Town of Clayton
Town of Clayton Planning Board Agenda
Monday, October 24, 2022 @ 6:00 PM
Town Council Chambers

https://www.youtube.com/TownofClaytonNC

IN PERSON TOWN COUNCIL / ADVISORY BOARD MEETING PROCEDURES

- **ALL persons attending must wear a mask.**
- We will be following proper social distancing at all times.
- Hand sanitizer will be available, both in the lobby and council chambers.
- Podium/microphone will be sanitized after each speaker.

**Face Masks May Be Removed When Speaking.*

1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ADJUSTMENT OF THE AGENDA

4. APPROVAL OF MINUTES

a. September 26, 2022 Codify Clayton Steering Committee - DRAFT MINUTES

5. PUBLIC HEARINGS

6. NEW BUSINESS WITH PUBLIC COMMENT

a. Clayton Pedestrian Plan
1. Pedestrian Plan Staff Report
2. Clayton Pedestrian Plan

b. Pawville Rezoning
1. 2022-170-RZ Pawville Staff Report
2. 2022-170-RZ Pawville Application, Owners Consent and Neighborhood Meeting Materials
3. 2022-170-RZ Pawville Boundary Survey
4. 2022-170-RZ Pawville

c. Short Johnson Road Conditional Zoning District
1. 2022-70-CZM Short Johnson Road Application
2. 2022-70-CZM Short Johnson Road Masterplan Narrative
3. 2022-70-CZM Short Johnson Road Master Plan
4. 2022-70-CZM Short Johnson Road Neighborhood Meeting Information
5. 2022-70-CZM Short Johnson Road Wastewater Allocation Policy
6. 2022-70-CZM Short Johnson Road Signed Recommended Conditions
7. 2022-70-CZM Short Johnson Road Staff Report Maps

d. Corbett Road Assemblage Conditional Zoning District
1. 2022-88-CZM Corbett Assemblage Application
2. 2022-88-CZM Corbett Rd Assemblage Masterplan Narrative

3. 2022-88-CZM Corbett Assemblage Masterplan
4. 2022-88-CZM Corbett Assemblage Neighborhood Meeting Information
5. 2022-88-CZM Corbett Assemblage TIA
6. 2022-88-CZM Corbett Assemblage NCDOT Congestion Management Comments
7. 2022-88-CZM Corbett Assemblage Wastewater Allocation
8. 2022-88-CZM Corbett Assemblage Signed Recommended Conditions
9. 2022-88-CZM Corbett Assemblage Staff Report Maps

7. STAFF REPORTS

8. OTHER BUSINESS

a. Informal Discussion & Public Comment

b. Planning Board Comments

9. ADJOURN

Town of Clayton
Clayton Planning Board Minutes
Monday, September 26, 2022 at 6:00 PM
Town Council Chambers

Board Members Present: Stephen Powers Ethan Bennett James Lipscomb Jeffery Spence Ronald Williams Jodie Dupree James Moore Marty Bizzell Rebecca Berry Jim Perricone **Board Members Absent:** Lisa Begley Thomas Antoine Kevin Lee	**Staff Present:** Aaron Prichard, Planner II Bruce Venable, Trainee Planner Dede Bumgarner, Development Services Manager/Zoning Administrator Love Ott, Land Development Specialist

1 CALL TO ORDER
Chairman Moore called the meeting to order at 6:00pm

2 PLEDGE OF ALLEGIANCE

3 ADJUSTMENT OF THE AGENDA

4 APPROVAL OF MINUTES
July 22, 2022 Minutes
Motion: Board Member Powers
Second: Board Member Williams
Result: Approved Unanimous

September 12, 2022 Minutes
Board Member Berry made an adjustment to the minutes stating it should be "Ms. Berry asked who" on pg. 8.
Motion: Board Member Dupree
Second: Board Member Williams
Result: Approved Unanimous with the adjustment

5 CODIFY CLAYTON: UDC STEERING COMMITTEE MEETING #5

a) Annotated Outline Discussion
Presenter: Chad Meadows of CodeWright, LLC

Chad Meadows provided the Committee with an updated schedule, stating that there will be a 2nd Public Forum on September 28th from 11-1:30 and from 3-7. Staff and the consultant will also be meeting with representatives from the development community that day. The draft Annotated Outline will then be presented to Town Council during their work session on October 3rd.

Board Member Berry: submitted all questions in advance. Asked 3.2.11 Does it mean that high density zones are places only near shopping, employment, and recreational uses?
Chad Meadows stated not anticipated it will affect the future land use map. Does not know where those applicants will file.

Board Member Bizzell: asked about conditional zoning districts: are there 3 new districts - mixed use, commercial and downtown?
Chad Meadows stated hoping to establish three new sections with conditional zoning such as limited, limited standards allow applicants to voluntary chose to include additional standards with their conditional zoning application, and master plan applicants can request reduction of standards or additional standards however the applicant must prove high quality of development. This is in hopes to increase higher quality of standards. The five conditional uses are listed this way it will create a larger range of options for applicants.

Chairman Moore: temporary uses have a specific time limit and seasonal sales?
Chad Meadows stated that every use will have the maximum duration of every temporary use. Seasonal sales will be an accessory use under the primary use the things that are sold at these accessory uses that is normal to the primary use do not have time limits.

Board Member Bennett: Chapter 4.2 religious institutions and schools are not being allowed in residential areas and it can be seen as a conflict of interest?
Chad Meadows stated the federal govt passed an act that was focused on local govt did not impinge on people's religion. Schools and churches need to be its own use so not one group of people is being discriminated against.

Board Member Perricone: 1.3.4 concerns that there are standards that are above the state and federal standards.
Chad Meadows stated that the state and federal will change some standards as time goes on so this section is stating that there could be change based on state and federal law and it is okay for local govt to more restrictive than state and federal law, however it can never be less restrictive.

Board Member Berry: Chapter 4: Land Uses (F) Can there be a caretaking dwelling, accessory use, or guest house on a lot? And how long should they be permitted to have the second structure before the primary structure?

Chad Meadows stated that there will be an accessory structure on rural lots, and they will be allowed to have more accessory structures. The time frame of how long the accessory structures be allowed before the primary structures can be added. This UDO will allow more accessory structures.

Board Member Bizzell: Land Use tables several uses that should be included in mixed use district that are currently restricted such as microbrewery or veterinary services.
Chad Meadows stated that there is likely more revision to this document. Current code has tons of special uses so this document is trying to change the special to permit by right and if there were questions about a certain use it can go to the conditional districts.

Chairman Moore: 3.2.15 why is the residential multi-family necessary?
Chad Meadows people want more options when buying homes, people can not afford the increase in homes, and there is a housing crisis in the US. Multi-family can be established in town without a special use and make it easier to develop.

Board Member Powers: Is there anything with in the UDO that will improve the specialized goods within town?
Chad Meadows stated that there is not really anything in the UDO that specifically addresses more business, however it does make it easier to develop business within town. But for retail establishments to come to town there needs to be more people living in Clayton.

Board Member Williams: asked about incentives for existing developments to grow?
Chad Meadows stated that will need to be thought about, in terms of what do they want as incentives.

Board Member Lipscomb need to do a better job in promoting the comprehensive growth plan.
Chad Meadows stated that the UDO in every chapter will have a detail purpose.

Board Member Dupree: need to promote more people giving input before things are done. On pg. 14 1.4 What is there to keep future officials from deciding making rules more restrictive?
Chad Meadows stated nothing, and it happens everywhere.

Board Member Berry stated that people are not being heard and there must be more communication with the committee and the community so that they can be heard.

Town Council Member Archer stated that there needs to be better public outreach that do not use social media to find out what is going on.

Board Member Dupree stated that there needs to be something on the town's website that tells the community what certain phrases or terms mean so they will understand better.

Board Member Berry stated that the community understands the results, and it will help if people see what is going on first to provide input before the project is finished.

Board Member Perricone: 1.4.4 adoptive policy guidance: what does adoptive policy guidance mean?
Chad Meadows stated that with the 160d change came a new requirement for all local governments in NC that want to have zoning to have a comprehensive plan and a future land use map in place as a mandatory requirement to have a zoning ordinance. Also, the general assembly did not want adopted policy guidance carrying the force of law and elected officials could deviate from the adopted policy guidance if they feel the need to do so. If local officials do deviate from adopted policy guidance, then the adopted policy guidance is amended to be consistent with the deviation that they made. However, it is not good practice to deviate from the plan.

Board Member Perricone: asked should the adoptive policy guidance be in consistent with the ordinance
Chad Meadows stated ideally yes it should.

Board Member Bizzell: asked about the use tables single family detached dwelling. Is it confusing to also say triplex?
Chad Meadows stated a single family attached dwelling is a dwelling unit its own lot. A triplex is three dwelling units on one lot, but it is not multi-family because multi-family is four units or more on one lot. The distinction is made to encourage triplex development. It will be a lot easier to understand when the definitions are included.

Board Member Perricone: 1.7 will there be timetables included so applicants can plan based on the timetable?
Chad Meadows stated procedural table can include a schedule with an application decision table, however it is up to the staff to include a timetable.

Board Member Perricone: asked if there is an in-between with including the timetables where there is one, but it is not in the UDO?
Chad Meadows stated that could be a good compromise with the application review schedule, being an outside document, it is not codify. It is not an ordinance, but it is a policy.

Board Member Bizzell: stated the policy would work best. Is fee-in-lieu new?
Chad Meadows there is not currently one in the code, however in the current ordinance it includes the possibility for fee-in-lieu such as recreation space. It is listed as a procedure because it limits inconsistency and so it follows the standard uniform procedural language.

Board Member Perricone: vesting section. How does the code allow for “real world” situations that change timetables particularly for significant projects?
Chad Meadows stated expand the expiration periods on the approvals. The vested right provision is intended to protect a prior approval from having to comply with changes in the rules that happened after the approval. There is a suggested vested rights certificate process that allows a site-specific vesting plan to expand its vesting term beyond the time granted with the approval.

Board Member Bizzell: admin adjustment discretion to the planning director pg. 30-31. Is that percentage intended to be per requirement?
Chad Meadows stated yes, it is the numeric requirement.

Board Member Perricone application summary table make a note towards the beginning of the page indicating that there are notes on the back end.
Chad Meadows stated that there will be notes that there are notes at the end.

6 PLANNING DIRECTOR UPDATE

7 ADJOURN

Motion to Adjourn: Board Member Powers
Motion: Board Member Powers
Second: Board Member Spence
Result: Approved Unanimous

Adjourned at 8:17

Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-1545

Planning Board, 10/24/2022

STAFF REPORT

Clayton Pedestrian Plan

REQUEST: Recommend adoption of the Clayton Pedestrian Plan to the Town Council.

BACKGROUND

Planning Process

The Clayton Pedestrian Plan builds on past efforts and creates a new vision for walkability throughout town. The Plan will be used by the Town to prioritize, fund, and implement high-quality infrastructure, high-impact programs, and supportive policies for walking. The Plan was funded in part by a NCDOT Integrated Mobility Division Multimodal Planning Grant.

The planning process began in the spring of 2021 and continued through the spring of 2022, including public outreach in the fall of 2021 and spring of 2022, 4 meetings with the Pedestrian Plan Steering Committee and a meeting with Town staff to review the draft network. The Steering Committee consisted of residents, development community representatives, local employers, representatives from the School System and Hospital and Town staff.

Vision and Goals

The Plan outlines the following Vision for walkability in Clayton:

The Town of Clayton will have a network of high quality walkways that connect downtown, nature, the Neuse River, and neighborhoods. People of all ages and abilities will have access to comfortable and convenient sidewalks and greenways, resulting in improved mobility choice, economic opportunity, and healthier lifestyles.

The Plan also includes the following six Goals:

- Enhance Connectivity
- Promote Equity
- Encourage Economic Growth
- Improve Health
- Increase Mobility
- Increase Safety

Recommendations

The Plan divides the recommendations into three categories: Infrastructure Recommendations, Program Recommendations and Policy Recommendations.

The Infrastructure Recommendations include broad recommendations for the comprehensive pedestrian network in Clayton, design guidance for different types of pedestrian infrastructure, safe routes to schools and parks recommendations, as well as a list of eight priority projects:

- Robertson Street Sidewalk Gaps
- Main Street Pedestrian Improvements
- US 70 Crossings
- Amelia Church Road and Shotwell Road Greenway Gaps
- Glen Laurel Road Pedestrian Improvements
- O'Neil Street Pedestrian Improvements
- East Coast Greenway Completion – Downtown Clayton Feasibility Study
- East Coast Greenway Completion – NC 42 Sidepath

The Program Recommendations include the following six programs:

- Active Transportation Advisory Committee
- Walk Friendly Communities Designation
- Safe Routes to Schools & Parks Action Plans
- Signage and Wayfinding
- Speed Management
- Pedestrian and Bicycle Counts

Finally, the Plan includes 14 Policy Recommendations organized under three categories:

- Complete Streets and Greenways
- Pedestrian-oriented Urban Design Elements
- Connectivity Requirements

Implementation

The Plan concludes with the Implementation Chapter, which specifies the different stakeholders, agencies and staff, and the roles of each, that will be charged with implementing the recommendations. The Implementation Chapter also includes eight specific immediate action steps for the Town and its partners:

- Adopt the Pedestrian Plan
- Amend/Adopt the Comprehensive Transportation Plan
- Form an Active Transportation Advisory Committee
- Update Town Policies
- Continue Coordinating with Developers and NCDOT
- Engage New Programs
- Set Aside Dedicated Funding for Pedestrian Infrastructure Projects
- Consider Additional Staffing Needs

CONSIDERATIONS:

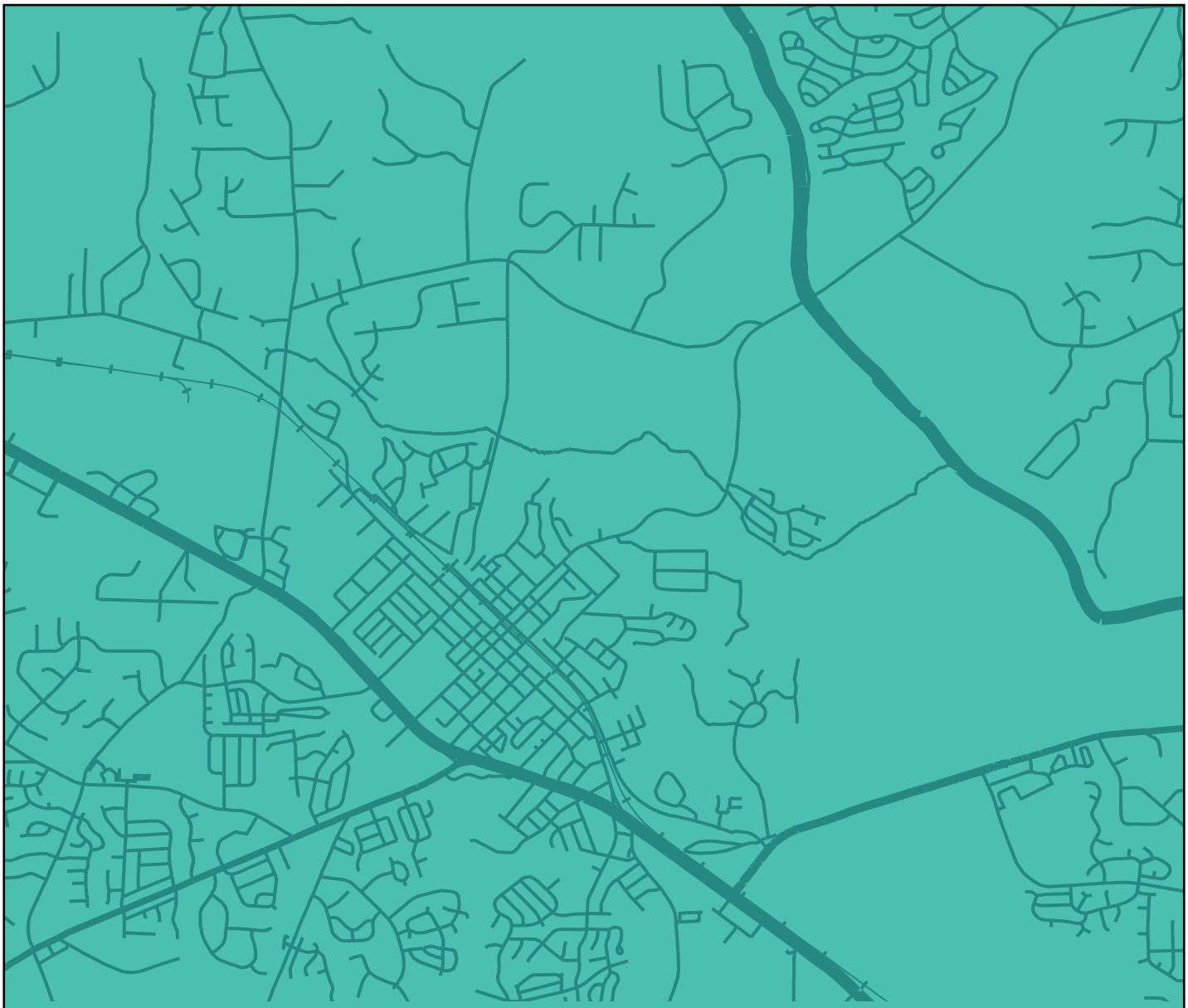
- The Pedestrian Plan provides guidance and recommendations for pedestrian infrastructure, programs and policies in Town. Adoption of the Plan will allow staff to utilize these recommendations in reviewing development projects and preparing budget requests for new programs and infrastructure, as well as be used in formulating the Town's Capital Investment Program.

STAFF RECOMMENDATION:

- Staff recommends ***APPROVAL*** of the Clayton Pedestrian Plan.

ATTACHMENTS:

Clayton Pedestrian Plan



Clayton Pedestrian Plan

Town of Clayton, NC

PREPARED BY ALTA PLANNING + DESIGN | 2022

Acknowledgments

Thank you to the local residents, community leaders, and Town staff that engaged in the development of this plan through meetings, mapping, public outreach, comment forms, and plan review. Special thanks to those who provided invaluable direction as Steering Committee members, listed below.

Steering Committee

Lynn Auclair, Deep River Brewing

Scott Barnard, Town of Clayton Parks & Recreation

Emily Beddingfield, Town of Clayton Recreation Advisory Board

Chuck Blatchley, Grifols

Travis Crowder, Town of Clayton Recreation Advisory Board

Russell Flint, Police Department

Johnny House, Resident

John Huebner, McDonald's

Jonathan Jacobs, Town of Clayton Engineering

Sam Lawhorn, NCDOT Division 4

Kyle McDermott, Johnston Health

Jay McLeod, Resident

Adrian O'Neal, Johnston County Parks, Greenways, and Open Space

Patrick Pierce, Town of Clayton Economic Development

Aaron Prichard, Town of Clayton Planning

Basil Tsiaousopoulos, Resident

Bruce Venable, Town of Clayton Planning

Brandon Watson, CAMPO

Town of Clayton Project Contact

Ben Howell, Planning Director

NCDOT Project Contact

Nick Morrison, Integrated Mobility Division

Project Consultants

Alta Planning + Design

This project was made possible by the NCDOT IMD Multimodal Planning Grant program.

Integrated Mobility Division

N.C. DEPARTMENT OF TRANSPORTATION

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2022 CLAYTON PEDESTRIAN PLAN: EXECUTIVE SUMMARY

Developed over a year-long planning process, the Clayton Pedestrian Plan builds on past efforts and creates a new vision for walking throughout town. The Plan will be used by the Town of Clayton to prioritize, fund, and implement high-quality infrastructure, high-impact programs, and supportive policies for walking.

This planning effort was made possible by an NCDOT IMD Multimodal Planning Grant award.

VISION

The Town of Clayton will have a network of high quality walkways that connect downtown, nature, the Neuse River, and neighborhoods. People of all ages and abilities will have access to comfortable and convenient sidewalks and greenways, resulting in improved mobility choice, economic opportunity, and healthier lifestyles.

GOALS



ENHANCE CONNECTIVITY



PROMOTE EQUITY



ENCOURAGE ECONOMIC GROWTH



IMPROVE HEALTH



INCREASE MOBILITY

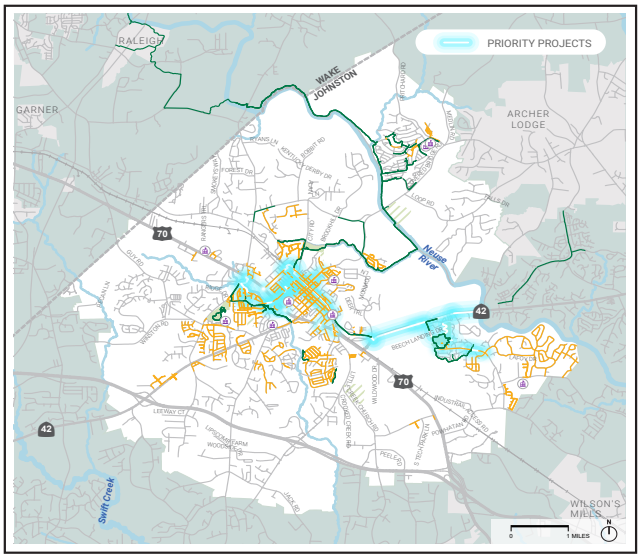


INCREASE SAFETY

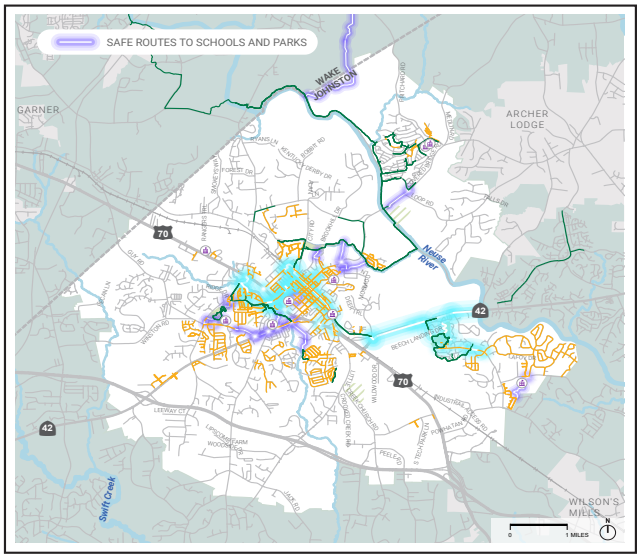
INFRASTRUCTURE RECOMMENDATIONS

Building on the existing sidewalk grid, the growing greenway network, and past planning efforts, priority projects are identified to continue filling in gaps in the pedestrian network (map below/left). Additional gaps in the network were highlighted to connect schools and parks (map below/right). See Chapter 3 and Appendix A for comprehensive pedestrian network recommendations.

PRIORITY PROJECTS



PROJECTS CONNECTING TO SCHOOLS & PARKS

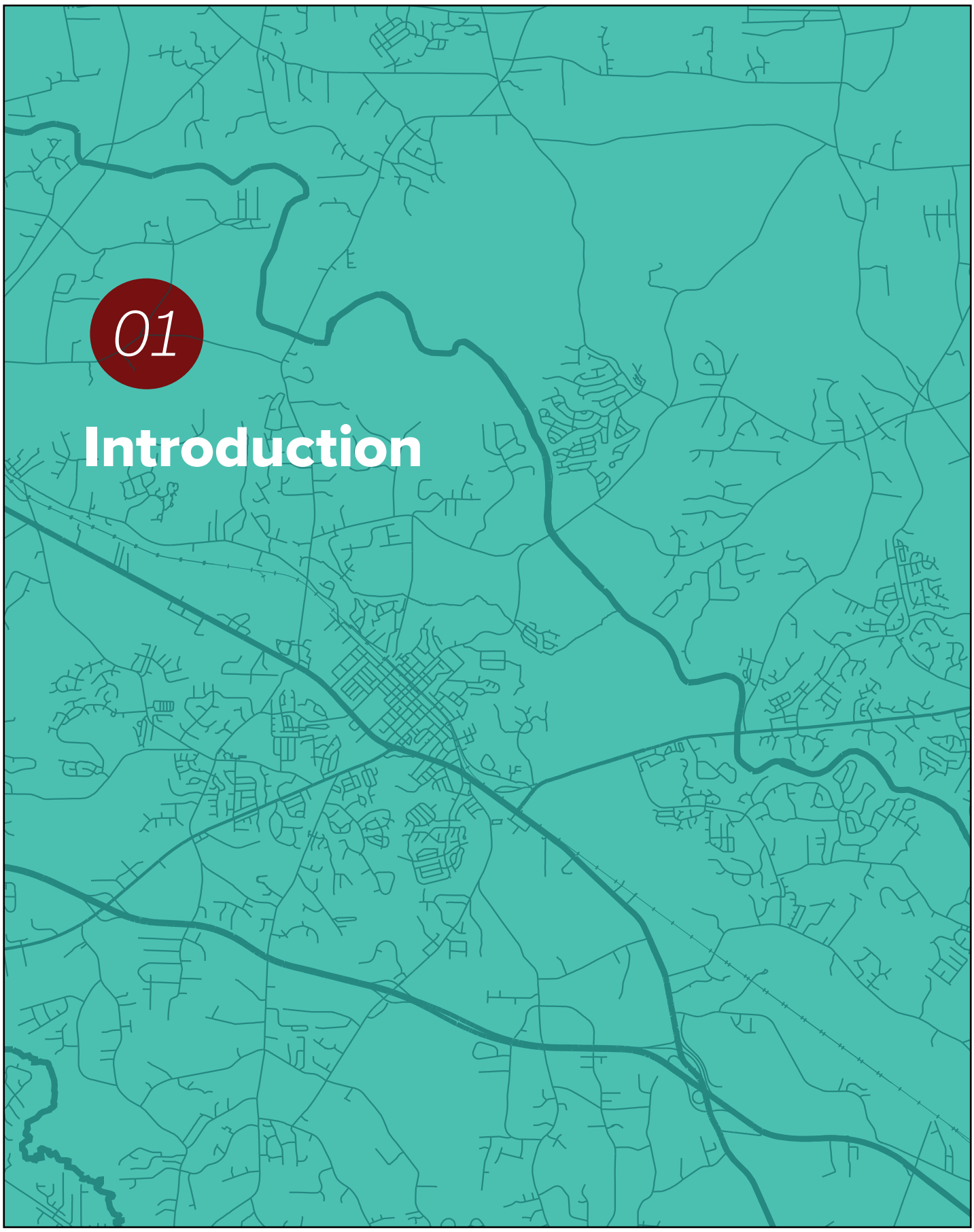


PROGRAM RECOMMENDATIONS

Programmatic efforts such as formalizing an Active Transportation Advisory Committee to help lead implementation efforts (such as engaging the Walk Friendly Communities program) require consistent effort and investment from the Town. Program recommendations can be found in Chapter 4.

POLICY RECOMMENDATIONS

One of the most cost-effective implementation strategies for Clayton is to establish land use and transportation policies, design standards, and development regulations that promote walkable new development, programs, and capital projects. Policy recommendations can be found in Chapter 5.



01

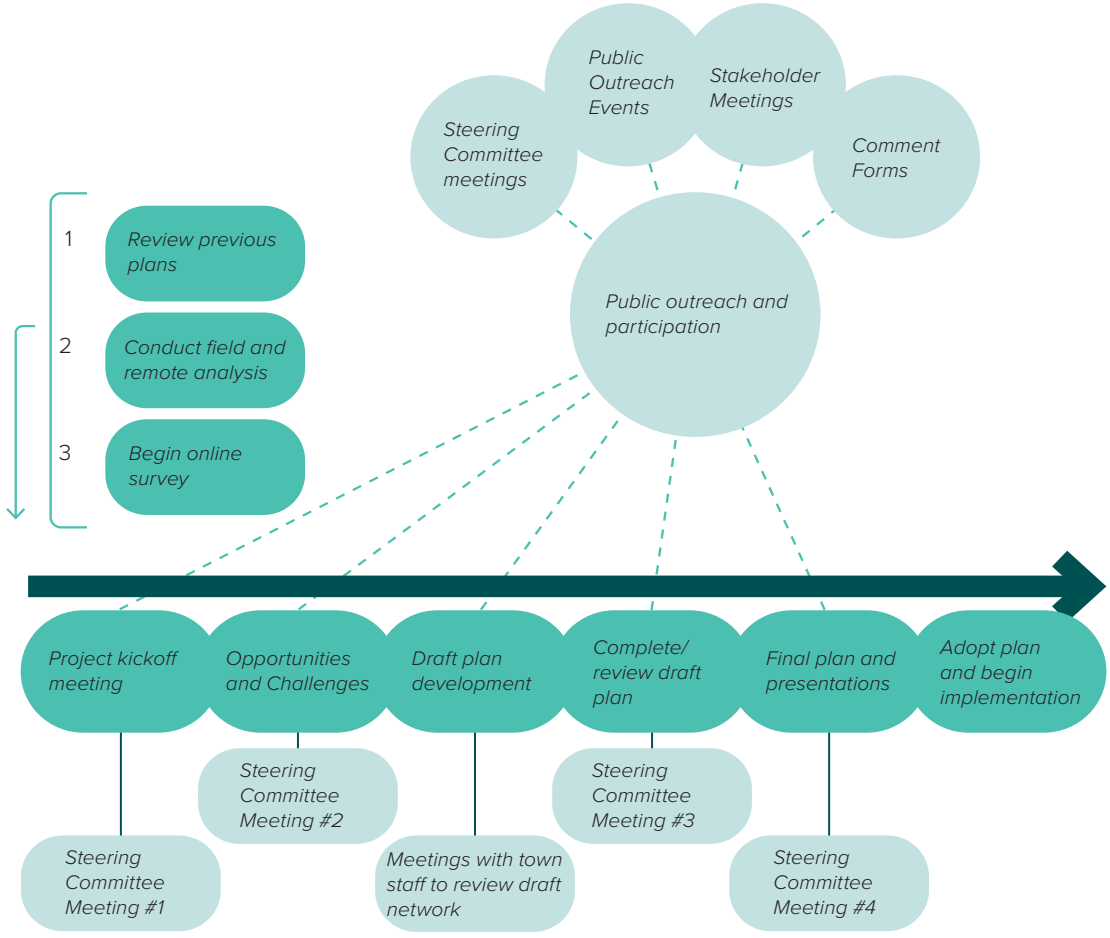
Introduction

Planning Process

The Clayton Pedestrian Plan builds on past efforts and creates a new vision for walking throughout town. The Plan will be used by the Town of Clayton to prioritize, fund, and implement high-quality infrastructure, high-impact programs, and supportive policies for walking.

This planning effort was made possible by an NCDOT IMD Multimodal Planning Grant award.

The Clayton Pedestrian Plan process began in the spring of 2021 and continued through to the spring of 2022. The graphic below illustrates the project timeline, the planning activities undertaken, and how they work together to form a dynamic and representative plan for the Town of Clayton.



Clayton Pedestrian Plan Vision

The Town of Clayton will have a ***network of high quality walkways*** *that* ***connect downtown****, nature, the Neuse River, and neighborhoods.* ***People of all ages and abilities*** *will have access to comfortable and convenient sidewalks and greenways, resulting in improved* ***mobility choice, economic opportunity, and healthier lifestyles.***

How to Get There

The goals outlined below build upon the vision statement, relate to key themes from local plans, and expand upon national best practices.



Enhance Connectivity
Develop a network that links downtown, neighborhoods, and other destinations such as parks and open space, so people of all ages and abilities can safely and conveniently get where they want to go.



Promote Equity
Ensure that walking infrastructure is provided in the areas with the greatest need.



Encourage Economic Growth
Recognize the economic benefits of walkable communities, and capitalize on increased property values.



Improve Health
Enhance access to active transportation and outdoor recreation for health and wellness.



Increase Mobility
Provide active transportation choices that support a healthy, safe, and walkable community.

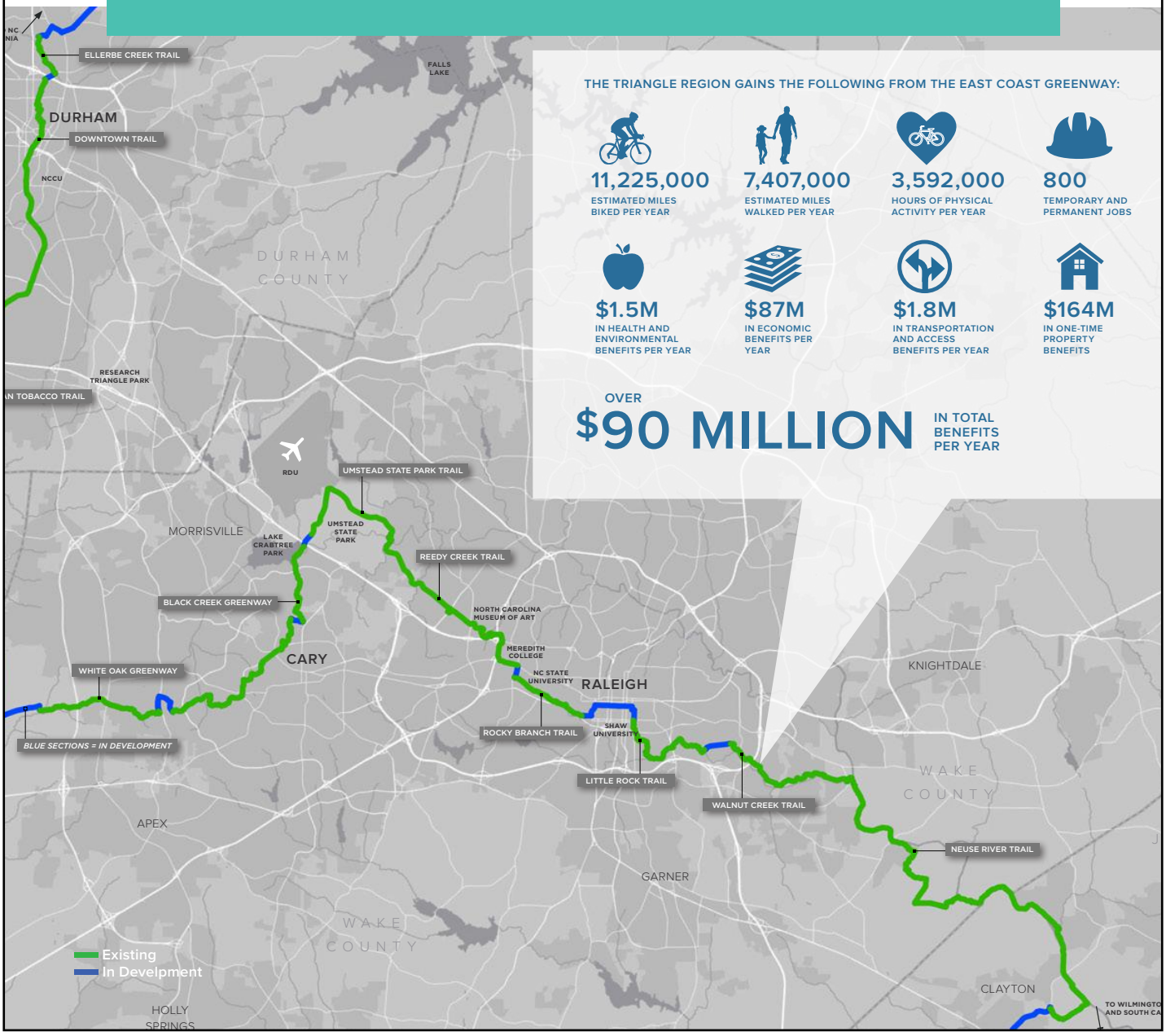


Increase Safety
Address the safety of the transportation system for the most vulnerable users and aim for zero pedestrian fatalities and serious injuries.

The Value of Walkable Communities

CONNECTIVITY BENEFITS

Clayton is at the current southern terminus of the existing 70-mile East Coast Greenway (ECG) section through the Triangle. Highlights from the ECG's *The Impact of Greenways in the Triangle* show significant returns on investment for this section of the ECG.



The Value of Walkable Communities

HEALTH BENEFITS

Sidewalks and greenways offer safe and accessible opportunities for physical activity, and can result in health benefits. People who walk are able to connect with places that they want or need to go.

For every 0.6 MILES **WALKED** there is a **5%** **REDUCTION** IN THE LIKELIHOOD OF **OBESITY.**

Frank, 2004

Those who are physically active generally live longer and have a lower risk for heart disease, stroke, Type 2 diabetes, depression, some cancers, and obesity.

CDC, 2015



20 MINUTES WALKING OR BIKING each day is associated with a

21% LOWER RISK OF HEART FAILURE FOR MEN

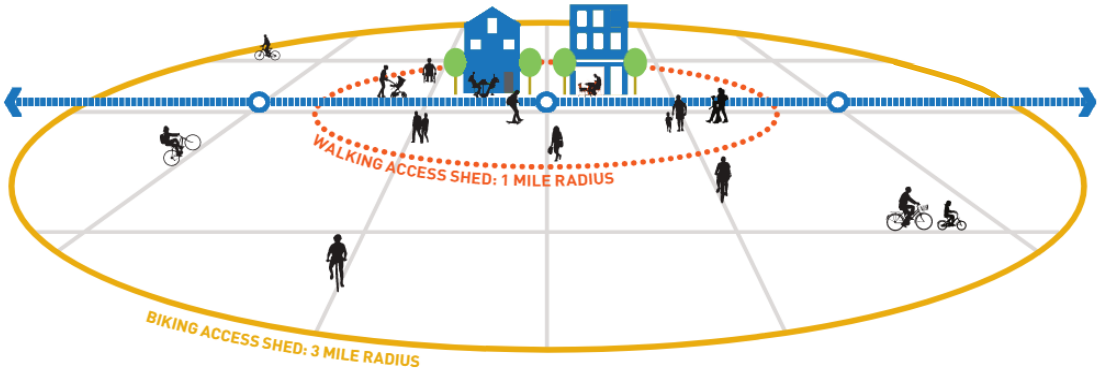
and

29% LOWER RISK FOR WOMEN

Rahman, 2014 and 2015

EQUITY

Sidewalks and greenways, when applied comprehensively, provide a critical element of freedom to those who may not have access to, or the ability to drive a motor vehicle.



40%

OF ALL TRIPS (IN THE US) ARE TWO MILES (OR LESS), A DISTANCE THAT CAN EASILY BE COVERED BY A 10 MINUTE BIKE RIDE OR A 30 MINUTE WALK

NHTS, 2009

DRIVING 4 MILES/DAY COSTS

$847 / year

in fuel and vehicle wear and tear

AAA, 2015

WALKING is **FREE**

The Value of Walkable Communities

ENVIRONMENTAL BENEFITS

Decreasing reliance on automobiles and reducing congestion by utilizing sidewalks and greenways will lead to improved air quality. Walking paths serve as a tool for conserving open space and preserving wetlands.



IF 8% MORE CHILDREN LIVING WITHIN 2 MILES OF A SCHOOL WERE TO WALK OR BIKE TO SCHOOL, the air pollution reduced from not taking a car would be **EQUIVALENT TO REMOVING 60,000 CARS FROM THE ROAD** for one year, nationally.

Pedroso, 2008, SRTS

SAFETY BENEFITS

Pedestrian treatments and traffic calming help to save lives. Additionally, natural surveillance for trails and greenways occurs through increased numbers of trail users, creating an environment where behavior on the trail is monitored by trail users themselves.

A pedestrian hit by a vehicle traveling at **25 MPH**



has a **89%** chance of survival

A pedestrian hit by a vehicle traveling at **35 MPH**



has a **68%** chance of survival

A pedestrian hit by a vehicle traveling at **45 MPH**



has a **35%** chance of survival

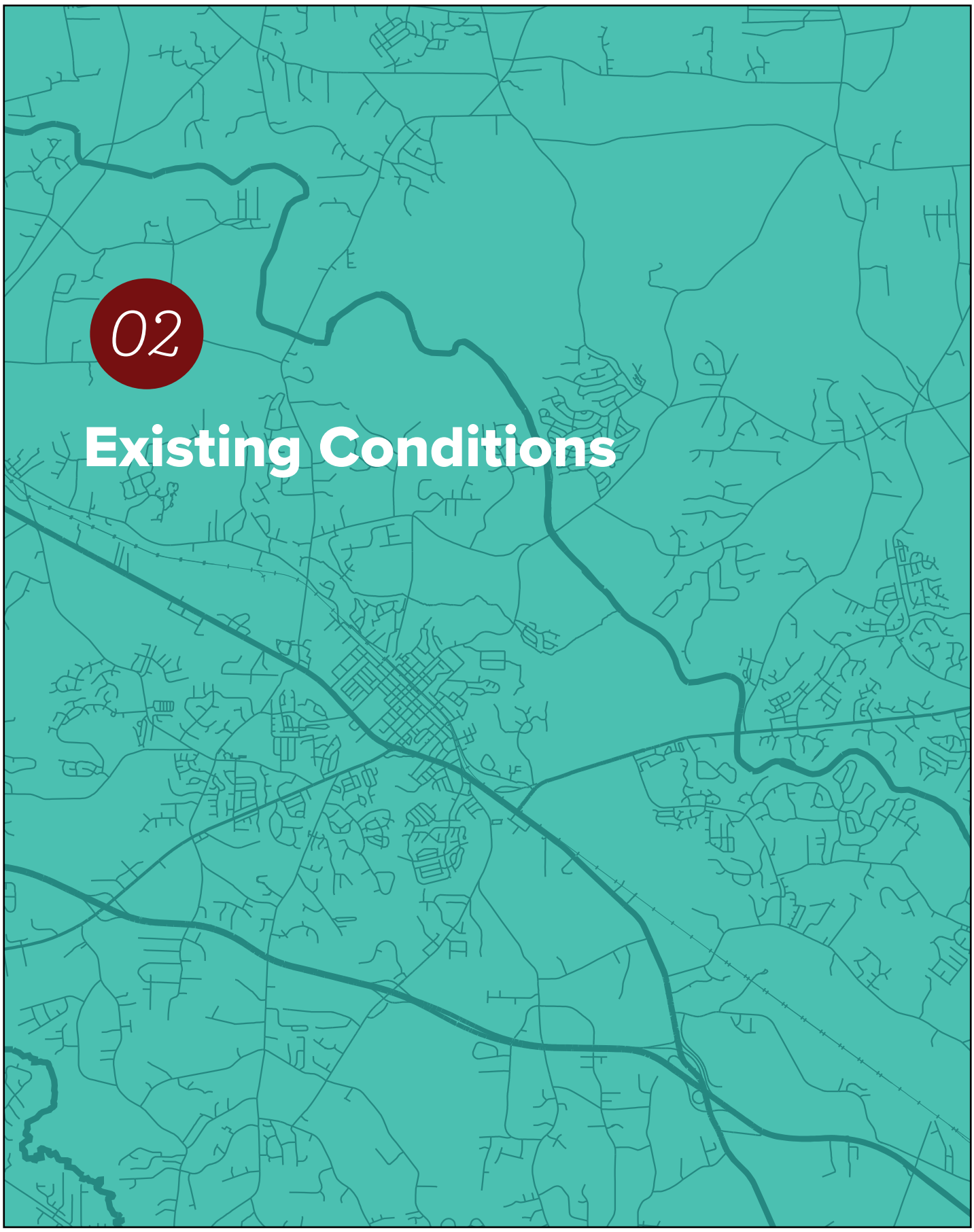
Rosén, E., & Sander, U. (2009). Pedestrian fatality risk as a function of car impact speed. Accident Analysis & Prevention, 41(3), 536-542.

"Communities designed to be walkable can **improve safety** not only for people who walk but for **all community members."**

- Surgeon General, 2015

	% DECREASE IN CRASHES
Install sidewalk to avoid walking along roadway	**65-89**
Increase enforcement to reduce speed	**70**
Install pedestrian refuge island	**56**
Add exclusive pedestrian phasing to signalized intersection	**34**

Federal Highway Administration. (2008). "Desktop reference for crash reduction factors."



02

Existing Conditions

Local Context

Surveyed in the early 1700's, the settlement that would become the Town of Clayton experienced much of its early growth during the 19th century, as a center of Johnston County's local agricultural trade and a stop along the North Carolina Railroad Company's important Goldsboro-Charlotte route. Today, Clayton maintains its small-town feel, even as residents are able to benefit from close proximity to state capital Raleigh, and convenient commutes to employment opportunities throughout the Research Triangle.

Main Street forms the backbone of Clayton's historic downtown district and parallels the railroad tracks. With its diverse offering of restaurants, churches, local businesses, parks, and watering holes such as Deep River Brewing, Main Street is a destination for people in and outside of Clayton's town limits who wish to experience the quintessential North Carolina small town. A few blocks southwest of the historic downtown area, the U.S. Highway 70 Business route runs southeast-to-northwest nearly roughly parallel to Main Street, while NC Highway 42 runs east/west through the eastern town limits; both of these major roadways provide access to larger modern shopping centers, Clayton Middle and High Schools, several parks, Johnston Health's Clayton campus, and major employers such as Grifols Therapeutics, Novo Nordisk, and Caterpillar CMDC.

The Town of Clayton has a population of 26,307 (2020 Census, see below). Clayton's population, similar to that of other outlying suburbs in the Triangle region, has grown substantially over the past few decades as housing prices have risen in Durham and Wake counties. Future development is expected to continue at a similar pace as in the past few decades, with Clayton's population expected to exceed 50,000 people by 2050. Highlighted in the Comprehensive Plan, the Town of Clayton hopes to continue to attract growth while preserving the small-town character and affordability that make it such a great place to live.

This plan lays out the ways in which the town can attain goals of increasing pedestrian safety and accessibility, building upon the work that has already been done to create a downtown sidewalk grid and a developing greenway system.

Demographic Comparison

	Clayton	Raleigh-Cary Metro Area	North Carolina
Population[1]	26,307	1,129,410	10,439,388
Median Age[2]	34.6	36.9	38.9
Median Household Income[2]	$61,954	$78,706	$56,642
% Households without a Vehicle[2]	3.4%	3.9%	5.6%
% Walk to Work[2]	2%	1.1%	1.7%
% School-Age Children (Ages 5-19)[2]	18.4%	20.6%	19%
Black or African American (alone)[2]	23.4%	19.8%	21.4%
Asian (alone)[2]	0.7%	6.0%	3.0%
American Indian and Alaska Native (alone)[2]	1.0%	0.4%	1.2%
Native Hawaiian and other Pacific Islander (alone)[2]	0.0%	0.0%	0.1%
White (alone)[2]	66.4%	65.6%	67.6%
Two or more races[2]	2.9%	4.3%	3.6%
Some other race (alone)[2]	5.6%	3.9%	3.2%
Hispanic or Latino[1]	14.3%	12.0%	10.7%

[1]US Census Bureau, 2020 Census

[2]US Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

Existing Conditions

Due to the size of Clayton, many residents have the potential to walk to their destinations since parks, schools, neighborhoods, and the downtown center are all proximate. However, due to existing land use, connectivity, and infrastructure conditions, walking is not always a safe or comfortable choice.

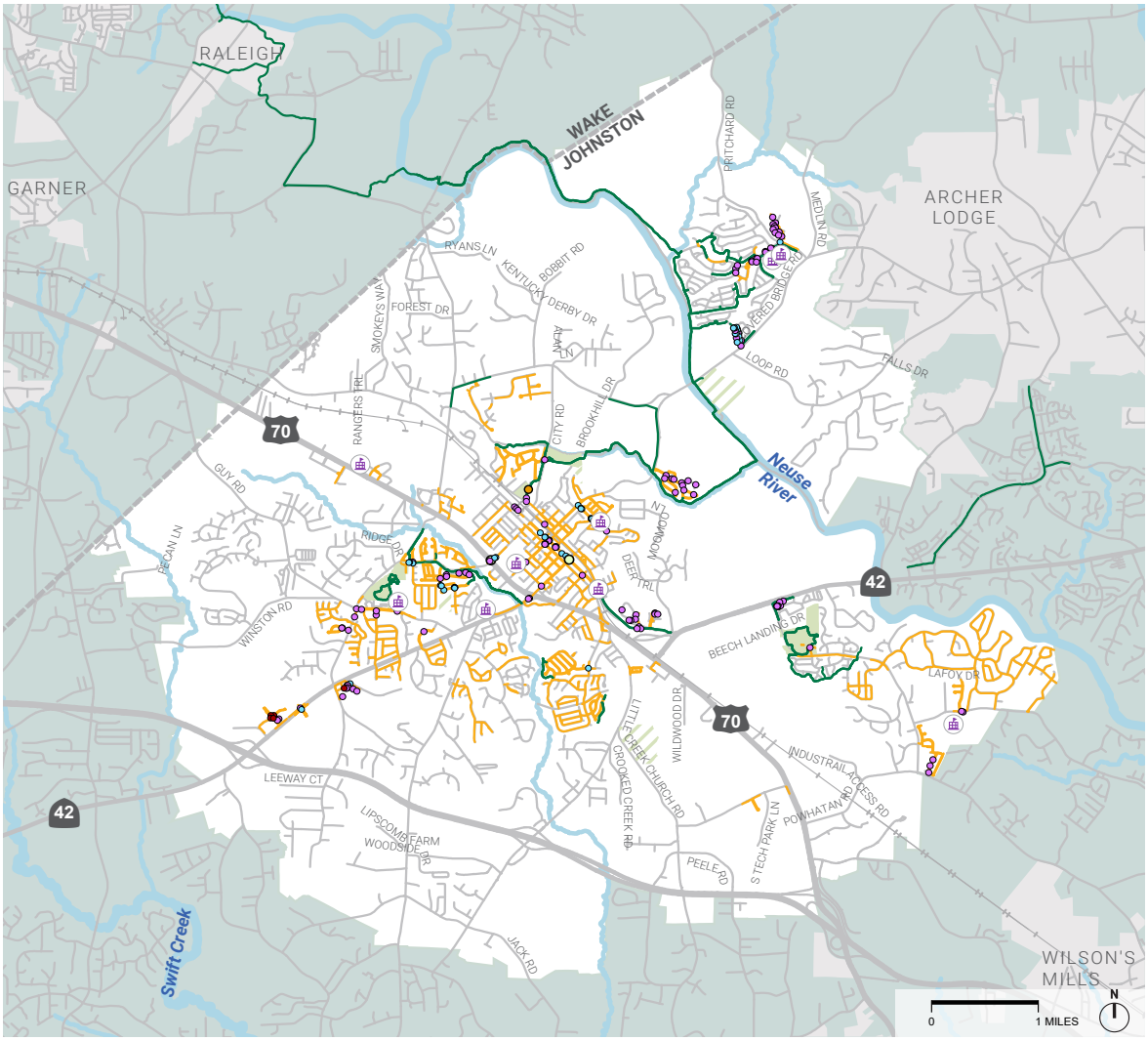
Below: Photo of the recently completed greenway extension connecting Sam's Branch Greenway into Municipal Park. From this point in Clayton to downtown Durham is an existing 70 mile section of the East Coast Greenway.

Clayton's existing sidewalk network (see Existing Facilities map, right) is mostly concentrated within the denser and more walkable downtown area as well as in some of the outlying subdivisions. Clayton has a fairly robust greenway network for a town of its size, with connections to neighboring Wake County along the Neuse River Greenway/East Coast Greenway through Raleigh and the Triangle.

Crosswalks are found in some locations throughout town, and overall, crosswalk implementation is inconsistent.



Existing Facilities



EXISTING FACILITIES

- SIDEWALK
- GREENWAY
- PEDESTRIAN CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- RAISED CROSSWALK
- BRICK CROSSWALK
- TWO-BAR CROSSWALK

FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

Walking in Clayton Today...

Opportunities

Clayton provides many opportunities for new or improved pedestrian facilities. Clayton's downtown sidewalk network, the developing greenway system, and Clayton's first at-grade crosswalk of US 70 (recently implemented) are key elements of the existing network. Recent residential development across Clayton has included pedestrian facilities, significantly expanding the sidewalk network. Several future roadway projects have an opportunity to include pedestrian facilities and close gaps in the current network.



Recently implemented US 70 crosswalk



Recently installed curb ramps at O'Neil St and Wilson St - opportunity to create a formalized crosswalk



Clayton Community Park greenway - short connection opportunity to Clayton Middle School



The extensive downtown sidewalk network (E. Main St)



Clayton River Walk on the Neuse trailhead at Covered Bridge Rd.

Challenges

The existing sidewalk network, overall, has inadequate coverage/connectivity with many micro gaps. The commercial corridor of US 70 and the railroad corridor are most notably lacking in consistency in crossing/connecting pedestrian facilities. Suburban automobile-oriented development patterns typically weren't designed with pedestrians in mind, so distances and connectivity for some of the outlying subdivisions can be challenging to overcome. As the Town continues to make strides in ADA accessibility, there remain many locations that need updating.



Gap in the sidewalk network along Robertson St south of Main St



Sidewalk that connects to railroad tracks with no trespassing sign

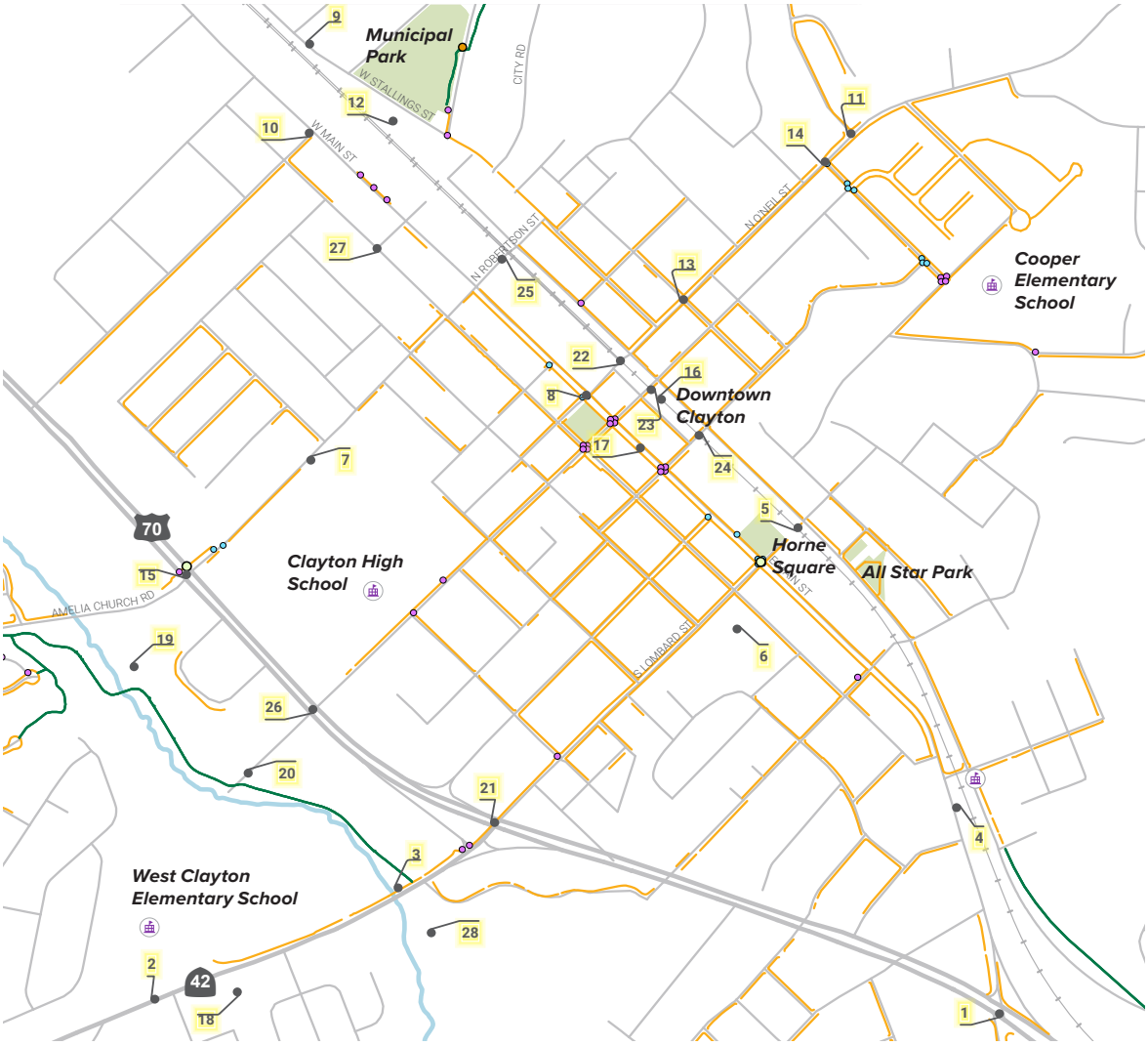


Sidewalk along Amelia Church Rd dead ends at the Little Creek bridge, falling short of the US 70 corridor and downtown connectivity



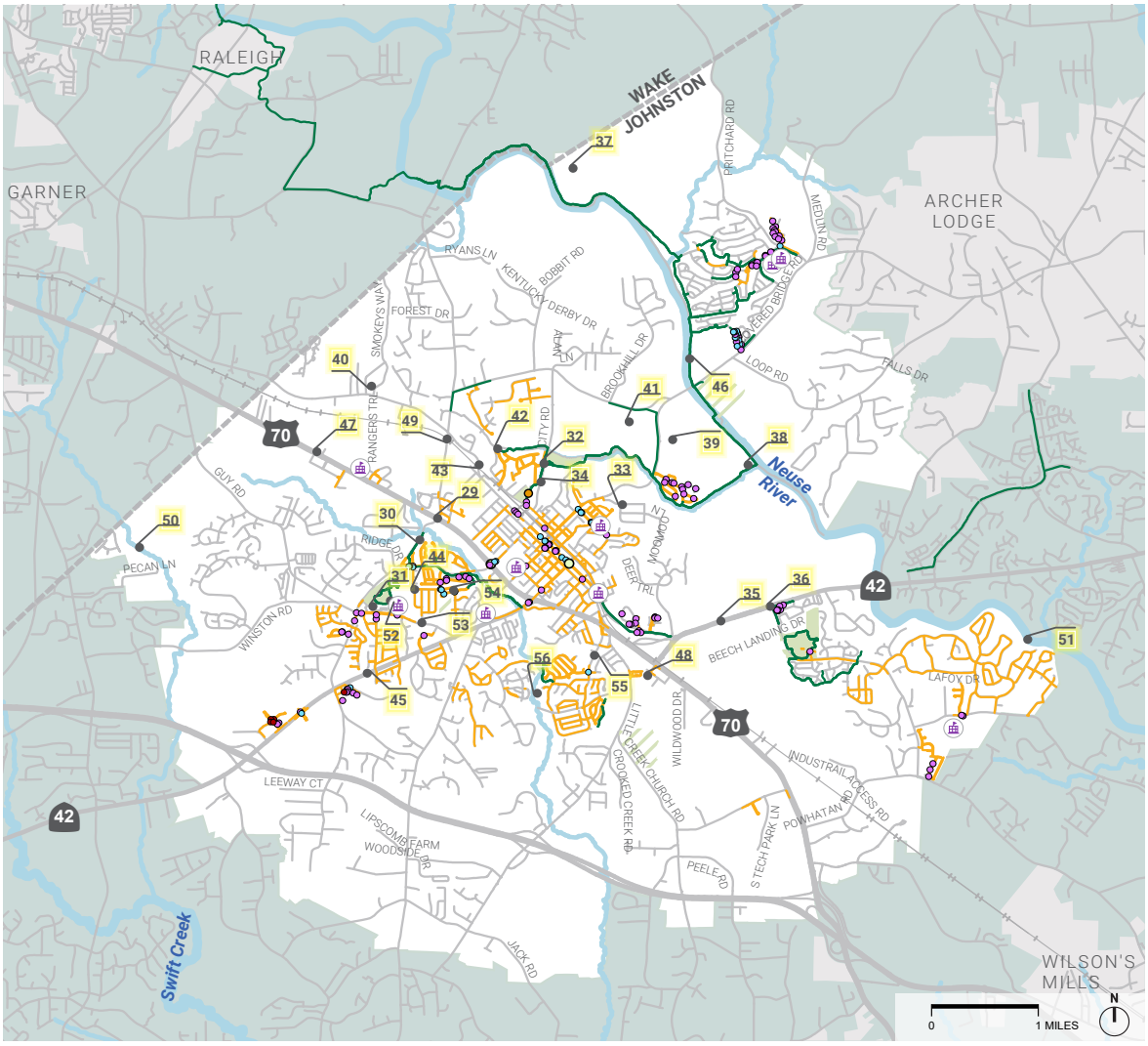
Sidewalk along NC 42 that connects to West Clayton Elementary School - no formal crosswalk to the neighborhoods on the opposite side of street (see cluster of pedestrian crashes along this stretch on page 23)

Opportunities and Challenges (Downtown)



Map ID	Opportunities and Challenges Notes
1	Champion St & US 70 needs improved/signalized pedestrian crossing.
2	Reduce risk of collisions for pedestrians crossing at S Lombard St/NC 42 & Barber Mill Rd.
3	Improve greenway connection to downtown streets at NC 42 intersection.
4	Gap in sidewalk along E Main St.
5	Lombard St RR Crossing: Not an approved RR crossing, though there are steps leading to the tracks.
6	Destination: Compare Foods (grocery store) is an important destination for pedestrians who are transportation-disadvantaged in the downtown area.
7	Connectivity improvements needed along S Robertson St.
8	Improve safety for pedestrians crossing at S O'Neil St & W Main St.
9	Stallings St: wide street with fast-moving traffic.
10	Improve safety at high-volume pedestrian crossing at Moore St & Main St to Deep River Brewing.
11	Improve safety at N O'Neil St & Georgetowne Dr crossing, with streetscape and buffer enhancements.
12	Provide a safe way for pedestrians and bicyclists coming from Municipal Park to cross the RR and Main St into downtown.
13	Need a safe pedestrian crossing at N O'Neil St & E Whitaker St.
14	Need safe school crossing at N O'Neil St & E Wilson St.
15	Recently constructed crosswalk (and pedestrian signal) along the west side of the US 70/Robertson St/ Amelia Church Rd intersection.
16	Significant greenspace between the railroad tracks and Front St - opportunity to complete the East Coast Greenway between the existing segments at Municipal Park and E. Front St. Commuter rail connecting through downtown Clayton is currently being studied. If/when commuter rail comes to downtown Clayton, this is both an opportunity and challenge to improve pedestrian connectivity across (and along) the railroad tracks, including pedestrian crossings and the potential East Coast Greenway alignment.
17	Mid-block crosswalks generally needed through downtown along Main St.
18	Crossing of NC 42 needed for neighborhoods on south side of road to connect to sidewalk, greenway, school, and downtown. NC 42 is a high traffic volume/high speed road.
19	Cleared and level sewer outfall - potential connection opportunity from greenway to Amelia Church Rd east of creek crossing.
20	Cleared and level space - connection opportunity from greenway to Fayetteville St and Clayton High School.
21	Aside from the recently completed crosswalk at US 70/Robertson St/Amelia Church Rd, the Lombard St sidewalk under US 70 is the only other pedestrian crossing of US 70 in Clayton.
22	Sidewalk needing repair, crossing of RR improvement.
23	Sidewalk upgrade needed for RR crossing.
24	Sidewalk repair needed on RR crossing approach (especially on east/north side).
25	Gap in sidewalk network.
26	Gap in sidewalk network and crossing needed of US 70 to make direct connection from Clayton High School to greenway.
27	Sidewalk gaps west of downtown.
28	Extend greenway east along Little Creek or utility clearing.

Opportunities and Challenges (ETJ)



EXISTING FACILITIES

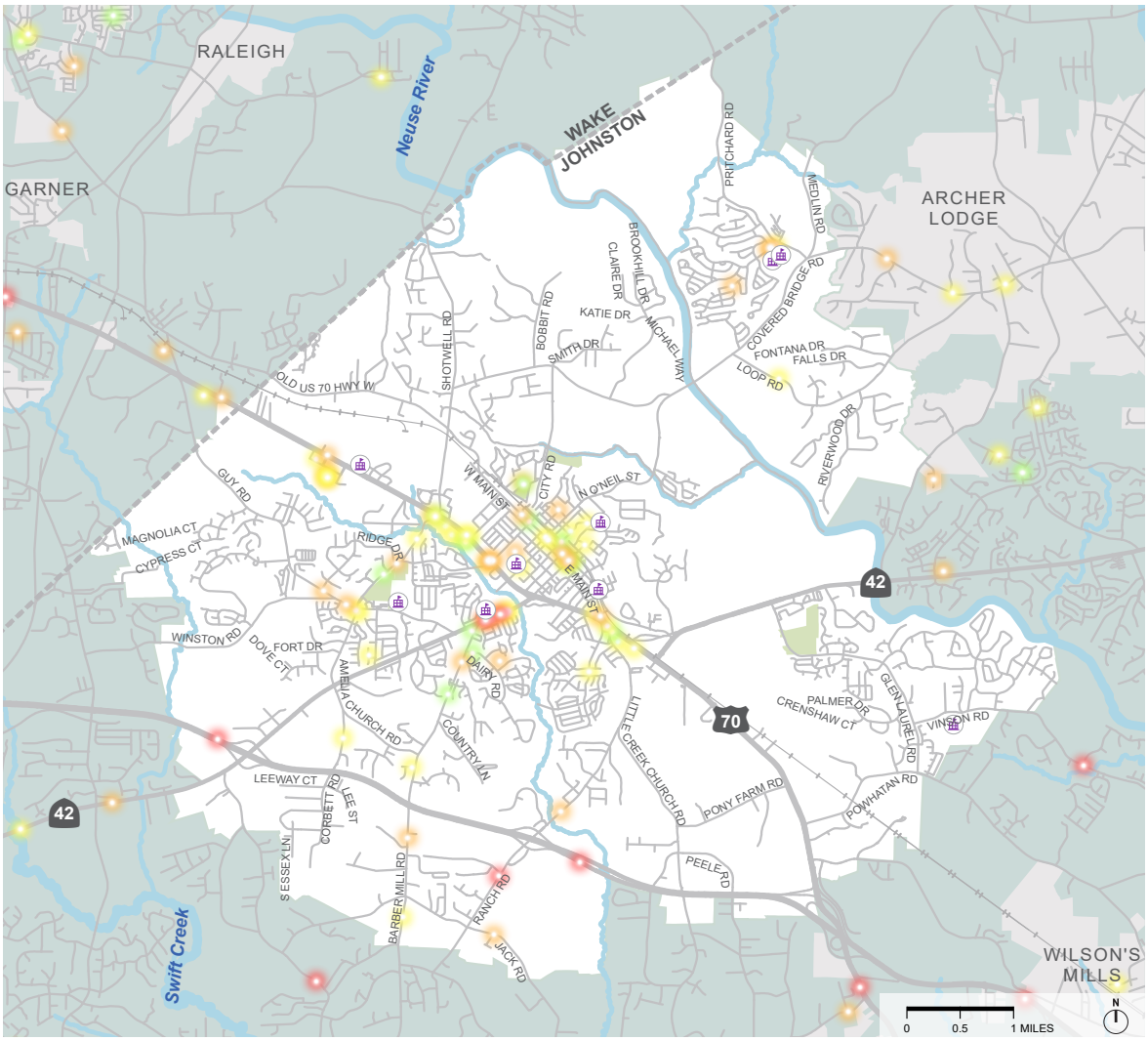
- SIDEWALK
- GREENWAY
- PEDESTRIAN CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- RAISED CROSSWALK
- BRICK CROSSWALK
- TWO-BAR CROSSWALK

FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

Map ID	Opportunities and Challenges Notes
29	Shotwell Rd & US 70 needs improved/signalized pedestrian crossing.
30	Seniors from Lion Spring senior living community often walk from the greenway's end to Highway 70 to access shopping and amenities.
31	Parkside Village apartments are next to Clayton Community Park but do not have a sidewalk into the park.
32	Close gap between Sam's Branch Greenway and nearby greenway in Highgate development.
33	Connect Ashcroft neighborhood and future neighborhoods in this area to O'Neil (and add sidewalk to O'Neil), and provide connection to Cooper Academy, allowing kids to walk to the school.
34	Invest in high-quality signage that will guide people along the greenway and towards downtown.
35	Next link in NC 42 greenway - STI projects EB-6016 & EB-6017 will extend the Front St sidepath along NC 42 to the Neuse River bridge. These projects are scheduled for construction in 2028.
36	Pedestrian crossing needed at NC 42 & Glen Laurel; reduce speed limit at town line on NC 42 to 35 mph for improved safety.
37	Make connection from Neuse River Trail north to Williamson Preserve (high priority for Wake Co. & partnership opportunity with Williamson Preserve).
38	Clayton River Walk will be closed through 2024 for water treatment plant upgrades - too long with no alternative.
39	Future Development - Need policies to create key destinations from subdivision to existing networks (build or fees).
40	Destination: Clemmons Educational State Forest
41	Steeple Chase Subdivision - More facilities under construction here, need to connect to external network.
42	Recently constructed greenway segment that connects to the terminus of Crawford Pkwy.
43	Add pedestrian facilities to new portion of W Stallings & Old US 70 - currently requires 2 railroad crossings, but will be more direct if expanded.
44	Increase connectivity between Garrison Avenue neighborhoods and the nearby park.
45	STI project (R-3410) will widen NC 42 from NC 50 to US 70B in Clayton to multi-lanes, and will include a sidepath on one side of the road. Construction is scheduled for 2029.
46	Flooding along the Neuse River Greenway and Sam's Branch Greenway can cause trail closures and additional maintenance after heavy rain events.
47	STI project (U-6113) will transform US 70 from the eastern edge of Clayton to Garner into a Super Street - construction is scheduled for the 2030's at this time.
48	STI project (U-6223) will construct a new road from the NC 42/US 70 intersection to Little Creek Church Rd. Construction is scheduled for 2022. No pedestrian facilities are included in the current design.
49	STI project (P-5743) will construct a grade separated crossing of Shotwell Rd and the railroad line. Construction is scheduled for the 2030's at this time.
50	The White Oak Creek corridor was identified as a connection opportunity between Clayton and Garner in the Wake County Greenway System Plan.
51	A feasibility study for extending the East Coast Greenway/Mountains to Sea Trail from Clayton to Smithfield will be completed in 2022.
52	Direct connection needed from Clayton Middle School to the Clayton Community Park greenway.
53	Gap in sidewalk network.
54	Gap in sidewalk network.
55	Gap in sidewalk network.
56	Greenway connectivity needed to southeast neighborhoods.

Pedestrian Collisions (ETJ)



PEDESTRIAN INJURY SEVERITY

- FATALITY
- MINOR OR SERIOUS INJURY
- POSSIBLE OR UNKNOWN INJURY
- NO INJURY

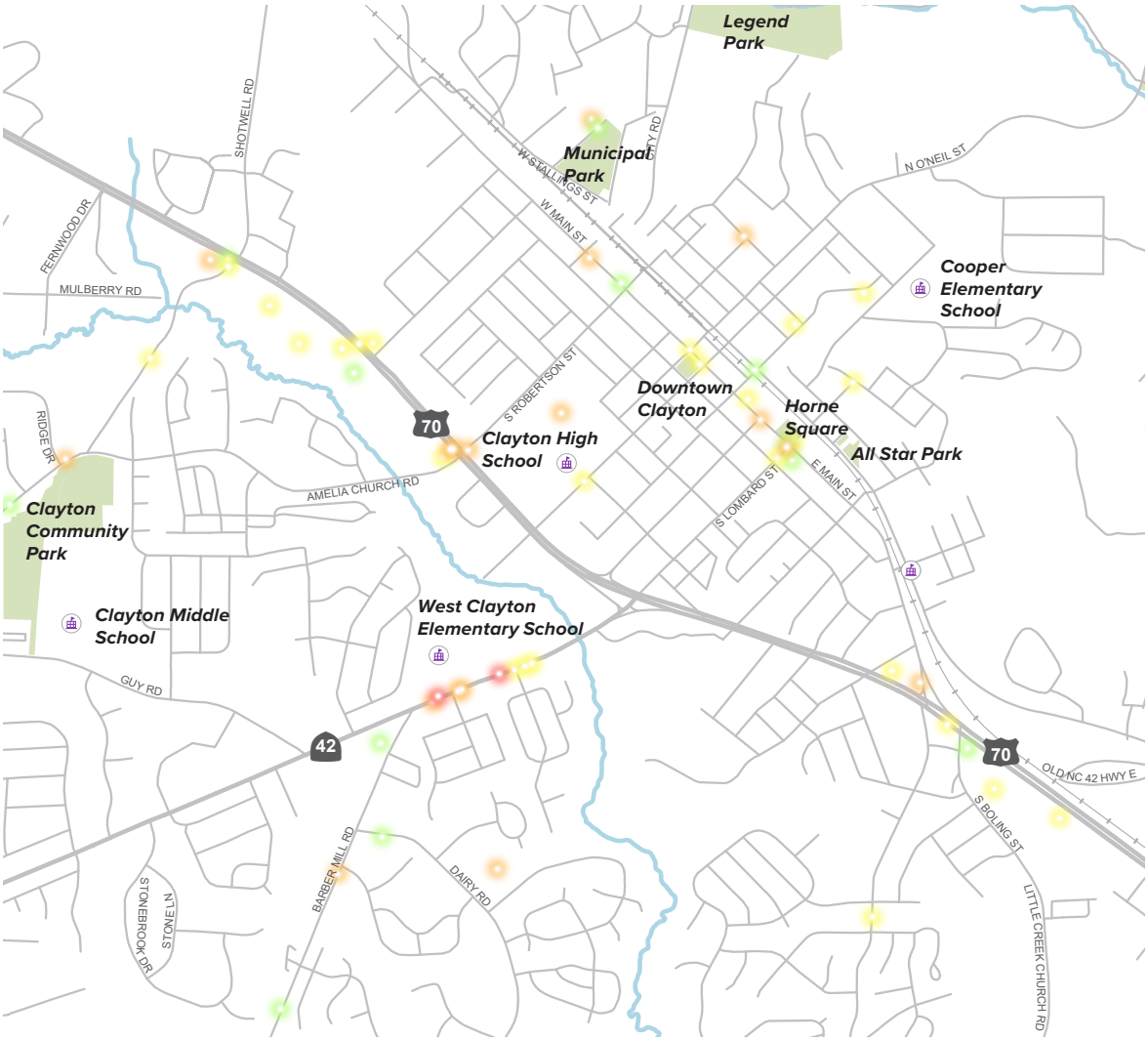
FEATURES AND BOUNDARIES

- SCHOOL
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- COUNTY BOUNDARY

This map illustrates collisions involving a pedestrian between 2009 and 2019. Within this 10-year time frame, there were a total of 82 pedestrian collisions within the Clayton ETJ. Of these, 38 collisions occurred along the roadway, 15 occurred at intersections, and 29 occurred off-road (typically in parking lots).

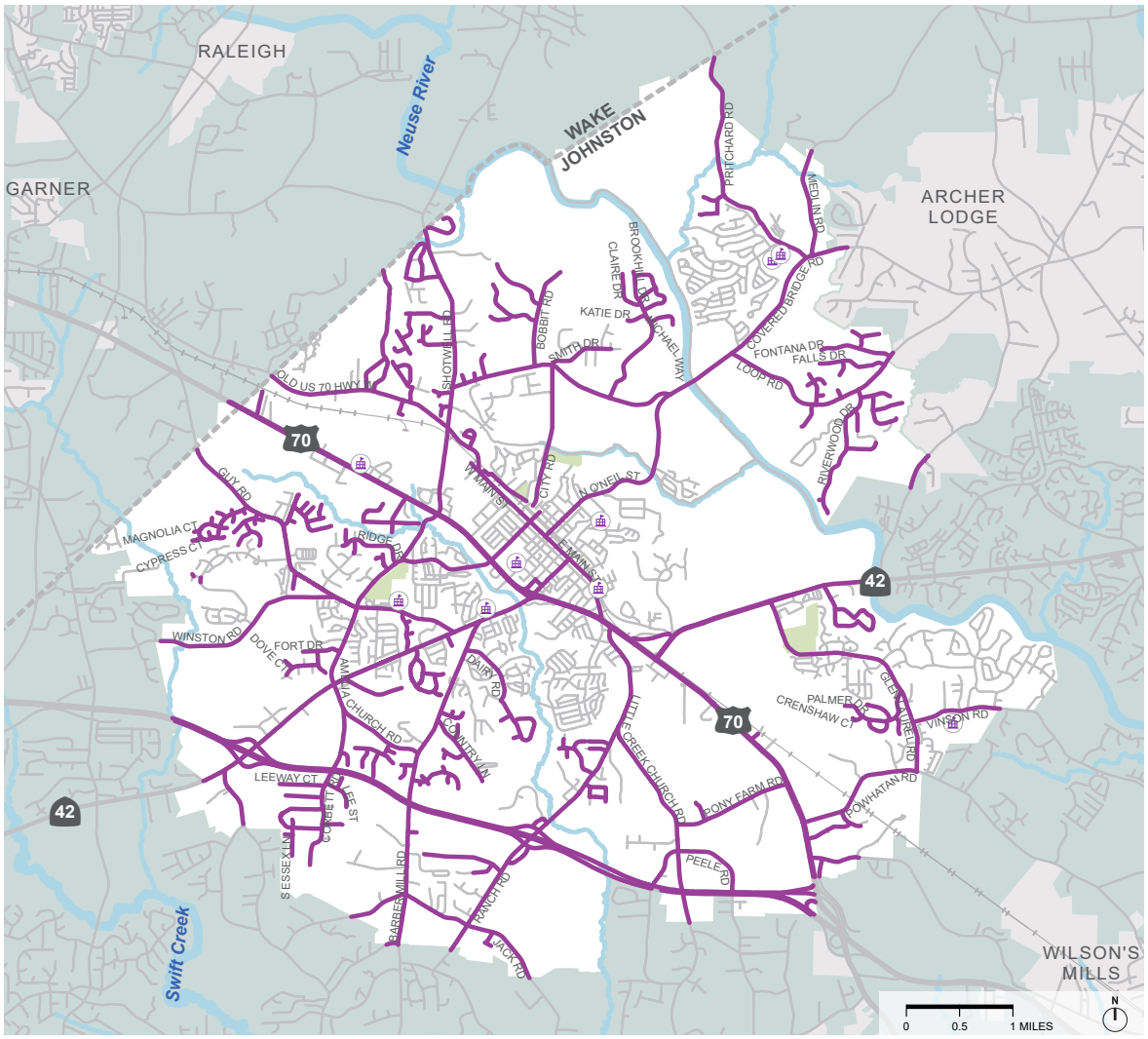
Five of the 82 collisions resulted in a pedestrian fatality. All of the fatalities occurred along higher-volume/higher-speed roadways (two on US-70, two on NC-42/Lombard St, and one on Ranch Rd). The pedestrians involved in the fatalities were disproportionately male persons of color.

Pedestrian Collisions (Downtown)



Closer to the downtown area of Clayton, clusters of crashes can be found along Main St, NC 42, and US 70. Notably, a cluster of eight pedestrian crashes (including two fatalities) along NC 42 occur on a 1,200' stretch in front of West Clayton Elementary School and two residential neighborhoods.

NCDOT-Owned Roads



CLAYTON ROADWAY OWNERSHIP

- NCDOT OWNED ROADS
- LOCALLY OWNED ROADS

FEATURES AND BOUNDARIES

- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

This map shows which roadways in Clayton are state-versus- locally-owned. The Town of Clayton will need to coordinate with NCDOT Division 4 and the Integrated Mobility Division to implement this plan's recommended improvements along NCDOT roadways.

Plan Review

A review of previous programs and plans related to Clayton pedestrian planning is included below. The purpose of the plan review is to identify previous recommendations in Clayton that are relevant to pedestrian travel.

Town of Clayton Comprehensive Growth Plan 2045 (2022)

Think Clayton is a framework for Clayton's continued growth in the coming decades, providing the basis for Clayton's regulations and policies that guide its physical development. Key pedestrian-related notes from the plan include:

- Public Survey - Building more greenways and trails was the highest cited environmental priority in the public survey, and sidewalks and pedestrian improvements were the second highest cited transportation priority.
- Goals - Mobility goals include: (M-1) Develop and maintain a multimodal transportation system; (M-3) Support system user safety and prioritize bike and pedestrian activity. Parks & Natural Resources include: (PR-1) Support the development of Clayton as a regional destination for recreation and trail-based tourism; (PR-2) Develop the Neuse River corridor as a greenway and blueway with multiple access points for hiking, biking, and paddling; (PR3) Provide all Clayton residents convenient access to a park within a 10-minute walk of their residence.
- Recommendations - Throughout the document pedestrian connectivity and complete streets are emphasized, including connectivity in and to downtown, strategically improving pedestrian connectivity throughout Clayton, continuing to develop the greenway system, adopting a Complete Streets Policy, and coordinating with development and NCDOT to ensure pedestrian circulation is included in all projects.

Town of Clayton Parks and Recreation Comprehensive Plan Update (2013)

One of the main goals for this plan is to "Analyze the accessibility of Parks and Recreation facilities and how they could be better connected to where users live and work."



The plan includes a discussion of how vibrant, accessible parks and recreation opportunities allow Clayton's downtown to maintain the small-town feel that has been such a large part of its appeal for families from the Triangle and beyond.

Specific proposals include creating new sidewalk and greenway connections to and from nearby neighborhoods and institutions, and improving safety for people choosing to walk and bike to parks in Clayton. Greenway priorities outlined in the plan include:

- Sam's Branch Greenway completion
- Sidepath along Amelia Church Rd
- East Clayton Community Park to the Neuse River (future ECG/MST)
- Little Creek Greenway
- Front St multi-use path

Town of Clayton Parks and Recreation Master Plan Update Addendum (2019)

This plan document contains inventories of each of Clayton's parks, detailing existing pedestrian connectivity in each.

Each park's inventory also includes recommendations for improving pedestrian access, with suggestions such as additional wayfinding as well as improved connections to specific destinations such as nearby schools and apartment complexes.

Connect 2050: The Research Triangle Region's Metropolitan Transportation Plan (Capital Area MPO (CAMPO) and Durham-Chapel Hill-Carrboro (DCHC) MPO) (2022)

The Connect2050 Plan began from a different foundation than previous metropolitan transportation plans. Instead of relying on a conventional perspective that prioritizes faster car travel and less congested roads, this plan used a lens that also focused on the mobility and accessibility concerns of people who are less likely to own cars and have a greater propensity to use transit, walking and bicycling to meet their travel needs.

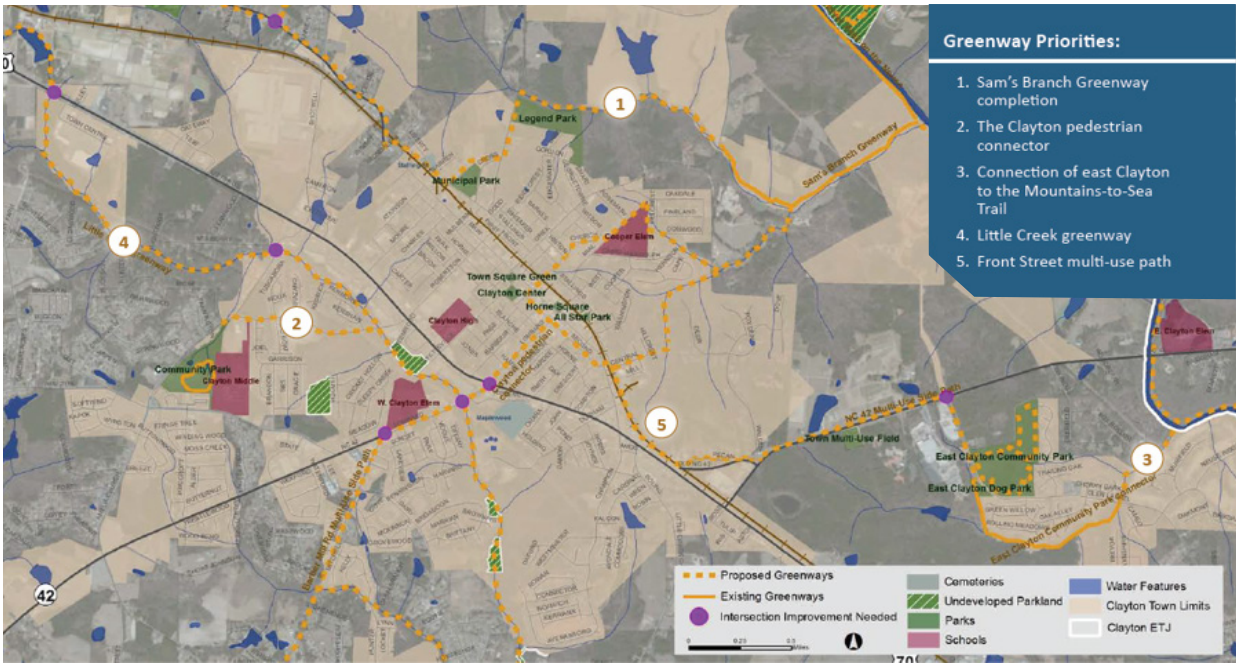
On a regional level, the CAMPO and DCHCMPO encourage pedestrian projects. Most town and city governments have instituted sidewalk requirements for new development, and sidewalk upgrades are generally included in roadway construction projects. Most roadway projects in the 'Roadway Element' of the MTP are expected to provide appropriate accommodations for pedestrians, concurrent with roadway improvements. Missing links and gaps in the pedestrian networks will be constructed retroactively. Priority is generally given to areas with heavy pedestrian traffic generators, such as schools, parks, transit stops, and business districts, and to address historic inequities in the provision of sidewalks.

The DCHC MPO bicycle and pedestrian policy expects any roadway or other transportation project, whether it is a new or improved facility, to include appropriate pedestrian and bicycle accommodations, and references national best practices in design guidane from NACTO, AASHTO, and the FHWA.

Southeast Area Study (CAMPO and Upper Coastal Plain RPO) (2017)

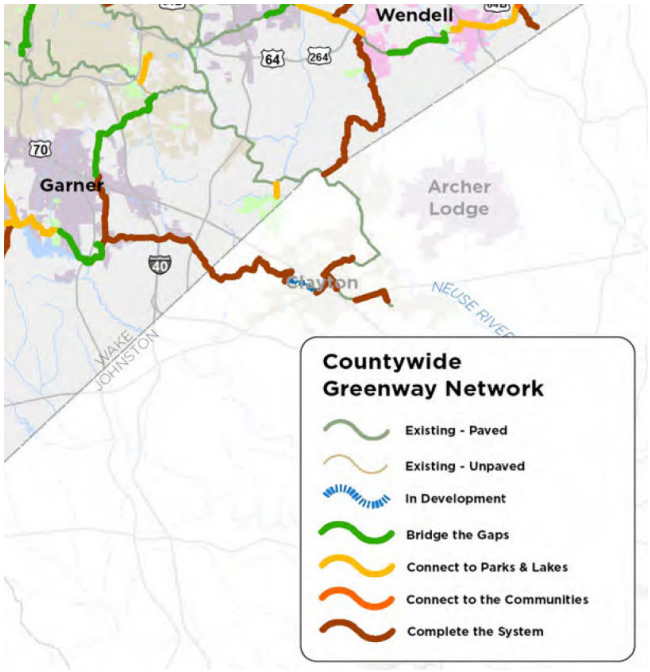
The Southeast Area Study (SEAS) features pedestrian recommendations for the region, including Clayton, as well as an overall emphasis on integrating multimodal transportation improvements to all roadway and development projects. High-level programmatic and policy recommendations complement infrastructure recommendations. This plan is currently being updated.

Below: Image from the overall greenway priorities map from the Clayton Parks & Recreation Master Plan. Several of these priorities have been completed and/or are currently being implemented.



Wake County Greenway System Plan (2017)

Because Clayton is proximate to the Wake County border, and with the regional trail system connecting directly from Wake County to Clayton via the Neuse River Greenway/East Coast Greenway, Clayton is included in the recommended Wake County Greenway System network. A connection to Garner from Clayton via the Little Creek and White Oak creek corridors is also recommended as part of the Wake County greenway system (see map to the right).

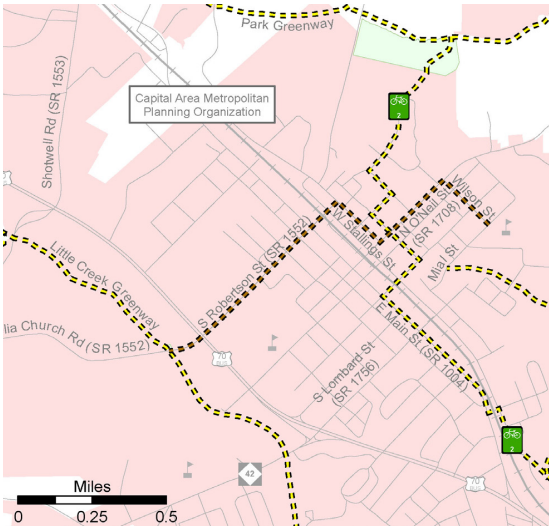


Above: Image from the Wake County Greenway System recommended network, including connectivity to Clayton.

Johnston County Comprehensive Transportation Plan (Maps) (2011)

This plan lays out a road map for wide-scale transportation infrastructure changes across Johnston County that will allow the county to meet the needs of increased population, as new residents continue to be drawn by its proximity to Raleigh and relatively low cost of living.

While much of the plan document focuses on improvements to highways and other major roadways to allow them to meet increased capacity needs, the plan contains a map of Clayton's downtown that includes existing and proposed sidewalks, as well as highlighting where sidewalks are due for improvements.



Above: Image from Clayton Pedestrian Map in the 2011 Johnston County Comprehensive Transportation Plan. Key corridors recommended for improvement include Robertson St, O'Neil St/Wilson St, the Little Creek Greenway, and a greenway connection through downtown - components of these projects have been completed.

Clayton Downtown Master Plan (2010)

This plan lays out recommendations for land use changes and urban design reconfigurations for downtown Clayton, including recommended pedestrian connections.

Recommendations include new pedestrian connections between buildings from parking areas behind Main Street, as well as between downtown and nearby neighborhoods, specifically between Fayetteville and Lombard Streets.

Town of Clayton Comprehensive Bicycle Plan (2007)

While the Clayton Comprehensive Bicycle Plan focuses mainly on improving the bicycle traveling experience within Clayton, it contains a useful discussion of existing conditions that lay groundwork for understanding the ways in which the town's sidewalk network already provides connectivity, and how this can be expanded for pedestrians.

Many of the suggested improvements, such as widening existing sidewalks, creating new sidepaths, or adding more crosswalks will benefit pedestrians as well as bicycles.

Survey Responses

Public feedback was solicited through an online and hard copy survey (see summary of results below and further detail in Appendix D), distribution of information cards, two in-person public outreach events, four steering committee meetings, and seven stakeholder interviews.

492 responses

How would you rate walking conditions in Clayton?

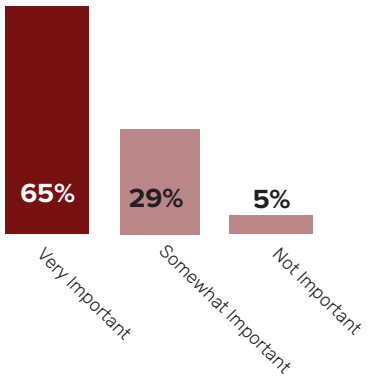
FAIR 56%

9% said Excellent

34% said Poor

492 responses

How important to you is improving walking conditions in Clayton?



493 responses

When walking in Clayton, what is (or would be) the primary purpose of your trip?

1 Exercise, Recreation, Socializing

2 Transportation

3 Other

490 responses

What do you think is the most important outcome of the Clayton Pedestrian Plan?

1 Safer conditions for walking overall

2 Better connections for transportation

3 More choices for recreation and exercise

4 Other

489 responses

What destinations would you most desire to reach by walking?

- Downtown Businesses
- Existing trails and greenways
- Clayton Parks
- Other shopping areas
- K-12 Schools

492 responses

Which of the following pedestrian improvements would you like to see in Clayton?

- **81%** More sidewalks/ improvements to existing sidewalks
- **61%** Additional crossing opportunities/improvements
- **47%** Lighting
- **45%** More greenways & Trailheads
- **30%** Slower vehicle speeds (traffic calming)
- **28%** Increased shade (e.g., street trees)

489 responses

Roadway crossings: what do you think are the factors that most discourage pedestrians crossing roadways in Clayton?

- **69%** Lack of striped crosswalks or traffic signals
- **62%** Heavy/fast motor vehicle traffic
- **53%** Motorists failing to yield to pedestrians

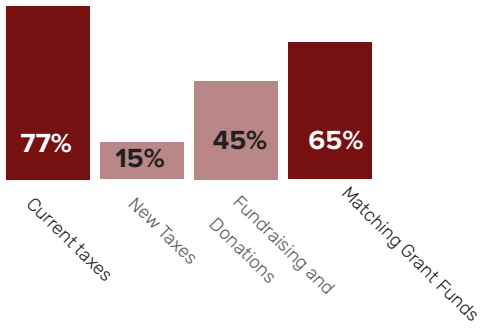
492 responses

What is your relationship to Clayton?

- **95%** I live here
- **42%** I own property here
- **17%** I work here
- **4%** I visit here

493 responses

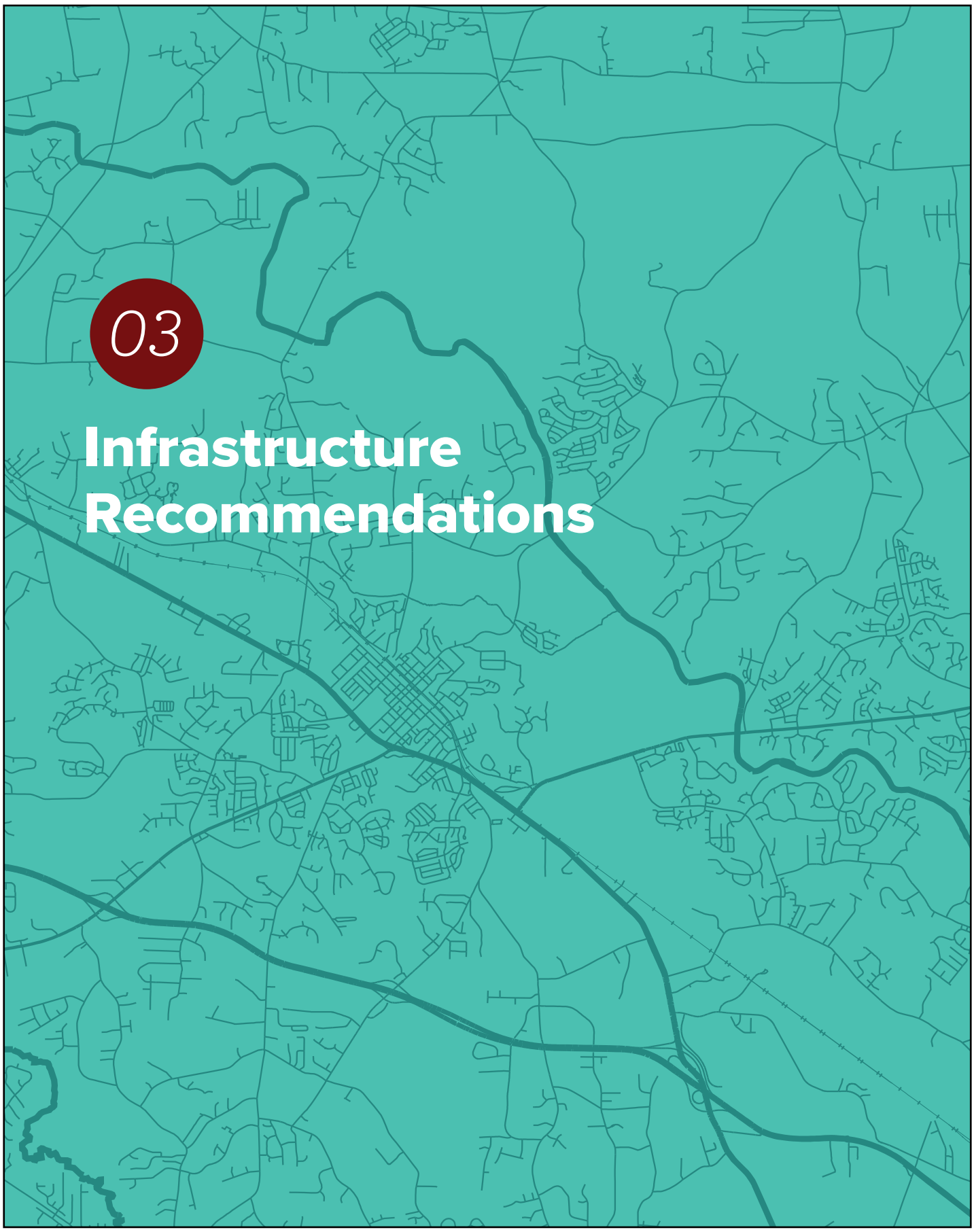
How should pedestrian facilities be funded within Clayton?



377 responses

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements?

- **MAIN ST/DOWNTOWN**
- **US 70/NC 42**
- **SHOTWELL RD AMELIA CHURCH RD/CLAYTON COMMUNITY PARK**
- **GLEN LAUREL RD & EAST CLAYTON COMMUNITY PARK**
- **ROBERTSON ST GAPS**



03 Infrastructure Recommendations

Introduction

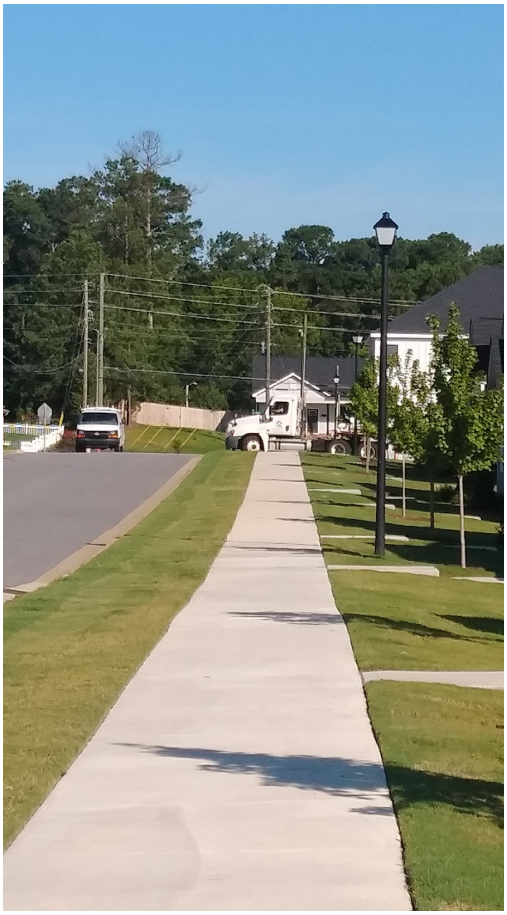
The proposed pedestrian network aims to reflect the plan's vision and goals, the core of which is to provide a connected network that is safe and comfortable for people of all ages and abilities. A connected network of sidewalks, greenways, and pedestrian crossings aim to achieve this vision of an all ages and abilities network.

The proposed pedestrian network was developed to:

- Build upon existing and previously planned pedestrian facilities
- Incorporate insight from the public, stakeholders, and steering committee
- Integrate best practices in pedestrian design guidance (see following pages)
- Provide connections to downtown, neighborhoods, schools, parks, and other key destinations
- Address gaps in the network

Facility Types

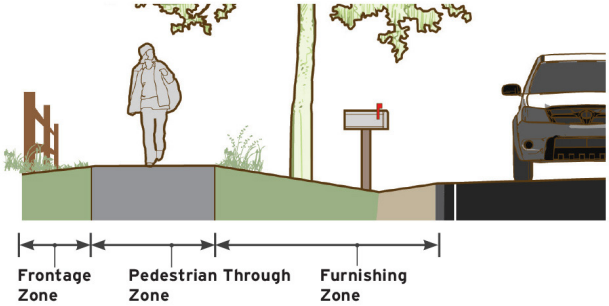
The facility types on the following pages make up the general toolbox of recommendations proposed in this plan. Each facility has its own set of guidance based on context and implementation feasibility. This section culminates in a series of maps showing priority projects, safe routes to schools and parks projects, and comprehensive recommendations.



Above: Recently constructed sidewalk along Wilson St.

Sidewalk Recommendations

Sidewalks are desirable to support pedestrian safety and comfort in areas with a mix of land uses and also in areas of the community where the roadway network connections have generally high traffic volumes or speeds. Sidewalks serve multiple important functions and should be designed with distinct zones to accommodate these uses. The graphics below and to the right provide recommended and constrained minimum dimensions for sidewalk elements in lower density areas as well as the downtown context.



In lower density areas, there are less competing uses (generally) and may have smaller dimensions than a downtown context. Sidewalks should be physically separated from the roadway by an unpaved buffer separation, barrier or curb edge.

Frontage Zone

The frontage zone is a shy zone adjacent to the property line and provides space for people to enter and exit buildings.

- On most sidewalks, a frontage zone of 1–2 ft allows for shy distance to fences and building walls. No frontage zone is necessary adjacent to parks or open space.
- Next to buildings with active ground floor uses, the frontage zone may be widened to 2-8 ft to provide room for door swing, café seating, product display, and window shopping.

Pedestrian Through Zone

The pedestrian through zone is the clear width needed for pedestrian travel activity and should be wide enough for two people to walk side-by-side.

- The pedestrian through zone should be at least 5 ft wide. This permits side-by-side walking and meets accessibility guidelines for turning and maneuvering.

Furnishing Zone

The furnishing zone is closest to the street and provides space for mailboxes, signs, street lighting, and other utilities. This area serves as snow storage areas in winter climates and protects pedestrians from splash during rain events.

- A furnishing zone of 4–8 ft is preferred for comfort and aesthetics. This width allows for trees, benches, and other large furnishing items.

Minimum recommended dimensions for sidewalks from the Small Town and Rural Multimodal Networks Design Guide

Volume And User Mix	Frontage Zone	Pedestrian Through Zone	Furnishing Zone	Total Width
Constrained Minimum	1 ft (0.3 m)	5 ft (1.2 m)	2 ft (0.6 m)	8 ft (2.4 m)
Recommended Minimum	2 ft (0.6 m)	6 ft (1.5 m)	4 ft (1.2 m)	12 ft (3.6 m)

Parking Lane/Enhancement Zone

In a downtown context, the enhancement zone may add additional space to the pedestrian realm in the form of curb extensions, parklets, bicycle corrals or other features. The enhancement zone may occupy a parking lane or shoulder.

In commercial areas or a denser environment such as downtown Clayton, sidewalk zones can also vary. The graphic/table below and to the right highlight general parameters.



Street Classification	Parking Lane/ Enhancement Zone	Furnishing Zone	Pedestrian Through Zone	Frontage Zone
Downtown commercial areas	7-10 feet	6-8 feet	6-12 ft	2 - 8 ft

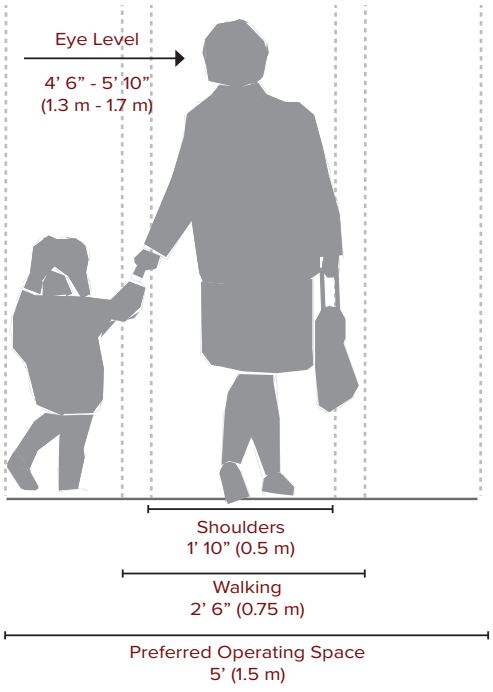
Designing Streets for All Ages

Types of Pedestrians

The transportation network should accommodate pedestrians with a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical characteristics, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. Older adults walk more slowly and may require assistant devices to help with their walking stability, sight, and hearing. The table below summarizes common pedestrian characteristics for various age groups.

The Manual on Uniform Traffic Control Devices (MUTCD) recommends a normal walking speed of 3.5 feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to 3 feet per second for areas with older populations and persons with mobility impairments. The transportation system should accommodate these users to the greatest extent possible.

AGE	CHARACTERISTICS
0-4	Learning to walk
	Requires constant adult supervision
	Developing peripheral vision and depth perception
5-8	Increasing independence, but still requires supervision
	Poor depth perception
9-13	Susceptible to "darting out" in roadways
	Insufficient judgment
	Sense of invulnerability
14-18	Improved awareness of traffic environment
	Insufficient judgment
19-40	Active, aware of traffic environment
41-65	Slowing of reflexes
65+	Difficulty crossing street
	Vision loss
	Difficulty hearing vehicles approaching from behind



Crossing Improvements

Intersections are an important part of the pedestrian network. Intersections have high potential conflict between pedestrians, bicyclists, and vehicles. However, intersections can be designed to help reduce these conflicts, making them safer for all users. Based on input from the public and the existing conditions analyses, several proposed intersection improvement projects have been identified and are detailed in priority projects and highlighted in the comprehensive pedestrian network.

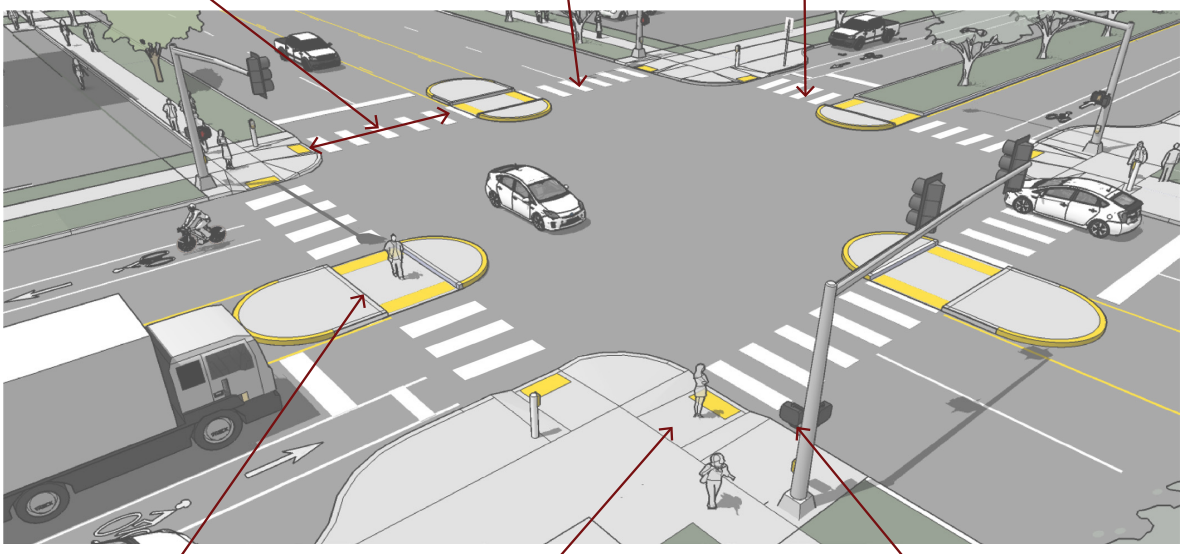
The following guidelines should be considered when designing intersection improvements for pedestrians:

Pedestrian Intersection Guidance

The diagram below highlights best practices for pedestrian facility design at intersections.

The crosswalk should be located to align as closely as possible with the through pedestrian zone of the sidewalk corridor.

High visibility markings provide additional visibility and are recommended for all crosswalk markings.



Median refuge islands increase visibility and allow pedestrians to cross one direction of traffic at a time.

ADA compliant curb ramps allow all users to transition from the street to a sidewalk. Perpendicular curb ramps are preferred to diagonal curb ramps.

The use of a Leading Pedestrian Interval (LPI) to provide additional traffic-protected crossing time to pedestrians should be considered.

Pedestrians at Signalized Intersections

Typical Application

PEDESTRIAN SIGNAL HEADS

Pedestrian signal heads indicate to pedestrians when to cross at a signalized crosswalk. Pedestrian signal indications are recommended at all traffic signals except where pedestrian crossing is prohibited by signage.

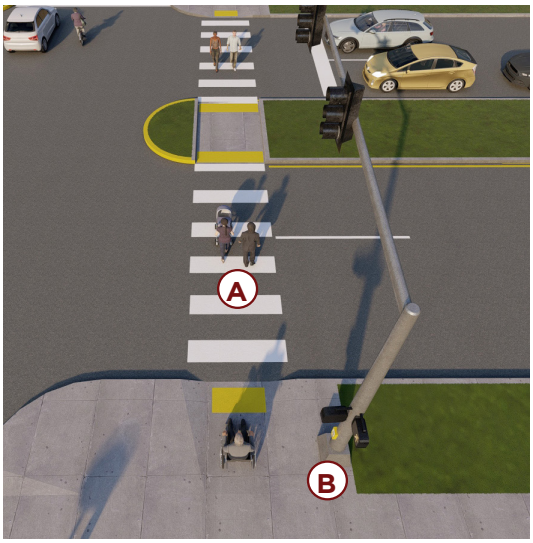
Countdown pedestrian signals should be retrofitted at existing signals with older style pedestrian signals and on any new installation. Countdown signals have a crash reduction factor of between 25 and 52% in varied studies[1].

SIGNAL TIMING AND THE PEDESTRIAN PHASE

Adequate pedestrian crossing time is a critical element of the walking environment at signalized intersections. The length of a signal phase with parallel pedestrian movements should provide sufficient time for a pedestrian to safely cross the adjacent street. The MUTCD recommends a walking speed of 3.5 ft per second.

At crossings where older pedestrians or pedestrians with disabilities are expected, crossing speeds as low as 3 ft per second should be assumed. Special pedestrian phases can be used to provide greater visibility or more crossing time for pedestrians at certain intersections.

Large pedestrian crossing distances can be broken up with median refuge islands. A pedestrian pushbutton can be provided on the median to create a two-stage pedestrian crossing if the pedestrian phase is actuated. This ensures that pedestrians are not stranded on the median, and is especially applicable on large, multi-lane roadways with high vehicle volumes, where providing sufficient pedestrian crossing time for a single stage crossing may be an issue.



A Consider the use of a Leading Pedestrian Interval (LPI) to provide additional traffic-protected crossing time to pedestrians.

B Accessible Pedestrian Signals (APS) provide crossing assistance to pedestrians with vision impairment at signalized intersections.

Further Considerations

Pushbuttons should be located so that someone in a wheelchair can reach the button from a level area of the sidewalk without deviating significantly from the natural line of travel into the crosswalk. Pushbuttons should be marked (for example, with arrows) so that it is clear which signal is affected.

In areas with very heavy pedestrian traffic, consider an all-pedestrian signal phase to give pedestrians free passage in the intersection when all motor vehicle traffic movements are stopped. This may provide operational benefits as turning movements are then unimpeded.

[1] **http://www.cmfclearinghouse.org/index.cfm**

Crossing Improvements (Continued)

Pedestrian Traffic Signal Enhancements

Pedestrian-vehicle conflicts can occur when drivers performing turning movements across the crosswalk do not see or yield to pedestrians who have the right-of-way. Pedestrians may also arrive at an intersection late, or may not have any indication of how much time they have to safely cross the intersection. Pedestrian traffic signal enhancements can be made to provide pedestrians with a head start, called a Leading Pedestrian Interval, or extend the walk time to allow them to safely and comfortably cross the street.

Typical Application

- Leading Pedestrian Intervals (LPI) are used to reduce right turn and permissive left turn vehicle and pedestrian conflicts. The pedestrian interval is initiated 3-10 seconds, in advance of the concurrent green with the potential for permissive right and left turn conflicts. The LPI gives pedestrians a head start making them more visible, and reducing crossing exposure time. Accessible Pedestrian Signals (APS) should be implemented with an LPI.
- Push buttons can be configured to provide additional crossing time. The MUTCD requires signage indicating the walk time extension at or adjacent to the push button (R10-32P).
- Passive pedestrian detection devices save pedestrians the trouble of having to locate a push button. They are also capable of tracking pedestrians as they cross the intersection, and can be configured to extend the walk/flashing don't walk interval when pedestrians are still in the intersection, and/or not dedicate walk time in the absence of pedestrians.
- The PROWAG guidance requires APS installation with any new or altered signal.



Leading Pedestrian Interval



Pushbuttons require regular inspection

Further Considerations

When pedestrians have to wait an entire cycle for the next walk phase, a higher incidence of non-compliance, in the form of jay-walking, or unpredictable behavior may occur. These signal enhancements facilitate safer, more predictable, and conspicuous crossing conditions. The Leading Pedestrian Interval and walk time extensions provide additional time for pedestrians who may need more time to cross the street such as wheel-chair users, people with disabilities, the elderly, and children.

Midblock Crossings

Midblock crossings can provide legal crossings at locations where pedestrians want to travel, and can be safer than crossings at intersections because traffic is only moving in two directions.



Rectangular rapid flashing beacons (RRFB), above, alert drivers at unsignalized intersections of people walking.



Pedestrian Hybrid Beacons stop automobile traffic for bicyclists and pedestrians wishing to cross a high traffic volume/high speed roadway.

*The chart to the right from the **NCDOT Action Plan for Implementing Pedestrian Crossing Countermeasures at Uncontrolled Locations** outlines parameters for choosing an appropriate crossing treatment.*

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	● 2 4 5 6	● 5 6 7 9	○ 5 6 ● 9	● 4 5 6	● 5 6 7 9	○ 5 6 ● 9	● 4 5 6 7 9	○ 5 6 7 ● 9	○ 5 6 ●
3 lanes with raised median (1 lane in each direction)	● 2 3 4 5	● 5 7 9	○ 5 ● 9	○ 3 4 5 7 9	○ 3 5 ● 9	○ 3 5 ● 9	○ 3 4 5 7 9	○ 3 5 ● 9	○ 3 5 ●
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	● 2 3 4 5 6 7 9	● 3 5 6 7 9	○ 3 5 6 ●	○ 3 4 5 6 7 9	○ 3 5 6 ● 9	○ 3 5 6 ●	○ 3 4 5 6 7 9	○ 3 5 6 ● 9	○ 3 5 6 ●
4+ lanes with raised median (2 or more lanes in each direction)	● 3 5 7 8 9	● 3 5 7 8 9	○ 3 5 8 ●	○ 3 5 7 8 9	○ 3 5 ● 8 9	○ 3 5 8 ●	○ 3 5 ● 7 8 9	○ 3 5 8 ● 9	○ 3 5 8 ●
4+ lanes w/o raised median (2 or more lanes in each direction)	● 3 5 6 7 8 9	○ 3 5 ● 7 8 9	○ 3 5 ● 8 9	○ 3 5 ● 7 8 9	○ 3 5 ● ● 8 9	○ 3 5 ● 8 9	○ 3 5 ● ● 7 8 9	○ 3 5 ● 8 9	○ 3 5 ● 8 ●

Given the set of conditions in a cell,

\# Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.

○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs

2 Raised crosswalk

3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line

4 In-Street Pedestrian Crossing sign

5 Curb extension

6 Pedestrian refuge island

7 Rectangular Rapid-Flashing Beacon (RRFB)**

8 Road Diet

9 Pedestrian Hybrid Beacon (PHB)**

Shared Use Paths

Description

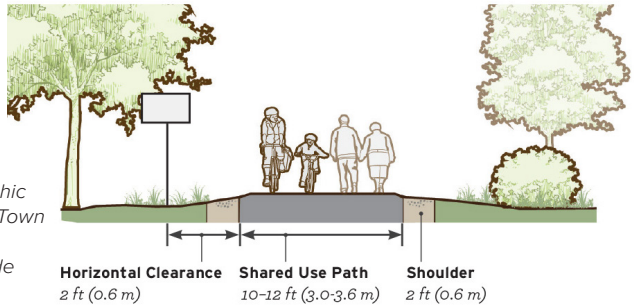
Shared use paths (or greenways) are completely separated from motorized vehicular traffic and are constructed in their own corridor, often within an open-space area. Shared Use Paths should be a minimum of 10' wide. Pavement widths of 12-, 14-, and even 16-feet are appropriate in high-use areas.

Benefits

- Provides a dedicated facility for users of all ages and abilities.
- Provides, in some cases, access to areas that are otherwise served only by limited-access roadways.
- Provides nonmotorized transportation access to natural and recreational areas, which can especially help individuals without access to an automobile obtain access to recreation.
- Provides, in some cases, a short-cut between neighborhoods.
- Supports tourism through convenient access to natural areas or as an enjoyable recreational opportunity itself.

Elements of Shared Use Paths

- The minimum paved width for a trail is 10 feet. Anticipated future traffic volumes should be used to guide design decisions.
- Maximum grade should not exceed 5 percent.
- Provide a graded shoulder area of at least 2 feet.
- Lighting should be provided at path/roadway intersections at a minimum and at other locations where nighttime use is likely to be high.
- Sight distances are based on site conditions and user-based factors. Ensure sight distances are designed per the AASHTO Bike Guide.
- Provide protective railings/fences at 42 inches high if the trail is adjacent to a steep slope.
- Surfaces can be paved or unpaved and should be ADA accessible



Shared Use Path graphic from the FHWA Small Town and Rural Multimodal Networks Design Guide

Guidance on Shared Use Path widths from the FHWA Small Town and Rural Multimodal Networks Design Guide

** Note that the Minimum recommended pathway width is 10 ft. In low-volume situations and constrained conditions, the absolute minimum sidepath width is 8 ft*

Volume and User Mix	Recommended Minimum Pathway Width
Low volume (less than 50 users in one direction per hour), low mix (75 percent bicyclists, 25 percent pedestrians).	*8–10 ft (2.4–3.0 m)
Low volume (less than 50 users in one direction per hour), heavy user mix (50 percent bicyclists, 50 percent pedestrians).	12 ft (3.6 m)
High volume (150 or more users in one direction per hour), low mix (75 percent bicyclists, 25 percent pedestrians).	12–14 ft (3.6–4.2 m)

Sidepaths

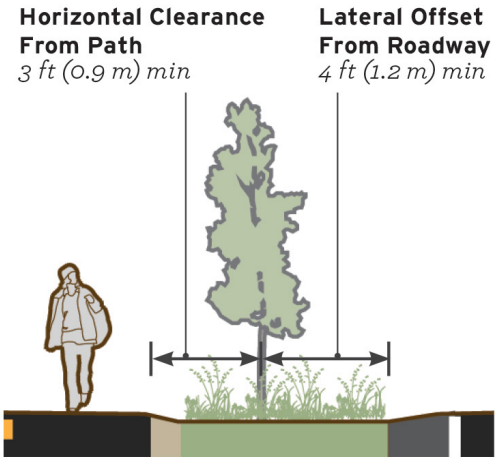
A sidepath is a bidirectional shared use path located immediately adjacent and parallel to a roadway. Sidepaths can offer a high-quality experience for users of all ages and abilities in heavy traffic environments (such as NC 42 pictured right).

Design Strategies

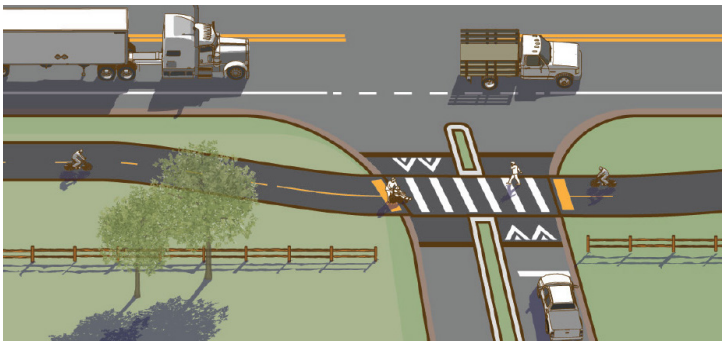
- Reduce the frequency of driveways.
- Design intersections to reduce driver speeds and heighten awareness of path users.
- Encourage low speeds on pathway approaches.
- Maintain visibility for all users.
- Provide clear assignment of right-of- way with signs and markings and elevation change.



The Front St sidepath was constructed along with the Front St extension in the past decade. Limited intersections or driveway crossings make this a comfortable facility.

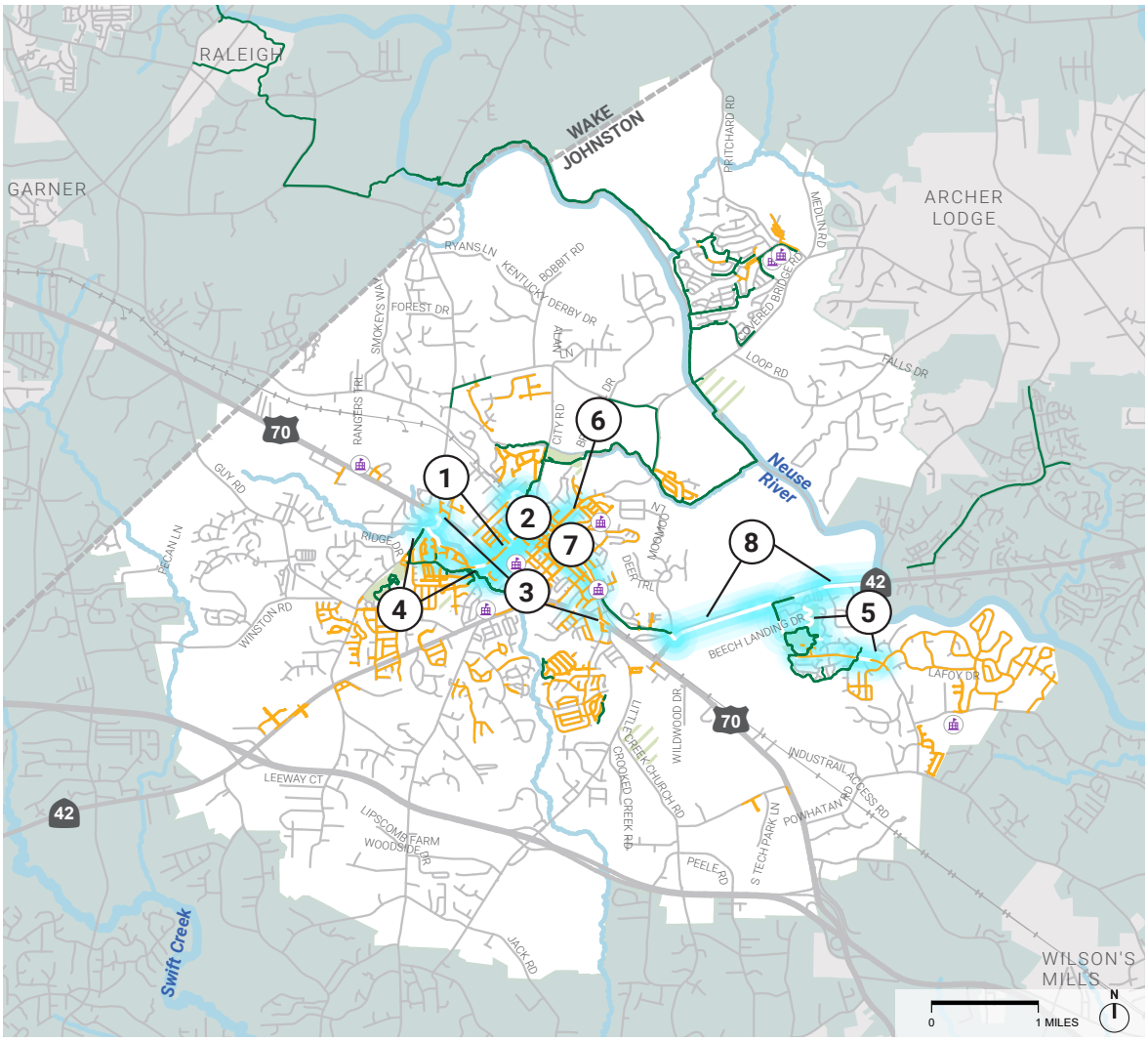


Guidance for sidepath separation distance in various contexts (FHWA Small Town and Rural Multimodal Networks Design Guide)



Adjacent Road Speed Limit (Mi/h)	Recommended Sidepath Separation Distance at Crossings
< 25 mi/h	6.5 ft (2.0 m)
35–45 mi/h	6.5–16.5 ft (2.0–5.0 m)
≥ 55 mi/h	16.5–24 ft (5.0–7.0 m)

Priority Projects



EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

RECOMMENDATIONS
- PRIORITY PROJECTS

Priority Project Checklist

The eight project sheets below fill key gaps in the pedestrian network, and have been identified as the highest priority projects. The prioritization criteria in the table below are commonly utilized during pedestrian infrastructure project development processes. They generally align with CAMPO's LAPP prioritization criteria.

Map ID	Priority Project	*Missing Link*	*Near Ped Crash*	*Supported in Public Feedback*	*Within 1/4 mile of a park or recreation center*	*Within 1/4 mile of a school*	*Access to downtown core/business areas*	*In an adopted plan*
1	**Robertson St Sidewalk Gaps**	√	√	√	√	√	√	√
2	**Main St Pedestrian Improvements**	√	√	√	√	√	√	√
3	**US 70 Crossings**	√	√	√		√	√	
4	**Amelia Church Rd & Shotwell Rd Greenway Gaps**	√	√	√	√	√	√	√
5	**Glen Laurel Rd Pedestrian Improvements**	√	√	√	√		√	√
6	**O'Neil St Pedestrian Improvements**	√		√	√	√	√	√
7 8	**East Coast Greenway Completion**	√	√	√	√	√	√	√

Priority Project Sheets

The following series of project summaries can be used when applying for future funding, or when communicating the priority project details to potential partners during implementation. The project sheets that follow show an analysis of the priority segments, including factors of feasibility identified by the project team. It serves as an inventory of the alignment factors at play, providing guidance for the next steps in implementation.

Priority Project #1: Robertson St Sidewalk Gaps and Crossing Improvements

Several gaps in the sidewalk along the east side of Robertson St should be completed with sidewalk. Additionally, formalized crosswalks are needed to connect to the neighborhood to the west. This is an important pedestrian corridor that links Clayton High School, downtown Clayton, the US 70 corridor (and the recently installed US 70 crosswalk), and multiple neighborhoods and businesses.

Facility: Sidewalk, Crosswalks

Trip Generators: Downtown, Clayton High School, US 70 businesses, multiple neighborhoods

Potential ROW Needs: 375' Sidewalk section along the Clayton High School property should be constructed closer to the ballfields; coordinate with Johnston County Board of Education

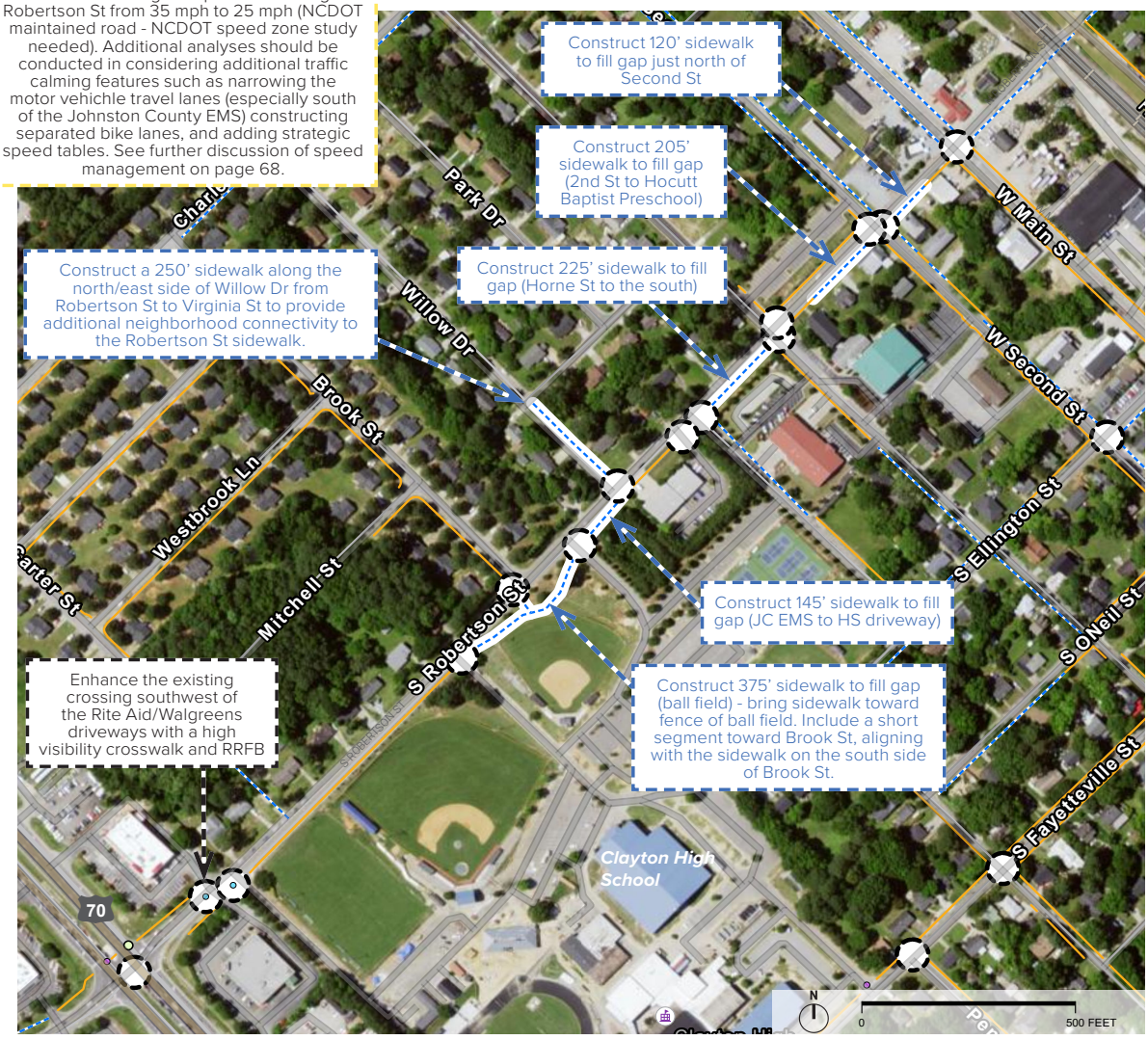
Potential Partnerships: Johnston County, NCDOT, adjacent businesses and residences

Estimated Construction Costs: $359,000 (see Appendix E for further detail)



Ample space to complete the sidewalk gap south of Horne St

Consider lowering the speed limit along S. Robertson St from 35 mph to 25 mph (NCDOT maintained road - NCDOT speed zone study needed). Additional analyses should be conducted in considering additional traffic calming features such as narrowing the motor vehicle travel lanes (especially south of the Johnston County EMS) constructing separated bike lanes, and adding strategic speed tables. See further discussion of speed management on page 68.



EXISTING FACILITIES

- SIDEWALK
- PEDESTRIAN-ACTIVATED CROSSING SIGNAL
- HIGH-VISIBILITY CROSSWALK
- TWO-BAR CROSSWALK

RECOMMENDATIONS

- SIDEWALK
- CROSSING IMPROVEMENT

High visibility crosswalks are needed across Robertson St to connect the Robertson St sidewalk to neighborhoods to the west. At each of these streets, install high visibility crosswalks (Brooks St, Willow Dr, Horne St, and Second St.)

For side street crossings, high visibility crosswalks should be painted (high visibility crosswalks should be the default).

Priority Project #2: Main St Pedestrian Improvements

While sidewalks are complete along both sides of Main St from Robertson St to Central St, crossing improvements are needed at each intersection to some degree. Pedestrian signals are needed at all signalized intersections.

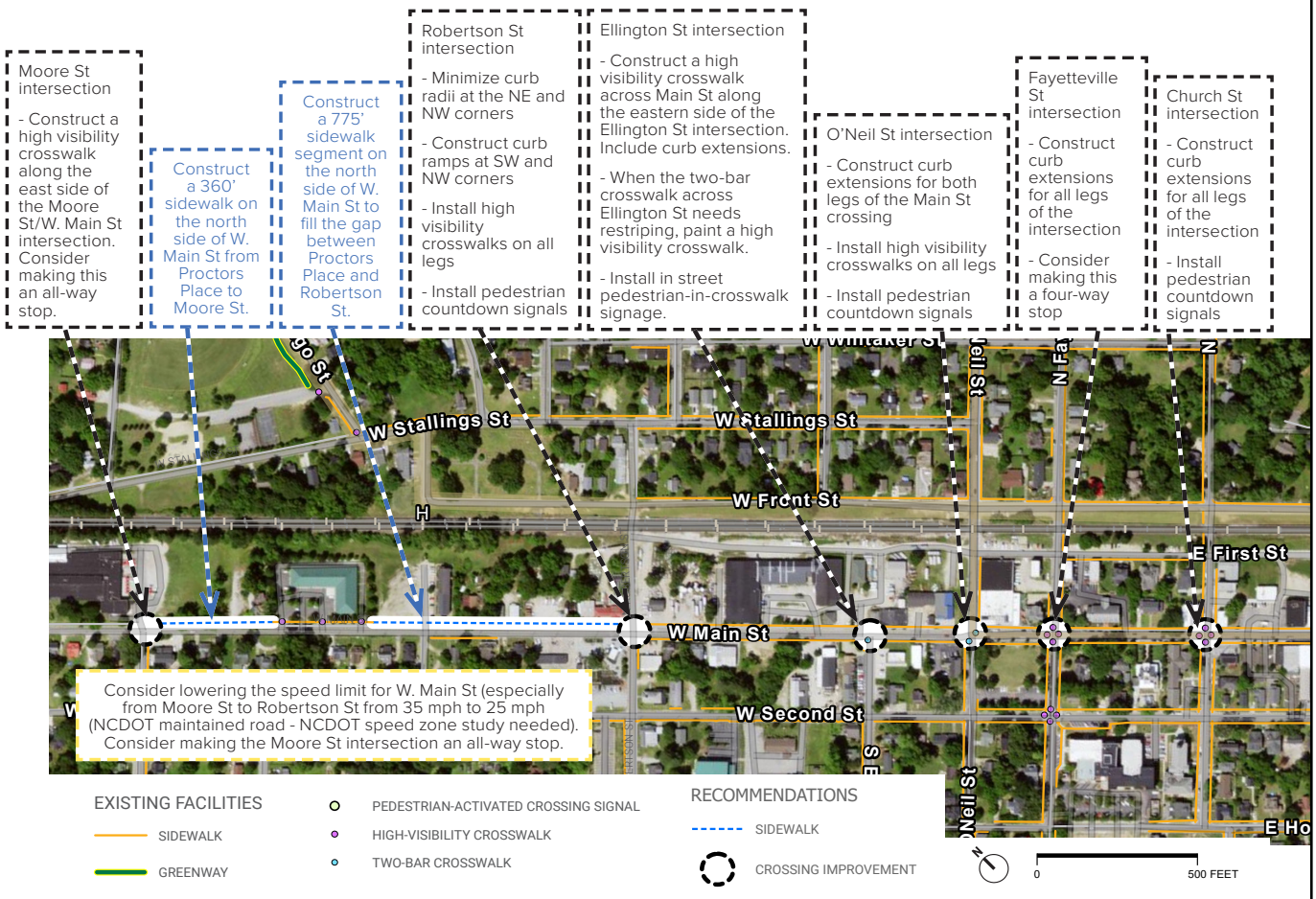
Facility: Sidewalk, Crosswalks

Trip Generators: Downtown businesses, US 70 businesses, multiple neighborhoods

Potential ROW Needs: Potentially along the proposed sidewalk segments along W. Main St, depending on alignment, especially if placed along north side of drainage ditch.

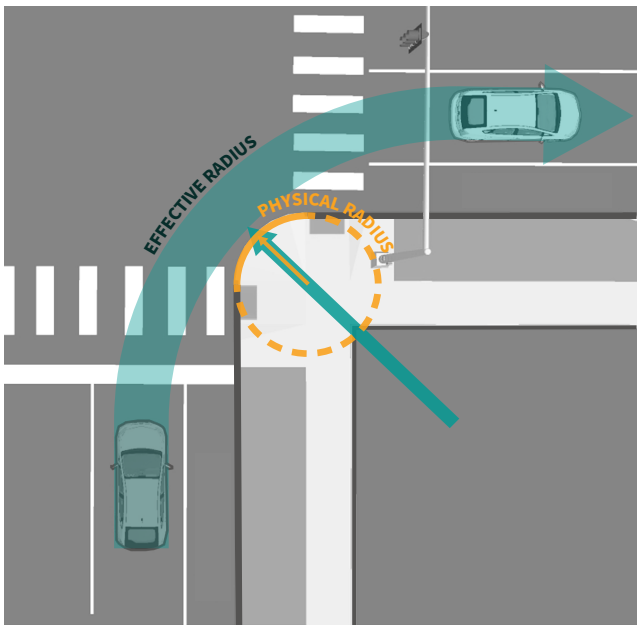
Potential Partnerships: NCDOT, adjacent businesses and residences

Estimated Construction Costs: $1,279,000 (see Appendix E for further detail)



Curb Radii Considerations

The size of a curb's radius can have a significant impact on pedestrian comfort and safety. A smaller curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crossing distance and requires vehicles to slow more on the intersection approach. During the design phase, the chosen radius should be the smallest possible for the circumstances and consider the effective radius in any design vehicle turning modeling. For further information, see Alta Planning + Design's 'Corner Design for All Users' white paper - https://altago.com/resources/corner-design-for-all-users/



Barbour St intersection

- Construct a high visibility crosswalk across Main St along the eastern side of the Barbour St intersection. Include curb extensions.
- When the two-bar crosswalk across Barbour St needs restriping, paint a high visibility crosswalk.
- Install in street pedestrian-in-crosswalk signage

East First St intersection

- When the two-bar crosswalk across East First St needs restriping, paint a high visibility crosswalk.

Lombard St intersection

- When the two-bar crosswalks across all four legs of the intersection need restriping, paint high visibility crosswalks.
- Construct curb extensions for all legs of the intersection

Community Garden Mid-block crosswalk

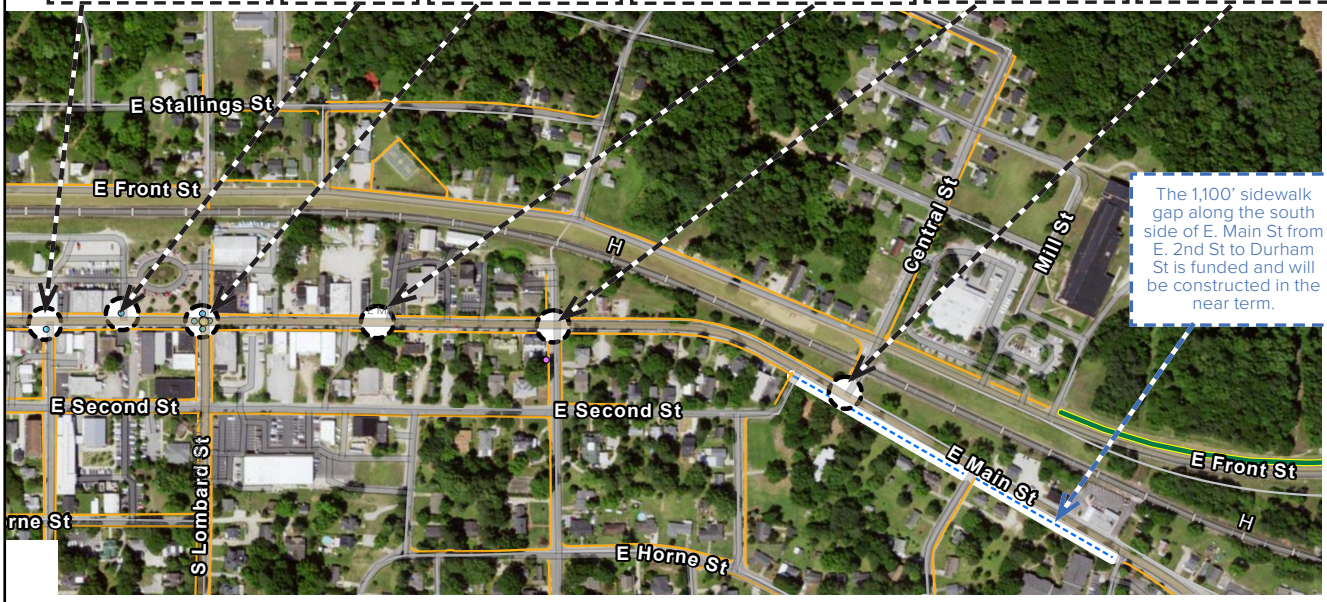
- The Main Street Community Garden is approximately halfway between the Lombard St and Smith St intersections and could be a logical location for a mid-block crosswalk in this vicinity (further study needed to identify exact location).
- Construct curb extensions and a high visibility crosswalk for this mid-block crossing.
- Install in street pedestrian-in-crosswalk signage

Smith St intersection

- Construct curb extensions for both legs of the Main St crossing
- Install high visibility crosswalks on all legs
- Install in street pedestrian-in-crosswalk signage

Central St intersection

- With the future sidewalk construction along the south side of E. Main St, install a pedestrian crosswalk along the west side of the intersection across Main St
- Minimize curb radii at the NW corner
- Install high visibility crosswalk markings
- Install pedestrian countdown signals



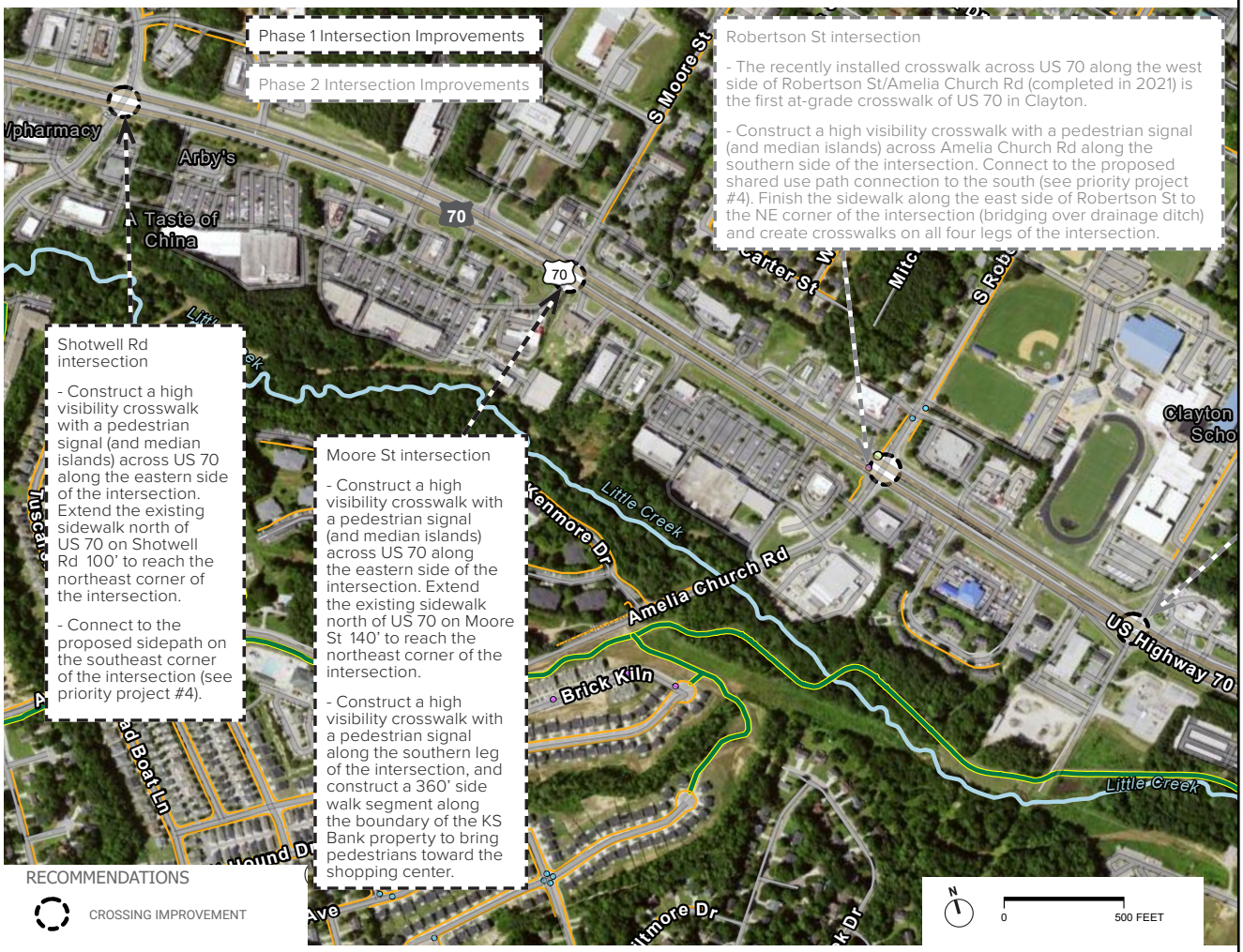
The 1,100' sidewalk gap along the south side of E. Main St from E. 2nd St to Durham St is funded and will be constructed in the near term.

