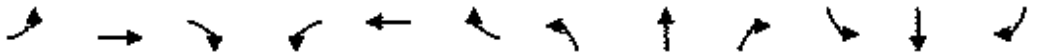
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	4	4	9	6	4
Future Vol, veh/h	4	4	4	9	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	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)



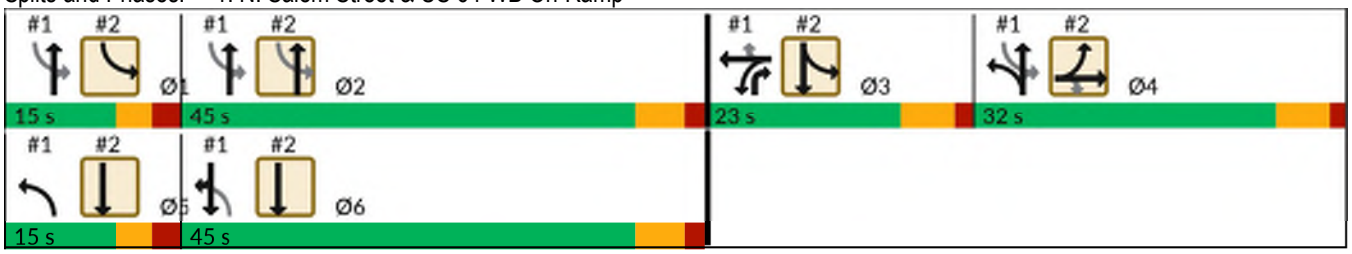
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	267	289	7	300	820	572	28	674	208
Future Volume (vph)	0	0	0	267	289	7	300	820	572	28	674	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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

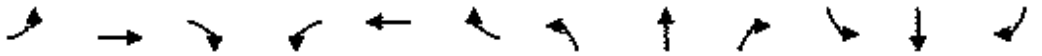
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				F	F	A	A	A	A	A	C	A
Approach Delay (s/veh)					124.3			1.9			23.7	
Approach LOS					F			A			C	
Queue Length 50th (ft)				206	~328	0	23	13	0	5	148	0
Queue Length 95th (ft)				#386	#525	0	m27	m13	m0	13	186	53
Internal Link Dist (ft)		1087			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	

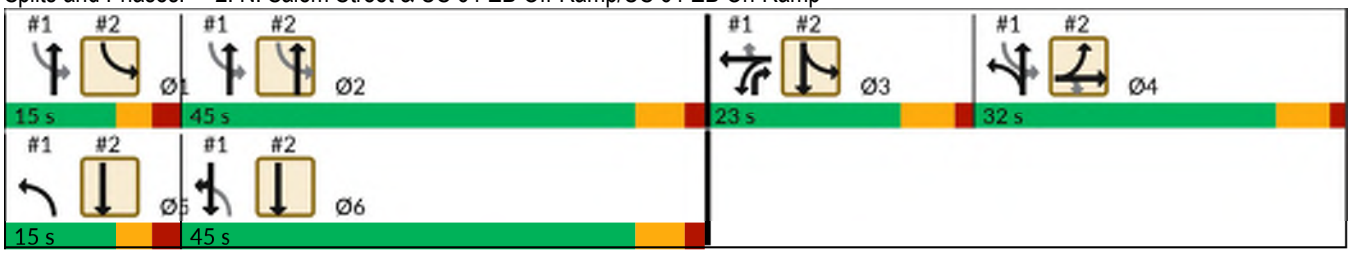
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 111.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay (s/veh): 52.2		Intersection LOS: D	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-1408			

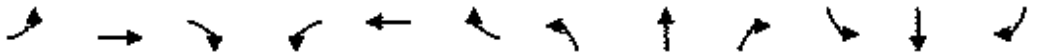
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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





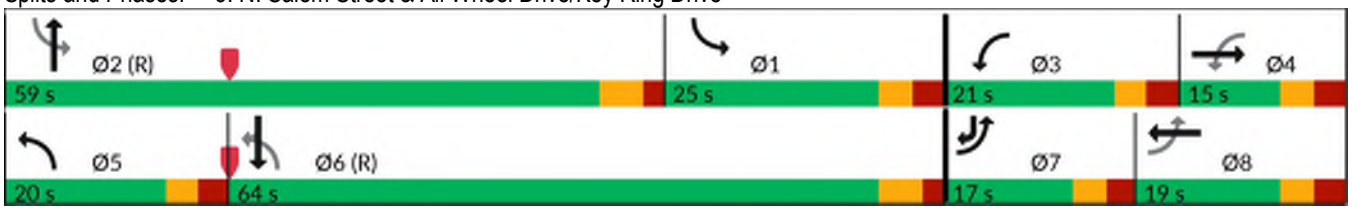
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	16	4	136	13	115	5	876	14	269	830	17
Future Volume (vph)	8	16	4	136	13	115	5	876	14	269	830	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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

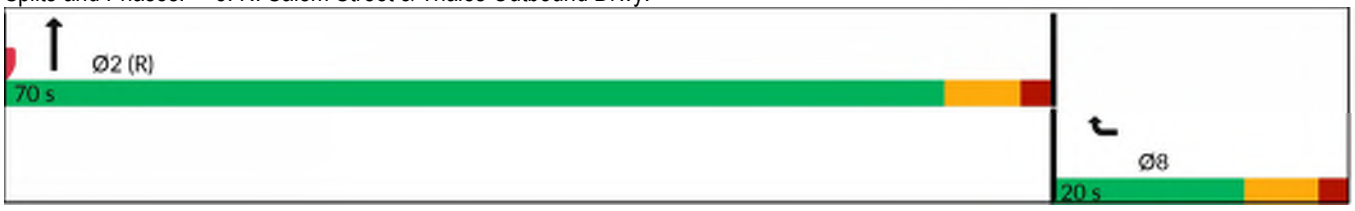
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	237	828	0	0	0
Future Volume (vph)	0	237	828	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (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			

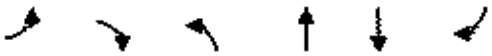
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		F	B			
Approach Delay (s/veh)	101.2		11.3			
Approach LOS	F		B			
Queue Length 50th (ft)		~217	273			
Queue Length 95th (ft)		90	374			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		426	1332			
Starvation Cap Reductn		0	0			
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			

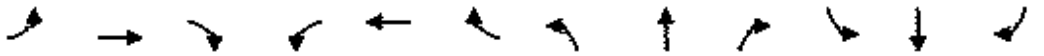
Intersection	
Int Delay, s/veh	0.6

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	-	-

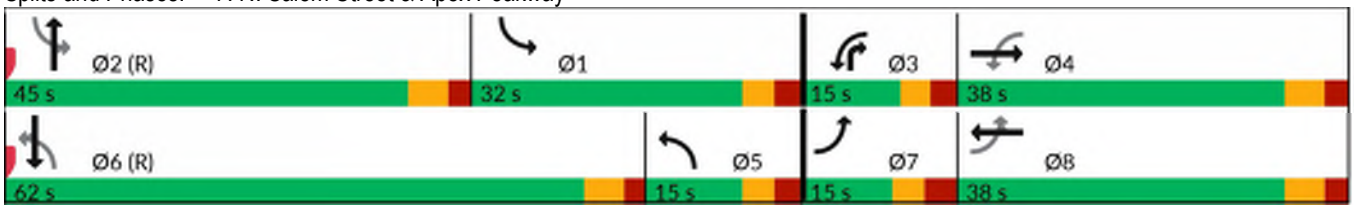


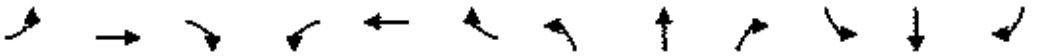
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	278	50	22	175	358	15	360	21	327	380	97
Future Volume (vph)	141	278	50	22	175	358	15	360	21	327	380	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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			

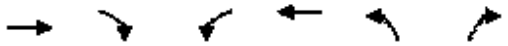
Intersection	
Int Delay, s/veh	2.6

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	

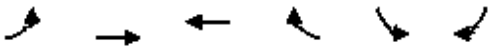
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.2%		ICU Level of Service A	
Analysis Period (min) 15			

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			

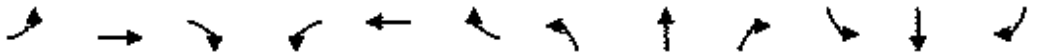
Intersection	
Int Delay, s/veh	2.7

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



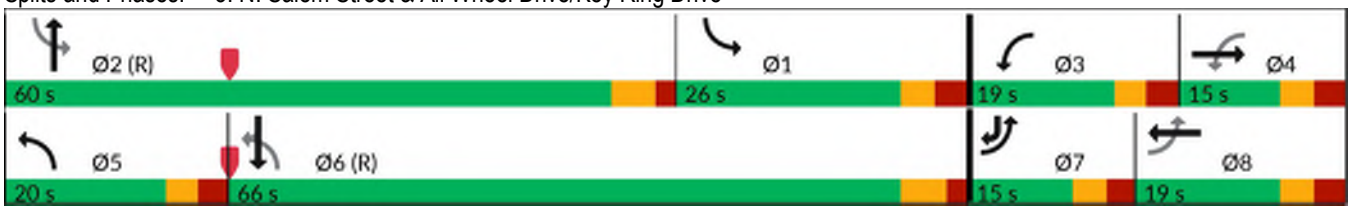
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	18	13	106	17	101	8	941	15	121	980	17
Future Volume (vph)	24	18	13	106	17	101	8	941	15	121	980	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (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

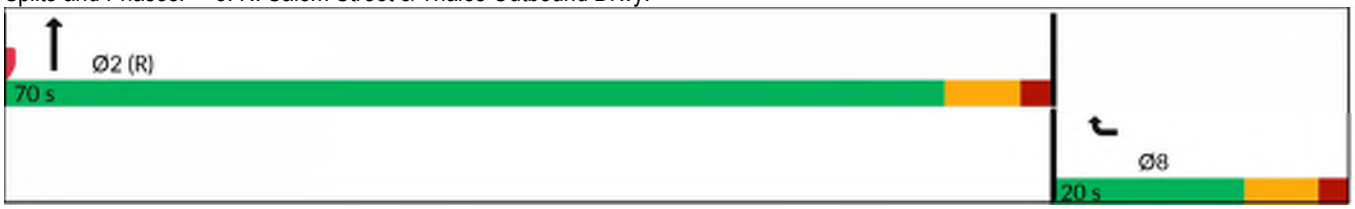
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	216	854	0	0	0
Future Volume (vph)	0	216	854	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (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.



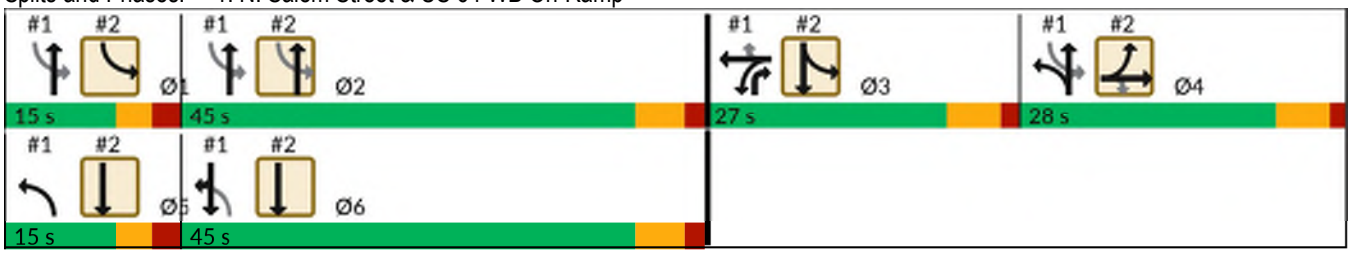
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	317	426	17	234	981	487	34	933	300
Future Volume (vph)	0	0	0	317	426	17	234	981	487	34	933	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (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

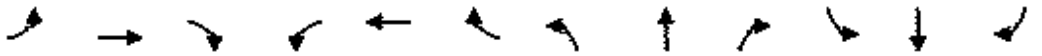
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				E	F	A	B	A	A	A	C	A
Approach Delay (s/veh)					171.9			3.0			25.8	
Approach LOS					F			A			C	
Queue Length 50th (ft)				232	~507	0	40	17	0	7	214	39
Queue Length 95th (ft)				#409	#726	0	m64	m18	m0	18	260	115
Internal Link Dist (ft)		1087			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	

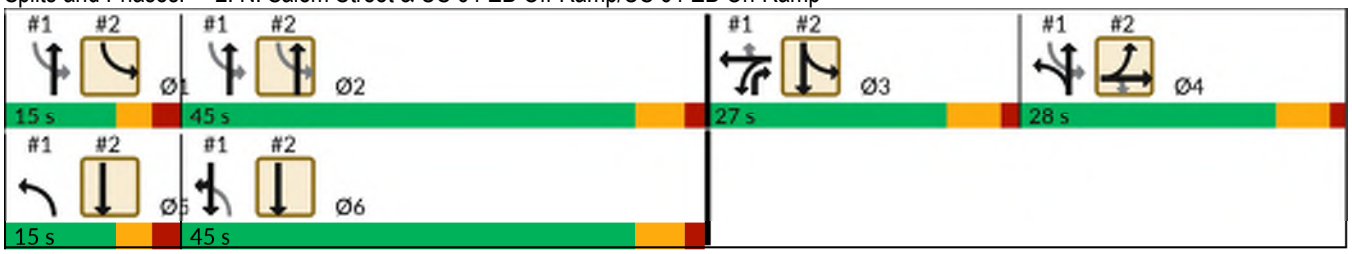
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.41			
Intersection Signal Delay (s/veh): 41.8		Intersection LOS: D	
Intersection Capacity Utilization 65.6%		ICU Level of Service 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



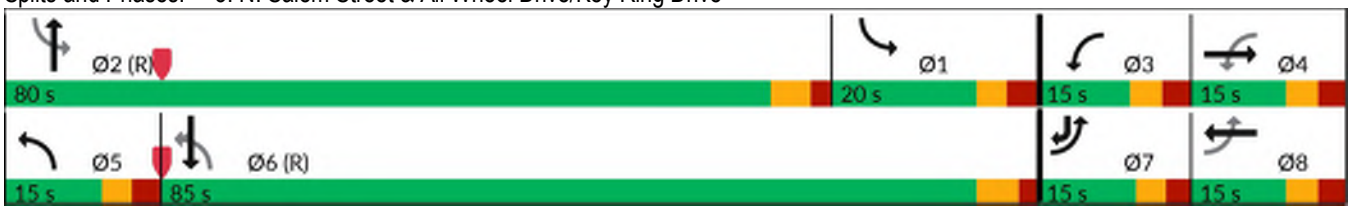
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	13	16	19	16	36	6	1000	4	17	1258	5
Future Volume (vph)	15	13	16	19	16	36	6	1000	4	17	1258	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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			

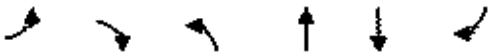
Intersection	
Int Delay, s/veh	0.3

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			

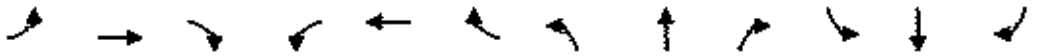
Intersection	
Int Delay, s/veh	0.6

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	-	-



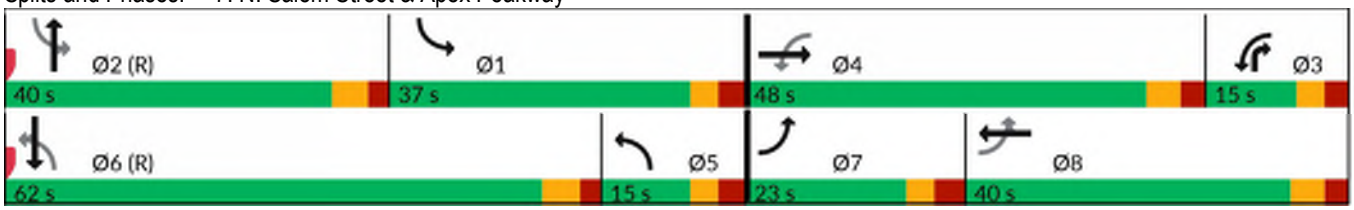
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	358	44	30	326	478	23	408	33	422	608	228
Future Volume (vph)	132	358	44	30	326	478	23	408	33	422	608	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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

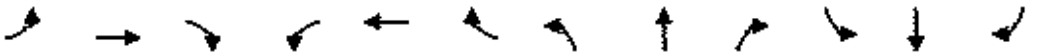
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	A	B	D	A	E	C	A
Approach Delay (s/veh)		56.6			33.7			46.8			37.5	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	89	366		19	301	0	9	353	0	280	468	38
Queue Length 95th (ft)	129	477		39	406	102	27	#582	0	#508	#706	107
Internal 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	

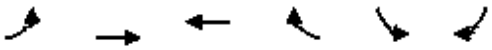
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.0%		ICU Level of Service A	
Analysis Period (min) 15			

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

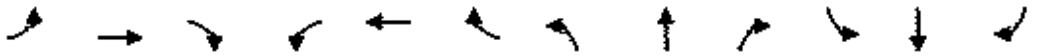
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	4	4	9	6	4
Future Vol, veh/h	4	4	4	9	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	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)



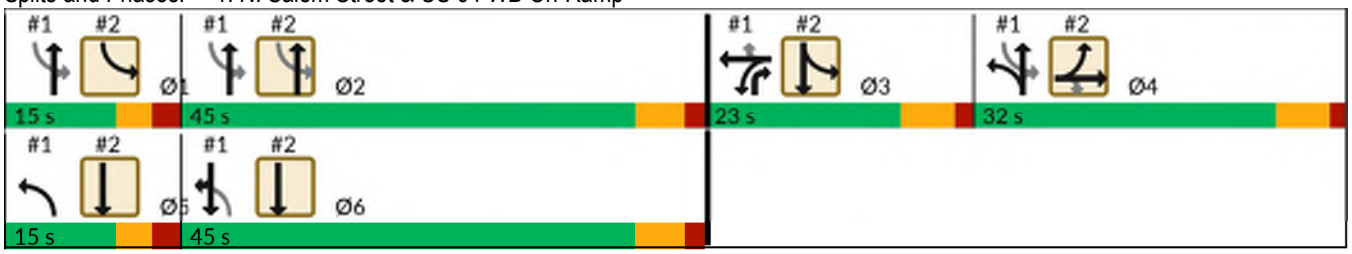
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	284	289	7	331	847	572	28	688	208
Future Volume (vph)	0	0	0	284	289	7	331	847	572	28	688	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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

