



SOUTHEAST AREA STUDY UPDATE

FINAL REPORT

SEAS

S O U T H E A S T A R E A S T U D Y

U P D A T E

December 2023



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ACKNOWLEDGMENTS

On behalf of the Capital Area Metropolitan Planning Organization (CAMPO), thank you to the Upper Coastal Plain Rural Planning Organization (UCPRPO), the North Carolina Department of Transportation (NCDOT), the Core Technical Team (CTT), the Stakeholder Oversight Team (SOT), local jurisdiction planners, and elected officials for the time and persistent dedication over the course of the Southeast Areas Study (SEAS) Update planning process. The SEAS Update was a collaborative effort across key stakeholders and the public and the success of this plan can be attributed to the collective efforts of the project partners.

Core Technical Team

| | | | | | |
|-----------|-------------|-----------------|-------------|----------------|----------------|
| Mike | Gordon | Archer Lodge | Garrett | Mitchell | Micro |
| Bryan | Chadwick | Archer Lodge | David | Keilson | NCDOT Div 5 |
| Erin | Joseph | Benson | Nick | Morrison | NCDOT IMD |
| Kimberly | Pickett | Benson | Brian | Murphy | NCDOT Safety |
| Joshua | Baird | Clayton | Phil | Geary | NCDOT TPD |
| Rich | Cappola | Clayton | Carlos | Moya-Astudillo | NCDOT TPD |
| Ben | Howell | Clayton | Andy | Brown | NCDOT Div 4 |
| Jonathan | Jacobs | Clayton | Jennifer | Collins | NCDOT Div 4 |
| Patrick | Pierce | Clayton | Addison | Gainey | NCDOT Div 4 |
| Pauline | Ketchum | Four Oaks | James | Salmons | NCDOT-Div 4 |
| John | Hodges | Garner | Scottie | Hayes | Pine Level |
| Jeff | Triezenberg | Garner | Don | Belk | Raleigh |
| Sarah | Van Every | Garner | Anne | Conlon | Raleigh |
| David | Walker | GoRaleigh | Christopher | Golden | Raleigh |
| Jay | Heikes | GoTriangle | Bruce | McKay | Selma |
| Nita | Bhave | ITRE | James | Sullivan | Selma |
| Braston | Newton | Johnston County | Mark | Helmer | Smithfield |
| Cameron | Pittman | Johnston County | Stephen | Wensman | Smithfield |
| Dale | Holland | Kenly | Tim | Gardiner | Wake County |
| Justine | Jones | Kenly | Akul | Nishawala | Wake County |
| Dale | Moore | Kenly | Terry | Nolan | Wake County |
| John | Pitts | Kenly | Sharon | Peterson | Wake County |
| Marty | Parnell | Micro | Wendy | Oldham | Wilson's Mills |
| Stephanie | Richter | Micro | | | |

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INTRODUCTION

In 2016, the Capital Area Metropolitan Planning Organization (CAMPO) initiated the Southeast Area Study (SEAS) to define the area's land use strategy and accommodate existing and future travel needs. The SEAS Update revisited the original SEAS, completed in 2017, for the purpose of reevaluating the unified vision and comprehensive transportation strategy and to refresh its policies and practices and produce recommendations for land use and transportation.

The recommendations from the SEAS Update will inform Johnston County's Comprehensive Transportation Plan (CTP), update CAMPO's overall CTP, and identify project priorities to be considered in the next Metropolitan Transportation Plan (MTP), the financially constrained, long-range transportation plan for the region. These recommendations are also intended to be used as a basis for ongoing planning and policy work in local town plans.

The Study Area—Then and Now

The original SEAS study area included portions of both Wake and Johnston Counties and 12 municipalities—Archer Lodge, Benson, Clayton, Four Oaks, Garner, Kenly, Micro, Raleigh, Selma, Smithfield, and Wilson’s Mills. For the 2023 update, the study area was expanded to reflect current growth patterns. The expanded area adds the US 401 corridor west of Garner and areas east of I-95, including Pine Level and areas within the extraterritorial jurisdictions of Benson, Four Oaks, Smithfield, and Selma.

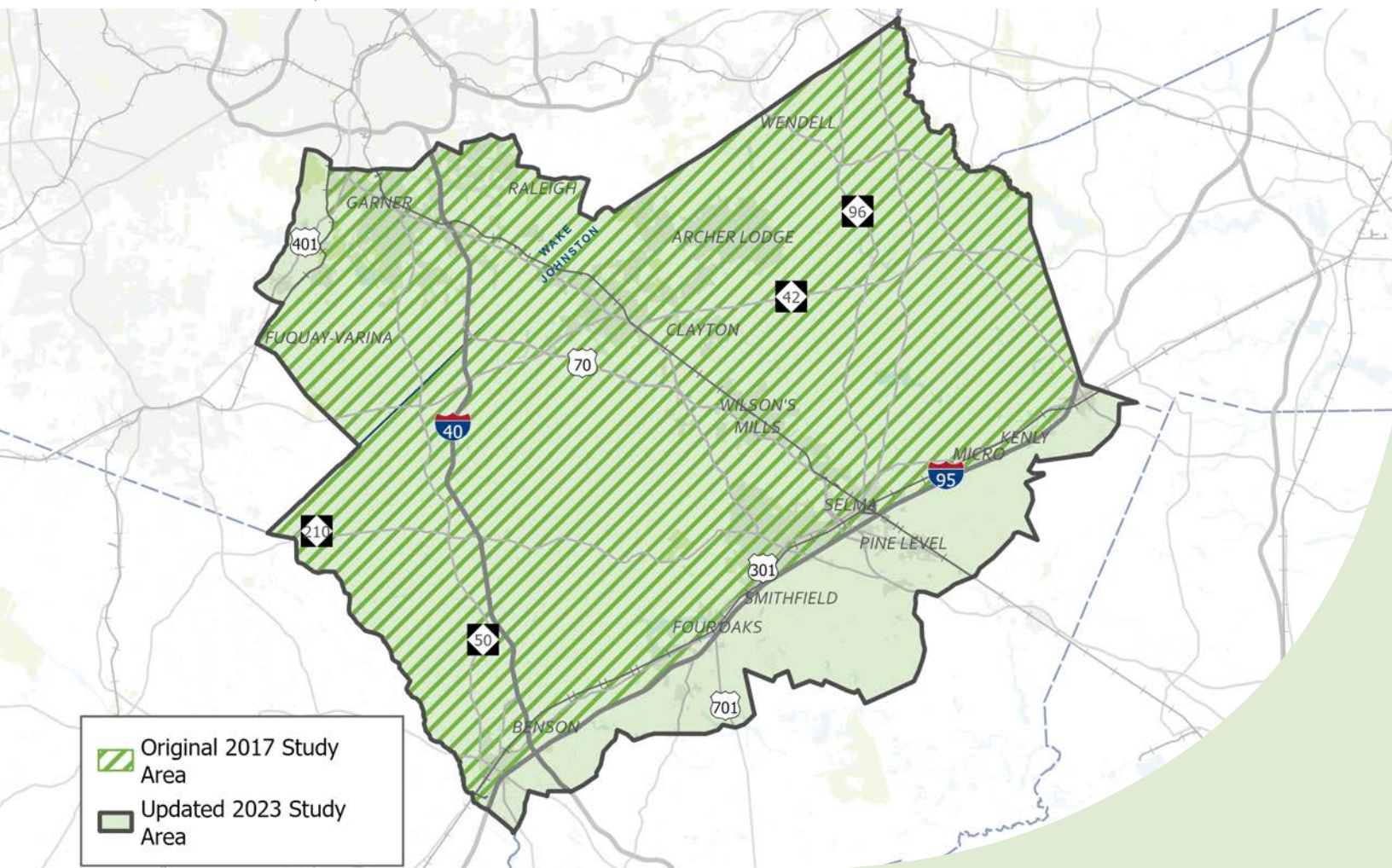
In the five years since the completion of the original study, the Southeast Area has experienced unforeseen growth with Johnston County being one of the fastest-growing regions of North Carolina. This rapidly changing environment makes the update of the SEAS even more vitally important.

Source: North Carolina Department of Commerce

What is an Area Study?

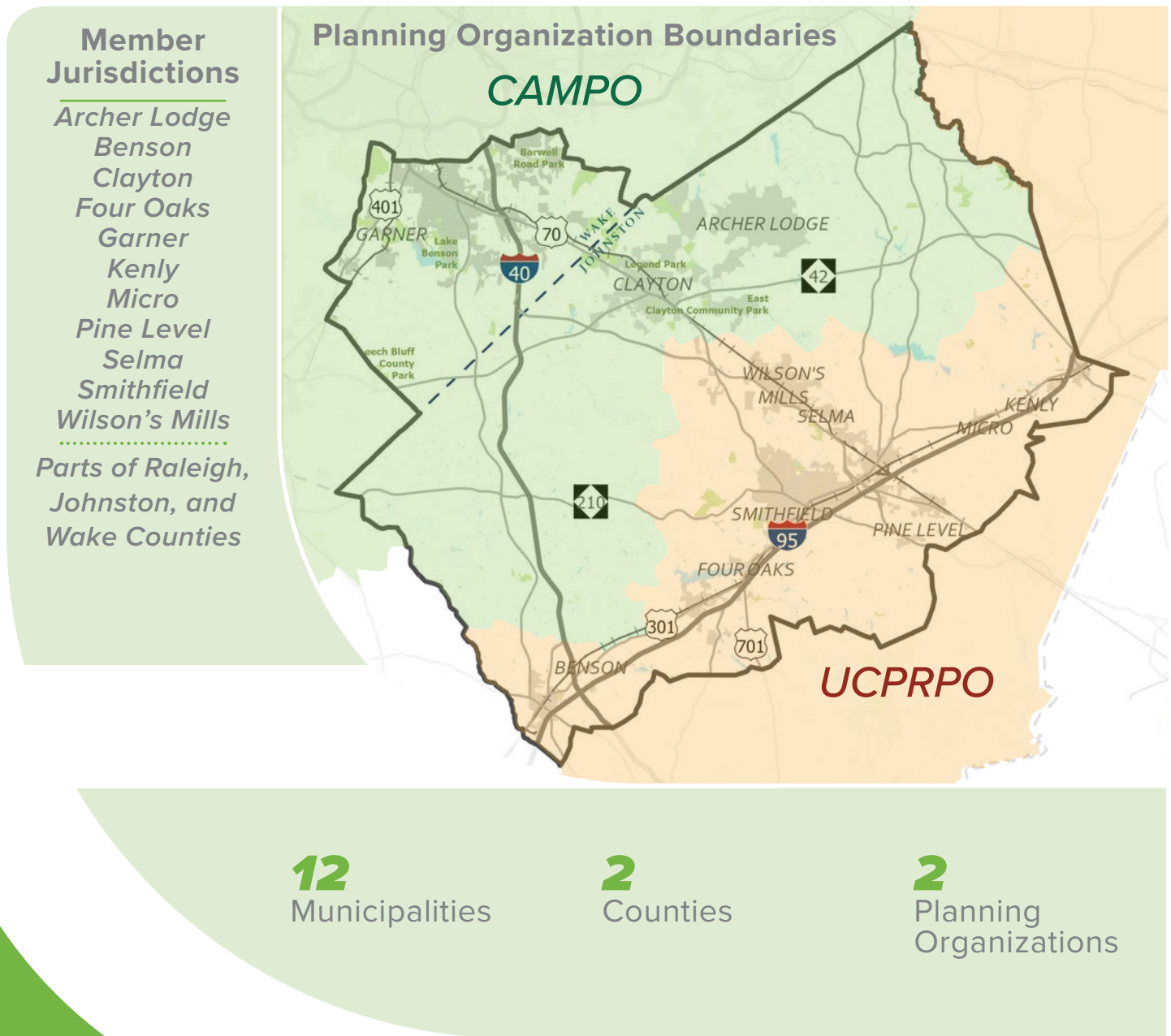
CAMPO conducts area studies to allow a deep dive into the local road network, multimodal plans, and opportunities in a smaller study area of the region. There are three existing area studies: the Northeast Area Study, the Southwest Area Study, and the Southeast Area Study.

| 2017 | 2023 |
|--------------------------------|--------------------------------|
| 570 Square Miles | 668 Square Miles |
| 2,550+ Miles of Road | 2,850+ Miles of Road |
| 227,000 People | 290,500 People |



Project Partners

The SEAS Update was a collaborative effort between CAMPO, the Upper Coastal Plain Rural Planning Organization (UCPRPO), and the North Carolina Department of Transportation (NCDOT). The updated study area includes 12 municipalities and spans portions of both Johnston and Wake counties. With a large footprint that crosses the border between CAMPO and UCPRPO and includes part of a city, 11 towns, and two counties, coordination in developing recommendations and strategies is integral to the success of the region. The map below displays the boundaries of both CAMPO and UCPRPO.



Involved Parties

In addition to the establishing agencies and study area jurisdictions, the SEAS Update was a collaborative effort between technical committees, technical experts, stakeholders, and the public. The various involved parties are described below.

Capital Area Metropolitan Planning Organization

CAMPO is a regional transportation planning organization serving communities in Franklin, Granville, Harnett, Johnston, and Wake Counties. CAMPO has a Technical Coordinating Committee (TCC), comprised of staff from member and stakeholder agencies, that provides technical recommendations to the CAMPO Executive Board. The CAMPO Executive Board was the endorsing body of the SEAS Update.

Upper Coastal Plain Rural Planning Organization

UCPRPO is a Rural Planning Organization (RPO) in North Carolina consisting of Edgecombe, Johnston, Nash, and Wilson Counties. UCPRPO works cooperatively with NCDOT to plan rural transportation systems and to advise the department on rural transportation policy.

Stakeholder Oversight Team

A Stakeholder Oversight Team (SOT) consisting of member jurisdictions, transit providers, school systems, chambers of commerce, community groups, and local and state agencies worked as a representative committee for the planning process. The SOT acted as an advisory board for findings and recommendations of the study. SOT members also provided assistance with public engagement and communication efforts.

Core Technical Team

A Core Technical Team (CTT), composed of local and state agency staff as a subset of the SOT, was the guiding review body that gave direction, input, and monitored the project study as it took place.

Key Community Stakeholders

In addition to the SOT, key stakeholders from a variety of organizations including advocacy groups, major employers, community groups, neighborhood organizations, and agencies were engaged throughout the planning process.

Public

The general public that reside, work, recreate, and make up the communities in the Southeast Area were engaged in the development process to encourage investment with the goal of creating a plan that is reflective of the various communities' needs.



PLANNING FRAMEWORK

A successful plan requires a strong planning framework. The SEAS Update intentionally engaged the public and a variety of stakeholders throughout the development of this plan. A meaningful engagement strategy includes the development of a shared vision, the consideration of alternatives, and an ultimate consensus around the findings and final recommendations.

This chapter outlines the engagement strategies and outcomes that informed the development of the SEAS Update. More detailed engagement summaries can be found in Appendix A.

Engagement Phases

The purpose of engagement was to inform and gather input on the SEAS Update. Engagement was divided into two distinct phases, each with unique objectives that informed the development of this plan. A blend of outreach strategies was used to engage the community in a variety of ways.

Phase 1 | Discover

May 2022 - August 2022

Educate the public after a review of previous studies and data collection to seek input on vision, guiding principles, and study area challenges. This phase focused outreach to answer the following questions:

- What guiding principles do we see as most important?
- What are the most critical transportation issues in the Southeast Area?
- How much growth and what kind of growth is ideal?
- What would improve how we travel as the area grows?
- What are some places that need improvement?
- What places should we protect and preserve?

Phase 2 | Involve

September 2022 - August 2023

Educate the public about Phase 1 public input, alternative options, and seek input on potential preferred alternatives. This phase focused outreach to answer the following questions:

- What tradeoffs would we have to make for our preferred land use future?
- Do proposed transportation recommendations meet our current and future needs?
- What criteria should be emphasized in recommending and prioritizing transportation projects?

Outreach at a Glance

Public engagement occurred throughout the development of this plan and informed vision, goals, and recommendations. A snapshot summarizing public outreach can be found below.

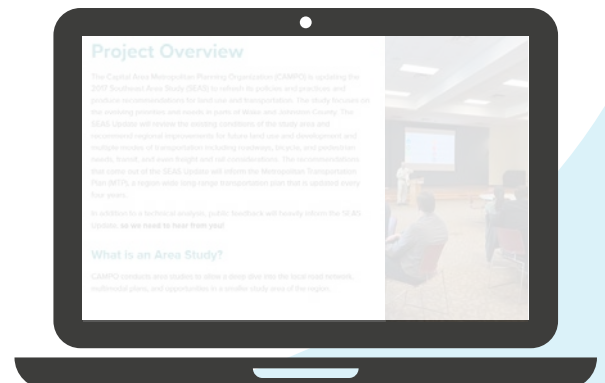
1,115+
Total Participants

1,100+
Survey Responses

1,075+
Total Comments

Public Engagement

The foundation of all planning efforts is community input. The SEAS Update made an intentional effort to involve the public in both direct and indirect ways. A variety of public engagement opportunities helped bolster excitement about the planning effort.



Phase 1 | Discover

Phase 1 involved raising awareness and educating the public about the SEAS Update. The purpose of Phase 1 was to:

- Revisit and reevaluate the 2017 Guiding Principles
- Identify transportation and land use needs and opportunities
- Raise awareness about the SEAS Update

Project Website

As part of Phase 1, the SEAS project website was created to be the engagement hub for this plan. During the development of the study, the website was regularly updated and maintained. The site provided relevant information, documents, and maps for the public to stay informed on the project’s progress. The website also had a calendar with past and upcoming events to document project milestones and events.



Archer Lodge | Benson | Clayton | Four Oaks | Garner | Kenly | Micro | Pine Level | Raleigh | Selma | Smithfield | Wilson's Mills | Johnston County | Wake County

Project Overview

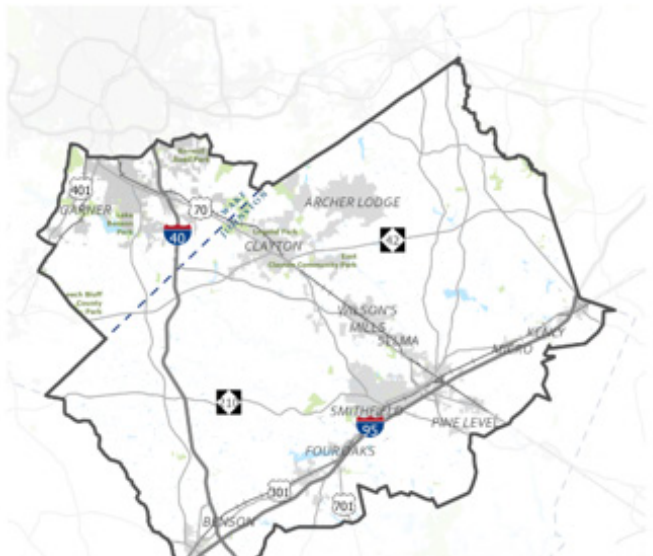
The Capital Area Metropolitan Planning Organization (CAMPO) is updating the 2017 Southeast Area Study (SEAS) to refresh its policies and practices and produce recommendations for land use and transportation. The study focuses on the evolving priorities and needs in parts of Wake and Johnston County. The SEAS Update will review the existing conditions of the study area and recommend regional improvements for future land use and development and multiple modes of transportation including roadways, bicycle, and pedestrian needs, transit, and even freight and rail considerations. The recommendations that come out of the SEAS Update will inform the Metropolitan Transportation Plan (MTP), a region-wide long-range transportation plan that is updated every four years.

In addition to a technical analysis, public feedback will heavily inform the SEAS Update. We need to hear from you!

Area Study?

allow a deep dive into the local road network, and a smaller study area of the region.

Study Area Map



Pop-Up Events

A challenge of standard public engagement is reaching members of the entire community. An intentional effort was made to reach members of the community that might otherwise not engage in the planning process. There were eight pop-up events held across the study area in July 2022 to engage with people in person for feedback regarding vision and goal setting and issues identification. The pop-up events were located at events like downtown festivals and farmers' markets or at the Garner regional library on days of scheduled activities with the hopes of meeting people where they were.

Online Survey

A public survey was used to target online feedback. The first online survey was open from July 6, 2023 to July 29, 2023. The questions on the survey targeted participants thoughts on the overarching vision for this plan, transportation priorities, and growth preferences. While a summary of the online survey results can be seen below, a more robust analysis of input can be found in Appendix A.

600+

Survey Participants

800+

Total Comments

180+

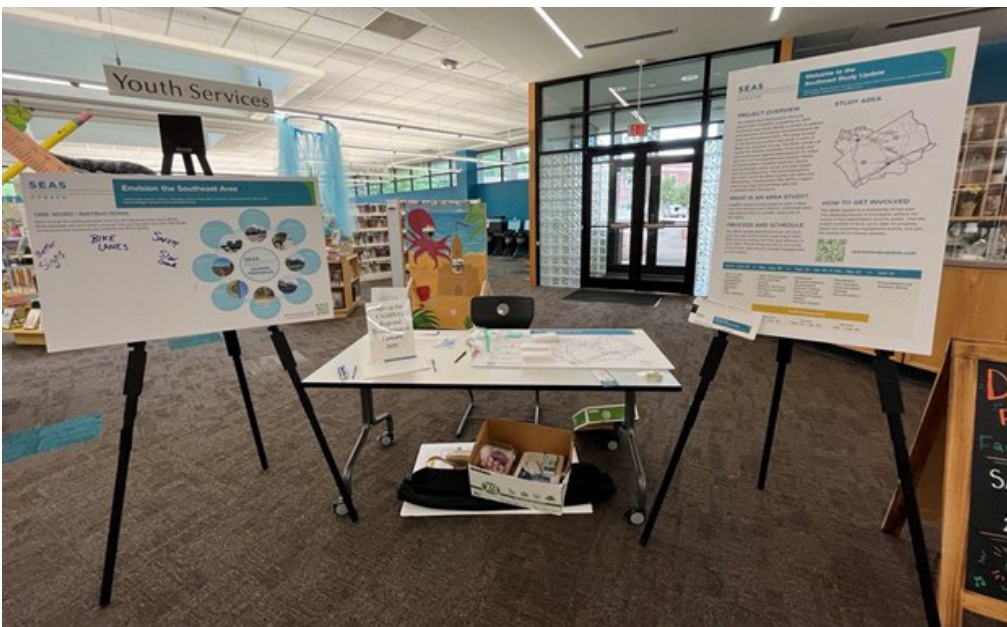
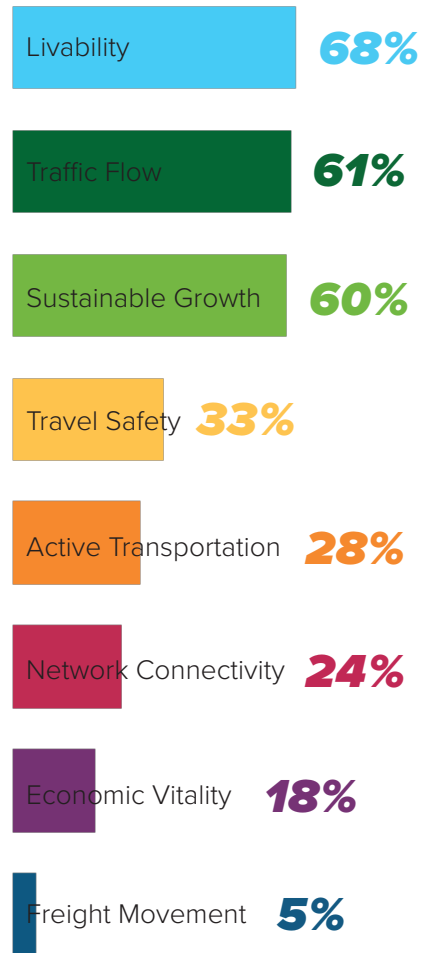
Map Comments

Visioning

As part of the survey, participants were asked to select the three guiding principles that were most important to them. A full list of the guiding principles can be found on the following page. The major takeaways from this question included:

- Concerns about uncontrolled growth and resulting congestion
- The need to preserve natural resources and natural land
- The desire for more greenways, trails, and open spaces
- The need for alternative modes to provide transportation choices

Percent of Respondents



Guiding Principles

The eight guiding principles identified and refined in the SEAS Update reflect the regional vision for the southeast area. Throughout this plan’s development, the guiding principles influenced the direction and development of all planning elements. The principles are listed below in no particular order.



LIVABILITY

Enhance and promote our region’s quality of life through transportation and land use decisions that equitably support public health, education, parks and recreation, public art, and local character.



TRAFFIC FLOW

Make it easier to move within and through our region by reducing congestion and improving roadway operations.



SUSTAINABLE GROWTH

Blend development decisions and transportation strategies to promote and sustain employment and population growth by offering housing and neighborhood choices to meet diverse needs while preserving the area’s natural features.



TRAVEL SAFETY

Promote a safer, more secure transportation system by reducing crashes, enhancing reliability and predictability, and improving emergency coordination.



ACTIVE TRANSPORTATION

Integrate our transportation network to provide travel choices, especially walking and cycling, for all users, regardless of age and ability.



NETWORK CONNECTIVITY

Link local and regional destinations through improved connections and enhanced integration among travel modes.



ECONOMIC VITALITY

Grow our economy through a transportation network that connects residents to jobs, goods, services, and opportunities within and beyond our region.



FREIGHT MOVEMENT

Support global competitiveness of our region through a transportation network that efficiently moves goods and services.



Phase 2 | Involve

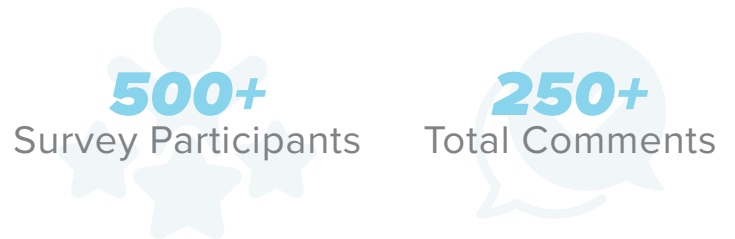
Phase 2 Engagement presented initial findings through an educational approach with the goal of seeking valuable input on draft recommendations. The purpose of Phase 2 was to:

- Educate the public on the preferred growth scenario
- Gather feedback on draft transportation recommendations and priorities

A full summary of Phase 2 Engagement can be found in Appendix A.

Online Survey

An online survey was used to gather public input on the draft bicycle, pedestrian, transit, intersection, and roadway recommendations. The survey was open from June 16, 2023 to July 16, 2023. The survey included a mapping component that invited respondents to leave comments on specific transportation projects.



Jurisdictional Meetings

As part of the SEAS Update, a series of meetings were held with staff from member jurisdictions across the southeast area to understand local priorities. The meeting discussions focused on preferred locations for growth, the state of land use policies, and safety issues.



Public Symposium

A public symposium was held at Garner Town Hall on June 22, 2023. The symposium consisted of two parts. The first was an SOT presentation and orientation to the boards and public engagement materials. The second half of the meeting was a public open house where people were welcomed to drop in and ask questions or provide feedback on the draft transportation recommendations, prioritization criteria, and associated tradeoffs.



BENEFITS OF COMPACT DEVELOPMENT

Land Use Trade-Offs

The Scenario Planning Board explained that we are working to achieve more compact development in the Southeast Area. Compact development is a type of land use that prioritizes higher density residences, active transportation, transit options, and a range of housing types. Land use decisions often require trade-offs. Consider the trade-offs below and place a sticker in the shaded box of the development type you prefer.

| Density of Development | Housing Types | | | | | | | | |
|---|--|---------------|---|--|--|------------------|---------------|--|--|
| <p>Higher density development increases the return on investment for public infrastructure and consumes less land but it can change the existing land use character.</p> <p>Lower density development maintains existing low density character but requires more land and public infrastructure is more expensive on a per-person basis.</p> | <p>A range of housing types provides more options for a variety of households, and increases the potential for more affordable housing.</p> <p>A focus on single-family homes maintains single family character but doesn't meet a variety of household needs and can lead to suburban sprawl.</p> | | | | | | | | |
| <table border="1"> <thead> <tr> <th>HIGHER DENSITY</th> <th>LOWER DENSITY</th> </tr> </thead> <tbody> <tr> <td> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">clayton</div> </td> <td> <div style="border: 1px solid black; padding: 5px;">garner</div> </td> </tr> </tbody> </table> | HIGHER DENSITY | LOWER DENSITY | <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">clayton</div> | <div style="border: 1px solid black; padding: 5px;">garner</div> | <table border="1"> <thead> <tr> <th>RANGE OF HOUSING</th> <th>SINGLE-FAMILY</th> </tr> </thead> <tbody> <tr> <td> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">clayton</div> </td> <td> <div style="border: 1px solid black; padding: 5px;"></div> </td> </tr> </tbody> </table> | RANGE OF HOUSING | SINGLE-FAMILY | <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">clayton</div> | <div style="border: 1px solid black; padding: 5px;"></div> |
| HIGHER DENSITY | LOWER DENSITY | | | | | | | | |
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| RANGE OF HOUSING | SINGLE-FAMILY | | | | | | | | |
| <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">garner</div> <div style="border: 1px solid black; padding: 5px;">clayton</div> | <div style="border: 1px solid black; padding: 5px;"></div> | | | | | | | | |
| Options | Utility Expansion | | | | | | | | |

Pop-Up Events

As in the first phase of engagement, an intentional effort was made to reach members of the community by attending ongoing, local events across the region. The project team went out to six pop-up events in July 2023 to engage with people in person for feedback regarding the draft recommendations and transportation priorities.

What We Heard



Roadway

Improve congestion and prepare for future traffic with incoming growth

- Address congestion on routes into the Triangle and on rural roads not made to handle projected traffic
- Address lack of alternatives to driving on major corridors
- Keep traffic from worsening on major arteries



Pedestrian

Make communities more walkable and bikeable through infrastructure and safety improvements

- Maintain and expand sidewalk networks/pedestrian facilities
- Provide safe crossings for major arterials, highways, rail corridors, etc.
- Provide dedicated paths/lanes to separate and protect cyclists and pedestrians from traffic



Growth

Grow with purpose and direction by balancing growth with community and natural area preservation

- Preserve community character and tailor development to the needs of each community
- Ensure infrastructure can keep up with growth
- Avoid uncontrolled sprawl that encroaches on rural areas and worsening traffic



Bicycle

Create regional connectivity for bicyclists and pedestrians

- Provide bike and pedestrian facilities connecting different communities across the region
- Add greenways and shared use paths parallel to major travel corridors that can act as alternatives to driving
- Create connections between major destinations and residential developments



Transit

Make transit a viable alternative to driving

- Emphasize transit as an opportunity for mode shift to relieve congestion
- Prioritize regional transit connections into the Triangle
- Coordinate transit with land use strategy
- Provide first-mile/last-mile connections



Equity

Ensure recommendations are developed through a lens of equity

- Include equity as a focus of the study by considering access to transportation and opportunity
- Equitably distribute project benefits
- Ensure that projects do not adversely impact historically disadvantaged communities and communities of concern



REGIONAL SNAPSHOT

The Regional Snapshot is an assessment of the conditions and trends that affect how people live, work, and travel in and through the Southeast Area. It sets the stage for defining and shaping a new land use and transportation future. This context along with the input from Phase 1 Engagement provides the information needed for the development of recommendations responsive to the needs and values of the Southeast Area.

This chapter leverages a variety of data sources from the local, regional, and state levels. Individual data sources are noted where they are referenced. In many places throughout this document comparisons are made between the study area as a whole, as well as comparisons between the counties, region, or state.

Format

The Regional Snapshot takes a threefold look at **people, places,** and **mobility** to paint a full picture of the Southeast Area as it exists in terms of demographics, land use and the environment, and the transportation system.

| | | |
|--|---|--|
| <p>People</p> <p>A look at the demographic trends in the study area</p> | <p>Places</p> <p>A look at land use trends around growth and the environment</p> | <p>Mobility</p> <p>An analysis of the existing and planned transportation network</p> |
|--|---|--|

Building Blocks

The SEAS Update is just what the name implies—an opportunity to revisit the groundwork that has already been laid for the future of transportation and growth in the Southeast Area. In addition to it being an update to the existing SEAS, the towns, counties, and agencies working in the study area have a combined collection of almost 30 plans that are in progress or have been adopted in just the past five years since the 2017 SEAS was completed. These plans are the building blocks of transportation and land use decision making and are important considerations when identifying investments over the coming years. This section lists the concurrent and adopted plans since the completion of the 2017 SEAS, many of which stemmed from recommendations of the previous planning process. While not a comprehensive list, all of the plans summarized in this section were collected because they are relevant to the SEAS Update. The following pages give a brief overview of these plans.