Priority Project #3: US 70 Crossings

While US 70 remains a significant barrier to pedestrian connectivity on both sides, multiple efforts are needed to make this corridor traversable by pedestrians. In addition to the numerous residences, businesses, and destinations on either side of US 70, this is a key corridor that is also being studied as part of the southern extension of bus rapid transit between Raleigh, Garner, and Clayton.

Building on the recently completed US 70 pedestrian crossing at the Robertson St/Amelia Church Rd intersection, the following priorities for improving US 70 crossings include (see further detail in the map below):

- **US 70/E. Main St/Champion St intersection:** With sidewalks complete to all four corners of the intersection and the funded sidewalk gap project along E. Main St to the north, this crossing would utilize the existing signalized intersection to connect the eastern edge of downtown with multiple businesses and neighborhoods to the southeast.
- **Shotwell Rd intersection:** With existing sidewalk connectivity to the northeast corner (and see priority project #4 regarding connectivity to the southeast corner), this crossing would utilize the existing signalized intersection to connect multiple businesses and residential areas on either side of US 70.
- **Moore St intersection:** With existing sidewalk connectivity to the northeast corner and the western edge of the downtown Clayton neighborhood grid, this crossing would connect numerous businesses and residences.



Facility: Sidewalk, Crosswalks

Trip Generators: US 70 businesses, multiple neighborhoods

Potential ROW Needs: N/A

Potential Partnerships: NCDOT, adjacent businesses

Estimated Construction Costs: $604,000 (see Appendix E for further detail)



Recently implemented US 70 crosswalk



Priority Project #4: Amelia Church Rd & Shotwell Rd Greenway Gaps

Facility: Sidewalk, Greenway, Crosswalks

Trip Generators: US 70 businesses, multiple neighborhoods

Potential ROW Needs: Each greenway segment would need agreements with adjacent business or home owner association/LLC.

Potential Partnerships: NCDOT, adjacent businesses and residences

Estimated Construction Costs: $3,151,000 (see Appendix E for further detail)

Greenway segments along Little Creek, Amelia Church Rd, and Shotwell Rd provide important neighborhood connectivity on the southwest side of US 70, but they come short of connecting to the US 70 corridor. Two short links are needed - one in the Shotwell Rd area and one along Amelia Church Rd.

Furthermore, additional greenway links could help significantly with neighborhood connectivity as well. See map notes on the following page. The image at the bottom of the page shows a cleared utility corridor that could link the existing greenway toward the Greenwood Dr neighborhood and US 70.



Cleared utility corridor that could be part of a greenway connection between Little Creek and the Greenwood Dr neighborhood and US 70.

EXISTING FACILITIES

SIDEWALK

GREENWAY

PEDESTRIAN-ACTIVATED CROSSING SIGNAL

HIGH-VISIBILITY CROSSWALK

TWO-BAR CROSSWALK

RECOMMENDATIONS

SIDEWALK

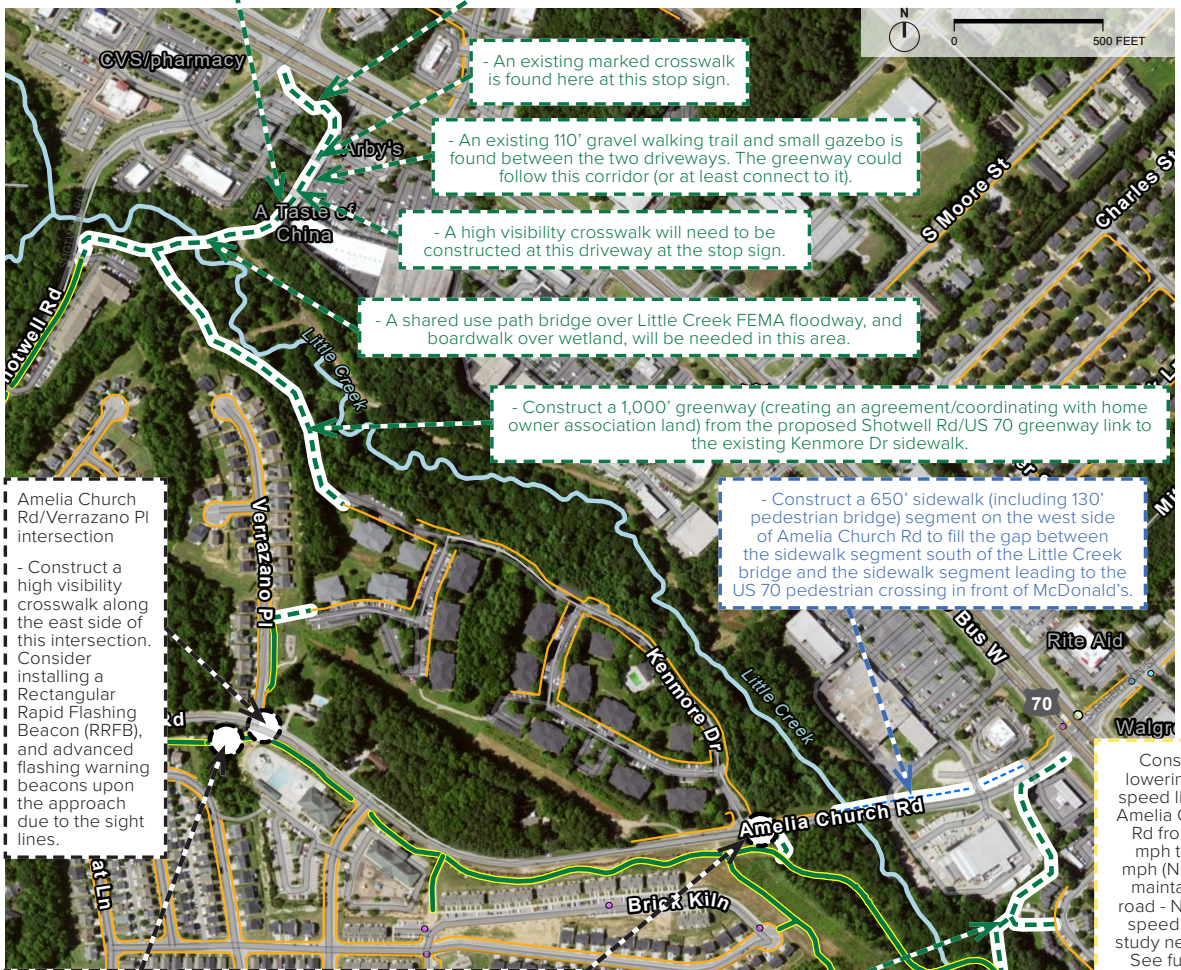
GREENWAY

CROSSING IMPROVEMENT

- Construct a 1,300' greenway from the northern terminus of the existing sidepath along the east side of Shotwell Rd to the southeastern corner of the Shotwell Rd intersection.

- Utilize the wooded area here rather than along the edge of Shotwell Rd, providing a much more comfortable shared use path experience, with better connectivity to Clayton Corners shopping mall and businesses. Between the Lion Spring senior living community and US 70, the property is owned by DDRM Clayton Corners LLC, and any greenway development on this land will require an agreement and coordination with them.

- See priority project #3 for further information on the proposed US 70 crossing.



- An existing marked crosswalk is found here at this stop sign.

- An existing 110' gravel walking trail and small gazebo is found between the two driveways. The greenway could follow this corridor (or at least connect to it).

- A high visibility crosswalk will need to be constructed at this driveway at the stop sign.

- A shared use path bridge over Little Creek FEMA floodway, and boardwalk over wetland, will be needed in this area.

- Construct a 1,000' greenway (creating an agreement/coordinating with home owner association land) from the proposed Shotwell Rd/US 70 greenway link to the existing Kenmore Dr sidewalk.

- Construct a 650' sidewalk (including 130' pedestrian bridge) segment on the west side of Amelia Church Rd to fill the gap between the sidewalk segment south of the Little Creek bridge and the sidewalk segment leading to the US 70 pedestrian crossing in front of McDonald's.

Amelia Church Rd/Verrazano Pl intersection

- Construct a high visibility crosswalk along the east side of this intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB), and advanced flashing warning beacons upon the approach due to the sight lines.

- The greenway bridge crossing of the creek in this location as it currently cuts off greenway users from the Clayton Community Center to the west.

Amelia Church Rd/Kenmore Dr intersection

- East of this intersection is unused roadway space in the center of the road. Construct a pedestrian island and high visibility crosswalk in this location. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

- A 60' greenway segment will need to be constructed to make this connection from the existing greenway to the proposed crossing.

- The existing greenway is on the east side of Little Creek here - construct a 1,000' greenway connector to the Greenwood Dr neighborhood and to the southeast corner of the US 70/Amelia Church Rd intersection. Coordination and agreements will be needed with two or three landowners.

Consider lowering the speed limit for Amelia Church Rd from 35 mph to 25 mph (NCDOT maintained road - NCDOT speed zone study needed). See further discussion of speed management on page 68.

- Consider installing bike/ped counters on this section of greenway to count user numbers as improvements are made over time.

Priority Project #5: Glen Laurel Rd Pedestrian Improvements

Facility: Sidewalk, Greenway, Crosswalks

Trip Generators: East Clayton Community Park, multiple neighborhoods, new shopping center

Potential ROW Needs: Each greenway segment would need an agreement with an adjacent business, landowner, or home owner association.

Potential Partnerships: NCDOT, adjacent businesses and residences

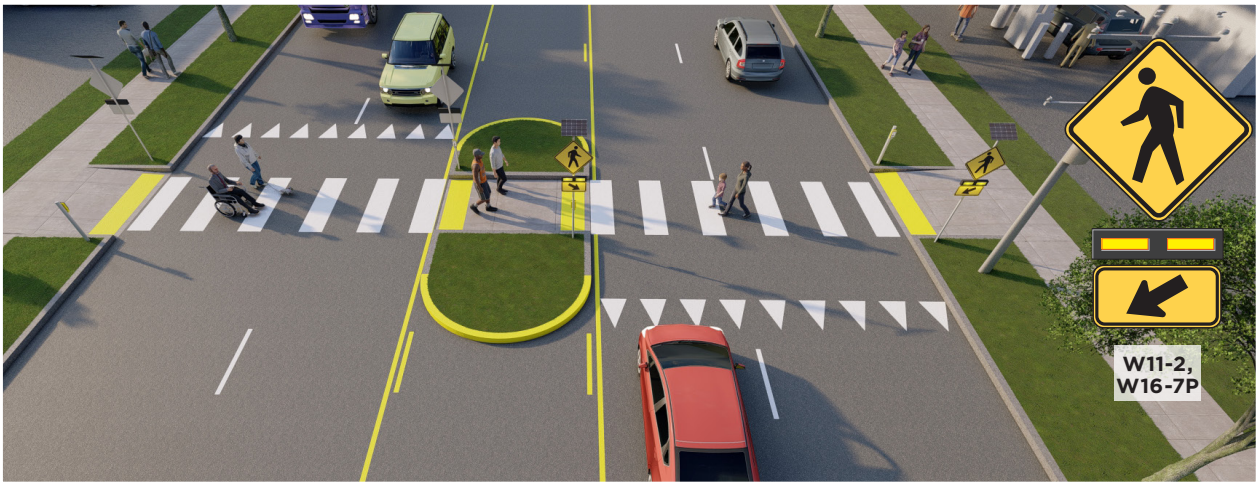
Estimated Construction Costs: $1,320,000 (see Appendix E for further detail)

Key pedestrian improvements to this corridor are detailed on the following page, and include:

- Creating formalized crosswalks
- Filling gaps in the sidepath/shared use path network
- Lowering the speed limit from 45 mph to 35 mph (additional traffic calming measures related to roadway design should be considered (such as strategic stop signs, narrowing lane widths)

Options for installing Rectangular Rapid Flashing Beacons (RRFBs) along Glen Laurel Rd are highlighted in the map to the right. They elicit the highest increase in compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88%. Additional studies of long term installations in Florida show little to no decrease in yielding behavior over time.



Rectangular Rapid Flashing Beacon (RRFB) example graphic

EXISTING FACILITIES

SIDEWALK

GREENWAY

RECOMMENDATIONS

SIDEWALK

GREENWAY

CROSSING IMPROVEMENT

- Construct a 700' sidepath/greenway link to fill this gap between the existing Glen Laurel Rd sidepath and East Clayton Community Park greenway. This will require an agreement with one landowner.

- Construct a 1,600' paved or unpaved greenway link through the northern, wooded section of East Clayton Community Park to connect directly to the apartments recently constructed along NC 42.

- Construct a 240' greenway link between the existing greenway and Black Forest Dr, connecting the neighborhood to the park. This would require an agreement with the home owners association.

- Construct a 660' sidewalk segment on the south side of Glen Laurel Rd to fill this sidewalk gap. This will include some boardwalk over existing wetland.

Consider lowering the speed limit for Glen Laurel Rd from 45 mph to 35 mph (NCDOT maintained road - NCDOT speed zone study needed). Additional analyses should be conducted in considering additional traffic calming features such as creating all-way stops at key residential crossings or East Clayton Community Park. See further discussion of speed management on page 68.



Greenway/Dog Park entrance area

- Consider further analyzing this area for a potential pedestrian crosswalk. The two existing greenways on either side of Glen Laurel Rd are proximate, and is a logical location for pedestrians to attempt to cross. Site lines related to the curve make creating a crossing challenging. Further study needed.

East Clayton Community Park entrance/Oak Alley Tr intersection

- Construct a high visibility crosswalk along the west side of the intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB).

- Consider removing the right turn lane pocket, creating a shorter distance for the pedestrian crossing.

- Greenway surface repairs needed to this greenway on the south side of Glen Laurel Rd.

Trailing Oak Tr/Oak Alley Tr intersection

- Construct a high visibility crosswalk along the east side of the intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

Greenway crossing

- Construct a high visibility crosswalk. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

Birkdale Dr/Lynshire Ave intersection

- Construct a high visibility crosswalk along the east side of the intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB).

Priority Project #6: O'Neil St Pedestrian Improvements

Facility: Crosswalks

Trip Generators: Municipal Park, Cooper Elementary School, Downtown, multiple neighborhoods

Potential ROW Needs: None

Potential Partnerships: NCDOT, adjacent residences

Estimated Construction Costs: $184,000 (see Appendix E for further detail)

Near Term Recommendations

New curb ramps have been recently installed along much of this corridor. High visibility crosswalks should be painted at each intersection, and crosswalks across O'Neil St should be constructed, creating formal pedestrian crossings. See further detail on the following page. Curb extensions (not included in the cost estimate above), could be accomplished by using quick-build materials (such as paint and flexible delineators), or by constructing concrete extensions that would require additional drainage detail (higher cost).

Stallings St/O'Neil St intersection - new curb ramps recently installed, but formalized crosswalks are needed



Longer Term Recommendations

Whithin the current 60' wide O'Neil St right of way, a significantly improved pedestrian environment could be created with some investment, by doing the following:

- Most of the O'Neil St sidewalks are older and are narrower than the 5' ADA standard width for sidewalks. Replace with 5-6' sidewalks.
- Bury the utility poles - these utilize valuable real estate that could allow for greater flexibility in creating a bike/ped corridor that has a wide physical buffer with motor vehicle traffic.
- O'Neil St currently has 28'-29' pavement width, leaving wide motor vehicle travel lanes at 14'-15' each for the two-lane cross-section. The curb should be modified to create standard 11' travel lanes, which will better match the desired posted speed limit of 25 mph, and allow for greater flexibility in creating a bike/ped corridor that has a wide physical buffer with motor vehicle traffic. This will also shorten the crossing distance for pedestrians crossing O'Neil St.


Wilson St intersection
- Construct a high visibility crosswalk across O'Neil St along the north/east side of the intersection. Construct a median island in the unused center median space. Consider installing a Rectangular Rapid Flashing Beacon (RRFB) or stop signs (all-way).
- Paint a high visibility crosswalk across Wilson St along the east/south side of the intersection, replacing the current two-bar crosswalk.
Wilson St intersection
- The sidewalk segment on the west/north side of this intersection is obstructed by a utility pole, four guy wires, and related overgrowth from adjacent vegetation. The sidewalk should be replaced and shifted several feet away from these barriers.
Barnes St intersection
- Construct a high visibility crosswalk across O'Neil St along the north/east side of the intersection (include curb extensions).
- Paint a high visibility crosswalk across Barnes St along the west/north side of the intersection, connecting the recently improved curb ramps.
Whitaker St intersection
- Paint a high visibility crosswalk across O'Neil St along the north/east side of the intersection, connecting the recently improved curb ramps (include curb extensions).
- Paint a high visibility crosswalk across W. Whitaker St along both the west/north and east/south sides of the intersection, connecting the recently improved curb ramps.
Stallings St intersection
- Construct a high visibility crosswalk across O'Neil St along the north/east side of the intersection (include curb extensions).
- Paint a high visibility crosswalk across Stallings St along the west/north side of the intersection, connecting the recently improved curb ramps.
Hinton St intersection
- Construct a high visibility crosswalk across O'Neil St along the north/east side of the intersection.
- Paint a high visibility crosswalk across Hinton St along the east/south side of the intersection, connecting the recently improved curb ramps.
Starmont dr
N ONeil St
W Barnes St
N ONeil St
Kennel Ln
W Whitaker St
N Fayetteville St
E Hinton St
N Church St
E Whitaker St
N ONeil St
N
0
500 FEET
EXISTING FACILITIES
SIDEWALK
RECOMMENDATIONS
CROSSING IMPROVEMENT

Priority Project #7: East Coast Greenway Completion: Downtown Clayton Feasibility Study

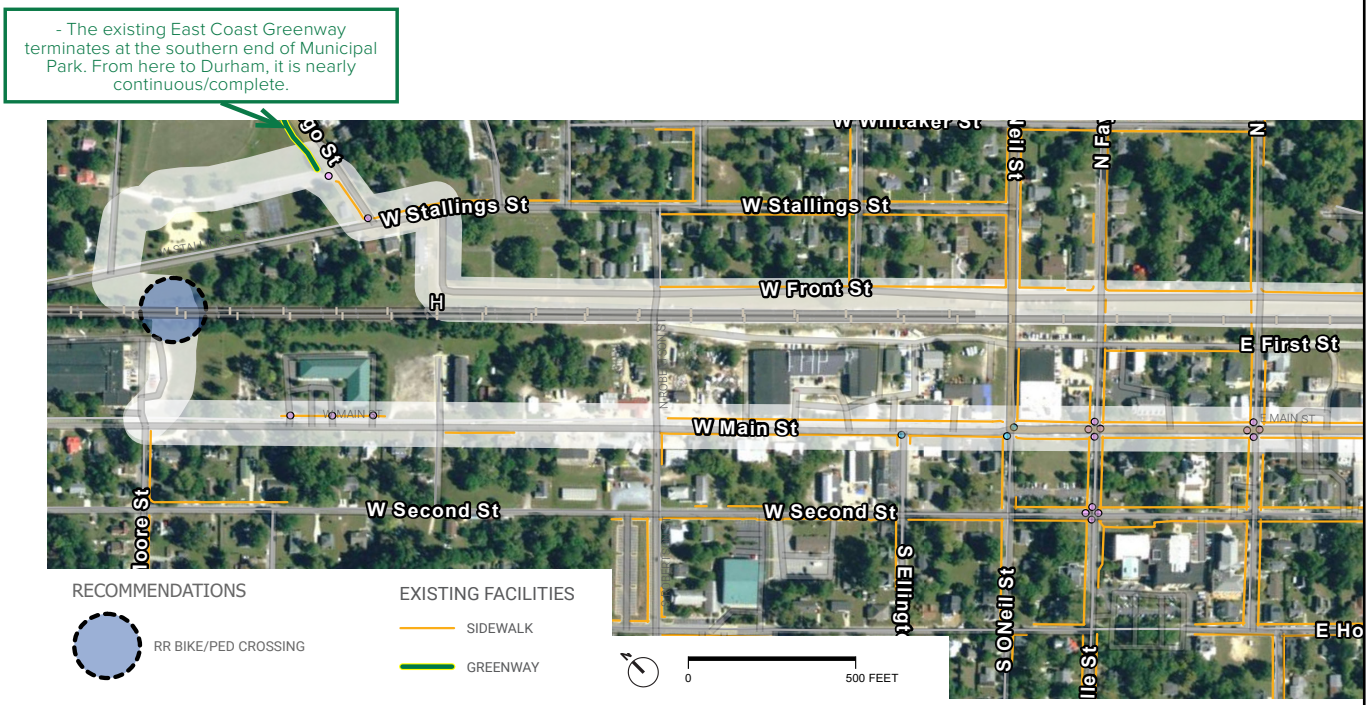
Municipal Park to Front St Alternatives

From the East Coast Greenway terminus at the southern edge of Municipal Park to the Front St sidepath, a key gap remains in the East Coast Greenway through the downtown area of Clayton. Two general alternatives were discussed during this planning process and a feasibility study is recommended to further detail these potential alternatives.

Rail with Trail Alternative

Trails along active rail lines are well documented throughout the US (see **Rails with Trails: Best Practices and Lessons Learned** (2021) by the Federal Highway Administration and Federal Railroad Administration). In downtown Clayton, a shared use path along the active railroad corridor could potentially fill this East Coast Greenway gap, utilizing the green space between the active Norfolk Southern railroad line and Front St.

With commuter rail connecting Raleigh to Clayton currently being studied, there are likely to be significant modifications to the railroad corridor and adjacent land and streetscape in the future. Any potential rail with trail along this corridor would need to be incorporated into the commuter rail development process and design.



Bike/Ped Crossing of Railroad from Municipal Park to W. Main Street

This alternative would bring the trail directly south of Municipal Park to the Moore St/W. Main St intersection, by creating a bike/ped crossing of the railroad tracks (coordination would be needed with Deep River Brewing Company on the south side). Further analysis on the feasibility of this option is needed, including whether an undercrossing, bridge, or at-grade bike/ped crossing of the railroad tracks could be feasible here.

From Moore St/W. Main St, to bring the East Coast Greenway through downtown Clayton along Main St, significant changes would be needed to the Main St streetscape to create either a sidepath or a separated bike lane/sidewalk combination to connect to Central St and Front St.

- With the upcoming downtown master plan to be conducted, this could be a topic that is further explored in that process.



A recently constructed East Coast Greenway railroad underpass in Cary, NC (Google Street View)



Priority Project #8: East Coast Greenway Completion: NC 42 Sidepath

Facility: Sidepath/Greenway

Trip Generators: Multiple residential areas and businesses, East Clayton Community Park, Neuse River access, East Coast Greenway

Potential ROW Needs: Depending on exact alignment, some right-of-way may be needed from adjacent landowners

Potential Partnerships: NCDOT, adjacent landowners, Johnston County, East Coast Greenway Alliance

Estimated Construction Costs: $2,681,000 (see Appendix E for further detail)

Utilizing the wide right of way along the south side of NC 42, construct the sidepath/greenway as far away from the roadway as possible, and ideally along the tree line at the edge of the right of way boundary. This project could be phased by first constructing the Front St to Glen Laurel Rd section, filling a key gap between Front St and East Clayton Community Park.

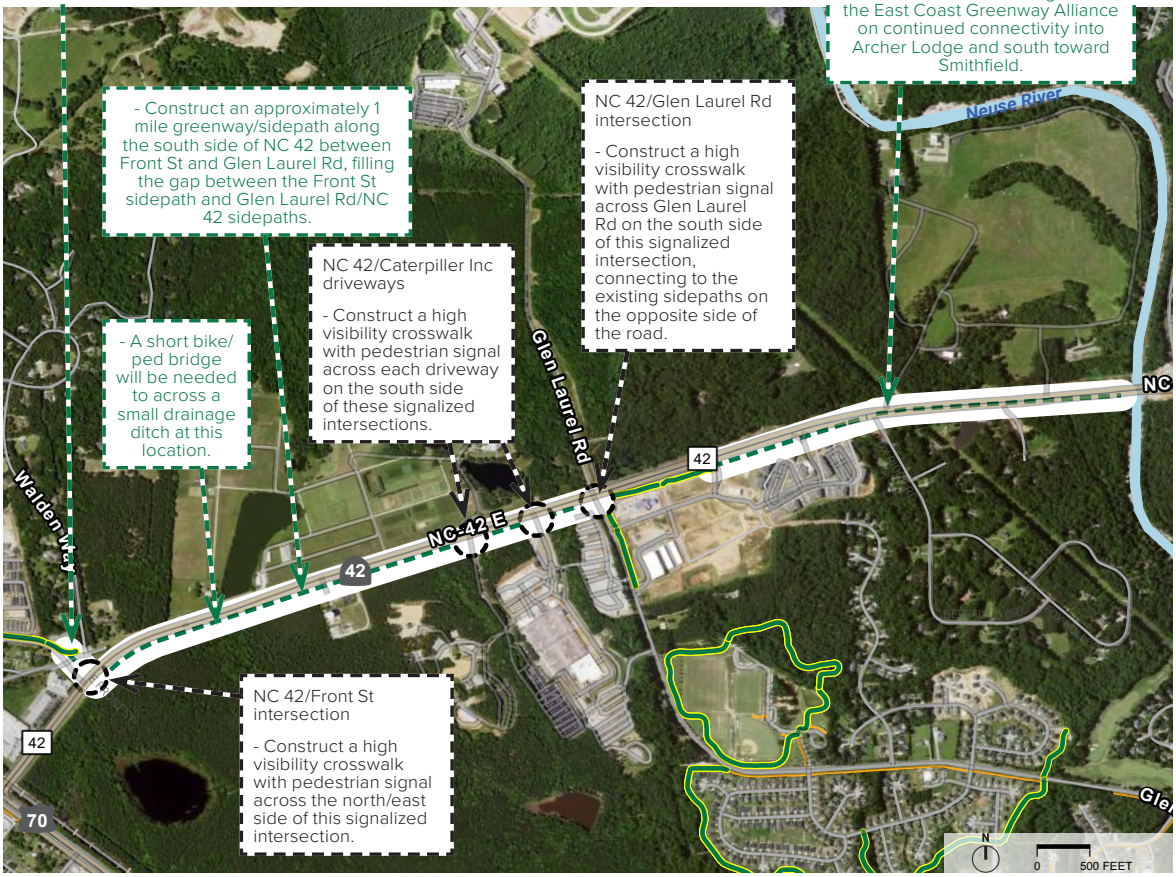
The second section, east of Glen Laurel Rd, has more constraints due to topography and limitations from the recent NC 42 roadway expansion. Coordinate connectivity with the upcoming feasibility study of the East Coast Greenway from the NC 42/Neuse River bridge to Smithfield. Connection opportunities also include connecting to/through the future Johnston Community College campus (with potential connectivity further east to East Clayton Community Park).



Recently installed sidepath along NC 42 east of Glen Laurel Rd. Ample physical buffer space from the roadway is key to an all ages and abilities facility along NC 42, which also serves as the East Coast Greenway through Clayton (between Front St and the Neuse River).



East Coast Greenway eastern terminus at Front St/NC 42



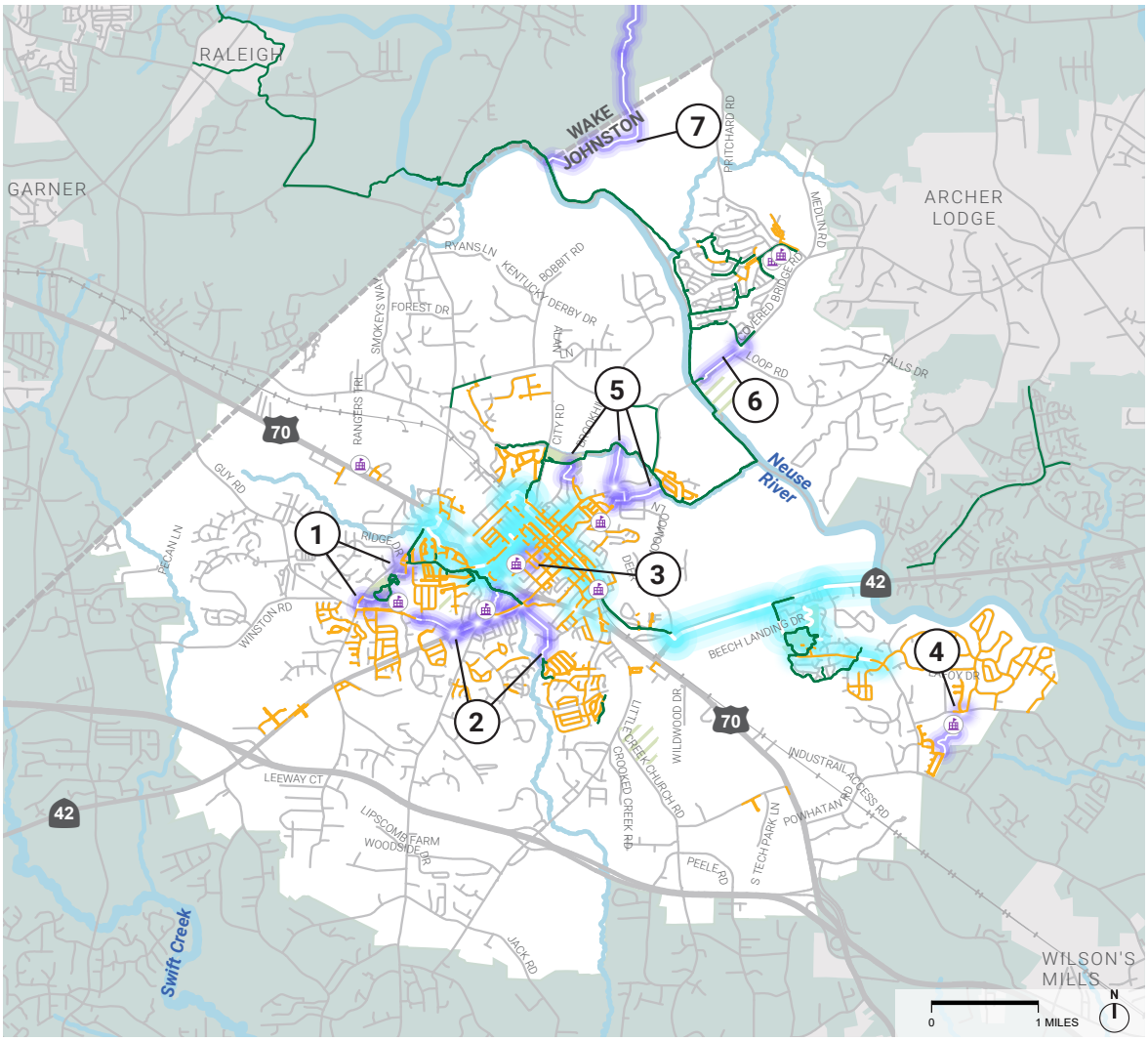
EXISTING FACILITIES

- SIDEWALK
- GREENWAY

RECOMMENDATIONS

- GREENWAY
- CROSSING IMPROVEMENT

Safe Routes to Schools and Parks



EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

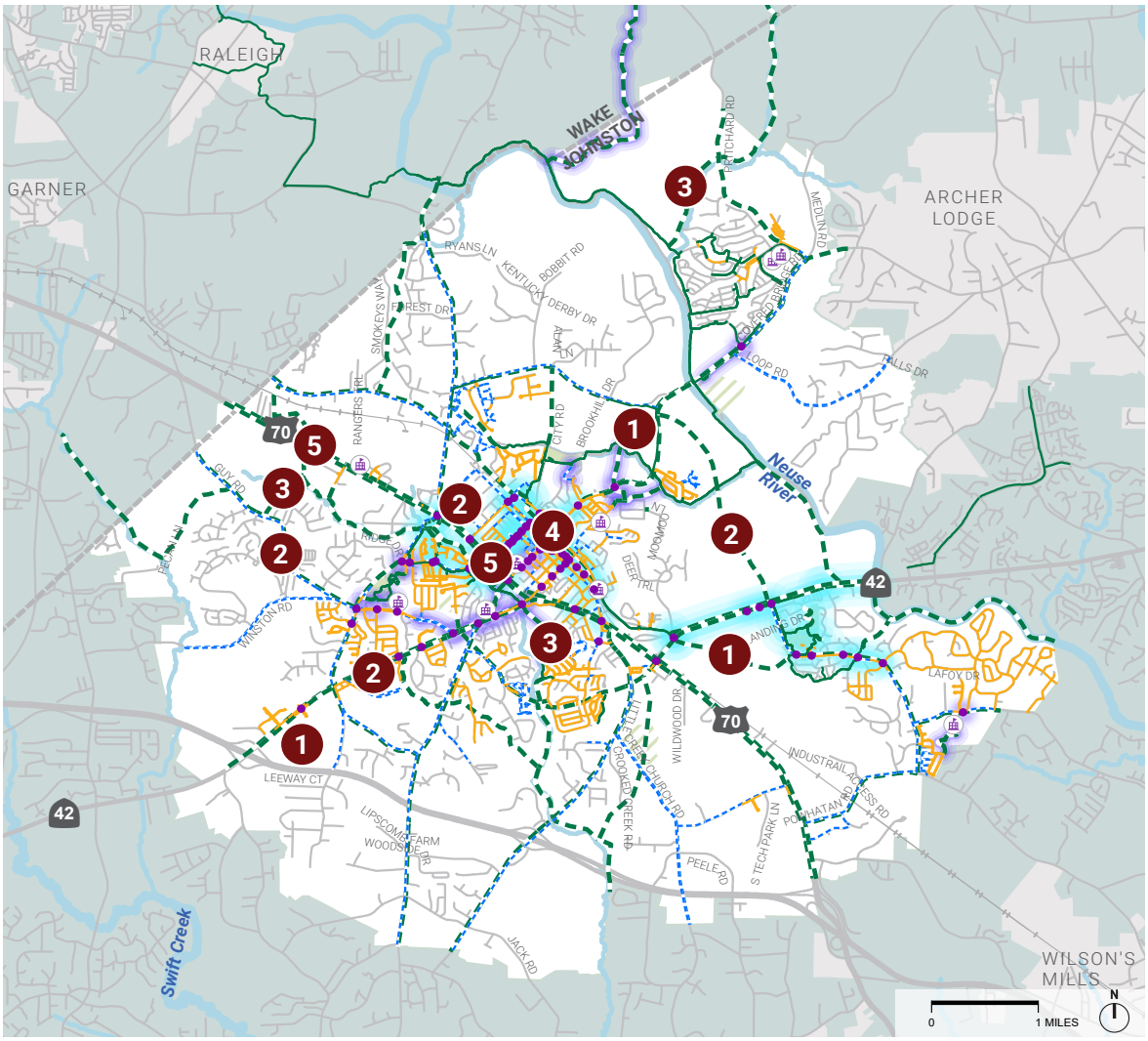
RECOMMENDATIONS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS

Safe Routes to Schools and Parks

Numerous, relatively short links or intersection projects can enhance connectivity to parks and schools throughout Clayton. Parks and schools are key activity centers that, in many instances in Clayton, are located near multiple neighborhoods that are within a walkable distance. Implementing these short connections should be considered priorities.

Map ID	Safe Routes to Schools and Parks Notes
1	To better connect Clayton Community Park with Clayton Middle School and the surrounding neighborhood, the following steps should be taken: 1) Create a gateway in the fence that runs between the Middle School and Clayton Community Park, and create a formal shared use path link between the Clayton Community Park Greenway and the Middle School entrance. 2) Create a formal shared use path link (or links) between the Parkside Village sidewalks and the Clayton Community Park greenway. 3) Construct a high visibility crosswalk across the west side of the Guy Rd/Pinecroft Dr intersection, and install a Rectangular Rapid Flashing Beacon (RRFB). 4) Complete the gap in the sidewalk network at the northeast corner of the Guy Rd/Amelia Church Rd intersection, and construct a high visibility crosswalk with pedestrian signal across the east side of the intersection. 5) Construct a shared use path from the Amelia Church Rd sidewalk terminus at Parkside Village Dr (along the north side of Parkside Village Dr) and connect it directly to the Clayton Community Park Greenway. 6) Construct a shared use path segment from the Clayton Community Center parking lot sidewalk to the greenway to the southwest. 7) Paint a high visibility crosswalk at the current two-bar crosswalk 150' west of the Yellow Jacket Ridge/Amelia Church intersection and also install a Rectangular Rapid Flashing Beacon (RRFB). 8) Shotwell Rd/Amelia Church intersection - extend the Clayton Community Center sidewalk to the intersection and construct a high visibility crosswalk with pedestrian signal across all legs of this intersection.
2	To better connect West Clayton Elementary School with the existing greenway, Clayton Middle School, Clayton Community Park, and surrounding neighborhoods, the following steps should be taken: 1) As part of the NC 42 widening project scheduled for the late 2020's, construct sidepaths on both sides of NC 42. Construct a pedestrian crossing (Pedestrian Hybrid Beacon (PHB)) at the school's eastern driveway entrance to connect the neighborhoods on the opposite side of the street. 2) Construct pedestrian crossings at the Barber Mill Rd intersection and Guy Rd intersection, and fill the sidewalk gap between NC 42 to Clayton Middle School. 3) Construct a greenway segment from the current Little Creek greenway southern terminus at NC 42 to the greenway segment to the south near Lakemont Dr (along the Town-owned land), connecting these neighborhoods to the greenway system and West Clayton Elementary. A Pedestrian Hybrid Beacon (PHB) should be installed at the greenway crossing. 4) Construct a greenway segment from the northeast side of West Clayton Elementary School to the existing greenway (a short bike/ped bridge over Little Creek will be needed).
3	Clayton High School/S. Fayetteville St: 1) Construct a high visibility crosswalk across S. Fayetteville St at the Penny St intersection (north side) and E. Blanche St (all four sides), complementing the recently installed crosswalk adjacent to the High School at Hamby St.
4	Powhatan Elementary School: 1) Construct a median island in the painted center median in the existing crosswalk at the Vinson Rd school entrance intersection. Consider installing a Rectangular Rapid Flashing Beacon (RRFB). 2) Construct a short greenway link from the south side of the school to National Dr, utilizing school property and homeowners association property (agreement would be needed).
5	Cooper Elementary, Legend Park, and Sam's Branch Greenway: Consider three options for providing better connectivity in this area 1) From the new neighborhood constructed just north of Cooper Elementary, combined with upcoming development to the north of Oakdale Ave (and with potential future development to Sam's Branch to the northeast), construct a greenway segment to Sam's Branch Greenway (bike/ped bridge over Sam's Branch will be needed. 2) On the north side of O'Neil St, a residential subdivision will be constructed between the road and Sam's Branch - opportunity to connect Cooper Elementary (and surrounding neighborhoods) with Sam's Branch Greenway here as well. A high visibility crosswalk and Rectangular Rapid Flashing Beacon should be installed for the pedestrian crossing of O'Neil St in making this connection. 3) Formalize a pedestrian connection to Sam's Branch Greenway and Legend Park via Georgetowne Dr, Gordon St, and Lake Dr as the roadway public right of way abuts the Sam's Branch Greenway and Legend Park property.
6	Construct a sidepath from the Sam's Branch Greenway trailhead to Club Connection Blvd (and existing sidepath - high visibility crosswalk will be needed here with RRFB). This will also connect the future athletic fields that will be constructed between the trailhead and Loop Rd.
7	This proposed regional greenway will connect multiple parks including the East Coast Greenway, recently constructed mountain biking trails, Williamson Preserve, and a regional Wake County park (Lake Myra) that is under development to the north. Much of this corridor is already along publicly owned land.

Comprehensive Pedestrian Network



EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

RECOMMENDATIONS
- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS

Comprehensive Pedestrian Network

In addition to the projects previously mentioned, there are several other important components of the pedestrian network that should be completed with pedestrian facilities when development or funding opportunities arise. The comprehensive network is the long-term vision for Clayton's pedestrian network, and below are several key components. Zoom-in maps of the comprehensive network can be found in Appendix A.

1 Projects With Development

As development continues in Clayton at a faster rate, it is imperative that these projects are constructed with pedestrian connectivity in mind. Many recent developments, such as the Steeple Chase subdivision development (between Sam's Branch Greenway and Covered Bridge Rd), have done well to incorporate greenways, sidepaths, and sidewalks into the site.

2 Projects With New Roadway Construction

As Clayton continues to grow, several roads are funded or proposed to be widened (or new construction). These are opportunities to incorporate sidepaths early into the roadway development process. This is typically significantly cheaper than retrofitting roads with complete streets infrastructure. The Front St sidepath was constructed at the same time of the roadway and serves as a good example.

NC 42 will undergo a significant change (widening) later this decade between US 70 through the southwest part of Clayton. Sidepaths and pedestrian crossing signals at all signialized intersections should be installed.

3 Watershed Trails

Continue to work with developers, home owners associations, individual landowners, and others on incorporating greenways into site planning and development that occurs along riparian corridors such as Little Creek. These corridors tend to be areas with the most intact habitat cores, and should be preserved for not only transportation and recreation, but for the critical foundation of the environmental economy they serve. These can be paved or unpaved trails depending on the specific project and context.

4 Future Commuter Rail

With commuter rail potentially coming to Clayton, a possible downtown station will result in significant changes to both the roadway and pedestrian crossings of the rail corridor. This will be an opportunity to create excellent pedestrian crossings as part of future improvements to the track. At-grade crossings should be created at every roadway crossing. While more expensive, gade separated crossings such as a bike/ped bridge or tunnel can provide safe alternatives where an at-grade crossing is not feasible (see page 55 for a local example).

5 Future Bus Rapid Transit (BRT)

US 70 is a key corridor that is also being studied as part of the southern extension of BRT between Raleigh, Garner, and Clayton. Not only are pedestrian crossings of US 70 critical (see page 46-47) to connect adjacent residences, businesses, and other destinations, but pedestrian connectivity will be essential for serving future bus stops. Sidepaths should also be developed along both sides of US 70 to complement future BRT and overall pedestrian connectivity.



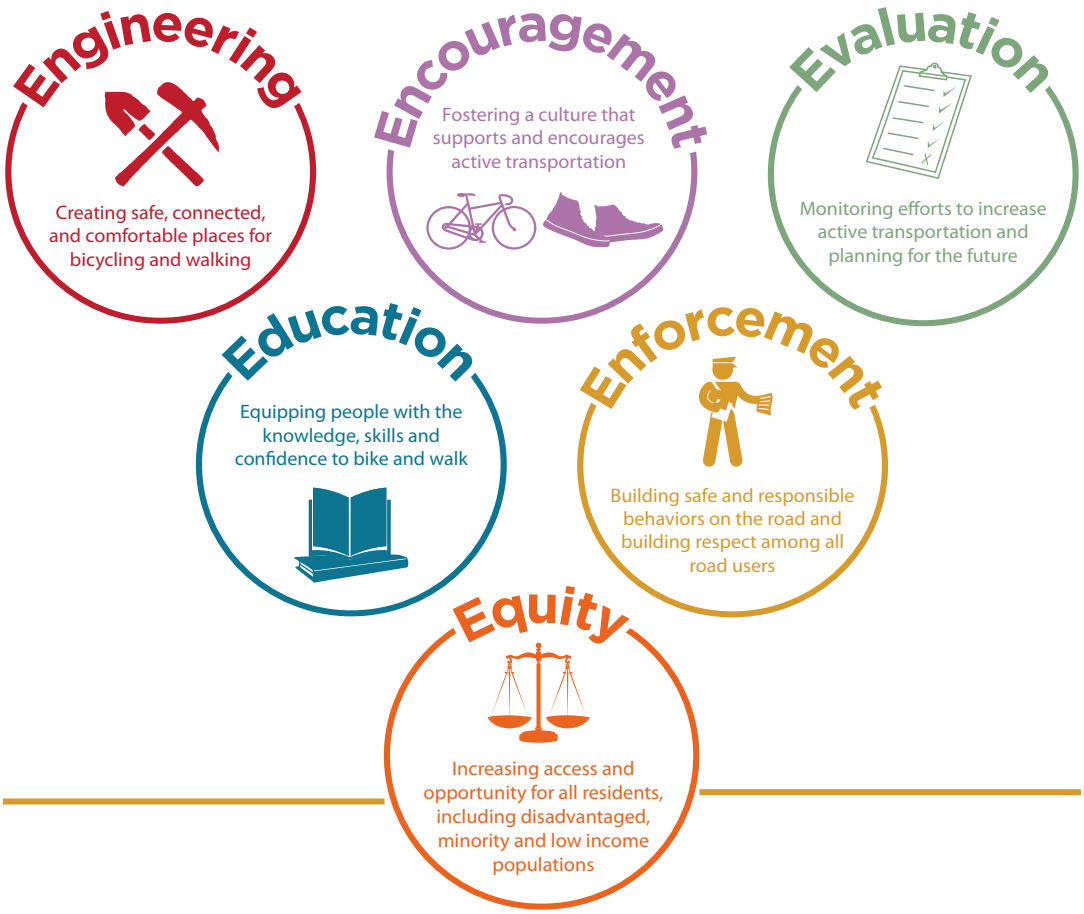
4 Program Recommendations

Programs

Program recommendations are essential and complementary to infrastructure recommendations. The ideal goal is to develop a culture of safe and enjoyable walking built on comprehensive actions and initiatives by diverse groups of people. A model used to describe this comprehensive approach is called the 6 E's: Engineering, Education, Encouragement, Enforcement, Evaluation, and Equity (see diagram below).

Based on public, steering committee, and stakeholder input, the following programs are recommended:

- Active Transportation Advisory Committee
- Walk Friendly Communities Designation
- Safe Routes to Schools & Parks Action Plans
- Signage and Wayfinding
- Speed Management
- Pedestrian and Bicycle Counts



Form an Active Transportation Advisory Committee (ATAC)

Leadership from the Town of Clayton Planning Department as well as the Parks & Recreation Department, and members of this project's steering committee should become the advisory committee for guiding the implementation of this plan (often called a Bicycle and Pedestrian Advisory Committee or Trails Committee).

The ATAC should have representation from active pedestrians and bicyclists and should champion the recommendations of this plan. **The formation of this group would be a significant step in becoming designated as a Walk Friendly Community (see next page).** The committee would provide a communications link between the residents of the community and local government. They should also continue to meet periodically, and be tasked with assisting municipal staff in community outreach, marketing, and educational activities recommended by this plan.

Role in Implementation

The Committee should be prepared to:

- Meet with Town of Clayton staff and evaluate progress of the plan's implementation and offer input regarding pedestrian, bicycle, and trail-related issues.
- Assist Town of Clayton staff in applying for grants and organizing pedestrian- and bicycle-related events and educational activities.
- Build upon current levels of local support for pedestrian and bicycle issues and advocate for local project funding.

Examples in Other Local Communities

Wilson, NC; Pinehurst, NC; Southern Pines, NC

Resources:

Best Practices for Bicycle and Pedestrian Advisory Committees from the League of American Bicyclists and the Alliance for Biking & Walking

Become Designated as a Walk Friendly Community

The WFC program is a national recognition program developed to encourage communities to support safer walking environments as a local priority. The program recognizes communities which have achieved high levels of walking and low rates of pedestrian crashes while also recognizing communities which are making progress in achieving these two goals through policies, projects and programs. The thorough and detailed application process is a key part of becoming more walk-friendly by:

- Building new local partnerships.
- Collecting data for future planning efforts.
- Documenting all local walking-related programs, projects, and policies.
- Identifying areas of needed improvement.
- Providing tools to develop specific solutions before the application is submitted.
- Offering feedback and further suggestions to the community after application review.
- Creating momentum for future projects.

Preparing a WFC application requires a multi-faceted approach to collecting and presenting information about a community. The core of the application effort is completion of the WFC Assessment Tool which assesses the community in Engineering, Education, Encouragement, Enforcement, and Evaluation as well as other elements such as planning. These are the combination of criteria that best assist communities to become more walkable and to set clear goals and plans for achieving those goals. The tool is also designed to recognize that there are many different ways that communities achieve walkability and that every location is unique.



With this plan and its top recommendations completed, the Town of Clayton should be in a position to apply for and receive recognition as a Walk Friendly Community.

Safe Routes to Schools & Parks Action Plans

Safe Routes to Schools and Parks enables and encourages children and adults to walk and bike to schools and parks. These programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools and parks.

Both schools and parks are key local destinations with significant amounts of local travel (ie; shorter, walkable distances). If connected by all ages and abilities pedestrian infrastructure, they have the potential to influence a shift to more active modes of transportation.

Serving as 'mini' pedestrian/bicycle plans for each school/park, these planning processes could begin by incorporating the recommendations for the network from this plan, and further explore opportunities and challenges for infrastructure, programming, and policy. See the Safe Routes to Schools and Parks Projects in Chapter 3 of this plan for an example of potential connectivity improvements to multiple schools and parks in Clayton.

Below are examples of recommendations from the **Lincoln Heights Safe Routes to School Action Plan** *in Fuquay-Varina that could serve as a template for Safe Routes to Schools & Parks Plans in Clayton.*

WALKING SCHOOL BUS / BIKE TRAINS

Walking School Buses and Bike Trains let students walk or bicycle to school as a group, often with an adult volunteer. They may be daily, weekly, or monthly events.

Best Practice Programs:

- Pinehurst Elementary School in Pinehurst, NC, created a **Walking School Bus** that resulted in a 22% reduction in traffic.
- **Michigan's SRTS** program developed Walking School Bus volunteer resources, sample parent letters, and resources to help develop a route.
- Santa Clarita, CA, SRTS developed a **Walking School Bus Training Guidebook** to help parents form walking school buses.
- Tampa Bay, FL, Washington, DC, Denver, CO, and Portland, OR, participated in a **Bike Train Webinar**.



Suggested Lead Agency:

- Lincoln Heights SRTS Task Force

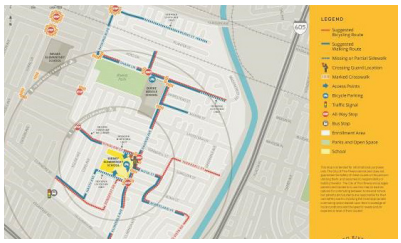
Cost: $-$$

SUGGESTED ROUTE TO SCHOOL MAPS

Suggested route maps show existing sidewalks, trails, bikeways, crossing guards, and traffic control to help parents find the best walking and biking routes to school. An example and template for Lincoln Heights can be found on page 4-16. Involving students in the development of personal maps is recommended.

Best Practice Programs:

- The **Institute of Transportation Engineers (ITE)** has a white paper on School Route Maps.
- Washington State **requires school districts** to develop suggested route maps for all elementary schools.
- Davis, CA, developed user-friendly **Suggested Route Maps** that include walking times and bicycle parking.



Suggested Lead Agency:

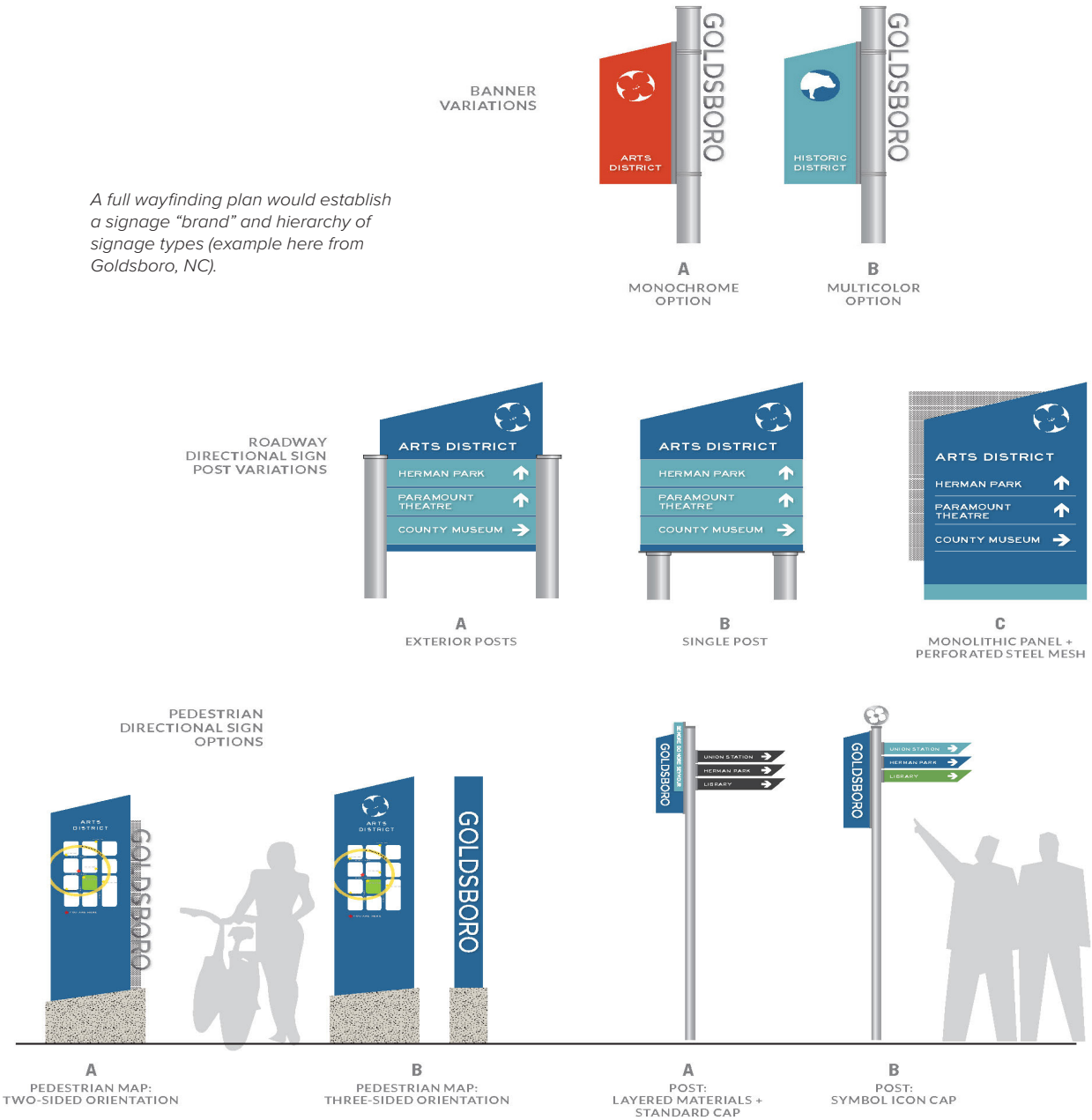
- Lincoln Heights SRTS Task Force

Cost: $-$$

Signage and Wayfinding

For a longer-term, more comprehensive approach to wayfinding, Clayton should conduct a full wayfinding plan. The plan would establish an agreed-upon signage "brand" (a.k.a., look and feel of the signs), a hierarchy of signage types (route confirmation, directional, and kiosk signage, for example), and a signage placement plan that shows exactly where each sign and sign type will be placed.

A full wayfinding plan would establish a signage "brand" and hierarchy of signage types (example here from Goldsboro, NC).



Speed Management

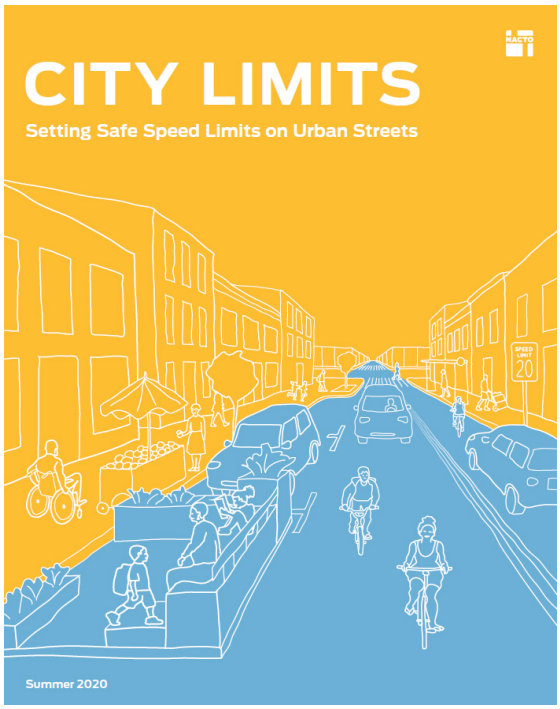
On major streets, where conditions vary widely, cities can conduct a Safe Speed Study to determine the safest maximum speed limit (see page 43 of the NACTO City Limits guide). In urban areas, a Safe Speed Study will most often result in a recommended maximum speed limit of 20 or 25 mph for major streets.

For streets that have well-protected places for people to walk and bike, and that are in low density areas with primarily manufacturing and residential uses, cities may find that a 30 or even 35 mph speed limit is appropriate. However, these higher speed limits should be used sparingly and only in cases where safe conditions can be met. Streets such as Robertson St, Glen Laurel Rd and Amelia Church Rd are examples of corridors that would benefit from speed limit reductions of 10 mph (all of these are NCDOT state maintained roads and will need coordination with NCDOT Division 4).

NACTO guidance for Speed Management

The National Association of City Transportation Officials (NACTO) created a guide on speed limits. The document succinctly outlines why communities may want to revisit their speed limits, how to go about making changes, and what is recommended based on context and goals.

More on these tactics can be found in the NACTO City Limits guide pictured below. The document can be accessed at (https://nacto.org/safespeeds/).



Traffic Calming Measures

Speed management needs to be approached holistically. In addition to signing appropriate speeds to a given street, street design plays a key role in creating safe motor vehicle speeds. There are three general types of speed reduction measures:

- Physical measures such as vertical deflections, horizontal shifts, and roadway narrowing intended to reduce speed and enhance the street environment for non-motorists.
- Nonphysical measures using signs and markings are intended to raise awareness and reduce speed through visual indications.
- Diversion treatments reduce cut-through traffic by obstructing or otherwise preventing traffic movements in one or more directions.

Speed management can also enhance pedestrian safety in downtown Clayton. Refer to the Transitions to Main Streets section in **FHWA Achieving Multimodal Networks** (2016) for more information on applying traffic calming in advance of built-up areas.

Pedestrian and Bicycle Counts

Clayton should begin the collection of bike/ped count data utilizing permanent counters and/or various technologies available that can enable the Town to evaluate trends, such as increase/decrease in usage, peak travel periods, and high activity locations. Better data on pedestrian and bicycle travel can help to determine where investments are most needed. It also helps in quantifying the benefits of walking and biking. Ultimately, better data will make active transportation projects more competitive for funding opportunities. Furthermore, with a popular regional greenway such as the East Coast Greenway featured in Clayton, count data can help determine path widths beyond 10' as needed. Bike/ped count data will also be useful for the Little Creek/Amelia Church Rd/Shotwell Rd greenway sections.

Determine the appropriate counter technology for Clayton based on feasibility and available funding. The study described below, completed by NCDOT in 2021, provides in-depth information on current technologies available. NCDOT's State-of-the-Art Approaches to Bicycle and Pedestrian Counters provides great detail on different counting technology. Clayton should review this report and consult Town Information Technology staff on potential options.

Table 43. Qualitative Cost-Benefit Analysis of the Technologies Tested

Product	Technology	Mode	Benefits		Costs		Benefit-Cost Ratio (BCR)
			Accuracy	Quality of Software Tools	Installation Difficulty	Equipment or Service Cost	
Eco-Counter MULTI System	Passive Infrared	Pedestrian	High	High	Acceptable	High	Acceptable
Eco-Counter MULTI System	Inductive Loop	Bicycle	High	High	Acceptable	High	Acceptable
TRAFx Trail Counter	Passive Infrared	All Modes Combined	Acceptable	High	Very Low	Low	High
MetroCount RidePod BP	Piezoelectric	Pedestrian	Very High	Low	Very High	Low	Acceptable
MetroCount RidePod BP	Piezoelectric	Bicycle	Very High	Low	Very High	Low	Acceptable
MetroCount RidePod BT	Pneumatic Tube	Bicycle	Very High	Low	Low	Low	Very High
Miovision Scout	Standard Video with Algorithm Processing	Pedestrian	High	High	Low	Very High	Acceptable
Miovision Scout	Standard Video with Algorithm Processing	Bicycle	High	High	Low	Very High	Acceptable
Eco-Counter CITIX 3D	Depth Camera	Pedestrian	Very Low	Acceptable	Very High	Very High	Very Low
Eco-Counter CITIX 3D	Depth Camera	Bicycle	Very Low	Acceptable	Very High	Very High	Very Low

State-of-the-Art Approaches to Bicycle and Pedestrian Counters by NCDOT (2021) with NCSU Institute for Transportation Research and Education (ITRE) and Department of Parks, Recreation, and Tourism Management. The above summary chart is from page 65 of the report.

Another company not listed in the report is **GoodVision**. *GoodVision can georeference drone imagery and pull all user activity over a specified time. For example, a series of drone video or stationary cameras across a corridor could give a sense of activity and behavior with a high level of detail.*



5

Policy Recommendations

Policies

One of the most cost-effective implementation strategies for Clayton is to establish land use and transportation policies, design standards, and development regulations that promote walkable/bikable new development, programs, and capital projects. Pedestrian, bicyclist, and motorist needs should be considered within the context of the Clayton transportation and land use system. Coordinating land-use and transportation planning activities in order to support the provision of transportation options such as walking and biking has many benefits to a community including improving safety, mobility and quality of life.

The tables below include recommendations for updating Clayton's Code of Ordinances (as well as Clayton's Typical Street Cross Sections). Sidewalks, bicycle facilities, and streetscape amenities such as street trees and lighting are some of the most fundamental elements of Complete Streets for pedestrians. All of these elements and others noted below also provide safety and comfort benefits to all roadway users including motorists. Access management, multi-modal level of service assessments, and traffic calming are also critical for developing Complete Streets networks for safe and comfortable walking, biking, and driving infrastructure through the development review and capital project implementation process.

The recommendations in the tables that follow are organized into major categories of "Complete Streets and Greenways", "Pedestrian-oriented Urban Design Elements", and "Connectivity Requirements." All of the major categories are interrelated.

Policy Recommendations

Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
Complete Streets and Greenways		
1.1 Implement Complete Streets Policy A Complete Streets policy allows Clayton to work towards creating a street network that encourages pedestrian and bicycle travel and provides safe and comfortable roadways for all users.	**Needs Improvement** The recently adopted Comprehensive Plan recommends that the Town of Clayton 'Adopt a Complete Streets policy that supports the NCDOT 2019 Complete Streets policy and applies to new location or roadway improvements projects to ensure pedestrian and bicycle facilities are included.'	The policy should reference the 2019 NCDOT **Complete Streets Policy**, which applies to all NCDOT-maintained streets in the Town. The policy can also reference the NCDOT **Complete Streets Planning and Design Guidelines**, which provides excellent guidance for locally maintained streets and street networks and Complete Streets planning and design and regulatory processes. (This table references elements from the Guidelines.) Smart Growth America provides great **resources** for designing streets that cater to all users, including a **best practices guide** co-authored with APA. Dunn, NC has one of the best complete street policy statements of any community in NC: **Zoning Ordinance Sec. 22-352**. Circulation and connectivity. (a) Purpose and intent. The purpose of this section is to support the creation of a highly connected transportation system with the city in order to provide choices for drivers, bicyclists, and pedestrians; promote walking and bicycling; connect neighborhoods to each other and to local destinations such as schools, parks, and shopping centers; reduce vehicle miles of travel and travel times; increase effectiveness of municipal service delivery, and free up arterial capacity to better serve regional long distance travel needs.

Policy Recommendations (Continued)

Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
1.2 Develop Complete Streets Design Guidelines for a variety of contexts and all street/roadway user groups The subsections below include recommendations for elements of Complete Streets and complete multi-modal networks. Sidewalks, greenways, and streetscape items such as street trees and lighting are some of the most fundamental elements of Complete Streets for pedestrians and greenway users. Access management, multi-modal level of service assessments, and traffic calming are also critical for developing complete street networks for walking through the development review and capital project implementation process.	**Needs Improvement** To begin with, consider adopting by reference for street design one or more of the following and including in the new Unified Development Code: • NCDOT Complete Streets Policy and Roadway Design Manual • NACTO Urban Street Design Guide • The design resources included in this plan (see Appendix B)	The NCDOT Complete Street Guidelines include recommendations on complete street design elements for pedestrians and greenway users. Clayton could adopt and endorse the NCDOT guidelines and other national guidelines, including the **NACTO Urban Street Design Guide**.
1.3 Require pedestrian accommodations, including by roadway type Pedestrian facilities should be determined based on street types and land uses of a given roadway corridor.	Clayton has **Good** sidewalk requirements that are generally based on street types and/or land use. § 155.602 STREETS. (H) (1) Sidewalks. In order to enhance pedestrian safety and mobility, except as set forth below, sidewalks shall be required on both sides of all streets	Consider a greater range of sidewalks requirements based on street and land use context. In areas such as downtown and pedestrian-oriented business districts with buildings at the back of the sidewalk and ground level retail, sidewalks should be as wide as 10-16 feet wide. See the NCDOT **Complete Streets Planning and Design Guidelines** for contextually-based streetscape and sidewalk design requirements. Consider including these guidelines by reference in local design guidance or requirements. Also: The design resources recommended as part of this plan (see Appendix B) should be considered for incorporation or inclusion by reference in the Town's UDC and/or engineering specifications.
1.4 Require designated bicycle facilities (bike lanes, shoulders, greenways, etc) during new development or redevelopment or capital roadway projects	**Needs Improvement** On-road bicycle facilities are not included in the Town's Typical Street Cross Sections, but the option for sidepaths is included.	A wider range of bicycle facility typologies should be considered based on street typology including buffered and separated bike lanes as detailed in various publications including the NACTO Urban Bikeway Design Guide and the soon-to-be-released update to the AASHTO Guide for the Development of Bicycle Facilities. Also, see: Chapter 6 of Wake Forest, NC **UDO** for recommendations for bicycle facilities and greenways, esp. sections 6.8.2, 6.9, 6.10. Chapter 7 of the Wilson, NC **UDO** regarding greenways.
1.5 Require dedication, reservation or development of greenways	**Needs Improvement**	The Town of Clayton's open space requirements can include greenway development, but specific language should be included to the effect of requiring greenways identified in this Pedestrian Plan in all new development (and built to Town standards). See requirements in Wake Forest, NC **UDO**, Section 6.8.2 Greenways: "When required by the Wake Forest Comprehensive Transportation Plan, greenways and multi-use paths shall be provided according to the provisions [that follow in the section cited above]." The Town of Clayton should work with its legal counsel to determine the best approach.

Policy Recommendations (Continued)

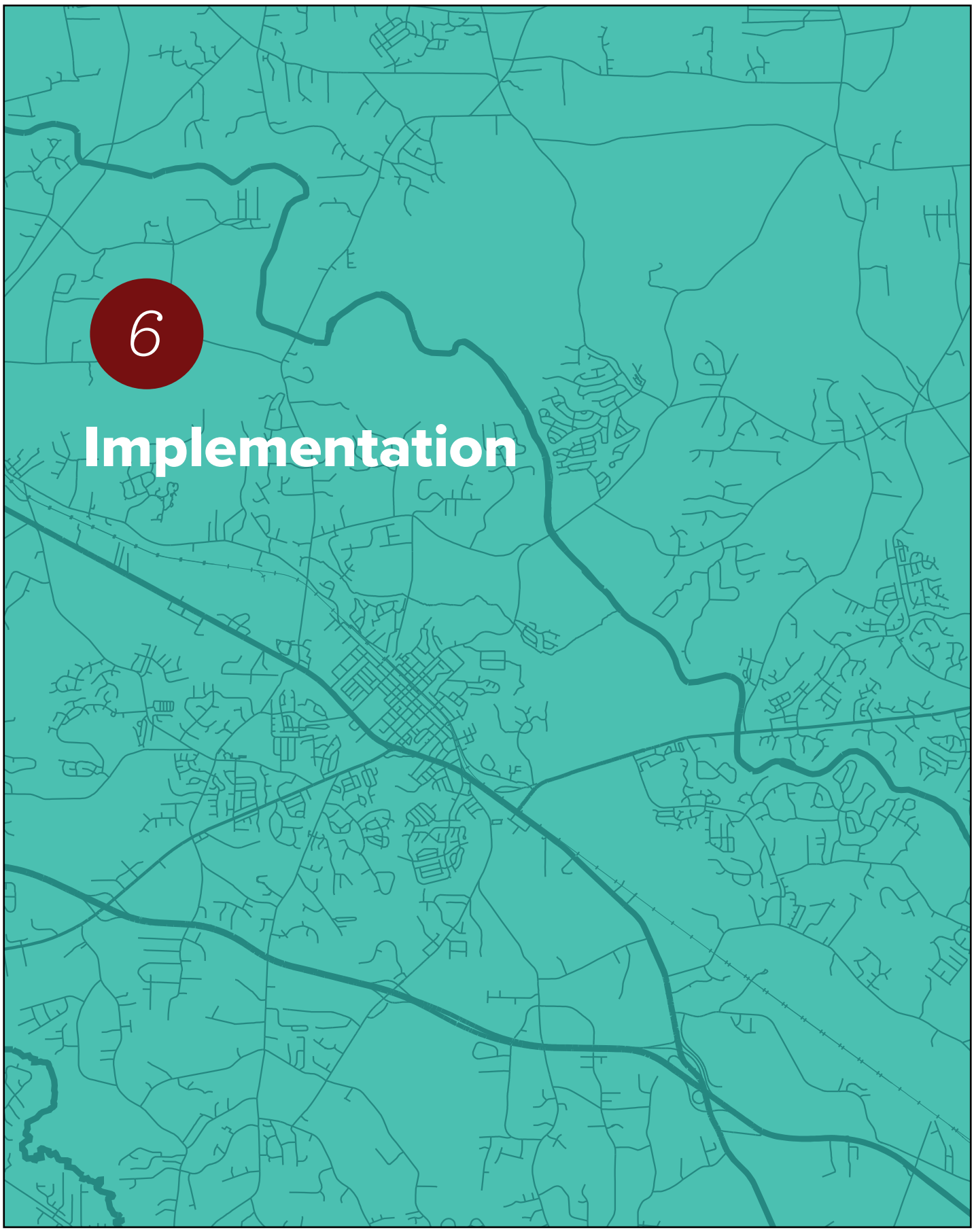
Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
1.6 Consider pedestrian concerns and Level of Service (LOS) in Traffic Impact Analyses and other engineering studies Beyond LOS for motor vehicle travel at intersections, Clayton should consider adopting multi-modal level of service standards where active transportation and transit use are expected to be high. Consideration of pedestrian and bicycle levels of service assure adequate facilities for pedestrians and bicyclists in new development and capital improvements. This also helps promote walking and biking and transit use as legitimate means of transportation.	**Needs Improvement** TIA reviews for new or existing land-development projects are a great opportunity for ensuring ped/bike and transit projects/ improvements are considered along with highway/street improvements.	The NCDOT **Complete Streets Planning and Design Guidelines** provides factors of "Quality of Service" and LOS for bicycle, pedestrian, and transit modes (See Chapter 3, page 39 and Chapter 5). The City of Raleigh uses multimodal level of service approach in determining road improvements and traffic mitigation in their **Street Design Manual**. Charlotte, NC uses Pedestrian LOS and Bicycle LOS Methodologies for intersection improvements in their **Traffic Impact Study process**.
1.7 Adopt traffic calming programs, policies, and standards Traffic calming on local streets increases safety and comfort for all roadway users, including pedestrians and bicyclists. It also increases neighborhood livability.	**Needs Improvement**	FHWA has developed a comprehensive **Traffic Calming ePrimer**. The Town of Holly Springs has an excellent **Traffic Calming and Pedestrian Safety Policy**, which includes allowable design treatments and policy for implementation. See also the **NACTO Urban Bikeway Design Guide** section on Bicycle Boulevards, which includes traffic calming measures.
1.8 Develop an access management program or policy Limiting turning movements on major roadways and requiring cross-access between adjacent parcels of land, including commercial developments, is a great tool for reducing the amount of traffic and turning movements on major roads while increasing safety and connectivity for pedestrians, bicyclists, and cars.	**Good** § 155.204 OVERLAY DISTRICT STANDARDS The Thoroughfare Overlay District includes Access Regulations.	The **Complete Streets Planning and Design Guidelines** provides recommended "Access Density" guidelines (See Chapter 4, page 61 and 62) based on context, and should be referenced to create guidance for roads beyond the Thoroughfare Overlay District.

Policy Recommendations (Continued)

Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
Pedestrian-oriented Urban Design Elements		
2.1 Require planting strips and street trees When planted in a planting strip between the sidewalk and the curb, street trees provide a buffer between the pedestrian zone and the street. In addition to their value for improving the air quality, water quality, and beauty of a community, street trees can also help slow traffic and improve comfort for pedestrians. Trees add visual interest to streets and narrow the street's visual corridor, which may cause drivers to slow down.	Good but **Needs Improvement** § 155.402 LANDSCAPING, SCREENING AND BUFFERING (E2a) Street Buffers All new development with frontage on a commercial street or designated minor thoroughfare shall provide a Class A buffer as set forth in division (E)(3) of this section.	Street trees should be required for all street types and for all new development or capital projects (and where feasible based on NCDOT design standards). Planting strips of eight feet or greater is recommended for large maturing trees and to provide greater separation between pedestrians and the roadway. Larger planting strips may be required to meet NCDOT requirements. See NCDOT **Complete Streets Planning and Design Guidelines** (Chapter 4) for context-based pedestrian and "green" zone recommendations. See also, Town of Wendell **UDO Chapter 8**, especially section 8.8, Street Trees.
2.2 Require/Specify pedestrian-scale street lighting	Good but **Needs Improvement**	General guidance is given for pedestrian-scale lighting, but further detail on application and requirements should be included. Pedestrian-scale lighting along streets and at intersections is one of the most important tools for pedestrian crash prevention. See Town of Wendell **UDO, Sections 11.10 and 11.11** for pedestrian-scaled lighting requirements by zoning district and for lighting requirements for greenways and walkways.
2.3 Update bicycle parking requirements	Good but **Needs Improvement** § 155.401 OFF-STREET PARKING AND LOADING includes requirements for bicycle parking, but some improvements to the standards could include adding requirements for long-term bicycle parking, and bring the bicycle parking ratios to the recommended standards in the APBP Bicycle Parking Guidelines 2nd Edition (reference Chapter 3).	In general, bicycle parking should be required for all non-residential developments that have employees or visitors, all public or civic uses or sites, and all multi-family development Different standards of bicycle parking are needed for short-term visitors and customers and for longer term users like employees, residents, and students. See City of Wilson **UDO**, Chapter 9: Parking & Driveways, Section 9.4 and 9.6. See City of Durham UDO Section **10.3.1** Required Motorized Vehicle and Bicycle Parking, and Section **10.4.4** Design Standards for Bicycle Parking Model standards for bicycle parking as well as design can be found through the Association of Pedestrian and Bicycle Professionals' Bicycle Parking Guidelines 2nd Edition. (**www.apbp.org**), and are recommended for the Town of Clayton.

Policy Recommendations (Continued)

Topics/Strategies	Comments/Recommendations	
	Current UDC or Adopted Plan/Standards	General Recommendations
Connectivity Requirements		
3.1 Revise block size requirements "[A] Good [street] network provides more direct (shorter) routes for bicyclists and pedestrians to gain access to the thoroughfares and to the land uses along them (or allows them to avoid the thoroughfare altogether). Likewise, good connections can also allow short-range, local [motor] vehicular traffic more direct routes and access, resulting in less traffic and congestion on the thoroughfares. This can, in turn, help make the thoroughfare itself function as a better, more Complete Street. For all of these reasons, a complete local street network should generally provide for multiple points of access, short block lengths, and as many connections as possible." (NCDOT Complete Streets Planning and Design Guidelines, p 59)	**Good** § 155.603 LOTS AND BLOCKS (B) (3) Blocks shall not exceed 1,500 feet in length. § 155.603 LOTS AND BLOCKS. (B) (4) (4) In all districts except RE, I-1 and I-2, pedestrian connection not less than ten feet in width shall be required near the center and entirely across any block in excess of 900 feet in length to provide adequate access to schools, shopping centers, churches, or transportation facilities.	Maximum block length in any situation should rarely exceed 800-1000 feet for good connectivity. In areas with highest development density (urbanized, mixed use centers and high-density neighborhoods) block lengths can be as little as 200 feet. In areas with blocks as long as 800 feet or greater, a pedestrian and/or bicycle path through the block and/or alley should be required, and Clayton does have this latter requirement. See the example table on page 59 of the NCDOT **Complete Streets Planning and Design Guidelines** for a context-based approach to block size.
3.2 Require connectivity/cross-access between adjacent land parcels	**Good** § 155.602 STREETS (K) (1) Public streets shall be constructed to the boundary lines of the development submitted for approval when required to provide for efficient circulation of traffic within the community.	Requiring connectivity or cross-access between adjacent developments is a great tool for reducing the amount of traffic on major roads while increasing connectivity for pedestrians, bicycles, service vehicles, and neighborhood access. For good model language, see City of Wilson, NC **UDO**, Section 6.4: Connectivity Or Town of Wake Forest, NC **UDO**, Section 6.5, Connectivity. Or for a links-to-node ratio approach, see the Town of Knightdale's **UDO** Chapter 10, page 13.
3.3 Limit dead end streets or cul-de-sacs Dead end streets or Cul-de-sacs, while good at limiting motor vehicular traffic in an area, are a severe hindrance for network connectivity and over all neighborhood/ community accessibility, including for emergency access and other services.	**Good** § 155.603 LOTS AND BLOCKS. (B) (5) A pedestrian connection not less than ten feet in width shall be required through a residential cul-de-sac when the cul-de-sac helps provide adequate access to schools, shopping centers, churches, or transportation facilities. For these purposes, this connection is required when another connection (per (B)(4) above) does not exist or the cul-de-sac terminates within 350' of either a public right-of-way, sidewalk, greenway, school, transportation facility, park, library or public community facility, or shopping center.	Make the maximum length for Cul-de-sacs 250-300 feet (except in "rural" or very low-density development; e.g., density of less than 1 dua) to limit the distance that a person biking or walking would have to travel along a cul-de-sac Consider requiring other traffic calming/traffic diversion measures that allow for connectivity and improve the pedestrian and biking environment such as street trees, narrow street width standards, traditional traffic calming devices, emergency and/or bike/ped connections only between streets and T intersections. For good model language, see City of Wilson, NC **UDO**, Section 6.4: Connectivity Or Town of Wake Forest, NC **UDO**, Section 6.5, Connectivity.



6 Implementation

How to Use This Plan

At the heart of every successful pedestrian plan is a coordinated effort by town staff and other partners to support safe travel on foot. Everyone has a key role to play in implementing this plan. Town of Clayton staff and elected/appointed officials should use this report to establish programs and policies that educate, encourage, and prioritize infrastructure investments proposed throughout the town.

TOWN OF CLAYTON

Town staff can use this report to document travel behaviors, existing roadway design deficiencies, and specific improvement opportunities. Continuing to coordinate with developers and NCDOT will be key to implementing pedestrian facilities. This plan provides documentation and recommendations to refer to in shaping development or NCDOT projects and activities.

NCDOT

NCDOT staff, specifically within Division 4 can use this plan to get familiar with proposed priority projects. NCDOT will play an integral role in the design, construction, and maintenance of pedestrian facilities throughout the NCDOT maintained roadways. During the project scoping process, the Town and CAMPO can communicate with NCDOT personnel to affect how STIP projects are formulated and designed.

DEVELOPERS

As development continues in Clayton, walkability could and should be thoroughly incorporated into each site design. Growth in pedestrian facilities, such as the sidepaths and sidewalks being constructed as part of the Steeplechase Subdivision, are examples of developer participation that can serve the pedestrian network.

ACTIVE TRANSPORTATION ADVISORY COMMITTEE

An Active Transportation Advisory Committee (ATAC) can use this plan as a framework for coordinating the development of the policies and programs recommended for Clayton. An Active Transportation Advisory Committee will be instrumental in implementing the plan.

LOCAL STAKEHOLDERS

Local stakeholders can use this plan to understand and confirm the conditions in their neighborhoods and near their organizations (if applicable) as well as become familiar with the ways in which they can support program goals. In many cases, education and encouragement programs require these dedicated volunteers. Local stakeholders can also provide input on NCDOT processes and projects.

Implementation Action Steps

The following represent key, immediate action steps for Clayton and its partners:

Adopt This Plan

Adoption does not obligate the Town financially, but signals an intent to support the vision, goals, and recommendations of this plan in the coming years and decades.

Amend CTP

Referencing facility recommendations from this plan will ensure projects that are implemented by NCDOT will not require a cost share from the Town, per the NCDOT Complete Streets Policy.

Form an Active Transportation Advisory Committee

Leadership from the Planning Department, Parks & Recreation Department, and members of this project's steering committee should become the advisory committee for guiding the implementation of this plan.

The ATAC should have representation from active pedestrians and a diverse stakeholder group in Clayton. The formation of this group would be a significant step in becoming designated as a Walk Friendly Community (see program recommendations in Chapter 4). The committee would provide a communications link between the residents of the community and local government. They should also continue to meet quarterly, and be tasked with assisting municipal staff in community outreach, marketing, infrastructure decisions, and educational activities recommended by this plan.

Update Town Policies

Policy recommendations are presented in Chapter 5. In their essence, new policies and updated existing policies are low-cost or zero-cost means for Clayton to influence or enforce pedestrian improvements. The recommendations from this plan should be incorporated into the Town's Code of Ordinances.

Continue Coordinating with Developers and NCDOT

Continue coordinating with developers on pedestrian infrastructure circulation within and to/from new developments. As roads are improved or newly constructed, continue coordinating with NCDOT on implementing Complete Streets. With the NC 42 widening south of US 70, ensure pedestrian facilities (sidepaths, sidewalks, and crossing facilities), are thoroughly incorporated into the project.

Engage New Programs

Program recommendations can be found in Chapter 4. Planning staff, partner departments, and the ATAC should work together to move program recommendations forward.

Set Aside Dedicated Funding for Pedestrian Infrastructure Projects

Priority project sheets contain cost estimates and potential funding opportunities are listed in Appendix C. Dedicated annual funding for completing pedestrian projects should be included as a line item in Clayton's annual budget. Additionally, leverage dedicated funding by seeking private partnerships with local businesses to aid in raising funds for pedestrian projects and/or grants that require a match. Completing or at least initiating the design phase for these projects will make them more competitive in grant applications such as CAMPO's LAPP process.

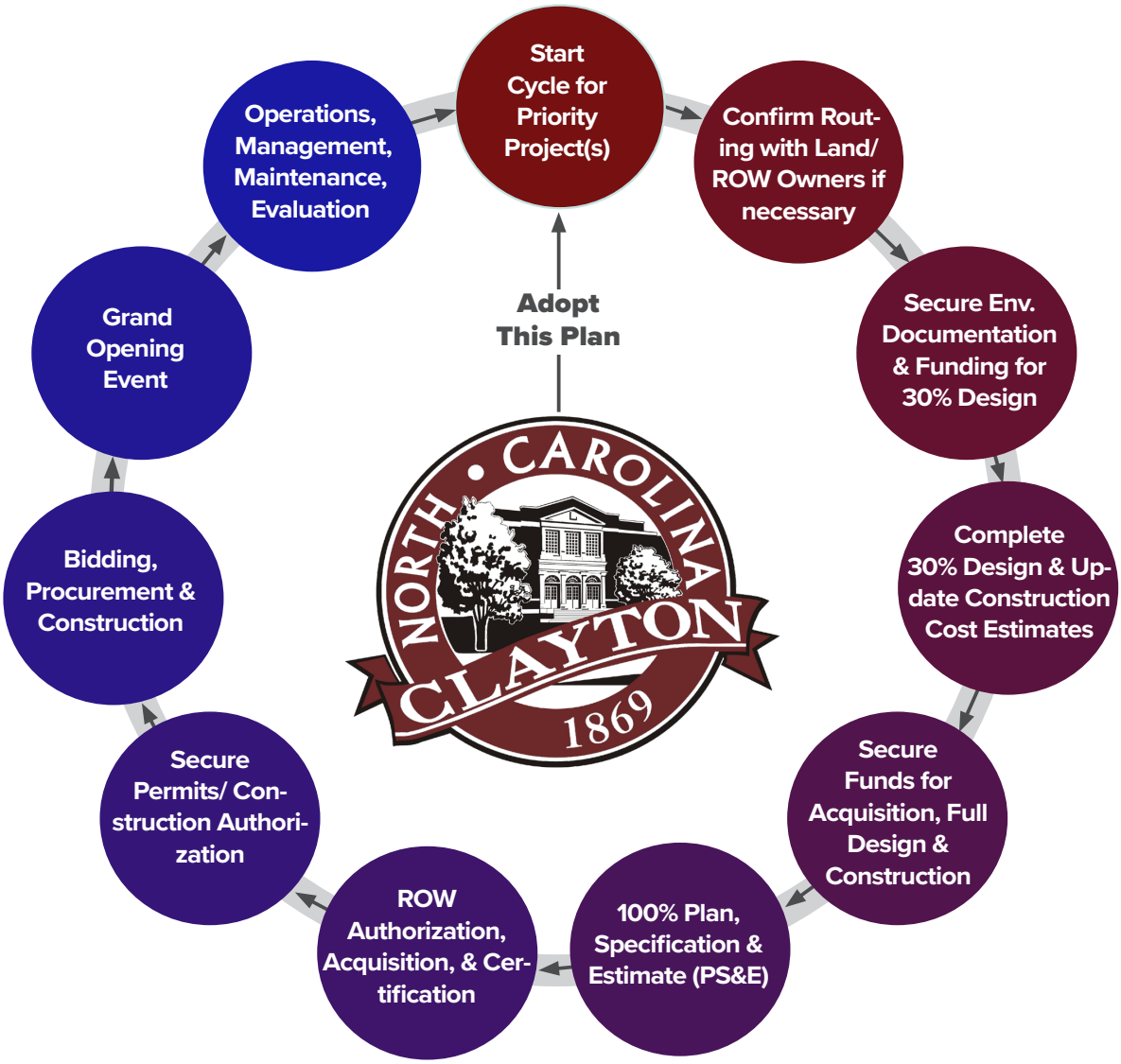
Additional Staffing Needs

Consider creating a dedicated Transportation Planner whose responsibilities can include pedestrian/bicycle/greenway infrastructure and program/policy implementation. In a rapidly growing community, pedestrian Infrastructure development and program creation in a timely fashion requires additional staff time.

Typical Project Development Process

The implementation of pedestrian infrastructure projects will take time and will happen through multiple mechanisms including the NCDOT SPOT process, Clayton's CIP, CAMPO's LAPP process, land and roadway development, and park and open space development.

To be competitive in CAMPO's LAPP process, creating shovel ready projects (projects that have design completed) is very important. The graphic below highlights some of the key steps in the project implementation process. These are the steps typically involved in pedestrian facility development, when the project is being built independent of other major development or roadway projects. Certain funding sources may have additional requirements, and some steps may occur simultaneously or in a different order.



Key Partners in Implementation

Role of the Town Council

The Town Council should be responsible for understanding and adopting this plan. The Council will ultimately determine the timing of action steps, and dedication of resources to implement this plan.

Role of the Planning Board

The Planning Board serves as an advisory board to the Town Council on matters of planning and zoning. The Planning Board should be prepared to:

- Become familiar with the recommendations of this plan, and support its implementation.
- During subdivision plan review, ensure required space for recommended infrastructure projects if applicable.
- Include pedestrian infrastructure needs when updating ordinances.
- Learn about bicycle- and pedestrian-related policies in North Carolina. (see: https://connect.ncdot.gov/projects/BikePed/Pages/Policies-Guidelines.aspx)

Role of the Active Transportation Advisory Committee (ATAC)

The Committee should be prepared to:

- Meet with Clayton staff and evaluate progress of the plan's implementation and offer input regarding pedestrian, bicycle, and trail-related issues.
- Assist Clayton staff in applying for grants and organizing pedestrian- and bicycle-related events and educational activities.
- Build upon current levels of local support for pedestrian and bicycle issues and advocate for local project funding.

Role of the Local NCDOT Division 4

Division 4 of the NCDOT is responsible for the construction and maintenance of pedestrian and bicycle facilities on NCDOT-owned and maintained roadways in Clayton, or is expected to allow for the municipalities to do so with encroachment agreements. Clayton should be proactive and take the lead in communicating with and working with Division 4, but Division 4 should also be prepared to do the following, as they are able:

- Recognize this plan as not only an adopted plan of Clayton, but also as an approved plan of the NCDOT.
- Become familiar with the pedestrian facility recommendations for NCDOT roadways in this plan (Chapter 3); take initiative in incorporating this plan's recommendations into the Division's schedule of improvements whenever possible.
- Become familiar with the design guidance listed in Appendix B of this plan; construct and maintain recommended facilities using the highest standards allowed by the State (including the use of innovative treatments on a trial basis).
- Notify Clayton staff of all upcoming roadway reconstruction projects in Clayton, no later than the design phase. Provide sufficient time for comments from Town staff.
- If needed, seek guidance and direction from the NCDOT Integrated Mobility Division on issues related to this plan and its implementation.

Role of The Police Department

The Clayton Police Department should be prepared to:

- Become experts on pedestrian-and bicycle related laws in North Carolina (see: https://www.ncdot.gov/divisions/bike-ped/Pages/bike-ped-laws.aspx).
- Continue to enforce not only pedestrian- and bicycle-related laws, but also motorist laws that affect walking and bicycling, such as speeding, running red lights, aggressive driving, etc.
- Participate in pedestrian- and bicycle-related education programs (excellent existing program example: the **Clayton Police Department engaged the Watch for Me NC education and encouragement program in 2018** - this effort should continue).
- Review safety considerations as projects are implemented.

Role of Developers

Developers in Clayton are currently playing an important role in pedestrian facility development. In general, developers should be prepared to:

- Become familiar with the benefits, both financial and otherwise, of providing amenities for walking and biking (including trails) in residential and commercial developments.
- Be prepared to account for pedestrian and bicycle circulation and connectivity in developments.

Role of Local & Regional Stakeholders

Stakeholders for pedestrian facility development and related programs, such as Johnston County, CAMPO, the Triangle Trails Initiative, members of this steering committee, and other local organizations play important roles in the implementation of this plan. Local and regional stakeholders should be prepared to:

- Become familiar with the recommendations of this plan, and communicate & coordinate with Clayton for implementation, specifically in relation to funding opportunities, such as grant writing and developing local matches for facility construction.
- CAMPO should continue to work with Clayton on submitting pedestrian and bicycle infrastructure projects for evaluation within the State Transportation Improvement Program (STIP).
- Business owners and organizations should look for opportunities to partner on specific projects, such as trail connectivity, streetscape improvements, or comprehensive signage and wayfinding projects.

Role of Local Residents, Clubs and Advocacy Groups

Local residents, clubs, and advocacy groups also play a role in the success of this plan. Building on the outreach conducted during this planning process, the ATAC should be prepared to engage local residents and groups by:

- Asking for input regarding pedestrian issues.
- Enlisting volunteers for pedestrian-related events and educational activities and/or to participate in such activities.
- Encouraging people to speak at Town Council meetings and advocate for local pedestrian and bicycle project and program funding.
- Fundraising for project implementation.

Role of Volunteers

Services from volunteers, students, and seniors, or donations of material and equipment may be provided in-kind, to offset construction and maintenance costs. Formalized maintenance agreements, such as adopt-a-trail/greenway or adopt-a-highway can be used to provide a regulated service agreement with volunteers.

Advantages of utilizing volunteers include reduced or donated planning and construction costs, community pride and personal connections to Clayton's walking network.



The Triangle Trails Initiative is a key regional partner that will assist in establishing support for regional trail development.

Performance Measures (Evaluation and Monitoring)

Clayton should establish performance measures to benchmark progress towards fulfilling the recommendations of this plan. The ATAC should play a key role in presenting these performance measures in an annual evaluation update. Performance measures could address the following aspects of pedestrian transportation and recreation in Clayton:

- Safety. Measures of pedestrian-related crashes and injuries.
- Facilities. Measures of how many pedestrian facilities have been funded and constructed since the plan's adoption.
- Maintenance. Measures of existing sidewalk/ crosswalk or trail deficiency or maintenance needs.
- Counts. Measures of pedestrian traffic at specific locations.
- Education, Encouragement and Enforcement. Measures of the number of people who have participated in part of a pedestrian-related program since the plan's adoption.

Maintenance

The physical condition of walking facilities is an important consideration when residents consider choosing walking for transportation or other uses.

Continuing a maintenance management plan will be useful in ensuring that responsibility is assigned appropriately and that regular maintenance is done. The following recommendations provide a menu of considerations that can help guide continued facility maintenance in Clayton.

Pedestrian facilities should be viewed and maintained as a public resource, serving generations to come. The following guiding principles will help assure the preservation of a first class system:

- Good maintenance begins with sound planning and design.
- Promote and maintain a quality outdoor recreation and transportation experience.
- Develop a management plan that is reviewed and updated annually with tasks, operational policies, standards, and routine and remedial maintenance goals.
- Maintain quality control and conduct regular inspections.
- Include field crews, police and fire/rescue personnel in both the design review and on-going management process.
- Maintain an effective, responsive public feedback system and promote public participation.
- Be a good neighbor to adjacent properties.
- Operate a cost-effective program with sustainable funding sources.

Facility Repair or Replacement

All facilities will require repair or replacement at one time or another. The time between observation and repair/replacement will depend on whether the needed repair is deemed a hazard, to what degree the needed repair will affect the safety of the user, and whether the needed repair can be performed by an in-house maintenance crew or if it is so extensive that the needed repair must be done by outside entities or replaced completely.

Longevity of Facilities

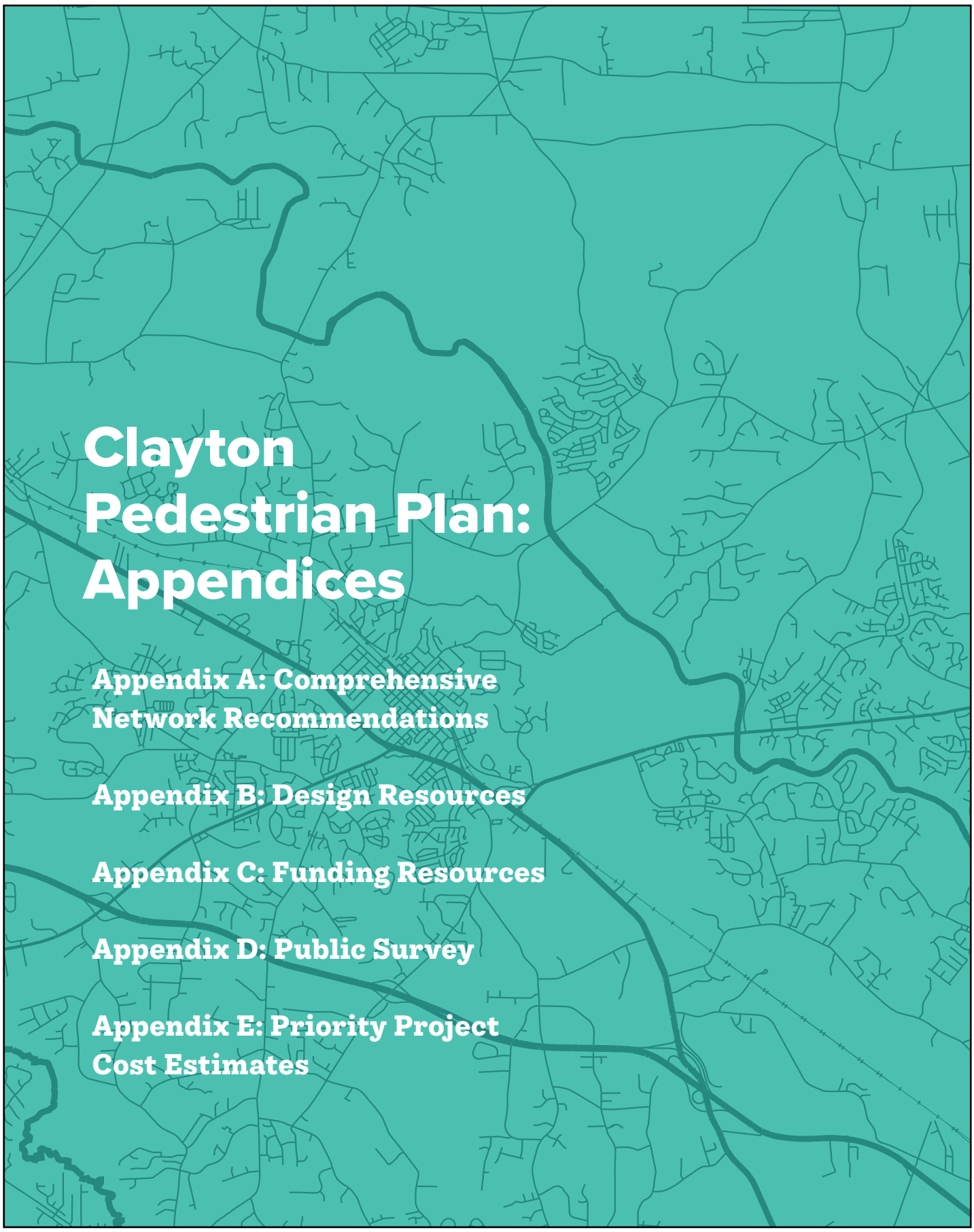
- Mulch 2-3 years
- Granular Stone 7-10 years
- Asphalt 7-15 years
- Concrete 20+ years
- Boardwalk 7-10 years
- Bridge/Underpass 100+ years

Range of Trail Maintenance Costs

Reported annual maintenance costs from cities and regions for greenways range widely, from just $500/mile to over $15,000/mile. The Town of Cary, NC uses $6,000/mile for annual mowing and trash pick up, and minor repairs like replacing a fence rail; they budget asphalt and drainage repairs separately on case by case basis. Some key factors affecting these wide ranges include:

- Quality of materials used, and frequency of sealing and reconstruction of the path
- Amount of leaf drop affecting the trail that requires concentrated sweeping
- Amount of flooding of the trail that has to be cleaned up
- Amount of snow removal/grooming needed
- Whether or not mowing, irrigation, and other care of adjacent open space is calculated in the cost
- Presence of waste receptacles

The largest factor affecting the annual maintenance figures is whether or not the eventual trail reconstruction is accounted for in annual maintenance budgets, as opposed to being considered as separate capital item.



Clayton Pedestrian Plan: Appendices

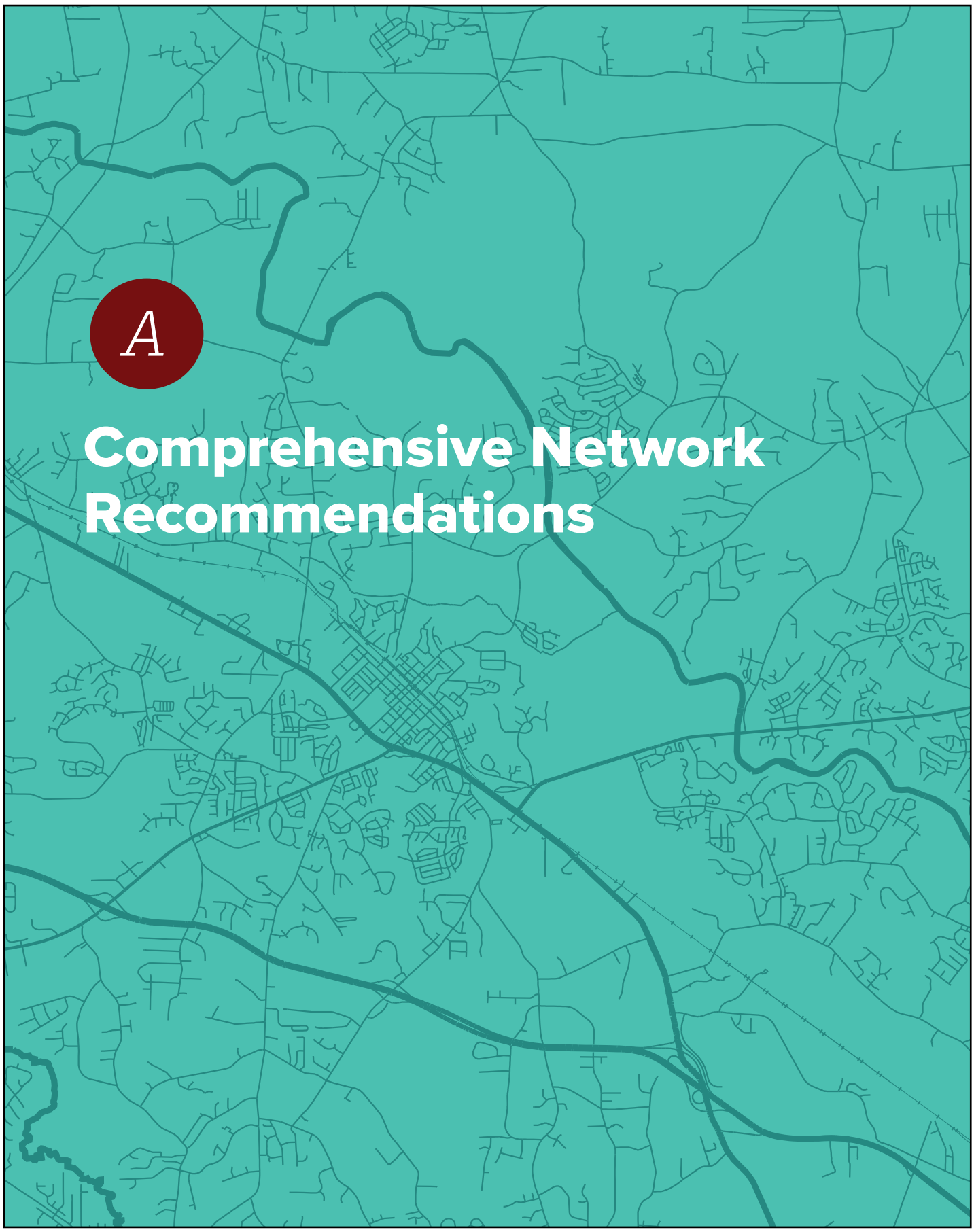
Appendix A: Comprehensive Network Recommendations

Appendix B: Design Resources

Appendix C: Funding Resources

Appendix D: Public Survey

Appendix E: Priority Project Cost Estimates

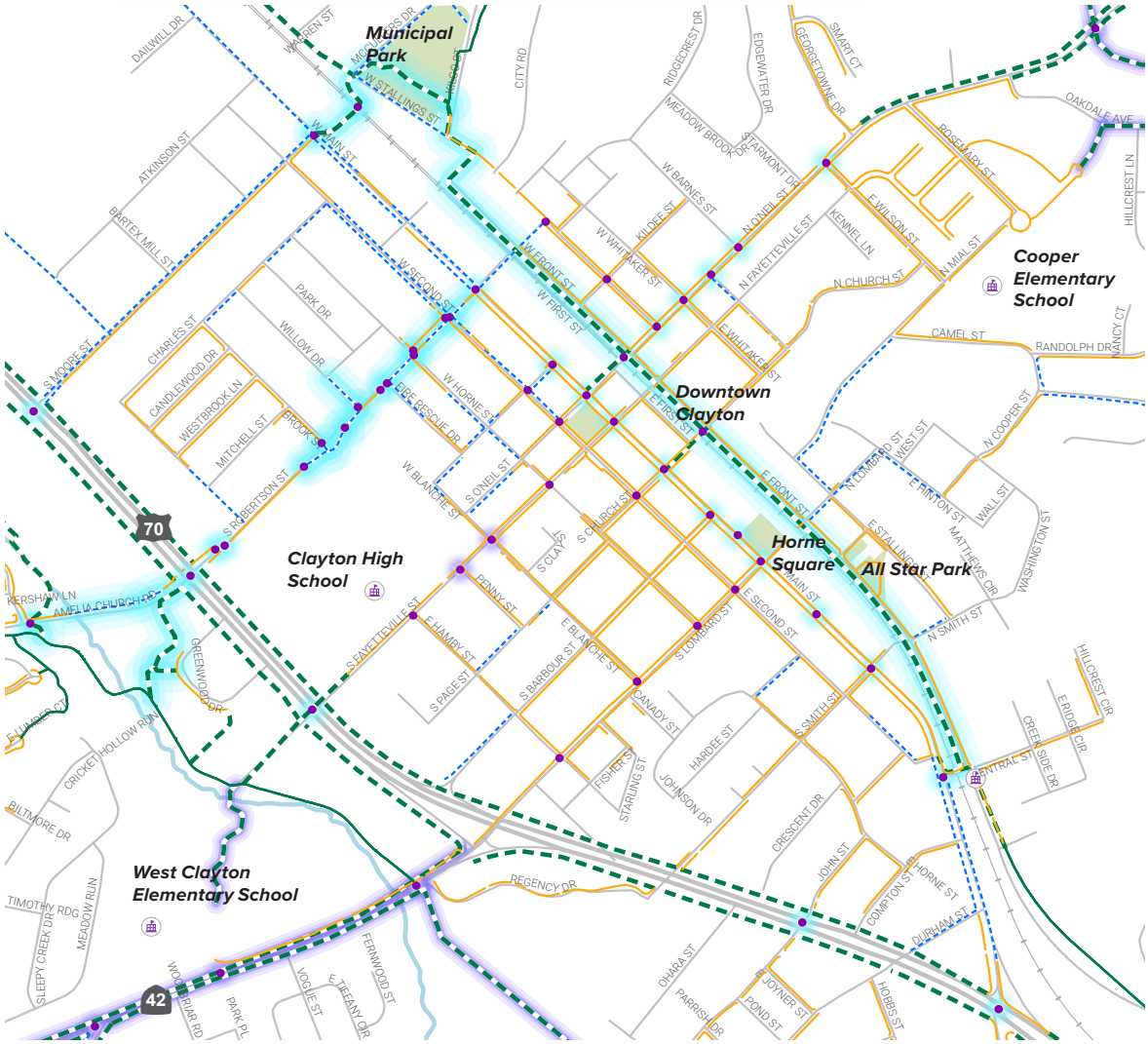


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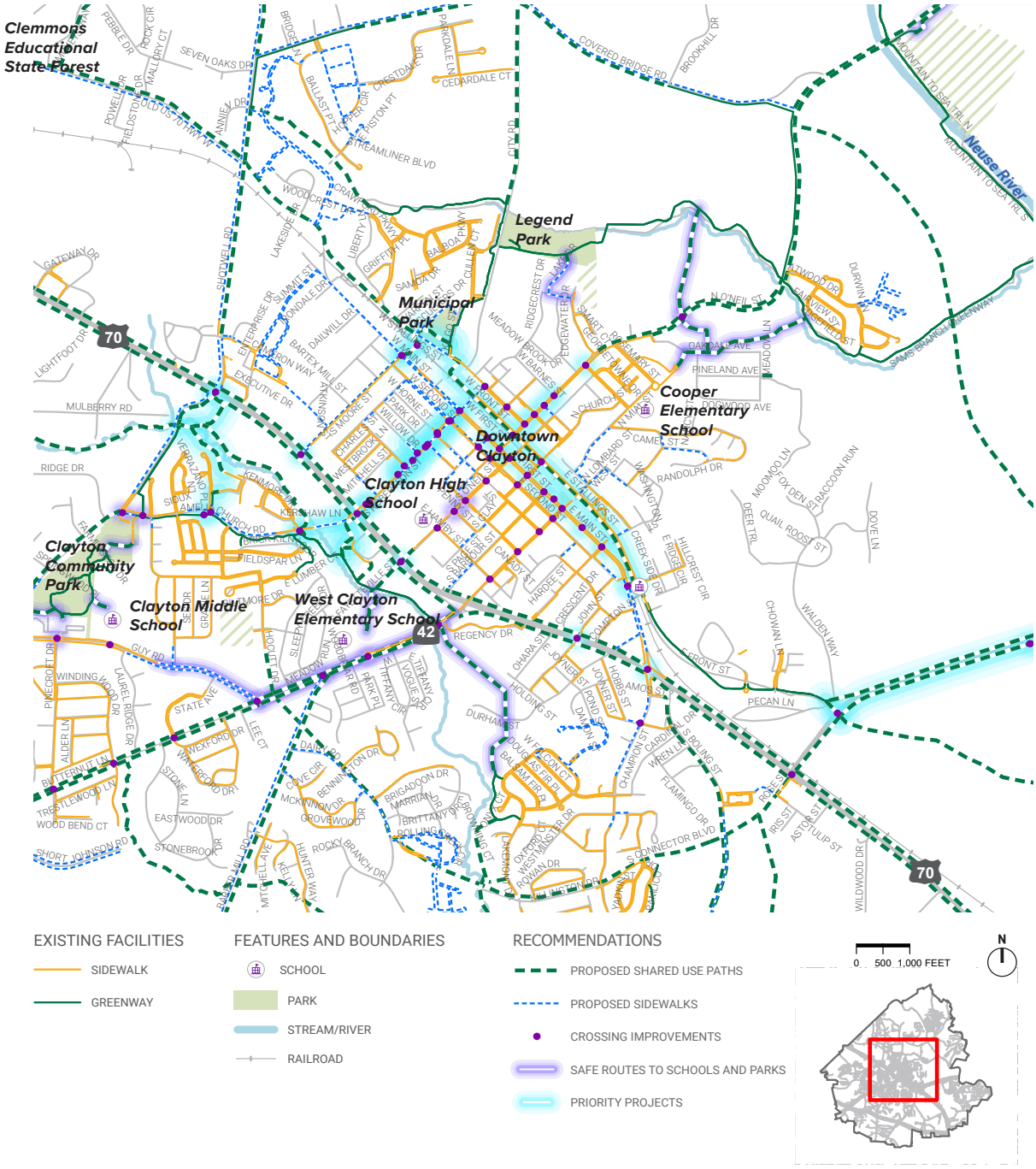
Comprehensive Network Recommendations

Appendix: Recommendations Maps

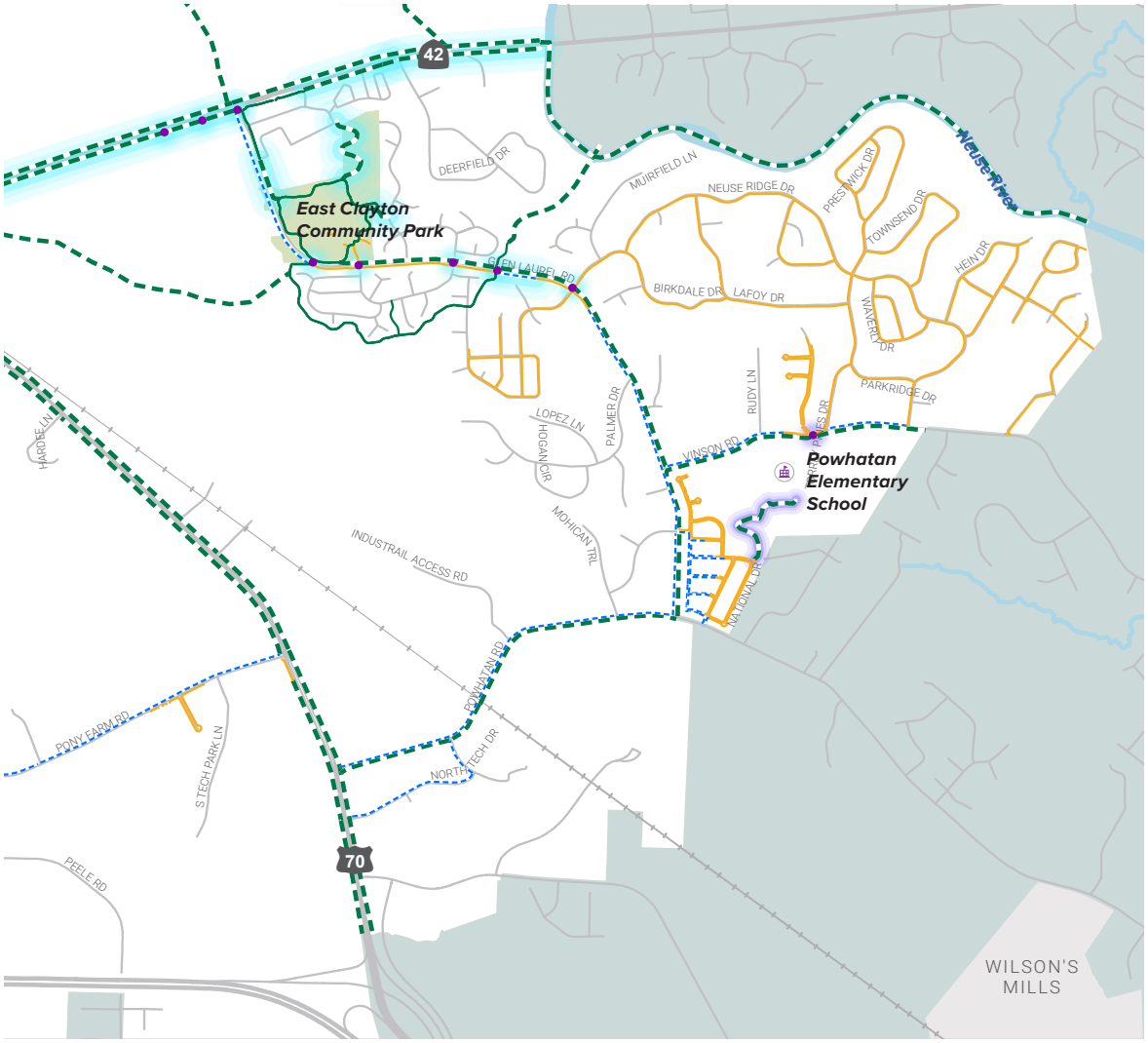
Downtown Clayton



Central Clayton



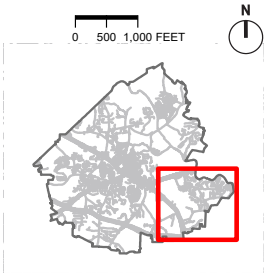
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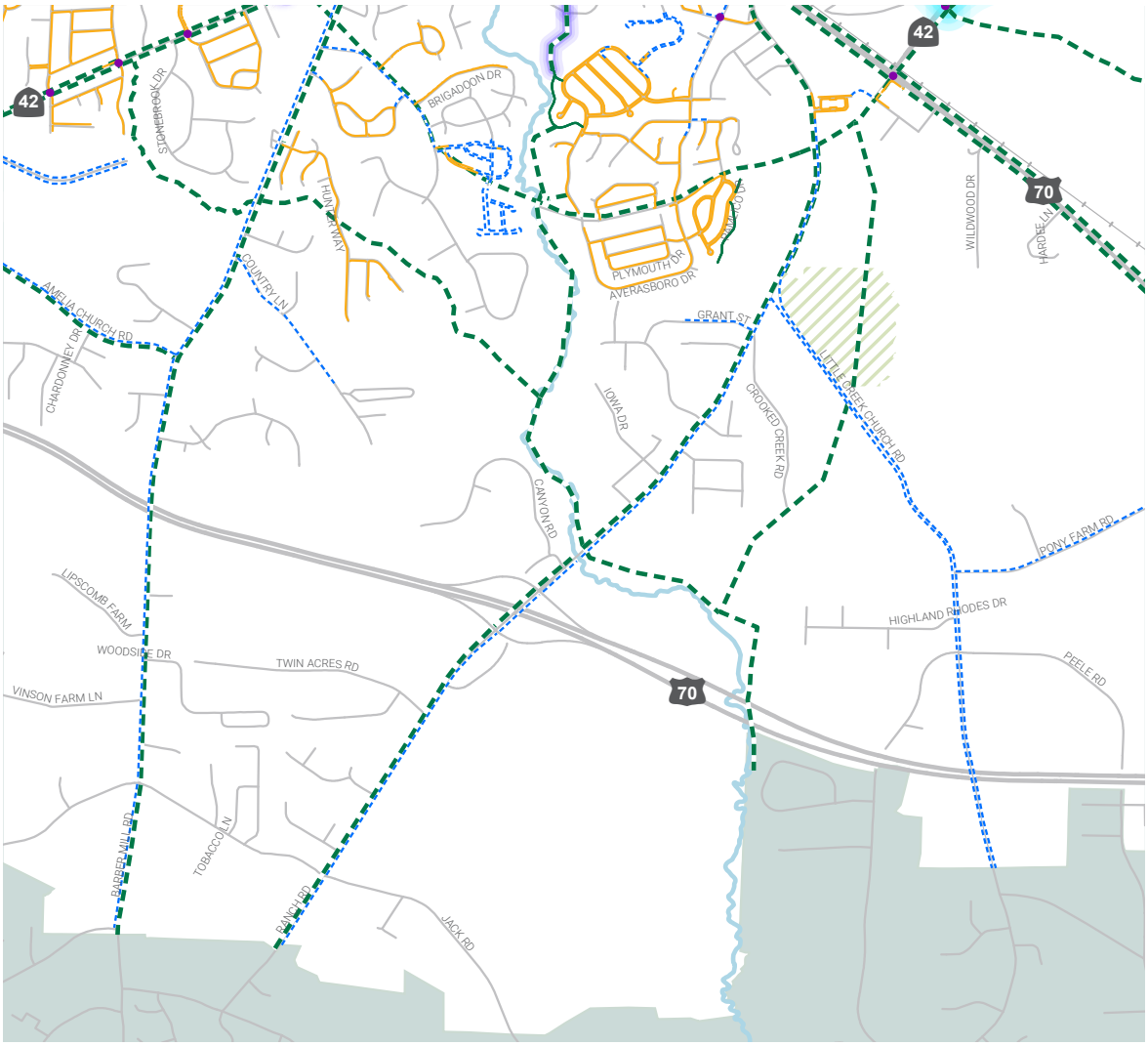
EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY

RECOMMENDATIONS
- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS



South Clayton



EXISTING FACILITIES
- SIDEWALK
- GREENWAY

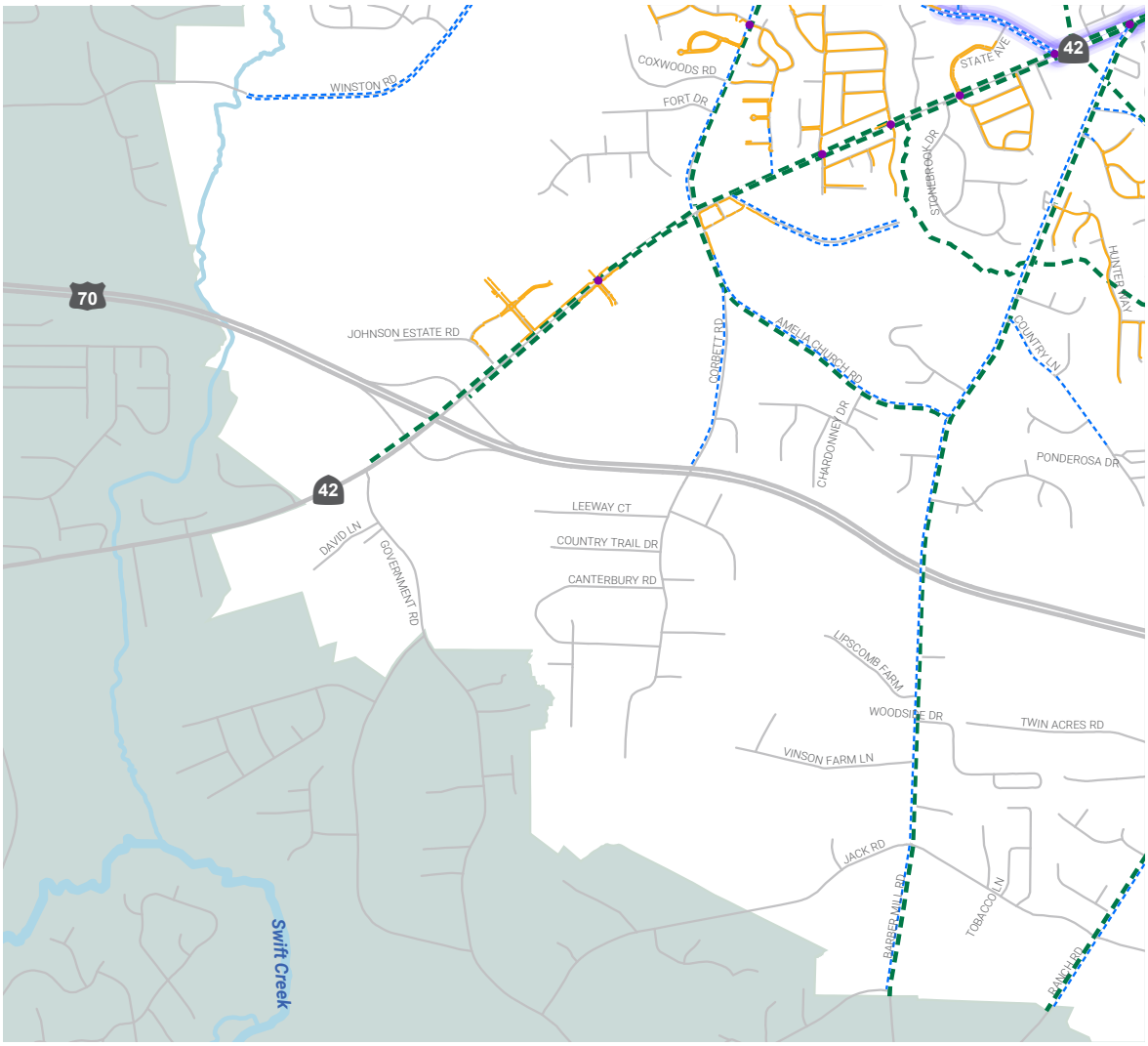
FEATURES AND BOUNDARIES
- RAILROAD
- CLAYTON ETJ

RECOMMENDATIONS
- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS

0 500 1,000 FEET

N

Southwest Clayton



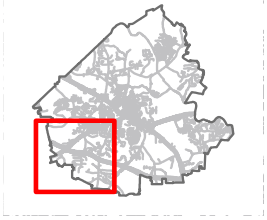
EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- STREAM/RIVER
- CLAYTON ETJ

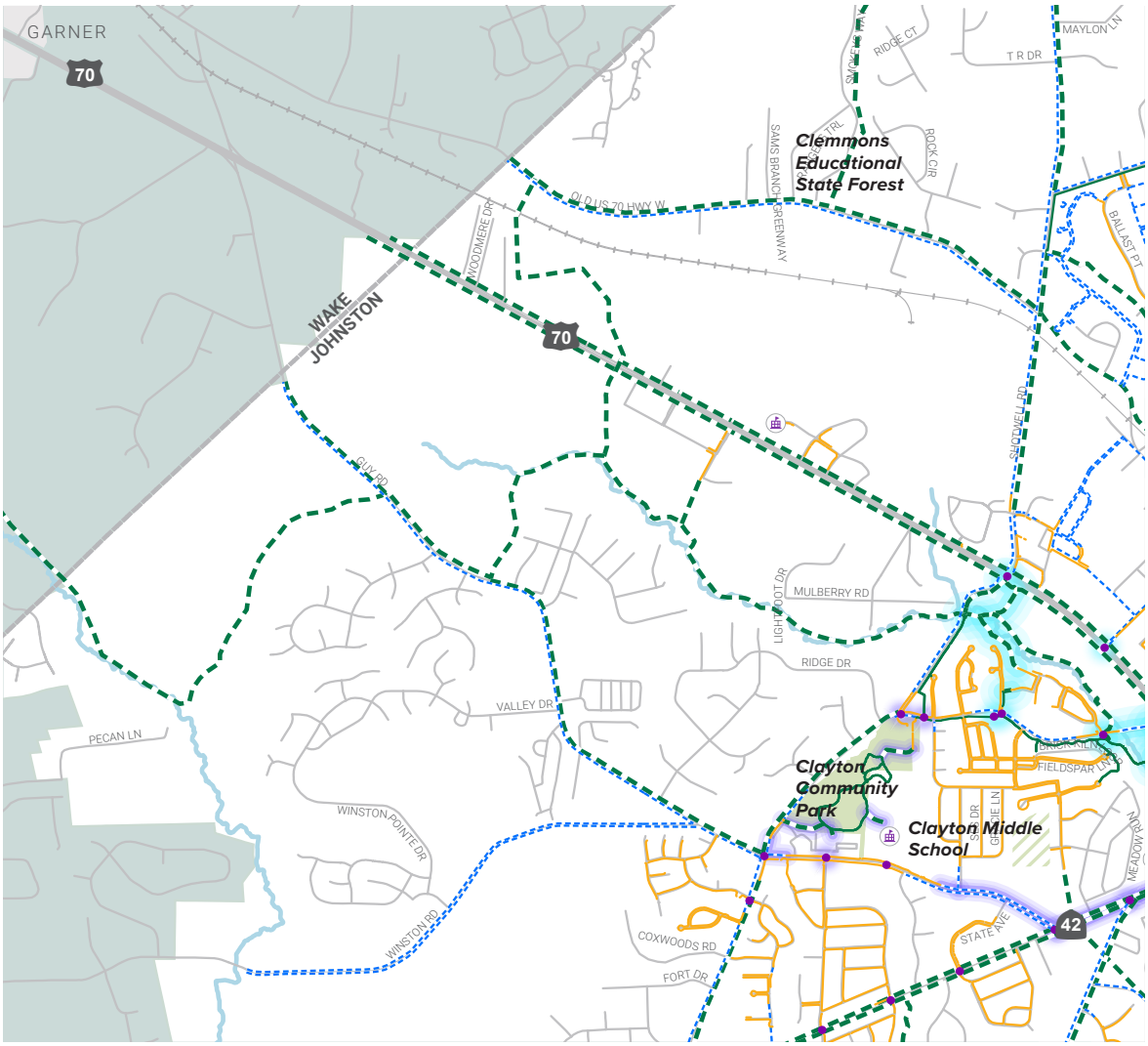
RECOMMENDATIONS
- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS

0 500 1,000 FEET

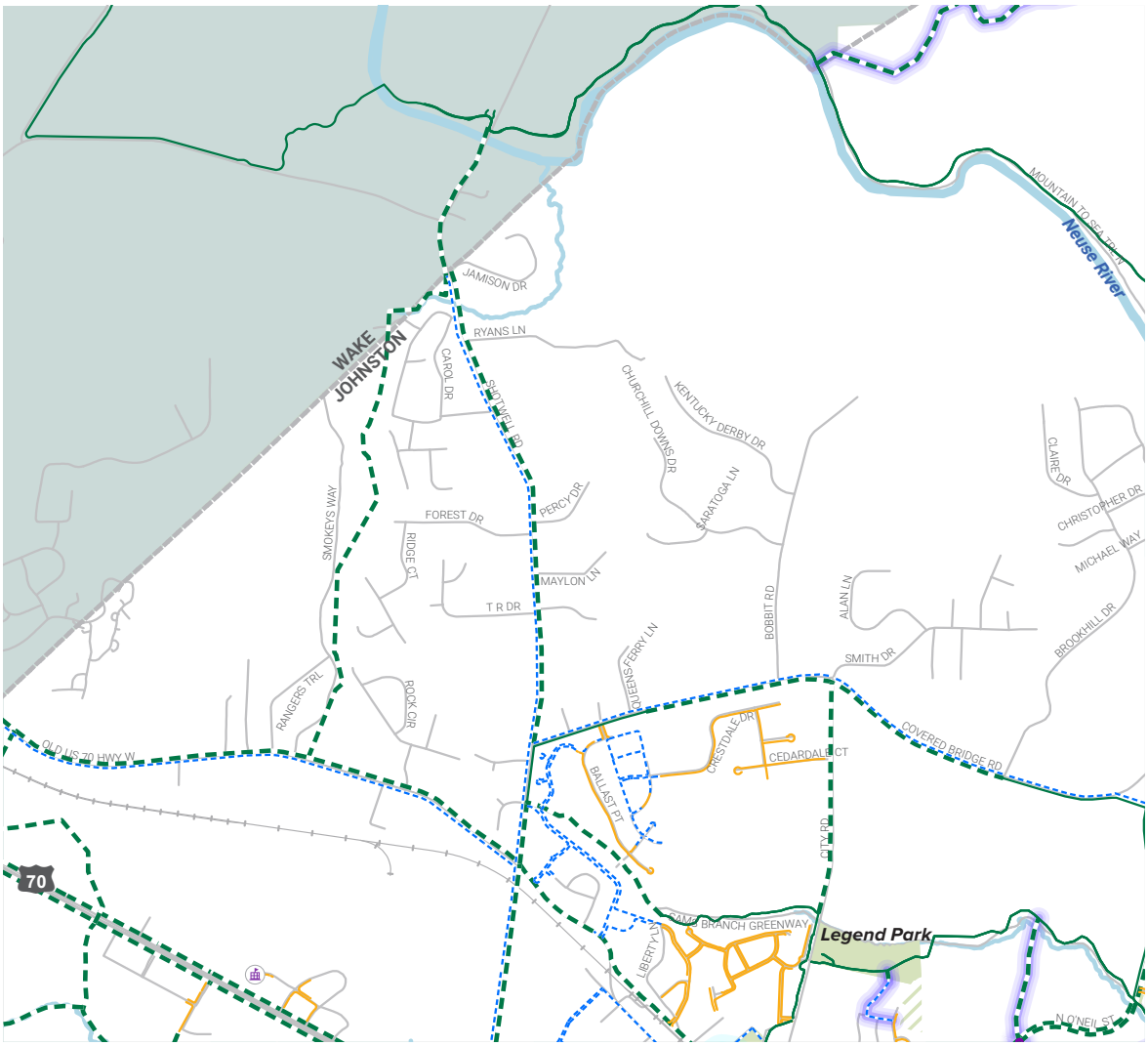
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West Clayton



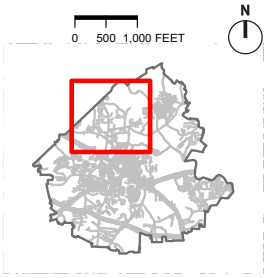
Northwest Clayton



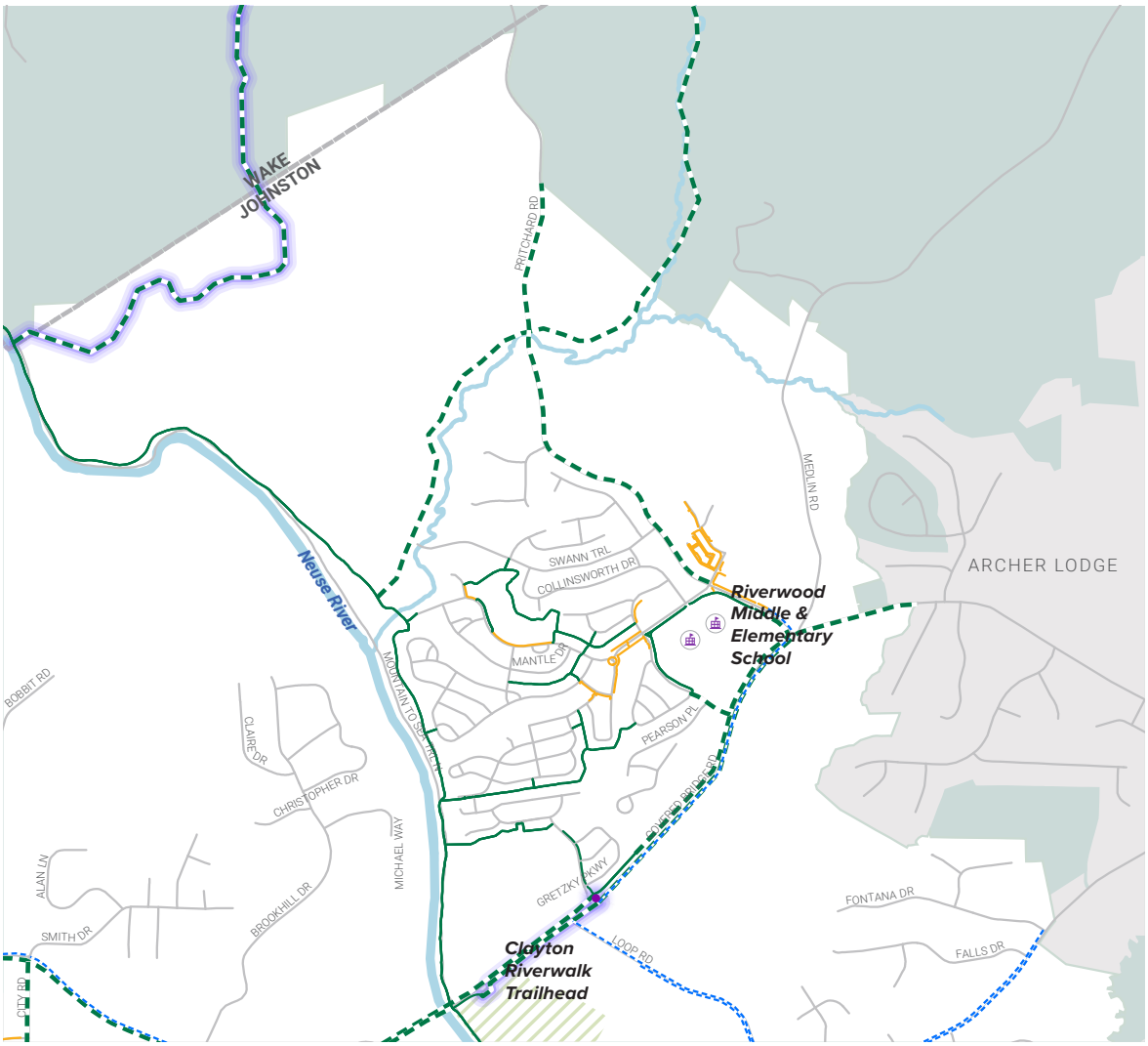
EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- COUNTY BOUNDARY

RECOMMENDATIONS
- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS



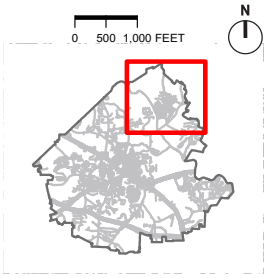
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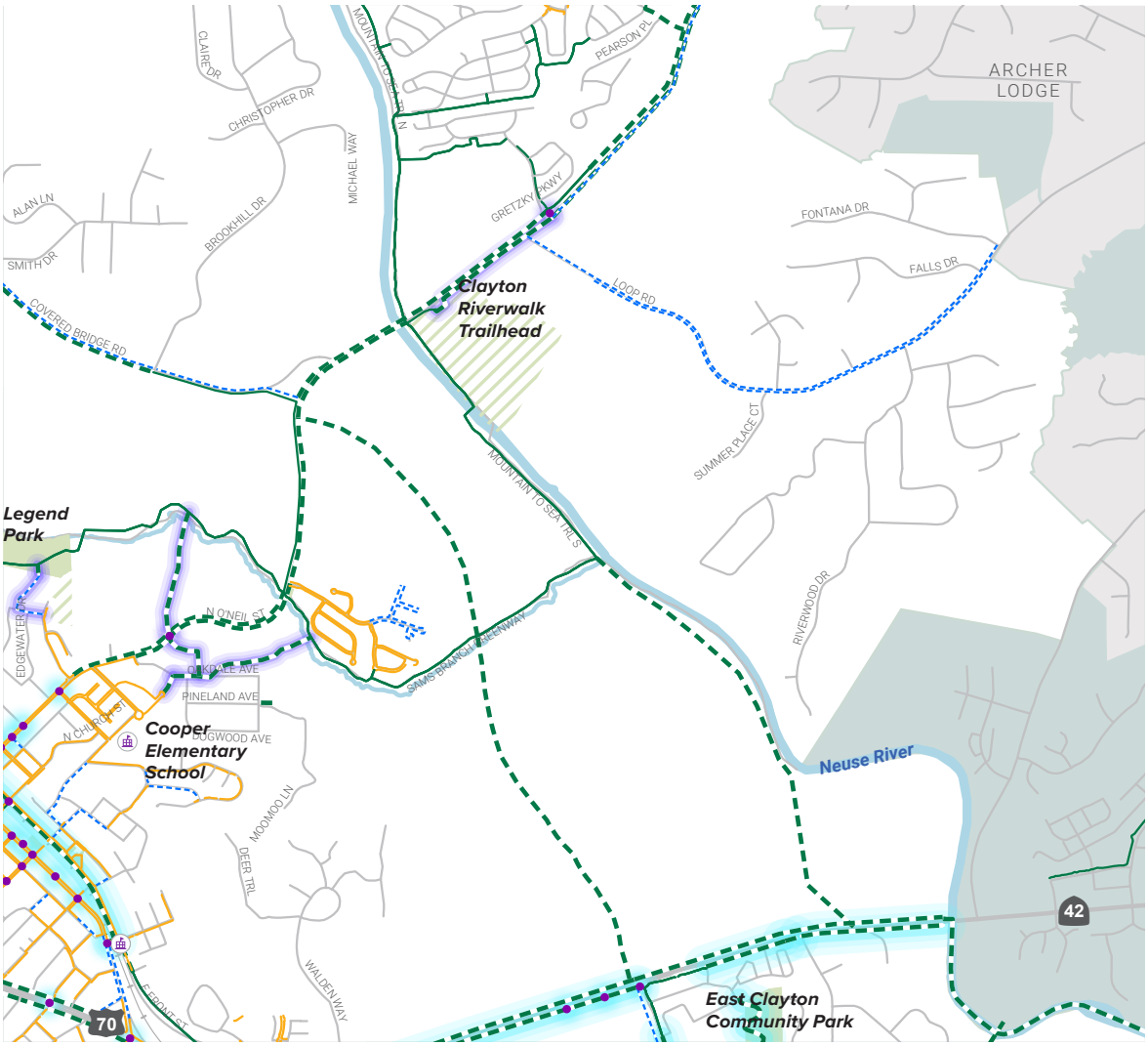
EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- SCHOOL
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY
- COUNTY BOUNDARY

RECOMMENDATIONS
- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
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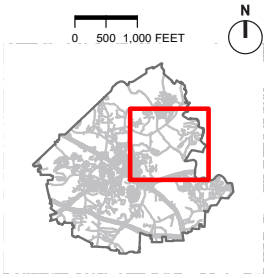
Northeast Clayton



EXISTING FACILITIES
- SIDEWALK
- GREENWAY

FEATURES AND BOUNDARIES
- SCHOOL
- PARK
- STREAM/RIVER
- RAILROAD
- CLAYTON ETJ
- OTHER MUNICIPAL BOUNDARY

RECOMMENDATIONS
- PROPOSED SHARED USE PATHS
- PROPOSED SIDEWALKS
- CROSSING IMPROVEMENTS
- SAFE ROUTES TO SCHOOLS AND PARKS
- PRIORITY PROJECTS





B

Design Resources

Overview

Planners and project designers should refer to these guidelines in developing the infrastructure projects recommended by this plan, but they should not be used as the sole reference for any detailed engineering design.

As a starting point, the following list of resources are from the NCDOT website, for "**Bicycle & Pedestrian Project Development & Design Guidance**", located here (resources listed are linked through this page; last retrieved in March 2022).

North Carolina Guidelines

North Carolina Department of Transportation (NCDOT):

- WalkBikeNC: Statewide Pedestrian & Bicycle Plan
- Glossary of North Carolina Terminology for Active Transportation
- NCDOT Complete Streets
- Evaluating Temporary Accommodations for Pedestrians
- NC Local Programs Handbook
- Traditional Neighborhood Development Guidelines

Greenway Construction Standards:

- Greenway Standards Summary Memo
- Design Issues Summary
- Greenway Design Guidelines Value Engineering Report
- Summary of Recommendations
- Minimum Pavement Design Recommendations for Greenways
- Steps to Construct a Greenway or Shared-Use Trail

National Guidelines

Rails-to-Trails Conservancy:

- General Design Guidance: https://www.railstotrails.org/build-trails/trail-building-toolbox/
- Rails-with-Trails: https://www.railstotrails.org/resource-library/resources/americas-rails-with-trails/

American Association of State Highway and Transportation Officials (AASHTO):

- Guide for the Development of Bicycle Facilities
- Guide for the Planning, Design, and Operation of Pedestrian Facilities

The Federal Highway Administration (FHWA):

- Accessibility Guidance
- Design Guidance
- Facility Design
- Facility Operations

Manual on Uniform Traffic Control Devices (MUTCD):

- Part 4E: Pedestrian Control Features
- Part 7: Traffic Controls for School Areas
- Part 9: Traffic Controls for Bicycle Facilities

National Association of City Transportation Officials (NACTO):

- Urban Bikeway Design Guide
- Urban Street Design Guide

Safe Routes to School (SRTS) Non-Infrastructure:

- National Center for Safe Routes to School
- National Partnership for Safe Routes to School

US Access board:

- ABA Accessibility Standards
- ADA Accessibility Guidelines
- ADA Accessibility Standards
- Public Rights-of-Way, Streets & Sidewalks, and Shared Use Paths

Additional FHWA resources not currently linked through the main NCDOT link above:

- Achieving Multimodal Networks (2016): **https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/**
- Small Town and Rural Multimodal Networks Design Guide (2017)
  - Main Guide: **https://ruraldesignguide.com/**
- Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (2018): **https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf**



C

Funding Resources

Funding Resources

OVERVIEW

When considering possible funding sources for trail projects, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. It will be necessary to consider several sources of funding that together will support full project completion. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and nonprofit sectors. Note that this reflects the funding available at the time of writing. Funding amounts, cycles, and the programs themselves may change over time.

FEDERAL FUNDING SOURCES

Federal funding is typically directed through state agencies to local governments either in the form of grants or direct appropriations. Federal funding typically requires a local match of five percent to 50 percent, but there are sometimes exceptions. The following is a list of possible Federal funding sources that could be used to support the construction of trail facilities.