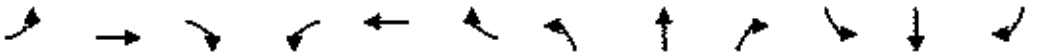
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				F	F	A	A	A	A	A	C	A
Approach Delay (s/veh)					136.1			2.3			23.6	
Approach LOS					F			A			C	
Queue Length 50th (ft)				~234	~332	0	32	14	0	5	152	0
Queue Length 95th (ft)				#417	#528	0	m49	m14	m0	13	190	53
Internal Link Dist (ft)		1087			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





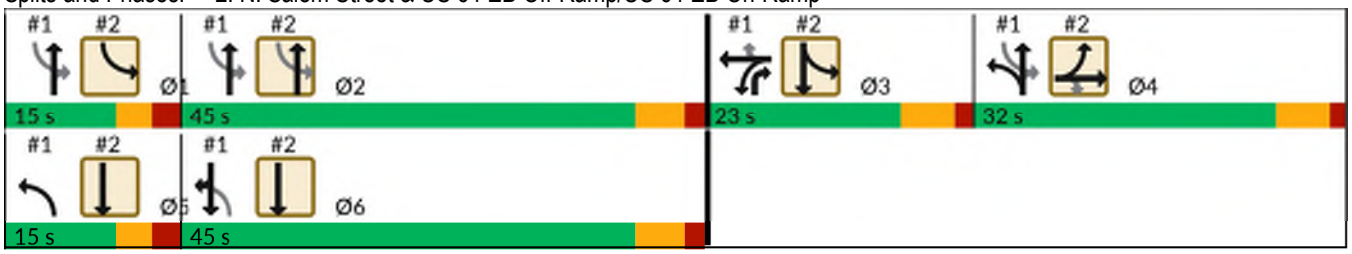
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	826	4	390	0	0	0	0	929	168	218	765	0
Future Volume (vph)	826	4	390	0	0	0	0	929	168	218	765	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	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	

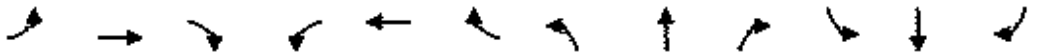
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F	D					D		C	A	
Approach Delay (s/veh)		106.8						35.2			9.0	
Approach LOS		F						D			A	
Queue Length 50th (ft)	~448	~456	185					288		85	55	
Queue Length 95th (ft)	#644	#654	#346					332		m130	m61	
Internal Link Dist (ft)		922			658			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





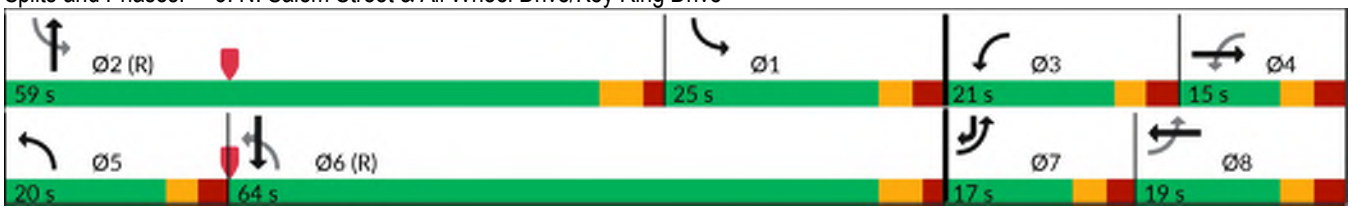
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	16	8	136	13	115	6	876	14	269	861	29
Future Volume (vph)	111	16	8	136	13	115	6	876	14	269	861	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (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

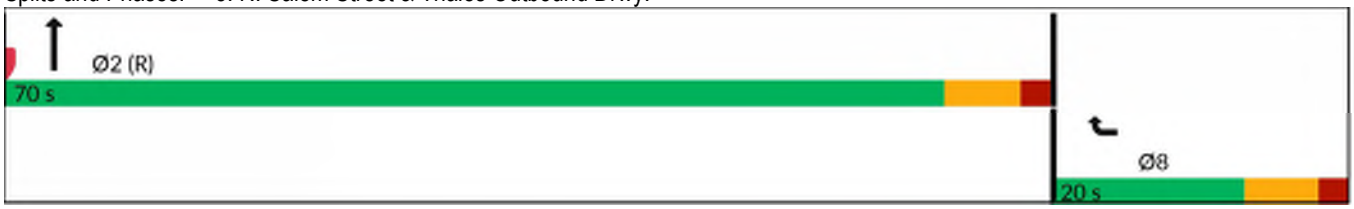
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	237	829	0	0	0
Future Volume (vph)	0	237	829	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (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			

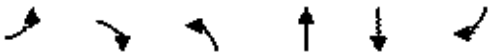
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		F	B			
Approach Delay (s/veh)	101.2		11.3			
Approach LOS	F		B			
Queue Length 50th (ft)		~217	273			
Queue Length 95th (ft)		90	375			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		426	1332			
Starvation Cap Reductn		0	0			
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			

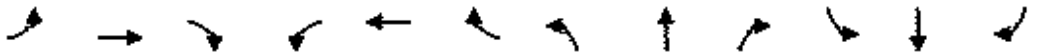
Intersection	
Int Delay, s/veh	0.7

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	-	-



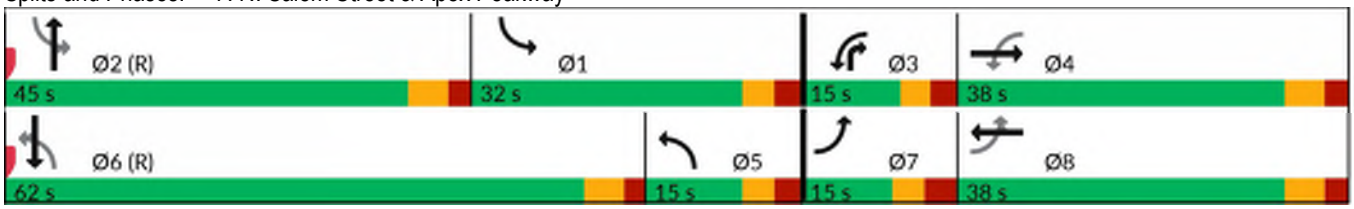
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	278	50	22	175	367	15	371	21	345	405	97
Future Volume (vph)	141	278	50	22	175	367	15	371	21	345	405	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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

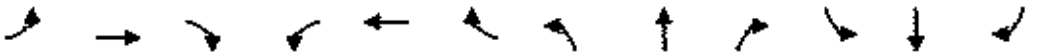
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	A	B	C	A	C	B	A
Approach Delay (s/veh)		51.6			24.8			31.1			22.7	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	93	278		14	147	0	5	257	0	153	185	0
Queue Length 95th (ft)	141	375		33	208	87	17	416	0	244	374	23
Internal Link Dist (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			

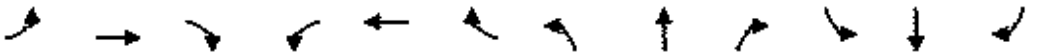
Intersection	
Int Delay, s/veh	3

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	

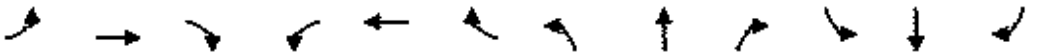
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.4%		ICU Level of Service A	
Analysis Period (min) 15			

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			

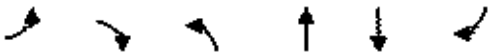
Intersection	
Int Delay, s/veh	6.7

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	-

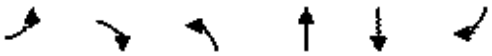
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.63	2.3	8.95	9.45
HCM LOS			A	A

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

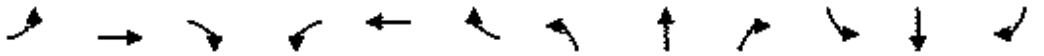
Major/Minor	Minor2		Major2	
Conflicting Flow All	-	866	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.22	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.318	-	-
Pot Cap-1 Maneuver	0	353	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	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

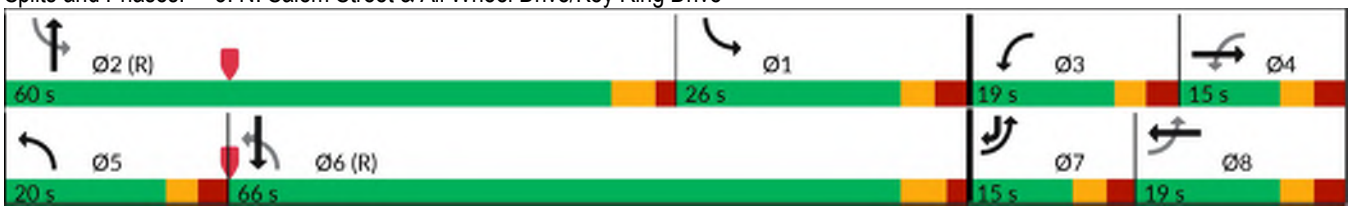
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		D	C		A	C		C	D	A
Approach Delay (s/veh)		49.1			33.8			24.9			35.4	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)	76	23		111	21		5	321		45	~954	0
Queue Length 95th (ft)	124	41		121	22		7	410		53	#1243	5
Internal Link Dist (ft)		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

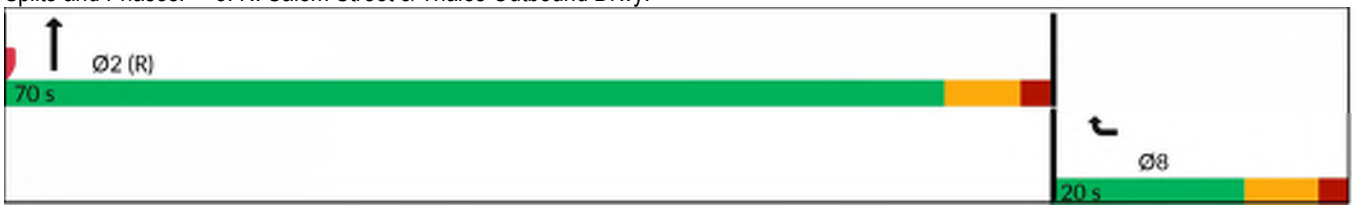
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	216	858	0	0	0
Future Volume (vph)	0	216	858	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (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			

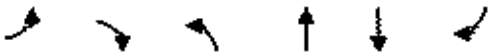
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS		F	B			
Approach Delay (s/veh)	99.2		15.5			
Approach LOS	F		B			
Queue Length 50th (ft)		~206	365			
Queue Length 95th (ft)		97	404			
Internal Link Dist (ft)	392		99			11
Turn Bay Length (ft)						
Base Capacity (vph)		394	1319			
Starvation Cap Reductn		0	0			
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.

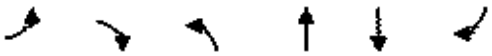
Splits and Phases: 5: N. Salem Street & Thales Outbound Drwy.





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

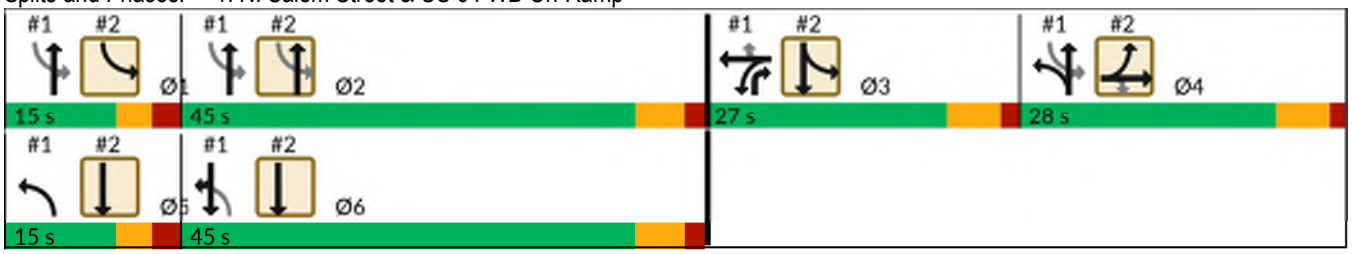
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	355	426	17	254	1003	487	34	963	300
Future Volume (vph)	0	0	0	355	426	17	254	1003	487	34	963	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (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

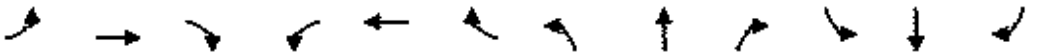
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS				F	F	A	B	A	A	A	C	B
Approach Delay (s/veh)					181.9			3.5			26.3	
Approach LOS					F			A			C	
Queue Length 50th (ft)				~283	~513	0	55	18	0	7	223	43
Queue Length 95th (ft)				#476	#734	0	m82	m18	m0	18	269	120
Internal Link Dist (ft)		1087			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	

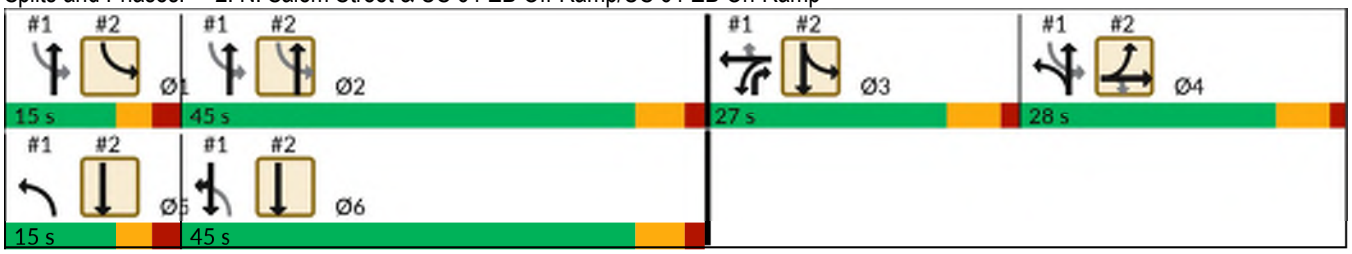
Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.42			
Intersection Signal Delay (s/veh): 41.9		Intersection LOS: D	
Intersection Capacity Utilization 67.1%		ICU Level of Service 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

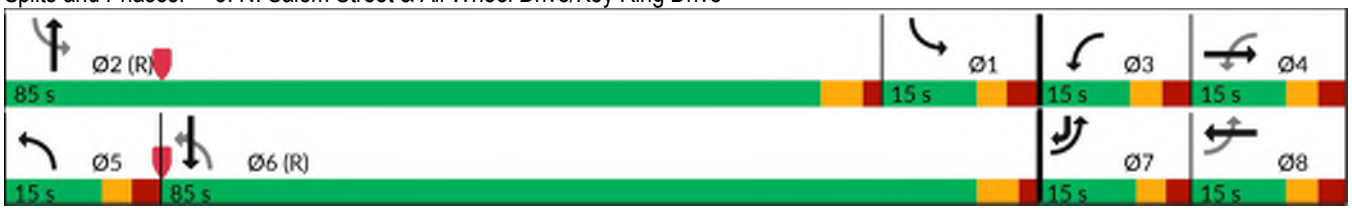
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	C		D	C		A	A		A	E	A
Approach Delay (s/veh)		48.1			36.7			9.4			69.2	
Approach LOS		D			D			A			E	
Queue Length 50th (ft)	72	10		14	14		2	151		4	~1069	0
Queue Length 95th (ft)	124	49		38	58		7	299		11	#1713	2
Internal Link Dist (ft)		426			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			

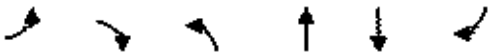
Intersection	
Int Delay, s/veh	0.3

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			

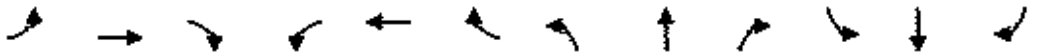
Intersection	
Int Delay, s/veh	0.7

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	-	-



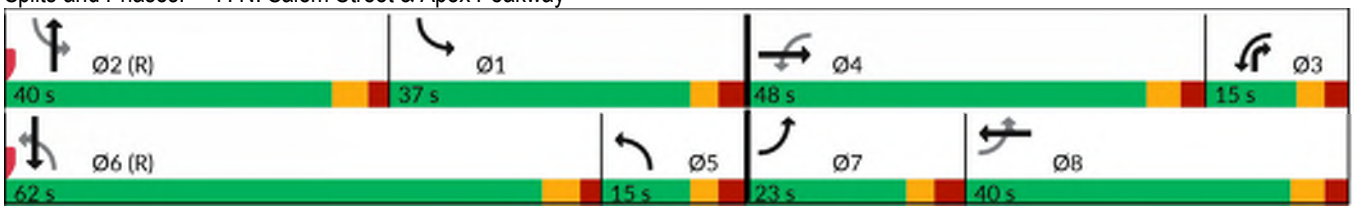
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	358	44	30	326	497	23	433	33	436	626	228
Future Volume (vph)	132	358	44	30	326	497	23	433	33	436	626	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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

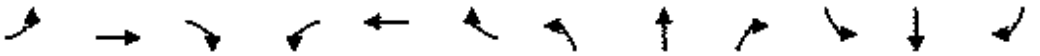
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		C	E	B	B	D	A	E	C	A
Approach Delay (s/veh)		56.7			34.1			49.4			42.0	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	89	366		19	301	14	9	381	0	327	490	38
Queue Length 95th (ft)	129	477		39	406	129	27	#635	0	#573	#771	107
Internal 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			

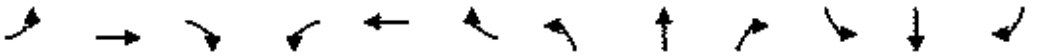
Intersection	
Int Delay, s/veh	2.1

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	

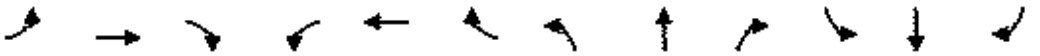
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.5%		ICU Level of Service A	
Analysis Period (min) 15			