Concurrent Plans

| Jurisdiction or Agency | Plan | Summary |
|------------------------|--|--|
| CAMPO | Garner-Clayton BRT Extension Study | Studying extending the South Wake BRT line from its planned Garner terminus further into Garner and Clayton roughly following the US 70 corridor |
| Clayton | Clayton Pedestrian Plan | An analysis of existing pedestrian infrastructure conditions and challenges, recommendations for improvements |
| GoTriangle | Greater Triangle Commuter Rail Study | Studying the potential creation of a commuter rail between West Durham and Garner/Clayton and what would be needed (e.g., cost, infrastructure) |
| Johnston County | Envision Johnston Update | Continuing from the original Envision Johnston analysis with more specific policies and an initial land use proposal |
| Smithfield | Smithfield Pedestrian Plan | An inventory of existing pedestrian infrastructure and proposals for needed sidewalk and shared path connections |
| UCPRPO | Neuse River Trail Clayton-Smithfield Study | Studying an extension of the Neuse River Trail to connect its current end in Clayton with the Buffalo Creek Greenway in Smithfield |
| Wake County | Lower Swift Creek Area Study | A new area land use plan for a small section of unincorporated Wake County within Garner’s urban service area |

Adopted Plans

| Jurisdiction or Agency | Plan | Year | Summary |
|------------------------|---|-------|---|
| Archer Lodge | Town of Archer Lodge Bicycle and Pedestrian Plan | 2020 | Analysis of current and planned pedestrian and bike facilities, policy/program recommendations |
| Benson | 2019 Town of Benson Community Transportation Plan | 2019* | An analysis of existing transportation services and recommendations for various modes |
| CAMPO | Fayetteville-Raleigh Passenger Rail Feasibility Study | 2020 | A study of two potential corridors for passenger rail from Raleigh to Fayetteville |
| | Report of Economic Development Assessment | 2020 | An analysis of community assets; a vision, goal, and strategy for economic development |
| Four Oaks | Downtown Streetscape Master Plan | 2020 | A design plan for the public realm around Main Street, Wellons Street/US-301, and surrounding parts of downtown Four Oaks |
| | Land Use Plan Analysis and Update | 2022 | Comparing status quo, previously planned, and smart growth approaches to town land uses |
| Garner | Garner Forward | 2018 | Long term comprehensive and transportation plans for the future outlook of the town, leading into a planned development ordinance rewrite |
| | Town of Garner Transit Study | 2020 | Summary of community engagement, analysis of transit needs/demands, recommendations |
| Johnston County | Johnston County Parks and Recreation Master Plan | 2021 | Analysis of current park amenities in Johnston County, recommendations |
| | Envision Johnston (Comprehensive Land Use Plan) | 2021 | Analysis of where certain land uses were most suitable based on needs of each use and community engagement |
| Pine Level | Pine Level Comprehensive Land Use Plan | 2022 | Analysis of current trends, community vision, and future land use for the Pine Level area |
| Raleigh | Southeast Special Area Study Phase 2 Report | 2020 | Policy guidance for the rural and natural areas southeast of Raleigh based on public engagement |
| | Raleigh Community Climate Action Plan | 2021 | An analysis of climate risks facing Raleigh and detailed strategies and actions for equity and resilience |

*Plan not formally adopted.

Adopted Plans (Continued)

| Jurisdiction or Agency | Plan | Year | Summary |
|------------------------------------|---|------|---|
| Selma | Eastfield Conceptual Master Plan | 2017 | A master plan map for a planned development south of I-95 in Selma |
| | Economic Development Strategic Plan | 2019 | Strategic plan for attracting and retaining jobs based on an analysis of the town's assets and opportunities |
| | Town of Selma Land Use Plan 2040 | 2021 | Analysis of community conditions and a plan for future land uses and ordinance changes |
| Smithfield | Smithfield Town Plan | 2019 | Comprehensive town plan including growth management and transportation elements |
| Central Pines Regional Council | Close to Home: An Affordable Housing Analysis of The Triangle's Passenger Rail Corridor | 2021 | Existing and planned affordable housing types, locations, and opportunities along the commuter rail corridor |
| | Opportunity Analysis (of Greater Triangle Commuter Rail Corridor) | 2022 | Analysis of what could happen along the commuter rail corridor (travel markets, land use, affordable housing, and economic impact) |
| Wake County | 2019 Community Health Needs Assessment | 2019 | Analysis of community health needs and inventory of available or needed health resources |
| | PLANWake Comprehensive Plan | 2021 | Comprehensive plan for Wake County |
| | Wake County Transit Plan Update | 2021 | Update to plans for future transit improvement in Wake County (GoTriangle, GoRaleigh) |
| Wake County Public Schools (WCPSS) | Capital Investment Plan Update | 2022 | Summary of major planned facility work (new construction and major renovations), comparison to previous CIP |
| Wilson's Mills | Town Plan 2040 Comprehensive Land Use and Master Plan | 2019 | Analysis of town resources and community wants; goals and objectives for future land use, economic development, and community character |

**Formerly Triangle J Council of Governments (TJCOG)

People

This section examines demographic trends in the Southeast Area. It includes an assessment of population makeup, growth, prosperity, education, and vulnerable groups. Understanding who lives and works in the Southeast Area today will inform important considerations for who to plan for in the future. The “present day” information in this section was analyzed using the 2020 Decennial Census and the 2020 American Community Survey, 5-year estimates.

Population and Growth

The Southeast Area study area contains about 21% of the Raleigh-Cary Metropolitan Statistical Area (MSA)’s population. Since the original plan, the study area has not only outpaced the growth of the Raleigh MSA and the state, but even exceeded estimates in the original study, growing by over 21,600 people in three years when the original SEAS predicted only growing by 10,000 in five years. Preserving the area’s character in the midst of rapid population growth and change highlights the importance of coordinating strategies for both land use and transportation.

Age

The study area has an older population than the Raleigh-Cary MSA at large. 12.5% of the study area population is above age 65, an increase from 11.5% in 2015 and a higher percentage than within the Raleigh-Cary MSA. The study area also has a higher median age (38.5) than the Raleigh-Cary MSA (36.9), both increases from their 2015 medians (37.7 for the study area, 35.8 for the MSA). Men have a slightly lower median age than women within the study area at 36.9 and 39.8, respectively.

Educational Attainment

89.6% of the study area population has obtained, at the least, a high school diploma, and 29% have a bachelor’s degree or higher. While these numbers are lower than the Raleigh-Cary MSA and state rates of educational attainment, they still reflect an educated population well equipped for skilled employment.

Owned vs. Rented Households

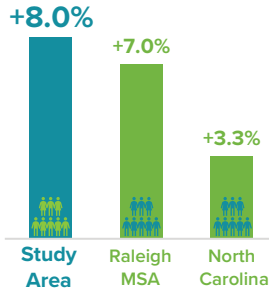
Around 74% of households in the study area are owner-occupied, compared to about 26% renter-occupied. This is a slight increase in owner-occupied households since 2017 when about 73% of properties were occupied by their owners. Most rental properties are concentrated in more dense areas within towns and cities, largely matching the land use patterns of the study area.

Community Snapshot

Population Growth



Study area population growth from 2017 to 2020 outpaced the growth of the Raleigh MSA and North Carolina



Population



Vehicle Access



4.1% have no vehicle



23.9% have 1 vehicle

Diversity



32.7% Minorities
compared to Raleigh MSA's 34.3%

Sex



51% female



49% male

Household Tenure



73.8% owner-occupied



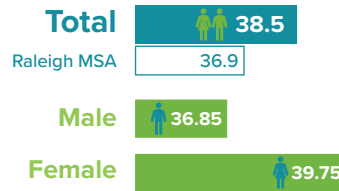
26.3% renter-occupied

Age

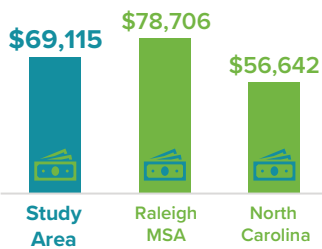


12.5% Elderly
compared to Raleigh MSA's 12.1%

Median Age



Median Income

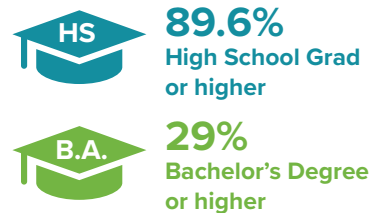


Poverty



10.2% of Households in Poverty
compared to Raleigh MSA's 8.3%

Education



Source: 2017 and 2020 American Community Survey 5-year estimates; 2020 Census

Median Household Income

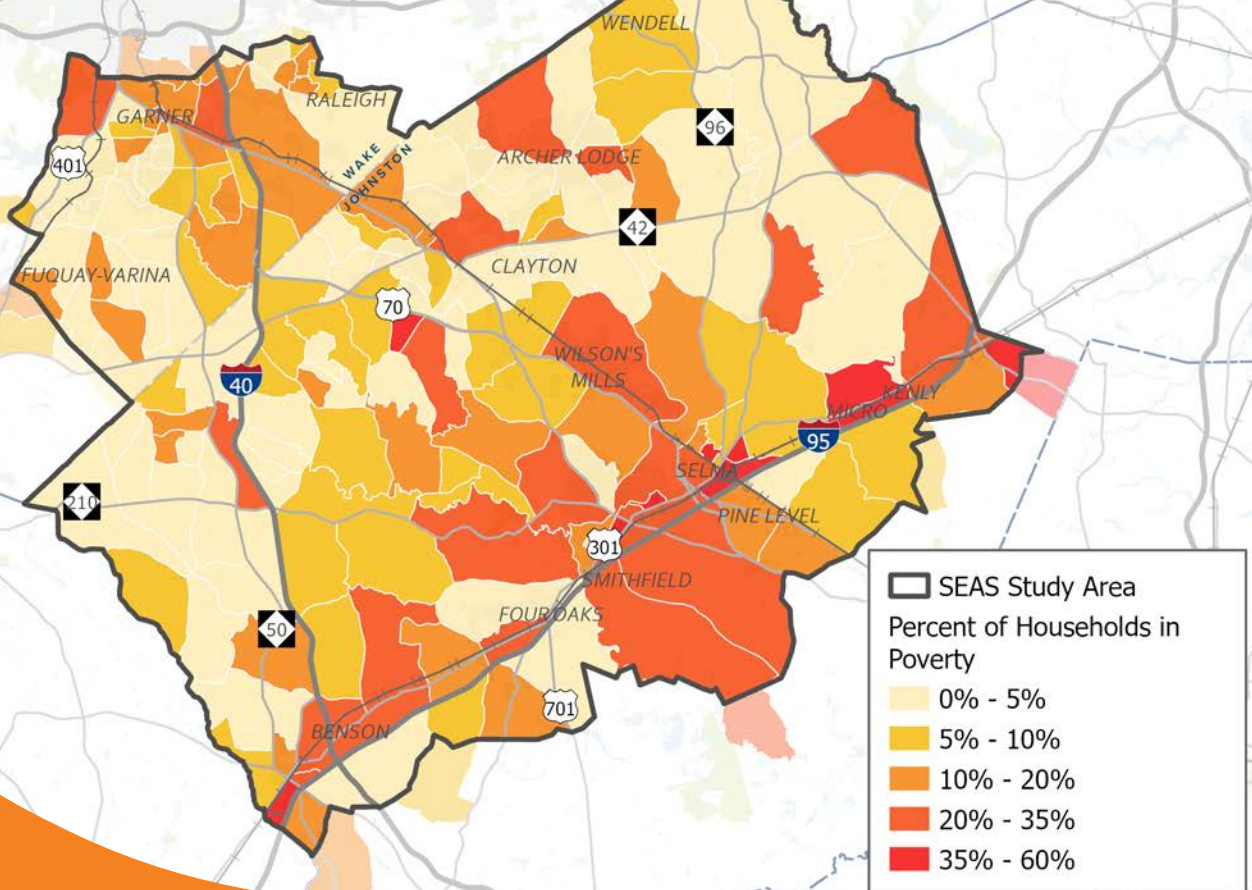
The median household income in the study area is \$69,115, an increase from \$67,046 in 2015. While significantly lower than the Raleigh-Cary MSA's median (\$78,706), it still exceeds the statewide median of \$56,642.

Households in Poverty

Just over 10% of study area households are in poverty, a higher rate than that of the larger Raleigh-Cary MSA, but a decrease from the study area's 12% in 2013. Most parts of the study area with the worst poverty are along the US 301/I-95 corridor, with a smaller area of less severe poverty roughly following the US 70 corridor. Other than the areas around southeast Raleigh and Garner, the poverty rate generally increases further out from downtown Raleigh, matching a nationwide pattern of poverty being pushed further out into suburbs as urban housing costs increase.

Percent of Households in Poverty

Source: 2020 American Community Survey 5-year estimates



Population Density

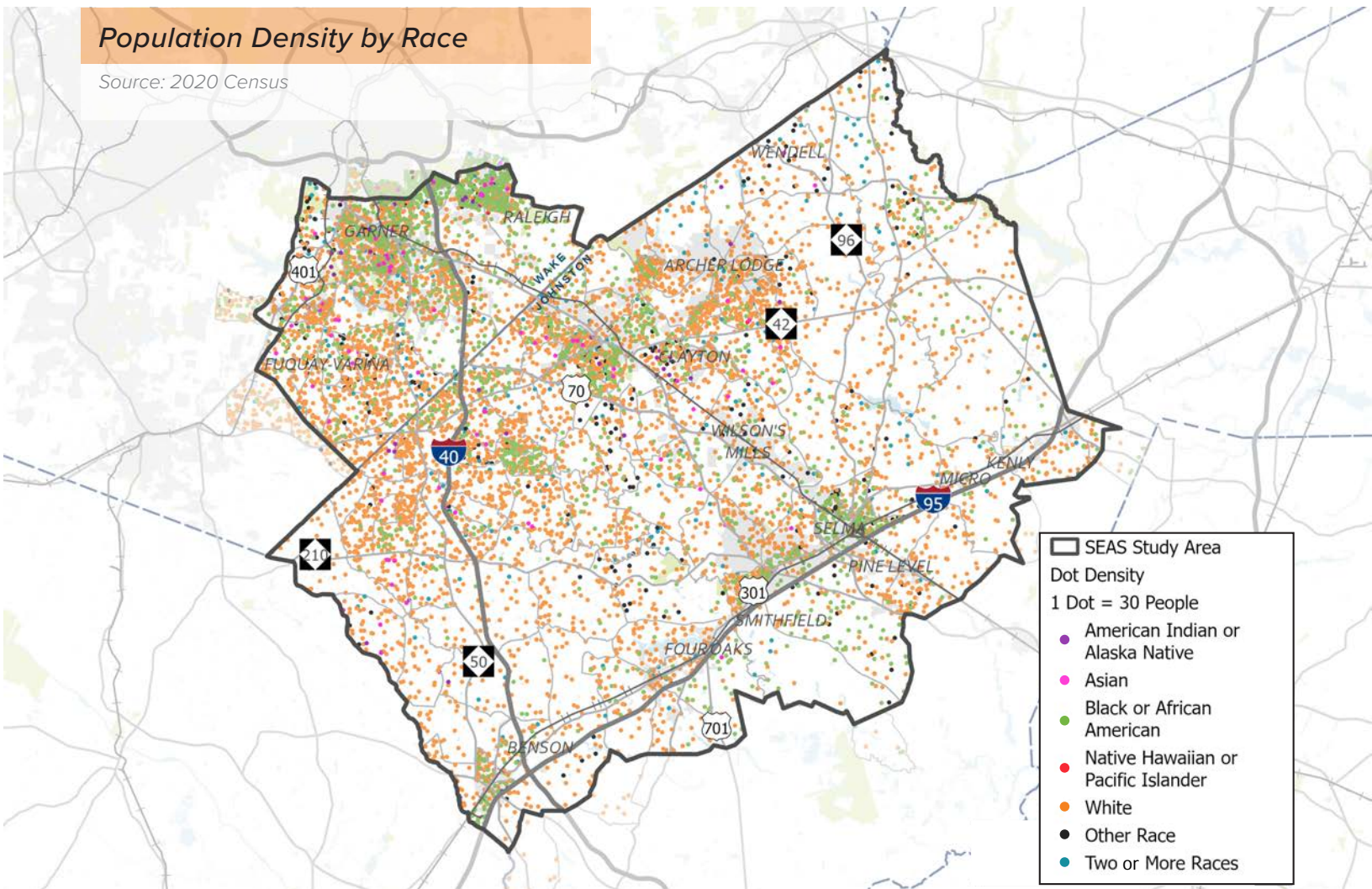
The bulk of the study area's population is located within proximity to areas surrounding the Wake/Johnston County border, with population growth spreading from Raleigh and Garner outward further into Johnston County along I-40, US 70, and NC 42. There is slightly less density in the towns along the US 301/I-95 corridor, which have not seen as much growth.

Race

Around 67.3% of the study area population is White/Caucasian, while 32.7% of the study area's population is non-white or mixed. This is a slight increase in non-white or mixed populations since the original SEAS, which made up about 30% of the study area population in 2017. Combined, White/Caucasian and Black/African American populations make up the vast majority of the study area's population. Notably, the White/Caucasian population is spread out across the area, while the Black/African-American population is largely clustered in towns and in the area near the I-40/NC 42 interchange.

Population Density by Race

Source: 2020 Census

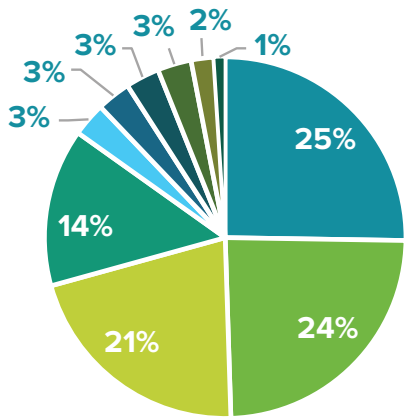


Places

The Research Triangle Region, anchored by the cities of Raleigh and Durham and the town of Chapel Hill, has been one of the fastest growing areas in the state over the last decade. Due to available and affordable land and proximity and access to employment centers, the Southeast Area is anticipated to continue to experience high growth for the foreseeable future.

Places Snapshot

Future Land Use Based on Existing Plans



- Low Density Residential
- Moderate-High Density Residential
- Industrial
- Civic and Institutional
- Transit-Oriented Development
- Green Space or Farms/Forest
- Rural
- Commercial
- Mixed Use
- Other

Growth in Perspective Between 2010-2019



Johnston and Wake were the two fastest growing counties in the Research Triangle



The Triangle was one of the three fastest growing regions in North Carolina



North Carolina was the fourth fastest growing state in the nation

Environmental Features

Percent of Study Area



13%
wetlands



12%
flood hazard zones



7%
managed areas



3%
voluntary agricultural districts

Housing Unit Stats

Unit Types



77.8%
single-family

12.1%
mobile homes

10.1%
multifamily

Percent Cost Burdened*

39.3%
of renters

7.2%
of owners

Year Built*

23.6%
1990-1999

23.3%
2000-2009

11.9%
1980-1989



*Within all of Johnston County

Source: 2017 and 2020 American Community Survey 5-year estimates; 2020 Census; Triangle J Council of Governments (TJCOG) CommunityViz Growth Model; North Carolina Department of Environmental Quality (NCDEQ); North Carolina Flood Risk Information System (FRIS); National Wetlands Inventory (NWI); North Carolina Natural Heritage Program (NHP)

Growth Over the Last Decade

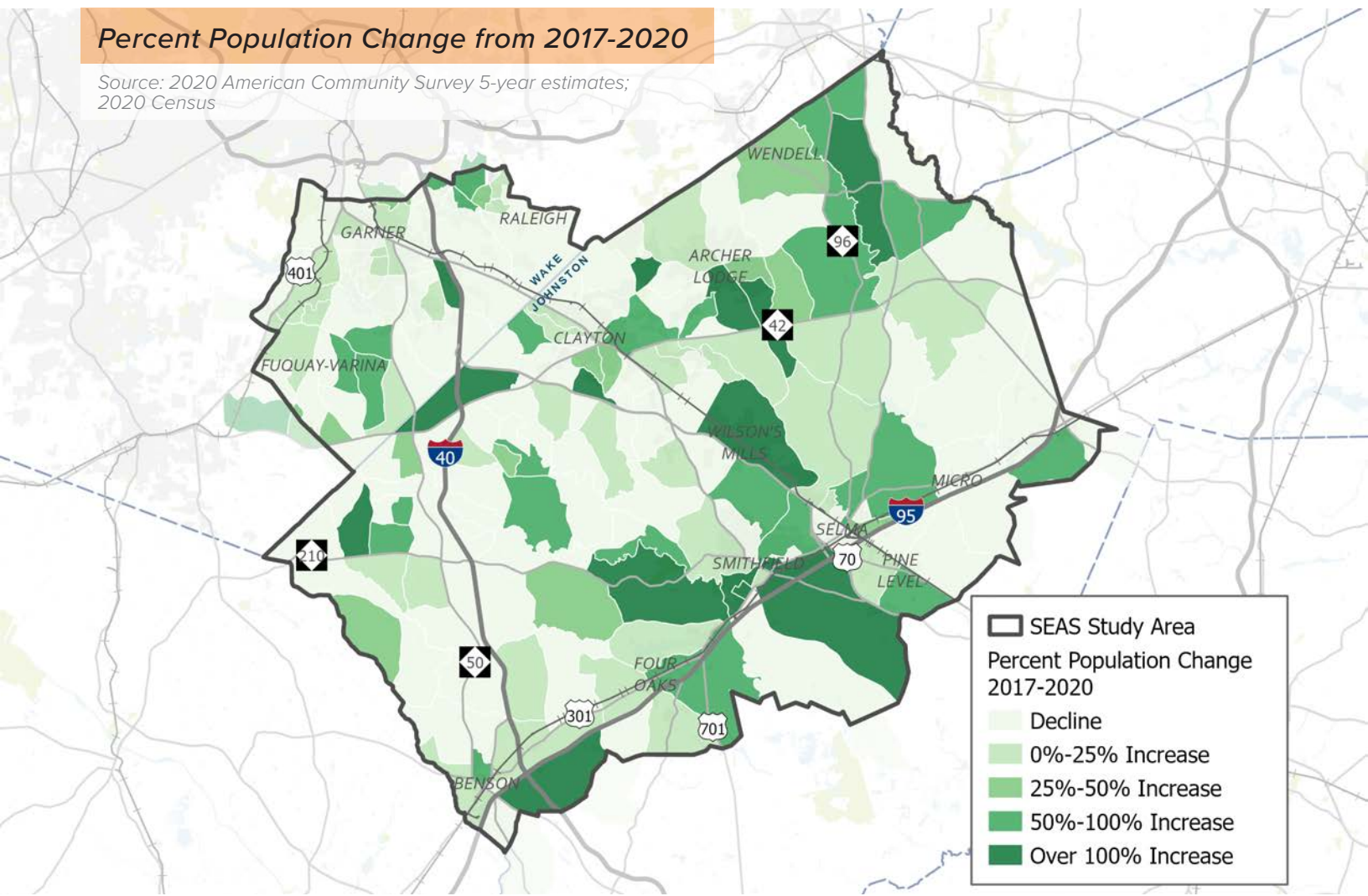
Between 2010-2019, North Carolina was the third highest growth state in the Southeast and fourth in the nation. During that same time period, the fastest growing regions in the state were Charlotte, the Research Triangle, and Wilmington. Wake County and Johnston County were the two highest population growth counties in the Triangle. According to the Central Pines Regional Council, Johnston County led the state in population growth from 2010 to 2020 with the Town of Clayton being at the forefront of this growth.

Recent Household and Population Trends

Looking at 2017-2020 (the period since the last SEAS update), the Census estimated change in households shows that growth trends are shifting further south and east in Johnston County. The Census areas that had the highest increase in number of households were near Benson, Four Oaks, and Smithfield with other significant increases near Selma and Wilson’s Mills. For this same time period, population growth in the SEAS has occurred primarily in areas within or surrounding existing municipalities, following the overall state trends of population growth in urbanizing areas. Overall population change was highest in Benson, Smithfield, Wilson’s Mills and near Archer Lodge, Fuquay-Varina, and Wendell.

Percent Population Change from 2017-2020

Source: 2020 American Community Survey 5-year estimates; 2020 Census



Housing Unit Trends

There are approximately 108,029 total housing units within the Southeast Area according to the ACS 2020 5-year estimates. The majority of the housing units in the study area are single family homes (77.8%), the majority of which are detached (75.1% detached vs 2.8% attached). The next largest category of housing units are mobile homes (12.1%), followed by a variety of multiple unit housing types (10.1%). While not representative of the entire study area, housing unit data from the US Census for Johnston County also helps illustrate area trends. Most housing units in Johnston County were built between 1990-1999 (23.6%), 2000-2009 (23.3%), or 1980-1989 (11.9%). Within Johnston County, 39.3% of renters are cost burdened, meaning that they spend 35.0% or more of their household income on rent. In comparison, 7.2% of homeowners spend 35.0% or more of their household income on their mortgage.

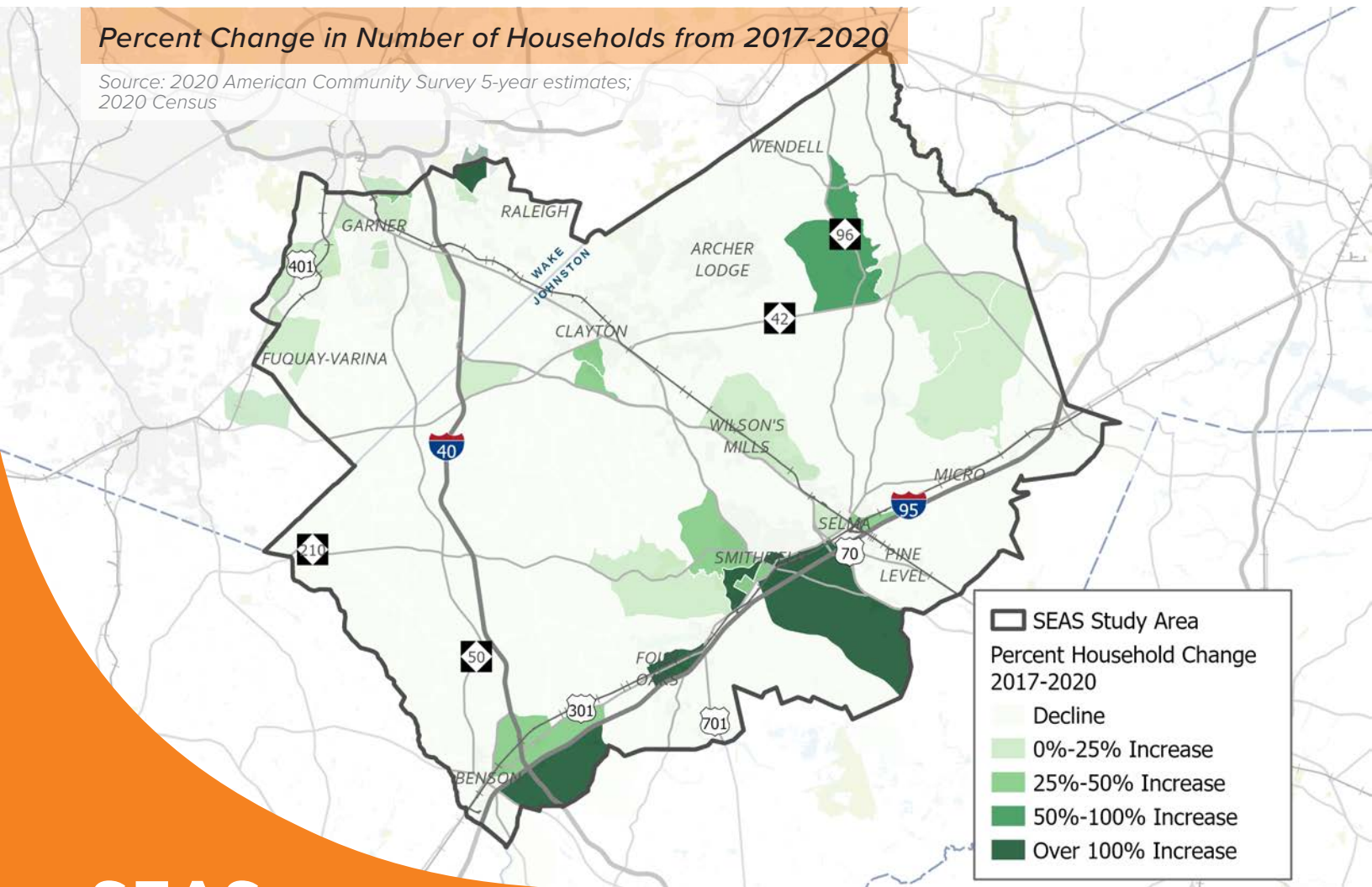
Housing and Transportation Costs

Expanding on the definition of cost burdened, The Housing + Transportation (H+T) Affordability Index provides a comprehensive view of affordability that includes both the cost of housing and the cost of transportation. The H+T Index sets a benchmark of affordability where housing and transportation costs should cost no more than 45% of household income. In Johnston County, about 48% of the population is cost burdened with housing and transportation costs accounting for over 45% of household income.

Source: Center for Neighborhood Technology's H+T Index

Percent Change in Number of Households from 2017-2020

Source: 2020 American Community Survey 5-year estimates; 2020 Census



Natural Environment

The SEAS has a diversity of environmental resources that are important considerations when planning future growth and development. Highlights include the Neuse River, Swift Creek, and Holts Lake. Approximately 13% of the study area is in the National Wetland Inventory, and 12% of the study area are in Flood Hazard Zones.

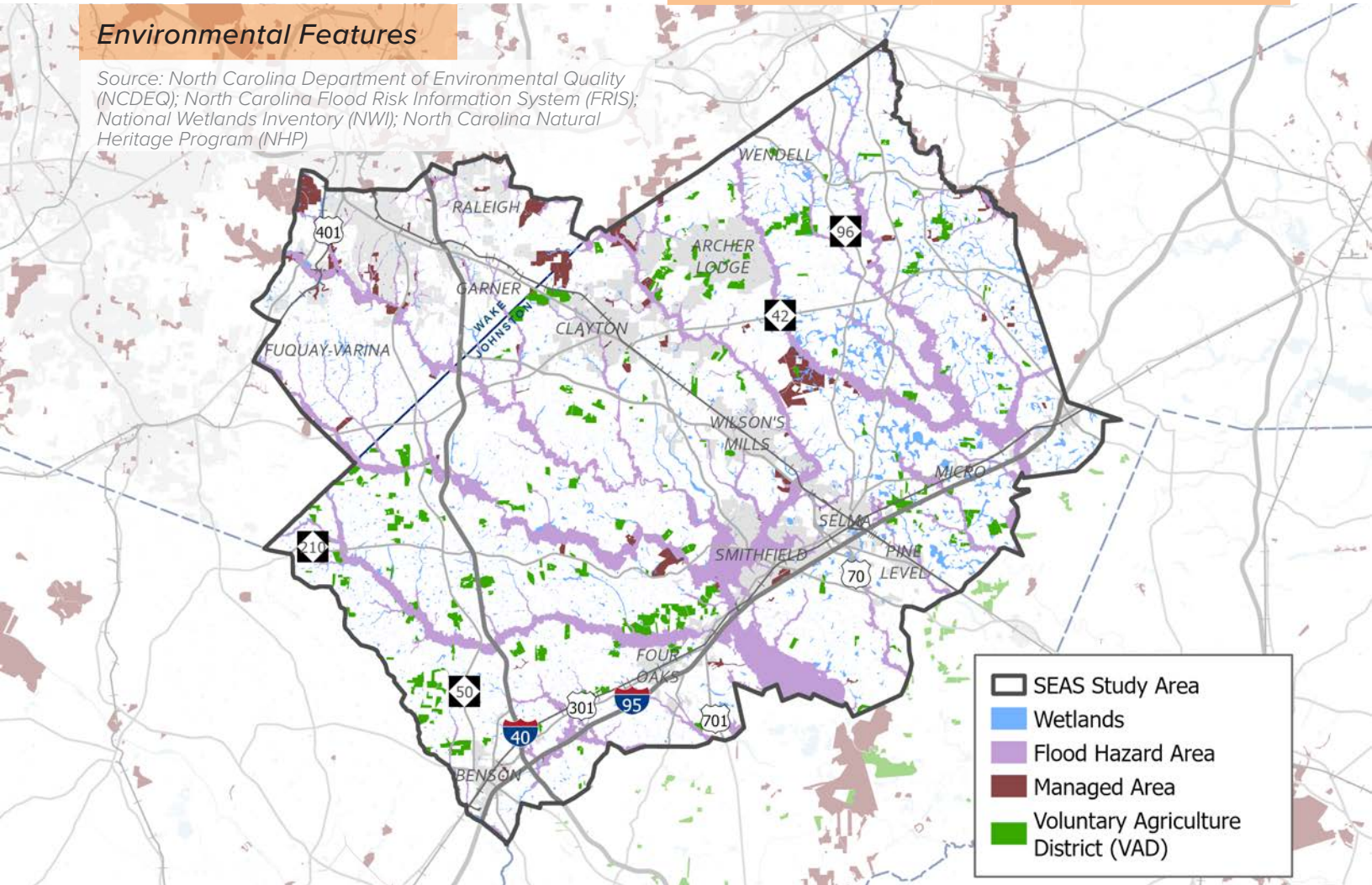
Voluntary Agriculture Districts (VADs) encourage the preservation and protection of farmland and working forests (defined by the North Carolina Department of Agriculture and Consumer Services). VADs involve a voluntary agreement for farmers to maintain their land as a source of agricultural production for a set time. Both Wake County and Johnston County have enrolled properties in the Voluntary Agricultural District program. Approximately 3% of the study area is considered part of VADs.