The Infrastructure Investment and Jobs Act (IIJA)

The following is a preliminary summary of how IIJA may affect funding sources related to bicycle, pedestrian, and trail infrastructure based on what is known at the time this plan was written (early 2022).

Formula Funds (State DOTs administer to locals):

Transportation Alternatives Program (TAP) will increase from $850 million to $1.44 billion per year. This is the largest dedicated source of funds for walking and biking projects in the US and it just got 70% bigger. The North Carolina Department of Transportation (NCDOT) administers this funding for rural areas of the state that do not have a metropolitan planning organization. The Capital Area Metropolitan Planning Organization (CAMPO) administers Transportation Alternatives Program funding on a competitive basis to local jurisdictions in its region.

Congestion Mitigation and Air Quality Improvement Program (CMAQ) will increase by 10% to $13.2B. This program funds interchange improvements, local transit operations, and bike and pedestrian infrastructure to help meet the National Ambient Air Quality Standard in non-attainment areas; Johnston County currently qualifies as an attainment area. Each project is evaluated to quantify its air quality improvement benefits. Funds cannot be used to add capacity for single-occupancy vehicles. Funding is distributed to non-attainment areas by population and weighted by air quality severity.

States where more than 15% of all fatalities involve cyclists or pedestrians (Vulnerable Road Users or VRU), will be required to spend 15% of their Highway Safety Improvement Program (HSIP) funding on bicycle/pedestrian projects. This includes North Carolina, where about 15% of all fatalities involve VRUs. Projects are evaluated, prioritized, and selected at the NCDOT district level based on three years of crash data (targeted funds) or systemic approved projects as outlined in the HSIP guidance.

Every state and MPO will be required to use at least 2.5% of its apportioned funding to develop planning documents that can include but are not limited to, Complete Streets standards, a Complete Streets prioritization plan, multimodal corridor studies, or active transportation plans (among other uses).

Discretionary Grants (US DOT administers to locals):

Rebuilding American Infrastructure with Sustainability and Equity (RAISE). In the first RAISE grant cycle, nearly one in five funded grant applications involved trail development. In addition, the selection committee awarded another 21% of funding to projects focused on making roads safer for vulnerable road users like cyclists and pedestrians.

Under the Infrastructure Investment and Jobs Act (IIJA), the RAISE grant program will have $7.5 billion available over the next five years.

Competitive applications to this program have the following in common:

- The project can demonstrate broad community support and is a recognized local or regional priority.
- The project explicitly considers how it will address climate change and racial equity.

- The project documents direct and significantly favorable local or regional impact relative to the scoring criteria:
  - Safety
  - Environmental Sustainability
  - Quality of Life
  - Economic Competitiveness
  - State of Good Repair
  - Innovation
  - Partnership
- The project has a high benefit to cost ratio.
- The project demonstrates readiness by providing a detailed scope of work and budget, a realistic project delivery schedule, an understanding of the environmental risks, permit requirements, and mitigation measures, and is within the public right-of-way.
- A United States Senator or Congress member actively champions the project.

For more information on RAISE program guidelines and upcoming Notice of Funding Opportunities, see:

www.transportation.gov/RAISEgrants

Healthy Streets Program (new): $500 million federal grant program to fund projects that address urban heat island effect, to include porous pavement changes and improvements to the tree canopy, especially along pedestrian walkways and public transit stops.

Active Transportation Infrastructure Investment Program (new): Local, regional, state, and tribal governments can apply to the program to receive funding for active transportation projects and planning grants that build upon a local/regional/state network or network spine. The projects and planning efforts have to account for safety and facilitate more people walking and biking.

Safe Streets and Roads for All (new): $5 billion federal grant program to fund Vision Zero plans, infrastructure, and programs.

US DOT published a Notice of Funding Opportunities (NOFO) as they become available for each of the programs above.

Surface Transportation Block Grant (STBG) Program

The FAST Act converted the Surface Transportation Program into the Surface Transportation Block Grant (STBG) program. This program is among the most flexible eligibilities among all Federal-aid and highway programs. The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of pedestrian improvements are eligible, including trails, sidewalks, crosswalks, pedestrian signals, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Safe Routes to School programs, congestion pricing projects and strategies, and recreational trails projects are other eligible activities. Under the FAST Act, a State may use STBG funds to create and operate a State office to help design, implement, and oversee public-private partnerships eligible to receive Federal highway or transit funding. In general, projects cannot be located on local roads or rural minor collectors. However, there are exceptions. These exceptions include recreational trails, pedestrian and bicycle projects, and Safe Routes to School programs.

For more information: https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm

Locally Administrered Projects Program (LAPP)

The Locally Administered Projects Program (LAPP) was first adopted by the NC Capital Area MPO on October 20, 2010. The program is used by the MPO to prioritize and program local transportation projects in the region that utilize federal funding and are the responsibility of the MPO (such as Surface Transportation Block Grant Program – Direct Allocation (STBGP-DA), Congestion Mitigation for Air Quality (CMAQ), etc.). LAPP is a competitive funding program managed by CAMPO that prioritizes locally administered projects in the Region. These projects are funded using the federal funding sources directly attributed to the region with a minimum 20% local match. Member jurisdictions of the CAMPO region are eligible to apply for these funds.

For more information: https://www.campo-nc.us/funding/locally-administered-projects-program

Highway Safety Improvement Program (HSIP)

HSIP provides $2.4 billion for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds.

For more information: http://www.fhwa.dot.gov/fastact/factsheets/hsipfs.cfm

Safe Routes to School (SRTS) Program

SRTS enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children. SRTS facilitates the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. Most of the types of eligible SRTS projects include sidewalks or shared use paths. However, intersection improvements (i.e. signalization, marking/upgrading crosswalks, etc.), on-street bicycle facilities (bike lanes, wide paved shoulders, etc.) or off-street shared use paths are also eligible for SRTS funds.

The North Carolina Department of Transportation's Safe Routes to School (SRTS) Program was established in 2005 through SAFETEA-LU as a federally funded program to provide an opportunity for communities to improve conditions for bicycling and walking to school. It is currently supported with Transportation Alternatives federal funding through the Surface Transportation Block Grant program established under the FAST Act. The SRTS Program has set aside $1,500,000 per year of Transportation Alternative Program (TAP) funds for non-infrastructure programs and activities over a three-year period. Funding requests may range from a yearly amount of $50,000 to $100,000 per project. Projects can be one to three years in length. Funding may be requested to support activities for community-wide, regional or statewide programs.

For more information: https://connect.ncdot.gov/projects/BikePed/Pages/Non-Infrastructure-Alternatives-Program.aspx

CAMPO also serves as a partner in SRTS programming.

For more information: https://www.campo-nc.us/programs-studies/bicycle-and-pedestrian

OTHER FEDERAL FUNDING SOURCES

Federal Transit Administration Enhanced Mobility of Seniors and Individuals with Disabilities

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.

For more information: https://www.transit.dot.gov/funding/grants/enhanced-mobility-seniors-individuals-disabilities-section-5310

Federal Lands Transportation Program (FLTP)

The FLTP funds projects that improve transportation infrastructure owned and maintained by the following Federal Lands Management Agencies: National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), USDA Forest Service, Bureau of Land Management (BLM), U.S. Army Corps of Engineers, Bureau of Reclamation, and independent Federal agencies with land and natural resource management responsibilities. FLTP funds are for available for program administration, transportation planning, research, engineering, rehabilitation, construction, and restoration of Federal Lands Transportation Facilities. Transportation projects that are on the public network that provide access to, adjacent to, or through Federal lands are also eligible for funding. Under the FAST Act, $335 - $375 million has been allocated to the program per fiscal year from 2016 - 2020.

For more information: https://flh.fhwa.dot.gov/programs/fltp/documents/FAST%20FLTP%20 fact%20sheet.pdf

Federal Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the U.S. Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources.

Since 1965, the LWCF program has built a park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than $75 million in matching grants to protect land and support more than 875 state and local park projects. More than 38,500 acres have been acquired with LWCF assistance to establish a park legacy in our state. As of August 2020, the LWCF is now permanently funded by the federal government for $900 million every year. This is hundreds of millions more per year than the fund typically receives.

For more information: https://www.ncparks.gov/more-about-us/grants/lwcf-grants

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program that provides technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program only provides planning assistance; there are no implementation funds available. Projects are prioritized for assistance based on criteria, including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. Project applicants may be state and local agencies, tribes, nonprofit organizations, or citizen groups. National parks and other federal agencies may apply in partnership with other local organizations. This program may benefit trail development in North Carolina indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: https://www.nps.gov/orgs/rtca/index.htm

Environmental Contamination Cleanup Funding Sources

EPA's Brownfields Program provides direct funding for brownfields assessment, cleanup, revolving loans, and environmental job training. EPA's Brownfields Program collaborates with other EPA programs, other federal partners, and state agencies to identify and leverage more resources for brownfields activities. The EPA provides assessment grants to recipients to characterize, assess, and conduct community involvement related to brownfields sites. They also provide area-wide planning grants (AWP) which provides communities with funds to research, plan, and develop implementation strategies for areas affected by one or more brownfields.

For more information: https://www.epa.gov/brownfields/types-brownfields-grant-funding

National Fish and Wildlife Foundation: Five Star & Urban Waters Restoration Grant Program

The Five Star & Urban Waters Restoration Grant Program seeks to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance to diverse local partnerships for wetland, riparian, forest and coastal habitat restoration, urban wildlife conservation, stormwater management as well as outreach, education and stewardship. Projects should focus on water quality, watersheds and the habitats they support. The program focuses on five priorities: on-the-ground restoration, community partnerships, environmental outreach, education, and training, measurable results, and sustainability. Eligible applicants include nonprofit organizations, state government agencies, local governments, municipal governments, tribes, and educational institutions. Projects are required to meet or exceed a 1:1 match to be competitive.

For more information: http://www.nfwf.org/fivestar/Pages/home.aspx

STATE AND STATE-ADMINISTERED FUNDING SOURCES

There are multiple sources for state funding of bicycle and pedestrian transportation projects. However, state transportation funds cannot be used to match federally funded transportation projects, according to a law passed by the North Carolina Legislature.

North Carolina Department of Transportation (NCDOT) Strategic Transportation Investments (STI)

Passed in 2013, the Strategic Transportation Investments law (STI) allows NCDOT to use its funding more efficiently and effectively to enhance the state's infrastructure, while supporting economic growth, job creation and a higher quality of life. This process encourages thinking from a statewide and regional perspective while also providing flexibility to address local needs. STI also establishes a way of allocating available revenues based on data-driven scoring and local input. It is used for the State Transportation Improvement Program (STIP), which identifies the transportation projects that will receive funding during a 10-year period. STIP is a state and federal requirement, which NCDOT updates it every two years.

STI'S QUANTITATIVE SCORING PROCESS

All independent bicycle and pedestrian projects are ranked based on a quantitative scoring process, with the following main steps:

- Initial Project Review (NCDOT Strategic Prioritization Office (SPOT))
- Review Projects and Data (NCDOT Integrated Mobility Division (IMD))
- Review Data (MPOs, RPOs, Divisions)

- Review Updates and Calculate Measures (NCDOT IMD)
- Score Projects (NCDOT SPOT)

BICYCLE AND PEDESTRIAN PROJECT ELIGIBILITY REQUIREMENTS

- Minimum total project cost = $100,000
- Eligible costs include right-of-way, preliminary engineering, and construction
- Bicycle and pedestrian and public transportation facilities that appear in a state, regional or locally adopted transportation plan will be included as part of the proposed roadway project. NCDOT will fully fund the cost of designing, acquiring right of way, and constructing the identified facilities.

SPECIFIC IMPROVEMENT TYPES

- Grade-Separated Bicycle Facility (Bicycle)
- Off-Road/Separated Linear Bicycle Facility (Bicycle)
- On-Road; Designated Bicycle Facility (Bicycle)
- On-Road Bicycle Facility (Bicycle)
- Multi-Site Bicycle Facility (Bicycle)
- Grade-Separated Pedestrian Facility (Pedestrian)
- Protected Linear Pedestrian Facility (Pedestrian)
- Multi-Site Pedestrian Facility (Pedestrian)
- Improved Pedestrian Facility (Pedestrian)

BUNDLING PROJECTS

- Allowed across geographies and across varying project types
- Bundling will be limited by project management requirements rather than geographic limitations
- Any bundled project must be expected to be under one project manager/administrative unit (must be a TAP-eligible entity)
- Makes projects more attractive for LIPs and easier to manage/let

MORE INFO ON PRIORITIZATION 6.0:

NCDOT's Prioritization Data page has training slides that explain the prioritization process:

https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx

See the "Prioritization Training" folder and the following session information within:

- Session 3: Detailed information on overall scoring components, including local input points.
- Session 4: Features relevant project funding information, and
- Session 7: Detailed slides explaining the bicycle and pedestrian project scoring

HIGH IMPACT/LOW COST FUNDS

Established by NCDOT in 2017 to provide funds to complete low-cost projects with high impacts to the transportation system including intersection improvement projects, minor widening projects, and operational improvement projects. Funds are allocated equally to each Division.

PROJECT SELECTION CRITERIA

Each Division is responsible for selecting their own scoring criteria for determining projects funded in this program. At a minimum, Divisions must consider all of the following in developing scoring formulas:

- The average daily traffic volume of a roadway and whether the proposed project will generate additional traffic.
- Any restrictions on a roadway.
- Any safety issues with a roadway.
- The condition of the lanes, shoulders, and pavement on a roadway.
- The site distance and radius of any intersection on a roadway.
    - $1.5M max per project unless otherwise approved by the Secretary of Transportation
    - Projects are expected to be under contract within 12 months of funding approval by BOT

NCDOT TECHNICAL REVIEW & APPROVAL

- Division Engineer completes project scoring and determines eligibility.
- Division Engineer determines projects to be funded and requests approval of funding from the Chief Engineer. Division Engineer shall supply all necessary project information including funding request forms, project designs and cost estimates.
- The Project Review Committee will make a recommendation for further investigation or to include on the Board Agenda for action by the Secretary, NCDOT.

Incidental Projects

Bicycle and Pedestrian accommodations such as; bike lanes, wide paved shoulders, sidewalks, intersection improvements, bicycle and pedestrian safe bridge design, etc. are frequently included as "incidental" features of larger highway/roadway projects.

In addition, bicycle safe drainage grates and handicapped accessible sidewalk ramps are now a standard feature of all NCDOT highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds.

"Incidental Projects" are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multi-modal transportation system. Having a local bicycle or pedestrian plan is important, because it allows NCDOT to identify where bike and pedestrian improvements are needed, and can be included as part of highway or street improvement projects. It also helps local government identify what their priorities are and how they might be able to pay for these projects. Under the updated NCDOT Complete Streets Policy, NCDOT pays the full cost for incidental projects if the project is proposed in a locally adopted plan (see link to updated NCDOT Complete Streets Policy below).

For more information: https://connect.ncdot.gov/projects/BikePed/Documents/Complete%20Streets%20Implementation%20Guide.pdf

NC Highway Safety Improvement Program

The purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic process that identifies reviews and addresses specific traffic safety concerns throughout the state. The program is structured in several distinct phases:

- A system of safety warrants is developed to identify locations that are possibly deficient.
- Locations that meet warrant criteria are categorized as potentially hazardous (PH) locations.
- Detailed crash analyses are performed on the PH locations with the more severe and correctable crash patterns.
- The Regional Traffic Engineering staff performs engineering field investigations.
- The Regional Traffic Engineering staff utilizes Benefit: Cost studies and other tools to develop safety recommendations.
- Depending on the cost and nature of the counter-measures, the investigations may result in requesting Division maintenance forces to make adjustments or repairs, developing Spot Safety projects, developing Hazard Elimination projects, making adjustments to current TIP project plans or utilizing other funding sources to initiate countermeasures.
- Selected projects are evaluated to determine the effectiveness of countermeasures.

The ultimate goal of the HSIP is to reduce the number of traffic crashes, injuries and fatalities by reducing the potential for and the severity of these incidents on public roadways.

For more information: https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-program-and-Projects.aspx

Highway Hazard Elimination Program

The Hazard Elimination Program is used to develop larger improvement projects to address safety and potential safety issues. The program is funded with 90 percent federal funds and 10 percent state funds. The cost of Hazard Elimination Program projects typically ranges between $400,000 and $1 million. A Safety Oversight Committee (SOC) reviews and recommends Hazard Elimination projects to the Board of Transportation (BOT) for approval and funding. These projects are prioritized for funding according to a safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction. Once approved and funded by the BOT, these projects become part of the department's State Transportation Improvement Program (STIP).

Governor's Highway Safety Program

The Governor's Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries, and fatalities is required as a condition of continued funding. Permitted safety projects include checking station equipment, traffic safety equipment, and BikeSafe NC equipment. However, funding is not allowed for speed display signs. This funding source is considered to be "seed money" to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. Applications must include county level crash data. Local governments, including county governments and municipal governments, are eligible to apply.

For more information: https://www.ncdot.gov/initiatives-policies/safety/ghsp/Pages/default.aspx

The North Carolina Division of Parks and Recreation - Recreational Trails Program Grant

Funding from the federal Recreational Trails Program (RTP), which is used for renovating or constructing trails and greenways, is allocated to states. The North Carolina Division of Parks and Recreation and the State Trails Program manages these funds with a goal of helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking, and horseback riding to river trails and off-highway vehicle trails. Grants are available to governmental agencies and nonprofit organizations. The maximum grant amount is $250,000 and requires a 25% match of RTP funds received. Permissible uses include:

- New trail or greenway construction
- Trail or greenway renovation
- Approved trail or greenway facilities
- Trail head/ trail markers
- Purchase of tools to construct and/or renovate trails/ greenways
- Land acquisition for trail purposes
- Planning, legal, environmental, and permitting costs - up to 10% of grant amount
- Combination of the above

For more information: http://www.ncparks.gov/more-about-us/grants/trail-grants/recreational-trails-program

NC Parks and Recreation Trust Fund (PARTF)

The Parks and Recreation Trust Fund (PARTF) provides dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities, and public authorities, as defined by G.S. 159-7, are eligible applicants. A local government can request a maximum of $500,000 with each application. An applicant must match the grant dollar-for-dollar, 50 percent of the total cost of the project, and may contribute more than 50 percent. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match. Property acquired with PARTF funds must be dedicated for public recreational use.

For more information: https://www.ncparks.gov/more-about-us/parks-recreation-trust-fund/parks-and-recreation-trust-fund

Clean Water Management Trust Fund

The Clean Water Management Trust Fund (CWMTF) is available to any state agency, local government, or non-profit organization whose primary purpose is the conservation, preservation, and restoration of North Carolina's environmental and natural resources. Grant assistance is provided to conservation projects that:

- enhance or restore degraded waters;
- protect unpolluted waters, and/or
- contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits;
- provide buffers around military bases to protect the military mission;
- acquire land that represents the ecological diversity of North Carolina; and
- acquire land that contributes to the development of a balanced State program of historic properties.

For more information: http://www.cwmtf.net/#appmain.htm

Urban and Community Forestry Grant

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help plan and establish street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to more effective and efficient management of urban and community forests.

For more information: https://www.ncforestservice.gov/Urban/urban_grant_program.htm

LOCAL FUNDING SOURCES

Local governments often plan for the funding of bicycle and pedestrian infrastructure or improvements through development of Capital Improvement Projects (CIP) or occasionally, through their annual Operating Budgets. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows decision-makers to balance all capital needs. Typical capital funding mechanisms include the capital reserve fund, taxes, fees, and bonds. However, many will require specific local action as a means of establishing a program if it is not already in place.

PRIVATE AND NONPROFIT FUNDING SOURCES

Many communities have solicited funding assistance from private foundations and other conservation-minded benefactors. Below are examples of private funding opportunities.

Rails-To-Trails Conservancy

Under the Doppelt Family Trail Development Fund, RTC will award approximately $85,000 per year, distributed among several qualifying projects, through a competitive process. Eligible applicants include nonprofit organizations and state, regional, and local government agencies. Two types of grants are available - community support grants and project transformation grants. Around three to four community support grants are awarded each year, ranging from $5,000-$10,000 each. Community Support Grants support nonprofit organizations or "Friends of the Trail" groups that need funding to get trail development or trail improvement efforts off the ground. Each year, 1-2 Project Transformation Grants area awarded that range from $15,000-$50,000. The intention of these grants is to enable an organization to complete a significant trail development or improvement project. For both types of grants, applications for projects on rail-trails and rails-with-trails are given preference, but rail-trail designation is not a requirement. The trail must serve multiple user types, such as bicycling, walking, and hiking, and must be considered a trail, greenway, or shared use path.

For more information: http://www.railstotrails.org/our-work/doppelt-family-trail-development-fund/

National Fish and Wildlife Foundation (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, nonprofit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation provides grants through more than 70 diverse conservation grant programs. One of the most relevant programs for bicycle and pedestrian projects is Acres for America. Funding priorities include conservation of bird, fish, plants and wildlife habitats, providing access for people to enjoy outdoors, and connecting existing protected lands. Federal, state, and local government agencies, educational institutions, Native American tribes, and non-profit organizations may apply twice annually for matching grants. Due to the competitive nature of grant funding for Acres for America, all awarded grants require a minimum 1:1 match.

For more information: http://www.nfwf.org/whatwedo/grants/Pages/home.aspx

The Trust for Public Land

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the TPL is the only national non-profit working exclusively to protect land for human enjoyment and well-being. TPL helps acquire land and transfer it to public agencies, land trusts, or other groups that intend to conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

For more information: http://www.tpl.org

Land for Tomorrow Campaign

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come. For more information: http://www.land4tomorrow.org/

The Conservation Alliance

The Conservation Alliance is a nonprofit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about $35,000 each. Funding criteria states that:

The project should seek to secure lasting and quantifiable protection of a specific wild land or waterway. We prioritize landscape-scale projects that have a clear benefit for habitat.

The campaign should engage grassroots citizen action in support of the conservation effort. We do not fund general education, restoration, stewardship, or scientific research projects.

All projects must have a clear recreational benefit.

For more information: http://www.conservationalliance.com/grants//?yearly=2020

Blue Cross Blue Shield (BCBS) of North Carolina Foundation

BCBS does not have a traditional grant cycle and announces grant opportunities on a periodic basis. Grants can range from small-dollar equipment grants to large, multi-year partnerships.

For more information: http://www.bcbsncfoundation.org/grants-programs/grantmaking-overview/

Duke Energy Foundation

Funded by Duke Energy shareholders, this foundation makes charitable grants to nonprofit organizations and government agencies. Grant applicants must serve communities that are also served by Duke Energy. The grant program has several investment priorities that could potentially fund bicycle and pedestrian projects. The Duke Energy Foundation is committed to making strategic investments to build powerful communities where nature and wildlife thrive, students can excel and a talented workforce drives economic prosperity for all.

For more information: https://www.duke-energy.com/community/duke-energy-foundation

Z. Smith Reynolds Foundation

This Winston-Salem-based Foundation is committed to improving the quality of life for all North Carolinians. The Z. Smith Reynolds Foundation is a statewide, private, family foundation that has been a catalyst for positive change in North Carolina for more than 80 years. A variety of grant programs are available.

For more information: http://www.zsr.org/grants-programs

Bank of America Charitable Foundation

The Bank of America Charitable Foundation supports a wide range of activities, including a focus on community greening efforts that create healthy neighborhoods and environmental sustainability through the preservation, creation or restoration of open space, parks and community gardens.

For more information: https://about.bankofamerica.com/en-us/global-impact/charitable-foundation-funding.html

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Corporate Donations

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Local governments typically create funds to facilitate and simplify a transaction from a corporation's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

Private Individual Donations

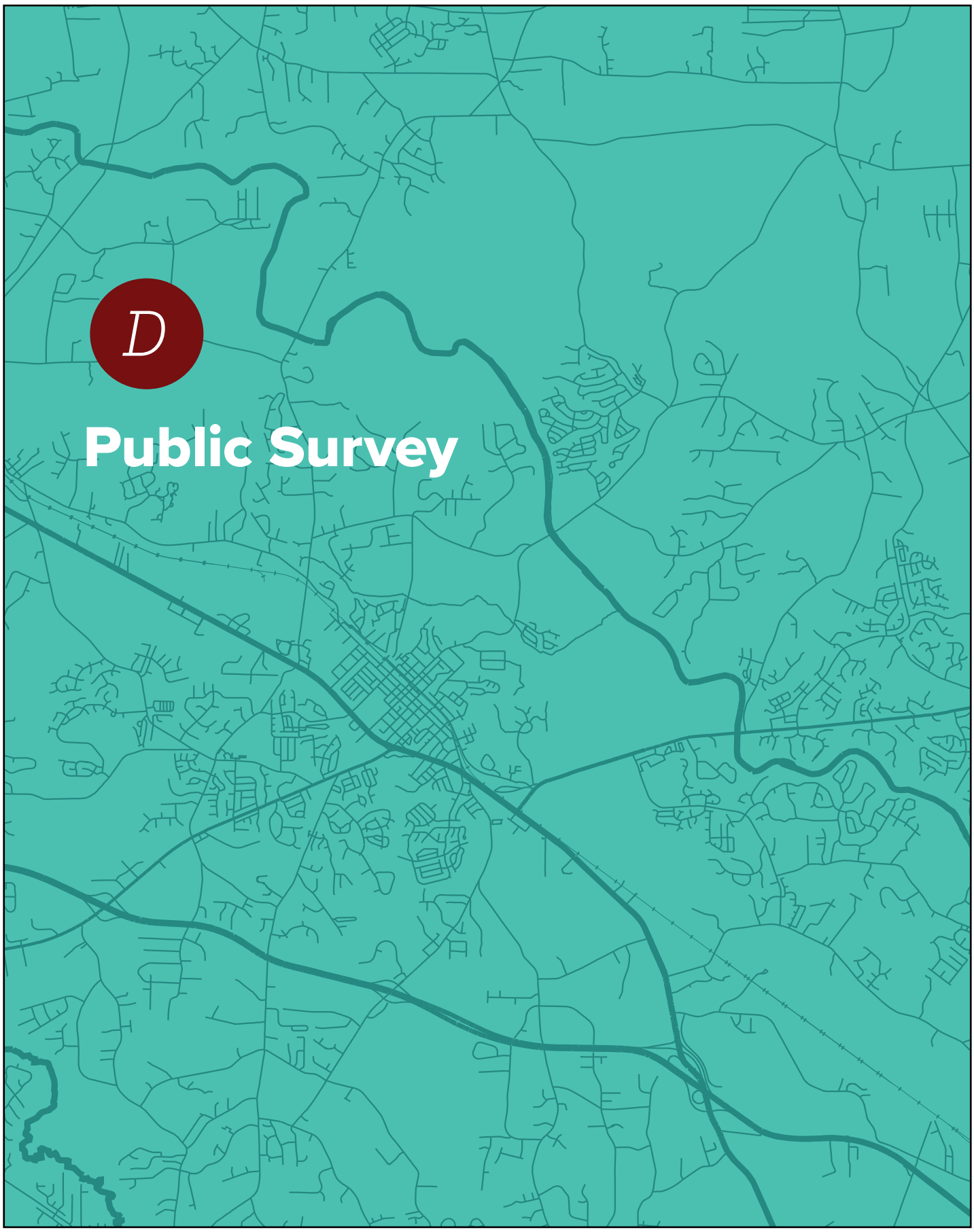
Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Local governments typically create funds to facilitate and simplify a transaction from an individual's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

Fundraising/Campaign Drives

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

Volunteer Work

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers form church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fundraising, maintenance, and programming needs.


D
Public Survey

The public survey responses are summarized at the end of Chapter 2. For questions that had a written response option, all responses are displayed below.

When walking in Clayton, what is (or would be) the primary purpose of your trip?
Be able to go to gas station walk kids coming from school and go that is a most
BOTH EXERCISE AND REACHING A DESTINATION
Both of these are equally important
Dining
down town shops and businesses
Enjoyment
From offstreet parking to businesses
Get to work
I would like to walk to downtown from my Cobblestone community. I would like walkability to be our town's priority.
Night life, dinner & dinner and drinks
Only if there was no other way to go. Not a fan of having to walk everywhere.
Restaurants
shop, library, bank
SHOPPING
Shopping/restaurant
Sightseeing
Walking to a specific location, i.e., restaurant, shop, etc.

When walking in Clayton, what is (or would be) the primary purpose of your trip?
2x to 3x a week
Am in physical therapy, right now, but my goal is to get back to walking!
Cannot because of lack of side walks
Don't currently walk do to lack of sidewalk availability and safety concerns do to no sidewalk being available.
Every few weeks
I don't
I would walk more if we had sidewalks and crosswalks especially on Highway 70
Never but I do see adults walking to the stores and kids from school and they have to cross a busy intersection with no sidewalk
The frequency depends upon whether or not I'm on my exercise grind. Sometimes daily, sometimes seldom.
Weekends
Would love to walk to the park in Clayton next to my house on Glen Laurel and Black Forest Dr but have to cross a busy road and then cross again the reach the park with now cross walk or sidewalk on our side of the street
Would walk more if there were sidewalks/crosswalks.

What do you think is the most important outcome of the Clayton Pedestrian Plan?
1. Connect sidewalk from Chandler's Ridge to Summerlyn along Glen Laural. 2. Extend the Greenway past 42 along the Neuse for easier access for those of us who love off of 42.
All of the above
All of the above
All of the above
All of the above
All of the above
All of the above
All of the above.
All of the above.
All the above
biking
CONNECTING EXISTING VENUES AND DESTINATIONS. IE GLEN LAUREL AND RIVERWOOD AND WEST MAIN ST
CONTINUE TO KEEP THIS REQUIREMENT SAFE
Don't know
I do not see a need for improvement
I don't want an additional pedestrian greenway. The cost & safety issues outweigh any desire for it.
One or two areas that are safer to walk in.
Seating. So many people with health issues and disabilities who can't walk long distances without multiple options to sit while on the walk.
Sidewalk space on 70
Spending as little tax dollars as possible

What destinations would you most desire to reach by walking?
42east to publix and that shopping area from greenwood shopping/restaurants to publix
Again all of the above
Between Chandlers Ridge and Summerlyn divisions.
Connection between Summerlyn community. Glen Laurel Rd seperates the community.
East Clayton Community Park
East Clayton Park from the Clayton Dog Park and accessibility to the future shopping area at Glen Laurel and 42 to/from East Clayton Park
filling in the missing gaps of sidewalks
Food
Getting to plazas with food stores, restaurants & variety shops
Glen Laurel
Houses
I have no problems walking downtown. Just cross streets at the intersections.
If I want to walk on a greenway, I would drive to the one on Covered Bridge Rd.
Is like to be able to walk on sidewalks down 70
Just my neighborhood
library
Link between NC42e with Sam's Branch
Lionsgate bridge has been out OVER a year!
Multiple locations
Nearby subdivisions and neighborhoods
Neighborhood pool
Neighborhoods need sidewalks and crosswalks.
Novo Nordisk
Primary concern for other pedestrians bc their are no sidewalks to help avoid traffic.. such as 70 B, shotwell, most of Amelia church
Shotwell Rd to the Lowe’s shopping area. Lots of seniors live on Shotwell and walk to Lowe’s. The bridge is narrow and doesn’t leave room for two cars and a person walking on the side.
Side walk to be able to walk and run if they don't have a car
There's nothing in walking distance go to, with or without a sidewalk.
Walking lights on main highway 70
We need a crosswalk on glen laurel to get to East Clayton community park - or a flashing yellow light, cars drive very wrecklessly
Work
Would like to see safe walking and crossing along highways.

Which of the following pedestrian improvements would you like to see in Clayton?
Accessible downtown restroom facilities and enhanced, more visible, eye catching crosswalks
ADA accessible facilities as the norm not the exception.
Areas where you can sit and relax in such as the park
better handicap curbs
Better painting of crosswalks
Between Chandlers Ridge and Summerlyn divisions.
Cameras periodically throughout all secluded walking trails
Connect ameila church rd sidewalk to park and middle school. It is pieced the kids can't walk home safely
CONNECTING EXISTING AREAS TO DOWNTOWN
Connection from neighborhood to greenways
Continous sidewalk from Main Street to US 70 via Robertson Street
CONTINUE TO SUPPORT THE COMMUNITY
Covered seating along the paths.
Crossing walking at school needs signs in the cross walk because people don't stop for kids to walk to high school
Crosswalk on Glen Laurel to get to East Clayton Park
Crosswalks on Amelia Church! They painted over the only existing one.
Follow future plans to eliminate vehicle usage throughout a certain point on Main St and create/build more opportunities for businesses to come so that it can become a walkable shopping area.
getting to east clayton park needs a better option. Extremely dangerous. People drive down the road at 50mph, no crosswalk. Even when driving its extremely dangerous just to pull out of park or summerlyn neighborhood for how fast existing traffic moves.
Hamby & Lombard is very busy!!
I have no problems walking downtown
I hope the mastermind behind the multi million dollar expansion of 42 through Clayton at least had the foresight to add sidewalk or maybe a bike path. The suspense is killing me.
Improve and expand downtown parking
Improved density or more mixed use so destinations are closer
less on-street parking
Less vehicles parking on the street
Lombard Street is ridiculous. No enforcement like McNeil gets from other direction. Camel Street has no sidewalks, children have no option but to walk on street despite no stop signs leading into the street on a bending corner people accelerate into.
More bike road options
More enforcement if speeding laws
More unpaved trails
MUST LIGHT UP THE ROADS
NO MORE "LIGHTING," LED STREET LAMPS ARE TERRIBLE FOR WILDLIFE
NO traffic calming!!!
None
None
None. I can see the progress on existing sidewalks
Repair existing sidewalks and clear back overgrown brush.
Safe crossing opportunities on Hwy 70
Security cameras at trailheads
Sidewalk on Motorcycle Road
sidewalks on Robertson, more pedestrian access to highways
walk buttons to allow pedestrians to cross Main St and other busy roads downtown
wider streets

Roadway crossings: what do you think are the factors that most discourage pedestrians crossing roadways in Clayton?
A few motorists actually aim at us when we mow the grass, teasing that they could hit us. Too many accidents and crazies on this road.
CLAYTON CONTINUES TO WORK AND SUPPORT THE COMMUNITY
Consider pedestrian bridges where traffic is heavy and people have been killed crossing
Dangerous
Dismal city planning
Especially when crossing 70
Hamby & Lombard
having to walk between parked vehicles
I don't have problems crossing the roads i walk around downtown.
I have balance issues and am very afraid walking along the roadside on Robertson
I THINK CURRENT CONDITIONS ARE FINE FOR AN ASTUTE WALKER
I think the crosswalks could be bolder, more noticeable as some other towns are implementing
I want to see a light or a sign to say yield to pedestrians at the high school for the kids
I'm talking about downtown only. Main Street
Lack of monitoring speed, specifically on glen laural
Lack of pedestrian footbridges across areas connecting to downtown such as highway 70
Lack of sidewalks
Lack of sidewalks
Lack of sidewalks.
Lack of speeding enforcement
Long stop lights. Signal for pedestrians takes forever
Need to ban trucks cutting thru Ameila to 42. They can take 70 to 42. This is strictly residential. There are 100-200 trucks a day on this road.
No issues
No sidewalks
None
none
Pedestrians waiting for signal to change for them to walk
Please get a pedestrian walkway over business 70.
Poor thoughts on city walking paths "stroads". There is a difference between roads and streets
Pritchard Rd crossing over to Riverwood schools has no indicators/lights for kids that cross the street.
SIDEWALKS
The only issue I've encountered are each of the ends of the downtown strip. The crosswalk in front of the lawn and at the very end towards the community garden are pointless without traffic lights. With Clayton allowing street parking, pedestrians can't even see what's coming and just because there's a crosswalk doesn't mean those cars will stop for us. They rarely do so because there's no light to make them stop and because of the street parking that blocks our view of incoming traffic this creates a very dangerous environment for walkers.
The speed limit is 25 miles per hour, so crossing is not a problem on Main. The intersection with Lombard has a crossing which works fine as it is.
Where is Clayton PD?! Other than speeding like everyone else?!

How should pedestrian facilities be funded within Clayton?
Are we seriously confused about finding funds for a framing sidewalk?
Assuming the town is funded via a property taxation structure, find where new residential developments will be. Because these developments are adding to the town population and subsequently pedestrian population they will be a boon to the coffers of the town by way of current taxation schemes. Use the increase to provide new sidewalk developments to coalesce new and existing town destinations..
Better taxation if developers - a building tax to help fund the many additions they are adding to schools and streets. Maybe require all developers to have sidewalks put in as a requirement of a building permit
Bonds
Builders
Business and Builders
CREATE A FAIR ARRANGEMENT TO SUPPORT THE TOWN AND IT'S CITIZIANS
Current budget
Current funds available
Developers
DO NOT increase current/future taxes
Do NOT raise taxes for walking options in a place that is too hot to walk at least 6 months of the year!
Don't do it
DOT funds
Get those developers to contribute more to those awkward existing pathways! Have Johnston County contribute to the greater walkways and bike paths.
got rich from the excessive development should pay
Have our 1% fund it. Fred Smith comes to mind. Let those who made it big in the community give back to the community instead of continuing to benefit from the sweat of the average Joe.
How is it done now?
Instead of over development, take care of existing residents
Mayors salary
None...Just fix the sidewalks, add new sidewalks and enforce the law on motorists who drive like idiots. A fair percentage of motorists pass on double lines and speed over hills and in curves. Eighteen wheelers often speed down busy roads now with no one enforcing the speed or other activity.
Small charge to businesses directly impacted by better more sidewalks (like deep river)
Spend more on west clayton. Too much has been spent on east. Make it fair
State funded
The area by the post office
Town should budget and build. Matching grants are great, but should not hold up making progress.
Transportation Department

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements?
2nd Street between Yellow House and the Town Square is narrow with broken and uneven sidewalk. It also lacks adequate lighting at night. A sidewalk survey should be conducted to identify unsafe and uneven sidewalks throughout the downtown area in particular and repairs should immediately be made. I would think downtown revitalization grants would be available for such projects. Also, stores and businesses should be required to have accessible entrances! Some have steps which are impassable and dangerous to some with temporary or permanent limitations and/or disabilities.
4 way stop at Fayetteville and Blanche (too many big big trucks) and pedestrian crossing at Fayetteville and Main
42 and 70 north to Garner and south to Smithfield, 42 eastbound to Buffalo Road
42 by mobile home park, 70 by high school, on champion st.
42. It would be great to have sidewalks that connect downtown Clayton with Flowers Plantation.
42E
70 42 main O'Neil Boling
70 and downtown Clayton
70 and Main Street
70 and Roberson/Amelia church, 70 and Main/Champion
70 bus. and Main St
70 Business and Amelia Church Rd.
70 business, connections to greenways or other pedestrian areas
70 Business, Shotwell, Amelia church, 42
70 by the high school; 42 by moss creek; Glenn laurel by the park; guy road by moss creek.
70. Start there. Both sides of the street please pretty please.
A safe way to cross Hwy 70 from downtown. A tunnel? A bridge? Street lights downtown need to be updated.
A sidewalk from Barbour mill road to the school across 42. There have been too many clues calls and accidents considering all of the neighborhoods around the area.
A sidewalk throughout Main Street Sidewalk on Barber Mill road
Ability for students to cross 70 from Clayton High School. Good sidewalks from neighborhoods to reach shopping.
Access along or parallel to US 70 - not for me, but just for the safety of those I see walking along there.
Access to Greenways through sidewalks
Across 70 by champion to downtown, walkways to clayton highschool
Across hwy 70, and to main street-downtown
Adding a sidewalk the length of Motorcycle Rd for several communities to have a safe connection to Neuse River Pkwy's wide sidewalk that goes to the stores/ restaurants at 42E & the Parkway. Additionally, a wide sidewalk on 42E from Buffalo Rd to Glen Laurel Rd (coinciding with the 42E expansion) would connect us to many businesses & parks.
ALL 42 east
All along Main St, Fayetteville Street and all the streets with parking on both sides causing blind turning into these streets and cars having to stop to let oncoming cars through.
All along Main Street and behind it.
All Areas - We need to be pedestrian friendly like Chapel Hill.
All areas of Hwy 70
All intersections that are adjacent to all clayton public schools, recreational parks, and downtown area.
All of down town needs to extend the side walks all on city street to connect to other side walks and be properly marked with signage. All the schools in the Town of clayton needs to have updated signs with flashing signals and road markings.
all of main street
All of Main Street
All of Riverwood that doesn't already have sidewalks.
ALL of the intersections along Main Street. The street is entirely too narrow for amount of traffic that flows through. While I'm very excited about new businesses, there's NO parking, which creates a nightmare along Main.
All of them.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
All of US-70 ; Main Street western side of town ; area on Amelia Chuch Road around Clayton Community Park ;
All streets near the high school. All need sidewalks. Possibly one way streets or parking only on one side.
ALL THROUGH MAIN ST
ALL. OF. DOWNTOWN.
Almost all of them
Almost every area of Clayton is NOT pedestrian friendly
Along Glen Laurel Rd, leading up to the park
Along Highway 42 (heading toward Fuquay), in front of West Clayton Elementary and leading down to Ellington Subdivision. This area has been part of Clayton for a very long time and does not receive the improvements that other areas receive.
Along Highway 42 West
Although not applicable to me I am concerned for the safety of Clayton High School Students crossing over Rt 70. Any pedestrian bridges across 70 ever considered? I live at the Walk at East Village and I would like to see pedestrian crosswalk lines as one turns into our development. There is a great deal of foot traffic on the walkway on East Front St. and many of cars coming in and out.
Amelia Chuch from Guy Rd to Clayton Community park. Why is their no sidewalk?
Amelia Church
Amelia Church Rd and Guy Rd
Amelia Church Rd to Shotwell Roads to Clayton Corners
Amelia Church Rd, O'Neill & Hwy 42
Amelia Church Rd.
Amelia Church Road could us a walkway to connect with the park and the Rec Center, then continue with the sidewalk near Lions Gate. Also to connect with the Middle School and West Clayton Elementary along Guy RD.
Amelia Church Road near Clayton Community Park to downtown Clayton
Amelia Church Road, US 70
Amelia church road/70Business. I see a lot of high schoolers early in the morning when it is dark out walking on the edge of the road because there is no sidewalks. I'm so afraid someone is going to get hit because of this.
Amelia Street/Shotwell/Clayton Community Center--lots of traffic, not at all pedestrian friendly. There are also very few safe crossings for pedestrians downtown on Main Street. You have to peek out from behind parked cars and run across the street. Accessing the post office should be a no-brainer! We like to walk from the Community Center or from the community park next to the center, into town, for food, dining, and the post office, but the lack of sidewalks from neighborhoods makes it dangerous!
Anything on hwy 70
Anywhere near the highschool and downtown
Areas adjacent to downtown like Second St and Front St could be used more by pedestrians and for access to downtown if there were continuous ADA compliant sidewalks/crosswalks. The new crosswalk markings on main st encourage yielding and should be on more busy intersections in town.
Areas and pathways surrounding downtown and decrepit housing areas around that need to be either reprimanded and/or fined ad they make the historic area look bad.
Areas off of Bus 70
Around parks
Around parks
Around the high school, down 70 highway so the kids can be safer walking to and from school.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
At the corner of Vinson Rd and Glen Laurel, there needs to be a 4 way stop sign. Most of the time it's not clear to see oncoming traffic which a lot of times accidents occur. Glen Laurel, on both sides of the street (GL Subdivision), needs sidewalls, and proper lighting. This area has become high traffic area and the road is whining and dark. This is a serious hazardous blind spot. Further, down Vinson Rd at the top of the hill (Summerlyn) drivers are blindsided by the pedestrian crossing there needs to be a caution light with the pedestrian crossing. This particular area is predominantly families that have children constantly crossing back and forth from the pool to the park a big red flag.
Athletic Park in Riverwood Community
Barber mill rd
better access to highway 70 business for residents who walk. pedestrian priority downtown walking.
between BLVD and Corked and Untapped. lots of restaurants and bars where people are crossing often without proper crosswalks or signals.
Between the Clayton Dog Park and East Clayton Park. A teen was recently hit by a car crossing here. Multiple car accidents, too, from too fast/impaired driving. Hazardous area, but access between parks is necessary for the best use out of both, especially for individuals/families who use both parks.
Bridge area on shotwell between 70 and Amelia Church
Buffalo Rd and Jordan Narron Rd. The light will help but pedestrian traffic needs consideration.
Business 70
Business 70 especially near the Clayton high school and shotwell road.
Business 70 Heavy traffic and not enough time to get to the other side of the street because of car traffic.
Business 79 and Main Street.
By homes on the opposite side of downtown Clayton .
Champion and US 70 business needs a crosswalk. Please add lots of Greenway trail that connect south of US 70 bus w to downtown Clayton.
Champion connections to Main Street across US 70 Business. Greenway access to southeast side of downtown (near the intersection listed above).
Champion over 70
Champion st/Main st and business 70.
Champion street crossing 70 to Main Street. Finishing sidewalk on champion street to 70.
Church street
City road
City Road
City Road needs a sidewalk and/or bike lane . Many families live just off of City Road and would love to be able to walk to town.
City Road, Covered Bridge Rd
Clayton community park to summerlyn community. Bike options from Clayton community park to downtown Clayton. It is unsafe on the main highway from the new development area close to the Clayton community park. If there is a bike/pedestrian walk path, we could walk to the Nuese pathway inference and get to downtown.
Clayton high and hwy 70. Kids shouldn't have to play frogger to eat lunch at McDonald's
Clayton High, west Clayton elm,
Closer to downtown
Connect downtown Clayton to greenway. Make more obvious crossing locations on mani street. Connect Riverwood Golf to greenway, it's so close and could easily happen with one trailhead.
Connect the existing sidewalks of Chandlers Ridge and Summerlyn along Glen Laurel Road for pedestrian access to East Clayton park. Side walk on Main Street to business 70.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
Connecting areas together, for example Glenhaven off Barber Mill Rd cannot access other sidewalks/walkways in Clayton. Other neighborhoods have this same issue.
Connecting Glen Laurel to East Clayton park
Connecting the 2 sides of the LionsGate subdivision with a cross walk
Connection to the greenway from the Riverwood golf club
Continue in all directions from downtown- so more sidewalks for people- more lighted areas- buttons for pedestrians to push to signal they can walk.. downtown Clayton gets sooo congested and I always feel like I'm either going to hit another car or a pedestrian... need wider areas down there
Cover bridge - Lighting Also lighting by the fork. Traveling at night needs lighting
Cover bridge rd
Covered bridge rd.
Covered bridge road
Crossing from the Summerlyn Neighborhood to the East Clayton a park is so dangerous and needs immediate attention. Going from the dog park across to the park is equally challenging. It would also be nice to be able to bike from Glen Laurel, Summerlyn, and Chandler's Ridge to downtown without risking ones life on the road ways.
Crossing glen laurel
Crossing Highway 70. Especially crossing to Main Street and along Main Street from Highway 70. The sidewalks up Champion are nice, but we still have no way to safely cross Hwy 70 to get to downtown Clayton. It would be an easy bike ride, but even as adults it feels risky and could never allow our kids to do it, even with supervision. Improved pedestrian crossing conditions by the high school have been noticed and helpful, although I've seen high school students nearly hit twice because they didn't look before crossing and just assumed they could go when they wanted to in a crosswalk. Perhaps specific instruction to them at the school may be helpful.
Crossing I-70 on Amelia Church for the high school students and better access to downtown.
Crossing major roadways like 70 and 42.
Crossing roads to get to schools, esp. crossing O'Neil St to get to Cooper Elementary.
Crossing signals and marked pedestrian crosswalks along Hwy 70 at several of the existing traffic lights.
Crossing US 70 Business and Crossing Little Creek
Crosswalk and sidewalk from high school to McDonald's area. Crosswalk to Lowe's food shopping center
Crosswalk needed from Summerlyn Subdivision into East Clayton Community Park. It is VERY dangerous crossing Glen Laurel without an official crosswalk.
Crosswalks near parks on Glen Laurel
Crossway at 2nd st and main.
Current Hwy 42 widening project doesn't have pedestrian crossing at intersections that have traffic signals. Not sure why this was not included in the project to begin with.
Dairy/barber mill to west clayton elementary school
Deep river Vensons
Down town intersection
Down town, filling in the missing gap like between community park and Winston subdivision and we need additional crossings of Highway 70, Connection of the walking trail dead end at lions springs on Shotwell road with the shopping center. Way finding signs on greenways
Downton
downtown
Downtown

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
Downtown
Downtown
Downtown
Downtown & along route 42 E
Downtown and 70
Downtown and intersection at Walgreens and McDonald's
Downtown area
Downtown area speeding and Safety concerns .
Downtown business area
Downtown Clayton area and greenways
Downtown Clayton could use some sidewalks to be repaired. Some should also be extended from downtown along side streets and all the way to deep river brewing.
Downtown clayton, cooper academy and the new single family homes near them. Too many cars are parked on the street and we can't always see on coming traffic when driving or walking.
Downtown District- it's hard to see pedestrians/be seen as a pedestrian near Boulevard Coffee due to the numerous vehicles parked on the street. People dart out from between vehicles haphazardly.
Downtown in general. O'Neil Street needs a safe crossing because the MST/connection between Municipal Park/Downtown have been determined to be a priority corridor for pets/bikes, but there is currently no ped crossing on O'Neil, which has a very high ADT.
Downtown main street
Downtown Main Street. It's nearly impossible to cross to go to the farmers market, from the square to the businesses, and especially on the corner of main and O'Neil. Additionally it's hard for cars to see people due to street parking. Designated crossing areas would be much safer
Downtown needs crossings across Main Street (not just at intersections)
downtown O'neil street should have a sidewalk connecting the greenway to downtown. Bicycles and pedestrians do not have enough room to navigate it safely.
Downtown, motorists fail to yield at most crosswalks not at intersections with stoplights
Downtown. Others who walk elsewhere should plan to go to existing greenways.
East 42
East Clayton park to/from summerlyn Neighborhood. Between the higher speed, curves hard to see around no light or crosswalk. It's very difficult to get to the park or out of the neighborhood walking OR driving. Numerous accidents have occured:1 death, a fence taken out, 2 power poles destroyed and a car flipped , a teen was hit and hospitalized. All separate incidents within 2 years. How much more needs to happen before it's addressed?
East main is difficult to see around parked cars to cross safely.
East Main Street
Easy access to the strip malls along somebody but increase sidewalk or pedestrian crossing such as Lowe's Shopping Center, Food Lion Walmart etc. East and West 70
Extend the walkway down guy rd to Winston Pointe, Shotwell rd by the Lion spring senior living going towards 70, Amelia church rd by Amelia village apartments going towards Hwy 70
Extending, widening and re-paving Main Street sidewalks from the greenway end near the post office on first street to legend park and to Main Street near Deep River brewery. Connecting the other end of the greenway near 42 to neighborhoods - Flowers Plantation, Glen Laurel neighborhoods
First street to go all the way through

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
Flowers Plantation
Flowers Plantation at the corner of 42 and Buffalo. We would love the opportunity to walk to the Flowers Crossroads shopping center as well as the opportunity to safely walk our children to school at River Dell.
Focusing on areas closest to schools to improve walk ability and safety
Footbridge connecting downtown to Bristol/Cobblestone and adjoining neighborhoods. Highway 70 cannot be crossed safely.
From city rd to downtown
From HWY 70 going on Main Street through downtown
From parks, schools and to main roads...
From Summerly to East Clayton Community Park. We have already had one person hit there. It is a recipe for disaster!
Front street
Garrison Ave. And Shotwell and Hwy70 intersection
Glen Larel Rd, Vinson Rd, Powhatan Rd, HWY 42 from Glen Laurel Rd to HWY 70 and Downtown area
Glen Lauel, Hwy 42 to Front Street
Glen laural - a Child was just hit by a car last month crossing the street. The orchards at summerlyn to the community park desperately needs a sidewalk so the kids do not cross the street. The speed limit is too high and there is absolutely no monitoring of the speed limit. People tend to go faster on this road and it is very dangerous.
Glen laurel
Glen laurel
Glen laurel and black forest dr Glenn laurel and oak alley trail
Glen Laurel and East Clayton Community Park, multiples sidewalks on various streets connecting Front st. To Main St.
GLEN LAUREL AND RIVERWOOD TO DOWNTOWN
Glen Laurel by park and dog park
Glen Laurel crossing to East Clayton Community park
Glen Laurel near East Clayton Park
Glen Laurel near the dog park where people regularly hit the telephone pole and between the summer land neighborhoods where a 16 year old girl was recently hit.
Glen Laurel Rd
Glen Laurel rd (especially to east Clayton park and the summerlyn community
Glen laurel rd! My 16th year old daughter was hit by a car on September 18th trying to cross the street to go to the pool and is currently still in ICU fighting for her life.
Glen Laurel Road
Glen Laurel Road by Dog Park and Summerlyn entrances.
Glen Laurel Road from Glen Laurel to park
Glen Laurel Road needs a traffic light between the new park and Summerlyn subdivision. We are in danger of someone getting killed there. Guardrail on the turn on Glen Laural Road. A crosswalk that has a button to push by the Orchards so cars know someone is crossing. Glen Laural road is nothing but a speed way.
Glen Laurel, 70, 42, downtown, all parks

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
Glen Laurel, pedestrian bridge over to access parks, and also extend the sidewalks along Glen Laurel, as they lead nowhere.
Glenn laurel rd
Guy rd and Amelia church,
Guy Rd/Amelia Church area
Guy Rd/HWY 42, Shotwell/ HWY 70
Guy Road and Amelia Church Rd. hwy 70 By Clayton high School where kids cross daily. Guy Road and Wynston Way. Amelia Church Rd leading to Clayton Community Park and Clayton Community Center. Roads leading to Downtown Clayton.
Guy road at amelia church road. Build the sidewalks around the gas station and complete it to Wynston neighborhood.
Guy Road, Amelia Church, 42 West
Hamby & Lombard
Highway 42 near sheetz Amelia church road
Highway 70
Highway 70!!! And Vinson Rd is dark curvy and people speed!
HW42 west to guy rd.
Hwy 42 (south lombard st), Guy road, Connecting existing greenway trail on shotwell road (by community center) to the lowe's shopping center.
Hwy 42 and 70
Hwy 42 near West Clayton Elementary
Hwy 70 & city road
Hwy 70 and main. Near Vinson's and Smithfield's main and church.
Hwy 70 business - near high school; McDonald's; grocery stores/shopping centers
hwy 70 east & west
Hwy 70 intersection into Clayton by Burger king
Hwy 70, shotwell rd, Amelia church rd.
I 70 from Champion Rd to Downtown Clayton
I am a school bus driver, so I see a lot. I wrote to you about a crosswalk at Bus 70 & Robertson/Amelia Church. Glad it was approved! I see a fair amount of people walking on both sides of the parts of Amelia Church that don't have sidewalks (Lionsgate down to Amelia Village down to McDonalds and the gas station. In my opinion, both sides of the roadway need sidewalks. I've seen people crossing that little bridge part right before Hudson's and the shopping center. It's mostly kids or the old man with the cart, basically walking in the roadway on both sides of the road. Honestly, the entire 70 Bus Clayton corridor from Shotwell to Fayetteville Street would probably benefit from sidewalks, including Shotwell Rd to Amelia Church, right back down to 70 Business. I see people walking sometimes on the US70-NC42 section of the highway as well, especially on the eastern side where all the businesses are and the community behind them.
I AM PLEASED TO SEE HOW WELL THE TOWN OF CLAYTON IS TREATING ITS CITIZIANS!
I live in Riverwood and there is where the need exists for me.
I want to be able to walk downtown, but that requires crossing 70. It is unsafe where I live (the Dominos, GI Joe area). Please connect the two sides of town.
I would like to see some along glen laurel rd

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)

I would like to see the sidewalk down Lombard street extended down Barber Mill Rd and Dairy rd, along with a crosswalk on Lombard. Also, a greenway crossing (potentially a bridge) over Lombard Rd, into a greenway in the field that runs back toward the water treatment plant and over the creek to the greenway off Lakemont Dr. This would provide several neighborhoods on the south side of the town access to bike/walk downtown to shop. As of right now only the trailer park on Lombard has ready access to the existing sidewalk in front of West Clayton Elementary.
If it would be possible to make a pedestrian bridge at Robertson an 70. It would make High School and business customer shopping much safer and ensure better traffic flows Connecting Main Street Clayton sidewalks with new business/ neighborhoods being developed near the Derp River Brewery
I'm new to the area and I can't give exact names. Crossing over from main Street to Front. Sidewalk on 70, and 42
I'm not sure, but more nature trails
Improved sidewalks and railroad crossings
In front of Boulevard crossing roads and seeing vehicles/ pedestrians
In Riverwood Athletic Club, Chamberlain Drive needs some sidewalks
Intersection at 70 and Main Street. 70 and Robertson.
Intersection near Clayton Drafthouse.
Intersection of Barber Mill and HWY 42 at West Clayton Elementary
Intersection of US HWY 70 and Main Street/Champion Street
It would be amazing to have walkable access from the front street extension to Glen Laurel Rd and/or from the corner of Glen Laurel Road at 42 to the park on Glen Laurel.
It would be nice to have walking access from Glen Laurel subdivision to the East Clayton Park. There are partial sidewalks along the road that lead to nothing. It wouldn't take much to expand them to the park walkway.
Lionsgate. Fred Smith doesn't care about my safety. I almost got hit just getting my mail. I contacted ABC11.
Lombard and Main
Lombard and Main. But really all over
Lombard needs enforcement of existing speed limits. One of busiest roads in Clayton, yet least enforced. Speeding there 24/7 and rarely an officer present. Camel Street along back half has no sidewalks despite all the new homes. Buses actually drop kids off on the street. Where else does that happen?
Lombard to Clayton middle school, crosswaks on Hwy 70 to access businesses (grocery stores), sidewalks to main Street west, sidewalks from 70 and Robertson to main Street, trail along O'Neil to Sam's branch Greenway, all long overdue!
Lots of crossings on Main Street and limited ways to get to the park areas parallel to Main Street
Lumbard and main
Main
Main and 42
Main and Barbour Main and Lombard
Main and literally every intersection from Lombard to Moore streets
Main and Lombardi and Main and ONeill
Main and Robertson
Main street
Main street
main street / 1st st, oneil st, city rd
Main Street @ Fayetteville St Main Street @ Barbour St
Main Street and all crossings including sidewalks!
Main street at O'Neil, and Main Street at N Fayetteville

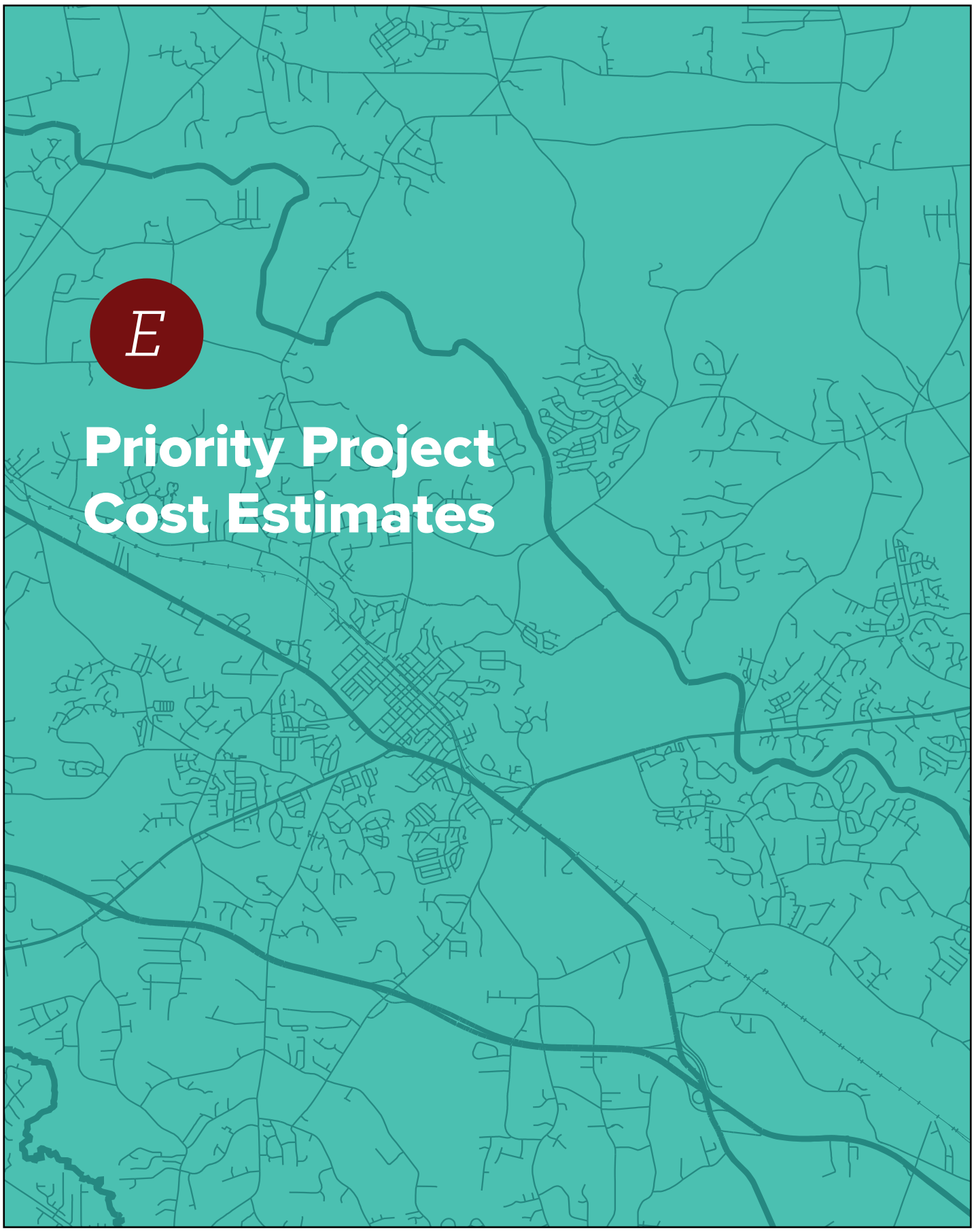
What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
Main Street from O'Neil going south
Main Street in downtown is often challenging. While pedestrian crosswalks have been added drivers rarely yield. Also a flashing light needs to be added by WCES. I know 42 is NCDOT but a safe walkway should be accessible for the students and residents.
Main Street toward Post Office end Amelia Church by Community Center (to safely access greenway from Riodge Dr)
Main street, from at least Vinson's all of the way to at least Instill.
Main Street. Difficult to cross the street with parked cars and traffic.
Main Street. It's very hard to cross and signage is terrible
Main Street-more than one crosswalk is needed. Sidewalks from the west end of Downtown to the east end.
More traffic lights in downtown
Most definitely a crosswalk to East Clayton community park, we also need a speed zone for safe exiting of Chandlers ridge and summerlyn communities
My priority is helping children walking from Hwy 42W trailer park to Clayton Middle School do not have sidewalks - concern for their safety. I would enjoy sidewalks extending all the way from Guy Road along Hwy 42W into downtown. Crosswalk signals along Main Street are improvements to assist pedestrians.
N
N O'Neil and Main then missing sidewalk to Deep River
N/A
Na
NC42e, Glen Laurel Road, Sidewalk over the tracks by the Post Office
Near Clayton park Glen Laurel Downtown
Near downtown areas — Stallings St.
Near Farmers Market
Near the library and the Chamber Building
Near Walmart on 70, near Clayton high
Need a sidewalk on Riverwood drive between the old shops and the new convenience store.
New Trails through woods
Not sure
Not sure. Downtown looks great
Nothing if it requires raising taxes.
O Neil st. Needs to have traffic signal outside of the Ashcroft development. Lower the speed limit 55mph is just ridiculous.
O'Neil needs some sort of sidewalk connecting the trailhead to downtown
O'Neil Street down to greenway
Oak Alley Trail/42E
Old 70
Old US 70
Older sections of clayton. Many of the roadways in the area behind the post office are older and over grown. Some of the sidewalks there are deteriorating and need repair. A few areas don't have sidewalks at all. I live in the Walk and I chose this location because I saw the sidewalks. It is what tells you that the community is friendly and inviting.
On Glen Laurel Road at the entrance of the Clayton Park and Summerlyn subdivision. Cars come over thr hill way too fast and if you are crossing the street the cars cant see you and you cant see them until it's too late. In September 2021 a child was hit by a car and nearly died. I feel and fear this will not be an isolated incident.
Oneail, Fayetteville

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
O'Neil and Main also Front st and O'Neil
O'Neil and main st. main St crossing in several spots would be good.
Oneil, Amelia Church, Hwy 42
Oneill and front st. Oneill and main.
ONeill Street
Page Street is extremely sketchy to walk after dark.
pedestrian signals for main downtown area-Main street.
Pretty much everything outside of downtown
Pritchard rd
Pritchard Rd-crossing in front of Riverwood schools and Food Lion
Public restroom. More trash receptacles. Main St and Oneal intersection improvement.
River wood development...the builder should contribute to the cost
Riverwood
Riverwood Athletic
Riverwood athletic club. How is an entire subdivision approved without any regard to pedestrian traffic?
Riverwood community lacks sidewalks. Would be really nice to have a sidewalk connect from Riverwood to Downtown Clayton.
Roadways
Roadways off of the new developments. The status quo should be a persistent endeavoring to coalesce new parts of Clayton with the existing town.
Robertson and Main (Lees Produce corner)
Robertson main to 70 main to PO main to 70
Robertson st. Needs sidewalk. As does 2nd st. Many others need improvement
Robertson, Rtes 70 and 42
Route 70 Glen Laurel Rd
Route 70 Glen Laurel Rd
Routes to Clayton High School
S robertson st to safely get to the clayton high for walkers. Across the railroad tracks
Safe sidewalk is needed along Shotwell from Amelia Church to the shopping center on both sides of Shotwell at Hwy Business 70.
Schools area to parents and kids be able to go and come back home safe. Those intersections are very busy and not safe for the pedestrians
Shot well and 70
Shot well Rd. between Amelia Church Rd. & Bus. Rt. 70. Crossing Bus. Rt. 70. Amelia Church Rd. between Lions Gate & Bus. Rt. 70.
Shot well road
Shotwell & 70
Shotwell and 70. Downtown Clayton, and hwy 42 near new Publik and Harris Teeter. Lots of neighborhoods would like a bike path to safely walk or ride bikes to these shopping areas.
Shotwell from Amelia to Route 70! Sidewalks along Amelia Church Road. Sidewalks down Guy Rd and Winston Road.
Shotwell road and Old us Business 70

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
Shotwell/70 is bad, walkways on Omelia Church to 70 via Shotwell. Full sidewalks to East Clayton park from nearby neighborhoods. You cannot get to this park currently on foot.
Sidewalk along Motorcycle Road
Sidewalk connection from Clayton community park to downtown. Currently there is no pedestrian walkways, bike paths, or crossings from Clayton community park to downtown on the Glenn laurel and highway 42 intersection or on highway 42. If there was an option for pedestrians to walk or bike, this would open options to downtown and the nuese river trail entry.
Sidewalks and lighting that will take you from the new retail/restaurant building off stallings to the distillery & deep river through main street and all the way down to Vincents.
Sidewalks are uneven. Railroad crossing as well
Sidewalks are uneven. Railroad crossing as well
Sidewalks from Ashcroft community to downtown
sidewalks leading to Lowe's supermarket on Shotwell Road between Guy Road and Highway 70. The sidewalks on Guy road between Amelia Church Road and Highway 70 are sporadic at best.
Sidewalks need to be on all of main street and garner road.
Sidewalks on Main Street - Past Lee's Produce to the new shopping center as well as Robertson & Moore out to 70 and the ability to cross 70.
Slow the speed on glen laurel. Way down. And connect all sidewalks on that road, would be nice to have a sidewalk that goes the whole length, much safer
Slow traffic on Glen Laural. Add a sidewalk to connect Chandlers Ridge and Summerlyn divisions.
South lumber st in Clayton right across from west Clayton elementary school
South Robertson and Hwy 70 Champion and Hwy 70
Southeastern
Stick to downtown areas. Old US 70 is too dangerous for pedestrian traffic and would require too much construction to facilitate walking to Clemmons (we have enough accidents on this roadway).
Stop light and road crossing at East Clayton community park. Crossing from the summerlyn development.
The area between East Clayton Park and Summerlyn desperately need a cross walk. There have been two incidents where people were hit,since my family has lived here.
The area immediately surrounding downtown, as well as the strip of land next to Glen Laurel Road between the Glen Laurel Neighborhood and Highway 42. It needs pedestrian crossings and more sidewalks.
The area of Champion and US Bus. 70 from Cobblestone to downtown. A walkway/bikepath along US 70 to the High School. Another Walkway along USBus 70 to 42 and cross over from Sheets. A bikepath/ walkway along 42 from US bus.70 to Flowers pathways and bikepaths. Please let bikepaths and walkways be a priority.
The assisted living center on Shotwell needs a sidewalk to the shopping center. Elderly people are regularly walking on that dangerous thin bridge that is a blind turn and people zoom through, and it is an extreme hazard to the elderly trying to access the shopping center and cars.
The bridge on Shotwell Road near the Lowes Food plaza needs a pedestrian bridge. It's very dangerous for people to walk on the current, narrow bridge with cars passing by. There's no other way around the bridge because of the creek.
The crossing in hwy 70 to McDonald's it would safer to have a crossing bridge for the high school kids.
The crosswalk in front of the lawn. It's a constant flow of traffic, no one stops, and we can't see what's coming because Clayton allows street parking.
The East Clayton Playground on Glen Laurel Rd , also side walks. Downtown sidewalk repairs. Business 70 .
The end of Main Street needs sidewalks that run out to Deep River.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
The ends of Main St (Near Epic Axe and past Manning's headed towards Hwy 70).
The entire downtown area - Main Street and adjacent side roads.
The entire downtown area but near the bank (hard to pull out and see the pedestrian's) and the main interaction up by the circle area.
The Guy Road/Amelia Church/42 Triangle
The north side of Main Street. Better sidewalks/crosswalks/walking paths between new townhome developments and downtown.
The other side of the railroad tracks. Front st and stallings st. And paths to hwy 70
THE PEDESTRIAN BRIDGE ON AMELIA CHURCH ADJACENT TO LIONSGATE NEEDS TO BE FIXED. DON'T CARE IF IT IS FRED SMITH'S RESPONSIBILITY EITHER HOLD HIS FEET TO THE FIRE OR BITE THE BULLET AND GET TOC TO FIX IT. THE BRIDGE ON SHOTWELL BETWEEN AMELIA CHURCH AND HWY 70 NEEDS TO HAVE A PEDESTRIAN CROSSING.
The roads by the railroad near down town, around McNeil. Larger side walks and visible crossing for pedestrians to cross to get to downtown.
The roads by west Clayton elementary and the trailer park. Kids/ families are always crossing over there to get to the elementary school or high school. Please make it safer for them to walk and cross.
The sidewalk on Lombard St, has tree roots and other things that can trip up a senior citizen
The south west part of Clayton. Towards Smithfield. There is absolutely no walking trails near us. It's like we're not even part of town, and just a zip code.
The town square needs crosswalk signals at the Fayetteville St and Main St crossing. I would not put one at O'neil because it would clog traffic too much. There should probably be one by the library as well (Church St & Main)
The whole length of Glen Laurel Rd and Vinson Rd to the school.
There are many sidewalks and streets in disrepair. I tripped on a broken/uneven sidewalk on front street recently and suffered a broken shoulder.
There is a great trail that leads to South Lombard/42west. It would be great to have the sidewalk maintained and extended up past West Clayton Elementary so you can actually continue the walk instead of walking back through. Why does the sidewalk end anyway? Why is the brush not kept up? Why is the sidewalks not maintained. The money spent on Town managers this past year could have funded at least a block or three. Please look at this area as it would be nice to clean it up and make it walkable.
There is no walkway across the Shotwell Rd Little creek bridge to the grocery store, shops and restaurants. I see Seniors crossing that in the road (presumably from Lion Spring Senior Living). How about extending the walkway through the woods, with a foot bridge, to the grocery store
There needs to be a crosswalk with signal on Glen Laurel to get to East Clayton Community Park. The cars comes flying over that hill. A little girl just got hit here.
Trailing Oak Trail and Glen Laurel and East Clayton Park Rd.
Trying to cross main street
US 70 and Robertson Street Robertson and Main streets Central and Front streets 2nd and Main streets
Us 70 business
US Highway 70
Us70
Vinson Road by the elementary school. Traffic speed is not enforced.
Walking access to community center. Community center area access to downtown.
walking from N Robertson down to Stallings where the new little shops will be. also where Deep River Brewing is.

What roadways/intersections/general areas in Clayton are most in need of pedestrian improvements? (Continued)
We live in the Guy Rd/Amelia church area, and would like to be able to walk downtown on sidewalks -- they would be needed on Guy Rd between Amelia Church & 42, and along 42 from Guy downtown.
We need a pedestrian- and bike-friendly route from downtown to the Greenway. I would also like to feel safer crossing the intersection at the post office, Smith and E. Main, and anywhere along N. O'Neill St. Thank you for the crosswalks at BLVD, but drivers still do not want to stop there. Also thank you for the safer crossing at 70 and Robertson.
We need more cross walks with lights for pedestrians. Additionally I think the downtown residential areas should have more 4 way stops to prevent cars from getting up to unsafe speeds.
West Clayton Elementary
West stallings, shotwell
West stallings, shotwell
When crossing streets that don't have lights or those light poles where you can press the button without getting ran over by a vehicle
Where Main St & Bus 70 intersect
Wilson mills
Yes



E

Priority Project Cost Estimates

Alta Engineering SE, PLLC

PLANNING ESTIMATE

CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #1: ROBERTSON ST SIDEWALK GAPS AND CROSSING IMPROVEMENTS**

DESCRIPTION: **1320 LF SIDEWALK ALLONG S. ROBERTSON ST AND WILLOW DR.**

TOTAL LENGTH: **0.3 MILES**

COUNTY: JOHNSTON

DIVISION: 4

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		TRAIL ITEMS				
0000100000-N	800	MOBILIZATION	1	LS	$16,000.00	$16,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$10,000.00	$10,000.00
0043000000-N	226	GRADING	1	LS	$31,000.00	$31,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	250	LF	$60.00	$15,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	675	SY	$60.00	$40,500.00
2605000000-N	848	CONCRETE CURB RAMP	11	EA	$3,000.00	$33,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	180	SY	$115.00	$20,700.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	$10,000.00	$10,000.00
		DRAINAGE ALLOWANCE	1	LS	$25,000.00	$25,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$15,000.00	$15,000.00
		MINOR ITEMS (5%)	1	LS	$10,000.00	$10,000.00

CONSTRUCTION COST SUBTOTAL	$227,000.00
CONTINGENCY (30%)	$68,100.00
UTILITIES (ABOVE GROUND)	$30,000.00
NCDOT ADMINISTRATION FEE (10%)	$33,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	**$359,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY: CJA

DATE: 6/10/2022

Alta Engineering SE, PLLC

PLANNING ESTIMATE

CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #2: MAIN ST PEDESTRIAN IMPROVEMENTS**

DESCRIPTION: **1135 LF SIDEWALK ALONG MAIN ST (EXCLUDES 1,100 OF FUNDED SIDEWALK NEAR CENTRAL ST)**

INTERSECTION IMPROVEMENTS AT MOORE ST, ROBERTSON ST, ELLINGTON ST, O'NEIL ST, FAYETTEVILLE ST, CHURCH ST, BARBOUR ST, E. 1ST ST, LOMBARD ST, COMMUNITY GARDEN MID-BLOCK CROSSING, SMITH ST, CENTRAL ST

TOTAL LENGTH:	**0.2 MILES**
INTERSECTIONS:	**12**

COUNTY: JOHNSTON DIVISION: 4

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		TRAIL ITEMS				
0000100000-N	800	MOBILIZATION	1	LS	$61,000.00	$61,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$9,000.00	$9,000.00
0043000000-N	226	GRADING	1	LS	$49,000.00	$49,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	2,645	LF	$40.00	$105,800.00
2591000000-E	848	4" CONCRETE SIDEWALK	531	SY	$65.00	$34,515.00
2605000000-N	848	CONCRETE CURB RAMP	54	EA	$3,000.00	$162,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	300	SY	$115.00	$34,500.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	$30,000.00	$30,000.00
8801000000-E	SP	MSE RETAINING WALL NO ****	480	SF	$110.00	$52,800.00
		MAIN ST / ROBERTSON SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	$35,000.00	$35,000.00
		MAIN ST / O'NEIL ST SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	$35,000.00	$35,000.00
		MAIN ST / CHURCH ST SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	$35,000.00	$35,000.00
		MAIN ST / CENTRAL ST SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	$15,000.00	$15,000.00
		DRAINAGE ALLOWANCE	1	LS	$145,000.00	$145,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$10,000.00	$10,000.00
		MINOR ITEMS (5%)	1	LS	$38,000.00	$38,000.00

CONSTRUCTION COST SUBTOTAL	$852,000.00
CONTINGENCY (30%)	$255,600.00
UTILITIES (ABOVE GROUND)	$55,000.00
NCDOT ADMINISTRATION FEE (10%)	$116,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	**$1,279,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY CJA

DATE 6/10/2022

PLANNING ESTIMATE

CLAYTON, NC PEDESTRIAN PLAN

Alta Engineering SE, PLLC

LOCATION: **PRIORITY PROJECT #3: US 70 CROSSINGS (PHASE 1)**

DESCRIPTION: **1125 LF SIDEWALK FILLING SIDEWALK GAPS**

INTERSECTION IMPROVEMENTS AT SHOTWELL RD, MOORE ST, AND CHAPION ST

TOTAL LENGTH:	**0.2 MILES**
INTERSECTIONS:	**3**

COUNTY: JOHNSTON DIVISION: 4

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		TRAIL ITEMS				
0000100000-N	800	MOBILIZATION	1	LS	$27,000.00	$27,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$9,000.00	$9,000.00
0043000000-N	226	GRADING	1	LS	$22,000.00	$22,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	827	SY	$60.00	$49,620.00
2605000000-N	848	CONCRETE CURB RAMP	28	EA	$3,000.00	$84,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	210	SY	$115.00	$24,150.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	267	SY	$150.00	$40,050.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	$30,000.00	$30,000.00
		SHOTWELL / US70 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	$20,000.00	$20,000.00
		MOORE / US70 SIGNAL - ADD PEDESTRIAN SIGNALS (2 LEGS)	1	LS	$25,000.00	$25,000.00
		CHAMPION ST / US70 SIGNAL - ADD PEDESTRIAN SIGNALS (4 LEGS)	1	LS	$40,000.00	$40,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$10,000.00	$10,000.00
		MINOR ITEMS (5%)	1	LS	$18,000.00	$18,000.00

CONSTRUCTION COST SUBTOTAL	$399,000.00
CONTINGENCY (30%)	$119,700.00
UTILITIES (ABOVE GROUND)	$30,000.00
NCDOT ADMINISTRATION FEE (10%)	$55,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	**$604,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY CJA

DATE 6/10/2022

Alta Engineering SE, PLLC

PLANNING ESTIMATE

CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #4: AMELIA CHURCH RD & SHOTWELL RD GREENWAY GAPS**

DESCRIPTION:
3500 LF 10' WIDE ASPHALT SHARED USE PATH, PEDESTRIAN BRIDGES, AND BOARDWALK ALONG LITTLE CREEK OFF OF SHOTWELL RD AND AMELIA CHURCH RD
650 LF 5' WIDE CONCRETE SIDEWALK AND PEDESTRIAN BRIDGE ALONG AMELIA CHURCH RD
INTERSECTION IMPROVEMENTS AT AMELIA CHURCH RD / VERRAZANO PL, AND AMELIA CHURCH RD / KENMORE DR

TOTAL LENGTH: **0.8 MILES**

COUNTY: JOHNSTON DIVISION: 4

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		TRAIL ITEMS				
0000100000-N	800	MOBILIZATION	1	LS	$121,000.00	$121,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$28,000.00	$28,000.00
0043000000-N	226	GRADING	1	LS	$302,000.00	$302,000.00
1121000000-E	520	AGGREGATE BASE COURSE	1,450	TON	$50.00	$72,500.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	410	TON	$200.00	$82,000.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	25	TON	$780.00	$19,500.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	720	LF	$60.00	$43,200.00
2591000000-E	848	4" CONCRETE SIDEWALK	289	SY	$65.00	$18,785.00
2605000000-N	848	CONCRETE CURB RAMP	21	EA	$3,000.00	$63,000.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	28	SY	$150.00	$4,200.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	$10,000.00	$10,000.00
8801000000-E	SP	MSE RETAINING WALL NO ****	1,225	SF	$110.00	$134,750.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	6	EA	$10,000.00	$60,000.00
		PEDESTRIAN BRIDGE	300	LF	$3,000.00	$900,000.00
		10' CLEAR WIDTH WOOD BOARDWALK	140	LF	$600.00	$84,000.00
		DRAINAGE ALLOWANCE	1	LS	$70,000.00	$70,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$55,000.00	$55,000.00
		MINOR ITEMS (5%)	1	LS	$97,000.00	$97,000.00

CONSTRUCTION COST SUBTOTAL	$2,165,000.00
CONTINGENCY (30%)	$649,500.00
UTILITIES (ABOVE GROUND)	$50,000.00
NCDOT ADMINISTRATION FEE (10%)	$286,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	**$3,151,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY CJA
DATE 6/10/2022

Alta Engineering SE, PLLC

PLANNING ESTIMATE

CLAYTON, NC PEDESTRIAN PLAN

LOCATION: **PRIORITY PROJECT #5: GLEN LAUREL RD PEDESTRIAN IMPROVEMENTS**

DESCRIPTION:
2540 LF 10' WIDE ASPHALT SHARED USE PATH SPURS FROM E. CLAYTON COMMUNITY PARK GREENWAY
660 LF 5' WIDE CONCRETE SIDEWALK AND BOARDWALK ALONG GLEN LAUREL RD
GREENWAY CROSSING, AND LYNSHIRE AVE
EXCLUDES POTENTIAL EFFORTS ASSOCIATED WITH SPEED LIMIT REDUCTION OF GLEN LAUREL RD., AND EX. GREENWAY SURFACE REPAIRS

TOTAL LENGTH: **0.6 MILES**

COUNTY: JOHNSTON DIVISION: 4

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		TRAIL ITEMS				
0000100000-N	800	MOBILIZATION	1	LS	$50,000.00	$50,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$22,000.00	$22,000.00
0043000000-N	226	GRADING	1	LS	$180,000.00	$180,000.00
1121000000-E	520	AGGREGATE BASE COURSE	1,110	TON	$50.00	$55,500.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	310	TON	$200.00	$62,000.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	20	TON	$780.00	$15,600.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	225	LF	$65.00	$14,625.00
2591000000-E	848	4" CONCRETE SIDEWALK	289	SY	$50.00	$14,450.00
2605000000-N	848	CONCRETE CURB RAMP	11	EA	$3,000.00	$33,000.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	34	SY	$150.00	$5,100.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	$20,000.00	$20,000.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	9	EA	$10,000.00	$90,000.00
		10' CLEAR WIDTH WOOD BOARDWALK	400	LF	$600.00	$240,000.00
		DRAINAGE ALLOWANCE	1	LS	$35,000.00	$35,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$40,000.00	$40,000.00
		MINOR ITEMS (5%)	1	LS	$41,000.00	$41,000.00

CONSTRUCTION COST SUBTOTAL	$919,000.00
CONTINGENCY (30%)	$275,700.00
UTILITIES (ABOVE GROUND)	$5,000.00
NCDOT ADMINISTRATION FEE (10%)	$120,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	**$1,320,000.00**

NOTE:
ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY CJA
DATE 6/10/2022

PLANNING ESTIMATE

CLAYTON, NC PEDESTRIAN PLAN

Alta Engineering SE, PLLC

LOCATION: **PRIORITY PROJECT #6: O'NEIL ST PEDESTRIAN IMPROVEMENTS - NEAR TERM RECOMMENDATIONS**

DESCRIPTION: **O'NEIL ST INTERSECTION IMPROVEMENTS AT STALLINGS ST, WHITAKER ST, BARNES ST, WHILSON ST, AND HINTON ST**

EXCLUDES LONGER TERM RECOMMENDATIONS

INTERSECTIONS: **5**

COUNTY: JOHNSTON DIVISION: 4

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
		TRAIL ITEMS				
0000100000-N	800	MOBILIZATION	1	LS	$10,000.00	$10,000.00
0043000000-N	226	GRADING	1	LS	$6,000.00	$6,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	40	LF	$75.00	$3,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	23	SY	$70.00	$1,610.00
2605000000-N	848	CONCRETE CURB RAMP	8	EA	$3,000.00	$24,000.00
2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	17	SY	$150.00	$2,550.00
4025000000-E		CONTR FURN, ***SIGN (E)	72	SF	$20.00	$1,440.00
4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	108	LF	$20.00	$2,160.00
4102000000-N	904	SIGN ERECTION, TYPE E	8	EA	$150.00	$1,200.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	$20,000.00	$20,000.00
4710000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	997	LF	$12.00	$11,964.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	3	EA	$10,000.00	$30,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$5,000.00	$5,000.00
		MINOR ITEMS (5%)	1	LS	$5,000.00	$5,000.00

CONSTRUCTION COST SUBTOTAL	$124,000.00
CONTINGENCY (30%)	$37,200.00
UTILITIES (ABOVE GROUND)	$5,000.00
NCDOT ADMINISTRATION FEE (10%)	$17,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	**$184,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY: CJA

DATE: 6/10/2022

PLANNING ESTIMATE

CLAYTON, NC PEDESTRIAN PLAN

Alta Engineering SE, PLLC

LOCATION: **PRIORITY PROJECT #8: EAST COAST GREENWAY COMPLETION - NC 42 SIDEPATH**

DESCRIPTION: **9620 LF 10' WIDE SHARED USE PATH ALONG NC 42 FROM FRONT ST TO GLEN LAUREL RD, AND FROM MCKENZIE RIDGE DR TO NEUSE RIVER**

TOTAL LENGTH: **1.8 MILES**

COUNTY: JOHNSTON

DIVISION: 4

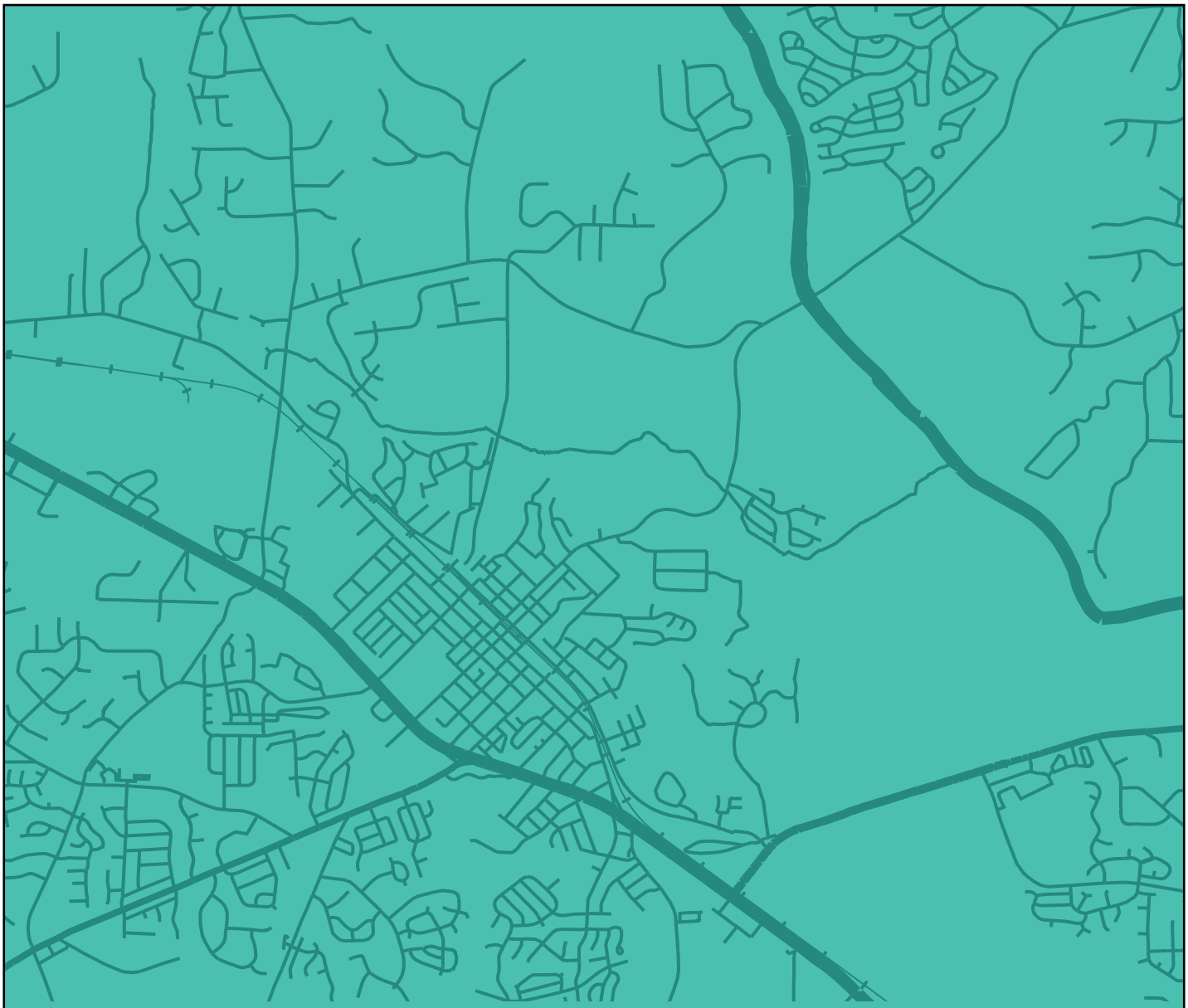
ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		TRAIL ITEMS				
0000100000-N	800	MOBILIZATION	1	LS	$99,000.00	$99,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$72,000.00	$72,000.00
0043000000-N	226	GRADING	1	LS	$594,000.00	$594,000.00
1121000000-E	520	AGGREGATE BASE COURSE	4,350	TON	$45.00	$195,750.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	1,220	TON	$140.00	$170,800.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	75	TON	$720.00	$54,000.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	2,700	LF	$40.00	$108,000.00
2605000000-N	848	CONCRETE CURB RAMP	7	EA	$3,000.00	$21,000.00
4399000000-N	1105	TEMPORARY TRAFFIC CONTROL	1	LS	$50,000.00	$50,000.00
		PEDESTRIAN BRIDGE	20	LF	$3,000.00	$60,000.00
		E FRONT ST / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	$15,000.00	$15,000.00
		CATERPILLER INC W. ENTR / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	$15,000.00	$15,000.00
		CATERPILLER INC E. ENTR / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	$15,000.00	$15,000.00
		GLEN LAUREL RD / NC 42 SIGNAL - ADD PEDESTRIAN SIGNALS (1 LEG)	1	LS	$15,000.00	$15,000.00
		DRAINAGE ALLOWANCE	1	LS	$165,000.00	$165,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$125,000.00	$125,000.00
		MINOR ITEMS (5%)	1	LS	$84,000.00	$84,000.00

CONSTRUCTION COST SUBTOTAL	$1,859,000.00
CONTINGENCY (30%)	$557,700.00
UTILITIES (ABOVE GROUND)	$20,000.00
NCDOT ADMINISTRATION FEE (10%)	$244,000.00
OPINION OF TOTAL CONSTRUCTION COST (2022)	**$2,681,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- BASED ON 2022 UNIT PRICES, INFLATION NOT INCLUDED
- ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE
- EXCLUDES RIGHT-OF-WAY, DESIGN, PERMITTING, AND CONST. ADMINISTRATION PROJECT COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNONWN AND NOT INCLUDED.

COMPUTED BY: CJA

DATE: 6/10/2022



Clayton Pedestrian Plan 2022

PREPARED FOR THE TOWN OF CLAYTON |
PREPARED BY ALTA PLANNING + DESIGN

alta

Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-1545

Planning Board, 10/24/2022

STAFF REPORT

Application Number: 2022-170-RZ
Project Name: Pawville – Rezoning

TAG #(s): 05GO2003
Town Limits/ETJ: Town Limits
Applicant: Carolina Land Design
Owner: Store Master Funding XVII, LLC
Location: Southwest Lot at Tew Court and Gateway Drive
Project Planner: Bruce Venable, Planner I

Public Noticing Dates:

- **Neighborhood Meeting:** October 12, 2022
- **Sign posted:** October 12, 2022
- **PB Adjacent Property Letters Mailed:** October 12, 2022

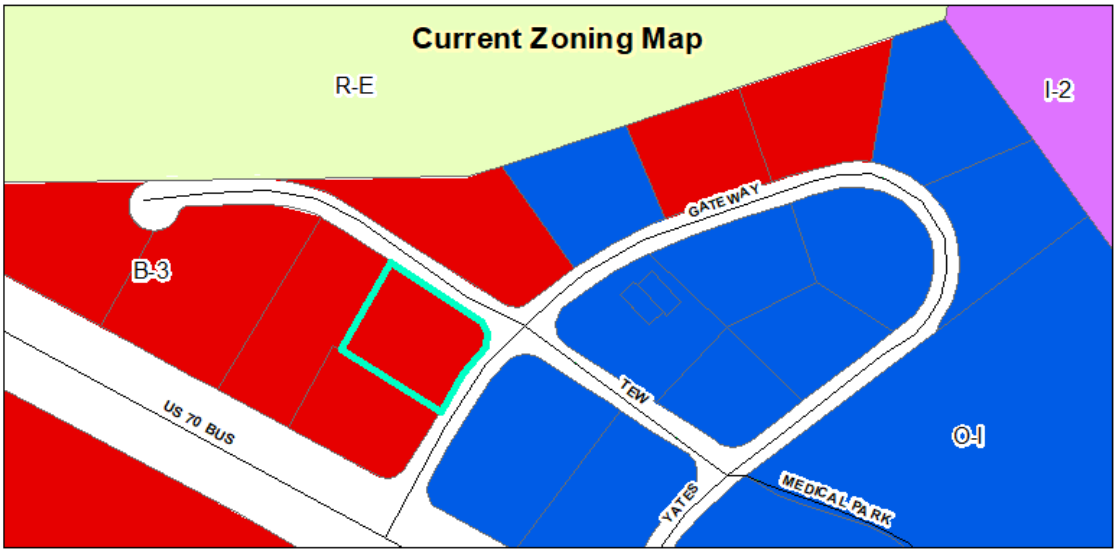
REQUEST: Rezoning from Highway-Business SUD (B-3 SUD) to Highway-Business (B-3)



SITE DATA:
Acreage: +/- 1.14 acres
Existing Use: Vacant

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	B-3 (Highway-Business)	Dental Center
South	B-3 (Highway-Business)	
East	O-I (Office-Institutional)	Child Care
West	B-3 (Highway-Business)	Vacant



STAFF ANALYSIS AND COMMENTARY:

Overview

The site is within the Clayton Town limits. The site is located at the corner of Tew Ct, and Gateway Dr. The applicant is requesting to re-zone the property from the now defunct Highway-Business Special Use District (B-3 SUD) to Highway-Business (B-3) The property is currently Vacant.

REZONING APPROVAL CRITERIA
In connection with its legislative decision on a rezoning request, the Town Council may consider factors including, but not limited to, the following:

(1) Consistency with the adopted plans and policies of the Town;

Applicant's Response: Project follows B-3 zoning consistency

Staff Commentary: Staff believe that the current zoning and the proposed zoning changes are consistent with currently adopted plans for this project

(2) Suitability of the subject property for uses permitted by the current versus the proposed district;

Applicant's Response: The current district is outdated and needs to be rezoned per the city's latest change of rules after going over a year of plan checks for a special use permit

Staff Commentary: The SUD district is no longer in use and requires a zoning change.

(3) Whether the proposed change tends to improve the balance of uses, or meets a specific demand in the Town;

Applicant's Response: The proposed change is mandatory by the city.

Staff Commentary: The SUD district is no longer in use and requires a zoning change.

(4) The capacity of adequate public facilities and services including schools, transportation infrastructure, recreation facilities, wastewater treatment, water supply facilities, and stormwater drainage facilities for the proposed use;

Applicant's Response: The pet kennel and vet building will have an adequate water supply from Tew Court. The project will connect sewer line to an existing adequate sewer in the right-of-way as well.

Staff Commentary: The rezoning should not affect the Town's compacity of public facilities, services nor will it negatively affect the current infrastructure.

(5) It has been determined that the legal purposes for which zoning exists are not contravened;

Applicant's Response: The existing zoning is outdated per the city's latest change in policy.

Staff Commentary: Staff believe that this request is not contravened and is aligned with the comprehensive future land use plan of 2045 and will serve the community under its zoning district.

(6) It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare;

Applicant's Response: There is no danger to public health where the buildings are proposed.

Staff Commentary: There should be no adverse effect upon any of the adjoining property owners.

(7) It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

Applicant's Response: The changing from Special use zoning to highway business is irrelevant in this case.

Staff Commentary: No one property owner or small group will benefit materially from this change.

Consistency with the Comprehensive Growth Plan 2045

The Future Land Use Map identifies this area as "Employment Center" (see map below). Page 21 of the Comprehensive Growth Plan states that Employment Center areas are designated "to provide locations for primary employment and economic development opportunities" and are "located along a major transportation corridor..." These guidelines are consistent with the purpose and function of B-3 zoning, as stated above. The rezoning request would be consistent with the Employment Center Future Land Use designation.

Comprehensive Growth Plan Goals supporting the rezoning request include:

Goal LU 1: Preserve Clayton's character while allowing for growth and development in appropriate areas.

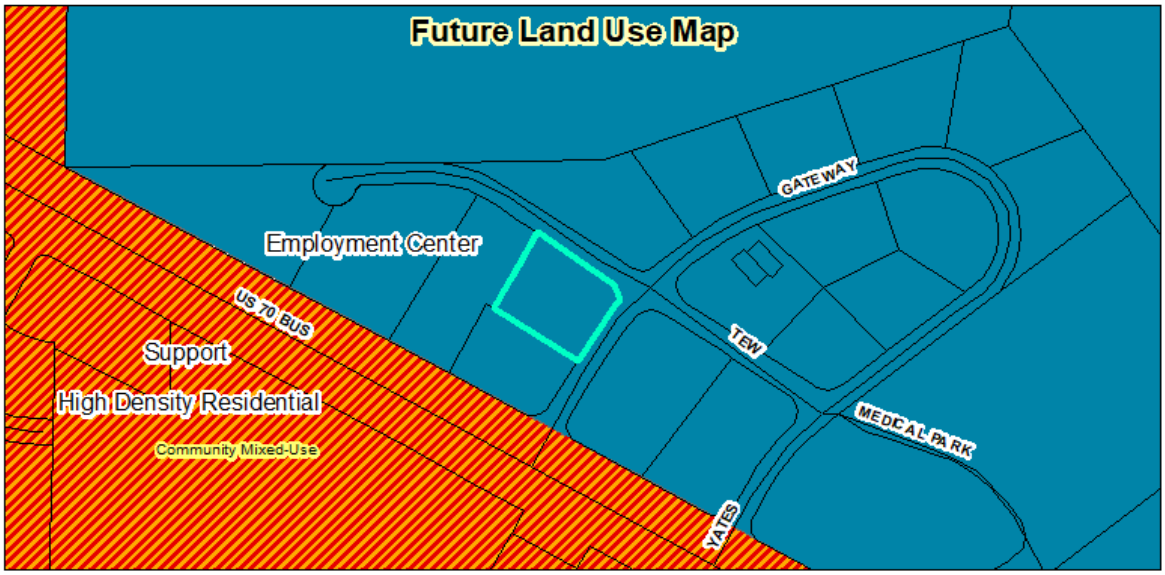
Policy LU 1.1: Manage future growth and encourage quality development through the implementation of the Comprehensive Plan, the Unified Development Code (UDC), and other plans and regulations adopted by the Town Council.

Strategy LU 1.1.1: Review development proposals for consistency with the Future Land Use Map.

Goal ED 1: Increase opportunities for companies that provide well-paid jobs.

Policy ED 1.2: Preserve and develop prime industrial land for employment growth.

Strategy ED 1.2.2: Protect industrial land uses by encouraging compatible uses within and near the Employment Center areas identified on the Future Land Use Map.



CONSIDERATIONS:

- Approval of the rezoning would allow any permitted use within the B-3 Zoning District to be constructed on the site. Town Council should consider all potential uses of the site when considering the rezoning

STAFF RECOMMENDATION:

- Staff recommends ***APPROVAL*** of the proposed rezoning request.
- Recommended Planning Board Action:

  The Planning Board recommends ***APPROVAL*** of the proposed rezoning request. The request is consistent with Goal LU 1, Policy LU 1.1, Strategy LU 1.1.1, Goal ED 1, Policy ED 1.2, and Strategy ED 1.2.2 of the Comprehensive Growth Plan 2045.

ATTACHMENTS:

1) Staff Report
2) Application/Owner's Consent Form
3) Neighborhood Meeting Materials
4) Survey
5) Staff Report Maps

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

REZONING APPLICATION COVER SHEET

Name of Project: Clayton Pawville **Date:** 10-3-2022

Applicant Name: William Huyler, Carolina Land Design, PLLC

The following checklist to be completed by applicant:

[ ] Pre-Application Meeting on: 2-25-2021
[ ] Review Fee
[ ] Advertisement Fee
[ ] Completed Application
[ ] Owner's Consent Form
[ ] Adjacent Property Owner's List
[ ] Neighborhood Meeting Notice Letter (1 copy)
[ ] 2 Sets of stamped, addressed, empty envelopes for adjacent property owner notification
[ ] Signed & Sealed Boundary Survey
[ ] Copy of signed & sealed boundary survey in PDF on USB

Reviewed by: _____

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

REZONING APPLICATION

■ **Rezoning Fee: $750 + $10 per acre**

SITE INFORMATION

Name of Project: Clayton Pawville

Acreage of Property: 1.14 AC **Zoning District:** B-3 SPECIAL USE DISTRICT

County Tag #: 05G02003 **NC Pin #:** 165909-16-5659

Address/Location: SW LOT AT TEW COURT AND GATEEWAY DRIVE

Existing Zoning District: B-3 SPECIAL USE **Proposed Zoning District:** B-3

APPLICANT INFORMATION

Applicant: Carolina Land Design

Mailing Address: 300 S Main Street Suite 212, Holly Springs, NC 27540

Phone Number: 760 791 2204 **Fax:**

Contact Person: William Huyler

Email Address: will@carolinalanddesign.com

PROPERTY OWNER INFORAMTION

Name: Store Master Funding XVII, LLC

Mailing Address: 8377 E Hartford Dr Ste 100, Scottsdale, AZ 85255

Phone Number: 480 256 1100 **Fax:**

Email Address: customerservice@storecapital.com

OFFICE USE ONLY

Date Received: _____ Amount Paid: _____ File Number: _____

EXPLANATION OF PROJECT

Please provide detailed information concerning all requests. Attach additional sheets if necessary.

2 paved drive entrys to the back of the site.

Parking area with a dropoff at the side of the kennel fence.

Exterior fence around the kennel to keep pets safe.

2 stormwater basins to treat and mitigate stormwater flows.

Project will take up two lots. One lot is zoned for special use and needs to be rezoned per change of rules after 4 planchecks by city

Project takes 2 lots. Once is zoned B-3 and the other is B-3 SUD that needs to be rezoned.

APPROVAL CRITERIA

All applications for a Rezoning must address the following findings:

1. Consistency with the adopted plans of the Town.

   Project follows B-3 zoning consistency.

2. Suitability of the subject property for uses permitted by the current vs. the proposed district.

   The current district is outdated and needs to be rezoned per the city's latest change of rules after going over a year of planchecks for a special use permit.

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.

   The proposed change is mandatory by the city.

4. The capacity of adequate public facilities and services including schools, roads, recreation facilities, wastewater treatment, potable water supply and stormwater drainage facilities is available for the proposed use.

   The pet kennel and vet building will have an adequate water supply from Tew court.

   The project will connect sewerline to an existing adequate sewer in the right-of-way as well.

5. It has been determined that the legal purposes for which zoning exists are not violated.

   The existing zoning is outdated per the city's latest change in policy.

6. It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare.

   There is no danger to public health where the buildings are proposed.

7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

The changing from Special use zoning to highway business is irrelevant ijn this case.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town Council of the Town of Clayton to amend the Zoning Ordinance and change the Official Zoning Map of the Town of Clayton as requested.. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

William Huyler	William Huyler	October 4, 2022
Print Name	***Signature of Applicant***	***Date***

NEIGHBORHOOD MEETING INFORMATION

Purpose:

The purpose of the Neighborhood Meeting is to inform the surrounding property owners of the nature of the proposed land use and/or development features, answer questions, respond to concerns, and solicit comments.

Meeting Date:

The neighborhood meeting must be held prior to the 1st scheduled public meeting date. It is recommended to hold the meeting at least 10 days prior to the 1st scheduled public meeting date, however, it is **not** a requirement.

Meeting Time & Location:

The meeting must be held no earlier than 6:00 pm Monday through Friday, and must be held in a location generally accessible to residents within close proximity of the request. The meeting space must be able to comfortably accommodate everyone that receives an invitation.

Meeting Notice Mailing requirements:

1. The applicant must contact all adjacent property owners via first class mailing (see sample letter).
2. The mailing must include all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the subject property. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property.
3. The notice must be mailed at least ten (10) calendar days but not more than twenty-five (25) days prior to the date of the Neighborhood Meeting.

Information required to be provided at the Neighborhood Meeting:

At a minimum, the following materials must be present and discussed at a Neighborhood Meeting:

1. A copy of the project application.
2. A schedule of all upcoming public meetings for the application.
3. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
4. A map, drawing, or other depiction of the proposed land use change or development proposal.

Information provided to Planning Department:

Alert the Planning Department once the date, location, and time of the Neighborhood Meeting are determined.

Deliver the following items to the Planning Department at least ten (10) calendar days prior to the 1st scheduled public meeting in electronic or hard copy format:

- [x] Adjacent Property Owner's List (aka "mailing list") *Should be submitted with original application packet*
- [x] Copy of the letter mailed *Should be submitted with original application packet*
- [x] Attendance Roster (aka "sign-in sheet") *Submit no later than 10 days prior to 1st public meeting date*
- [x] Neighborhood Meeting Summary Form with minutes (see below) *Submit no later than 10 days prior to the 1st public meeting date*

ADJACENT PROPERTY OWNERS LIST

Project Name: Clayton Pawville

The following are all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the property (including across street rights of way) subject to this request. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property. Please use a separate sheet if necessary

It is the responsibility of the applicant to correctly identify the current owner, based upon records in the Johnston County GIS Office, for all property owners of land within the required public notice radius.

PARCEL NUMBER	NAME	ADDRESS
165909-16-4543	Windham South LLC	501 Gateway Drive Clayton, NC 27520
165909-16-6378	Growing Child Associates LLC	1130 Capital Blvd. Wake Forest, NC 27587
165909-16-9695	McNutt Family Holdings LLC	303 Devonhall Lane Cary, NC 27518
165909-16-6801	Gateway Dental Center LLC	304 Tew Court Clayton, NC 27520
165909-16-1739	Abernathy Property Management	402 Lake Royale Louisberg, NC 27549

CAROLINA LAND DESIGN
CIVIL ENGINEERING ◦ PLANNING & CONSULTING

300 S . Main Street,Suite 212
Holly Springs, NC 27540

September 29th 2022
Dear Clayton Area Property Owner:
The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change or development proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting will be held to provide information to area residents about the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: ____10,12, 2022_____Meeting Time: __6:00 PM_____

Meeting Location: Google Meet online meet.Google.com/xnc-rjzu-iaa or join by phone +1 732-630-8027 Pin: 741559186

Any problems joining Meet please contact Daulton Stansfield at 9108001867

Type of Application: ____Zoning Change for Special Use Highway Business_____

Project/proposal property address: _Tew Court, Clayton at the Southwest portion of intersection of Tew Court and Gateway Drive___

Description of project/proposal: New pet kennel building and veterinary building with external pet runs and fencing. Project to have around 25 parking spaces with 2 driveways in the back._____

Upcoming public meetings for this application (Planning Board and/or Town Council):_____October 24, 2022_____

At a minimum, the following will be available for your inspection at the Neighborhood Meeting:
1. A copy of the project application.
2. A schedule of all upcoming public meetings for the application.
3. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
4. A map, drawing, or other depiction of the proposed land use change or development proposal.
A map is enclosed with this letter showing the location of the property that is subject to this application for land use change and/or development proposal.
If you have any questions prior to or after this meeting, you may contact us at ***760 791-2204.*** You may also contact the Planning Department at 919-553-5002.

CAROLINA LAND DESIGN
CIVIL ENGINEERING ° PLANNING & CONSULTING

300 S . Main Street,Suite 212
Holly Springs, NC 27540

Sincerely,

William Huyler
CLD
Cc: Town of Clayton Planning Department

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Clayton Pawville

Application: _____

Location/Date: _____

	NAME	ADDRESS
1		
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NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: _____

Date of Mailing: _____

Date of Meeting: _____ Time of Meeting: _____

Location of Meeting: _____

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Printed Name: _____ Signature: _____

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Clayton Pawville

Application:

Location/Date: Google Meet, 6 PM October, 12, 2022

	NAME	ADDRESS
1	Daulton Stansfield	
2		
3		
4		
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NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application:

Date of Mailing: 10/12/202

Date of Meeting: 10/12/2022 Time of Meeting: 6pm

Location of Meeting: Google meet hosted by Daulton Stansfield

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Printed Name: Daulton Stansfield Signature: Daulton Stansfield

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

The meeting started at 6 PM on Google Meet. I the invitation and address to the Google meet was sent out to each of the surrounding land/ business owners. At 6:45 I closed the meeting as no one had joined or reached out to me about joining.

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Clayton Pawville **Address or PIN #:** 165909-16-2635

AGENT/APPLICANT INFORMATION:

William Huyler
(Name - type, print clearly)

300 S. Main Street Ste 212
(Address)
Holly Springs NC 27540
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests***):

Special Use Permit
Site Plan

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

(Name - type, print clearly)

(Address)

(Owner's Signature)

(City, State, Zip)

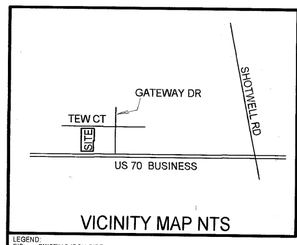
STATE OF _____
COUNTY OF _____

Sworn and subscribed before me_____, a Notary Public for the above State and County, this the_____ day of _____, 20_____.

SEAL

Notary Public

My Commission Expires: _____



VICINITY MAP NTS

THIS PLAT REPRESENTS A RECOMBINATION OF PREVIOUSLY RECORDED PARCELS OF LAND AND DOES NOT CONSTITUTE A SUBDIVISION AS SPECIFIED BY THE NORTH CAROLINA GENERAL STATUTES. APPROVAL FOR RECORDATION BY THE TOWN OF CLAYTON IS GRANTED BY CERTIFICATION BELOW.

12/28/2021 Ben H. Howell
DATE PLANNING DIRECTOR
TOWN OF CLAYTON NC

LEGEND:
EIP.....EXISTING IRON PIPE
IPS.....IRON PIPE SET
EIS.....EXISTING IRON STAKE
SIS.....IRON STAKE SET
R/W.....RIGHT OF WAY
PK.....PARKER KALON NAIL
ECM.....EXISTING CONC MONUMENT
CMS.....CONCRETE MONUMENT SET
F/H.....FIRE HYDRANT
S.....SEWER CLEAN-OUT
T.....TELEPHONE BOX
C.....CABLE BOX
P.....TRANSFORMER
W.....WATER METER
SSMH....SANITARY SEWER MANHOLE
N/F.....NOW OR FORMERLY
BC.....BACK OF CURB
C.....COMPUTED POINT
G.....GEODECTIC MONUMENT
RCP...REINFORCED CONCRETE PIPE
PARCEL BOUNDARY
RIGHT OF WAY
TIE LINE
FEATURE
STREAM (IE WATER COURSE)
NOT SURVEYED
POWER LINE
FORMER LINE
AREA BY COORDINATE METHOD
TITLE BY LAWYER
PROPERTY SUBJECT TO EASEMENT OF RECORD

I Jodie R. H. Gay REVIEW OFFICER OF JOHNSTON COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING

Jodie R H Gay
REVIEW OFFICER

3-10-2022
DATE

CALLS ALONG 20' PRIVATE EASEMENT

Id	Bearing	Distance
L1	N 56°22'39" W	10.02'
L2	N 56°22'39" W	10.02'
L3	S 30°27'31" W	47.53'
L4	S 30°27'31" W	49.29'
L5	S 26°41'33" W	55.68'
L6	S 26°41'33" W	56.00'
L7	S 28°36'36" W	82.73'
L8	S 49°25'48" W	13.94'
L9	S 49°25'48" W	17.73'
L10	S 28°36'36" W	78.72'
L11	N 61°03'20" W	16.67'

Id	Delta	Radius	Arc Length	Chord	Ch Bear
C1	00°15'26"	1042.00'	4.68'	4.68'	S 60°55'37" E
C2	02°32'43"	1042.00'	46.29'	46.29'	N 59°31'32" W

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON, WHICH IS LOCATED IN THE JURISDICTION OF THE TOWN OF CLAYTON AND THAT I HEREBY ADOPT THIS SUBDIVISION PLAN WITH MY FREE CONSENT, ESTABLISHED MINIMUM SETBACK LINES, AND DEDICATE ALL STREETS, ALLEYS, PARKS, AND OTHER SITES AND EASEMENTS TO PUBLIC OR PRIVATE USE AS NOTED. FUTHERMORE I DEDICATE ALL ELECTRICAL SYSTEMS AND ALL SEWER AND WATER LINES TO THE TOWN OF CLAYTON.

12/28/21 Store Master Funding LLC by [signature] owner's consent form
DATE OWNER

DATE OWNER

DATE OWNER

NORTH FROM NSRS 2011 NAD 83

TEW COURT 50' PUBLIC R/W
S 56°22'39" E 133.07'
Δ=03°16'28" R=209.99' L=12.00' LC=12.00' LCB=N 65°54'42" W
Δ=07°33'49" R=209.99' L=28.94' LC=28.92' LCB=N 60°19'33" W
24" RCP
18" RCP
MAG NAIL SET
AREA LIGHT
1/2" IPS FLUSH WITH GROUND
10' DRAINAGE AND UTILITY EASEMENT
WATER METER
CLEANOUT
FIRE HYDRANT
8" SANITARY SEWER LINE
6" WATER LINE
15" RCP
30 RCP
1/2" EIP WITH CAP 1" BELOW GROUND
CATCH BASIN
S 56°22'39" E 207.81'
16' DRAINAGE AND UTILITY EASEMENT
8" SANITARY SEWER LINE
CLEANOUT
1/2" EIP 1/4" BELOW GROUND
32.09'
S 72°42'47" E 68.96'
Δ=95°49'20" R=50.00' L=83.62' LC=74.21' LCB=S 08°27'59" E
1/2" EIP (BENT) NAIL AT BASE
AREA LIGHT
FIRE HYDRANT
MAG NAIL SET IN INTERSECTION OF GATEWAY DRIVE NSRS 2011 COORDINATES N=696711.12' E=2151760.84'

DEED LINE IN DB 2858 PG 893 PB 65 PG 419
PORTION NOT DEEDED TO ABERNATHY PROPERTY MGMT 0.06 acres 2433.56 sq ft
CURB AND GUTTER LINE IN PB 65 PG 451
N 28°36'40" E 406.97'
N 30°37'23" E 406.16'

ABERNATHY PROPERTY MGMT. DB 2858 PG 893 PB 65 PG 419 LOT 2 TP NO. 05G02002Y ZONING B-3SUD

Lot 3 AS RECORDED IN PB 65 PG 451 1.49 acres 64920.78 sq ft

Lot 3 TOTAL 1.55 acres 67354.33 sq ft TP NO. 05G02002Z REFERENCES: DB 2658 PG 57 PB 65 PG 188 PB 65 PG 419 PB 65 PG 451

NEW Lot 3 2.63 acres 114483.02 sq ft

FORMER LINE S 28°36'40" W 213.26'

JOMA GROUP LLC DB 3024 PG 755 TP NO. 05G02003 LOT 4B PB 65 PG 188 ZONING B-3SUD

Lot 4B 1.14 acres 49562.24 sq ft PB 65 PG 188

N 61°03'20" W 14.50'
TRANSFORMER
CURB AND GUTTER
MAG NAIL (EXISTING)
30' CROSS ACCESS EASEMENT 15' EACH SIDE OF LINE
N 61°03'20" W 166.99'
24' COMMON ACCESS EASEMENT 12' EACH SIDE OF LINE
S 28°36'40" W 183.50'
WINDHAM SOUTH LLC DB 2791 PG 616 LOT 4A PB 65 PG 188 TP NO. 05G02006E ZONING B-3SUD
CLEANOUT
20' PRIVATE UTILITY EASEMENT
18" RCP
CATCH BASIN
Δ=98°36'59" R=50.00' L=86.07' LC=75.83' LCB=S 39°08'38" W
N 59°07'25" W 19.10'
GATEWAY DRIVE 50' PUBLIC R/W
6" WATER LINE
1/2" EIP 4" BELOW GROUND
30' DUKE ENERGY EASEMENT
N 61°03'20" W 159.00'
18" WATER LINE (DUCTILE)
US HIGHWAY 70 BUSINESS 200' RIGHT OF WAY
1/2" EIP WITH CAP 1" BELOW GROUND
1/2" EIP 4" BELOW GROUND
WATER METERS

SITE DATA:
AREAS LOT 3 1.49 ACRES 64920.78 SF
LOT 4B 1.14 ACRES 49562.24 SF
OWNERS
LOT 3
STORE MASTER FUNDING LLC
8377 E. HARTFORD DR STE 100
SCOTTSDALE AZ 85255
LOT 4B
STORE MASTER FUNDING LLC STE 100
8377 E. HARTFORD DR STE 100
SCOTTSDALE AZ 85255
PROPERTY IS WITHIN CITY LIMITS
ZONING LOT 3 B-3 LOT 4B B-3 SUD
TAX PARCELS NO.
LOT 3 05G02002Z NC PIN 165909-16-2635
LOT 4B 05G02003 NC PIN 165909-16-5659
PROPERTY IS NOT IN A WATER SUPPLY WATERSHED
PROPERTY IS NOT IN AN ENVIROMENTALLY SENSATIVE AREA

PROPERTY SHOWN HEREON ____ IS X IS NOT LOCATED IN A FEMA DESIGNATED FLOOD ZONE

FLOOD HAZARD NO. 3720165900K

EFFECTIVE DATE: 06/20/18

9/10/21
DATE

I ALSEY J. GILBERT PLS CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (deed description recorded in db 2658 pg 57 & db 3024 pg 755 etc.) THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN pb 65 pg 188 pg 65 pg 419 THAT THE RATIO OF PRECISION IS 1:52122 THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 10th DAY OF SEPTEMBER AD 2021

ALSEY J. GILBERT PLS

REG. NO. SEE ALSO NEW DEED 6089 PG 24 AND 6089 PG 27

NORTH CAROLINA PROFESSIONAL SEAL L-3701 LAND SURVEYOR ALSEY J. GILBERT

_____ a. THAT THE SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.
_____ b. THAT THE SURVEY IS LOCATED IN A PORTION OF A COUNTY OR MUNICIPALITY THAT IS UNREGULATED AS TO AN ORDINANCE THAT REGULATES PARCELS OF LAND.
_____ c. ANY ONE OF THE FOLLOWING:
1. THAT THE SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND OR ONE OR OR MORE EXISTING EASEMENTS AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.
2. THAT THE SURVEY IS OF AN EXISTING FEATURE SUCH AS A BUILDING OR OTHER STRUCTURE, OR NATURAL FEATURE, SUCH AS A WATERCOURSE.
3. THAT THE SURVEY IS A CONTROL SURVEY.
AJG d. THAT THE SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT ORDERED SURVEY, OR OTHER EXEMPTION OR EXCEPTION TO THE DEFINITION OF SUBDIVISION.
_____ e. THAT THE INFORMATION AVAILABLE TO THE SURVEYOR IS SUCH THAT THE SURVEYOR IS UNABLE TO MAKE A DETERMINATION TO THE BEST OF THE SURVEYOR'S PROFESSIONAL ABILITY AS TO PROVISIONS IN (a) THROUGH (d) ABOVE.

9/10/2021
DATE SURVEYOR

AS FOR TIE
DATE: 09/05/2021
TYPE OF GPS: RTN (GPS)
DATUM EPOCH: NAD 83 NSRS 2011
POSITIONAL ACCURACY: 0.06'
GEOID MODEL: 12B
PUBLISH FIXED MODEL: (VRS)
COMBINED FACTOR: 0.99988664
US SURVEY FOOT

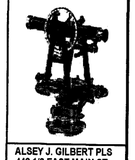
REVISED 12/28/2021 TO SHOW NEW PROPERTY OWNERS ADDRESS:

Filed in JOHNSTON COUNTY, NC
Filed 03/15/2022 10:26:51 AM
CRAIG OLIVE, Register of Deeds
Dep/Asst pwoodall
PLAT B: 95 P: 380

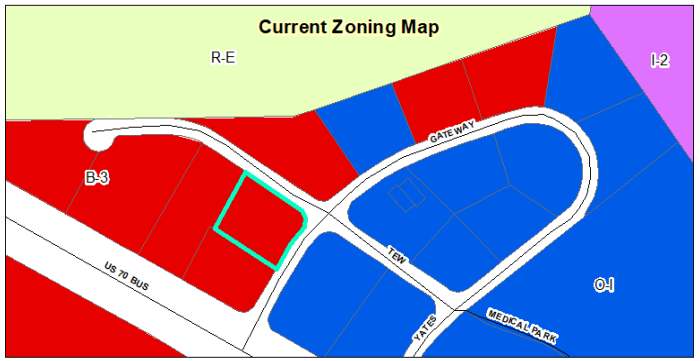
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LOT 3 B-3
LOT 4 B-3 SUD

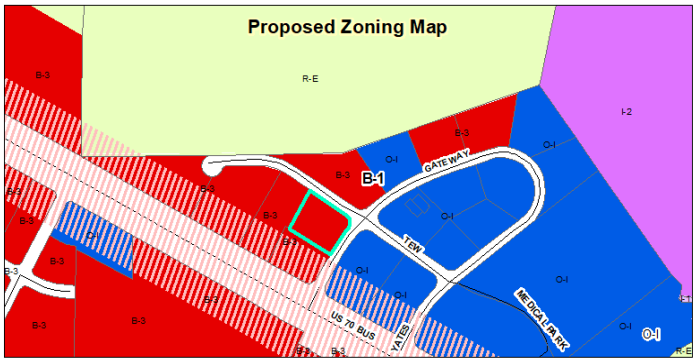
RECOMBINATION FOR:
STORE MASTER FUNDING XVII, LLC
LOT 3 GATEWAY MEDICAL PARK PB 65 PG 419 (PB 65 PG 451) AND LOT 4B PB 65 PG 188
CLAYTON TWP. JOHNSTON CO., NC
SCALE 1"=40' DATE 09/05/2021
LOT 3 TP NO. 05G02002Z NC PIN 165909-16-2635
LOT 4B TP NO. 05G02003 NC PIN 165909-16-5659

0 40 80 120

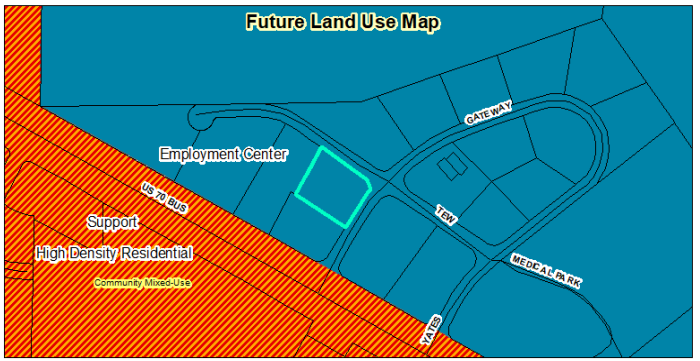


ALSEY J. GILBERT PLS
442 1/2 EAST MAIN ST.
CLAYTON NC 27520
PHONE 919/553-5104
FAX:919/553-3663









Request:
2022-170-RZ, to Rezone a parcel from Highway Business Special Use District (B-3 SUD) to Highway Business (B-3)

Applicant: Clayton Pawville
Property Owners: Store Master Funding XVII, LLC
Tag #: 05G02003

N

Staff Report Map
Prepared by: TOC Planning Department
October 6, 2022

Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

Document Path: O:\PLANNING\REZONING\Rezoning\2022\2022-170-RZ Clayton Pawville Rezoning\Staff Map

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

Conditional Zoning w/Master Plan Coversheet

Name of Project: Short Johnson Rd Rezoning **Date:** 5/2/2022

Applicant Name: Davis Park Leasing, LLC

The following checklist to be completed by applicant:

x [☑] Pre-Application Meeting on: 4/28/2022
x [☐] Review Fee
x [☑] Completed Application
n/a [☐] Owner's Consent Form
v [☐] Adjacent Property Owner's List
x [☐] Neighborhood Meeting Letter (one copy)
x [☐] 2 sets of stamped, addressed, empty envelopes for adjacent property owner notification
x [☐] Signed & sealed boundary survey
x [☐] Copy of signed & sealed boundary survey in PDF on USB

x [☐] Master Plan Set to include the following:
- Cover Sheet
- Survey
- Bubble Plan Outlining:
  a. Where and which uses or groups of uses will occur
  b. The proposed intensity/density of those uses
  c. General location of internal and external network of public right-of-way and public infrastructure
  d. All required elements for establishment of a zoning district including but not limited to dimensional standards, open space network, natural resource preservation, and landscaping or buffering

Reviewed by:_____

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

Conditional Zoning w/Master Plan Application

Conditional Rezoning w/Associated Site Plan Fee: $1000 + $5.00 per acre
Advertising Fee: $200.00

SITE INFORMATION

Name of Project: Short Johnson Road Rezoning

Acreage of Property: 21.99 Acres **Zoning District:** RE-Residential Estate

County Tag #: 05G03010 **NC Pin #:** 165801-15-7790

Address/Location: Short Johnson Rd., Clayton, NC

Existing Zoning District: RE **Proposed Zoning District:** R6-CZ

APPLICANT INFORMATION

Applicant: Davis Park Leasing, LLC

Mailing Address: 8000 Weston Parkway, Cary, NC 27513

Phone Number: (919) 678.4210 **Fax:** _____

Contact Person: Dean Penny

Email Address: dean.penny@craigdavisproperties.com

PROPERTY OWNER INFORAMTION

Name: Same as applicant above

Mailing Address: _____

Phone Number: _____ **Fax:** _____

Email Address: _____

OFFICE USE ONLY

Date Received: _____ Amount Paid: _____ File Number: _____

send comments to richard.brown@kimley-horn.com and austin.roland@kimley-horn.com also

EXPLANATION OF PROJECT

Please provide detailed information concerning all requests. Attach additional sheets if necessary.

See attached narrative statements

APPROVAL CRITERIA – REZONING

All applications for a Conditional Rezoning must address the following Approval Criteria:

1. Consistency with the adopted plans of the Town.

   See attached narrative statements

2. Suitability of the subject property for uses permitted by the current vs. the proposed conditional district.

   See attached narrative statements

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.

   See attached narrative statements

4. The capacity of adequate public facilities and services including schools, roads, recreation facilities, wastewater treatment, water supply facilities and stormwater drainage facilities is available for the proposed conditional district.

   See attached narrative statements

5. It has been determined that the legal purposes for which zoning exists are not violated.

   See attached narrative statements

6. It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare.

   See attached narrative statements

7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

See attached narrative statements

APPROVAL CRITERIA- MASTER PLAN

All associated Master Plans must address the following Approval Criteria:

1. Compliance with code section 155.203(L) and all other applicable requirements of this chapter, or analysis and justification if it deviates from the requirements of this chapter.

See master plan narrative.

The development proposed in the master plan is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties.

2. Consistency with the Clayton General Design guidelines

See master plan narrative.

3. Conformance of the proposal with the stated purpose of the requested conditional zoning district.

See master plan narrative.

4. Compatibility of the proposed development with the adjacent community.

See master plan narrative.

5. The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out.

See master plan narrative.

6. Compatible relationships between each component of the overall project.

See master plan narrative.

7. Self-sufficiency of each phase of the overall project.
See master plan narrative.

8. Documentation that the proposed infrastructure improvements accommodate the additional impacts caused by the development, or documentation to assure that the development, as proposed, will not overtax the existing public infrastructure systems.
See master plan narrative.

9. The fiscal impact of the proposal and the proposed financing of required improvements.
See master plan narrative.

10. The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community.
See master plan narrative.

11. The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.
See master plan narrative.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town Council of the Town of Clayton to amend the Zoning Ordinance and change the Official Zoning Map of the Town of Clayton as requested.. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

Richard Brown, PLA		5/2/2022
Print Name	***Signature of Applicant***	***Date***

NEIGHBORHOOD MEETING INFORMATION

Purpose:

The purpose of the Neighborhood Meeting is to inform the surrounding property owners of the nature of the proposed land use and/or development features, answer questions, respond to concerns, and solicit comments.

Meeting Date:

The neighborhood meeting must be held at least 10 days prior to the 1st scheduled public meeting date.

Meeting Time & Location:

The meeting must be held no earlier than 6:00 pm Monday through Friday, and must be held in a location generally accessible to residents within close proximity of the request. The meeting space must be able to comfortably accommodate everyone that receives an invitation.

Meeting Notice Mailing requirements:

a. The applicant must contact all adjacent property owners via first class mailing (see sample letter).

b. The mailing must include all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the subject property. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property.

c. The notice must be mailed at least ten (10) calendar days but not more than twenty-five (25) days prior to the date of the Neighborhood Meeting.

Information required to be provided at the Neighborhood Meeting:

At a minimum, the following materials must be present and discussed at a Neighborhood Meeting:

i. A copy of the project application.
ii. A schedule of all upcoming public meetings for the application.
iii. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
iv. A map, drawing, or other depiction of the proposed land use change or development proposal.

Information provided to Planning Department:

Alert the Planning Department once the date, location, and time of the Neighborhood Meeting are determined.

Deliver the following items to the Planning Department at least ten (10) calendar days prior to the 1st scheduled public meeting in electronic or hard copy format:

- ☐ Adjacent Property Owner's List (aka "mailing list") *Should be submitted with original application packet*
- ☐ Copy of the letter mailed *Should be submitted with original application packet*
- ☐ Attendance Roster (aka "sign-in sheet") *Submit no later than 10 days prior to 1st public meeting date*
- ☐ Neighborhood Meeting Summary Form with minutes (see below) *Submit 10 days prior to 1st public hearing*

January 2021

ADJACENT PROPERTY OWNERS LIST

Project Name: _____

The following are all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the property (including across street rights of way) subject to this request. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property. Please use a separate sheet if necessary

It is the responsibility of the applicant to correctly identify the current owner, based upon records in the Johnston County GIS Office, for all property owners of land within the required public notice radius.

PARCEL NUMBER	NAME	ADDRESS
See attached list of property owners.		

January 2021

SAMPLE NEIGHBORHOOD MEETING LETTER
(PLACE ON AGENT'S OR OWNER'S LETTERHEAD)

<Date>

Dear Clayton Area Property Owner:

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change or development proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting will be held to provide information to area residents about the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: _____ Meeting Time: _____

Meeting Location: _____

Type of Application: _____

Project/proposal property address: _____

Description of project/proposal: _____

_____

Upcoming public meetings for this application (Planning Board and/or Town Council): _____

At a minimum, the following will be available for your inspection at the Neighborhood Meeting:

1. A copy of the project application.
2. A schedule of all upcoming public meetings for the application.
3. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
4. A map, drawing, or other depiction of the proposed land use change or development proposal.

A map is enclosed with this letter showing the location of the property that is subject to this application for land use change and/or development proposal.

If you have any questions prior to or after this meeting, you may contact us at ***<Insert phone number of applicant>***. You may also contact the Town of Clayton Planning Department at 919-553-5002.

Sincerely,

<Applicant>

Cc: Town of Clayton Planning Department

January 2021

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: _____

Application: _____

Location/Date: _____

NAME	ADDRESS
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January 2021

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application:

Date of Mailing:

Date of Meeting: Time of Meeting:

Location of Meeting:

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Printed Name: Signature:

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

Conditional Zoning Master Plan Narrative

For

Short Johnson Road

Clayton, North Carolina

Prepared for:

The Town of Clayton, North Carolina

Submitted: May 2, 2022
1st Resubmittal: August 11, 2022
2nd Resubmittal: September 27, 2022
3rd Resubmittal: October 20, 2022

Applicant / Lead Consultant

KIMLEY-HORN
NC License #F-0102
421 Fayetteville St. Raleigh, North Carolina 27601
(919) 677-2000

Ownership:

DAVIS PARK LEASING, LLC
8000 Weston Parkway, Suite 360 Cary, NC 27513
(919) 414-1300

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P-00 Cover Sheet

P-01 Topographical and Boundary Survey

P-02 Master Land Use Plan

Table of Contents – Exhibits

Exhibit A – Vicinity Map

Exhibit B – Project Location Map

Exhibit C – List of Adjoining Property Owners

Section 1.0 Purpose & Intent

The applicant of this project, Davis Park Leasing, LLC, proposes to create a residential community of approximately 22 acres in western Clayton along each side of Short Johnson Road. The current zoning does not support the required density; therefore, a rezoning is needed to amend the current zoning map and district.

The proposed rezoning is being submitted as a conditional zoning request. Conditions associated with the request are intended to limit the land uses, provide an average minimum lot size and a maximum density.

A. Compatibility

The proposal is compatible with the adjacent land uses. It is designed to create a harmonious relationship with all surrounding uses. There are no adverse impacts to adjoining property owners.

B. Phasing

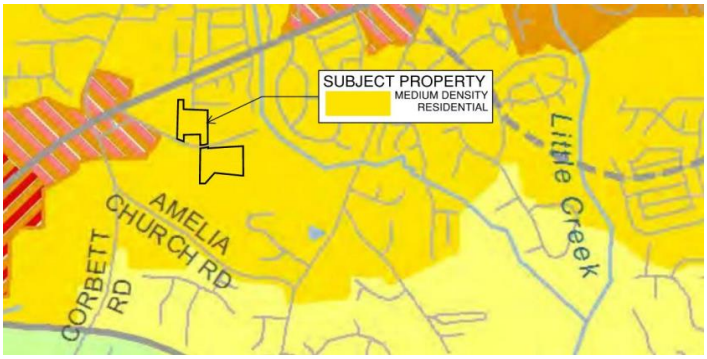
As depicted on the master plan, the project is to be completed in two distinct phases. Each phase will be self-sufficient with regards to infrastructure and amenities.

Section 2.0 Conditional Zoning District Approval Criteria

The Town Council may consider the following factors in its legislative decision.

Consistency:

This proposal is consistent with adopted plans of the Town of Clayton.
Land Use: The Town's Future Land Use Map (FLUM) designates the property as "Medium-Density Residential" which is intended to support the transition from suburban to a more urban residential character. The proposed plan provides single-family lots/dwelling units at a gross **density** of between 3-5 units per acre, thereby complying with the 2040 Future Land Use Map designation.



2040 Future Land Use Map

Suitability:

The property is suitable for the proposed land use, which is conducive to the location and supported by traffic and compatible with surrounding development patterns.
Context/Character: The proposed district will allow for a neighborhood(s) with housing units that are more urban in character and in closer proximity to commercial services and centers. The proposed land use provides a transition from the more suburban areas of the Town to more developed areas.

Balance of uses and specific demand:

This request seeks to improve the residential mix within this area of Town through the rezoning of the property from RE to CZ-R. This will provide compatibility with the Future Land Use Map and will also promote development at a density that is appropriate with the surrounded development patterns. The Town is seeking quality single family residential communities and the market indicates a strong demand for quality housing within this trade area.

Adequate public facilities:

Adequate public facilities, including schools, roads/streets, wastewater infrastructure, public water and stormwater infrastructure are either existing or will be improved to meet the demands of the proposed uses.

Schools - The subdivision is expected to be served by the Johnston County Public School System. Based on the JCPS School Finder, for the 2021-22 calendar year the assigned schools are West Clayton Elementary, Clayton Middle School, and Clayton High School. West Clayton Elementary and Clayton High School are listed on the current "2021-2022 Capped Schools" list.
Streets - The street network will consist of public streets in accordance with the Town of Clayton design criteria. The streets providing access and internal circulation to the northern and southern tracts will generally be as shown on Sheet P-02 – Master Plan.
Recreation – The community will have its own designated active and passive open space areas located throughout the neighborhood.
Stormwater - In accordance with the Town's requirements, the SCMs will be designed to treat and control the first inch of rainfall. Peak discharge will be controlled at or below pre-development levels for the 1-year, 2-year, 10-year, and 25-year storm events.
Water - An existing 8" Town of Clayton waterline is present at the end of the Trailwood Drive that will be extended into the site to serve the development with water. All fire hydrant and domestic flow and pressure requirements will be met with the extension of this 8" main into the proposed developed area. Additionally, the waterline will be extended along Short Johnson and tie into Town Waterline at the end of the Amelia Station Apartments waterline extension.

Wastewater - An existing 8" PVC sewer main is present at the end of Trailwood Drive with a manhole at the property line. The existing gravity sewer then drains east to the Walnut Creek pump station. The proposed development will drain by gravity sewer into the existing manhole at the end of Trailwood Drive. The portion of the of the property on the south side of Short Johnson Road will drain to this same gravity sewer line underneath Short Johnson as elevation allows for it. Any section of this property that is not able to drain by gravity to Trailwood will either be connected directly to the Walnut Creek pump station with its own gravity line or with the use of a new pump station.

A wastewater allocation request is submitted at the time of this application in which 10 points are accounted for as Residential – Energy Efficient Appliances. At least two elements from the following list of energy efficient appliances will be provided for all units: electric heat strips, low flow water fixtures, low flush toilets, energy efficient light fixtures, energy efficient HVAC units, or electric water heaters.

Legal purposes:

The proposed zoning will not result in violations to the legal provisions of the Town's Code. The Conditional Zoning through amendments to the UDC provide for the possibility of mutually agreeable zoning conditions through the rezoning process for this request.

Adverse Effects:

The proposed zoning does not adversely affect the adjoining properties and property owners. The zoning district allows for residential development that is compatible with the intent of the FLUM. The development will improve vehicular and pedestrian connectivity to and from neighboring properties. Storm water and sedimentation/erosion control measures will adhere to local and state regulations.

Material Benefit:

The proposed zoning will allow for a residential subdivision and associated connections and services. As such, the proposal does not result in one property owner or small group of property owners to the detriment of the general public.

Section 3.0 Master Plan Approval Criteria

A. Compliance with § 155.203(L)

Compliance with § 155.203(L) and all other applicable requirements of Chapter 155, or analysis and justification if it deviates from the requirement of Chapter 155.

The proposed master plan complies with the land uses, density of the CZ-R district. The project is made up of approximately 22 total acres of land. The plan proposes residential land uses and provides appropriate land use buffers where the development adjoins residential uses along the project boundaries.

B. Clayton General Design Guidelines

Consistency with the Clayton General Design Guidelines.

The proposed project is consistent with the access, parking, loading, landscaping, screening, buffering, signage, and lighting guidelines outlined in Sections 155.400 through 155.404.

C. Conformance with Purpose

Conformance of the proposal with the stated purpose of the requested conditional zoning district.

The district's intent is to allow for a mix of housing types, including buffering and open space amenities. The development will provide vehicular and pedestrian connectivity through the existing facilities and a proposed transportation and pedestrian network to serve the community.

D. Compatibility with Community

Compatibility of the proposed development with the adjacent community.

The proposed development is at a density consistent with the closest homes located in the Walnut Creek neighborhood to the north. These homes are in the Residential 10 (R-10) zoning district. The Master Plan will also remain under 5 units per acre. Additionally, the RE district, as defined in the UDC at time of site plan approval, permits cluster subdivisions with reduced lot sizes and more open space, similar to this proposal.

E. Quality

The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out.

The quality of this project will be based on the preservation of environmentally sensitive areas and appropriate perimeter land use buffers. Quality homes,
roads, and open space will be provided that will be organized in a way to create a quality community.

F. Compatible Relationships

Compatible relationships between each component of the overall project.

The Short Johnson master plan has been designed to promote compatibility through connectivity and circulation, amenities, the residences, and the community will be organized around sensitive natural features. Open spaces, storm water ponds and RCAs have been designed in a way to optimize compatibility internal and external to the development.

G. Self-sufficiency

Self-sufficiency of each phase of the overall project.

The project intends to conform to applicable requirements of the UDC at time of site plan approval and/or those defined within this master plan. Infrastructure elements including public water and wastewater service, stormwater infrastructure and open space will be designed in such a way that the overall project and each phase will be compliant with the standards.

H. Fiscal Impact

The fiscal impact of the proposal and the proposed financing of required improvements.

Financing for the development will be provided by the developer. By approval of this rezoning, the Town will be benefit from additional tax base and development of this property in a manner consistent with the Comprehensive Plan.

I. Pedestrian and Bicycle Links

The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community.

This project will create connections to the existing Short Johnson Road and will provide public sidewalk along the existing frontage of the property. All proposed streets will have pedestrian sidewalks and accessibility in accordance with Town standards.

J. Ecological Sensitivity

The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

Except where street connectivity is required for access, all riparian buffers, streams, and wetlands will be protected as part of this development plan. There is one proposed stream crossing on the southern portion of the property, which will be designed to minimize impact to the stream.

SECTION 4.0 General Project Information

EXHIBIT A - VICINITY MAP



PROJECT LOCATION MAP



PROJECT DATA:

A. Project Name: Short Johnson Road

B. Applicant / Land Planner: Kimley-Horn and Associates
421 Fayetteville St. Raleigh, NC 27601
Contact: Richard Brown, PLA (919) 653-2976
richard.brown@kimley-horn.com

D. Zoning: Existing: RE – Residential Estate
Proposed: CZ-R

E. Land Use: Existing: Vacant
Proposed: Single Family Residential

F. Total Development Area: **22 acres**

a. Property Owner / Developer: Davis Park Leasing, LLC c/o Craig Davis Properties, Inc.
8000 Weston Parkway, Suite 360
Cary, NC 27513
Contact: Dean Penny

G. Applicant/Authorized Agent: Kimley-Horn
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
Contact: Richard Brown, PLA

Section 5.0 Master plan Summary

The project is located along the north and south of Short Johnson Road with property area totaling approximately 22 acres. The master plan is this single-family subdivision ranging between 3-5 dwelling units per acre and proposes a range of lot sizes between 4,000 and 10,000 sf.

The Master plan is structured to provide form and framework in the plan but flexibility for developers to bring creativity in response to market conditions and the Town's vision for development and growth.