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			

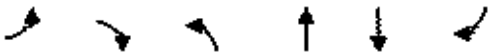
Intersection	
Int Delay, s/veh	7

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

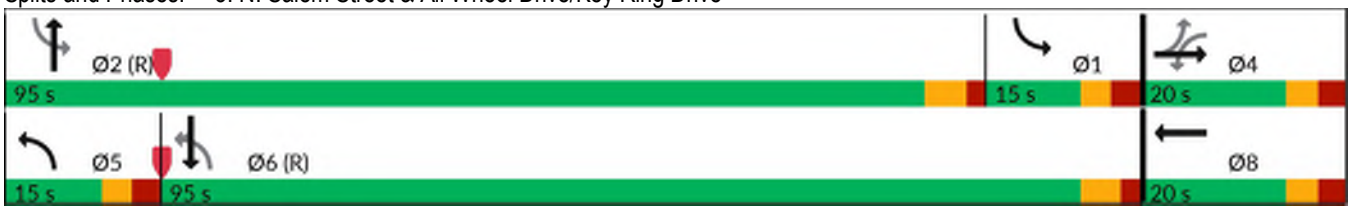
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	13	24	19	16	36	9	995	4	17	1323	35
Future Volume (vph)	89	13	24	19	16	36	9	995	4	17	1323	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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: _____

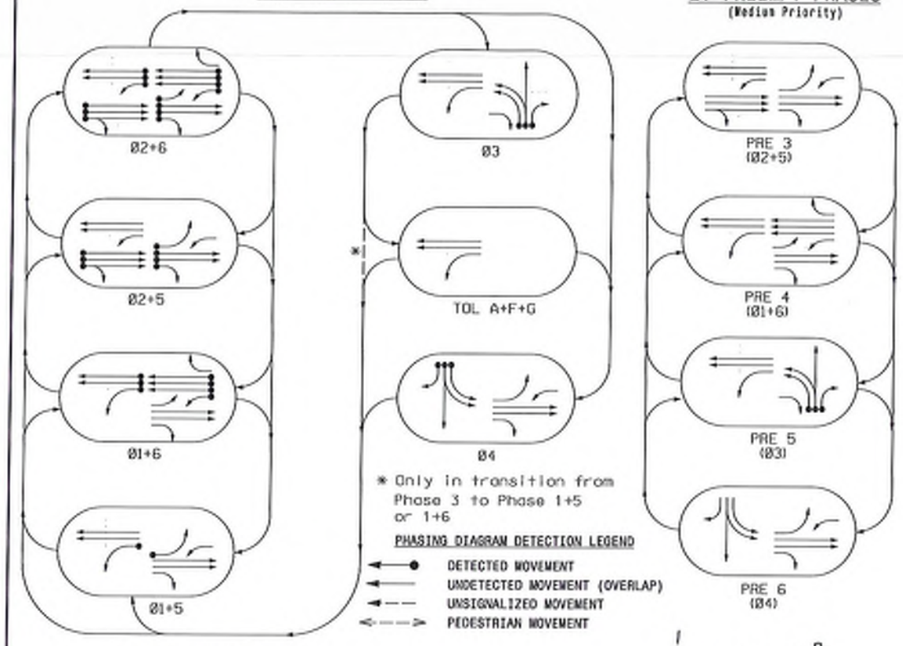
Timing Page: _____

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	-	-	-	-	-

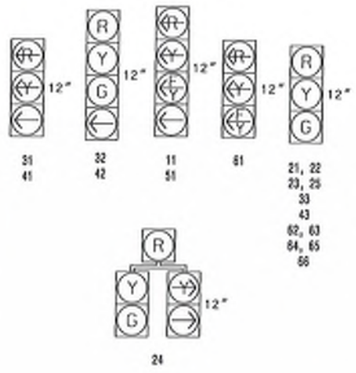
6 Phase
Fully Actuated with/
Emergency Vehicle Preemption
(Salem Street CLS)

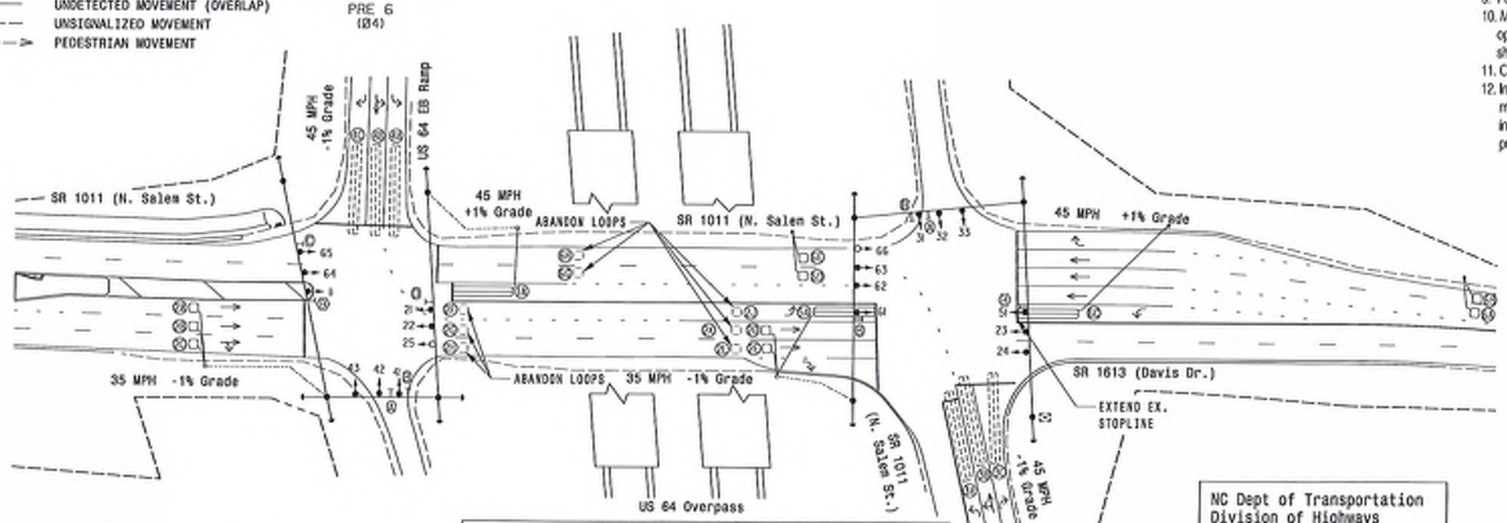
NOTES

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
T	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 for phase during normal operation
** 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

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
4/11/2018
SIGNATURE DATE
SIG. INVENTORY NO. 05-1408

PLANS PREPARED IN THE OFFICE OF:
Kimley»Horn
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919)677-2000

Prepared For:
750 Greenfield Pkwy, Garner, NC 27529

KIMBALL_TYPE4_SIGNALS-01205T001 Salem Street Signal.dgn 4/10/2018 7:25:35 AM susan.pennington

Intersection: Ave Witsea Dr

Signal Inventory #:

Collected by:

Date:

AM Peak Hour

Coordinated:

Plan #: 1/1

Duration: 7am-4pm

Cycle Length: 120

Offset: 114

Phase Seq. Page: 2

Laging Phases: 1

Timing Page: 1

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:

Plan #: 2/1

Duration: 4-7pm

Cycle Length: 130

Offset: 116

Phase Seq. Page: 2

Laging Phases: 1

Timing Page: 1

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								

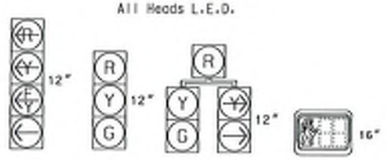
Notes:

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

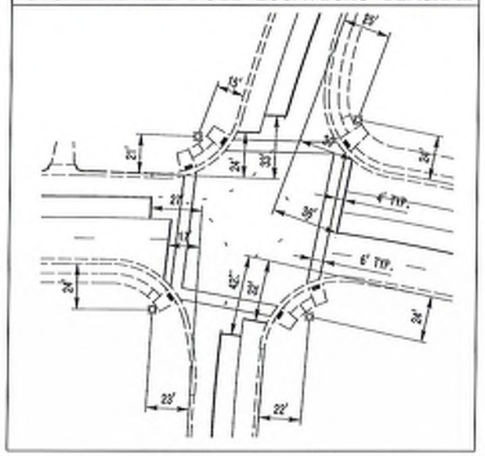
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15*	-	Y
					6**	Y	Y	-	-	-	-	Y
2A/S29	6X6	70	6	Y	2	Y	Y	-	-	-	Y	Y
2B/S30	6X6	70	6	Y	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

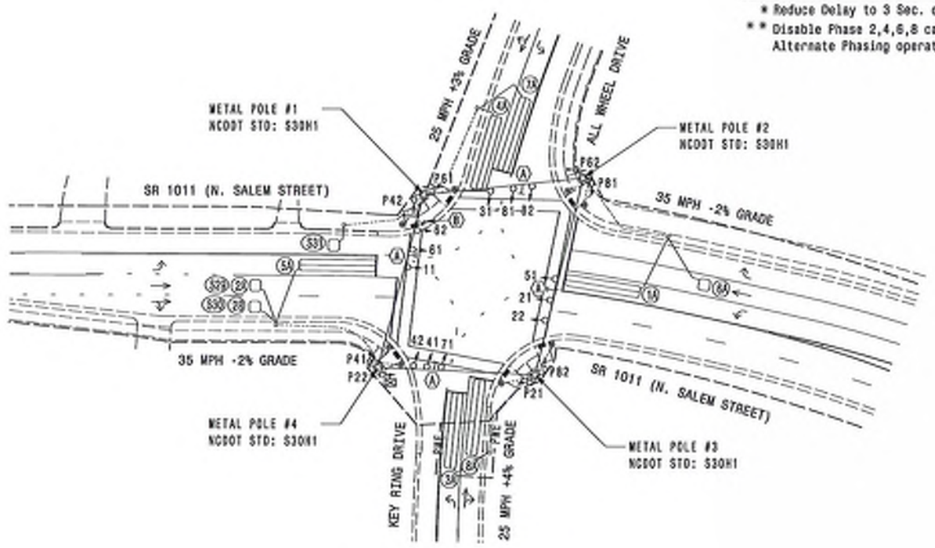
* Reduce Delay to 3 Sec. during Alternate Phasing operation.
** Disable Phase 2,4,6,8 calls for loops 1A,3A,5A,7A during Alternate Phasing operation.

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





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 *	35	60	35	30	20	60	20	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

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	
A	Street Sign (D3-1)	A
R3-5R	Right Arrow "ONLY" Sign (R3-5R)	R3-5R

NC Dept of Transportation
Division of Highways
Final Drawing Date: 4/19/2018
Traffic Engineering Branch
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:
750 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: 1"=40' (0 40')

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 032607 ENGINEER STACIE L. PHILLIPS

SIGNATURE DATE: 4/11/2018

SIG. INVENTORY NO. 05-1989

4/10/2018 7:25:24 AM austin.pennington K:\RAL_TRTA_STDNLS\05\36249\03\Salem Street Signal\s4 - Signal Design\01 05-1989_2011.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:

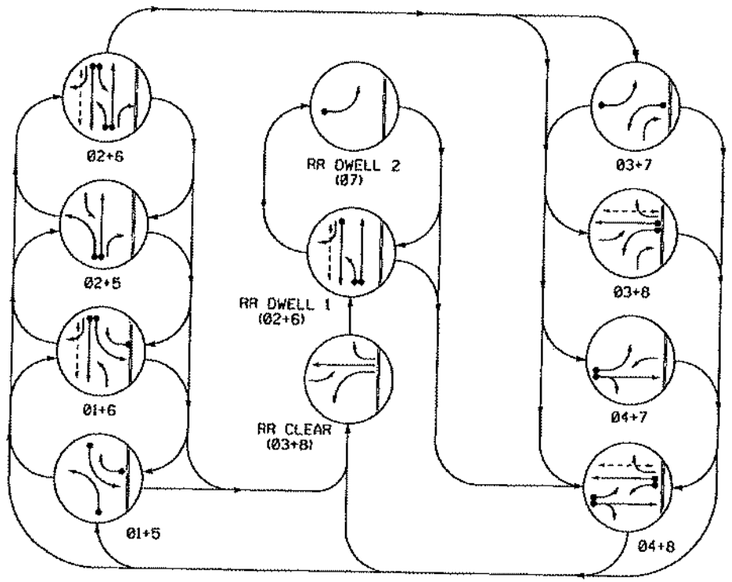
Phase	1	2	3	4	5	6	7	8
Splits/Max	37	40	18	45	18	59	23	40
Min. Green								
Yellow								
Red								
Veh. Ext.								
Walk								
Ped. Clear								
Time B4 Reduce								
Time 2 Reduce								
Min. Gap								
Seconds/Actuation								

Notes:

PROJECT REFERENCE NO.	SHEET NO.
Apex Peakway	Sig. 1

8 Phase w/Railroad Preemption Fully Acutated (Apex CBD Closed Loop System)

PHASING DIAGRAM

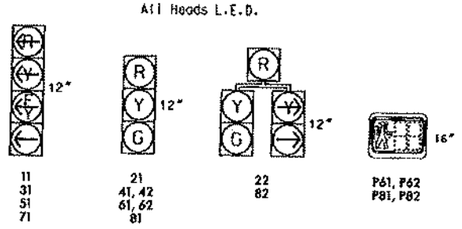


PHASING DIAGRAM DETECTION LEGEND

- 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	P81, P62 P81, P82

TABLE OF OPERATION

SIGNAL FACE	PHASE											
	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	R	G	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	*

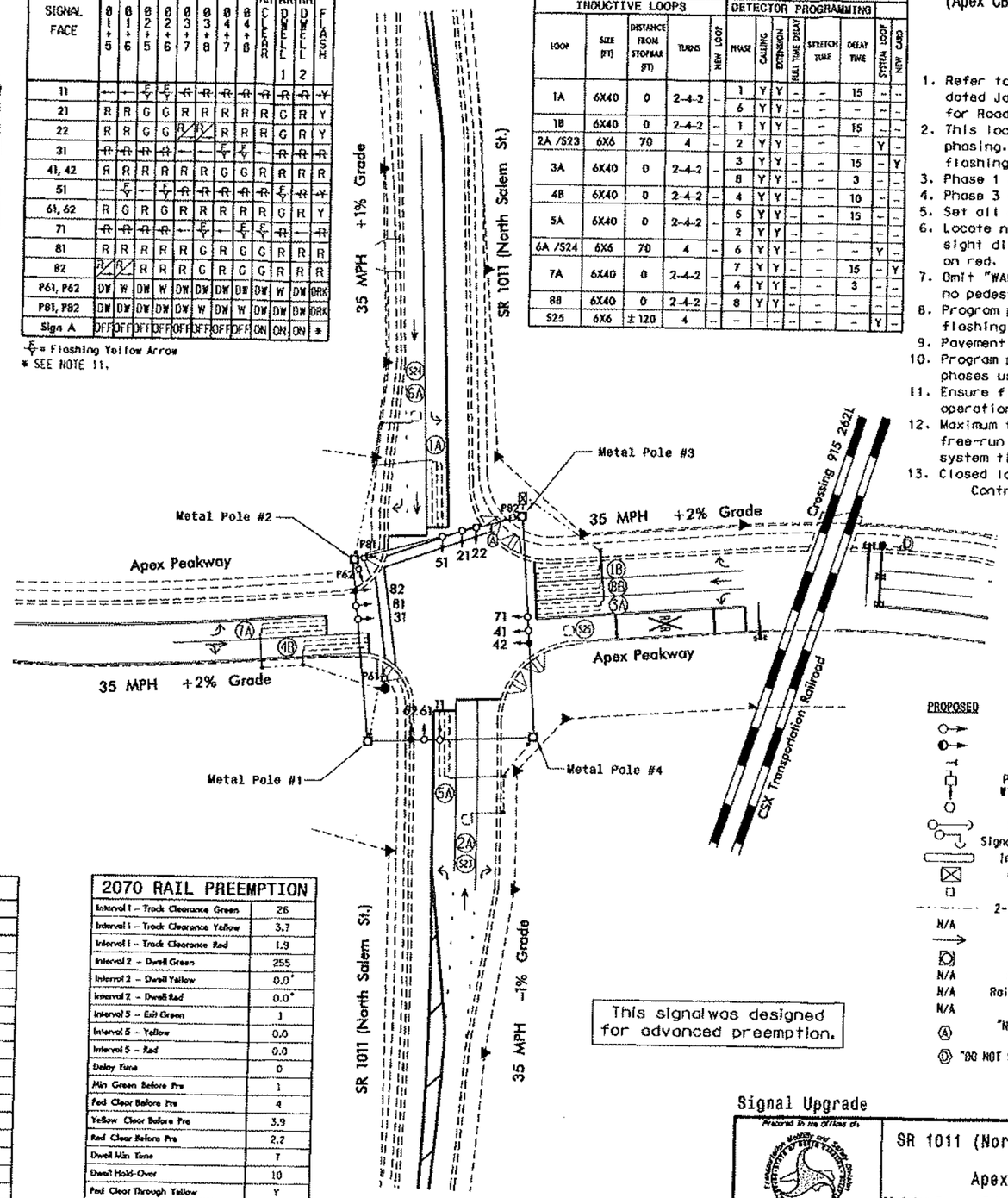
F = Flashing Yellow Arrow
* SEE NOTE 11.

2070L LOOP & DETECTOR INSTALLATION

LOOP	INDUCTIVE LOOPS: 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
					8	Y	Y	–	–	3	–	–
4B	6X40	0	2-4-2	–	4	Y	Y	–	–	10	–	–
5A	6X40	0	2-4-2	–	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 3 – Exit Green	1
Interval 3 – Yellow	0.0
Interval 3 – 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	A, E, P

* Time defaults to time used for phase during normal operation.