The Natural Heritage Program, under the North Carolina Department of Natural and Cultural Resources, is a conservation land management program. Managed Areas include properties and easements maintained with the goal of conservation of biodiversity and ecosystem function. Managed Areas are 7% of the SEAS.

| Environmental Feature | Acres | Percent of Study Area |
|---|--------|-----------------------|
| Voluntary Agriculture Districts (VADs) | 14,318 | 3% |
| Managed Areas | 28,253 | 7% |
| Flood Hazard Zones | 50,192 | 12% |
| Wetlands | 57,551 | 13% |

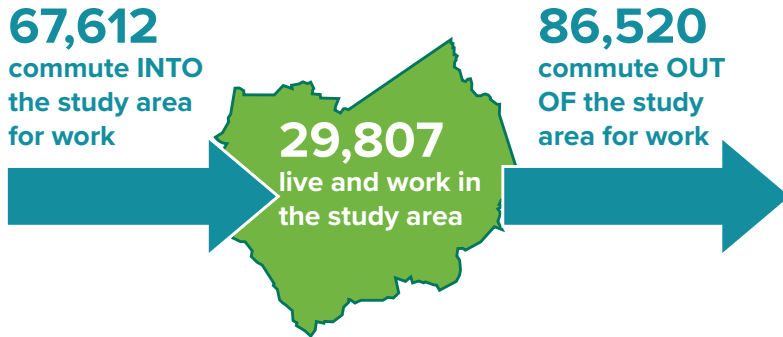
Environmental Features

Source: North Carolina Department of Environmental Quality (NCDEQ); North Carolina Flood Risk Information System (FRIS); National Wetlands Inventory (NWI); North Carolina Natural Heritage Program (NHP)

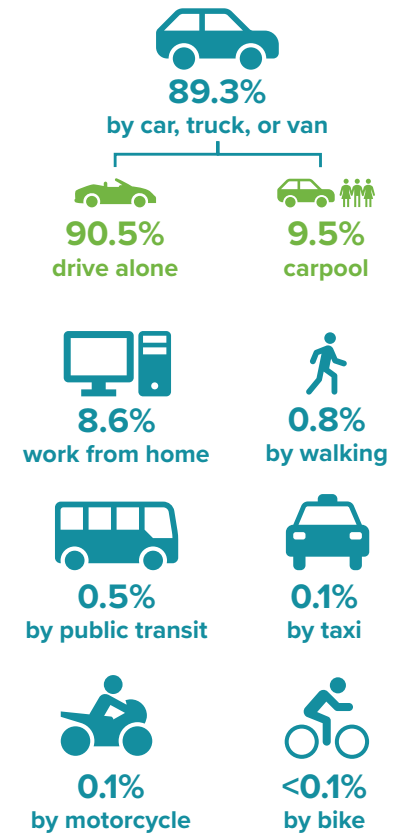


Mobility Snapshot

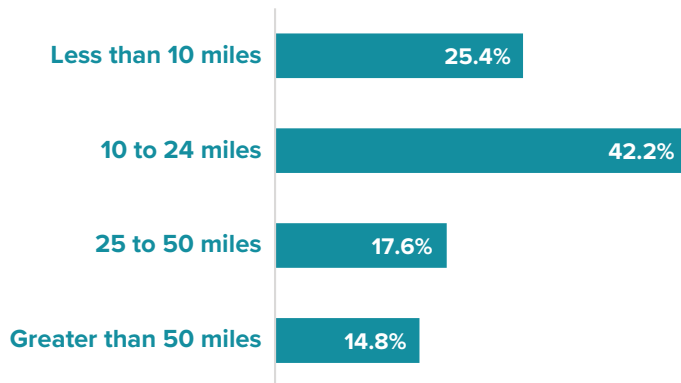
Inflow/Outflow



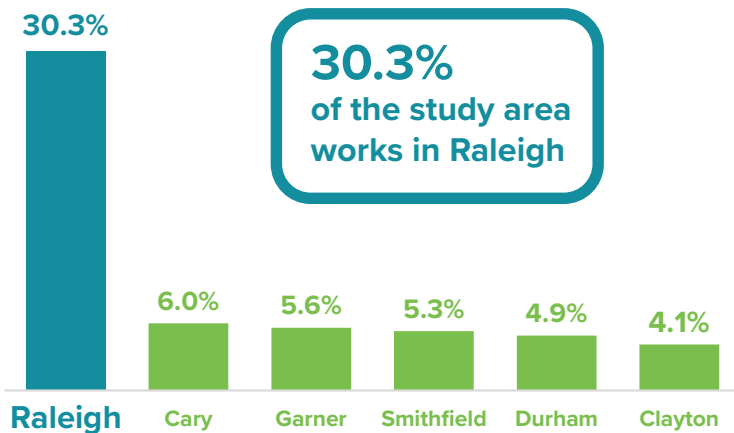
Mode to Work



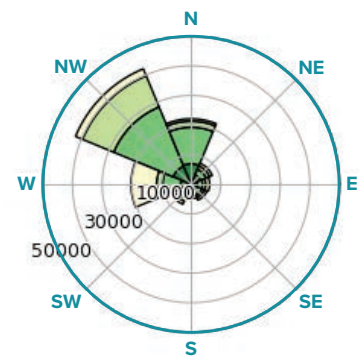
Commute Distance



Workplace Destination



Commute Direction



Most commute north-west towards or into the Triangle

Source: 2020 American Community Survey (ACS) 5-year estimates; 2019 Longitudinal Employer-Household Dynamics (LEHD) Data

Mobility

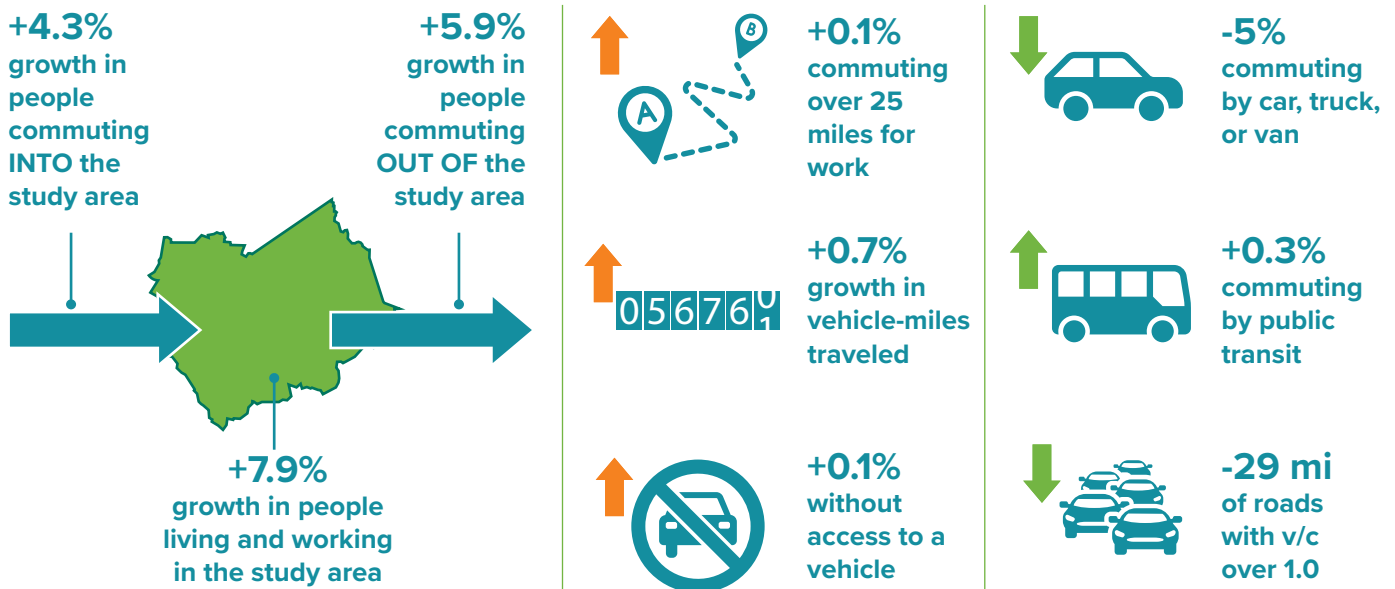
Creating recommendations that support improved movement of people within and through the Southeast Area requires a thorough analysis of the state of mobility as it exists today. This section also looks at the modal improvements and projects that are already proposed in the study area based on existing plans to understand what the SEAS Update needs to do to respond to or support these existing recommendations. Mobility can be measured in different ways using many metrics. This section looks at the study area’s transportation system through measures of quality, quantity, connectivity, traffic, and safety in order to create a picture of current and planned mobility in the Southeast Area.

Travel Patterns, Mode Split, and Vehicle Access

The Southeast Area is fairly car reliant, with over 89% of commuters driving in a car, truck, or van. Out of those that commuted by car, truck, or van, just over 90% drove alone, while 9.5% carpooled. Another 8.6% work from home and do not commute. 0.8% commute by walking, 0.5% by transit (primarily bus), and 0.1% each by taxi and motorcycle. Notably, less than 0.1% biked to work, which may reflect on the lack of bike infrastructure in the region and long commute distances. Despite the continued high car reliance, there has been a noticeable shift. At the time of the original SEAS plan, nearly 94% commuted by car, truck, or van, and only around 0.2% took public transit.

While just under 30,000 people both live and work in the study area, most people (just over 86,500) commute out of the study area for work. The vast majority commute northwest towards or into the Triangle, with 30.3% of the study area working in Raleigh. Most workers (42.2%) commute 10 to 24 miles to work, followed by those that commute less than 10 miles (25.4%). However, a sizable amount (14.8%) commute over 50 miles to work. 4.1% of the study area population lacks access to a vehicle, while 23.9% only has access to one vehicle. Parts of Garner, Smithfield, Selma, and Benson have some of the highest rates of people without access to a vehicle.

Since 2017...



Safety and Crashes

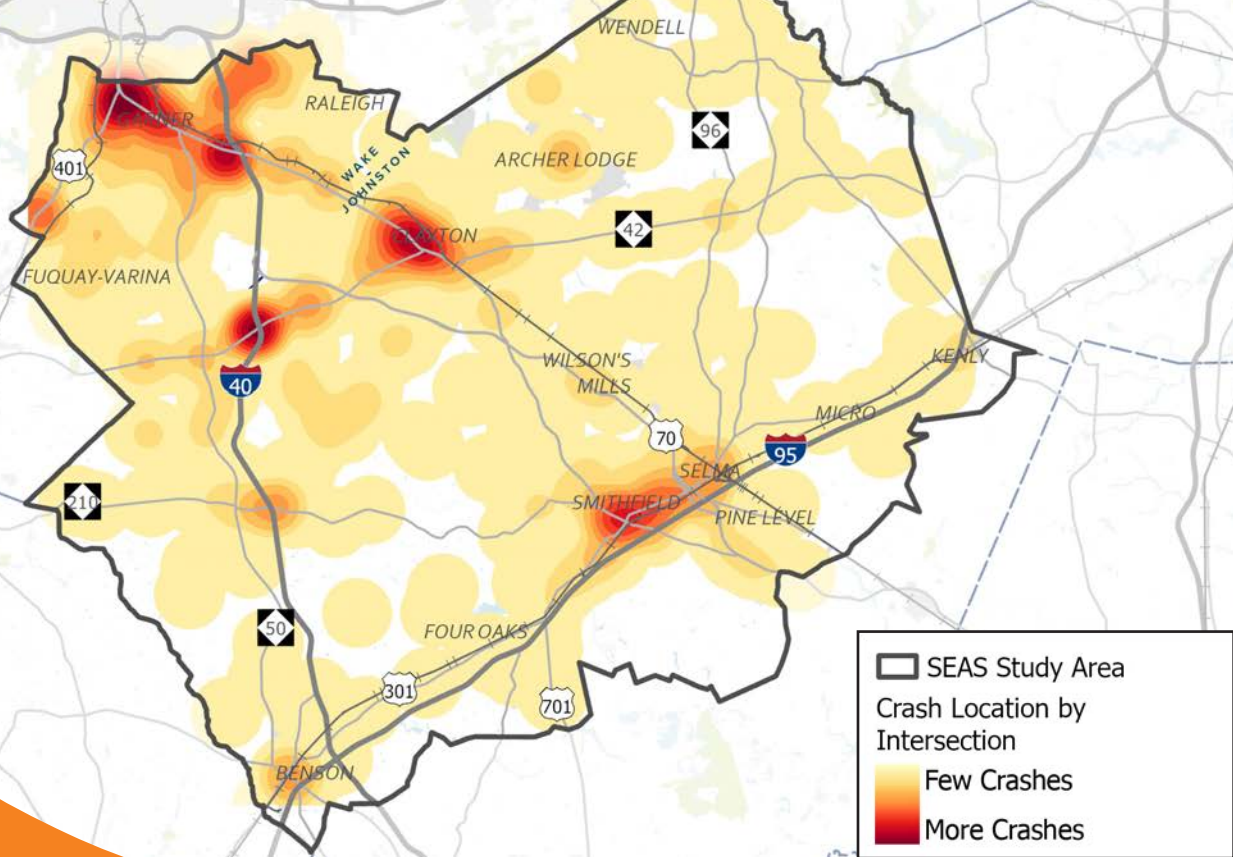
Crash data can be used to help identify safety issues on roadways and at intersections with frequent crashes. Locations with some of the most severe crashes often have safety concerns or unsafe designs that need to be addressed.

Between 2015 and 2019, most crashes were largely concentrated along major highways and thoroughfares throughout the study area. Minor crashes that only caused property damage made up the largest percentage of crashes. Only a small percentage of crashes during this period resulted in injuries or death. Out of just over 10,000 crashes, 1.1% of crashes were fatal or caused serious injury, while 28.2% of crashes caused only minor injuries. This is an improvement from 2012-2014, where there were about 12,300 crashes over less time and 9.1% were fatal or caused serious injury. Most areas with the worst density of fatal or severe crashes were located around major highway interchanges or roughly followed major highways (I-40, I-95, US 70). Some major rural intersections and major routes through municipalities also saw clusters of serious crashes.

| | | | |
|-----------|--------------------------------|--|--------------------------------------|
| 2012-2014 | 12,313 Total Crashes | 1,115 (9.1%) Fatal or Serious Injury | 2,697 (21.9%) Minor Injury |
| 2015-2019 | 10,061 Total Crashes | 118 (1.1%) Fatal or Serious Injury | 2,837 (28.2%) Minor Injury |

Crashes by Intersection from 2015 to 2019

Source: NCDOT 2015-2019 Total Crash Frequency by Intersection

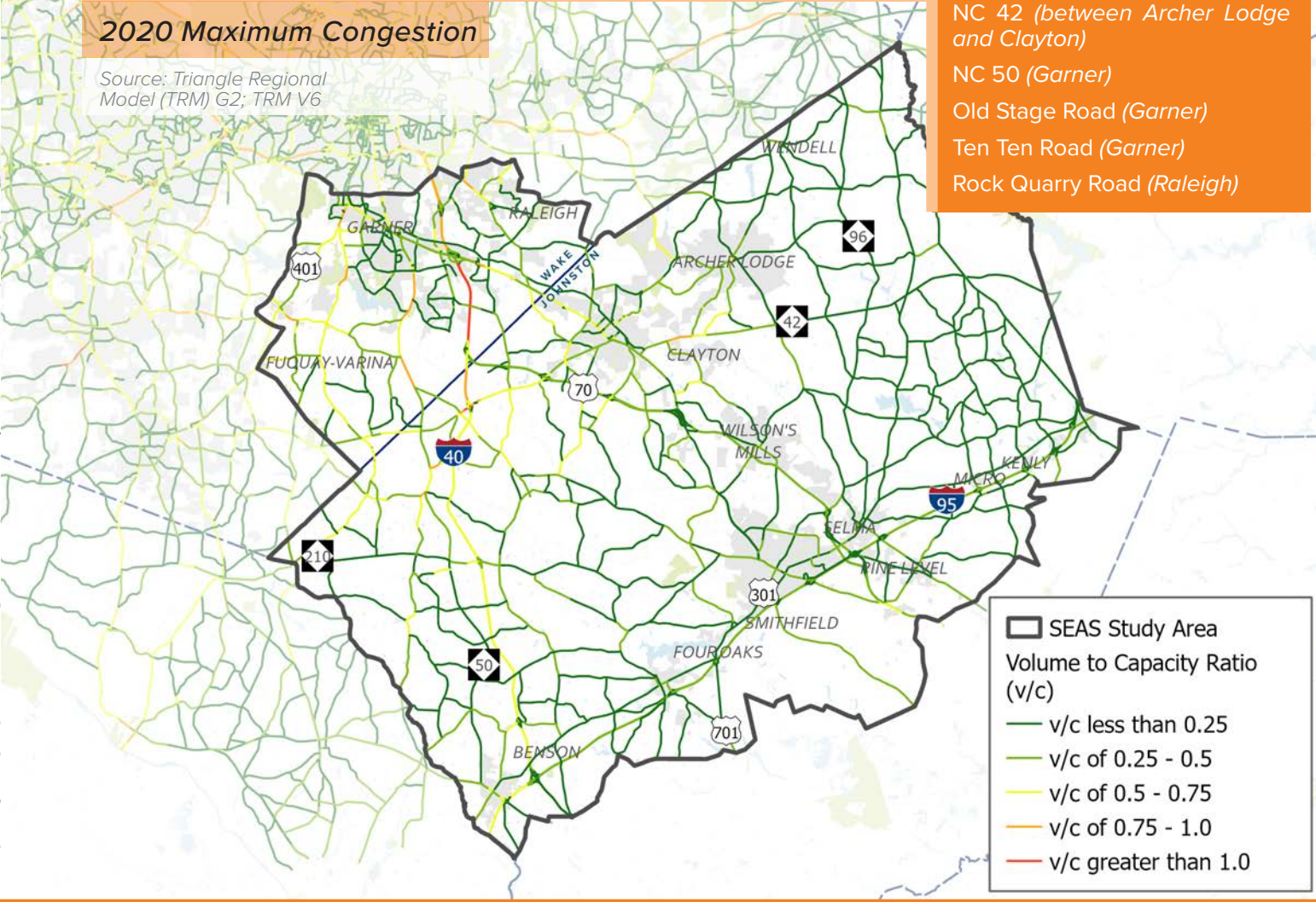


Congestion and Traffic Volumes

Sophisticated models can simulate the interaction of estimated demand and available supply at a regional scale. The Triangle Regional Model (TRM) comprises the Raleigh urbanized area, the Durham-Chapel Hill urbanized area, and a portion of the UCPRPO area. For the purposes of this document, current congestion levels are derived from the TRM 2020 Base Year Model and are symbolized based on volume-to-capacity (V/C) ratios. Modeled traffic congestion provides system level insights into congestion issues and can indicate corridors that warrant higher levels of study and analysis or capacity improvements. Roads are typically approaching capacity at a V/C of 0.75 and above, considered at capacity at a V/C of 1.0, and considered over capacity above that threshold. Roadways reflecting a V/C approaching capacity in the 2020 model are concentrated in Raleigh, Garner, and along major corridors. These roadways are shown on the following map and a selection of them are listed at right.

Vehicle miles traveled (VMT) is the total miles of vehicle travel along a roadway. VMT is essentially a measure of the demand for vehicle travel on roadways. The daily VMT for the study area in 2016 and 2020 is displayed in the table below, there was a less than 1% increase between the years.

| | | | |
|------|---|-------------------------|--|
| 2016 | 36.6 miles V/C greater than 1.0 | 8,108,663 VMT | Congested Corridors I-40 (from I-440 to the Wake/Johnston County line) US 70 (I-40/US 70 Junction) US 401 (Garner) NC 42 (between Archer Lodge and Clayton) NC 50 (Garner) Old Stage Road (Garner) Ten Ten Road (Garner) Rock Quarry Road (Raleigh) |
| 2020 | 7 miles V/C greater than 1.0 | 8,166,948 VMT | |



Roadways

The Southeast Area, which encompasses southeastern Wake County and a significant majority of Johnston County, is mostly composed of rural two-lane roadways with posted speed limits of 45 or 55 miles per hour. This network is layered with a few major interstates and state routes that cross the area. For many people and even users of this document, the roadways and their capacity serve as the primary basis for driving recommendations in a transportation plan – this aspect is vital to the SEAS Update as well with an added factor of considering a roadway’s “completeness” in terms of supporting other modes of travel besides the private automobile.

Major Roadways

Major thoroughfares throughout the study area include:

- **US 70 and US 70 Business** serve as the gateway into the heart of the study area from Raleigh. US 70 Bypass serves as the faster route through from I-40 to Selma, Princeton, and Goldsboro, while US 70 Business connects the downtowns of Garner, Clayton, and Smithfield.
- **I-40** connects Raleigh to the Cleveland Township area and Benson while serving as the main route from Raleigh to Wilmington.
- **NC 42** serves as a major east-west connector from the Cleveland Township area near I-40/NC 42 through Clayton east to Archer Lodge and the growing Flowers Plantation area.
- **I-95 and US 301** connect a string of towns across Johnston County including Benson, Four Oaks, Smithfield, Selma, Micro, and Kenly, with I-95 acting as a bypass for long distance trips while US 301 runs through the heart of each town.

Other major roads include **US 401**, which runs west of Garner and connects Raleigh to Fuquay-Varina, **NC 96** and **NC 39**, connecting north-south through the eastern part of the study area to Selma, **NC 210** connecting Smithfield to the western parts of the study area, and **NC 50** paralleling I-40 from Garner to Benson.

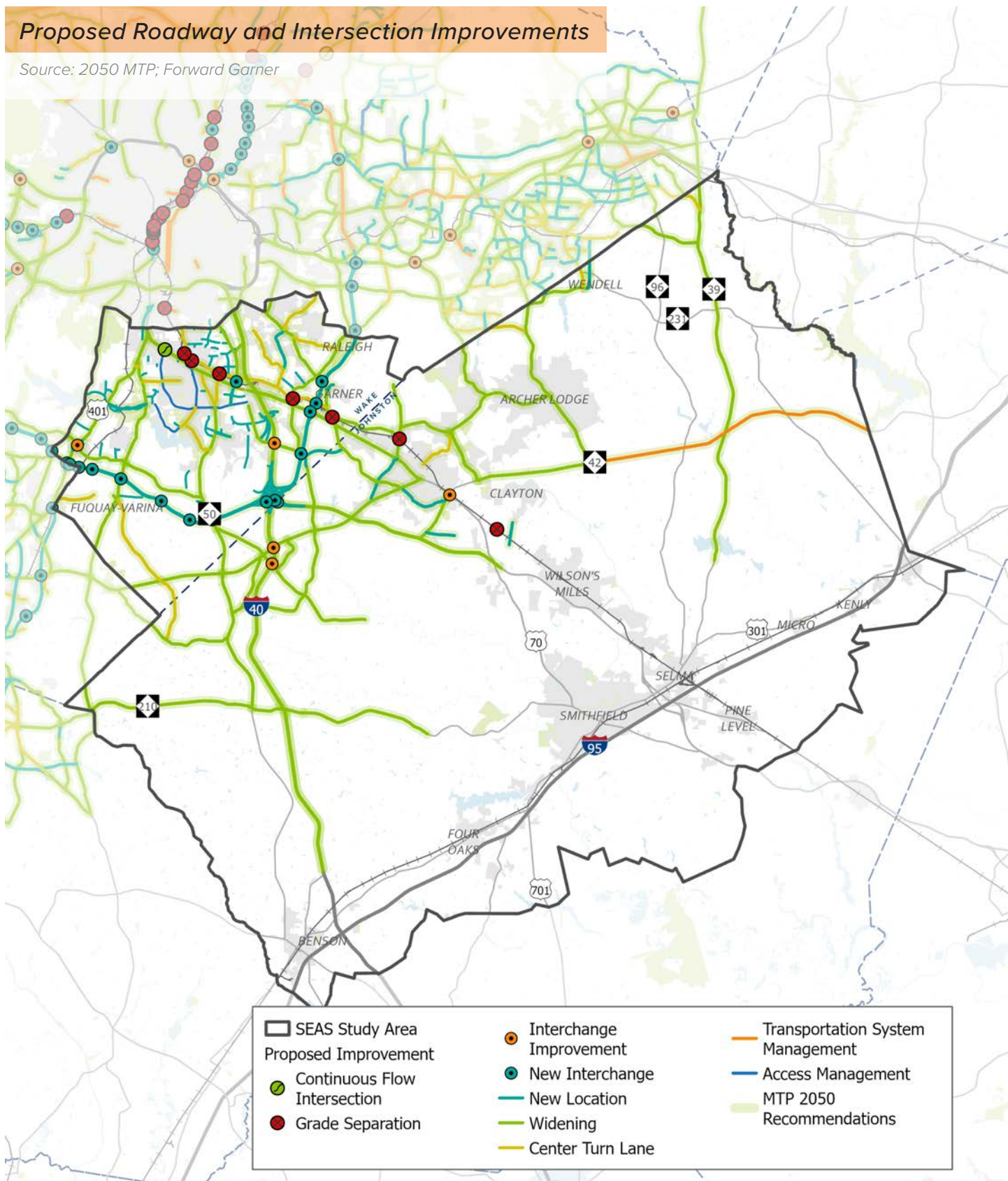
Projects

The map at right includes all 2050 MTP projects. The following are select projects in the study area:

- **Complete 540 Project:** Triangle Expressway southern extension from NC 55 Bypass in Apex to US-64/Future I-87 in Knightdale, completing the I-540/NC 540 outer loop around Wake County. The completed loop will improve driving connections across the southern part of the Raleigh area and make it easier for study area residents to reach different parts of the Triangle without having to drive further in to the I-440 Beltline.
- **Future I-42:** US 70 east of Raleigh is designated as one of NCDOT’s Strategic Transportation Corridors (STC), an initiative to create a network of efficient and safe roadways that will drive economic development throughout the state. Portions of US 70 are programmed and funded for upgrades to interstate standards, with plans to close at-grade intersections and add interchanges. Within the study area, work on a stretch through Wilson’s Mills between US 70 Bypass and the Smithfield-Selma Bypass is underway.
- **I-40:** Widening from Cornwallis Road in Clayton north into Raleigh. Construction is underway and expected to be completed in 2023. There are also interchange improvements funded and underway at I-40/NC 42.
- **NC 42, Ranch Road:** Widening from two lanes to divided four lane roadways. NC 42 East (east of Business US-70) has recently been completed, with plans on NC 42 West currently under development. Construction has also begun on the Ranch Road extension, which will connect NC 42 East directly to US-70 without needing to turn onto Business US-70.
- **I-95 bridges and interchanges:** A series of interchange improvements and bridge replacements are planned for the I-95 corridor to accommodate future widening and make the corridor more resilient to floodwaters. Currently, interchange improvements are underway between Benson and Fayetteville.

Proposed Roadway and Intersection Improvements

Source: 2050 MTP; Forward Garner



Active Transportation

Planning for the future of the Southeast Area requires a holistic view of the area's transportation network, including multiple modes of travel and a variety of trip types. Priorities for the study area must be considered when planning a cohesive bicycle and pedestrian network. Investments in large, semi-regional vehicular connections may serve a higher number of people, but may also require an extensive amount of time and money. Creating active transportation connections by removing gaps and barriers can return significant quality of life benefits by promoting walking and bicycling while also providing alternatives that can result in less cars on the road.

Existing Conditions

Most municipalities within the study area have sidewalk networks, though with several gaps recommended for completion in county plans and comprehensive transportation plans (CTP). Subdivisions, particularly recently built ones, have comprehensive sidewalk networks but these lack connections outside of the neighborhood.

The area does have a series of existing greenways and sidepaths, most prominently:

- **Neuse River Trail**, extending from east of Clayton north into Wake County and Raleigh
- **Sam's Branch Greenway and Clayton Downtown Connector**, both completed since the original SEAS plan and connecting the current end of the Neuse River Trail to Legend Park, Clayton Municipal Park, and downtown Clayton.
- **Buffalo Creek Greenway**, connecting Smithfield Community Park with downtown Smithfield
- **Front Street Sidepath** in downtown Clayton
- **Neuse River Parkway sidepath**, connecting the Flowers area to east Clayton

Besides the shared greenways, very little existing dedicated bicycle infrastructure exists in the study area.

Projects

The largest current project in the study area is the **Neuse River Trail Extension**, a key missing connection between Clayton and Smithfield and a missing link in the regional and national greenway network. The trail currently extends from the Sam's Branch Greenway in Clayton north through eastern Raleigh, where it connects with other greenways that stretch across the Triangle.

UCPRPO, Johnston County, and NCDOT are planning an extension of the Neuse River Trail to connect the Clayton end of the Neuse River Trail to the existing Buffalo Creek Greenway in Smithfield. The project is currently in the preferred route selection phase. Once the connection is completed, the Neuse River Trail will become part of the **Mountains-to-Sea Trail** within the state and it will be possible to walk or bike completely on off-road greenways from Hillsborough to Smithfield. The connection will also play a role in the larger **East Coast Greenway** network which will eventually span the entire eastern seaboard from Florida to Maine.

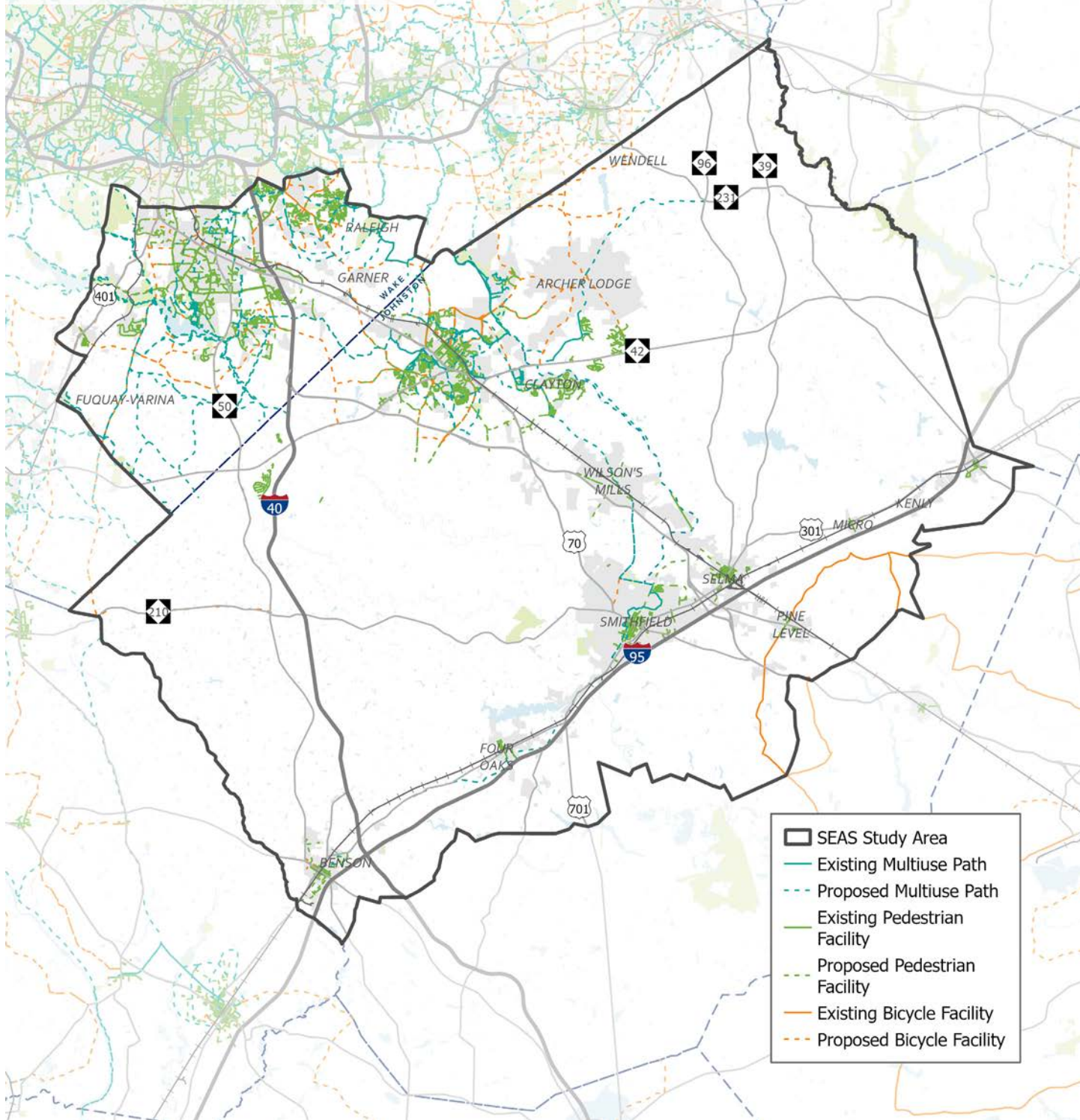
Several greenways are also proposed in Garner, with the **Creech Road Greenway** (from the Walnut Green Greenway to Garner Recreational Park) and the **Buffaloe Road Greenway** (from White Deer Park to Centennial Park) prioritized to help bridge gaps in the network.

Existing and Planned Bicycle and Pedestrian Facilities

Source: 2050 MTP; Garner Forward, Town of Clayton; Wake County Greenway System Plan; NCDOT Pedestrian and Bicycle Infrastructure Network (PBIN)

350+

Miles of Existing Bicycle and Pedestrian Facilities



Transit

At its best, transit provides an efficient and inexpensive transportation mode for persons making the traditional suburban or rural-to-urban commute and those traveling between key activity centers. It is important that public transit service remain a viable, efficient mobility option for those who need it most—senior citizens, the physically or economically disadvantaged, and other patrons who choose to ride. As the region has grown, interest in transit has increased both with the public and at the governmental level. Several recent studies for commuter rail, bus rapid transit, and expanded passenger rail service have explored and reinforced that interest.

Existing Transit

GoTriangle (regional routes) and **GoRaleigh** (local routes) operate fixed bus route service within the Wake County portion of the study area. GoRaleigh routes 17 and 18 serve Southeast Raleigh, while Garner is primarily served by routes 20-A and 20-B, which operate a weekday-only bus loop around the town.

GoTriangle Access and **GoRaleigh Access** operate curb to curb paratransit service for individuals with disabilities within 3/4 mile of fixed route transit service.

Johnston County Area Transit System (JCATS) offers curb to curb human services and general public transportation within Johnston County, and includes Raleigh, connecting Johnston County residents to areas outside of the county. JCATS does not currently operate any fixed route transit, however, JCATS is constructing a new transfer facility to better accommodate drivers and riders.

JCATS also participates in the **Down East Express** program, a daily by-reservation transit service between Morehead City and the Triangle with transfer centers at the JCATS facility and in the other counties along the way.

For intercity transit, Selma's **Amtrak** station (Selma-Smithfield Union Station) is served daily by the Carolinian (Charlotte-New York) and Palmetto (Savannah-New York) trains.