The development proposed in the master plan is generally consistent with the guidance found within the Town's Comprehensive Plan.

Section 6.0 Land Use

The district is intended to provide a cohesive mix of residential and service uses within a master planned development with appropriate perimeter buffering and open space. The primary land uses within this district are anticipated to be single family detached, although the zoning allows for flexibility to respond to market demands and provide for a physically and functionally integrated community.

This application provides for the following uses to be permitted by right within the district, as provided for in the Master plan Text. The permitted uses for the project, in its entirety, shall be as follows:

6.1 Permitted Uses

The following Standard Residential Uses shall be allowed as a permitted use within the CZ-R district:

A) Single Family detached (Front / Alley / Rear Loaded)
B) Townhome
C) Zero lot line house
D) Assisted Living
E) Multi-Family/Apartment/Cottage/Duplex

6.2 Accessory Uses

The following Uses shall be allowed as accessory uses within the CZ-R district, subject to specific use regulations within the Town's current Unified Development Code:

A) - Accessory Dwelling Unit
B) - Park

END OF PERMITTED USES

6.3 Non-Permitted Uses

The following uses will be specifically prohibited on the property by the master plan:

A) Boarding house
B) Bed & Breakfast
C) School/Academy
D) Government Service
E) Church/Place of Worship
F) Cemetery
G) Plant Nursery/Agricultural Sales
H) Private Stables/Agricultural Livestock
I) Golf course
J) Telecommunications Facility
K) Renewable Energy Facility
L) Manufactured Home/Manufactured Home Park
M) Group Care Home (7 to 12 Residents)
N) Day Care Facility
O) Funeral Home
P) Kennel

END OF NON-PERMITTED USES

Section 7.0 Land Use Intensity and Design Controls

The proposed development is single-family residential, and the maximum density between three and five dwelling units per acre. Lots within the district boundary may be within the range of 4,000 - 10,000 square feet in size.

7.1 Residential Land Use Controls

I. Maximum Residential Units/Lots

A. Residential Uses = up to 98 lots/dwelling units

Note 1: Single Family attached, and detached lots/units may be interchangeable.

Note 2: Residential uses may be transferred between the northern and southern tracts. However, in no case shall the overall intensity (total dwelling units) of residential development exceed the maximum listed herein.

B. Allowable Residential Use Types:

Residential uses may include those proposed in Section 6.1 - Permitted Uses (above).

Table 1 – Trip Generation Comparison

Table 1 ITE Trip Generation Comparison (Vehicles)							
LUC	Land Use	Intensity	Daily	AM Peak Hour		PM Peak Hour	
				In	Out	In	Out
210	Single Family Detached Housing	98 d.u.	990	19	54	62	36

As shown in Table 1, the assumed density of 98 single-family detached homes would be expected to generate approximately 990 trips on a typical weekday, with 73 trips during the AM peak hour and 98 trips during the PM peak hour.

7.2 Residential Design Controls

Table 2 - Intensity and Dimensional Standards shall apply to all uses. If subsequent revisions to the UDC after approval of the master plan result in less restrictive standards, those standards may be then applied accordingly.

Table 2 – Intensity and Dimensional standards

Land Use	Access	Lot Size Range	Min. Lot Width	Front Setback*	Side Interior Setback*	Side Street	Rear Setback*	Max. Impervious Coverage %	Max. Lot Coverage % **	Max Height	Max Density /ac
Single Family Detached	Front Loaded	4,000 SF – 10,000 SF	35’	25’	6’	10’	15’	70%	60%	35’	5
Single Family / Zero Lot Line	Front Loaded	4,000 SF – 10,000 SF	35’	25’	0’	10’	15’	70%	60%	35’	5
Single Family Attached	Alley / Rear Loaded	3,000 SF – 10,000 SF	30’	10’	0’	10’	25’	70%	60%	45’	5
	Front Loaded	3,000 SF – 10,000 SF	24’	25’	0’	10’	10’	70%	60%	45’	5

** Internal Setbacks: there shall be no minimum front or side street setback to internal private alleys/access easements.*

***The maximum area of the lot that is permitted to be covered by buildings. This may include principal and accessory building structures.*

7.3 Landscaping, Buffering and Screening:

The proposed landscaping is an important and unifying element throughout the district. The following outlines basic elements and areas of special consideration. Where landscaping is not specified herein, development shall comply with the required Landscaping Regulations as defined by the UDC in effect at the time of approval of this rezoning application.

Perimeter Landscape Buffers: To screen adjacent zoning districts outside the boundaries of the conditional zoning district proposed, the developer will provide a

minimum twenty (20') foot wide Class C perimeter buffer along the property line adjacent to neighboring residential uses. This buffer will consist of 2 canopy trees, 1 under story tree, and 12 shrubs per 100'. Additionally, an opaque fence with a minimum height of 6' from finished grade will be required to run the length of constructed perimeter buffers. Where stream buffers and natural areas adjoin neighboring residential uses, then existing vegetation will be used to satisfy buffer requirements. No wall, opaque fence, evergreen hedge, or berm will be required for areas utilizing existing vegetation or stream buffer area for buffer credit.

These specific planting requirements for buffers are included in the master plan as provided for in the UDC, Landscaping, Buffering and Screening and as identified on the Master Plan P-02.

Street Protective Yards: To enhance the public street frontage, the developer will provide a minimum twenty (20') foot wide street yard along the Short Johnson Road frontage. Street yard plantings for this frontage shall be installed at an average rate of 1 per 25' for street trees.

Street protective yards along new neighborhood public streets will be 10-15' wide with an average of 1 street tree per 40'.

Vehicular Use Areas: Any vehicular use areas internal to the development (mail kiosk, visitor parking, etc.) will comply with the interior landscaping and vehicular use area landscaping requirements as applicable under the UDC in effect at this time of this master plan approval.

Section 8.0 Parking and Loading Requirements

Except where otherwise noted and approved by Town Council, Parking
The Development shall comply with the Town's UDC in effect at the time of approval of this rezoning application.

Section 9.0 Architectural Standards

Residential Uses
Proposed Residential Materials

Materials shall include, but not be limited to, the following:
A. Brick or simulant;
B. Stone or simulant;
C. Stucco (to be used as trim or accent and will not be used as a primary material);
D. Premium Vinyl *(minimum thickness of 0.042")*
E. Wood siding, cement fiber siding (Hardi-plank), and Wood composite (Smart side).

Masonry materials as listed above shall apply to a minimum 25% of the primary street facing façade for new construction. Other materials (with the exception of vinyl) may be used for the remaining 75% of front facades. Other materials may be used for the sides and rear facing building elevations. At the time of Site Plan submittal, preliminary elevations will be submitted for review and approval. At the time of Building Permit application, a materials board shall be submitted to the Town of Clayton for administrative review and approval.

Section 10.0 Signage:

All signage within the Development shall comply with the signage requirements as set forth in Section155.403, Signs, of the Town of Clayton Unified Development Code. Individual Signage Plans shall be submitted as part of the individual plan approvals for the various development tracts within The Project.

Section 11.0 Stormwater Management:

Most of the site area is vacant and currently drains to a nearby stream outfall and drainage channels internal to the site (P-01 Existing Conditions). The proposed development will require storm water management measures for quality and quantity treatment in accordance with the Town of Clayton Stormwater Design Manual. A network of subsurface reinforced concrete pipes will convey storm water flows from impervious areas to proposed Stormwater Control Measures (SCMs). Locations for the SCMs are identified on the Master Plan - P-02. All stormwater management will be required to meet all North Carolina Department of Environmental Quality (NCDEQ) and Town of Clayton design requirements at time of Subdivision infrastructure or Site plan submittal.

Section 12.0 Natural Resource & Environmental Protection

I. Watershed Information:

The subject property is located within the Neuse River Watershed District.

II. FEMA Floodplain

There is no FEMA floodplain located on the subject property per FIRM Map 3720164800K, Panel: 1648, effective June 20, 2018.

The Development shall comply with the applicable regulatory standards of the Town's UDC as amended related to natural resource and environmental protection and the provisions of the masterplan.

III. Environmental Findings:

Kimley-Horn conducted an environmental wetland and buffer delineation report for the subject property. The preliminary findings of this report have preliminarily mapped

wetlands and any jurisdictional features present on the subject property. Streams and wetland and jurisdictional determinations have been preliminarily mapped by Kimley-Horn and Associates. Applicability and status of these features will be confirmed and reviewed by NCDENR and the Army Corps of Engineers prior to development.

IV. Resource Conservation Areas:
Per UDC Section 155.500 Resource Conservation Areas, these environmental areas may not be occupied by buildings or other impervious surface areas associated with development impacts exceeding 5% of each Resource Conservation Area.

The proposed master plan (sheet P-02) will require limited impacts to these RCAs. Proposed impacts shall be limited to public streets and pedestrian walkways (sidewalks, multi-use paths, etc) such that wetland disturbance does not exceed ½ acre as required by the US Army Corps of Engineers. These impacts are necessary in order to serve the public benefit of the overall development as well as surrounding land areas which will be offered public access through the property. However, in no case shall private buildings, structures, parking, or other impervious surfaces impact greater than 5% of any resource conservation area.

Section 13.0 Public Facilities:

All public facilities improvements shall be designed and installed in compliance with the Town of Clayton Ordinance, Chapters 50-52, at the time of approval of site plan. Each of the major infrastructure elements is described below:

13.1 Water Service
Public Water services exist within Trailwood Drive right of way. Water services are anticipated to be connected to the existing main within Trailwood Drive and looped through the property via extension of a public main. It is anticipated that new water lines will be stubbed to the adjoining property lines and to Short Johnson Rd., via the public street network. The size and specification of public water infrastructure shall be determined during final design and will conform to Town of Clayton Public Works and Utilities Department requirements. The waterline will be extended parallel to Short Johnson Road and tie into the existing waterline at Amelia Station Apartments.

13.2 Sanitary Sewer Service
There is an existing 8” gravity main within Trailwood Drive which drains to the existing Walnut Creek pump station to the northeast of the subject property, operated by the Town of Clayton. This development will tie into an existing sanitary sewer manhole at the end of Trailwood Drive in order to drain the subject parcel by gravity. The size and specification of public sewer infrastructure shall be determined during final design and will conform to Town of Clayton Public Works and Utilities Department requirements.

The project is anticipated to be developed in two phases (refer to exhibit P-02). Based on recent discussions with the Town of Clayton engineering department the Walnut

Creek pump station will need to be studied to determine existing capacity of this pump station and if pump station improvements are required then additional sewer allocation points will have to be met. See breakdown below for sewer allocation point breakdown.

If pump station improvements are required to the existing station, then a negative 10 points will be applied to the wastewater allocation request. In order to offset the negative 10 points, the developer will commit to the installation of two types of energy efficient appliances throughout the development. The remaining wastewater allocation points are met with the following breakdown:

Development Type: Residential Subdivision	5 points
Tax Status: Residential	5 points
Community Benefit Bonus:	
Town Electric Customer	20 points
Masonry Elements	10 points
Sustainable/High Energy Efficient Appliances	10 points
Pump Station Improvements	-10 points
Total	50 points

13.3 Gas & Electric Service

In order to receive 20 Community Benefit Bonus points this development will utilize Town of Clayton electric service. There is an existing overhead electrical line that crosses the property along the north side of Short Johnson Road which is assumed to be Town of Clayton owned electrical line. It is anticipated that the major power distribution on the site perimeter will be standard overhead lines along public streets and internal services will be installed underground along the proposed public roadway infrastructure.

13.4 Streets/Roads:

The Development will require improvements to develop a new internal roadway network and external points of access. It has not been determined that a Transportation Impact Analysis will be required at this time. Roadway improvements required to support the subdivision will include public streets. The street network and designations are shown on P-02. The street network is conceptual and subject to adjustment pending final design and engineering. Public right of way dedication will be required for proposed internal public streets as shown on the Masterplan.

Access: A total of two (3) access points are identified from Short Johnson Road. See P-02 – Master Plan. Final engineering plans for driveway access will be developed in conjunction with individual site plan applications.

Future Cross Access: Cross access locations shall be provided as shown on the Master Plan (P-02). An offer of cross access to these adjoining parcels from the internal street network will be a condition of the zoning. This will occur via an executed access

easement to a common property line be made in a timely manner in coordination with the proposed action by NCDOT or the adjoining property owner.

Section 14.0 Phasing:

The project is intended to be completed in two distinct phases as indicated on the master plan (P-02). Each phase will be self-sufficient with regards to infrastructure and amenities.

END OF MASTER PLAN TEXT

List of Proposed Conditions:

Following are a list of conditions offered in conjunction with the CZ-R district:

1) The Maximum number of number of lots/units within the district boundary shall be shall not exceed 98.

2) A 20' wide Type 'C' buffer will be provided in all locations where a residential lot abuts an adjacent residential use outside of the district boundary.

3) The following uses will be specifically prohibited on the property by the master plan
   - Boarding house
   - Bed & Breakfast
   - School/Academy
   - Government Service
   - Church/Place of Worship
   - Cemetery
   - Plant Nursery/Agricultural Sales
   - Private Stables/Agricultural Livestock
   - Golf course
   - Telecommunications Facility
   - Renewable Energy Facility
   - Manufactured Home/Manufactured Home Park
   - Group Care Home (7 to 12 Residents)
   - Day Care Facility
   - Funeral Home
   - Kennel

4) Masonry materials, as listed in the Conditional Zoning Master Plan Narrative, shall apply to a minimum of 25% of the primary street facing façade for new construction. Other non-masonry materials may be used for side and rear facing building elevations.

5) An analysis of the Walnut Creek Pump Station will be performed in conjunction with a subdivision/development plan application for property. Any improvements or upgrades deemed to be required by the pump station capacity study will be the responsibility of the developer and will be required prior to recordation of the final plat.

6) The developer will be responsible for the extension of the existing 8" water line within Short Johnson Rd. The waterline will be extended from end of the existing line, across the subject parcel frontage within Short Johnson right-of-way, and as needed to serve the new development for the subject property.

Exhibit C - Property Ownership / Adjoiners

DAVIS PARK LEASING, LLC
8000 WESTON PKWY STE 360
CARY, NC 27513-2123

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

RAVENS, KEVIN PAUL
104 WOOD BEND CT
CLAYTON, NC 27520-7251

JOHNSON, KIRBY ROY
JOHNSON, LORI H
12232 US 70 BUS HWY W
CLAYTON, NC 27520-0000

RONALD FITZGERALD JOINT REVOCALBE TRUST
LINDA FITZGERALD JOINT REVOCALBE TRUST
210 TRAILWOOD DR
CLAYTON, NC 27520-7263

TAYLOR, OLIVA
TAYLOR, JENNIFER G
4279 MARIVAL WAY
MASON, OH 45040-2866

MALIK, TUBAA
120 WOOD BEND CT
CLAYTON, NC 27520-7251

YOUNG, MARY J
112 WOODBEND CT
CLAYTON, NC 27520-7251

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

ROSE, JACQUELINE A
116 WOOD BEND CT
CLAYTON, NC 27520-0000

BARLEY, KIMERLY F.
3516 ALTHORP DR
RALEIGH, NC 27616-8479

MOORE, JOHN D
MOORE, DEBORAH M
300 TRAILWOOD DRIVE
CLAYTON, NC 27520-0000

HOLDER, GLENN
HOLDER, GLORIA
214 TRAILWOOD DRIVE
CLAYTON, NC 27520-0000

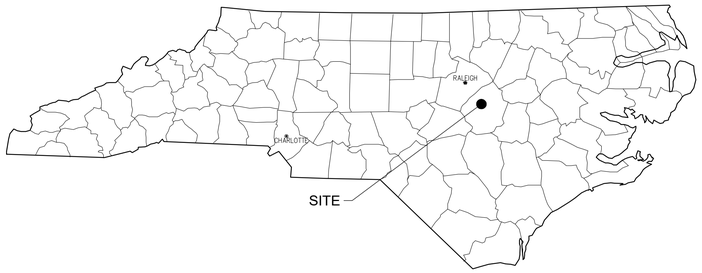
YOUNG MEN'S CHRISTIAN ASSOCIATION OF THE TRIANGLE AREA, INC.
801 CORPORATE CENTER DR STE 200
RALEIGH, NC 27607-5243

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

BLACKMON, RICKY E
BLACKMON, PAMELA JEAN
220 SHORT JOHNSON RD
CLAYTON, NC 27520-0000

WEST CLAYTON CHURCH OF GOD
PO BOX 777
CLAYTON, NC 27528

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.



SHORT JOHNSON RD

MASTER PLAN

CLAYTON, JOHNSTON COUNTY, NC, 27577

SHEET INDEX	
SHEET NUMBER	**SHEET TITLE**
P-00	COVER SHEET
P-01	BOUNDARY SURVEY
P-02	MASTERPLAN

SITE AND SURROUNDING ZONING

GENERAL NOTES:
1. CONSTRUCTION DRAWING APPROVAL IS REQUIRED BEFORE CONSTRUCTION ON THIS PROJECT MAY BEGIN. DEVELOPMENT FEES ARE DUE BEFORE CONSTRUCTION DRAWING APPROVAL.
2. PLAN IS SUBJECT TO REVISIONS DURING CONSTRUCTION DRAWING APPROVAL PROCESS.
3. ALL CONSTRUCTION SHALL CONFORM TO TOWN OF CLAYTON ENGINEERING DESIGN AND CONSTRUCTION STANDARDS.

GOVERNING AGENCY CONTACTS:

PLANNING DEPARTMENT:
111 E Second Street
Clayton, NC 27520
919-553-5002

APPLICANT DESIGN TEAM:

PROPERTY OWNER
DAVIS PARK LEASING, LLC.
8000 WESTON PKWY, STE 360
CARY, NC 27513-2123

SURVEYOR
BALLENTINE ASSOCAITES, P.A.
221 PROVIDENCE ROAD
CHAPEL HILL, NC, 27514
919-929-0481

LANDSCAPE ARCHITECT
LAND USE PLANNER
CIVIL ENGINEER
TRAFFIC ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601
(919) 677-2000

NOTE:
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH NCDEQ, NCDOT, AND TOWN OF CLAYTON STANDARDS AND SPECIFICATIONS APPLICABLE. IN THE EVENT OF A CONFLICT THE MORE STRINGENT STANDARD SHALL GOVERN.

No.	REVISIONS	DATE	BY

Kimley»Horn
421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
PHONE: 919-677-2000 FAX: 919-677-2050
WWW.KIMLEY-HORN.COM
NC FIRM #F-0102

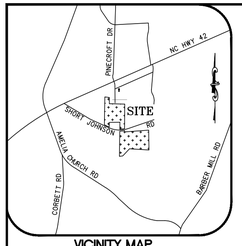
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT
PRELIMINARY - NOT FOR CONSTRUCTION
KEVIN L. BROWN

KHA PROJECT 014441000
DATE 05/02/2022
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

COVER SHEET

SHORT JOHNSON RD
PREPARED FOR
CONDITIONAL REZONING
REVIEW
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-00



VICINITY MAP
NOT TO SCALE.

LEGEND

- EXISTING IRON PIPE
- EXISTING PK NAIL/RR SPIKE
- CALCULATED PROPERTY CORNER
- SET PROPERTY CORNER
- TEMPORARY BENCHMARK
- UTILITY POLE
- LIGHT POLE
- ELECTRIC METER
- GUY WIRE
- TELEPHONE PEDESTAL
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- WELL
- SIGN
- MAILBOX
- SUBJECT PROPERTY LINE
- UNSURVEYED PROPERTY LINE
- RIGHT OF WAY
- FENCELINE
- OVERHEAD UTILITY LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND CABLE LINE
- UNDERGROUND WATER LINE
- TREE LINE
- CREEK BANK
- STREAM BUFFER

SCHEDULE B – PART II (EXCEPTIONS)

Investors Title Insurance Company
Commitment Number: 2020100886CA
Commitment Date: February 14, 2022 @ 03:49 PM

1. Taxes for the year 2022, and subsequent years, not yet due and payable. –[NOT A SURVEY MATTER]
2. Matters shown on plat recorded in Plat Book 9 at Page 97. –[AFFECTS SUBJECT PROPERTY, OLD LOCATION OF 30' FARM ROAD SHOWN, NO PHYSICAL EVIDENCE OF OLD ROAD REMAINS]
3. Easement(s) to Carolina Power & Light Company recorded in Book 562 at Page 360. –[AFFECTS SUBJECT PROPERTY, EASEMENT IS BLANKET IN NATURE]
4. Right of Way Grant to Carolina Power & Light Company recorded in Book 1387 at Page 106. –[AFFECTS SUBJECT PROPERTY, EASEMENT IS BLANKET IN NATURE]
5. Right of Way Agreement to North Carolina Department of Transportation recorded in Book 1728 at Page 200. –[AFFECTS SUBJECT PROPERTY, SHOWN ON SURVEY]
6. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term 'encroachment' includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land. Paragraph 2 (c) of the Covered Risks is hereby deleted. –[MATTERS AFFECTING SUBJECT PROPERTY, SHOWN ON SURVEY]
7. Any inaccuracy in the area, square footage, or acreage of Land described in Schedule A or attached plat, if any. The Company does not insure the area, square footage, or acreage of the Land. –[AREA CALCULATED BY COORDINATE METHOD]
8. Rights or claims of parties in possession not shown by the public records. –[NOT A SURVEY MATTER]

PROPERTY DESCRIPTION (FROM TITLE)

Beginning at a point in the Pulley Road and corner of Tract #1 and runs with the line of Tract #1, N. 5 deg. E 862 feet to a stake in line with Willie Aikins; thence with said Aikins' line S 82 deg. E 147.5 feet to a stake in line with Smith; thence with his line S 5 deg. W 182 feet to a stake, his corner; thence with Smith's line S 87 deg. E 480 feet to a stake and corner with S.B. Barbour; thence with said Barbour's line S 4 deg. 30 min. W 870 feet to a stake, his corner; thence with said Barbour's line S 87 deg. E 750 feet to a stake, his corner; thence with said Barbour's line S 4 deg 30 min. W 600 feet to a stake and corner with Tract #3; thence with the lines of Tract #3 N 80 deg. W 606 feet; thence S 47 deg. W 300 feet; thence N 85 deg. W 105 feet; thence N 5 deg. E 1035 feet; thence N 87 deg. W 330 feet; thence S 5 deg. W 160 feet to a point in the Pulley Road; thence with said road, N 60 deg. 45 min. W 161 feet to the point of the beginning, and containing 23 acres, more or less. It is the intentions of the surveyor and parties of both parts that the cultivated land is equally divided in this division. See map recorded in Plat Book 9, page 97 in the office of the Register of Deeds, Smithfield, Johnston County, North Carolina.

SURVEYORS CERTIFICATIONS

To: Davis Park Leasing LLC, a North Carolina limited liability company; and Investors Title Insurance Company:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 5, 7(a), 7(b)(1), 8, 9, 11(b), 13, 16, 17, 18 and 19 of Table A thereof. The field work was completed on February 17, 2022.

Date of Plat or Map: March 8, 2022

_____
DAVID E. BOWERS, P.L.S. L–4966

I, DAVID E. BOWERS, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION FROM DEED DESCRIPTION RECORDED IN BOOK 6185 AND PAGE 10; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AND DRAWN FROM INFORMATION FOUND IN BOOK AND PAGE (AS SHOWN); THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; AND THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47–30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER, AND SEAL THIS

8th DAY OF MARCH, A.D. 2022.

_____
DAVID E. BOWERS PLS L–4966

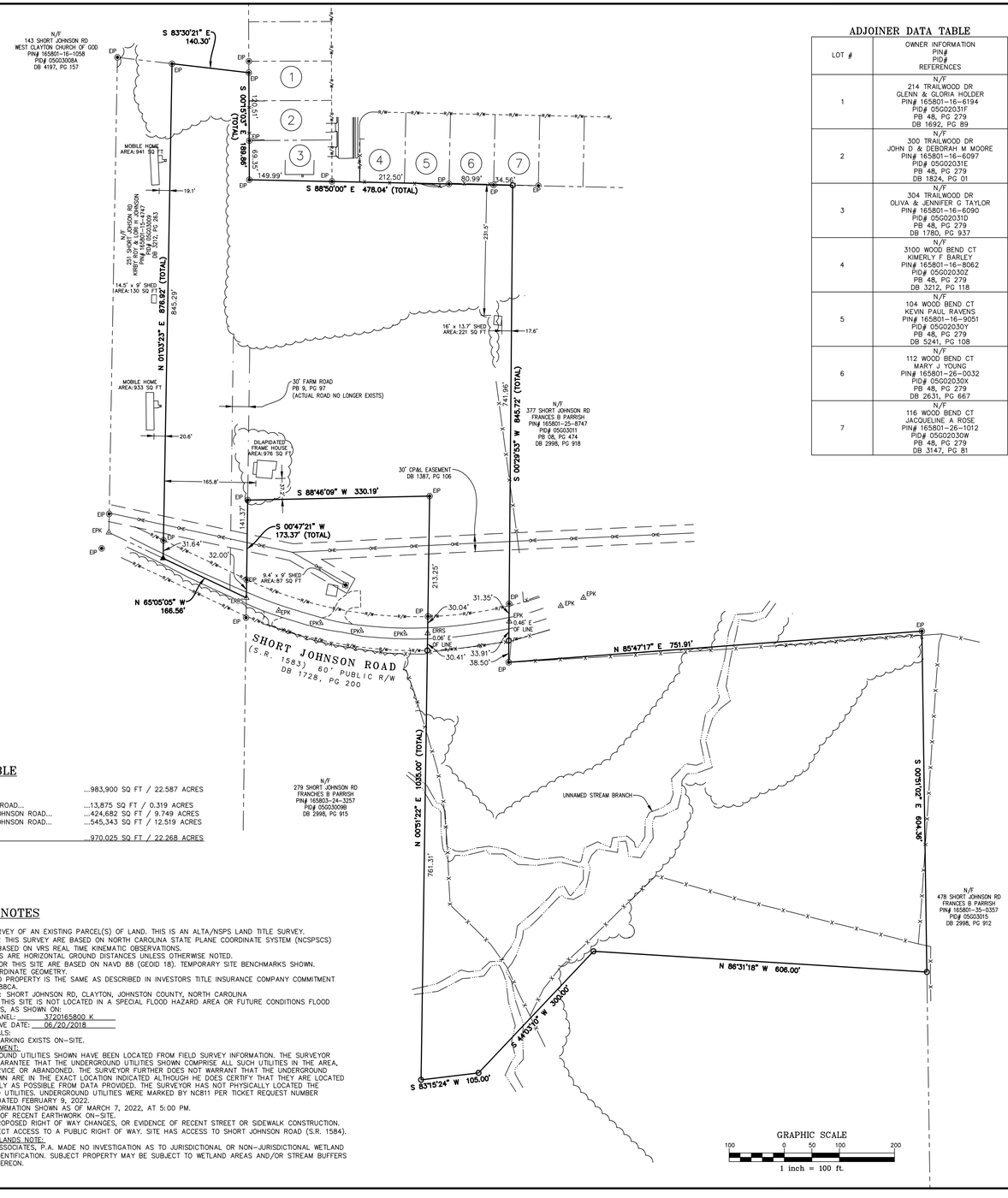
PRELIMINARY PLAT
NOT FOR RECORDATION
CONVEYANCES OR SALES

ZONING NOTES

ZONING REPORT TO BE PROVIDED TO SURVEYOR.

REFERENCES

DB 562, PG 360	DB 1387, PG 106	DB 1692, PG 89
DB 1728, PG 200	DB 1780, PG 937	DB 1824, PG 1
DB 2631, PG 667	DB 2998, PG 912	DB 2998, PG 915
DB 2998, PG 918	DB 3147, PG 81	DB 3212, PG 118
DB 3212, PG 263	DB 4197, PG 157	DB 6185, PG 10
PB 9, PG 97	PB 38, PG 425	PB 48, PG 279



SITE DATA TABLE

PARCEL GROSS AREA...	...983,900 SQ FT / 22.587 ACRES
AREA IN SHORT JOHNSON ROAD...	...13,875 SQ FT / 0.319 ACRES
AREA NORTH OF SHORT JOHNSON ROAD...	...424,682 SQ FT / 9.749 ACRES
AREA SOUTH OF SHORT JOHNSON ROAD...	...545,343 SQ FT / 12.519 ACRES
PARCEL NET AREA...	...970,025 SQ FT / 22.268 ACRES

GENERAL NOTES

1. THIS IS A SURVEY OF AN EXISTING PARCEL(S) OF LAND. THIS IS AN ALTA/NSPS LAND TITLE SURVEY.
2. BEARINGS FOR THIS SURVEY ARE BASED ON NORTH CAROLINA STATE PLANE COORDINATE SYSTEM (NCSPSCS) NAD83/2011 BASED ON VRS REAL TIME KINEMATIC OBSERVATIONS.
3. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
4. ELEVATIONS FOR THIS SITE ARE BASED ON NAVD 88 (GEOID 18). TEMPORARY SITE BENCHMARKS SHOWN.
5. AREA BY COORDINATE GEOMETRY.
6. THE SURVEYED PROPERTY IS THE SAME AS DESCRIBED IN INVESTORS TITLE INSURANCE COMPANY COMMITMENT NO.: 2020100886CA.
7. SITE ADDRESS: SHORT JOHNSON RD, CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA
8. FLOOD NOTE: THIS SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA OR FUTURE CONDITIONS FLOOD HAZARD AREAS, AS SHOWN ON:
   FIRM PANEL: 3720165800 K
   EFFECTIVE DATE: 06/20/2018
9. PARKING TOTALS:
   NO MARKED PARKING EXISTS ON–SITE.
10. UTILITY STATEMENT:
    THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM DATA PROVIDED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. UNDERGROUND UTILITIES WERE MARKED BY NC811 PER TICKET REQUEST NUMBER C220400421 DATED FEBRUARY 9, 2022.
11. ADJOINER INFORMATION SHOWN AS OF MARCH 7, 2022, AT 5:00 PM.
12. NO EVIDENCE OF RECENT EARTHWORK ON–SITE.
13. NO KNOWN PROPOSED RIGHT OF WAY CHANGES, OR EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION.
14. SITE HAS DIRECT ACCESS TO A PUBLIC RIGHT OF WAY. SITE HAS ACCESS TO SHORT JOHNSON ROAD (S.R. 1584).
15. STREAMS/WETLANDS NOTE:
    BALLENTINE ASSOCIATES, P.A. MADE NO INVESTIGATION AS TO JURISDICTIONAL OR NON–JURISDICTIONAL WETLAND OR STREAM IDENTIFICATION. SUBJECT PROPERTY MAY BE SUBJECT TO WETLAND AREAS AND/OR STREAM BUFFERS NOT SHOWN HEREON.

ADJOINER DATA TABLE

LOT #	OWNER INFORMATION PIN# PID# REFERENCES
1	N/F 214 TRAILWOOD DR GLENN & GLORIA HOLDER PIN# 165801–16–6194 PID# 05002031F PB 48, PG 279 DB 1692, PG 89
2	N/F 300 TRAILWOOD DR JOHN D & DEBORAH M MOORE PIN# 165801–16–6097 PID# 05002031E PB 48, PG 279 DB 1824, PG 01
3	N/F 304 TRAILWOOD DR OLIVA & JENNIFER G TAYLOR PIN# 165801–16–6090 PID# 05002031D PB 48, PG 279 DB 1780, PG 937
4	N/F 3100 WOOD BEND CT KIMERLY F BARLEY PIN# 165801–16–8062 PID# 05002030Z PB 48, PG 279 DB 3212, PG 118
5	N/F 104 WOOD BEND CT KEVIN PAUL RAVENS PIN# 165801–16–9051 PID# 05002030Y PB 48, PG 279 DB 5241, PG 108
6	N/F 112 WOOD BEND CT MARY J YOUNG PIN# 165801–26–0032 PID# 05002030X PB 48, PG 279 DB 2631, PG 667
7	N/F 116 WOOD BEND CT JACQUELINE A ROSE PIN# 165801–26–1012 PID# 05002030W PB 48, PG 279 DB 3147, PG 81

NCSPCS NAD83/2011

BALLENTINE ASSOCIATES, P.A.
221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
(919) 489 – 4789
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Ballentine Associates, P.A. CORPORATE SEAL C328 NORTH CAROLINA Chapel Hill

NUM	REVISIONS	DATE
A	ADDITIONAL UNDERGROUND UTILITY LOCATION	22 MAR 22

OWNER INFORMATION:
DAVIS PARK LEASING, LLC
8000 WESTON PKWY, STE 360
CARY, NC 27513–2123

OWNERS REPRESENTATIVE:
CRAIG DAVIS PROPERTIES
GREG JONCZYK
PH. 919.678.4208
EMAIL: greg.jonczyk@craigdavisproperties.com

ISSUED	DATE
TO CLIENT	08 MAR 22
TO CLIENT	22 MAR 22

DAVIS PARK LEASING, LLC
SHORT JOHNSON ROAD
CLAYTON, NORTH CAROLINA 27520
CLAYTON TOWNSHIP, JOHNSTON COUNTY, NORTH CAROLINA
ALTA/NSPS LAND TITLE SURVEY

JOB NUMBER:	222013.00
DATE:	08 MAR 22
SCALE:	1" = 100'
DRAWN BY:	CJS / EJS
REVIEWED BY:	DEB

SHEET
1 OF 3

LEGEND

- EXISTING IRON PIPE
- EXISTING PK NAIL/RR SPIKE
- CALCULATED PROPERTY CORNER
- SET PROPERTY CORNER
- TEMPORARY BENCHMARK
- UTILITY POLE
- LIGHT POLE
- ELECTRIC METER
- GUY WIRE
- TELEPHONE PEDESTAL
- FIRE HYDRANT
- WATER METER
- WELL
- SIGN
- MAILBOX

- SUBJECT PROPERTY LINE
- UNSURVEYED PROPERTY LINE
- RIGHT OF WAY
- FENCELINE
- OVERHEAD UTILITY LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND CABLE LINE
- UNDERGROUND WATER LINE
- TREE LINE
- CREEK BANK
- STREAM BUFFER

GENERAL NOTES

1. GENERAL NOTES SHOWN ON SHEET 1 OF 3.

SURVEYORS CERTIFICATIONS

To: Davis Park Leasing LLC, a North Carolina limited liability company; and Investors Title Insurance Company:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 5, 7(a), 7(b)(1), 8, 9, 11(b), 13, 16, 17, 18 and 19 of Table A thereof. The field work was completed on February 17, 2022.

Date of Plat or Map: March 8, 2022

_____
DAVID E. BOWERS, P.L.S. L-4966

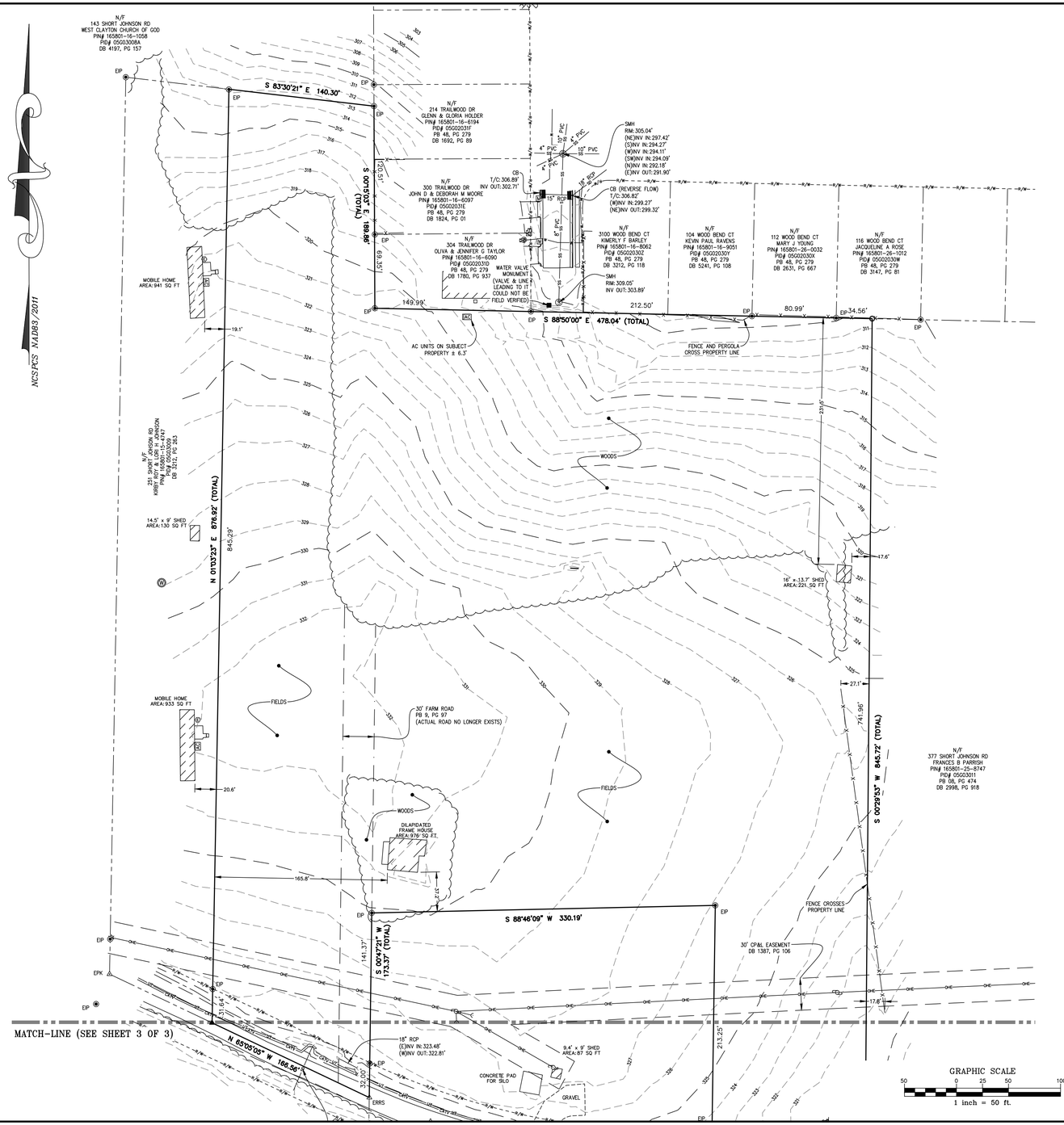
I, DAVID E. BOWERS, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION FROM DEED DESCRIPTION RECORDED IN BOOK 6185 AND PAGE 10; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AND DRAWN FROM INFORMATION FOUND IN BOOK AND PAGE (AS SHOWN); THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; AND THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER, AND SEAL THIS

8th DAY OF MARCH, A.D. 2022.

_____
DAVID E. BOWERS PLS L-4966

PRELIMINARY PLAT
NOT FOR RECORDATION
CONVEYANCES OR SALES

NCSPCS NAD83/2011



GRAPHIC SCALE
50 0 25 50 100
1 inch = 50 ft.

BALLENTINE ASSOCIATES, P.A.
221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
(919) 489 - 4789
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Ballentine Associates, P.A. CORPORATE SEAL C328 NORTH CAROLINA Chapel Hill

NUM	REVISIONS	DATE
A	ADDITIONAL UNDERGROUND UTILITY LOCATION	22 MAR 22

OWNER INFORMATION:
DAVIS PARK LEASING, LLC
8000 WESTON PKWY, STE 360
CARY, NC 27513-2123

OWNERS REPRESENTATIVE:
CRAIG DAVIS PROPERTIES
GREG JONCZYK
PH. 919.678.4208
EMAIL: greg.jonczyk@craigdavisproperties.com

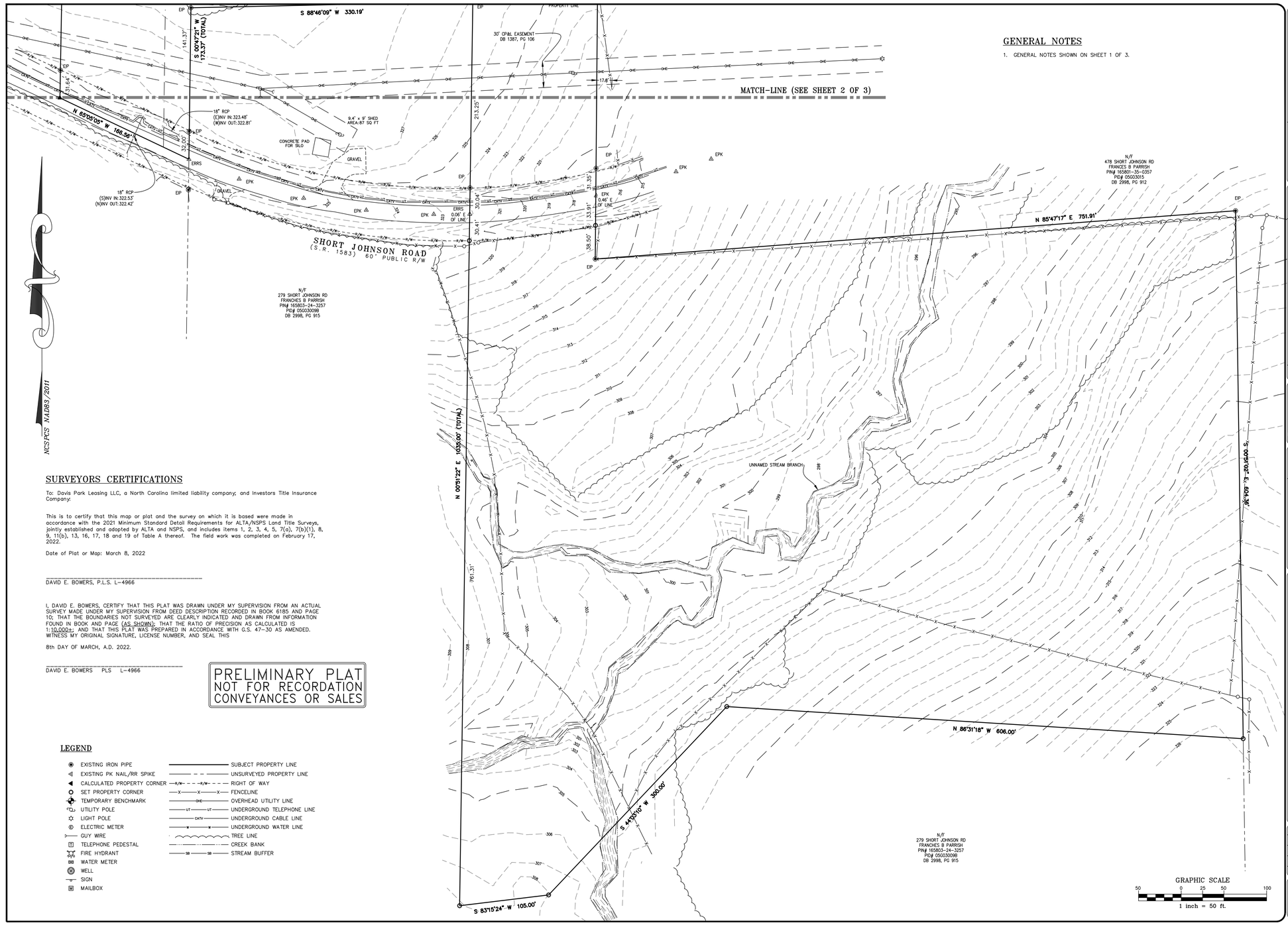
ISSUED	DATE
TO CLIENT	08 MAR 22
TO CLIENT	22 MAR 22

DAVIS PARK LEASING, LLC
SHORT JOHNSON ROAD
CLAYTON, NORTH CAROLINA 27520
CLAYTON TOWNSHIP, JOHNSTON COUNTY, NORTH CAROLINA

ALTA/NSPS LAND TITLE SURVEY

JOB NUMBER:	222013.00
DATE:	08 MAR 22
SCALE:	1" = 50'
DRAWN BY:	CJS / EJS
REVIEWED BY:	DEB

SHEET
2 OF 3



NCSPCS (NAD83/2011)

GENERAL NOTES

1. GENERAL NOTES SHOWN ON SHEET 1 OF 3.

SURVEYORS CERTIFICATIONS

To: Davis Park Leasing LLC, a North Carolina limited liability company; and Investors Title Insurance Company:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 5, 7(a), 7(b)(1), 8, 9, 11(b), 13, 16, 17, 18 and 19 of Table A thereof. The field work was completed on February 17, 2022.

Date of Plat or Map: March 8, 2022

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DAVID E. BOWERS, P.L.S. L-4966

I, DAVID E. BOWERS, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION FROM DEED DESCRIPTION RECORDED IN BOOK 6185 AND PAGE 10; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AND DRAWN FROM INFORMATION FOUND IN BOOK AND PAGE (AS SHOWN); THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; AND THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER, AND SEAL THIS

8th DAY OF MARCH, A.D. 2022.

_____
DAVID E. BOWERS PLS L-4966

PRELIMINARY PLAT
NOT FOR RECORDATION
CONVEYANCES OR SALES

LEGEND

- EXISTING IRON PIPE
- EXISTING PK NAIL/RR SPIKE
- CALCULATED PROPERTY CORNER
- SET PROPERTY CORNER
- TEMPORARY BENCHMARK
- UTILITY POLE
- LIGHT POLE
- ELECTRIC METER
- GUY WIRE
- TELEPHONE PEDESTAL
- FIRE HYDRANT
- WATER METER
- WELL
- SIGN
- MAILBOX
- SUBJECT PROPERTY LINE
- UNSURVEYED PROPERTY LINE
- RIGHT OF WAY
- FENCELINE
- OVERHEAD UTILITY LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND CABLE LINE
- UNDERGROUND WATER LINE
- TREE LINE
- CREEK BANK
- STREAM BUFFER

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221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
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(919) 929 - 0481

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Ballentine Associates, P.A. CORPORATE SEAL C328 NORTH CAROLINA Chapel Hill

NUM	REVISIONS	DATE
1	ADDITIONAL UNDERGROUND UTILITY LOCATION	22 MAR 22

OWNER INFORMATION:
DAVIS PARK LEASING, LLC
8000 WESTON PKWY, STE 360
CARY, NC 27513-2123

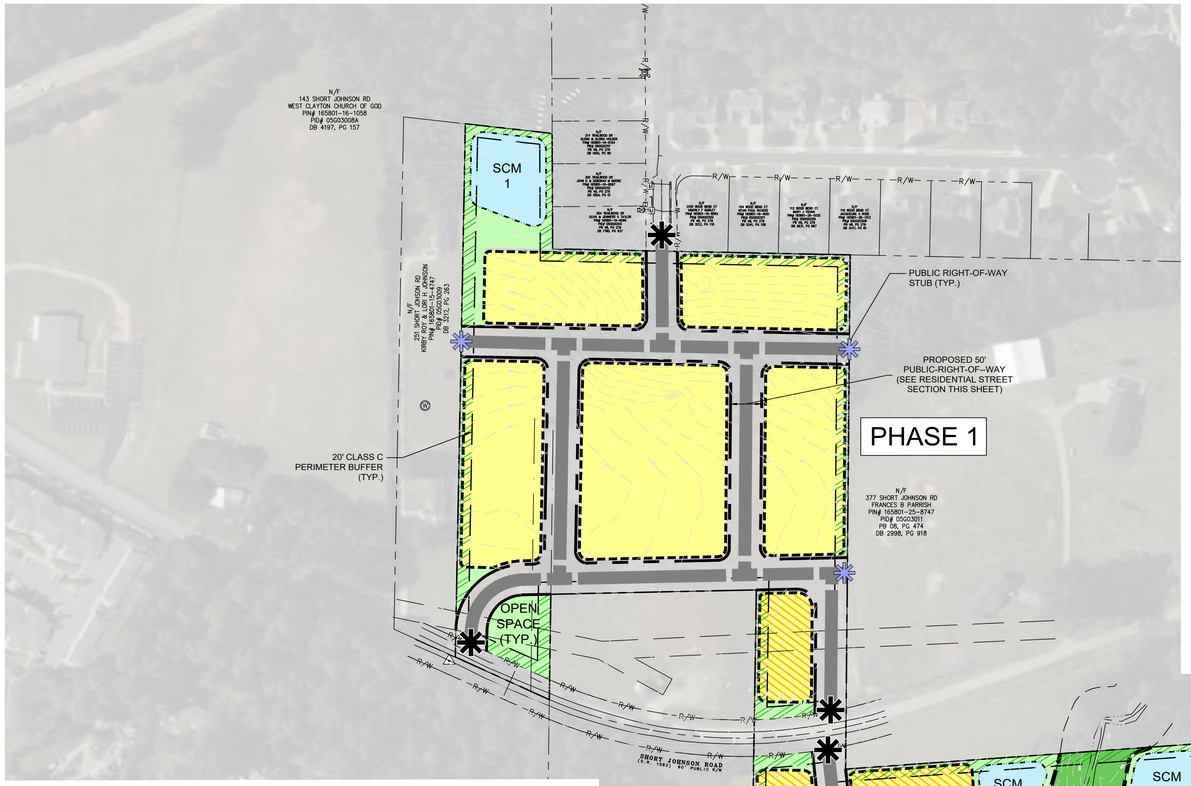
OWNERS REPRESENTATIVE:
CRAIG DAVIS PROPERTIES
GREG JONCZYK
PH. 919.678.4208
EMAIL: greg.jonczyk@craigdavisproperties.com

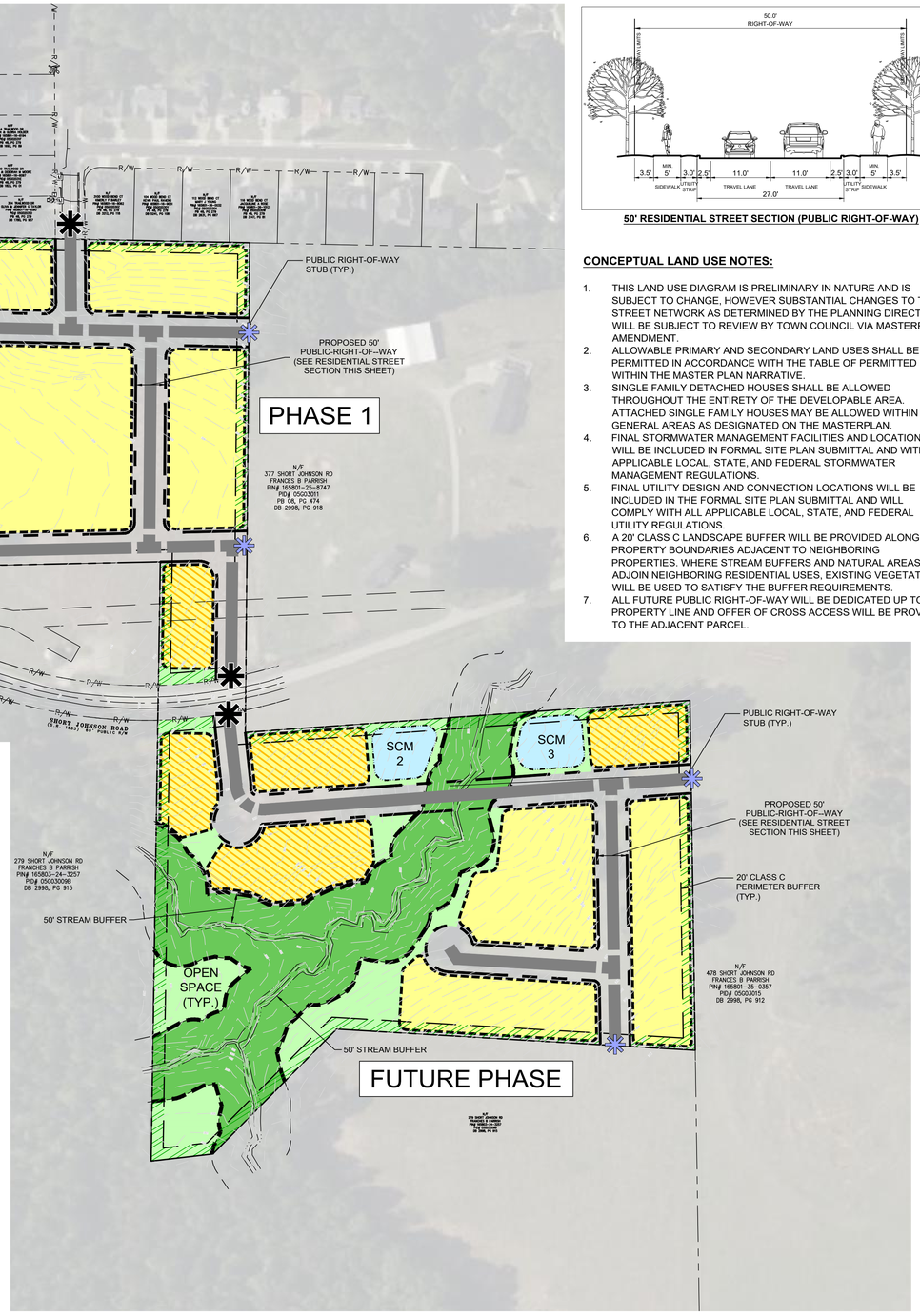
ISSUED	DATE
TO CLIENT	08 MAR 22
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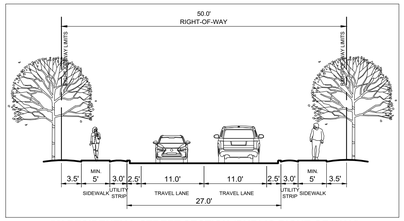
DAVIS PARK LEASING, LLC
SHORT JOHNSON ROAD
CLAYTON, NORTH CAROLINA 27520
CLAYTON TOWNSHIP, JOHNSTON COUNTY, NORTH CAROLINA
ALTA/NSPS LAND TITLE SURVEY

JOB NUMBER:	222013.00
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DRAWN BY:	CJS / EJS
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SHEET
3 OF 3







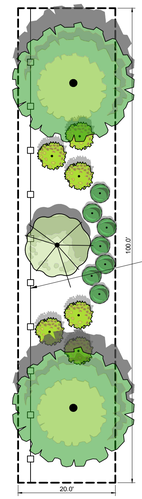
50' RESIDENTIAL STREET SECTION (PUBLIC RIGHT-OF-WAY)

CONCEPTUAL LAND USE NOTES:

1. THIS LAND USE DIAGRAM IS PRELIMINARY IN NATURE AND IS SUBJECT TO CHANGE, HOWEVER SUBSTANTIAL CHANGES TO THE STREET NETWORK AS DETERMINED BY THE PLANNING DIRECTOR, WILL BE SUBJECT TO REVIEW BY TOWN COUNCIL VIA MASTERPLAN AMENDMENT.
2. ALLOWABLE PRIMARY AND SECONDARY LAND USES SHALL BE PERMITTED IN ACCORDANCE WITH THE TABLE OF PERMITTED USES WITHIN THE MASTER PLAN NARRATIVE.
3. SINGLE FAMILY DETACHED HOUSES SHALL BE ALLOWED THROUGHOUT THE ENTIRETY OF THE DEVELOPABLE AREA. ATTACHED SINGLE FAMILY HOUSES MAY BE ALLOWED WITHIN THE GENERAL AREAS AS DESIGNATED ON THE MASTERPLAN.
4. FINAL STORMWATER MANAGEMENT FACILITIES AND LOCATIONS WILL BE INCLUDED IN FORMAL SITE PLAN SUBMITTAL AND WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL STORMWATER MANAGEMENT REGULATIONS.
5. FINAL UTILITY DESIGN AND CONNECTION LOCATIONS WILL BE INCLUDED IN THE FORMAL SITE PLAN SUBMITTAL AND WILL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL UTILITY REGULATIONS.
6. A 20' CLASS C LANDSCAPE BUFFER WILL BE PROVIDED ALONG ALL PROPERTY BOUNDARIES ADJACENT TO NEIGHBORING PROPERTIES. WHERE STREAM BUFFERS AND NATURAL AREAS ADJOIN NEIGHBORING RESIDENTIAL USES, EXISTING VEGETATION WILL BE USED TO SATISFY THE BUFFER REQUIREMENTS.
7. ALL FUTURE PUBLIC RIGHT-OF-WAY WILL BE DEDICATED UP TO THE PROPERTY LINE AND OFFER OF CROSS ACCESS WILL BE PROVIDED TO THE ADJACENT PARCEL.

MASTERPLAN LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROJECT BOUNDARY
- EXISTING RIGHT OF WAY
- PROPOSED PUBLIC STREET (50' R/W)
- POTENTIAL STORM MANAGEMENT FACILITY
- SINGLE FAMILY DETACHED RESIDENTIAL
- SINGLE FAMILY ATTACHED RESIDENTIAL (OPTIONAL, SEE NOTE #3)
- 50' STREAM BUFFER OFFSET
- OPEN SPACE
- POTENTIAL FULL ACCESS TO SITE
- POTENTIAL CROSS CONNECTION
- PROPOSED 50' PUBLIC RIGHT-OF-WAY
- 20' CLASS 'C' LANDSCAPE BUFFER



TYPICAL BUFFER PLAN VIEW



TYPICAL BUFFER SECTION VIEW

PLANTING REQUIREMENTS PER 100 LINEAR FEET OF BUFFER:

- 2 CANOPY TREES
- 1 UNDERSTORY TREE
- 12 SHRUBS

NOTE:
CLASS C BUFFER SHALL INCLUDE AN OPAQUE FENCE WITH A MINIMUM HEIGHT OF SIX FEET AT INSTALLATION TO BE PROVIDED IN ALL LOCATIONS WHERE A RESIDENTIAL LOT ABUTS AN ADJACENT RESIDENTIAL USE OUTSIDE OF THE DISTRICT BOUNDARY. WHERE STREAM BUFFERS AND NATURAL AREAS ADJOIN NEIGHBORING RESIDENTIAL USES, THEN EXISTING VEGETATION WILL BE USED TO SATISFY BUFFER REQUIREMENTS.

SITE DATA TABLE

TAG / PARCEL ID #	05G03010	
TOTAL SITE ACREAGE	21.99 ACRES	
UTILITY PROVIDERS	WATER	CLAYTON
	SEWER	CLAYTON
	ELECTRIC	CLAYTON
PROPOSED LAND USE	RESIDENTIAL	
PROPOSED ZONING	CZ-R	
PROPOSED DENSITY	UP TO 98 LOTS/UNITS	
OPEN SPACE	REQUIRED	12.5% OF TOTAL SITE ACREAGE = 2.74 AC
	PROVIDED	+/- 3.00 AC
SETBACKS	SEE TABLE BELOW	
BUFFERYARDS / STREETYARDS	SITE LOCATION	BUFFERYARD / STREETYARD WIDTH
	SHORT JOHNSTON RD	20'
	INTERNAL STREETS	10'
	PERIMETER BUFFERYARD	20'
PARKING REQUIREMENTS	BUILDING USE	LOTS / UNITS / MINIMUM PARKING REQUIRED
	RESIDENTIAL, SINGLE-FAMILY	- / PARKING REQUIREMENTS WILL ADHERE TO THE SAME STANDARDS LISTED IN CURRENT UNIFIED DEVELOPMENT ORDINANCE BASED ON USE
BUILDING HEIGHT RESTRICTION	SEE TABLE BELOW	
MAXIMUM IMPERVIOUS	SEE TABLE BELOW	

Table 2 - Intensity and Dimensional Standards (See reference in the Conditional Zoning Master Plan Narrative)

Land Use	Access	Lot Size Range	Min. Lot Width	Front Setback*	Side Interior Setback*	Side Street	Rear Setback*	Max. Impervious Coverage %	Max. Lot Coverage % **	Max Height	Max Density /ac
Single Family Detached	Front Loaded	4,000 SF - 10,000 SF	35'	25'	6'	10'	15'	70%	60%	35'	5
Single Family / Zero Lot Line	Front Loaded	4,000 SF - 10,000 SF	35'	25'	0'	10'	15'	70%	60%	35'	5
Single Family Attached	Alley / Rear Loaded	3,000 SF - 10,000 SF	30'	10'	0'	10'	25'	70%	60%	45'	5
	Front Loaded	3,000 SF - 10,000 SF	24'	25'	0'	10'	10'	70%	60%	45'	5

*Internal Setbacks: there shall be no minimum front or side setback to internal private alleys/access easements.
**The maximum area of the lot that is permitted to be covered by buildings. this may include principal and accessory building structures

SCALE: 1" = 100'

0 50 100 200

NOTE:
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH NCDEQ, NCDOT, AND TOWN OF CLAYTON STANDARDS AND SPECIFICATIONS APPLICABLE. IN THE EVENT OF A CONFLICT THE MORE STRINGENT STANDARD SHALL GOVERN.

No	REVISIONS	DATE	BY

Kimley»Horn
421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
PHONE: 919-677-2000 FAX: 919-677-2050
WWW.KIMLEY-HORN.COM
#F-0102

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT
PRELIMINARY NOT FOR CONSTRUCTION
D. L. BROWN

KHA PROJECT 014441000
DATE 05/02/2022
SCALE AS SHOWN
DESIGNED BY AMR
DRAWN BY AMR
CHECKED BY RLB

MASTERPLAN

SHORT JOHNSON RD
PREPARED FOR
CONDITIONAL REZONING
REVIEW
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-02

Printed By:Rolland Austin Sheet Set:######## Layout:P-02 MASTERPLAN October 20, 2022 07:43:58am K:\RAL_DEV\011744\8 Short Johnson Rd\Planning Phase\PHD CAD Files\02 Plan Sheets\Rezoning\02 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.

Kimley»Horn

September 7th, 2022

Dear Clayton Area Property Owner:

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change or development proposal involving property adjacent to, or near, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting must be held to provide information to area residents about the proposal. A representative of the applicant will coordinate this meeting and explain the application, answer questions, and solicit comments.

UPDATE: The previously advertised meeting set for Sept. 6th did not take place on account of the meeting location being accidentally omitted from the original meeting notice. Please see the new meeting information below:

New Meeting Date: Tuesday, September 20th, 2022 **New Meeting Time**: 6:00-8:00 PM EST

New Location: Clayton Community Center

Type of Application: 2020-70-CZM Short Johnson Road Rezoning

Project/proposal property address: Short Johnson Road Clayton, NC 27520

Description of project/proposal: Zoning change from existing Residential Estate (RE) To CZ-R Conditional Zoning, Residential

Upcoming public meetings for this application (Planning Board and/or Town Council):

- Planning Board: To be determined with Town Planning staff
- Town Council: To be confirmed after Planning Board

The following is enclosed with this letter and will be discussed during the virtual Neighborhood Meeting:

1. Aerial Image of Property
2. Current Zoning Map of Property
3. The anticipated schedule of all upcoming public meetings for the application
4. The proposed land use master plan for the development

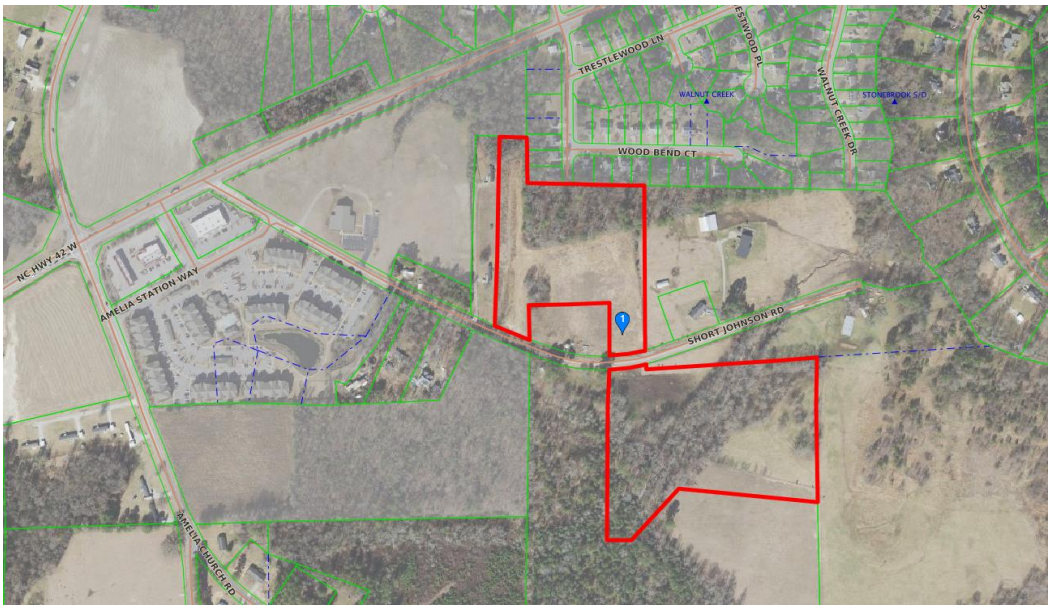
If you have any questions prior to or after this meeting, you may contact us at 919-677-2000. You may also contact the Town of Clayton Planning Department at 919-553-5002.

Sincerely,

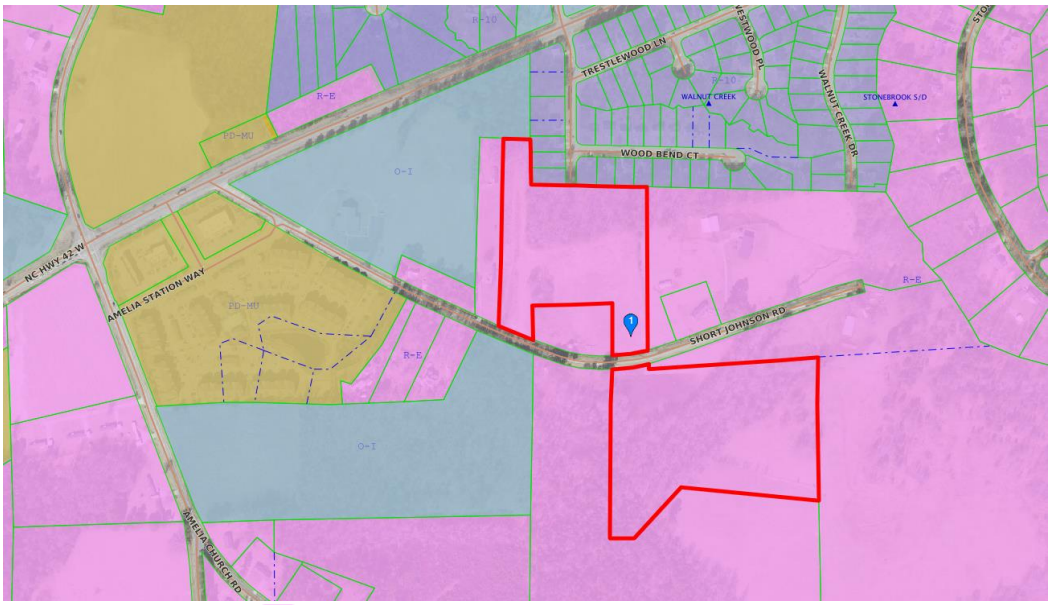
Richard L. Brown, PLA
Landscape Architect | Land Planner, Kimley-Horn

CC: Town of Clayton Planning Department
Aaron Prichard

Project Locator Map



Current Zoning Map (Amended April 28, 2022)



Town: R-E (Residential Estate)

DAVIS PARK LEASING, LLC
8000 WESTON PKWY STE 360
CARY, NC 27513-2123

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

RAVENS, KEVIN PAUL
104 WOOD BEND CT
CLAYTON, NC 27520-7251

JOHNSON, KIRBY ROY
JOHNSON, LORI H
12232 US 70 BUS HWY W
CLAYTON, NC 27520-0000

RONALD FITZGERALD JOINT REVOCALBE TRUST
LINDA FITZGERALD JOINT REVOCALBE TRUST
210 TRAILWOOD DR
CLAYTON, NC 27520-7263

TAYLOR, OLIVA
TAYLOR, JENNIFER G
4279 MARIVAL WAY
MASON, OH 45040-2866

MALIK, TUBAA
120 WOOD BEND CT
CLAYTON, NC 27520-7251

YOUNG, MARY J
112 WOODBEND CT
CLAYTON, NC 27520-7251

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

ROSE, JACQUELINE A
116 WOOD BEND CT
CLAYTON, NC 27520-0000

BARLEY, KIMERLY F.
3516 ALTHORP DR
RALEIGH, NC 27616-8479

MOORE, JOHN D
MOORE, DEBORAH M
300 TRAILWOOD DRIVE
CLAYTON, NC 27520-0000

HOLDER, GLENN
HOLDER, GLORIA
214 TRAILWOOD DRIVE
CLAYTON, NC 27520-0000

YOUNG MEN'S CHRISTIAN ASSOCIATION OF THE TRIANGLE AREA, INC.
801 CORPORATE CENTER DR STE 200
RALEIGH, NC 27607-5243

PARRISH, FRANCES B
377 SHORT JOHNSON ROAD
CLAYTON, NC 27520-0000

BLACKMON, RICKY E
BLACKMON, PAMELA JEAN
220 SHORT JOHNSON RD
CLAYTON, NC 27520-0000

WEST CLAYTON CHURCH OF GOD
PO BOX 777
CLAYTON, NC 27528

NOTE: Turn off 'Fit to Page' in print dialog before printing.

Label Type: AV5160
18 label(s) printed

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: 2022-70-CZM Short Johnson Road Rezoning

Date of Mailing: Sept. 7th, 2022

Date of Meeting: Sept. 20th, 2022 Time of Meeting: 6:00 pm

Location of Meeting: Clayton Community Center

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Printed Name: Austin Roland Signature: Austin Roland

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Discussed Topics:

Density
- The proposed density for the project was questioned and some worried about the 5 per acre limit being too much for the Short Johnson Rd neighborhood. It was explained that the 5 Du/Acre max. was consistent with the current Town Comprehensive Plan and Future Land Use Map adopted at the date of this meeting.

Housing Types
- Questions were asked about the housing type to be offered by the development and opinions were shared about housing types built in nearby developments.

Infrastructure
- Comments were made about the town and county placing more emphasis on road and residential development than other publicly offered utilities and services. Complaints were made about cell receptions and internet provider coverage.

Traffic
- There were general traffic worries and adding to peak traffic numbers in general for the town. Neighbors were concerned about the development residents using Trailwood Drive as a cut through to the proposed development.

Required Buffers
- The proposed perimeter buffer was described and neighbors were supportive of the provided standard depicted for them. They were also favorable toward an opaque wooden screen fence and asked about the anticipated location of said fence.

Environmental
- Concerns were raised about the impact of existing stream erosion down stream of the subject property. It was explained that the intent of the development would be to not add to the current erosion observed to to respect existing stream features/buffers.

Annexation
- Questions were asked about the project being incorporated into the town and if that would affect the adjacent neighborhood. It was explained that the annexation of the project would be necessary to access town provided services and not likely affect the services of adjacent neighbors within county limits.

Anticipated Timeline
- It was predicted what the anticipated timeline for the development of the project and when residents might see the project being built following completed permitting.Contact cards were distributed for general inquiries and everyone was encouraged to remain apart of the public input process moving forward.

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Short Johnson Road Conditional Rezoning

Application: 2022-70-CZM

Location/Date: Clayton Community Center - Tuesday Sept. 20th, 2022 - 6:00pm

	NAME	ADDRESS
1	Laura Parrish	361 Short Johnson Rd.
2	RONALD FITZGERALD	210 TRAILWOOD Rd
3	Kevin Ravens	104 Wood Bend Ct.
4	Dan Heath	143 Short Johnson Rd. (WCCOG)
5		
6		
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	TOWN OF CLAYTON POLICY	
	Department: Public Services	**Effective:** January 21, 2020
Policy Title: Water & Wastewater Allocation Policy Version #02 (V.02)		**Supersedes:** TC Action 2010-026 **Prepared By:** Richard D. Cappola Jr., PE Public Services Director **Approved By:** Town Council **Date: January 21,2020**

I. Purpose

The Town of Clayton has invested substantial capital in the infrastructure necessary to support a growing, prosperous, and healthy community. Water supply and wastewater treatment capacities are among the most important elements of this infrastructure. The intent of this policy is to provide for the judicious allocation of these resources in conformity with adopted goals and priorities in an effort to shape the community consistent with the articulated vision to become the "Premier Community for Active Families." This policy is intended to manage the remaining capacity available until additional capacity is developed through construction of a new Water Reclamation Facility, and should be reviewed periodically to ensure it is achieving the intended purpose.

II. Scope

The Town Council for the Town of Clayton has adopted the Comprehensive Plan 2040 which is a useful tool to successfully evaluate applications for allocation of public resources so that the character of the community shall be consistent with its vision, values, and plans. In accordance with the "Town of Clayton Strategic Growth Plan", utility allocation reservations should support and maximize the concept of increasing the Town's property tax based revenues by the expansion and improvement of higher valued land use development, emphasizing a balance of Residential, commercial, and industrial uses.

III. Policy

The Town of Clayton seeks to grant utility allocations such that the existing character of the Town's utility customer base does not become more residential than is practical to achieve the intent of the Strategic Growth Plan, and seeks to increase the diversity of the customer base by increasing the percentage of resources devoted to industrial, commercial, and mixed use development.

The total amount of available capacity and each incremental increase in capacity should generally be allocated based on the following parameters:

- No more than fifty percent (50%) of the total available capacity may be allocated to projects that include solely residential development.
- At least thirty percent (30%) of the total available capacity shall be reserved for allocation to commercial/industrial projects.
- Projects encompassing mixed use (residential and commercial) elements may be considered for allocation even if such an allocation will exceed the limit established above for residential use. Note: These percentages may be reviewed and adjusted by the Town Council at their discretion.

Due to weather related factors, the regulatory environment, and the dynamic nature of wastewater flow and treatment, accounting of available utility capacity is, by its very nature, inexact. The Town of Clayton shall track allocation reservations granted and the amount of capacity available. Such reports do not constitute a policy statement, commitment or guarantee on the amount of capacity available for allocation.

The following hierarchy shall apply to evaluation of utility allocation requests:

- Commercial properties with quality development projects
- Development projects with a mixed-use element
- Industrial projects and other major employer entities
- Additional phases attached to residential projects with a proven record of quality product and economic success
- Residential projects that include tangible, high quality community amenities
- Residential projects that include diverse products and opportunities
- Residential projects not otherwise described above

Evaluation of projects will be based on the scoring rubric attached hereto as Exhibit A, which is incorporated in this Agreement by reference. A project must meet or exceed 50 points to receive an allocation. Proposed projects can gain BONUS POINTS by the applicant offering to provide items listed on the rubric as part of their development proposal. Examples of these items may include such things as additional amenities (fire pits, community gardens, etc.) or offering to provide "Minimum of 25% of building façades will be made of masonry materials."

The Town of Clayton may allocate utility service capacity to competing projects based on a demonstrated intent and ability of the applicant to meet adopted Town goals and plans for character and quality of development. The Town of Clayton reserves the right to deny a utility allocation request if the applicant fails to adequately demonstrate that the project meets adopted Town goals or plans, or in the case that the project is deemed to be less supportive of Town goals or plans of a competing project.

IV. Procedure

The owner or developer of any project requiring water or wastewater utility service from the Town of Clayton shall submit a written application, in the application form provided by Town Staff, for an allocation reservation. The application shall include detailed information on the amount of capacity necessary to serve the project, the nature of the project, project schedule in relation to demand of utility capacity, and other supporting information demonstrating how the project serves the needs and interests of the Town of Clayton. In the case of Industrial flows, additional information associated with the constituents shall be required and may be subject to other ordinances or policies of the Town.

- The Town Council shall review for approval all allocations which require or may require a daily flow allocation of ten thousand gallons or more (> 10,000 GPD)
    - The Town Council shall incorporate the evaluation of utility allocation requests into the decision-making process associated with Subdivisions, Mixed-use Planned Developments, and Special Use Permits. The criteria contained herein for evaluation of utility allocation requests shall be included as elements within the review processes for the accompanying land use application with regard to conformity with Town of Clayton policies and ordinances, planning practices, and consistency with adopted long-range and strategic plans.
    - For allocations requiring Town Council approval, but which do not require other land use regulatory reviews or approvals, the applicant shall provide a full description of how their project supports the goals and priorities established within this and related policies and plans in their application for allocation reservation.

- The Town Manager or their designee shall review for approval all applications for utility capacity which require a daily flow allocation of less than ten thousand gallons (< 10,000 GPD).
    - In addition to the scoring rubric, the Town Manager or their designee shall consider the goals articulated by this and related Town policies when reviewing applications for utility allocations. If an application is denied, the Town Manager or their designee shall state in writing the reasons for denial of the request.

V. General Conditions

- This policy shall replace any previous policies on water and wastewater allocations adopted by the Town Council.
- An allocation will expire if a project has not progressed in construction plan approval, building permit approval, or on-site construction within 12 months of award of the allocation.
- Upon request by the applicant and at the discretion of the Town Engineer, an allocation may be extended for one twelve (12) month period.
- If a project is unsuccessful in obtaining any required Federal, State, or local government permit or approval the reservation shall be retracted. The Town of Clayton shall bear no liability for any costs incurred by the applicant, nor bare further responsibility in the matter.
- Granting of a utility allocation does not imply or confer approval of any other applications or reviews as may be required by Town Ordinance or policy and does not imply or create any vested right.
- Public water may be utilized for irrigation purposes so long as the Primary Use associated with the site has previously gained a water allocation through the Town.
- This policy shall be reviewed annually and, when appropriate, readjusted by the Town Council. The Town's overall progress on policy goals will be considered and the multipliers and/or point thresholds readjusted accordingly.

V. Appeals Process

- Appeal of any provision of this policy shall be made to the Town Council.
- Appeal of any decision on a utility allocation by the Town Manager or their designee shall be made to the Town Council for final decision. Any such appeal shall be placed on the agenda of a regularly scheduled Town Council meeting.

WATER & WASTEWATER ALLOCATION CRITERIA

TOTAL POINTS = 50 *MINIMUM 50 POINTS REQUIRED*

	Category	Points	Calc.	Notes
DEVELOPMENT TYPE[1] (Choose 1 from this category)	Government/Public Admin./Public Safety	50		
	Non-residential (Commercial) - Retail & Restaurant	30		
	Non-residential (Commercial) - Office	20		
	Non-residential (Commercial) - Warehouse	15		
	Non-residential (Commercial) - Medical	25		
	Non-residential (Commercial) - Hotel/Motel	35		
	Industrial/Manufacturing	30		
	Institutional	15		
	Residential Existing Lot- Single Family Detached	40		Individual Existing Lot construction
	Residential Subdivision - Single Family Detached (> 0.25 Acre Lots)	20		Single Family Homes on Individual Lots greater than 0.25 acres
	Residential Subdivision - Single Family Detached (< 0.25 Acre Lots)	15	15	Single Family Homes on Individual Lots less than 0.25 Acres
	Residential Subd.- Single Family Attached (> 1,500 SF Heated Space)	10		Townhomes with heated square-footage greater than 1,500 SF
	Residential Subd.- Single Family Attached (< 1,500 SF Heated Space)	5		Townhomes with heated square-footage less than 1,500 SF
	Residential - Multifamily (Apartments)	10		
	Mixed-Residential	25		Mix of various lot sizes of Single-family, Townhomes, and Apartments
	Mixed-Use Commercial & Residential	30		Mix of Residential and Non-residential (Commercial) uses
	Downtown Redevelopment	30		
	Infill Development	25		Utilities already exist within 300 Feet of property
FUTURE TAX STATUS (Choose 1 from this category)	Exempt	0		
	Residential	5	5	
	Non-residential	10		
	Industrial	10		
COMMUNITY BENEFIT BONUS POINTS (Choose All that apply from this category)	Cultural Arts/Entertainment for Public	10		
	Sports/Recreation for Public	10		
	Town Electric Customer	20	20	
	Expansion of existing non-residential use	10		
	Re-development of an existing property	5		Must result in increased property value
	Residential Subdivision - Additional amenities included	5 - 15		Pool, Clubhouse, sports courts, etc. - 5 pts per, max 15 pts
	Job Creation - 10 to 25 new jobs	5		
	Job Creation - 26 to 100 new jobs	10		
	Job Creation - 100+ new jobs	15		
	Job creation - Jobs created will have salaries at or above median income	5		Must be greater than 50% of jobs added with documentation to confirm
	Residential - Multiple-Car Garages provided	5		
	Residential - Overflow Parking provided	5		Subject to Planning and Engineering support
	Masonry Elements included in Building Construction	10	10	
	Sustainable/High Efficiency Products and appliances used	5 - 15	10	5 pts per, max 15 pts
	Private trail connection to Public Greenway	10		
COMMUNITY IMPACT DEDUCT POINTS (Choose All that apply from this category)	Pump Station Improvements required[2]	-10	-10	Subject to Town policy and standards
	New Pump Station Required[2]	-20		Subject to Town policy and standards
	Out-of Town Status (After construction)	-10		
	Outside Fire District	-5		
	Inconsistent with Comp Plan	-5		

CLARIFICATIONS

1 Any Development Type Category not listed is subject to Town Council discretion with staff recommendation.

2 The Town Engineer may waive these deductions if the improvments are consistent with Future utility service plans, replace/offline an aging station, or are in the best interest of the Town.

TOWN OF CLAYTON
Engineering & Inspections Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

WASTEWATER ALLOCATION REQUEST

The Town of Clayton, in an effort to manage and maintain the sewer and water capacity for the Town, requires that this application be completed and submitted to the Town for consideration of a utility allocation. Review fee is due upon submittal of request.

Wastewater Allocation Request Review Fee: $50

Application MUST be completed and sealed by a registered engineer unless otherwise approved by staff.

SITE INFORMATION

Name of Project: Short Johnson Road Rezoning **Acreage of Property:** 21.990

County Tag Number: 05G03010 **NC PIN:** 165801-15-7790

Address/Location: Short Johnson Road, Clayton, NC

Zoning District: RE-Residential Estate

Town Limits / ETJ: ☐ Town Limits ■ ETJ (Extra-Territorial Jurisdiction)

APPLICANT INFORMATION – Applicant must be a registered engineer unless otherwise approved by Town Engineer

Applicant: Kimley-Horn and Associates Inc.

Mailing Address: 421 Fayetteville Street, Suite 600, Raleigh, NC 27601

Phone Number: (919) 678-4178 **Fax:**

Contact Person: Austin Jackson P.E.

Email Address: austin.jackson@kimley-horn.com

PROPERTY OWNER INFORMATION

Name: Davis Park Leasing, LLC

Mailing Address: 8000 Weston Parkway, Cary, NC 27513

Phone Number: (919) 678-4210 **Fax:**

Email Address: dean.penny@craigdavisproperties.com

FOR OFFICE USE ONLY

Date Received: _____ File Number: _____ Associated Project Number: _____

PROJECT INFORMATION

Use: ☒ **New** ☐ **Expanded** ☐ **Change** **Use Type:** ☒ **Residential** ☐ **Non-Residential**

Proposed Use(s): Residential **Existing Use(s):** Vacant

Invoice shall be mailed to the following:

Developer Name: Craig Davis Properties, LLC

Mailing Address: 8000 Weston Parkway, Cary, NC 27513

Phone Number: (919) 678-4210 **Fax Number:**

Email Address: dean.penny@craigdavisproperties.com

ALLOCATION REQUEST

The following is required:

- **For non-residential construction, submit a floor plan of proposed building.**
- **Use additional sheets if necessary.**
- **Provide any documentation supporting/justifying the request as an attachment (using a comparable use is recommended).**
- **If a phasing / take-down schedule is proposed, include as an attachment.**

Residential:

Gross Acreage: 21.990

Single Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units			
3 Bedroom Units	98	250	24500
>3 Bedroom Units			
Total		------	24500

Multi-Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units			
3 Bedroom Units			
>3 Bedroom Units			
Total		------	

Non-Residential: ***(Design Flow Guideline provided as Appendix A)****

**If design flow deviates from the flow rates presented in Appendix A, provide supporting documentation/justification as an attachment in the form of 12 months of water bills demonstrating gallons per day utilized.*

Gross Acreage:

Use	Measurement Unit	# of Units	GPD per Unit	Total Requested GPD
Total			------	

TOTAL REQUESTED GALLONS PER DAY: 24500

NOTE TO APPLICANT:

Invoicing:
Invoices are generated on the following schedule:

Non-Residential:
Generated with the application for a Zoning Compliance Permit.

Residential:
Multi-Family / Apartments:
Generated with the application for a Zoning Compliance Permit.

Subdivision / Subdivided Lots:
Generated at Final Plat submittal.

Fee Development:
Development Fees are calculated and invoiced based on the Town of Clayton adopted Comprehensive List of Fees and Charges. Invoiced fees include acreage fees, capacity fees, nutrient offset fees, recreation fees, fees-in-lieu, and electric department lot deposit. Please speak with Town staff with questions.

Approval:
Requests over 10,000 GPD are approved by the Town Council, by resolution. All other requests are approved by the Town Manager.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town of Clayton to approve the subject Wastewater Allocation. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

Austin Jackson, P.E.		09/27/2022
Print Name	***Signature of Applicant***	***Date***

Engineer Seal:



TOWN OF CLAYTON OFFICE USE ONLY:

Approved by: ☐ Town Manager

☐ Town Council (*requests of 10,000 GPD or more require Council approval by resolution)*

The **Town Manager / Town Council (circle one)** has authorized the allocation of _____

gallons per day for project # _____.

Date of Approval: _____

Signed:

_____
Town Manager

If approved by Town Council:
Attach a copy of the resolution and any associated documentation.

APPENDIX A: DESIGN FLOW RATES

The following table from the North Carolina Administrative Code 02T.0114 shall be used to determine the minimum allowable design daily flow of wastewater facilities. Alternatively, the Town in its sole and absolute discretion may calculate the customer's initial average daily wastewater flow based on data from the customer's operations (or from similarly situated customers) with a comparable sanitary sewer system, where such data are available and reasonably current.

Establishment Type	Daily Flow Rate
Barber and Beauty Shops	
Barber Shops	50 gal/chair
Beauty Shops	125 gal/booth or bowl
Businesses, Offices and Factories	
General business and office facilities	25 gal/employee/shift
Factories, excluding industrial waste	25 gal/employee/shift
Factories or businesses with showers or food preparation	35 gal/employee/shift
Warehouse	100 gal/loading bay
Warehouse – self storage (not including caretaker residence)	1 gal/unit
Churches	
Churches without kitchens, day care or camps	3 gal/seat
Churches with kitchen	5 gal/seat
Churches providing day care or camps	25 gal/person (child & employee)
Fire, Rescue and Emergency Response	
Fire or rescue stations without on-site staff	25 gal/person
Fire or rescue stations with on-site staff	50 gal/person/shift
Food and Drink Facilities	
Banquet, dining hall	30 gal/seat
Bars, cocktail lounges	20 gal/seat
Caterers	50 gal/100 sq. ft. floor space
Restaurant, full Service	40 gal/seat
Restaurant, single service articles	20 gal/seat
Restaurant, drive-in	50 gal/car space
Restaurant, carry out only	50 gal/100 sq. ft. floor space
Institutions, dining halls	5 gal/meal
Deli	40 gal/100 sq. ft. floor space
Bakery	10 gal/100 sq. ft. floor space
Meat department, butcher shop or fish market	75 gal/100 sq. ft. floor space
Specialty food stand or kiosk	50 gal/100 sq. ft. floor space
Hotels and Motels	
Hotels, motels and bed & breakfast facilities, without in-room cooking facilities	120 gal/room
Hotels and motels, with in-room cooking facilities	175 gal/room
Resort hotels	200 gal/room
Cottages, cabins	200 gal/unit
Self-service laundry facilities	500 gal/machine
Medical, Dental and Veterinary Facilities	
Medical or dental offices	250 gal/practitioner/shift
Veterinary offices (not including boarding)	250 gal/practitioner/shift
Veterinary hospitals, kennels, animal boarding facilities	20 gal/pen, cage, kennel or stall
Hospitals, medical	300 gal/bed
Hospitals, mental	150 gal/bed
Convalescent, nursing, rest homes without laundry facilities	60 gal/bed
Convalescent, nursing, rest homes with laundry facilities	120 gal/bed
Residential care facilities	60 gal/person
Parks, Recreation, Camp Grounds, R-V Parks and other Outdoor Activity Facilities	
Campgrounds with comfort station, without water or sewer hookups	75 gal/campsite

Establishment Type	Daily Flow Rate
Campgrounds with water and sewer hookups	100 gal/campsite
Campground dump station facility	50 gal/space
Construction, hunting or work camps with flush toilets	60 gal/person
Construction, hunting or work camps with chemical or portable toilets	40 gal/person
Parks with restroom facilities	250 gal/plumbing fixture
Summer camps without food preparation or laundry facilities	30 gal/person
Summer camps with food preparation and laundry facilities	60 gal/person
Swimming pools, bathhouses and spas	10 gal/person
Public access restrooms	325 gal/plumbing fixture
Schools, Pre-school and Day Care	
Day care and preschool facilities	25 gal/person (child & employee)
Schools with cafeteria, gym and showers	15 gal/student
Schools with cafeteria	12 gal/student
Schools without cafeteria, gym or showers	10 gal/student
Boarding schools	60 gal/person (student & employee)
Service Stations and Car Wash Facilities	
Service stations, gas stations	250 gal/plumbing fixture
Car wash facilities	1200 gal/bay
Sports Centers	
Bowling center	50 gal/lane
Fitness, exercise, karate or dance center	50 gal/100 sq. ft.
Tennis, racquet ball	50 gal/court
Gymnasium	50 gal/100 sq. ft.
Golf course with only minimal food service	250 gal/plumbing fixture
Country clubs	60 gal/member or patron
Mini golf, putt-putt	250 gal/plumbing fixture
Go-kart, motocross	250 gal/plumbing fixture
Batting cages, driving ranges	250 gal/plumbing fixture
Marinas without bathhouse	10 gal/slip
Marinas with bathhouse	30 gal/slip
Video game arcades, pool halls	250 gal/plumbing fixture
Stadiums, auditoriums, theaters, community centers	5 gal/seat
Stores, Shopping Centers, Malls and Flea Markets	
Auto, boat, recreational vehicle dealerships/showrooms with restrooms	125 gal/plumbing fixture
Convenience stores, with food preparation	60 gal/100 sq. ft.
Convenience stores, without food preparation	250 gal/plumbing fixture
Flea markets	30 gal/stall
Shopping centers and malls with food service	130 gal/1000 sq. ft.
Stores and shopping centers without food service	100 gal/1000 sq. ft.
Transportation Terminals	
Air, bus, train, ferry, port and dock	5 gal/passenger

Source: North Carolina Administrative Code 02T.0114, January 1, 2007

Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

October 20, 2022

Davis Park Leasing, LLC
Attn: Dean Penny
8000 Weston Parkway
Cary, NC 27513
Dean.penny@craigdavisproperties.com

Re: 2022-70-CZM Short Johnson Road Conditional Zoning District and Master Plan

To Whom It May Concern,

The Town of Clayton Planning staff is recommending to the Planning Board and Town Council that conditions of approval be placed upon the above referenced application, which proceeds to the Planning Board on October 24, 2022 and Town Council on November 21, 2022. These recommended conditions of approval are outlined on the back of this letter.

Please read through these potential conditions of approval, and sign below if you are in agreement with the conditions as proposed. If you are not in agreement please respond accordingly in writing. This will be included within the agenda packet for Planning Board and Town Council review.

Thank you.

Sincerely,

Ben Howell, AICP, CZO
Planning Director

Recommend Conditions of Approval (2022-70-CZM, Short Johnson Road Conditional Zoning District and Master Plan):

1. Following Town Council approval, an electronic copy of the Master Plan and Narrative including the Conditions of Approval shall be submitted to the Planning Department for final approval.
2. The Development shall meet all adopted Town of Clayton Unified Development Code (UDC) requirements, Town of Clayton Engineering and Stormwater design standards, and the North Carolina Fire Code and NFPA Fire standards, except where specifically modified by the approved master plan.
3. The Development shall be constructed in substantial conformance with the Master Plan and Master Plan Narrative as approved by the Clayton Town Council.
4. All parcels subject to the rezoning and master plan shall be annexed into Town prior to any additional development approvals.
5. The Maximum number of number of lots/units within the district boundary shall not exceed 98.
6. A 20' wide Type 'C' opaque buffer with a 6' opaque fence will be provided in all locations where a residential lot abuts an adjacent residential use outside of the district boundary. Where environmental features and/or other natural wooded areas exist at the district boundary the preservation of existing vegetation may be used to satisfy this buffer requirement.
7. The developer will provide a minimum twenty (20') foot wide type C street yard along the Short Johnson Road property frontage. Street yard plantings for areas along the frontage shall be installed at an average rate of 1 per 40' for street trees. Street protective yards along proposed new public streets within the development will be 10-15' wide with an average of 1 street tree per 40'. Street yards shall not apply to private alleys or rear-load conditions.
8. The following uses will be specifically prohibited on the property by the master plan
    - Boarding house
    - Bed & Breakfast
    - School/Academy
    - Government Service
    - Church/Place of Worship
    - Cemetery
    - Plant Nursery/Agricultural Sales
    - Private Stables/Agricultural Livestock
    - Golf course
    - Telecommunications Facility
    - Renewable Energy Facility
    - Manufactured Home/Manufactured Home Park
    - Group Care Home (7 to 12 Residents)

- Day Care Facility
- Funeral Home
- Kennel

9. Masonry materials, as listed in the Conditional Zoning Master Plan Narrative, shall apply to a minimum of 25% of the primary street facing façade for new building construction. Per Section 9.0 - Architectural Standards in the Master Plan narrative, other non-masonry materials may be used for side and rear facing building elevations.

10. An analysis of the Walnut Creek Pump Station will be performed in conjunction with a subdivision/development plan application for property. Any improvements or upgrades deemed to be required by the pump station capacity study will be the responsibility of the developer and will be required prior to the recordation of the first final plat.

11. The developer will be responsible for the extension of the existing 8" water line within Short Johnson Rd. The waterline will be extended from end of the existing line, across the subject parcel frontage within Short Johnson right-of-way, and as needed to serve the new development for the subject property.

12. An informational statement will be provided on plats, in deeds and in covenants regarding farming operations surrounding the development and potential noxious sounds, smells and dust.

13. Sustainable high efficiency products and/or appliances will be provided as part of the development in order to achieve wastewater allocation. A minimum of two (2) of the following energy efficient elements shall be included within each single family home/unit.

    - Electric heat strips;
    - Low flow water fixtures (faucets and shower heads);
    - Low flush toilets;
    - LED Lighting throughout home;
    - Air Barrier & Sealing;
    - Decorative Fiberglass Insulated Front Door;
    - Gas Heat (2nd Floor Electric Heat Pump if Separate System);
    - Low VOC Paint;
    - Low-E Insulated Single-Hung Vinyl Windows w/ Tilt-Out Feature.

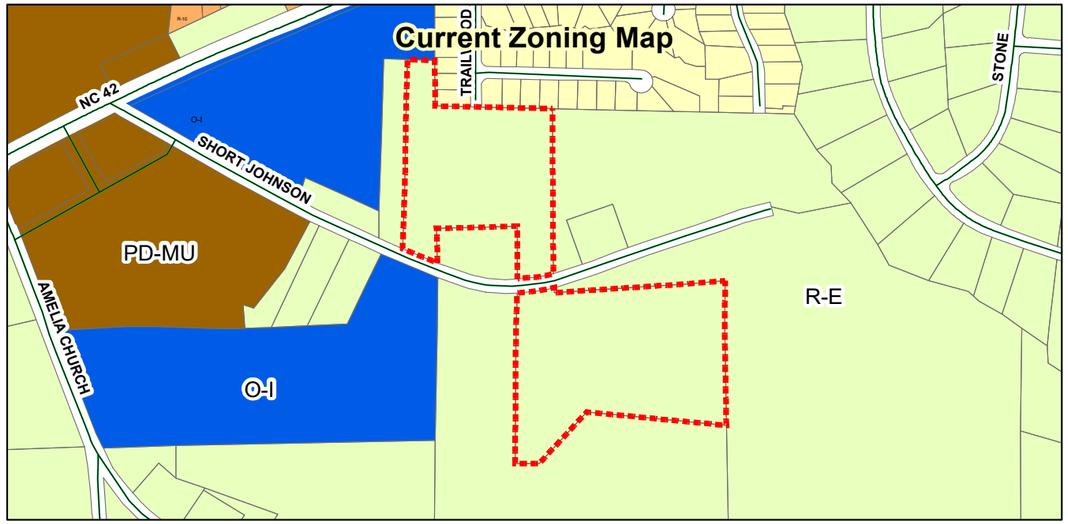
14. Subject to any legal limitations and/or any current franchise agreements that would result in conflicts outside of the property owner's control, this development will utilize Town of Clayton electric service.

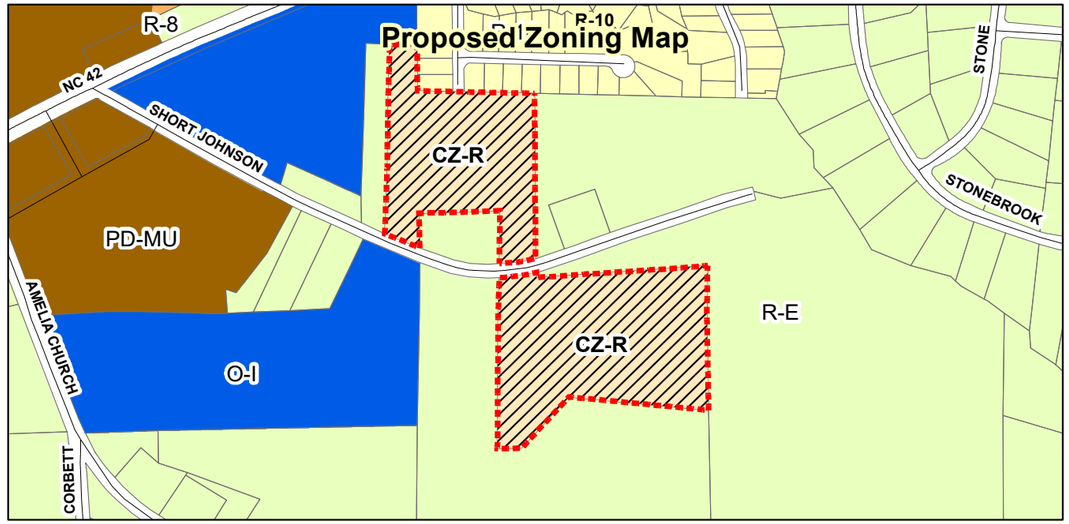
15. To the extent of any conflict between the Master Plan, Master Plan Narrative and these conditions, these conditions shall control.

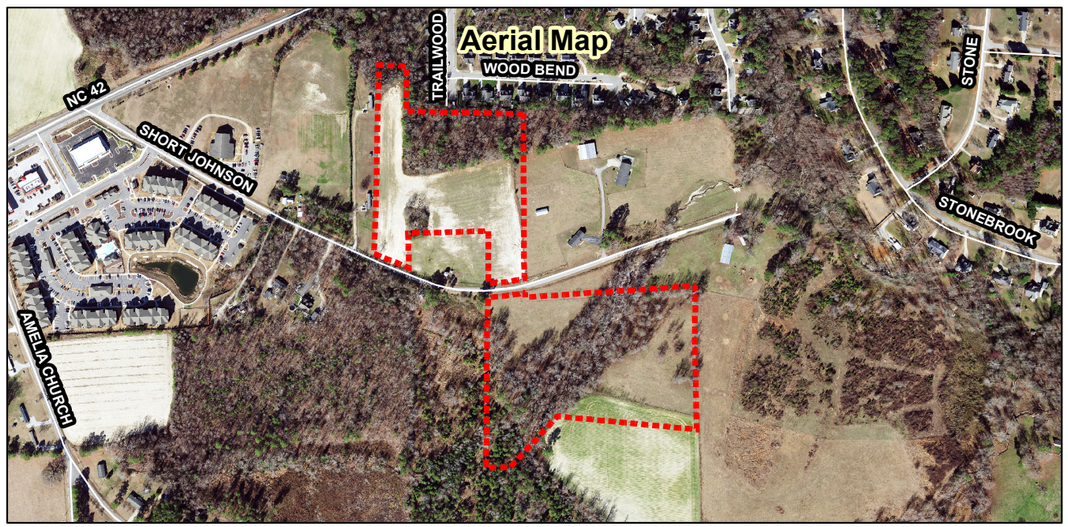
APPLICANT AFFIDAVIT

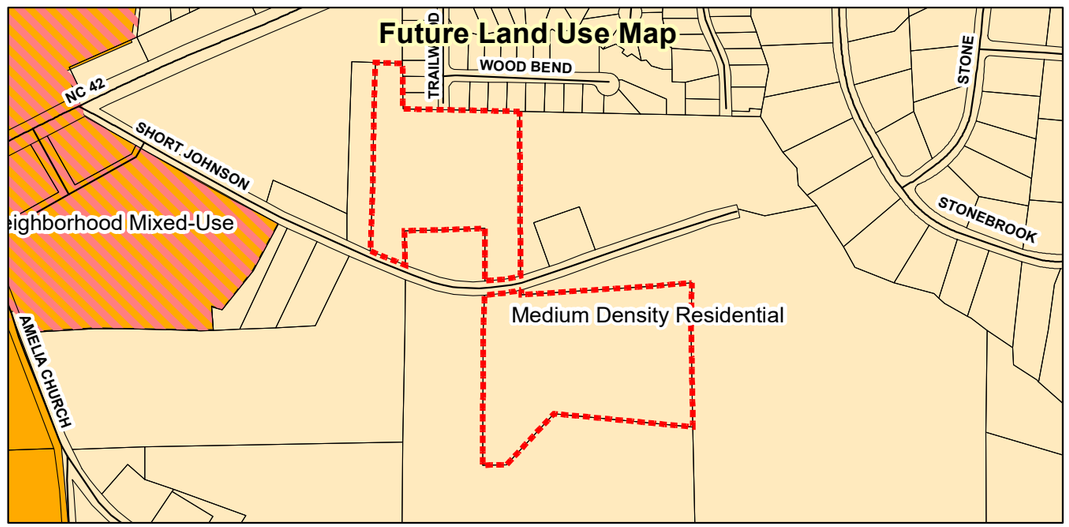
I/We, the undersigned, do herby certify that I have reviewed the recommended conditions of approval and am in agreement with the conditions as they are outlined within this letter.

H DEAN PENNY		10-20-22
Print Name	*Signature of Applicant*	*Date*









Request: Rezoning from R-E to CZ-R
Project Name: Short Johnson Road
Project Number: 2022-70-CZM

Applicant: Davis Park Leasing, LLC
Property Owner: Davis Park Leasing, LLC
Tag #: 05G03010

Site

0 0.2 0.4 Miles

N

Staff Report Map
Prepared by: TOC Planning Department
October 12, 2022

Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

Document Path: O:\PLANNING\CONDITIONAL ZONING w_MASTER\2022\2022-70-CZM Short Johnson Road\Staff Report Maps\Staff Report Maps - 2022-70-CZM Short Johnson Road.mxd

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

Conditional Zoning w/Master Plan Coversheet

Name of Project: Corbett Road Assemblage **Date:** June 1st, 2022

Applicant Name: Kimley-Horn

The following checklist to be completed by applicant:

[☑] Pre-Application Meeting on: April 19th, 2022
[☑] Review Fee
[☑] Completed Application
[☑] Owner's Consent Form
[☑] Adjacent Property Owner's List
[☑] Neighborhood Meeting Letter (one copy)
[☑] 2 sets of stamped, addressed, empty envelopes for adjacent property owner notification
[☑] Signed & sealed boundary survey
[☑] Copy of signed & sealed boundary survey in PDF on USB

[☑] Master Plan Set to include the following:
- Cover Sheet
- Survey
- Bubble Plan Outlining:
  a. Where and which uses or groups of uses will occur
  b. The proposed intensity/density of those uses
  c. General location of internal and external network of public right-of-way and public infrastructure
  d. All required elements for establishment of a zoning district including but not limited to dimensional standards, open space network, natural resource preservation, and landscaping or buffering

Reviewed by:_____

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

Conditional Zoning w/Master Plan Application

Conditional Rezoning w/Associated Site Plan Fee: $1000 + $5.00 per acre
Advertising Fee: $200.00

SITE INFORMATION

Name of Project: Corbett Rd. Assemblage

Acreage of Property: 86.39 Ac **Zoning District:** RE-Residential Estate

County Tag #: See list **NC Pin #:** See list

Address/Location: 100 Corbett Rd, Clayton, NC 27520

Existing Zoning District: RE-Residential Estate **Proposed Zoning District:** (CZ-R) Conditional Zoning - Residential

APPLICANT INFORMATION

Applicant: Kimley-Horn

Mailing Address: 421 Fayetteville Street, Suite 600 Raleigh, NC 27601

Phone Number: 919-653-2976 **Fax:** _____

Contact Person: Richard Brown, PLA

Email Address: richard.brown@kimley-horn.com

PROPERTY OWNER INFORAMTION

Name: _____

Mailing Address: _____

Phone Number: _____ **Fax:** _____

Email Address: _____

OFFICE USE ONLY

Date Received: _____ Amount Paid: _____ File Number: _____

January 2021

EXPLANATION OF PROJECT

Please provide detailed information concerning all requests. Attach additional sheets if necessary.

The site is currently zoned RE-Residential Estate and has been used for residential in recent history. The applicant proposes to redevelop the site for apartment, attached and detached single-family residential uses. The proposed development program would introduce new mixed residential community that will support and activate the proposed Copper District development to the East with additional housing options for individuals and families that desire to live closer to an urban growth core within Clayton's town limits with easy access to nearby US HWY 70. in order to execute this vision, the applicant wishes to rezone from the existing low density zoning classification to one that allows a more diverse mix of of lots/dwelling units and density within this Town growth center.

APPROVAL CRITERIA – REZONING

All applications for a Conditional Rezoning must address the following Approval Criteria:

1. Consistency with the adopted plans of the Town.
   See Narrative
2. Suitability of the subject property for uses permitted by the current vs. the proposed conditional district.
   See Narrative
3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.
   See Narrative
4. The capacity of adequate public facilities and services including schools, roads, recreation facilities, wastewater treatment, water supply facilities and stormwater drainage facilities is available for the proposed conditional district.
   See Narrative
5. It has been determined that the legal purposes for which zoning exists are not violated.
   See Narrative
6. It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare.
   See Narrative

7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

See Narrative

APPROVAL CRITERIA- MASTER PLAN

All associated Master Plans must address the following Approval Criteria:

1. Compliance with code section 155.203(L) and all other applicable requirements of this chapter, or analysis and justification if it deviates from the requirements of this chapter.

See Narrative

2. Consistency with the Clayton General Design guidelines.

See Narrative

3. Conformance of the proposal with the stated purpose of the requested conditional zoning district.

See Narrative

4. Compatibility of the proposed development with the adjacent community.

See Narrative

5. The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out.

See Narrative

6. Compatible relationships between each component of the overall project.

See Narrative

7. Self-sufficiency of each phase of the overall project.

See Narrative

8. Documentation that the proposed infrastructure improvements accommodate the additional impacts caused by the development, or documentation to assure that the development, as proposed, will not overtax the existing public infrastructure systems.

See Narrative

9. The fiscal impact of the proposal and the proposed financing of required improvements.

See Narrative

10. The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community.

See Narrative

11. The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

See Narrative

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town Council of the Town of Clayton to amend the Zoning Ordinance and change the Official Zoning Map of the Town of Clayton as requested.. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

Richard L. Brown, PLA		June 1, 2022
Print Name	*Signature of Applicant*	*Date*

NEIGHBORHOOD MEETING INFORMATION

Purpose:

The purpose of the Neighborhood Meeting is to inform the surrounding property owners of the nature of the proposed land use and/or development features, answer questions, respond to concerns, and solicit comments.

Meeting Date:

The neighborhood meeting must be held at least 10 days prior to the 1st scheduled public meeting date.

Meeting Time & Location:

The meeting must be held no earlier than 6:00 pm Monday through Friday, and must be held in a location generally accessible to residents within close proximity of the request. The meeting space must be able to comfortably accommodate everyone that receives an invitation.

Meeting Notice Mailing requirements:

a. The applicant must contact all adjacent property owners via first class mailing (see sample letter).

b. The mailing must include all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the subject property. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property.

c. The notice must be mailed at least ten (10) calendar days but not more than twenty-five (25) days prior to the date of the Neighborhood Meeting.

Information required to be provided at the Neighborhood Meeting:

At a minimum, the following materials must be present and discussed at a Neighborhood Meeting:

i. A copy of the project application.
ii. A schedule of all upcoming public meetings for the application.
iii. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
iv. A map, drawing, or other depiction of the proposed land use change or development proposal.

Information provided to Planning Department:

Alert the Planning Department once the date, location, and time of the Neighborhood Meeting are determined.

Deliver the following items to the Planning Department at least ten (10) calendar days prior to the 1st scheduled public meeting in electronic or hard copy format:

- ☐ Adjacent Property Owner's List (aka "mailing list") *Should be submitted with original application packet*
- ☐ Copy of the letter mailed *Should be submitted with original application packet*
- ☐ Attendance Roster (aka "sign-in sheet") *Submit no later than 10 days prior to 1st public meeting date*
- ☐ Neighborhood Meeting Summary Form with minutes (see below) *Submit 10 days prior to 1st public hearing*

January 2021

ADJACENT PROPERTY OWNERS LIST

Project Name: Corbett Road Assemblage

The following are all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the property (including across street rights of way) subject to this request. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property. Please use a separate sheet if necessary

It is the responsibility of the applicant to correctly identify the current owner, based upon records in the Johnston County GIS Office, for all property owners of land within the required public notice radius.

PARCEL NUMBER	NAME	ADDRESS

SAMPLE NEIGHBORHOOD MEETING LETTER
(PLACE ON AGENT'S OR OWNER'S LETTERHEAD)

<Date>

Dear Clayton Area Property Owner:

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change or development proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting will be held to provide information to area residents about the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: _____ Meeting Time: _____

Meeting Location: _____

Type of Application: _____

Project/proposal property address: _____

Description of project/proposal: _____

_____

Upcoming public meetings for this application (Planning Board and/or Town Council): _____

At a minimum, the following will be available for your inspection at the Neighborhood Meeting:

1. A copy of the project application.
2. A schedule of all upcoming public meetings for the application.
3. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
4. A map, drawing, or other depiction of the proposed land use change or development proposal.

A map is enclosed with this letter showing the location of the property that is subject to this application for land use change and/or development proposal.

If you have any questions prior to or after this meeting, you may contact us at ***<Insert phone number of applicant>***. You may also contact the Town of Clayton Planning Department at 919-553-5002.

Sincerely,

<Applicant>

Cc: Town of Clayton Planning Department

January 2021

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: _____

Application: _____

Location/Date: _____

NAME	ADDRESS
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January 2021

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application:

Date of Mailing:

Date of Meeting: Time of Meeting:

Location of Meeting:

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Printed Name: Signature:

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

January 2021

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03071T

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests***):

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Alicia Sue Johnson
(Name - type, print clearly)

534 Corbett Rd
(Address)

(Owner's Signature)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Carrie J Johnson, a Notary Public for the above State and County, this the 16 day of May, 2022.

SEAL:

CARRIE J JOHNSON NOTARY PUBLIC JOHNSTON COUNTY, NC

Carrie J Johnson
Notary Public

My Commission Expires: July 28, 2025

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03067A

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests***):

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Alicia Sue Johnson
(Name - type, print clearly)

534 Corbett Rd
(Address)

(Owner's Signature)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Carrie J Johnson, a Notary Public for the above State and County, this the 1st day of May, 2022.

CARRIE J. JOHNSON NOTARY PUBLIC JOHNSTON COUNTY, NC

SEAL

Carrie J Johnson
Notary Public

My Commission Expires: July 28, 2025

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03071T

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Joseph Christopher Johnson
(Name - type, print clearly)

534 Corbett Rd
(Address)

(Owner's Signature)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Carrie J Johnson, a Notary Public for the above State and County, this the 16th day of January, 2022.

SEAL CARRIE J. JOHNSON NOTARY PUBLIC JOHNSTON COUNTY, NC

Carrie J Johnson
Notary Public

My Commission Expires: July 28, 2025

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03067A

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Joseph Christopher Johnson
(Name - type, print clearly)

534 Corbett Rd
(Address)

(Owner's Signature)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Carrie J Johnson, a Notary Public for the above State and County, this the 4th day of May, 2022.

SEAL CARRIE J JOHNSON NOTARY PUBLIC JOHNSTON COUNTY, NC

Notary Public

My Commission Expires: July 28, 2025

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05F02037J

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Courtney Sanders
(Name - type, print clearly)

2219 J NC Highway 42 W
(Address)

Courtney Sanders
(Owner's Signature)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Betty J. Boswell, a Notary Public for the above State and County, this the 16 day of May, 2022.

SEAL

BETTY J BOSWELL NOTARY PUBLIC JOHNSTON COUNTY, NC My Commission Expires 10-23-23

Betty J. Boswell
Notary Public

My Commission Expires: October 23, 2023

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03070B

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Rezoning
Master Planning

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Henry Franklin Waters
(Name - type, print clearly)

Henry Franklin Waters
(Owner's Signature)

253 Corbett Rd.
(Address)

Clayton, NC 27520
(City, State, Zip)

STATE OF NC
COUNTY OF Johnston

Sworn and subscribed before me Lavern Carter, a Notary Public for the above State and County, this the 25 day of May, 2022.

SEAL

LAVERN CARTER NOTARY PUBLIC JOHNSTON COUNTY, NC MY COMMISSION EXPIRES JUNE 4, 2026

Notary Public

My Commission Expires: June 4, 2026

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03066B

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

James H. Wooten SR.
(Name - type, print clearly)

2117 NC 42 west
(Address)

James H. Wooten SR
(Owner's Signature)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me James H. Wooten SR., a Notary Public for the above State and County, this the 15th day of May, 2022.

SEAL

Joy R. Standridge
Notary Public

My Commission Expires: 3-19-2024

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03066

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Jason Tyler Merriman
(Name - type, print clearly)

2219 D NC 42 W
(Address)

clayton, NC, 27520
(City, State, Zip)

(Owner's Signature)

STATE OF North Carolina
COUNTY OF New Hanover

Sworn and subscribed before me Marco Monroy, a Notary Public for the above State and County, this the 16th day of May, 2022.

SEAL

MARCO MONROY
NOTARY PUBLIC
NEW HANOVER COUNTY, NC

Notary Public

My Commission Expires: 6-16-2024

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03071U

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

KELSEY MERRIMAN
(Name - type, print clearly)

2219 NC Highway 42 W
(Address)

Kelsey Merriman
(Owner's Signature)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Betty J. Boswell, a Notary Public for the above State and County, this the 16 day of May, 2022.

SEAL

BETTY J BOSWELL NOTARY PUBLIC JOHNSTON COUNTY, NC My Commission Expires 10-23-23

Betty J. Boswell
Notary Public

My Commission Expires: October 23, 2023

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03068A

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Laura B. Corbett
(Name - type, print clearly)

Laura B. Corbett
(Owner's Signature)

354 Corbett Road
(Address)

Clayton, NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me, Maegan Myers, a Notary Public for the above State and County, this the 17 day of May, 2022.

SEAL

NOTARY PUBLIC MAEGAN MYERS JOHNSTON COUNTY, NC

Maegan Myers
Notary Public

My Commission Expires: 6/12/2023

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03071P

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests***):

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Laura B. Corbett
(Name - type, print clearly)

Laura B. Corbett
(Owner's Signature)

354 Corbett Road
(Address)

Clayton, NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me, Maegan Myers, a Notary Public for the above State and County, this the 17 day of March, 2022.

SEAL

MAEGAN MYERS NOTARY PUBLIC JOHNSTON COUNTY, NC

Maegan Myers
Notary Public

My Commission Expires: 6/12/2023

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03071N

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Matthew R. Pooley
(Name - type, print clearly)

Matthew R. Pooley
(Owner's Signature)

2219 E. NC Hwy 42 West
(Address)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Betty J. Boswell, a Notary Public for the above State and County, this the 16 day of May, 2022.

SEAL

BETTY J BOSWELL NOTARY PUBLIC JOHNSTON COUNTY, NC My Commission Expires 10-23-23

Betty J. Boswell
Notary Public

My Commission Expires: October 23, 2023

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03071

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests)***:

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

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OWNER AUTHORIZATION:

Matthew R. Pooley
(Name - type, print clearly)

Matthew R. Pooley
(Owner's Signature)

2219 E. NC Hwy 42 West
(Address)

Clayton NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Betty J. Boswell, a Notary Public for the above State and County, this the 16 day of May, 2022.

SEAL

BETTY J. BOSWELL NOTARY PUBLIC JOHNSTON COUNTY, NC My Commission Expires 10-23-23

Betty J. Boswell
Notary Public

My Commission Expires: October 23, 2023

July 2018

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Corbett Rd Assemblage **Address or PIN #:** 05G03070S

AGENT/APPLICANT INFORMATION:

Kimley-Horn and Associates
(Name - type, print clearly)

421 Fayetteville Street, Suite 600
(Address)
Raleigh, North Carolina 27601
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (***list applicable requests***):

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

(Name - type, print clearly)

(Address)

(Owner's Signature)

(City, State, Zip)

STATE OF NC
COUNTY OF WAKE

Sworn and subscribed before me Denver Hill, a Notary Public for the above State and County, this the 19th day of May, 2022.

SEAL

DENVER HILL NOTARY PUBLIC WAKE COUNTY, NC

Notary Public

My Commission Expires: 9/20/2022

July 2018

Conditional Zoning Master Plan Narrative

For

Corbett Road Assemblage

A Mixed Residential Development District

Clayton, North Carolina

Prepared for:

The Town of Clayton, North Carolina

Submitted: June 1, 2022
Resubmitted: August 29, 2022
Resubmitted: September 27, 2022
Resubmitted: October 20, 2022

Applicant / Lead Consultant

KIMLEY-HORN

NC License #F-0102

421 Fayetteville St. Raleigh, North Carolina 27601

(919) 677-2000

Contract Purchaser/Developer:

DAVIS PARK LEASING, LLC

8000 Weston Parkway, Suite 360 Cary, NC 27513

(919) 414-1300



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Section 1.0 Purpose & Intent

The applicant of this project, Davis Park Leasing, LLC, proposes to create a mixed residential community of approximately 86.39 acres in western Clayton along the west side of Corbett Road near the intersection with Amelia Church Rd. The current zoning does not support the proposed land uses and density; therefore, a rezoning is needed to amend the current zoning map and district.

In light of the recent development activity and market trends in the Town's jurisdiction, and with a favorable development environment, this application seeks to advance the project with a master plan that is market driven while maintaining the broader goals of the Town's 2045 Comprehensive Plan and community area plan for the western NC 42 Corridor. The district will provide flexibility for a variety of residential land uses and product types within a planned framework to create a walkable neighborhood with community gathering spaces, neighborhood amenities as well as a pedestrian, bike and vehicular network connecting to the adjacent Copper District Mixed Use Development and its planned shopping amenities, employment, and entertainment destinations to serve western Clayton.

The proposed rezoning is being submitted as a conditional zoning request. Conditions associated with the request are intended to limit certain land uses, allow for a diverse mix of residential uses, and provide for a maximum density and range of lot sizes. The proposed commitments also include public street and multi-modal improvements as part of the master plan framework.



Exhibit A – Rezoning Boundary



SECTION 2.0 MASTERPLAN SUMMARY

The Development Concept

The district has been envisioned with consideration to the existing and future needs of the surrounding community with a diverse mix of quality residential options. The ~86.4 -acre master plan proposes up to 750 residential lots/units comprised of up to 365 multifamily residential dwelling units, and up to 385 single family attached and detached units. Of equal importance, the plan promotes a system of natural and constructed open spaces, and connectivity and walkability by proposed greenway and multi-use pathways throughout the development. Multiple vehicular and bike connections are also proposed to stub to surrounding properties. Thus, establishing a framework for interconnectivity as the surrounding properties are considered for potential redevelopment opportunities in the future.

The Masterplan is structured to provide form and framework in the plan but flexibility for developers to bring creativity in response to market conditions and the Town's vision for development and growth. The development proposed in the master plan is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties.

The Development meets the Specific Use standards and Development Standards defined in Articles 3 and 4 of the Town of Clayton Unified Development Code (UDC) by means of the design controls established within. More specifically, the Development Standards will reflect the following:

- Land Uses
- Residential Controls
- Key Development Standards
- Architectural Standards
- Landscaping, Buffering and Screening
- Stormwater Management
- Street Network and Access
- Vehicular and Pedestrian Circulation
- General Phasing

A. Compatibility

The proposal is compatible with the adjacent land uses. The land use program is designed to create compatible transitions to existing adjoining use and to create a harmonious relationship with these surrounding properties. There are no anticipated adverse impacts to adjoining property owners.

B. Phasing

The project is to be completed in multiple phases. Although improvements are intended to be phased pursuant to development within each phase, each of the phases will be self-sufficient with regards to infrastructure sufficiency.

Section 3.0 Conditional Zoning District Approval Criteria

The Town Council may consider the following factors in its legislative decision.

Consistency:

This proposal is **consistent** with adopted plans of the Town of Clayton and promotes the land use goals of the 2045 Comprehensive Plan.

LU-1: Preserve Clayton's character while allowing for growth and development in appropriate areas.
LU-2: Provide a sense of place and enhance aesthetics along major corridors and in new developments.
LU-3: Encourage a range of housing types and lot sizes that will meet the needs of various income levels, family sizes, and ages.
LU-4: Provide safe, sound, and well-maintained housing and neighborhoods.

Land Use: The Town's Future Land Use Map (FLUM) designates the property as "High-Density Residential" (HDR) which is intended to support the transition from suburban to a more urban residential character. The proposed plan provides single-family lots/dwellings at a gross **density** of </=10 units per acre, a residential mix of uses and minimum 15% of open space, thereby complying with the Future Land Use Plan.

HDR

High Density Residential (HDR)



The High Density Residential area provides for housing near major transportation corridors, existing commercial areas, and Downtown. These areas have a connected street network, adequate pedestrian and bicycle facilities, and are served by public water and sewer. High Density Residential includes all housing types while providing higher-density development than the other residential categories. In some places, HDR serves as a transition between commercial uses and lower-density residential uses. In other instances, it accompanies neighborhood commercial uses such as a grocery store or services in established or growing areas of Town.

- **Gross Residential Density*:** ≤10 units/acre, with higher densities allowed as part of planned developments that are walkable to commercial areas.
- **Unit Type:** Single family detached homes, townhomes and apartments.
- **Open Space:** Minimum of 10%**. Open space should be a mix of preserved natural features with passive recreation facilities, buffers to existing development and more formal or developed open space such as common greens, plazas, and/or playgrounds.



Suitability:

The property is **suitable** for the proposed land use, which is conducive to the location and supported by traffic and compatible with surrounding development patterns.

Context/Character:

The proposed district will allow for a neighborhood(s) with housing units that are more urban in character and in closer proximity to commercial services and centers. The proposed land use provides a transition from the more suburban areas of the Town to more developed areas.

Balance of Uses and Specific Demand:

This request seeks to improve the residential mix within this area of Town through the rezoning of the property from RE to CZ-R. This will provide compatibility with the Future Land Use Map and will also promote development at a density that is appropriate with the surrounded development patterns. The Town is seeking a diverse mix of quality single family residential communities and the market indicates a strong demand for quality housing within this trade area.

Adequate Public Facilities:

Adequate public facilities, including schools, roads/streets, wastewater infrastructure, public water and stormwater infrastructure are either existing or will be improved to meet the demands of the proposed land use program.

Schools - The subdivision is expected to be served by the Johnston County Public School System. Based on the JCPS School Finder, for the 2022-23 calendar year the assigned schools are West Clayton Elementary, Clayton Middle School, and Clayton High School. West Clayton Elementary and Clayton High are listed in the "2022-2023 Capped Schools" list.

Road/Street Infrastructure –
Internal Streets: The public street framework will generally be as shown on Sheet **P-02** – Master Plan. The street network will consist of public and private streets designed in general accordance with the Town of Clayton's current construction requirements. In addition, some custom street cross-sections are proposed for approval within the master plan.

A Traffic Impact Analysis (TIA) is submitted in conjunction with this application which proposes some improvements to the existing public street infrastructure, subject to review and final negotiations with NCDOT and the Town of Clayton.



NCDOT Roadway Improvements: The following offsite improvements are proposed to be constructed in conjunction with each phase of the development. The timing of offsite improvements shall be determined by the phasing analysis per the approved TIA.

Amelia Church Road at Corbett Road:

- Construct an exclusive eastbound right-turn lane on Amelia Church Road with 100 feet of storage and appropriate taper.

Corbett Road at Site Access A:

- Construct Site Access A as a right-in/right-out access with one ingress lane and one egress lane.

Corbett Road at Site Access B:

- Construct Site Access B as a full-movement access with one ingress lane and one egress lane.

Corbett Road at Site Access C:

- Construct Site Access C as a full-movement access with one ingress lane and one egress lane.

Corbett Road at Site Access D:

- Construct Site Access D as a full-movement access with one ingress lane and one egress lane.

Recreation and Open Space - In addition to participation in the Town's Recreation and Open Space Fees, the site will have its own designated open space areas located throughout the neighborhood community. At build-out, open space areas will total at least 15% of the net land area within the district boundary (net land area excludes public right of way dedication), thereby exceeding the 10% guidance in the 2045 Comprehensive plan. Additionally, a minimum of 25% of the open space provided will be active.
A wastewater allocation request is submitted at the time of this application. Five (5) points towards the allocation score are proposed as Residential – Additional Amenities. At least one of the following amenities will be provided: Pool, clubhouse, neighborhood play area, playground, dog park or an activity lawn.

Stormwater
In accordance with the Town's requirements, the SCMs will be designed to treat and control one inch of rainfall. Peak discharge will be controlled at or below pre-development levels for the 1-year, 2-year, 10-year, and 25-year storm events. Existing non-jurisdictional ponds on the property may be reshaped and/or utilized as storm water control measures.
Existing ponds and water features as shown in P-02 are approximate and subject to USACOE and NCDEQ jurisdictional review. These ponds, if non-jurisdictional, may be used



for the purposes of stormwater quantity control and quality treatment with upgrades that bring these devices to Town of Clayton and NCDEQ standards. If any pond is determined to be jurisdictional, then it shall remain in its current state unless permitted to be removed in accordance with USACOE and NCDEQ regulations. If additional stormwater measures are required for attenuation and treatment of stormwater beyond those shown in the master plan, they will be shown at the time of site planning for each subsequent development. Any and all stormwater devices, either upfit of existing ponds or proposed stormwater control measures, shall conform to Town of Clayton and NCDEQ regulations.

Public Utilities

In accordance with the Town's requirements, the development will be served by public utility infrastructure. There is an 8" public water line within Corbett Road and a 12" line within Amelia Church Road that will serve the development. A public water utility network will be provided for within property shown in Exhibit A to serve the proposed development. The new water network will be of adequate size for domestic and fire demands in accordance with state and town of Clayton regulations. A public gravity sewer line (8-12" based on estimated flows) will be installed through the development. This sewer main is anticipated to follow the public right of way and will connect to the proposed Copper District sewer pump station that is conditionally approved as of the time of this application.

Legal Purposes:

The proposed zoning will not result in violations to the legal provisions of the Town's Code. In accordance with 155.705(A) of the UDC, the district area is significantly larger than the 5-acre minimum for a Conditional Zoning district. The master plan proposal could not be feasibly developed under a traditional zoning district. The Conditional Zoning establishes alternatives to the Unified Development Code and provides for the possibility of mutually agreeable zoning conditions through the rezoning process for this request.

Adverse Effects:

The proposed zoning does not adversely affect the adjoining properties and property owners. The zoning district allows for residential development that is compatible with the intent of the FLUM. The development will improve vehicular and pedestrian connectivity to and from neighboring properties. Storm water and sedimentation/erosion control measures will adhere to local and state regulations.

Material Benefit:

The proposed zoning will allow for a residential subdivision and associated connections and services. As such, the proposal does not result in one property owner or small group of property owners to the detriment of the general public.



Section 4.0 Master Plan Approval Criteria

A. Compliance with § 155.203(L)

Compliance with § 155.203(L) and all other applicable requirements of Chapter 155, or analysis and justification if it deviates from the requirement of Chapter 155:

The proposed master plan complies with the land uses, density of the CZ - Residential district. The project is made up of 15 properties and approximately 86.39 total acres of land. The plan proposes a residential mix of uses. The master plan (P-02) provides for a Class 'C' landscape buffer along all adjoining property boundaries with the district, except where the district shares a boundary with the Copper District to the west.

B. Clayton General Design Guidelines

Consistency with the Clayton General Design Guidelines:

The proposed project is generally consistent with the majority of elements within the Design Guidelines. The plan considers the Site Planning guidance through appropriate land use relationships, land form, and drainage. Tree preservation will be focused on environmentally sensitive areas including known jurisdictional stream buffers and wetland areas. Mobility consideration is accomplished through a street framework, and a multi-use trail network. On-site and on-street parking is also envisioned. Landscaping, screening, buffering, signage, walls/fences and lighting guidelines will follow the town UDC requirements in effect at the time of this rezoning. A pedestrian/streetside trail system and open network is also proposed as part of this master plan. This will expand on the Copper District pedestrian network via connections to that proposed private greenway trail system as well as public streetside pedestrian paths.

C. Conformance with Purpose

Conformance of the proposal with the stated purpose of the requested conditional zoning district:

The district's intent is to allow for a mix of housing types, including buffering and open space amenities. The development will provide vehicular and
pedestrian connectivity through the existing facilities and a proposed transportation and pedestrian network to serve the community.

D. Compatibility with Community

Compatibility of the proposed development with the adjacent community:

The proposed development is at a density compatible with the proposed Copper District to the west of the property. Other surrounding properties are zoned Residential RE and include a combination of vacant and low-density residential land uses. The Master Plan will provide appropriate land use transitions with the lower density land uses adjoining the surrounding properties zoned Residential Estate (RE) with existing single-family homes. Appropriate land use buffers are also proposed. The overall gross density proposed by this application will remain under 10 units per acre. Additionally, the CZ



district, as defined in the UDC, permits cluster subdivisions with a diversity of lot sizes and more open space, similar to this proposal.

E. Quality

The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out:

The quality of this project will be based on the preservation of environmentally sensitive areas and appropriate perimeter land use buffers. Quality homes, roads, pedestrian paths and open space will be provided that will be organized in a way to create a quality community.

F. Compatible Relationships

Compatible relationships between each component of the overall project:

The Corbett Road Assemblage master plan has been designed to promote compatibility through connectivity and circulation, amenities, the residences, and the community will be organized around sensitive natural features. Open spaces, storm water ponds and perimeter buffers have been designed in a way to optimize compatibility internal and external to the development.

G. Self-sufficiency

Self-sufficiency of each phase of the overall project:

The project will strive to conform to applicable requirements of the UDC and/or those defined within this master plan. Infrastructure elements including streets, public water and wastewater service, stormwater infrastructure and open space will be designed in such a way that the overall project and each phase will be compliant with the standards.

H. Fiscal Impact

The fiscal impact of the proposal and the proposed financing of required:

improvements. Financing for the development will be provided by the developer. By approval of this rezoning, the Town will be benefit from additional tax base and development of this property in a manner consistent with the Comprehensive Plan.

I. Pedestrian and Bicycle Links

The success of the proposal in providing adequate multi-use paths and greenway links within the development and with the adjacent community to the extent feasible:

This project will create connections to existing Corbett Road and to the proposed Copper District to the west. And will provide public sidewalk along the existing frontage of the property. All proposed streets will have pedestrian sidewalks and accessibility in accordance with Town standards.

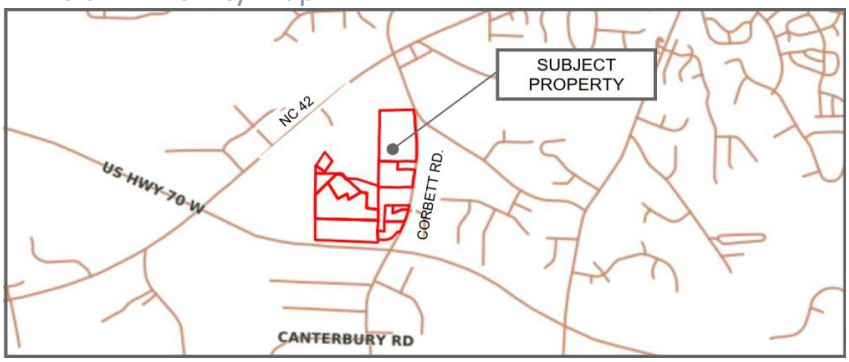
J. Ecological Sensitivity

The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development:

Except where street connection is required for access, all riparian buffers, streams, and wetlands will be protected as part of this development plan. There is one proposed stream crossing on the southern portion of the property, which will be designed to minimize impact to the stream.

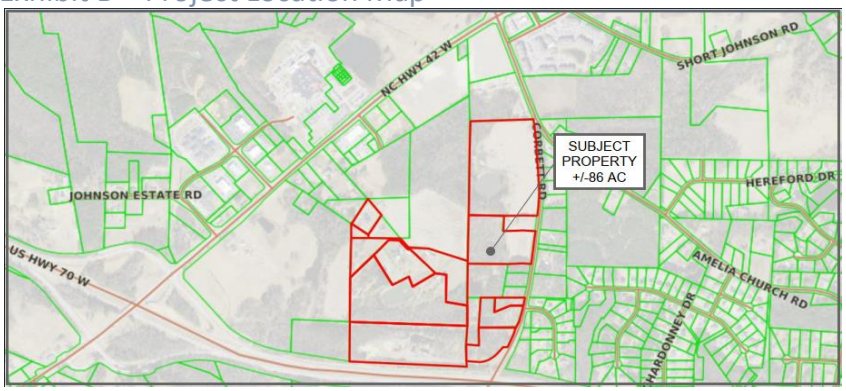
Section 5.0 General Project Information

Exhibit A – Vicinity Map



Not To Scale

Exhibit B – Project Location Map



Scale: 1" = 1000'



PROJECT DATA:

A. Project Name: Corbett Road Assemblage

B. Applicant / Land Planner: Kimley-Horn and Associates
421 Fayetteville St. Raleigh, NC 27601
Contact: Richard Brown, PLA (919) 653-2976
richard.brown@kimley-horn.com

D. Zoning: Existing: RE – Residential Estate
Proposed: Conditional Zoning (CZ) District

E. Land Use: Existing: Single Family; Vacant
Proposed: Mixed Residential (Multi-family; single family attached and detached)

F. Total Master Plan Area: **86.39 acres**

G. Property Owners: See sheet P-02

H. Developer/Contract Purchaser: Davis Park Leasing, LLC c/o Craig Davis Properties, Inc.
8000 Weston Parkway, Suite 360
Cary, NC 27513
Contact: Dean Penny; Craig Davis

I. Applicant/Authorized Agent: Kimley-Horn
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
Contact: Richard Brown, PLA



Section 6.0 Land Use, Intensity and Design Controls

The district is intended to provide a cohesive mix of residential and service uses within a planned development with appropriate perimeter buffering and open space. The primary land uses within this district are anticipated to be single family detached, although the zoning allows for flexibility to respond to market demands and provide for a physically and functionally integrated community.

This application provides for the following uses to be permitted by right within the district, as provided for in the Masterplan Text, and in accordance with the Use table of the Town's Unified Development Code. The permitted uses for the project, in its entirety, shall be as follows:

6.1 Permitted Uses

I. Standard Residential Typologies (Section 155.301)

A) Single Family detached (Front / Alley / Rear Loaded)
B) Townhome
C) Zero lot line residence
D) Duplex
E) Multi-Family/Apartment/Cottage
F) Bed and Breakfast

II. Recreational Use (Section 155.303)

A) Pool / Clubhouse
B) Neighborhood Community Center
C) Park (pocket park, tot lot, dog park, etc)

III. Accessory Uses (Section 155.202 and 155.308):

A) Accessory Dwelling Unit
B) Food Truck
C) Outdoor dining (neighborhood café, bar) *

Note: Where uses are not specifically address or modified within this master plan narrative, uses will follow the Use Regulation Table as provided for in the Town of Clayton Unified Development Code.

**Maximum total sf = 5,000 sf*

END OF PERMITTED USES

6.2 Non-Permitted Uses

The following uses will be specifically precluded by the master plan

A) Boarding house



B) Manufactured Homes
C) Golf course
D) Telecommunications Facility
E) Commercial Uses
F) Group Care Home (7 to 12 Residents)
G) Kennel

6.3 Residential Land Use Controls

I. Maximum Residential Units/Lots

A. *Residential Uses* = up to 750 dwelling units[2]

Note 1: Single Family attached, and detached lots/units may be interchangeable.

Note 2: Residential uses may be transferred between tracts. However, in no case shall the overall intensity (total dwelling units) of residential development exceed the maximum listed herein, without approval of an amended Trip Generation Analysis or TIA to demonstrate the adequacy of proposed roadway improvements to accommodate requested increases. Proposed maximums do not include Accessory Dwelling Units.

B. Allowable Residential Use Types:
Residential uses may include those provided for in *Section 6.1 - Permitted Uses*.

6.4 Residential Design Controls

Article 4 Design Standards, 155.405 Table of Intensity and Dimensional Standards shall apply to all uses EXCEPT as specifically provided for below. If subsequent revisions to the UDC after approval of the Conditional Zoning result in less restrictive standards, those standards may be then applied accordingly.

Land Use	Access	Lot Size Range	Min. lot width	Front setback*	Side setback*	Side Street	Rear setback*	Max. Impervious Coverage %	Max Lot Coverage % **	Max height	Max. density /ac ***
Single Family Detached	Front Loaded	2,000 SF – 10,000 SF	42’	25’	6’	10’	15’	70%	60%	35’	10
Single Family / Zero Lot Line	Front Loaded	2,000 SF – 10,000 SF	42’	25’	0’	10’	15’	70%	60%	35’	10
Single Family Attached	Alley / Rear Loaded	2,000 SF – 10,000 SF	30’	20’	6’	10’	20’	70%	60%	35’	10
Townhouses (attached)	Front Loaded	1,800 SF – 3,500 SF	18’	25’	0’	10’	10’	70%	70%	45’	10
Multi-family Apartments/Condos	------	NA	60’	20’	20’	15’	20’	70%	70%	55’	10

**** Internal Setbacks:*** *there shall be no minimum front or side street setback to internal private alleys/access easements.*
********The maximum area of the lot that is permitted to be covered by buildings. This may include principal and accessory building structures.*
********* *Density/Acre shall be measured based on the overall zoning district boundary.*



Table ES-1 – *Trip Generation Comparison*

Table ES-1 ITE Traffic Generation (Vehicles) – Scenario 1								
Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		PM Peak Hour	
				Total	In	Out	In	Out
210	Single-Family Detached Housing	200	d.u.	1,910	36	104	120	71
215	Single-Family Attached Housing	185	d.u.	1,360	28	63	61	46
220	Multifamily Housing (Low-Rise)	365	d.u.	2,416	33	103	112	66
Total Trip Generation: Scenario 1				**5,686**	**97**	**270**	**293**	**183**

As per Table ES-1, the assumed density of 750 homes/units would be expected to generate approximately 347 new trips during the AM peak hour and 437 new trips during the PM peak hour.

Note: The Planning Director may approve up to a 10 % increase in density, provided that these increases do not exceed the total trip generation budgets set forth by the table above.

6.5 Landscaping, Buffering and Screening:

The proposed landscaping is an important and unifying element throughout the district. The following outlines basic elements and areas of special consideration. Where landscaping is not specified herein, development shall comply with the required Landscaping Regulations of the current UDC.

Street Protective Yards: To enhance thee street frontage, the developer will provide a minimum twenty (20') foot wide type C street yard along the Corbett Road frontage. Street yard plantings for areas along the frontage shall be installed at an average rate of 1 per 40' for street trees. This frontage excludes proposed right of way for new streets serving the development. This 20' wide street yard will also be designated and credited toward the open space for the overall development.

Street protective yards along new neighborhood public streets will be 10-15' wide with an average of 1 street tree per 40'. Streetyard plantings shall not apply to private alleys.

All street yard trees shall be a minimum of two and one-half caliper inches at time of planting and shall be planted no less than five feet or more than 15 feet from the back of the sidewalk.

All portions of the master plan shall meet Section 155.402 of the UDC, Landscaping, Screening and Buffering unless specifically provided for within and provided that the Planning Director may approve a reduction or elimination of required buffers or screening between like uses/lots at the time of individual site plan submittals.



Perimeter Bufferyards: Specific buffer standards are included in the master plan as provided for in the UDC, Landscaping, Buffering and Screening and as identified on the Master Plan ***P-02***. A Class 'C' buffer will apply to property lines adjoining the district boundary as specifically reflected on the masterplan (Sheet P-02). This buffer shall not apply along the district boundary with the Copper District to the west.

6.6 Open Space:

Open Spaces will be dedicated throughout the district. As an alternative to providing 1,245sf/lot, the master plan proposes to total to establish a minimum 15% of dedicated open space. Additionally, a minimum of 25% of the open space provided will be active. The remaining 75% open space shall be passive. Active open space areas will be provided in the form of plazas, parks, neighborhood amenities, mult-use paths and greenways, recreation lawns, etc. Passive open spaces will include existing natural areas, ponds, wetland areas, vegetative buffers, etc.

Section 7.0 Parking and Loading Requirements:

Except where otherwise noted and approved by Town Council, Parking and Loading for all uses included in The Development shall comply with the UDC in effect at the time of this approval.

Section 8.0 Architectural Standards:

Allowable Residential Building Materials:

Materials shall include, but not be limited to, the following:
A. Brick or simulant;
B. Stone or simulant,
C. Premium Vinyl (minimum thickness of 0.042")
D. Stucco (to be used as trim or accent and will not be used as a primary material);
E. Wood siding, cement fiber siding (Hardi-plank), and Wood composite (Smart side).

Masonry materials as listed above shall apply to a minimum 25% of the primary street facing façade. Other materials (with the exception of vinyl) may be used for the remaining 75% of front facades. All materials shall be allowed on the side and rear facing building elevations. At the time of Site Plan submittal, preliminary elevations will be submitted for review and approval. At the time of Building Permit application, a materials board shall be submitted to the Town of Clayton for administrative approval.

In order to ensure architectural variety within the neighborhood, no single family detached home shall be constructed with an exterior elevation (front façade) or color palette that is identical to the home on either side or directly across the street from it.



Section 9.0 Signage:

All signage within The Development shall comply with the signage requirements as set forth in the Town of Clayton's Unified Development Code. Individual Signage Plans shall be submitted as part of the individual plan approvals for the various development tracts within The Project.

Section 10.0 Storm Water Management:

Much of the project area is comprised of vacant and single-family structures. The property currently drains to a nearby stream outfall and drainage channels internal to the site. The proposed development will require storm water management measures for quality and quantity treatment in accordance with the Town of Clayton Stormwater Design Manual. A network of subsurface reinforced concrete pipes will convey storm water flows from impervious areas to proposed Stormwater Control Measures (SCMs). Locations for the SCMs are generally identified on the Master Plan **P0-2**. However, the number of SCMs and their exact locations and sizes will be determined at subdivision/site plan, based on the actual design and engineering of the site. All stormwater management will be required to meet all North Carolina Department of Environmental Quality (NCDEQ) and Town of Clayton design requirements at time of Subdivision infrastructure or Site plan submittal.