Signal Upgrade

Prepared in the Offices of:
Transportation Mobility and Safety Division
Traffic Engineering Branch
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 1/15/12

SIG. INVENTORY NO. AS-2007

T:\Traffic Projects\Apex\Peakway\Signal\Sig.10 Turn Invstig_Completed\2347_sig-dsn_20120725.dgn
7/25/2012 15:36
Quentin Watkins

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 de 2026

https://www.apexnc.org/DocumentCenter/View/56045/PBPN-25CZ24?bidId=

Draw | 1 of 2 | Edit with Acrobat

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, 1303, 1401, 1403, 1405, 1408 N. Salem St/0 Charlton Downs Ln
Acreage: 152.35 acres
Property Identification Numbers (PINs): 0742360251, 0742363795, 0742360783, 0742360306, 0742352609, 0742362719, 0742364387, 0742362433, 0742368597, 0742363169, 0742359857, 0742353848, 0742360373, 0742369479, 0742363278, 0742367112
Current 2045 Land Use Map Designation: Mixed Use: High Density Residential/Office Employment/Commercial Services (4.52 ± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (27.38 ± 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 #15/2012)
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 16, 2026, 6:30 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.hearings@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 final 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, property and neighborhood associations within 100 feet of the proposed conditional zoning (see item) were sent first 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.org/Apex. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/9279. 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/56045

Dianne F. Khin, AICP
Planning Director

Published Dates: August 28 – September 04, 2026

11:03 AM
8/28/2026

https://www.apexnc.org/DocumentCenter/View/56045/PBPN-25CZ24?bidId=

Draw | 2 of 2 | Edit with Acrobat

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, 1303, 1401, 1403, 1405, 1408 N. Salem Street, 0 Charlton Downs Lane
Superficie: 152.35 acres
Números de identificación de las propiedades: 0742360251, 0742363795, 0742360783, 0742360306, 0742352609, 0742362719, 0742364387, 0742362433, 0742368597, 0742363169, 0742359857, 0742353848, 0742360373, 0742369479, 0742363278, 0742367112
Designación actual en el Mapa de Uso Territorial para 2045: Mixed Use: High Density Residential/Office Employment/Commercial Services (4.52± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (27.38 ± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (24.03 ± 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 (4.52 ± acres) and Mixed Use: Medium Density Residential/Office Employment/Commercial Services (27.38 ± 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 #15/2012)
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: 16 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.hearings@apexnc.org, o presentarla a la secretaria 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, requisitos 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.org/Apex. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/9279. 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/56045

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 28 de agosto – 04 de septiembre de 2026

11:02 AM
8/28/2026

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
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 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 de 2026

Legal Notice of Public Hearings / AGENDA

https://www.apexnc.org/DocumentCenter/View/56331/25CZ24-TC-Public-Notice-combo?bidId=

Maps/GIS | Team Apex Landin... | SharePoint Folders | Planning Tools | GeoCivix Home | Unified Developm... | Apex Pages | ECU | Documents - One... | Training | Employee Olympics | ECU PiratePort

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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 Murana, 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, 0742368387, 0742362432, 0742368697, 0742363169, 0742358857, 0742353848, 0742365731, 0742369479, 0742360278, 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/townofapexnc

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/cmaps. 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

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=

Maps/GIS | Team Apex Landin... | SharePoint Folders | Planning Tools | GeoCivix Home | Unified Developm... | Apex Pages | ECU | Documents - One... | Training | Employee Olympics | ECU PiratePort

Draw | 2 of 2 | Edit with Acrobat

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELEFONO 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 Murana, Merit Group, LLC
Dirección de las propiedades: 0, 1201, 1205, 1207, 1301, 1303, 1401, 1403, 1405, 1409 N. Salem St; 0 Charlion Downs Ln
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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/townofapexnc.

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/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

Search | 75°F Partly sunny | 8:33 AM 9/18/2026

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 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

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
Tribayne 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.

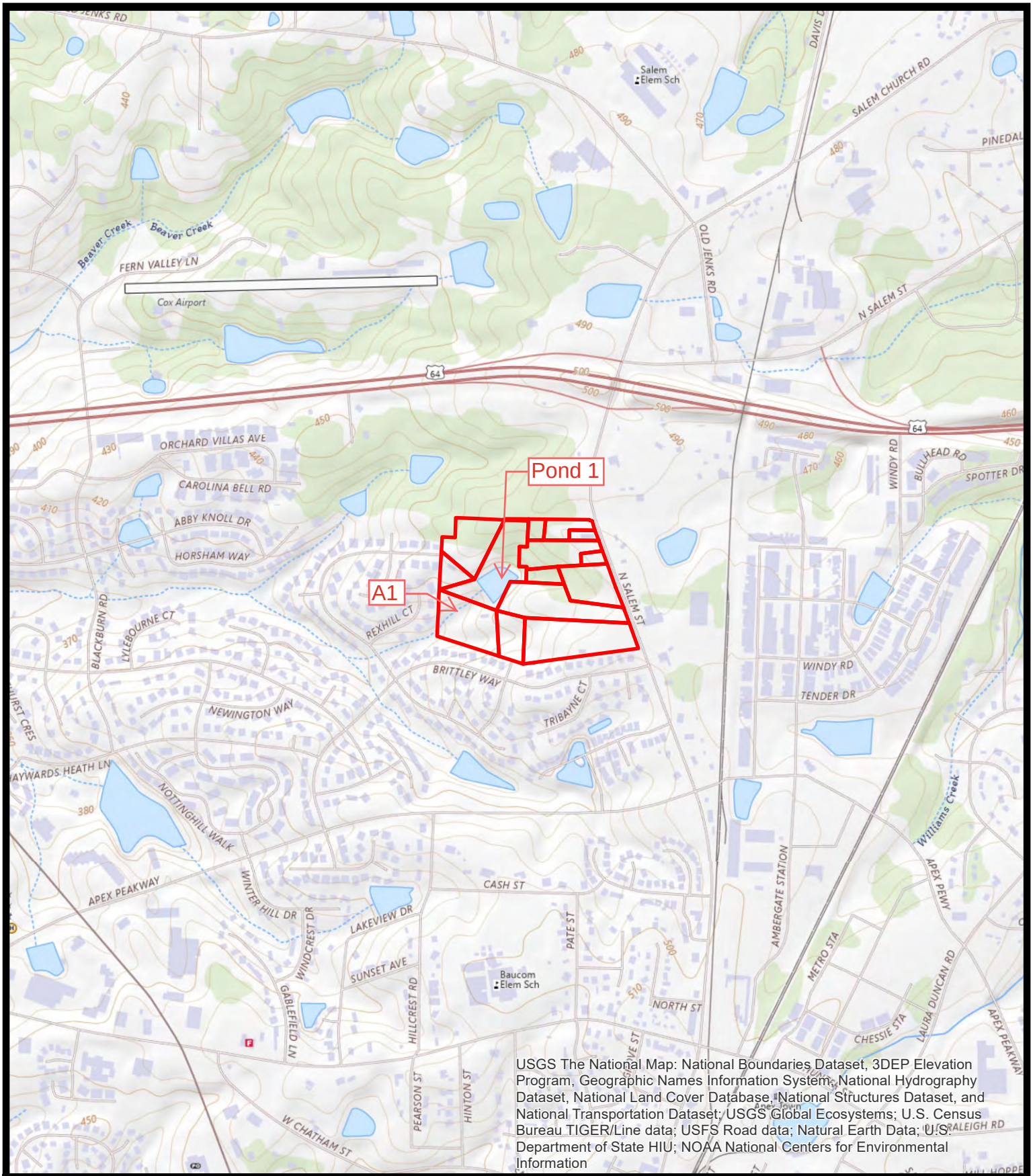
-Reid, Rebekah, and Dale Suiter. "North Carolina's Federally Threatened, Endangered, and at-Risk Plant Species: U.S. Fish & Wildlife Service." *FWS.Gov*, USFWS, 21 Mar. 2022, www.fws.gov/story/2022-03/north-carolinas-federally-threatened-endangered-and-riskplantspecies.

-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.



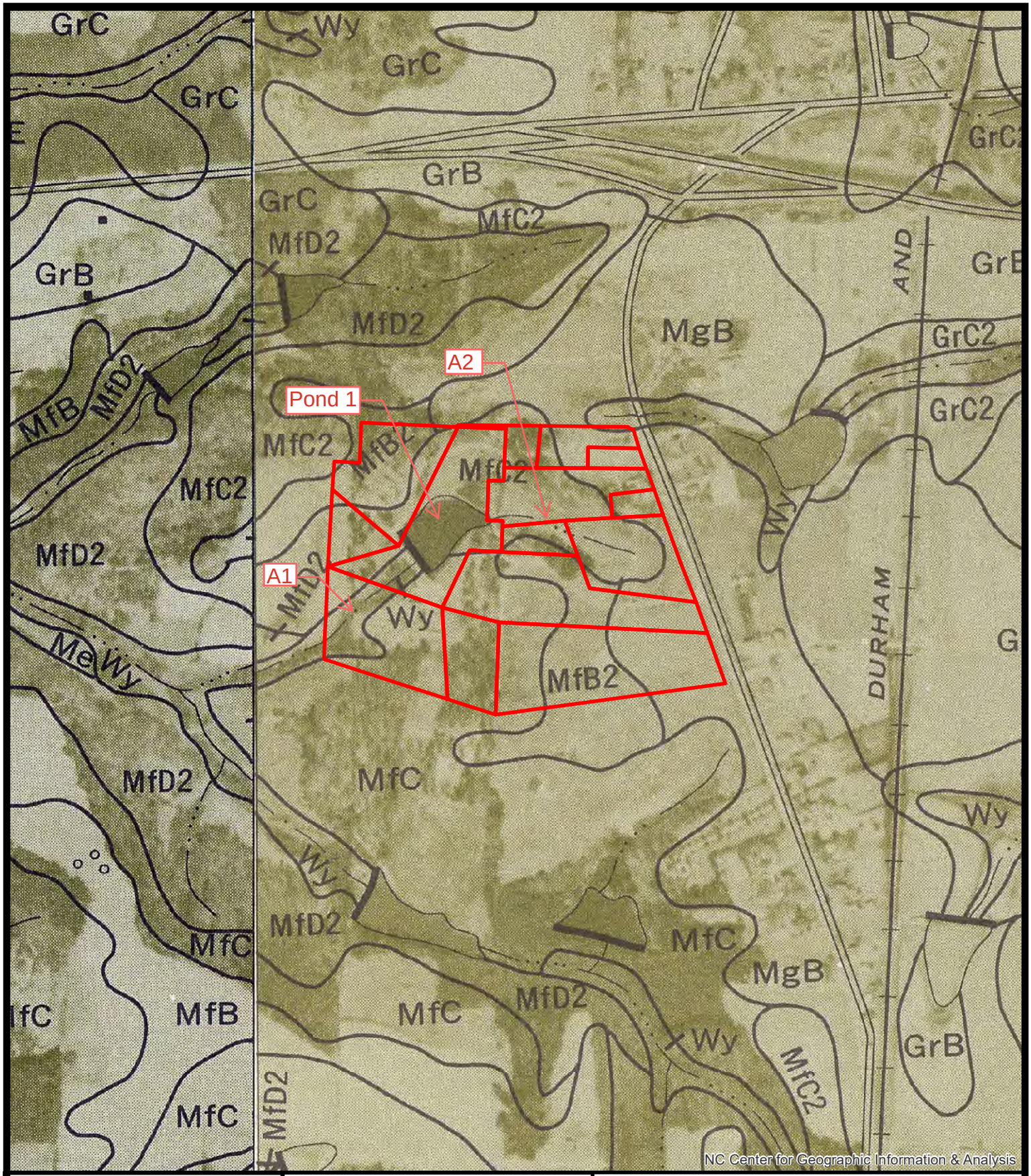
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S. Department of State HIU; NOAA National Centers for Environmental Information

Project Number: 13759.W8	**Map Title:** USGS Map 1301 N. Salem St Assemblage, Apex, NC
Project Manager: MM	
Scale: 1" = 1000'	
Date: 01/12/2026	**Source:** ESRI USGS National Map

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) 846-9467
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 County Soil Survey Sheets 65 & 66**

0 500 1,000

Feet

N

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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 Map
Date: 01/12/2026	

0 500 1,000
Feet

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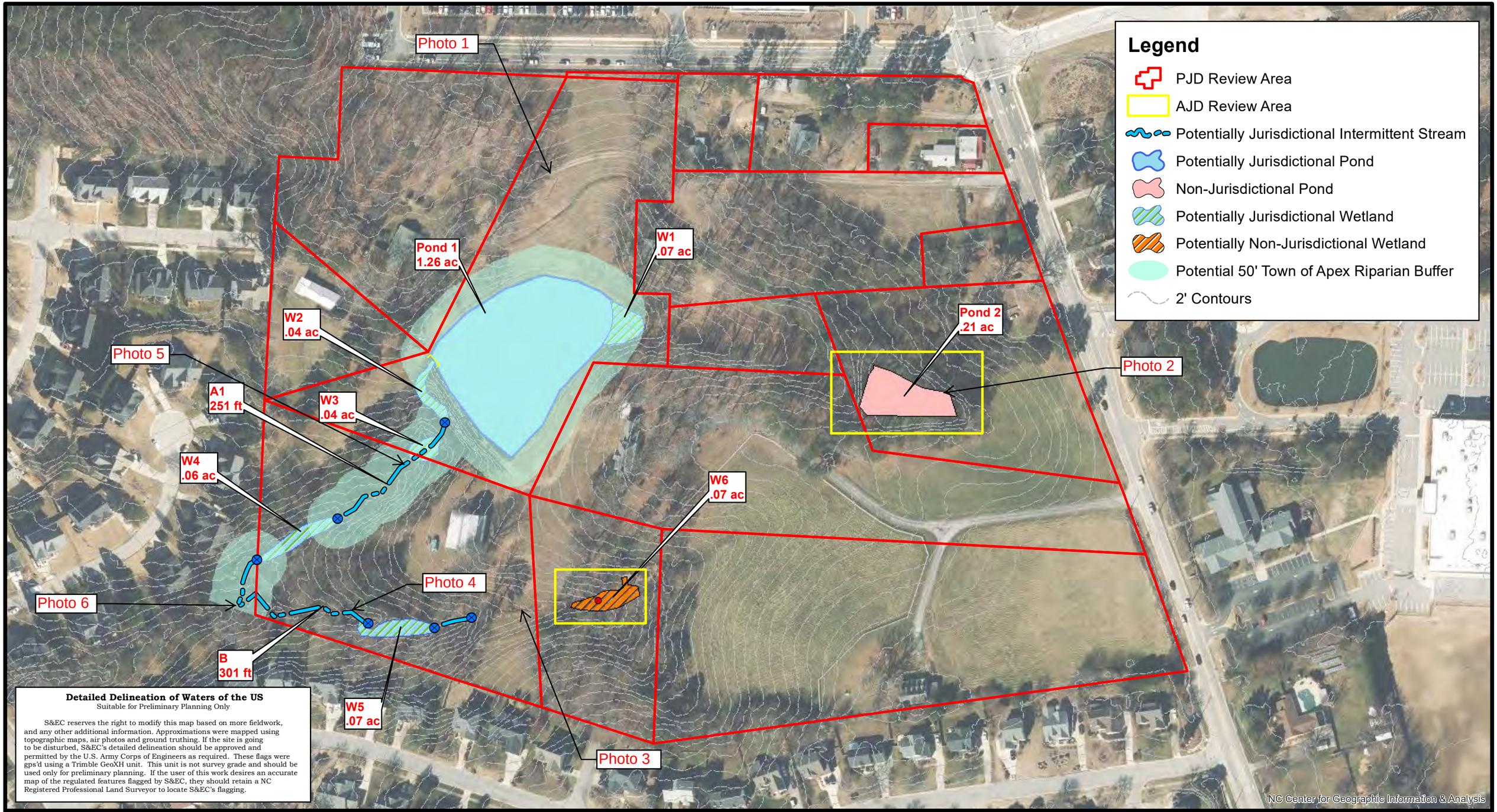
S&EC Soil & Environmental Consultants, Inc.



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
01/12/2026	0 150 300 600 Feet

Aerial Photo Map

1301 N. Salem Rd Assemblage,
Apex, NC

Source: Aerials from NC One Maps

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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

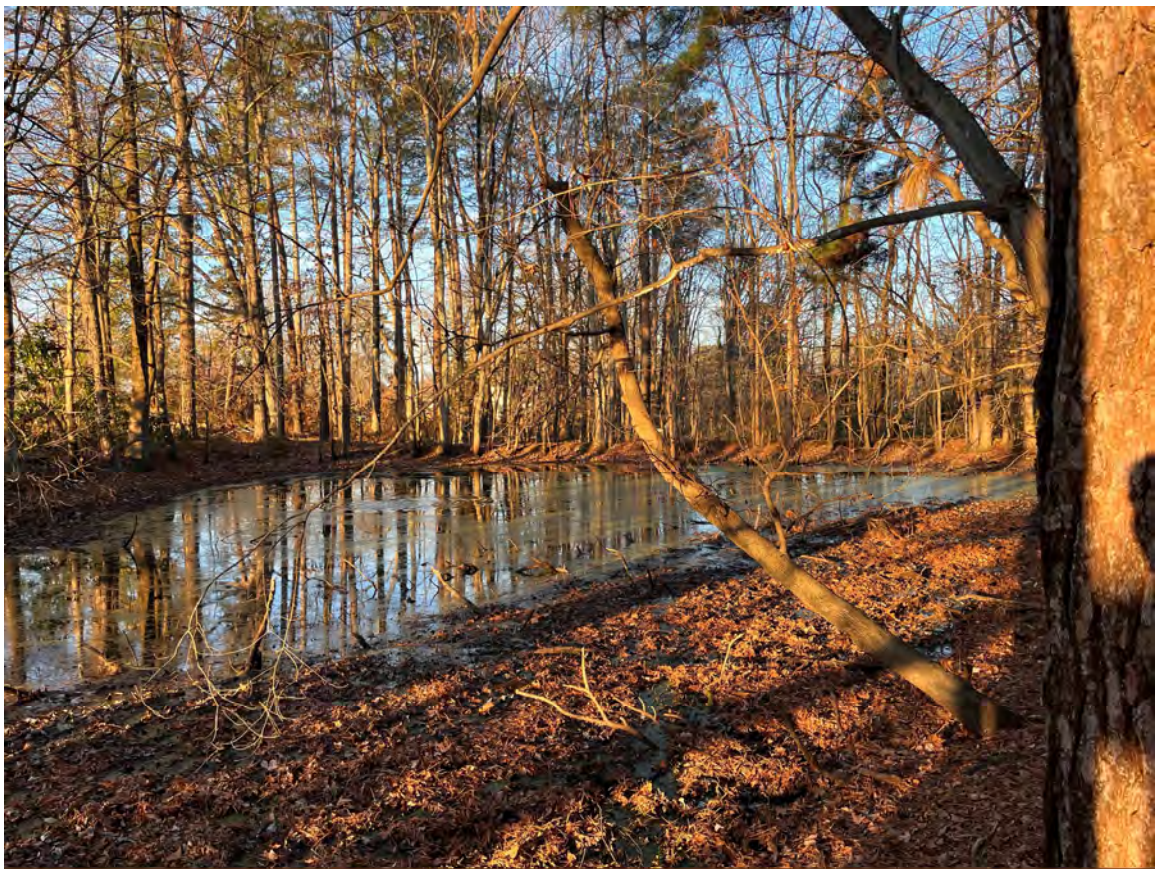


Photo 3: Wetland 6 disconnect

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
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 PRELIMINARY NOT FOR CONSTRUCTION 10/31/2025 ZUMMALT

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.