Proposed Transit

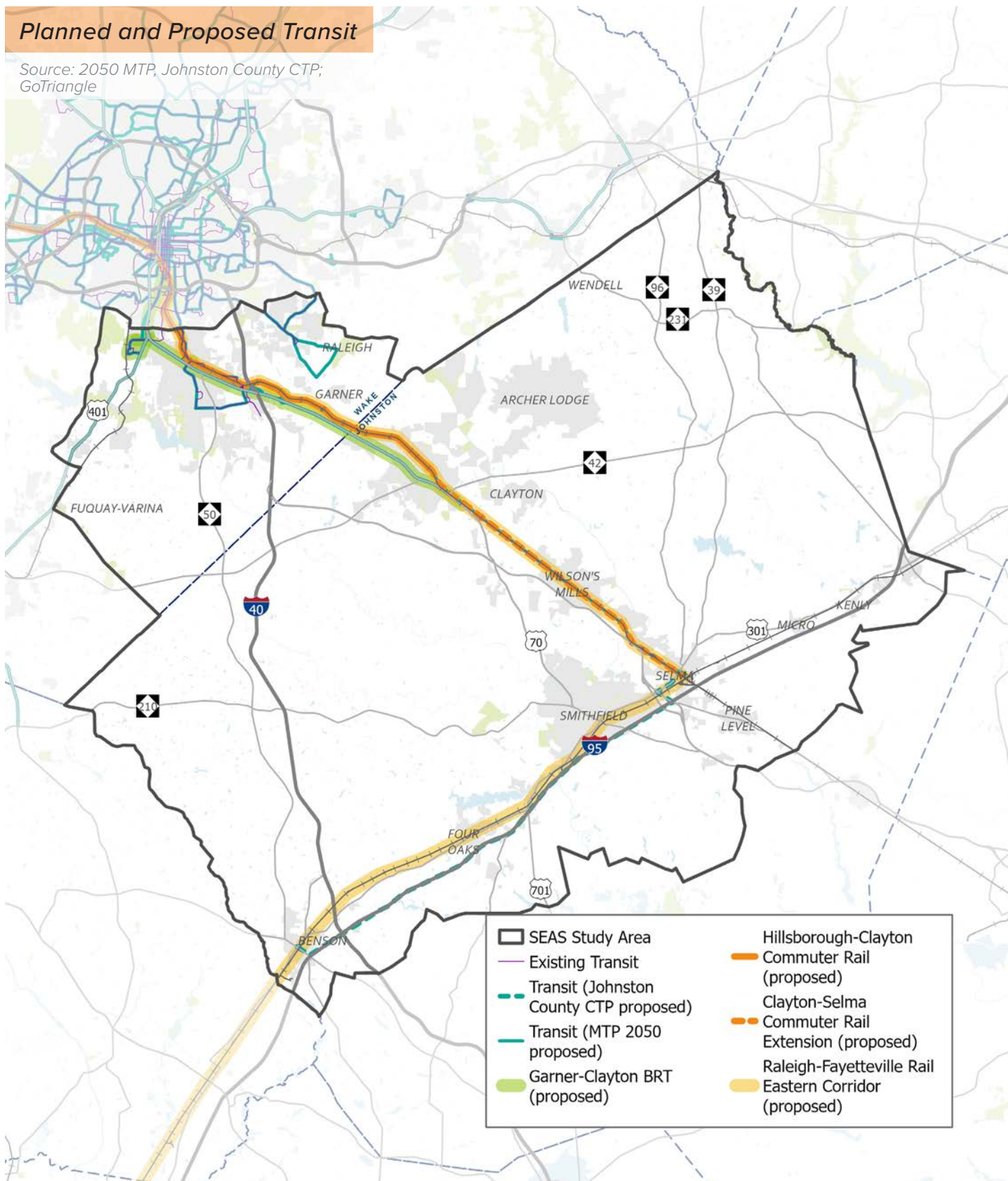
There are several planned or proposed transit projects being studied that would serve the study area:

- **A bus rapid transit line** officially planned from downtown Raleigh to Garner, with studies underway considering a future extension from the planned Garner terminus into Clayton.
- **A commuter rail line between Raleigh and Garner** with potential long-term extensions through Clayton, Wilson's Mills, and Selma.
- **A passenger rail connection between Raleigh and Fayetteville.** Two potential corridors have been proposed. The eastern corridor, which was forecasted for faster speeds and higher ridership, would have stops in Dunn, Benson, Selma, and Clayton.
- **A microtransit pilot between Smithfield and Selma.** JCATS' board has authorized funding for a microtransit pilot in the Smithfield-Selma area using existing buses.

The most recent Johnston County CTP also proposed a bus route between the Amtrak train station in Selma and a park and ride near downtown Benson along I-95.

Planned and Proposed Transit

Source: 2050 MTP, Johnston County CTP; GoTriangle



Freight Transport

A comprehensive transportation network that supports freight movement is an important component of the economy and often an indicator for economic investment. There is a relation between the capacity of transport infrastructure and the level of economic activity where high-density transport infrastructure and highly connected networks are commonly associated with high levels of investment. When a transportation network is able to move both people and goods efficiently it can provide economic and social benefits such as access to investments and employment opportunities. The existing rail and truck infrastructure discussed below strategically place the Southeast Area to be a receiver of this investment. The SEAS Update has to ensure the freight network is set up for potential growth while staying intentional and deliberate about where that growth is directed.

Rail

The Southeast Area has three rail corridors that run through it. The North Carolina Railroad Company (NCR) owns the railway that runs from the northwest to southeast of the study area, parallel to US 70. This rail corridor connects Charlotte, Greensboro, Durham, Raleigh, the Southeast Area, Goldsboro, New Bern, and finally, Morehead City, where it ends at the Port of Morehead City. The CSX line runs parallel to I-95 and connects South Carolina, running through Fayetteville, Selma, Wilson, Rocky Mount, and into Virginia. The final corridor is owned by Norfolk Southern and passes at the edge of the study area through Garner and Raleigh.

Truck

The key state and regional corridors running through the Southeast Area are designated truck routes, including: I-40, I-95, US 70, and US 401. The highest percent of trucks, about 15%-20% of the given corridor's traffic, takes place on I-95. All of these routes, in addition to NC 42, NC 50, NC 96, NC 210, Shotwell Road/Bethlehem Road, and Covered Bridge Road/Bufalo Road are all identified in the Triangle Regional Freight Plan as Strategic Freight Corridors (SFC), a core network of roadways identified for future investment to accomplish the goals of the plan.

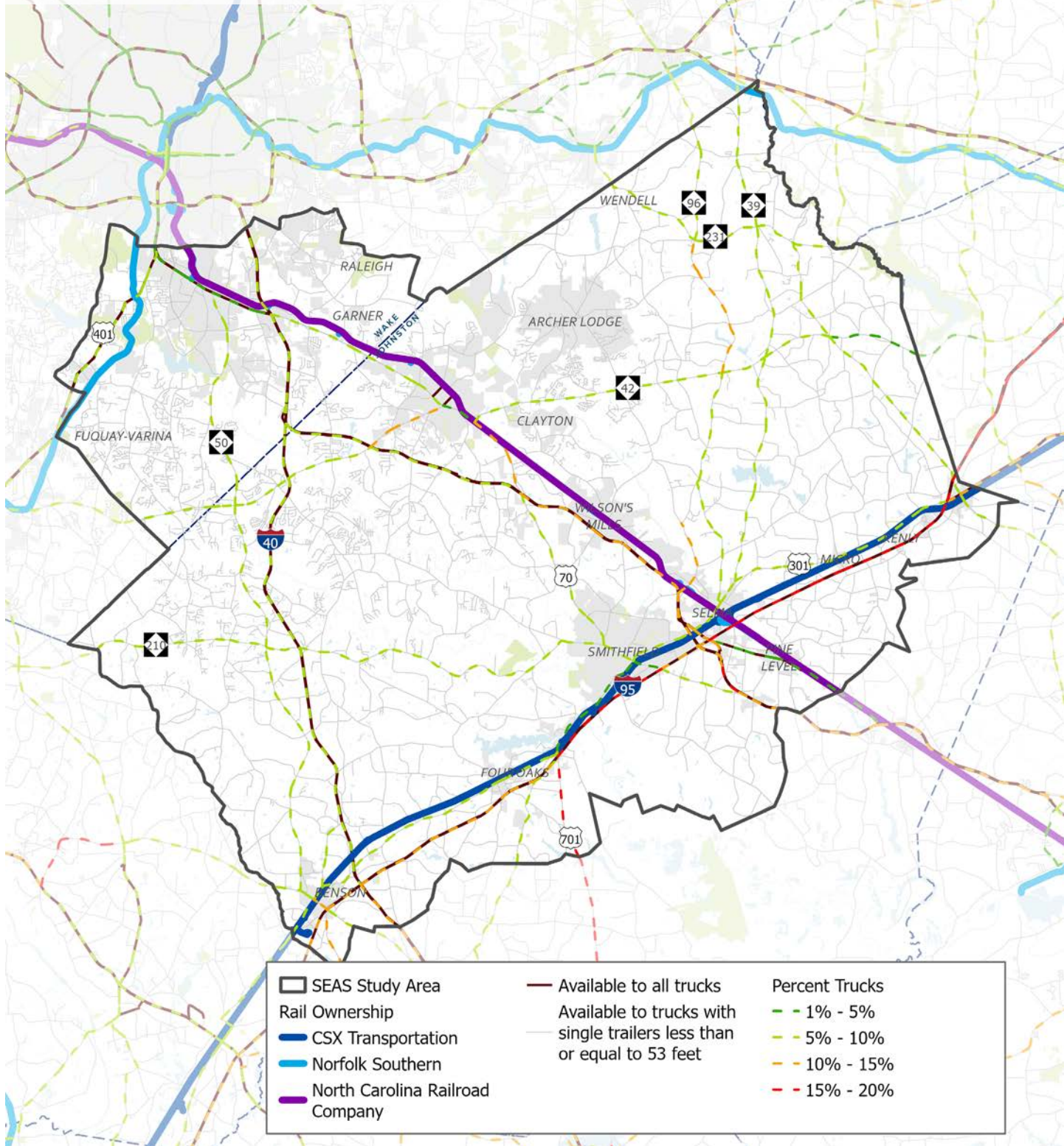
Rail Safety

Another component to rail is safety, particularly when considering at-grade rail crossings. The Southeast Area has several locations where the railway is on the same elevation as the roadway network, often bisecting each other as depicted in the photo below. While grade separating these crossings is an expensive undertaking, the SEAS Update will be mindful of select opportunities where this improvement may be critical to the efficiency and safety of travel.



Freight Corridors and Truck Traffic

Source: NCDOT North Carolina Truck Network (NCTN); NCDOT AADT 2019; NCDOT North Carolina Rail System





LAND USE AND SCENARIO PLANNING

A critical component in the planning process was the establishment of a vision for future land use for the purposes of integrating and coordinating land use, development, and transportation investments. As part of the land use scenario planning process, the SEAS Update tested several scenarios to understand the impacts of growth in the study area. The scenario planning process explored various growth scenarios based on a combination of assumptions, alternatives, and sentiments from community input. The ultimate preferred scenario will act as a guide for future growth that blends land use and mobility needs in the study area. This chapter explores the questions, alternatives, and outcomes of the scenario planning effort and suggests policies and strategies to implement the preferred scenario's land use suggestions. Additional detail on the land use implementation toolkit is available in Appendix B.

Scenario Planning

What is Scenario Planning?

Land use scenario planning compares different possible futures of an area to help decide where and how we should grow. Rather than a prediction or prescription, scenario planning is an exploration of what could be—comparing the pros and cons of various potential growth patterns to see what could best fit community priorities.

For the SEAS Update, scenario planning considered:

- What will our future look like if things **keep going like they are now**?
- What are some **alternative paths** we could take that might better meet our goals?

Scenario planning for the Southeast Area started with three initial scenarios. One scenario looked at current trends to envision what the Southeast Area could look like if built out according to the more sprawling and car-centric existing plans. The other two alternative scenarios looked at different ways growth could be focused in more compact locations, along major corridors or in significant mixed-use centers, to better reflect the SEAS Update’s guiding principles.

Each scenario was then scored based on how well they advanced our guiding principles. The best parts of the original three scenarios were then combined to create a blended preferred scenario, which guided the policy and transportation recommendations later in this plan.

What Does Scenario Planning Inform?

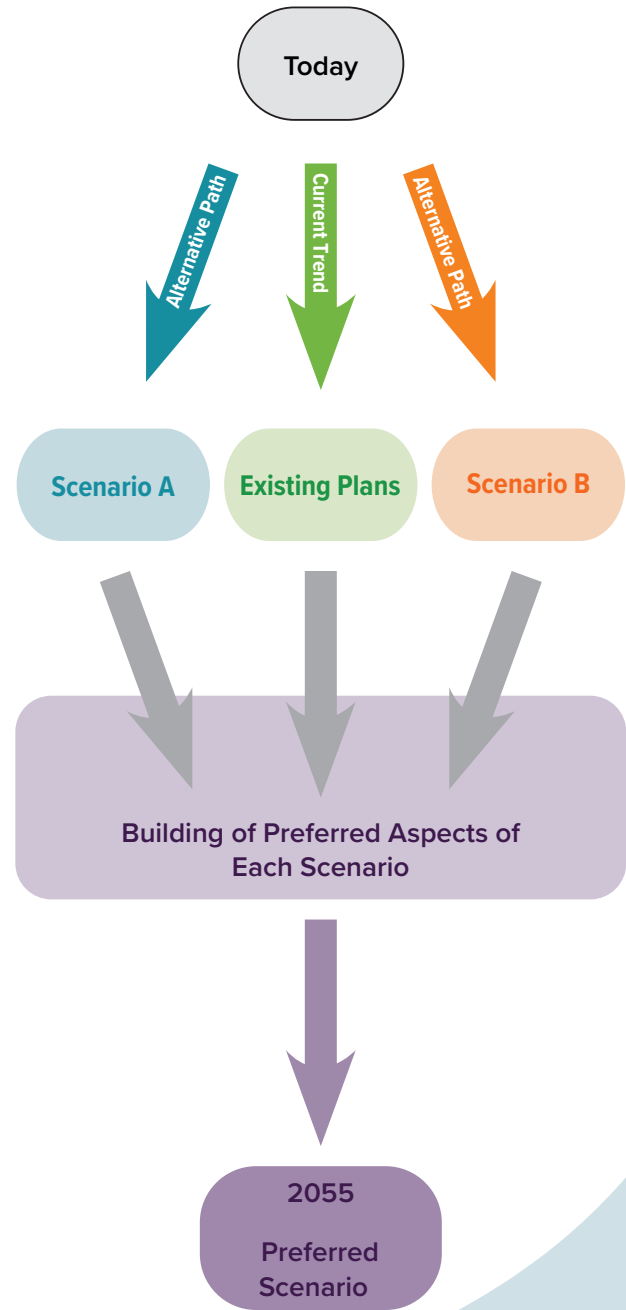
Knowing where we want growth will help make decisions about land use and transportation, such as:

- Where to put **new homes and job centers** versus where to **preserve farms and forests**
- Where to invest in **paths, roads, trails, and transit** that can **support more people**
- What **policies** are needed to focus growth where we want it

The land use and transportation recommendations created as part of the SEAS Update support the preferred scenario.

What is the Process?

The following graphic outlines the scenario planning process. The development and refinement of the alternatives and preferred scenario were heavily influenced by CTT and SOT input as well as assumptions about growth and development throughout the region.

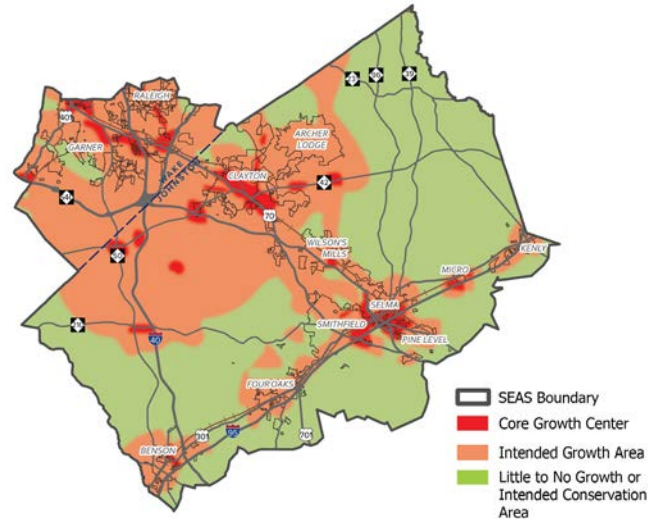


Scenario Growth Alternatives

Existing Plans Scenario

The Existing Plans Scenario acted as a **status quo** look at land use in the Southeast Area. The project team looked at existing jurisdictional land use plans alongside existing zoning and growth patterns to map out where growth was currently being directed.

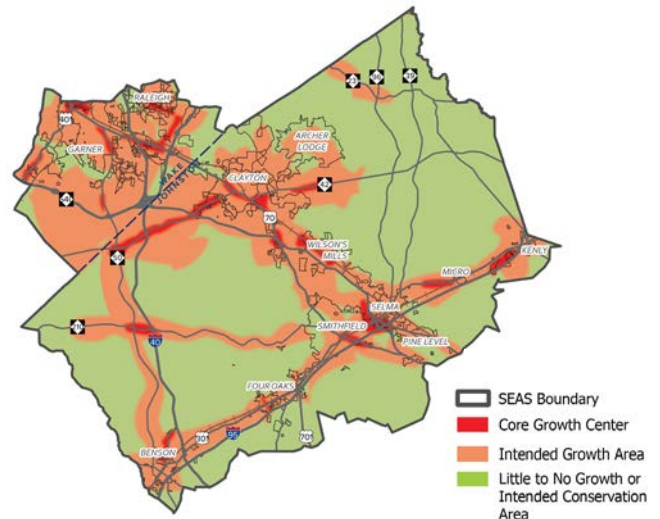
The current plans somewhat concentrate growth in centers along US 70 and NC 42, but existing planning currently invites growth into surrounding areas in Wake and Johnston County as well as Benson and Four Oaks. These types of development patterns can lead to sprawl, place strains on existing infrastructure, and lead towards a loss of farmland and rural areas. With more spread out growth, it can also make providing transit and other transportation alternatives more expensive and more challenging.



Corridors Scenario

The Corridors Scenario attempted to concentrate growth primarily along **major corridors** throughout the Southeast Area. In this scenario, the local jurisdictions identified the corridors that were best suited for growth and development.

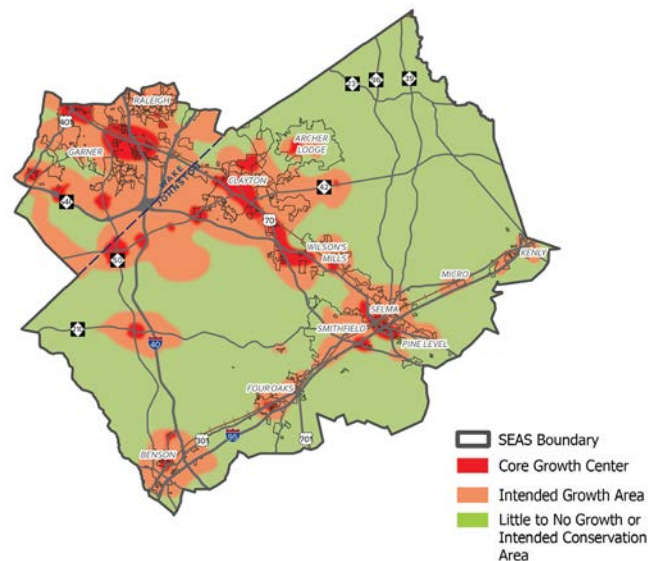
The Corridors Scenario focused a significant amount of growth along the NC 42 and US 70 corridors around Clayton, and along major corridors within Raleigh, Garner, Smithfield, Selma, Wilson’s Mills, and Benson. In more suburban areas, the growth is clustered around corridors like NC 210, US 301, NC 50, and Old Stage Road to reduce the amount of impact on rural areas in western Johnston County and Archer Lodge.



Centers Scenario

The densest of the alternatives is the Centers Scenario. This scenario concentrates growth in existing and newly proposed **mixed-use centers**, including downtowns and major crossroads as well as other growth centers identified in collaboration with member jurisdictions.

In this scenario, growth is focused around centers in Clayton, Garner, and parts of Smithfield and Selma, as well as parts of western Johnston County and areas along Ten-Ten Road in Wake County. Other towns such as Benson, Four Oaks, Wilson’s Mills, and Archer Lodge would see growth outward from their centers. Like the Corridors Scenario, much less of the rural parts of Johnston County would be impacted by sprawling growth than in existing plans.



Preferred Scenario

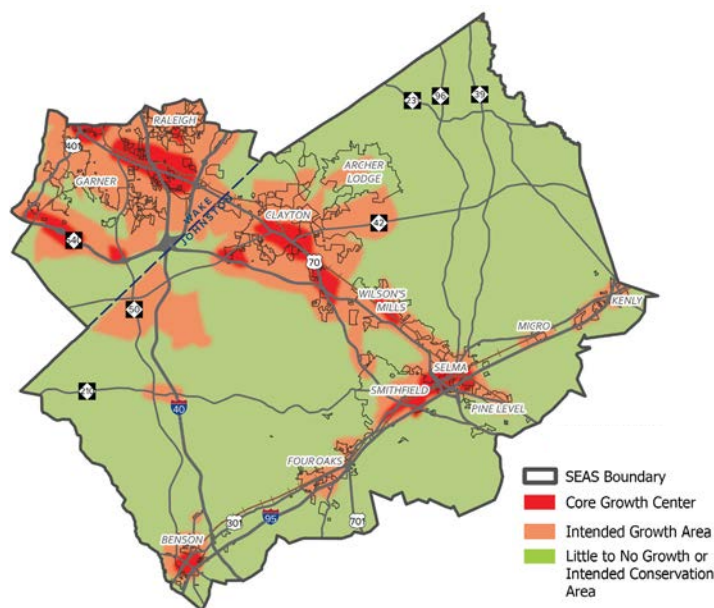
The Preferred Scenario takes the aspects of the original three scenarios that best achieve the guiding principles and combines them into a final, preferred scenario that enhances those desired features. Throughout the scenario planning process, a strong preference for the compact development represented in the Centers scenario emerged. The Preferred Scenario built upon the Centers scenario by further concentrating growth in more urban centers that are best suited for it while avoiding sprawl in areas that are traditionally more rural and agrarian. The Preferred Scenario was able to densify even more with an increase in multi-family housing. The Plan’s committees and planners noted the benefits of focusing growth in specific centers including:

- **Lower cost** of extending infrastructure
- Increased viability of **walking, biking, and transit to help ease congestion**
- **Preserving much more of the rural and agricultural areas** in the western, southern, and eastern parts of the Southeast Area

By concentrating growth in these core centers, **most rural, environmentally sensitive, and agricultural areas of the Southeast Area are preserved.** New residents would mostly live in walkable mixed-use areas with easier access to employment centers nearby and elsewhere in the Triangle, whether driving or taking public transit.

Using Scenario Planning Outcomes

A key objective of the SEAS Update is to build upon policy frameworks that are already in place to recommend adjustments to work towards community goals. The Preferred Growth Scenario serves as guidance for local governments to aspire towards in their land use and transportations decisions. With an increase in density and multifamily housing, the Preferred Growth Scenario prioritizes compact development to concentrate density in town cores while preserving rural character in surrounding areas.



Scenario Scorecard

The performance of the Preferred Scenario against the Existing Plans.

| Indicator | Preferred |
|--|-----------|
| Urban Land Use Shift (sq mi) | ▲ |
| Suburban Land Use Shift (sq mi) | ▼ |
| Rural Land Use Shift (sq mi) | ▲ |
| Net Residential Density | ▲ |
| Mix of Housing Types | ▲ |
| Developable Area of Walkable Place Types (sq mi) | ▲ |
| Homes Near Transit | ■ |
| Jobs Near Transit | ▲ |
| Job and Home Balance | ▲ |
| Vehicle Miles Traveled | ■ |
| Vehicle Hours of Delay | ■ |
| Lane Miles of Congested Corridors | ■ |



Land Use

All SEAS communities have made progress towards the implementation of the 2017 SEAS land use recommendations. The majority of the communities updated their comprehensive land use plans, adjusted their land development regulations, and took steps to provide a range of housing types through policies in regulatory planning documents. The SEAS Update can build on the progress made by each member jurisdiction to create new priorities, strengthen existing plans, and revisit past priorities based on the Preferred Growth Scenario.

The SEAS Update focuses on operationalizing policies for key focus areas, such as housing, bicycle and pedestrian improvements, mixed-use development, and more. The matrix below provides recommendations for each jurisdiction to focus on to accomplish the goals of the SEAS Update based on their current environment and progress to date.

2023 Land Use Recommendation Matrix

Implementation Focus Area

| | Economic Development | Support Higher Densities | Range of Housing Options | Preserve Lower Densities | Mixed-Use | Design Guidelines | Downtown Redevelopment Strategies | Building Re-Use | Right-Size Parking Requirements | Connect Street Network | Bicycle- Pedestrian Expansion | Street Cross Sections | Responding to Parking Unknowns |
|-----------------|----------------------|--------------------------|--------------------------|--------------------------|-----------|-------------------|-----------------------------------|-----------------|---------------------------------|------------------------|-------------------------------|-----------------------|--------------------------------|
| Johnston County | ✓ | ☆ | ☆ | ★ | | ✓ | | | | ☆ | ☆ | | ☆ |
| Archer Lodge | ☆ | ☆ | | ☆ | ☆ | | ☆ | | ☆ | ★ | ★ | ☆ | ☆ |
| Clayton | ✓ | ✓ | ✓ | | ★ | | ✓ | ✓ | ☆ | ☆ | ☆ | | ☆ |
| Wilson’s Mills | ✓ | ✓ | ✓ | | ✓ | | | ☆ | ✓ | ✓ | ✓ | | ☆ |
| Selma | ✓ | ✓ | ✓ | | ✓ | | ✓ | ☆ | ✓ | ✓ | ✓ | | ☆ |
| Smithfield | | | ★ | | | | ✓ | ☆ | ✓ | ✓ | ☆ | | ☆ |
| Four Oaks | ✓ | ☆ | ☆ | | ★ | | ✓ | ☆ | ☆ | ☆ | ☆ | | ☆ |
| Benson | ✓ | ☆ | ☆ | | ★ | | ✓ | ☆ | ☆ | ☆ | ✓ | | ☆ |
| Micro | ✓ | ★ | ✓ | | ★ | | ✓ | | | ☆ | | | ☆ |
| Kenly | | ☆ | ☆ | | ☆ | | ☆ | ☆ | ☆ | ☆ | ☆ | | ☆ |
| Wake County | | | ✓ | ★ | | ✓ | | | ☆ | ☆ | | | ☆ |
| Garner | ✓ | ✓ | | | ✓ | | ✓ | ☆ | ☆ | ✓ | ☆ | | ☆ |
| Raleigh | ✓ | ★ | ☆ | | | ✓ | | | ✓ | ☆ | | | ☆ |
| Pine Level | ☆ | ☆ | | | | | ☆ | | | ★ | | ☆ | ☆ |

Legend

- ✓ Accomplished from 2017 SEAS Recommendation
- ★ SEAS Update: Highest Priority
- ☆ SEAS Update: Important Consideration

Benefits of Compact Development

The SEAS Update land use recommendations support more compact development patterns. As part of the SEAS Update, the project team created an educational video about the benefits of compact development that supports the recommendations detailed in this chapter. The brief, persuasive video identifies the ongoing, negative consequences of the current development patterns in Wake and Johnston counties and highlights the many benefits of compact development including housing diversity and choice, infrastructure cost savings, and quality of life improvements among others. This video should be shared with planners, the public, and decision-makers to educate and inform them about the ultimate goal—and the benefits—of compact development and the Land Use Implementation Toolkit.

Check out the video for yourself here: www.youtube.com/@nccapitalareampo2526

Implementation Tools

| | Policy | | | Regulatory | | | Interjurisdictional | |
|-----------------|----------------------------|--------------------------|-------------------------|-----------------------|--------------------|-------------------------|----------------------|--------------------------------------|
| | Comprehensive Plan Updates | Corridors and Area Plans | Operationalize Policies | Zoning & Code Updates | Conditional Zoning | Zoning Incentive System | Interlocal Agreement | CIP and Growth Guided Infrastructure |
| Johnston County | ✓ | ★ | ☆ | ★ | ★ | | ★ | ★ |
| Archer Lodge | ★ | ☆ | ☆ | ★ | | | ★ | |
| Clayton | ✓ | ☆ | ☆ | ★ | | | ☆ | ★ |
| Wilson’s Mills | ✓ | ★ | ☆ | ✓ | ☆ | ☆ | ☆ | ★ |
| Selma | ✓ | ★ | ☆ | ✓ | ☆ | ☆ | ☆ | ★ |
| Smithfield | ✓ | ★ | ☆ | | ☆ | ☆ | ☆ | ★ |
| Four Oaks | ★ | | ☆ | ★ | | | | ☆ |
| Benson | ✓ | ★ | ☆ | ★ | ☆ | ☆ | | ★ |
| Micro | ✓ | ☆ | ☆ | ✓ | ☆ | ☆ | | ☆ |
| Kenly | ★ | ☆ | ☆ | ★ | | | ☆ | ★ |
| Wake County | ✓ | ☆ | ☆ | ✓ | ☆ | | ✓ | ★ |
| Garner | ✓ | ☆ | ☆ | ✓ | ☆ | ★ | | |
| Raleigh | | ★ | ☆ | | | | | ★ |
| Pine Level | ✓ | ☆ | ☆ | ✓ | ☆ | | ☆ | |

- Legend**
- ✓ Accomplished from 2017 SEAS Recommendation
 - ★ SEAS Update: Highest Priority
 - ☆ SEAS Update: Important Consideration

Land Use Implementation Toolkit

Many local governments within the Southeast Area have already taken steps and adopted policies/ordinances that will help achieve the land use objectives set out in the SEAS. Additional work to coordinate those efforts and create new initiatives in each community will move the entire area in the direction of the Preferred Growth Scenario. A list of potential local tools and planning focus areas that are recommended for consideration by local governments has been constructed. The SEAS Update Land Use Implementation Toolkit includes two key components: Focus Areas and Tools.

Focus Areas

Utilized to implement policy, regulatory, or other interjurisdictional coordination actions.

- Coordinate Future Land Use with Economic Development Priorities
- Support Higher Densities in Growth and Redevelopment Areas
- Support a Range of Housing Options in Growth Areas
- Preserve Lower Densities in Rural and Agricultural Areas
- Encourage Mixed-Use at Key Growth Nodes
- Create Design Guidelines for Key Nodes
- Develop Downtown Redevelopment Strategies
- Facilitate Building Re-Use
- Right-Size Parking Requirements
- Connect Street Networks
- Support Bicycle-Pedestrian Expansion
- Street Cross-Sections that Support Land Use and Character Goals
- Flexibility to Respond to Market Shifts and Planning “Unknowns”

Tools

Guide the development of and provide objectives for land use management, organized by policy, regulatory, and interjurisdictional coordination.

Policy

Policies and strategies written in a municipality’s planning documents and used as guidance.

- Comprehensive Plan Updates
- Corridor and Small Area Planning
- Operationalize Policies

Regulatory

Use to identify permissible land uses and help shape the character of an area.

- Zoning and Code Updates
- Newer Zoning Tools

Interjurisdictional Coordination

Allow for governing bodies to coordinate with each other related to infrastructure, planning, and growth.

- Interlocal Agreements (Joint Plans and Annexation)
- Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment

The planning tools within the Implementation Toolkit serve to help municipalities achieve the high-level actions within the focus areas.

Recommendations by Community

The following recommendations include two types of planning strategies for each jurisdiction to consider in their continued work: first; the highest priority strategies that can be tackled first to have the greatest impact on their community and second; important strategies for consideration. To learn more about implementing these strategies, see the Land Use Implementation Toolkit in Appendix B.

Archer Lodge

Archer Lodge updated their land development regulations in 2022. Additionally, Archer Lodge is in the process of adopting a new comprehensive plan by the end of 2023, including a new future land use map (FLUM). For more detailed information on Archer Lodge's planning history and process since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Comprehensive Plan Updates:** The update will likely be key to providing a Future Land Use Map and policies surrounding the planning strategies below. Ideally, this will include the consideration of the SEAS Preferred Growth Scenario.
- **Zoning and Code Updates:** Archer Lodge can continue to adjust their code to protect environmental and agricultural resources, allow higher densities, encourage mixed-use, and provide a range of housing. Ideally, this will include the consideration of the 2023 SEAS Preferred Growth Scenario.
- **Interlocal Agreements:** Tied to plan-guided infrastructure investment, interlocal agreements will be key for Archer Lodge's future growth. In particular, addressing sewer capacity to support density and new development will be important.
- **Connect Street Network:** The SEAS Update includes emphasis on connectivity as an important factor in making road networks function as efficiently as possible. This can be accomplished through comprehensive plan policies regarding street connectivity and ultimately by including a street connectivity index in the code or requirements within the subdivision ordinance. Street connectivity can include connecting neighborhoods, limiting cul-de-sacs, requiring multiple points of access for all residential developments of a certain size, and other approaches.
- **Support Bicycle-Pedestrian Expansion:** Archer Lodge can further adjust policies and regulations to support bicycle and pedestrian infrastructure, with emphasis on these facilities as important factors in a more efficient transportation network.

Other Considerations

- Corridor and Small Area Planning
- Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment
- Coordinate Future Land Use with Economic Development Priorities
- Preserve Lower Densities in Rural and Agricultural Areas
- Encourage Mixed-Use at Key Growth Nodes
- Develop Downtown Redevelopment Strategies
- Right-Size Parking Requirements
- Operationalize Policies
- Street Cross-Sections that Support Land Use and Character Goals
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Benson

Benson adopted a comprehensive plan in 2021 and is currently working on updating their land development regulations. For more detailed information on Benson’s planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Corridor and Small Area Planning:** Small Area Plans can serve to focus on particular geographic areas that need attention because of changing circumstances, new opportunities, or community objectives. An example is the NC-242 Highway corridor, which is a primary opportunity for mixed-use development.
- **Zoning and Code Updates:** Benson is currently working on a UDO update to allow conditional zoning and to implement policies from the comprehensive plan.
- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** As Benson grows, planning will need to coordinate and re-calibrate capital investment plans for key infrastructure. The comprehensive plan included utility infrastructure as a focus area, which can be implemented through infrastructure investment and the Town’s CIP in the future.
- **Encourage Mixed-Use at Key Growth Nodes:** Tied to Corridor and Small Area Planning, Benson can encourage mixed-use at key growth nodes to spur commercial and residential development.

Other Considerations

- Conditional Zoning
- Zoning Incentive System
- Interlocal Agreements
- Support Higher Densities in Growth and Redevelopment Areas
- Support a Range of Housing Options in Growth Areas
- Facilitate Building Re-Use
- Right-Size Parking Requirements
- Connect Street Networks
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning “Unknowns”

Clayton

Clayton adopted the 2045 Comprehensive Growth Plan in 2021 and is currently updating their land development regulations. For more detailed information on Clayton's planning history and progress, see Appendix B.