Section 11.0 Natural Resource & Environmental Protection

I. Watershed Information:
The subject property is located within the Neuse River Watershed District.

II. FEMA Floodplain
There is no FEMA floodplain located on the subject property per FIRM Map 3720164800K, Panel: 1648,
effective June 20, 2018.

The Development shall comply with the applicable regulatory standards of the Town's UDC as amended related to natural resource and environmental protection and the provisions of the Masterplan.

III. Environmental Findings:
Kimley-Horn conducted an environmental wetland and buffer delineation on the property. Streams and wetland and jurisdictional determinations have been preliminarily mapped by Kimley-Horn and Associates. Applicability and status of these features will be confirmed and reviewed by NCDENR and the Army Corps of Engineers prior to development.



IV. Resource Conservation Areas:
Per the current UDC, Resource Conservation Areas may not be occupied by buildings or other impervious surface areas associated with development impacts exceeding 5% of each Resource Conservation Area. This master plan seeks to allow impacts for necessary impacts for public infrastructure (roads and utility crossings) to adequately serve the development.

The proposed master plan (sheet **P-02**) will require limited impacts to these RCAs to the extent practical. Proposed impacts shall be limited to public streets and pedestrian walkways (sidewalks, multi-use paths, etc) such that wetland disturbance does not exceed ½ acre as required by the US Army Corps of Engineers. These impacts are necessary in order to serve the public benefit of the overall development as well as surrounding land areas which will be offered public access through the property. However, in no case shall private buildings, structures, parking, or other impervious surfaces impact greater than 5% of any resource conservation area.

Section 12.0 Public Facilities:

All public facilities improvements shall be designed and installed in compliance with the Town of Clayton Ordinance, Chapters 50-52. Each of the major infrastructure elements is described below:

12.1 Water Service

A County-owned public water main exists within Corbett Road and serves some of the properties within the assemblage. Other properties are served by individual wells. It is anticipated that the water main within Corbett Road will be converted to Town of Clayton service via a master interconnect meter to serve this district. The anticipated location is on the north end of the Corbett Road near to the Amelia Church Rd intersection. Final master interconnect meter configuration and locations will be determined during the Construction Drawing Review process subject to agreement between the applicant/developer, Town staff and Johnston County. All master interconnect meter improvements are required to be completed prior to the certification of any utility infrastructure as necessary to serve each phase of the development and prior to recordation of the first final plat for each phase.

A public water utility network will be provided for within the development that will connect to the water network of the Copper District project to the west to serve the proposed uses and demands. Additional water capacity and services are planned for the Copper District to the west of the property via public mains and an elevated water storage facility. Water services are anticipated to be connected to the existing main within Corbett Road or the proposed looped system through this development via extension of a public main from Copper District. The size and specification of public water infrastructure



shall be determined during final design and will conform to Town of Clayton Public Works and Utilities Department requirements.

12.2 Sanitary Sewer Service

In accordance with the Town's requirements, the development will be served by public utility infrastructure. A public gravity sewer line (8-12" based on estimated flows) will be installed through the development. This sewer main is anticipated to follow the public right of way and will connect to the proposed Copper District sewer pump station that is in permitting as of the time of this application.

It is anticipated that the 750 residential units for this development will produce 209,350 GPD of residential wastewater. Additionally, the amenity area bathroom facility is anticipated to have 22 plumbing fixtures that will generate 5,500 GPD of wastewater. The total wastewater allocation request shown in this package is 214,850 GPD. See wastewater allocation request for details.

12.3 Gas & Electric Service

For areas with existing electrical infrastructure, the developer will have a choice of service provider. It is anticipated that the major power distribution on the site perimeter will be standard overhead lines along public streets and internal services will be installed underground along the proposed public roadway infrastructure.

12.4 Streets/Roads:

The Development will require improvements to develop a new internal roadway network and external points of access in accordance with the recommendations of the final Development Transportation Impact Analysis and as approved by the NCDOT. Roadway improvements required to support the subdivision will include public streets. The street network and designations are shown on ***P-02.*** The street network is conceptual and subject to adjustment pending final design and engineering. Public right of way dedication will be required for proposed internal public streets as shown on the Masterplan.

Access: A total of four (4) new access points are identified from Corbett Road. See ***P-02*** – *Master Plan*. Final engineering plans for driveway access will be developed in conjunction with individual subdivision / site plan applications.

Future Cross Access: Cross access locations shall be provided as shown on the Master Plan (P-02). An offer of cross access to these adjoining parcels from the internal street network will be a condition of the zoning. This will occur via an executed access easement to a common property line be made in a timely manner in coordination with the proposed action by NCDOT.



Section 13.0 AMENDMENTS AND APPROVALS

13.1 Property Owner Changes

Only parties owning property within the Conditional Zoning District boundary shall have the right to amend this Masterplan and the Exhibits hereto, but only to the extent any such amendment applies to individual properties owned by such parties. Any property owners' association owning and/or maintaining common open space and/or landscape amenities must join in all amendments to this Masterplan.

13.2 Town Approval of Changes

Amendments to this Master Plan may be required from time to time. Any future, proposed amendments shall be reviewed and approved in accordance with the requirements of Article 7 of the Unified Development Code.

The Planning Director may approve up to a 10 % increase in sf, provided that these increases do not exceed the total trip generation budgets set forth by the TIA.

END OF MASTER PLAN TEXT



2022-88-CZM Corbett Rd Assemblage – Master Plan
List of Proposed Conditions/Commitments:

Following are a list of conditions offered in conjunction with the CZ-R district:

1) The Maximum number of number of lots/units within the district boundary shall not exceed 750 or 10 DU/Ac whichever is less. Additionally, the lot dimensional standards for attached and detached residential lots within the district boundary shall follow the design controls set forth within Section 6.4 of the Master Plan narrative.

2) A 20' wide Type 'C' buffer will be provided in all locations where a residential lot abuts an adjacent residential use outside of the district boundary. This buffer shall include either a wall, opaque fence, evergreen hedge, berm or combination thereof with a minimum height of 6' at installation. Where environmental features and/or other natural wooded areas exist at the district boundary the preservation of existing vegetation may be used to satisfy this buffer requirement.

3) The developer will provide a minimum twenty (20') foot wide type C street yard along the Corbett Road frontage. Street yard plantings for areas along the frontage shall be installed at an average rate of 1 per 40' for street trees. Street protective yards along proposed new public streets will be 10-15' wide with an average of 1 street tree per 40'. Street yards shall not apply to private alleys or rear-load conditions.

4) A minimum of 13 Acres (15% of gross land area) will be dedicated as open space throughout the district. Open space areas may include natural and/or constructed neighborhood amenities, ponds, greenways/trails, multi-use paths, community gathering spaces, pool/clubhouse(s), open lawn areas, and other neighborhood common areas that are not within individual ownership and accessible to all homeowners within the development. The development will also be responsible for meeting the requirements of the then current Unified Development Code, requiring dedication or payment-in-lieu for recreation or open space to the Town.

5) The allowable uses within the district shall be as per Section 6.1 of the Master Plan Narrative. The following uses as set forth in Section 6.2 of the Master Plan narrative will be specifically prohibited within the district.
   - Boarding house
   - Golf course
   - Telecommunications Facility
   - Commercial Uses
   - Manufactured Home/Manufactured Home Park
   - Group Care Home (7 to 12 Residents)



- Kennel

6) Masonry materials, as listed in the Conditional Zoning Master Plan Narrative, shall apply to a minimum of 25% of the primary street facing façade for construction of new single family and multi-family buildings. Per Section 8.0 - *Architectural Standards* in the Master Plan narrative, other non-masonry materials may be used for side and rear facing building elevations.

7) In order to ensure architectural variety within the neighborhood, no single family detached home shall be constructed with an exterior elevation (front façade) or color palette that is identical to the home on either side or directly across the street from it.

8) Sustainable high efficiency products and/or appliances will be provided as part of the development in order to achieve wastewater allocation. A minimum of two (2) of the following energy efficient elements shall be included within each single-family home/unit.
   - Electric heat strips;
   - Low flow water fixtures (faucets and shower heads);
   - Low flush toilets;
   - LED Lighting throughout home;
   - Air Barrier & Sealing;
   - Decorative Fiberglass Insulated Front Door;
   - Gas Heat (2nd Floor Electric Heat Pump if Separate System);
   - Low VOC Paint;
   - Low-E Insulated Single-hung Vinyl Windows w/ Tilt Out Feature.

9) At least one of the following amenities will be provided: Pool, clubhouse, neighborhood play area, playground, dog park or an activity lawn.

10) The developer is responsible for the construction of a new master interconnect meter along Corbett Road and modifications to the existing master interconnect meter located at the intersection of NC-42 and Amelia Church Road to provide Town of Clayton Utility service to the subject development. Additional interconnect meter modifications or construction may be necessary near the intersection of Corbett Road and Amelia Church Road.
    Final master interconnect meter configuration and locations will be determined during the Construction Drawing Review process subject to agreement between the applicant/developer, Town staff and Johnston County. All master interconnect meter improvements are required to be completed prior to the certification of any utility infrastructure as necessary to serve each phase of the development and prior to recordation of the first final plat for each phase.



11) The street network, access points and cross-connections shall generally be constructed as shown on the Master Plan. Changes to the layout of the street network can be approved administratively by staff, but any changes to the number of access points or cross-connections shall require approval by Town Council.

12) The following offsite improvements will be constructed as determined by Scenario 2 of the Traffic Impact Analysis reviewed by NCDOT in conjunction with this rezoning request. Phasing of these improvements will be determined per a phasing analysis to be submitted by the developer for approval by NCDOT prior to the issuance of the first site permit within the zoning district boundary.

Corbett Road at Site Access A:

- Construct Site Access A as a right-in/right-out access with one ingress lane and one egress lane.

Corbett Road at Site Access B:

- Construct Site Access B as a full-movement access with one ingress lane and one egress lane.

Corbett Road at Site Access C:

- Construct Site Access C as a full-movement access with one ingress lane and one egress lane.

Corbett Road at Site Access D:

- Construct Site Access D as a full-movement access with one ingress lane and one egress lane.



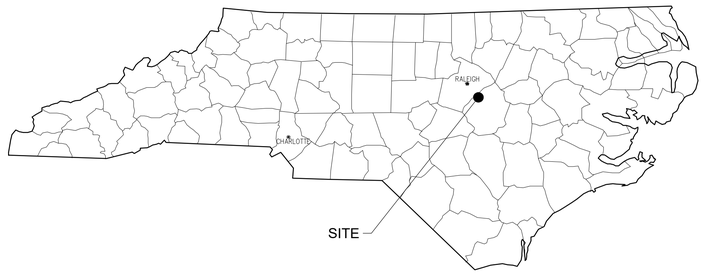
Exhibit D - Property Ownership / Adjoiners

Property Owner Name	Address
DWB PROPERTIES LLC	PO BOX 324 GARNER, NC 27529-0324
YOUNG MEN'S CHRISTIAN ASSOCIATION OF THE TRIANGLE AREA, INC.	801 CORPORATE CENTER DR STE 200 RALEIGH, NC 27607-5243
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
ARMWOOD, GLENN	184 CORBETT RD CLAYTON, NC 27520-0000
TRUITT, MICHAEL M TRUITT, SHERRY B	276 CORBETT RD CLAYTON, NC 27520-0000
JANIFFA H ALLEN REVOCABLE TRUST ALLEN, JANIFFA H TRUSTEE	217 CORBETT RD CLAYTON, NC 27520-6424
JANIFFA H ALLEN REVOCABLE TRUST ALLEN, JANIFFA H TRUSTEE	217 CORBETT RD CLAYTON, NC 27520-6424
BENSON, JEANNIE T.	296 CORBETT RD CLAYTON, NC 27520-6423
BENSON, JEANNIE T.	296 CORBETT RD CLAYTON, NC 27520-6423
ARMWOOD, GLENN	184 CORBETT RD CLAYTON, NC 27520-0000
PAGE, ALICE DAVID	2219G NC HIGHWAY 42 W CLAYTON, NC 27520-8346
BERMUDEZ, FORTINO GAYTAN BERMUDEZ, MARTHA DIAZ	2325 HEMLOCK CIR CLAYTON, NC 27520-0000
BLINSON, BENJAMIN G BLINSON, TRUDE	2219I NC HIGHWAY 42 W CLAYTON, NC 27520-8346
PERRY, WILMER HOMER PERRY, SHIRLEY DIANE	297 CORBETT RD CLAYTON, NC 27520-0000
TOTTEN, TIMOTHY F TOTTEN, JULIE A	29 HANNAH DR CLAYTON, NC 27520-8521
CORBETT, JOHNNY CORBETT, LISA	371 CORBETT RD CLAYTON, NC 27520-0000
CORBETT, JOHNNY CORBETT, LISA	371 CORBETT RD CLAYTON, NC 27520-0000
WEEKS, LOIS G	423 CORBETT RD CLAYTON, NC 27520-6428



COPPER LAND LLC	8000 WESTON PKWY STE 360 CARY, NC 27513-2123
CMD 78 ASSOCIATES, LLC	8000 WESTON PKWY STE 360 CARY, NC 27513-2123
AUDREY WOOTEN LIVING TRUST WOOTEN, AUDREY M. TRUSTEE	2117 NC HIGHWAY 42 W CLAYTON, NC 27520-8344
AUDREY WOOTEN LIVING TRUST WOOTEN, AUDREY M. TRUSTEE	2117 NC HIGHWAY 42 W CLAYTON, NC 27520-8344
LANGDON, BENNY LANGDON, SETH	19 SLATEFORD DR CLAYTON, NC 27520-7507
JERRY M COATS AND PHYLLIS G COATS TRUST COATS, JERRY M TRUSTEE	2149 NC HWY 42 WEST CLAYTON, NC 27520-0000
AIKEN, W DALE CANADY, SUSAN A	6406 OLD FAIRGROUND RD BENSON, NC 27504-9690
HEALTHPARK AT FORTY TWO WEST LAND LLC	1436 RIDGE RD RALEIGH, NC 27607-6729
WATERS, HENRY FRANKLIN WATERS, PATRICIA HOCKADAY	253 CORBETT RD CLAYTON, NC 27520-6424
PERRY, WILMER HOMER PERRY, SHIRLEY DIANE	297 CORBETT RD CLAYTON, NC 27520-0000
TOTTEN, TIMOTHY F TOTTEN, JULIE A	29 HANNAH DR CLAYTON, NC 27520-8521
COATS, JERRY M COATS, PHYLLIS G	2149 NC HIGHWAY 42 W CLAYTON, NC 27520-8344

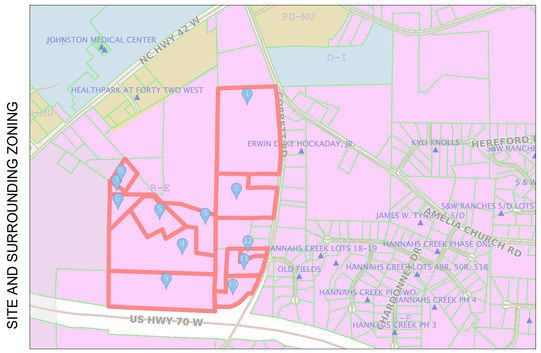
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CORBETT ROAD ASSEMBLAGE

CONDITIONAL REZONING APPLICATION

CLAYTON, JOHNSTON COUNTY, NC, 27577



SITE AND SURROUNDING ZONING

SCALE:1" = 800'

SHEET INDEX	
SHEET NUMBER	**SHEET TITLE**
P-00	COVER SHEET
P-01	BOUNDARY EXHIBIT
P-02	MASTERPLAN
P-03	STREET TYPOLOGIES
P-04	STREET TYPOLOGIES

SITE DATA TABLE	
TOTAL SITE ACREAGE	86.39 ACRES
EXISTING LAND USE	AGRICULTURAL / RESIDENTIAL USE
EXISTING ZONING	RE-RESIDENTIAL ESTATE
PARCEL IDENTIFICATION NUMBERS	05G03070S, 05G03070B, 05G03066B, 05G03071O, 05G03071, 05G03066, 05G03071U, 05F02037J, 05G03071N 05G03067A, 05G03071T, 05G03068A, 05G03071P
PROPERTY LOCATION	TOWN OF CLAYTON
PROPOSED LAND USE	RESIDENTIAL USE
PROPOSED ZONING	(CZ-R) CONDITIONAL ZONING - RESIDENTIAL
ELECTRIC PROVIDER	TO BE DETERMINED
WATER PROVIDER	TOWN OF CLAYTON
SEWER PROVIDER	TOWN OF CLAYTON
REQUIRED OPEN SPACE	15% OF NET SITE AREA

GOVERNING AGENCY CONTACTS:

PLANNING DEPARTMENT:
111 E Second Street
Clayton, NC 27520
919-553-5002

APPLICANT DESIGN TEAM:

APPLICANT
CRAIG DAVIS PROPERTIES, INC.
8000 WESTON PARKWAY, SUITE 360
CARY, NORTH CAROLINA 27513

SURVEYOR
BALLENTINE ASSOCAITES, P.A.
221 PROVIDENCE ROAD
CHAPEL HILL, NC, 27514
919-929-0481

LANDSCAPE ARCHITECT / LAND USE PLANNER
ENVIRONMENTAL SCIENTIST
CIVIL ENGINEER
TRAFFIC ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601
(919) 677-2000

No.	REVISIONS	DATE	BY

Kimley»Horn
421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
PHONE: 919-677-2000 FAX: 919-677-2050
WWW.KIMLEY-HORN.COM
#F-0102

NORTH CAROLINA
REGISTERED LANDSCAPE ARCHITECT
PRELIMINARY
NOT FOR CONSTRUCTION
RICHARD L. BROWN

KHA PROJECT	011174043
DATE	06/01/2022
SCALE	AS SHOWN
DESIGNED BY	AMR
DRAWN BY	AMR
CHECKED BY	RLB

COVER SHEET

CORBETT ROAD ASSEMBLAGE
PREPARED FOR
CONDITIONAL REZONING APPLICATION
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-00

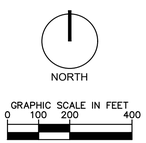
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BEING ALL OF THE PROPERTIES AS DESCRIBED IN DEED BOOKS AND PAGES OF THE JOHNSON COUNTY REGISTRY:
DEED BOOK 620, PAGE 536
DEED BOOK 667, PAGE 228
DEED BOOK 721, PAGE 390
DEED BOOK 932, PAGE 504
DEED BOOK 2605, PAGE 40
DEED BOOK 2605, PAGE 42
DEED BOOK 2627, PAGE 512
DEED BOOK 3070, PAGE 361
DEED BOOK 3170, PAGE 786
DEED BOOK 4127, PAGE 550
DEED BOOK 4421, PAGE 716
DEED BOOK 4711, PAGE 595
DEED BOOK 4745, PAGE 60
DEED BOOK 5471, PAGE 426
DEED BOOK 5791, PAGE 103
DEED BOOK 5929, PAGE 557
DEED BOOK 5929, PAGE 559
DEED BOOK 6263, PAGE 200
CLAYTON TOWNSHIP, JOHNSTON COUNTY, NORTH CAROLINA.



BEING ALL THAT CERTAIN LAND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT AN EXISTING 1" IRON PIPE ON THE SOUTHEAST CORNER OF BENNY LANGDON, ET AL (NC PIN# 164800-83-0418 / DEED BOOK 957, PAGE 612), AND THE NORTHEAST CORNER OF COPPER LAND LLC (NC PIN# 164800-72-2724 / DEED BOOK 6245, PAGE 412), AND THE NORTHWEST CORNER OF KELSEY M. MERRIMAN (NC PIN# 164800-83-1159 / DEED BOOK 5929, PAGE 559, ALSO SEE PLAT BOOK 88, PAGE 53) AND HAVING NCSPCS COORDINATES (NAD83) OF NORTHING: 683,306.85' EASTING: 2,148,077.08'; THENCE WITH THE LINE OF COURTNEY SANDERS (NC PIN# 164800-83-2367 / DEED BOOK 5471, PAGE 426, SEE ALSO PLAT BOOK 79, PAGE 399) THE FOLLOWING TWO (2) CALLS: AND WITH THE LINE OF BENNY LANGDON, ET AL (NC PIN# 164800-83-0418 / DEED BOOK 957, PAGE 612, SEE ALSO DEED BOOK 6129, PAGE 1) NORTH 39°10'08" EAST TO A SET IRON PIPE ON THE NORTHWEST CORNER OF AUDREY WOOTEN LIVING TRUST [1] (NC PIN# 164800-83-5492 / DEED BOOK 6258, PAGE 619); THENCE WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [1] SOUTH 30°58'39" EAST A DISTANCE OF 254.66 FEET TO A POINT, THE NORTHWEST CORNER OF BENJAMIN G. BLINSON (NC PIN# 164800-83-4242 / DEED BOOK 4745, PAGE 60, SEE ALSO PLAT BOOK 88, PAGE 53); THENCE WITH THE LINE OF BENJAMIN G. BLINSON, AND CONTINUING WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [1] SOUTH 30°58'39" EAST A DISTANCE OF 340.60 FEET TO A POINT ON THE LINE OF ALICE C. PAGE (NC PIN# 164800-92-2538 / DEED BOOK 4127, PAGE 550, SEE ALSO PLAT BOOK 61, PAGE 214); THENCE WITH THE LINE OF ALICE C. PAGE, AND CONTINUING WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [1] SOUTH 82°33'12" EAST A DISTANCE OF 20.00 FEET TO A POINT, A SOUTHWESTERN CORNER OF AUDREY WOOTEN LIVING TRUST [2] (NC PIN# 164800-93-0768 / DEED BOOK 6263, PAGE 200); THENCE WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [2], AND CONTINUING WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [1] THE FOLLOWING TWO (2) CALLS: SOUTH 85°18'00" EAST A DISTANCE OF 100.35 FEET TO A POINT; THENCE NORTH 05°01'00" EAST A DISTANCE OF 488.00 FEET TO A POINT, THE SOUTHEASTERN CORNER OF AUDREY WOOTEN LIVING TRUST [3] (NC PIN# 164800-83-3888 / DEED BOOK 6258, PAGE 619); THENCE CONTINUING WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [2], AND WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [3] NORTH 05°20'00" EAST A DISTANCE OF 738.93 FEET TO A POINT ON THE LINE OF HEALTHPARK AT FORTY TWO WEST LAND LLC (NC PIN# 164800-84-6403 / DEED BOOK 3999, PAGE 938, SEE ALSO PLAT BOOK 76, PAGE 308); THENCE CONTINUING WITH THE LAND OF AUDREY WOOTEN LIVING TRUST [2], AND WITH THE LINE OF HEALTHPARK AT FORTY TWO WEST LAND LLC AND DALE W. AIKEN, ET AL (NC PIN# 164800-84-9886 / DEED BOOK 1451, PAGE 561, SEE ALSO PLAT BOOK 76, PAGE 308) NORTH 64°46'00" EAST A DISTANCE OF 803.67 FEET TO A POINT ON THE LINE OF DWB PROPERTIES LLC (NC PIN# 164800-94-8820 / DEED BOOK 4357, PAGE 289, SEE ALSO PLAT BOOK 74, PAGE 367); THENCE CONTINUING WITH THE LINE OF AUDREY WOOTEN LIVING TRUST [2], AND WITH THE LINE OF DWB PROPERTIES LLC, AND CORBETT NC, LP (NC PIN# 164800-94-8244 / DEED BOOK 6191, PAGE 918) SOUTH 05°08'00" WEST A DISTANCE OF 1,559.71 FEET TO AN EXISTING IRON PIPE ON THE SOUTHWEST CORNER OF CORBETT NC, LP, ALSO THE NORTHWEST CORNER OF PATRICIA H. WATERS (NC PIN# 164800-93-6064 / DEED BOOK 932, PAGE 504); THENCE WITH THE LINE OF PATRICIA H. WATERS, AND CONTINUING WITH THE LINE OF CORBETT NC, LP SOUTH 82°53'00" EAST A DISTANCE OF 409.38 FEET TO AN EXISTING IRON PIPE ON THE NORTHWEST CORNER OF GLENN ARMWOOD (NC PIN# 164800-93-8284 / DEED BOOK 3170, PAGE 786); THENCE WITH THE LINE OF GLENN ARMWOOD, AND CONTINUING WITH THE LINE OF CORBETT NC, LP SOUTH 82°53'00" EAST A DISTANCE OF 410.00 FEET TO THE CENTER OF CORBETT ROAD (S.R. 1554), A VARIABLE WITH PUBLIC R/W; THENCE CONTINUING WITH THE LINE OF GLENN ARMWOOD, AND WITH THE CENTER OF CORBETT ROAD SOUTH 12°07'00" WEST A DISTANCE OF 180.00 FEET TO THE NORTHEAST CORNER OF PATRICIA H. WATERS; THENCE WITH THE LINE OF PATRICIA H. WATERS, AND THE CENTERLINE OF CORBETT ROAD THE FOLLOWING TWO (2) CALLS: SOUTH 12°07'00" WEST A DISTANCE OF 22.00 FEET TO A POINT; THENCE SOUTH 13°20'00" WEST A DISTANCE OF 390.40 FEET TO A POINT, THE NORTHEAST CORNER OF MICHAEL M. TRUITT, ET AL (NC PIN# 164800-92-9700 / DEED BOOK 3070, PAGE 361); THENCE WITH THE LINE OF MICHAEL M. TRUITT, ET AL, AND CONTINUING WITH THE CENTERLINE OF CORBETT ROAD SOUTH 13°12'00" WEST A DISTANCE OF 130.00 FEET TO A POINT, THE NORTHEAST CORNER OF JEANIE T. BENSON (NC PIN# 164800-92-9516 / DEED BOOK 667, PAGE 228); THENCE WITH THE LINE OF JEANIE T. BENSON, AND CONTINUING WITH THE CENTERLINE OF CORBETT ROAD SOUTH 13°12'00" WEST A DISTANCE OF 170.00 FEET TO A POINT, THE NORTHEAST CORNER OF FORTINO G. BERMUDEZ, ET AL (NC PIN# 164800-92-8491 / DEED BOOK 2605, PAGE 42); THENCE WITH THE LINE OF FORTINO G. BERMUDEZ, ET AL, AND CONTINUING WITH THE CENTERLINE OF CORBETT ROAD SOUTH 13°12'00" WEST A DISTANCE OF 94.00 FEET TO A POINT ON THE LINE OF LAURA B. CORBETT (NC PIN# 164800-92-7142 & 164800-92-8229 / DEED BOOK 620, PAGE 536); THENCE WITH THE LINE OF LAURA B. CORBETT THE FOLLOWING THREE (3) CALLS: SOUTH 85°35'00" EAST A DISTANCE OF 49.25 FEET TO A POINT; THENCE SOUTH 04°27'00" WEST A DISTANCE OF 359.75 FEET TO A POINT; THENCE NORTH 85°10'00" WEST A DISTANCE OF 165.57 FEET TO A POINT, THE NORTHWEST CORNER OF JOSEPH C. JOHNSON, ET AL [1] (NC PIN# 164800-91-6897 / DEED BOOK 5791, PAGE 103, ALSO SEE PLAT BOOK 91, PAGE 248), ALSO ON THE WEST R/W OF CORBETT ROAD; THENCE WITH THE LINE OF JOSEPH C. JOHNSON, ET AL [1], AND THE WEST R/W OF CORBETT ROAD, AND THE NORTH R/W OF U.S. HIGHWAY 70 BYPASS, A VARIABLE WIDTH PUBLIC R/W THE FOLLOWING FIVE (5) CALLS: THENCE WITH A CURVE TURNING TO THE RIGHT WITH AN ARC LENGTH OF 256.51', WITH A RADIUS OF 1,590.00', WITH A CHORD BEARING OF SOUTH 24°38'55" WEST, WITH A CHORD LENGTH OF 256.24' TO A POINT; THENCE NORTH 86°20'57" WEST A DISTANCE OF 49.80 FEET TO A POINT; THENCE SOUTH 43°49'03" WEST A DISTANCE OF 112.24 FEET TO A POINT; THENCE WITH A CURVE TURNING TO THE RIGHT WITH AN ARC LENGTH OF 274.95', WITH A RADIUS OF 295.30', WITH A CHORD BEARING OF SOUTH 70°53'54" WEST, WITH A CHORD LENGTH OF 265.13' TO A POINT; THENCE NORTH 82°18'02" WEST A DISTANCE OF 107.97 FEET TO A POINT ON THE LINE OF JOSEPH C. JOHNSON, ET AL [2] (NC PIN# 164800-81-7856 / DEED BOOK 4711, PAGE 595); THENCE WITH THE LINE OF JOSEPH C. JOHNSON, ET AL [2], AND CONTINUING WITH THE NORTH R/W OF U.S. HIGHWAY 70 BYPASS THE FOLLOWING THREE (3) CALLS: SOUTH 00°50'36" WEST 83.30 FEET TO A POINT; THENCE NORTH 86°41'15" WEST A DISTANCE OF 1,115.97 FEET TO A POINT; THENCE NORTH 86°08'14" WEST A DISTANCE OF 252.69 FEET TO AN EXISTING IRON PIPE ON THE SOUTHEAST CORNER OF CMD 78 ASSOCIATES, LLC (NC PIN# 164800-71-7932 / DEED BOOK 5890, PAGE 193, ALSO SEE PLAT BOOK 76, PAGE 85); THENCE CONTINUING WITH THE LINE OF JOSEPH C. JOHNSON, ET AL [2], AND WITH THE LINE OF CMD 78 ASSOCIATES, LLC NORTH 01°04'11" EAST A DISTANCE OF 471.80 FEET TO AN EXISTING IRON PIPE ON THE SOUTHWEST CORNER OF MATTHEW R. POOLEY, ET AL (NC PIN# 164800-82-6369 / DEED BOOK 4421, PAGE 716, ALSO SEE PLAT BOOK 61, PAGE 214), AND THE SOUTHEAST CORNER OF COPPER LAND LLC; THENCE WITH THE LINE OF MATTHEW R. POOLEY, ET AL, AND WITH THE LINE OF COPPER LAND LLC NORTH 07°51'44" EAST A DISTANCE OF 523.62 FEET TO AN EXISTING IRON PIPE ON THE SOUTHWEST CORNER OF JASON T. MERRIMAN (NC PIN# 164800-83-2010 / DEED BOOK 5929, PAGE 557, ALSO SEE PLAT BOOK 88 PAGE 53); THENCE WITH THE LINE OF JASON T. MERRIMAN, AND CONTINUING WITH THE LINE OF COPPER LAND LLC NORTH 07°34'50"EAST A DISTANCE OF 466.94 FEET TO A POINT, THE SOUTHWEST CORNER OF KELSEY M. MERRIMAN; THENCE WITH THE LINE OF KELSEY M. MERRIMAN, AND CONTINUING WITH THE LINE OF COPPER LAND LLC NORTH 07°34'50" EAST A DISTANCE OF 169.04 FEET TO THE POINT OF BEGINNING, CONTAINING AN AREA OF 101.31 ACRES, MORE OR LESS.
LESS AND EXCEPTING OUT-CONVEYENCES OF RECORD AFFECTING SUBJECT PROPERTIES SUBSEQUENT TO CURRENT DEEDS OF RECORD REFERENCED ABOVE.



GRAPHIC SCALE IN FEET
0 100 200 400

No.	REVISIONS	DATE	BY
1	MASTERPLAN REVISIONS PER TOWN COMMENTS	2022-09-26	

Kimley»Horn
421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
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PRELIMINARY
NOT FOR CONSTRUCTION

KHA PROJECT 011174043
DATE 06/01/2022
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

BOUNDARY EXHIBIT

CORBETT ROAD ASSEMBLAGE
PREPARED FOR
CONDITIONAL REZONING APPLICATION
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-01

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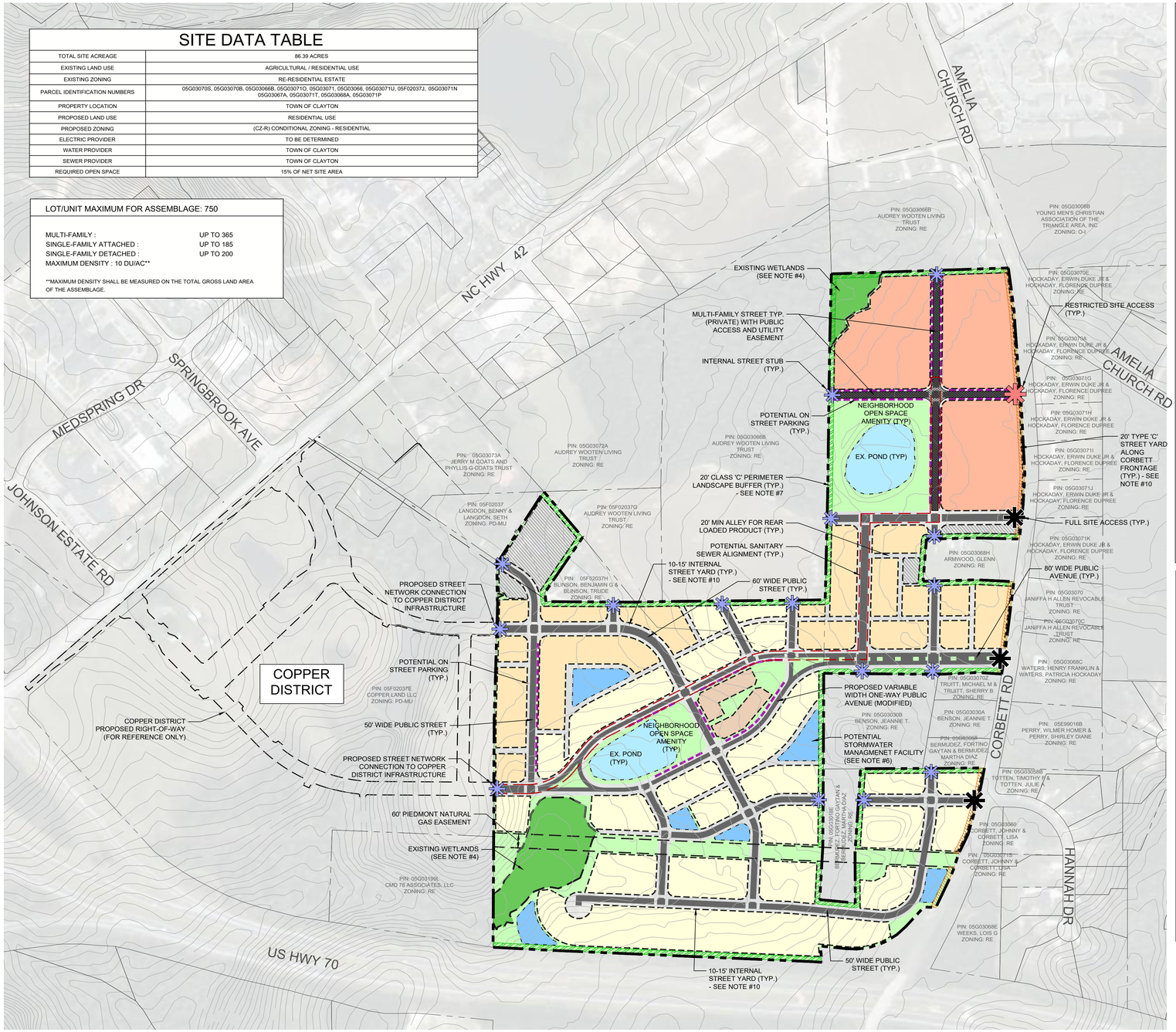
SITE DATA TABLE

TOTAL SITE ACREAGE	86.39 ACRES
EXISTING LAND USE	AGRICULTURAL / RESIDENTIAL USE
EXISTING ZONING	RE-RESIDENTIAL ESTATE
PARCEL IDENTIFICATION NUMBERS	05G03070S, 05G03070B, 05G03066B, 05G03071Q, 05G03071, 05G03066, 05G03071U, 05F02037J, 05G03071N 05G03067A, 05G03071T, 05G03068A, 05G03071P
PROPERTY LOCATION	TOWN OF CLAYTON
PROPOSED LAND USE	RESIDENTIAL USE
PROPOSED ZONING	(CZ-R) CONDITIONAL ZONING - RESIDENTIAL
ELECTRIC PROVIDER	TO BE DETERMINED
WATER PROVIDER	TOWN OF CLAYTON
SEWER PROVIDER	TOWN OF CLAYTON
REQUIRED OPEN SPACE	15% OF NET SITE AREA

LOT/UNIT MAXIMUM FOR ASSEMBLAGE: 750

MULTI-FAMILY :	UP TO 365
SINGLE-FAMILY ATTACHED :	UP TO 185
SINGLE-FAMILY DETACHED :	UP TO 200
MAXIMUM DENSITY : 10 DU/AC**	

**MAXIMUM DENSITY SHALL BE MEASURED ON THE TOTAL GROSS LAND AREA OF THE ASSEMBLAGE.



MASTERPLAN LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING PONDS
- EXISTING WETLANDS AND STREAMS (SEE NOTE #4)
- OPEN SPACE / NEIGHBORHOOD AMENITIES
- POTENTIAL STORMWATER CONTROL MEASURE (SEE NOTE #6)
- DETACHED SINGLE-FAMILY
- ATTACHED SINGLE-FAMILY
- MULTI-FAMILY
- RESERVED FOR FUTURE DEVELOPMENT
- 20' MIN. CLASS 'C' BUFFER WITH FENCE (SEE NOTE #7)
- 20' MIN. CLASS 'C' STREETSCAPE (SEE NOTE #10)
- PROPOSED 80' PUBLIC AVENUE
- PROPOSED 60' PUBLIC COLLECTOR
- PROPOSED 50' PUBLIC / PRIVATE STREET
- PROPOSED VARIABLE WIDTH PRIVATE MULTI-FAMILY STREET W/ PUBLIC ACCESS AND UTILITY EASEMENT
- PROPOSED VARIABLE WIDTH ONE-WAY PUBLIC AVENUE (MODIFIED)
- POTENTIAL CROSS CONNECTIVITY
- POTENTIAL FULL ACCESS TO SITE
- POTENTIAL RESTRICTED ACCESS TO SITE
- POTENTIAL SANITARY SEWER ALIGNMENT (SEE NOTE #3)
- POTENTIAL ON STREET PARKING LOCATIONS (SEE NOTE #9)

CONCEPTUAL LAND USE NOTES:

1. THIS LAND USE DIAGRAM IS PRELIMINARY IN NATURE AND IS SUBJECT TO CHANGE BASED ON FINAL DESIGN AND ENGINEERING, HOWEVER SUBSTANTIAL CHANGES TO THE PRIMARY STREET NETWORK AS DETERMINED BY THE PLANNING DIRECTOR, WILL BE SUBJECT TO REVIEW BY TOWN COUNCIL VIA MASTERPLAN AMENDMENT. THE SECONDARY STREET NETWORK WILL BE SUBJECT TO CHANGE WITHIN THE SITE PLAN PROCESS FOR EACH DEVELOPABLE AREA AND WILL BE DEPENDANT ON THE SPECIFIED USE.
2. ALLOWABLE PRIMARY AND ACCESSORY LAND USES SHALL BE PERMITTED IN ACCORDANCE WITH THE TABLE OF PERMITTED USES WITHIN THE MASTER PLAN NARRATIVE.
3. FINAL UTILITY DESIGN AND CONNECTION LOCATIONS WILL BE INCLUDED IN THE FORMAL SITE PLAN SUBMITTAL AND WILL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL UTILITY REGULATIONS.
4. EXISTING WETLAND, STREAM, AND POND DELINEATIONS ARE PRELIMINARY AND ARE PENDING FINAL DETERMINATION FROM USACE, LOCATIONS MAY VARY.
5. EXISTING PONDS SHOWN WITHIN THIS MASTERPLAN THAT ARE NOT DETERMINED TO BE JURISDICTIONAL BY THE USACE MAY BE REMOVED OR UTILIZED TO MEET STORMWATER REGULATIONS AND/OR OPEN SPACE NEEDS FOR THE DEVELOPMENT.
6. FINAL STORMWATER MANAGEMENT FACILITIES AND LOCATIONS WILL BE INCLUDED IN FORMAL SITE PLAN SUBMITTAL FOR EACH DEVELOPMENT PHASE, IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL STORMWATER MANAGEMENT REGULATIONS.
7. A 20' CLASS 'C' LANDSCAPE BUFFER WILL BE PROVIDED ALONG ALL PROPERTY BOUNDARIES ADJACENT TO NEIGHBORING PROPERTIES AND US HWY 70 AND WILL NOT BE APPLICABLE ALONG BOUNDARIES BORDERING COPPER DISTRICT. WHERE STREAM BUFFERS AND NATURAL AREAS ADJOIN NEIGHBORING USES, EXISTING VEGETATION WILL BE USED TO SATISFY THE BUFFER REQUIREMENTS.
8. CROSS ACCESS LOCATIONS WILL BE PROVIDED AS SHOWN ON THE MASTERPLAN. LOCATIONS ARE APPROXIMATE AND WILL CORRESPOND TO THE FINAL PUBLIC STREET DESIGN. STREET RIGHTS-OF-WAY WILL BE STUBBED TO THERE GENERAL LOCATIONS IN CONJUNCTION WITH EACH DEVELOPMENT PHASE.
9. POTENTIAL ON STREET PARKING LOCATIONS WILL BE PROVIDED AS SHOWN ON THE MASTERPLAN. LOCATIONS ARE APPROXIMATE AND WILL CORRESPOND TO THE FINAL PUBLIC STREET DESIGN (TO BE PROVIDED WITH THE SITE PLAN APPLICATION). PLEASE SEE THE STREET TYPOLOGIES SECTIONS ON SHEETS P-04 AND P-05 FOR MORE INFORMATION.
10. A MINIMUM TWENTY (20') FOOT WIDE TYPE C STREET YARD SHALL BE PROVIDED ALONG THE CORBETT ROAD FRONTAGE. STREET YARD PLANTINGS FOR AREAS ALONG THE FRONTAGE SHALL BE INSTALLED AT AN AVERAGE RATE OF 1 PER 40' FOR STREET TREES. STREET PROTECTIVE YARDS ALONG PROPOSED NEW PUBLIC STREETS WILL BE 10-15' WIDE WITH AN AVERAGE OF 1 STREET TREE PER 40'. STREET YARDS SHALL NOT APPLY TO PRIVATE ALLEYS OR REAR-LOAD CONDITIONS.

NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

No.	REVISIONS	DATE	BY

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NORTH CAROLINA
LANDSCAPE ARCHITECTURE
PRELIMINARY
NOT FOR CONSTRUCTION
RICHARD L. BROWN

KHA PROJECT 011174043
DATE 06/01/2022
SCALE AS SHOWN
DESIGNED BY AMR
DRAWN BY AMR
CHECKED BY RLB

MASTER PLAN

CORBETT ROAD ASSEMBLAGE

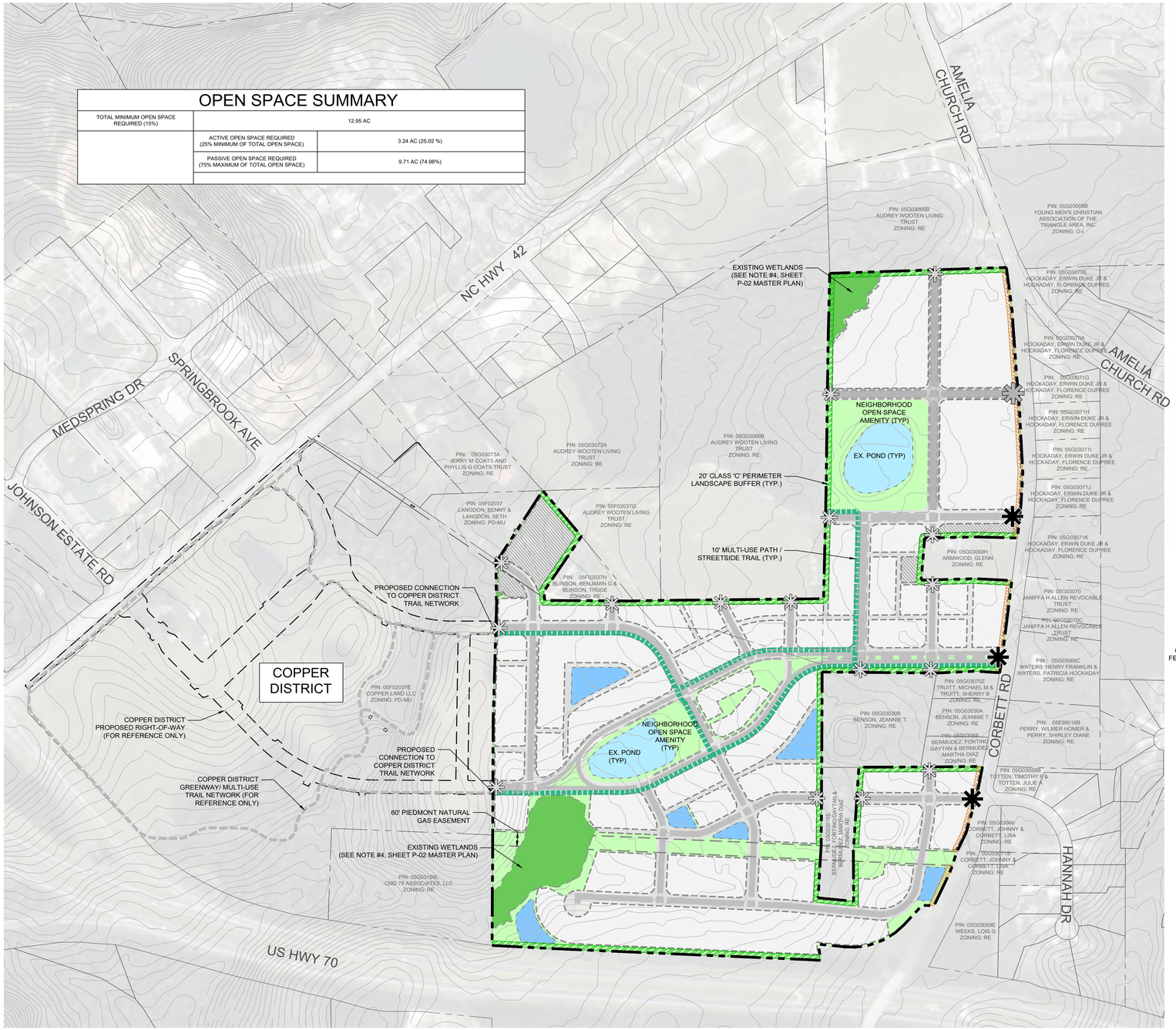
PREPARED FOR
CONDITIONAL REZONING APPLICATION
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-02

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OPEN SPACE SUMMARY

TOTAL MINIMUM OPEN SPACE REQUIRED (15%)	12.95 AC	
	ACTIVE OPEN SPACE REQUIRED (25% MINIMUM OF TOTAL OPEN SPACE)	3.24 AC (25.02 %)
	PASSIVE OPEN SPACE REQUIRED (75% MAXIMUM OF TOTAL OPEN SPACE)	9.71 AC (74.98%)



GREENWAY & OPEN SPACE LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING PONDS
- EXISTING WETLANDS AND STREAMS (SEE NOTE #4, SHEET P-02 MASTER PLAN)
- OPEN SPACE / NEIGHBORHOOD AMENITIES
- POTENTIAL STORMWATER CONTROL MEASURE (SEE NOTE #6, SHEET P-02 MASTER PLAN)
- 20' MIN. CLASS C BUFFER W/ FENCE
- 20' MIN. CLASS C STREETYARD
- PROPOSED 10' MULTI-USE PATH / STREETSIDE TRAIL
- POTENTIAL CROSS CONNECTIVITY
- POTENTIAL FULL ACCESS TO SITE
- POTENTIAL RESTRICTED ACCESS TO SITE

OPEN SPACE AND GREENWAY NOTES:

1. PEDESTRIAN CIRCULATION NETWORK AND GREENWAY ALIGNMENT IS PRELIMINARY AND SUBJECT TO APPROVALS BY THE TOWN, NCDOT, AND THE ARMY CORPS OF ENGINEERS.
2. REQUIRED OPEN SPACE TOTALING TO 15% OF THE NET SITE AREA WILL BE PROVIDED. 25% MINIMUM OF PROVIDED OPEN SPACE WILL BE ACTIVE WHILE THE REMAINING 75% WILL BE PASSIVE OPEN SPACE. ACTIVE OPEN SPACE AREAS WILL TAKE THE FORM OF PLAZAS, PARKS, NEIGHBORHOOD AMENITIES, MULTI-USE/GREENWAY TRAILS, AND RECREATIONAL OPPORTUNITIES. PASSIVE OPEN SPACE AREAS WILL TAKE THE FORM OF EXISTING NATURAL AREAS, WATER BODIES, WETLANDS, PRESERVED LANDSCAPE BUFFERS, AND EXISTING UTILITY/ACCESS EASEMENTS NOT LOCATED IN ANY PROPOSED PUBLIC RIGHT-OF-WAY.
3. OPEN SPACE FOR EACH PHASE WILL BE MET WITH THE OVERALL OPEN SPACE PLAN FOR THE DEVELOPMENT. THIS PLAN SHALL BE PROVIDED AT SUBDIVISION PERMITTING PROCESS.
4. GREENWAY TRAILS / MULTI-USE PATHS MAY BE PROVIDED AS OFF STREET OR STREETSIDE TRAILS, LOCATIONS SHOWN ARE PRELIMINARY AND SUBJECT TO THE FINAL DESIGN.

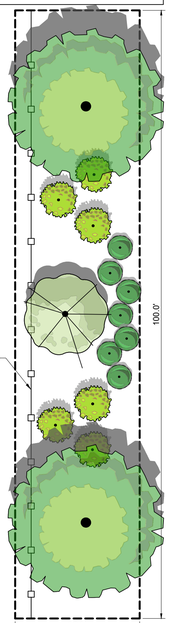


TYPICAL BUFFER SECTION VIEW

PLANTING REQUIREMENTS PER 100 LINEAR FEET OF BUFFER:

- 2 CANOPY TREES
- 1 UNDERSTORY TREE
- 12 SHRUBS

NOTE:
CLASS C BUFFER SHALL INCLUDE A WALL, OPAQUE FENCE, EVERGREEN HEDGE, BERM, OR COMBINATION THEREOF WITH A MINIMUM HEIGHT OF SIX FEET AT INSTALLATION.



TYPICAL BUFFER PLAN VIEW

NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

No.	REVISIONS	DATE	BY

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NORTH CAROLINA LANDSCAPE ARCHITECT
PRELIMINARY
NOT FOR CONSTRUCTION
RICHARD L. BROWN III

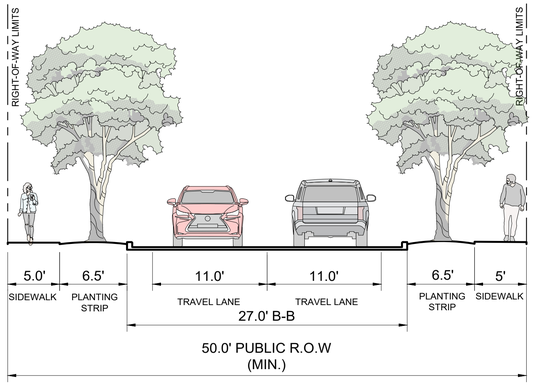
KHA PROJECT 011174043
DATE 06/01/2022
SCALE AS SHOWN
DESIGNED BY AMR
DRAWN BY AMR
CHECKED BY RLB

OPEN SPACE PLAN

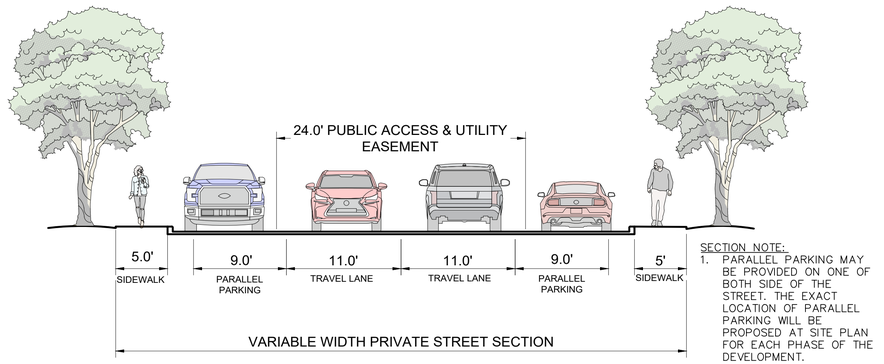
CORBETT ROAD ASSEMBLAGE
PREPARED FOR CONDITIONAL REZONING APPLICATION
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-03

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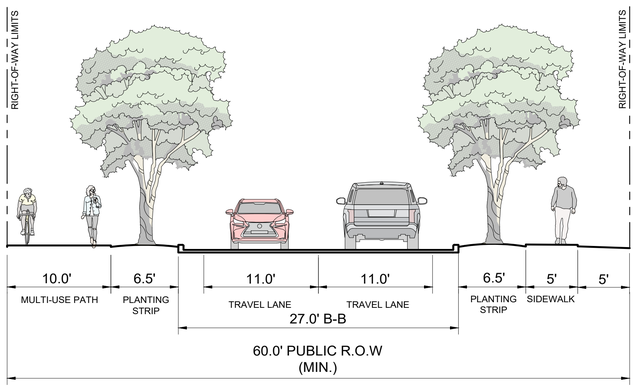


A 50' RESIDENTIAL STREET (PUBLIC)

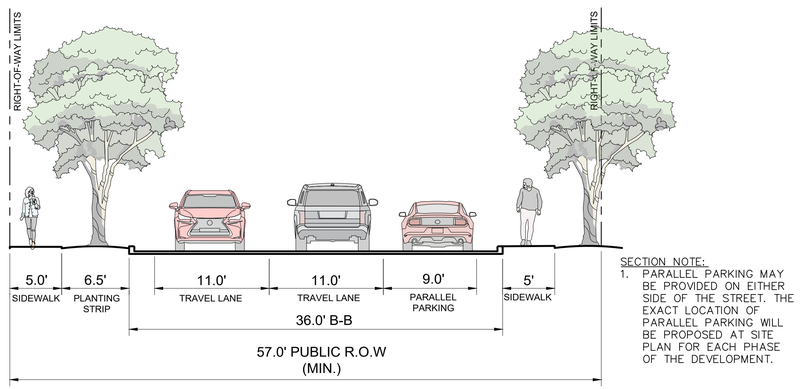


SECTION NOTE:
1. PARALLEL PARKING MAY BE PROVIDED ON ONE OF BOTH SIDE OF THE STREET. THE EXACT LOCATION OF PARALLEL PARKING WILL BE PROPOSED AT SITE PLAN FOR EACH PHASE OF THE DEVELOPMENT.

B VARIABLE WIDTH MULTI-FAMILY STREET (PRIVATE) WITH DOUBLE-SIDED PARALLEL PARKING



C 60' PUBLIC COLLECTOR



SECTION NOTE:
1. PARALLEL PARKING MAY BE PROVIDED ON EITHER SIDE OF THE STREET. THE EXACT LOCATION OF PARALLEL PARKING WILL BE PROPOSED AT SITE PLAN FOR EACH PHASE OF THE DEVELOPMENT.

D 57' RESIDENTIAL STREET (PUBLIC) WITH SINGLE-SIDE PARALLEL PARKING

STREET TYPOLOGY NOTES:

1. MEDIAN WIDTH MAY VARY IN CERTAIN LOCATIONS PER FINAL ROADWAY DESIGNS.
2. MULTI-USE PATH LOCATIONS WILL CORRESPOND TO THE TRAIL NETWORK SHOWN ON THE SHEET P-03 OPEN SPACE PLAN. ALL INSTANCES OF THE MULTI-USE PATH WILL BE IN ACCORDANCE WITH THE TOWN OF CLAYTON'S MANUAL OF SPECIFICATIONS, STANDARDS, & DESIGN (MSSD) UNLESS OTHERWISE SPECIFIED ON THE APPROVED SITE PLANS.

No.	REVISIONS	DATE	BY

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NC #F-0102

NORTH CAROLINA LANDSCAPE ARCHITECT
PRELIMINARY
NOT FOR CONSTRUCTION
RICHARD L. BROWN

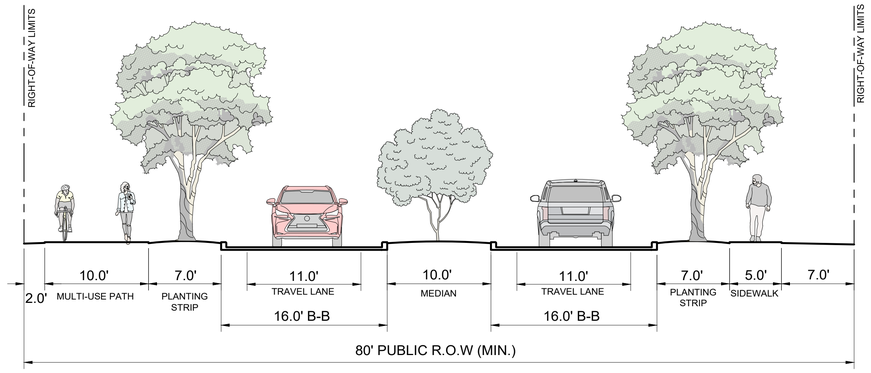
KHA PROJECT 011174043
DATE 06/01/2022
SCALE AS SHOWN
DESIGNED BY AMR
DRAWN BY AMR
CHECKED BY RLB

STREET TYPOLOGIES

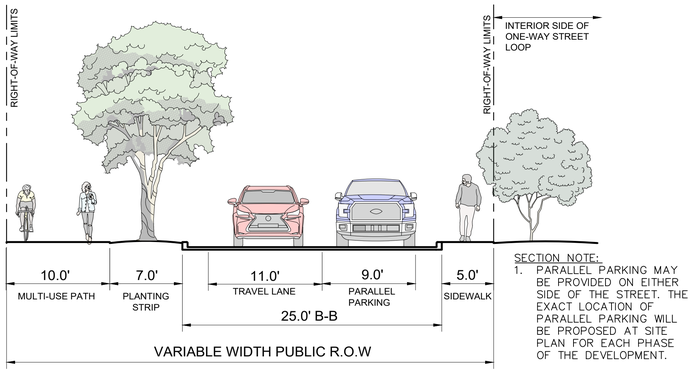
CORBETT ROAD ASSEMBLAGE
PREPARED FOR
CONDITIONAL REZONING APPLICATION
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-04

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E 80' PROPOSED AVENUE



SECTION NOTE:
1. PARALLEL PARKING MAY BE PROVIDED ON EITHER SIDE OF THE STREET. THE EXACT LOCATION OF PARALLEL PARKING WILL BE PROPOSED AT SITE PLAN FOR EACH PHASE OF THE DEVELOPMENT.

F VARIABLE WIDTH PROPOSED AVENUE (MODIFIED, ONE-WAY PUBLIC) WITH SINGLE-SIDE PARALLEL PARKING

STREET TYPOLOGY NOTES:

1. MEDIAN WIDTH MAY VARY IN CERTAIN LOCATIONS PER FINAL ROADWAY DESIGNS.
2. MULTI-USE PATH LOCATIONS WILL CORRESPOND TO THE TRAIL NETWORK SHOWN ON THE SHEET P-03 OPEN SPACE PLAN. ALL INSTANCES OF THE MULTI-USE PATH WILL BE IN ACCORDANCE WITH THE TOWN OF CLAYTON'S MANUAL OF SPECIFICATIONS, STANDARDS, & DESIGN (MSSD) UNLESS OTHERWISE SPECIFIED ON THE APPROVED SITE PLANS.

No.	REVISIONS	DATE	BY

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#F-0102

NORTH CAROLINA
LANDSCAPE
PRELIMINARY
NOT FOR CONSTRUCTION
RICHARD L. BROWN

KHA PROJECT	011174043
DATE	06/01/2022
SCALE	AS SHOWN
DESIGNED BY	AMR
DRAWN BY	AMR
CHECKED BY	RLB

STREET TYPOLOGIES

CORBETT ROAD ASSEMBLAGE
PREPARED FOR
CONDITIONAL REZONING APPLICATION
TOWN OF CLAYTON NORTH CAROLINA

SHEET NUMBER
P-05

Kimley»Horn

September 8th, 2022

Dear Clayton Area Property Owner:

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change or development proposal involving property adjacent to, or near, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting must be held to provide information to area residents about the proposal. A representative of the applicant will coordinate this meeting and explain the application, answer questions, and solicit comments.

Meeting Date: Wednesday, September 21th, 2022 **Meeting Time**: 6:00-8:00 PM EST

Location: Clayton Community Center

Type of Application: 2020-88-CZM Corbett Rd Assemblage Rezoning

Project/proposal property address: 100 CORBETT RD; 253 CORBETT ROAD; 2219D NC HIGHWAY 42 W; 2219G NC HIGHWAY 42 W; 2219 F NC HIGHWAY 42 W; 534 CORBETT RD; 534 CORBETT RD; 354 CORBETT ROAD;

Description of project/proposal: Zoning change from existing Residential Estate (RE) To CZ-R Conditional Zoning, Residential with Masterplan

Upcoming public meetings for this application (Planning Board and/or Town Council):

- Planning Board: To be determined with Town Planning staff
- Town Council: To be confirmed after Planning Board

The following is enclosed with this letter and will be discussed during the virtual Neighborhood Meeting:

1. Aerial Image of Property
2. Current Zoning Map of Property
3. The proposed land use master plan for the development

If you have any questions prior to or after this meeting, you may contact us at 919-677-2000. You may also contact the Town of Clayton Planning Department at 919-553-5002.

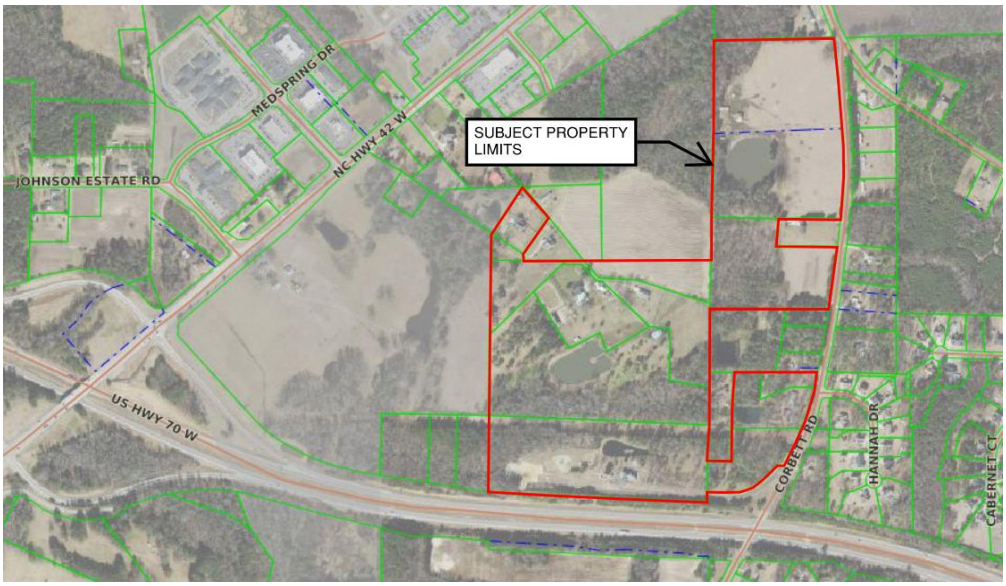
Sincerely,

Richard L. Brown, PLA
Landscape Architect | Land Planner, Kimley-Horn

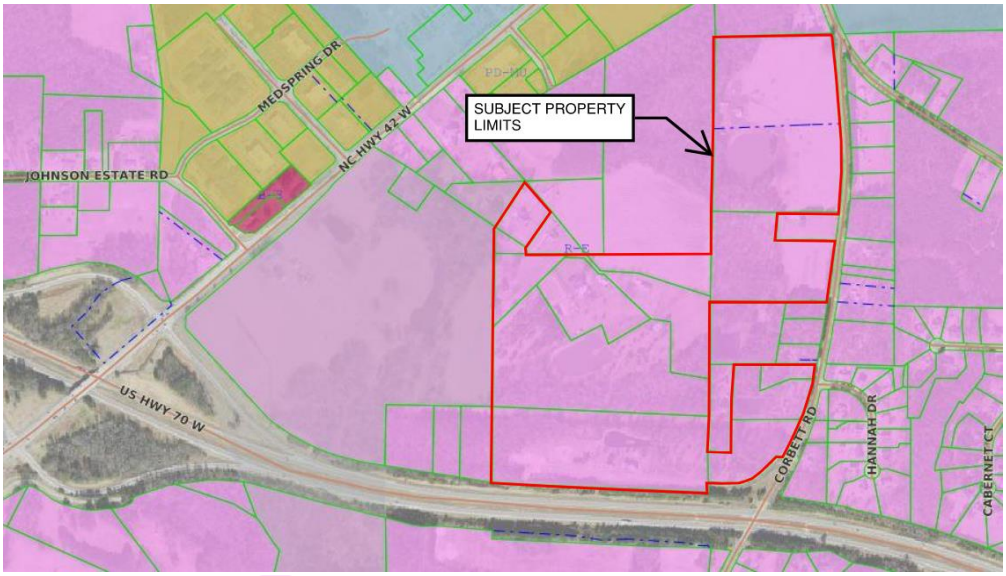
CC: Town of Clayton Planning Department
Aaron Prichard

kimley-horn.com 421 Fayetteville Street Raleigh, NC 27601 919 677 2000

Project Locator Map



Current Zoning Map (Amended April 28, 2022)



CORBETT RD, ASSEMBLAGE ADJACENT NEIGHBORS

Property Owner Name	Address
DWB PROPERTIES LLC	PO BOX 324 GARNER, NC 27529-0324
YOUNG MEN'S CHRISTIAN ASSOCIATION OF THE TRIANGLE AREA, INC.	801 CORPORATE CENTER DR STE 200 RALEIGH, NC 27607-5243
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
HOCKADAY, ERWIN DUKE JR HOCKADAY, FLORENCE DUPREE	2177 AMELIA CHURCH ROAD CLAYTON, NC 27520-0000
ARMWOOD, GLENN	184 CORBETT RD CLAYTON, NC 27520-0000
TRUITT, MICHAEL M TRUITT, SHERRY B	276 CORBETT RD CLAYTON, NC 27520-0000
JANIFFA H ALLEN REVOCABLE TRUST ALLEN, JANIFFA H TRUSTEE	217 CORBETT RD CLAYTON, NC 27520-6424
JANIFFA H ALLEN REVOCABLE TRUST ALLEN, JANIFFA H TRUSTEE	217 CORBETT RD CLAYTON, NC 27520-6424
BENSON, JEANNIE T.	296 CORBETT RD CLAYTON, NC 27520-6423
BENSON, JEANNIE T.	296 CORBETT RD CLAYTON, NC 27520-6423
ARMWOOD, GLENN	184 CORBETT RD CLAYTON, NC 27520-0000
PAGE, ALICE DAVID	2219G NC HIGHWAY 42 W CLAYTON, NC 27520-8346
BERMUDEZ, FORTINO GAYTAN BERMUDEZ, MARTHA DIAZ	2325 HEMLOCK CIR CLAYTON, NC 27520-0000
BLINSON, BENJAMIN G BLINSON, TRUDE	2219I NC HIGHWAY 42 W CLAYTON, NC 27520-8346
PERRY, WILMER HOMER PERRY, SHIRLEY DIANE	297 CORBETT RD CLAYTON, NC 27520-0000
TOTTEN, TIMOTHY F TOTTEN, JULIE A	29 HANNAH DR CLAYTON, NC 27520-8521
CORBETT, JOHNNY CORBETT, LISA	371 CORBETT RD CLAYTON, NC 27520-0000
CORBETT, JOHNNY CORBETT, LISA	371 CORBETT RD CLAYTON, NC 27520-0000
WEEKS, LOIS G	423 CORBETT RD CLAYTON, NC 27520-6428
COPPER LAND LLC	8000 WESTON PKWY STE 360 CARY, NC 27513-2123
CMD 78 ASSOCIATES, LLC	8000 WESTON PKWY STE 360 CARY, NC 27513-2123
AUDREY WOOTEN LIVING TRUST WOOTEN, AUDREY M. TRUSTEE	2117 NC HIGHWAY 42 W CLAYTON, NC 27520-8344
AUDREY WOOTEN LIVING TRUST WOOTEN, AUDREY M. TRUSTEE	2117 NC HIGHWAY 42 W CLAYTON, NC 27520-8344
LANGDON, BENNY LANGDON, SETH	19 SLATEFORD DR CLAYTON, NC 27520-7507
JERRY M COATS AND PHYLLIS G COATS TRUST COATS, JERRY M TRUSTEE	2149 NC HWY 42 WEST CLAYTON, NC 27520-0000
AIKEN, W DALE CANADY, SUSAN A	6406 OLD FAIRGROUND RD BENSON, NC 27504-9690
HEALTHPARK AT FORTY TWO WEST LAND LLC	1436 RIDGE RD RALEIGH, NC 27607-6729
WATERS, HENRY FRANKLIN WATERS, PATRICIA HOCKADAY	253 CORBETT RD CLAYTON, NC 27520-6424
PERRY, WILMER HOMER PERRY, SHIRLEY DIANE	297 CORBETT RD CLAYTON, NC 27520-0000
TOTTEN, TIMOTHY F TOTTEN, JULIE A	29 HANNAH DR CLAYTON, NC 27520-8521
COATS, JERRY M COATS, PHYLLIS G	2149 NC HIGHWAY 42 W CLAYTON, NC 27520-8344

ADDED ADDRESSES SINCE INITIAL APPLICATION SUBMITTAL. THEY WERE INCLUDED IN NEIGHBORHOOD MEETING. PLEASE INCLUDE ON FUTURE MAILERS.

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: 2022-88-CZM Corbett Road Assemblage Rezoning

Date of Mailing: Sept. 8th, 2022

Date of Meeting: Sept. 21st, 2022 Time of Meeting: 6:00 pm

Location of Meeting: Clayton Community Center

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Printed Name: Austin Roland Signature: Austin Roland

Meeting Summary/Minutes: provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.

Discussed Topics:

Density:

- A couple of neighbors had questions regarding the proposed density for the project. It was explained that the 10 Du/Acre max. was consistent with the current Town Comprehensive Plan and Future Land Use Map adopted at the date of this meeting. Also, we discussed that the rezoning proposal includes a condition that caps the overall units/lots at 750, which would result in an overall density of less than 10 du/ac.

Circulation/Traffic/Access:

- Neighbors asked what type of intersections to expect along Corbett Rd and it was clarified that they would likely not be signalized due to NCDOT having a high threshold for that requirement. A few of the proposed entrances into the site from Corbett was also questioned and it was explained that it was in order to disperse traffic more evenly throughout the development.
- Neighbors brought forth concerns about the traffic congestion at the HWY 42 and Amelia Church Road intersection and there was a general desire to not add to that issue at peak hours. It was generally questioned what the NCDOT plans were for that intersection in particular and it was explained that the NCDOT R3410 would provide the guidance and plans in that instance.
- As it relates to this proposed rezoning/development program, it was explained that the two internal roadway connections to the adjacent Copper District development is expected to relieve some pressure on the HWY 42 x Amelia Church intersection.
- It was asked if the speed limit along Corbett Road would be affected by this development and it was explained that NCDOT periodically evaluates volume and design speed of state roadways to give those requirements but that it was not anticipated to be changed.

Community Character:

- Neighbors expressed positive remarks about the current character of Corbett Rd and the desire to retain as many of the street trees if at all possible. It was also a desire to retain more trees to provide wind protection for the existing residents.
There was also a comment/question about on-site tree removal resulting in a decrease of noise protection from nearby 70 Bypass and HWY 42.
- Questions were asked about the intended streetscape along Corbett and if opposing properties would be looking across to front facades or back facades of the proposed residential housing types.
- The existing gas easement was brought up as a possible greenway opportunity through the bottom of the site and it was explained that a greenway application there would be dependent upon the approval of the utility provide and owner of the easement.
- It was expressed that retaining the existing grading for the site would help to retain a lot of community character for the development. The preliminary engineering has not been started at this point, although the applicant would intend to work with the topo to the enxtent practical.

Infrastructure:

- There was a question about the current public school capacity relative to adding more housing. The applicant explained that the JCPS School Finder for 2022/23 lists West Clayton Elementary and Clayton Middle on the 2022-2023 Capped Schools list. There are no plans currently by the County for a public school on the subject property.
- Sanitary sewer capacity issues for the town were brought up and it was explained that new treatment facilities for Clayton and Johnston County would be forthcoming and aim to double capacity. It was also explained that a wastewater allocation request is submitted apart of this application process and would require action by Town Council.

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

NEIGHBORHOOD MEETING SUMMARY FORM

CONTINUED:

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Discussed Topics:

Housing Types
- Questions were asked about the housing type to be offered by the development and opinions were shared about housing types built in nearby developments.
- It was asked if any low income housing types would be offered in the development and it was clarified that it is not required by the town at this time and that it was not the intent of the development to provide that offering.

Annexation
- Questions were asked about the project being incorporated into the town and if that would affect the adjacent neighborhood. It was explained that the annexation of the project would be necessary to access town provided services and not likely affect the services of adjacent neighbors within county limits.

Anticipated Timeline
- It was predicted what the anticipated timeline for the development of the project and when residents might see the project being built following completed permitting.
- Neighbors inquired about the next steps in the application process and to be kept informed moving forward. Contact cards were distributed for general inquiries and everyone was encouraged to remain apart of the public input process.

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

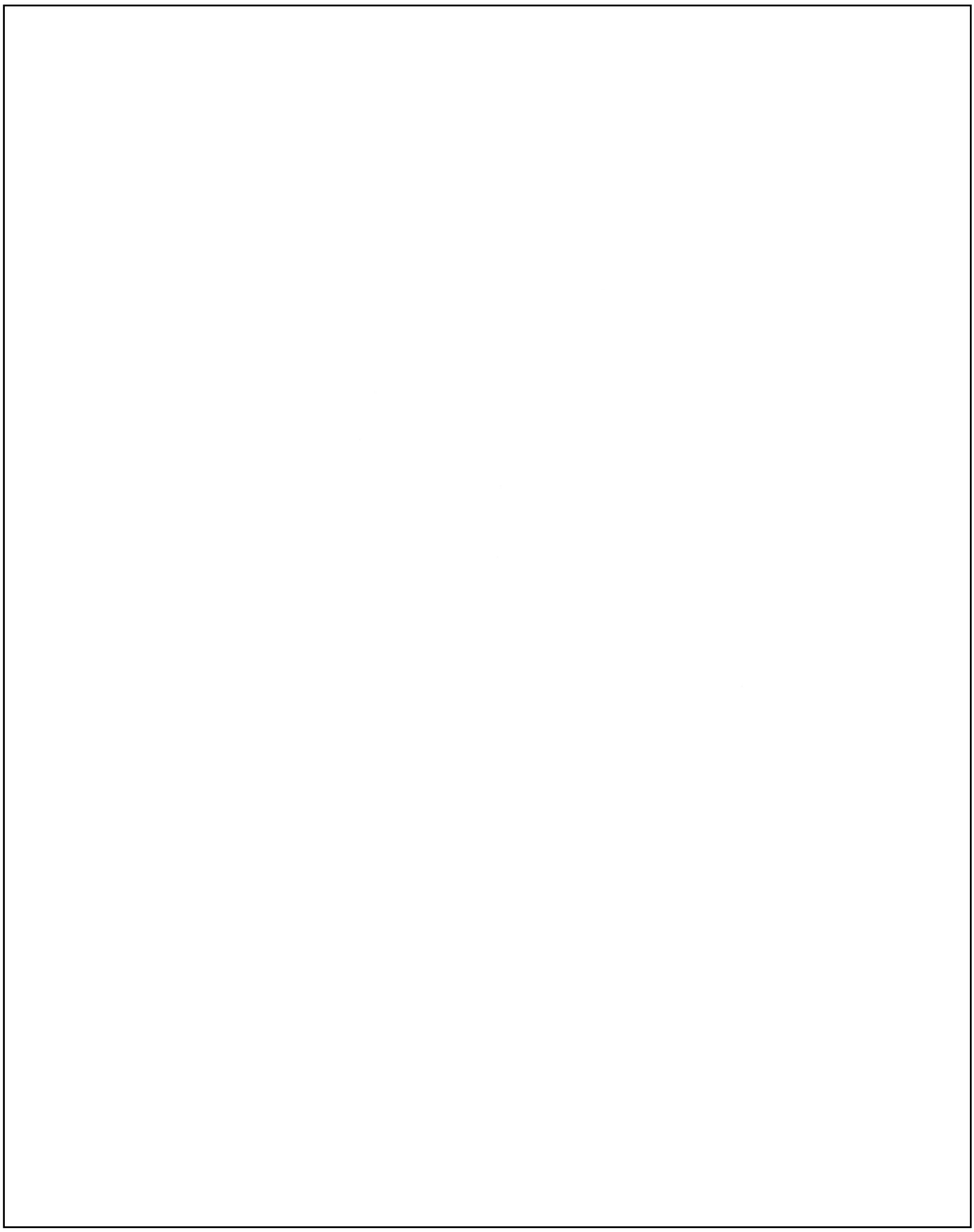
Project: Corbett Rd Assemblage Rezoning

Application: 2022-88-CZM

Location/Date: Clayton Community Center - Wednesday Sept. 21st, 2022

	NAME	ADDRESS
1	[illegible]	2177 Amelia Ch. Rd.
2	[illegible]	371 Corbett Road
3	[illegible]	29 Hannah Dr.
4	Jerry & Phyllis Cobb	2149 NC Hwy 42 West
5	Sherry Truitt	270 Corbett Rd
6	Nathaniel Truitt	270 Corbett Rd
7	Benny Langdon	195 Slateford Drive
8	Michael. Truitt	270 Corbett Rd
9	Jeff Bond	123 Hannah Dr.
10	Vicki Harris	253 Corbett Rd.
11	[illegible]	217 Corbett Rd.
12		
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January 2021



Traffic Impact Analysis

Corbett Assemblage

Clayton, NC

Prepared for:

Davis Park Leasing, LLC

Kimley»Horn

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Traffic Impact Analysis for

Corbett Assemblage

Clayton, North Carolina

Prepared for:

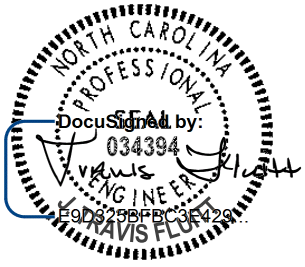
Davis Park Leasing, LLC.
Cary, NC

Prepared by:

Kimley-Horn and Associates, Inc.
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000

August 2022

011174043



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.

Executive Summary

Kimley-Horn and Associates, Inc. has prepared a Traffic Impact Analysis (TIA) for the proposed Corbett Assemblage residential development located west of Corbett Road between Amelia Church Road and US 70 Bypass in Clayton, North Carolina. The proposed development covers approximately 86 acres and, as currently envisioned, will include approximately 200 single-family detached homes, 185 townhomes (analyzed as single-family attached homes to present conservative results), and 365 low-rise apartments. The site is proposed to be accessed via four driveways along Corbett Road and cross-access with the adjacent Copper District development, which connects to NC 42. Build-out of the development is anticipated in the year 2027.

North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) Project R-3410 proposes to widen NC 42 to a four-lane, median-divided roadway through the study area along with other geometric and traffic signal improvements. However, the timing of this project is currently uncertain. Based on scoping discussions with Town of Clayton and NCDOT staff, two study scenarios were analyzed due to the uncertainty related to the timing of STIP Project R-3410 and the build-out of the Copper District development:

- Scenario 1: Corbett Assemblage Build-out without Copper District or STIP Project
- Scenario 2: Corbett Assemblage Build-out with Copper District and STIP Project

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the Corbett Assemblage development. The traffic conditions studied include the existing (2022) traffic condition and the projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Trip generation for Scenario 1, which includes the Corbett Assemblage uses only, was calculated using data from the 11th Edition of the ITE *Trip Generation Manual*. As shown in Table ES-1, these uses have the potential to generate approximately 5,686 new daily trips, 367 new AM peak hour trips, and 476 new PM peak hour trips on a typical weekday.

Table ES-1
ITE Traffic Generation (Vehicles) – Scenario 1

Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		PM Peak Hour	
				Total	In	Out	In	Out
210	Single-Family Detached Housing	200	d.u.	1,910	36	104	120	71
215	Single-Family Attached Housing	185	d.u.	1,360	28	63	61	46
220	Multifamily Housing (Low-Rise)	365	d.u.	2,416	33	103	112	66
Total Trip Generation: Scenario 1				**5,686**	**97**	**270**	**293**	**183**

To account for anticipated capture between the proposed uses and the Copper District development in Scenario 2, the trip generation for the Corbett Assemblage development was calculated as the difference in net new external trips between the trip generation of only the Copper District and the combined trip generation (including internal capture) of the Copper District and Corbett Assemblage. Trip generation for the Copper District, which was originally calculated using data from the 10th Edition of the *Trip Generation Manual*, was obtained from the *Lumen Traffic Impact Analysis* (Kimley-Horn, July 2020). As shown in Table ES-2, the total net new external site traffic generation from the Corbett Assemblage development in Scenario 2 will be approximately 4,478 new daily trips, 347 new AM peak hour trips, and 432 new PM peak hour trips on a typical weekday.

Table ES-2
ITE Traffic Generation (Vehicles) – Scenario 2

Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		PM Peak Hour	
				Total	In	Out	In	Out
210	Single-Family Detached Housing - *Copper District*	140	d.u.	1,418	26	78	88	52
210	Single-Family Detached Housing - *Corbett Assemblage*	200	d.u.	1,910	36	104	120	71
215	Single-Family Attached Housing - *Corbett Assemblage*	185	d.u.	1,360	28	63	61	46
220	Multifamily Housing (Low-Rise) - *Corbett Assemblage*	365	d.u.	2,416	33	103	112	66
221	Multifamily Housing (Mid-Rise) - *Copper District*	480	d.u.	2,614	41	118	122	78
310	Hotel - *Copper District*	120	rooms	928	32	23	33	31
720	Medical Office Building - *Copper District*	700,000	s.f.	26,806	1,073	189	189	1,071
820	Shopping Center - *Copper District*	35,000	s.f.	2,944	105	64	120	130
850	Supermarket - *Copper District*	55,000	s.f.	5,874	126	84	259	249
Subtotal				46,270	1,500	826	1,104	1,794
Internal Capture				*7,192*	*133*	*133*	*223*	*223*
Pass-by Capture				*2,004*	*0*	*0*	*108*	*94*
Net New External Trips – CD + CA				**37,074**	**1,367**	**693**	**773**	**1,477**
Net New External Trips – Copper District Only				**32,596**	**1,280**	**433**	**502**	**1,316**
Increase in Net New Trips: Corbett Assemblage				**4,478**	**87**	**260**	**271**	**161**

Capacity analyses were performed using Synchro Version 11 software. Table ES-3 summarizes the operation of the study intersections for the AM and PM peak hour traffic conditions for each scenario.

Table ES-3 Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
NC 42 at US 70 Bypass Eastbound Ramps (Signalized)		
Existing (2022) Traffic	A (9.7)	B (11.8)
Background (2027) Traffic – Scenario 1	B (10.1)	B (12.2)
Build-out (2027) Traffic – Scenario 1	B (12.0)	B (15.4)
Background (2027) Traffic – Scenario 2	C (26.5)	C (22.1)
Build-out (2027) Traffic – Scenario 2	C (27.2)	C (24.6)
NC 42 at US 70 Bypass Westbound Ramps (Signalized)		
Existing (2022) Traffic	B (18.5)	B (15.3)
Background (2027) Traffic – Scenario 1	B (19.4)	B (16.3)
Build-out (2027) Traffic – Scenario 1	B (18.4)	B (18.4)
Background (2027) Traffic – Scenario 2	B (15.9)	B (10.8)
Build-out (2027) Traffic – Scenario 2	B (17.6)	B (10.9)
NC 42 at Johnson Estate Road/West Copper District Access (Unsignalized)		
Existing (2022) Traffic	SB – B (12.8) EBL – A (9.2)	SB – C (19.6) EBL – B (10.5)
Background (2027) Traffic – Scenario 1	SB – B (13.4) EBL – A (9.4)	SB – C (22.1) EBL – B (10.9)
Build-out (2027) Traffic – Scenario 1 with Improvements	NB – C (20.1) SB – C (16.2) EBL – B (10.4)	NB – C (16.1) SB – D (28.9) EBL – B (12.0)
Background (2027) Traffic – Scenario 2	NB – C (18.2) SB – B (12.2)	NB – C (20.1) SB – C (23.6)
Build-out (2027) Traffic – Scenario 2	NB – C (19.2) SB – B (13.2)	NB – C (22.4) SB – D (25.4)
NC 42 at Springbrook Avenue/East Copper District Access (Signalized)		
Existing (2022) Traffic	A (7.3)	B (13.1)
Background (2027) Traffic – Scenario 1	A (8.2)	B (14.2)
Build-out (2027) Traffic – Scenario 1	B (17.3)	C (24.3)
Background (2027) Traffic – Scenario 2	C (30.9)	D (44.8)
Build-out (2027) Traffic – Scenario 2 with Improvements	C (29.8)	D (46.4)

Table ES-3 (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
NC 42 at Johnston Health/HealthPark Way (Signalized)		
Existing (2022) Traffic	A (6.1)	B (13.9)
Background (2027) Traffic – Scenario 1	A (7.0)	B (14.8)
Build-out (2027) Traffic – Scenario 1	A (7.6)	B (14.9)
Background (2027) Traffic – Scenario 2	A (8.0)	A (9.8)
Build-out (2027) Traffic – Scenario 2	A (7.7)	A (9.1)
NC 42 at Amelia Church Road (Signalized)		
Existing (2022) Traffic	C (30.3)	D (35.2)
Background (2027) Traffic – Scenario 1	C (31.9)	D (40.6)
Build-out (2027) Traffic – Scenario 1	C (31.2)	D (51.5)
Background (2027) Traffic – Scenario 2	C (31.9)	D (38.8)
Build-out (2027) Traffic – Scenario 2	C (32.5)	D (42.1)
Amelia Church Road at Corbett Road (Unsignalized)		
Existing (2022) Traffic	NB – C (15.2) WBL – A (7.5)	NB – C (15.1) WBL – A (8.5)
Background (2027) Traffic – Scenario 1	NB – C (17.6) WBL – A (7.6)	NB – C (16.6) WBL – A (8.7)
Build-out (2027) Traffic – Scenario 1 with Improvements	NB – C (22.1) WBL – A (7.7)	NB – C (20.5) WBL – A (9.2)
Background (2027) Traffic – Scenario 2	NB – C (20.5) WBL – A (7.6)	NB – C (19.7) WBL – A (9.0)
Build-out (2027) Traffic – Scenario 2 with Improvements	NB – D (27.4) WBL – A (7.7)	NB – C (23.3) WBL – A (9.4)

Table ES-3 (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Corbett Road at Hannah Drive/Access D (Unsignalized)		
Existing (2022) Traffic	WB – A (9.0) SBL – A (7.4)	WB – A (8.9) SBL – A (7.3)
Background (2027) Traffic – Scenario 1	WB – A (9.1) SBL – A (7.5)	WB – A (9.0) SBL – A (7.4)
Build-out (2027) Traffic – Scenario 1	EB – A (9.7) WB – A (9.6) NBL – A (7.3) SBL – A (7.5)	EB – A (9.8) WB – A (9.6) NBL – A (7.4) SBL – A (7.4)
Background (2027) Traffic – Scenario 2	WB – A (9.1) SBL – A (7.5)	WB – A (9.0) SBL – A (7.4)
Build-out (2027) Traffic – Scenario 2	EB – A (9.7) WB – A (9.5) NBL – A (7.3) SBL – A (7.5)	EB – A (9.8) WB – A (9.5) NBL – A (7.4) SBL – A (7.4)
Corbett Road at Access A (Unsignalized)		
Build-out (2027) Traffic – Scenario 1	EB – A (8.7)	EB – A (9.3)
Build-out (2027) Traffic – Scenario 2	EB – A (8.7)	EB – A (9.3)
Corbett Road at Access B (Unsignalized)		
Build-out (2027) Traffic – Scenario 1	EB – B (10.1) NBL – A (7.4)	EB – B (10.2) NBL – A (7.6)
Build-out (2027) Traffic – Scenario 2	EB – B (10.1) NBL – A (7.4)	EB – B (10.1) NBL – A (7.6)
Corbett Road at Access C (Unsignalized)		
Build-out (2027) Traffic – Scenario 1	EB – A (9.5) NBL – A (7.3)	EB – A (9.6) NBL – A (7.5)
Build-out (2027) Traffic – Scenario 2	EB – A (9.4) NBL – A (7.3)	EB – A (9.5) NBL – A (7.5)

Scenario 1

The following improvements are recommended to be performed to accommodate site traffic associated with the Corbett Assemblage:

NC 42 at Johnson Estate Road/West Copper District Access:

- Construct the West Copper District Access as a right-in/right-out driveway with one ingress lane and one egress lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 50 feet of storage and appropriate taper

NC 42 at Springbrook Avenue/East Copper District Access:

- Construct the East Copper District Access as a full-movement driveway with an exclusive left-turn lane with 200 feet of storage and a shared through/right-turn lane
- Restripe the existing exclusive southbound right-turn lane on Springbrook Avenue as a shared through/right-turn lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Construct an exclusive westbound left-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Modify the traffic signal to accommodate the recommended laneage

Amelia Church Road at Corbett Road:

- Construct an exclusive eastbound right-turn lane on Amelia Church Road with 100 feet of storage and appropriate taper

Corbett Road at Site Access A:

- Construct Site Access A as a right-in/right-out access with one ingress lane and one egress lane

Corbett Road at Site Access B:

- Construct Site Access B as a full-movement access with one ingress lane and one egress lane

Corbett Road at Site Access C:

- Construct Site Access C as a full-movement access with one ingress lane and one egress lane

Corbett Road at Site Access D:

- Construct Site Access D as a full-movement access with one ingress lane and one egress lane

Analyses indicate that, with the recommended improvements in place, all of the study intersections are expected to operate at acceptable LOS in the Scenario 1 build-out condition. The recommended roadway laneage for Scenario 1 is shown on **Figures ES-1 and ES-2.**

Scenario 2

Improvements by Others

The following improvements are planned to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions:

NC 42:

- Widen NC 42 to a four-lane divided roadway through the study area

NC 42 at US 70 Bypass Eastbound Ramps:

- Construct an additional southbound right-turn lane and extend the existing southbound right-turn lane on the US 70 Bypass Eastbound Off-Ramp to provide dual right-turn lanes with 350 feet of storage each

- Restripe the existing eastbound shared through/right-turn lane on NC 42 as a through lane and construct an exclusive eastbound right-turn lane with 200 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at US 70 Bypass Westbound Ramps:

- Construct an additional northbound right-turn lane and extend the existing northbound right-turn lane on the US 70 Bypass Westbound Off-Ramp to provide dual right-turn lanes with 450 feet of storage each
- Restripe the existing westbound shared through/right-turn lane on NC 42 as a through lane and construct an exclusive westbound right-turn lane with 450 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at Johnson Estate Road:

- Reconfigure the intersection to restrict Johnson Estate Road to a right-in/right-out only access

NC 42 at Springbrook Avenue:

- Extend the existing eastbound left-turn lane on NC 42 to provide 425 feet of storage
- Extend the existing westbound right-turn lane on NC 42 to provide 125 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at Johnston Health/HealthPark Way:

- Extend the existing eastbound left-turn lane on NC 42 to provide 450 feet of storage
- Extend the existing eastbound right-turn lane on NC 42 to provide 175 feet of storage
- Extend the existing westbound left-turn lane on NC 42 to provide 425 feet of storage
- Extend the existing westbound right-turn lane on NC 42 to provide 225 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at Amelia Church Road:

- Extend the existing northbound left-turn lane on Amelia Church Road to provide 350 feet of storage
- Extend the existing southbound left-turn lane on Amelia Church Road to provide 100 feet of storage
- Construct an additional southbound right-turn lane and extend the existing southbound right-turn lane on Amelia Church Road to provide dual right-turn lanes with 200 feet of storage each
- Construct an additional eastbound left-turn lane and extend the existing eastbound left-turn lane on NC 42 to provide dual left-turn lanes with 375 feet of storage each
- Construct an exclusive eastbound right-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Construct an exclusive westbound left-turn lane on NC 42 with 200 feet of storage and appropriate taper
- Modify the existing traffic signal to accommodate the planned laneage

While the traffic analysis for the TIP project recommended additional improvements as part of that project to accommodate projected future volumes, only those improvements identified on the project public hearing maps were included in this analysis to be conservative.

In addition to the improvements planned as part of TIP Project R-3410, the following improvements were recommended to be performed as part of the Copper District development:

NC 42 at Johnson Estate Road/West Copper District Access:

- Construct the West Copper District Access as a right-in/right-out driveway with one ingress lane and one egress lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 200 feet of storage and appropriate taper

NC 42 at Springbrook Avenue/East Copper District Access:

- Construct an exclusive eastbound right-turn lane on NC 42 with 150 feet of storage and appropriate taper
- Construct dual westbound left-turn lanes on NC 42, each with 400 feet of storage and appropriate taper
- Provide dual northbound left-turn lanes, a through lane, and an exclusive right-turn lane on the northbound approach of the East Copper District Access
- Restripe the existing exclusive southbound right-turn lane on Springbrook Avenue as a shared through/right lane
- Modify the traffic signal to accommodate the recommended laneage

Recommended Improvements – Corbett Assemblage

In addition to improvements committed as part of NCDOT STIP Project R-3410 and the Copper District, the following improvements are recommended to be performed to accommodate site traffic associated with the Corbett Assemblage development:

NC 42 at Springbrook Avenue/East Copper District Access:

- Restripe the existing southbound shared through/right-turn lane on Springbrook Avenue as a through lane and construct an exclusive southbound right-turn lane with 150 feet of storage
- Modify the traffic signal to accommodate the recommended laneage

Amelia Church Road at Corbett Road:

- Construct an exclusive eastbound right-turn lane on Amelia Church Road with 100 feet of storage and appropriate taper

Corbett Road at Site Access A:

- Construct Site Access A as a right-in/right-out access with one ingress lane and one egress lane

Corbett Road at Site Access B:

- Construct Site Access B as a full-movement access with one ingress lane and one egress lane

Corbett Road at Site Access C:

- Construct Site Access C as a full-movement access with one ingress lane and one egress lane

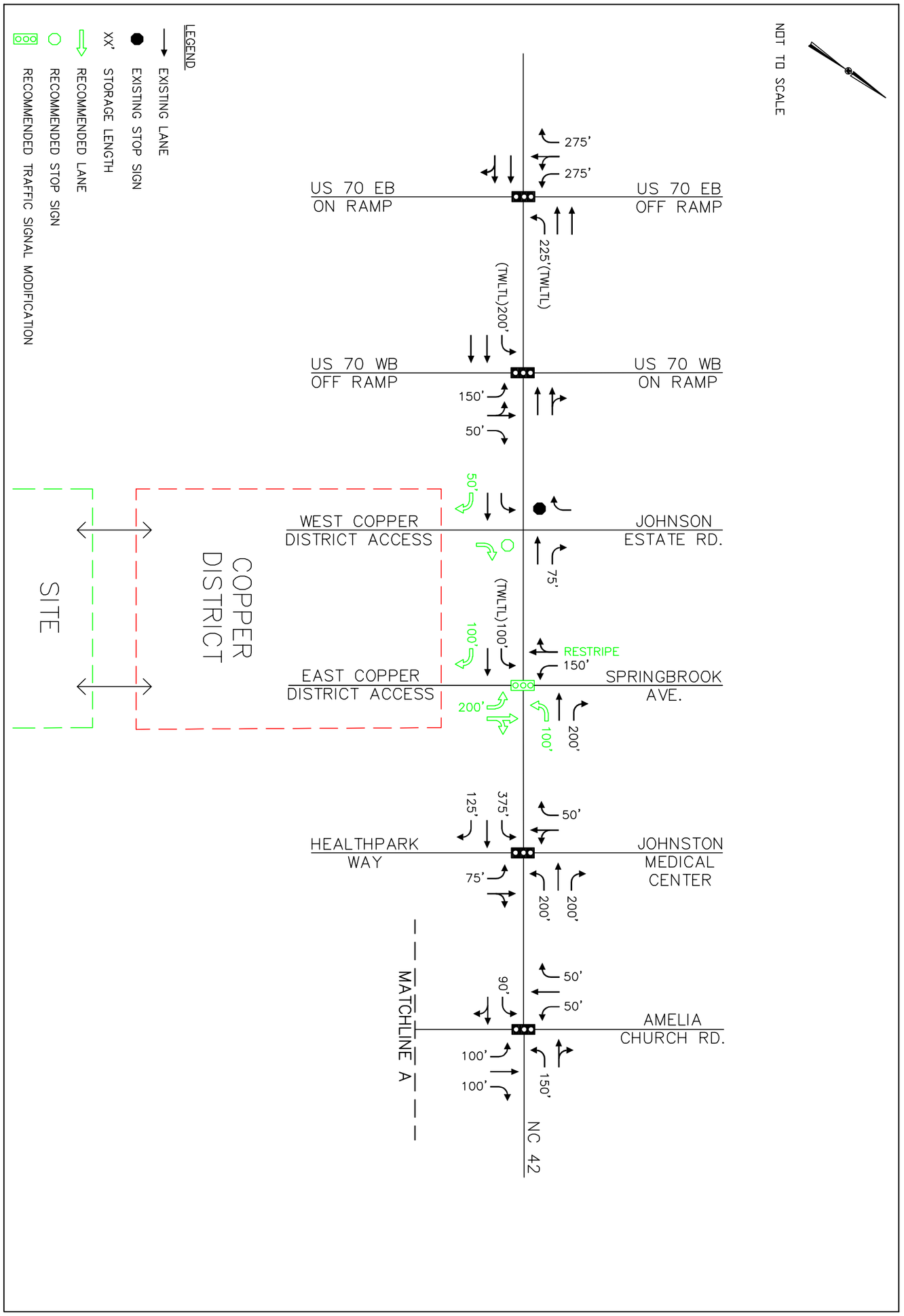
Corbett Road at Site Access D:

- Construct Site Access D as a full-movement access with one ingress lane and one egress lane

Analyses indicate that, with the committed and recommended improvements in place, all of the study intersections are expected to operate at an acceptable LOS in the Scenario 2 build-out condition. While some long queues in the background condition are anticipated to continue in the build-out condition, the impact of project site traffic on both intersection volumes and delays is expected to be relatively minimal.

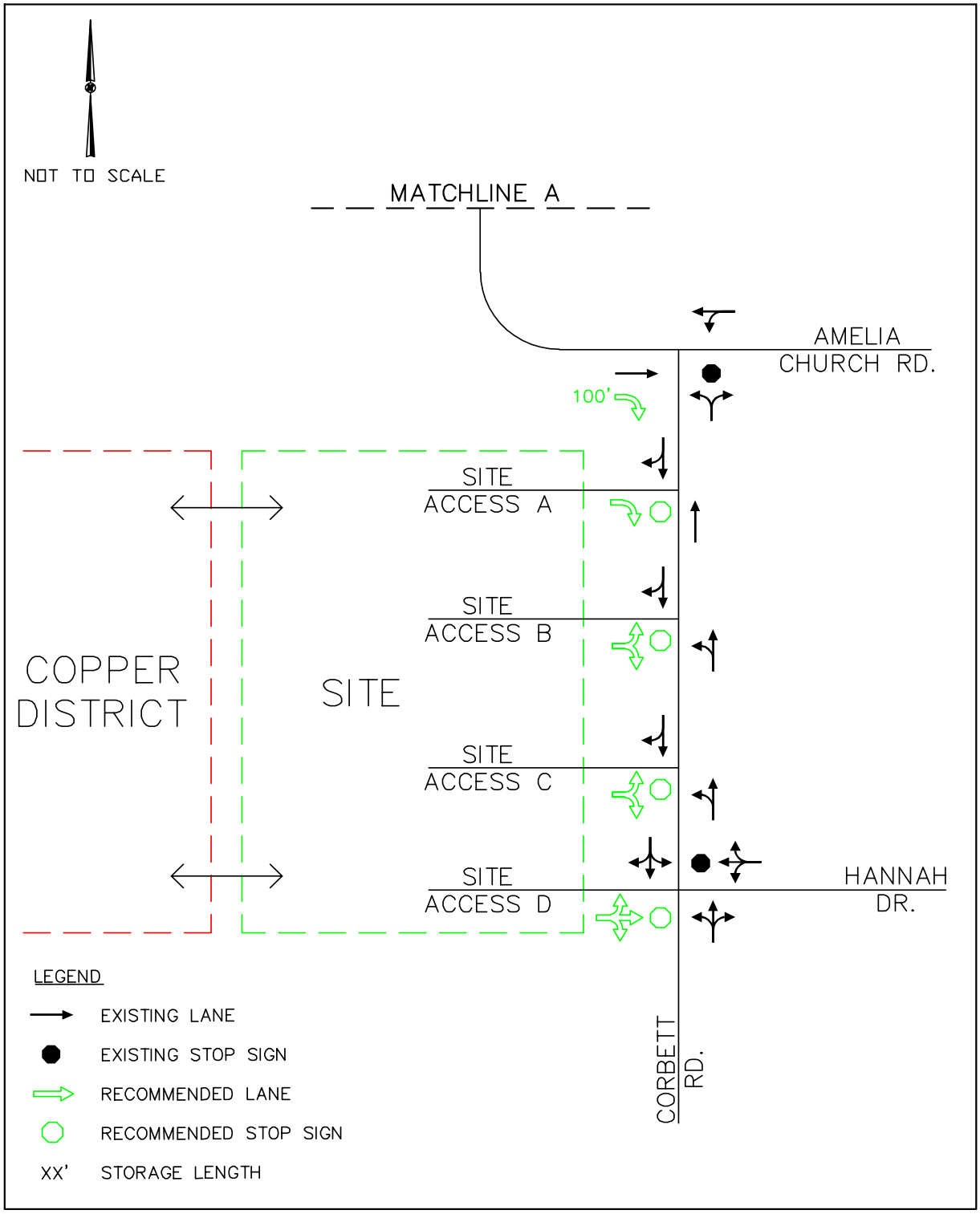
The committed and recommended roadway laneage for Scenario 2 is shown on **Figures ES-3** and **ES-4.**

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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE (SCENARIO 1) NC 42 INTERSECTIONS	FIGURE ES-1

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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE (SCENARIO 1) CORBETT RD. INTERSECTIONS	FIGURE ES-2

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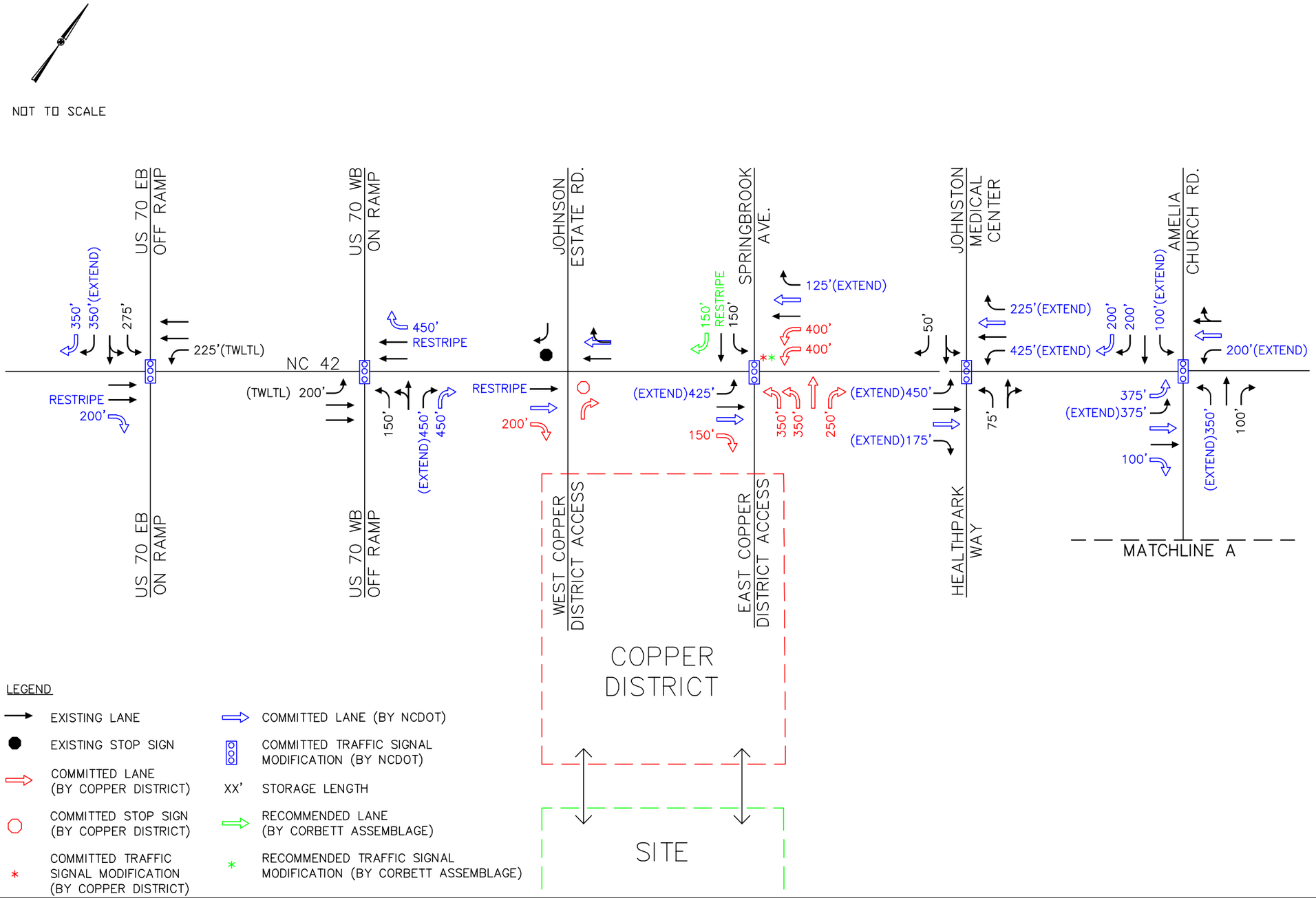


FIGURE ES-3

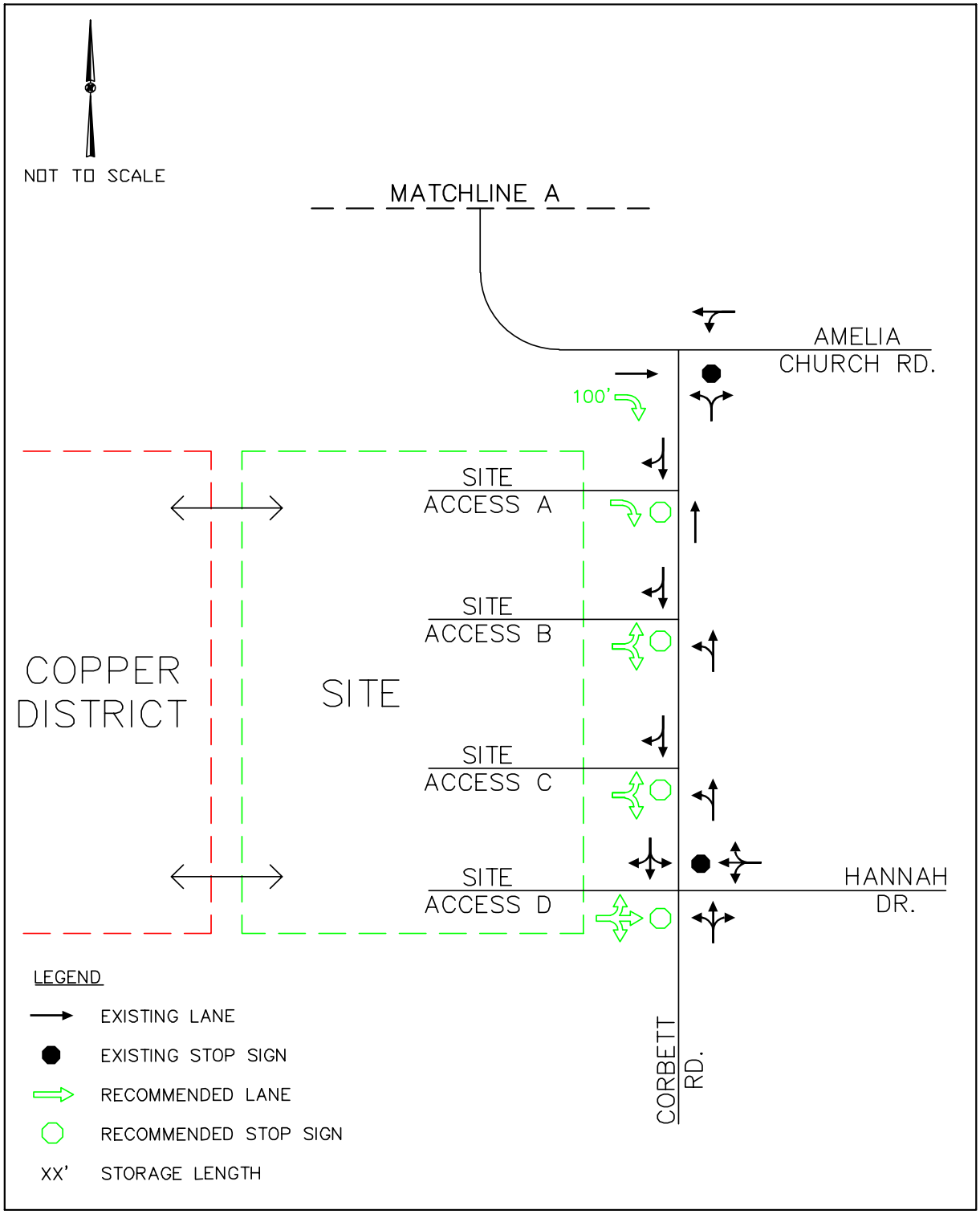
COMMITTED AND RECOMMENDED ROADWAY LANEAGE (SCENARIO 2) NC 42 INTERSECTIONS

CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	COMMITTED AND RECOMMENDED ROADWAY LANEAGE (SCENARIO 2) CORBETT RD. INTERSECTIONS	FIGURE ES-4

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1.0 Introduction

Kimley-Horn and Associates, Inc. has prepared a Traffic Impact Analysis (TIA) for the proposed Corbett Assemblage residential development located west of Corbett Road between Amelia Church Road and US 70 Bypass in Clayton, North Carolina. The proposed development covers approximately 86 acres and, as currently envisioned, will include approximately 200 single-family detached homes, 185 townhomes (analyzed as single-family attached homes to present conservative results), and 365 low-rise apartments. The site is proposed to be accessed via four driveways along Corbett Road and cross-access with the adjacent Copper District development, which connects to NC 42. Build-out of the development is anticipated in the year 2027.

North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) Project R-3410 proposes to widen NC 42 to a four-lane, median-divided roadway through the study area along with other geometric and traffic signal improvements. However, the timing of this project is currently uncertain. Based on scoping discussions with Town of Clayton and NCDOT staff, two study scenarios were analyzed due to the uncertainty related to the timing of STIP Project R-3410 and the build-out of the Copper District development:

- Scenario 1: Corbett Assemblage Build-out without Copper District or STIP Project
- Scenario 2: Corbett Assemblage Build-out with Copper District and STIP Project

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the Corbett Assemblage development. The traffic conditions studied include the existing (2022) traffic condition and the projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Town of Clayton and NCDOT staff provided background data and were consulted regarding the elements to be covered in this analysis. The TIA Scoping Documents are included in the Appendix.

2.0 Inventory

2.1 *Study Area*

The study area for this development includes the following intersections:

- NC 42 at US 70 Bypass Eastbound Ramps
- NC 42 at US 70 Bypass Westbound Ramps
- NC 42 at Johnson Estate Road/West Copper District Access
- NC 42 at Springbrook Avenue/East Copper District Access
- NC 42 at Johnston Health/HealthPark Way
- NC 42 at Amelia Church Road
- Amelia Church Road at Corbett Road
- Corbett Road at Hannah Drive/Access D (Single-Family South Driveway)
- Corbett Road at Access A (Multifamily North Driveway)
- Corbett Road at Access B (Multifamily South Driveway)
- Corbett Road at Access C (Single-Family North Driveway)

Figure 2.1 shows the site location, and the conceptual site plan is shown on **Figure 2.2**

2.2 *Existing Conditions*

The Corbett Assemblage development is proposed to be located west of Corbett Road between Amelia Church Road and US 70 Bypass in Clayton, North Carolina. Roadways in the area include US 70 Bypass, NC 42, Amelia Church Road, Springbrook Avenue, Corbett Road, Johnson Estate Road, and Hannah Drive. The existing roadway laneage is shown in **Figure 2.3**.

US 70 Bypass is a 4-lane divided highway with a posted speed limit of 70 mph in the vicinity of NC 42. The estimated 2022 average daily traffic (ADT) volume on US 70 Bypass is approximately 41,000 vehicles per day (vpd) northwest of NC 42.

NC 42 is a 3-lane undivided roadway between the US 70 Bypass Ramps and Springbrook Avenue and a 2-lane undivided roadway between Springbrook Avenue and Amelia Church Road. NC 42 is planned to be widened to a 4-lane divided roadway as part of NCDOT Project R-3410. It has a posted speed limit of 45 mph in the study area. The estimated 2022 ADT volume is approximately 14,200 vpd west of Amelia Church Road.

Amelia Church Road is a 2-lane undivided roadway with a posted speed limit of 45 mph. The estimated 2022 ADT volume is approximately 11,800 vpd north of NC 42 and approximately 7,600 vpd south of NC 42.

Springbrook Avenue is a 2-lane divided roadway with an assumed speed limit of 25 mph. The estimated 2022 ADT volume is approximately 2,300 vpd.

Corbett Road is a 2-lane undivided roadway with a posted speed limit of 45 mph. The estimated 2022 ADT volume is approximately 1,300 vpd.

Johnson Estate Road is a 2-lane undivided roadway with an assumed speed limit of 55 mph. The estimated 2022 ADT volume is less than 1,000 vpd.

Hannah Drive is a 2-lane undivided roadway with an assumed speed limit of 25 mph. The estimated 2022 ADT volume is less than 1,000 vpd.

FIGURE 2.1

SITE LOCATION

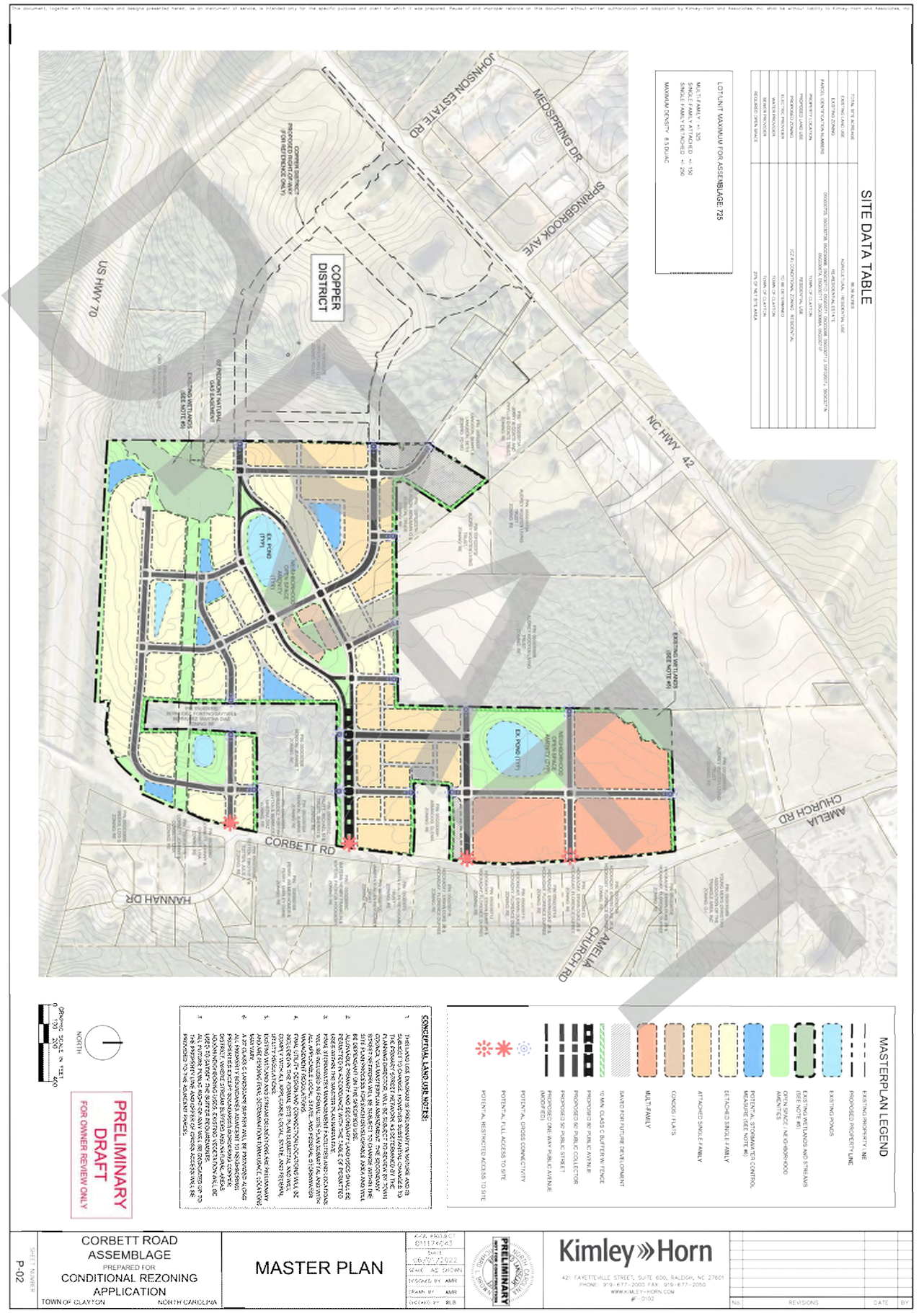
CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	PRELIMINARY SITE PLAN	FIGURE 2.2

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NOT TO SCALE

LEGEND

- EXISTING LANE
- EXISTING STOP SIGN
- EXISTING TRAFFIC SIGNAL
- SPEED LIMIT XX — POSTED SPEED LIMIT
- XX' — STORAGE LENGTH

FIGURE 2.3

EXISTING ROADWAY LANEAGE

CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

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3.0 Traffic Generation

As currently envisioned, the Corbett Assemblage will include approximately 200 single-family detached homes, 185 townhomes (which were generated as single-family attached homes to present conservative results), and 365 low-rise apartments. Trip generation for Scenario 1, which includes the Corbett Assemblage uses only, was calculated using data from the 11th Edition of the ITE *Trip Generation Manual.* As shown in Table 3.1, these uses have the potential to generate approximately 5,686 new daily trips, 367 new AM peak hour trips, and 476 new PM peak hour trips on a typical weekday.

Table 3.1
ITE Traffic Generation (Vehicles) – Scenario 1

Land Use Code	Land Use	Intensity		Daily	AM Peak Hour		PM Peak Hour	
				Total	In	Out	In	Out
210	Single-Family Detached Housing	200	d.u.	1,910	36	104	120	71
215	Single-Family Attached Housing	185	d.u.	1,360	28	63	61	46
220	Multifamily Housing (Low-Rise)	365	d.u.	2,416	33	103	112	66
Total Trip Generation: Scenario 1				**5,686**	**97**	**270**	**293**	**183**

To account for anticipated capture between the proposed uses and the Copper District development in Scenario 2, the trip generation for the Corbett Assemblage development was calculated as the difference in net new external trips between the trip generation of only the Copper District and the combined trip generation (including internal capture) of the Copper District and Corbett Assemblage. Trip generation for the Copper District, which was originally calculated using data from the 10th Edition of the *Trip Generation Manual*, was obtained from the *Lumen Traffic Impact Analysis* (Kimley-Horn, July 2020). As shown in Table 3.2, the total net new external site traffic generation from the Corbett Assemblage development in Scenario 2 will be approximately 4,478 new daily trips, 347 new AM peak hour trips, and 432 new PM peak hour trips on a typical weekday.

Table 3.2 ITE Traffic Generation (Vehicles) – Scenario 2								
Land Use Code	**Land Use**	**Intensity**		**Daily**	**AM Peak Hour**		**PM Peak Hour**	
				Total	**In**	**Out**	**In**	**Out**
210	Single-Family Detached Housing - *Copper District*	140	d.u.	1,418	26	78	88	52
210	Single-Family Detached Housing - *Corbett Assemblage*	200	d.u.	1,910	36	104	120	71
215	Single-Family Attached Housing - *Corbett Assemblage*	185	d.u.	1,360	28	63	61	46
220	Multifamily Housing (Low-Rise) - *Corbett Assemblage*	365	d.u.	2,416	33	103	112	66
221	Multifamily Housing (Mid-Rise) - *Copper District*	480	d.u.	2,614	41	118	122	78
310	Hotel - *Copper District*	120	rooms	928	32	23	33	31
720	Medical Office Building - *Copper District*	700,000	s.f.	26,806	1,073	189	189	1,071
820	Shopping Center - *Copper District*	35,000	s.f.	2,944	105	64	120	130
850	Supermarket - *Copper District*	55,000	s.f.	5,874	126	84	259	249
Subtotal				46,270	1,500	826	1,104	1,794
Internal Capture				*7,192*	*133*	*133*	*223*	*223*
Pass-by Capture				*2,004*	*0*	*0*	*108*	*94*
Net New External Trips – CD + CA				**37,074**	**1,367**	**693**	**773**	**1,477**
Net New External Trips – Copper District Only				**32,596**	**1,280**	**433**	**502**	**1,316**
Increase in Net New Trips: Corbett Assemblage				**4,478**	**87**	**260**	**271**	**161**

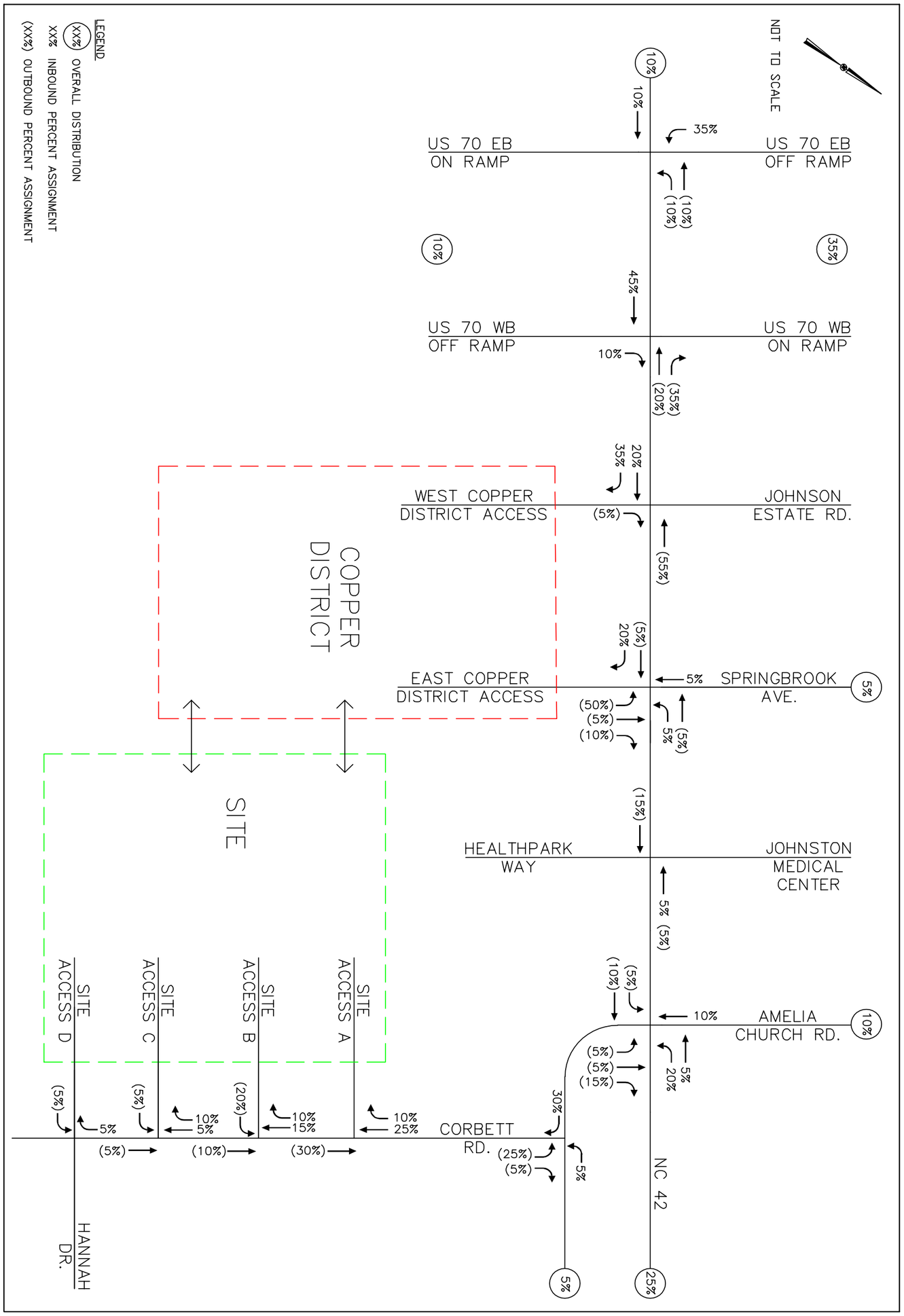
4.0 Site Traffic Distribution

The projected site-generated trips were assigned to the surrounding roadway network. The directional distribution and assignment used in the analysis for this development were generally consistent with the *Lumen TIA*, which was based on a review of surrounding land uses and discussions with NCDOT and the Town of Clayton. The following overall distribution was used for the development:

- 35% to/from the north on US 70 Bypass
- 25% to/from the east on NC 42
- 10% to/from the west on NC 42
- 10% to/from the south on US 70 Bypass
- 10% to/from the north on Amelia Church Road
- 5% to/from the south/east on Amelia Church Road
- 5% to/from the north on Springbrook Avenue

Figure 4.1 shows the site traffic distribution and percent assignment for the project, which are the same for both Scenario 1 and Scenario 2.

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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT	FIGURE 4.1

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5.0 Projected 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 performed at the following intersections when Johnston County schools were in session:

- NC 42 at US 70 Bypass Eastbound Ramps May 10, 2022
- NC 42 at US 70 Bypass Westbound Ramps May 10, 2022
- NC 42 at Johnson Estate Road May 10, 2022
- NC 42 at Springbrook Avenue May 10, 2022
- NC 42 at Johnson Health/HealthPark Way May 10, 2022
- NC 42 at Amelia Church Road May 10, 2022
- Amelia Church Road at Corbett Road May 10, 2022

As turning movement counts were not collected at the intersection of Corbett Road at Hannah Drive, trips were generated for the 13 single-family homes and assigned to that study intersection with through volumes balanced with the Amelia Church Road intersection.

The existing AM and PM peak hour traffic volumes are shown on **Figures 5.1 and 5.2**, respectively. The traffic count data are 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 scoping discussions, a 3% annual growth rate was applied to existing volumes up to the future study year 2027. This growth is anticipated to be sufficient to account for site traffic generated by the "Spring Branch Lot 8" and the "Medspring Drive Shell" medical office sites located generally north of NC 42 along Springbrook Avenue and Johnson Estate Road, respectively.

5.3 *Approved Development Traffic*

Only the Copper District project was identified for specific inclusion as an approved development. Site trips for that development were obtained from the *Lumen TIA* and were included in this analysis as background traffic in Scenario 2 only.

5.4 *Johnson Estate Road Access Conversion*

As part of STIP Project R-3410, the intersection of NC 42 at Johnson Estate Road is proposed to be converted from a directional crossover (left-in/right-in/right-out) to a right-in/right-out driveway. To account for this reconfiguration, left turns from NC 42 onto Johnson Estate Road were reassigned to the Springbrook Avenue intersection in Scenario 2.

5.5 *Total Background Traffic*

Background traffic volumes include existing traffic and historic growth traffic for both scenarios. Projected (2027) Scenario 1 AM and PM peak hour background traffic volumes are shown on **Figures 5.1 and 5.2**, respectively. Projected (2027) Scenario 2 AM and PM peak hour background traffic volumes, which also include approved development and Johnson Estate Road diversion traffic, are shown on **Figures 5.7 and 5.8**, respectively.

5.6 *Site Traffic*

Site traffic was generated and assigned to the adjacent roadway network according to the distribution discussed previously in *Section 4.0*. Scenario 1 AM peak hour site traffic volumes are shown on **Figures 5.3 and 5.4,** while the Scenario 1 PM peak hour site traffic volumes are shown on **Figures 5.5 and 5.6.**

Scenario 2 AM peak hour site traffic volumes are shown on **Figures 5.9 and 5.10,** while the Scenario 2 PM peak hour site traffic volumes are shown on **Figures 5.11 and 5.12.**

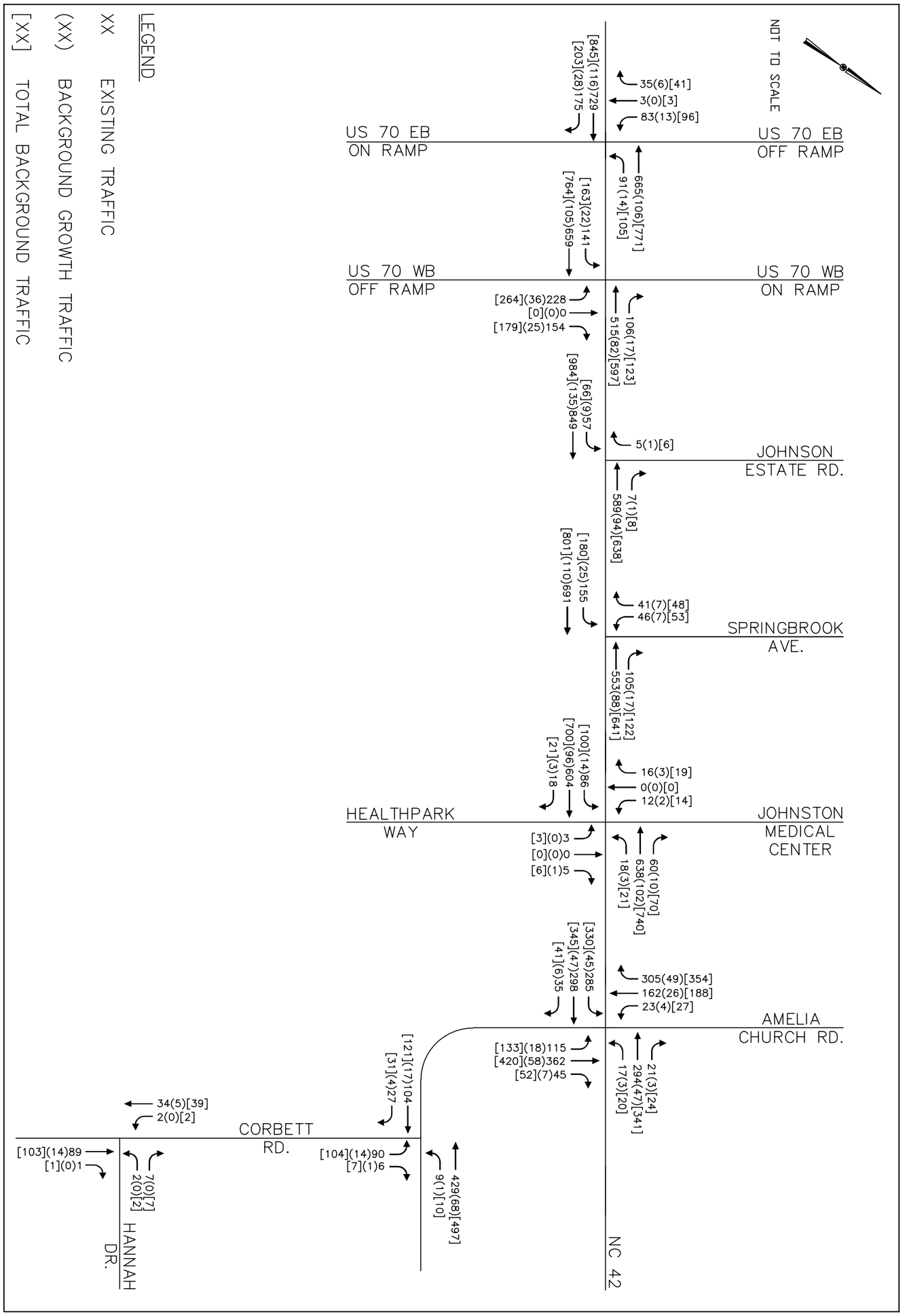
5.7 *Build-Out Traffic*

Projected build-out traffic volumes include background traffic and site traffic. Traffic volume calculations are detailed in intersection spreadsheets in the Appendix of this report.

The projected (2027) Scenario 1 AM peak hour build-out traffic volumes are shown on **Figures 5.3 and 5.4,** while the Scenario 1 PM peak hour build-out traffic volumes are shown on **Figures 5.5 and 5.6.**

The projected (2027) Scenario 2 AM peak hour build-out traffic volumes are shown on **Figures 5.9 and 5.10,** while the Scenario 2 PM peak hour build-out traffic volumes are shown on **Figures 5.11 and 5.12.**

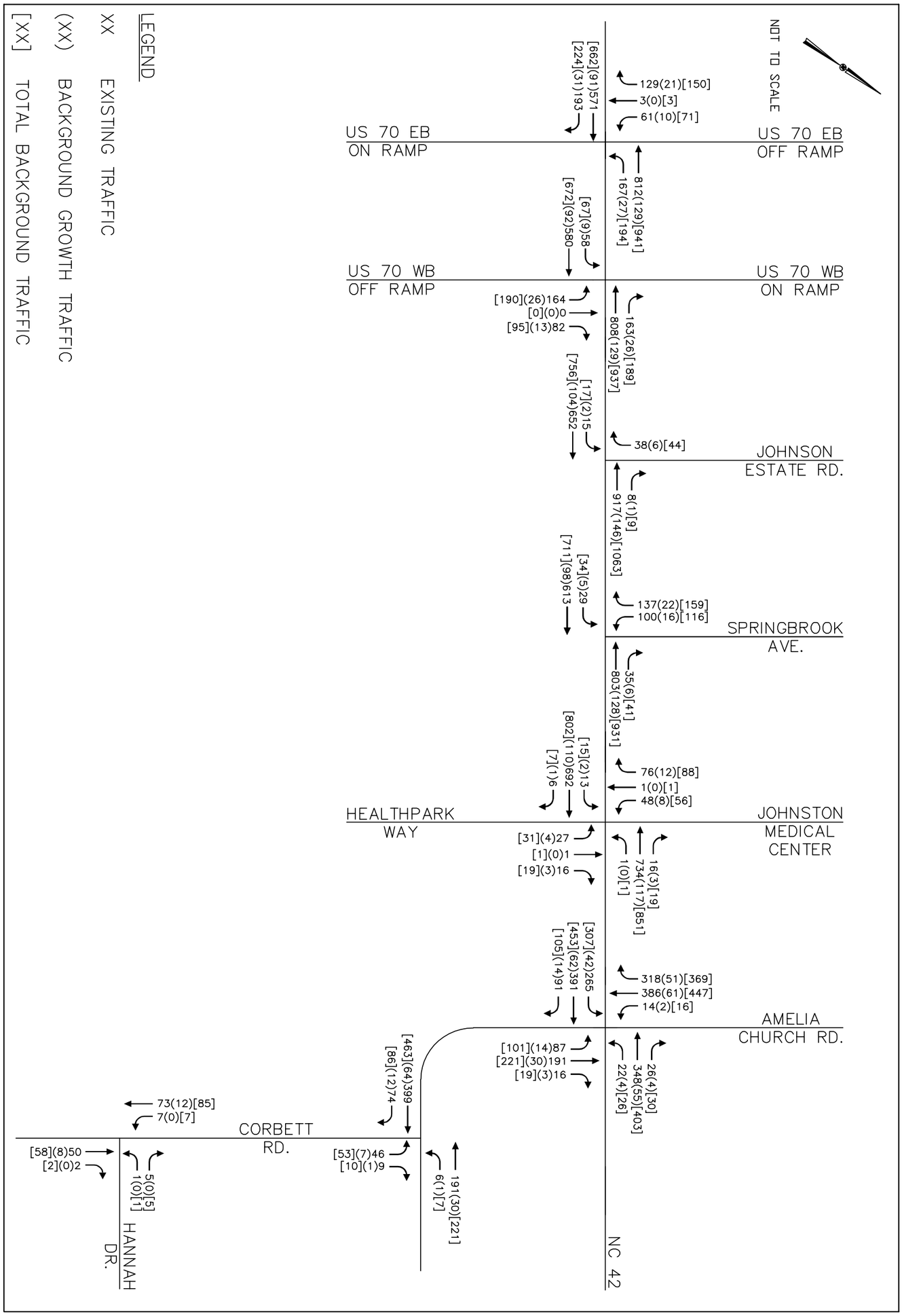
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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	EXISTING AND PROJECTED (2027) BACKGROUND AM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 1)	FIGURE 5.1

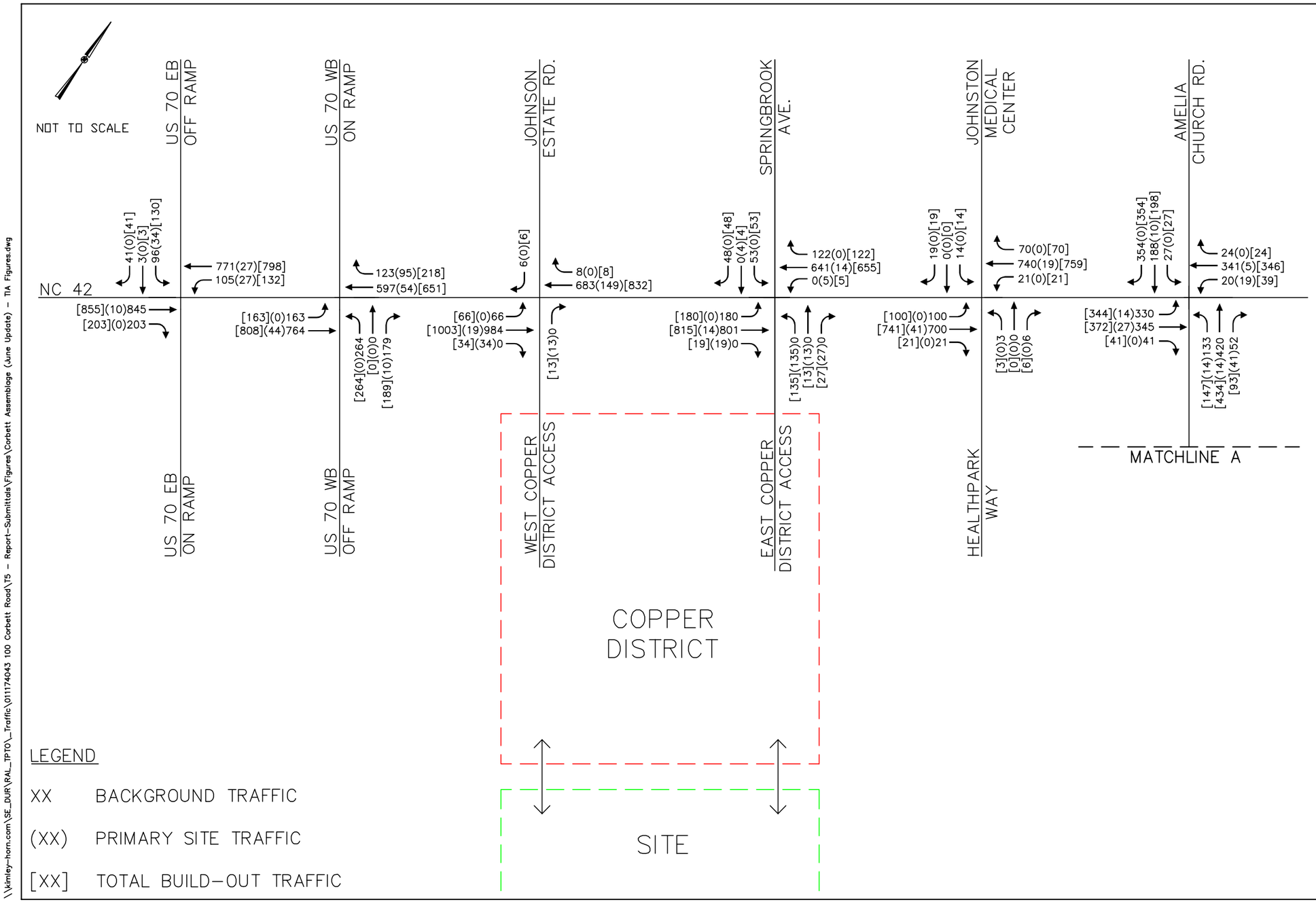
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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	EXISTING AND PROJECTED (2027) BACKGROUND PM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 1)	FIGURE 5.2

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PROJECTED (2027) BACKGROUND AND BUILD-OUT AM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 1) NC 42 INTERSECTIONS

FIGURE 5.3

CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

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NOT TO SCALE

MATCHLINE A

497(0)[497]
10(5)[15]

AMELIA CHURCH RD.

[121](0)121
[60](29)31

[172](68)104
[21](14)7

0(10)[10]
42(24)[66]

SITE ACCESS A

[0](0)0

0(10)[10]
42(15)[57]

[192](81)111

SITE ACCESS B

[54](54)0
[0](0)0

0(10)[10]
42(5)[47]

[0](0)0
[138](27)111

SITE ACCESS C

[14](14)0
[0](0)0

[0](0)0
[125](14)111

0(5)[5]
39(0)[39]
2(0)[2]

7(0)[7]
0(0)[0]
2(0)[2]

SITE ACCESS D

HANNAH DR.

[14](14)0
[0](0)0
[0](0)0

[0](0)0
[103](0)103
[1](0)1

CORBETT RD.