---

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.

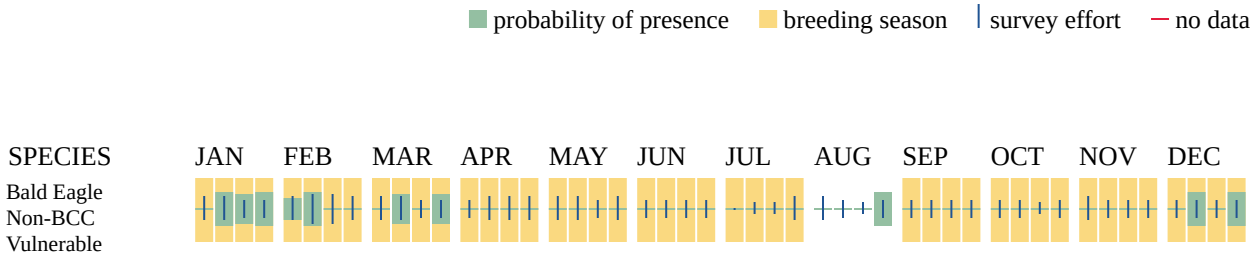
Probability of Presence (■)

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.

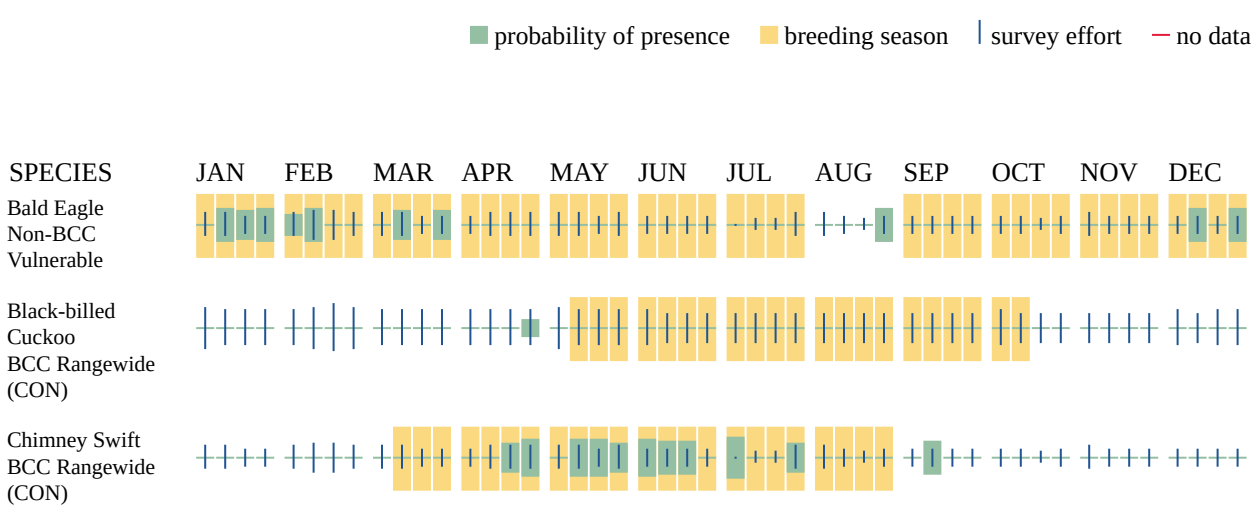
Probability of Presence (■)

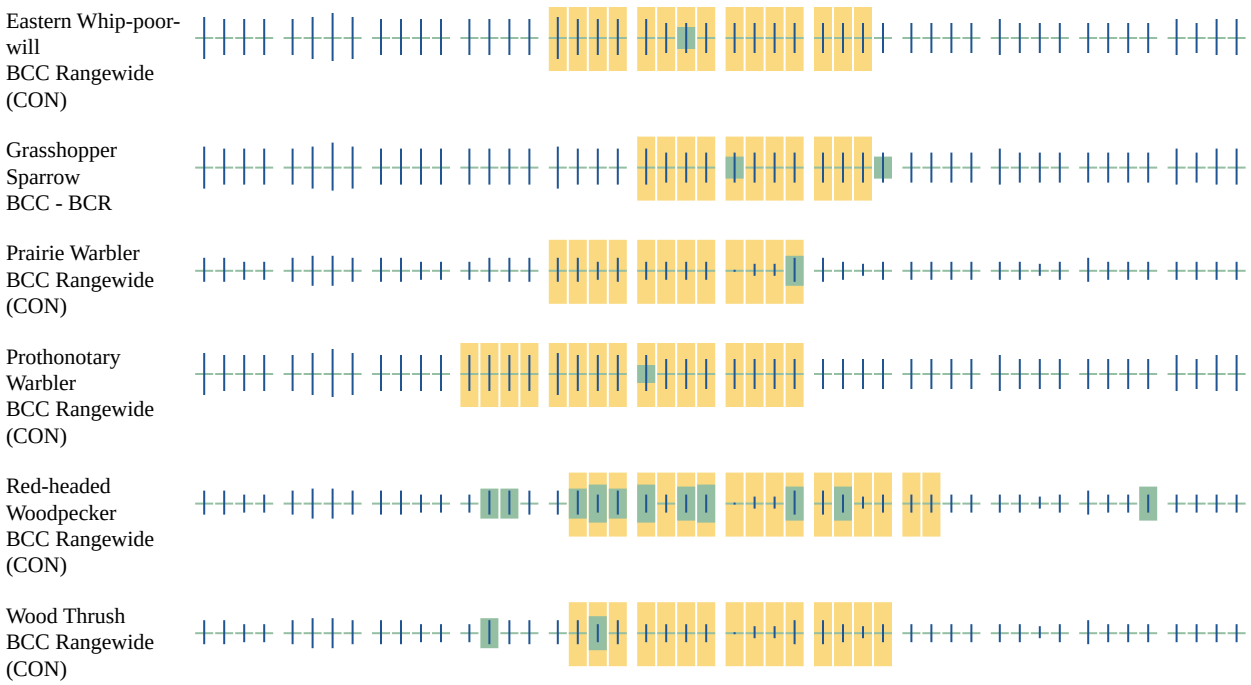
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

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

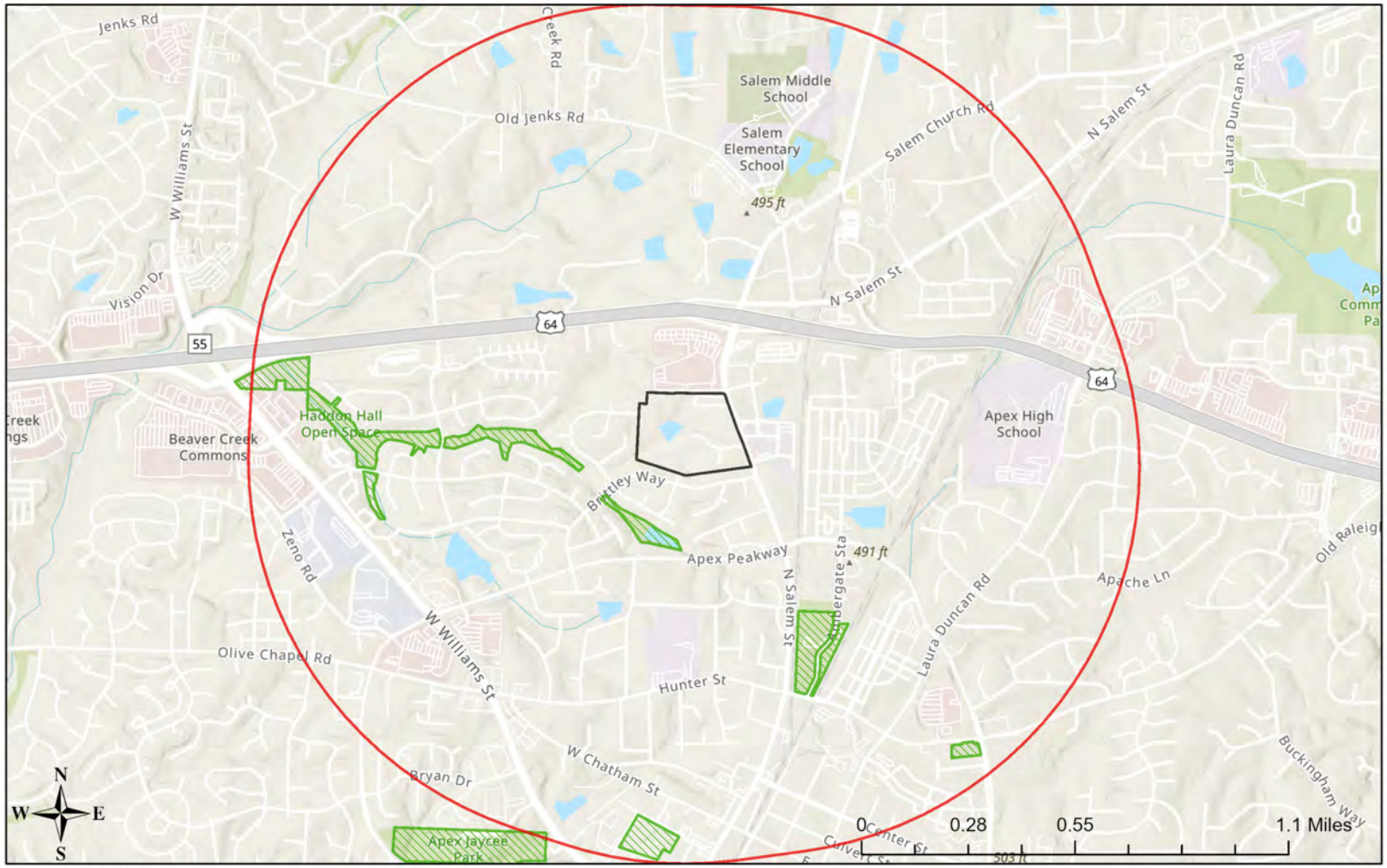
No Natural Areas are Documented Within a One-mile Radius of the Project Area

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

WATER RESOURCES DEPARTMENT

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 REQUIRE 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

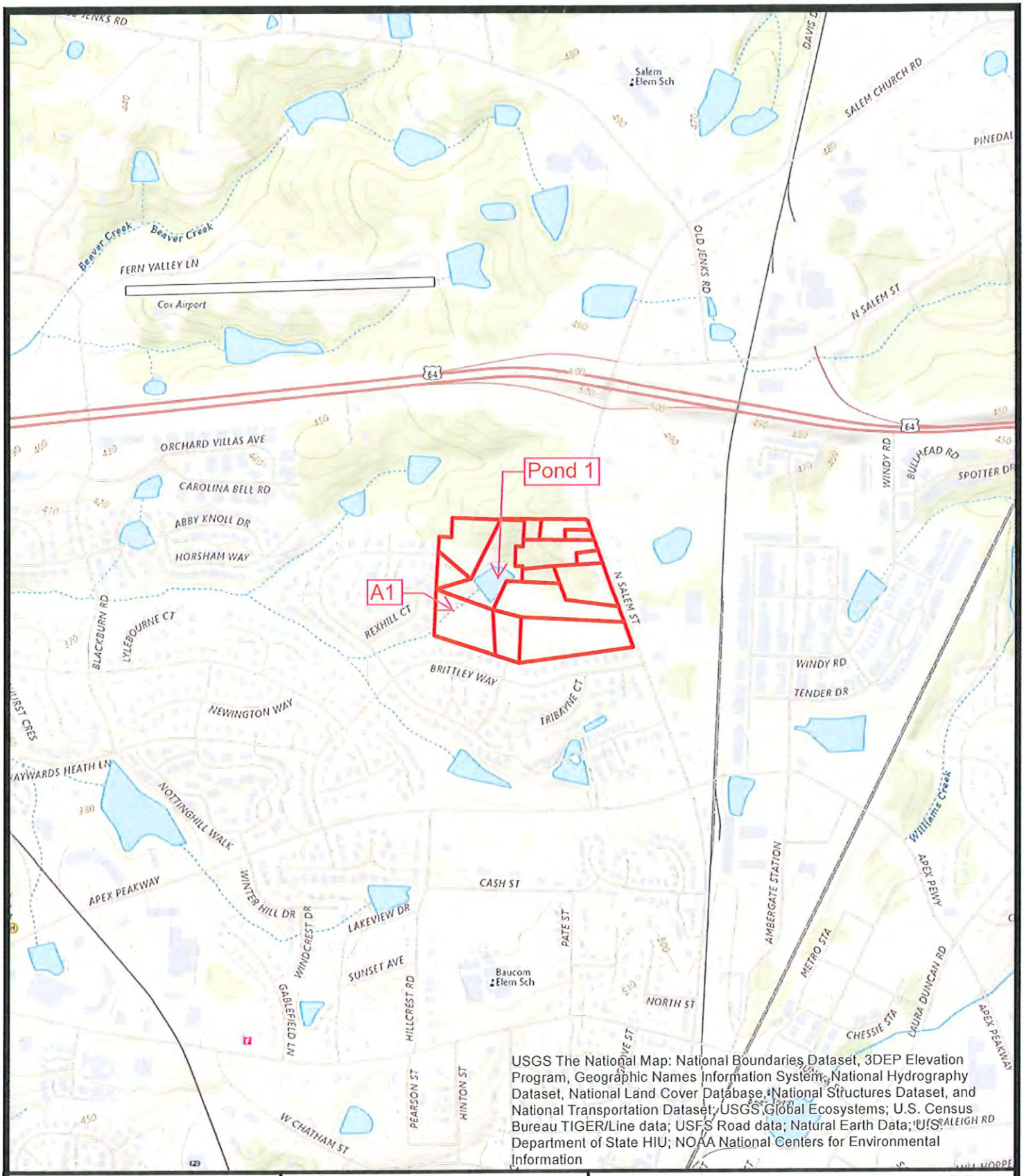
Properties are recorded in the Wake County, NC Register of Deeds under Purchase Contract to Good Acres Holdings, LLC

All properties are in Wake County, NC, in the Town of Apex jurisdiction.