Highest Priority Strategies

- **Zoning and Code Updates:** Finalizing the updates to the Clayton Unified Development Ordinance (UDO) will provide land development regulations to implement the newly adopted comprehensive plan.
- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** As the Town experiences growth, capital improvement planning and growth-guided infrastructure can be carried forward as a high priority recommendation for Clayton.
- **Encourage Mixed-Use at Key Growth Nodes:** Clayton's comprehensive plan encourages mixed-uses and higher densities in a number of districts, which is supported by the UDO updates for mixed-use districts. Clayton can advance this planning strategy by considering a points-based or incentive system in key growth nodes to allow for a reduction in performance standards, which aligns with the 2045 Comprehensive Plan recommendation for mixed-use developments downtown. These efforts can be coordinated with the Downtown Master Plan.

Other Considerations

- Corridor and Small Area Planning
- Interlocal Agreements
- Right-Size Parking Requirements
- Connect Street Networks
- Support Bicycle-Pedestrian Expansion
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Four Oaks

Four Oaks adopted the Downtown Streetscape Master Plan and Economic Development Assessment in 2020. For more detailed information on the planning history and progress in Four Oaks since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Comprehensive Plan, Zoning, and Code Updates:** Updating the comprehensive plan for Four Oaks will be key for setting the vision and policy direction in the community. In addition, Zoning and Code Updates should follow the comprehensive plan’s policy guidance and could include updates regarding the strategies below.
- **Encourage Mixed-Use at Key Growth Nodes:** Four Oaks can advance the 2023 Preferred Growth Scenario by encouraging mixed-use at key growth nodes, including allowing higher density in key locations through the Town’s comprehensive plan future land use map (FLUM) or creating a mixed-use zoning district in the development ordinance.

Other Considerations

- Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment
- Support Higher Densities in Growth and Redevelopment Areas
- Support a Range of Housing Options in Growth Areas
- Facilitate Building Re-Use
- Right-Size Parking Requirements
- Connect Street Networks
- Support Bicycle-Pedestrian Expansion
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning “Unknowns”

Garner

Garner adopted the Garner Forward Comprehensive Plan in 2018 and updated their land development regulations in 2022. For more detailed information on Garner’s planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Zoning Incentive System:** Following their land development regulation updates in 2022, Garner could consider implementing a zoning incentive system. Garner’s policies suggest that zoning incentives like a points-based system could be appropriate for mixed-use, residential, or commercial development to see more affordable or missing middle housing or redevelopment.
- **Right-Size Parking Requirements:** The Garner Forward Comprehensive Plan, adopted in 2018, recommends revisiting and revising parking requirements comprehensively. This strategy can be advanced in a future UDO update.

Other Considerations

- Corridor and Small Area Planning
- Conditional Zoning
- Zoning Incentive System
- Facilitate Building Re-Use
- Right-Size Parking Requirements
- Support Bicycle-Pedestrian Expansion
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning “Unknowns”

Kenly

Kenly is currently working on a comprehensive plan update, as of 2023. For more detailed information on Kenly's planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Comprehensive Plan, Zoning, and Code Updates:** Updating the comprehensive plan for Kenly will be key for setting the vision and policy direction in the community. In addition, zoning and land development code updates should follow the comprehensive plan's policy guidance and could include updates regarding the strategies below.
- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** Kenly can advance the 2023 Preferred Growth Scenario coordinating capital improvement planning with their comprehensive plan and using that plan to guide infrastructure investment.

Other Considerations

- Corridor and Small Area Planning
- Interlocal Agreements
- Support Higher Densities in Growth and Redevelopment Areas
- Support a Range of Housing Options in Growth Areas
- Encourage Mixed-Use at Key Growth Nodes
- Develop Downtown Redevelopment Strategies
- Facilitate Building Re-Use
- Right-Size Parking Requirements
- Connect Street Networks
- Support Bicycle-Pedestrian Expansion
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Micro

Micro adopted their Comprehensive Land Use Plan in 2019 and updated their land development regulations in 2021. For more detailed information on Micro's planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Zoning and Code Updates:** Micro updated their code in June 2021, and can continue to advance the 2023 Preferred Growth Scenario by adjusting their zoning and development regulations to support the strategies below.
- **Support Higher Densities in Growth and Redevelopment Areas:** Micro can update their comprehensive plan future land use map (FLUM) to allow for denser development in key locations that may experience more growth and redevelopment, as well as create a corresponding zoning district that allows for denser development.
- **Encourage Mixed-Use:** Micro can adjust zoning to encourage mixed-use development through adding a mixed-use district.

Pine Level

Pine Level updated their land use regulations in 2021 and adopted a land use plan in 2022. For more detailed information on Pine Level's planning history, see Appendix B.

Highest Priority Strategies

- **Connect Street Networks:** The Southeast Area Study includes emphasis on connectivity as an important factor in making road networks function as efficiently as possible. This can be accomplished through comprehensive plan policies regarding street connectivity, including a street connectivity index in the code, or requirements within the subdivision ordinance. Street connectivity can include connecting neighborhoods, limiting cul-de-sacs, requiring multiple points of access for all residential developments of a certain size, and other approaches.

Other Considerations

- Corridor and Small Area Planning
- Conditional Zoning
- Zoning Incentive System
- Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment
- Connect Street Networks
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Other Considerations

- Corridor and Small Area Planning
- Conditional Zoning
- Interlocal Agreements
- Coordinate Future Land Use with Economic Development Priorities
- Support Higher Densities in Growth and Redevelopment Areas
- Develop Downtown Redevelopment Strategies
- Operationalize Policies
- Street Cross-Sections that Support Land Use and Character Goals
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Raleigh

Raleigh has adopted small area plans for Cameron Village and Hillsborough Street, Midtown-St Albans, and Falls North as well as the Raleigh Strategic Plan and the Downtown Plan. For more detailed information on Raleigh’s planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Corridor and Small Area Planning:** As Raleigh experiences growth and development, corridor and small area planning will be key. Small Area Plans can serve to focus on particular geographic areas that need attention because of changing circumstances, new opportunities, or community objectives.
- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** Prioritizing capital improvement planning and plan-guided infrastructure investment ensures that utility investments are guided by community growth plans, and not solely by individual development requests. CIPs and other plans pertaining to infrastructure investment should be aligned with community growth, specifically in operationalizing the policies of documents like comprehensive plans. Coordinating anticipated growth and infrastructure needs with the objectives of policies ensures that growth lines up with the future needs and desires of the community. These efforts will be important for Raleigh, especially as the City evaluates service delivery related to ETJ expansion.
- **Support Higher Densities in Growth and Redevelopment Areas:** Raleigh’s current comprehensive plan future land use map (FLUM) includes several higher-density categories and mixed-use categories for new development. Continuing to support higher density development in growth and redevelopment areas and advancing this through code updates will be important for Raleigh.

Other Considerations

- Support a Range of Housing Options in Growth Areas
- Connect Street Networks
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning “Unknowns”

Selma

Selma adopted the 2040 Comprehensive Land Use Plan in 2021. For more detailed information on Selma's planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Corridor and Small Area Planning:** Small Area Plans can serve to focus on particular geographic areas that need attention because of changing circumstances, new opportunities, or community objectives. Encouraging mixed-use, downtown development, and bicycle and pedestrian improvements could be considerations in corridor or small area planning efforts.
- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** Prioritizing capital improvement planning and plan-guided infrastructure investment ensures that utility investments are guided by community growth plans, and not solely by individual development requests. CIPs and other plans pertaining to infrastructure investment should be aligned with community growth, specifically in operationalizing the policies of documents like comprehensive plans. Coordinating anticipated growth and infrastructure needs with the objectives of policies ensures that growth lines up with the future needs and desires of the community. This strategy is carried forward as a high priority for Selma.

Other Considerations

- Conditional Zoning
- Zoning Incentive System
- Interlocal Agreements
- Facilitate Building Re-Use
- Operationalize Policies
- Support Bicycle-Pedestrian Expansion
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Smithfield

Smithfield adopted the Smithfield Town Plan in 2020, including three volumes (Introduction, Growth Management Element, and Transportation Element). For more detailed information on Smithfield’s planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Corridor and Small Area Planning:** As Smithfield receives new economic development sites and development or redevelopment downtown, corridor and small area planning can serve to focus on particular geographic areas that need attention because of changing circumstances, new opportunities, or community objectives.
- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** As Smithfield grows, planning will need to coordinate and re-calibrate capital investment plans for key infrastructure. Prioritizing capital improvement planning and plan-guided infrastructure investment ensures that utility investments are guided by community growth plans, and not solely by individual development requests. CIPs and other plans pertaining to infrastructure investment should be aligned with community growth, specifically in operationalizing the policies of documents like comprehensive plans. Coordinating anticipated growth and infrastructure needs with the objectives of policies ensures that growth lines up with the future needs and desires of the community.
- **Support a Range of Housing Options in Growth Areas:** Smithfield’s Town Plan includes policy recommendations around increasing residential density and providing a range of housing options. Smithfield can advance this by supporting a range of housing types in land use regulations.

Other Considerations

- Conditional Zoning
- Zoning Incentive System
- Interlocal Agreements
- Facilitate Building Re-Use
- Connect Street Networks
- Support Bicycle-Pedestrian Expansion
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning “Unknowns”

Wilson's Mills

Wilson's Mills adopted their 2040 Comprehensive Land Use Plan and a new Development Ordinance in 2019. For more detailed information on Wilson's Mills planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Corridor and Small Area Planning:** As Wilson's Mills experiences growth, corridor and small area planning will be especially important. Small Area Plans can serve to focus on particular geographic areas that need attention because of changing circumstances, new opportunities, or community objectives. Wilson's Mills plans to update its UDO to incentivize density and provide a range of housing options; as large developments occur, small area planning can support and guide zoning updates.
- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** Prioritizing capital improvement planning and plan-guided infrastructure investment ensures that utility investments are guided by community growth plans, and not solely by individual development requests. CIPs and other plans pertaining to infrastructure investment should be aligned with community growth, specifically in operationalizing the policies of documents like comprehensive plans. Coordinating anticipated growth and infrastructure needs with the objectives of policies ensures that growth lines up with the future needs and desires of the community. Wilson's Mill's is provided utilities by Johnston County, which will require interlocal agreements or other interjurisdictional coordination as Wilson's Mills continues to grow.

Other Considerations

- Conditional Zoning
- Zoning Incentive System
- Interlocal Agreements
- Facilitate Building Re-Use
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Johnston County

Johnston County is currently in the process of adopting the Envision Johnston - 2040 Comprehensive Land Use Plan. For more detailed information on Johnston County's planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Zoning and Code Updates:** Following comprehensive plan adoption, Johnston County can advance the 2023 SEAS Preferred Growth scenario by updating land use regulations accordingly. Johnston County can provide specific provisions within the code that promotes density where infrastructure is supported, or expansion is planned.
- **Corridor and Small Area Planning:** Johnston County has identified corridor and small area planning as a high priority strategy. This can be advanced by interjurisdictional coordination and identifying areas of common interest along jurisdictional lines.
- **Conditional Zoning:** To provide flexibility for working with developers to create projects that support community goals, the County could allow conditional zoning. This voluntary, legislative zoning tool allows for specific conditions to be applied to a project and allows for some negotiation between the local government and developer to agree on a set of conditions.
- **Interlocal Agreements:** Johnston County can serve in the role of convener with local jurisdictions, specifically for water, sewer, and its related growth management.
- **CIP and Plan-Guided Infrastructure Investment:** Utility expansion and provision in Johnston County will need to be aligned with the County's comprehensive plan, municipal comprehensive plans, and the SEAS 2023 Preferred Growth Scenario. Johnston County can advance this by promoting growth within the town centers instead of unincorporated areas of the county to maintain levels of service and promote compact development.
- **Preserve Lower Densities in Rural and Agricultural Areas:** Advancing the 2023 Preferred Growth Scenario will preserving lower densities in these areas and higher densities around the municipalities, following water and sewer provision, will reduce sprawl. Johnston County can implement this by updating the code accordingly.

Other Considerations

- Support Higher Densities in Growth and Redevelopment Areas
- Support a Range of Housing Options in Growth Areas
- Connect Street Networks
- Support Bicycle-Pedestrian Expansion
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning "Unknowns"

Wake County

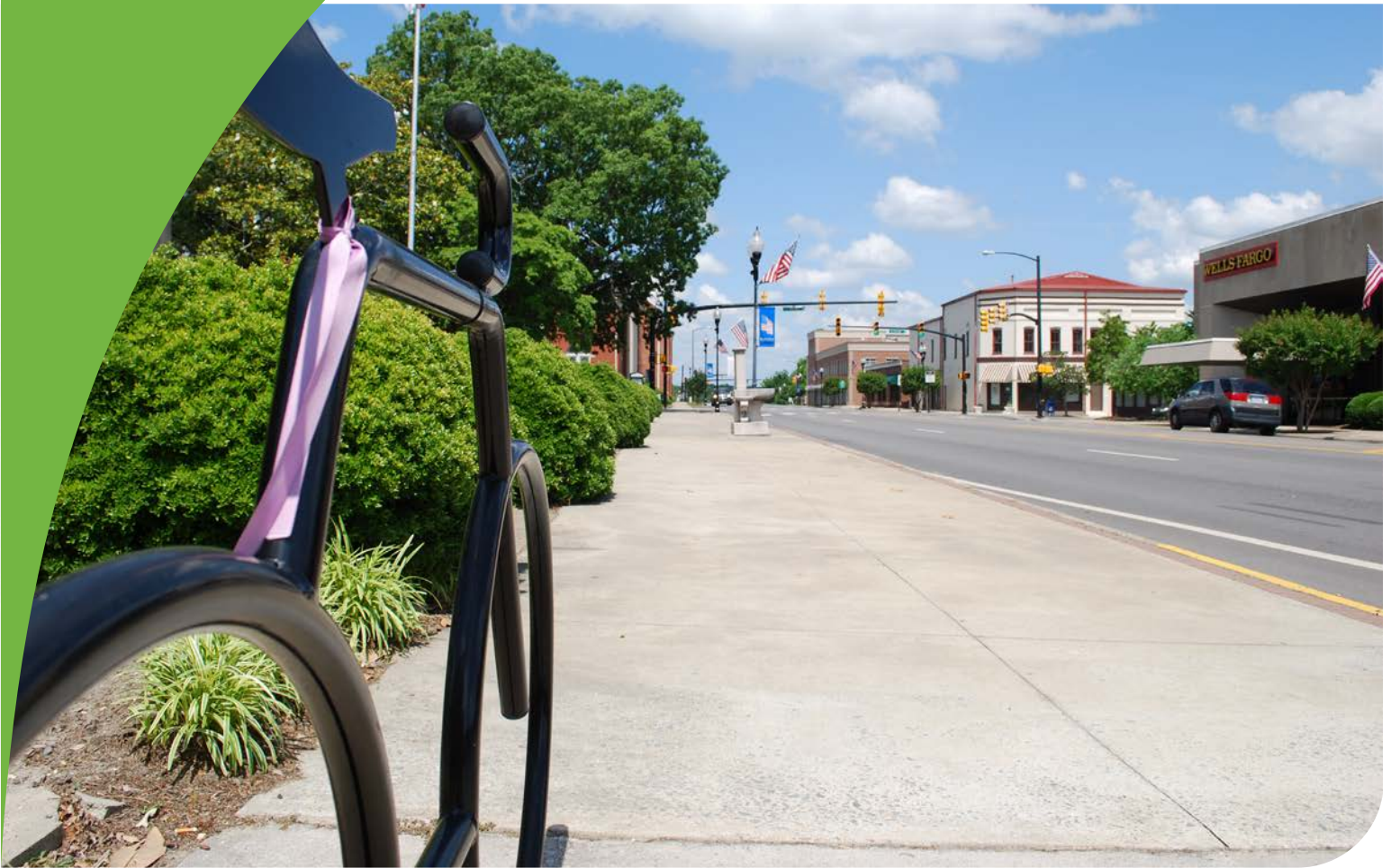
Wake County adopted their comprehensive plan, PlanWake, in 2021, as well as the Lower Swift Creek Area Plan in 2022. For more detailed information on Wake County’s planning history and progress since the 2017 SEAS, see Appendix B.

Highest Priority Strategies

- **Capital Improvement Plan (CIP) and Plan-Guided Infrastructure Investment:** Wake County’s PlanWake Development Framework Policies include the Municipal Capital Improvement Plan and Service Expansion Alignment, which requires a municipality to demonstrate appropriate infrastructure for requested ETJ area. Continuing to advance this strategy will require interjurisdictional coordination.
- **Preserve Lower Densities in Rural and Agricultural Areas:** Wake County’s comprehensive plan included reducing sprawl as a priority. This could be followed with zoning and code updates to support these policies, in order to support their metrics around growth in rural areas and funding open space conservation efforts. By preserving lower densities in rural and agricultural areas, Wake County can support the 2023 SEAS Preferred Growth Scenario.

Other Considerations

- Corridor and Small Area Planning
- Conditional Zoning
- Create Design Guidelines for Key Nodes
- Right-Size Parking Requirements
- Support Bicycle-Pedestrian Expansion
- Operationalize Policies
- Flexibility to Respond to Market Shifts and Planning “Unknowns”



MULTIMODAL RECOMMENDATIONS

The SEAS Update's transportation recommendations consider the regional system holistically rather than focusing on each travel mode individually. The resulting recommendations provide a comprehensive multimodal network that invests in a fast-growing region.

Since a complete transportation network cannot be created without understanding the land use context, the SEAS Update transportation recommendations respond to the preferred growth strategy described in Chapter 4. The recommendations were also refined using the travel demand model to project the region's needs 20 years in the future.

The project team drew from the previous planning efforts, input from the Core Technical Team, the Stakeholder Oversight Team, and feedback from the community to create a universe of projects for **roadway**, **bicycle** and **pedestrian**, and **transit** modes. The recommendations were built on the understanding that the transportation network should include safe facilities for pedestrians, bicyclists, motorists, and drivers and passengers of public transportation.

| | | |
|--|---|---|
| <p>Roadway</p> <p>Outlines the region’s plan to mitigate and improve congestion</p> | <p>Bicycle and Pedestrian</p> <p>Illustrates a blend of facilities for various users and trip purposes</p> | <p>Transit</p> <p>Identifies opportunities to enhance or add service</p> |
|--|---|---|

Recommendations Development

The transportation recommendations were developed through a five-step process that began with the cataloging of all existing projects proposed as part of past planning efforts. From there, any gaps were evaluated using the results of the existing conditions analysis, the preferred scenario, the regional travel demand model, and public input to create our first set of draft recommendations. The recommendations were then reviewed by the Core Technical Team, the Stakeholder Oversight Team, and the public, and they were then revised based on feedback received to create the final set of recommendations. This development process is outlined below.



Complete Streets

Complete Streets is a concept that stresses the importance of planning and designing streets to prioritize access, comfort, and safety for people of all ages and abilities. By implementing Complete Street principles, communities can be more accessible and welcoming particularly for vulnerable populations, including older adults, children, people with disabilities, and people who do not have access to a vehicle. NCDOT has a Complete Streets policy that directs the department to consider the needs of pedestrians, cyclists, transit, and other modes when building or improving roadway infrastructure. The guiding principles of the SEAS Update embrace the blend of multimodal recommendations to create a transportation network that serves all types of users.

Equity in Planning

Another key consideration during the development of the SEAS Update was equity. The following pages outline in greater detail how socioeconomic and transportation data was leveraged to evaluate the burden or lack thereof on historically underserved or vulnerable populations in the study area.

Equitable Planning Analysis

An analysis of transportation need and transportation disadvantages informs the identification of priority areas for transportation investments within the Southeast Area. A Transportation Need Index identifies areas with a greater need for transportation infrastructure, while a Transportation Disadvantage Index identifies areas with more individuals with unique barriers to mobility, as well as those historically marginalized by transportation investments. Collectively, these indices represent a means for the identification of areas to target with transportation investments to enhance the quality and safety of residents' connections to jobs, schools, doctors, grocery stores, places of worship, and other destinations.

The results of this analysis most directly helped inform the bicycle, pedestrian, and transit recommendations, as multimodal infrastructure and transit access play a major role in providing more equitable access to opportunity in communities with safety needs or populations unable to drive. When considering the implementation of multimodal infrastructure, planners should reference the results of this analysis to make informed decisions about potential pockets of the community where resources might need to be directed towards. More information on the equitable planning analysis is available in Appendix C.

Transportation Disadvantage

To highlight geographies that may require special consideration to ensure that everyone has a means of accessing jobs and services, the NCDOT Transportation Disadvantage Index identifies areas with higher proportions of disadvantaged populations. In other words, the index identifies, describes, and quantifies relative barriers that may limit access to transportation. To do this, the transportation disadvantage index scores Census block groups based on their relative proportion of:

- **Individuals living in low-income households**, who are more likely to rely on walking, bicycling, and transit to meet their transportation needs, because as income falls, the cost of owning and operating a private vehicle becomes more burdensome.
- **Individuals living with disabilities**, whose unique transportation needs demand deliberate planning.
- **Carless households**, whose transportation needs, particularly in regions characterized by auto-oriented development such as the Southeast Area, are likely significant.
- **Older adults**, aged 65 years and older, who may choose not to or are unable to drive, resulting in their reliance on other modes of transportation.
- **Minors**, aged 15 years and younger, who are more likely to rely on active transportation and/or transit because the vast majority cannot drive.
- **Non-white individuals**, whose transportation requirements deserve additional consideration, reflecting a legacy of racism and ongoing marginalization.

The largest swath of high Transportation Disadvantage Index scores is found in the Smithfield and Selma area. High scores are also found in and around Garner in Wake County, as well as in Benson, west of Four Oaks, and east of NC 39 in Johnston County. Because the index is based on the relative population sizes, some block groups receive high scores despite very low population densities and total number of disadvantaged individuals (e.g., north of Selma).

Transportation Need

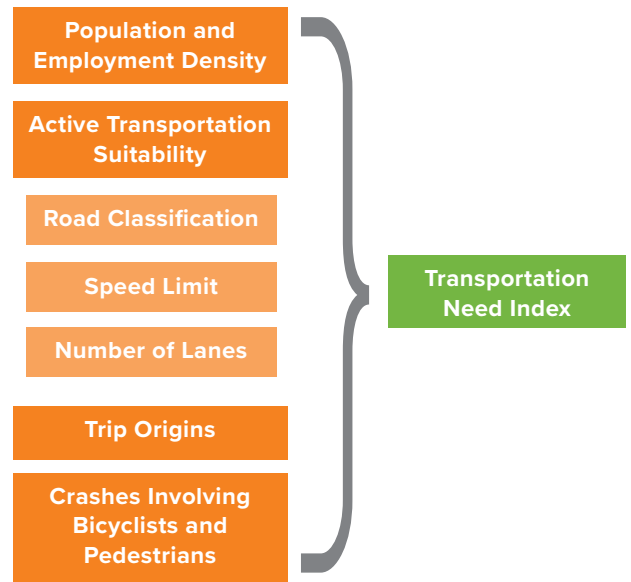
A Transportation Need Index, developed for the SEAS Update, leverages job and population density, active transportation suitability, crashes involving bicyclists and pedestrians, and trip origins to identify areas of greater transportation need.

The figure to the right summarizes the methodology used to calculate this index. Block groups receive a score in the range of zero to one for each variable, with higher values indicating greater transportation need¹. Weighting and summing these scores provides the relative Transportation Need Index figure for each block group.

Reflecting the location of people and jobs, prevailing roadway conditions, travel patterns, and crashes involving bicyclists and pedestrians (detailed throughout this chapter), areas of high transportation need are located in and around Selma and Smithfield, Clayton, and Garner.

¹ Scores are assigned using feature scaling (i.e., min-max normalization) to normalize the range of each variable.

Transportation Need Index Methodology



Combined Transportation Need and Disadvantage Analysis

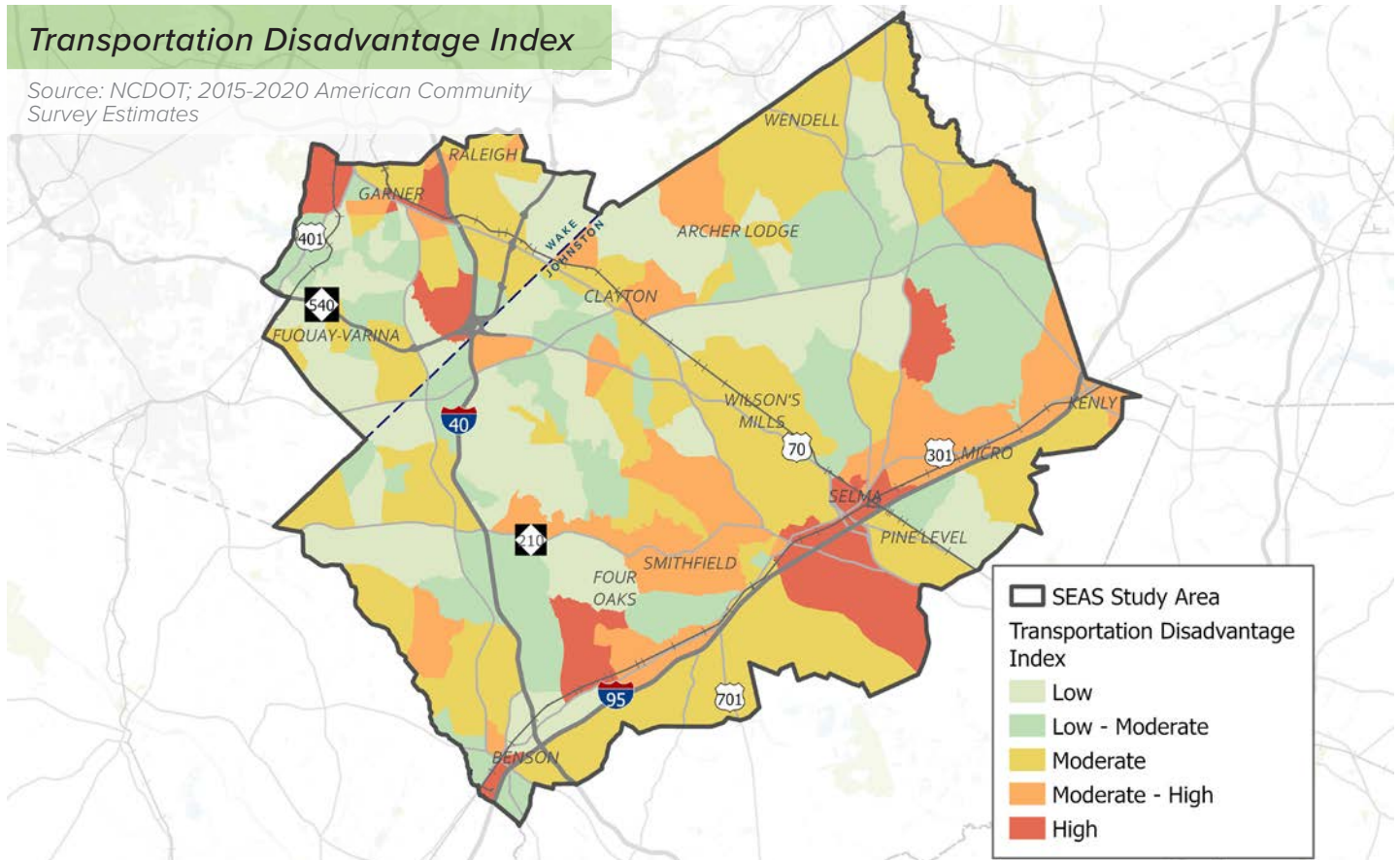
An analysis combining the transportation need and disadvantage indices identifies areas where transportation investments will be most impactful for the people who need them most. The figure on the facing page combines these indices, with dark purple depicting block groups scoring high on both the Transportation Need Index and Transportation Disadvantage Index.¹ Based on these results, general priority areas for investments include the following areas:

- The US 301 corridor running through Four Oaks, Smithfield, Selma, and Kenly
- Garner, particularly along the US 70 corridor
- Clayton, northeast of US 70
- Pine Level

¹ Light green depicts block groups scoring low on both the Transportation Need Index and Transportation Disadvantage Index; dark blue depicts block groups scoring high on the Transportation Need Index but low on the Transportation Disadvantage Index; conversely, dark green depicts block groups scoring low on the Transportation Need Index but high on the Transportation Disadvantage Index

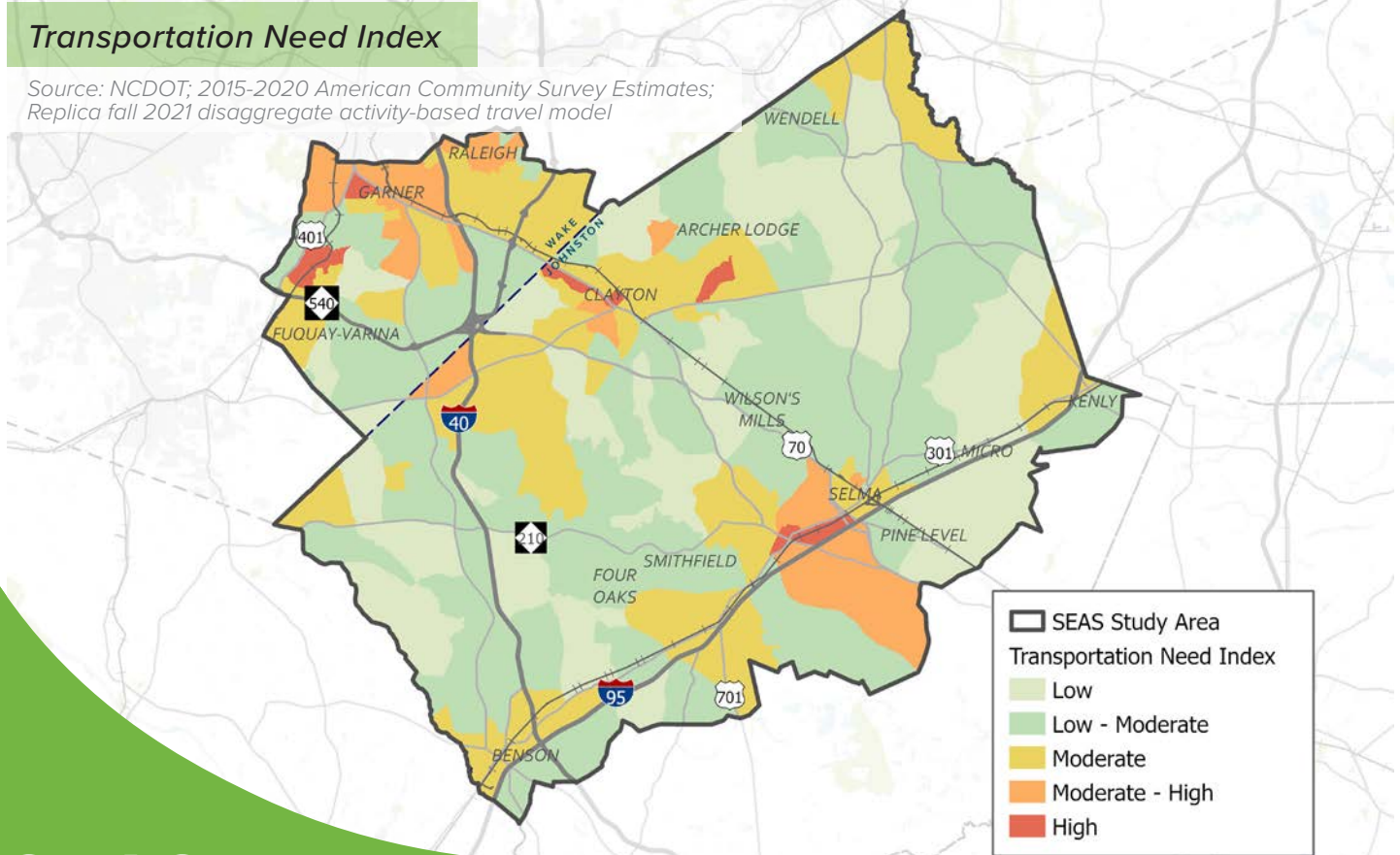
Transportation Disadvantage Index

Source: NCDOT; 2015-2020 American Community Survey Estimates



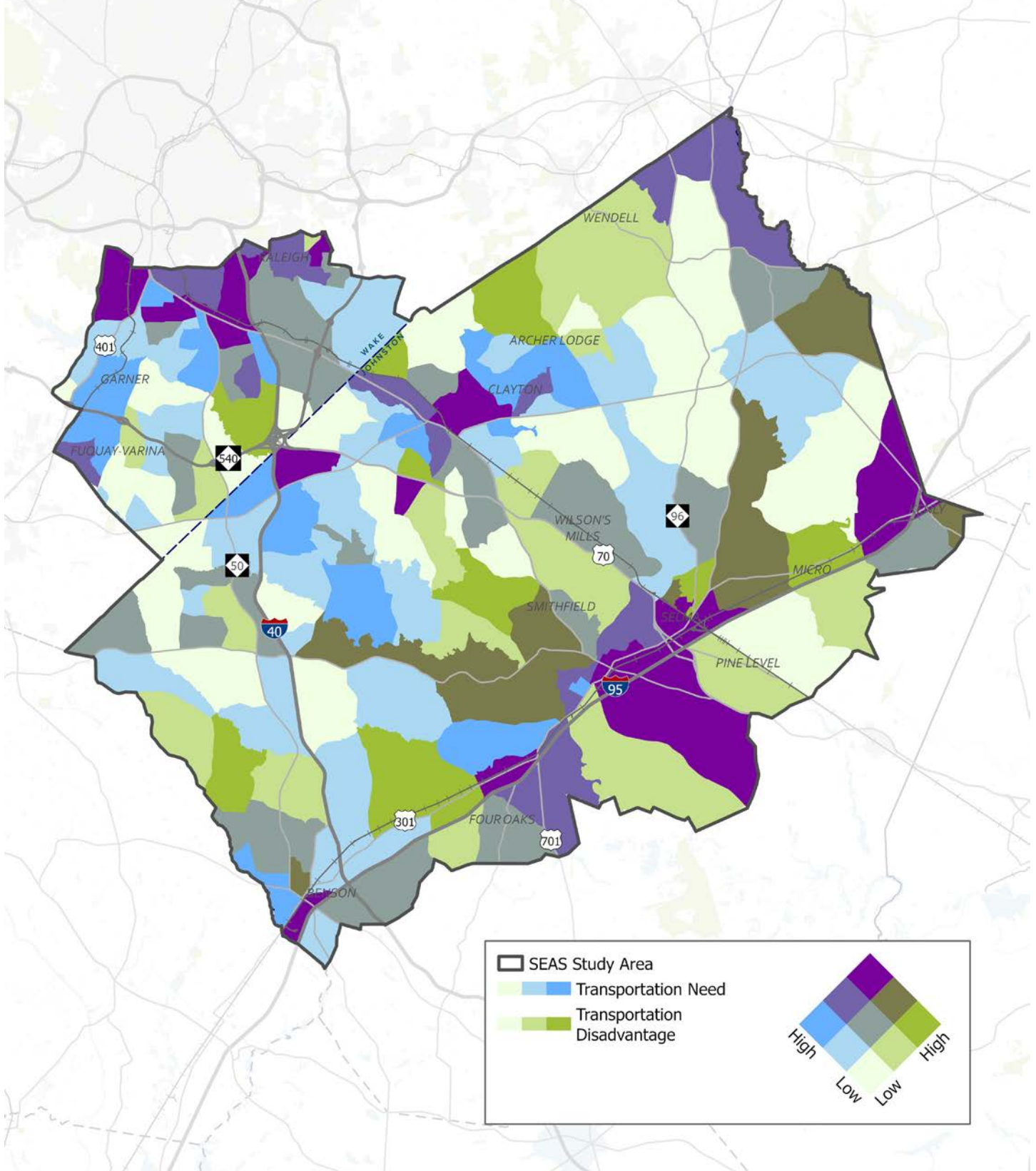
Transportation Need Index

Source: NCDOT; 2015-2020 American Community Survey Estimates; Replica fall 2021 disaggregate activity-based travel model



Transportation Need and Disadvantage Indices

Source: NCDOT; 2015-2020 American Community Survey Estimates;
 Replica fall 2021 disaggregate activity-based travel model



Roadway

To create an efficient transportation network, the transportation recommendations must balance connectivity and access with mobility. The proposed roadway recommendations consider a variety of improvements to the transportation network to improve infrastructure for all users and to mitigate congestion.