COPPER DISTRICT

SITE

LEGEND

XX BACKGROUND TRAFFIC

(XX) PRIMARY SITE TRAFFIC

[XX] TOTAL BUILD-OUT TRAFFIC

FIGURE 5.4

PROJECTED (2027) BACKGROUND AND BUILD-OUT AM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 1) CORBETT RD. INTERSECTIONS

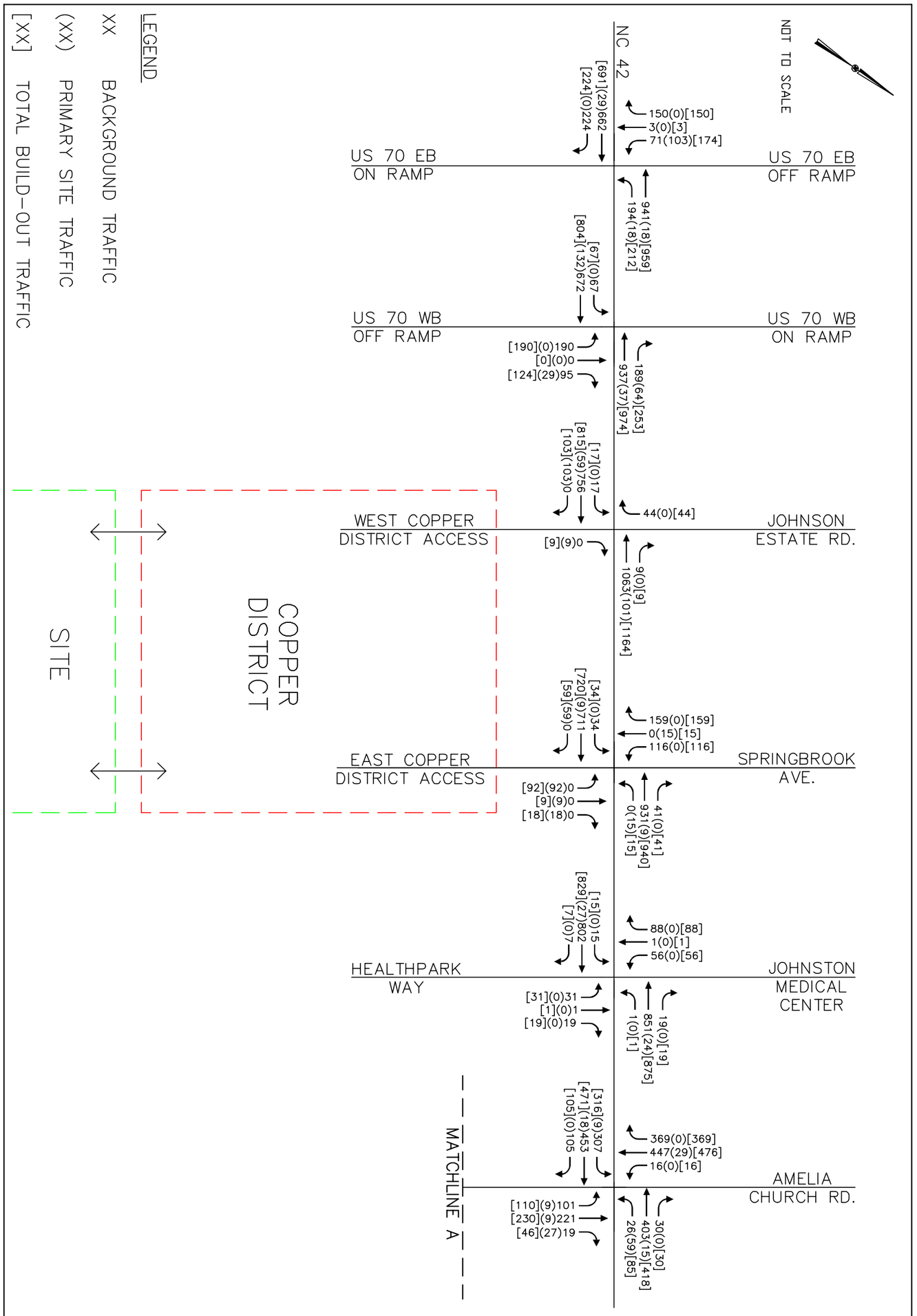
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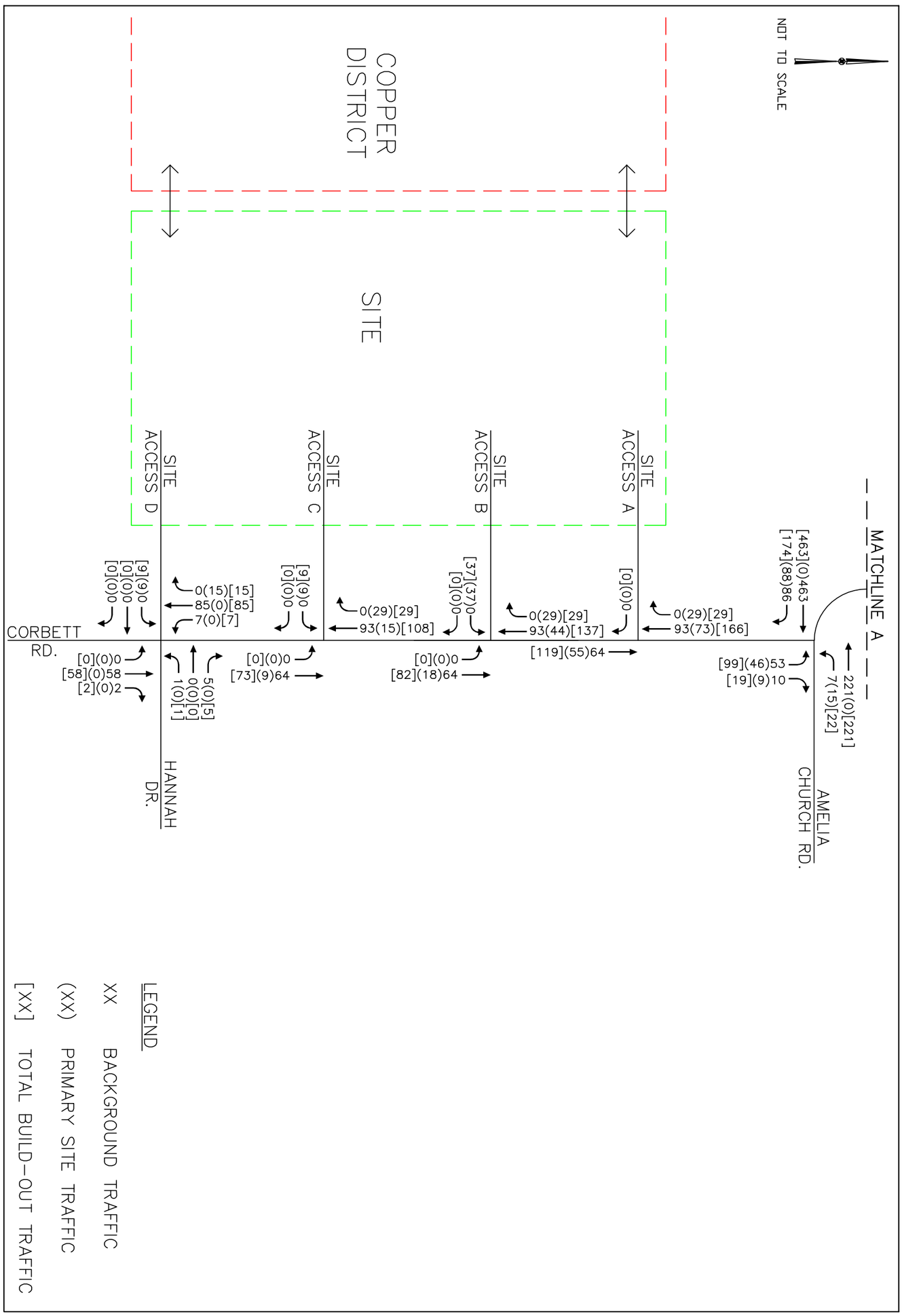
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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2027) BACKGROUND AND BUILD-OUT PM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 1) NC 42 INTERSECTIONS	FIGURE 5.5

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US 70 WB OFF RAMP

US 70 WB ON RAMP

JOHNSON ESTATE RD.

SPRINGBROOK AVE.

JOHNSTON MEDICAL CENTER

AMELIA CHURCH RD.

NC 42

HEALTHPARK WAY

WEST COPPER DISTRICT ACCESS

EAST COPPER DISTRICT ACCESS

COPPER DISTRICT

CORBETT RD.

HANNAH DR.

INSET

NC 42

US 70 EB ON RAMP

CORBETT RD.

LEGEND

XX EXISTING TRAFFIC

(XX) BACKGROUND GROWTH TRAFFIC

<XX> APPROVED DEVELOPMENT TRAFFIC

{XX} RI/RO DIVERSION

[XX] TOTAL BACKGROUND TRAFFIC

FIGURE 5.7

EXISTING AND PROJECTED (2027) BACKGROUND AM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 2)

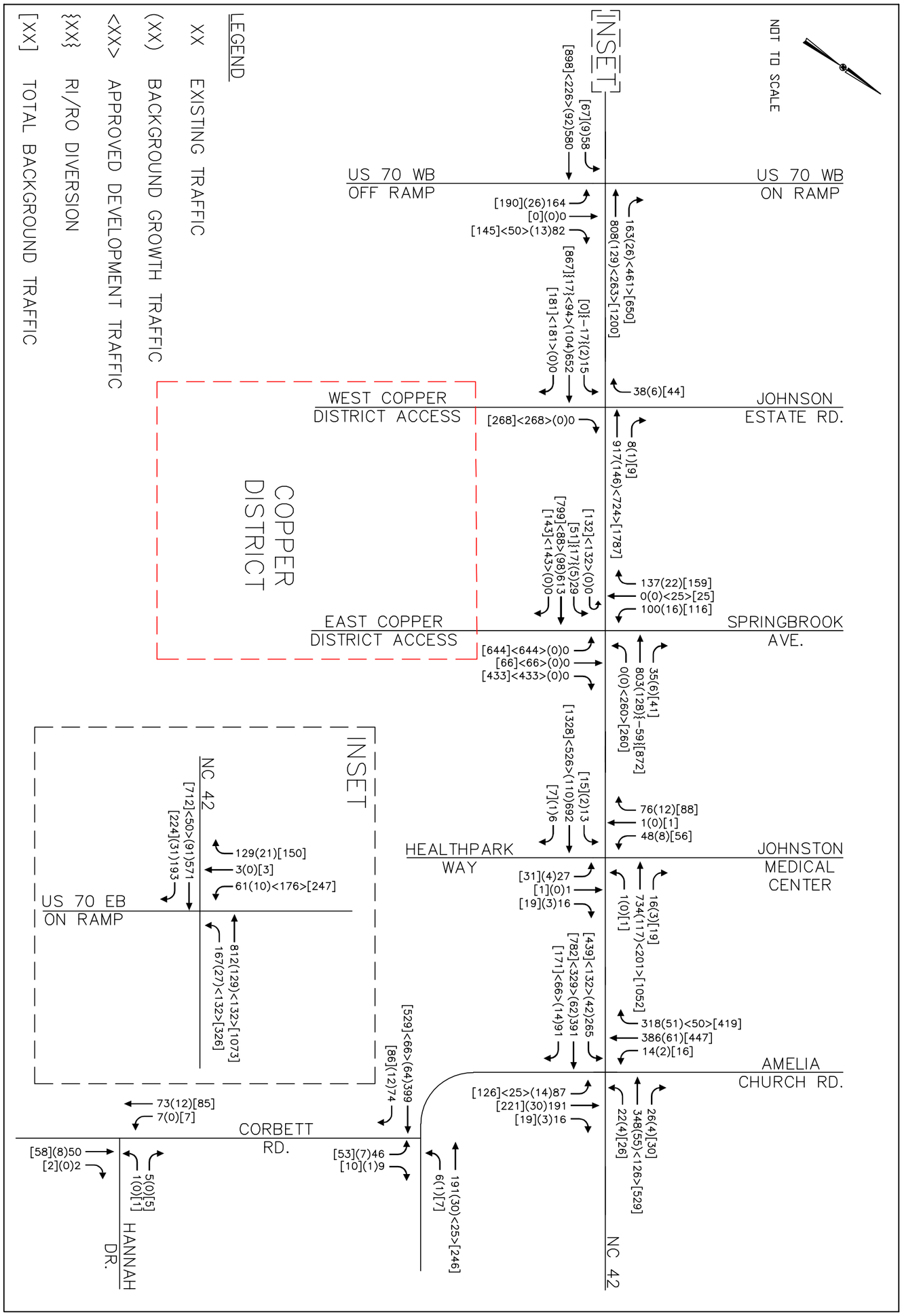
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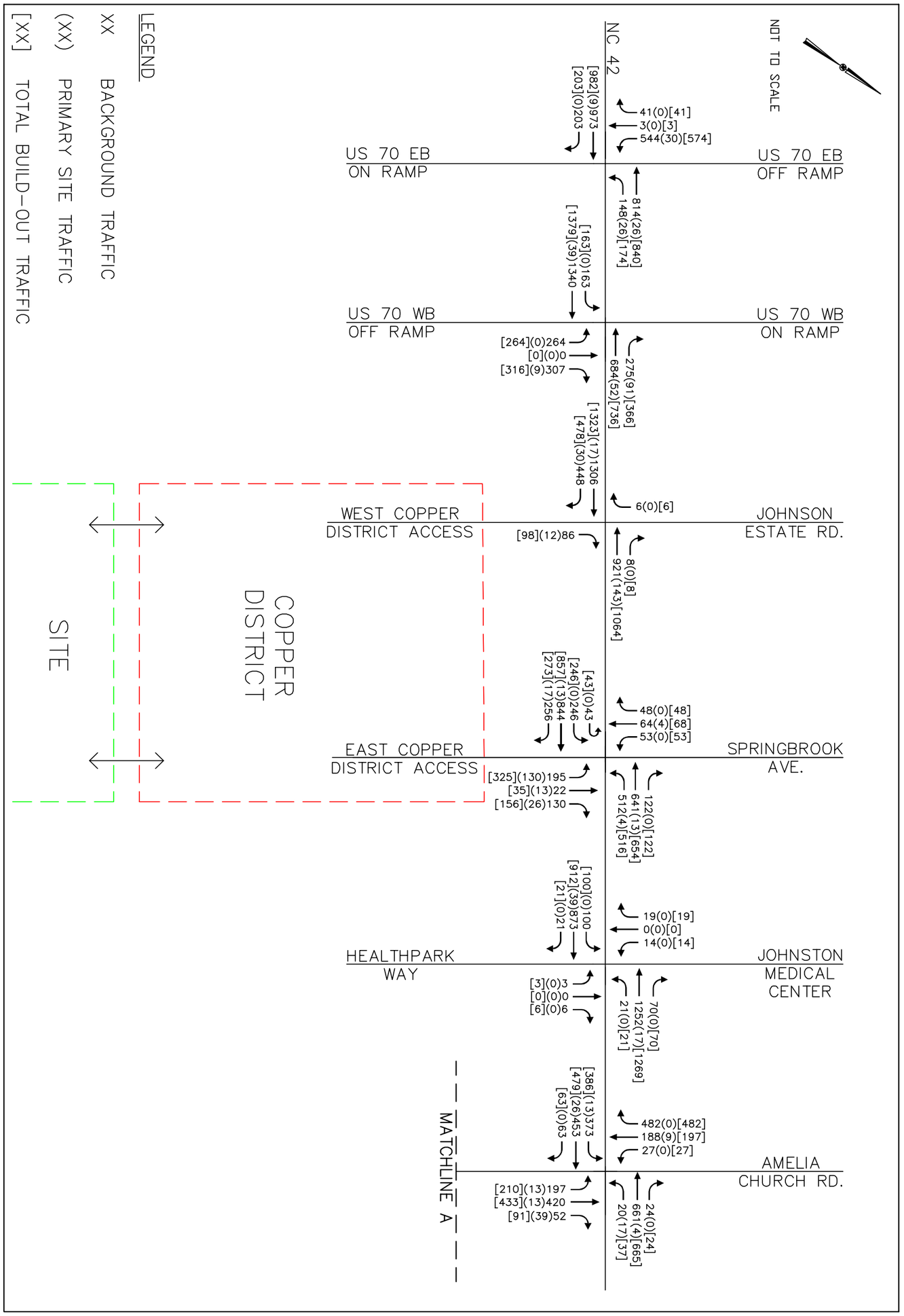
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FIGURE 5.10

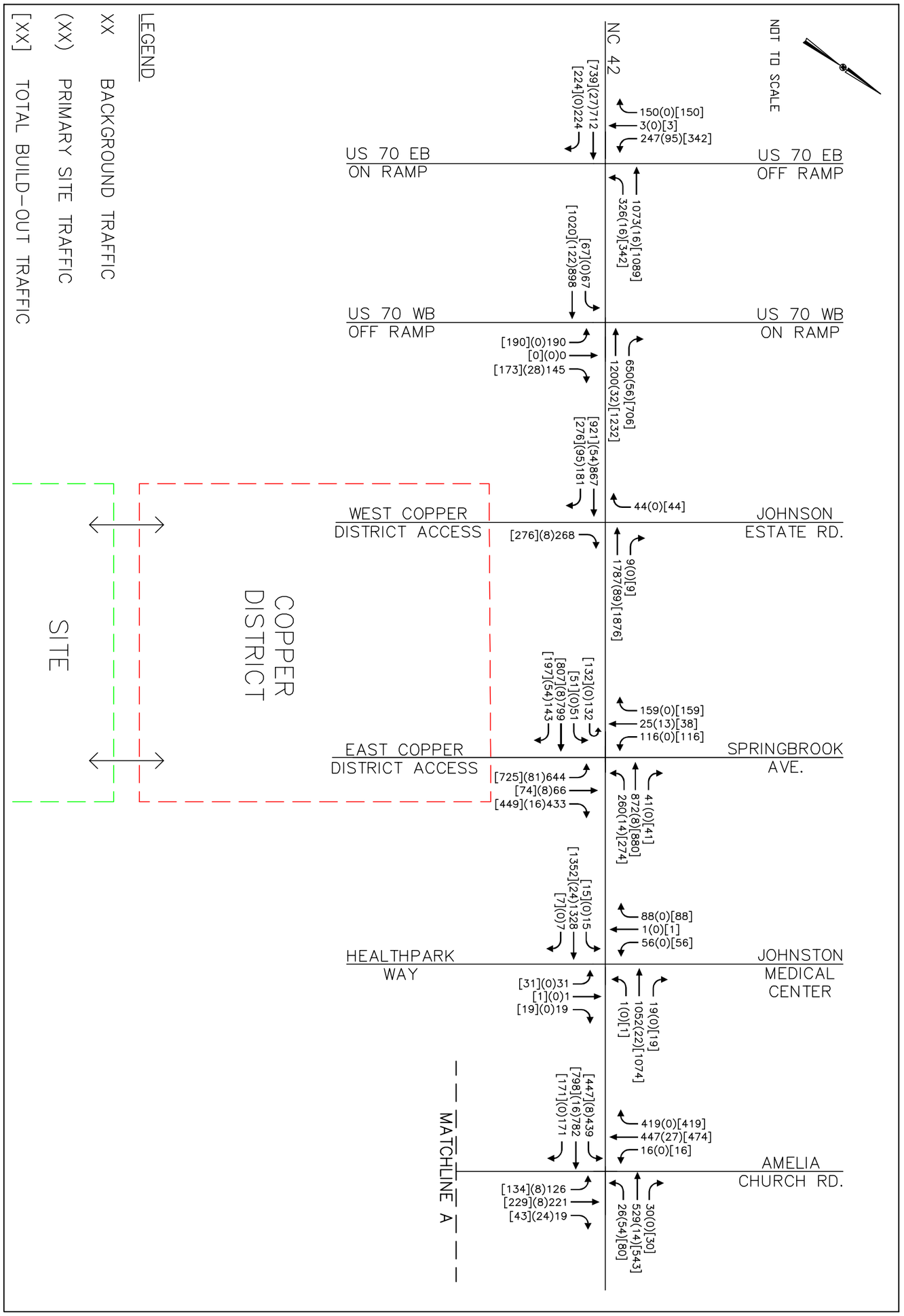
PROJECTED (2027) BACKGROUND AND BUILD-OUT AM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 2) CORBETT RD. INTERSECTIONS

CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

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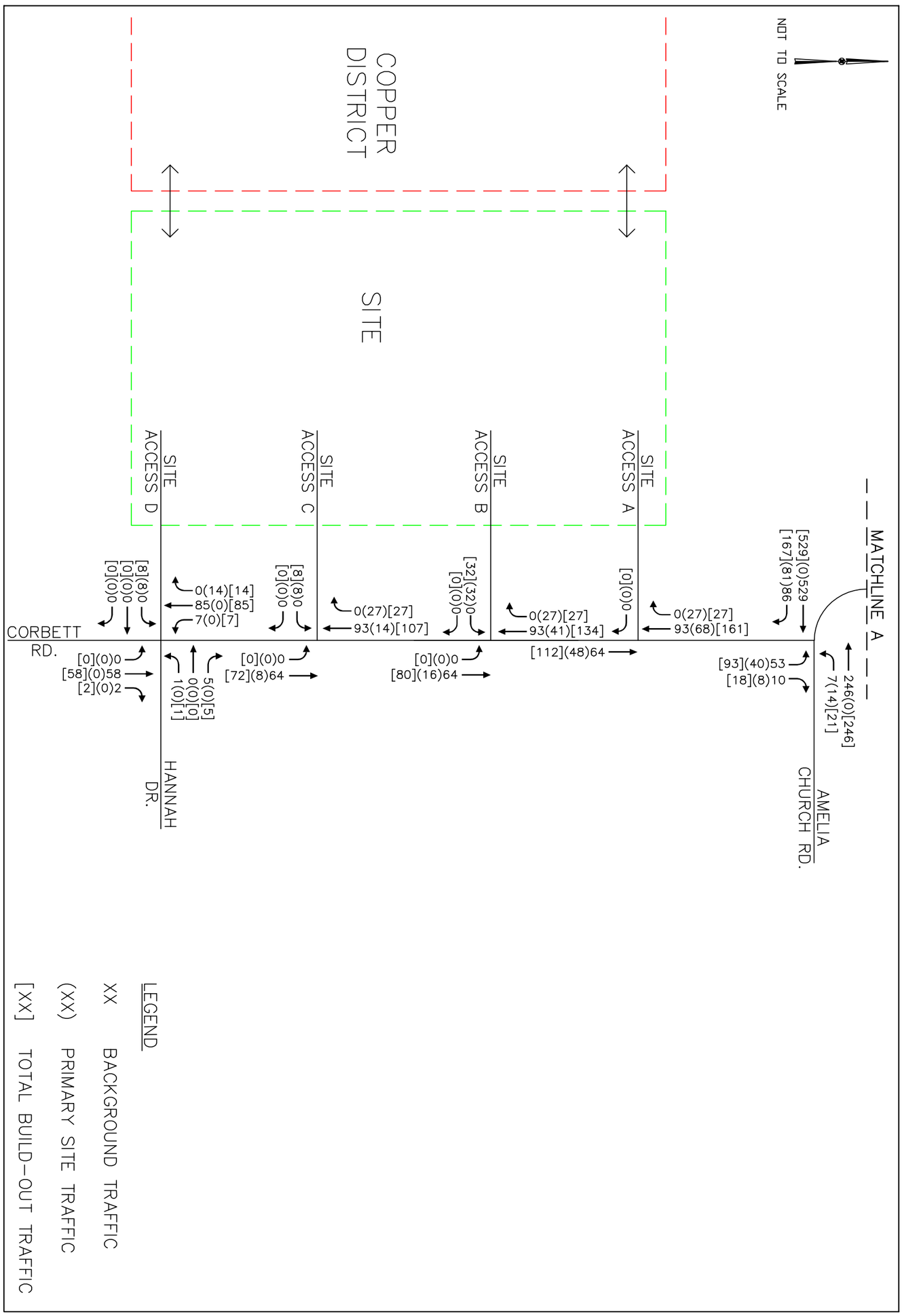
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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2027) BACKGROUND AND BUILD-OUT PM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 2) NC 42 INTERSECTIONS	FIGURE 5.11

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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2027) BACKGROUND AND BUILD-OUT PM PEAK HOUR TRAFFIC VOLUMES (SCENARIO 2) CORBETT RD. INTERSECTIONS	FIGURE 5.12

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6.0 Capacity Analysis

Capacity analyses were performed for the AM and PM peak hours for the existing (2022) traffic condition and the projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions at the study intersections using Synchro Version 11 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 (HCM)* 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/SimTraffic Version 11 or computable using methodology published in the *HCM*. 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 *HCM* 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

Existing peak hour factors (PHF) were used at existing intersections in Scenario 1, while a 0.90 PHF was used at new intersections in Scenario 1 and all intersections in Scenario 2. Per NCDOT guidance, right-turns on red (RTOR) were prohibited even if currently allowed. Additionally, while actual existing and projected volumes are shown in the figures, a minimum volume of 4 vehicles was used for intersection movements even if existing or projected volumes were found to be lower. Signal timings were optimized for each traffic condition.

6.1 *NC 42 at US 70 Bypass Eastbound Ramps*

Analyses indicate that the signalized intersection of NC 42 at the US 70 Bypass Eastbound Ramps currently operates at LOS A in the AM peak hour and LOS B in the PM peak hour.

Scenario 1
Analyses indicate that the intersection is anticipated to operate at LOS B in the year 2027 with or without the Corbett Assemblage development in place. While some long queues are anticipated in the future traffic conditions, the impact of project traffic on intersection volumes and delays is expected to be minor. Therefore, no roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Scenario 2
The following improvements are planned to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions of this analysis:

- Widen NC 42 to a four-lane divided roadway through the study area
- Construct an additional southbound right-turn lane and extend the existing southbound right-turn lane on the US 70 Bypass Eastbound Off-Ramp to provide dual right-turn lanes with 350 feet of storage each
- Restripe the existing eastbound shared through/right-turn lane on NC 42 as a through lane and construct an exclusive eastbound right-turn lane with 200 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

As noted previously, while the Technical Traffic Memo for the TIP Project identified additional improvements at this intersection to accommodate future traffic volumes, only those improvements identified on the project public hearing maps were included to be conservative.

Analyses indicate that, with the planned improvements in place, the intersection is anticipated to operate at LOS C in the year 2027 with or without the Corbett Assemblage development in place. While some long queues are anticipated in the future traffic conditions, the impact of site traffic on intersection volumes and delays is expected to be minimal. Therefore, no additional roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Table 6.1 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Table 6.1 Level-of-Service NC 42 at US 70 Bypass Eastbound Ramps (Signalized)		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Existing (2022) Traffic	A (9.7)	B (11.8)
Background (2027) Traffic – Scenario 1	B (10.1)	B (12.2)
Build-out (2027) Traffic – Scenario 1	B (12.0)	B (15.4)
Background (2027) Traffic – Scenario 2	C (26.5)	C (22.1)
Build-out (2027) Traffic – Scenario 2	C (27.2)	C (24.6)

6.2 *NC 42 at US 70 Bypass Westbound Ramps*

Analyses indicate that the signalized intersection of NC 42 at the US 70 Bypass Westbound Ramps currently operates at LOS B in both the AM and PM peak hours.

Scenario 1
Analyses indicate that the intersection is anticipated to continue operating at LOS B in the year 2027 with or without the Corbett Assemblage development in place. While some long queues are anticipated in the future traffic conditions, the impact of project traffic on intersection volumes and delays is expected to be minor. Therefore, no roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Scenario 2
The following improvements are committed to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions:

- Widen NC 42 to a four-lane divided roadway through the study area
- Construct an additional northbound right-turn lane and extend the existing northbound right-turn lane on the US 70 Bypass Westbound Off-Ramp to provide dual right-turn lanes with 450 feet of storage each
- Restripe the existing westbound shared through/right-turn lane on NC 42 as a through lane and construct an exclusive westbound right-turn lane with 450 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

As noted previously, while the Technical Traffic Memo for the TIP Project identified additional improvements at this intersection to accommodate future traffic volumes, only those improvements identified on the project public hearing maps were included to be conservative.

Analyses indicate that with the planned improvements in place, the intersection is anticipated to continue operating at LOS B in 2027 with or without the Corbett Assemblage development in place. While some long queues are anticipated in the future traffic conditions, the impact of project traffic on intersection volumes and delays is expected to be minimal. No additional roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage.

Table 6.2 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Table 6.2 Level-of-Service NC 42 at US 70 Bypass Westbound Ramps (Signalized)		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Existing (2022) Traffic	B (18.5)	B (15.3)
Background (2027) Traffic – Scenario 1	B (19.4)	B (16.3)
Build-out (2027) Traffic – Scenario 1	B (18.4)	B (18.4)
Background (2027) Traffic – Scenario 2	B (15.9)	B (10.8)
Build-out (2027) Traffic – Scenario 2	B (17.6)	B (10.9)

6.3 *NC 42 at Johnson Estate Road/West Copper District Access*

Analyses indicate that the unsignalized directional crossover (left-in/right-in/right-out) intersection of NC 42 at Johnson Estate Road currently operates with short delays on the minor street approach (Johnson Estate Road) in the peak hours.

Scenario 1
The intersection's minor street approach is anticipated to continue operating with short delays and queues in the Scenario 1 background condition.

The following improvements are recommended to be performed at this intersection as part of the Corbett Assemblage development:

- Construct the West Copper District Access as a right-in/right-out driveway with one ingress lane and one egress lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 50 feet of storage and appropriate taper

With these improvements in place, analyses indicate that the intersection is anticipated to operate with short to moderate delays on the minor street approaches in the build-out traffic condition. No queuing issues are expected.

Scenario 2
The following improvements are planned to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions:

- Widen NC 42 to a four-lane divided roadway through the study area
- Reconfigure the intersection to restrict Johnson Estate Road to a right-in/right-out only access

In addition to the planned STIP improvements, the following improvements are committed to be performed as part of the Copper District development:

- Construct the West Copper District Access as a right-in/right-out driveway with one ingress lane and one egress lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 200 feet of storage and appropriate taper

With these improvements in place, analyses indicate that the intersection is anticipated to operate with short minor street delays in the background traffic condition and short to moderate minor street delays in the build-out traffic condition. No queuing issues are expected. Therefore, no additional roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage.

Table 6.3 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Table 6.3
Level-of-Service
NC 42 at Johnson Estate Road/West Copper District Access (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2022) Traffic	SB – B (12.8) EBL – A (9.2)	SB – C (19.6) EBL – B (10.5)
Background (2027) Traffic – Scenario 1	SB – B (13.4) EBL – A (9.4)	SB – C (22.1) EBL – B (10.9)
Build-out (2027) Traffic – Scenario 1	NB – C (20.1) SB – C (16.2) EBL – B (10.4)	NB – C (16.1) SB – D (28.9) EBL – B (12.0)
Background (2027) Traffic – Scenario 2	NB – C (18.2) SB – B (12.2)	NB – C (20.1) SB – C (23.6)
Build-out (2027) Traffic – Scenario 2	NB – C (19.2) SB – B (13.2)	NB – C (22.4) SB – D (25.4)

6.4 *NC 42 at Springbrook Avenue/East Copper District Access*

Analyses indicate that the signalized intersection of NC 42 at Springbrook Avenue currently operates at LOS A in the AM peak hour and at LOS B in the PM peak hour.

Scenario 1
The intersection is expected to continue operating at LOS A in the AM peak hour and LOS B in the PM peak hour in the Scenario 1 background traffic condition.

The following improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development:

- Construct the East Copper District Access as a full-movement driveway with an exclusive left-turn lane with 200 feet of storage and a shared through/right-turn lane
- Restripe the existing exclusive southbound right-turn lane on Springbrook Avenue as a shared through/right-turn lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Construct an exclusive westbound left-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Modify the traffic signal to accommodate the recommended laneage

With these improvements in place, analyses indicate that the intersection is expected to operate at LOS B in the AM peak hour and LOS C in the PM peak hour in the build-out traffic condition.

Scenario 2
The following improvements are planned to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions:

- Extend the existing eastbound left-turn lane on NC 42 to provide 425 feet of storage
- Extend the existing westbound right-turn lane on NC 42 to provide 125 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

In addition to the improvements planned to be performed as part of TIP Project R-3410, the following improvements were recommended to be performed as part of the Copper District development:

- Construct an exclusive eastbound right-turn lane on NC 42 with 150 feet of storage and appropriate taper
- Construct dual westbound left-turn lanes on NC 42, each with 400 feet of storage and appropriate taper
- Provide dual northbound left-turn lanes, a through lane, and an exclusive right-turn lane on the northbound approach of the East Copper District Access

- Restripe the existing exclusive southbound right-turn lane on Springbrook Avenue as a shared through/right lane
- Modify the traffic signal to accommodate the recommended laneage

The following additional improvements are recommended to be performed as part of the Corbett Assemblage development:

- Restripe the existing southbound shared through/right-turn lane on Springbrook Avenue as a through lane and construct an exclusive southbound right-turn lane with 150 feet of storage
- Modify the traffic signal to accommodate the recommended laneage

With these improvements in place, analyses indicate that the intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour with or without the Corbett Assemblage development in place.

Table 6.4 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions. It should be noted that the results presented below are based on NCDOT-required inputs, which include prohibiting right-turns on red (RTOR) even when currently permitted. It is anticipated that RTOR will continue to be permitted at this intersection in the future, which would result in improved operations than those reported herein.

Table 6.4
Level-of-Service
NC 42 at Springbrook Avenue/East Copper District Access (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2022) Traffic	A (7.3)	B (13.1)
Background (2027) Traffic – Scenario 1	A (8.2)	B (14.2)
Build-out (2027) Traffic – Scenario 1	B (17.3)	C (24.3)
Background (2027) Traffic – Scenario 2	C (30.9)	D (44.8)
Build-out (2027) Traffic – Scenario 2	C (29.8)	D (46.4)

6.5 *NC 42 at Johnston Health/HealthPark Way*

Analyses indicate that the signalized intersection of NC 42 at Johnston Health/HealthPark Way currently operates at LOS A in the AM peak hour and LOS B in the PM peak hour.

Scenario 1
Analyses indicate that the intersection is anticipated to continue operating at LOS A in the AM peak hour and LOS B in the PM peak hour in the year 2027 with or without the proposed project in place. Therefore, no additional roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Scenario 2
The following improvements are planned to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions:

- Extend the existing eastbound left-turn lane on NC 42 to provide 450 feet of storage
- Extend the existing eastbound right-turn lane on NC 42 to provide 175 feet of storage
- Extend the existing westbound left-turn lane on NC 42 to provide 425 feet of storage
- Extend the existing westbound right-turn lane on NC 42 to provide 225 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

Analyses indicate that, with the planned improvements in place, the intersection is anticipated to operate at LOS A in the year 2027 with or without the proposed project in place. Therefore, no additional roadway improvements are recommended to be performed at this intersection.

Table 6.5 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Table 6.5
Level-of-Service
NC 42 at Johnston Health/HealthPark Way (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2022) Traffic	A (6.1)	B (13.9)
Background (2027) Traffic – Scenario 1	A (7.0)	B (14.8)
Build-out (2027) Traffic – Scenario 1	A (7.6)	B (14.9)
Background (2027) Traffic – Scenario 2	A (8.0)	A (9.8)
Build-out (2027) Traffic – Scenario 2	A (7.7)	A (9.1)

6.6 *NC 42 at Amelia Church Road*

Analyses indicate that the signalized intersection of NC 42 at Amelia Church Road currently operates at LOS C in the AM peak hour and LOS D in the PM peak hour.

Scenario 1
Analyses indicate that the intersection is anticipated to continue operating at LOS C in the AM peak hour and LOS D in the PM peak hour in the year 2027 with or without the proposed project in place. While some long queues are anticipated in the future traffic conditions, the impact of project traffic on intersection volumes and delays is expected to be minor. Therefore, no roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Scenario 2
The following improvements are planned to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions:

- Extend the existing northbound left-turn lane on Amelia Church Road to provide 350 feet of storage
- Extend the existing southbound left-turn lane on Amelia Church Road to provide 100 feet of storage
- Construct an additional southbound right-turn lane and extend the existing southbound right-turn lane on Amelia Church Road to provide dual right-turn lanes with 200 feet of storage each
- Construct an additional eastbound left-turn lane and extend the existing eastbound left-turn lane on NC 42 to provide dual left-turn lanes with 375 feet of storage each
- Construct an exclusive eastbound right-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Construct an exclusive westbound left-turn lane on NC 42 with 200 feet of storage and appropriate taper
- Modify the existing traffic signal to accommodate the planned laneage

Analyses indicate that, with the planned improvements in place, the intersection is anticipated to continue operating at LOS C in the AM peak hour and LOS D in the PM peak hour in the year 2027 with or without the proposed project in place. Therefore, no additional roadway improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Table 6.6 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Table 6.6 Level-of-Service NC 42 at Amelia Church Road (Signalized)		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Existing (2022) Traffic	C (30.3)	D (35.2)
Background (2027) Traffic – Scenario 1	C (31.9)	D (40.6)
Build-out (2027) Traffic – Scenario 1	C (31.2)	D (51.5)
Background (2027) Traffic – Scenario 2	C (31.9)	D (38.8)
Build-out (2027) Traffic – Scenario 2	C (32.5)	D (42.1)

6.7 *Amelia Church Road at Corbett Road*

Analyses indicate that the unsignalized intersection of Amelia Church Road at Corbett Road currently operates with short delays on the minor street (Corbett Road) in both peak hours.

Scenario 1
The intersection's minor street approach is expected to continue operating with short delays in both peak hours in the Scenario 1 background condition.

The following improvement is recommended to be performed at this intersection as part of the Corbett Assemblage development:

- Construct an exclusive eastbound right-turn lane on Amelia Church Road with 100 feet of storage and appropriate taper

Analyses indicate that, with the recommended improvement in place, the intersection is expected to continue operating with minor street delays in the study year 2027. No queuing issues are expected at this intersection.

Scenario 2
The intersection's minor street approach is expected to continue operating with short delays in both peak hours in the Scenario 2 background condition.

The following improvement is recommended to be performed at this intersection as part of the Corbett Assemblage development:

- Construct an exclusive eastbound right-turn lane on Amelia Church Road with 100 feet of storage and appropriate taper

Analyses indicate that, with the recommended improvement in place, the intersection is expected to continue operating with minor street delays in the study year 2027. No queuing issues are expected at this intersection.

Table 6.7 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Table 6.7 Level-of-Service Amelia Church Road at Corbett Road (Unsignalized)		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Existing (2022) Traffic	NB – C (15.2) WBL – A (7.5)	NB – C (15.1) WBL – A (8.5)
Background (2027) Traffic – Scenario 1	NB – C (17.6) WBL – A (7.6)	NB – C (16.6) WBL – A (8.7)
Build-out (2027) Traffic – Scenario 1 with Improvements	NB – C (22.1) WBL – A (7.7)	NB – C (20.5) WBL – A (9.2)
Background (2027) Traffic – Scenario 2	NB – C (20.5) WBL – A (7.6)	NB – C (19.7) WBL – A (9.0)
Build-out (2027) Traffic – Scenario 2 with Improvements	NB – D (27.4) WBL – A (7.7)	NB – C (23.3) WBL – A (9.4)

6.8 *Corbett Road at Hannah Drive/Site Access D (South Single-Family Driveway)*

Analyses indicate that the unsignalized intersection of Corbett Road at Hannah Drive currently operates with short delays on the minor street approach (Hannah Drive) in both peak hours and is expected to continue operating with short minor street delays in the projected (2027) Scenario 1 and Scenario 2 background traffic conditions.

A full-movement site driveway (Site Access D) with one ingress lane and one egress lane is proposed to align with Hannah Drive. Analyses indicate that this intersection is expected to continue operating with short minor street delays in the Scenario 1 and Scenario 2 build-out conditions. No queuing issues are expected at this intersection. Therefore, no additional improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Table 6.8 summarizes the intersection's operation for the existing (2022) and projected (2027) Scenario 1 and Scenario 2 background and build-out traffic conditions.

Table 6.8
Level-of-Service
Corbett Road at Hannah Drive/Site Access D (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2022) Traffic	WB – A (9.0) SBL – A (7.4)	WB – A (8.9) SBL – A (7.3)
Background (2027) Traffic – Scenario 1	WB – A (9.1) SBL – A (7.5)	WB – A (9.0) SBL – A (7.4)
Build-out (2027) Traffic – Scenario 1	EB – A (9.7) WB – A (9.6) NBL – A (7.3) SBL – A (7.5)	EB – A (9.8) WB – A (9.6) NBL – A (7.4) SBL – A (7.4)
Background (2027) Traffic – Scenario 2	WB – A (9.1) SBL – A (7.5)	WB – A (9.0) SBL – A (7.4)
Build-out (2027) Traffic – Scenario 2	EB – A (9.7) WB – A (9.5) NBL – A (7.3) SBL – A (7.5)	EB – A (9.8) WB – A (9.5) NBL – A (7.4) SBL – A (7.4)

6.9 *Corbett Road at Site Access A (North Multifamily Driveway)*

A right-in/right-out site driveway (Site Access A) with one ingress lane and one egress lane is proposed on Corbett Road approximately 420 feet south of Amelia Church Road. Analyses indicate that this intersection is expected to operate with short delays and queues in both the Scenario 1 and Scenario 2 build-out traffic conditions. Therefore, no additional improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Table 6.9 summarizes the intersection's operation for the projected (2027) Scenario 1 and Scenario 2 build-out traffic conditions.

Table 6.9
Level-of-Service
Corbett Road at Site Access A (North Multifamily Driveway) (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2027) Traffic – Scenario 1	EB – A (8.7)	EB – A (9.3)
Build-out (2027) Traffic – Scenario 2	EB – A (8.7)	EB – A (9.3)

6.10 *Corbett Road at Site Access B (South Multifamily Driveway)*

A full-movement site driveway (Site Access B) with one ingress lane and one egress lane is proposed on Corbett Road approximately 975 feet south of Amelia Church Road. Analyses indicate that this intersection is expected to operate with short delays and queues in both the Scenario 1 and Scenario 2 build-out traffic conditions. Therefore, no additional improvements are recommended to be performed at this intersection as part of the proposed Corbett Assemblage development.

Table 6.10 summarizes the intersection's operation for the projected (2027) Scenario 1 and Scenario 2 build-out traffic conditions.

Table 6.10
Level-of-Service
Corbett Road at Site Access B (South Multifamily Driveway) (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2027) Traffic – Scenario 1	EB – B (10.1) NBL – A (7.4)	EB – B (10.2) NBL – A (7.6)
Build-out (2027) Traffic – Scenario 2	EB – B (10.1) NBL – A (7.4)	EB – B (10.1) NBL – A (7.6)

6.11 *Corbett Road at Site Access C (North Single-Family Driveway)*

A full-movement site driveway (Site Access C) with one ingress lane and one egress lane is proposed on Corbett Road approximately 600 feet north of Hannah Drive/Site Access D. Analyses indicate that this intersection is expected to operate with short delays and queues at project build-out. Therefore, no additional improvements are recommended to be performed in both the Scenario 1 and Scenario 2 build-out traffic conditions as part of the proposed Corbett Assemblage development.

Table 6.11 summarizes the intersection's operation for the projected (2027) Scenario 1 and Scenario 2 build-out traffic conditions.

Table 6.11
Level-of-Service
Corbett Road at Site Access C (North Single-Family Driveway) (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2027) Traffic – Scenario 1	EB – A (9.5) NBL – A (7.3)	EB – A (9.6) NBL – A (7.5)
Build-out (2027) Traffic – Scenario 2	EB – A (9.4) NBL – A (7.3)	EB – A (9.5) NBL – A (7.5)

7.0 Recommendations

Scenario 1

The following improvements are recommended to be performed to accommodate site traffic associated with the Corbett Assemblage:

NC 42 at Johnson Estate Road/West Copper District Access:

- Construct the West Copper District Access as a right-in/right-out driveway with one ingress lane and one egress lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 50 feet of storage and appropriate taper

NC 42 at Springbrook Avenue/East Copper District Access:

- Construct the East Copper District Access as a full-movement driveway with an exclusive left-turn lane with 200 feet of storage and a shared through/right-turn lane
- Restripe the existing exclusive southbound right-turn lane on Springbrook Avenue as a shared through/right-turn lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Construct an exclusive westbound left-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Modify the traffic signal to accommodate the recommended laneage

Amelia Church Road at Corbett Road:

- Construct an exclusive eastbound right-turn lane on Amelia Church Road with 100 feet of storage and appropriate taper

Corbett Road at Site Access A:

- Construct Site Access A as a right-in/right-out access with one ingress lane and one egress lane

Corbett Road at Site Access B:

- Construct Site Access B as a full-movement access with one ingress lane and one egress lane

Corbett Road at Site Access C:

- Construct Site Access C as a full-movement access with one ingress lane and one egress lane

Corbett Road at Site Access D:

- Construct Site Access D as a full-movement access with one ingress lane and one egress lane

Analyses indicate that, with the recommended improvements in place, all of the study intersections are expected to operate at acceptable LOS in the Scenario 1 build-out condition. The recommended roadway laneage for Scenario 1 is shown on **Figures ES-1 and ES-2.**

Scenario 2

Improvements by Others

The following improvements are planned to be performed as part of NCDOT STIP Project R-3410 and were included in the background and build-out traffic conditions:

NC 42:

- Widen NC 42 to a four-lane divided roadway through the study area

NC 42 at US 70 Bypass Eastbound Ramps:

- Construct an additional southbound right-turn lane and extend the existing southbound right-turn lane on the US 70 Bypass Eastbound Off-Ramp to provide dual right-turn lanes with 350 feet of storage each
- Restripe the existing eastbound shared through/right-turn lane on NC 42 as a through lane and construct an exclusive eastbound right-turn lane with 200 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at US 70 Bypass Westbound Ramps:

- Construct an additional northbound right-turn lane and extend the existing northbound right-turn lane on the US 70 Bypass Westbound Off-Ramp to provide dual right-turn lanes with 450 feet of storage each
- Restripe the existing westbound shared through/right-turn lane on NC 42 as a through lane and construct an exclusive westbound right-turn lane with 450 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at Johnson Estate Road:

- Reconfigure the intersection to restrict Johnson Estate Road to a right-in/right-out only access

NC 42 at Springbrook Avenue:

- Extend the existing eastbound left-turn lane on NC 42 to provide 425 feet of storage
- Extend the existing westbound right-turn lane on NC 42 to provide 125 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at Johnston Health/HealthPark Way:

- Extend the existing eastbound left-turn lane on NC 42 to provide 450 feet of storage
- Extend the existing eastbound right-turn lane on NC 42 to provide 175 feet of storage
- Extend the existing westbound left-turn lane on NC 42 to provide 425 feet of storage
- Extend the existing westbound right-turn lane on NC 42 to provide 225 feet of storage
- Modify the existing traffic signal to accommodate the planned laneage

NC 42 at Amelia Church Road:

- Extend the existing northbound left-turn lane on Amelia Church Road to provide 350 feet of storage

- Extend the existing southbound left-turn lane on Amelia Church Road to provide 100 feet of storage
- Construct an additional southbound right-turn lane and extend the existing southbound right-turn lane on Amelia Church Road to provide dual right-turn lanes with 200 feet of storage each
- Construct an additional eastbound left-turn lane and extend the existing eastbound left-turn lane on NC 42 to provide dual left-turn lanes with 375 feet of storage each
- Construct an exclusive eastbound right-turn lane on NC 42 with 100 feet of storage and appropriate taper
- Construct an exclusive westbound left-turn lane on NC 42 with 200 feet of storage and appropriate taper
- Modify the existing traffic signal to accommodate the planned laneage

While the traffic analysis for the TIP project recommended additional improvements as part of that project to accommodate projected future volumes, only those improvements identified on the project public hearing maps were included in this analysis to be conservative.

In addition to the improvements planned as part of TIP Project R-3410, the following improvements were recommended to be performed as part of the Copper District development:

<u>NC 42 at Johnson Estate Road/West Copper District Access:</u>

- Construct the West Copper District Access as a right-in/right-out driveway with one ingress lane and one egress lane
- Construct an exclusive eastbound right-turn lane on NC 42 with 200 feet of storage and appropriate taper

<u>NC 42 at Springbrook Avenue/East Copper District Access:</u>

- Construct an exclusive eastbound right-turn lane on NC 42 with 150 feet of storage and appropriate taper
- Construct dual westbound left-turn lanes on NC 42, each with 400 feet of storage and appropriate taper
- Provide dual northbound left-turn lanes, a through lane, and an exclusive right-turn lane on the northbound approach of the East Copper District Access
- Restripe the existing exclusive southbound right-turn lane on Springbrook Avenue as a shared through/right lane
- Modify the traffic signal to accommodate the recommended laneage

Recommended Improvements – Corbett Assemblage

In addition to improvements committed as part of NCDOT STIP Project R-3410 and the Copper District, the following improvements are recommended to be performed to accommodate site traffic associated with the Corbett Assemblage development:

NC 42 at Springbrook Avenue/East Copper District Access:

- Restripe the existing southbound shared through/right-turn lane on Springbrook Avenue as a through lane and construct an exclusive southbound right-turn lane with 150 feet of storage
- Modify the traffic signal to accommodate the recommended laneage

Amelia Church Road at Corbett Road:

- Construct an exclusive eastbound right-turn lane on Amelia Church Road with 100 feet of storage and appropriate taper

Corbett Road at Site Access A:

- Construct Site Access A as a right-in/right-out access with one ingress lane and one egress lane

Corbett Road at Site Access B:

- Construct Site Access B as a full-movement access with one ingress lane and one egress lane

Corbett Road at Site Access C:

- Construct Site Access C as a full-movement access with one ingress lane and one egress lane

Corbett Road at Site Access D:

- Construct Site Access D as a full-movement access with one ingress lane and one egress lane

Analyses indicate that, with the committed and recommended improvements in place, all of the study intersections are expected to operate at an acceptable LOS in the Scenario 2 build-out condition. While some long queues in the background condition are anticipated to continue in the build-out condition, the impact of project site traffic on both intersection volumes and delays is expected to be relatively minimal.

The committed and recommended roadway laneage for Scenario 2 is shown on **Figures ES-3** and **ES-4.**

NOT TO SCALE

LEGEND

- EXISTING LANE
- EXISTING STOP SIGN
- XX' STORAGE LENGTH
- RECOMMENDED LANE
- RECOMMENDED STOP SIGN
- RECOMMENDED TRAFFIC SIGNAL MODIFICATION

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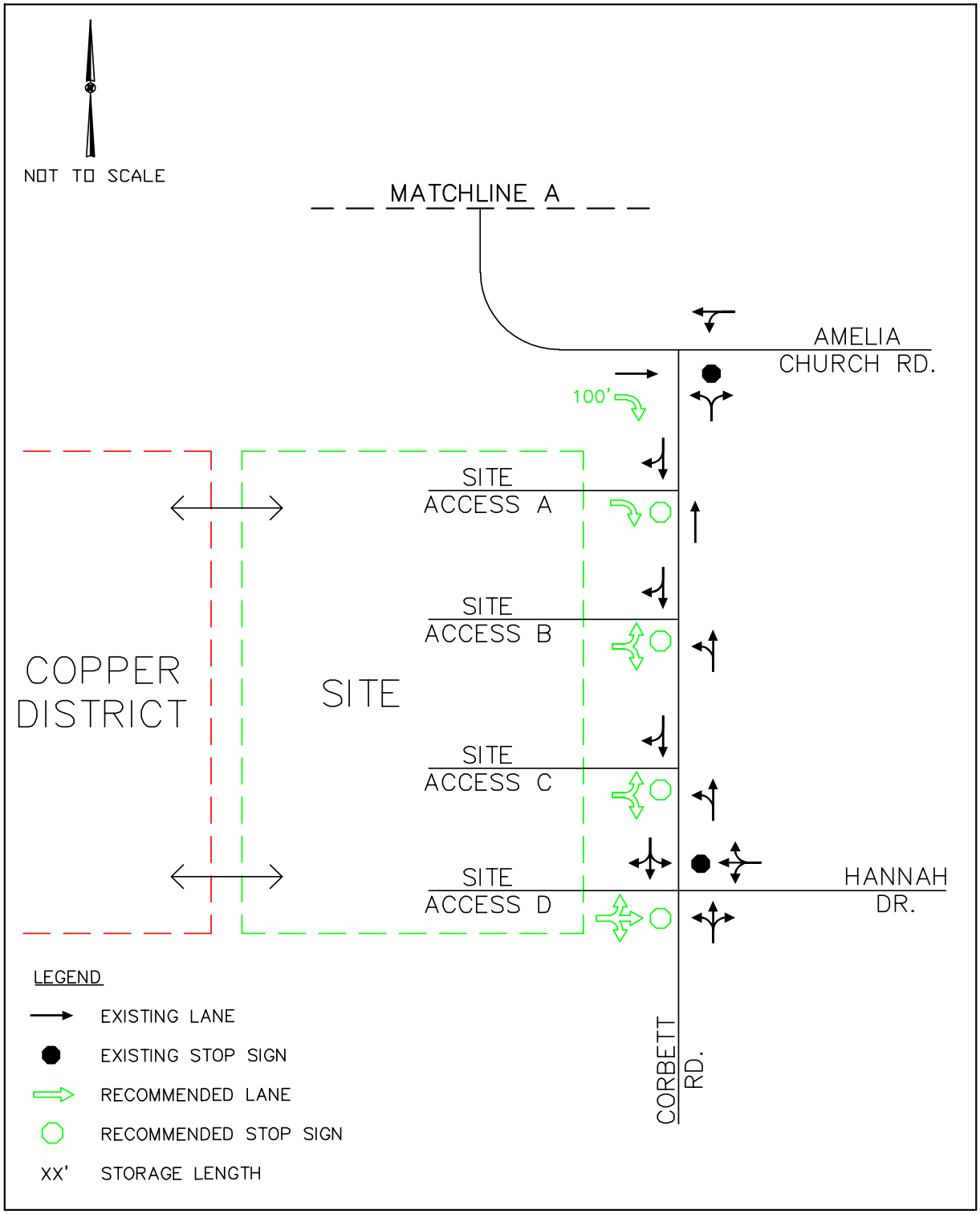
FIGURE 7.1

RECOMMENDED ROADWAY LANEAGE
(SCENARIO 1) NC 42 INTERSECTIONS

CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

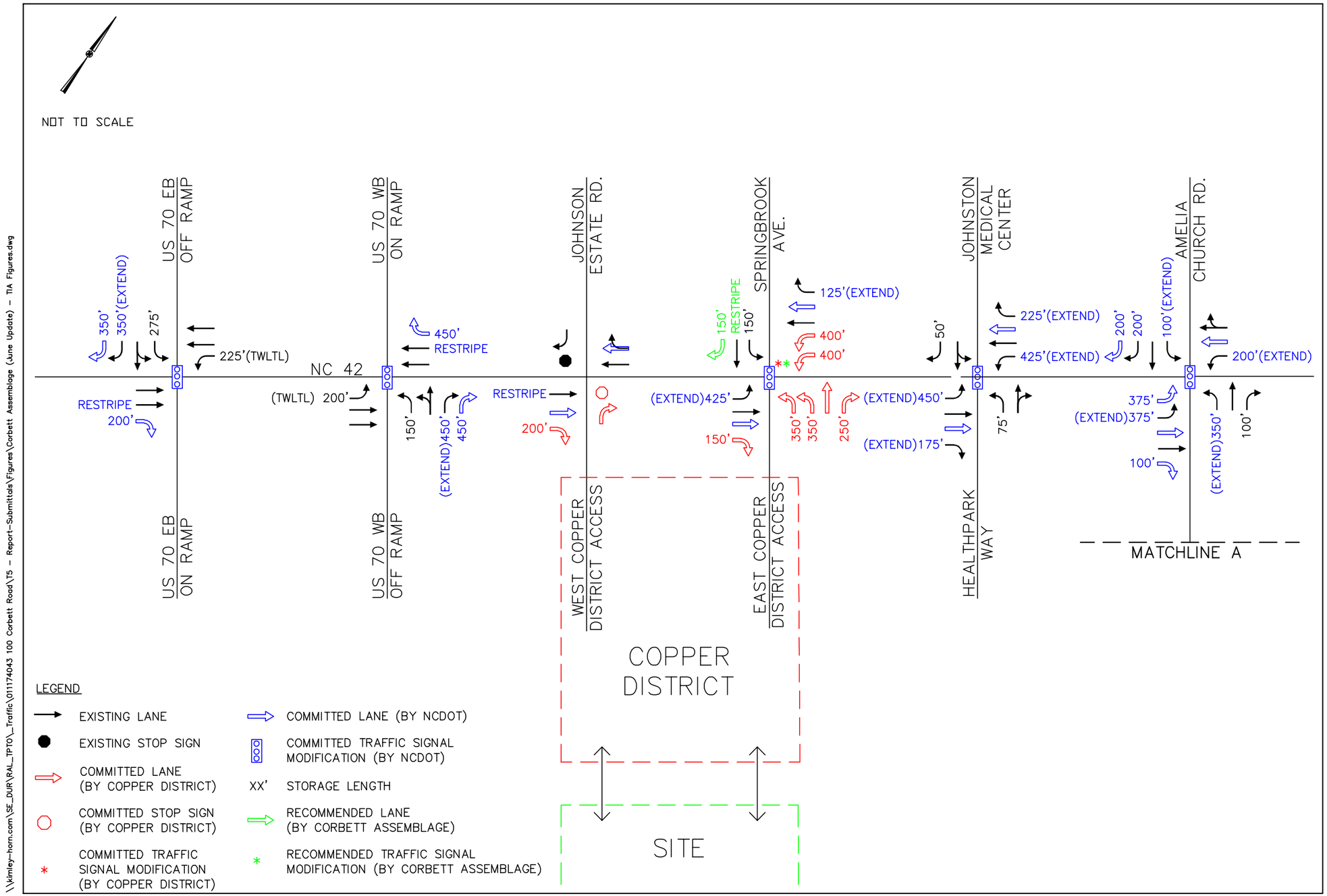
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Kimley»Horn	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED ROADWAY LANEAGE (SCENARIO 1) CORBETT RD. INTERSECTIONS	FIGURE 7.2

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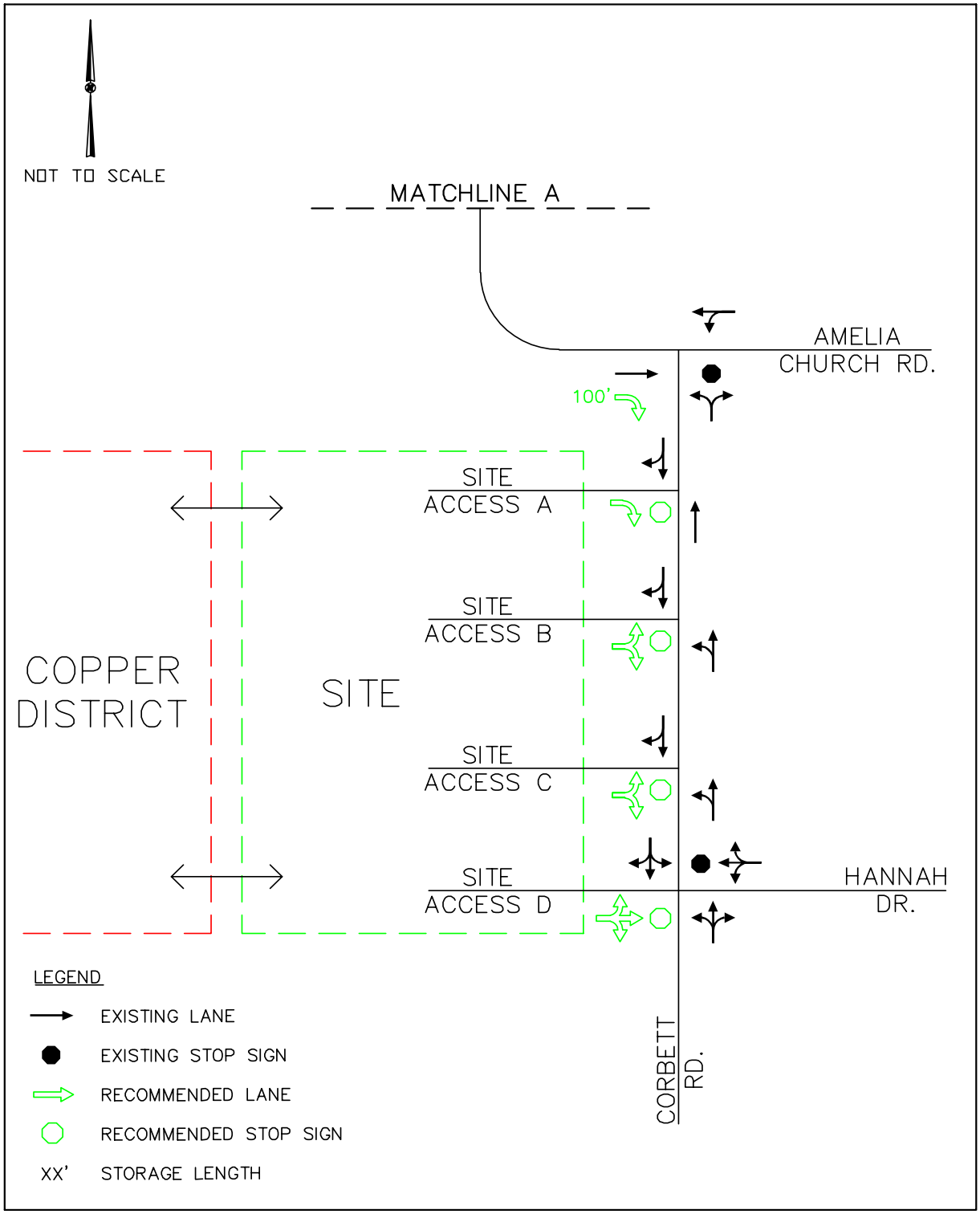
FIGURE 7.3

COMMITTED AND RECOMMENDED ROADWAY LANEAGE (SCENARIO 2) NC 42 INTERSECTIONS

CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

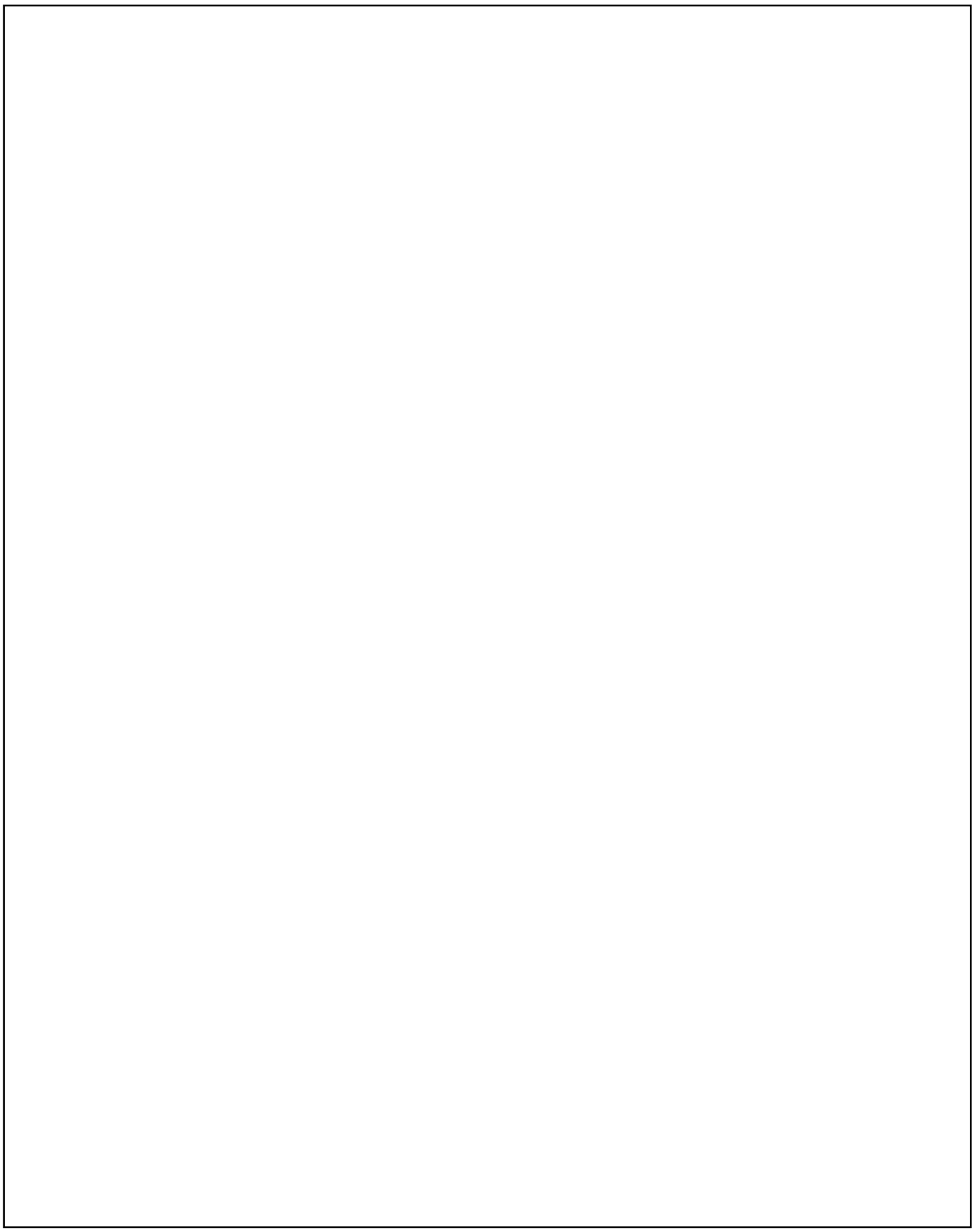
Kimley»Horn

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	CORBETT ASSEMBLAGE CLAYTON, NC TRAFFIC IMPACT ANALYSIS	COMMITTED AND RECOMMENDED ROADWAY LANEAGE (SCENARIO 2) CORBETT RD. INTERSECTIONS	FIGURE 7.4

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 Scoping Documents

NCDOT Traffic Impact Analysis Need Screening / Scoping Request

TIA Need Screening → TIA Scoping → TIA Submittal

A Traffic Impact Analysis (TIA) may be required for developments based on the site trip generation estimates, site context, or at the discretion of the NCDOT District Engineer. The Applicant or the TIA Consultant shall submit this form along with the site plan to the District Engineer to determine the TIA need and, if a TIA is required, initiate the TIA scoping process. Without an approved scope, the TIA is incomplete and will be rejected until the study is revised to conform to NCDOT's TIA requirements.

Project Name: Corbett Assemblage Previous Name: If Applicable

Location: 100 Corbett Road County: Johnston Municipality: Clayton

Project Description: Approximately 200 single-family detached, 185 townhomes (single-family attached), and 365 apartments (multifamily low-rise)

Project Contact:	Applicant	TIA Consultant
Company Name	Craig Davis Properties	Kimley-Horn
Contact Person	Greg Jonczyk	Travis Fluitt
Phone Number	919-678-4208	919-653-2948
Email	greg.jonczyk@craigdavisproperties.com	travis.fluitt@kimley-horn.com
Mailing Address	8000 Weston Pkwy, Suite 360 Cary, NC 27513	421 Fayetteville St, Suite 600 Raleigh, NC 27601

Site Plan Prepared By: Kimley-Horn Site Plan Date: 6/1/2022

See site plan/vicinity map requirements on page 2.

Parcel Size: 86 Acre(s) Anticipated Build-Out Year: 2027

Weekday Site Trip Generation - Do NOT adjust for mode split, pass-by, internal capture, or diverted trips.

ITE LUC	Proposed Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
210	Single Fam Detatch	200	d.u.		Adj. Street							ITE Equation
215	Single Fam Attach	185	d.u.		Adj. Street							ITE Equation
220	Multifam Low-Rise	365	d.u.		Adj. Street							ITE Equation
Total		750	d.u.									

Refer to the current *NCDOT Congestion Management Capacity Analysis Guidelines* for acceptable trip calculation methods and data sources.

**Explain local or other data sources, if used: See attached trip gen tables for new trips to be used in the TIA

☒ The estimated site trips meet NCDOT's TIA trip threshold of 3,000 daily trips.

☒ The estimated site trips meet the municipal TIA trip threshold of 100 peak hour trips

☐ This project is located in a known STIP and/ or local CIP project #

☒ This project includes a rezoning request.

☐ The proposed site access is located within 1,000 feet of an interchange.

☐ The Applicant requests for a new or modified control-of-access break.

☐ The Applicant requests for a new or modified median break.

Craig M. Davis — Applicant's Signature

Craig M. Davis — Print Name

July 20, 2022 — Date

Effective Date: 10/01/2017 (Version 17-721)

NCDOT Traffic Impact Analysis Need Screening / Scoping Request

TIA Need Screening → TIA Scoping → TIA Submittal

Site Plan/Vicinity Map Requirement for TIA Need Screening: While the site plan may not be finalized during the TIA scoping stage, the graphic representation of the proposed development shall provide adequate details on the development scope and context. More specifically, the site plan/map shall clearly show the location and type of each access point, spacing to adjacent and opposing driveways or intersections, internal street network, proposed buildings/parcels with their anticipated uses and sizes at full build-out and, if applicable, any nearby interstate, US, NC or Secondary Roads (SR).

Project Name: Corbett Assemblage **Project Reference Number:** _____

☒ **A TIA is Required by the Local Government.** In addition, the study area is expected to include NCDOT maintained transportation facilities.

☒ **A TIA is Required by NCDOT,** per the *Policy on Street and Driveway Access to North Carolina Highways*.

If either or both of the boxes above are checked, the Applicant/TIA Consultant is hereby requested to fill out as much as possible of the following TIA scoping checklist, and return it along with the supporting documents to NCDOT prior to the scoping meeting.

☐ **A TIA is NOT required**. This decision is based on the development information presented above. Changes in the development plan will require re-evaluation of the TIA need, and may necessitate a TIA. The Applicant should inform the District Engineer of any significant changes in a timely fashion to avoid delays or rejections of the driveway permit / encroachment agreement applications.

Additional Comments:

The TIA need decision is made by the NCDOT Division ____ District____ on _____.

NCDOT District Representative's Signature
Email concurrence may be used in lieu of the signature.

Print Name

NCDOT TIA Scoping Checklist

TIA Need Screening → TIA Scoping → TIA Submittal

Project Name: Corbett Assemblage **TIA Scoping Date:** _____

☒ **TIA Need Screening Forms are Attached.** Project Reference #: _____ Decision Date: _____

☒ **Site Plan and Access**

☒ Provide a site plan illustrating site access, internal and external roadways, buildings and land uses.
Refer to NCDOT's *Policy on Street and Driveway Access to North Carolina Highways* pages 14 and 15 for site plan requirements.

☒ Identify site access.

New Access	On Road	Access Type		Driveway Spacing		
	Road Name	Permitted Movements	Traffic Control	Distance (ft)	Direction	Nearest Intersection / Access
Access A	Corbett Road	RIRO	2-Way Stop	330	South	Amelia Church Rd
Access B	Corbett Road	Conventional Full-Mvmt	2-Way Stop	720	South	Access A
Access C	Corbett Road	Conventional Full-Mvmt	2-Way Stop	470	North	Access B
Access D	Corbett Road	Conventional Full-Mvmt	2-Way Stop	0		Hannah Dr
Access E						
Access F						
Access G						
Access H						

Existing Access	Existing Intersection of		Access Modification	Proposed Interconnectivity (If Applicable)		
	Road A	Road B		Connector #	Road Connected	Adjacent Development
Access 1			Please Select	Connector 1	42@Johnson Estate	Copper District
Access 2				Connector 2	42@Springbrook	Copper District
Access 3				Connector 3		
Access 4				Connector 4		

☐ Additional access clarifications and provisions (e.g., proposed control-of-access or median breaks, modifications of existing access, loading/unloading area access, bike/pedestrian accommodation).

☐ **Proposed K-12 School Site**

☐ NCDOT MSTA School Traffic Calculator for Select School Type shall be used.

☐ Peak Hour Factors (PHFs) shall be adjusted/weighted for new school trips (0.5 PHF by default).

☐ Internal school circulation analysis is required, and should be submitted in advance or concurrent with the TIA submittal.

☐ Clarify traffic operation plans (e.g. traffic circulation pattern, pedestrian access, drop-off/pick-up zone location and configuration, queue storage area and, if applicable, staggered start times).

☒ **Trip Generation**

The TIA Consultant shall prepare trip generation estimates following the current *NCDOT Congestion Management Capacity Analysis Guidelines*, and submit the calculation sheets and supporting information to the District Engineer for approval prior to capacity analysis.

ITE LUC	Proposed Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
210	Single Fam Detach	200	d.u.		Adj. Street							ITE Equation
215	Single Fam Attach	185	d.u.		Adj. Street							ITE Equation
220	Multifam Low-Rise	365	d.u.		Adj. Street							ITE Equation
Unadjusted Site Trips												
Internal Capture Trips (Attach Calculation Sheets)				0		0	0	0	0	0	0	Please Select
Internal Capture % of Unadjusted Site Trips				%			%			%		
LUC	Proposed Land Use	Any Internal Trips?		Pass-By % of External Trips								
		Please Select		%			%			%		Please Select
				%			%			%		
				%			%			%		
				%			%			%		
				%			%			%		
Pass-By Trips (Attach Calculation Sheets)												
Adjacent Street Volumes												Please Select
Non-Pass-By Primary Trips												
Diverted Trips, if Applicable and Justifiable												Please Select

**Explain local or other data sources, if used:

See attached trip gen tables for new trips to be used in the TIA, which will account for anticipated internal capture between this project and the Lumen (Copper District) project.

☐ Existing Site Trip Information for Redevelopment Projects (Attach separate sheets as needed)

ITE LUC	Existing Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
					Please Select							Please Select
Total Existing Site Trips												

☒ **Trip Distribution**

☒ Trip distribution diagrams are submitted concurrently with this document (attach separate sheets).

☐ Trip distribution diagrams will be submitted separately, along with supporting information, to the District Engineer for review and approval prior to capacity analysis. The trip distribution shall be based on the current and anticipated traffic patterns, as well as instructions noted below.

Distribution is proposed to be consistent with the Lumen (Copper District) TIA.

If required by the District Engineer, the following additional diagrams shall also be submitted:

☐ Mixed-Use Developments (separate diagrams for residential, commercial, and office trips)

☐ Inter-Development Trips (if 'internal" trips cross public streets)

☐ Pass-By Trips

☐ Diverted Trips

☐ Each Analysis Period

☐ **Mode Split**

☐ Provide Data Source and Justification

Mode / Period	Auto		
AM Peak	%	%	%
PM Peak	%	%	%
Daily	%	%	%
	%	%	%

☐ Identify proper infrastructure and accommodation for other modes of travel.

☒ **Analysis Peak Periods:**

☒ Weekday AM Peak 7:00am to 9:00am

☒ Weekday PM Peak 4:00pm to 6:00pm

☐ Weekday Midday Peak _____

☐ Weekday PM School Peak _____

☐ Weekend _____ Peak _____

☐ Other _____

☒ Study Area Intersections and Data Collection

The study area shall include the site access intersections (both new and existing) identified under "Site Plan and Access" on page 1, as well as the following external and, if applicable, internal intersections.

External Intersection	Intersection of		Traffic Control	Intersection Turning Movement Counts			Notes
	Road A	Road B		New / Existing	Date of Counts	Growth Adjustment	
#1	NC 42	US 70 EB Ramps	Signal	Require New Counts			
#2	NC 42	US 70 WB Ramps	Signal	Require New Counts			
#3	NC 42	Johnson Estate	2-Way Stop	Require New Counts			
#4	NC 42	Springbrook Ave	Signal	Require New Counts			
#5	NC 42	Healthpark Way	Signal	Require New Counts			
#6	NC 42	Amelia Church	Signal	Require New Counts			
#7	Amelia Chuch	Corbett	2-Way Stop	Require New Counts			
#8							
#9							
#10							
#11							
#12							

Internal Intersection	Intersection of		Access Type		Intersection Spacing		
	Road A	Road B	Traffic Control	Permitted Movements	Distance (ft)	Direction	Nearest Intersection
#101			Please Select	Please Select		Please Select	
#102							
#103							
#104							
#105							

The following data will be collected:

☒ New traffic turning movement counts in ☒ 15-min intervals ☐ 5-min intervals (near schools)
Unless otherwise noted above, new traffic counts shall be collected at the existing study intersections during the analysis periods. Weekday counts shall avoid Mondays, Fridays, holidays, school breaks, road closures, and major weather events.

☐ To account for the impact of existing and/or proposed school traffic, PHFs will be adjusted for:

intersections numbered: _____

and access points numbered: _____

☐ Traffic Forecast Data for TIP: _____

☒ Roadway/Intersection Configuration & Traffic Control

☒ Traffic Signal Phasing & Timing Data

☐ Crash Data: _____ Period: _____

☐ Other:

☒ **Future Year Conditions**

☒ Project Build-Out Year: 2027

☒ Future Analysis Year(s): 2027

☐ Identify below any funded/committed future transportation improvements, as well as any approved but incomplete developments near the site.

Funded STIP / Local CIP Project	Project Description	Year Complete
R-3410	Widening NC 42 to a four-lane median divided roadway	

Nearby Approved Development	Location	Future Land Use (exclude any completed phases)	Committed Improvements

☒ Annual Growth Factor: 3 %

Justification/Data Source: Direction from Town staff

☐ **Local Comprehensive Transportation Plan Compliance**

☐ Identify Applicable Local Transportation Planning Documents

☐ Identify Applicable Roadways inside the Study Area

Road Name	Classification	Speed Limit	Proposed Cross-Section	Proposed Right-of-Way	Compliance Requirements	Affect Study Intersection #
NC 42	Boulevard	45	4-lane median divided	110'		

☒ Study Method

The traffic analysis shall follow the current *NCDOT Congestion Management Capacity Analysis Guidelines*, *Policy on Street and Driveway Access to North Carolina Highways*, and use the current approved version of analysis software (e.g. Synchro/SimTraffic, HCS, Sidra Intersection, TransModeler).

The study shall include the following analysis scenarios for each analysis period.

1. Existing Conditions
2. Future No-Build Conditions (existing + background growth + approved developments + committed or funded improvements)
3. Future Build Conditions (future no-build + site trips)
4. Future Build with Improvements Conditions (future build traffic with improvements to mitigate the proposed development's impacts) and, if applicable:

☐ 5. TIP Design Year Analysis _____

☒ 6. Alternative Access Scenario (without proposed control-of-access or median break / modification)

The following additional analysis/outputs should be provided as warranted:

- ☐ Signal Warrant Analysis for accesses/intersections _____
- ☐ Multi-Modal Level of Service Analysis
- ☐ School Loading Zone Traffic Simulation
- ☐ Phasing Analysis (scope separately as needed)
- ☐ Safety/Crash Analysis
- ☐ Control-of-Access Modification Justification
- ☐ Median Break / Modification Justification
- ☐ Other _____

☒ Submittals

In addition to the hardcopies required below, the TIA Consultant shall provide the District Engineer and, if required, the local government an electronic copy of the study documents, including the latest site plan, figures and appendices, in searchable PDF files and the original traffic analysis files (e.g., Synchro, HCS). To expedite review, the NCDOT electronic submittals shall also be delivered concurrently to:

☐ Div. Traffic Engr ☐ Regional Traffic Engr ☐ Congestion Management ☐ Other _____

Submittals	NCDOT		Local Government	
	Electronic	Hardcopy	Electronic	Hardcopy
Trip Generation & Distribution	Required		Please Select	
Draft TIA Report	Required			
Final Sealed TIA Report	Required			

☒ Additional Comments (municipal TIA requirements, approved variations from NCDOT guidelines)

Build-out Scenario #1: Corbett Assemblage build-out without Lumen (Copper District) or NC 42 widening
Build-out Scenario #2: Corbett + Lumen build-out with NC 42 STIP project widening completed

Agreement by All Parties

The undersigned agree to the contents and methodology described above for completing the required traffic impact analysis for the proposed development identified herein. Any changes to the above methodology contemplated by the Applicant or the TIA Consultant must be submitted to the District Engineer in writing. If approved by NCDOT, then such changes may be accepted for the TIA report. Subsequent revisions to the development plan (e.g. land use, density, site access, or schedule) may require additional scoping and analysis, and may modify the TIA requirements.

This agreement shall become effective on the date approved by NCDOT, and shall expire ____ months after the effective date or upon significant changes to the roadway network and/or development assumptions, whichever occurs first. Once expired, renewal or re-scoping will be required for subsequent TIA submittals.

APPLICANT

Signature	Craig M. Davis Print Name	July 20, 2022 Date

TIA CONSULTANT

Signature	Travis Fluitt Print Name	7/18/2022 Date

LOCAL GOVERNMENT REPRESENTATIVE (If Applicable)

Signature	Print Name	Date

Email concurrence may be used in lieu of the signature.

NCDOT DISTRICT REPRESENTATIVE

Reviewed and approved by the NCDOT Division ____ District ____ on _____.

Signature	Print Name

Email concurrence may be used in lieu of the signature.

Corbett Assemblage

Table 1 - Trip Generation from Lumen (Copper District) TIA

Land Use		Intensity		Daily			AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out	Total	In	Out
210	Single Family Detached Housing	140	d.u.	1,418	709	709	104	26	78	140	88	52
221	Multifamily Housing (Mid-Rise)	480	d.u.	2,614	1,307	1,307	159	41	118	200	122	78
310	Hotel	120	rooms	928	464	464	55	32	23	64	33	31
720	Medical Office Building	700,000	s.f.	26,806	13,403	13,403	1,262	1,073	189	1,260	189	1,071
820	Shopping Center	35,000	s.f.	2,944	1,472	1,472	169	105	64	250	120	130
850	Supermarket	55,000	s.f.	5,874	2,937	2,937	210	126	84	508	259	249
Subtotal				**40,584**	**20,292**	**20,292**	**1,959**	**1,403**	**556**	**2,422**	**811**	**1,611**
Internal Capture												
210	Single Family Detached Housing			367	184	183	2	0	2	63	44	19
221	Multifamily Housing (Low-Rise)			678	340	338	5	1	4	89	61	28
310	Hotel			311	67	244	20	0	20	15	10	5
720	Medical Office Building			1,839	917	922	117	64	53	51	13	38
820	Shopping Center			865	462	403	45	26	19	61	23	38
850	Supermarket			1,726	923	803	57	32	25	123	50	73
Internal Capture Total				*5,786*	*2,893*	*2,893*	*246*	*123*	*123*	*402*	*201*	*201*
Total External Trips				**34,798**	**17,399**	**17,399**	**1,713**	**1,280**	**433**	**2,020**	**610**	**1,410**
Pass-By Capture		AM	PM									
820	Shopping Center[1]	0%	34%	708	354	354	0	0	0	64	33	31
850	Supermarket	0%	36%	1,494	747	747	0	0	0	138	75	63
Pass-By Capture Total				*2,202*	*1,101*	*1,101*	*0*	*0*	*0*	*202*	*108*	*94*
Total Net New External Trips - Lumen (Copper District)				**32,596**	**16,298**	**16,298**	**1,713**	**1,280**	**433**	**1,818**	**502**	**1,316**

K:\RAL_TPTO_Traffic\011174043 100 Corbett Road\T4 - Analysis\[CorbettAssemblage-TIAData.xls]Trip Gen 7/18/22

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	13,403	13,403	1,073	189	189	1,071
Retail	4,409	4,409	231	148	379	379
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2,016	2,016	67	196	210	130
Hotel	464	464	32	23	33	31
	20,292	20,292	1,403	556	811	1,611

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	917	922	64	53	13	38
Retail	1,385	1,206	58	44	73	111
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	524	521	1	6	105	47
Hotel	67	244	0	20	10	5
	2,893	2,893	123	123	201	201
% Reduction	14.3%		12.6%		16.6%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	12,486	12,481	1,009	136	176	1,033
Retail	3,024	3,203	173	104	306	268
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,492	1,495	66	190	105	83
Hotel	397	220	32	3	23	26
	17,399	17,399	1,280	433	610	1,410

Corbett Assemblage

Table 2 - Trip Generation: Lumen + Corbett Assembalge

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
210 Single Family Detached Housing - Lumen	140	d.u.	1,418	709	709	104	26	78	140	88	52
210 Single Family Detached Housing - Corbett	200	d.u.	1,910	955	955	140	36	104	191	120	71
215 Single Family Attached Housing - Corbett	185	d.u.	1,360	680	680	91	28	63	107	61	46
220 Multifamily Housing (Low-Rise) - Corbett	365	d.u.	2,416	1,208	1,208	136	33	103	178	112	66
221 Multifamily Housing (Mid-Rise) - Lumen	480	d.u.	2,614	1,307	1,307	159	41	118	200	122	78
310 Hotel - Lumen	120	rooms	928	464	464	55	32	23	64	33	31
720 Medical Office Building - Lumen	700,000	s.f.	26,806	13,403	13,403	1,262	1,073	189	1,260	189	1,071
820 Shopping Center - Lumen	35,000	s.f.	2,944	1,472	1,472	169	105	64	250	120	130
850 Supermarket - Lumen	55,000	s.f.	5,874	2,937	2,937	210	126	84	508	259	249
Subtotal			**46,270**	**23,135**	**23,135**	**2,326**	**1,500**	**826**	**2,898**	**1,104**	**1,794**
Internal Capture											
210 Single Family Detached Housing - Lumen			255	143	112	2	0	2	30	21	9
210 Single Family Detached Housing - Corbett			344	193	151	4	1	3	39	27	12
215 Single Family Attached Housing - Corbett			245	137	108	3	1	2	22	14	8
220 Multifamily Housing (Low-Rise) - Corbett			434	243	191	4	1	3	38	26	12
221 Multifamily Housing (Mid-Rise) - Lumen			470	263	207	5	1	4	43	29	14
310 Hotel			311	67	244	20	0	20	15	10	5
720 Medical Office Building			1,982	1,003	979	122	69	53	71	21	50
820 Shopping Center			1,052	516	536	48	28	20	62	23	39
850 Supermarket			2,099	1,031	1,068	59	33	26	124	50	74
Internal Capture Total			*7,192*	*3,596*	*3,596*	*267*	*134*	*133*	*444*	*221*	*223*
Total External Trips			**39,078**	**19,539**	**19,539**	**2,059**	**1,366**	**693**	**2,454**	**883**	**1,571**
Pass-By Capture	AM	PM									
820 Shopping Center[1]	0%	34%	644	322	322	0	0	0	64	33	31
850 Supermarket	0%	36%	1,360	680	680	0	0	0	138	75	63
Pass-By Capture Total			*2,004*	*1,002*	*1,002*	*0*	*0*	*0*	*202*	*108*	*94*
Total Net New External Trips: Lumen + Corbett Road			**37,074**	**18,537**	**18,537**	**2,059**	**1,366**	**693**	**2,252**	**775**	**1,477**
Total Net New External Trips: Lumen Only			**32,596**	**16,298**	**16,298**	**1,713**	**1,280**	**433**	**1,818**	**502**	**1,316**
Corbett Road Rezoning (Net Increast in Trips above Lumen)			**4,478**	**2,239**	**2,239**	**346**	**86**	**260**	**434**	**273**	**161**

Note: Trip generation calculations for Lumen project uses was obtained directly from that study, while trip generation calculations for uses proposed as part of the Corbett Road Rezoning project were calculated using data from the 11th Edition of ITE Trip Generation.

K:\RAL_TPTO_Traffic\011174043 100 Corbett Road\T4 - Analysis\[CorbettAssemblage-TIAData.xls]Trip Gen-Lumen+Corbett 7/18/22

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	13,403	13,403	1,073	189	189	1,071
Retail	4,409	4,409	231	148	379	379
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4,859	4,859	164	466	503	313
Hotel	464	464	32	23	33	31
	23,135	23,135	1,500	826	1,104	1,794

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	1,003	979	69	53	21	50
Retail	1,547	1,604	61	46	73	113
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	979	769	3	14	119	55
Hotel	67	244	0	20	10	5
	3,596	3,596	133	133	223	223
% Reduction	15.5%		11.4%		15.4%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	12,400	12,424	1,004	136	168	1,021
Retail	2,862	2,805	170	102	306	266
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3,880	4,090	161	452	384	258
Hotel	397	220	32	3	23	26
	19,539	19,539	1,367	693	881	1,571

K:\RAL_TPTO_Traffic\011174043 100 Corbett Road\T5 - Report-Submittals\TIA Figures\Corbett Assemblage - TIA Figures.dwg

FIGURE A

SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT

CORBETT ASSEMBLAGE
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

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

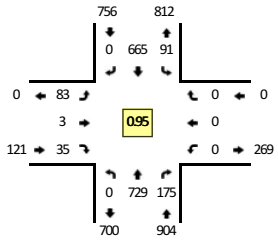
Type of peak hour being reported: Intersection Peak

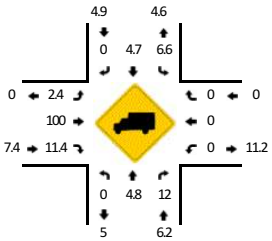
Method for determining peak hour: Total Entering Volume

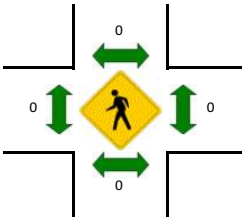
LOCATION: NC 42 -- US 70 EB Ramps
CITY/STATE: Johnston, NC

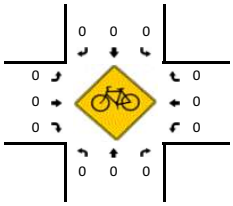
QC JOB #: 15806201
DATE: Tue, May 10 2022

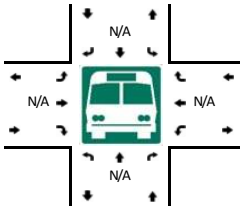
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

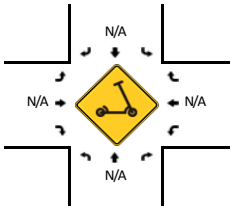












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				US 70 EB Ramps (Eastbound)				US 70 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	177	44	0	19	168	0	0	20	0	8	0	0	0	0	0	436	
7:15 AM	0	155	61	0	18	150	0	0	14	0	5	0	0	0	0	0	403	
7:30 AM	0	198	37	0	24	186	0	0	20	1	4	0	0	0	0	0	470	
7:45 AM	0	178	42	0	20	161	0	0	34	2	7	0	0	0	0	0	444	1753
8:00 AM	0	176	46	0	17	164	0	0	15	0	16	0	0	0	0	0	434	1751
8:15 AM	0	177	50	0	30	154	0	0	14	0	8	0	0	0	0	0	433	1781
8:30 AM	0	138	52	0	12	141	0	0	16	0	3	0	0	0	0	0	362	1673
8:45 AM	0	171	45	0	19	165	0	0	13	1	12	0	0	0	0	0	426	1655

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	792	148	0	96	744	0	0	80	4	16	0	0	0	0	0	1880
Heavy Trucks	0	24	24		0	20	0		0	4	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 5/16/2022 8:17 AM

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

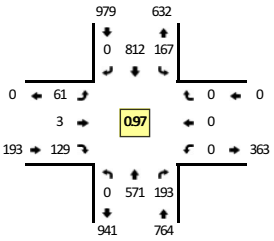
Type of peak hour being reported: Intersection Peak

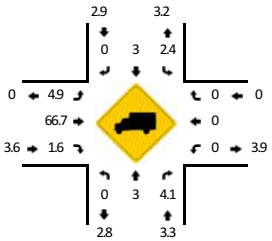
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- US 70 EB Ramps
CITY/STATE: Johnston, NC

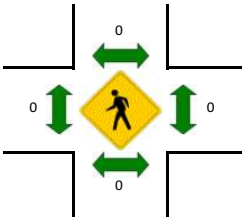
QC JOB #: 15806202
DATE: Tue, May 10 2022

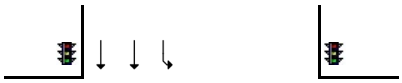
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

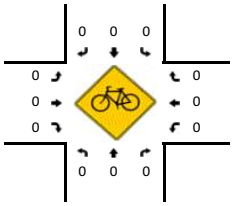


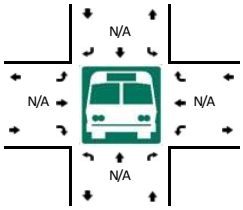


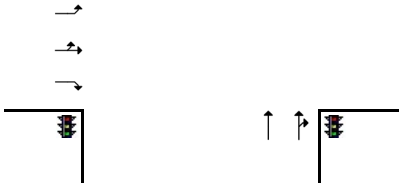
Quality Counts
DATA THAT DRIVES COMMUNITIES

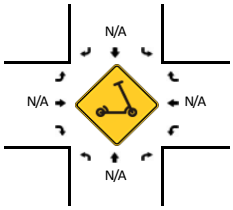












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				US 70 EB Ramps (Eastbound)				US 70 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	121	38	0	34	176	0	0	12	1	17	0	0	0	0	0	399	
4:15 PM	0	137	48	0	29	190	0	0	23	1	26	0	0	0	0	0	454	
4:30 PM	0	155	45	0	36	185	0	0	20	2	23	0	0	0	0	0	466	
4:45 PM	0	133	46	0	41	223	0	0	11	1	33	0	0	0	0	0	488	1807
5:00 PM	0	135	46	0	54	203	0	0	17	0	43	0	0	0	0	0	498	1906
5:15 PM	0	148	56	0	36	201	0	0	13	0	30	0	0	0	0	0	484	1936
5:30 PM	0	140	45	0	19	210	0	0	22	0	25	0	0	0	0	0	461	1931
5:45 PM	0	140	40	0	27	203	0	0	18	0	31	0	0	0	0	0	459	1902

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	540	184	0	216	812	0	0	68	0	172	0	0	0	0	0	1992
Heavy Trucks	0	12	8		0	16	0		0	0	4		0	0	0		40
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 5/16/2022 8:17 AM

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

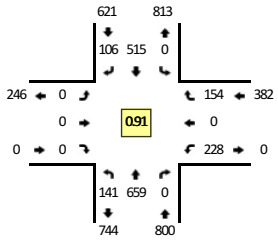
Type of peak hour being reported: Intersection Peak

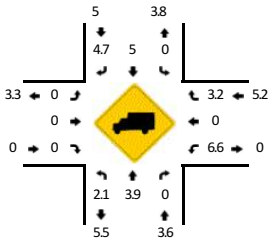
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- US 70 WB Ramps
CITY/STATE: Johnston, NC

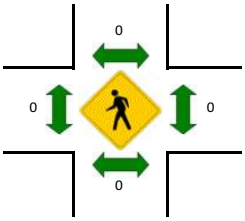
QC JOB #: 15806203
DATE: Tue, May 10 2022

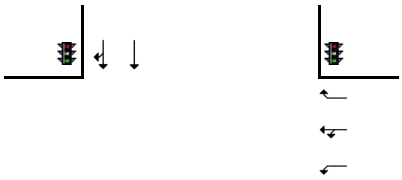
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

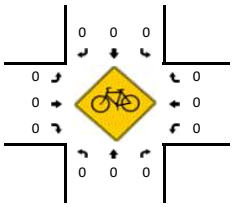


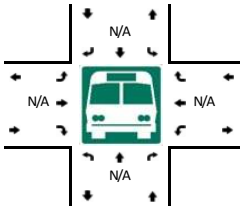


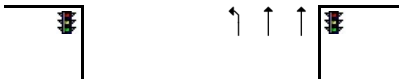
Quality Counts
DATA THAT DRIVES COMMUNITIES

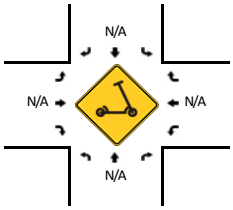












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				US 70 WB Ramps (Eastbound)				US 70 WB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	48	147	0	0	0	133	34	0	0	0	0	0	54	0	24	0	440	
7:15 AM	50	126	0	0	0	121	38	0	0	0	0	0	43	0	40	0	418	
7:30 AM	26	190	0	0	0	131	22	0	0	0	0	0	78	0	47	0	494	
7:45 AM	16	196	0	1	0	130	12	0	0	0	0	0	53	0	43	0	451	1803
8:00 AM	13	181	0	0	0	134	8	0	0	0	0	0	43	4	37	0	420	1783
8:15 AM	17	173	0	0	0	147	13	0	0	0	0	0	37	1	39	0	427	1792
8:30 AM	22	126	0	0	0	119	22	0	0	0	0	0	36	0	27	0	352	1650
8:45 AM	19	173	0	0	0	145	18	0	0	0	0	0	41	0	28	0	424	1623

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	104	760	0	0	0	524	88	0	0	0	0	0	312	0	188	0	1976
Heavy Trucks	0	36	0		0	8	0		0	0	0		16	0	12		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 5/16/2022 8:17 AM

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

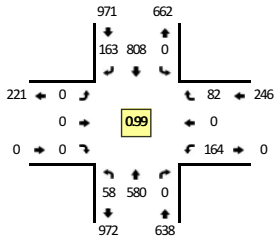
Type of peak hour being reported: Intersection Peak

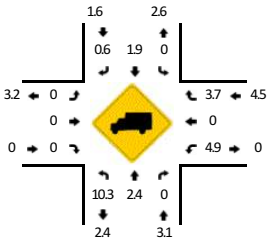
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- US 70 WB Ramps
CITY/STATE: Johnston, NC

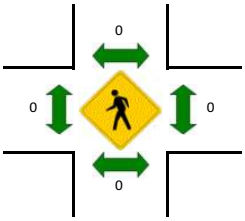
QC JOB #: 15806204
DATE: Tue, May 10 2022

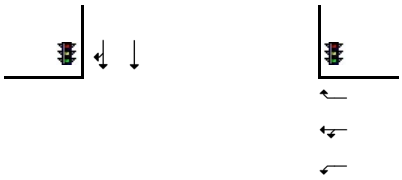
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

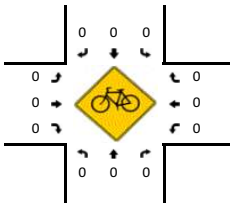


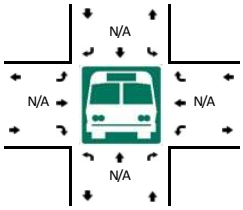


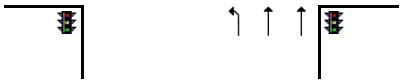
Quality Counts
DATA THAT DRIVES COMMUNITIES

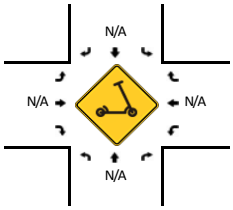












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				US 70 WB Ramps (Eastbound)				US 70 WB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	126	0	0	0	166	33	0	0	0	0	0	41	0	22	0	395	
4:15 PM	7	151	0	0	0	167	43	0	0	0	0	0	53	0	27	0	448	
4:30 PM	11	166	0	0	0	186	49	0	0	0	0	0	32	0	18	0	462	
4:45 PM	16	127	0	0	0	212	29	0	0	0	0	0	56	0	17	0	457	1762
5:00 PM	9	142	0	0	0	223	41	0	0	0	0	0	32	0	22	0	469	1836
5:15 PM	22	145	0	0	0	187	44	0	0	0	0	0	44	0	25	0	467	1855
5:30 PM	12	146	0	0	0	185	23	0	0	0	0	0	46	0	19	0	431	1824
5:45 PM	10	153	0	0	0	174	18	0	0	0	0	0	52	0	24	0	431	1798

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	36	568	0	0	0	892	164	0	0	0	0	0	128	0	88	0	1876
Heavy Trucks	0	8	0		0	4	0		0	0	0		12	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 5/16/2022 8:17 AM

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

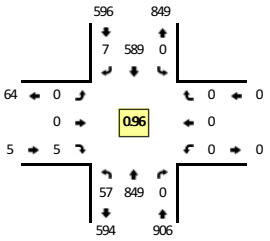
Type of peak hour being reported: Intersection Peak

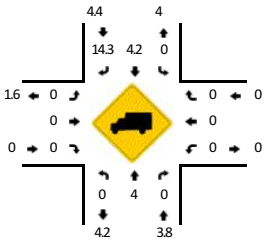
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Johnson Estate Rd
CITY/STATE: Johnston, NC

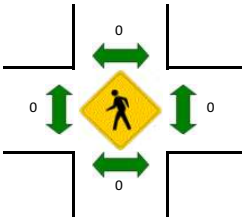
QC JOB #: 15806205
DATE: Tue, May 10 2022

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

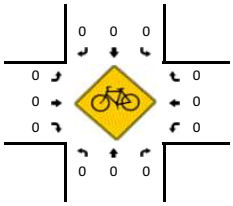


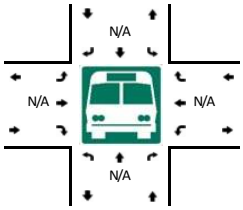


Quality Counts
DATA THAT DRIVES COMMUNITIES

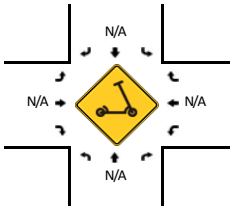












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Johnson Estate Rd (Eastbound)				Johnson Estate Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	16	155	0	0	0	174	1	0	0	0	1	0	0	0	0	0	347	
7:15 AM	11	144	0	0	0	150	0	0	0	0	3	0	0	0	0	0	308	
7:30 AM	16	221	0	0	0	153	1	0	0	0	0	0	0	0	0	0	391	
7:45 AM	17	223	0	0	0	136	2	0	0	0	2	0	0	0	0	0	380	1426
8:00 AM	13	203	0	0	0	138	3	0	0	0	2	0	0	0	0	0	359	1438
8:15 AM	11	202	0	0	0	162	1	0	0	0	1	0	0	0	0	0	377	1507
8:30 AM	8	144	0	0	0	140	2	0	0	0	1	0	0	0	0	0	295	1411
8:45 AM	8	194	0	0	0	160	0	0	0	0	3	0	0	0	0	0	365	1396

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	64	884	0	0	0	612	4	0	0	0	0	0	0	0	0	0	1564
Heavy Trucks	0	20	0		0	8	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 5/16/2022 8:17 AM

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

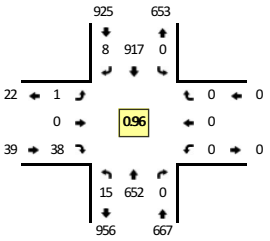
Type of peak hour being reported: Intersection Peak

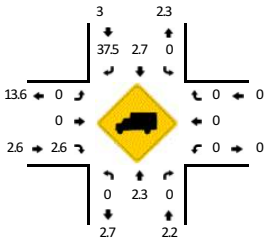
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Johnson Estate Rd
CITY/STATE: Johnston, NC

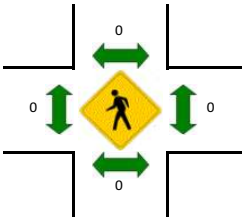
QC JOB #: 15806206
DATE: Tue, May 10 2022

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

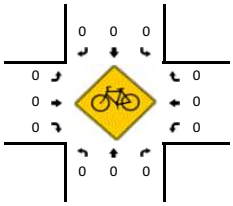


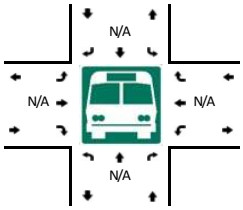


Quality Counts
DATA THAT DRIVES COMMUNITIES

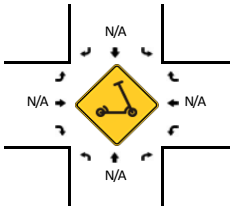












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Johnson Estate Rd (Eastbound)				Johnson Estate Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	146	0	0	0	192	3	0	0	0	6	0	0	0	0	0	353	
4:15 PM	7	170	0	1	0	204	5	0	1	0	5	0	0	0	0	0	393	
4:30 PM	2	182	0	0	0	226	1	0	0	0	9	0	0	0	0	0	420	
4:45 PM	4	140	0	0	0	241	1	0	0	0	6	0	0	0	0	0	392	1558
5:00 PM	1	160	0	0	0	246	1	0	0	0	18	0	0	0	0	0	426	1631
5:15 PM	2	161	0	0	0	221	1	0	0	0	6	0	0	0	0	0	391	1629
5:30 PM	1	170	0	0	0	203	1	0	0	0	6	0	0	0	0	0	381	1590
5:45 PM	1	176	0	0	0	190	3	0	0	0	4	0	0	0	0	0	374	1572

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	640	0	0	0	984	4	0	0	0	72	0	0	0	0	0	1704
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 5/16/2022 8:17 AM

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

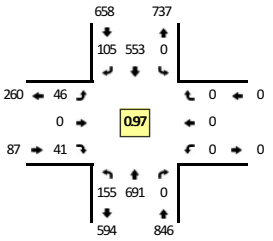
Type of peak hour being reported: Intersection Peak

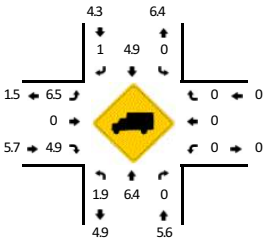
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Springbrook Ave
CITY/STATE: Clayton, NC

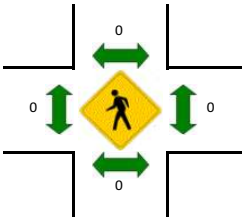
QC JOB #: 15806207
DATE: Tue, May 10 2022

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

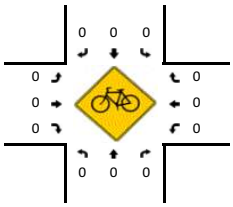


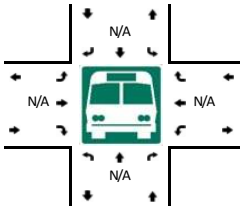


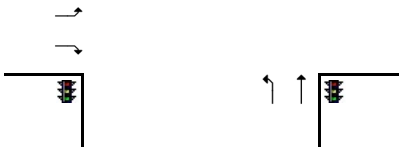
Quality Counts
DATA THAT DRIVES COMMUNITIES

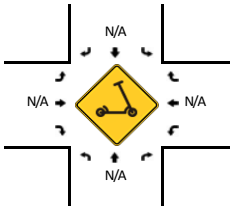












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Springbrook Ave (Eastbound)				Springbrook Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	26	129	0	0	0	163	16	0	9	0	12	0	0	0	0	0	355	
7:15 AM	33	122	0	0	0	142	17	0	13	0	11	0	0	0	0	0	338	
7:30 AM	49	171	0	0	0	144	20	0	4	0	7	0	0	0	0	0	395	
7:45 AM	44	176	0	0	0	124	39	0	12	0	14	0	0	0	0	0	409	1497
8:00 AM	36	169	0	0	0	139	23	0	16	0	4	0	0	0	0	0	387	1529
8:15 AM	26	175	0	0	0	146	23	0	14	0	16	0	0	0	0	0	400	1591
8:30 AM	24	123	0	0	0	122	24	0	15	0	16	0	0	0	0	0	324	1520
8:45 AM	32	163	0	0	0	140	43	0	20	0	25	0	0	0	0	0	423	1534

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	176	704	0	0	0	496	156	0	48	0	56	0	0	0	0	0	1636
Heavy Trucks	0	24	0		0	48	0		12	0	0		0	0	0		84
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 5/16/2022 8:17 AM

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

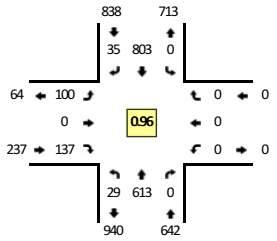
Type of peak hour being reported: Intersection Peak

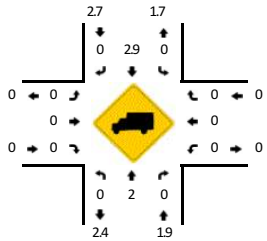
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Springbrook Ave
CITY/STATE: Clayton, NC

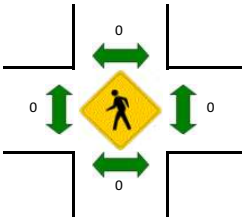
QC JOB #: 15806208
DATE: Tue, May 10 2022

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

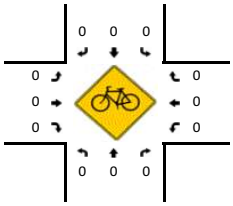


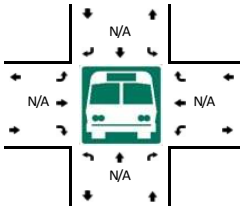


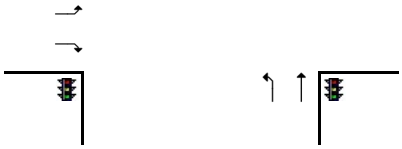
Quality Counts
DATA THAT DRIVES COMMUNITIES

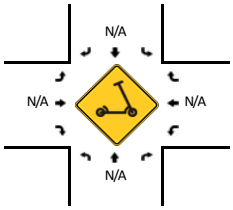












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Springbrook Ave (Eastbound)				Springbrook Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	141	0	0	0	163	14	0	14	0	34	0	0	0	0	0	369	
4:15 PM	11	159	0	0	0	172	13	0	12	0	36	1	0	0	0	0	404	
4:30 PM	10	174	0	0	0	191	7	0	23	0	37	0	0	0	0	0	442	
4:45 PM	5	133	0	0	0	198	6	0	28	0	39	0	0	0	0	0	409	1624
5:00 PM	8	152	0	0	0	207	13	0	27	0	40	0	0	0	0	0	447	1702
5:15 PM	6	154	0	0	0	207	9	0	22	0	21	0	0	0	0	0	419	1717
5:30 PM	6	167	0	0	0	186	7	0	11	0	13	0	0	0	0	0	390	1665
5:45 PM	2	176	0	0	0	182	9	0	6	0	10	0	0	0	0	0	385	1641

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	32	608	0	0	0	828	52	0	108	0	160	0	0	0	0	0	1788
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 5/16/2022 8:17 AM

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

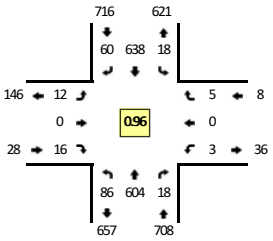
Type of peak hour being reported: Intersection Peak

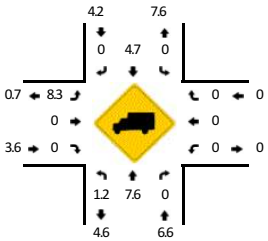
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Johnston Health_Healthpark Way
CITY/STATE: Clayton, NC

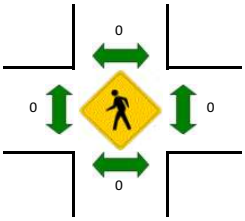
QC JOB #: 15806209
DATE: Tue, May 10 2022

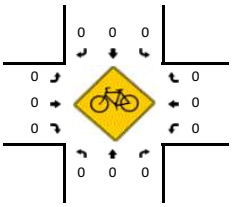
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

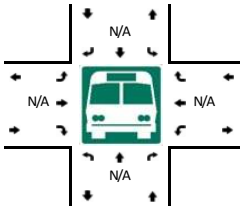


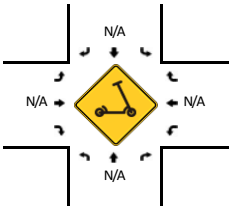


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Johnston Health_Healthpark Way (Eastbound)				Johnston Health_Healthpark Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	113	3	0	7	163	9	0	11	0	8	0	0	0	2	0	326	
7:15 AM	9	122	1	0	6	150	13	0	8	0	7	0	0	0	1	0	317	
7:30 AM	16	149	6	0	7	168	13	0	1	0	3	0	0	0	0	0	363	
7:45 AM	29	139	7	0	4	153	16	0	4	0	3	0	0	0	0	0	355	1361
8:00 AM	20	159	1	0	3	158	13	0	1	0	3	0	1	0	3	0	362	1397
8:15 AM	21	157	4	0	4	159	18	0	6	0	7	0	2	0	2	0	380	1460
8:30 AM	16	126	2	0	7	142	13	0	8	0	5	0	2	0	4	0	325	1422
8:45 AM	15	158	4	0	4	173	8	0	8	0	4	0	2	2	1	0	379	1446

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	84	628	16	0	16	636	72	0	24	0	28	0	8	0	8	0	1520
Heavy Trucks	0	64	0		0	28	0		4	0	0		0	0	0		96
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 5/16/2022 8:17 AM

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

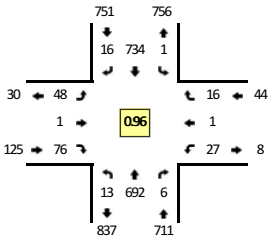
Type of peak hour being reported: Intersection Peak

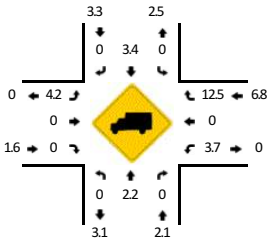
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Johnston Health_Healthpark Way
CITY/STATE: Clayton, NC

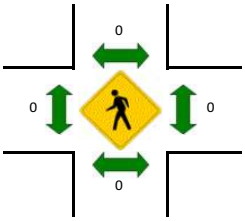
QC JOB #: 15806210
DATE: Tue, May 10 2022

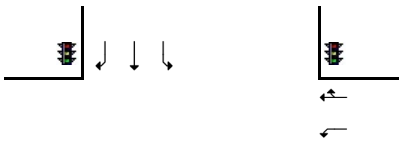
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

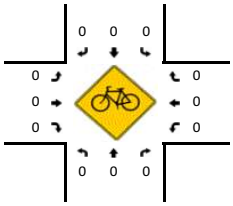


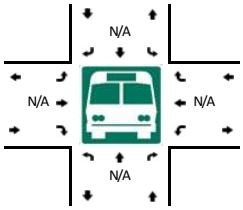


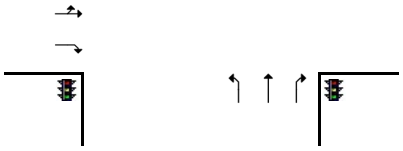
Quality Counts
DATA THAT DRIVES COMMUNITIES

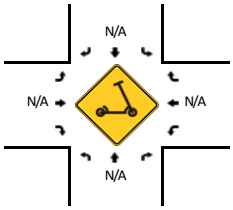












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Johnston Health_Healthpark Way (Eastbound)				Johnston Health_Healthpark Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	149	0	0	3	151	3	0	16	0	17	0	4	0	3	0	351	
4:15 PM	3	170	2	0	1	174	10	0	14	1	15	0	1	0	8	0	399	
4:30 PM	4	189	2	0	1	176	4	0	14	0	20	0	6	1	7	0	424	
4:45 PM	1	161	1	0	0	186	3	0	9	0	13	0	8	0	1	0	383	1557
5:00 PM	6	168	1	0	0	176	1	0	11	0	33	0	6	0	6	0	408	1614
5:15 PM	2	174	2	0	0	196	8	0	14	1	10	0	7	0	2	0	416	1631
5:30 PM	2	170	1	0	0	181	3	0	11	0	12	0	0	0	4	0	384	1591
5:45 PM	2	178	1	0	2	182	5	0	8	0	5	0	4	0	2	0	389	1597

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	756	8	0	4	704	16	0	56	0	80	0	24	4	28	0	1696
Heavy Trucks	0	24	0		0	44	0		4	0	0		0	0	8		80
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 5/16/2022 8:17 AM

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

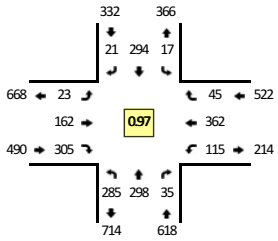
Type of peak hour being reported: Intersection Peak

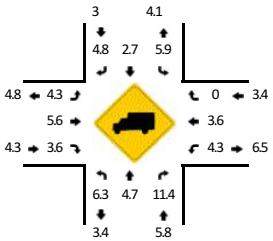
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Amelia Church Rd
CITY/STATE: Clayton, NC

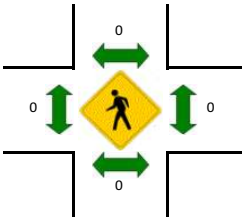
QC JOB #: 15806211
DATE: Tue, May 10 2022

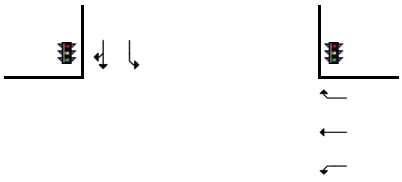
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

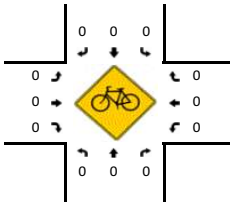


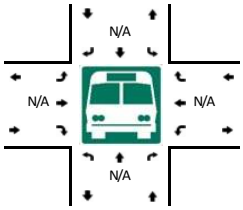


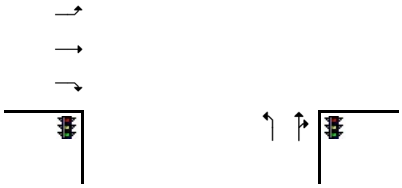
Quality Counts
DATA THAT DRIVES COMMUNITIES

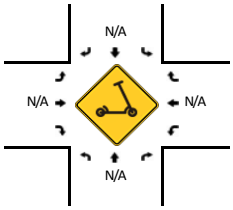












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Amelia Church Rd (Eastbound)				Amelia Church Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	53	58	9	0	2	89	6	0	3	15	51	0	46	104	6	0	442	
7:15 AM	70	53	9	0	3	77	0	0	3	19	57	0	38	107	10	0	446	
7:30 AM	70	74	12	0	5	85	5	0	1	30	65	0	34	104	11	0	496	
7:45 AM	59	78	6	0	3	56	7	0	0	54	84	0	30	97	15	0	489	1873
8:00 AM	79	68	9	0	6	78	4	0	15	46	83	0	20	87	10	0	505	1936
8:15 AM	77	78	8	0	3	75	5	0	7	32	73	0	31	74	9	0	472	1962
8:30 AM	59	69	13	0	9	81	5	0	2	25	55	0	26	70	7	0	421	1887
8:45 AM	72	80	19	0	5	99	3	0	2	33	55	0	25	65	9	0	467	1865

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	316	272	36	0	24	312	16	0	60	184	332	0	80	348	40	0	2020
Heavy Trucks	12	12	0		0	8	0		4	4	12		0	8	0		60
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 5/16/2022 8:17 AM

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

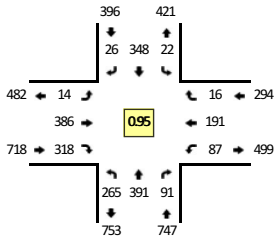
Type of peak hour being reported: Intersection Peak

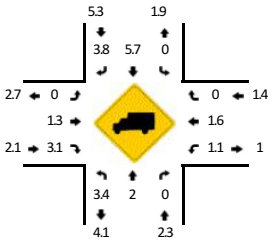
Method for determining peak hour: Total Entering Volume

LOCATION: NC 42 -- Amelia Church Rd
CITY/STATE: Clayton, NC

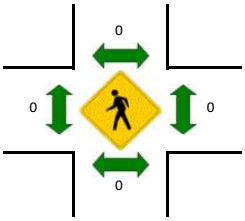
QC JOB #: 15806212
DATE: Tue, May 10 2022

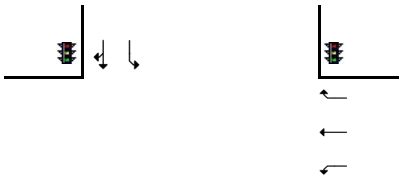
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

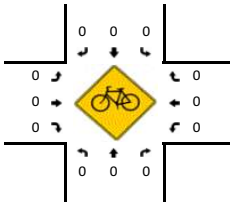


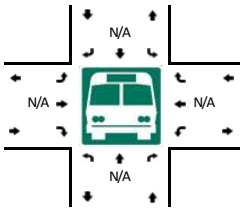


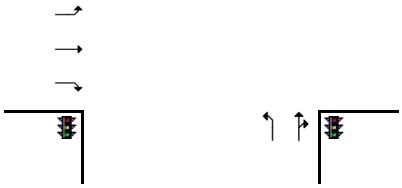
Quality Counts
DATA THAT DRIVES COMMUNITIES

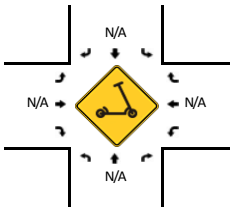












15-Min Count Period Beginning At	NC 42 (Northbound)				NC 42 (Southbound)				Amelia Church Rd (Eastbound)				Amelia Church Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	53	96	15	0	10	81	7	0	6	92	69	0	11	37	3	0	480	
4:15 PM	67	87	32	0	7	79	4	0	8	104	77	0	22	37	5	0	529	
4:30 PM	70	115	26	0	5	77	3	0	3	85	85	0	23	47	4	0	543	
4:45 PM	66	87	20	0	5	76	0	0	3	79	86	0	24	40	7	0	493	2045
5:00 PM	52	98	27	0	6	85	6	0	2	108	78	0	15	40	2	0	519	2084
5:15 PM	55	110	25	0	5	96	6	0	3	103	83	0	23	51	7	0	567	2122
5:30 PM	84	83	23	0	5	89	5	0	4	79	73	0	21	56	3	0	525	2104
5:45 PM	74	100	16	0	6	78	9	0	5	96	84	0	28	44	4	0	544	2155

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	440	100	0	20	384	24	0	12	412	332	0	92	204	28	0	2268
Heavy Trucks	0	8	0		0	28	4		0	4	8		0	4	0		56
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 5/16/2022 8:17 AM

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

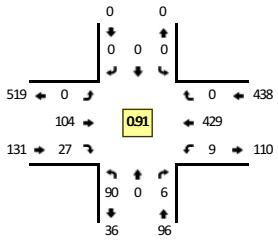
Type of peak hour being reported: Intersection Peak

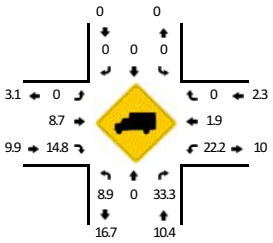
Method for determining peak hour: Total Entering Volume

LOCATION: Corbett Rd -- Amelia Church Rd
CITY/STATE: Johnston, NC

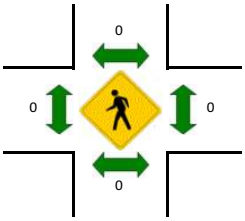
QC JOB #: 15806213
DATE: Tue, May 10 2022

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

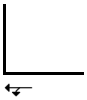


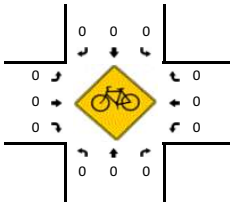


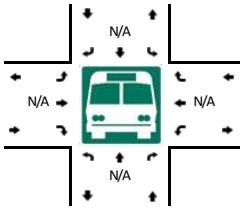
Quality Counts
DATA THAT DRIVES COMMUNITIES

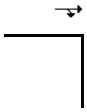


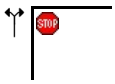


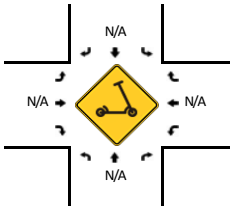












15-Min Count Period Beginning At	Corbett Rd (Northbound)				Corbett Rd (Southbound)				Amelia Church Rd (Eastbound)				Amelia Church Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	24	0	2	0	0	0	0	0	0	17	6	0	2	113	0	0	164	
7:15 AM	23	0	1	0	0	0	0	0	0	21	4	0	1	114	0	0	164	
7:30 AM	13	0	1	0	0	0	0	0	0	23	5	0	2	110	0	0	154	
7:45 AM	30	0	2	0	0	0	0	0	0	43	12	0	4	92	0	0	183	665
8:00 AM	13	0	3	0	0	0	0	0	0	40	6	0	1	83	0	0	146	647
8:15 AM	16	0	1	0	0	0	0	0	0	33	4	0	1	72	0	0	127	610
8:30 AM	9	0	5	0	0	0	0	0	0	31	5	1	4	78	0	0	133	589
8:45 AM	14	0	0	0	0	0	0	0	0	32	10	0	2	62	0	0	120	526

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	120	0	8	0	0	0	0	0	0	172	48	0	16	368	0	0	732
Heavy Trucks	16	0	0		0	0	0		0	24	8		4	0	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 5/16/2022 8:17 AM

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

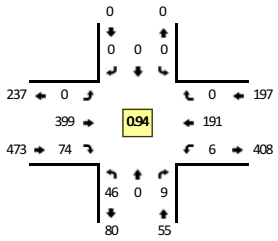
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

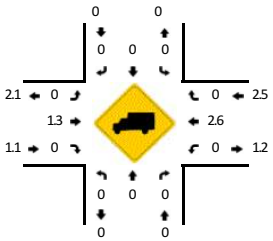
LOCATION: Corbett Rd -- Amelia Church Rd
CITY/STATE: Johnston, NC

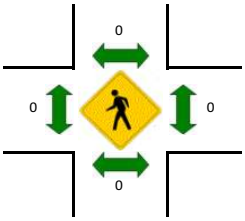
QC JOB #: 15806214
DATE: Tue, May 10 2022

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

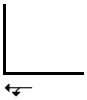


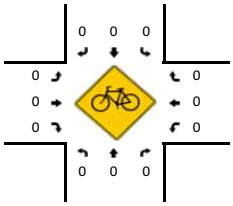
Quality Counts
DATA THAT DRIVES COMMUNITIES

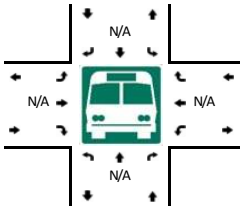


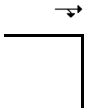


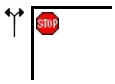


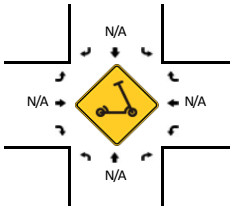












15-Min Count Period Beginning At	Corbett Rd (Northbound)				Corbett Rd (Southbound)				Amelia Church Rd (Eastbound)				Amelia Church Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	0	4	0	0	0	0	0	0	98	20	0	4	39	0	0	173	
4:15 PM	6	0	1	0	0	0	0	0	0	103	19	1	2	38	0	0	170	
4:30 PM	6	0	2	0	0	0	0	0	0	87	16	1	3	43	0	0	158	
4:45 PM	9	0	0	0	0	0	0	0	0	82	11	0	4	37	0	0	143	644
5:00 PM	11	0	2	0	0	0	0	0	0	117	13	0	2	38	0	0	183	654
5:15 PM	13	0	1	0	0	0	0	0	0	105	23	0	1	50	0	0	193	677
5:30 PM	9	0	3	0	0	0	0	0	0	79	20	0	2	59	0	0	172	691
5:45 PM	13	0	3	0	0	0	0	0	0	98	18	0	1	44	0	0	177	725

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	52	0	4	0	0	0	0	0	0	420	92	0	4	200	0	0	772
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 5/16/2022 8:17 AM

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

Corbett Assemblage

Table A - Trip Generation: Hannah Drive

Land Use	Intensity	Daily			AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out	Total	In	Out
210 Single Family Detached Housing - Hannah Drive	13 d.u.	154	77	77	12	3	9	15	9	6

K:\RAL_TPTO_Traffic\011174043 100 Corbett Road\T4 - Analysis\[1-CorbettAssemblage (No Copper Leaf or NC 42 Widening)-TIAData.xls]Trip Gen-HannahDr 8/22/22

Appendix C:
NCDOT TIP Project R-3410
Traffic Memo Excerpts and
Public Hearing Maps

Traffic Technical Memo

for

NC 42 Widening from NC 50 to US 70 Business

STIP Project No. R-3410, Johnston County

WBS No. 38857.1.R1.2

Developed For:

North Carolina Department of Transportation
Highway Division 4

By:

MOTT MACDONALD

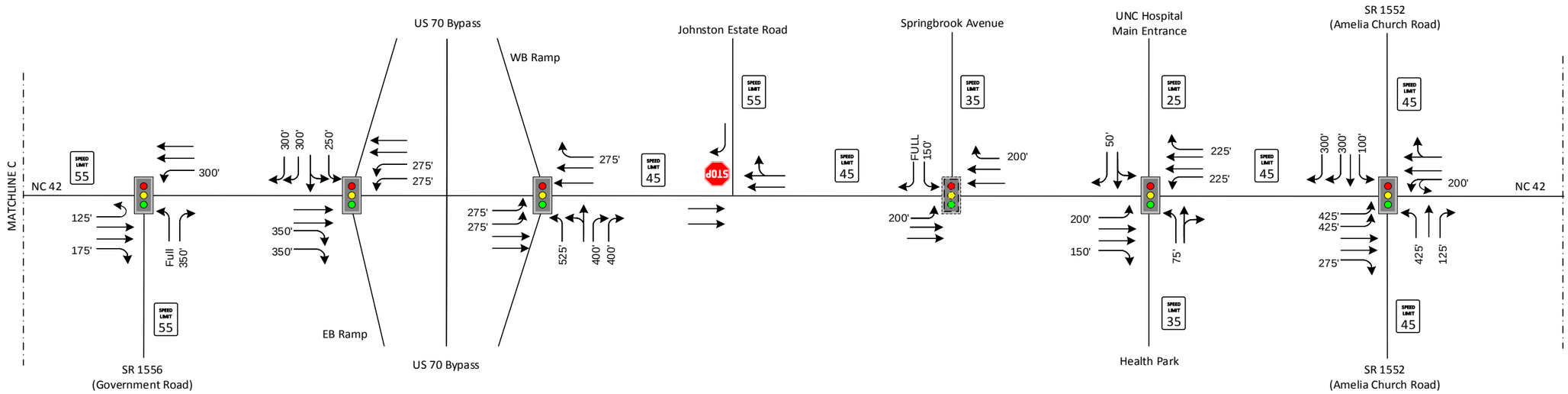
(License No. F-0669)
Post Office Box 700
Fuquay-Varina, North Carolina 27526
Phone: (919) 552-2253
Fax: (919) 552-2254

Project No. 388988AA

September 2018

NORTH CAROLINA PROFESSIONAL SEAL 034993 ENGINEER R. TRAVIS BRASWELL

9/28/18



Legend

- Number of Lanes
- xxx' Storage Distances
- FULL Continuous Lane
- Speed Limit 30
- Existing Signal
- Proposed Signal
- Stop Sign

N

R-3410
NC 42 Widening
Clayton, NC
Johnston County

Figure 8
2040 Design Year Build Laneage
Sheet 4 of 7

MOTT MACDONALD

LEGEND
MATCHLINE SHEET 6
MATCHLINE SHEET 4
42
70
PUBLIC MEETING MAP
PROJECT R-3410
JOHNSTON COUNTY
PROPOSED WIDENING OF NC 42
FROM NC 50 TO US 70 BUSINESS
MAY 2018
ROLL 5 OF 7
NOTES: FULL CONTROLL OF ACCESS - "FULL CONTROL OF ACCESS IS DEFINED AS A CONNECTION TO A FACILITY PROVIDED ONLY VIA RAMPS AT INTERCHANGES. ALL CROSS-STREETS ARE GRADE-SEPERATED. NO PRIVATE DRIVEWAY CONNECTIONS ALLOWED.
PARTIAL CONTROL OF ACCESS - "PARTIAL CONTROL OF ACCESS IS DEFINED AS ONE ACCESS POINT PER PARCEL, FOR PROPERTIES WITH LARGE ROAD FRONTAGES (FOR EXAMPLE, 300 FEET OR MORE). AN ADDITIONAL ACCESS POINT MAY BE CONSIDERED FOR PROPERTIES THAT HAVE ACCESS, SUCH AS VIA SIDE ROAD. ACCESS TO MAINLINE MAY BE ELIMINATED.
DESIGN DATA
FUNCTIONAL CLASSIFICATION: = MINOR ARTERIAL
DESIGN SPEED: = 55/45 MPH
MAX. SUPERELEV: = 6%
(GRAPHIC SCALE)

LEGEND
PUBLIC MEETING MAP
PROJECT R-3410
JOHNSTON COUNTY
PROPOSED WIDENING OF NC 42
FROM NC 50 TO US 70 BUSINESS
MAY 2018
ROLL 6 OF 7
NOTES: FULL CONTROLL OF ACCESS - "FULL CONTROL OF ACCESS IS DEFINED AS A CONNECTION TO A FACILITY PROVIDED ONLY VIA RAMPS AT INTERCHANGES. ALL CROSS-STREETS ARE GRADE-SEPERATED. NO PRIVATE DRIVEWAY CONNECTIONS ALLOWED.
PARTIAL CONTROL OF ACCESS - "PARTIAL CONTROL OF ACCESS IS DEFINED AS ONE ACCESS POINT PER PARCEL FOR PROPERTIES WITH LARGE ROAD FRONTAGES (FOR EXAMPLE, 500 FEET OR MORE). AN ADDITIONAL ACCES POINT MAY BE CONSIDERED FOR PROPERTIES THAT HAVE ACCESS SUCH AS VIA SIDE ROAD. ACCESS TO MAINLINE MAY BE ELIMINATED.
DESIGN DATA
FUNCTIONAL CLASSIFICATION = MINOR ARTERIAL
DESIGN SPEED = 50 MPH
MAX. SUPERELEV. = 0.06
MATCHLINE SHEET 5
MATCHLINE SHEET 7
TYPICAL SECTION NO. 2
FROM 70 BYPASS TO GUY RD
(GRAPHIC SCALE)
PRELIMINARY PLANS
NOT FOR CONSTRUCTION
INCOMPLETE PLANS

Appendix D:

Trip Generation – Scenario 1

(Corbett Assemblage Only)

Corbett Assemblage

Table 1 - Trip Generation: Scenario 1 - Corbett Assemblage Only

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
210 Single Family Detached Housing - Corbett	200	d.u.	1,910	955	955	140	36	104	191	120	71
215 Single Family Attached Housing - Corbett	185	d.u.	1,360	680	680	91	28	63	107	61	46
220 Multifamily Housing (Low-Rise) - Corbett	365	d.u.	2,416	1,208	1,208	136	33	103	178	112	66
Total Net New External Trips: Corbett Assemblage			**5,686**	**2,843**	**2,843**	**367**	**97**	**270**	**476**	**293**	**183**

K:\RAL_TPTO_Traffic\011174043 100 Corbett Road\T4 - Analysis\[1-CorbettAssemblage (No Copper Leaf or NC 42 Widening)-TIAData.xls]Trip Gen-Corbett 8/22/22

Appendix E:

Trip Generation – Scenario 2

(Corbett Assemblage + Copper District)

Lumen Property

Table 1 - Trip Generation

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**
210 Single Family Detached Housing	140	d.u.	1,418	709	709	104	26	78	140	88	52
221 Multifamily Housing (Mid-Rise)	480	d.u.	2,614	1,307	1,307	159	41	118	200	122	78
310 Hotel	120	rooms	928	464	464	55	32	23	64	33	31
720 Medical Office Building	700,000	s.f.	26,806	13,403	13,403	1,262	1,073	189	1,260	189	1,071
820 Shopping Center	35,000	s.f.	2,944	1,472	1,472	169	105	64	250	120	130
850 Supermarket	55,000	s.f.	5,874	2,937	2,937	210	126	84	508	259	249
Subtotal			**40,584**	**20,292**	**20,292**	**1,959**	**1,403**	**556**	**2,422**	**811**	**1,611**
Internal Capture											
210 Single Family Detached Housing			367	184	183	2	0	2	63	44	19
221 Multifamily Housing (Low-Rise)			678	340	338	5	1	4	89	61	28
310 Hotel			311	67	244	20	0	20	15	10	5
720 Medical Office Building			1,839	917	922	117	64	53	51	13	38
820 Shopping Center			865	462	403	45	26	19	61	23	38
850 Supermarket			1,726	923	803	57	32	25	123	50	73
Internal Capture Total			*5,786*	*2,893*	*2,893*	*246*	*123*	*123*	*402*	*201*	*201*
Total External Trips			**34,798**	**17,399**	**17,399**	**1,713**	**1,280**	**433**	**2,020**	**610**	**1,410**
Pass-By Capture	AM	PM									
820 Shopping Center[1]	0%	34%	708	354	354	0	0	0	64	33	31
850 Supermarket	0%	36%	1,494	747	747	0	0	0	138	75	63
Pass-By Capture Total			*2,202*	*1,101*	*1,101*	*0*	*0*	*0*	*202*	*108*	*94*
Total Net New External Trips			**32,596**	**16,298**	**16,298**	**1,713**	**1,280**	**433**	**1,818**	**502**	**1,316**

K:\RAL_TPTO_Traffic\011174036 Lumen\T4 - Analysis\[LumenProperty-TIAData.xls]Trip Gen 6/25/20

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

	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
INPUT	Office	13,403	13,403	1,073	189	189	1,071
	Retail	4,409	4,409	231	148	379	379
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	2,016	2,016	67	196	210	130
	Hotel	464	464	32	23	33	31
		20,292	20,292	1,403	556	811	1,611

INTERNAL TRIPS

	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
OUTPUT	Office	917	922	64	53	13	38
	Retail	1,385	1,206	58	44	73	111
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	524	521	1	6	105	47
	Hotel	67	244	0	20	10	5
		2,893	2,893	123	123	201	201
	% Reduction	14.3%		12.6%		16.6%	

EXTERNAL TRIPS

	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
OUTPUT	Office	12,486	12,481	1,009	136	176	1,033
	Retail	3,024	3,203	173	104	306	268
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	1,492	1,495	66	190	105	83
	Hotel	397	220	32	3	23	26
		17,399	17,399	1,280	433	610	1,410

Corbett Assemblage

Table 2 - Trip Generation: Scenario 2 - Lumen + Corbett Assembalge

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
210 Single Family Detached Housing - Lumen	140	d.u.	1,418	709	709	104	26	78	140	88	52
210 Single Family Detached Housing - Corbett	200	d.u.	1,910	955	955	140	36	104	191	120	71
215 Single Family Attached Housing - Corbett	185	d.u.	1,360	680	680	91	28	63	107	61	46
220 Multifamily Housing (Low-Rise) - Corbett	365	d.u.	2,416	1,208	1,208	136	33	103	178	112	66
221 Multifamily Housing (Mid-Rise) - Lumen	480	d.u.	2,614	1,307	1,307	159	41	118	200	122	78
310 Hotel - Lumen	120	rooms	928	464	464	55	32	23	64	33	31
720 Medical Office Building - Lumen	700,000	s.f.	26,806	13,403	13,403	1,262	1,073	189	1,260	189	1,071
820 Shopping Center - Lumen	35,000	s.f.	2,944	1,472	1,472	169	105	64	250	120	130
850 Supermarket - Lumen	55,000	s.f.	5,874	2,937	2,937	210	126	84	508	259	249
Subtotal			**46,270**	**23,135**	**23,135**	**2,326**	**1,500**	**826**	**2,898**	**1,104**	**1,794**
Internal Capture											
210 Single Family Detached Housing - Lumen			255	143	112	2	0	2	30	21	9
210 Single Family Detached Housing - Corbett			344	193	151	4	1	3	40	28	12
215 Single Family Attached Housing - Corbett			245	137	108	3	1	2	22	14	8
220 Multifamily Housing (Low-Rise) - Corbett			434	243	191	4	1	3	38	26	12
221 Multifamily Housing (Mid-Rise) - Lumen			470	263	207	5	1	4	43	29	14
310 Hotel			311	67	244	20	0	20	15	10	5
720 Medical Office Building			1,982	1,003	979	122	69	53	71	21	50
820 Shopping Center			1,052	516	536	47	27	20	63	24	39
850 Supermarket			2,099	1,031	1,068	59	33	26	124	50	74
Internal Capture Total			*7,192*	*3,596*	*3,596*	*266*	*133*	*133*	*446*	*223*	*223*
Total External Trips			**39,078**	**19,539**	**19,539**	**2,060**	**1,367**	**693**	**2,452**	**881**	**1,571**
Pass-By Capture	AM	PM									
820 Shopping Center[1]	0%	34%	644	322	322	0	0	0	64	33	31
850 Supermarket	0%	36%	1,360	680	680	0	0	0	138	75	63
Pass-By Capture Total			*2,004*	*1,002*	*1,002*	*0*	*0*	*0*	*202*	*108*	*94*
Total Net New External Trips: Lumen + Corbett Road			**37,074**	**18,537**	**18,537**	**2,060**	**1,367**	**693**	**2,250**	**773**	**1,477**
Total Net New External Trips: Lumen Only			**32,596**	**16,298**	**16,298**	**1,713**	**1,280**	**433**	**1,818**	**502**	**1,316**
Corbett Road Rezoning (Net Increast in Trips above Lumen)			**4,478**	**2,239**	**2,239**	**347**	**87**	**260**	**432**	**271**	**161**

Note: Trip generation calculations for Lumen project uses was obtained directly from that study, while trip generation calculations for uses proposed as part of the Corbett Road Rezoning project were calculated using data from the 11th Edition of ITE Trip Generation.