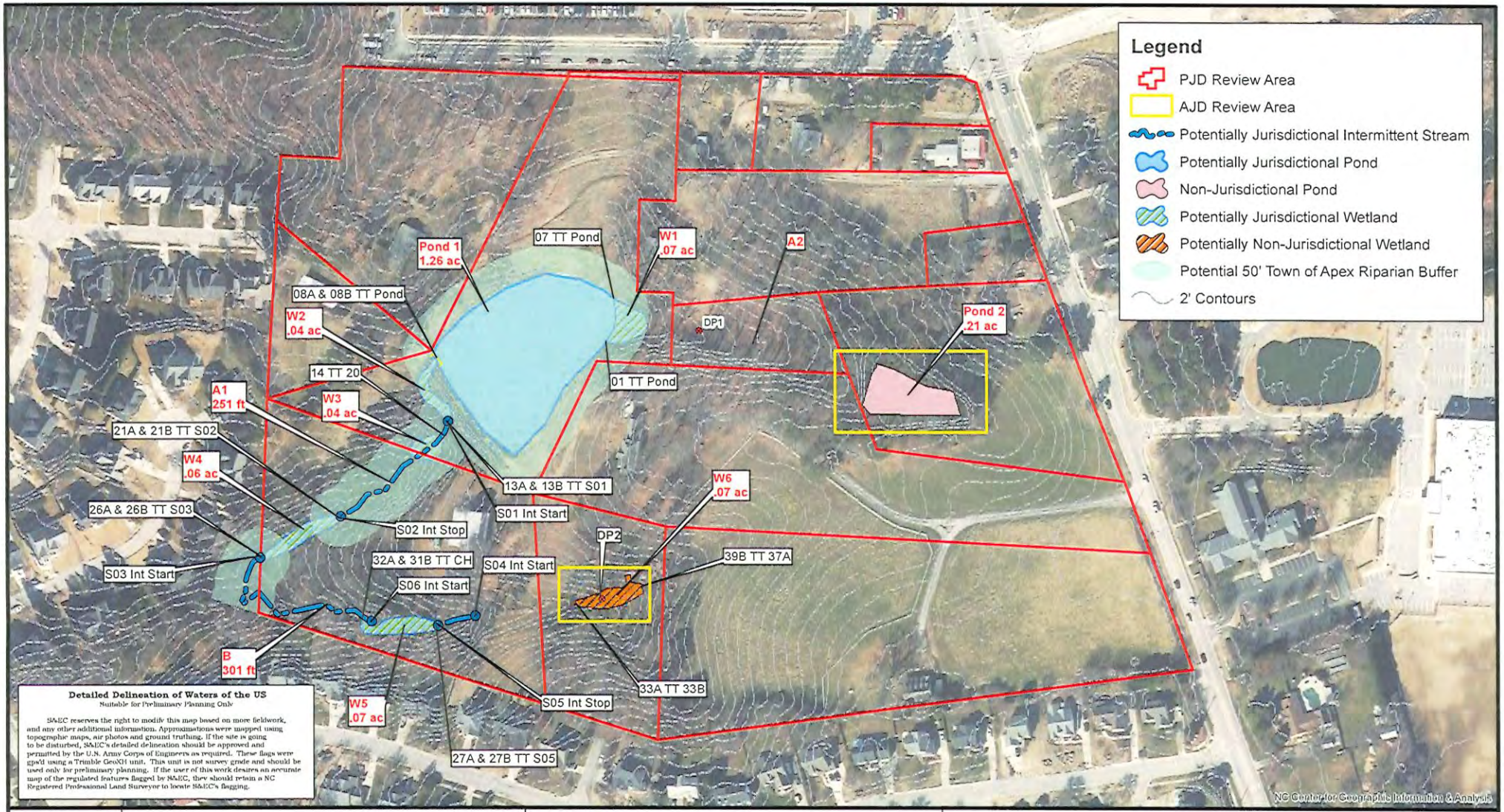
PIN Numbers are Wake County, NC

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	



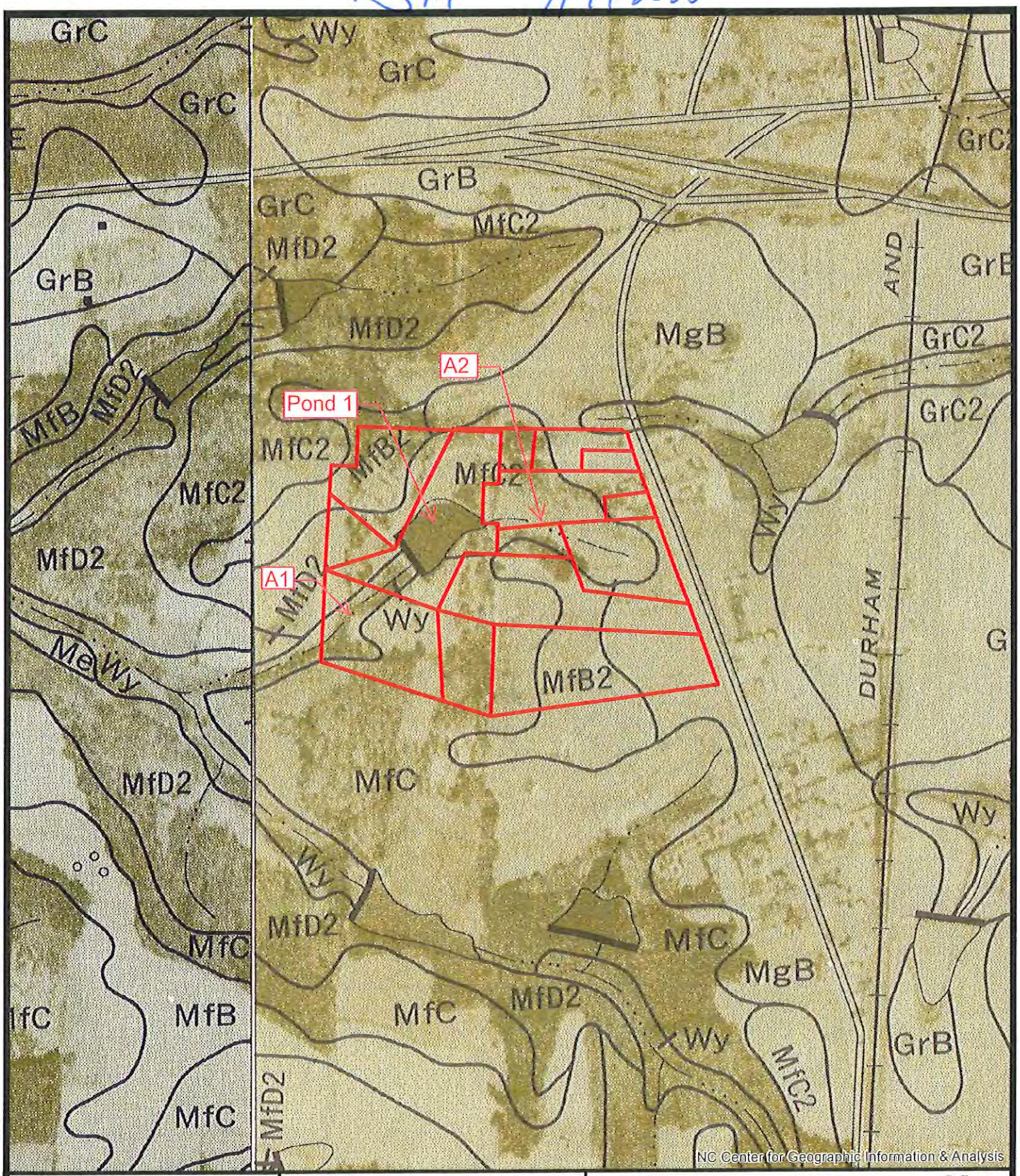
Project Number: 13759.W3	**Map Title:** USGS Map 1301 N. Salem St Assemblage, Apex, NC	0 1,000 2,000 Feet N
Project Manager: JH		
Scale: 1" = 1000'		
Date: 01/20/2025	**Source:** ESRI USGS National Map	S&EC Soil & Environmental Consultants, Inc. 8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-5467 seandec.com



Project No. 13759.W3	N W E S	**Wetland Sketch Map**	S&EC Soil & Environmental Consultants, Inc.
Project Mgr.: SB		1301 N. Salem Rd Assemblage, Apex, NC	8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-9467 sandec.com
Scale: 1" = 150'	0 150 300 600 Feet	Source: Aerials from NC One Maps	
6/26/2025			

JM 7/9/2025

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 Sheets 65 & 66	S&EC	Soil & Environmental Consultants, Inc.
Date: 01/20/2025			810 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone (919) 846-5900 • Fax (919) 846-5467

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:

JH

soils = perennial
USGS = Intermittent

EK 6/27/25
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.

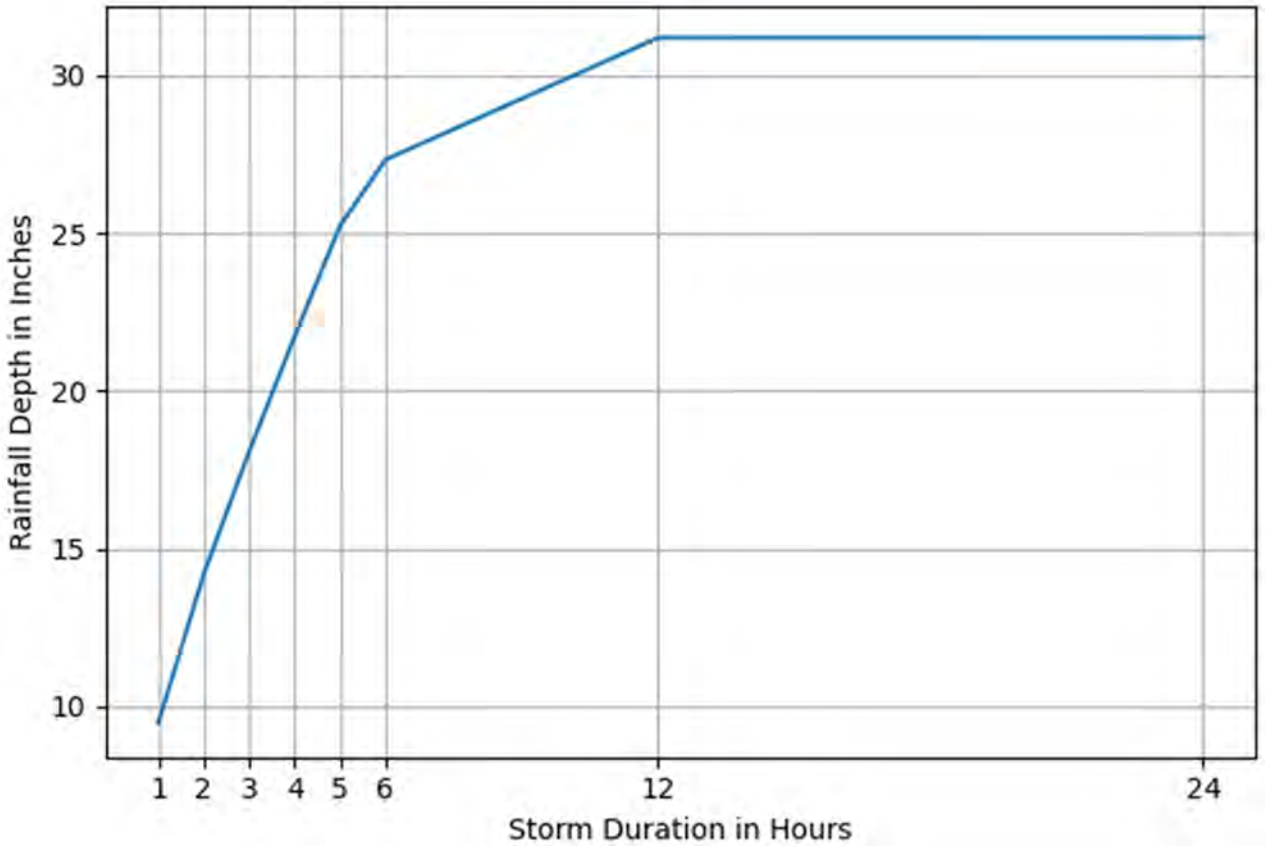


Figure 3. Local Storm PMP Depth-Duration Chart (full PMP values shown)

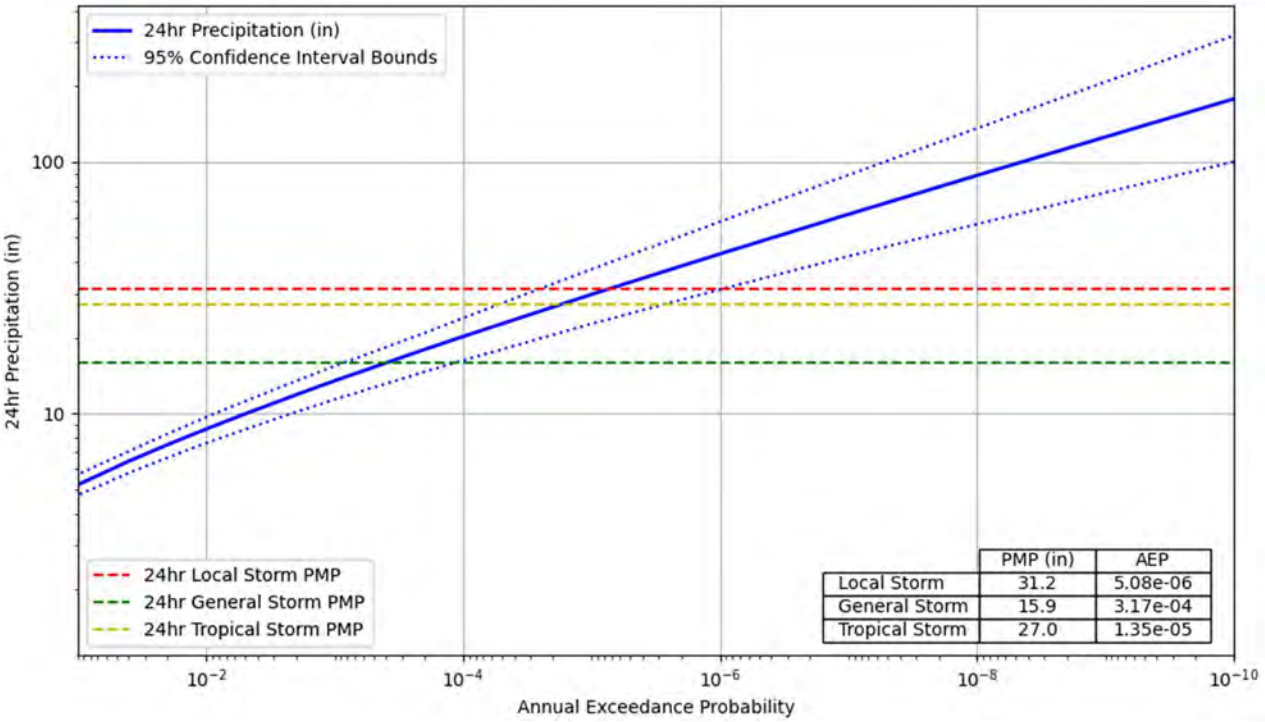


Figure 4. Basin-Average 24-Hour AEP Precipitation Depths

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

Applied Weather Associates (AWA). 2025. Probable Maximum Precipitation Study for North Carolina – Final Report. https://www.deq.nc.gov/energy-mineral-and-land-resources/demlr/nc-pmp-study-final-report/open.

Canoy Surveying. 2025. Topographic Survey, 1409-1201 N Salem Street. Survey date November 4, 2025. Received July 23, 2026.

NCDEQ. 2017. "Subchapter 2K – Dam Safety." 15A NCAC 02K. Available at: https://www.deq.nc.gov/energy-mineral-and-land-resources/land-quality/dam-safety/subchapter-2k-dam-safety/download

NCDEQ. 2026. Guidelines for Dam Breach Plans. https://www.deq.nc.gov/energy-mineral-and-land-resources/demlr/guidelines-dam-breach-plans20260213/open

NCSDD. 2026. North Carolina Quality Level 1 LiDAR Digital Elevation Data (3-Foot DEM). Accessed via https://sdd.nc.gov.

NRCS. 1986. Urban Hydrology for Small Watersheds, Technical Release 55 (TR-55). U.S. Department of Agriculture, Natural Resources Conservation Service, Washington, D.C.

NRCS. 2010. National Engineering Handbook, Part 630 Hydrology, Chapter 15: Time of Concentration. U.S. Department of Agriculture, Washington, D.C.

NRCS. n.d. Web Soil Survey. Retrieved August 2026, from http://websoilsurvey.sc.egov.usda.gov.

USACE. 2026. HEC-HMS Hydrologic Modeling System, Version 4.13 User's Manual. Hydrologic Engineering Center, Davis, CA.

USGS. 2026. Annual National Land Cover Database (NLCD) Collection 1 Products (ver. 1.2, June 2026). U.S. Geological Survey data release. https://doi.org/10.5066/P94UXNTS

FIGURES

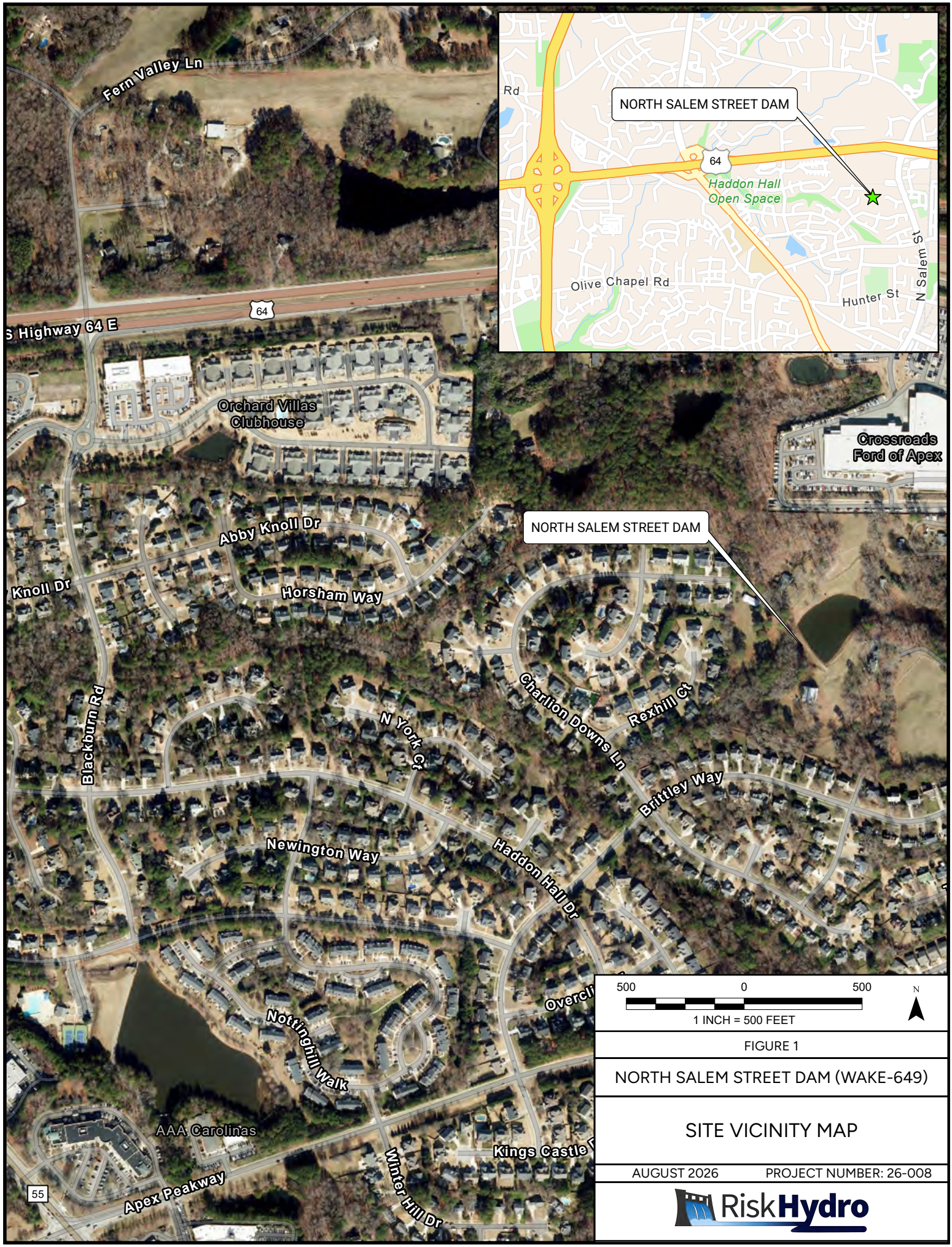


FIGURE 1

NORTH SALEM STREET DAM (WAKE-649)