Access Management

Access management strategies include, restriction of certain turning movements, consolidation of driveways, implementation of non-traversable medians, and other means of enhancing mobility and safety along the corridor

These strategies can make turning movements more predictable, minimize congestion, and potentially reduce the number of crashes.



Center Turn Lane

A center turn lane is a lane where vehicles can turn left. The addition of a two-way left turn lane down the center of an existing two-lane corridor can improve safety and overall traffic flow.



Modernization

A modernization project can include the resurfacing, repairing, or rehabilitation of a roadway to enhance the corridor without expanding the number of travel lanes. This type of recommendation can be coordinated with bicycle, pedestrian, and transit improvements to create multimodal corridors through lower-cost means.



New Location

The construction of a new roadway provides drivers with increased options and distributes vehicular traffic on alternative routes. A new location road can provide relief for corridors with existing congestion issues.



Operational Improvements

Operational improvements can include upgrading traffic signals or altering signal timing to enhance mobility along a particular corridor. Operational improvements can be low-cost improvements to enhance the flow of traffic by leveraging existing infrastructure. These improvements are beneficial to all roadway users since movements may become more predictable and well-timed.



Operational Improvements

Widening

A widening project includes the addition of at least one lane of travel in each direction to address congestion and capacity concerns. Widening—or capacity enhancing—projects are meant to address pervasive congestion.



Widening

Superstreet

A superstreet contains a series of reduced conflict intersections that are designed to enhance safety and travel flow. Typically, the superstreet eliminates left turning movements on busy roads. While there are a variety of designs, they all function by reducing the number of conflict points where drivers and pedestrians or bicyclists can collide.



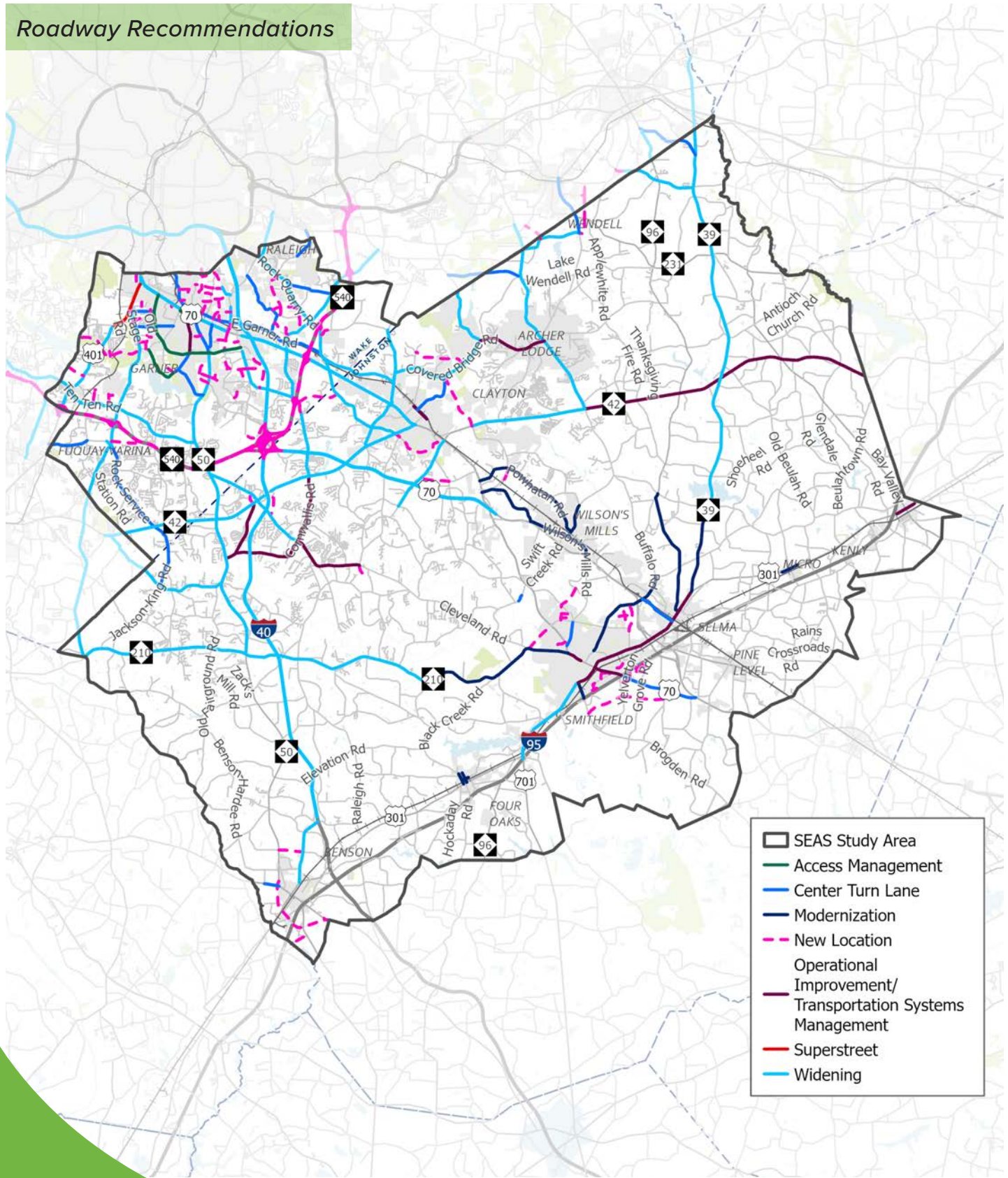
Superstreet

Roadway Snapshot

There are over 200 linear roadway recommendations as part of the SEAS Update. The blend of these seven roadway recommendation types helps create a holistic, multimodal network for all roadway users. The development of the roadway recommendations was heavily influenced by input from the community, the Complete Streets principles, and equitable planning criteria. The roadway recommendations help create the vision for the region over the next 20 years.

The following pages include maps of the linear roadway recommendations.

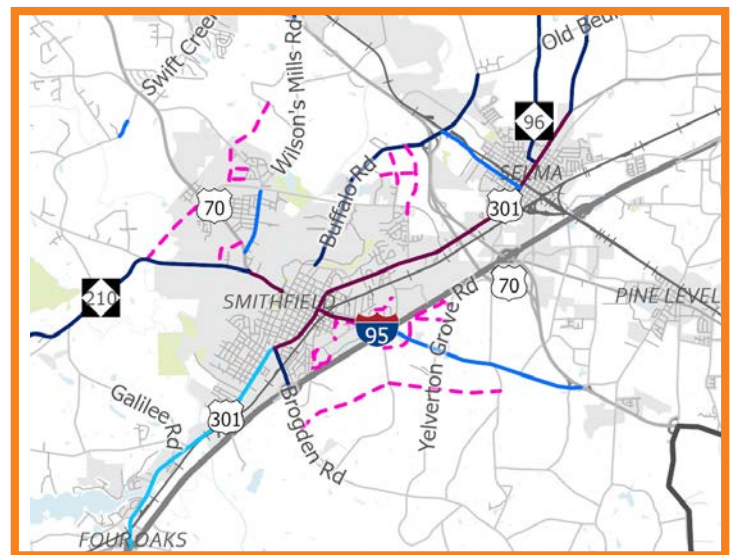
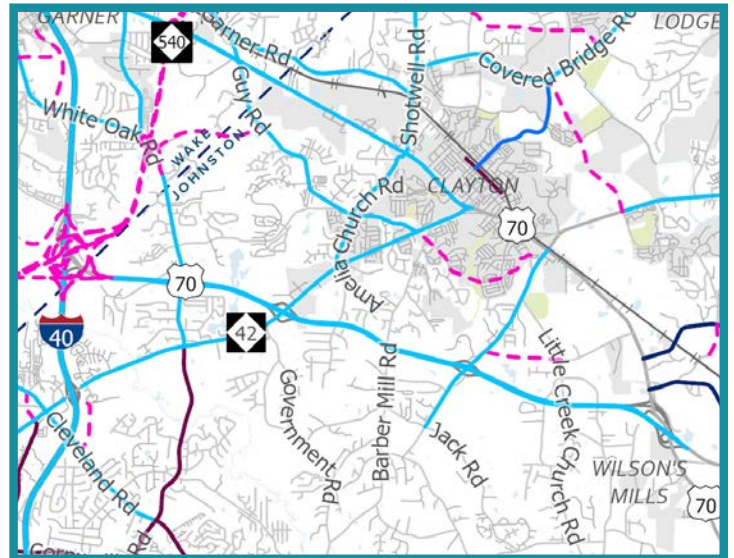
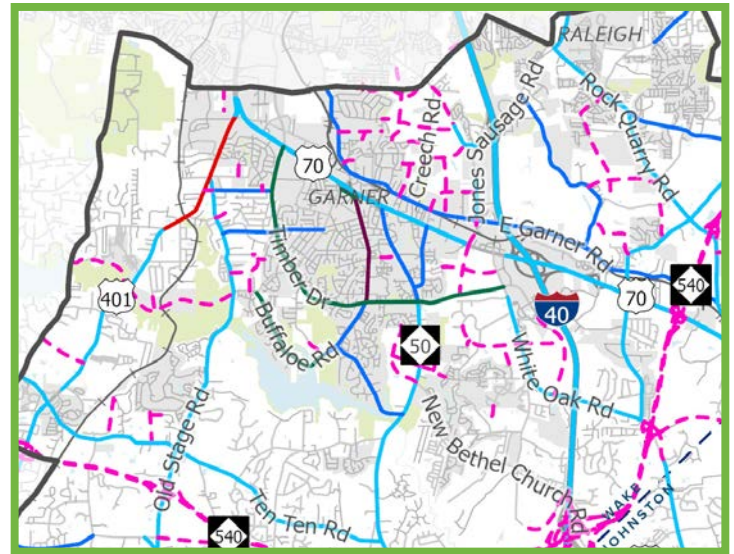
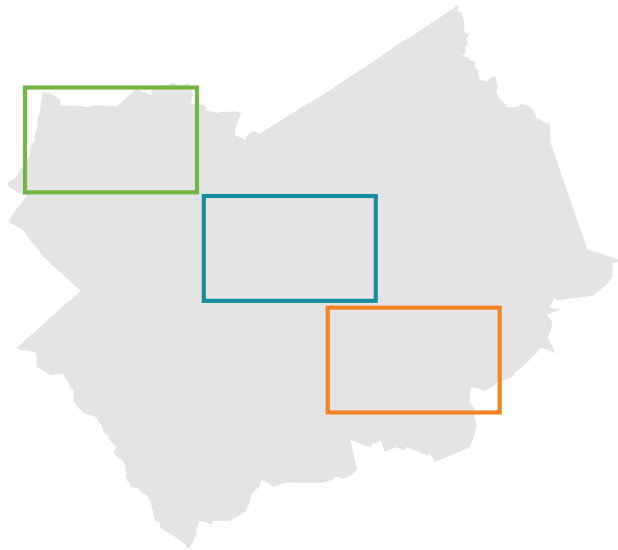
Roadway Recommendations



The previous page shows the roadway recommendations at the scale of the entire study area. The following inset maps, for three subareas of the southeast area, provide a closer look at the roadway recommendations.

The three areas include:

- Garner and Southeast Raleigh
- Clayton and NC 42
- Smithfield and Selma



- SEAS Study Area
- Access Management
- Center Turn Lane
- Modernization
- New Location
- Operational Improvement/Transportation Systems Management
- Superstreet
- Widening

Intersection

Intersection recommendations are created in coordination with the roadway recommendations to ensure that the access points between our traveled corridors provide for safe and efficient connections. The following are the intersection projects included in the SEAS Update.

Closed Railway Crossing

The closure of an existing railway crossing can increase the safety of an intersection by no longer allowing cars or people to interact with trains. By reducing the number of railway crossings, rail can move more efficiently and effectively without having to slow; similarly, motorists can also travel without having to stop and wait for freight or passenger rail.

Interchange Improvement

Interchange improvements can consist of a variety of improvements. The interchange improvements identified for the SEAS Update include ramp redesign or improved signal coordination to enhance the movement of vehicles. These improvements can improve the efficiency and flow of heavily traveled corridors.

New Interchange

A new interchange project involves adding a point of access from a grade separated limited access highway to another highway or local street. New interchange projects help enhance the flow of corridors by allowing vehicles to access adjacent roadways while maintaining speed and avoiding conflict points..

New Grade Separation

A grade separation involves realigning a roadway under or over a railway or other roadway to eliminate conflict between the corridors. Grade separation projects are vital to promoting and ensuring safety and efficient travel flow.

Intersection Realignment

An intersection realignment involves the shift or relocation of intersection access or exit points to simplify vehicular movements or enhance safety. A realignment project can improve visibility for all roadway users and create more direct approaches towards an intersection.

Intersection Improvement

An intersection improvement identifies a problem but requires further study to determine what type of improvement is needed. Potential recommendations may include striping, signal timing changes, turn lanes, or other infrastructure to reduce conflict between motorists, bicycles, and pedestrians and improve flow.

Multimodal ICE Toolkit

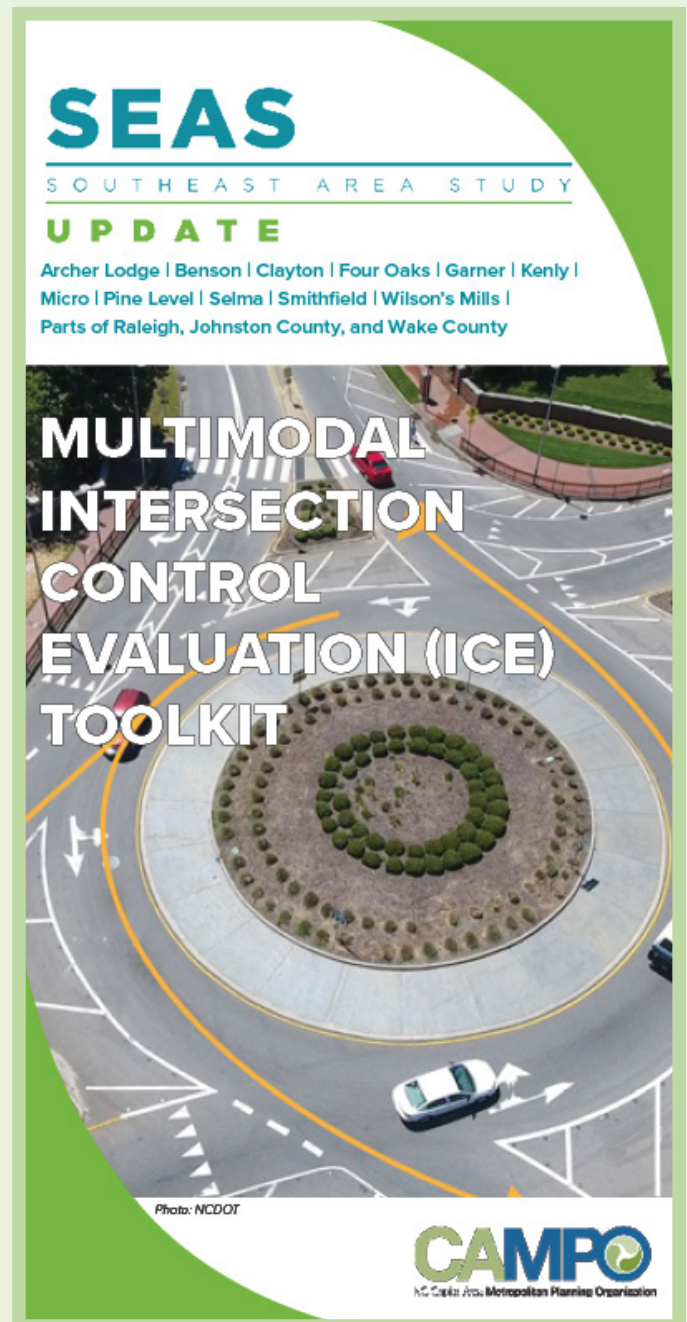
As the Southeast Area grows and builds out plans for sidewalks, greenways, transit service, new roadways, and mixed-use centers, it will become increasingly important for access, mobility, and safety to include accommodations for multimodal users in roadway design.

Intersection Control Evaluation (ICE) is a performance-based process and framework used to identify optimal solutions for intersection improvements. Intersection Control Evaluations typically focus on safety and delay reduction benefits; however, some ICEs focus more heavily on delay first and vehicle safety second, and have very limited focus on how alternative designs impact the safety and convenience of multimodal users.

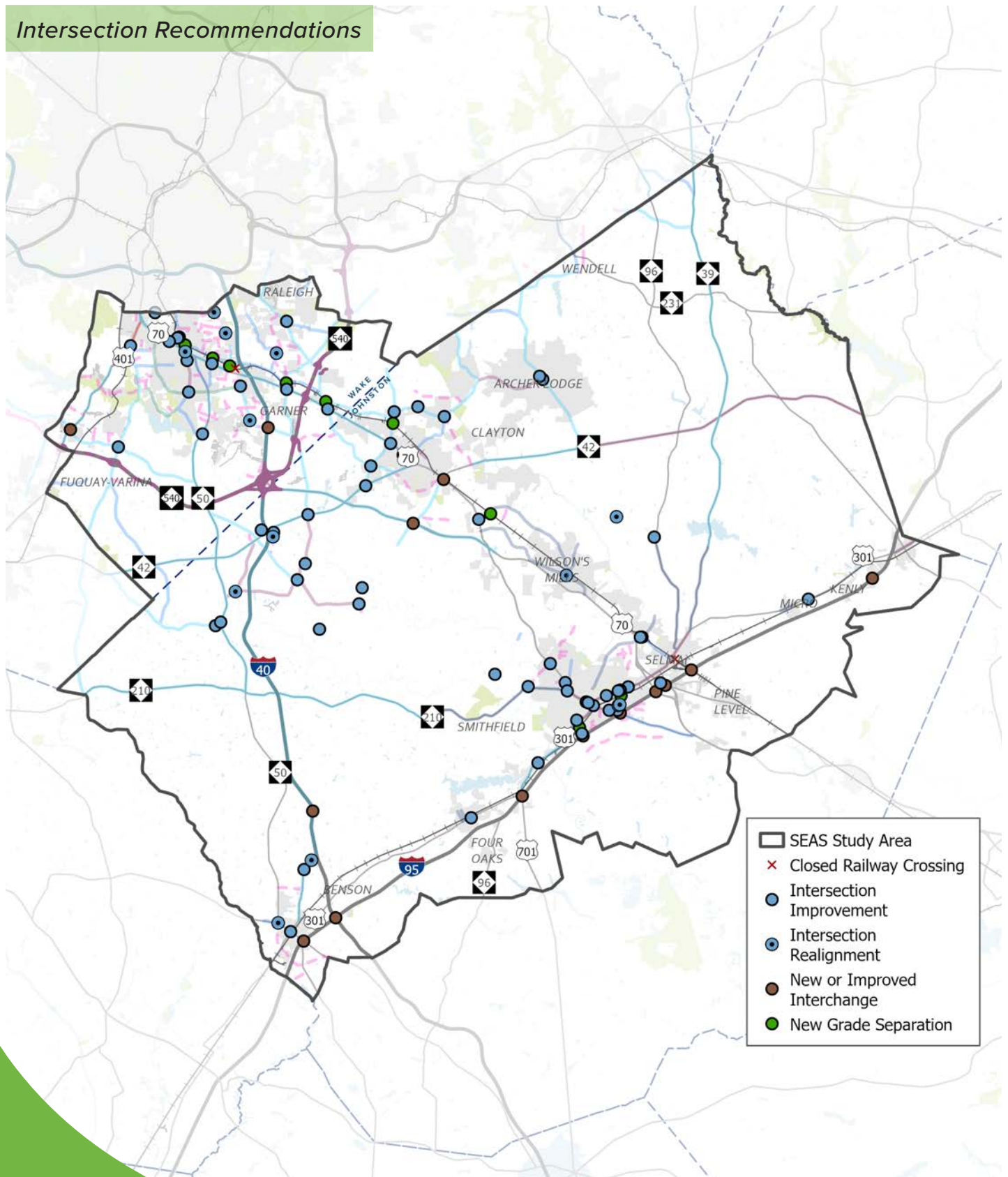
The needs of multimodal users, including people walking and rolling, biking, and taking transit, must be considered from the beginning to ensure that intersections are safe and efficient for everyone. As part of the SEAS Update, a toolkit was created to provide a resource for planners, engineers, developers, and decision-makers about a multimodal-friendly Intersection Control Evaluation process. The toolkit, which comes in both a long-form booklet and a shorter pamphlet, includes information like:

- Mobility, equity, and financial benefits of designing intersections for multiple modes,
- Things to consider when evaluating a location,
- Key multimodal design principles to emphasize safety and efficiency,
- Case studies and design resources as examples and additional guidance,
- An explanation of how multimodal intersection design advances the SEAS Update's guiding principles.

This toolkit can be found in full in Appendix D.



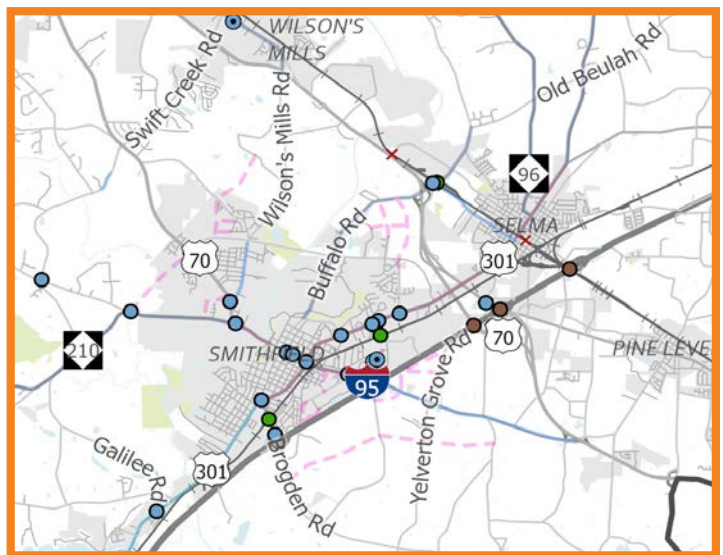
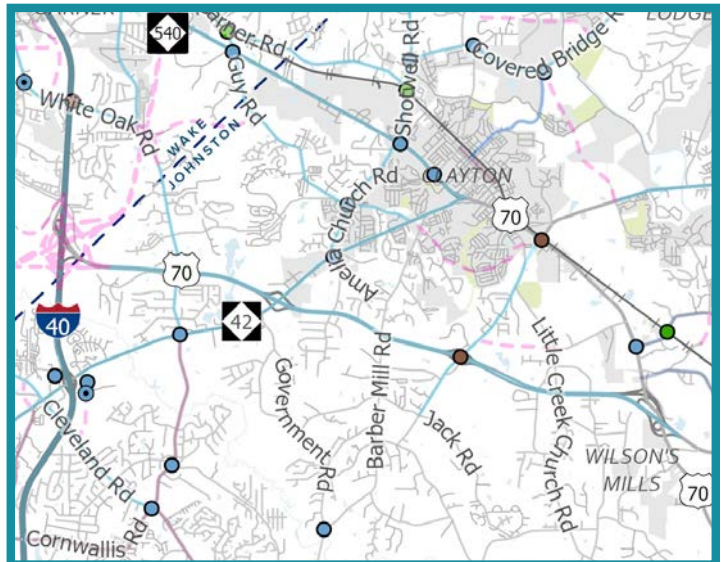
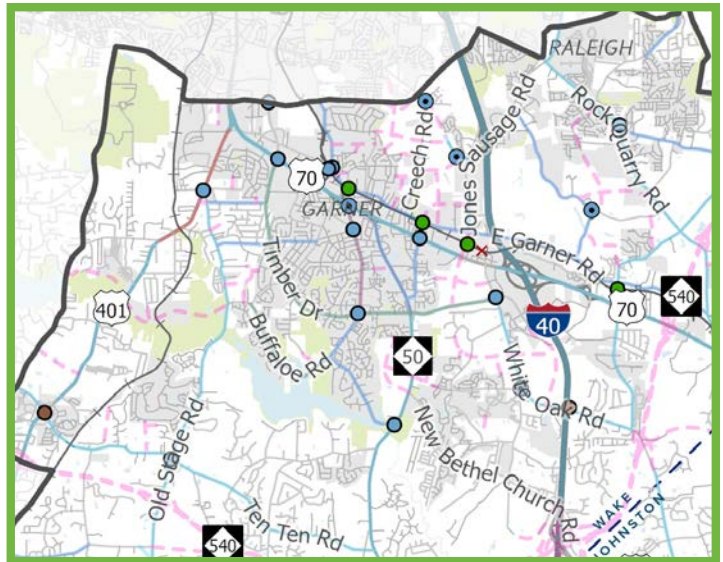
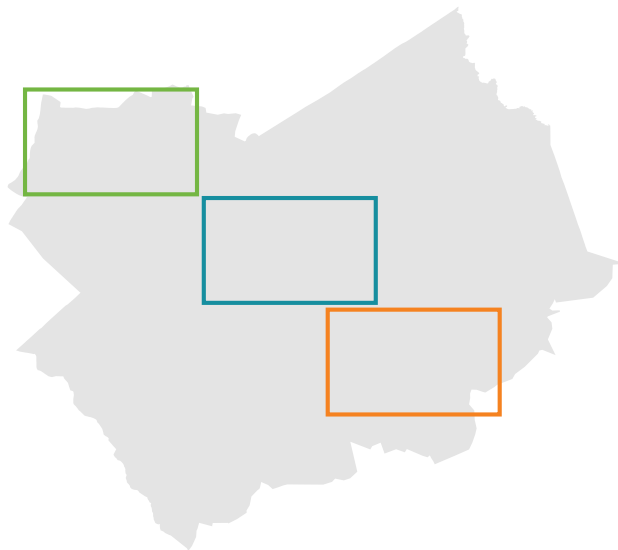
Intersection Recommendations



The previous page shows the intersection recommendations at the scale of the entire study area. The following inset maps, for three subareas of the southeast area, provide a closer look at the intersection recommendations.

The three areas include:

- Garner and Southeast Raleigh
- Clayton and NC 42
- Smithfield and Selma



- SEAS Study Area
- x Closed Railway Crossing
- Intersection Improvement
- ⊙ Intersection Realignment
- New or Improved Interchange
- New Grade Separation

Hot Spot Highlight: US 70 Business/NC 42/Ranch Road

As part of the Southeast Area Study Update, a hot spot study was conducted to examine a complex transportation issue at US 70 Business/NC 42/Ranch Road (Rose Street). The purpose of this hot spot was to find a long-term transportation solution in a growing and developing area. More information on the hot spot study can be found in Appendix E.

Current Configuration

The intersection of US 70 Business at NC 42 East and Future Ranch Road (Rose Street) is a traditional signalized four-way intersection. At this location, US 70 Business is a four-lane median-divided roadway with exclusive left- and right-turn lanes onto NC 42 East and Rose Street.

This intersection is planned to be developed through three phases.

- The first phase, currently under construction, is the extension of Ranch Road to connect to NC 42 East at US 70 Business to create a direct connection between NC 42 and the US 70 Clayton Bypass.
- The second phase, planned for 2040 as part of the 2050 MTP, would widen Ranch Road between the US 70 Clayton Bypass and US 70 Business to four lanes, built to state highway standards, and officially reroute NC 42 along Ranch Road.
- The third phase, and the focus of this Hot Spot Study, would place an interchange and rail grade separation at US 70 Business/NC 42 East.

As the area is rapidly changing and developing, this study is intended to identify potential feasible interchange design alternatives and associated footprints for this location long-term. With the area's expected growth, it's critical to ensure that development does not impede the ability to construct the interchange in the future. This study also considers impacts to existing and planned development and accounts for planned transit expansion of the Southern Corridor Rapid Bus Extension and the Greater Triangle Commuter Rail.



Alternative Recommendations

Based on the known needs and constraints, two conceptual interchange alternatives were created, one using a quadrant loop in the south quadrant and one widening Little Creek Church Road/Boling Street to operate as the interchange access road.

ALTERNATIVE 1

Astor Street Quadrant Interchange

The first alternative would create a quadrant interchange in the south quadrant of the intersection. The quadrant roadway ties into existing roads, partially using Astor Street to connect to US 70 Business.

This alternative would heavily impact the neighborhood of homes to the bridge's east and west along Tulip Street and Astor Street, as well as a set of homes at the end of Buckhorn Bridge Park; however, a new connection to Tulip Street southeast of the bridge maintains right in/right out access to/from US 70 Business for remaining homes within the quadrant loop. The Rose Street connection would partially remain north of the bridge, allowing right turns from eastbound US 70 Business and left turns from westbound US 70 Business, but restricting exiting traffic to right turn onto eastbound US 70 Business. The quadrant movement in Alternative 1 would result in significant impacts to nearby streams.



\$58,284,000

ALTERNATIVE 2

Little Creek Church Road/Boling Street Interchange

The second alternative would use an improved Little Creek Church Road/Boling Street as the interchange access road connecting US 70 Business to NC 42. Boling Street would be widened from two to three lanes. In addition, the intersection between Boling Street and US 70 Business would be realigned to intersect at a wider angle and slightly further from the Main Street/US 70 Business intersection, with significant impacts to the Clayton Village and the Wendy's properties.

While this alternative would cause additional impacts to properties along Boling Street, it would have significantly less impacts on the neighborhood of homes along Tulip Street when compared to Alternative 1. The Rose Street connection would partially remain north of the bridge, allowing right turns from eastbound US 70 Business and left turns from westbound US 70 Business, but restricting exiting traffic to right turn onto eastbound US 70 Business.



\$54,326,000

Following consultation with key stakeholders and a review of potential impacts, Alternative 1 is considered the preferred alternative. Note that these alternatives and associated Opinions of Probable Construction Costs (OPCC) are conceptual only and designs and costs will need to be reevaluated in the design phase.

Truck, Freight, and Rail

The previous and ongoing truck, rail, and freight planning efforts were reviewed as part of the recommendations development process. The following planning efforts should be closely considered as member jurisdictions move forward with implementing the recommendations in the Southeast Area Study Update.

Triangle Regional Freight Plan

CAMPO partnered with the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) and NCDOT to develop a coordinated regional freight plan for the Triangle. The Regional Freight Plan identified linear project improvements along strategic freight corridors (SFCs) to fund over the next 20 years. The plan identifies programmatic recommendations to further support the investments in the SFC network. The proposed roadway recommendations within the SEAS Update are aligned with the recommendations outlined in the Triangle Regional Freight Plan. In future decision-making processes, both the Triangle Regional Freight Plan and SEAS Update should serve as a guide for future investments in the regional freight network.

Fayetteville-Raleigh Passenger Rail

In partnership with the Fayetteville Area Metropolitan Planning Organization (FAMPO), CAMPO supported a study to determine the feasibility of connecting Fayetteville and Raleigh by passenger rail. The Passenger Rail Feasibility Study explored two alignments and identified economic impacts associated with the proposed service. While the study was completed in 2020, there are currently no plans to create a passenger rail service between the two municipalities.

FRA Corridor Identification Program

In March of 2023, NCDOT submitted 12 corridor proposals to the Federal Railroad Administration (FRA) Corridor Identification and Development program. If selected, the Raleigh-Wilmington and Raleigh-Morehead City corridors would receive funding for initial scoping, scheduling, and cost estimates. Both routes were included in the 2015 NC State Rail Plan as potential future intercity services. However, it is still early in the proposal process, and there are currently no short-term plans for passenger service on either corridor.

Greater Triangle Commuter Rail

In 2016, Wake County voters approved a half-cent sales tax to fund public transportation improvements in Wake County and throughout the region. CAMPO—in collaboration with DCHC MPO and GoTriangle—completed an exploratory study of commuter rail service in 2019, and in 2020, GoTriangle; Wake, Johnston, Durham, and Orange Counties; the Research Triangle Foundation; CAMPO; and DCHC MPO further studied implementation options.