K:\RAL_TPTO_Traffic\011174043 100 Corbett Road\T4 - Analysis\[2-CorbettAssemblage (With Copper Leaf and NC 42 Widening)-TIAData.xls]Trip Gen-Lumen+Corbett 8/22/22

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	13,403	13,403	1,073	189	189	1,071
Retail	4,409	4,409	231	148	379	379
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4,859	4,859	164	466	503	313
Hotel	464	464	32	23	33	31
	23,135	23,135	1,500	826	1,104	1,794

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	1,003	979	69	53	21	50
Retail	1,547	1,604	61	46	73	113
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	979	769	3	14	119	55
Hotel	67	244	0	20	10	5
	3,596	3,596	133	133	223	223
% Reduction	15.5%		11.4%		15.4%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	12,400	12,424	1,004	136	168	1,021
Retail	2,862	2,805	170	102	306	266
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3,880	4,090	161	452	384	258
Hotel	397	220	32	3	23	26
	19,539	19,539	1,367	693	881	1,571

Appendix F:

Intersection Spreadsheets – Scenario 1

INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**Corbett Assemblage**	**Net New Trips:**	97	270	293	183
Location:	**Clayton, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**					
Ct. Date	**5/10/2022**					
N/S Street	**US 70 EB Ramps**	**Annual Growth Rate:**	3.0%	**Existing Year:**	2022	
E/W Street	**NC 42**	**Growth Factor:**	0.1593	**Buildout Year:**	2027	

AM PEAK HOUR
AM PHF = 0.95

	NC 42 Eastbound			NC 42 Westbound			US 70 EB Ramps Northbound			US 70 EB Ramps Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	729	175	91	665	0	0	0	0	83	3	35
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	729	175	91	665	0	0	0	0	83	3	35
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.000	0.000	0.000	0.159	0.159	0.159
2027 Background Growth	0	116	28	14	106	0	0	0	0	13	0	6
2027 Background Traffic	0	845	203	105	771	0	0	0	0	96	3	41
Project Traffic												
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	35%	0%	0%
Inbound Project Traffic	0	10	0	0	0	0	0	0	0	34	0	0
Percent Assignment Outbound	0%	0%	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	27	27	0	0	0	0	0	0	0
Total Project Traffic	0	10	0	27	27	0	0	0	0	34	0	0
2027 Buildout Total	0	855	203	132	798	0	0	0	0	130	3	41
Percent Impact (Approach)		0.9%			5.8%			-			19.5%	

Overall Percent Impact 4.5%

PM PEAK HOUR
PM PHF = 0.97

	NC 42 Eastbound			NC 42 Westbound			US 70 EB Ramps Northbound			US 70 EB Ramps Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	571	193	167	812	0	0	0	0	61	3	129
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	571	193	167	812	0	0	0	0	61	3	129
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.000	0.000	0.000	0.159	0.159	0.159
2027 Background Growth	0	91	31	27	129	0	0	0	0	10	0	21
2027 Background Traffic	0	662	224	194	941	0	0	0	0	71	3	150
Project Traffic												
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	35%	0%	0%
Inbound Project Traffic	0	29	0	0	0	0	0	0	0	103	0	0
Percent Assignment Outbound	0%	0%	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	18	18	0	0	0	0	0	0	0
Total Project Traffic	0	29	0	18	18	0	0	0	0	103	0	0
2027 Buildout Total	0	691	224	212	959	0	0	0	0	174	3	150
Percent Impact (Approach)		3.2%			3.1%			-			31.5%	

Overall Percent Impact 7.0%

k:\ral_tpto_traffic\011174043 100 corbett road\t4 - analysis\[1-corbettassemblage (no copper leaf or nc 42 widening)-tiadata.xls]int. #1 *8/22/22*

INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**US 70 WB Ramps**
E/W Street:	**NC 42**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.91

Description	NC 42 **Eastbound** Left	Through	Right	NC 42 **Westbound** Left	Through	Right	US 70 WB Ramps **Northbound** Left	Through	Right	US 70 WB Ramps **Southbound** Left	Through	Right
2022 Traffic Count	141	659	0	0	515	106	228	0	154	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	141	659	0	0	515	106	228	0	154	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.159	0.159	0.159	0.000	0.000	0.000
2027 Background Growth	22	105	0	0	82	17	36	0	25	0	0	0
2027 Background Traffic	163	764	0	0	597	123	264	0	179	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	45%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%
Inbound Project Traffic	0	44	0	0	0	0	0	0	10	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	20%	35%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	54	95	0	0	0	0	0	0
Total Project Traffic	0	44	0	0	54	95	0	0	10	0	0	0
2027 Buildout Total	163	808	0	0	651	218	264	0	189	0	0	0
Percent Impact (Approach)		4.5%			17.1%			2.2%			-	

Overall Percent Impact 8.9%

PM PEAK HOUR
PM PHF = 0.99

Description	NC 42 **Eastbound** Left	Through	Right	NC 42 **Westbound** Left	Through	Right	US 70 WB Ramps **Northbound** Left	Through	Right	US 70 WB Ramps **Southbound** Left	Through	Right
2022 Traffic Count	58	580	0	0	808	163	164	0	82	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	58	580	0	0	808	163	164	0	82	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.159	0.159	0.159	0.000	0.000	0.000
2027 Background Growth	9	92	0	0	129	26	26	0	13	0	0	0
2027 Background Traffic	67	672	0	0	937	189	190	0	95	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	45%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%
Inbound Project Traffic	0	132	0	0	0	0	0	0	29	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	20%	35%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	37	64	0	0	0	0	0	0
Total Project Traffic	0	132	0	0	37	64	0	0	29	0	0	0
2027 Buildout Total	67	804	0	0	974	253	190	0	124	0	0	0
Percent Impact (Approach)		15.2%			8.2%			9.2%			-	

Overall Percent Impact 10.9%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Johnson Estate Road/West Copper District Access**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.96

Description	NC 42 Eastbound Left	NC 42 Eastbound Through	NC 42 Eastbound Right	NC 42 Westbound Left	NC 42 Westbound Through	NC 42 Westbound Right	West Copper District Access Northbound Left	West Copper District Access Northbound Through	West Copper District Access Northbound Right	Johnson Estate Road Southbound Left	Johnson Estate Road Southbound Through	Johnson Estate Road Southbound Right
2022 Traffic Count	57	849	0	0	589	7	0	0	0	0	0	5
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	57	849	0	0	589	7	0	0	0	0	0	5
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.000	0.000	0.159
2027 Background Growth	9	135	0	0	94	1	0	0	0	0	0	1
2027 Background Traffic	66	984	0	0	683	8	0	0	0	0	0	6
Project Traffic												
Percent Assignment Inbound	0%	20%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	19	34	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	55%	0%	0%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	149	0	0	0	13	0	0	0
Total Project Traffic	0	19	34	0	149	0	0	0	13	0	0	0
2027 Buildout Total	66	1003	34	0	832	8	0	0	13	0	0	6
Percent Impact (Approach)		4.8%			17.7%			100.0%			0.0%	

Overall Percent Impact 11.0%

PM PEAK HOUR
PM PHF = 0.96

Description	NC 42 Eastbound Left	NC 42 Eastbound Through	NC 42 Eastbound Right	NC 42 Westbound Left	NC 42 Westbound Through	NC 42 Westbound Right	West Copper District Access Northbound Left	West Copper District Access Northbound Through	West Copper District Access Northbound Right	Johnson Estate Road Southbound Left	Johnson Estate Road Southbound Through	Johnson Estate Road Southbound Right
2022 Traffic Count	15	652	0	0	917	8	0	0	0	0	0	38
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	15	652	0	0	917	8	0	0	0	0	0	38
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.000	0.000	0.159
2027 Background Growth	2	104	0	0	146	1	0	0	0	0	0	6
2027 Background Traffic	17	756	0	0	1063	9	0	0	0	0	0	44
Project Traffic												
Percent Assignment Inbound	0%	20%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	59	103	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	55%	0%	0%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	101	0	0	0	9	0	0	0
Total Project Traffic	0	59	103	0	101	0	0	0	9	0	0	0
2027 Buildout Total	17	815	103	0	1164	9	0	0	9	0	0	44
Percent Impact (Approach)		17.3%			8.6%			100.0%			0.0%	

Overall Percent Impact 12.6%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Springbrook Avenue/East Copper District Access**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate: 3.0% **Existing Year:** 2022
Growth Factor: 0.159274 **Buildout Year:** 2027

AM PEAK HOUR
AM PHF = 0.97

Description	NC 42 Eastbound				NC 42 Westbound			East Copper District Access Northbound			Springbrook Avenue Southbound		
	U-Turn	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	155	691	0	0	553	105	0	0	0	46	0	41
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	155	691	0	0	553	105	0	0	0	46	0	41
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.159	0.000	0.159
2027 Background Growth	0	25	110	0	0	88	17	0	0	0	7	0	7
2027 Background Traffic	0	180	801	0	0	641	122	0	0	0	53	0	48
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	5%	0%
Inbound Project Traffic	0	0	0	19	5	0	0	0	0	0	0	5	0
Percent Assignment Outbound	0%	0%	5%	0%	0%	5%	0%	50%	5%	10%	0%	0%	0%
Outbound Project Traffic	0	0	14	0	0	14	0	135	14	27	0	0	0
Total Project Traffic	0	0	14	19	5	14	0	135	14	27	0	5	0
2027 Buildout Total	0	180	815	19	5	655	122	135	14	27	53	5	48
Percent Impact (Approach)		3.3%				2.4%			100.0%			4.7%	

Overall Percent Impact 11.2%

PM PEAK HOUR
PM PHF = 0.96

Description	NC 42 Eastbound				NC 42 Westbound			East Copper District Access Northbound			Springbrook Avenue Southbound		
	U-Turn	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	29	613	0	0	803	35	0	0	0	100	0	137
Growth to 2020	0	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	29	613	0	0	803	35	0	0	0	100	0	137
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.159	0.000	0.159
2027 Background Growth	0	5	98	0	0	128	6	0	0	0	16	0	22
2027 Background Traffic	0	34	711	0	0	931	41	0	0	0	116	0	159
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	5%	0%
Inbound Project Traffic	0	0	0	59	15	0	0	0	0	0	0	15	0
Percent Assignment Outbound	0%	0%	5%	0%	0%	5%	0%	50%	5%	10%	0%	0%	0%
Outbound Project Traffic	0	0	9	0	0	9	0	92	9	18	0	0	0
Total Project Traffic	0	0	9	59	15	9	0	92	9	18	0	15	0
2027 Buildout Total	0	34	720	59	15	940	41	92	9	18	116	15	159
Percent Impact (Approach)		8.4%				2.4%			100.0%			5.2%	

Overall Percent Impact 10.2%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Johnston Health/Health Park Way**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.96

Description	NC 42 Eastbound			NC 42 Westbound			Health Park Way Northbound			Johnson Health Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	86	604	18	18	638	60	3	0	5	12	0	16
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	86	604	18	18	638	60	3	0	5	12	0	16
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	14	96	3	3	102	10	0	0	1	2	0	3
2027 Background Traffic	100	700	21	21	740	70	3	0	6	14	0	19
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	5	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	15%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	41	0	0	14	0	0	0	0	0	0	0
Total Project Traffic	0	41	0	0	19	0	0	0	0	0	0	0
2027 Buildout Total	100	741	21	21	759	70	3	0	6	14	0	19
Percent Impact (Approach)		4.8%			2.2%			0.0%			0.0%	

Overall Percent Impact 3.4%

PM PEAK HOUR
PM PHF = 0.96

Description	NC 42 Eastbound			NC 42 Westbound			Health Park Way Northbound			Johnson Health Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	13	692	6	1	734	16	27	1	16	48	1	76
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	13	692	6	1	734	16	27	1	16	48	1	76
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	2	110	1	0	117	3	4	0	3	8	0	12
2027 Background Traffic	15	802	7	1	851	19	31	1	19	56	1	88
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	15	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	15%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	27	0	0	9	0	0	0	0	0	0	0
Total Project Traffic	0	27	0	0	24	0	0	0	0	0	0	0
2027 Buildout Total	15	829	7	1	875	19	31	1	19	56	1	88
Percent Impact (Approach)		3.2%			2.7%			0.0%			0.0%	

Overall Percent Impact 2.6%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Amelia Church Road**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.97

Description	NC 42 Eastbound Left	NC 42 Eastbound Through	NC 42 Eastbound Right	NC 42 Westbound Left	NC 42 Westbound Through	NC 42 Westbound Right	Amelia Church Road Northbound Left	Amelia Church Road Northbound Through	Amelia Church Road Northbound Right	Amelia Church Road Southbound Left	Amelia Church Road Southbound Through	Amelia Church Road Southbound Right
2022 Traffic Count	285	298	35	17	294	21	115	362	45	23	162	305
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	285	298	35	17	294	21	115	362	45	23	162	305
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	45	47	6	3	47	3	18	58	7	4	26	49
2027 Background Traffic	330	345	41	20	341	24	133	420	52	27	188	354
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	10%	0%
Inbound Project Traffic	0	0	0	19	5	0	0	0	0	0	10	0
Percent Assignment Outbound	5%	10%	0%	0%	0%	0%	5%	5%	15%	0%	0%	0%
Outbound Project Traffic	14	27	0	0	0	0	14	14	41	0	0	0
Total Project Traffic	14	27	0	19	5	0	14	14	41	0	10	0
2027 Buildout Total	344	372	41	39	346	24	147	434	93	27	198	354
Percent Impact (Approach)		5.4%			5.9%			10.2%			1.7%	

Overall Percent Impact 6.0%

PM PEAK HOUR
PM PHF = 0.95

Description	NC 42 Eastbound Left	NC 42 Eastbound Through	NC 42 Eastbound Right	NC 42 Westbound Left	NC 42 Westbound Through	NC 42 Westbound Right	Amelia Church Road Northbound Left	Amelia Church Road Northbound Through	Amelia Church Road Northbound Right	Amelia Church Road Southbound Left	Amelia Church Road Southbound Through	Amelia Church Road Southbound Right
2022 Traffic Count	265	391	91	22	348	26	87	191	16	14	386	318
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	265	391	91	22	348	26	87	191	16	14	386	318
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	42	62	14	4	55	4	14	30	3	2	61	51
2027 Background Traffic	307	453	105	26	403	30	101	221	19	16	447	369
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	10%	0%
Inbound Project Traffic	0	0	0	59	15	0	0	0	0	0	29	0
Percent Assignment Outbound	5%	10%	0%	0%	0%	0%	5%	5%	15%	0%	0%	0%
Outbound Project Traffic	9	18	0	0	0	0	9	9	27	0	0	0
Total Project Traffic	9	18	0	59	15	0	9	9	27	0	29	0
2027 Buildout Total	316	471	105	85	418	30	110	230	46	16	476	369
Percent Impact (Approach)		3.0%			13.9%			11.7%			3.4%	

Overall Percent Impact 6.5%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Corbett Road**
E/W Street:	**Amelia Church Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.91

Description	Amelia Church Road Eastbound			Amelia Church Road Westbound			Corbett Road Northbound			- Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	104	27	9	429	0	90	0	6	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	104	27	9	429	0	90	0	6	0	0	0
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.159	0.000	0.159	0.000	0.000	0.000
2027 Background Growth	0	17	4	1	68	0	14	0	1	0	0	0
2027 Background Traffic	0	121	31	10	497	0	104	0	7	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	30%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	29	5	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	25%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	68	0	14	0	0	0
Total Project Traffic	0	0	29	5	0	0	68	0	14	0	0	0
2027 Buildout Total	0	121	60	15	497	0	172	0	21	0	0	0
Percent Impact (Approach)		16.0%			1.0%			42.5%			-	

Overall Percent Impact 13.1%

PM PEAK HOUR
PM PHF = 0.94

Description	Amelia Church Road Eastbound			Amelia Church Road Westbound			Corbett Road Northbound			- Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	399	74	6	191	0	46	0	9	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	399	74	6	191	0	46	0	9	0	0	0
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.159	0.000	0.159	0.000	0.000	0.000
2027 Background Growth	0	64	12	1	30	0	7	0	1	0	0	0
2027 Background Traffic	0	463	86	7	221	0	53	0	10	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	30%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	88	15	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	25%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	46	0	9	0	0	0
Total Project Traffic	0	0	88	15	0	0	46	0	9	0	0	0
2027 Buildout Total	0	463	174	22	221	0	99	0	19	0	0	0
Percent Impact (Approach)		13.8%			6.2%			46.6%			-	

Overall Percent Impact 15.8%

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INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**Corbett Assemblage**	**Net New Trips:**	97	270	293	183
Location:	**Clayton, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**					
Ct. Date	**Balanced with Amelia @ Corbett**					
N/S Street:	**Corbett Road**	**Annual Growth Rate:**	3.0%	**Existing Year:**	2022	
E/W Street:	**Site Access D (Single Family South)/Hannah Drive**	**Growth Factor:**	0.159274	**Buildout Year:**	2027	

AM PEAK HOUR
AM PHF = 0.90

Description	Site Access D (Single Family South) Eastbound			Hannah Drive Westbound			Corbett Road Northbound			Corbett Road Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	2	0	7	0	89	1	2	34	0
2022 Existing Traffic	0	0	0	2	0	7	0	89	1	2	34	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	14	0	0	5	0
2027 Background Traffic	0	0	0	2	0	7	0	103	1	2	39	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	5
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	14	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	14	0	0	0	0	0	0	0	0	0	0	5
2027 Buildout Total	14	0	0	2	0	7	0	103	1	2	39	5
Percent Impact (Approach)		100.0%			0.0%			0.0%			10.9%	

Overall Percent Impact 11.0%

PM PEAK HOUR
PM PHF = 0.90

Description	Site Access D (Single Family South) Eastbound			Hannah Drive Westbound			Corbett Road Northbound			Corbett Road Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	1	0	5	0	50	2	7	73	0
2022 Existing Traffic	0	0	0	1	0	5	0	50	2	7	73	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	8	0	0	12	0
2027 Background Traffic	0	0	0	1	0	5	0	58	2	7	85	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	15
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	9	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	9	0	0	0	0	0	0	0	0	0	0	15
2027 Buildout Total	9	0	0	1	0	5	0	58	2	7	85	15
Percent Impact (Approach)		100.0%			0.0%			0.0%			14.0%	

Overall Percent Impact 13.2%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**Balanced with Amelia @ Corbett**
N/S Street:	**Corbett Road**
E/W Street:	**Site Access A (Multifamily North)**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.90

Description	Site Access A (Multifamily North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	96	0	0	36	0
2022 Existing Traffic	0	0	0	0	0	0	0	96	0	0	36	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	15	0	0	6	0
2027 Background Traffic	0	0	0	0	0	0	0	111	0	0	42	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	24	10
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	81	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	81	0	0	24	10
2027 Buildout Total	0	0	0	0	0	0	0	192	0	0	66	10
Percent Impact (Approach)		-			-			42.2%			44.7%	

Overall Percent Impact 42.9%

PM PEAK HOUR
PM PHF = 0.90

Description	Site Access A (Multifamily North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	55	0	0	80	0
2022 Existing Traffic	0	0	0	0	0	0	0	55	0	0	80	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	9	0	0	13	0
2027 Background Traffic	0	0	0	0	0	0	0	64	0	0	93	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	73	29
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	55	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	55	0	0	73	29
2027 Buildout Total	0	0	0	0	0	0	0	119	0	0	166	29
Percent Impact (Approach)		-			-			46.2%			52.3%	

Overall Percent Impact 50.0%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**Balanced with Amelia @ Corbett**
N/S Street:	**Corbett Road**
E/W Street:	**Site Access B (Multifamily South)**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.90

Description	Site Access B (Multifamily South) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	96	0	0	36	0
2022 Existing Traffic	0	0	0	0	0	0	0	96	0	0	36	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	15	0	0	6	0
2027 Background Traffic	0	0	0	0	0	0	0	111	0	0	42	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	15	10
Percent Assignment Outbound	20%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Outbound Project Traffic	54	0	0	0	0	0	0	27	0	0	0	0
Total Project Traffic	54	0	0	0	0	0	0	27	0	0	15	10
2027 Buildout Total	54	0	0	0	0	0	0	138	0	0	57	10
Percent Impact (Approach)		100.0%			-			19.6%			37.3%	

Overall Percent Impact 40.9%

PM PEAK HOUR
PM PHF = 0.90

Description	Site Access B (Multifamily South) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	55	0	0	80	0
2022 Existing Traffic	0	0	0	0	0	0	0	55	0	0	80	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	9	0	0	13	0
2027 Background Traffic	0	0	0	0	0	0	0	64	0	0	93	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	44	29
Percent Assignment Outbound	20%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Outbound Project Traffic	37	0	0	0	0	0	0	18	0	0	0	0
Total Project Traffic	37	0	0	0	0	0	0	18	0	0	44	29
2027 Buildout Total	37	0	0	0	0	0	0	82	0	0	137	29
Percent Impact (Approach)		100.0%			-			22.0%			44.0%	

Overall Percent Impact 44.9%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 1: No Copper Dist. or NC 42 Widen.**
Ct. Date	**Balanced with Amelia @ Corbett**
N/S Street:	**Corbett Road**
E/W Street:	**Site Access C (Single Family North)**

	AM In	AM Out	PM In	PM Out
Net New Trips:	97	270	293	183
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.90

Description	Site Access C (Single Family North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	96	0	0	36	0
2022 Existing Traffic	0	0	0	0	0	0	0	96	0	0	36	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	15	0	0	6	0
2027 Background Traffic	0	0	0	0	0	0	0	111	0	0	42	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	5	10
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
Outbound Project Traffic	14	0	0	0	0	0	0	14	0	0	0	0
Total Project Traffic	14	0	0	0	0	0	0	14	0	0	5	10
2027 Buildout Total	14	0	0	0	0	0	0	125	0	0	47	10
Percent Impact (Approach)		100.0%			-			11.2%			26.3%	

Overall Percent Impact 21.9%

PM PEAK HOUR
PM PHF = 0.90

Description	Site Access C (Single Family North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	55	0	0	80	0
2022 Existing Traffic	0	0	0	0	0	0	0	55	0	0	80	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	9	0	0	13	0
2027 Background Traffic	0	0	0	0	0	0	0	64	0	0	93	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	15	29
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
Outbound Project Traffic	9	0	0	0	0	0	0	9	0	0	0	0
Total Project Traffic	9	0	0	0	0	0	0	9	0	0	15	29
2027 Buildout Total	9	0	0	0	0	0	0	73	0	0	108	29
Percent Impact (Approach)		100.0%			-			12.3%			32.1%	

Overall Percent Impact 28.3%

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Appendix G:

Intersection Spreadsheets – Scenario 2

INTERSECTION ANALYSIS SHEET

		AM In	AM Out	PM In	PM Out
Project:	**Corbett Assemblage**	**Net New Trips:**	87	260	271	161
Location:	**Clayton, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**					
Ct. Date	**5/10/2022**					
N/S Street:	**US 70 EB Ramps**	**Annual Growth Rate:**	3.0%	**Existing Year:**	2022
E/W Street:	**NC 42**	**Growth Factor:**	0.1593	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.95

Description	NC42 Eastbound			NC42 Westbound			US 70 EB Ramps Northbound			US 70 EB Ramps Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	729	175	91	665	0	0	0	0	83	3	35
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	729	175	91	665	0	0	0	0	83	3	35
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.000	0.000	0.000	0.159	0.159	0.159
2027 Background Growth	0	116	28	14	106	0	0	0	0	13	0	6
Copper District (Lumen) Site Trips	0	128	0	43	43	0	0	0	0	448	0	0
Total Approved Dev Trips	0	128	0	43	43	0	0	0	0	448	0	0
2027 Background Traffic	0	973	203	148	814	0	0	0	0	544	3	41
Project Traffic												
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	35%	0%	0%
Inbound Project Traffic	0	9	0	0	0	0	0	0	0	30	0	0
Percent Assignment Outbound	0%	0%	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	26	26	0	0	0	0	0	0	0
Total Project Traffic	0	9	0	26	26	0	0	0	0	30	0	0
2027 Buildout Total	0	982	203	174	840	0	0	0	0	574	3	41
Percent Impact (Approach)		0.8%			5.1%			-			4.9%	

Overall Percent Impact 3.2%

PM PEAK HOUR
PM PHF = 0.97

Description	NC42 Eastbound			NC42 Westbound			US 70 EB Ramps Northbound			US 70 EB Ramps Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	571	193	167	812	0	0	0	0	61	3	129
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	571	193	167	812	0	0	0	0	61	3	129
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.000	0.000	0.000	0.159	0.159	0.159
2027 Background Growth	0	91	31	27	129	0	0	0	0	10	0	21
Copper District (Lumen) Site Trips	0	50	0	132	132	0	0	0	0	176	0	0
Total Approved Dev Trips	0	50	0	132	132	0	0	0	0	176	0	0
2027 Background Traffic	0	712	224	326	1073	0	0	0	0	247	3	150
Project Traffic												
Percent Assignment Inbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	35%	0%	0%
Inbound Project Traffic	0	27	0	0	0	0	0	0	0	95	0	0
Percent Assignment Outbound	0%	0%	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	16	16	0	0	0	0	0	0	0
Total Project Traffic	0	27	0	16	16	0	0	0	0	95	0	0
2027 Buildout Total	0	739	224	342	1089	0	0	0	0	342	3	150
Percent Impact (Approach)		2.8%			2.2%			-			19.2%	

Overall Percent Impact 5.3%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**US 70 WB Ramps**
E/W Street:	**NC 42**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	87	260	271	161
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.91

Description	NC 42 **Eastbound** Left	Through	Right	NC 42 **Westbound** Left	Through	Right	US 70 WB Ramps **Northbound** Left	Through	Right	US 70 WB Ramps **Southbound** Left	Through	Right
2022 Traffic Count	141	659	0	0	515	106	228	0	154	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	141	659	0	0	515	106	228	0	154	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.159	0.159	0.159	0.000	0.000	0.000
2027 Background Growth	22	105	0	0	82	17	36	0	25	0	0	0
Copper District (Lumen) Site Trips	0	576	0	0	87	152	0	0	128	0	0	0
Total Approved Dev Trips	0	576	0	0	87	152	0	0	128	0	0	0
2027 Background Traffic	163	1340	0	0	684	275	264	0	307	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	45%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%
Inbound Project Traffic	0	39	0	0	0	0	0	0	9	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	20%	35%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	52	91	0	0	0	0	0	0
Total Project Traffic	0	39	0	0	52	91	0	0	9	0	0	0
2027 Buildout Total	163	1379	0	0	736	366	264	0	316	0	0	0
Percent Impact (Approach)		2.5%			13.0%			1.6%			-	

Overall Percent Impact 5.9%

PM PEAK HOUR
PM PHF = 0.99

Description	NC 42 **Eastbound** Left	Through	Right	NC 42 **Westbound** Left	Through	Right	US 70 WB Ramps **Northbound** Left	Through	Right	US 70 WB Ramps **Southbound** Left	Through	Right
2022 Traffic Count	58	580	0	0	808	163	164	0	82	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	58	580	0	0	808	163	164	0	82	0	0	0
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.159	0.159	0.159	0.000	0.000	0.000
2027 Background Growth	9	92	0	0	129	26	26	0	13	0	0	0
Copper District (Lumen) Site Trips	0	226	0	0	263	461	0	0	50	0	0	0
Total Approved Dev Trips	0	226	0	0	263	461	0	0	50	0	0	0
2027 Background Traffic	67	898	0	0	1200	650	190	0	145	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	45%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%
Inbound Project Traffic	0	122	0	0	0	0	0	0	27	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	20%	35%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	32	56	0	0	0	0	0	0
Total Project Traffic	0	122	0	0	32	56	0	0	27	0	0	0
2027 Buildout Total	67	1020	0	0	1232	706	190	0	172	0	0	0
Percent Impact (Approach)		11.2%			4.5%			7.5%			-	

Overall Percent Impact 7.0%

INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Johnson Estate Road/West Copper District Access**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	87	260	271	161
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.96

Description	NC 42 Eastbound			NC 42 Westbound			West Copper District Access Northbound			Johnson Estate Road Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	57	849	0	0	589	7	0	0	0	0	0	5
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	57	849	0	0	589	7	0	0	0	0	0	5
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.000	0.000	0.159
2027 Background Growth	9	135	0	0	94	1	0	0	0	0	0	1
Copper District (Lumen) Site Trips	0	256	448	0	238	0	0	0	86	0	0	0
Total Approved Dev Trips	0	256	448	0	238	0	0	0	86	0	0	0
Convert J.E. Forecast to RIRO	-66	66	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	1306	448	0	921	8	0	0	86	0	0	6
Project Traffic												
Percent Assignment Inbound	0%	20%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	17	30	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	55%	0%	0%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	143	0	0	0	12	0	0	0
Total Project Traffic	0	17	30	0	143	0	0	0	12	0	0	0
2027 Buildout Total	0	1323	478	0	1064	8	0	0	98	0	0	6
Percent Impact (Approach)		2.6%			13.3%			12.2%			0.0%	

Overall Percent Impact 6.8%

PM PEAK HOUR
PM PHF = 0.96

Description	NC 42 Eastbound			NC 42 Westbound			West Copper District Access Northbound			Johnson Estate Road Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	15	652	0	0	917	8	0	0	0	0	0	38
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	15	652	0	0	917	8	0	0	0	0	0	38
Growth Factor (0.03 per year)	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.000	0.000	0.159
2027 Background Growth	2	104	0	0	146	1	0	0	0	0	0	6
Copper District (Lumen) Site Trips	0	94	181	0	724	0	0	0	268	0	0	0
Total Approved Dev Trips	0	94	181	0	724	0	0	0	268	0	0	0
Convert J.E. Forecast to RIRO	-17	17	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	867	181	0	1787	9	0	0	268	0	0	44
Project Traffic												
Percent Assignment Inbound	0%	20%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	54	95	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	55%	0%	0%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	89	0	0	0	8	0	0	0
Total Project Traffic	0	54	95	0	89	0	0	0	8	0	0	0
2027 Buildout Total	0	921	276	0	1876	9	0	0	276	0	0	44
Percent Impact (Approach)		12.4%			4.7%			2.9%			0.0%	

Overall Percent Impact 7.2%

INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Springbrook Avenue/East Copper District Access**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	87	260	271	161
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.97

	NC 42 Eastbound				NC 42 Westbound			East Copper District Access Northbound			Springbrook Avenue Southbound		
Description	U-Turn	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	155	691	0	0	553	105	0	0	0	46	0	41
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	155	691	0	0	553	105	0	0	0	46	0	41
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.159	0.000	0.159
2027 Background Growth	0	25	110	0	0	88	17	0	0	0	7	0	7
Copper District (Lumen) Site Trips	43	0	43	256	512	0	0	195	22	130	0	64	0
Total Approved Dev Trips	43	0	43	256	512	0	0	195	22	130	0	64	0
Convert J.E. Forecast to RIRO	0	66	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	43	246	844	256	512	641	122	195	22	130	53	64	48
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	5%	0%
Inbound Project Traffic	0	0	0	17	4	0	0	0	0	0	0	4	0
Percent Assignment Outbound	0%	0%	5%	0%	0%	5%	0%	50%	5%	10%	0%	0%	0%
Outbound Project Traffic	0	0	13	0	0	13	0	130	13	26	0	0	0
Total Project Traffic	0	0	13	17	4	13	0	130	13	26	0	4	0
2027 Buildout Total	43	246	857	273	516	654	122	325	35	156	53	68	48
Percent Impact (Approach)			2.1%			1.3%			32.8%			2.4%	

Overall Percent Impact 6.5%

PM PEAK HOUR
PM PHF = 0.96

	NC 42 Eastbound				NC 42 Westbound			East Copper District Access Northbound			Springbrook Avenue Southbound		
Description	U-Turn	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	29	613	0	0	803	35	0	0	0	100	0	137
Growth to 2020	0	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	29	613	0	0	803	35	0	0	0	100	0	137
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.000	0.000	0.159	0.159	0.000	0.000	0.000	0.159	0.000	0.159
2027 Background Growth	0	5	98	0	0	128	6	0	0	0	16	0	22
Copper District (Lumen) Site Trips	132	0	88	143	260	-59	0	644	66	433	0	25	0
Total Approved Dev Trips	132	0	88	143	260	-59	0	644	66	433	0	25	0
Convert J.E. Forecast to RIRO	0	17	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	132	51	799	143	260	872	41	644	66	433	116	25	159
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	5%	0%
Inbound Project Traffic	0	0	0	54	14	0	0	0	0	0	0	14	0
Percent Assignment Outbound	0%	0%	5%	0%	0%	5%	0%	50%	5%	10%	0%	0%	0%
Outbound Project Traffic	0	0	8	0	0	8	0	81	8	16	0	0	0
Total Project Traffic	0	0	8	54	14	8	0	81	8	16	0	14	0
2027 Buildout Total	132	51	807	197	274	880	41	725	74	449	116	39	159
Percent Impact (Approach)			5.2%			1.8%			8.4%			4.5%	

Overall Percent Impact 5.1%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Johnston Health/Health Park Way**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	87	260	271	161
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.96

Description	NC 42 Eastbound			NC 42 Westbound			Health Park Way Northbound			Johnson Health Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	86	604	18	18	638	60	3	0	5	12	0	16
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	86	604	18	18	638	60	3	0	5	12	0	16
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	14	96	3	3	102	10	0	0	1	2	0	3
Copper District (Lumen) Site Trips	0	173	0	0	512	0	0	0	0	0	0	0
Total Approved Dev Trips	0	173	0	0	512	0	0	0	0	0	0	0
2027 Background Traffic	100	873	21	21	1252	70	3	0	6	14	0	19
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	4	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	15%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	39	0	0	13	0	0	0	0	0	0	0
Total Project Traffic	0	39	0	0	17	0	0	0	0	0	0	0
2027 Buildout Total	100	912	21	21	1269	70	3	0	6	14	0	19
Percent Impact (Approach)		3.8%			1.3%			0.0%			0.0%	

Overall Percent Impact 2.3%

PM PEAK HOUR
PM PHF = 0.96

Description	NC 42 Eastbound			NC 42 Westbound			Health Park Way Northbound			Johnson Health Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	13	692	6	1	734	16	27	1	16	48	1	76
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	13	692	6	1	734	16	27	1	16	48	1	76
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	2	110	1	0	117	3	4	0	3	8	0	12
Copper District (Lumen) Site Trips	0	526	0	0	201	0	0	0	0	0	0	0
Total Approved Dev Trips	0	526	0	0	201	0	0	0	0	0	0	0
2027 Background Traffic	15	1328	7	1	1052	19	31	1	19	56	1	88
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	14	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	15%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	24	0	0	8	0	0	0	0	0	0	0
Total Project Traffic	0	24	0	0	22	0	0	0	0	0	0	0
2027 Buildout Total	15	1352	7	1	1074	19	31	1	19	56	1	88
Percent Impact (Approach)		1.7%			2.0%			0.0%			0.0%	

Overall Percent Impact 1.7%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Amelia Church Road**
E/W Street:	**NC 42**

	AM In	AM Out	PM In	PM Out
Net New Trips:	87	260	271	161
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.97

Description	NC 42 Eastbound			NC 42 Westbound			Amelia Church Road Northbound			Amelia Church Road Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	285	298	35	17	294	21	115	362	45	23	162	305
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	285	298	35	17	294	21	115	362	45	23	162	305
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	45	47	6	3	47	3	18	58	7	4	26	49
Copper District (Lumen) Site Trips	43	108	22	0	320	0	64	0	0	0	0	128
Total Approved Dev Trips	43	108	22	0	320	0	64	0	0	0	0	128
2027 Background Traffic	373	453	63	20	661	24	197	420	52	27	188	482
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	10%	0%
Inbound Project Traffic	0	0	0	17	4	0	0	0	0	0	9	0
Percent Assignment Outbound	5%	10%	0%	0%	0%	0%	5%	5%	15%	0%	0%	0%
Outbound Project Traffic	13	26	0	0	0	0	13	13	39	0	0	0
Total Project Traffic	13	26	0	17	4	0	13	13	39	0	9	0
2027 Buildout Total	386	479	63	37	665	24	210	433	91	27	197	482
Percent Impact (Approach)		4.2%			2.9%			8.9%			1.3%	

Overall Percent Impact 4.3%

PM PEAK HOUR
PM PHF = 0.95

Description	NC 42 Eastbound			NC 42 Westbound			Amelia Church Road Northbound			Amelia Church Road Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	265	391	91	22	348	26	87	191	16	14	386	318
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	265	391	91	22	348	26	87	191	16	14	386	318
Growth Factor (0.03 per year)	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
2027 Background Growth	42	62	14	4	55	4	14	30	3	2	61	51
Copper District (Lumen) Site Trips	132	329	66	0	126	0	25	0	0	0	0	50
Total Approved Dev Trips	132	329	66	0	126	0	25	0	0	0	0	50
2027 Background Traffic	439	782	171	26	529	30	126	221	19	16	447	419
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	10%	0%
Inbound Project Traffic	0	0	0	54	14	0	0	0	0	0	27	0
Percent Assignment Outbound	5%	10%	0%	0%	0%	0%	5%	5%	15%	0%	0%	0%
Outbound Project Traffic	8	16	0	0	0	0	8	8	24	0	0	0
Total Project Traffic	8	16	0	54	14	0	8	8	24	0	27	0
2027 Buildout Total	447	798	171	80	543	30	134	229	43	16	474	419
Percent Impact (Approach)		1.7%			10.4%			9.9%			3.0%	

Overall Percent Impact 4.7%

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INTERSECTION ANALYSIS SHEET

Project:	**Corbett Assemblage**
Location:	**Clayton, NC**
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**
Ct. Date	**5/10/2022**
N/S Street:	**Corbett Road**
E/W Street:	**Amelia Church Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	87	260	271	161
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	3.0%	**Existing Year:**	2022
Growth Factor:	0.159274	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.91

Description	Amelia Church Road Eastbound			Amelia Church Road Westbound			Corbett Road Northbound			- Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	104	27	9	429	0	90	0	6	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	104	27	9	429	0	90	0	6	0	0	0
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.159	0.000	0.159	0.000	0.000	0.000
2027 Background Growth	0	17	4	1	68	0	14	0	1	0	0	0
Copper District (Lumen) Site Trips	0	22	0	0	64	0	0	0	0	0	0	0
Total Approved Dev Trips	0	22	0	0	64	0	0	0	0	0	0	0
2027 Background Traffic	0	143	31	10	561	0	104	0	7	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	30%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	26	4	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	25%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	65	0	13	0	0	0
Total Project Traffic	0	0	26	4	0	0	65	0	13	0	0	0
2027 Buildout Total	0	143	57	14	561	0	169	0	20	0	0	0
Percent Impact (Approach)		13.0%			0.7%			41.3%			-	

Overall Percent Impact 11.2%

PM PEAK HOUR
PM PHF = 0.94

Description	Amelia Church Road Eastbound			Amelia Church Road Westbound			Corbett Road Northbound			- Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	399	74	6	191	0	46	0	9	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2022 Existing Traffic	0	399	74	6	191	0	46	0	9	0	0	0
Growth Factor (0.03 per year)	0.000	0.159	0.159	0.159	0.159	0.000	0.159	0.000	0.159	0.000	0.000	0.000
2027 Background Growth	0	64	12	1	30	0	7	0	1	0	0	0
Copper District (Lumen) Site Trips	0	66	0	0	25	0	0	0	0	0	0	0
Total Approved Dev Trips	0	66	0	0	25	0	0	0	0	0	0	0
2027 Background Traffic	0	529	86	7	246	0	53	0	10	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	30%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	81	14	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	25%	0%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	40	0	8	0	0	0
Total Project Traffic	0	0	81	14	0	0	40	0	8	0	0	0
2027 Buildout Total	0	529	167	21	246	0	93	0	18	0	0	0
Percent Impact (Approach)		11.6%			5.2%			43.2%			-	

Overall Percent Impact 13.3%

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INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**Corbett Assemblage**	**Net New Trips:**	87	260	271	161
Location:	**Clayton, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**					
Ct. Date	**Balanced with Amelia @ Corbett**					
N/S Street:	**Corbett Road**	**Annual Growth Rate:**	3.0%	**Existing Year:**	2022	
E/W Street:	**Site Access D (Single Family South)/Hannah Drive**	**Growth Factor:**	0.159274	**Buildout Year:**	2027	

AM PEAK HOUR
AM PHF = 0.90

	Site Access D (Single Family South) Eastbound			Hannah Drive Westbound			Corbett Road Northbound			Corbett Road Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	2	0	7	0	89	1	2	36	0
2022 Existing Traffic	0	0	0	2	0	7	0	89	1	2	36	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	14	0	0	6	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	2	0	7	0	103	1	2	42	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	4
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	13	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	13	0	0	0	0	0	0	0	0	0	0	4
2027 Buildout Total	13	0	0	2	0	7	0	103	1	2	42	4
Percent Impact (Approach)		100.0%			0.0%			0.0%			8.3%	

Overall Percent Impact 9.8%

PM PEAK HOUR
PM PHF = 0.90

	Site Access D (Single Family South) Eastbound			Hannah Drive Westbound			Corbett Road Northbound			Corbett Road Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	1	0	5	0	50	2	7	73	0
2022 Existing Traffic	0	0	0	1	0	5	0	50	2	7	73	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	8	0	0	12	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	1	0	5	0	58	2	7	85	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	14
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	8	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	8	0	0	0	0	0	0	0	0	0	0	14
2027 Buildout Total	8	0	0	1	0	5	0	58	2	7	85	14
Percent Impact (Approach)		100.0%			0.0%			0.0%			13.2%	

Overall Percent Impact 12.2%

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INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**Corbett Assemblage**	**Net New Trips:**	87	260	271	161
Location:	**Clayton, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**					
Ct. Date	**Balanced with Amelia @ Corbett**					
N/S Street:	**Corbett Road**	**Annual Growth Rate:**	3.0%	**Existing Year:**	2022	
E/W Street:	**Site Access A (Multifamily North)**	**Growth Factor:**	0.159274	**Buildout Year:**	2027	

AM PEAK HOUR
AM PHF = 0.90

Description	Site Access A (Multifamily North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	96	0	0	36	0
2022 Existing Traffic	0	0	0	0	0	0	0	96	0	0	36	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	15	0	0	6	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	0	0	0	0	111	0	0	42	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	22	9
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	78	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	78	0	0	22	9
2027 Buildout Total	0	0	0	0	0	0	0	189	0	0	64	9
Percent Impact (Approach)		-			-			41.3%			42.5%	

Overall Percent Impact 41.6%

PM PEAK HOUR
PM PHF = 0.90

Description	Site Access A (Multifamily North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	55	0	0	80	0
2022 Existing Traffic	0	0	0	0	0	0	0	55	0	0	80	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	9	0	0	13	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	0	0	0	0	64	0	0	93	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	68	27
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	48	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	48	0	0	68	27
2027 Buildout Total	0	0	0	0	0	0	0	112	0	0	161	27
Percent Impact (Approach)		-			-			42.9%			50.5%	

Overall Percent Impact 47.7%

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INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**Corbett Assemblage**	**Net New Trips:**	87	260	271	161
Location:	**Clayton, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**					
Ct. Date	**Balanced with Amelia @ Corbett**					
N/S Street:	**Corbett Road**	**Annual Growth Rate:**	3.0%	**Existing Year:**	2022	
E/W Street:	**Site Access B (Multifamily South)**	**Growth Factor:**	0.159274	**Buildout Year:**	2027	

AM PEAK HOUR
AM PHF = 0.90

Description	Site Access B (Multifamily South) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	96	0	0	36	0
2022 Existing Traffic	0	0	0	0	0	0	0	96	0	0	36	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	15	0	0	6	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	0	0	0	0	111	0	0	42	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	13	9
Percent Assignment Outbound	20%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Outbound Project Traffic	52	0	0	0	0	0	0	26	0	0	0	0
Total Project Traffic	52	0	0	0	0	0	0	26	0	0	13	9
2027 Buildout Total	52	0	0	0	0	0	0	137	0	0	55	9
Percent Impact (Approach)		100.0%			-			19.0%			34.4%	

Overall Percent Impact 39.5%

PM PEAK HOUR
PM PHF = 0.90

Description	Site Access B (Multifamily South) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	55	0	0	80	0
2022 Existing Traffic	0	0	0	0	0	0	0	55	0	0	80	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	9	0	0	13	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	0	0	0	0	64	0	0	93	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	41	27
Percent Assignment Outbound	20%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Outbound Project Traffic	32	0	0	0	0	0	0	16	0	0	0	0
Total Project Traffic	32	0	0	0	0	0	0	16	0	0	41	27
2027 Buildout Total	32	0	0	0	0	0	0	80	0	0	134	27
Percent Impact (Approach)		100.0%			-			20.0%			42.2%	

Overall Percent Impact 42.5%

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INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**Corbett Assemblage**	**Net New Trips:**	87	260	271	161
Location:	**Clayton, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Scenario 2: With Copper Dist. & NC 42 Widen.**					
Ct. Date	**Balanced with Amelia @ Corbett**					
N/S Street:	**Corbett Road**	**Annual Growth Rate:**	3.0%	**Existing Year:**	2022	
E/W Street:	**Site Access C (Single Family North)**	**Growth Factor:**	0.159274	**Buildout Year:**	2027	

AM PEAK HOUR
AM PHF = 0.90

Description	Site Access C (Single Family North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	96	0	0	36	0
2022 Existing Traffic	0	0	0	0	0	0	0	96	0	0	36	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	15	0	0	6	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	0	0	0	0	111	0	0	42	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	9
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
Outbound Project Traffic	13	0	0	0	0	0	0	13	0	0	0	0
Total Project Traffic	13	0	0	0	0	0	0	13	0	0	4	9
2027 Buildout Total	13	0	0	0	0	0	0	124	0	0	46	9
Percent Impact (Approach)		100.0%			-			10.5%			23.6%	

Overall Percent Impact 20.3%

PM PEAK HOUR
PM PHF = 0.90

Description	Site Access C (Single Family North) Eastbound Left	Through	Right	- Westbound Left	Through	Right	Corbett Road Northbound Left	Through	Right	Corbett Road Southbound Left	Through	Right
2022 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	55	0	0	80	0
2022 Existing Traffic	0	0	0	0	0	0	0	55	0	0	80	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.159	0.000
2027 Background Growth	0	0	0	0	0	0	0	9	0	0	13	0
Copper District (Lumen) Site Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Dev Trips	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	0	0	0	0	0	0	64	0	0	93	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	14	27
Percent Assignment Outbound	5%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
Outbound Project Traffic	8	0	0	0	0	0	0	8	0	0	0	0
Total Project Traffic	8	0	0	0	0	0	0	8	0	0	14	27
2027 Buildout Total	8	0	0	0	0	0	0	72	0	0	107	27
Percent Impact (Approach)		100.0%			-			11.1%			30.6%	

Overall Percent Impact 26.6%

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Appendix H:

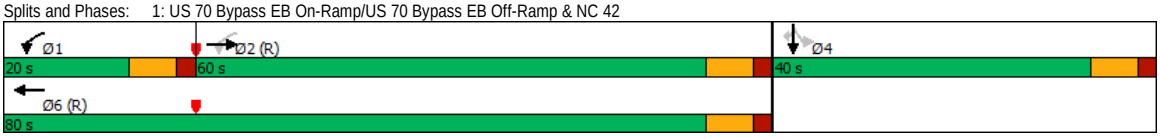
Synchro Output:

Existing (2022)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	729	175	91	665	0	0	0	0	83	4	35
Future Volume (vph)	0	729	175	91	665	0	0	0	0	83	4	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		0	225		0	0		0	275		275
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			300			25			100		
Satd. Flow (prot)	0	3454	0	1770	3539	0	0	0	0	1648	1658	1552
Flt Permitted				0.255						0.950	0.956	
Satd. Flow (perm)	0	3454	0	475	3539	0	0	0	0	1648	1658	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			55			25	
Link Distance (ft)		260			1187			548			472	
Travel Time (s)		3.9			18.0			6.8			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										48%		
Lane Group Flow (vph)	0	1004	0	101	739	0	0	0	0	48	48	39
Turn Type		NA		D.P+P	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases				2						4		4
Detector Phase		2		1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0		7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0		14.0	21.0					14.0	14.0	14.0
Total Split (s)		60.0		20.0	80.0					40.0	40.0	40.0
Total Split (%)		50.0%		16.7%	66.7%					33.3%	33.3%	33.3%
Yellow Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		C-Max		None	C-Max					None	None	None
Act Effct Green (s)		87.3		96.6	102.6					11.2	11.2	11.2
Actuated g/C Ratio		0.73		0.80	0.86					0.09	0.09	0.09
v/c Ratio		0.40		0.21	0.24					0.31	0.31	0.27
Control Delay		7.6		2.7	5.3					55.6	55.5	54.5
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		7.6		2.7	5.3					55.6	55.5	54.5
LOS		A		A	A					E	E	D
Approach Delay		7.6			5.0						55.2	
Approach LOS		A			A						E	
Queue Length 50th (ft)		150		0	110					36	36	29
Queue Length 95th (ft)		213		23	125					76	76	63
Internal Link Dist (ft)		180			1107			468			392	
Turn Bay Length (ft)				225						275		275
Base Capacity (vph)		2514		564	3025					480	483	452
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.40		0.18	0.24					0.10	0.10	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 49.9%		ICU Level of Service A	
Analysis Period (min) 15			

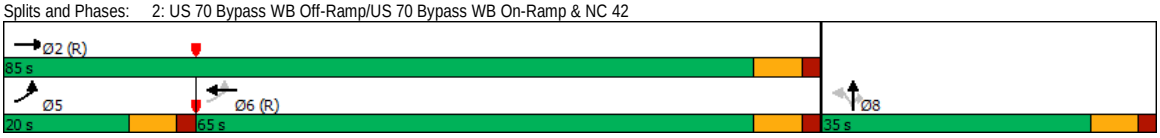
Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	659	0	0	515	106	228	4	154	0	0	0
Future Volume (vph)	141	659	0	0	515	106	228	4	154	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		0	150		50	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	250			25			125			25		
Satd. Flow (prot)	1778	3557	0	0	3430	0	1656	1663	1560	0	0	0
Flt Permitted	0.354						0.950	0.954				
Satd. Flow (perm)	663	3557	0	0	3430	0	1656	1663	1560	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	157	732	0	0	690	0	129	128	171	0	0	0
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	6						8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0		7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0		14.0	14.0	14.0			
Total Split (s)	20.0	85.0			65.0		35.0	35.0	35.0			
Total Split (%)	16.7%	70.8%			54.2%		29.2%	29.2%	29.2%			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			
Act Effct Green (s)	84.5	89.5			73.7		20.5	20.5	20.5			
Actuated g/C Ratio	0.70	0.75			0.61		0.17	0.17	0.17			
v/c Ratio	0.28	0.28			0.33		0.46	0.45	0.64			
Control Delay	6.2	4.9			15.2		48.7	48.5	56.6			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	6.2	4.9			15.2		48.7	48.5	56.6			
LOS	A	A			B		D	D	E			
Approach Delay		5.1			15.2			51.8				
Approach LOS		A			B			D				
Queue Length 50th (ft)	29	70			126		95	94	125			
Queue Length 95th (ft)	63	106			242		149	148	186			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200						150		50			
Base Capacity (vph)	627	2651			2105		414	415	390			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.25	0.28			0.33		0.31	0.31	0.44			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 61 (51%), Referenced to phase 2:EBT and 6:EBWB, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 49.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	57	849	589	7	0	5
Future Volume (vph)	57	849	589	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			75	0	0
Storage Lanes	1			1	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1863	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	1863	1583	0	1611
Link Speed (mph)		45	45		55	
Link Distance (ft)		711	850		375	
Travel Time (s)		10.8	12.9		4.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	943	654	8	0	6
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	849	589	7	0	5
Future Vol, veh/h	57	849	589	7	0	5
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	-	-	75	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	943	654	8	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	662	0	-	0	-	654
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	927	-	-	-	0	467
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	927	-	-	-	-	467
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	927	-	-	-	467
HCM Lane V/C Ratio	0.068	-	-	-	0.012
HCM Control Delay (s)	9.2	-	-	-	12.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	155	691	553	105	46	41
Future Volume (vph)	155	691	553	105	46	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-1%	0%		0%	
Storage Length (ft)	100			200	150	0
Storage Lanes	1			1	1	1
Taper Length (ft)	200				50	
Satd. Flow (prot)	1778	1872	1863	1583	1770	1583
Flt Permitted	0.377				0.950	
Satd. Flow (perm)	706	1872	1863	1583	1770	1583
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		25	
Link Distance (ft)		850	435		358	
Travel Time (s)		12.9	6.6		9.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	172	768	614	117	51	46
Turn Type	D.P+P	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases	6			6		4
Detector Phase	5	2	6	4	4	5
Switch Phase						
Minimum Initial (s)	7.0	12.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	20.0	20.0	20.0	20.0	14.0
Total Split (s)	20.0	100.0	80.0	20.0	20.0	20.0
Total Split (%)	16.7%	83.3%	66.7%	16.7%	16.7%	16.7%
Yellow Time (s)	3.0	4.6	4.6	3.2	3.2	3.0
All-Red Time (s)	2.4	1.3	1.3	2.1	2.1	2.4
Lost Time Adjust (s)	-0.4	-0.9	-0.9	-0.3	-0.3	-0.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	96.2	101.2	88.6	102.3	8.8	21.4
Actuated g/C Ratio	0.80	0.84	0.74	0.85	0.07	0.18
v/c Ratio	0.27	0.49	0.45	0.09	0.40	0.16
Control Delay	2.1	2.8	8.4	1.6	61.7	42.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.1	2.8	8.4	1.6	61.7	42.4
LOS	A	A	A	A	E	D
Approach Delay		2.7	7.3		52.5	
Approach LOS		A	A		D	
Queue Length 50th (ft)	2	9	217	10	39	31
Queue Length 95th (ft)	9	86	254	17	79	63
Internal Link Dist (ft)		770	355		278	
Turn Bay Length (ft)	100			200	150	
Base Capacity (vph)	729	1579	1374	1432	221	379
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.49	0.45	0.08	0.23	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: NC 42 & Springbrook Ave

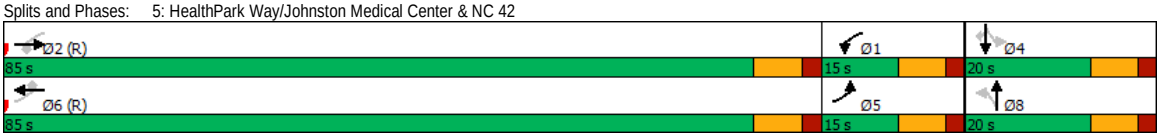




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	604	18	18	638	60	4	4	5	12	4	16
Future Volume (vph)	86	604	18	18	638	60	4	4	5	12	4	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	0		125	200		200	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			100			50			25		
Satd. Flow (prot)	1778	1872	1591	1761	1853	1575	1752	1678	0	0	1794	1583
Flt Permitted	0.313			0.362			0.746				0.770	
Satd. Flow (perm)	586	1872	1591	671	1853	1575	1376	1678	0	0	1434	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		375			562			963			874	
Travel Time (s)		5.7			8.5			18.8			23.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	671	20	20	709	67	4	10	0	0	17	18
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6		2	2		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0	85.0	20.0	20.0		20.0	20.0	20.0
Total Split (%)	12.5%	70.8%	70.8%	12.5%	70.8%	70.8%	16.7%	16.7%		16.7%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	101.0	102.4	102.4	104.0	92.0	92.0	9.6	9.6			9.6	9.6
Actuated g/C Ratio	0.84	0.85	0.85	0.87	0.77	0.77	0.08	0.08			0.08	0.08
v/c Ratio	0.16	0.42	0.01	0.03	0.50	0.06	0.04	0.08			0.15	0.14
Control Delay	2.3	4.9	2.6	0.8	5.1	3.3	51.2	51.9			54.1	53.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	2.3	4.9	2.6	0.8	5.1	3.3	51.2	51.9			54.1	53.7
LOS	A	A	A	A	A	A	D	D			D	D
Approach Delay		4.5			4.8			51.7			53.9	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	8	163	2	1	56	5	3	7			13	13
Queue Length 95th (ft)	19	382	m7	m2	300	m17	15	25			36	37
Internal Link Dist (ft)		295			482			883			794	
Turn Bay Length (ft)			125	200		200	75					50
Base Capacity (vph)	597	1597	1358	678	1420	1207	172	209			179	197
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.16	0.42	0.01	0.03	0.50	0.06	0.02	0.05			0.09	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 15 (13%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

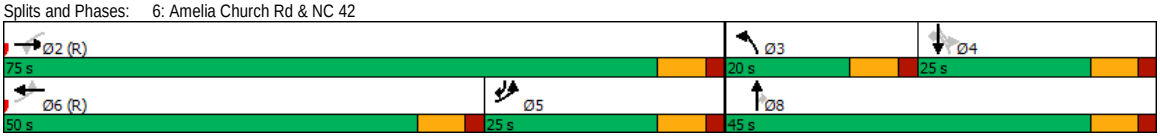
Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	298	35	17	294	21	115	362	45	23	162	305
Future Volume (vph)	285	298	35	17	294	21	115	362	45	23	162	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	150		0	100		100	50		50
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			50			100		
Satd. Flow (prot)	1770	1833	0	1770	1844	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.415			0.491			0.411			0.499		
Satd. Flow (perm)	773	1833	0	915	1844	0	766	1863	1583	930	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		434			612			509			275	
Travel Time (s)		6.6			9.3			7.7			4.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	317	370	0	19	350	0	128	402	50	26	180	339
Turn Type	D.P+P	NA		D.Pm	NA		D.P+P	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	6			2			4		8	4		4
Detector Phase	5	2		2	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0		14.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0		21.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	75.0		75.0	50.0		20.0	45.0	45.0	25.0	25.0	25.0
Total Split (%)	20.8%	62.5%		62.5%	41.7%		16.7%	37.5%	37.5%	20.8%	20.8%	20.8%
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag				Lead		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Act Effct Green (s)	69.1	74.1		74.1	49.1		30.9	35.9	35.9	17.6	17.6	37.6
Actuated g/C Ratio	0.58	0.62		0.62	0.41		0.26	0.30	0.30	0.15	0.15	0.31
v/c Ratio	0.52	0.33		0.03	0.46		0.42	0.72	0.11	0.19	0.66	0.68
Control Delay	18.4	9.6		10.6	29.4		35.1	45.2	29.2	47.3	60.0	29.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	9.6		10.6	29.4		35.1	45.2	29.2	47.3	60.0	29.4
LOS	B	A		B	C		D	D	C	D	E	C
Approach Delay		13.7			28.5			41.6			40.4	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)	90	121		6	200		73	272	27	18	132	154
Queue Length 95th (ft)	125	148		17	300		120	376	57	46	207	218
Internal Link Dist (ft)		354			532			429			195	
Turn Bay Length (ft)	90			150			100		100	50		50
Base Capacity (vph)	611	1132		565	754		333	621	527	155	310	495
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.33		0.03	0.46		0.38	0.65	0.09	0.17	0.58	0.68

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 47 (39%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	104	27	9	429	90	6
Future Volume (vph)	104	27	9	429	90	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1811	0	0	1861	1763	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1811	0	0	1861	1763	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	881			1323	1076	
Travel Time (s)	13.3			20.0	16.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	0	0	487	107	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	104	27	9	429	90	6
Future Vol, veh/h	104	27	9	429	90	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	30	10	477	100	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	146	0	628	131
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	497	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1436	-	447	919
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1436	-	443	919
Mov Cap-2 Maneuver	-	-	-	-	443	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	458	-	-	1436	-
HCM Lane V/C Ratio	0.233	-	-	0.007	-
HCM Control Delay (s)	15.2	-	-	7.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	7	89	4	4	34
Future Volume (vph)	4	7	89	4	4	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1668	0	1853	0	0	1853
Flt Permitted	0.984					0.995
Satd. Flow (perm)	1668	0	1853	0	0	1853
Link Speed (mph)	25		45			45
Link Distance (ft)	796		986			1026
Travel Time (s)	21.7		14.9			15.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	103	0	0	42
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	7	89	4	4	34
Future Vol, veh/h	4	7	89	4	4	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	8	99	4	4	38

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	147	101	0	0	103	0
Stage 1	101	-	-	-	-	-
Stage 2	46	-	-	-	-	-
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	845	954	-	-	1489	-
Stage 1	923	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	842	954	-	-	1489	-
Mov Cap-2 Maneuver	842	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.8
HCM LOS	A		

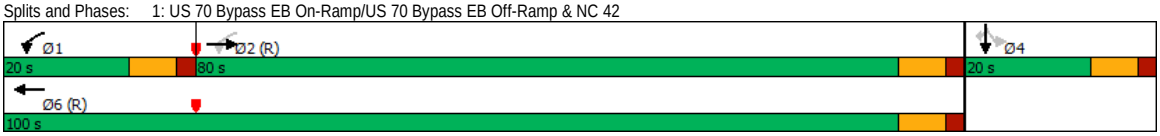
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	910	1489	-
HCM Lane V/C Ratio	-	-	0.013	0.003	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	571	193	167	812	0	0	0	0	61	4	129
Future Volume (vph)	0	571	193	167	812	0	0	0	0	61	4	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		0	225		0	0		0	275		275
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			300			25			200		
Satd. Flow (prot)	0	3422	0	1770	3539	0	0	0	0	1648	1660	1552
Flt Permitted				0.299						0.950	0.957	
Satd. Flow (perm)	0	3422	0	557	3539	0	0	0	0	1648	1660	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			55			25	
Link Distance (ft)		260			1187			548			472	
Travel Time (s)		3.9			18.0			6.8			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										47%		
Lane Group Flow (vph)	0	848	0	186	902	0	0	0	0	36	36	143
Turn Type		NA		D.P+P	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases				2						4		4
Detector Phase		2		1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0		7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0		14.0	21.0					14.0	14.0	14.0
Total Split (s)		80.0		20.0	100.0					20.0	20.0	20.0
Total Split (%)		66.7%		16.7%	83.3%					16.7%	16.7%	16.7%
Yellow Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		C-Max		None	C-Max					None	None	None
Act Effct Green (s)		80.0		90.5	95.5					14.5	14.5	14.5
Actuated g/C Ratio		0.67		0.75	0.80					0.12	0.12	0.12
v/c Ratio		0.37		0.35	0.32					0.18	0.18	0.76
Control Delay		9.6		5.4	1.8					49.6	49.5	76.7
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		9.6		5.4	1.8					49.6	49.5	76.7
LOS		A		A	A					D	D	E
Approach Delay		9.6			2.5						67.6	
Approach LOS		A			A						E	
Queue Length 50th (ft)		141		13	26					26	26	108
Queue Length 95th (ft)		186		39	12					62	62	#208
Internal Link Dist (ft)		180			1107			468			392	
Turn Bay Length (ft)				225						275		275
Base Capacity (vph)		2281		591	2816					206	207	194
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.37		0.31	0.32					0.17	0.17	0.74

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 78 (65%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			

Queue shown is maximum after two cycles.

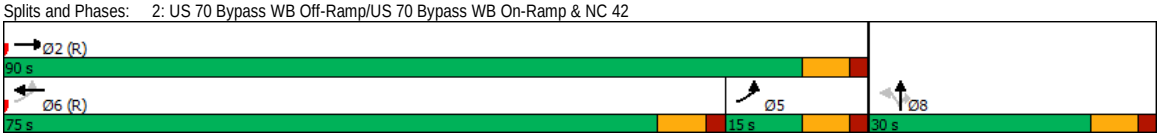
Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	580	0	0	808	163	164	4	82	0	0	0
Future Volume (vph)	58	580	0	0	808	163	164	4	82	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		0	150		50	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	250			25			200			25		
Satd. Flow (prot)	1778	3557	0	0	3433	0	1656	1663	1560	0	0	0
Flt Permitted	0.225						0.950	0.954				
Satd. Flow (perm)	421	3557	0	0	3433	0	1656	1663	1560	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	64	644	0	0	1079	0	93	93	91	0	0	0
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	6						8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0		7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0		14.0	14.0	14.0			
Total Split (s)	15.0	90.0			75.0		30.0	30.0	30.0			
Total Split (%)	12.5%	75.0%			62.5%		25.0%	25.0%	25.0%			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			
Act Effct Green (s)	91.7	95.7			83.7		14.3	14.3	14.3			
Actuated g/C Ratio	0.76	0.80			0.70		0.12	0.12	0.12			
v/c Ratio	0.15	0.23			0.45		0.47	0.47	0.49			
Control Delay	3.0	2.9			12.8		56.2	56.1	57.5			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	3.0	2.9			12.8		56.2	56.1	57.5			
LOS	A	A			B		E	E	E			
Approach Delay		2.9			12.8			56.6				
Approach LOS		A			B			E				
Queue Length 50th (ft)	5	53			231		71	71	67			
Queue Length 95th (ft)	10	66			375		124	124	116			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200						150		50			
Base Capacity (vph)	434	2835			2393		345	346	325			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.15	0.23			0.45		0.27	0.27	0.28			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 74 (62%), Referenced to phase 2:EBT and 6:EBWB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 15.3		Intersection LOS: B	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	652	917	8	0	38
Future Volume (vph)	15	652	917	8	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			100	0	0
Storage Lanes	1			1	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1863	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	1863	1583	0	1611
Link Speed (mph)		45	45		55	
Link Distance (ft)		711	850		375	
Travel Time (s)		10.8	12.9		4.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	724	1019	9	0	42
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	652	917	8	0	38
Future Vol, veh/h	15	652	917	8	0	38
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	-	-	100	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	724	1019	9	0	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1028	0	-	0	-	1019
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	676	-	-	-	0	288
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	676	-	-	-	-	288
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	676	-	-	-	288
HCM Lane V/C Ratio	0.025	-	-	-	0.147
HCM Control Delay (s)	10.5	-	-	-	19.6
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	613	803	35	100	137
Future Volume (vph)	29	613	803	35	100	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			200	150	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				50	
Satd. Flow (prot)	1770	1863	1863	1583	1752	1568
Flt Permitted	0.221				0.950	
Satd. Flow (perm)	412	1863	1863	1583	1752	1568
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		25	
Link Distance (ft)		850	435		358	
Travel Time (s)		12.9	6.6		9.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	681	892	39	111	152
Turn Type	D.P+P	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases	6			6		4
Detector Phase	5	2	6	4	4	5
Switch Phase						
Minimum Initial (s)	7.0	12.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	20.0	20.0	20.0	20.0	14.0
Total Split (s)	15.0	100.0	85.0	20.0	20.0	15.0
Total Split (%)	12.5%	83.3%	70.8%	16.7%	16.7%	12.5%
Yellow Time (s)	3.0	4.6	4.6	3.2	3.2	3.0
All-Red Time (s)	2.4	1.3	1.3	2.1	2.1	2.4
Lost Time Adjust (s)	-0.4	-0.9	-0.9	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.1
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	93.2	98.2	85.7	102.5	11.8	24.2
Actuated g/C Ratio	0.78	0.82	0.71	0.85	0.10	0.20
v/c Ratio	0.08	0.45	0.67	0.03	0.65	0.48
Control Delay	2.6	4.1	8.1	0.7	68.8	47.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	4.1	8.1	0.7	68.8	47.2
LOS	A	A	A	A	E	D
Approach Delay		4.0	7.7		56.3	
Approach LOS		A	A		E	
Queue Length 50th (ft)	5	98	212	1	84	105
Queue Length 95th (ft)	11	124	355	m3	142	167
Internal Link Dist (ft)		770	355		278	
Turn Bay Length (ft)	100			200	150	
Base Capacity (vph)	441	1524	1330	1394	219	348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.45	0.67	0.03	0.51	0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:EBWB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 4: NC 42 & Springbrook Ave

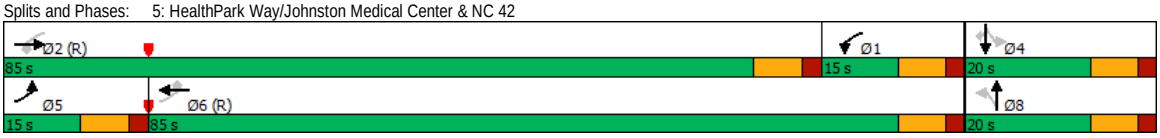


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	692	6	4	734	16	27	4	16	48	4	76
Future Volume (vph)	13	692	6	4	734	16	27	4	16	48	4	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	0		125	200		200	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			100			50			25		
Satd. Flow (prot)	1778	1872	1591	1761	1853	1575	1752	1617	0	0	1781	1583
Flt Permitted	0.267			0.296			0.720				0.725	
Satd. Flow (perm)	500	1872	1591	549	1853	1575	1328	1617	0	0	1350	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		375			562			963			874	
Travel Time (s)		5.7			8.5			18.8			23.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	769	7	4	816	18	30	22	0	0	57	84
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6		2	2		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0	85.0	20.0	20.0		20.0	20.0	20.0
Total Split (%)	12.5%	70.8%	70.8%	12.5%	70.8%	70.8%	16.7%	16.7%		16.7%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	95.1	94.1	94.1	96.1	91.5	91.5	12.9	12.9			12.9	12.9
Actuated g/C Ratio	0.79	0.78	0.78	0.80	0.76	0.76	0.11	0.11			0.11	0.11
v/c Ratio	0.03	0.52	0.01	0.01	0.58	0.01	0.21	0.13			0.39	0.49
Control Delay	2.2	6.1	3.3	4.2	11.6	7.4	51.5	49.0			57.3	60.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	2.2	6.1	3.3	4.2	11.6	7.4	51.5	49.0			57.3	60.1
LOS	A	A	A	A	B	A	D	D			E	E
Approach Delay		6.0			11.5			50.4			59.0	
Approach LOS		A			B			D			E	
Queue Length 50th (ft)	2	93	1	1	198	3	21	16			41	62
Queue Length 95th (ft)	m4	536	m3	m1	514	m8	52	41			85	114
Internal Link Dist (ft)		295			482			883			794	
Turn Bay Length (ft)			125	200		200	75					50
Base Capacity (vph)	504	1467	1247	540	1412	1200	166	202			168	197
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.03	0.52	0.01	0.01	0.58	0.01	0.18	0.11			0.34	0.43

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 16 (13%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 62.8% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42

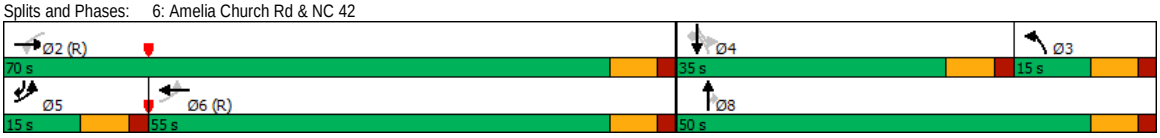


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	391	91	22	348	26	87	191	16	14	386	318
Future Volume (vph)	265	391	91	22	348	26	87	191	16	14	386	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	150		0	100		100	50		50
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			50			100		
Satd. Flow (prot)	1770	1811	0	1770	1844	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.352			0.337			0.134			0.519		
Satd. Flow (perm)	656	1811	0	628	1844	0	250	1863	1583	967	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		434			612			509			275	
Travel Time (s)		6.6			9.3			7.7			4.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	294	535	0	24	416	0	97	212	18	16	429	353
Turn Type	D.P+P	NA		D.Pm	NA		D.P+P	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	6			2			4		8	4		4
Detector Phase	5	2		2	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0		14.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0		21.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	70.0		70.0	55.0		15.0	50.0	50.0	35.0	35.0	15.0
Total Split (%)	12.5%	58.3%		58.3%	45.8%		12.5%	41.7%	41.7%	29.2%	29.2%	12.5%
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead				Lag		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Act Effct Green (s)	60.6	65.6		65.6	50.0		39.4	44.4	44.4	29.9	29.9	40.5
Actuated g/C Ratio	0.50	0.55		0.55	0.42		0.33	0.37	0.37	0.25	0.25	0.34
v/c Ratio	0.69	0.54		0.07	0.54		0.48	0.31	0.03	0.07	0.93	0.66
Control Delay	27.6	20.8		13.8	29.6		47.8	28.3	24.1	35.4	71.6	28.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	20.8		13.8	29.6		47.8	28.3	24.1	35.4	71.6	28.2
LOS	C	C		B	C		D	C	C	D	E	C
Approach Delay		23.2			28.8			33.8			51.7	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	100	190		8	239		49	115	9	10	325	170
Queue Length 95th (ft)	209	332		23	339		88	178	25	29	#518	251
Internal Link Dist (ft)		354			532			429			195	
Turn Bay Length (ft)	90			150			100		100	50		50
Base Capacity (vph)	429	989		343	768		210	698	593	241	465	533
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.54		0.07	0.54		0.46	0.30	0.03	0.07	0.92	0.66

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 3 (3%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 35.2 Intersection LOS: D
Intersection Capacity Utilization 80.6% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	399	74	6	191	46	9
Future Volume (vph)	399	74	6	191	46	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1824	0	0	1859	1749	0
Flt Permitted				0.998	0.960	
Satd. Flow (perm)	1824	0	0	1859	1749	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	877			938	1056	
Travel Time (s)	13.3			14.2	16.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	525	0	0	219	61	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	399	74	6	191	46	9
Future Vol, veh/h	399	74	6	191	46	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	443	82	7	212	51	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	525	0	710	484
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1042	-	400	583
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1042	-	397	583
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	419	-	-	1042	-
HCM Lane V/C Ratio	0.146	-	-	0.006	-
HCM Control Delay (s)	15.1	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	5	50	4	4	73
Future Volume (vph)	4	5	50	4	4	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1678	0	1846	0	0	1859
Flt Permitted	0.980					0.998
Satd. Flow (perm)	1678	0	1846	0	0	1859
Link Speed (mph)	25		45			45
Link Distance (ft)	796		986			1026
Travel Time (s)	21.7		14.9			15.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	60	0	0	85
Sign Control	Stop		Free			Free

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	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	50	4	4	73
Future Vol, veh/h	4	5	50	4	4	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	6	56	4	4	81

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	147	58	0	0	60	0
Stage 1	58	-	-	-	-	-
Stage 2	89	-	-	-	-	-
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	845	1008	-	-	1544	-
Stage 1	965	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	842	1008	-	-	1544	-
Mov Cap-2 Maneuver	842	-	-	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	927	1544	-
HCM Lane V/C Ratio	-	-	0.011	0.003	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix I:

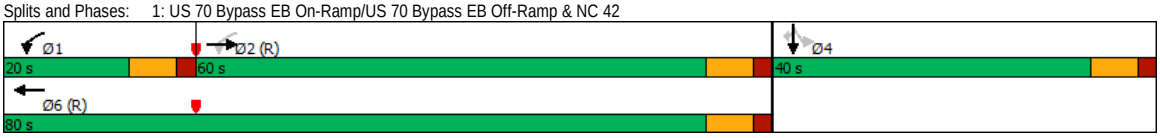
Synchro Output:

Background (2027) – Scenario 1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	845	203	105	771	0	0	0	0	96	4	41
Future Volume (vph)	0	845	203	105	771	0	0	0	0	96	4	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		0	225		0	0		0	275		275
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			300			25			100		
Satd. Flow (prot)	0	3454	0	1770	3539	0	0	0	0	1648	1658	1552
Flt Permitted				0.224						0.950	0.956	
Satd. Flow (perm)	0	3454	0	417	3539	0	0	0	0	1648	1658	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			45			55			25	
Link Distance (ft)		1054			1187			548			844	
Travel Time (s)		13.1			18.0			6.8			23.0	
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
Shared Lane Traffic (%)										48%		
Lane Group Flow (vph)	0	1103	0	111	812	0	0	0	0	53	52	43
Turn Type		NA		D.P+P	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases				2						4		4
Detector Phase		2		1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0		7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0		14.0	21.0					14.0	14.0	14.0
Total Split (s)		60.0		20.0	80.0					40.0	40.0	40.0
Total Split (%)		50.0%		16.7%	66.7%					33.3%	33.3%	33.3%
Yellow Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		C-Max		None	C-Max					None	None	None
Act Effct Green (s)		86.6		96.3	102.3					11.5	11.5	11.5
Actuated g/C Ratio		0.72		0.80	0.85					0.10	0.10	0.10
v/c Ratio		0.44		0.25	0.27					0.34	0.33	0.29
Control Delay		8.4		5.5	4.7					55.8	55.5	54.6
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		8.4		5.5	4.7					55.8	55.5	54.6
LOS		A		A	A					E	E	D
Approach Delay		8.4			4.8						55.3	
Approach LOS		A			A						E	
Queue Length 50th (ft)		173		27	107					41	40	32
Queue Length 95th (ft)		260		43	124					83	81	67
Internal Link Dist (ft)		974			1107			468			764	
Turn Bay Length (ft)				225						275		275
Base Capacity (vph)		2493		519	3016					480	483	452
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.44		0.21	0.27					0.11	0.11	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

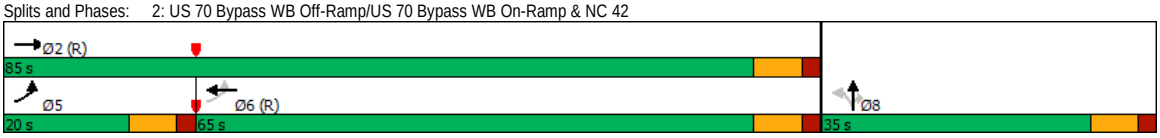
Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	764	0	0	597	123	264	4	179	0	0	0
Future Volume (vph)	163	764	0	0	597	123	264	4	179	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		0	150		50	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	250			25			125			25		
Satd. Flow (prot)	1778	3557	0	0	3430	0	1656	1663	1560	0	0	0
Flt Permitted	0.305						0.950	0.954				
Satd. Flow (perm)	571	3557	0	0	3430	0	1656	1663	1560	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	179	840	0	0	791	0	148	146	197	0	0	0
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	6						8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0		7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0		14.0	14.0	14.0			
Total Split (s)	20.0	85.0			65.0		35.0	35.0	35.0			
Total Split (%)	16.7%	70.8%			54.2%		29.2%	29.2%	29.2%			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			
Act Effct Green (s)	82.6	87.6			71.1		22.4	22.4	22.4			
Actuated g/C Ratio	0.69	0.73			0.59		0.19	0.19	0.19			
v/c Ratio	0.35	0.32			0.39		0.48	0.47	0.68			
Control Delay	7.1	5.8			16.9		47.7	47.4	56.5			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	7.1	5.8			16.9		47.7	47.4	56.5			
LOS	A	A			B		D	D	E			
Approach Delay		6.0			16.9			51.1				
Approach LOS		A			B			D				
Queue Length 50th (ft)	33	92			187		108	107	144			
Queue Length 95th (ft)	65	131			313		165	164	209			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200						150		50			
Base Capacity (vph)	559	2595			2033		414	415	390			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.32	0.32			0.39		0.36	0.35	0.51			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 61 (51%), Referenced to phase 2:EBT and 6:EBWB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	984	683	8	0	6
Future Volume (vph)	66	984	683	8	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			75	0	0
Storage Lanes	1			1	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1863	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	1863	1583	0	1611
Link Speed (mph)		45	45		35	
Link Distance (ft)		711	850		375	
Travel Time (s)		10.8	12.9		7.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	1025	711	8	0	6
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	984	683	8	0	6
Future Vol, veh/h	66	984	683	8	0	6
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	-	-	75	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	69	1025	711	8	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	719	0	-	0	-	711
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	882	-	-	-	0	433
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	882	-	-	-	-	433
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	882	-	-	-	433
HCM Lane V/C Ratio	0.078	-	-	-	0.014
HCM Control Delay (s)	9.4	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	801	641	122	53	48
Future Volume (vph)	180	801	641	122	53	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			200	150	0
Storage Lanes	1			1	1	1
Taper Length (ft)	200				50	
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.346				0.950	
Satd. Flow (perm)	645	1863	1863	1583	1770	1583
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		35	
Link Distance (ft)		850	397		358	
Travel Time (s)		12.9	6.0		7.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	826	661	126	55	49
Turn Type	D.P+P	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases	6			6		4
Detector Phase	5	2	6	4	4	5
Switch Phase						
Minimum Initial (s)	7.0	12.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	20.0	20.0	20.0	20.0	14.0
Total Split (s)	20.0	100.0	80.0	20.0	20.0	20.0
Total Split (%)	16.7%	83.3%	66.7%	16.7%	16.7%	16.7%
Yellow Time (s)	3.0	4.6	4.6	3.2	3.2	3.0
All-Red Time (s)	2.4	1.3	1.3	2.1	2.1	2.4
Lost Time Adjust (s)	-0.4	-0.9	-0.9	-0.3	-0.3	-0.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	95.3	100.3	86.9	101.6	9.7	23.1
Actuated g/C Ratio	0.79	0.84	0.72	0.85	0.08	0.19
v/c Ratio	0.31	0.53	0.49	0.09	0.39	0.16
Control Delay	3.1	3.9	9.5	1.8	59.6	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	3.9	9.5	1.8	59.6	40.5
LOS	A	A	A	A	E	D
Approach Delay		3.7	8.3		50.6	
Approach LOS		A	A		D	
Queue Length 50th (ft)	2	24	239	11	41	32
Queue Length 95th (ft)	26	125	272	23	83	64
Internal Link Dist (ft)		770	317		278	
Turn Bay Length (ft)	100			200	150	
Base Capacity (vph)	679	1557	1349	1410	221	391
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.53	0.49	0.09	0.25	0.13

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:EBWB, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: NC 42 & Springbrook Ave

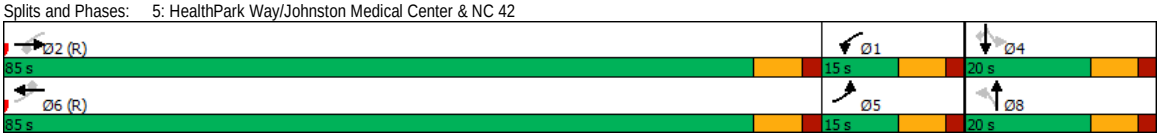


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	700	21	21	740	70	4	4	6	14	4	19
Future Volume (vph)	100	700	21	21	740	70	4	4	6	14	4	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	0		125	200		200	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	100			100			50			25		
Satd. Flow (prot)	1778	1872	1591	1761	1853	1575	1752	1678	0	0	1792	1583
Flt Permitted	0.286			0.329			0.745				0.765	
Satd. Flow (perm)	535	1872	1591	610	1853	1575	1374	1678	0	0	1425	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		378			562			963			874	
Travel Time (s)		5.7			8.5			18.8			23.8	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	729	22	22	771	73	4	10	0	0	19	20
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6		2	2		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0	85.0	20.0	20.0		20.0	20.0	20.0
Total Split (%)	12.5%	70.8%	70.8%	12.5%	70.8%	70.8%	16.7%	16.7%		16.7%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	100.9	99.5	99.5	102.9	91.9	91.9	9.7	9.7			9.7	9.7
Actuated g/C Ratio	0.84	0.83	0.83	0.86	0.77	0.77	0.08	0.08			0.08	0.08
v/c Ratio	0.19	0.47	0.02	0.04	0.54	0.06	0.04	0.07			0.17	0.16
Control Delay	2.5	6.1	2.9	0.9	5.9	3.7	50.8	51.6			54.4	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	2.5	6.1	2.9	0.9	5.9	3.7	50.8	51.6			54.4	53.8
LOS	A	A	A	A	A	A	D	D			D	D
Approach Delay		5.6			5.6			51.4			54.1	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	8	237	0	1	64	6	3	7			14	15
Queue Length 95th (ft)	16	474	m6	m2	323	m20	14	25			39	40
Internal Link Dist (ft)		298			482			883			794	
Turn Bay Length (ft)			125	200		200	75					50
Base Capacity (vph)	557	1552	1319	624	1418	1205	171	209			178	197
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.19	0.47	0.02	0.04	0.54	0.06	0.02	0.05			0.11	0.10

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 15 (13%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 7.0 Intersection LOS: A
Intersection Capacity Utilization 64.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42

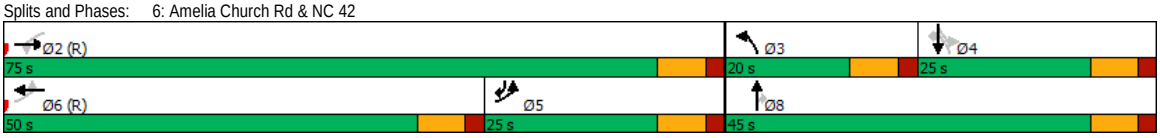


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	345	41	20	341	24	133	420	52	27	188	354
Future Volume (vph)	330	345	41	20	341	24	133	420	52	27	188	354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	150		0	100		100	50		50
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			50			100		
Satd. Flow (prot)	1770	1833	0	1770	1844	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.383			0.469			0.377			0.427		
Satd. Flow (perm)	713	1833	0	874	1844	0	702	1863	1583	795	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	398	0	21	377	0	137	433	54	28	194	365
Turn Type	D.P+P	NA		D.Pm	NA		D.P+P	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	6			2			4		8	4		4
Detector Phase	5	2		2	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0		14.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0		21.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	75.0		75.0	50.0		20.0	45.0	45.0	25.0	25.0	25.0
Total Split (%)	20.8%	62.5%		62.5%	41.7%		16.7%	37.5%	37.5%	20.8%	20.8%	20.8%
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag				Lead		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Act Effct Green (s)	68.5	73.5		73.5	48.5		31.5	36.5	36.5	18.0	18.0	38.0
Actuated g/C Ratio	0.57	0.61		0.61	0.40		0.26	0.30	0.30	0.15	0.15	0.32
v/c Ratio	0.58	0.35		0.04	0.51		0.45	0.76	0.11	0.24	0.69	0.73
Control Delay	22.1	9.8		10.8	30.7		35.6	47.1	29.2	49.2	61.6	31.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	9.8		10.8	30.7		35.6	47.1	29.2	49.2	61.6	31.4
LOS	C	A		B	C		D	D	C	D	E	C
Approach Delay		15.5			29.7			43.0			42.2	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)	100	125		6	224		78	294	29	19	142	165
Queue Length 95th (ft)	156	140		18	326		128	410	60	49	222	237
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	90			150			100		100	50		50
Base Capacity (vph)	583	1122		534	745		326	621	527	132	310	501
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.35		0.04	0.51		0.42	0.70	0.10	0.21	0.63	0.73

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 82.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	121	31	10	497	104	7
Future Volume (vph)	121	31	10	497	104	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1812	0	0	1861	1763	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1812	0	0	1861	1763	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	887			1058	1076	
Travel Time (s)	13.4			16.0	16.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	0	0	557	122	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	121	31	10	497	104	7
Future Vol, veh/h	121	31	10	497	104	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	34	11	546	114	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	167	0	718	150
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	568	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1411	-	396	896
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	567	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1411	-	392	896
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	561	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	407	-	-	1411	-
HCM Lane V/C Ratio	0.3	-	-	0.008	-
HCM Control Delay (s)	17.6	-	-	7.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	7	103	4	4	39
Future Volume (vph)	4	7	103	4	4	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1668	0	1853	0	0	1855
Flt Permitted	0.984					0.996
Satd. Flow (perm)	1668	0	1853	0	0	1855
Link Speed (mph)	25		45			45
Link Distance (ft)	796		986			1026
Travel Time (s)	21.7		14.9			15.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	118	0	0	47
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	7	103	4	4	39
Future Vol, veh/h	4	7	103	4	4	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	8	114	4	4	43

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	167	116	0	0	118	0
Stage 1	116	-	-	-	-	-
Stage 2	51	-	-	-	-	-
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	823	936	-	-	1470	-
Stage 1	909	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	821	936	-	-	1470	-
Mov Cap-2 Maneuver	821	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.7
HCM LOS	A		

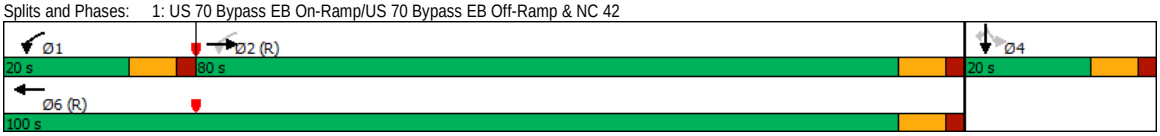
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	891	1470	-
HCM Lane V/C Ratio	-	-	0.014	0.003	-
HCM Control Delay (s)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	662	224	194	941	0	0	0	0	71	4	150
Future Volume (vph)	0	662	224	194	941	0	0	0	0	71	4	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		0	225		0	0		0	275		275
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			300			25			100		
Satd. Flow (prot)	0	3422	0	1770	3539	0	0	0	0	1648	1660	1552
Flt Permitted				0.274						0.950	0.957	
Satd. Flow (perm)	0	3422	0	510	3539	0	0	0	0	1648	1660	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			45			55			25	
Link Distance (ft)		1565			1187			548			842	
Travel Time (s)		19.4			18.0			6.8			23.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)										47%		
Lane Group Flow (vph)	0	913	0	200	970	0	0	0	0	39	38	155
Turn Type		NA		D.P+P	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases				2						4		4
Detector Phase		2		1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0		7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0		14.0	21.0					14.0	14.0	14.0
Total Split (s)		80.0		20.0	100.0					20.0	20.0	20.0
Total Split (%)		66.7%		16.7%	83.3%					16.7%	16.7%	16.7%
Yellow Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		C-Max		None	C-Max					None	None	None
Act Effct Green (s)		79.6		90.3	95.3					14.7	14.7	14.7
Actuated g/C Ratio		0.66		0.75	0.79					0.12	0.12	0.12
v/c Ratio		0.40		0.40	0.35					0.19	0.19	0.81
Control Delay		10.1		4.6	1.7					49.8	49.6	82.2
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		10.1		4.6	1.7					49.8	49.6	82.2
LOS		B		A	A					D	D	F
Approach Delay		10.1			2.2						71.4	
Approach LOS		B			A						E	
Queue Length 50th (ft)		157		8	21					29	28	118
Queue Length 95th (ft)		206		24	7					65	65	#231
Internal Link Dist (ft)		1485			1107			468			762	
Turn Bay Length (ft)				225						275		275
Base Capacity (vph)		2269		558	2809					206	207	194
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.40		0.36	0.35					0.19	0.18	0.80

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 78 (65%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			

Queue shown is maximum after two cycles.

Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42

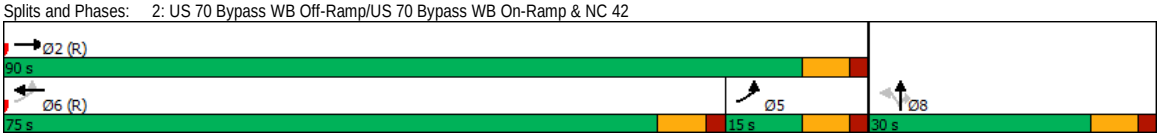




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	672	0	0	937	189	190	4	95	0	0	0
Future Volume (vph)	67	672	0	0	937	189	190	4	95	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		0	150		50	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	250			25			200			25		
Satd. Flow (prot)	1778	3557	0	0	3433	0	1656	1663	1560	0	0	0
Flt Permitted	0.207						0.950	0.954				
Satd. Flow (perm)	388	3557	0	0	3433	0	1656	1663	1560	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	68	679	0	0	1137	0	98	98	96	0	0	0
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	6						8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0		7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0		14.0	14.0	14.0			
Total Split (s)	15.0	90.0			75.0		30.0	30.0	30.0			
Total Split (%)	12.5%	75.0%			62.5%		25.0%	25.0%	25.0%			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			
Act Effct Green (s)	91.3	95.3			83.3		14.7	14.7	14.7			
Actuated g/C Ratio	0.76	0.79			0.69		0.12	0.12	0.12			
v/c Ratio	0.17	0.24			0.48		0.49	0.48	0.50			
Control Delay	4.0	2.9			14.7		56.3	56.2	57.6			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	4.0	2.9			14.7		56.3	56.2	57.6			
LOS	A	A			B		E	E	E			
Approach Delay		3.0			14.7			56.7				
Approach LOS		A			B			E				
Queue Length 50th (ft)	10	53			267		75	75	71			
Queue Length 95th (ft)	20	66			449		128	128	121			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200						150		50			
Base Capacity (vph)	410	2824			2383		345	346	325			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.17	0.24			0.48		0.28	0.28	0.30			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 74 (62%), Referenced to phase 2:EBT and 6:EBWB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 16.3		Intersection LOS: B	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	756	1063	9	0	44
Future Volume (vph)	17	756	1063	9	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			75	0	0
Storage Lanes	1			1	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1863	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	1863	1583	0	1611
Link Speed (mph)		45	45		35	
Link Distance (ft)		711	850		375	
Travel Time (s)		10.8	12.9		7.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	788	1107	9	0	46
Sign Control		Free	Free		Stop	

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	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	756	1063	9	0	44
Future Vol, veh/h	17	756	1063	9	0	44
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	-	-	75	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	788	1107	9	0	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1116	0	-	0	-	1107
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	626	-	-	-	0	256
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	626	-	-	-	-	256
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	626	-	-	-	256
HCM Lane V/C Ratio	0.028	-	-	-	0.179
HCM Control Delay (s)	10.9	-	-	-	22.1
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	711	931	41	116	159
Future Volume (vph)	34	711	931	41	116	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			200	150	0
Storage Lanes	1			1	1	1
Taper Length (ft)	200				50	
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.174				0.950	
Satd. Flow (perm)	324	1863	1863	1583	1770	1583
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		25	
Link Distance (ft)		850	908		358	
Travel Time (s)		12.9	13.8		9.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	741	970	43	121	166
Turn Type	D.P+P	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases	6			6		4
Detector Phase	5	2	6	4	4	5
Switch Phase						
Minimum Initial (s)	7.0	12.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	100.0	85.0	20.0	20.0	15.0
Total Split (%)	12.5%	83.3%	70.8%	16.7%	16.7%	12.5%
Yellow Time (s)	3.0	4.6	4.6	3.2	3.2	3.0
All-Red Time (s)	2.4	1.3	1.3	2.1	2.1	2.4
Lost Time Adjust (s)	-0.4	-0.9	-0.9	-0.3	-0.3	-0.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	92.2	97.2	84.3	102.1	12.8	25.7
Actuated g/C Ratio	0.77	0.81	0.70	0.85	0.11	0.21
v/c Ratio	0.10	0.49	0.74	0.03	0.64	0.49
Control Delay	2.8	4.4	10.8	0.8	66.7	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.8	4.4	10.8	0.8	66.7	46.1
LOS	A	A	B	A	E	D
Approach Delay		4.3	10.4		54.8	
Approach LOS		A	B		D	
Queue Length 50th (ft)	5	104	251	1	90	113
Queue Length 95th (ft)	11	128	422	m4	153	177
Internal Link Dist (ft)		770	828		278	
Turn Bay Length (ft)	100			200	150	
Base Capacity (vph)	375	1508	1308	1375	221	366
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.49	0.74	0.03	0.55	0.45

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:EBWB, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 67.2%	ICU Level of Service C
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

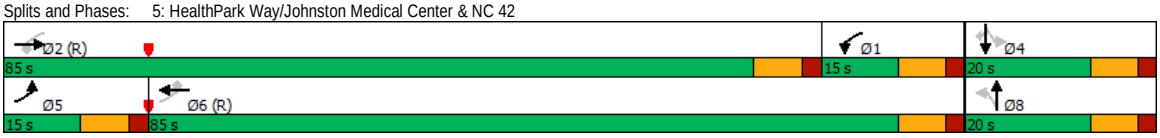
Splits and Phases: 4: NC 42 & Springbrook Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	802	7	4	851	19	31	4	19	56	4	88
Future Volume (vph)	15	802	7	4	851	19	31	4	19	56	4	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	0		125	200		200	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			100			50			25		
Satd. Flow (prot)	1778	1872	1591	1761	1853	1575	1752	1614	0	0	1779	1583
Flt Permitted	0.231			0.262			0.717				0.722	
Satd. Flow (perm)	432	1872	1591	486	1853	1575	1322	1614	0	0	1345	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		433			562			963			874	
Travel Time (s)		6.6			8.5			18.8			23.8	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	835	7	4	886	20	32	24	0	0	62	92
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6		2	2		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0	85.0	20.0	20.0		20.0	20.0	20.0
Total Split (%)	12.5%	70.8%	70.8%	12.5%	70.8%	70.8%	16.7%	16.7%		16.7%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	94.8	93.8	93.8	95.8	91.2	91.2	13.2	13.2			13.2	13.2
Actuated g/C Ratio	0.79	0.78	0.78	0.80	0.76	0.76	0.11	0.11			0.11	0.11
v/c Ratio	0.04	0.57	0.01	0.01	0.63	0.02	0.22	0.14			0.42	0.53
Control Delay	2.3	6.7	3.3	4.5	12.9	7.5	51.6	49.0			58.1	61.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	2.3	6.7	3.3	4.5	12.9	7.5	51.6	49.0			58.1	61.4
LOS	A	A	A	A	B	A	D	D			E	E
Approach Delay		6.6			12.7			50.5			60.1	
Approach LOS		A			B			D			E	
Queue Length 50th (ft)	2	102	1	1	225	4	23	17			45	68
Queue Length 95th (ft)	m4	654	m3	m1	665	m9	55	44			91	122
Internal Link Dist (ft)		353			482			883			794	
Turn Bay Length (ft)			125	200		200	75					50
Base Capacity (vph)	454	1463	1243	494	1408	1197	165	201			168	197
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.04	0.57	0.01	0.01	0.63	0.02	0.19	0.12			0.37	0.47

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 16 (13%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 69.0%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42

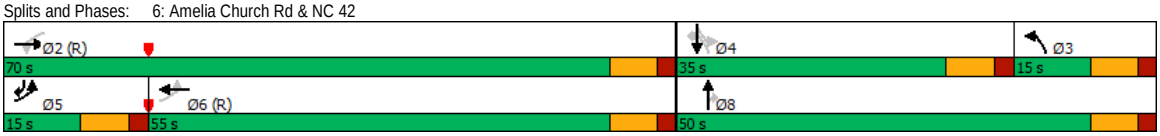


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	307	453	105	26	403	30	101	221	19	16	447	369
Future Volume (vph)	307	453	105	26	403	30	101	221	19	16	447	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	150		0	100		100	50		50
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			50			100		
Satd. Flow (prot)	1770	1811	0	1770	1842	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.313			0.297			0.133			0.486		
Satd. Flow (perm)	583	1811	0	553	1842	0	248	1863	1583	905	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	323	588	0	27	456	0	106	233	20	17	471	388
Turn Type	D.P+P	NA		D.Pm	NA		D.P+P	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	6			2			4		8	4		4
Detector Phase	5	2		2	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0		14.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0		21.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	70.0		70.0	55.0		15.0	50.0	50.0	35.0	35.0	15.0
Total Split (%)	12.5%	58.3%		58.3%	45.8%		12.5%	41.7%	41.7%	29.2%	29.2%	12.5%
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead				Lag		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Act Effct Green (s)	60.4	65.4		65.4	50.0		39.6	44.6	44.6	30.0	30.0	40.4
Actuated g/C Ratio	0.50	0.54		0.54	0.42		0.33	0.37	0.37	0.25	0.25	0.34
v/c Ratio	0.82	0.60		0.09	0.59		0.52	0.34	0.03	0.08	1.01	0.73
Control Delay	37.2	21.4		14.3	31.1		50.1	28.7	24.1	35.7	90.0	31.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	21.4		14.3	31.1		50.1	28.7	24.1	35.7	90.0	31.1
LOS	D	C		B	C		D	C	C	D	F	C
Approach Delay		27.0			30.2			34.8			62.8	
Approach LOS		C			C			C			E	
Queue Length 50th (ft)	122	220		10	269		54	128	10	10	~374	193
Queue Length 95th (ft)	#254	371		26	380		95	195	27	30	#592	282
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	90			150			100		100	50		50
Base Capacity (vph)	396	986		301	767		209	698	593	226	465	532
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.60		0.09	0.59		0.51	0.33	0.03	0.08	1.01	0.73

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 3 (3%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 40.6		Intersection LOS: D	
Intersection Capacity Utilization 87.9%		ICU Level of Service E	
Analysis Period (min) 15			
~ 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: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	463	86	7	221	53	10
Future Volume (vph)	463	86	7	221	53	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1824	0	0	1861	1749	0
Flt Permitted				0.999	0.960	
Satd. Flow (perm)	1824	0	0	1861	1749	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	891			704	766	
Travel Time (s)	13.5			10.7	11.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)						
Lane Group Flow (vph)	584	0	0	242	67	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	463	86	7	221	53	10
Future Vol, veh/h	463	86	7	221	53	10
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	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	493	91	7	235	56	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	584	0	788	539
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	991	-	360	542
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	991	-	357	542
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	786	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	377	-	-	991	-
HCM Lane V/C Ratio	0.178	-	-	0.008	-
HCM Control Delay (s)	16.6	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	5	58	4	7	85
Future Volume (vph)	4	5	58	4	7	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1678	0	1848	0	0	1855
Flt Permitted	0.980					0.996
Satd. Flow (perm)	1678	0	1848	0	0	1855
Link Speed (mph)	25		45			45
Link Distance (ft)	796		986			1026
Travel Time (s)	21.7		14.9			15.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	68	0	0	102
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	58	4	7	85
Future Vol, veh/h	4	5	58	4	7	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	6	64	4	8	94

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	176	66	0	0	68	0
Stage 1	66	-	-	-	-	-
Stage 2	110	-	-	-	-	-
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	814	998	-	-	1533	-
Stage 1	957	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	809	998	-	-	1533	-
Mov Cap-2 Maneuver	809	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	904	1533	-
HCM Lane V/C Ratio	-	-	0.011	0.005	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix J:

Synchro Output:

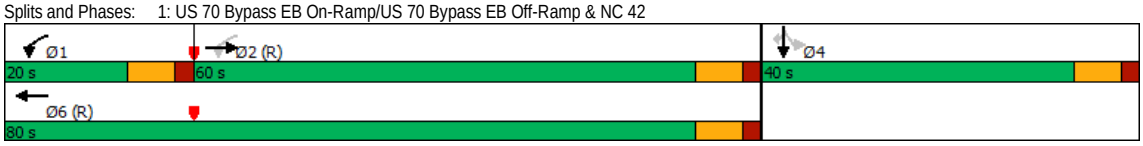
Build-out (2027) – Scenario 1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	855	203	132	798	0	0	0	0	130	4	41
Future Volume (vph)	0	855	203	132	798	0	0	0	0	130	4	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		0	225		0	0		0	275		275
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			300			25			100		
Satd. Flow (prot)	0	3454	0	1770	3539	0	0	0	0	1648	1656	1552
Flt Permitted				0.214						0.950	0.955	
Satd. Flow (perm)	0	3454	0	399	3539	0	0	0	0	1648	1656	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			55			25	
Link Distance (ft)		1054			1187			548			844	
Travel Time (s)		16.0			18.0			6.8			23.0	
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
Shared Lane Traffic (%)										49%		
Lane Group Flow (vph)	0	1114	0	139	840	0	0	0	0	70	71	43
Turn Type		NA		D.P+P	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases				2						4		4
Detector Phase		2		1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0		7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0		14.0	21.0					14.0	14.0	14.0
Total Split (s)		60.0		20.0	80.0					40.0	40.0	40.0
Total Split (%)		50.0%		16.7%	66.7%					33.3%	33.3%	33.3%
Yellow Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		C-Max		None	C-Max					None	None	None
Act Effct Green (s)		81.7		92.3	97.3					12.7	12.7	12.7
Actuated g/C Ratio		0.68		0.77	0.81					0.11	0.11	0.11
v/c Ratio		0.47		0.32	0.29					0.40	0.41	0.26
Control Delay		10.4		6.7	5.4					56.2	56.4	52.2
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		10.4		6.7	5.4					56.2	56.4	52.2
LOS		B		A	A					E	E	D
Approach Delay		10.4			5.6						55.4	
Approach LOS		B			A						E	
Queue Length 50th (ft)		185		32	105					54	54	31
Queue Length 95th (ft)		296		50	123					101	102	66
Internal Link Dist (ft)		974			1107			468			764	
Turn Bay Length (ft)				225						275		275
Base Capacity (vph)		2352		491	2870					480	483	452
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.47		0.28	0.29					0.15	0.15	0.10

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:EBWB and 6:WBT, Start of Green	
Natural Cycle: 55	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 12.0	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42



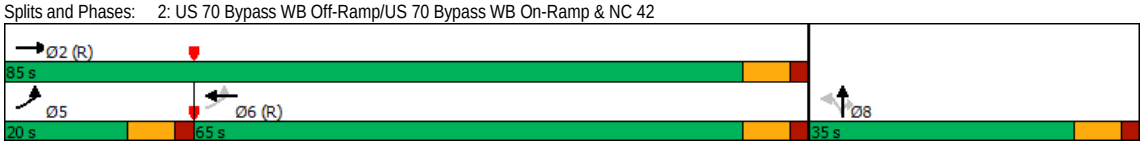


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	808	0	0	651	218	264	4	189	0	0	0
Future Volume (vph)	163	808	0	0	651	218	264	4	189	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		0	150		50	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	250			25			125			25		
Satd. Flow (prot)	1778	3557	0	0	3388	0	1656	1663	1560	0	0	0
Flt Permitted	0.239						0.950	0.954				
Satd. Flow (perm)	447	3557	0	0	3388	0	1656	1663	1560	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	179	888	0	0	955	0	148	146	208	0	0	0
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	6						8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0		7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0		14.0	14.0	14.0			
Total Split (s)	20.0	85.0			65.0		35.0	35.0	35.0			
Total Split (%)	16.7%	70.8%			54.2%		29.2%	29.2%	29.2%			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			
Act Effct Green (s)	82.0	87.0			70.5		23.0	23.0	23.0			
Actuated g/C Ratio	0.68	0.72			0.59		0.19	0.19	0.19			
v/c Ratio	0.41	0.34			0.48		0.47	0.46	0.70			
Control Delay	10.4	5.8			14.6		46.8	46.5	57.0			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	10.4	5.8			14.6		46.8	46.5	57.0			
LOS	B	A			B		D	D	E			
Approach Delay		6.6			14.6			50.9				
Approach LOS		A			B			D				
Queue Length 50th (ft)	32	98			222		108	106	151			
Queue Length 95th (ft)	84	136			323		165	164	220			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200						150		50			
Base Capacity (vph)	484	2577			1989		414	415	390			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.37	0.34			0.48		0.36	0.35	0.53			

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 61 (51%), Referenced to phase 2:EBT and 6:EBWB, Start of Green	
Natural Cycle: 60	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1003	34	0	832	8	0	0	13	0	0	6
Future Volume (vph)	66	1003	34	0	832	8	0	0	13	0	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		75	0		0	0		0
Storage Lanes	1		1	0		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	0	1863	1583	0	0	1611	0	0	1611
Flt Permitted	0.950											
Satd. Flow (perm)	1770	1863	1583	0	1863	1583	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		711			850			1006			375	
Travel Time (s)		10.8			12.9			27.4			7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	1114	38	0	924	9	0	0	14	0	0	7
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	1003	34	0	832	8	0	0	13	0	0	6
Future Vol, veh/h	66	1003	34	0	832	8	0	0	13	0	0	6
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	0	-	50	-	-	75	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	1114	38	0	924	9	0	0	14	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	933	0	0	-	-	0	-	-	1114	-	-	924
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	-	-	-	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	-	-	-	3.318	-	-	3.318
Pot Cap-1 Maneuver	734	-	-	0	-	-	0	0	253	0	0	327
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	734	-	-	-	-	-	-	-	253	-	-	327
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	20.1	16.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	253	734	-	-	-	-	327
HCM Lane V/C Ratio	0.057	0.1	-	-	-	-	0.02
HCM Control Delay (s)	20.1	10.4	-	-	-	-	16.2
HCM Lane LOS	C	B	-	-	-	-	C
HCM 95th %tile Q(veh)	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)	180	815	19	5	655	122	135	14	27	53	5	48
Future Volume (vph)	180	815	19	5	655	122	135	14	27	53	5	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		200	200		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	200			100			100			50		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1680	0	1770	1613	0
Flt Permitted	0.299			0.327			0.721			0.727		
Satd. Flow (perm)	557	1863	1583	609	1863	1583	1343	1680	0	1354	1613	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		850			950			1063			358	
Travel Time (s)		12.9			14.4			29.0			9.8	
Peak Hour Factor	0.97	0.97	0.90	0.90	0.97	0.97	0.90	0.90	0.90	0.97	0.90	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	840	21	6	675	126	150	46	0	55	55	0
Turn Type	D.P+P	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	6		2	6		6	8			4		
Detector Phase	5	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	12.0	12.0	12.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	19.0	19.0	19.0	19.0	19.0	14.0	14.0		14.0	14.0	
Total Split (s)	20.0	95.0	95.0	75.0	75.0	75.0	25.0	25.0		25.0	25.0	
Total Split (%)	16.7%	79.2%	79.2%	62.5%	62.5%	62.5%	20.8%	20.8%		20.8%	20.8%	
Yellow Time (s)	3.0	4.6	4.6	4.6	4.6	4.6	5.0	5.0		3.2	3.2	
All-Red Time (s)	2.4	1.3	1.3	1.3	1.3	1.3	2.0	2.0		2.1	2.1	
Lost Time Adjust (s)	-0.4	-0.9	-2.0	-2.0	-0.9	-0.3	-2.0	-2.0		-0.3	-2.0	
Total Lost Time (s)	5.0	5.0	3.9	3.9	5.0	5.6	5.0	5.0		5.0	3.3	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	86.8	91.8	92.9	78.5	77.4	76.8	18.2	18.2		18.2	19.9	
Actuated g/C Ratio	0.72	0.76	0.77	0.65	0.64	0.64	0.15	0.15		0.15	0.17	
v/c Ratio	0.37	0.59	0.02	0.02	0.56	0.12	0.74	0.18		0.27	0.21	
Control Delay	6.4	8.4	3.2	10.0	14.9	10.4	69.9	45.2		47.7	44.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.4	8.4	3.2	10.0	14.9	10.4	69.9	45.2		47.7	44.3	
LOS	A	A	A	A	B	B	E	D		D	D	
Approach Delay		8.0			14.2			64.1			46.0	
Approach LOS		A			B			E			D	
Queue Length 50th (ft)	12	153	1	2	264	45	110	31		38	37	
Queue Length 95th (ft)	56	385	m9	m4	297	74	#197	66		78	76	
Internal Link Dist (ft)		770			870			983			278	
Turn Bay Length (ft)	100		100	100		200	200			150		
Base Capacity (vph)	576	1425	1225	398	1201	1013	223	280		225	291	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.59	0.02	0.02	0.56	0.12	0.67	0.16		0.24	0.19	

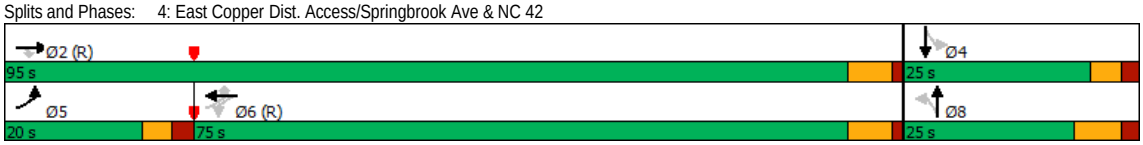
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 15	

\# 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: 4: East Copper Dist. Access/Springbrook Ave & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	741	21	21	759	70	4	4	6	14	4	19
Future Volume (vph)	100	741	21	21	759	70	4	4	6	14	4	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	0		125	200		200	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	100			100			50			25		
Satd. Flow (prot)	1778	1872	1591	1761	1853	1575	1752	1678	0	0	1792	1583
Flt Permitted	0.276			0.308			0.745				0.765	
Satd. Flow (perm)	517	1872	1591	571	1853	1575	1374	1678	0	0	1425	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		391			562			963			874	
Travel Time (s)		5.9			8.5			18.8			23.8	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	772	22	22	791	73	4	10	0	0	19	20
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6		2	2		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0	85.0	20.0	20.0		20.0	20.0	20.0
Total Split (%)	12.5%	70.8%	70.8%	12.5%	70.8%	70.8%	16.7%	16.7%		16.7%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	100.9	99.5	99.5	102.9	91.9	91.9	9.7	9.7			9.7	9.7
Actuated g/C Ratio	0.84	0.83	0.83	0.86	0.77	0.77	0.08	0.08			0.08	0.08
v/c Ratio	0.20	0.50	0.02	0.04	0.56	0.06	0.04	0.07			0.17	0.16
Control Delay	2.0	7.3	3.3	0.9	6.2	3.8	50.8	51.6			54.4	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	2.0	7.3	3.3	0.9	6.2	3.8	50.8	51.6			54.4	53.8
LOS	A	A	A	A	A	A	D	D			D	D
Approach Delay		6.6			5.9			51.4			54.1	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	3	335	2	1	115	7	3	7			14	15
Queue Length 95th (ft)	11	561	m5	m2	327	m20	14	25			39	40
Internal Link Dist (ft)		311			482			883			794	
Turn Bay Length (ft)			125	200		200	75					50
Base Capacity (vph)	544	1552	1319	593	1418	1205	171	209			178	197
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.19	0.50	0.02	0.04	0.56	0.06	0.02	0.05			0.11	0.10

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

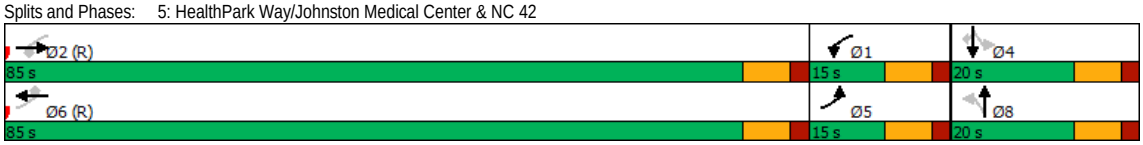
Offset: 15 (13%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 7.6	Intersection LOS: A
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	344	372	41	39	346	24	147	434	93	27	198	354
Future Volume (vph)	344	372	41	39	346	24	147	434	93	27	198	354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	150		0	100		100	50		50
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			50			100		
Satd. Flow (prot)	1770	1835	0	1770	1844	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.373			0.446			0.355			0.409		
Satd. Flow (perm)	695	1835	0	831	1844	0	661	1863	1583	762	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	355	426	0	40	382	0	152	447	96	28	204	365
Turn Type	D.P+P	NA		D.Pm	NA		D.P+P	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	6			2			4		8	4		4
Detector Phase	5	2		2	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0		14.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0		21.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	75.0		75.0	50.0		20.0	45.0	45.0	25.0	25.0	25.0
Total Split (%)	20.8%	62.5%		62.5%	41.7%		16.7%	37.5%	37.5%	20.8%	20.8%	20.8%
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag				Lead		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Act Effct Green (s)	67.8	72.8		72.8	47.8		32.2	37.2	37.2	18.3	18.3	38.3
Actuated g/C Ratio	0.56	0.61		0.61	0.40		0.27	0.31	0.31	0.15	0.15	0.32
v/c Ratio	0.62	0.38		0.08	0.52		0.50	0.77	0.20	0.24	0.72	0.72
Control Delay	20.6	7.2		11.4	31.4		36.5	47.3	30.5	49.4	62.8	30.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	7.2		11.4	31.4		36.5	47.3	30.5	49.4	62.8	30.8
LOS	C	A		B	C		D	D	C	D	E	C
Approach Delay		13.3			29.5			42.6			42.6	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)	97	106		13	231		85	302	53	19	150	161
Queue Length 95th (ft)	162	77		30	331		141	426	95	49	233	237
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	90			150			100		100	50		50
Base Capacity (vph)	571	1113		503	734		322	621	527	127	310	505
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.38		0.08	0.52		0.47	0.72	0.18	0.22	0.66	0.72

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

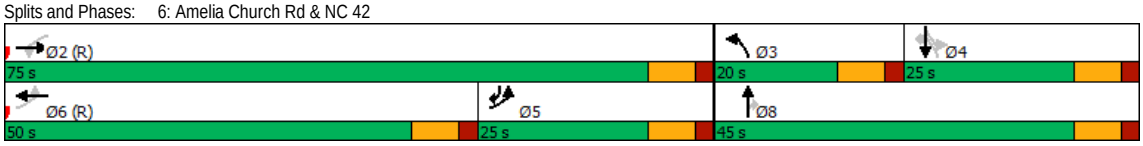
Offset: 47 (39%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 31.2	Intersection LOS: C
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	121	60	15	497	172	21
Future Volume (vph)	121	60	15	497	172	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1863	1583	0	1861	1756	0
Flt Permitted				0.999	0.957	
Satd. Flow (perm)	1863	1583	0	1861	1756	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	887			1058	426	
Travel Time (s)	13.4			16.0	6.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	66	0	562	212	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	121	60	15	497	172	21
Future Vol, veh/h	121	60	15	497	172	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	66	16	546	189	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	711	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	578	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1373	-	400	916
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1373	-	393	916
Mov Cap-2 Maneuver	-	-	-	-	393	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	419	-	-	1373	-
HCM Lane V/C Ratio	0.506	-	-	0.012	-
HCM Control Delay (s)	22.1	-	-	7.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.8	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	4	4	4	4	4	4	103	4	4	39	5
Future Volume (vph)	14	4	4	4	4	4	4	103	4	4	39	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1762	0	0	1750	0	0	1852	0	0	1827	0
Flt Permitted		0.968			0.984			0.998			0.996	
Satd. Flow (perm)	0	1762	0	0	1750	0	0	1852	0	0	1827	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		784			783			747			601	
Travel Time (s)		21.4			21.4			11.3			9.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	12	0	0	122	0	0	53	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	4	4	4	4	4	4	103	4	4	39	5
Future Vol, veh/h	14	4	4	4	4	4	4	103	4	4	39	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	4	4	4	4	4	4	114	4	4	43	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	182	180	46	182	181	116	49	0	0	118	0	0
Stage 1	54	54	-	124	124	-	-	-	-	-	-	-
Stage 2	128	126	-	58	57	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	779	714	1023	779	713	936	1558	-	-	1470	-	-
Stage 1	958	850	-	880	793	-	-	-	-	-	-	-
Stage 2	876	792	-	954	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	768	710	1023	768	709	936	1558	-	-	1470	-	-
Mov Cap-2 Maneuver	768	710	-	768	709	-	-	-	-	-	-	-
Stage 1	955	847	-	877	791	-	-	-	-	-	-	-
Stage 2	864	790	-	942	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.6	0.3	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	792	793	1470	-	-
HCM Lane V/C Ratio	0.003	-	-	0.031	0.017	0.003	-	-
HCM Control Delay (s)	7.3	0	-	9.7	9.6	7.5	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	192	66	10
Future Volume (vph)	0	4	0	192	66	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1611	0	1863	1829	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1829	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	690			562	426	
Travel Time (s)	18.8			8.5	6.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	213	84	0
Sign Control	Stop			Free	Free	

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	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	0	192	66	10
Future Vol, veh/h	0	4	0	192	66	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	0	213	73	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	79	-	0	-	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	981	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	981	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	981	-	-
HCM Lane V/C Ratio	-	0.005	-	-
HCM Control Delay (s)	-	8.7	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	54	4	4	138	57	10
Future Volume (vph)	54	4	4	138	57	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1765	0	0	1861	1825	0
Flt Permitted	0.955			0.999		
Satd. Flow (perm)	1765	0	0	1861	1825	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	580			607	562	
Travel Time (s)	15.8			9.2	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	157	74	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	4	4	138	57	10
Future Vol, veh/h	54	4	4	138	57	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	4	4	153	63	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	230	69	74	0	-	0
Stage 1	69	-	-	-	-	-
Stage 2	161	-	-	-	-	-
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	758	994	1526	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	756	994	1526	-	-	-
Mov Cap-2 Maneuver	756	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	868	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1526	-	769	-	-
HCM Lane V/C Ratio	0.003	-	0.084	-	-
HCM Control Delay (s)	7.4	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	4	4	125	47	10
Future Volume (vph)	14	4	4	125	47	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1744	0	0	1861	1818	0
Flt Permitted	0.962			0.999		
Satd. Flow (perm)	1744	0	0	1861	1818	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	621			601	607	
Travel Time (s)	16.9			9.1	9.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	143	63	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	4	4	125	47	10
Future Vol, veh/h	14	4	4	125	47	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	4	4	139	52	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	205	58	63	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	147	-	-	-	-	-
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	783	1008	1540	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	781	1008	1540	-	-	-
Mov Cap-2 Maneuver	781	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1540	-	822	-	-
HCM Lane V/C Ratio	0.003	-	0.024	-	-
HCM Control Delay (s)	7.3	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

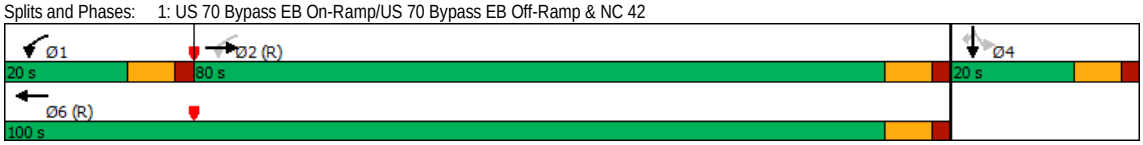
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	691	224	212	959	0	0	0	0	174	4	150
Future Volume (vph)	0	691	224	212	959	0	0	0	0	174	4	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		0	225		0	0		0	275		275
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			300			25			100		
Satd. Flow (prot)	0	3425	0	1770	3539	0	0	0	0	1648	1654	1552
Flt Permitted				0.237						0.950	0.954	
Satd. Flow (perm)	0	3425	0	441	3539	0	0	0	0	1648	1654	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			45			55			25	
Link Distance (ft)		1565			1187			548			842	
Travel Time (s)		19.4			18.0			6.8			23.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										49%		
Lane Group Flow (vph)	0	1017	0	236	1066	0	0	0	0	98	99	167
Turn Type		NA		D.P+P	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases				2						4		4
Detector Phase		2		1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0		7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0		14.0	21.0					14.0	14.0	14.0
Total Split (s)		80.0		20.0	100.0					20.0	20.0	20.0
Total Split (%)		66.7%		16.7%	83.3%					16.7%	16.7%	16.7%
Yellow Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0		-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		C-Max		None	C-Max					None	None	None
Act Effct Green (s)		78.6		90.0	95.0					15.0	15.0	15.0
Actuated g/C Ratio		0.66		0.75	0.79					0.12	0.12	0.12
v/c Ratio		0.45		0.52	0.38					0.48	0.48	0.86
Control Delay		11.1		9.4	1.6					57.3	57.4	88.5
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		11.1		9.4	1.6					57.3	57.4	88.5
LOS		B		A	A					E	E	F
Approach Delay		11.1			3.0						71.7	
Approach LOS		B			A						E	
Queue Length 50th (ft)		186		12	29					75	75	129
Queue Length 95th (ft)		244		56	15					135	136	#255
Internal Link Dist (ft)		1485			1107			468			762	
Turn Bay Length (ft)				225						275		275
Base Capacity (vph)		2244		509	2801					206	206	194
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.45		0.46	0.38					0.48	0.48	0.86

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 78 (65%), Referenced to phase 2:EBWB and 6:WBT, Start of Green	
Natural Cycle: 60	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42

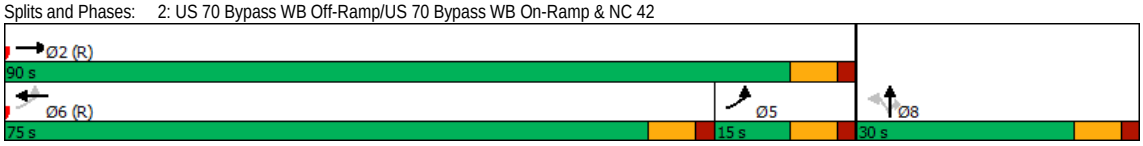


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	804	0	0	974	253	190	4	124	0	0	0
Future Volume (vph)	67	804	0	0	974	253	190	4	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		0	150		50	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	250			25			125			25		
Satd. Flow (prot)	1778	3557	0	0	3412	0	1656	1663	1560	0	0	0
Flt Permitted	0.143						0.950	0.954				
Satd. Flow (perm)	268	3557	0	0	3412	0	1656	1663	1560	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	74	893	0	0	1363	0	108	107	138	0	0	0
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	6						8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0		7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0		14.0	14.0	14.0			
Total Split (s)	15.0	90.0			75.0		30.0	30.0	30.0			
Total Split (%)	12.5%	75.0%			62.5%		25.0%	25.0%	25.0%			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			
Act Effct Green (s)	88.1	92.1			80.1		17.9	17.9	17.9			
Actuated g/C Ratio	0.73	0.77			0.67		0.15	0.15	0.15			
v/c Ratio	0.23	0.33			0.60		0.44	0.43	0.59			
Control Delay	7.3	4.8			18.7		51.0	50.8	57.6			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	7.3	4.8			18.7		51.0	50.8	57.6			
LOS	A	A			B		D	D	E			
Approach Delay		5.0			18.7			53.5				
Approach LOS		A			B			D				
Queue Length 50th (ft)	16	109			423		81	80	101			
Queue Length 95th (ft)	32	128			608		134	132	160			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200						150		50			
Base Capacity (vph)	322	2731			2278		345	346	325			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.23	0.33			0.60		0.31	0.31	0.42			

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 74 (62%), Referenced to phase 2:EBT and 6:EBWB, Start of Green	
Natural Cycle: 60	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	815	103	0	1164	9	0	0	9	0	0	44
Future Volume (vph)	17	815	103	0	1164	9	0	0	9	0	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		75	0		0	0		0
Storage Lanes	1		1	0		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	1863	1583	0	1863	1583	0	0	1611	0	0	1611
Flt Permitted	0.950											
Satd. Flow (perm)	1770	1863	1583	0	1863	1583	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		711			850			1006			375	
Travel Time (s)		10.8			12.9			27.4			7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	906	114	0	1293	10	0	0	10	0	0	49
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.3%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	815	103	0	1164	9	0	0	9	0	0	44
Future Vol, veh/h	17	815	103	0	1164	9	0	0	9	0	0	44
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	0	-	50	-	-	75	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	906	114	0	1293	10	0	0	10	0	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1303	0	0	-	-	0	-	-	906	-	-	1293
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	-	-	-	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	-	-	-	3.318	-	-	3.318
Pot Cap-1 Maneuver	531	-	-	0	-	-	0	0	334	0	0	199
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	531	-	-	-	-	-	-	-	334	-	-	199
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	16.1	28.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	334	531	-	-	-	-	199
HCM Lane V/C Ratio	0.03	0.036	-	-	-	-	0.246
HCM Control Delay (s)	16.1	12	-	-	-	-	28.9
HCM Lane LOS	C	B	-	-	-	-	D
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-	-	0.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	720	59	15	940	41	92	9	18	116	15	159
Future Volume (vph)	34	720	59	15	940	41	92	9	18	116	15	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		200	200		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	200			200			100			50		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1676	0	1770	1608	0
Flt Permitted	0.103			0.318			0.424			0.738		
Satd. Flow (perm)	192	1863	1583	592	1863	1583	790	1676	0	1375	1608	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		850			943			1006			358	
Travel Time (s)		12.9			14.3			27.4			7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	800	66	17	1044	46	102	30	0	129	194	0
Turn Type	D.P+P	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	6		2	6		6	8			4		
Detector Phase	5	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	12.0	12.0	12.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	19.0	19.0	19.0	19.0	19.0	14.0	14.0		14.0	14.0	
Total Split (s)	15.0	90.0	90.0	75.0	75.0	75.0	30.0	30.0		30.0	30.0	
Total Split (%)	12.5%	75.0%	75.0%	62.5%	62.5%	62.5%	25.0%	25.0%		25.0%	25.0%	
Yellow Time (s)	3.0	4.6	4.6	4.6	4.6	4.6	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	1.3	1.3	1.3	1.3	1.3	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-0.4	-0.9	-2.0	-2.0	-0.9	-0.4	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	3.9	3.9	5.0	5.5	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	86.1	89.1	90.2	82.7	81.6	81.1	20.9	20.9		20.9	20.9	
Actuated g/C Ratio	0.72	0.74	0.75	0.69	0.68	0.68	0.17	0.17		0.17	0.17	
v/c Ratio	0.16	0.58	0.06	0.04	0.82	0.04	0.74	0.10		0.54	0.69	
Control Delay	6.1	11.2	4.5	11.3	21.3	11.1	76.8	40.4		52.9	59.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.1	11.2	4.5	11.3	21.3	11.1	76.8	40.4		52.9	59.2	
LOS	A	B	A	B	C	B	E	D		D	E	
Approach Delay		10.5			20.7			68.6			56.7	
Approach LOS		B			C			E			E	
Queue Length 50th (ft)	9	234	15	4	456	11	75	20		91	142	
Queue Length 95th (ft)	14	609	21	m10	#1020	m27	#148	46		151	216	
Internal Link Dist (ft)		770			863			926			278	
Turn Bay Length (ft)	100		100	100		200	200			150		
Base Capacity (vph)	271	1382	1189	408	1266	1069	164	349		286	335	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.58	0.06	0.04	0.82	0.04	0.62	0.09		0.45	0.58	

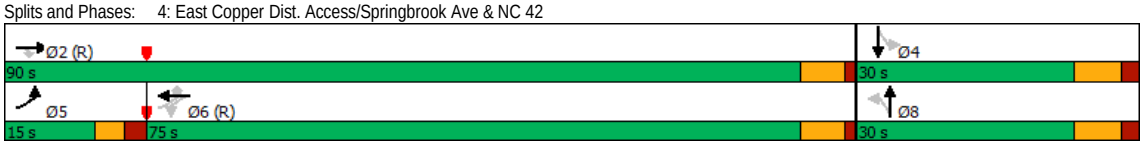
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 24.3	Intersection LOS: C
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

\# 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: 4: East Copper Dist. Access/Springbrook Ave & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	829	7	4	875	19	31	4	19	56	4	88
Future Volume (vph)	15	829	7	4	875	19	31	4	19	56	4	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	0		125	200		200	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			100			50			25		
Satd. Flow (prot)	1778	1872	1591	1761	1853	1575	1752	1612	0	0	1779	1583
Flt Permitted	0.188			0.219			0.714				0.721	
Satd. Flow (perm)	352	1872	1591	406	1853	1575	1317	1612	0	0	1343	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		398			562			963			874	
Travel Time (s)		6.0			8.5			18.8			23.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	921	8	4	972	21	34	25	0	0	66	98
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6		2	2		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0	85.0	20.0	20.0		20.0	20.0	20.0
Total Split (%)	12.5%	70.8%	70.8%	12.5%	70.8%	70.8%	16.7%	16.7%		16.7%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	94.6	93.6	93.6	95.6	91.0	91.0	13.4	13.4			13.4	13.4
Actuated g/C Ratio	0.79	0.78	0.78	0.80	0.76	0.76	0.11	0.11			0.11	0.11
v/c Ratio	0.04	0.63	0.01	0.01	0.69	0.02	0.23	0.14			0.44	0.56
Control Delay	3.0	9.2	3.3	3.5	10.9	5.9	51.8	49.0			58.8	62.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	3.0	9.2	3.3	3.5	10.9	5.9	51.8	49.0			58.8	62.4
LOS	A	A	A	A	B	A	D	D			E	E
Approach Delay		9.1			10.7			50.6			61.0	
Approach LOS		A			B			D			E	
Queue Length 50th (ft)	2	574	1	1	180	3	24	18			48	72
Queue Length 95th (ft)	m4	457	m2	m1	599	m7	57	45			95	129
Internal Link Dist (ft)		318			482			883			794	
Turn Bay Length (ft)			125	200		200	75					50
Base Capacity (vph)	397	1460	1240	436	1404	1194	164	201			167	197
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.04	0.63	0.01	0.01	0.69	0.02	0.21	0.12			0.40	0.50

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

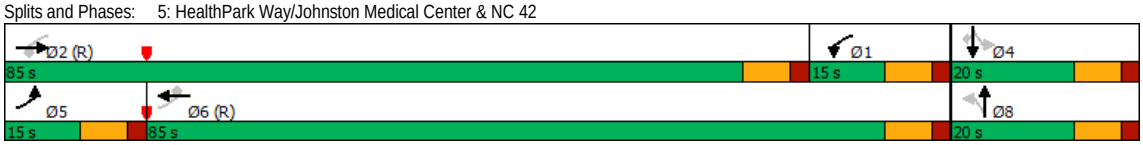
Offset: 16 (13%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	316	471	105	85	418	30	110	230	46	16	476	369
Future Volume (vph)	316	471	105	85	418	30	110	230	46	16	476	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	150		0	100		100	50		50
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			50			100		
Satd. Flow (prot)	1770	1812	0	1770	1844	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.229			0.260			0.133			0.451		
Satd. Flow (perm)	427	1812	0	484	1844	0	248	1863	1583	840	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	351	640	0	94	497	0	122	256	51	18	529	410
Turn Type	D.P+P	NA		D.Pm	NA		D.P+P	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	6			2			4		8	4		4
Detector Phase	5	2		2	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0		14.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0		21.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	20.0	70.0		70.0	50.0		15.0	50.0	50.0	35.0	35.0	20.0
Total Split (%)	16.7%	58.3%		58.3%	41.7%		12.5%	41.7%	41.7%	29.2%	29.2%	16.7%
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead				Lag		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Act Effct Green (s)	60.4	65.4		65.4	45.0		39.6	44.6	44.6	30.0	30.0	45.4
Actuated g/C Ratio	0.50	0.54		0.54	0.38		0.33	0.37	0.37	0.25	0.25	0.38
v/c Ratio	0.91	0.65		0.36	0.72		0.60	0.37	0.09	0.09	1.14	0.69
Control Delay	56.0	28.5		20.5	39.2		54.7	29.3	24.9	36.0	126.4	26.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	28.5		20.5	39.2		54.7	29.3	24.9	36.0	126.4	26.0
LOS	E	C		C	D		D	C	C	D	F	C
Approach Delay		38.3			36.2			36.0			81.7	
Approach LOS		D			D			D			F	
Queue Length 50th (ft)	202	326		40	326		63	142	25	11	~477	188
Queue Length 95th (ft)	#330	475		84	456		108	214	53	31	#692	274
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	90			150			100		100	50		50
Base Capacity (vph)	386	986		263	691		209	698	593	210	465	598
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.65		0.36	0.72		0.58	0.37	0.09	0.09	1.14	0.69

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 3 (3%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 1.14
Intersection Signal Delay: 51.5 Intersection LOS: D
Intersection Capacity Utilization 90.6% ICU Level of Service E
Analysis Period (min) 15
~ 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: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	463	174	22	221	99	19
Future Volume (vph)	463	174	22	221	99	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1863	1583	0	1855	1749	0
Flt Permitted				0.996	0.960	
Satd. Flow (perm)	1863	1583	0	1855	1749	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	891			704	420	
Travel Time (s)	13.5			10.7	6.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	514	193	0	270	131	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	463	174	22	221	99	19
Future Vol, veh/h	463	174	22	221	99	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	514	193	24	246	110	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	707	0	808	514
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	294	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	891	-	350	560
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	891	-	339	560
Mov Cap-2 Maneuver	-	-	-	-	339	-
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	733	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	362	-	-	891	-
HCM Lane V/C Ratio	0.362	-	-	0.027	-
HCM Control Delay (s)	20.5	-	-	9.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.6	-	-	0.1	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	4	4	4	4	5	4	58	4	7	85	15
Future Volume (vph)	9	4	4	4	4	5	4	58	4	7	85	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1758	0	0	1730	0	0	1842	0	0	1822	0
Flt Permitted		0.973			0.986			0.997			0.997	
Satd. Flow (perm)	0	1758	0	0	1730	0	0	1842	0	0	1822	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		784			799			747			608	
Travel Time (s)		21.4			21.8			11.3			9.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	14	0	0	72	0	0	119	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	4	4	4	5	4	58	4	7	85	15
Future Vol, veh/h	9	4	4	4	4	5	4	58	4	7	85	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	4	4	4	4	6	4	64	4	8	94	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	198	195	103	197	201	66	111	0	0	68	0	0
Stage 1	119	119	-	74	74	-	-	-	-	-	-	-
Stage 2	79	76	-	123	127	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	761	700	952	762	695	998	1479	-	-	1533	-	-
Stage 1	885	797	-	935	833	-	-	-	-	-	-	-
Stage 2	930	832	-	881	791	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	748	694	952	750	689	998	1479	-	-	1533	-	-
Mov Cap-2 Maneuver	748	694	-	750	689	-	-	-	-	-	-	-
Stage 1	882	792	-	932	831	-	-	-	-	-	-	-
Stage 2	917	830	-	867	786	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	9.6	0.5	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1479	-	-	773	805	1533	-	-
HCM Lane V/C Ratio	0.003	-	-	0.024	0.018	0.005	-	-
HCM Control Delay (s)	7.4	0	-	9.8	9.6	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	119	166	30
Future Volume (vph)	0	4	0	119	166	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1611	0	1863	1824	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1824	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	690			568	420	
Travel Time (s)	18.8			8.6	6.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	132	217	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	0	119	166	30
Future Vol, veh/h	0	4	0	119	166	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	0	132	184	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	201	-	0	-	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	840	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	840	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	840	-	-
HCM Lane V/C Ratio	-	0.005	-	-
HCM Control Delay (s)	-	9.3	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	4	4	82	137	29
Future Volume (vph)	37	4	4	82	137	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1759	0	0	1859	1820	0
Flt Permitted	0.956			0.998		
Satd. Flow (perm)	1759	0	0	1859	1820	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	580			600	568	
Travel Time (s)	15.8			9.1	8.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	0	95	184	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	4	4	82	137	29
Future Vol, veh/h	37	4	4	82	137	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	4	4	91	152	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	267	168	184	0	-	0
Stage 1	168	-	-	-	-	-
Stage 2	99	-	-	-	-	-
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	722	876	1391	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	720	876	1391	-	-	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	925	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1391	-	733	-	-
HCM Lane V/C Ratio	0.003	-	0.062	-	-
HCM Control Delay (s)	7.6	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	4	4	73	108	30
Future Volume (vph)	9	4	4	73	108	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1729	0	0	1859	1809	0
Flt Permitted	0.966			0.998		
Satd. Flow (perm)	1729	0	0	1859	1809	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	621			608	600	
Travel Time (s)	16.9			9.2	9.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	85	153	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.5%		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	9	4	4	73	108	30
Future Vol, veh/h	9	4	4	73	108	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	4	4	81	120	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	226	137	153	0	-	0
Stage 1	137	-	-	-	-	-
Stage 2	89	-	-	-	-	-
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	762	911	1428	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	760	911	1428	-	-	-
Mov Cap-2 Maneuver	760	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1428	-	801	-	-
HCM Lane V/C Ratio	0.003	-	0.018	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix K:

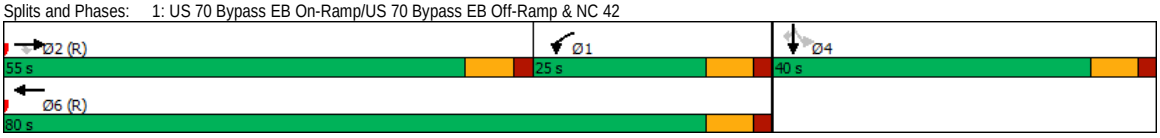
Synchro Output:

Background (2027) – Scenario 2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	973	203	148	814	0	0	0	0	544	4	41
Future Volume (vph)	0	973	203	148	814	0	0	0	0	544	4	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		200	225		0	0		0	250		350
Storage Lanes	0		1	1		0	0		0	1		2
Taper Length (ft)	25			300			25			200		
Satd. Flow (prot)	0	3557	1591	1770	3539	0	0	0	0	1648	1653	2731
Flt Permitted				0.950						0.950	0.953	
Satd. Flow (perm)	0	3557	1591	1770	3539	0	0	0	0	1648	1653	2731
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			45			55			25	
Link Distance (ft)		1054			1187			548			844	
Travel Time (s)		13.1			18.0			6.8			23.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	1081	226	164	904	0	0	0	0	302	306	46
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0	14.0	7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0	21.0	14.0	21.0					14.0	14.0	14.0
Total Split (s)		55.0	55.0	25.0	80.0					40.0	40.0	40.0
Total Split (%)		45.8%	45.8%	20.8%	66.7%					33.3%	33.3%	33.3%
Yellow Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					None	None	None
Act Effct Green (s)		55.9	55.9	20.0	80.9					29.1	29.1	29.1
Actuated g/C Ratio		0.47	0.47	0.17	0.67					0.24	0.24	0.24
v/c Ratio		0.65	0.30	0.56	0.38					0.76	0.77	0.07
Control Delay		27.9	22.7	45.4	3.3					54.3	54.8	32.9
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		27.9	22.7	45.4	3.3					54.3	54.8	32.9
LOS		C	C	D	A					D	D	C
Approach Delay		27.0			9.8						53.0	
Approach LOS		C			A						D	
Queue Length 50th (ft)		335	108	134	103					226	230	15
Queue Length 95th (ft)		444	182	208	121					317	323	31
Internal Link Dist (ft)		974			1107			468			764	
Turn Bay Length (ft)			200	225						250		350
Base Capacity (vph)		1658	741	295	2387					480	482	796
Starvation Cap Reductn		0	0	0	0					0	0	0
Spillback Cap Reductn		0	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.65	0.30	0.56	0.38					0.63	0.63	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 64 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

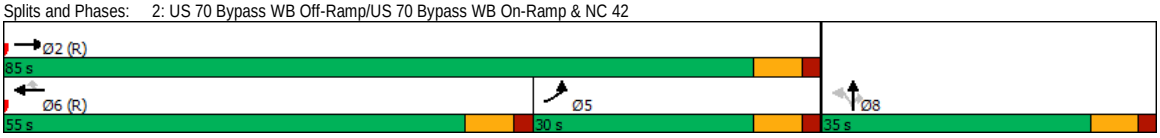
Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	1340	0	0	684	275	264	4	307	0	0	0
Future Volume (vph)	163	1340	0	0	684	275	264	4	307	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		450	150		450	0		0
Storage Lanes	1		0	0		1	1		2	0		0
Taper Length (ft)	250			25			200			25		
Satd. Flow (prot)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	181	1489	0	0	760	306	149	148	341	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Detector Phase	5	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0	14.0	7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0	21.0	14.0	14.0	14.0			
Total Split (s)	30.0	85.0			55.0	55.0	35.0	35.0	35.0			
Total Split (%)	25.0%	70.8%			45.8%	45.8%	29.2%	29.2%	29.2%			
Yellow Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Act Effct Green (s)	25.0	87.4			57.4	57.4	22.6	22.6	22.6			
Actuated g/C Ratio	0.21	0.73			0.48	0.48	0.19	0.19	0.19			
v/c Ratio	0.49	0.57			0.45	0.41	0.48	0.47	0.66			
Control Delay	46.4	5.3			5.1	5.7	47.8	47.6	51.0			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	46.4	5.3			5.1	5.7	47.8	47.6	51.0			
LOS	D	A			A	A	D	D	D			
Approach Delay		9.8			5.3			49.5				
Approach LOS		A			A			D				
Queue Length 50th (ft)	145	225			40	31	109	109	141			
Queue Length 95th (ft)	226	260			88	82	168	167	182			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200					450	150		450			
Base Capacity (vph)	370	2591			1685	753	414	415	686			
Starvation Cap Reductn	0	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.49	0.57			0.45	0.41	0.36	0.36	0.50			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 64 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 15.9		Intersection LOS: B	
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1306	448	0	921	8	0	0	86	0	0	6
Future Volume (vph)	0	1306	448	0	921	8	0	0	86	0	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		711			850			682			375	
Travel Time (s)		10.8			12.9			18.6			7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1451	498	0	1032	0	0	0	96	0	0	7
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection												
Int Delay, s/veh	0.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1306	448	0	921	8	0	0	86	0	0	6
Future Vol, veh/h	0	1306	448	0	921	8	0	0	86	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1451	498	0	1023	9	0	0	96	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	726	-	-	516
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	367	0	0	504
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	367	-	-	504
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

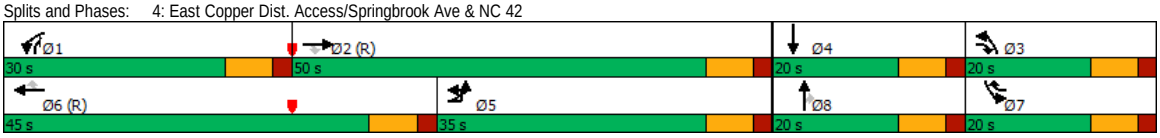
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18.2	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	367	-	-	-	-	504
HCM Lane V/C Ratio	0.26	-	-	-	-	0.013
HCM Control Delay (s)	18.2	-	-	-	-	12.2
HCM Lane LOS	C	-	-	-	-	B
HCM 95th %tile Q(veh)	1	-	-	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	43	246	844	256	512	641	122	195	22	130	53	64	48
Future Volume (vph)	43	246	844	256	512	641	122	195	22	130	53	64	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		425		150	400		125	350		250	150		0
Storage Lanes		1		1	2		1	1		1	1		0
Taper Length (ft)		100			200			100			50		
Satd. Flow (prot)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1744	0
Flt Permitted		0.950			0.950			0.950			0.950		
Satd. Flow (perm)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1744	0
Right Turn on Red				No			No			No			No
Satd. Flow (RTOR)													
Link Speed (mph)			45			45			25			35	
Link Distance (ft)			850			1341			810			358	
Travel Time (s)			12.9			20.3			22.1			7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	321	938	284	569	712	136	217	24	144	59	124	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases				2			6			8			
Detector Phase	5	5	2	3	1	6	7	3	8	1	7	4	
Switch Phase													
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	7.0	12.0	7.0	7.0	7.0	12.0	12.0	
Minimum Split (s)	14.0	14.0	19.0	14.0	14.0	14.0	19.0	14.0	14.0	14.0	19.0	19.0	
Total Split (s)	35.0	35.0	50.0	20.0	30.0	45.0	20.0	20.0	20.0	30.0	20.0	20.0	
Total Split (%)	29.2%	29.2%	41.7%	16.7%	25.0%	37.5%	16.7%	16.7%	16.7%	25.0%	16.7%	16.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
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	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None	None	
Act Effct Green (s)		30.0	47.1	61.0	24.4	41.5	71.0	13.9	9.6	30.4	24.5	14.6	
Actuated g/C Ratio		0.25	0.39	0.51	0.20	0.35	0.59	0.12	0.08	0.25	0.20	0.12	
v/c Ratio		0.73	0.68	0.35	0.82	0.58	0.15	0.55	0.16	0.36	0.16	0.58	
Control Delay		40.3	22.9	9.1	43.0	26.5	9.3	55.3	53.7	26.2	43.4	61.7	
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		40.3	22.9	9.1	43.0	26.5	9.3	55.3	53.7	26.2	43.4	61.7	
LOS		D	C	A	D	C	A	E	D	C	D	E	
Approach Delay			24.0			31.5			44.3			55.8	
Approach LOS			C			C			D			E	
Queue Length 50th (ft)		196	250	64	174	225	27	81	18	54	39	92	
Queue Length 95th (ft)		318	321	76	243	225	37	123	45	90	81	157	
Internal Link Dist (ft)			770			1261			730			278	
Turn Bay Length (ft)		425		150	400		125	350		250	150		
Base Capacity (vph)		442	1388	818	718	1223	936	429	232	410	361	218	
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		0.73	0.68	0.35	0.79	0.58	0.15	0.51	0.10	0.35	0.16	0.57	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 85 (71%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 30.9		Intersection LOS: C	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: East Copper Dist. Access/Springbrook Ave & NC 42