SITE VICINITY MAP

AUGUST 2026 PROJECT NUMBER: 26-008

RiskHydro

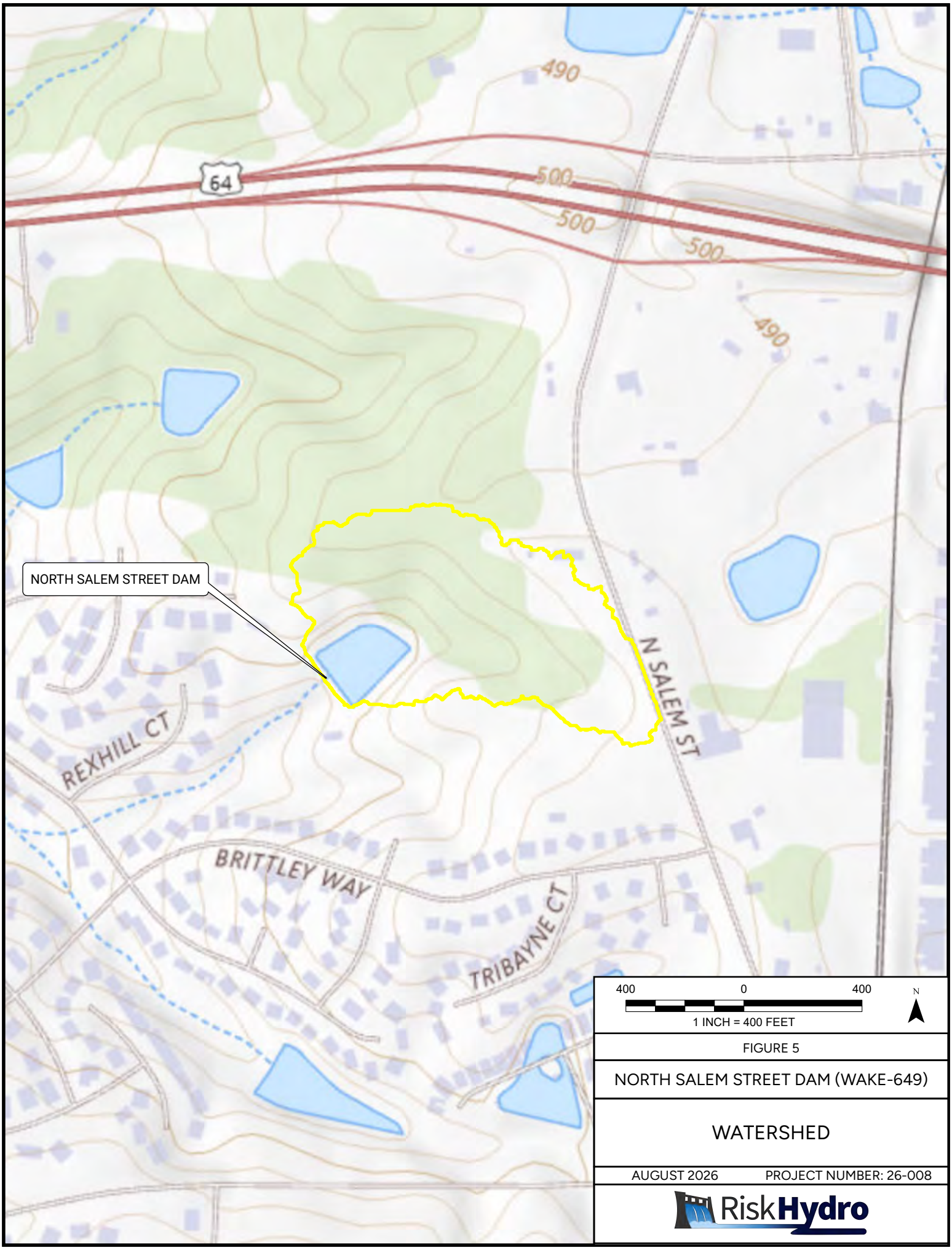


FIGURE 5

NORTH SALEM STREET DAM (WAKE-649)

WATERSHED

AUGUST 2026 PROJECT NUMBER: 26-008

RiskHydro

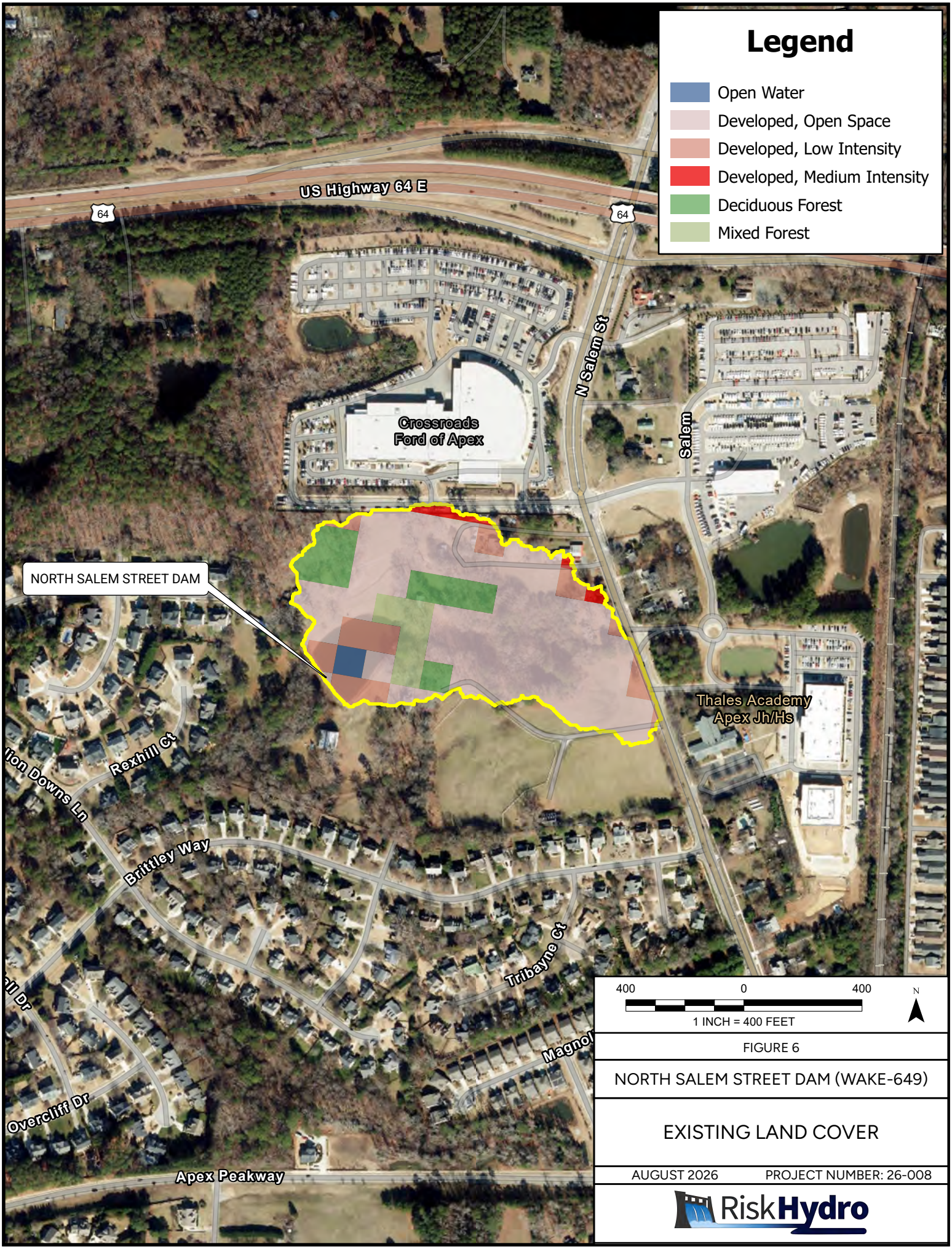


FIGURE 6

NORTH SALEM STREET DAM (WAKE-649)

EXISTING LAND COVER

AUGUST 2026 PROJECT NUMBER: 26-008

RiskHydro

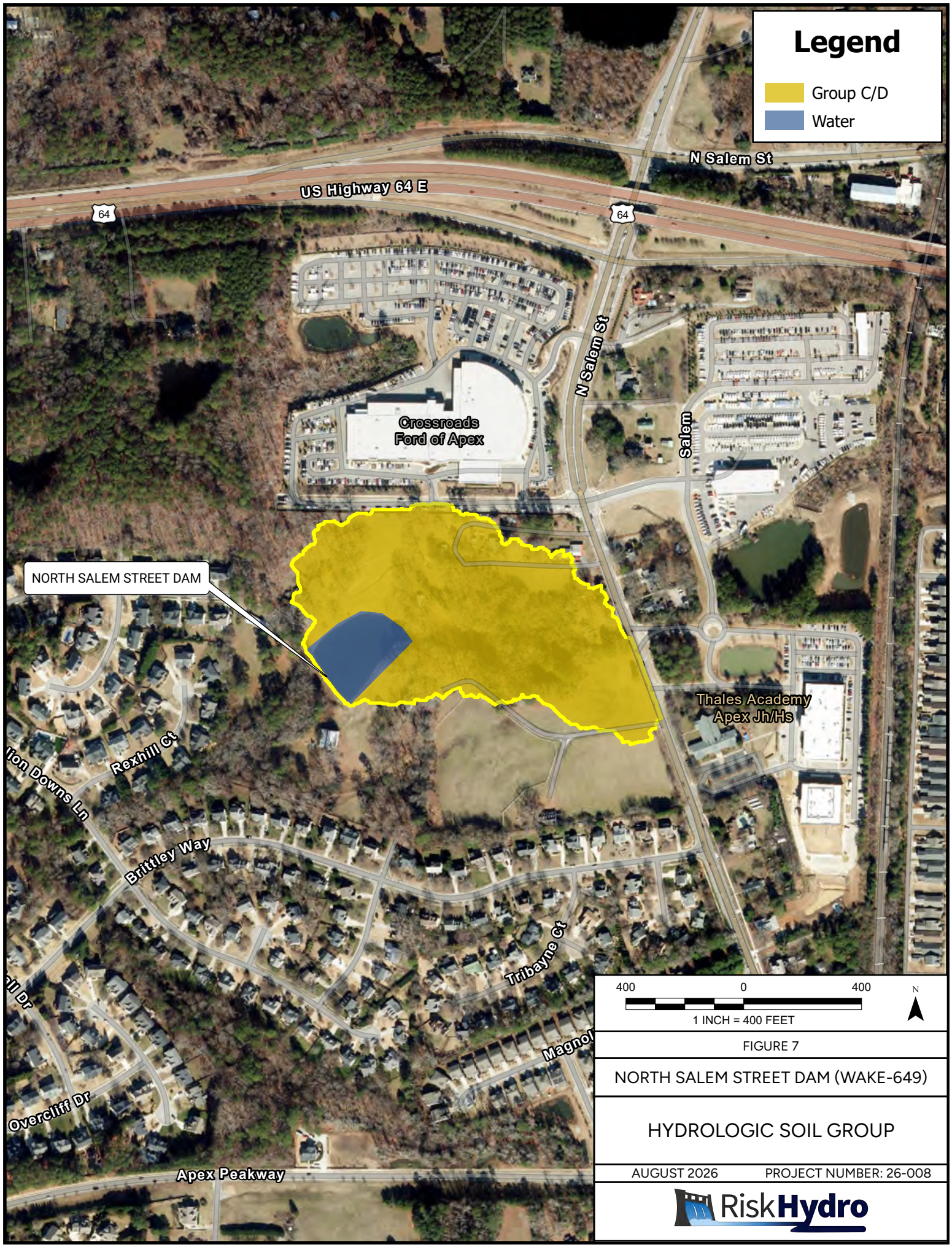


FIGURE 7

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.

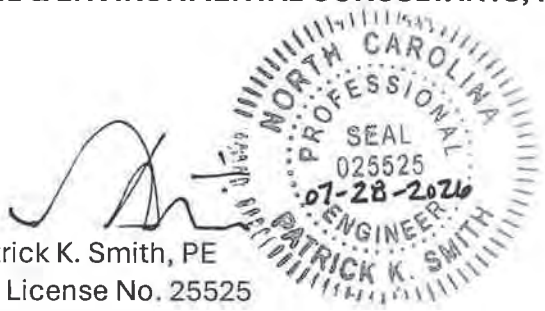
Based on the field observations, available mapping, and the results of the sunny-day dam breach analysis, S&EC concludes that the subject dam meets the criteria for a High Hazard classification under the North Carolina Dam Safety Program. Accordingly, S&EC requests that the NCDEQ Dam Safety Program review 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

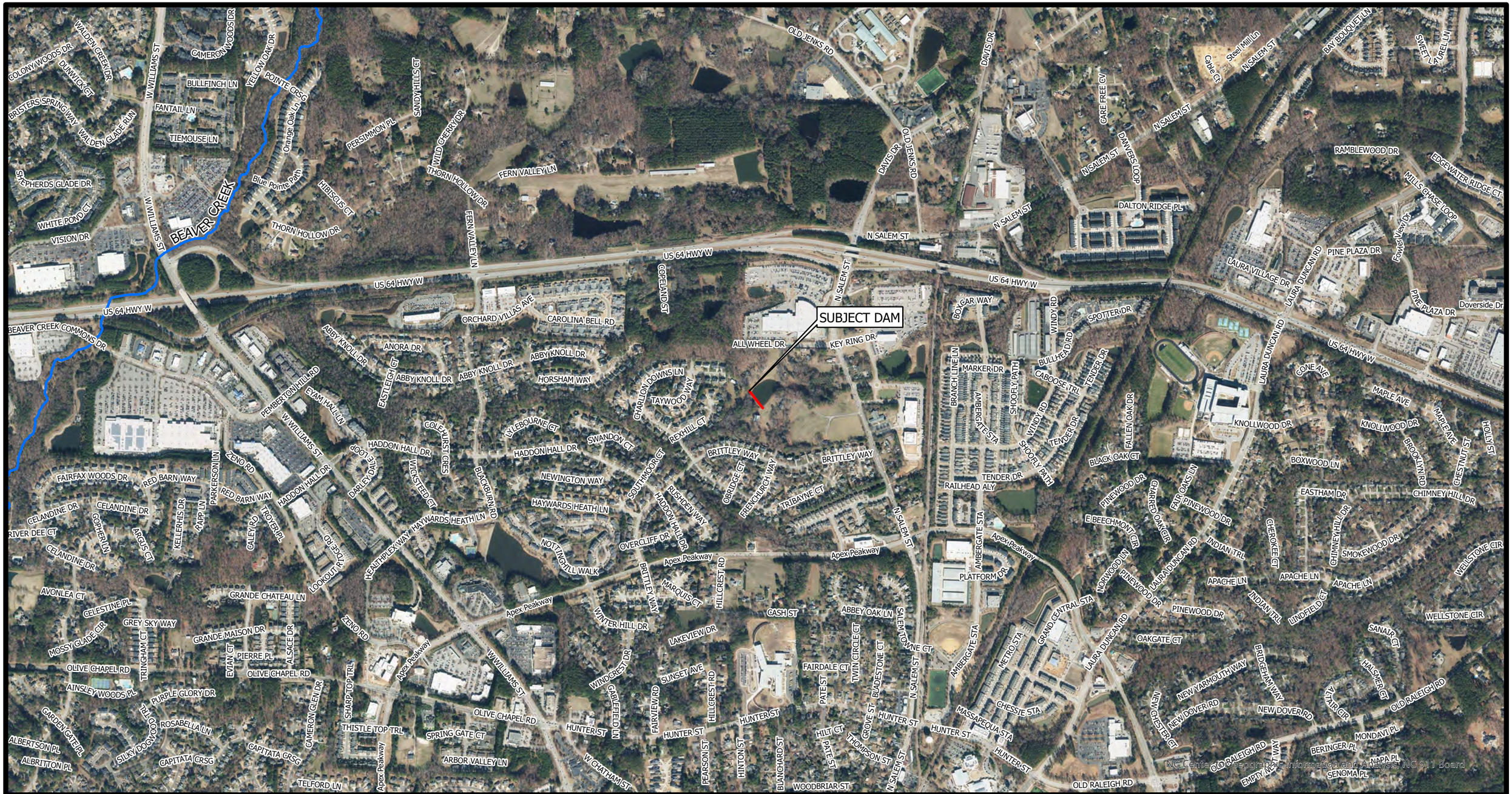
Figure 2 – USGS Topographic Map

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 OneMap

N

0 500 1,000 2,000 Feet

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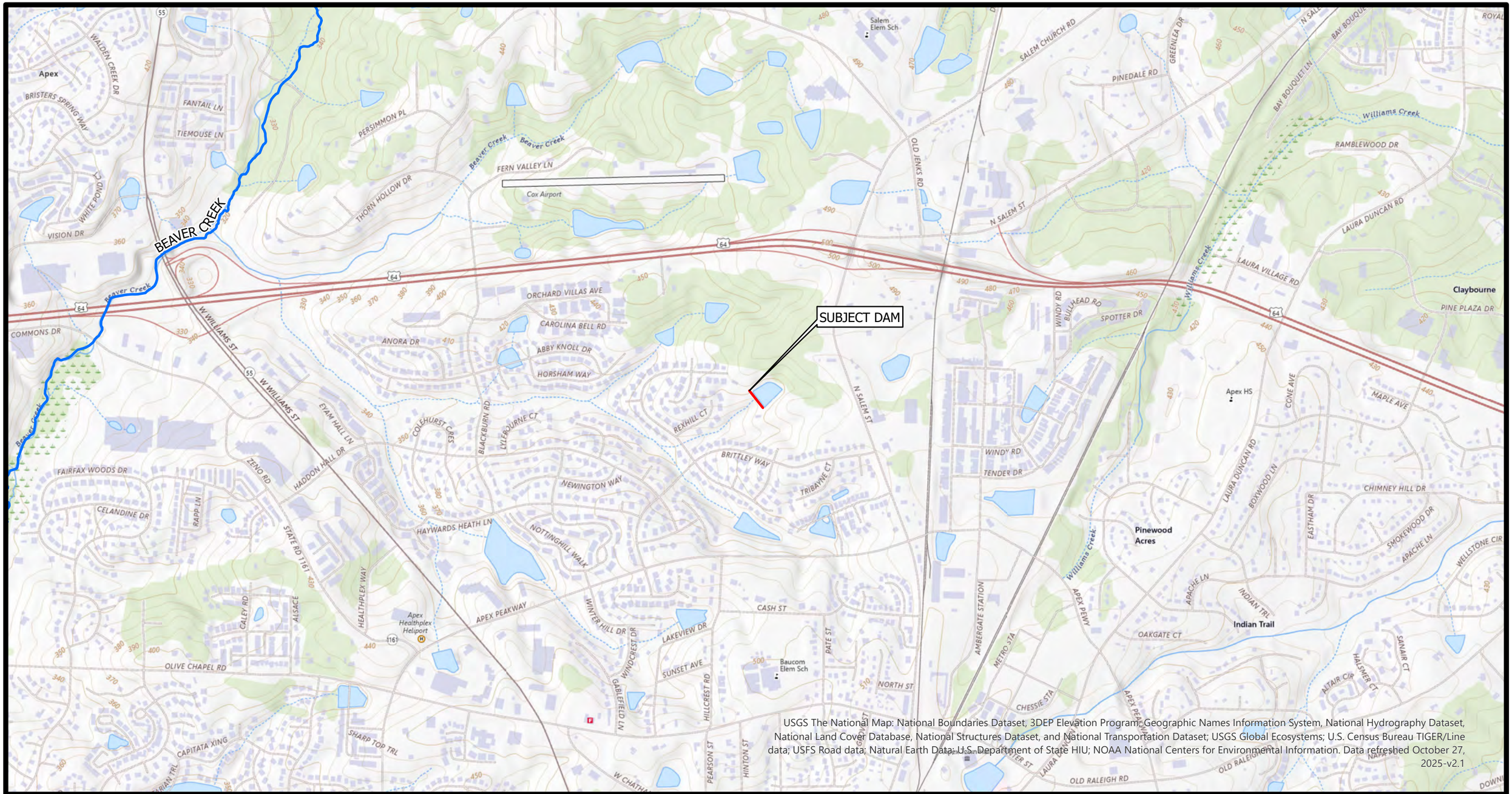
sandec.com