Feasibility and Challenges

The feasibility study found the corridor to be well-positioned to serve future growing travel markets. Initial surveys also found strong resident and business community support.

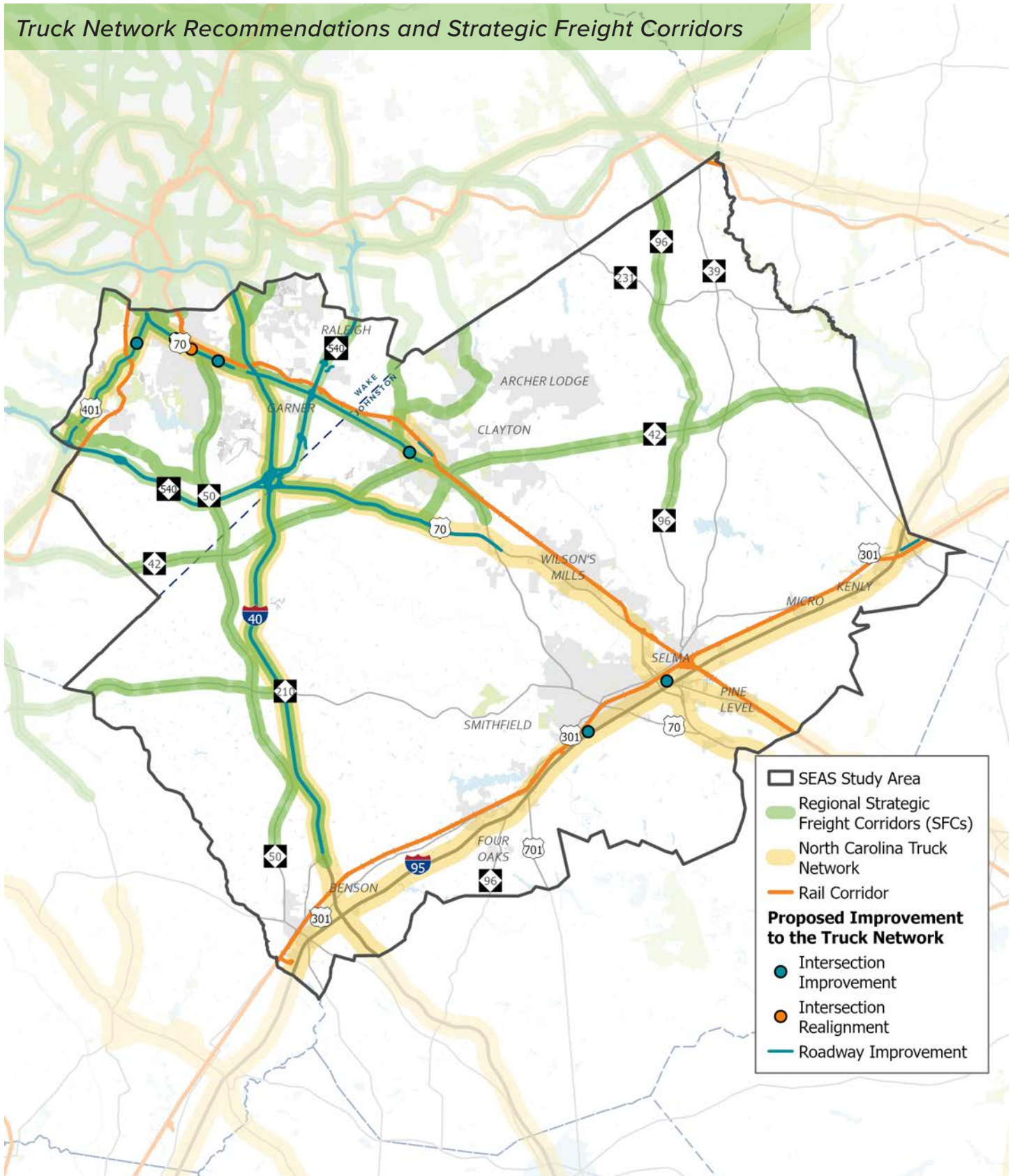
The study also found significant technical and financial challenges. Major upgrades would be needed to avoid conflicts between commuter, intercity passenger, and freight trains. Service would need to be implemented in smaller phases. Cost also remains a challenge, and as August of 2023, the corridor does not qualify for federal funds.

Short-Term Rail Corridor Improvements

Funding challenges prompted a shift to a longer-term approach focused on strategic upgrades to the corridor that can improve safety and conditions for Amtrak and freight trains today while making future implementation of regional rail easier. These upgrades include grade separations, crossing closures, signal upgrades, station improvements, and new track and sidings.

The SEAS Update includes recommendations for rail crossings along the corridor, including grade separations and crossing closures that would help work towards commuter rail service long-term while improving conditions for current and short-term passenger and freight trains. Continued coordination will be increasingly important as regional partners continue to work towards commuter rail.

Truck Network Recommendations and Strategic Freight Corridors



Bicycle and Pedestrian

Proposed Linear Improvements

As traffic volumes and traffic speeds increase on roadways, there is a greater need for facilities to have a wider buffer and physical barrier between bicyclists and pedestrians and vehicles. Achieving physical separation should be a central component of almost every facility design process in the Southeast Area Study Update to ensure the safety of its users.

The map on page 77 displays the bicycle and pedestrian recommendations in three broad categories with each of these categories generally including:

Pedestrian Facilities

Pedestrian facility recommendations generally refer to sidewalks. Sidewalks achieve physical separation for pedestrians from the travel lanes. Most of the communities in the Southeast Area have extensive sidewalk networks in their downtown core.

From 2007-2021, there were **547 crashes** involving pedestrians.
88% (122 of 139) of all pedestrian fatalities and serious injuries occurred in places without sidewalks.

While the existing sidewalks are primarily concentrated in downtowns, there are still significant gaps in these areas. The sidewalk gaps particularly occur along corridors with higher traffic volumes and higher speeds. When overlaid with historic crash data, the opportunities to create safer, dedicated pedestrian facilities was evident. The pedestrian facility recommendations focus on filling the identified gaps and creating safer intersections to reduce conflict between pedestrians and other roadway users.



Sidewalk



Sidewalk

Bicycle Facilities

Bicycle facility recommendations generally refer to bike lanes. In most cases, bike lanes should be designed with a physical buffer between the bike lane and roadway corridor. In limited circumstances, bicycle facilities can include shared lanes (sharrows) on roads such as neighborhood streets that have very low traffic volumes and speeds.

From 2007-2021, there were **209 crashes** involving bicyclists.

100% of all bicyclist fatalities and serious injuries (30) occurred in places without bike facilities.

When choosing a facility type, the National Association of City Transportation Officials (NACTO) provides design guidance for people of all ages and abilities based on vehicle speed and volume. The guidance considers the different types of cyclists and identifies key considerations to user safety. More information on the NACTO guidance can be found in Appendix F.

The existing bicycle network primarily consists of multiuse paths. In order to provide a more robust bicycle network, a variety of facility types were considered in order to provide a range of safe, appropriate facilities for people of all ages and abilities.

Multiuse Paths

Multiuse path recommendations include both sidepaths (multiuse paths along a road) and greenways (multiuse paths away from the roadway network). Multiuse paths achieve physical separation and generally serve all ages and abilities of bicyclists and pedestrians.

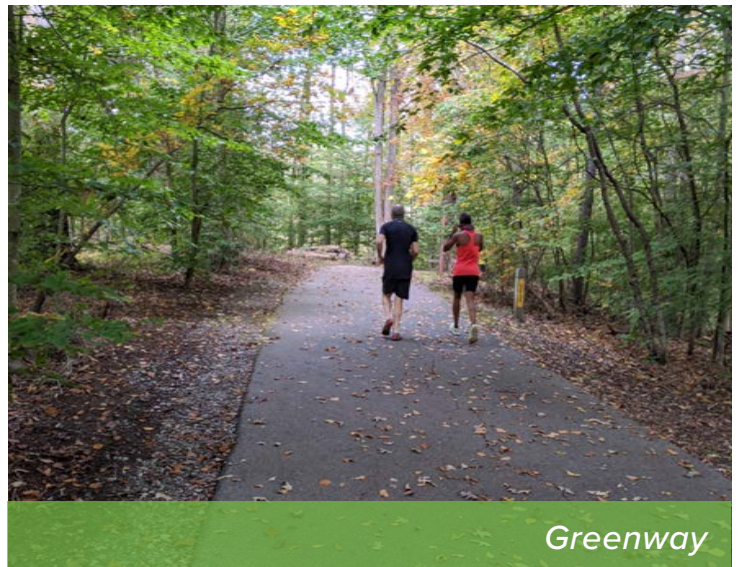
The multiuse path recommendations included in this plan help connect regional destinations through dedicated facilities for both pedestrians and bicyclists. By leveraging existing connections provided by the Mountains-to-Sea Trail, the Great Trails State Network, and the East Coast Greenway, the Southeast Area can further build upon its extensive multiuse path network.



Protected Bike Lane

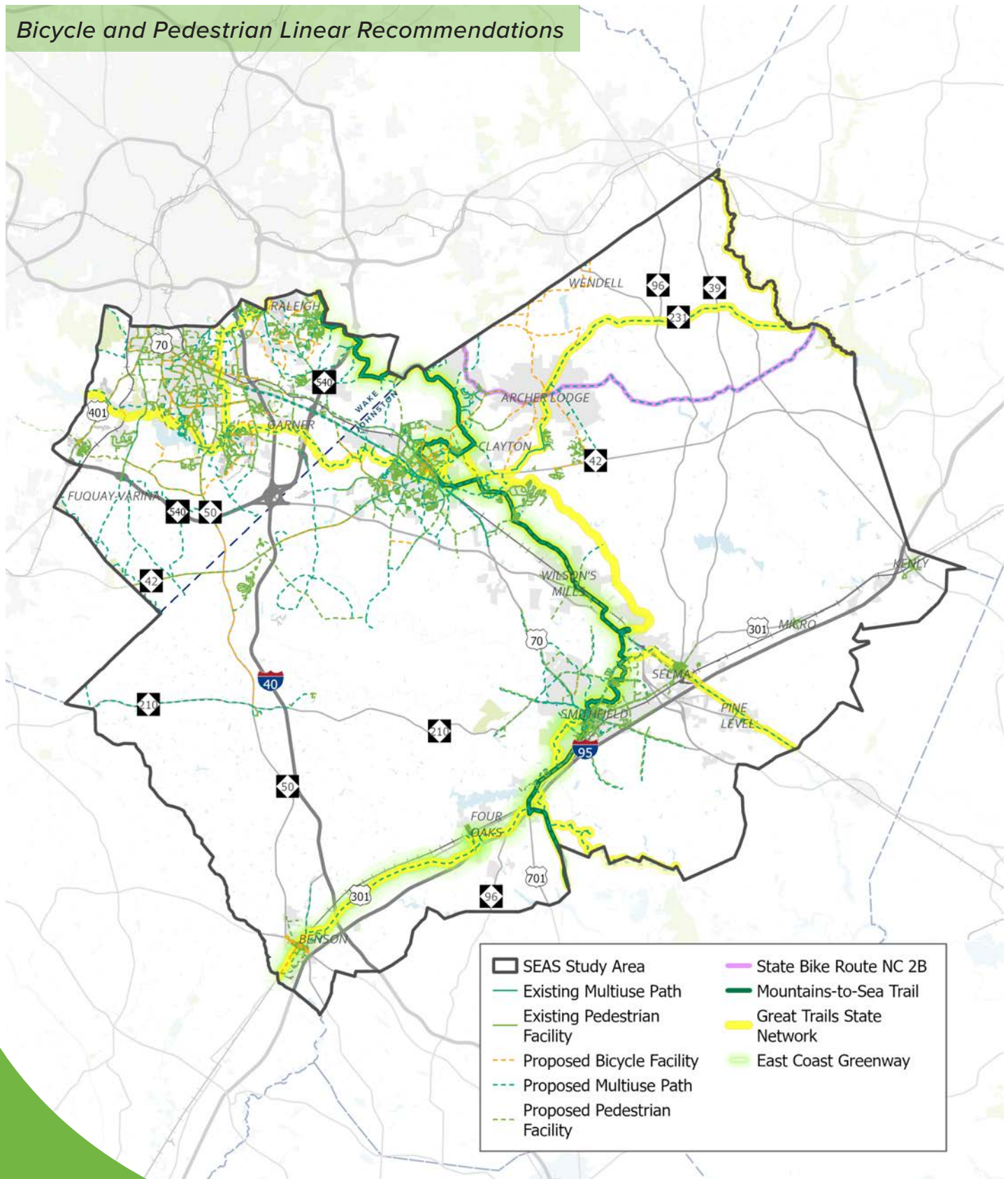


Buffered Bike Lane

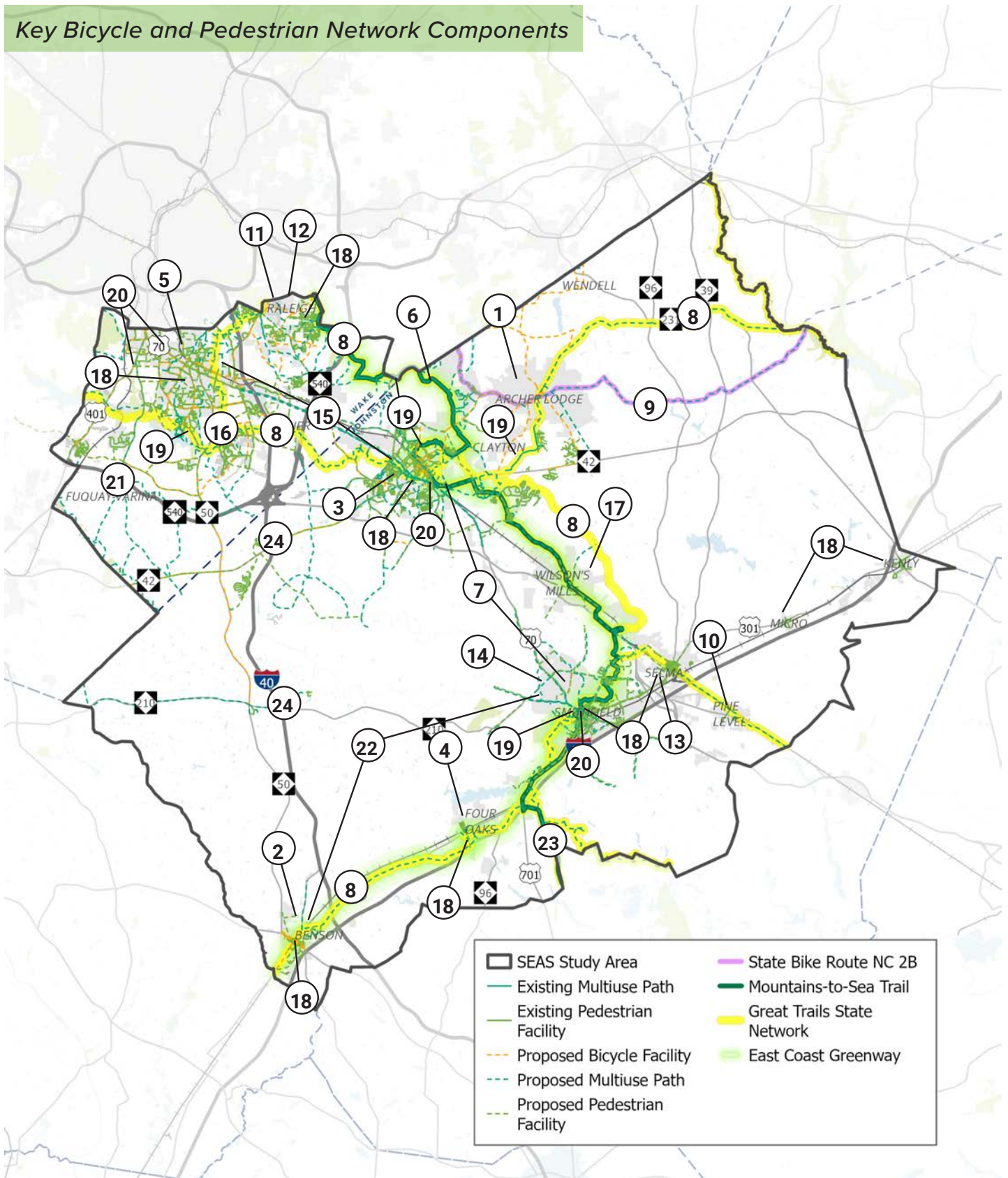


Greenway

Bicycle and Pedestrian Linear Recommendations



Key Bicycle and Pedestrian Network Components



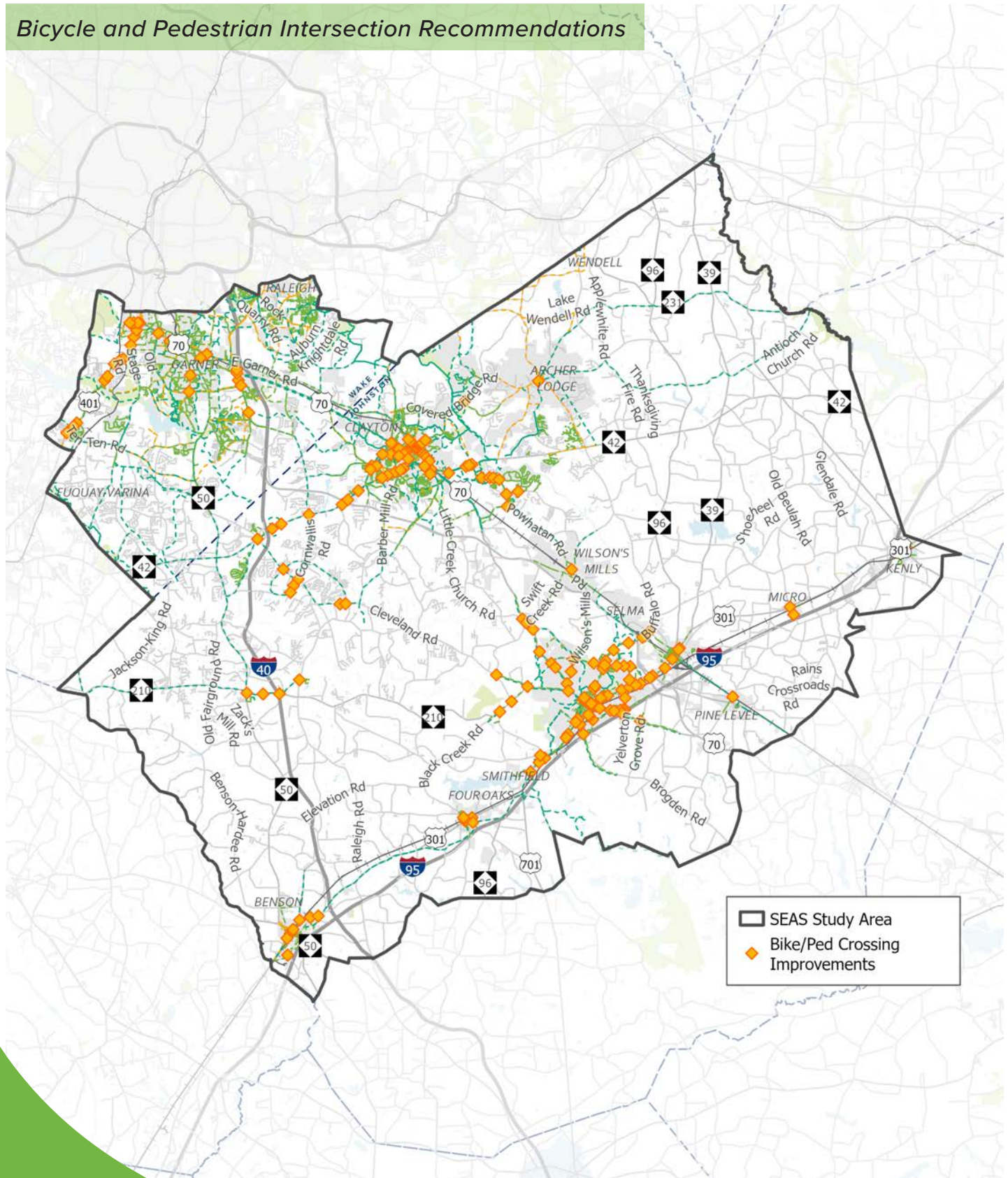
Key Bicycle and Pedestrian Network Components

| Map ID | Note |
|--------|--|
| 1 | The Town of Archer Lodge Bicycle and Pedestrian Plan (2020) identifies priority projects connecting neighborhoods, parks, schools, downtown, and trails. |
| 2 | The Town of Benson Community Transportation Plan (2019) identifies a network of bike/pedestrian recommendations, including projects to be combined with upcoming roadway projects. |
| 3 | The Town of Clayton Pedestrian Plan (2022) identifies a set of priorities and safe routes to schools and parks projects. |
| 4 | The Four Oaks Downtown Streetscape Master Plan (2020) includes recommendations for sidewalks, safer crosswalks with bulbouts, street trees/landscaping, and ADA and accessibility improvements. |
| 5 | The Town of Garner Pedestrian Plan (2023) includes comprehensive network recommendations including six priority projects that fill key gaps in the local network. |
| 6 | The Johnson County Parks and Recreation Master Plan (2021) action steps include: Greenways/hiking/biking trails: "After the MST connection the most requested connections were: (1) Connecting Benson to Four Oaks, Four Oaks to Smithfield; (2) Connecting Selma to Smithfield [note connections from Selma to MST should be sought]; (3) Connecting Pine Level to Selma; (4) Connection between Greater Cleveland area and Clayton." |
| 7 | The Neuse River Trail Feasibility Study (2022) identifies a recommended alignment to extend the Neuse River Trail from Clayton to Smithfield. Recommendations include four segments/phases mostly along rural roadway corridors (sidepaths) and includes a Neuse River bike/pedestrian bridge crossing near Selma. |
| 8 | The Great Trails State Plan (2022) incorporates regional trails such as the East Coast Greenway and Mountains to Sea Trail and pulls key connections from local plans to identify statewide connectivity opportunities. |
| 9 | State Bike Route NC 2B is currently unsigned, but was identified as a new state bike route in WalkBike NC (2013) (North Carolina's Statewide Bicycle and Pedestrian Plan). |
| 10 | The Pine Level Comprehensive Plan (2022) goals and objectives include the desire for a well-connected multi-modal transportation system and investment in walking/biking/trails, walkability of new developments. |
| 11 | The Raleigh Bike Plan (2016) includes priority projects - a prioritization map updated in 2020 was created to reflect completed and funded projects. |
| 12 | The Capital Area Greenway Master Plan Update (2022) includes recommendations and action items (near, mid, and long term); includes a new trail classification system, updated trail prioritization criteria and results; and an emphasis on reinvestment in existing trails. |
| 13 | The Town of Selma Land Use Plan 2040 (2021) includes greenway and sidewalk recommendations. |
| 14 | The Smithfield Town Plan (2019) includes bicycle and pedestrian recommendations. |

Key Bicycle and Pedestrian Network Components Continued

| Map ID | Note |
|--------|--|
| 15 | Bike and pedestrian facilities will play a key role in supporting bus rapid transit (BRT) service. Opportunities inside station areas depend on safe, high quality sidewalks, intersections and bicycle/scooter facilities. Opportunities outside station areas but within the corridor depend on first mile/last mile bus service and safe bicycle/scooter facilities. BRT stations are planned for Garner and Clayton. |
| 16 | The Wake County Greenway System Plan (2018) includes recommendations by project category (bridge the gaps, connect parks and lakes, connect the communities, and longer term proposed trails). |
| 17 | Wilson's Mills Comprehensive Land Use and Master Plan (2019) includes planned sidewalk projects. |
| 18 | Existing Sidewalks: Each community has a core sidewalk network that serves as a key building block for both local and regional connectivity. Newer developments are building pedestrian infrastructure more consistently. |
| 19 | Existing Greenways: The Neuse River Trail and Sam's Branch Greenway provide a key walking/biking regional connection from Raleigh to Clayton as part of both the East Coast Greenway and the Mountains to Sea Trail. Other shared use path segments such as the S. Garner Trail, Neuse River Pkwy sidepath, neighborhood greenways in Clayton, and the Buffalo Creek Greenway in Smithfield provide local greenway connectivity. |
| 20 | High traffic volume, high speed corridors such as US 401 and US 70 in Garner, US 70 in Clayton, US 301, and US 70 Business in Smithfield are where some of the highest amounts of bicycle, pedestrian, and motorist collisions happen. These types of corridors, with limited (or no) physical buffering between pedestrian and bicycle spaces can significantly deter higher amounts of walking and biking. |
| 21 | The I-540 extension through the southeastern part of Wake County: This project is programmed to include greenway undercrossings where greenways are shown on previous plans. |
| 22 | A feasibility study for the proposed East Coast Greenway section from Smithfield to Benson is scheduled to begin in 2023. From Benson, the East Coast Greenway is proposed to connect to Dunn and the Dunn-Erwin Rail Trail. |
| 23 | The Mountains to Sea Trail Coastal Crescent section branches from the East Coast Greenway between Smithfield and Four Oaks. When complete, the Coastal Crescent will connect SEAS to Sampson and Bladen Counties before continuing on to the coast. The Neuse River serves a blueway connection for the Mountains to Sea Trail from SEAS to Goldsboro, Kinston, and New Bern. |
| 24 | Roadway widening projects such as Cleveland Rd and NC 210 in southwestern Johnston County and NC 42 west through Clayton and Johnston County are opportunities to build bicycle and pedestrian facilities such as sidepaths as part of the project. |

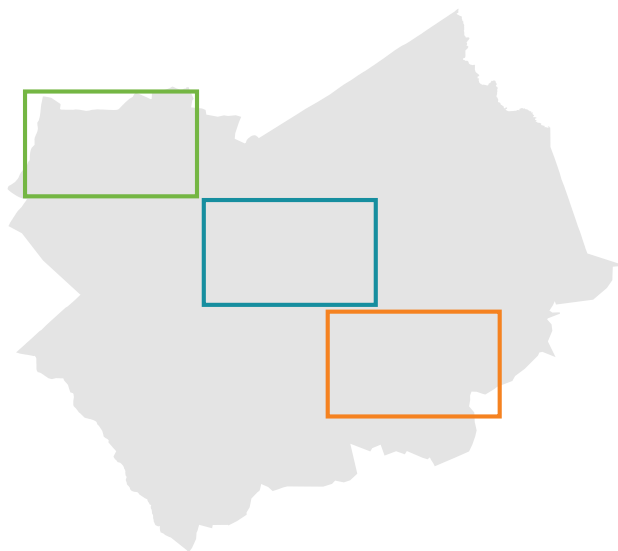
Bicycle and Pedestrian Intersection Recommendations



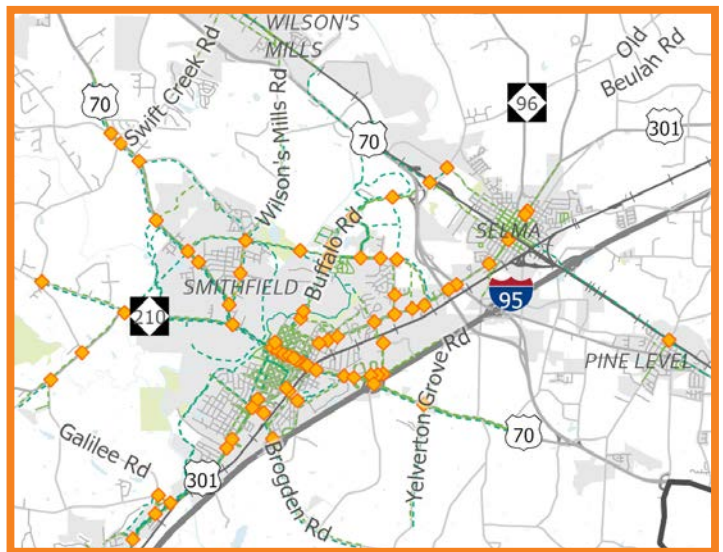
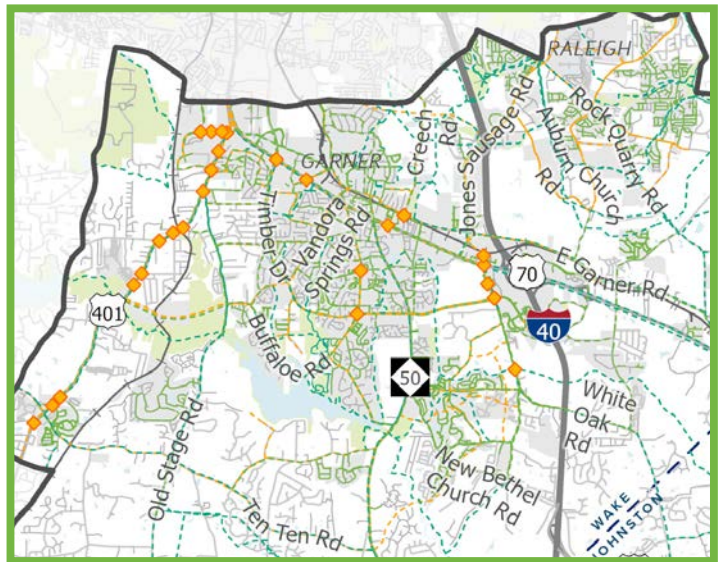
Many bicycle and pedestrian crossing improvements were identified as part of the SEAS Update both from locally adopted plans and through a safety analysis. Considering the small nature of most of these improvements, these recommendations should be considered as part of larger corridor projects as they get implemented and improved. The previous page showed the bicycle and pedestrian intersection recommendations at the scale of the entire study area. The following inset maps, for three subareas of the southeast area, provide a closer look at the crossing recommendations.

The three areas include:

- Garner and Southeast Raleigh
- Clayton and NC 42
- Smithfield and Selma



- SEAS Study Area
- ◆ Bike/Ped Crossing Improvements



Transit

Proposed Improvements

As outlined in Chapter 3, the existing and planned transit projects will create more efficient mobility options for those who most need it. As part of the recommendations development process, a transit demand analysis identified locations that could support dedicated, fixed-route service. The primary factors used to determine transit demand or transit propensity include population and employment density as well as other demographic cohorts including low-income households, zero-car or one-car households, and older adults. In addition to the demographic factors, understanding the variety of public transportation solutions was equally important. A microtransit suitability analysis was conducted to assess the viability of service for areas with lower population and employment density. The full inventory of transit propensity and suitability analyses can be found in the Appendix C.

The proposed transit recommendations focus on appropriately-scaled solutions that build on existing plans and services, and prioritize investments that will benefit the most people. The recommendations create connections to existing transit infrastructure in the greater Raleigh metropolitan area, ensuring that residents of the Southeast Area can access opportunity throughout the region—and even throughout the state.

Circulator

A frequent fixed-route service connecting key destinations and transfer points within communities with higher volumes of trips and shorter stop spacing. Circulators are most appropriate for denser communities with higher population, more walkability, and a variety of local destinations.

- **Garner–Clayton Circulator** is a proposed 39.1-mile route, round-trip, between Garner North-South Station and Powhatan Road in Clayton via US 70.
- **Selma–Smithfield Circulator** is a proposed 19.5-mile route, round-trip, between Selma Amtrak Station and the Smithfield Outlets via US 301, Second Street, and Market Street.
- **Garner–West Johnson Circulator** is a proposed 25.2-mile route, round-trip, between Garner North-South Station and Forty-Two Forty Plaza in western Johnston County via NC 50.
- **Clayton–Willow Springs Circulator** is a proposed 27.7-mile route, round-trip, between the Walmart Supercenter - Clayton and Willow Springs, via Cleveland Road, NC 42, and US 70.

Connector

An extended connection between communities with lower volumes of longer distance trips with select stops in areas with high population and employment densities. These are most appropriate for connecting the broader region, regional destinations, and activity centers.

- **Clayton–Selma Connector** is a proposed 41.1-mile route, round-trip, between Selma Amtrak Station and Walmart Supercenter - Clayton via US 70.
- **Benson–Garner Connector** is a proposed route between Benson and Garner North-South Station.
 - **Alternative 1** (via NC 50): Moderate transit need and disadvantage, pockets of high transit propensity and potential. Serves the residents of Edmondson.
 - **Alternative 2** (via Raleigh, Mclemore, and Cleveland roads): Relatively high population and employment densities. Serves the residents of Willow Springs.
- **Benson–Selma Connector** is a proposed 39.2-mile, round-trip, between Selma Amtrak Station and Benson via US 301.
- **Kenly–Selma Connector** is a proposed 24.1-mile route, round-trip, between the Selma Amtrak Station and Downtown Kenly via US 301.
- **Selma–Raleigh Connector** is a proposed 73.0-mile route, round-trip, between Downtown Raleigh and Selma Amtrak Station, via US 70 and US 401.

Microtransit Zone

An on-demand, curb-to-curb service, connecting residents to destinations throughout their community, as well as circulator and connector routes. Microtransit zones are most appropriate in areas with demand for transit but that may not yet have the employment density, population, or walkability to support fixed-route transit.

- **Garner Microtransit Zone** serves portions of southwest and northeast Garner in Wake County. The zone is bordered by US 70, Garner Road, and Jones Sausage Road to the north; Clifford Road and Lake Benson to the south; Rock Quarry Road and White Oak Road to the east; and Old State Road to the west. The transfer opportunities include GoRaleigh Routes 7, 17, 18, 20, 40x, the Garner–Clayton Circulator, and Garner–West Johnston Circulator.
- **Clayton Microtransit Zone** serves Clayton in northern Johnston County. The zone is bounded by the Wake County/Johnston County Line to the north; Ranch Road and NC 42 to the south; the Neuse River, Covered Bridge Road, and Shotwell Road to the east; and Guy Road and Amelia Church Road to the west. The transfer opportunities include GoRaleigh Routes 7, 17, 18, 20, 40x, the Garner–Clayton Circulator, and Garner–West Johnston Circulator.
- **Selma/Smithfield Microtransit Zone** serves the Towns of Selma and Smithfield in southern Johnston County. The zone is bounded by the Neuse River, US 70, Buffalo Road, and Old Beulah Road to the north; I-95 to the south; Lizzie Mill Road, Moccasin Creek, and NC 39 to the east; and the Neuse River to the west. The transfer opportunities include Amtrak, the Selma–Smithfield Circulator, the Benson–Selma Connector, the Clayton–Selma Connector, and the Kenly–Selma Connector.
- **McGee–Willow Springs Microtransit Zone** serves the population area at the Edmondson and McGee Crossroads in the Township of Pleasant Grove. The zone also serves Willow Spring in the Township of Cleveland. The zone is bounded by NC 42 and Cleveland Road to the north; NC 210 and North Pleasant Coates Road to the south; Cornwallis Road, I-40, and Sanders Road to the east; and the White Memorial Church Road to the west. The transfer opportunities include the Garner–West Johnston Circulator.