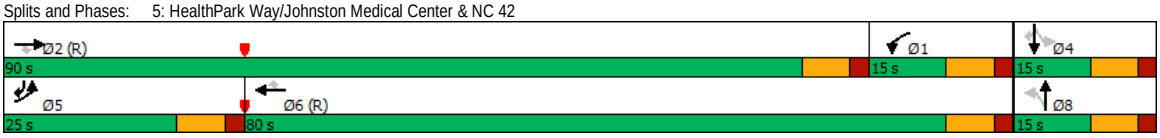


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	873	21	21	1252	70	4	4	6	14	4	19
Future Volume (vph)	100	873	21	21	1252	70	4	4	6	14	4	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	450		175	425		225	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	100			100			50			25		
Satd. Flow (prot)	1778	3557	1591	1761	3522	1575	1752	1669	0	0	1792	1583
Flt Permitted	0.950			0.950			0.769				0.762	
Satd. Flow (perm)	1778	3557	1591	1761	3522	1575	1418	1669	0	0	1419	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		1341			562			963			874	
Travel Time (s)		20.3			8.5			18.8			23.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	970	23	23	1391	78	4	11	0	0	20	21
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	25.0	90.0	90.0	15.0	80.0	80.0	15.0	15.0		15.0	15.0	25.0
Total Split (%)	20.8%	75.0%	75.0%	12.5%	66.7%	66.7%	12.5%	12.5%		12.5%	12.5%	20.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	14.9	102.0	102.0	9.6	89.1	89.1	9.4	9.4			9.4	20.9
Actuated g/C Ratio	0.12	0.85	0.85	0.08	0.74	0.74	0.08	0.08			0.08	0.17
v/c Ratio	0.50	0.32	0.02	0.16	0.53	0.07	0.04	0.08			0.18	0.08
Control Delay	43.7	4.6	2.1	49.4	5.6	4.3	51.5	52.6			55.5	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	43.7	4.6	2.1	49.4	5.6	4.3	51.5	52.6			55.5	36.3
LOS	D	A	A	D	A	A	D	D			E	D
Approach Delay		8.4			6.2			52.3			45.7	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	60	6	0	17	90	9	3	8			15	15
Queue Length 95th (ft)	m85	373	m6	m29	213	m25	15	27			41	32
Internal Link Dist (ft)		1261			482			883			794	
Turn Bay Length (ft)	450		175	425		225	75					50
Base Capacity (vph)	296	3023	1352	146	2616	1170	118	139			118	342
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.38	0.32	0.02	0.16	0.53	0.07	0.03	0.08			0.17	0.06

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 60.6% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42

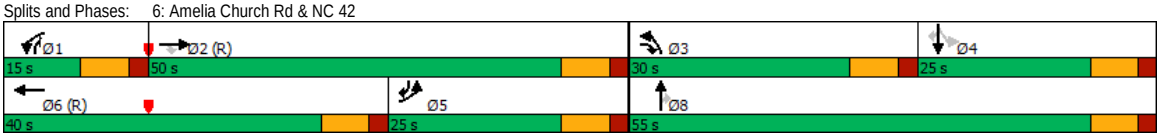


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	373	453	63	20	661	24	197	420	52	27	188	482
Future Volume (vph)	373	453	63	20	661	24	197	420	52	27	188	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		100	200		0	350		100	100		200
Storage Lanes	2		1	1		0	1		1	1		2
Taper Length (ft)	200			100			50			100		
Satd. Flow (prot)	3433	3539	1583	1770	3522	0	1770	1863	1583	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.495		
Satd. Flow (perm)	3433	3539	1583	1770	3522	0	1770	1863	1583	922	1863	2787
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	414	503	70	22	761	0	219	467	58	30	209	536
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8	1		4	5
Permitted Phases			2						8	4		4
Detector Phase	5	2	3	1	6		3	8	1	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0	7.0	7.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0	14.0	14.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	50.0	30.0	15.0	40.0		30.0	55.0	15.0	25.0	25.0	25.0
Total Split (%)	20.8%	41.7%	25.0%	12.5%	33.3%		25.0%	45.8%	12.5%	20.8%	20.8%	20.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
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	Lag	Lag	Lead	Lead	Lead		Lead		Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	20.0	53.6	79.8	9.4	40.2		21.2	44.8	59.2	18.6	18.6	38.6
Actuated g/C Ratio	0.17	0.45	0.66	0.08	0.34		0.18	0.37	0.49	0.16	0.16	0.32
v/c Ratio	0.72	0.32	0.07	0.16	0.65		0.70	0.67	0.07	0.21	0.73	0.60
Control Delay	34.6	7.7	1.9	54.4	38.1		58.4	36.1	14.5	47.4	63.1	21.0
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	34.6	7.7	1.9	54.4	38.1		58.4	36.1	14.5	47.4	63.1	21.0
LOS	C	A	A	D	D		E	D	B	D	E	C
Approach Delay		18.6			38.6			40.9			33.3	
Approach LOS		B			D			D			C	
Queue Length 50th (ft)	163	38	3	16	272		160	288	22	20	153	108
Queue Length 95th (ft)	194	46	6	43	353		239	390	42	50	238	135
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	375		100	200			350		100	100		200
Base Capacity (vph)	572	1581	1103	147	1179		368	776	789	154	312	896
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	0.72	0.32	0.06	0.15	0.65		0.60	0.60	0.07	0.19	0.67	0.60

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 22 (18%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 74.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	143	31	10	561	104	7
Future Volume (vph)	143	31	10	561	104	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1818	0	0	1861	1763	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1818	0	0	1861	1763	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	887			1058	1076	
Travel Time (s)	13.4			16.0	16.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	193	0	0	634	124	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	143	31	10	561	104	7
Future Vol, veh/h	143	31	10	561	104	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	34	11	623	116	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	193	0	821	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	645	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1380	-	344	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1380	-	340	867
Mov Cap-2 Maneuver	-	-	-	-	340	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	516	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	1380	-
HCM Lane V/C Ratio	0.348	-	-	0.008	-
HCM Control Delay (s)	20.5	-	-	7.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	7	103	4	4	42
Future Volume (vph)	4	7	103	4	4	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1668	0	1853	0	0	1855
Flt Permitted	0.984					0.996
Satd. Flow (perm)	1668	0	1853	0	0	1855
Link Speed (mph)	25		45			45
Link Distance (ft)	796		986			1026
Travel Time (s)	21.7		14.9			15.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	118	0	0	51
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	7	103	4	4	42
Future Vol, veh/h	4	7	103	4	4	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	8	114	4	4	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	171	116	0	0	118	0
Stage 1	116	-	-	-	-	-
Stage 2	55	-	-	-	-	-
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	819	936	-	-	1470	-
Stage 1	909	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	817	936	-	-	1470	-
Mov Cap-2 Maneuver	817	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	965	-	-	-	-	-

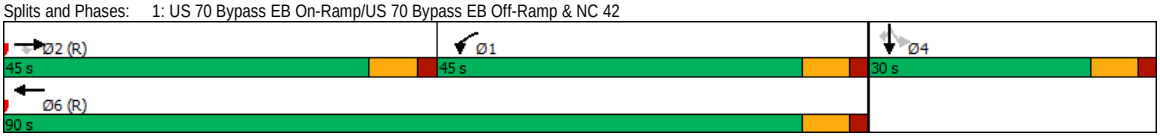
Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	889	1470	-
HCM Lane V/C Ratio	-	-	0.014	0.003	-
HCM Control Delay (s)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	712	224	326	1073	0	0	0	0	247	4	150
Future Volume (vph)	0	712	224	326	1073	0	0	0	0	247	4	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		200	225		0	0		0	250		350
Storage Lanes	0		1	1		0	0		0	1		2
Taper Length (ft)	25			300			25			200		
Satd. Flow (prot)	0	3557	1591	1770	3539	0	0	0	0	1648	1654	2731
Flt Permitted				0.950						0.950	0.954	
Satd. Flow (perm)	0	3557	1591	1770	3539	0	0	0	0	1648	1654	2731
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			45			55			25	
Link Distance (ft)		1565			1187			548			842	
Travel Time (s)		19.4			18.0			6.8			23.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										49%		
Lane Group Flow (vph)	0	791	249	362	1192	0	0	0	0	140	138	167
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0	14.0	7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0	21.0	14.0	21.0					14.0	14.0	14.0
Total Split (s)		45.0	45.0	45.0	90.0					30.0	30.0	30.0
Total Split (%)		37.5%	37.5%	37.5%	75.0%					25.0%	25.0%	25.0%
Yellow Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					None	None	None
Act Effct Green (s)		47.4	47.4	40.0	92.4					17.6	17.6	17.6
Actuated g/C Ratio		0.40	0.40	0.33	0.77					0.15	0.15	0.15
v/c Ratio		0.56	0.40	0.61	0.44					0.58	0.57	0.42
Control Delay		31.0	29.7	26.8	1.4					56.6	56.1	48.6
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		31.0	29.7	26.8	1.4					56.6	56.1	48.6
LOS		C	C	C	A					E	E	D
Approach Delay		30.7			7.3						53.4	
Approach LOS		C			A						D	
Queue Length 50th (ft)		247	136	186	4					108	106	67
Queue Length 95th (ft)		342	230	298	53					168	166	99
Internal Link Dist (ft)		1485			1107			468			762	
Turn Bay Length (ft)			200	225						250		350
Base Capacity (vph)		1404	627	590	2724					343	344	568
Starvation Cap Reductn		0	0	0	0					0	0	0
Spillback Cap Reductn		0	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.56	0.40	0.61	0.44					0.41	0.40	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 103 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 22.1		Intersection LOS: C	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42

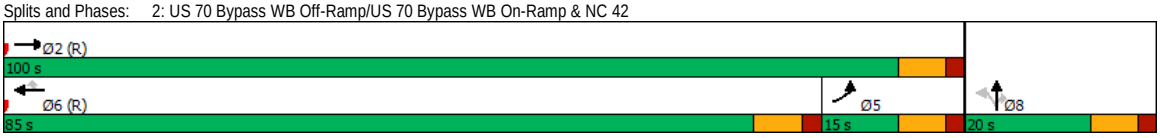


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	898	0	0	1200	650	190	4	145	0	0	0
Future Volume (vph)	67	898	0	0	1200	650	190	4	145	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		450	150		450	0		0
Storage Lanes	1		0	0		1	1		2	0		0
Taper Length (ft)	250			25			200			25		
Satd. Flow (prot)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	74	998	0	0	1333	722	108	107	161	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Detector Phase	5	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0	14.0	7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0	21.0	14.0	14.0	14.0			
Total Split (s)	15.0	100.0			85.0	85.0	20.0	20.0	20.0			
Total Split (%)	12.5%	83.3%			70.8%	70.8%	16.7%	16.7%	16.7%			
Yellow Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Act Effct Green (s)	9.8	96.3			84.3	84.3	13.7	13.7	13.7			
Actuated g/C Ratio	0.08	0.80			0.70	0.70	0.11	0.11	0.11			
v/c Ratio	0.51	0.35			0.54	0.65	0.57	0.57	0.51			
Control Delay	73.2	1.3			3.7	5.4	62.4	62.1	55.8			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	73.2	1.3			3.7	5.4	62.4	62.1	55.8			
LOS	E	A			A	A	E	E	E			
Approach Delay		6.3			4.3			59.5				
Approach LOS		A			A			E				
Queue Length 50th (ft)	61	8			98	101	84	83	67			
Queue Length 95th (ft)	m111	2			m107	m114	148	146	106			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200					450	150		450			
Base Capacity (vph)	148	2854			2474	1106	207	207	343			
Starvation Cap Reductn	0	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.50	0.35			0.54	0.65	0.52	0.52	0.47			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 97 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	867	181	0	1787	9	0	0	268	0	0	44
Future Volume (vph)	0	867	181	0	1787	9	0	0	268	0	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		711			850			802			375	
Travel Time (s)		10.8			12.9			21.9			7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	963	201	0	1996	0	0	0	298	0	0	49
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection												
Int Delay, s/veh	2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	867	181	0	1787	9	0	0	268	0	0	44
Future Vol, veh/h	0	867	181	0	1787	9	0	0	268	0	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	963	201	0	1986	10	0	0	298	0	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	482	-	-	998
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	530	0	0	242
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	530	-	-	242
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	20.1	23.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	530	-	-	-	-	242
HCM Lane V/C Ratio	0.562	-	-	-	-	0.202
HCM Control Delay (s)	20.1	-	-	-	-	23.6
HCM Lane LOS	C	-	-	-	-	C
HCM 95th %tile Q(veh)	3.4	-	-	-	-	0.7

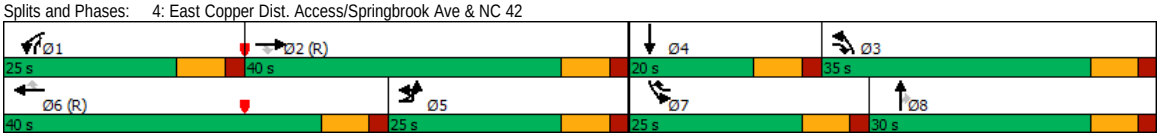
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	132	51	799	143	260	872	41	644	66	433	116	25	159
Future Volume (vph)	132	51	799	143	260	872	41	644	66	433	116	25	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		425		150	400		125	350		250	150		0
Storage Lanes		1		1	2		1	1		1	1		0
Taper Length (ft)		100			200			100			50		
Satd. Flow (prot)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1621	0
Flt Permitted		0.950			0.950			0.950			0.950		
Satd. Flow (perm)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1621	0
Right Turn on Red				No			No			No			No
Satd. Flow (RTOR)													
Link Speed (mph)			45			45			25			35	
Link Distance (ft)			850			1341			972			358	
Travel Time (s)			12.9			20.3			26.5			7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	204	888	159	289	969	46	716	73	481	129	205	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases				2			6			8			
Detector Phase	5	5	2	3	1	6	7	3	8	1	7	4	
Switch Phase													
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	14.0	19.0	14.0	14.0	14.0	14.0	14.0	20.0	14.0	14.0	14.0	
Total Split (s)	25.0	25.0	40.0	35.0	25.0	40.0	25.0	35.0	30.0	25.0	25.0	20.0	
Total Split (%)	20.8%	20.8%	33.3%	29.2%	20.8%	33.3%	20.8%	29.2%	25.0%	20.8%	20.8%	16.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
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	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None	None	
Act Effct Green (s)		20.0	35.9	65.2	19.8	35.6	59.6	29.4	24.2	46.2	23.0	15.0	
Actuated g/C Ratio		0.17	0.30	0.54	0.16	0.30	0.50	0.24	0.20	0.38	0.19	0.12	
v/c Ratio		0.69	0.84	0.18	0.51	0.92	0.06	0.85	0.19	0.79	0.38	1.01	
Control Delay		45.0	33.2	6.1	46.4	41.4	6.6	54.2	39.6	42.2	49.3	119.5	
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		45.0	33.2	6.1	46.4	41.4	6.6	54.2	39.6	42.2	49.3	119.5	
LOS		D	C	A	D	D	A	D	D	D	D	F	
Approach Delay			31.7			41.3			48.8			92.4	
Approach LOS			C			D			D			F	
Queue Length 50th (ft)		157	355	30	70	358	7	272	45	292	95	~164	
Queue Length 95th (ft)		#222	#362	51	119	#498	m17	#347	90	443	154	#322	
Internal Link Dist (ft)			770			1261			892			278	
Turn Bay Length (ft)		425		150	400		125	350		250	150		
Base Capacity (vph)		295	1057	868	590	1051	817	858	425	620	374	202	
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		0.69	0.84	0.18	0.49	0.92	0.06	0.83	0.17	0.78	0.34	1.01	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 19 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 44.8 Intersection LOS: D
Intersection Capacity Utilization 80.4% ICU Level of Service D
Analysis Period (min) 15
~ 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: 4: East Copper Dist. Access/Springbrook Ave & NC 42

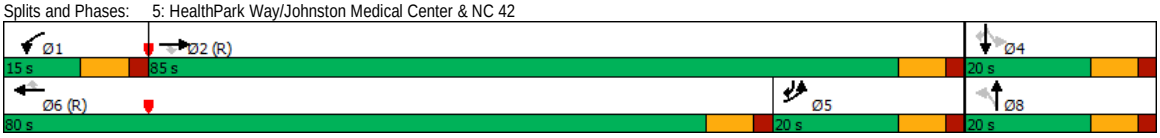


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1328	7	4	1052	19	31	4	19	56	4	88
Future Volume (vph)	15	1328	7	4	1052	19	31	4	19	56	4	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	450		175	425		225	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			100			50			25		
Satd. Flow (prot)	1778	3557	1591	1761	3522	1575	1752	1612	0	0	1779	1583
Flt Permitted	0.950			0.950			0.714				0.721	
Satd. Flow (perm)	1778	3557	1591	1761	3522	1575	1317	1612	0	0	1343	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		1341			562			963			874	
Travel Time (s)		20.3			8.5			18.8			23.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1476	8	4	1169	21	34	25	0	0	66	98
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	20.0	85.0	85.0	15.0	80.0	80.0	20.0	20.0		20.0	20.0	20.0
Total Split (%)	16.7%	70.8%	70.8%	12.5%	66.7%	66.7%	16.7%	16.7%		16.7%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	15.0	98.3	98.3	9.0	80.1	80.1	12.7	12.7			12.7	29.9
Actuated g/C Ratio	0.12	0.82	0.82	0.08	0.67	0.67	0.11	0.11			0.11	0.25
v/c Ratio	0.08	0.51	0.01	0.03	0.50	0.02	0.24	0.15			0.46	0.25
Control Delay	34.0	3.2	3.9	64.0	10.6	6.8	52.7	49.5			60.7	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	34.0	3.2	3.9	64.0	10.6	6.8	52.7	49.5			60.7	35.7
LOS	C	A	A	E	B	A	D	D			E	D
Approach Delay		3.6			10.7			51.4			45.8	
Approach LOS		A			B			D			D	
Queue Length 50th (ft)	9	66	1	3	210	4	24	18			49	59
Queue Length 95th (ft)	m13	183	m2	m6	373	m9	57	45			95	103
Internal Link Dist (ft)		1261			482			883			794	
Turn Bay Length (ft)	450		175	425		225	75					50
Base Capacity (vph)	222	2913	1303	146	2350	1050	164	201			167	394
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.08	0.51	0.01	0.03	0.50	0.02	0.21	0.12			0.40	0.25

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 109 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 55.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42

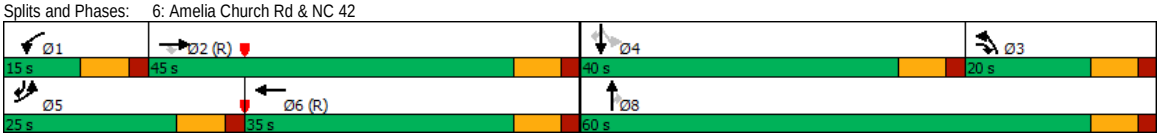


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	439	782	171	26	529	30	126	221	19	16	447	419
Future Volume (vph)	439	782	171	26	529	30	126	221	19	16	447	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		100	200		0	350		100	100		200
Storage Lanes	2		1	1		0	1		1	1		2
Taper Length (ft)	200			100			50			100		
Satd. Flow (prot)	3433	3539	1583	1770	3511	0	1770	1863	1583	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.510		
Satd. Flow (perm)	3433	3539	1583	1770	3511	0	1770	1863	1583	950	1863	2787
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	488	869	190	29	621	0	140	246	21	18	497	466
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8			4	5
Permitted Phases			2						8	4		4
Detector Phase	5	2	3	1	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0	7.0	7.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0	14.0	14.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	45.0	20.0	15.0	35.0		20.0	60.0	60.0	40.0	40.0	25.0
Total Split (%)	20.8%	37.5%	16.7%	12.5%	29.2%		16.7%	50.0%	50.0%	33.3%	33.3%	20.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
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	Lag	Lead	Lag		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	20.0	47.5	63.6	9.5	31.4		14.2	53.7	53.7	34.5	34.5	54.5
Actuated g/C Ratio	0.17	0.40	0.53	0.08	0.26		0.12	0.45	0.45	0.29	0.29	0.45
v/c Ratio	0.85	0.62	0.23	0.21	0.68		0.67	0.30	0.03	0.07	0.93	0.37
Control Delay	73.8	20.7	6.2	55.4	44.6		66.9	22.0	18.1	31.8	66.8	12.3
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	73.8	20.7	6.2	55.4	44.6		66.9	22.0	18.1	31.8	66.8	12.3
LOS	E	C	A	E	D		E	C	B	C	E	B
Approach Delay		35.7			45.1			37.2			40.3	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	204	176	38	21	231		105	116	9	10	372	75
Queue Length 95th (ft)	#280	265	24	53	298		#175	175	24	29	#574	101
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	375		100	200			350		100	100		200
Base Capacity (vph)	575	1399	824	147	917		221	853	725	277	543	1268
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	0.85	0.62	0.23	0.20	0.68		0.63	0.29	0.03	0.06	0.92	0.37

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 38.8 Intersection LOS: D
Intersection Capacity Utilization 75.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	529	86	7	246	53	10
Future Volume (vph)	529	86	7	246	53	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1827	0	0	1861	1751	0
Flt Permitted				0.999	0.960	
Satd. Flow (perm)	1827	0	0	1861	1751	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	891			704	766	
Travel Time (s)	13.5			10.7	11.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	684	0	0	281	70	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	529	86	7	246	53	10
Future Vol, veh/h	529	86	7	246	53	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	588	96	8	273	59	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	684	0	925	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	289	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	909	-	299	478
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	760	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	909	-	296	478
Mov Cap-2 Maneuver	-	-	-	-	296	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	315	-	-	909	-
HCM Lane V/C Ratio	0.222	-	-	0.009	-
HCM Control Delay (s)	19.7	-	-	9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	5	58	4	7	85
Future Volume (vph)	4	5	58	4	7	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1678	0	1848	0	0	1855
Flt Permitted	0.980					0.996
Satd. Flow (perm)	1678	0	1848	0	0	1855
Link Speed (mph)	25		45			45
Link Distance (ft)	796		986			1026
Travel Time (s)	21.7		14.9			15.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	68	0	0	102
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	58	4	7	85
Future Vol, veh/h	4	5	58	4	7	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	6	64	4	8	94

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	176	66	0	0	68	0
Stage 1	66	-	-	-	-	-
Stage 2	110	-	-	-	-	-
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	814	998	-	-	1533	-
Stage 1	957	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	809	998	-	-	1533	-
Mov Cap-2 Maneuver	809	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	904	1533	-
HCM Lane V/C Ratio	-	-	0.011	0.005	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix L:

Synchro Output:

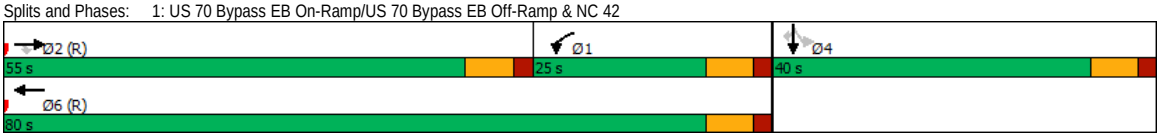
Build-out (2027) – Scenario 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	982	203	174	840	0	0	0	0	574	4	41
Future Volume (vph)	0	982	203	174	840	0	0	0	0	574	4	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		200	225		0	0		0	250		350
Storage Lanes	0		1	1		0	0		0	1		2
Taper Length (ft)	25			300			25			200		
Satd. Flow (prot)	0	3557	1591	1770	3539	0	0	0	0	1648	1653	2731
Flt Permitted				0.950						0.950	0.953	
Satd. Flow (perm)	0	3557	1591	1770	3539	0	0	0	0	1648	1653	2731
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			45			55			25	
Link Distance (ft)		1054			1187			548			844	
Travel Time (s)		13.1			18.0			6.8			23.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	1091	226	193	933	0	0	0	0	319	323	46
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0	14.0	7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0	21.0	14.0	21.0					14.0	14.0	14.0
Total Split (s)		55.0	55.0	25.0	80.0					40.0	40.0	40.0
Total Split (%)		45.8%	45.8%	20.8%	66.7%					33.3%	33.3%	33.3%
Yellow Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					None	None	None
Act Effct Green (s)		55.0	55.0	20.0	80.0					30.0	30.0	30.0
Actuated g/C Ratio		0.46	0.46	0.17	0.67					0.25	0.25	0.25
v/c Ratio		0.67	0.31	0.65	0.40					0.78	0.78	0.07
Control Delay		28.8	23.2	48.6	2.4					54.8	55.4	32.3
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		28.8	23.2	48.6	2.4					54.8	55.4	32.3
LOS		C	C	D	A					D	E	C
Approach Delay		27.9			10.3						53.6	
Approach LOS		C			B						D	
Queue Length 50th (ft)		347	110	159	98					238	242	15
Queue Length 95th (ft)		451	182	239	117					337	343	31
Internal Link Dist (ft)		974			1107			468			764	
Turn Bay Length (ft)			200	225						250		350
Base Capacity (vph)		1631	729	295	2360					480	482	796
Starvation Cap Reductn		0	0	0	0					0	0	0
Spillback Cap Reductn		0	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.67	0.31	0.65	0.40					0.66	0.67	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 59 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 27.2		Intersection LOS: C	
Intersection Capacity Utilization 65.3%		ICU Level of Service C	
Analysis Period (min) 15			

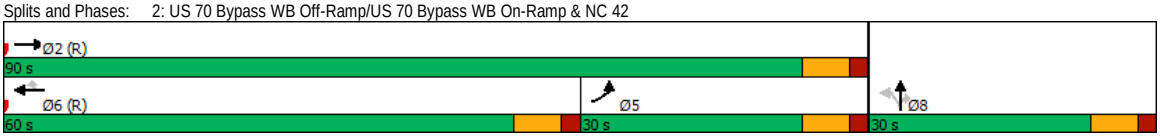
Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	1379	0	0	736	366	264	4	316	0	0	0
Future Volume (vph)	163	1379	0	0	736	366	264	4	316	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		450	150		450	0		0
Storage Lanes	1		0	0		1	1		2	0		0
Taper Length (ft)	250			25			200			25		
Satd. Flow (prot)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	181	1532	0	0	818	407	149	148	351	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Detector Phase	5	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0	14.0	7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0	21.0	14.0	14.0	14.0			
Total Split (s)	30.0	90.0			60.0	60.0	30.0	30.0	30.0			
Total Split (%)	25.0%	75.0%			50.0%	50.0%	25.0%	25.0%	25.0%			
Yellow Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Act Effct Green (s)	25.0	88.1			58.1	58.1	21.9	21.9	21.9			
Actuated g/C Ratio	0.21	0.73			0.48	0.48	0.18	0.18	0.18			
v/c Ratio	0.49	0.59			0.48	0.53	0.49	0.49	0.70			
Control Delay	50.1	6.9			7.6	9.3	49.4	49.2	53.7			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	50.1	6.9			7.6	9.3	49.4	49.2	53.7			
LOS	D	A			A	A	D	D	D			
Approach Delay		11.4			8.2			51.6				
Approach LOS		B			A			D				
Queue Length 50th (ft)	148	248			135	129	109	108	145			
Queue Length 95th (ft)	m226	274			165	175	176	175	198			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200					450	150		450			
Base Capacity (vph)	370	2611			1705	762	345	346	571			
Starvation Cap Reductn	0	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.49	0.59			0.48	0.53	0.43	0.43	0.61			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 58 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 65.3%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1323	478	0	1064	8	0	0	98	0	0	6
Future Volume (vph)	0	1323	478	0	1064	8	0	0	98	0	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		711			850			682			375	
Travel Time (s)		10.8			12.9			18.6			7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1470	531	0	1191	0	0	0	109	0	0	7
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1323	478	0	1064	8	0	0	98	0	0	6
Future Vol, veh/h	0	1323	478	0	1064	8	0	0	98	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1470	531	0	1182	9	0	0	109	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	735	-	-	596
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	362	0	0	447
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	362	-	-	447
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	19.2	13.2
HCM LOS			C	B

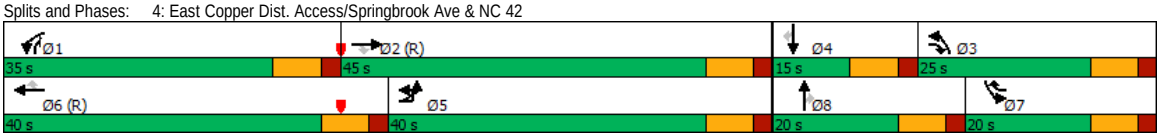
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	362	-	-	-	-	447
HCM Lane V/C Ratio	0.301	-	-	-	-	0.015
HCM Control Delay (s)	19.2	-	-	-	-	13.2
HCM Lane LOS	C	-	-	-	-	B
HCM 95th %tile Q(veh)	1.2	-	-	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	43	246	857	273	516	654	122	325	35	156	53	68	48
Future Volume (vph)	43	246	857	273	516	654	122	325	35	156	53	68	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		425		150	400		125	350		250	150		150
Storage Lanes		1		1	2		1	1		1	1		1
Taper Length (ft)		100			200			100			50		
Satd. Flow (prot)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1863	1583
Flt Permitted		0.950			0.950			0.950			0.950		
Satd. Flow (perm)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1863	1583
Right Turn on Red				No			No			No			No
Satd. Flow (RTOR)													
Link Speed (mph)			45			45			25			35	
Link Distance (ft)			850			1341			810			358	
Travel Time (s)			12.9			20.3			22.1			7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	321	952	303	573	727	136	361	39	173	59	76	53
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases				2			6			8			4
Detector Phase	5	5	2	3	1	6	7	3	8	1	7	4	4
Switch Phase													
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	7.0	12.0	7.0	7.0	7.0	12.0	12.0	12.0
Minimum Split (s)	14.0	14.0	19.0	14.0	14.0	14.0	19.0	14.0	14.0	14.0	19.0	19.0	19.0
Total Split (s)	40.0	40.0	45.0	25.0	35.0	40.0	20.0	25.0	20.0	35.0	20.0	15.0	15.0
Total Split (%)	33.3%	33.3%	37.5%	20.8%	29.2%	33.3%	16.7%	20.8%	16.7%	29.2%	16.7%	12.5%	12.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
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	5.0
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)		35.0	47.4	67.0	27.0	39.4	65.3	18.6	10.3	33.7	20.9	10.0	10.0
Actuated g/C Ratio		0.29	0.40	0.56	0.22	0.33	0.54	0.16	0.09	0.28	0.17	0.08	0.08
v/c Ratio		0.62	0.68	0.34	0.74	0.63	0.16	0.68	0.24	0.39	0.19	0.49	0.40
Control Delay		30.8	23.8	7.9	35.6	25.9	10.6	54.6	54.5	25.2	45.0	63.9	62.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		30.8	23.8	7.9	35.6	25.9	10.6	54.6	54.5	25.2	45.0	63.9	62.0
LOS		C	C	A	D	C	B	D	D	C	D	E	E
Approach Delay			22.2			28.3			45.7			57.4	
Approach LOS			C			C			D			E	
Queue Length 50th (ft)		165	251	58	146	198	26	135	29	62	40	57	40
Queue Length 95th (ft)		277	385	89	202	240	46	187	63	96	83	109	83
Internal Link Dist (ft)			770			1261			730			278	
Turn Bay Length (ft)		425		150	400		125	350		250	150		150
Base Capacity (vph)		516	1397	902	858	1161	861	572	232	484	308	155	131
Starvation Cap Reductn		0	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	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.62	0.68	0.34	0.67	0.63	0.16	0.63	0.17	0.36	0.19	0.49	0.40

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 84 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 29.8 Intersection LOS: C
Intersection Capacity Utilization 70.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: East Copper Dist. Access/Springbrook Ave & NC 42

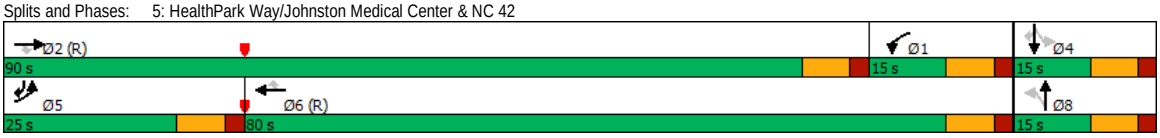


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	912	21	21	1269	70	4	4	6	14	4	19
Future Volume (vph)	100	912	21	21	1269	70	4	4	6	14	4	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	450		175	425		225	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	100			100			50			25		
Satd. Flow (prot)	1778	3557	1591	1761	3522	1575	1752	1669	0	0	1792	1583
Flt Permitted	0.950			0.950			0.769				0.762	
Satd. Flow (perm)	1778	3557	1591	1761	3522	1575	1418	1669	0	0	1419	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		1341			562			963			874	
Travel Time (s)		20.3			8.5			18.8			23.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	1013	23	23	1410	78	4	11	0	0	20	21
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	25.0	90.0	90.0	15.0	80.0	80.0	15.0	15.0		15.0	15.0	25.0
Total Split (%)	20.8%	75.0%	75.0%	12.5%	66.7%	66.7%	12.5%	12.5%		12.5%	12.5%	20.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	14.9	102.0	102.0	9.6	89.1	89.1	9.4	9.4			9.4	20.9
Actuated g/C Ratio	0.12	0.85	0.85	0.08	0.74	0.74	0.08	0.08			0.08	0.17
v/c Ratio	0.50	0.34	0.02	0.16	0.54	0.07	0.04	0.08			0.18	0.08
Control Delay	47.5	3.8	1.5	48.4	5.4	4.1	51.5	52.6			55.5	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	47.5	3.8	1.5	48.4	5.4	4.1	51.5	52.6			55.5	36.3
LOS	D	A	A	D	A	A	D	D			E	D
Approach Delay		8.0			6.0			52.3			45.7	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	63	7	0	17	95	9	3	8			15	15
Queue Length 95th (ft)	m86	307	m4	m27	219	m24	15	27			41	32
Internal Link Dist (ft)		1261			482			883			794	
Turn Bay Length (ft)	450		175	425		225	75					50
Base Capacity (vph)	296	3023	1352	146	2616	1170	118	139			118	342
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.38	0.34	0.02	0.16	0.54	0.07	0.03	0.08			0.17	0.06

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 7.7 Intersection LOS: A
Intersection Capacity Utilization 61.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42

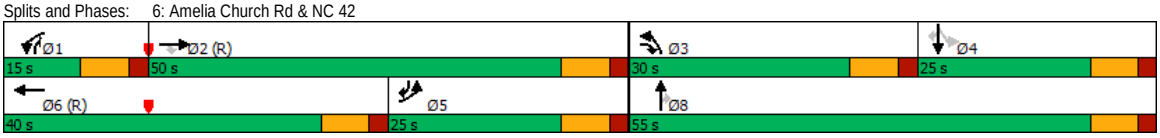


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	386	479	63	37	665	24	210	433	91	27	197	482
Future Volume (vph)	386	479	63	37	665	24	210	433	91	27	197	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		100	200		0	350		100	100		200
Storage Lanes	2		1	1		0	1		1	1		2
Taper Length (ft)	200			100			50			100		
Satd. Flow (prot)	3433	3539	1583	1770	3522	0	1770	1863	1583	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.489		
Satd. Flow (perm)	3433	3539	1583	1770	3522	0	1770	1863	1583	911	1863	2787
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	429	532	70	41	766	0	233	481	101	30	219	536
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8	1		4	5
Permitted Phases			2						8	4		4
Detector Phase	5	2	3	1	6		3	8	1	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0	7.0	7.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0	14.0	14.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	50.0	30.0	15.0	40.0		30.0	55.0	15.0	25.0	25.0	25.0
Total Split (%)	20.8%	41.7%	25.0%	12.5%	33.3%		25.0%	45.8%	12.5%	20.8%	20.8%	20.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
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	Lag	Lag	Lead	Lead	Lead		Lead		Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	20.0	49.6	76.4	9.6	39.3		21.7	45.7	60.4	19.0	19.0	39.0
Actuated g/C Ratio	0.17	0.41	0.64	0.08	0.33		0.18	0.38	0.50	0.16	0.16	0.32
v/c Ratio	0.75	0.36	0.07	0.29	0.66		0.73	0.68	0.13	0.21	0.74	0.59
Control Delay	36.2	8.9	2.6	57.4	39.2		59.6	35.8	15.1	47.2	64.0	20.6
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	36.2	8.9	2.6	57.4	39.2		59.6	35.8	15.1	47.2	64.0	20.6
LOS	D	A	A	E	D		E	D	B	D	E	C
Approach Delay		19.8			40.1			40.0			33.7	
Approach LOS		B			D			D			C	
Queue Length 50th (ft)	169	67	6	30	280		170	291	37	20	160	103
Queue Length 95th (ft)	200	46	7	68	356		254	404	66	50	#261	135
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	375		100	200			350		100	100		200
Base Capacity (vph)	572	1463	1050	148	1152		368	776	801	153	314	905
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	0.75	0.36	0.07	0.28	0.66		0.63	0.62	0.13	0.20	0.70	0.59

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 19 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 32.5 Intersection LOS: C
Intersection Capacity Utilization 75.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	143	57	14	561	169	20
Future Volume (vph)	143	57	14	561	169	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1863	1583	0	1861	1758	0
Flt Permitted				0.999	0.957	
Satd. Flow (perm)	1863	1583	0	1861	1758	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	887			1058	427	
Travel Time (s)	13.4			16.0	6.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	159	63	0	639	210	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	143	57	14	561	169	20
Future Vol, veh/h	143	57	14	561	169	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	63	16	623	188	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	814	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1347	-	347	886
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	341	886
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	508	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	27.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	365	-	-	1347	-
HCM Lane V/C Ratio	0.575	-	-	0.012	-
HCM Control Delay (s)	27.4	-	-	7.7	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.5	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	4	4	4	7	4	103	4	4	42	4
Future Volume (vph)	13	4	4	4	4	7	4	103	4	4	42	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1760	0	0	1715	0	0	1852	0	0	1837	0
Flt Permitted		0.969			0.988			0.998			0.996	
Satd. Flow (perm)	0	1760	0	0	1715	0	0	1852	0	0	1837	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		784			802			747			603	
Travel Time (s)		21.4			21.9			11.3			9.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	16	0	0	122	0	0	55	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.7%		ICU Level of Service A	
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	13	4	4	4	4	7	4	103	4	4	42	4
Future Vol, veh/h	13	4	4	4	4	7	4	103	4	4	42	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	4	4	4	4	8	4	114	4	4	47	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	187	183	49	185	183	116	51	0	0	118	0	0
Stage 1	57	57	-	124	124	-	-	-	-	-	-	-
Stage 2	130	126	-	61	59	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	774	711	1020	776	711	936	1555	-	-	1470	-	-
Stage 1	955	847	-	880	793	-	-	-	-	-	-	-
Stage 2	874	792	-	950	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	760	707	1020	765	707	936	1555	-	-	1470	-	-
Mov Cap-2 Maneuver	760	707	-	765	707	-	-	-	-	-	-	-
Stage 1	952	844	-	877	791	-	-	-	-	-	-	-
Stage 2	859	790	-	938	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.5	0.3	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	787	817	1470	-	-
HCM Lane V/C Ratio	0.003	-	-	0.03	0.02	0.003	-	-
HCM Control Delay (s)	7.3	0	-	9.7	9.5	7.5	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	189	64	9
Future Volume (vph)	0	4	0	189	64	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1611	0	1863	1831	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1831	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	690			562	427	
Travel Time (s)	18.8			8.5	6.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	210	81	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	0	189	64	9
Future Vol, veh/h	0	4	0	189	64	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	0	210	71	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	76	-	0	-	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	985	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	985	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	985	-	-
HCM Lane V/C Ratio	-	0.005	-	-
HCM Control Delay (s)	-	8.7	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	52	4	4	137	55	9
Future Volume (vph)	52	4	4	137	55	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1763	0	0	1861	1827	0
Flt Permitted	0.955			0.999		
Satd. Flow (perm)	1763	0	0	1861	1827	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	580			605	562	
Travel Time (s)	15.8			9.2	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	0	156	71	0
Sign Control	Stop			Free	Free	

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

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	4	4	137	55	9
Future Vol, veh/h	52	4	4	137	55	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	4	4	152	61	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	226	66	71	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	160	-	-	-	-	-
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	762	998	1529	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	760	998	1529	-	-	-
Mov Cap-2 Maneuver	760	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	869	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1529	-	773	-	-
HCM Lane V/C Ratio	0.003	-	0.08	-	-
HCM Control Delay (s)	7.4	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	4	4	124	46	9
Future Volume (vph)	13	4	4	124	46	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1740	0	0	1861	1822	0
Flt Permitted	0.963			0.999		
Satd. Flow (perm)	1740	0	0	1861	1822	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	621			603	605	
Travel Time (s)	16.9			9.1	9.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	142	61	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	4	4	124	46	9
Future Vol, veh/h	13	4	4	124	46	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	4	4	138	51	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	202	56	61	0	-	0
Stage 1	56	-	-	-	-	-
Stage 2	146	-	-	-	-	-
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	787	1011	1542	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	785	1011	1542	-	-	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	964	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.2	0
HCM LOS	A		

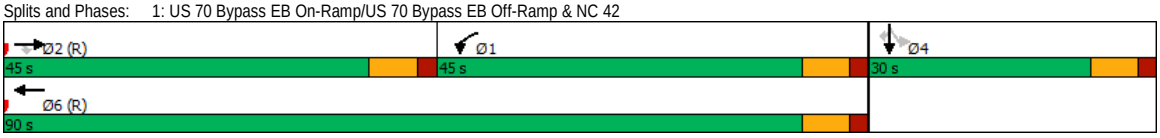
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1542	-	829	-	-
HCM Lane V/C Ratio	0.003	-	0.023	-	-
HCM Control Delay (s)	7.3	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	740	224	342	1089	0	0	0	0	344	4	150
Future Volume (vph)	0	740	224	342	1089	0	0	0	0	344	4	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			0%			4%	
Storage Length (ft)	0		200	225		0	0		0	250		350
Storage Lanes	0		1	1		0	0		0	1		2
Taper Length (ft)	25			300			25			200		
Satd. Flow (prot)	0	3557	1591	1770	3539	0	0	0	0	1648	1653	2731
Flt Permitted				0.950						0.950	0.953	
Satd. Flow (perm)	0	3557	1591	1770	3539	0	0	0	0	1648	1653	2731
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			45			55			25	
Link Distance (ft)		1565			1187			548			842	
Travel Time (s)		19.4			18.0			6.8			23.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	822	249	380	1210	0	0	0	0	191	195	167
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		14.0	14.0	7.0	14.0					7.0	7.0	7.0
Minimum Split (s)		21.0	21.0	14.0	21.0					14.0	14.0	14.0
Total Split (s)		45.0	45.0	45.0	90.0					30.0	30.0	30.0
Total Split (%)		37.5%	37.5%	37.5%	75.0%					25.0%	25.0%	25.0%
Yellow Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
All-Red Time (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0					-2.0	-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					None	None	None
Act Effct Green (s)		44.2	44.2	40.0	89.2					20.8	20.8	20.8
Actuated g/C Ratio		0.37	0.37	0.33	0.74					0.17	0.17	0.17
v/c Ratio		0.63	0.43	0.64	0.46					0.67	0.68	0.35
Control Delay		34.6	32.3	27.6	1.8					57.6	58.2	44.8
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		34.6	32.3	27.6	1.8					57.6	58.2	44.8
LOS		C	C	C	A					E	E	D
Approach Delay		34.0			8.0						54.0	
Approach LOS		C			A						D	
Queue Length 50th (ft)		274	144	207	7					146	149	65
Queue Length 95th (ft)		362	232	325	61					223	227	98
Internal Link Dist (ft)		1485			1107			468			762	
Turn Bay Length (ft)			200	225						250		350
Base Capacity (vph)		1308	585	590	2629					343	344	568
Starvation Cap Reductn		0	0	0	0					0	0	0
Spillback Cap Reductn		0	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.63	0.43	0.64	0.46					0.56	0.57	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 103 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 24.6		Intersection LOS: C	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

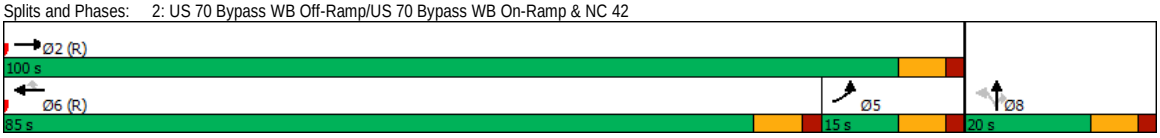
Splits and Phases: 1: US 70 Bypass EB On-Ramp/US 70 Bypass EB Off-Ramp & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	1020	0	0	1232	706	190	4	173	0	0	0
Future Volume (vph)	67	1020	0	0	1232	706	190	4	173	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			3%			0%	
Storage Length (ft)	200		0	0		450	150		450	0		0
Storage Lanes	1		0	0		1	1		2	0		0
Taper Length (ft)	250			25			200			25		
Satd. Flow (prot)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Flt Permitted	0.950						0.950	0.954				
Satd. Flow (perm)	1778	3557	0	0	3522	1575	1656	1663	2745	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1187			711			1791			500	
Travel Time (s)		18.0			10.8			34.9			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	74	1133	0	0	1369	784	108	107	192	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Detector Phase	5	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	14.0			14.0	14.0	7.0	7.0	7.0			
Minimum Split (s)	14.0	21.0			21.0	21.0	14.0	14.0	14.0			
Total Split (s)	15.0	100.0			85.0	85.0	20.0	20.0	20.0			
Total Split (%)	12.5%	83.3%			70.8%	70.8%	16.7%	16.7%	16.7%			
Yellow Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Act Effct Green (s)	9.8	95.9			83.9	83.9	14.1	14.1	14.1			
Actuated g/C Ratio	0.08	0.80			0.70	0.70	0.12	0.12	0.12			
v/c Ratio	0.51	0.40			0.56	0.71	0.56	0.55	0.60			
Control Delay	71.8	1.6			3.6	5.9	61.3	61.0	58.2			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	71.8	1.6			3.6	5.9	61.3	61.0	58.2			
LOS	E	A			A	A	E	E	E			
Approach Delay		5.9			4.4			59.8				
Approach LOS		A			A			E				
Queue Length 50th (ft)	62	7			96	105	84	83	80			
Queue Length 95th (ft)	m102	2			m103	m113	148	146	124			
Internal Link Dist (ft)		1107			631			1711			420	
Turn Bay Length (ft)	200					450	150		450			
Base Capacity (vph)	148	2842			2463	1101	207	207	343			
Starvation Cap Reductn	0	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.50	0.40			0.56	0.71	0.52	0.52	0.56			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 97 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: US 70 Bypass WB Off-Ramp/US 70 Bypass WB On-Ramp & NC 42





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	921	276	0	1876	9	0	0	276	0	0	44
Future Volume (vph)	0	921	276	0	1876	9	0	0	276	0	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	3539	1583	0	3536	0	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		711			850			802			375	
Travel Time (s)		10.8			12.9			21.9			7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1023	307	0	2094	0	0	0	307	0	0	49
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.1%		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	0	921	276	0	1876	9	0	0	276	0	0	44
Future Vol, veh/h	0	921	276	0	1876	9	0	0	276	0	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1023	307	0	2084	10	0	0	307	0	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	512	-	-	1047
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	507	0	0	225
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	507	-	-	225
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	22.4	25.4
HCM LOS			C	D

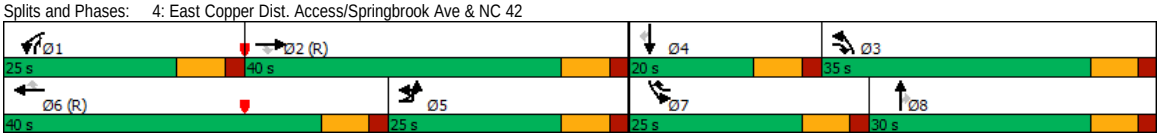
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	507	-	-	-	-	225
HCM Lane V/C Ratio	0.605	-	-	-	-	0.217
HCM Control Delay (s)	22.4	-	-	-	-	25.4
HCM Lane LOS	C	-	-	-	-	D
HCM 95th %tile Q(veh)	4	-	-	-	-	0.8

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	132	51	807	197	274	880	41	725	74	449	116	39	159
Future Volume (vph)	132	51	807	197	274	880	41	725	74	449	116	39	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		425		150	400		125	350		250	150		150
Storage Lanes		1		1	2		1	1		1	1		1
Taper Length (ft)		200			200			100			50		
Satd. Flow (prot)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1863	1583
Flt Permitted		0.950			0.950			0.950			0.950		
Satd. Flow (perm)	0	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1863	1583
Right Turn on Red				No			No			No			No
Satd. Flow (RTOR)													
Link Speed (mph)			45			45			25			35	
Link Distance (ft)			850			1341			972			358	
Travel Time (s)			12.9			20.3			26.5			7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	204	897	219	304	978	46	806	82	499	129	43	177
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases				2			6			8			4
Detector Phase	5	5	2	3	1	6	7	3	8	1	7	4	4
Switch Phase													
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	14.0	19.0	14.0	14.0	14.0	14.0	14.0	20.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	25.0	40.0	35.0	25.0	40.0	25.0	35.0	30.0	25.0	25.0	20.0	20.0
Total Split (%)	20.8%	20.8%	33.3%	29.2%	20.8%	33.3%	20.8%	29.2%	25.0%	20.8%	20.8%	16.7%	16.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
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	5.0
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)		20.0	35.9	65.9	19.1	35.0	59.6	30.0	24.2	45.5	23.6	15.0	15.0
Actuated g/C Ratio		0.17	0.30	0.55	0.16	0.29	0.50	0.25	0.20	0.38	0.20	0.12	0.12
v/c Ratio		0.69	0.85	0.25	0.56	0.95	0.06	0.94	0.22	0.83	0.37	0.19	0.90
Control Delay		44.7	33.3	7.0	46.8	47.0	7.0	63.6	40.1	45.8	48.9	49.3	94.5
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		44.7	33.3	7.0	46.8	47.0	7.0	63.6	40.1	45.8	48.9	49.3	94.5
LOS		D	C	A	D	D	A	E	D	D	D	D	F
Approach Delay			30.7			45.6			55.8			72.1	
Approach LOS			C			D			E			E	
Queue Length 50th (ft)		149	314	49	78	413	7	317	51	311	95	30	137
Queue Length 95th (ft)		#226	#399	81	127	#508	16	#437	99	465	154	67	#271
Internal Link Dist (ft)			770			1261			892			278	
Turn Bay Length (ft)		425		150	400		125	350		250	150		150
Base Capacity (vph)		295	1057	868	572	1032	817	858	425	612	383	232	197
Starvation Cap Reductn		0	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	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.69	0.85	0.25	0.53	0.95	0.06	0.94	0.19	0.82	0.34	0.19	0.90

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 19 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 46.4 Intersection LOS: D
Intersection Capacity Utilization 81.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

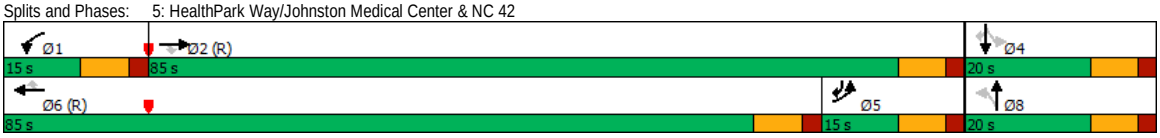
Splits and Phases: 4: East Copper Dist. Access/Springbrook Ave & NC 42



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1352	7	4	1074	19	31	4	19	56	4	88
Future Volume (vph)	15	1352	7	4	1074	19	31	4	19	56	4	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			1%			2%			0%	
Storage Length (ft)	450		175	425		225	75		0	0		50
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			100			50			25		
Satd. Flow (prot)	1778	3557	1591	1761	3522	1575	1752	1612	0	0	1779	1583
Flt Permitted	0.950			0.950			0.714				0.721	
Satd. Flow (perm)	1778	3557	1591	1761	3522	1575	1317	1612	0	0	1343	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		1341			562			963			874	
Travel Time (s)		20.3			8.5			18.8			23.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1502	8	4	1193	21	34	25	0	0	66	98
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	24.0	24.0	14.0	31.0	31.0	14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0	85.0	20.0	20.0		20.0	20.0	15.0
Total Split (%)	12.5%	70.8%	70.8%	12.5%	70.8%	70.8%	16.7%	16.7%		16.7%	16.7%	12.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	10.0	98.3	98.3	9.0	85.1	85.1	12.7	12.7			12.7	24.9
Actuated g/C Ratio	0.08	0.82	0.82	0.08	0.71	0.71	0.11	0.11			0.11	0.21
v/c Ratio	0.11	0.52	0.01	0.03	0.48	0.02	0.24	0.15			0.46	0.30
Control Delay	38.5	3.3	3.6	61.5	8.5	5.7	52.7	49.5			60.7	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	38.5	3.3	3.6	61.5	8.5	5.7	52.7	49.5			60.7	40.5
LOS	D	A	A	E	A	A	D	D			E	D
Approach Delay		3.6			8.6			51.4			48.7	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	11	66	1	3	116	4	24	18			49	62
Queue Length 95th (ft)	m14	183	m2	m6	353	m8	57	45			95	110
Internal Link Dist (ft)		1261			482			883			794	
Turn Bay Length (ft)	450		175	425		225	75					50
Base Capacity (vph)	148	2913	1303	146	2497	1116	164	201			167	328
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.11	0.52	0.01	0.03	0.48	0.02	0.21	0.12			0.40	0.30

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 109 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 55.7%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: HealthPark Way/Johnston Medical Center & NC 42

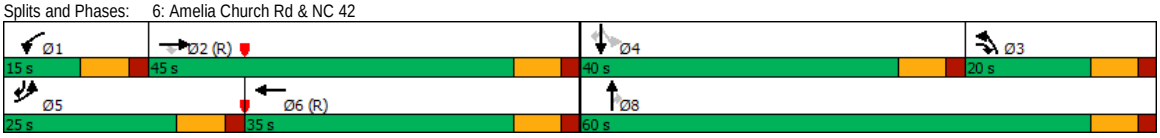


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	798	171	80	543	30	134	229	43	16	474	419
Future Volume (vph)	447	798	171	80	543	30	134	229	43	16	474	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		100	200		0	350		100	100		200
Storage Lanes	2		1	1		0	1		1	1		2
Taper Length (ft)	200			100			50			100		
Satd. Flow (prot)	3433	3539	1583	1770	3511	0	1770	1863	1583	1770	1863	2787
Flt Permitted	0.950			0.950			0.950			0.502		
Satd. Flow (perm)	3433	3539	1583	1770	3511	0	1770	1863	1583	935	1863	2787
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		607			612			509			889	
Travel Time (s)		9.2			9.3			7.7			13.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	497	887	190	89	636	0	149	254	48	18	527	466
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8			4	5
Permitted Phases			2						8	4		4
Detector Phase	5	2	3	1	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0	7.0	7.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	21.0	14.0	14.0	21.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	45.0	20.0	15.0	35.0		20.0	60.0	60.0	40.0	40.0	25.0
Total Split (%)	20.8%	37.5%	16.7%	12.5%	29.2%		16.7%	50.0%	50.0%	33.3%	33.3%	20.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
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	Lag	Lead	Lag		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	20.0	40.8	55.2	9.8	30.6		14.4	54.4	54.4	35.0	35.0	55.0
Actuated g/C Ratio	0.17	0.34	0.46	0.08	0.26		0.12	0.45	0.45	0.29	0.29	0.46
v/c Ratio	0.87	0.74	0.26	0.62	0.71		0.70	0.30	0.07	0.07	0.97	0.36
Control Delay	74.2	24.9	7.0	72.0	46.0		68.9	21.8	18.6	31.8	74.5	12.1
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	74.2	24.9	7.0	72.0	46.0		68.9	21.8	18.6	31.8	74.5	12.1
LOS	E	C	A	E	D		E	C	B	C	E	B
Approach Delay		38.3			49.2			37.1			45.0	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	208	183	37	68	238		112	121	20	10	403	75
Queue Length 95th (ft)	#287	282	26	#134	306		#197	182	43	29	#628	101
Internal Link Dist (ft)		527			532			429			809	
Turn Bay Length (ft)	375		100	200			350		100	100		200
Base Capacity (vph)	572	1203	736	147	896		221	853	725	272	543	1277
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	0.87	0.74	0.26	0.61	0.71		0.67	0.30	0.07	0.07	0.97	0.36

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 65 (54%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 42.1 Intersection LOS: D
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Amelia Church Rd & NC 42



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	529	167	21	246	93	18
Future Volume (vph)	529	167	21	246	93	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1863	1583	0	1855	1749	0
Flt Permitted				0.996	0.960	
Satd. Flow (perm)	1863	1583	0	1855	1749	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	891			704	427	
Travel Time (s)	13.5			10.7	6.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	588	186	0	296	123	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	529	167	21	246	93	18
Future Vol, veh/h	529	167	21	246	93	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	588	186	23	273	103	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	774	0	907	588
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	842	-	306	509
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	737	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	842	-	296	509
Mov Cap-2 Maneuver	-	-	-	-	296	-
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	23.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	318	-	-	842	-
HCM Lane V/C Ratio	0.388	-	-	0.028	-
HCM Control Delay (s)	23.3	-	-	9.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0.1	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	4	4	4	4	5	4	58	4	7	85	14
Future Volume (vph)	8	4	4	4	4	5	4	58	4	7	85	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1756	0	0	1730	0	0	1842	0	0	1824	0
Flt Permitted		0.974			0.986			0.997			0.997	
Satd. Flow (perm)	0	1756	0	0	1730	0	0	1842	0	0	1824	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		784			790			747			609	
Travel Time (s)		21.4			21.5			11.3			9.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	14	0	0	72	0	0	118	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	4	4	4	4	5	4	58	4	7	85	14
Future Vol, veh/h	8	4	4	4	4	5	4	58	4	7	85	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	4	4	4	4	6	4	64	4	8	94	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	197	194	102	196	200	66	110	0	0	68	0	0
Stage 1	118	118	-	74	74	-	-	-	-	-	-	-
Stage 2	79	76	-	122	126	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	762	701	953	763	696	998	1480	-	-	1533	-	-
Stage 1	887	798	-	935	833	-	-	-	-	-	-	-
Stage 2	930	832	-	882	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	749	695	953	751	690	998	1480	-	-	1533	-	-
Mov Cap-2 Maneuver	749	695	-	751	690	-	-	-	-	-	-	-
Stage 1	884	793	-	932	831	-	-	-	-	-	-	-
Stage 2	917	830	-	868	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	9.5	0.5	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1480	-	-	775	806	1533	-	-
HCM Lane V/C Ratio	0.003	-	-	0.023	0.018	0.005	-	-
HCM Control Delay (s)	7.4	0	-	9.8	9.5	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	0	112	161	27
Future Volume (vph)	0	4	0	112	161	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1611	0	1863	1827	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1827	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	690			555	427	
Travel Time (s)	18.8			8.4	6.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	124	209	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	0	112	161	27
Future Vol, veh/h	0	4	0	112	161	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	0	124	179	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	194	-	0	-	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	847	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	847	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	847	-	-
HCM Lane V/C Ratio	-	0.005	-	-
HCM Control Delay (s)	-	9.3	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	4	4	80	134	27
Future Volume (vph)	32	4	4	80	134	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1758	0	0	1859	1820	0
Flt Permitted	0.957			0.998		
Satd. Flow (perm)	1758	0	0	1859	1820	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	580			601	555	
Travel Time (s)	15.8			9.1	8.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	0	93	179	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	4	4	80	134	27
Future Vol, veh/h	32	4	4	80	134	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	4	4	89	149	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	261	164	179	0	-	0
Stage 1	164	-	-	-	-	-
Stage 2	97	-	-	-	-	-
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	728	881	1397	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	726	881	1397	-	-	-
Mov Cap-2 Maneuver	726	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	927	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1397	-	740	-	-
HCM Lane V/C Ratio	0.003	-	0.054	-	-
HCM Control Delay (s)	7.6	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	4	4	72	107	28
Future Volume (vph)	8	4	4	72	107	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1726	0	0	1859	1811	0
Flt Permitted	0.967			0.998		
Satd. Flow (perm)	1726	0	0	1859	1811	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	621			609	601	
Travel Time (s)	16.9			9.2	9.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	84	150	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.3%		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	8	4	4	72	107	28
Future Vol, veh/h	8	4	4	72	107	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	4	4	80	119	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	223	135	150	0	-	0
Stage 1	135	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	765	914	1431	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	763	914	1431	-	-	-
Mov Cap-2 Maneuver	763	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.4	0
HCM LOS	A		

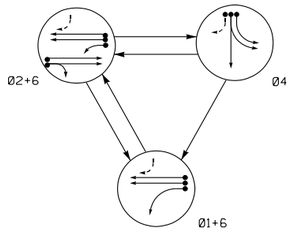
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1431	-	807	-	-
HCM Lane V/C Ratio	0.003	-	0.017	-	-
HCM Control Delay (s)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix M:

Signal Plans

PROJECT REFERENCE NO.	SHEET NO.
SS-4904DY	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION				
SIGNAL FACE	PHASE Ø1+6	Ø2+6	Ø4	FLASH
11	←F ←Y	←R	←Y	
21,22	R	G	R	Y
41,42	R	R	G	R
61,62	G	G	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.

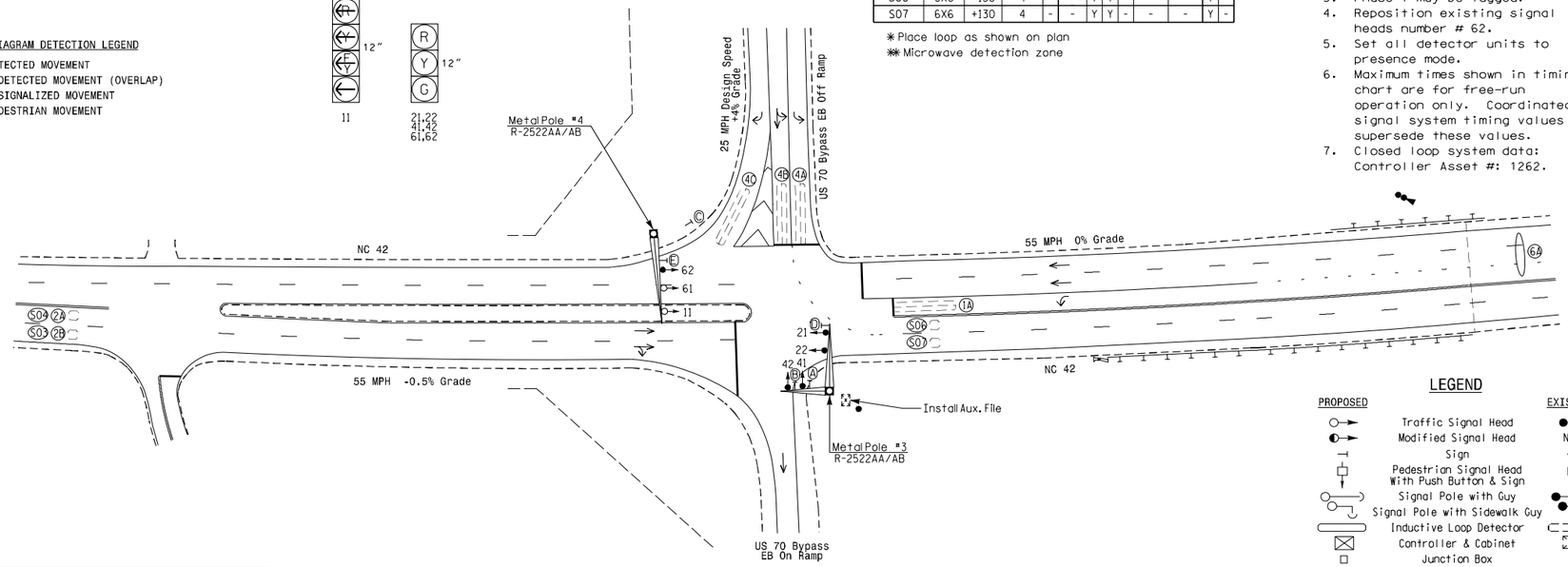
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	-	1	Y	Y	-	-	15	-	-
					6	Y	Y	Y	-	3	-	-
2A/S04	6X6	420	6	-	2	Y	Y	-	-	-	Y	-
2B/S05	6X6	420	6	-	2	Y	Y	-	-	-	Y	-
4A	6X40	0	2-4-2	-	4	Y	Y	-	-	-	-	-
4B	6X40	0	2-4-2	-	4	Y	Y	-	-	-	-	-
4C	6X40	✳	2-4-2	-	4	Y	Y	-	-	20	-	-
6A	✳✳	420	✳✳	-	6	Y	Y	-	-	-	-	-
S06	6X6	+130	4	-	-	Y	Y	-	-	-	Y	-
S07	6X6	+130	4	-	-	Y	Y	-	-	-	Y	-

✳ Place loop as shown on plan
✳✳ Microwave detection zone

3 Phase
Fully Actuated
NC 42-US 70 BYP (East System) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Reposition existing signal heads number # 62.
5. Set all detector units to presence mode.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
7. Closed loop system data: Controller Asset #: 1262.



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
▯↓	Pedestrian Signal Head With Push Button & Sign	■↓
○)	Signal Pole with Guy	●)
○)	Signal Pole with Sidewalk Guy	●)
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
- - - - -	2-in Underground Conduit	- - - - -
N/A	Right of Way	- - - - -
→	Directional Arrow	→
N/A	Guardrail	⊥⊥
◁▭	Metal Pole with Mastarm	▭
⬭	Microwave Detection Zone	⬭
◁	Microwave Detector	■
Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
Ⓑ	Combined Through and Left Arrow Sign (R3-6L)	Ⓑ
Ⓒ	"YIELD" Sign (R1-2)	Ⓒ
Ⓓ	No Left Turn Sign (R3-2)	Ⓓ
Ⓔ	No Right Turn Sign (R3-1)	Ⓔ

OASIS 2070 TIMING CHART				
	PHASE			
FEATURE	1	2	4	6
Min Green 1 *	7	14	7	14
Extension 1 *	2.0	6.0	2.0	6.0
Max Green 1 *	15	90	30	90
Yellow Clearance	3.0	5.3	3.6	5.3
Red Clearance	2.9	1.0	2.3	1.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	1.5	-	1.5
Max Variable Initial *	-	46	-	46
Time Before Reduction *	-	15	-	15
Time To Reduce *	-	30	-	30
Minimum Gap	-	3.4	-	3.4
Recall Mode	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	YELLOW
Dual Entry	-	-	-	-
Simultaneous Gap	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.

Signal Upgrade Corr. File: 04-16-40326

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Offices of:
Professional Mobility and Safety Solutions
NCDOT Traffic Engineering Branch
Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

NC 42
at
US 70 Bypass EB Ramp

Division 4 Johnston County W. of Clayton

PLAN DATE:	November 2016	REVIEWED BY:	JPG
PREPARED BY:	KGP, Jr.	REVIEWED BY:	

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

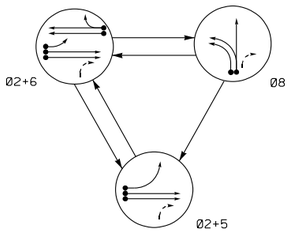
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Documents Originated: Jason P. Galloway 12/12/2016
SIG. INVENTORY NO. 04-1262

09-DEC-2016 08:18
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kgpowell

PROJECT REFERENCE NO.	SHEET NO.
SS-4904DY	Sig. 1.0

PHASING DIAGRAM



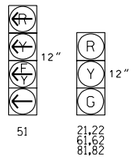
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION				
SIGNAL FACE	PHASE Ø2+5	PHASE Ø2+6	PHASE Ø4+8	FLASH
21,22	G	G	R	Y
51	←	←	R	Y
61,62	R	G	R	Y
81,82	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



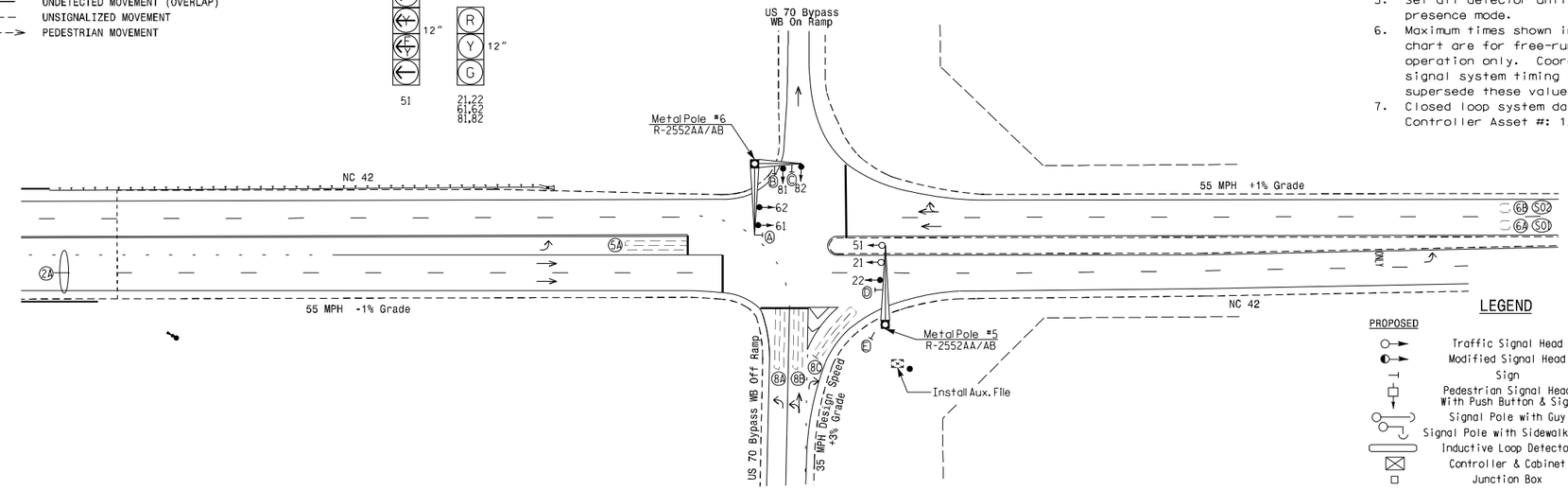
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART											
INDUCTIVE LOOPS				DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	**	420	**	-	2	Y	Y	-	-	-	-	-
5A	6X40	0	2-4-2	-	5	Y	Y	-	-	15	-	-
				-	2	Y	Y	Y	-	3	-	-
6A/SO1	6X6	420	6	-	6	Y	Y	-	-	-	Y	-
6B/SO2	6X6	420	6	-	6	Y	Y	-	-	-	Y	-
8A	6X40	0	2-4-2	-	8	Y	Y	-	-	-	-	-
8B	6X40	0	2-4-2	-	8	Y	Y	-	-	-	-	-
8C	6X40	*	2-4-2	-	8	Y	Y	-	-	20	-	-

* Place loop as shown on plan
** Microwave detection zone

3 Phase
Fully Actuated
NC 42-US 70 BYP (East System) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 5 may be lagged.
4. Reposition existing signal head number #22.
5. Set all detector units to presence mode.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
7. Closed loop system data: Controller Asset #: 1261.



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
□	Pedestrian Signal Head With Push Button & Sign	■
○	Signal Pole with Guy	●
○	Signal Pole with Sidewalk Guy	●
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
----------	2-in Underground Conduit	----------
N/A	Right of Way	----------
→	Directional Arrow	→
N/A	Guardrail	⊥⊥
⊠	Metal Pole with Mastarm	⊠
⬭	Microwave Detection Zone	⬭
⊲	Microwave Detector	⊲
Ⓐ	No Left Turn Sign (R3-2)	Ⓐ
Ⓑ	Left Arrow "ONLY" Sign (R3-5L)	Ⓑ
Ⓒ	Combined Through and Left Arrow Sign (R3-6L)	Ⓒ
Ⓓ	No Right Turn Sign (R3-1)	Ⓓ
Ⓔ	"YIELD" Sign (R1-2)	Ⓔ

OASIS 2070 TIMING CHART				
FEATURE	PHASE 2	PHASE 5	PHASE 6	PHASE 8
Min Green 1 *	14	7	14	7
Extension 1 *	6.0	2.0	6.0	2.0
Max Green 1 *	90	15	90	0
Yellow Clearance	5.3	3.0	5.3	3.7
Red Clearance	1.0	2.9	1.0	1.9
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	1.5	-	1.5	-
Max Variable Initial *	46	-	46	-
Time Before Reduction *	15	-	15	-
Time To Reduce *	30	-	30	-
Minimum Gap	3.4	-	3.4	-
Recall Mode	MIN RECALL	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	YELLOW	-
Dual Entry	-	-	-	-
Simultaneous Gap	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.

Signal Upgrade Corr. File: 04-16-40326

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
Traffic Engineering Branch, Signal Design Section
750 N.Greenfield Pkwy, Garner, NC 27529

NC 42
at
US 70 Bypass WB Ramp

Division 4 Johnston County W. of Clayton

PLAN DATE:	November 2016	REVIEWED BY:	JPG
PREPARED BY:	KGP, Jr.	REVIEWED BY:	

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Jason P. Galloway 12/9/2016
DocuSigned by: DATE

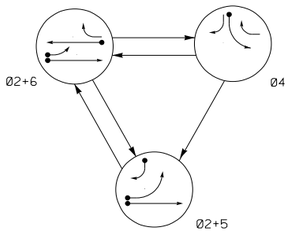
SIG. INVENTORY NO. 04-1261

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kgpeed.in

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PROJECT REFERENCE NO.	SHEET NO.
36249.4066	Sig.1.0

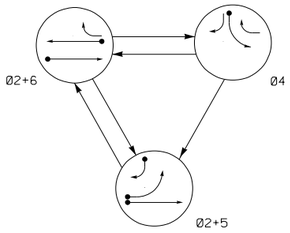
DEFAULT PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION				
SIGNAL FACE	PHASE 02+5	PHASE 02+6	PHASE 04	FLASH
21,22	G	G	R	Y
41	R	R	G	R
42	R	R	G	R
51	~~←~~	~~F Y~~	~~R~~	~~Y~~
61	R	G	R	Y
62	R	G	R	Y

ALTERNATE PHASING TABLE OF OPERATION				
SIGNAL FACE	PHASE 02+5	PHASE 02+6	PHASE 04+8	FLASH
21,22	G	G	R	Y
41	R	R	G	R
42	R	R	G	R
51	~~←~~	~~R~~	~~R~~	~~Y~~
61	R	G	R	Y
62	R	G	R	Y

ALTERNATE PHASING DIAGRAM

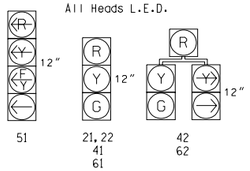


PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.



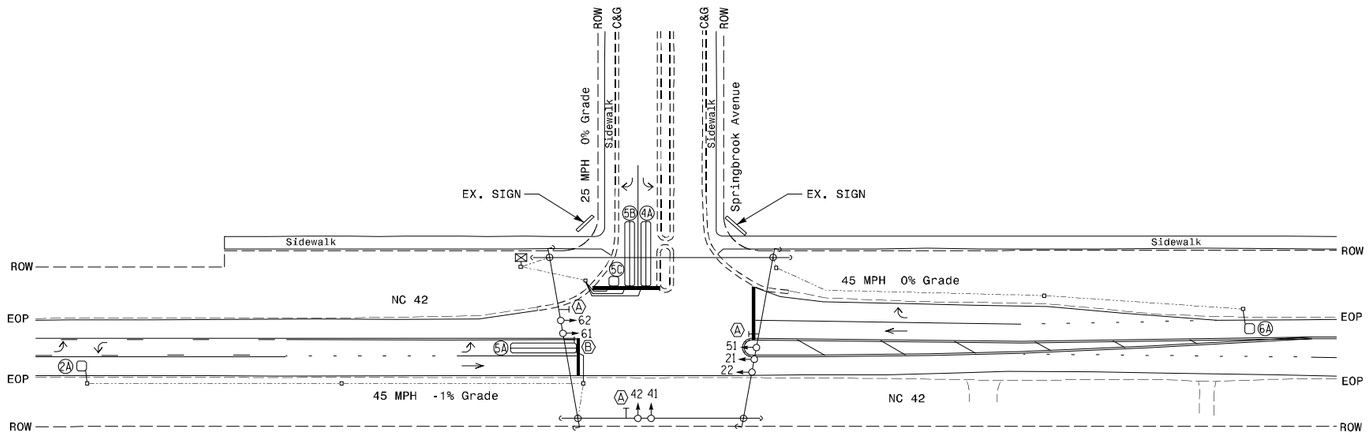
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X6	300	5	Y	2	Y	Y	-	-	-	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15*	-	Y
			2-4-2	Y	2#	Y	Y	Y	-	3	-	Y
5B	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	Y
5C	6X6	0	3	Y	5	Y	Y	-	-	15	-	Y
6A	6X6	300	5	Y	6	Y	Y	-	-	-	-	Y

Disable Phase call for loop(s) during Alternate Phasing Operation.
* Disable delay during Alternate Phasing Operation.

3 Phase
Fully Actuated
(NC 42 Closed Loop System)
System #10409

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: http://www.ncdot.org/doh/preconstruct/traffic/itss
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal sytem timing values supersede these values.
7. The Division Traffic Engineer will determine the hours of use for each phasing plan.



LEGEND

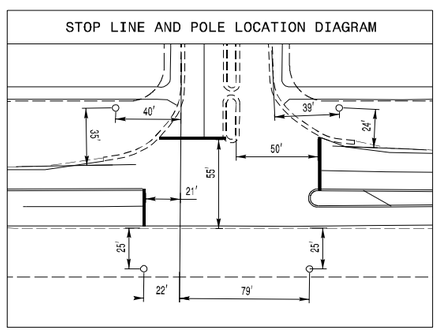
PROPOSED		EXISTING
	Traffic Signal Head	
	Sign	
	Signal Pole With Guy	
	Signal Pole with Sidewalk Guy	
	Curb Ramp	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
DD	Directional Drilled Conduit	N/A
	Directional Arrow	
N/A	Right of Way	
A	Street Name Sign (D3-1)	A
B	No U Turn Sign (R3-4)	B

OASIS 2070 TIMING CHART

FEATURE	PHASE 2	4	5	6
Min Green 1 *	12	7	7	12
Extension 1 *	6.0	2.0	2.0	6.0
Max Green 1 *	90	20	20	90
Yellow Clearance	4.6	3.2	3.0	4.6
Red Clearance	1.3	2.1	2.4	1.3
Red Revert	-	-	-	-
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	2.5	-	-	2.5
Max Variable Initial *	34	-	-	34
Time Before Reduction *	15	-	-	15
Time To Reduce *	45	-	-	45
Minimum Gap	3.4	-	-	3.4
Recall Mode	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	YELLOW	-	-	YELLOW
Dual Entry	-	-	-	-
Simultaneous Gap	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.

STOP LINE AND POLE LOCATION DIAGRAM



This plan supersedes the plan signed and sealed on 12/04/2019

New Installation

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC Dept of Transportation
Division of Highways
Final Drawing Date: 2/19/2020
DocuSigned by: Lindsay M. Tuttle
ITS & Signals Unit

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

Prepared for the Offices of:
Traffic Engineering, Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy.,Garner,NC 27529

NC 42
at
Springbrook Avenue

Division 4 Johnston County Clayton

PLAN DATE:	February 2020	REVIEWED BY:	J.L. Lewis
PREPARED BY:	M.L. Stygles	REVIEWED BY:	J. Ma

REVISIONS	INIT.	DATE

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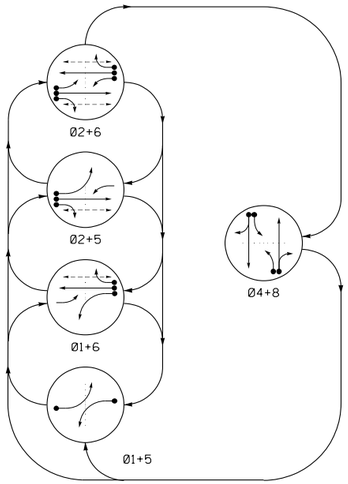
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NORTH CAROLINA PROFESSIONAL SEAL 046087 ENGINEER MATTHEW L. STYGLES
Signature on file
SIGNATURE 2/10/2020 DATE
SIG. INVENTORY NO. 04-1443

$$$$USERNAME$$$$

DocuSign Envelope ID: 2482187D-9F3C-477E-BB2A-7E3E2CC9A350

PROJECT REFERENCE NO.	SHEET NO.
36249,3645	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø4+8	FLASH
11	←	—	F/Y	F/Y	~~R~~	~~Y~~
21,22	R	R	G	G	R	Y
41,42	R	R	R	R	G	R
51	←	F/Y	←	F/Y	~~R~~	~~Y~~
61,62	R	G	R	G	R	Y
81,82	R	R	R	R	G	R
P21,P22	DW	DW	W	W	DW	DRK
P61,P62	DW	W	DW	W	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

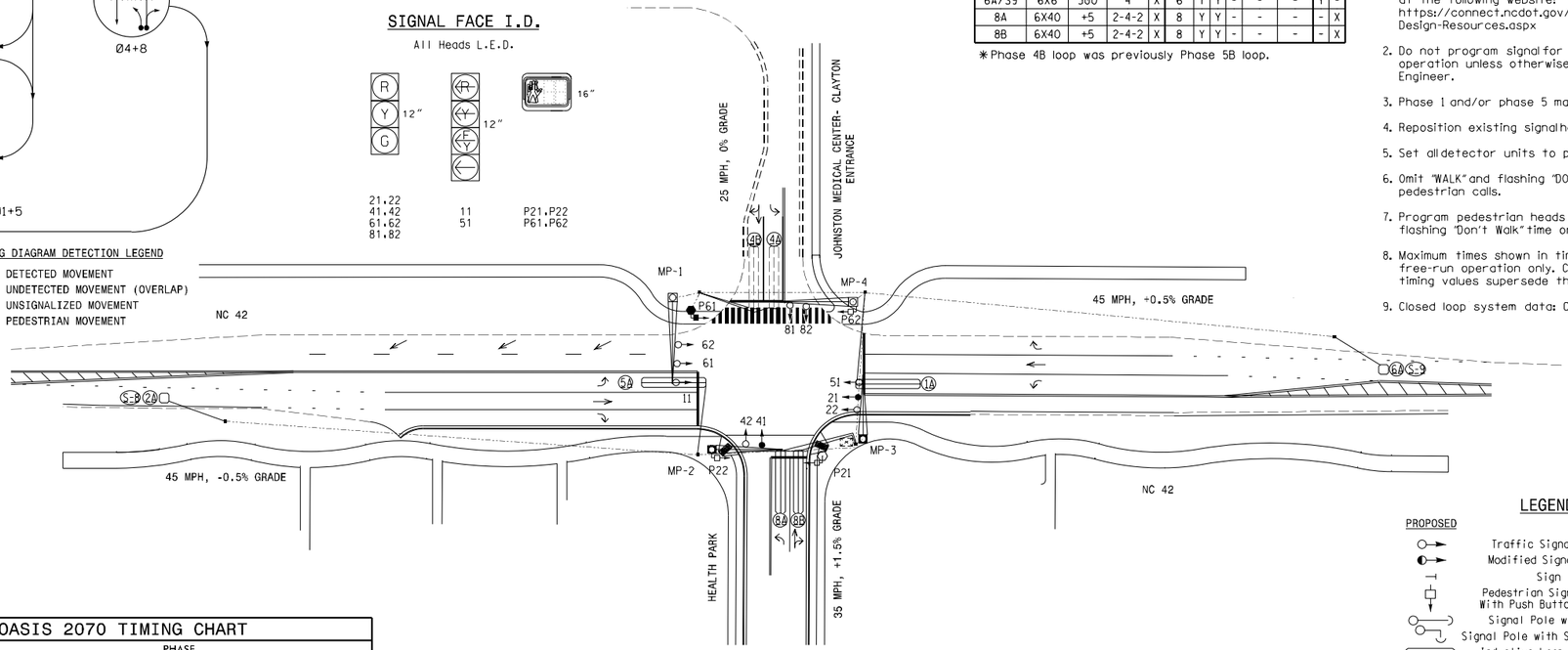
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	+5	2-4-2	X	1	Y	Y	-	-	10	-	X
					6	Y	Y	Y	-	3	-	X
2A/S8	6X6	300	4	X	2	Y	Y	-	-	-	Y	-
4A	6X40	+5	2-4-2	-	4	Y	Y	-	-	-	-	-
4B*	6X40	+5	2-4-2	-	4	Y	Y	-	-	-	-	-
5A	6X40	+5	2-4-2	X	5	Y	Y	-	-	10	-	-
					2	Y	Y	Y	-	3	-	-
6A/S9	6X6	300	4	X	6	Y	Y	-	-	-	Y	-
8A	6X40	+5	2-4-2	X	8	Y	Y	-	-	-	-	X
8B	6X40	+5	2-4-2	X	8	Y	Y	-	-	-	-	X

*Phase 4B loop was previously Phase 5B loop.

5 Phase
Fully Actuated
NC 42 (Clayton) East Closed Loop System

NOTES

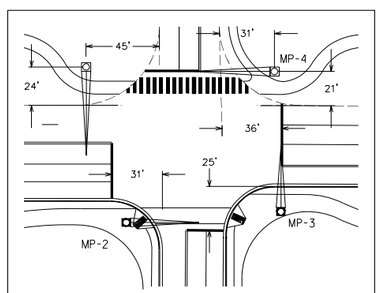
1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: https://connect.ncdot.gov/resources/safety/Pages/ITS Design-Resources.aspx
2. Do not program signal for late night falshing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Reposition existing signal heads numbered 21 and 41.
5. Set all detector units to presence mode.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Closed loop system data: Controller Asset #1361.



OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	4	5	6	8
Min Green 1 *	7	12	7	7	12	7
Extension 1 *	2.0	6.0	2.0	2.0	6.0	2.0
Max Green 1 *	20	90	25	20	90	25
Yellow Clearance	3.0	4.6	3.8	3.0	4.6	3.8
Red Clearance	2.4	1.2	2.4	2.4	1.2	2.4
Red Revert	-	-	-	-	-	-
Walk 1 *	-	7	-	-	7	-
Don't Walk 1	-	10	-	-	17	-
Seconds Per Actuation *	-	2.5	-	-	2.5	-
Max Variable Initial *	-	34	-	-	34	-
Time Before Reduction *	-	15	-	-	15	-
Time To Reduce *	-	30	-	-	30	-
Minimum Gap	-	3.0	-	-	3.0	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-
Dual Entry	-	-	ON	-	-	ON
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.



PROPOSED STOPBAR & POLE LOCATIONS

NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/17/2016
DocuSigned by: Jason P. Gallaway
ITS & Signals Unit

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Metal Pole with Mastarm	
	Modified Pedestrian Head	N/A
	Type II Signal Pedestal	
N/A	Wheelchair Ramp	

Signal Upgrade

Prepared By:
A. MortonThomas and Associates, Inc.
Consulting Engineers
6131 FALLS OF NEUSE ROAD, SUITE 106, RALEIGH, NC 27609
TEL (919) 855-9989 FAX (919) 855-5687
E-MAIL MSURASKY@AMTENGINEERING.COM
AMT FILE # 112-153.001

Prepared in the Offices of:
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 1"=40'

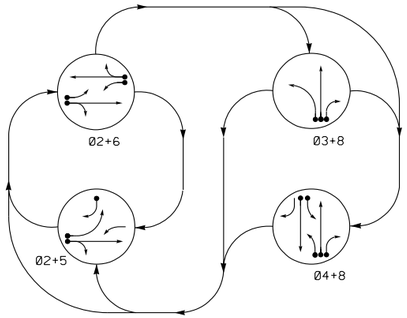
NC 42
AT
JOHNSTON MEDICAL CENIER-CLAYTON ENTRANCE AND HEALTH PARK
DIVISION 4 JOHNSTON COUNTY CLAYTON
PLAN DATE: October 2016 REVIEWED BY: MS
PREPARED BY: TJW REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 27333 ENGINEER MICHAEL N. SURASKY
SIGNATURE 11/28/2016 DATE
SIG. INVENTORY NO. 04-1361

PROJECT REFERENCE NO.	SHEET NO.
	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2+5	Ø2+6	Ø3+8	Ø4+8	FLASH
21,22	G	G	R	R	Y
31	~~R~~	~~R~~	–	~~FY~~	~~R~~
41	R	R	R	G	R
42	R/–	R	R	G	R
51	–	~~FY~~	~~R~~	~~R~~	~~Y~~
61	~~FY~~	~~FY~~	~~R~~	~~R~~	~~Y~~
62,63	R	G	R	R	Y
81,82	R	R	G	G	R

SIGNAL FACE I.D.

All Heads L.E.D.

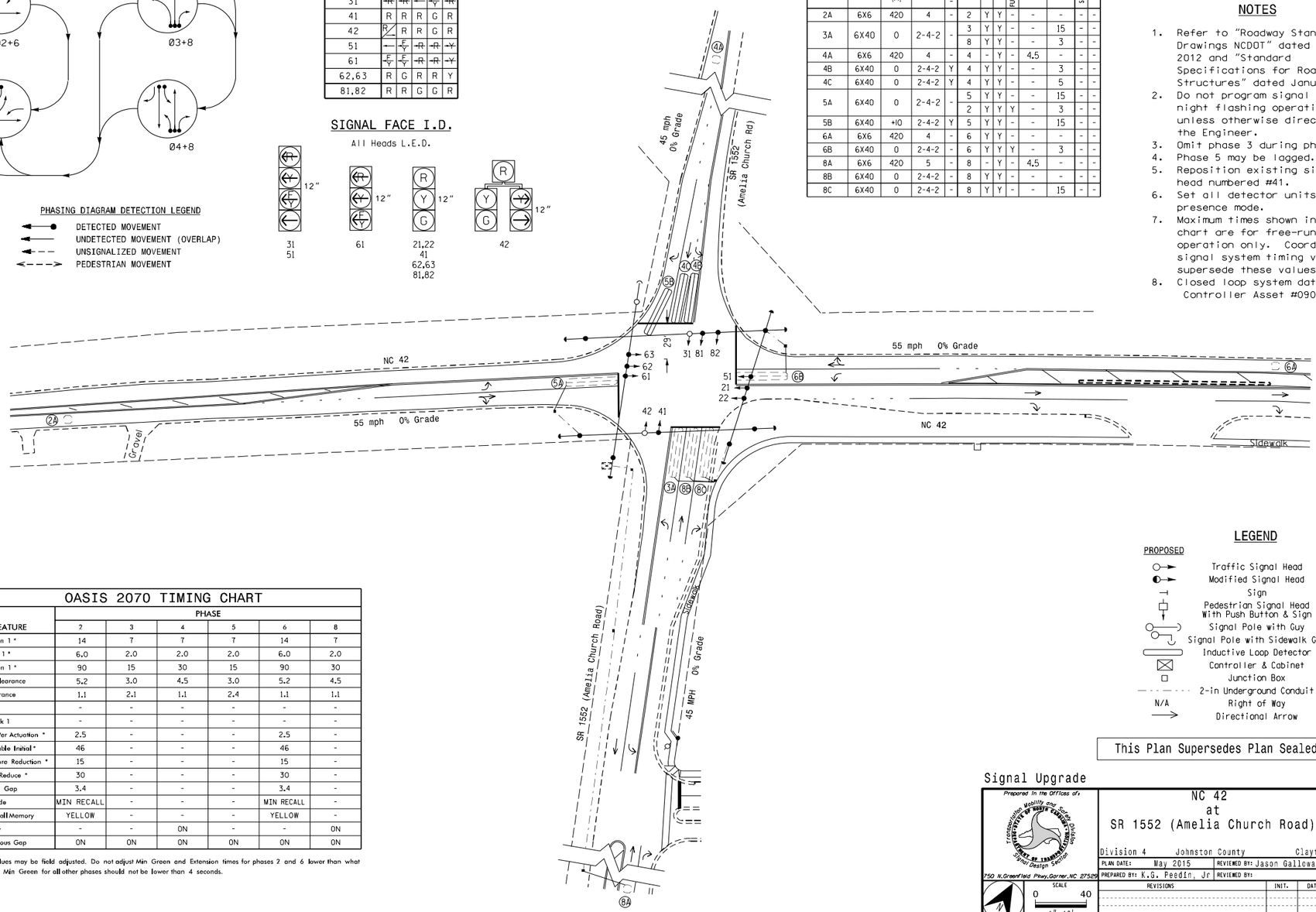
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

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
2A	6X6	420	4	-	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	15	-	-
					8	Y	Y	-	-	3	-	-
4A	6X6	420	4	-	4	-	Y	-	4.5	-	-	-
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	3	-	-
4C	6X40	0	2-4-2	Y	4	Y	Y	-	-	5	-	-
5A	6X40	0	2-4-2	-	5	Y	Y	-	-	15	-	-
					2	Y	Y	Y	-	3	-	-
5B	6X40	+10	2-4-2	Y	5	Y	Y	-	-	15	-	-
6A	6X6	420	4	-	6	Y	Y	-	-	-	-	-
6B	6X40	0	2-4-2	-	6	Y	Y	Y	-	3	-	-
8A	6X6	420	5	-	8	-	Y	-	4.5	-	-	-
8B	6X40	0	2-4-2	-	8	Y	Y	-	-	-	-	-
8C	6X40	0	2-4-2	-	8	Y	Y	-	-	15	-	-

4 Phase
Fully Actuated
NC 42 W. Closed Loop System

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Omit phase 3 during phase 4 on.
4. Phase 5 may be lagged.
5. Reposition existing signal head numbered #41.
6. Set all detector units to presence mode.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
8. Closed loop system data: Controller Asset #0904.



OASIS 2070 TIMING CHART

FEATURE	PHASE 2	3	4	5	6	8
Min Green 1 *	14	7	7	7	14	7
Extension 1 *	6.0	2.0	2.0	2.0	6.0	2.0
Max Green 1 *	90	15	30	15	90	30
Yellow Clearance	5.2	3.0	4.5	3.0	5.2	4.5
Red Clearance	1.1	2.1	1.1	2.4	1.1	1.1
Walk 1 *	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-
Seconds Per Actuation *	2.5	-	-	-	2.5	-
Max Variable Initial *	46	-	-	-	46	-
Time Before Reduction *	15	-	-	-	15	-
Time To Reduce *	30	-	-	-	30	-
Minimum Gap	3.4	-	-	-	3.4	-
Recall Mode	MIN RECALL	-	-	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	-	-	YELLOW	-
Dual Entry	-	-	ON	-	-	ON
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.

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	

This Plan Supersedes Plan Sealed on 4/01/2015

Signal Upgrade

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy, Garner, NC 27529

NC 42
at
SR 1552 (Amelia Church Road)

Division 4 Johnston County Clayton

PLAN DATE: May 2015 REVIEWED BY: Jason Galloway
PREPARED BY: K.G. Peedin, Jr REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Jason Galloway 5/18/2015
DATE

SIG. INVENTORY NO. 04-0904

18 MAY 2015, 09:32
S:\#TISSIG#15\Signals\Signal Design Section\Eastern Region\div-04\04-0904\04090401_sig_dsn_20150518.dgn
jgallowa

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

DELIVERY VIA EMAIL

September 14, 2022

Jonathan K. Jacobs, PE
Assistant Town Engineer - Town of Clayton
111 E. Second Street
Clayton, NC 27528

COUNTY: Johnston

SUBJECT: **TIA Review of Proposed Corbett Assemblage**

Dear Mr. Jacobs,

Highway Division Four (Division) has reviewed the Traffic Impact Analysis (TIA) for the subject development. Please accept this letter as concurrence with the TIA and the attached TIA Review Report performed by the Congestion Management Section of the Transportation Mobility and Safety Division of NCDOT. Any comments below are in addition to the requirements that are included in the actual TIA or Traffic Impact Analysis Review. All requirements or recommendations included herein are based off current Department and Division policies. This review should not be mistaken for approval of the driveway permit, design/construction plans, final plat, site plans, or access locations. A driveway permit must be obtained prior to construction and NCDOT will approve site plan and access locations during this review. All design aspects of any submitted plans shall comply with current NCDOT Standard Specifications for Roads and Structures and Policy on Street and Driveway Access to North Carolina Highways.

GENERAL COMMENTS

- Any roadway improvements and right-of-way dedication necessary to accommodate the road construction shall be the responsibility of the owner/developers. All required ROW shall be dedicated as public ROW in the final plat. Installation of right turn lanes will typically require at least 15' of dedication.
- Lane Closures for required improvement construction will only be permitted under restricted hours due to heavy traffic volumes in the vicinity of the proposed development. These restrictions will be determined during the driveway permitting application and approval.
- These conditions are based on current traffic volumes and projected growth for the study area. If the proposed build out year for this development, as stated in the TIA, varies more than one year an addendum or revised TIA may be required.
- Improvements being identified by a TIA for an adjacent development does not dismiss or release this development from installation and/or participation of these improvements. It is recommended that the Developers coordinate this installation with other committed

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS | DIV. 4 DIST. 3
2671 US 70 WEST
GOLDSBORO, NC 27530

Telephone: (919) 739-5300
Fax: (919) 731-2017
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
2671 US 70 WEST
GOLDSBORO, NC 26730

developments. The Department will not participate in determining the value of each individual contribution to this roadway improvement.

- Any additional improvements that are constructed after the completion of this TIA must be maintained while constructing the improvements required by this letter.

Additional Requirements

- Any approved driveways for this site on NCDOT ROW must be spaced 600'on secondary and 1,000' on primary routes. This is measured along the ROW line between the tangent projection of the inside edges of adjacent driveways apart measuring the distance between the radiuses of both driveways.
- The analysis includes background improvements by others. If these improvements are not in place at the time of construction, the site should provide these improvements or analysis demonstrating mitigation is not necessary.
- All left and right turns installed on NCDOT ROW at will required a minimum of 100' of storage if located at a site driveway. If any left turn lane taper overlaps with any existing or proposed middle turn lane or taper, the entire section will need to be widened to three lanes.
- Driveways shown on the attached report as being right-in/right only will require channelization with a 4' concrete median and associated widening in the middle of the NCDOT roadway the driveway is accessing.
- Right-of-way reservation to match NCDOT project R-3410 shall be a requirement of the driveway permit and recorded via plat for the proposed subdivision for the property frontage along NC 42.
- NCDOT makes no guarantees about access after completion of R-3410. Due to the widening and creation of a raised median the proposed driveways may be converted to Right-in and Right-out movements only.

Feel free to contact me if you have any additional questions or concerns.

Sincerely,

Sam Lawhorn, PE
District Engineer

cc: Kevin Bowen, PE - Division Engineer
Paul Marak, PE - Division Traffic Engineer
Charles Sorrell - Congestion Management Engineer
Travis Fluitt, PE – Kimley-Horn Engineering
Driveway Permit File

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

September 14, 2022

Corbett Assemblage

Traffic Impact Analysis Review Report
Congestion Management Section

TIA Project: SC-2022-284
Division: 4
County: Johnston



Clarence B. Bunting, IV, P.E. Regional Engineer
Charles Sorrell, Project Design Engineer

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
TRANSPORTATION MOBILITY & SAFETY DIVISION
1561 MAIL SERVICE CENTER
RALEIGH, NC 27699-1561

Telephone: (919) 814-5000
Fax: (919) 771-2745
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
750 N. GREENFIELD PARKWAY
GARNER, NC 27529

Corbett Assemblage TIA

SC-2022-284	Clayton	Johnston County

Per your request, the Congestion Management Section (CMS) of the Transportation Mobility and Safety Division has completed a review of the subject site. The comments and recommendations contained in this review are based on data for background conditions presented in the Traffic Impact Analysis (TIA) and are subject to the approval of the local District Engineer's Office and appropriate local authorities.

Date Initially Received by CMS	9/7/22	Date of Site Plan	6/1/22
Date of Complete Information	9/7/22	Date of Sealed TIA	8/29/22

Proposed Development

The TIA assumes the development is to be completed by 2027 and consist of the following:

Land Use	Land Use Code	Size
Single-Family Detached Housing	210	200 units
Single-Family Attached Housing	215	185 units
Multifamily Housing (Low Rise)	220	365 units

Trip Generation - Unadjusted Volumes During a Typical Weekday

	IN	OUT	TOTAL
AM Peak Hour	97	270	367
PM Peak Hour	293	183	476
Daily Trips			5,686

General Reference

For reference to various documents applicable to this review please reference the following link: *https://connect.ncdot.gov/resources/safety/Pages/Congestion-Management.aspx*

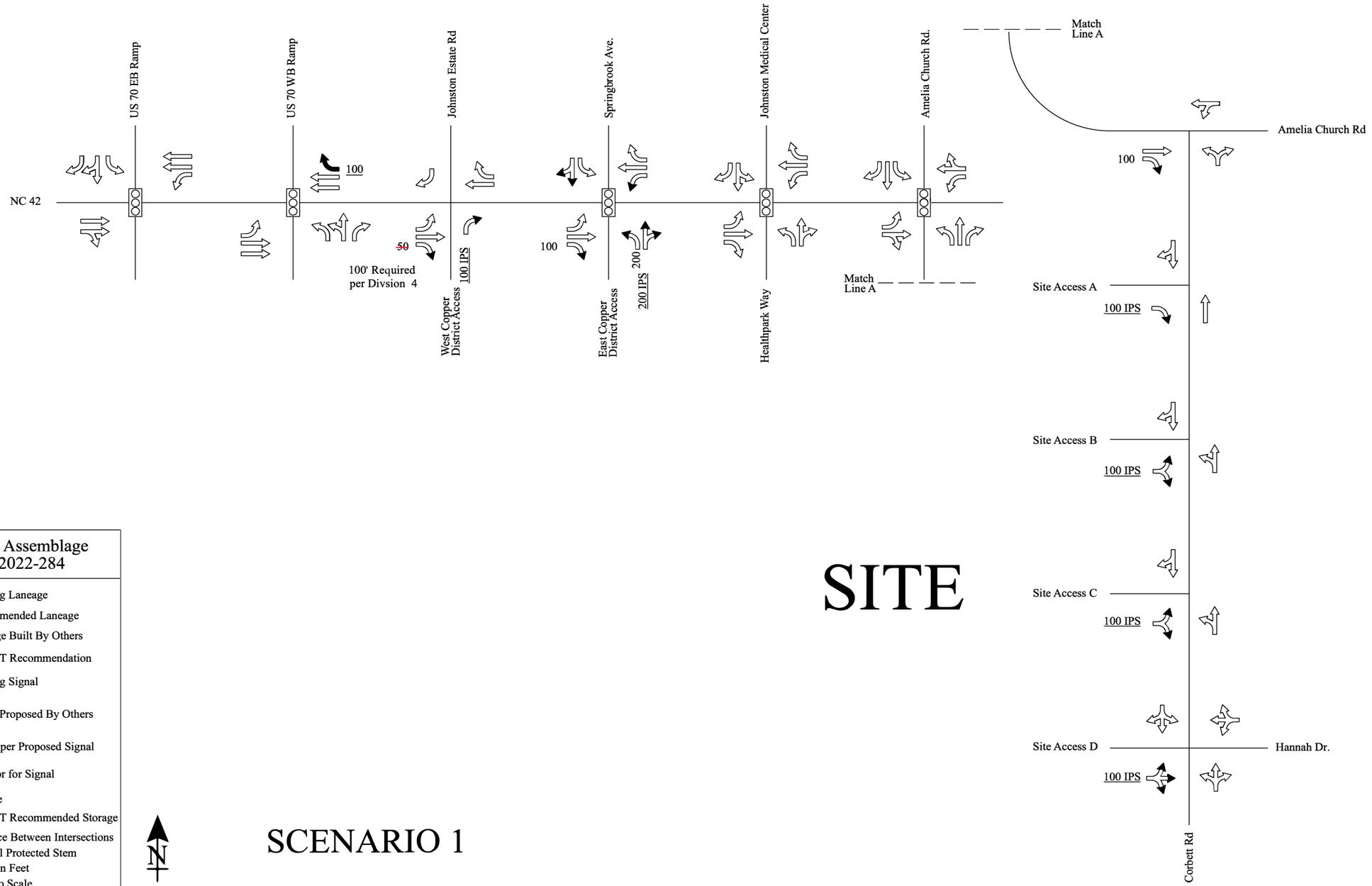
Once the driveway permit has been approved and issued, a copy of the final driveway permit requirements should be forwarded to this office. If we can provide further assistance, please contact the Congestion Management Section.

Signalization

We defer to the District Engineer, the Division Traffic Engineer, and the Regional Traffic Engineer for final decisions regarding signalization.

Improvements By Others

The analysis includes background improvements by others. If these improvements are not in place at the time of construction, the site should provide these improvements or analysis demonstrating mitigation is not necessary.

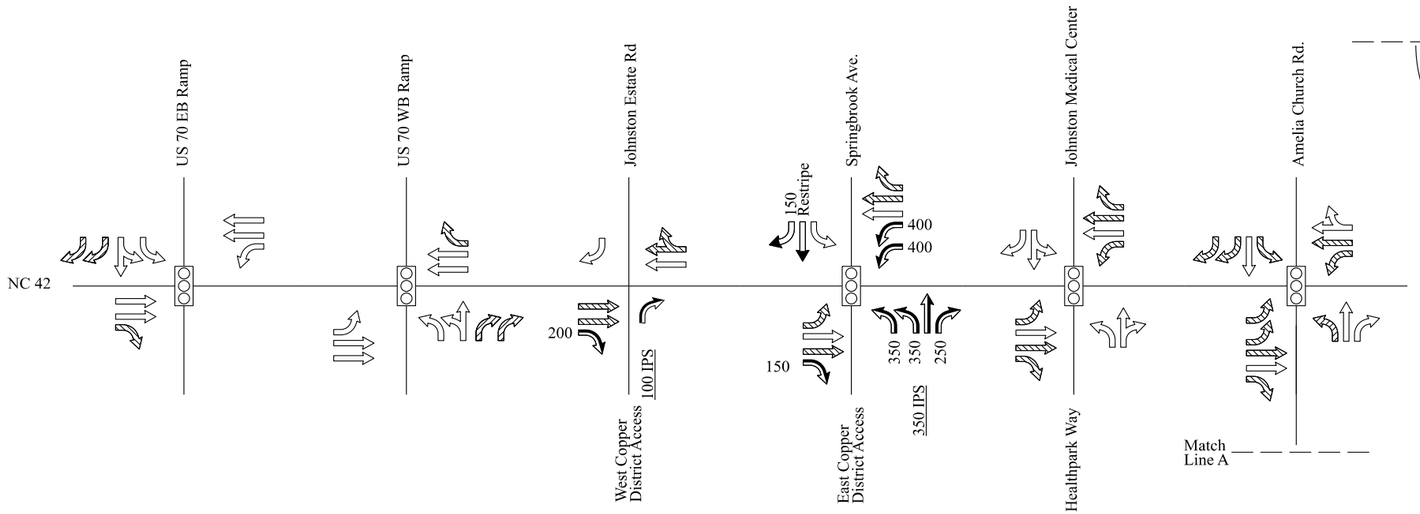


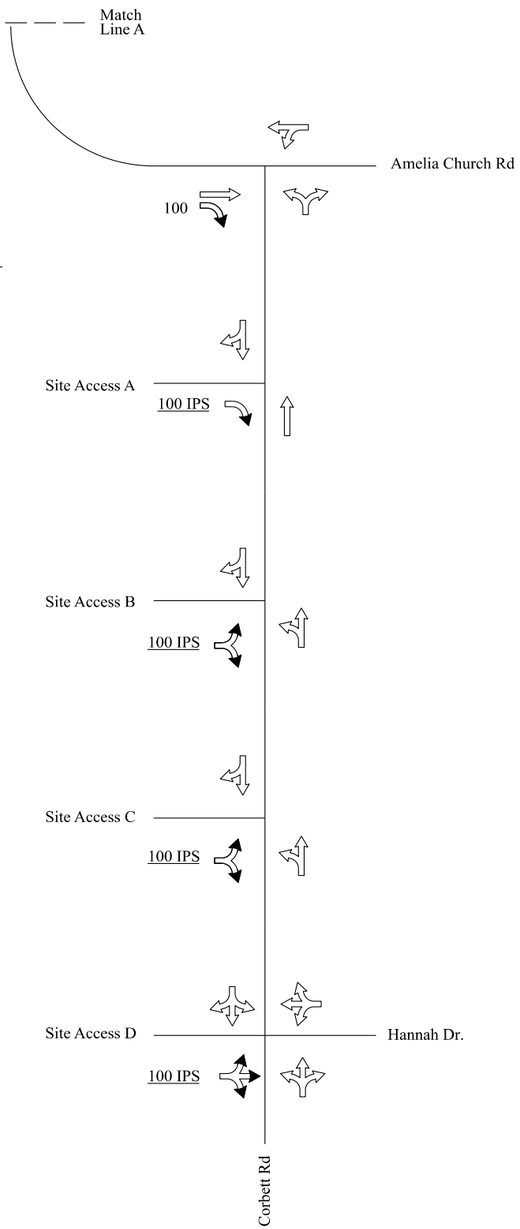
Corbett Assemblage
SC-2022-284

- Existing Laneage
- Recommended Laneage
- Laneage Built By Others
- NCDOT Recommendation
- Existing Signal
- Signal Proposed By Others
- Developer Proposed Signal
- Monitor for Signal
- XXX Storage
- XXX NCDOT Recommended Storage
- <XXX> Distance Between Intersections
- IPS Internal Protected Stem
- All Distances in Feet
- Drawing Not to Scale

SITE

SCENARIO 1





Corbett Assemblage
SC-2022-284

- Existing Laneage
- Recommended Laneage
- Laneage Built By Others
- Laneage By Copper District
- NCDOT Recommendation
- Existing Signal
- Signal Proposed By Others
- Developer Proposed Signal
- XXX Storage
- XXX NCDOT Recommended Storage
- <XXX> Distance Between Intersections
- IPS Internal Protected Stem
- All Distances in Feet
- Drawing Not to Scale

SITE

SCENARIO 2

TOWN OF CLAYTON POLICY

Department: Public Services	**Effective:** January 21, 2020
Policy Title: Water & Wastewater Allocation Policy Version #02 (V.02)	**Supersedes:** TC Action 2010-026 **Prepared By:** Richard D. Cappola Jr., PE Public Services Director **Approved By:** Town Council **Date: January 21,2020**

I. Purpose

The Town of Clayton has invested substantial capital in the infrastructure necessary to support a growing, prosperous, and healthy community. Water supply and wastewater treatment capacities are among the most important elements of this infrastructure. The intent of this policy is to provide for the judicious allocation of these resources in conformity with adopted goals and priorities in an effort to shape the community consistent with the articulated vision to become the "Premier Community for Active Families." This policy is intended to manage the remaining capacity available until additional capacity is developed through construction of a new Water Reclamation Facility, and should be reviewed periodically to ensure it is achieving the intended purpose.

II. Scope

The Town Council for the Town of Clayton has adopted the Comprehensive Plan 2040 which is a useful tool to successfully evaluate applications for allocation of public resources so that the character of the community shall be consistent with its vision, values, and plans. In accordance with the "Town of Clayton Strategic Growth Plan", utility allocation reservations should support and maximize the concept of increasing the Town's property tax based revenues by the expansion and improvement of higher valued land use development, emphasizing a balance of Residential, commercial, and industrial uses.

III. Policy

The Town of Clayton seeks to grant utility allocations such that the existing character of the Town's utility customer base does not become more residential than is practical to achieve the intent of the Strategic Growth Plan, and seeks to increase the diversity of the customer base by increasing the percentage of resources devoted to industrial, commercial, and mixed use development.

The total amount of available capacity and each incremental increase in capacity should generally be allocated based on the following parameters:

- No more than fifty percent (50%) of the total available capacity may be allocated to projects that include solely residential development.
- At least thirty percent (30%) of the total available capacity shall be reserved for allocation to commercial/industrial projects.
- Projects encompassing mixed use (residential and commercial) elements may be considered for allocation even if such an allocation will exceed the limit established above for residential use. Note: These percentages may be reviewed and adjusted by the Town Council at their discretion.

Due to weather related factors, the regulatory environment, and the dynamic nature of wastewater flow and treatment, accounting of available utility capacity is, by its very nature, inexact. The Town of Clayton shall track allocation reservations granted and the amount of capacity available. Such reports do not constitute a policy statement, commitment or guarantee on the amount of capacity available for allocation.

The following hierarchy shall apply to evaluation of utility allocation requests:

- Commercial properties with quality development projects
- Development projects with a mixed-use element
- Industrial projects and other major employer entities
- Additional phases attached to residential projects with a proven record of quality product and economic success
- Residential projects that include tangible, high quality community amenities
- Residential projects that include diverse products and opportunities
- Residential projects not otherwise described above

Evaluation of projects will be based on the scoring rubric attached hereto as Exhibit A, which is incorporated in this Agreement by reference. A project must meet or exceed 50 points to receive an allocation. Proposed projects can gain BONUS POINTS by the applicant offering to provide items listed on the rubric as part of their development proposal. Examples of these items may include such things as additional amenities (fire pits, community gardens, etc.) or offering to provide "Minimum of 25% of building façades will be made of masonry materials."

The Town of Clayton may allocate utility service capacity to competing projects based on a demonstrated intent and ability of the applicant to meet adopted Town goals and plans for character and quality of development. The Town of Clayton reserves the right to deny a utility allocation request if the applicant fails to adequately demonstrate that the project meets adopted Town goals or plans, or in the case that the project is deemed to be less supportive of Town goals or plans of a competing project.

IV. Procedure

The owner or developer of any project requiring water or wastewater utility service from the Town of Clayton shall submit a written application, in the application form provided by Town Staff, for an allocation reservation. The application shall include detailed information on the amount of capacity necessary to serve the project, the nature of the project, project schedule in relation to demand of utility capacity, and other supporting information demonstrating how the project serves the needs and interests of the Town of Clayton. In the case of Industrial flows, additional information associated with the constituents shall be required and may be subject to other ordinances or policies of the Town.

- The Town Council shall review for approval all allocations which require or may require a daily flow allocation of ten thousand gallons or more (> 10,000 GPD)
    - The Town Council shall incorporate the evaluation of utility allocation requests into the decision-making process associated with Subdivisions, Mixed-use Planned Developments, and Special Use Permits. The criteria contained herein for evaluation of utility allocation requests shall be included as elements within the review processes for the accompanying land use application with regard to conformity with Town of Clayton policies and ordinances, planning practices, and consistency with adopted long-range and strategic plans.
    - For allocations requiring Town Council approval, but which do not require other land use regulatory reviews or approvals, the applicant shall provide a full description of how their project supports the goals and priorities established within this and related policies and plans in their application for allocation reservation.

- The Town Manager or their designee shall review for approval all applications for utility capacity which require a daily flow allocation of less than ten thousand gallons (< 10,000 GPD).
    - In addition to the scoring rubric, the Town Manager or their designee shall consider the goals articulated by this and related Town policies when reviewing applications for utility allocations. If an application is denied, the Town Manager or their designee shall state in writing the reasons for denial of the request.

V. General Conditions

- This policy shall replace any previous policies on water and wastewater allocations adopted by the Town Council.
- An allocation will expire if a project has not progressed in construction plan approval, building permit approval, or on-site construction within 12 months of award of the allocation.
- Upon request by the applicant and at the discretion of the Town Engineer, an allocation may be extended for one twelve (12) month period.
- If a project is unsuccessful in obtaining any required Federal, State, or local government permit or approval the reservation shall be retracted. The Town of Clayton shall bear no liability for any costs incurred by the applicant, nor bare further responsibility in the matter.
- Granting of a utility allocation does not imply or confer approval of any other applications or reviews as may be required by Town Ordinance or policy and does not imply or create any vested right.
- Public water may be utilized for irrigation purposes so long as the Primary Use associated with the site has previously gained a water allocation through the Town.
- This policy shall be reviewed annually and, when appropriate, readjusted by the Town Council. The Town's overall progress on policy goals will be considered and the multipliers and/or point thresholds readjusted accordingly.

V. Appeals Process

- Appeal of any provision of this policy shall be made to the Town Council.
- Appeal of any decision on a utility allocation by the Town Manager or their designee shall be made to the Town Council for final decision. Any such appeal shall be placed on the agenda of a regularly scheduled Town Council meeting.

WATER & WASTEWATER ALLOCATION CRITERIA

TOTAL POINTS = 50 *MINIMUM 50 POINTS REQUIRED*

	Category	Points	Calc.	Notes
DEVELOPMENT TYPE[1] (Choose 1 from this category)	Government/Public Admin./Public Safety	50		
	Non-residential (Commercial) - Retail & Restaurant	30		
	Non-residential (Commercial) - Office	20		
	Non-residential (Commercial) - Warehouse	15		
	Non-residential (Commercial) - Medical	25		
	Non-residential (Commercial) - Hotel/Motel	35		
	Industrial/Manufacturing	30		
	Institutional	15		
	Residential Existing Lot- Single Family Detached	40		Individual Existing Lot construction
	Residential Subdivision - Single Family Detached (> 0.25 Acre Lots)	20		Single Family Homes on Individual Lots greater than 0.25 acres
	Residential Subdivision - Single Family Detached (< 0.25 Acre Lots)	15		Single Family Homes on Individual Lots less than 0.25 Acres
	Residential Subd.- Single Family Attached (> 1,500 SF Heated Space)	10		Townhomes with heated square-footage greater than 1,500 SF
	Residential Subd.- Single Family Attached (< 1,500 SF Heated Space)	5		Townhomes with heated square-footage less than 1,500 SF
	Residential - Multifamily (Apartments)	10		
	Mixed-Residential	25	25	Mix of various lot sizes of Single-family, Townhomes, and Apartments
	Mixed-Use Commercial & Residential	30		Mix of Residential and Non-residential (Commercial) uses
	Downtown Redevelopment	30		
	Infill Development	25		Utilities already exist within 300 Feet of property
FUTURE TAX STATUS (Choose 1 from this category)	Exempt	0		
	Residential	5	5	
	Non-residential	10		
	Industrial	10		
COMMUNITY BENEFIT BONUS POINTS (Choose All that apply from this category)	Cultural Arts/Entertainment for Public	10		
	Sports/Recreation for Public	10		
	Town Electric Customer	20		
	Expansion of existing non-residential use	10		
	Re-development of an existing property	5		Must result in increased property value
	Residential Subdivision - Additional amenities included	5 - 15	5	Pool, Clubhouse, sports courts, etc. - 5 pts per, max 15 pts
	Job Creation - 10 to 25 new jobs	5		
	Job Creation - 26 to 100 new jobs	10		
	Job Creation - 100+ new jobs	15		
	Job creation - Jobs created will have salaries at or above median income	5		Must be greater than 50% of jobs added with documentation to confirm
	Residential - Multiple-Car Garages provided	5		
	Residential - Overflow Parking provided	5		Subject to Planning and Engineering support
	Masonry Elements included in Building Construction	10	10	
	Sustainable/High Efficiency Products and appliances used	5 - 15	5	5 pts per, max 15 pts
	Private trail connection to Public Greenway	10		
COMMUNITY IMPACT DEDUCT POINTS (Choose All that apply from this category)	Pump Station Improvements required[2]	-10		Subject to Town policy and standards
	New Pump Station Required[2]	-20		Subject to Town policy and standards
	Out-of Town Status (After construction)	-10		
	Outside Fire District	-5		
	Inconsistent with Comp Plan	-5		

CLARIFICATIONS

1 Any Development Type Category not listed is subject to Town Council discretion with staff recommendation.

2 The Town Engineer may waive these deductions if the improvments are consistent with Future utility service plans, replace/offline an aging station, or are in the best interest of the Town.

TOWN OF CLAYTON
Engineering & Inspections Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

WASTEWATER ALLOCATION REQUEST

The Town of Clayton, in an effort to manage and maintain the sewer and water capacity for the Town, requires that this application be completed and submitted to the Town for consideration of a utility allocation. Review fee is due upon submittal of request.

Wastewater Allocation Request Review Fee: $50

Application MUST be completed and sealed by a registered engineer unless otherwise approved by staff.

SITE INFORMATION

Name of Project: Corbett Assemblage Rezoning **Acreage of Property:** 86.36

County Tag Number: see attached **NC PIN:** see attached

Address/Location: 100 Corbett Road ad, Clayton, NC

Zoning District: RE-Residential Estate

Town Limits / ETJ: ☐ Town Limits ■ ETJ (Extra-Territorial Jurisdiction)

APPLICANT INFORMATION – Applicant must be a registered engineer unless otherwise approved by Town Engineer

Applicant: Kimley-Horn and Associates Inc.

Mailing Address: 421 Fayetteville Street, Suite 600, Raleigh, NC 27601

Phone Number: (919) 678-4178 **Fax:**

Contact Person: Austin Jackson P.E.

Email Address: austin.jackson@kimley-horn.com

PROPERTY OWNER INFORMATION

Name: See attached

Mailing Address:

Phone Number: **Fax:**

Email Address:

FOR OFFICE USE ONLY

Date Received: _____ File Number: _____ Associated Project Number: _____

PROJECT INFORMATION

Use: ☒ **New** ☐ **Expanded** ☐ **Change** **Use Type:** ☒ **Residential** ☐ **Non-Residential**

Proposed Use(s): Residential **Existing Use(s):** Vacant

Invoice shall be mailed to the following:

Developer Name: Craig Davis Properties, LLC

Mailing Address: 8000 Weston Parkway, Cary, NC 27513

Phone Number: (919) 678-4210 **Fax Number:**

Email Address: dean.penny@craigdavisproperties.com

ALLOCATION REQUEST

The following is required:

- **For non-residential construction, submit a floor plan of proposed building.**
- **Use additional sheets if necessary.**
- **Provide any documentation supporting/justifying the request as an attachment (using a comparable use is recommended).**
- **If a phasing / take-down schedule is proposed, include as an attachment.**

Residential:

Gross Acreage: +/- 83.86

Single Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units	150	240	36000
3 Bedroom Units	235	250	58750
>3 Bedroom Units			
Total	385	------	94750

Multi-Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units	140	240	33600
3 Bedroom Units	225	360	81000
>3 Bedroom Units			
Total	365	------	114600

Non-Residential: ***(Design Flow Guideline provided as Appendix A)****

**If design flow deviates from the flow rates presented in Appendix A, provide supporting documentation/justification as an attachment in the form of 12 months of water bills demonstrating gallons per day utilized.*

Gross Acreage: +/- 2.5

Use	Measurement Unit	# of Units	GPD per Unit	Total Requested GPD
NEIGHBORHOOD AMENITY	PLUMBING FIXTURE	22	250	5500
Total			------	5500

TOTAL REQUESTED GALLONS PER DAY: 214850

NOTE TO APPLICANT:

Invoicing:
Invoices are generated on the following schedule:

Non-Residential:
Generated with the application for a Zoning Compliance Permit.

Residential:
Multi-Family / Apartments:
Generated with the application for a Zoning Compliance Permit.

Subdivision / Subdivided Lots:
Generated at Final Plat submittal.

Fee Development:
Development Fees are calculated and invoiced based on the Town of Clayton adopted Comprehensive List of Fees and Charges. Invoiced fees include acreage fees, capacity fees, nutrient offset fees, recreation fees, fees-in-lieu, and electric department lot deposit. Please speak with Town staff with questions.

Approval:
Requests over 10,000 GPD are approved by the Town Council, by resolution. All other requests are approved by the Town Manager.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town of Clayton to approve the subject Wastewater Allocation. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

Austin Jackson, P.E.		09/27/2022
Print Name	***Signature of Applicant***	***Date***

Engineer Seal:



TOWN OF CLAYTON OFFICE USE ONLY:

Approved by: ☐ Town Manager

☐ Town Council (*requests of 10,000 GPD or more require Council approval by resolution)*

The **Town Manager / Town Council (circle one)** has authorized the allocation of _____

gallons per day for project # _____.

Date of Approval: _____

Signed:

_____
Town Manager

If approved by Town Council:
Attach a copy of the resolution and any associated documentation.

APPENDIX A: DESIGN FLOW RATES

The following table from the North Carolina Administrative Code 02T.0114 shall be used to determine the minimum allowable design daily flow of wastewater facilities. Alternatively, the Town in its sole and absolute discretion may calculate the customer's initial average daily wastewater flow based on data from the customer's operations (or from similarly situated customers) with a comparable sanitary sewer system, where such data are available and reasonably current.

Establishment Type	Daily Flow Rate
Barber and Beauty Shops	
Barber Shops	50 gal/chair
Beauty Shops	125 gal/booth or bowl
Businesses, Offices and Factories	
General business and office facilities	25 gal/employee/shift
Factories, excluding industrial waste	25 gal/employee/shift
Factories or businesses with showers or food preparation	35 gal/employee/shift
Warehouse	100 gal/loading bay
Warehouse – self storage (not including caretaker residence)	1 gal/unit
Churches	
Churches without kitchens, day care or camps	3 gal/seat
Churches with kitchen	5 gal/seat
Churches providing day care or camps	25 gal/person (child & employee)
Fire, Rescue and Emergency Response	
Fire or rescue stations without on-site staff	25 gal/person
Fire or rescue stations with on-site staff	50 gal/person/shift
Food and Drink Facilities	
Banquet, dining hall	30 gal/seat
Bars, cocktail lounges	20 gal/seat
Caterers	50 gal/100 sq. ft. floor space
Restaurant, full Service	40 gal/seat
Restaurant, single service articles	20 gal/seat
Restaurant, drive-in	50 gal/car space
Restaurant, carry out only	50 gal/100 sq. ft. floor space
Institutions, dining halls	5 gal/meal
Deli	40 gal/100 sq. ft. floor space
Bakery	10 gal/100 sq. ft. floor space
Meat department, butcher shop or fish market	75 gal/100 sq. ft. floor space
Specialty food stand or kiosk	50 gal/100 sq. ft. floor space
Hotels and Motels	
Hotels, motels and bed & breakfast facilities, without in-room cooking facilities	120 gal/room
Hotels and motels, with in-room cooking facilities	175 gal/room
Resort hotels	200 gal/room
Cottages, cabins	200 gal/unit
Self-service laundry facilities	500 gal/machine
Medical, Dental and Veterinary Facilities	
Medical or dental offices	250 gal/practitioner/shift
Veterinary offices (not including boarding)	250 gal/practitioner/shift
Veterinary hospitals, kennels, animal boarding facilities	20 gal/pen, cage, kennel or stall
Hospitals, medical	300 gal/bed
Hospitals, mental	150 gal/bed
Convalescent, nursing, rest homes without laundry facilities	60 gal/bed
Convalescent, nursing, rest homes with laundry facilities	120 gal/bed
Residential care facilities	60 gal/person
Parks, Recreation, Camp Grounds, R-V Parks and other Outdoor Activity Facilities	
Campgrounds with comfort station, without water or sewer hookups	75 gal/campsite

Establishment Type	Daily Flow Rate
Campgrounds with water and sewer hookups	100 gal/campsite
Campground dump station facility	50 gal/space
Construction, hunting or work camps with flush toilets	60 gal/person
Construction, hunting or work camps with chemical or portable toilets	40 gal/person
Parks with restroom facilities	250 gal/plumbing fixture
Summer camps without food preparation or laundry facilities	30 gal/person
Summer camps with food preparation and laundry facilities	60 gal/person
Swimming pools, bathhouses and spas	10 gal/person
Public access restrooms	325 gal/plumbing fixture
Schools, Pre-school and Day Care	
Day care and preschool facilities	25 gal/person (child & employee)
Schools with cafeteria, gym and showers	15 gal/student
Schools with cafeteria	12 gal/student
Schools without cafeteria, gym or showers	10 gal/student
Boarding schools	60 gal/person (student & employee)
Service Stations and Car Wash Facilities	
Service stations, gas stations	250 gal/plumbing fixture
Car wash facilities	1200 gal/bay
Sports Centers	
Bowling center	50 gal/lane
Fitness, exercise, karate or dance center	50 gal/100 sq. ft.
Tennis, racquet ball	50 gal/court
Gymnasium	50 gal/100 sq. ft.
Golf course with only minimal food service	250 gal/plumbing fixture
Country clubs	60 gal/member or patron
Mini golf, putt-putt	250 gal/plumbing fixture
Go-kart, motocross	250 gal/plumbing fixture
Batting cages, driving ranges	250 gal/plumbing fixture
Marinas without bathhouse	10 gal/slip
Marinas with bathhouse	30 gal/slip
Video game arcades, pool halls	250 gal/plumbing fixture
Stadiums, auditoriums, theaters, community centers	5 gal/seat
Stores, Shopping Centers, Malls and Flea Markets	
Auto, boat, recreational vehicle dealerships/showrooms with restrooms	125 gal/plumbing fixture
Convenience stores, with food preparation	60 gal/100 sq. ft.
Convenience stores, without food preparation	250 gal/plumbing fixture
Flea markets	30 gal/stall
Shopping centers and malls with food service	130 gal/1000 sq. ft.
Stores and shopping centers without food service	100 gal/1000 sq. ft.
Transportation Terminals	
Air, bus, train, ferry, port and dock	5 gal/passenger

Source: North Carolina Administrative Code 02T.0114, January 1, 2007

Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

October 20, 2022

Kimley-Horn
Attn: Richard Brown, PLA
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
Richard.brown@kimley-horn.com

Re: 2022-88-CZM Corbett Road Assemblage Conditional Zoning District and Master Plan

To Whom It May Concern,

The Town of Clayton Planning staff is recommending to the Planning Board and Town Council that conditions of approval be placed upon the above referenced application, which proceeds to the Planning Board on October 24, 2022 and Town Council on November 21, 2022. These recommended conditions of approval are outlined on the back of this letter.

Please read through these potential conditions of approval, and sign below if you are in agreement with the conditions as proposed. If you are not in agreement please respond accordingly in writing. This will be included within the agenda packet for Planning Board and Town Council review.

Thank you.

Sincerely,

Ben Howell, AICP, CZO
Planning Director

Recommend Conditions of Approval (2022-88-CZM, Corbett Road Assemblage Conditional Zoning District and Master Plan):

1. Following Town Council approval, an electronic copy of the Master Plan and Narrative including the Conditions of Approval shall be submitted to the Planning Department for final approval.
2. The Development shall meet all adopted Town of Clayton Unified Development Code (UDC) requirements, Town of Clayton Engineering and Stormwater design standards, and the North Carolina Fire Code and NFPA Fire standards, except where specifically modified by the approved master plan.
3. The Development shall be constructed in substantial conformance with the Master Plan and Master Plan Narrative as approved by the Clayton Town Council.
4. The Maximum number of number of lots/units within the district boundary shall not exceed 750 or 10 DU/Ac whichever is less. Additionally, the lot dimensional standards for attached and detached residential lots within the district boundary shall follow the design controls set forth within Section 6.4 of the Master Plan narrative.
5. A 20' wide Type 'C' buffer will be provided in all locations where a residential lot abuts an adjacent residential use outside of the district boundary. This buffer shall include either a wall, opaque fence, evergreen hedge, berm or combination thereof with a minimum height of 6' at installation. Where environmental features and/or other natural wooded areas exist at the district boundary the preservation of existing vegetation may be used to satisfy this buffer requirement.
6. The developer will provide a minimum twenty (20') foot wide type C street yard along the Corbett Road frontage. Street yard plantings for areas along the frontage shall be installed at an average rate of 1 per 40' for street trees. Street protective yards along proposed new public streets will be 10-15' wide with an average of 1 street tree per 40'. Street yards shall not apply to private alleys or rear-load conditions.
7. A minimum of 13 Acres (15% of gross land area) will be dedicated as open space throughout the district. Open space areas may include natural and/or constructed neighborhood amenities, ponds, greenways/trails, multi-use paths, community gathering spaces, pool/clubhouse(s), open lawn areas, and other neighborhood common areas that are not within individual ownership and accessible to all homeowners within the development. The development will also be responsible for meeting the requirements of the then current Unified Development Code, requiring dedication or payment-in-lieu for public recreation or open space to the Town.
8. The allowable uses within the district shall be as per Section 6.1 of the Master Plan Narrative. The following uses as set forth in Section 6.2 of the Master Plan narrative will be specifically prohibited within the district.
    - Boarding house
    - Golf course
    - Telecommunications Facility
    - Commercial Uses
    - Manufactured Home/Manufactured Home Park
    - Group Care Home (7 to 12 Residents)

- Kennel

9. Masonry materials, as listed in the Conditional Zoning Master Plan Narrative, shall apply to a minimum of 25% of the primary street facing façade for construction of new single family and multi-family buildings. Per Section 8.0 - *Architectural Standards* in the Master Plan narrative, other non-masonry materials may be used for side and rear facing building elevations.

10. In order to ensure architectural variety within the neighborhood, no single family detached home shall be constructed with an exterior elevation (front façade) or color palette that is identical to the home on either side or directly across the street from it.

11. Sustainable high efficiency products and/or appliances will be provided as part of the development in order to achieve wastewater allocation. A minimum of two (2) of the following energy efficient elements shall be included within each single family home/unit.

    - Electric heat strips;
    - Low flow water fixtures (faucets and shower heads);
    - Low flush toilets;
    - LED Lighting throughout home;
    - Air Barrier & Sealing;
    - Decorative Fiberglass Insulated Front Door;
    - Gas Heat (2nd Floor Electric Heat Pump if Separate System);
    - Low VOC Paint;
    - Low-E Insulated Single-hung Vinyl Windows w/ Tilt Out Feature.

12. At least one of the following amenities will be provided: Pool, clubhouse, neighborhood play area, playground, dog park or an activity lawn.

13. The developer is responsible for the construction of a new master interconnect meter along Corbett Road and modifications to the existing master interconnect meter located at the intersection of NC-42 and Amelia Church Road to provide Town of Clayton Utility service to the subject development. Additional interconnect meter modifications or construction may be necessary near the intersection of Corbett Road and Amelia Church Road. Final master interconnect meter configuration and locations will be determined during the Construction Drawing Review process subject to agreement between the applicant/developer, Town staff and Johnston County. All master interconnect meter improvements are required to be completed prior to the certification of any utility infrastructure as necessary to serve each phase of the development and prior to recordation of the first final plat for each phase.

14. The street network, access points and cross-connections shall generally be constructed as shown on the Master Plan. Changes to the layout of the street network can be approved administratively by staff, but any changes to the number of access points or cross-connections shall require approval by Town Council.

15. The following offsite improvements will be constructed as determined by Scenario 2 of the Traffic Impact Analysis reviewed by NCDOT in conjunction with this rezoning request. Phasing of these improvements will be determined per a phasing analysis to be submitted by the developer for approval by NCDOT prior to the issuance of the first site permit within the zoning district boundary.

Corbett Road at Site Access A:

- Construct Site Access A as a right-in/right-out access with one ingress lane and one egress lane.

Corbett Road at Site Access B:

- Construct Site Access B as a full-movement access with one ingress lane and one egress lane.

Corbett Road at Site Access C:

- Construct Site Access C as a full-movement access with one ingress lane and one egress lane.

Corbett Road at Site Access D:

- Construct Site Access D as a full-movement access with one ingress lane and one egress lane.

16. To the extent of any conflict between the Master Plan, Master Plan Narrative and these conditions, these conditions shall control.

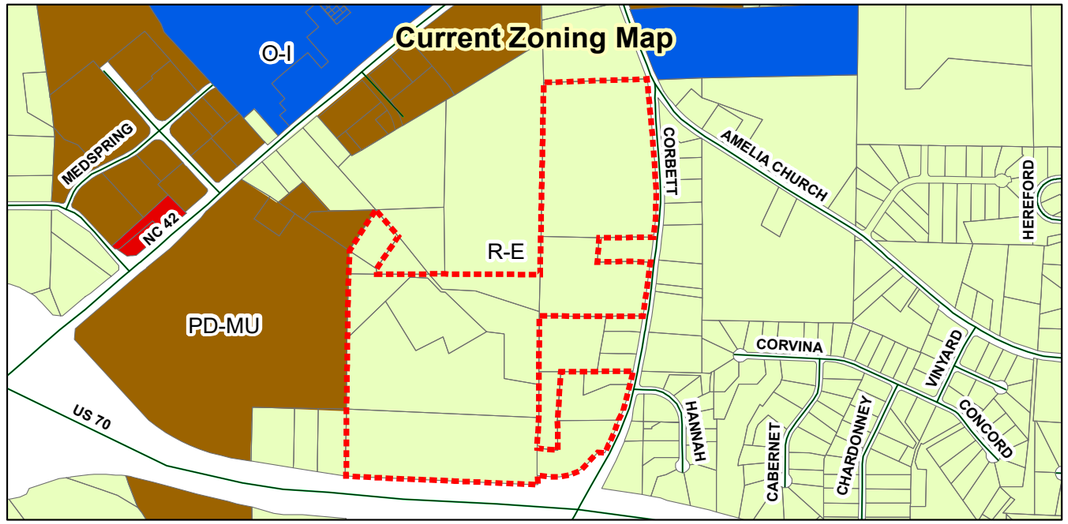
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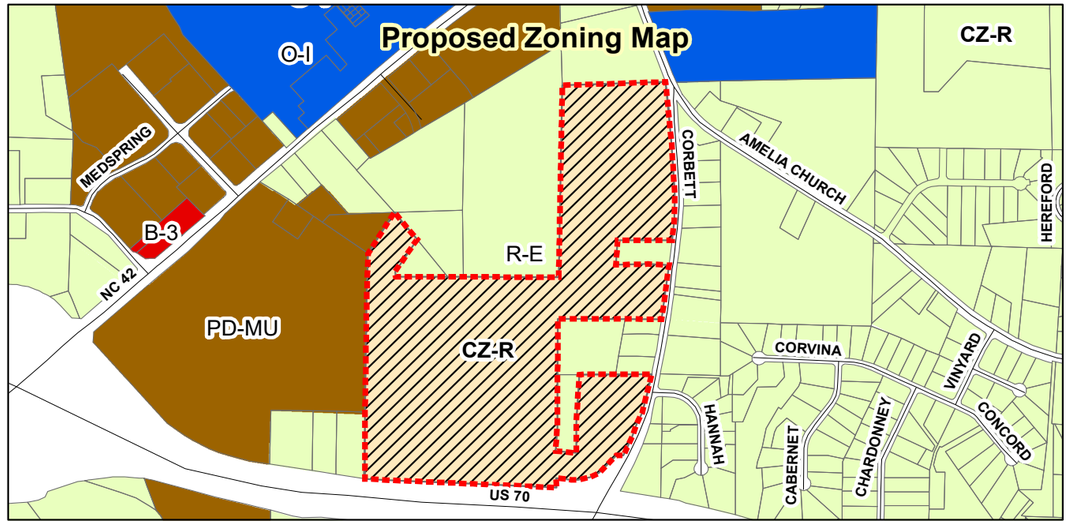
I/We, the undersigned, do herby certify that I have reviewed the recommended conditions of approval and am in agreement with the conditions as they are outlined within this letter.

H DEAN PENNY
Print Name

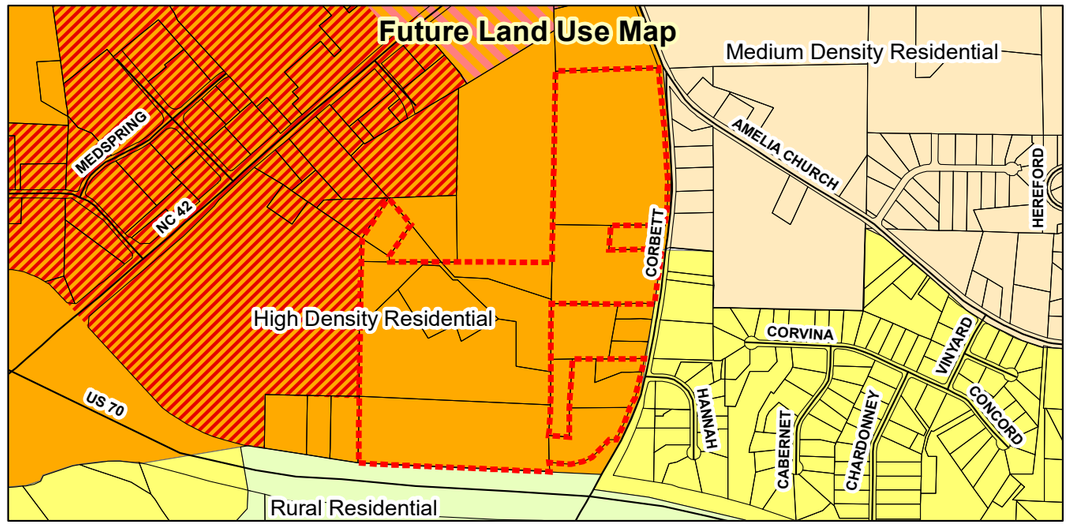
Signature of Applicant

10-20-22
Date









Request: Rezoning from R-E to CZ-R
Project Name: Corbett Road Assemblage
Project Number: 2022-88-CZM

Applicant: Kimley-Horn
Property Owner: Multiple
Tag #: 05G03070S, 05G03070B, 05G03066B, 05G03071O, 05G03071, 05G03066
05G03071U, 05F02037J, 05G03071N, 05G03067A, 05G03071T, 05G03068A, 05G03071P

Site

0 0.5 1 Miles

N

Staff Report Map
Prepared by: TOC Planning Department
October 12, 2022

Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

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