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 Map

0 500 1,000 2,000 Feet

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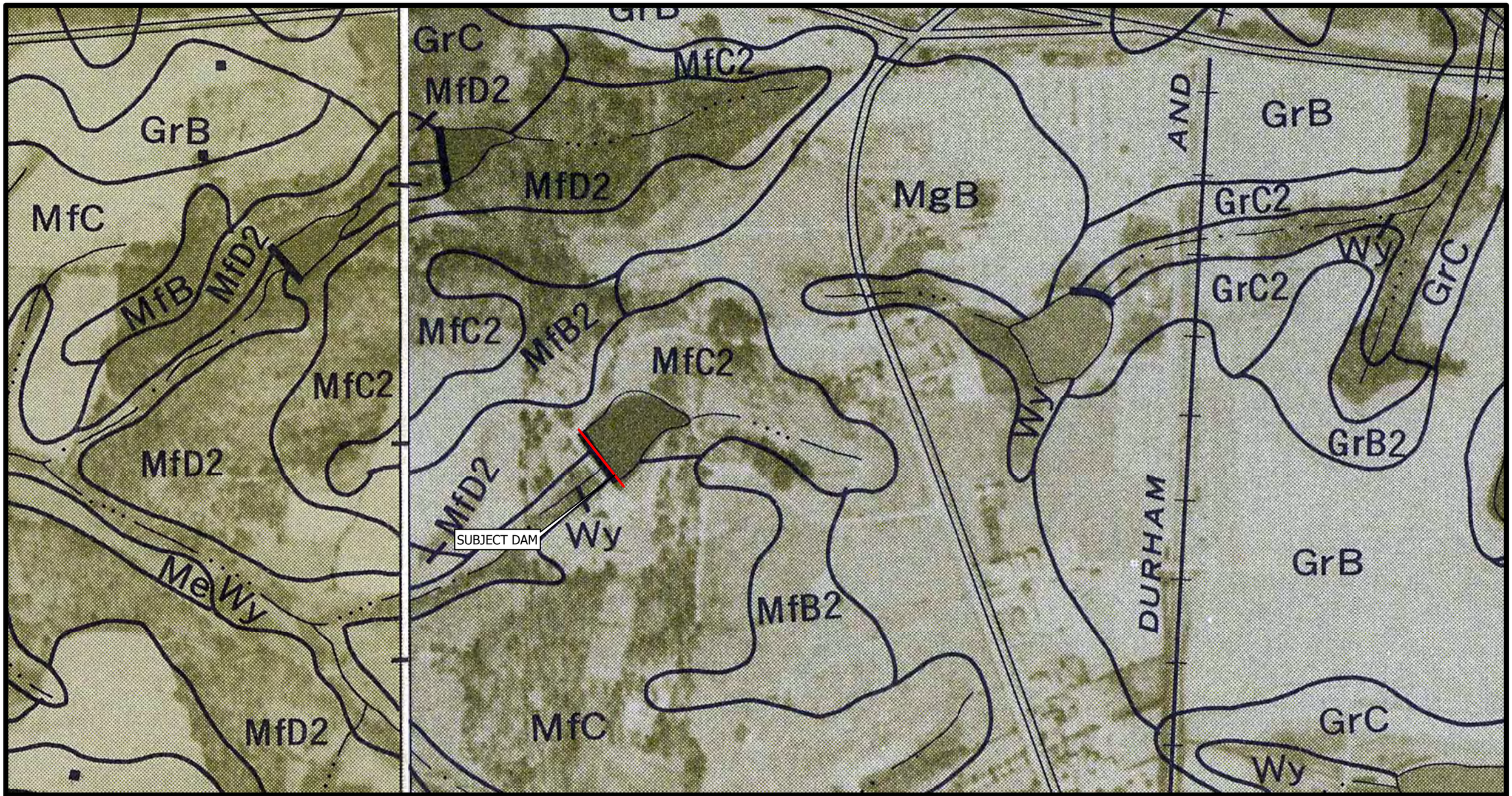

Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 300'
Date:	6/23/2026

Map Title:

Figure 3 - Soil Survey Map

N. Salem St. Dam JD/HC

Source: Wake County Soil Survey Sheet No. 65 & 66

0 150 300 600 Feet

N

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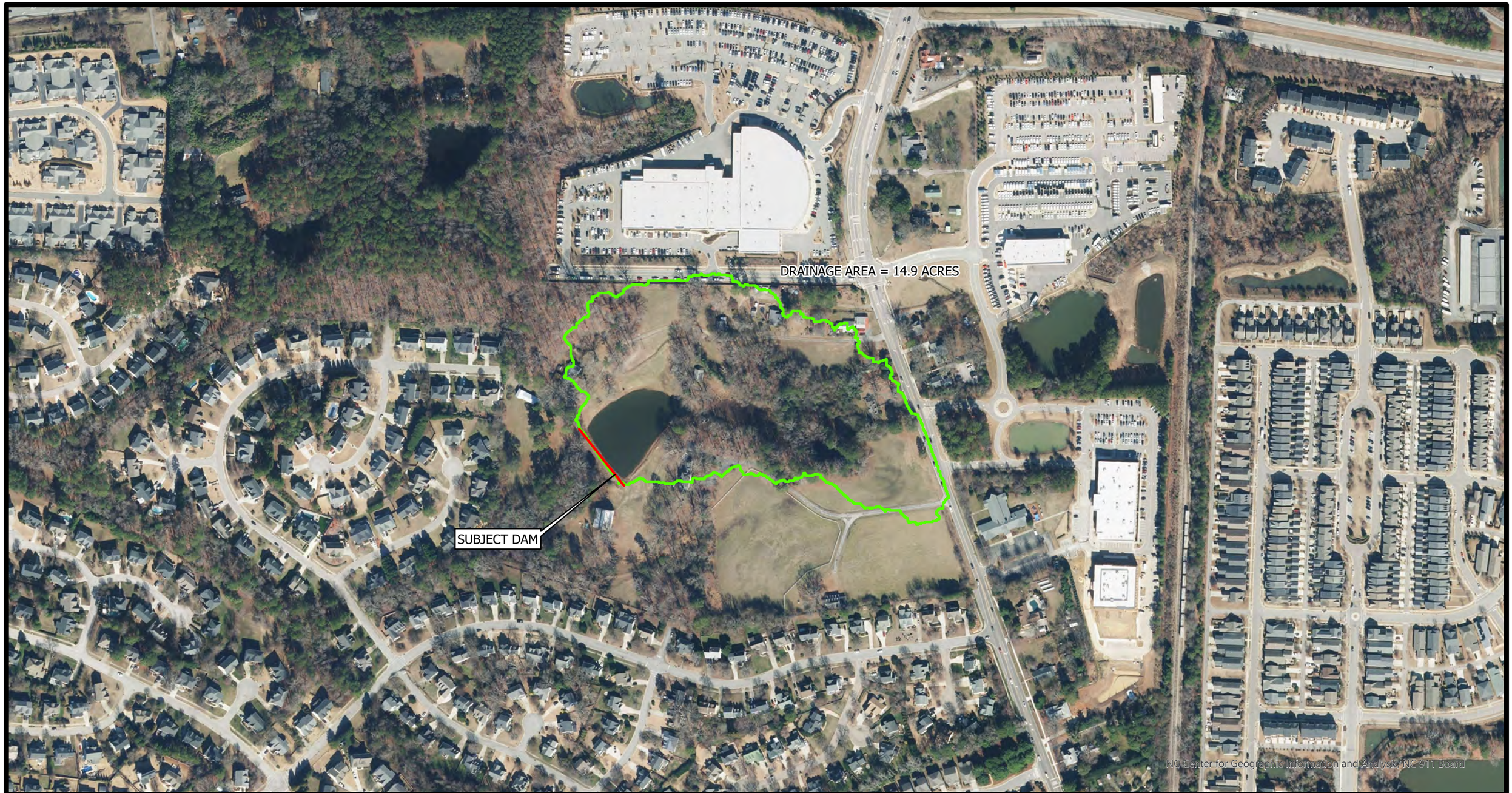

Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 300'
Date:	6/23/2026

Map Title:

Figure 4 - Drainage Area Map

N. Salem St. Dam JD/HC

Source: Aerial Imagery from NC OneMap

0 150 300 600 Feet

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sandec.com

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 OneMap

0 500 1,000 2,000 Feet

N

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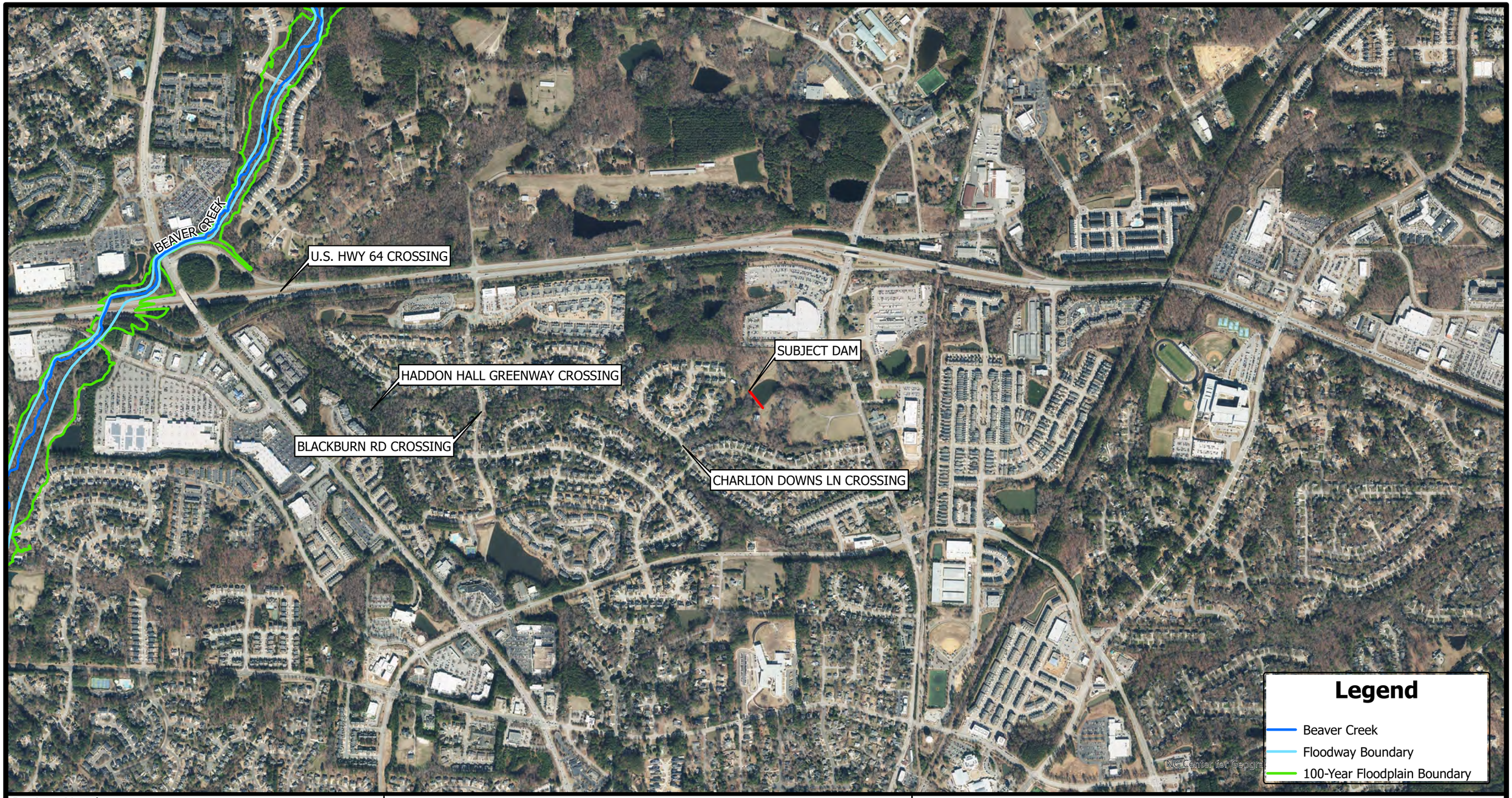

Project Number:	13759.D1
Project Manager:	Patrick K. Smith, PE
Scale:	1" = 1,000'
Date:	6/23/2026

Map Title:

Figure 6 - FEMA Floodplain Map

N. Salem St. Dam JD/HC

Source: Aerial Imagery from NC OneMap

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

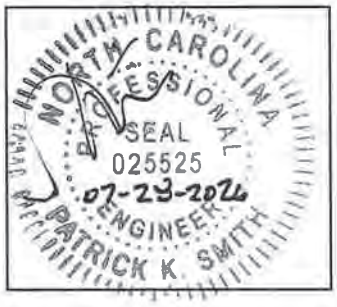
I agree that this form will be used to initiate the Jurisdictional Determination process and/or determine its Hazard Classification based on the current submittal and additionally requested documents, as needed.

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

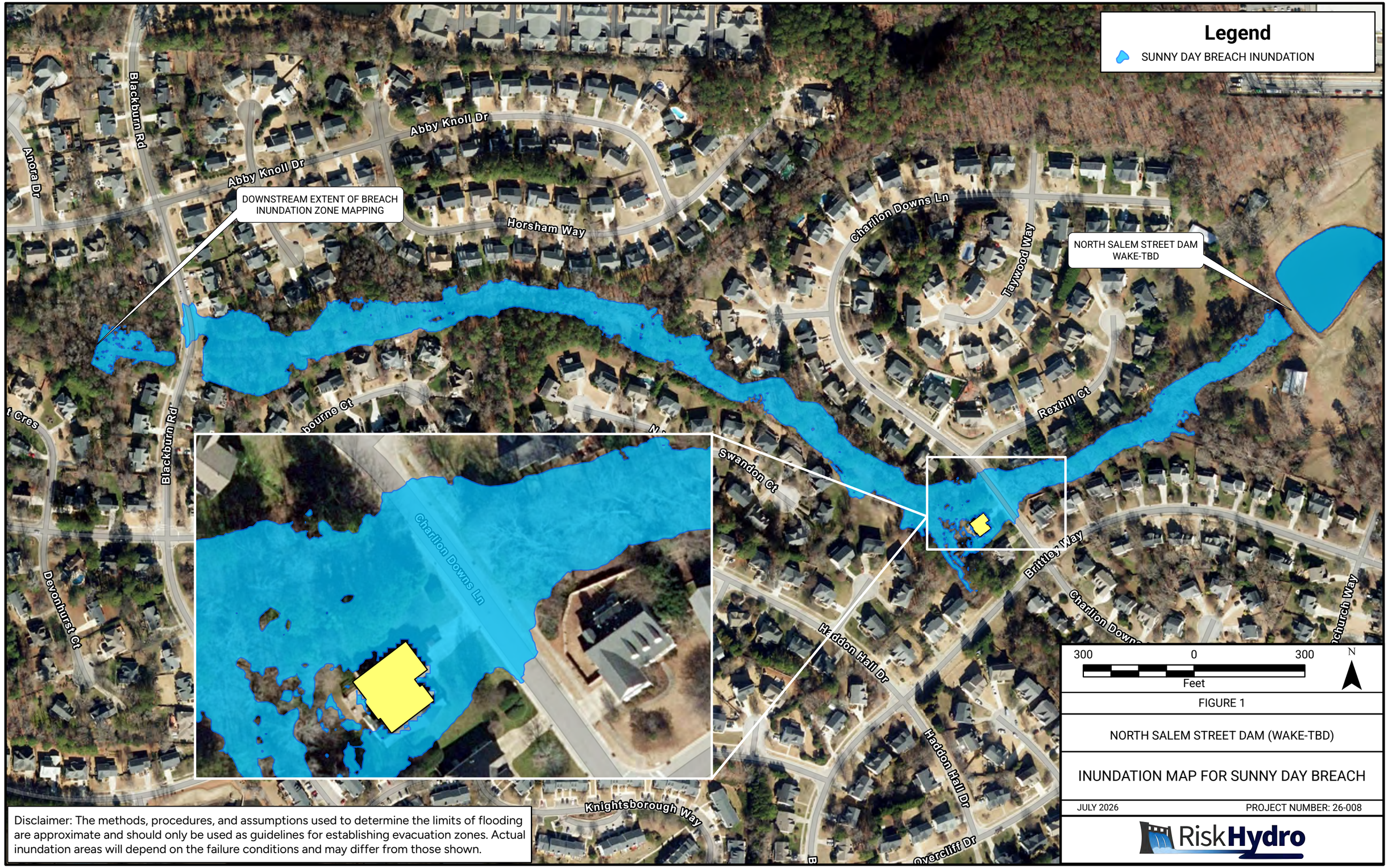


FIGURE 1

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