Transit Transfer Facilities

A transit transfer facility (TTF) complements fixed-route and microtransit recommendations. TTFs present an opportunity to utilize underused spaces to enhance the rider’s experience by providing a comfortable environment for riders to wait for their service. Amenities could include bus shelters, real-time information, lighting, bicycle racks, and restrooms. The following locations are recommended TTFs.

- **Garner North South Station**
- **White Oak Crossing**
- **Walmart Supercenter (Clayton)**
- **Powhatan Road (Clayton)**
- **Downtown Smithfield**
- **Selma Amtrak**

Bus Stop Amenities

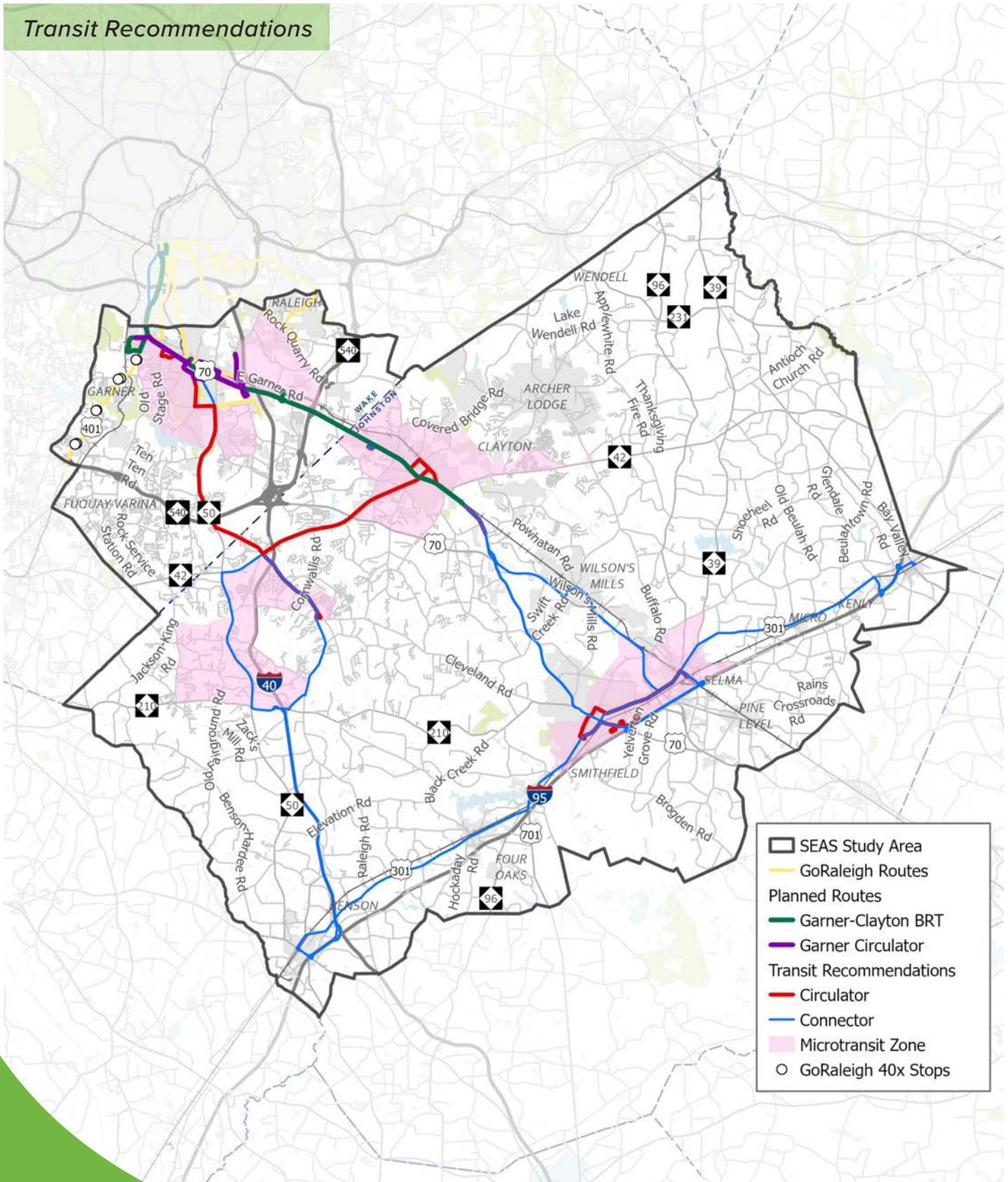
Amenities to promote the comfort of transit riders that are not TTFs. All bus stops should strive to include the following amenities:

- **Bus shelters**
- **Seating**
- **Trash receptacles**
- **Clear signage with printed schedules**
- **Transit-supportive land uses**
- **Active transportation infrastructure**

New GoRaleigh 40X Stops

In Garner, along US 401, there are pockets of moderate-to-moderately high transit-oriented populations who live in high transportation need areas. Based on these trends, along with public feedback, additional stops on the GoRaleigh 40X are warranted. The locations were chosen based on land use, existing infrastructure (i.e. traffic lights or presence of sidewalks), and areas nearby with high transit potential. With these stops, residents of Wake County along US401 can utilize the 40X to Downtown Raleigh or Wake Tech Community College. In addition, at Garner North-South Station, residents can transfer to microtransit or additional fixed-route options that go as far south as Clayton on a one-seat ride.

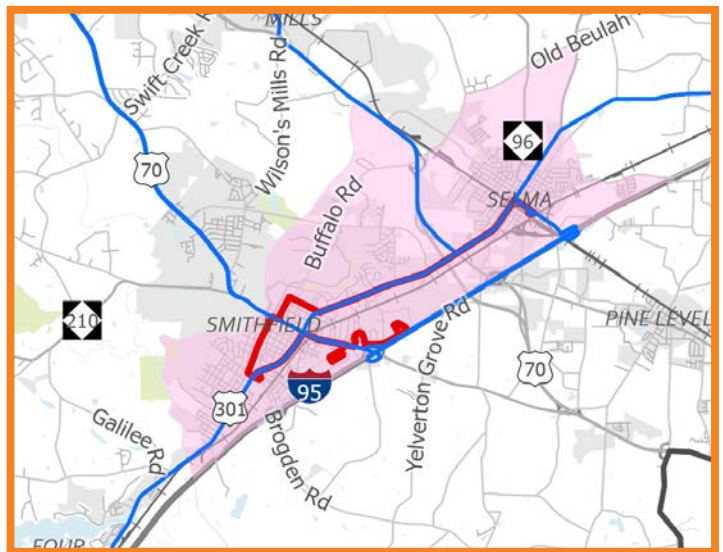
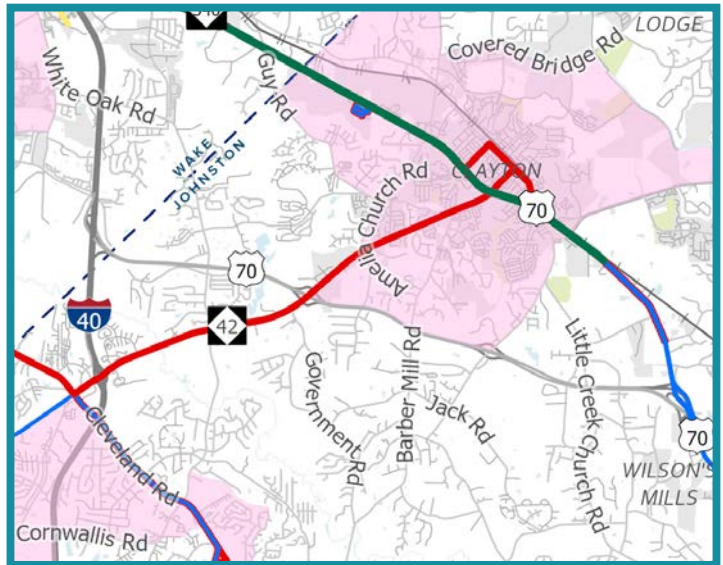
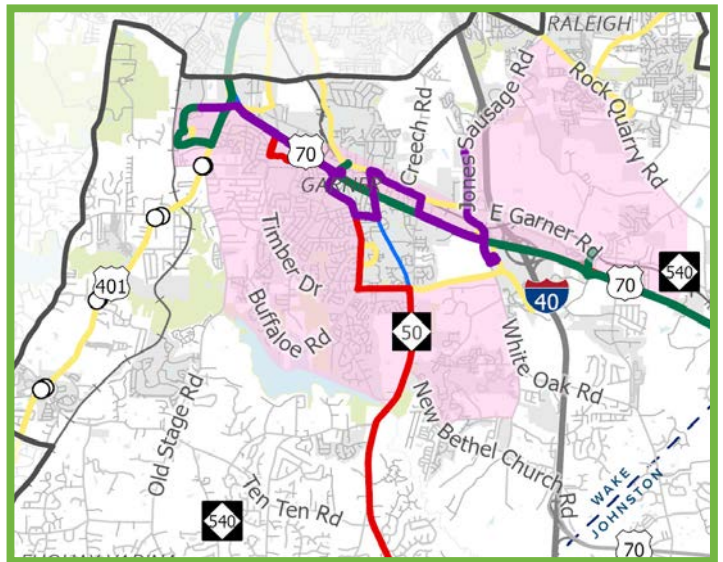
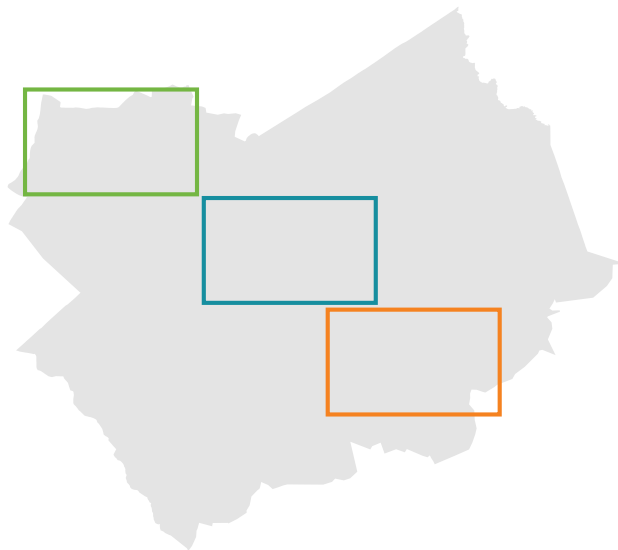
Transit Recommendations



The previous page showed the transit recommendations at the scale of the entire study area. The following inset maps, for three subareas of the southeast area, provide a closer look at the transit recommendations.

The three areas include:

- Garner and Southeast Raleigh
- Clayton and NC 42
- Smithfield and Selma



- SEAS Study Area
- GoRaleigh Routes
- Planned Routes
- Garner-Clayton BRT
- Garner Circulator
- Transit Recommendations
- Circulator
- Connector
- Microtransit Zone
- GoRaleigh 40x Stops



ACTION PLAN

The Southeast Area Study represents an opportunity to create a unified planning approach across boundaries and jurisdictions. As the first integrated planning effort between CAMPO and UCPRPO, the original Southeast Area Study brought together the larger region for idea sharing between jurisdictions, consideration of regional project impacts, identification of a shared vision, and a better understanding of where the region needs to go in the future. Now, the SEAS Update continues to build on that foundation, as CAMPO, UCPRPO, and Southeast Area jurisdictions update their vision for the region and take the next step towards implementing the land use policy, growth strategy, and transportation recommendations needed to meet their shared goals.

This chapter contains project maps and tables. Larger scale maps are found in Appendix G.

How the SEAS Influences Regional Planning

The SEAS Update land use and transportation recommendations were created with a combined effort of stakeholders from the CAMPO and UCPRPO areas. Each area will benefit from the enhanced knowledge of the types of improvements that are important to the region.

Land Use

Addressing transportation issues facing the Southeast Area such as congestion, safety, connectivity, and multimodal access requires coordination with changes in land use policies and strategies and collaboration across jurisdictions. The Preferred Growth Scenario developed as part of the SEAS Update has a strong foundation rooted in multijurisdictional support, and the SEAS Update includes specific land use priority strategies for each Southeast Area jurisdiction in Chapter 4 to help guide the implementation of land use policy that supports the SEAS Update guiding principles.

Transportation

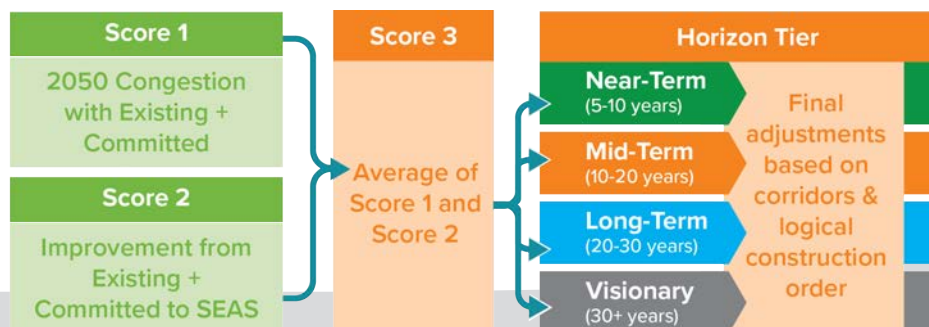
The transportation recommendations within the SEAS Update will become the base of area Comprehensive Transportation Plans (CTP) as aspirational region-wide snapshots of recommended projects based on local needs and desires. Recommendations within the CAMPO area will be considered for evaluation in the fiscally constrained Metropolitan Transportation Plan (MTP), which considers priority needs, project costs, and expected funding to plan out what can be funded and built by 2055. The UCPRPO area is not subject to the development of a Metropolitan Transportation Plan, but UCPRPO can look to the SEAS Update’s prioritization to help identify the best candidate projects to be considered and scored through the State Transportation Improvement Program process. CAMPO and UCPRPO will work with NCDOT to determine how projects recommended in the Southeast Area Study advance into funding and implementation.

Project Prioritization

Project prioritization is a method to determine the highest priority projects based on measurable data, known factors influencing project development, and local input. The projects identified in the SEAS Update are generally sorted into four tiers of horizon years: Near-Term (5-10 years), Mid-Term (10-20 years), Long-Term (20-30 years), and Visionary (30+ years), where the time bands are suggested estimates for full build out of a given project. This prioritization process is intended to be a decision making tool for local jurisdictions and elected officials. The prioritization being considered for the SEAS Update is not tied to funding availability. As such, projects prioritized within a given tier may move to a later tier if funding is not available; conversely, results of the prioritization should not necessarily preclude a given project should funding become available sooner than the horizon tier. In the SEAS Update, each transportation mode was prioritized independently with different methods, as explained in this chapter.

Roadway and Intersection

The prioritization process for roadway and intersection projects scored recommendations based on expected 2050 congestion as a measure of volume over capacity (V/C) and the anticipated congestion improvement a given project would provide if implemented. Projects were sorted into the horizon tiers based on their scoring, with adjustments made as needed to pair projects along specific corridors and ensure a connected network.

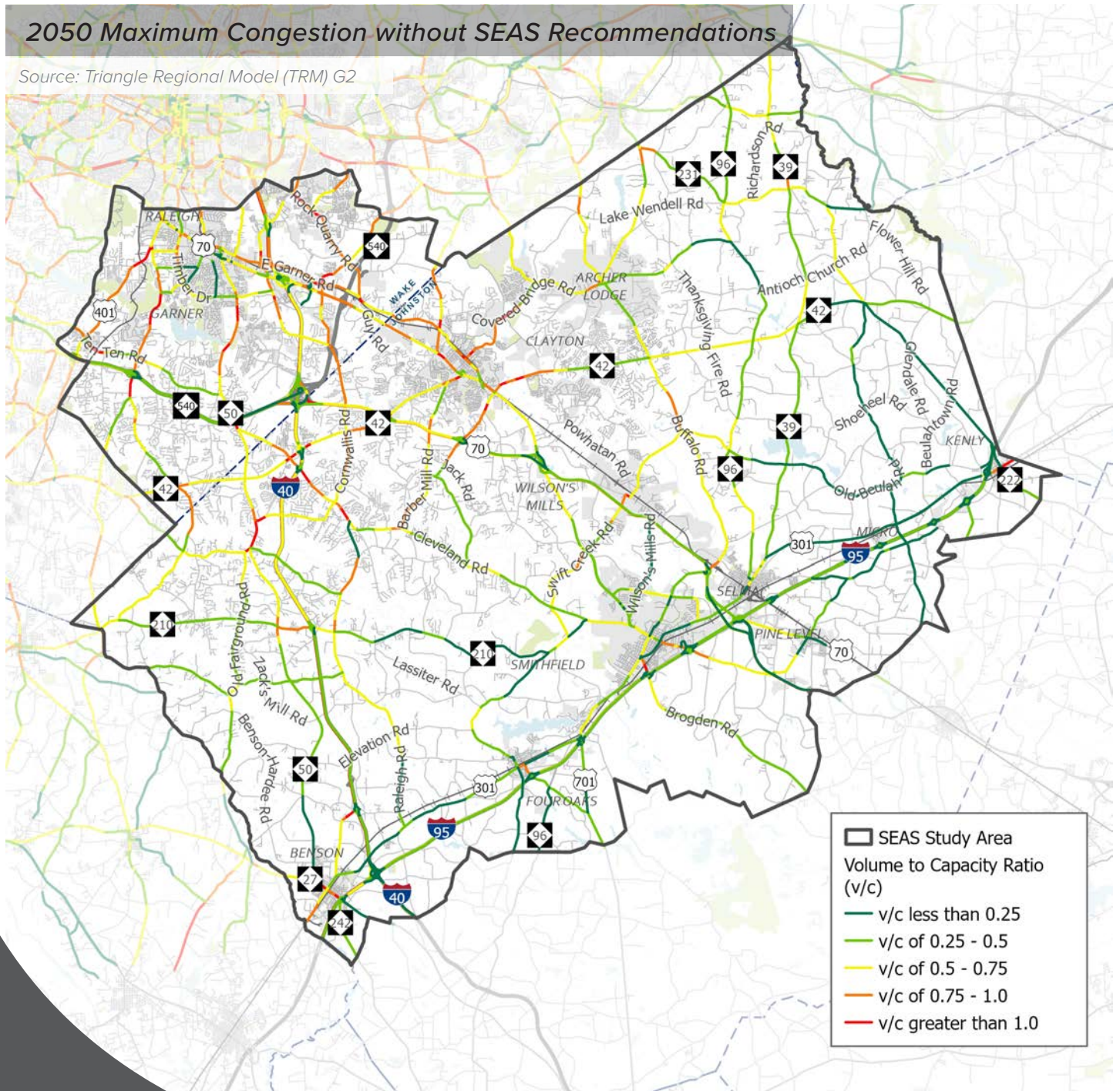


Congestion

The maps below and on the following page shows forecasted maximum congestion as volume over capacity (V/C) during the afternoon peak hour in 2050 if the recommendations of the SEAS Update are not and are implemented, respectively. The map below does include existing projects and projects committed with funding.

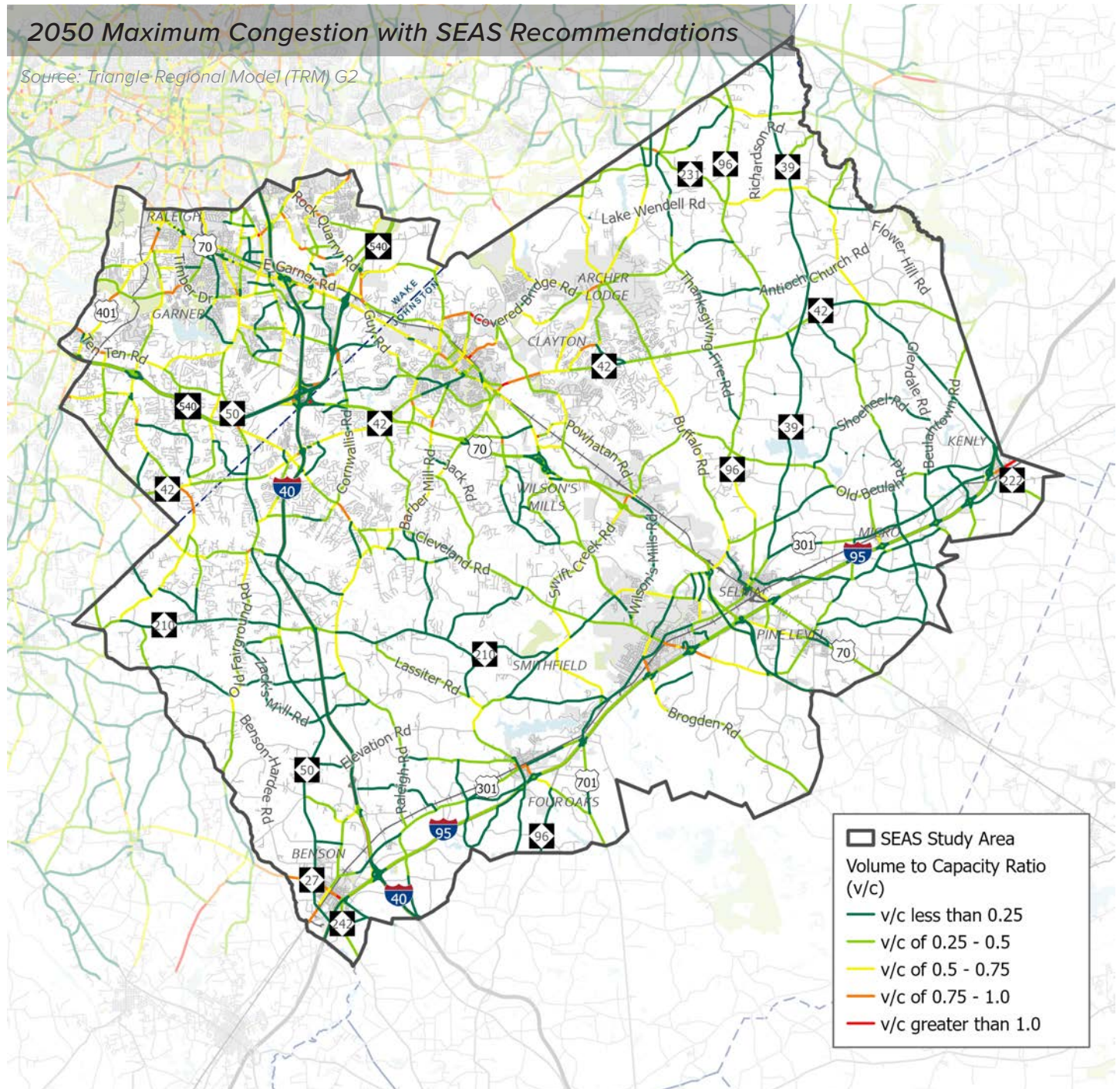
2050 Maximum Congestion without SEAS Recommendations

Source: Triangle Regional Model (TRM) G2



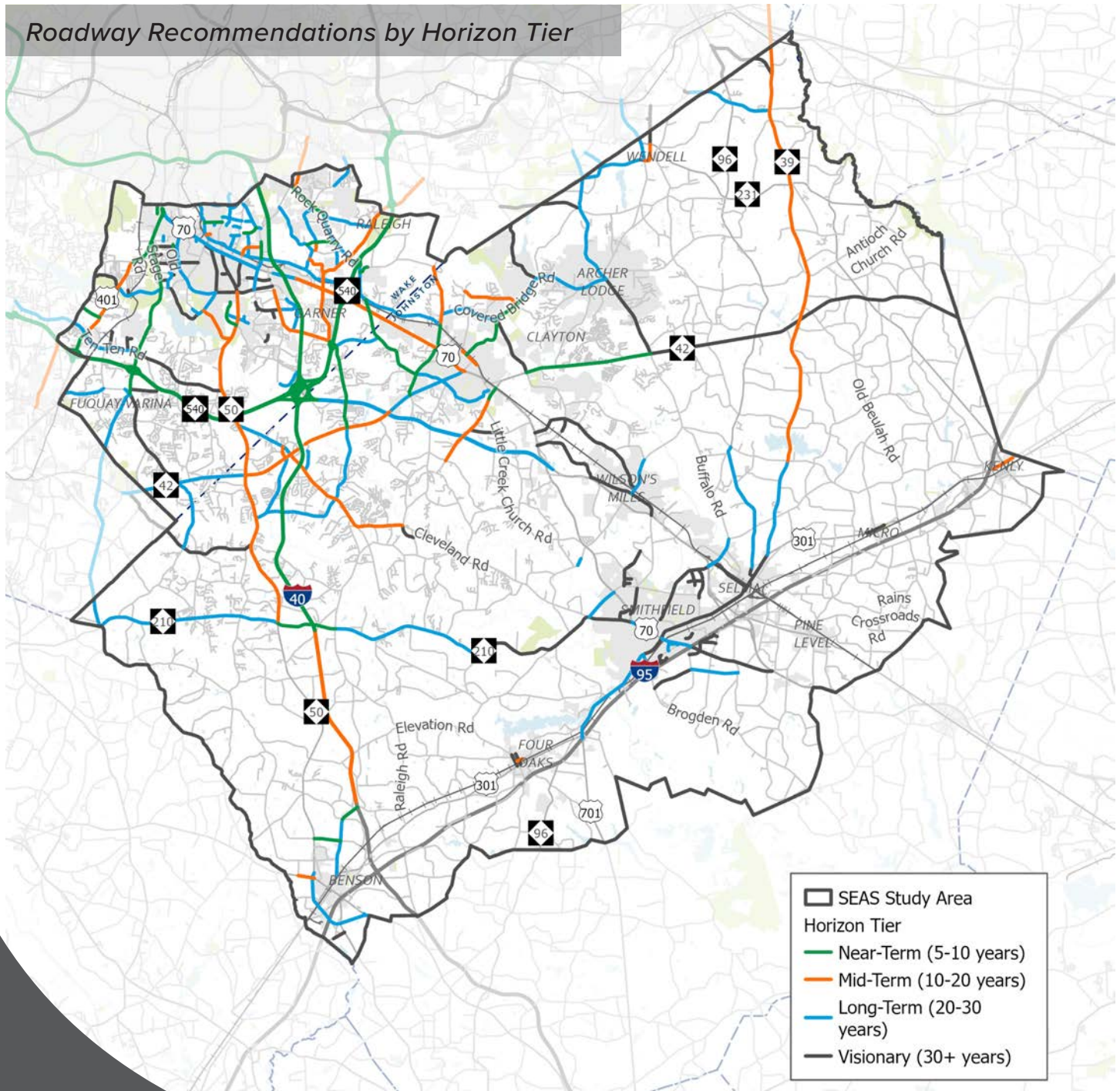
Congestion Improvement

This map below shows that just small, largely segmented portions of roads remain congested (V/C at or greater than 1.0) in 2050, indicating that the SEAS recommendations help to mitigate congestion growth on several major area corridors.



Roadway Prioritization

The map below and the tables on the following pages show the SEAS Update roadway recommendations by their suggested phasing based on the congestion-based prioritization described at the beginning of this chapter.



Roadway Projects by Tier

| ID | Project Location | Improvement | Cost | Horizon |
|---------|--|------------------|---------------|-----------|
| A136a | Lake Wheeler Rd from Tryon Rd to Penny Rd | Center Turn Lane | \$24,640,000 | Near-Term |
| A137a | Old Stage Rd from US 401 to Ten Ten Road | Widening | \$55,190,000 | Near-Term |
| A138c1 | Jones Sausage Rd from Amazon Driveway to E. Garner Rd | Widening | \$14,100,000 | Near-Term |
| A143b | Cornwallis Rd from NC 540 to NC 42 | Widening | \$40,530,000 | Near-Term |
| A201a | Rock Quarry Rd from New Hope Rd to Battle Bridge Rd | Widening | \$23,560,000 | Near-Term |
| A406a | Shotwell Rd from Old US 70 to US 70 Business | Widening | \$13,780,000 | Near-Term |
| A406b | Amelia Church Rd; Shotwell Rd from NC 42 to US 70 | Widening | \$26,280,000 | Near-Term |
| A480a1 | US 401 from US 70 to Garner Station Rd | Widening | \$27,790,000 | Near-Term |
| A480a2 | US 401 from Garner Station Rd to Old Stage Rd | Superstreet | \$24,900,000 | Near-Term |
| A480a3 | US 401 from Old Stage Rd to Simpkins Rd | Superstreet | \$24,890,000 | Near-Term |
| A480b | US 401 from Ten Ten Rd to Wake Tech Wy | Widening | \$51,930,000 | Near-Term |
| F41 | I-40 from Wade Ave to NC 540 | Widening | \$244,580,000 | Near-Term |
| F44a | I-40 from I-440 to US 70 Business | Widening | \$225,890,000 | Near-Term |
| F44b | I-40 from US 70 to NC 42 | Widening | \$323,440,000 | Near-Term |
| F44c | I-40 from NC 42 to NC 210 | Widening | \$163,850,000 | Near-Term |
| Hrnt3c1 | NC 210 from NC 50 to Raleigh Rd | Widening | \$90,910,000 | Near-Term |
| Jhns1b | NC 42 from Glen Laurel Rd to Buffalo Rd | Widening | \$104,440,000 | Near-Term |
| Jhns7a | Guy Rd from Old US 70 to Amelia Church Rd | Widening | \$49,900,000 | Near-Term |
| Jhns13a | NC 42 from US 70 Business to Ranch Rd | New Location | \$2,960,000 | Near-Term |
| Jhns16 | N O'Neil St from W. Main St to Clayton Northern Connector | Center Turn Lane | \$28,670,000 | Near-Term |
| SEAS2 | Old Stage Rd from Ten Ten Road to Rock Service Station Rd | Widening | \$14,060,000 | Near-Term |
| SEAS8 | Covered Bridge Rd from O'Neil St to east of Club Connection Blvd | Center Turn Lane | \$13,620,000 | Near-Term |
| SEAS63 | Whitfield Rd from Auburn Church Rd to Rock Quarry Rd | New Location | \$15,060,000 | Near-Term |
| SEAS185 | Charles St from current end to Wilmington Rd | New Location | \$6,490,000 | Near-Term |
| SEAS188 | New Roadway from W. Garner Rd to Weston Rd | New Location | \$7,090,000 | Near-Term |
| SEAS198 | New Bethel Church Rd from Ackerman Rd Extension to NC 50 | New Location | \$6,440,000 | Near-Term |
| SEAS199 | New Bethel Church Rd from November St to Ackerman Rd Extension | New Location | \$5,210,000 | Near-Term |
| SEAS206 | Denlee Rd from Lake Wheeler Rd to US 401 | New Location | \$7,980,000 | Near-Term |
| SEAS208 | New Roadway from Cindy Dr to Grovemont Rd | New Location | \$880,000 | Near-Term |
| SEAS224 | Wilmington St from Tryon Rd to rear of Belk/Carlie C's Shopping Center | New Location | \$4,540,000 | Near-Term |
| SEAS287 | Banner Elk Rd from NC 50 to NC 242 | New Location | \$10,570,000 | Near-Term |
| SEAS291 | NC 242 from Tarheel Rd to I-40 | Widening | \$9,820,000 | Near-Term |
| A65 | NC 39 from Debnam Rd to Hatcher Rd | Widening | \$167,390,000 | Mid-Term |
| A117 | New Hope Rd from Old Poole Rd to Rock Quarry Rd | Widening | \$28,840,000 | Mid-Term |
| A136b | Lake Wheeler Rd from Penny Rd to Ten Ten Rd | Widening | \$51,070,000 | Mid-Term |
| A136c | Lake Wheeler Rd from Ten Ten Rd to Hilltop-Needlemore Rd | Widening | \$48,910,000 | Mid-Term |
| A143a | White Oak Rd from US 70 to NC 540 | Widening | \$48,060,000 | Mid-Term |
| A169d2 | Southern Wendell Bypass from NC 231 to Wendell Rd | New Location | \$13,230,000 | Mid-Term |

Roadway Projects by Tier (Continued)

| ID | Project Location | Improvement | Cost | Horizon |
|---------|---|------------------|---------------|-----------|
| A203 | Auburn-Knightdale Rd; Raynor Rd from Grasshopper Rd to White Oak Rd | Widening | \$99,600,000 | Mid-Term |
| A228b | NC 50 from Cleveland Rd to NC 42 | Widening | \$24,310,000 | Mid-Term |
| A228c | NC 50 from NC 42 to NC 210 | Widening | \$74,520,000 | Mid-Term |
| A301 | US 70 Business from I-40 to NC 42 | Widening | \$64,840,000 | Mid-Term |
| A406c | Shotwell Rd from Old Baucom Rd to Old US 70 | Widening | \$27,860,000 | Mid-Term |
| A407b3 | NC 42 from NC 50 to Glen Rd | Widening | \$26,860,000 | Mid-Term |
| A480a4 | US 401 from Simpkins Rd to Ten Ten Rd | Widening | \$74,950,000 | Mid-Term |
| A576 | Buffaloe Rd from Aversboro Rd to Benson Rd | Center Turn Lane | \$21,610,000 | Mid-Term |
| F41b | I-40 from NC 540 to Cornwallis Rd | Widening | \$23,690,000 | Mid-Term |
| F44d | I-40 from NC 210 to NC 242 | Widening | \$172,790,000 | Mid-Term |
| F45 | I-40 from Cornwallis Rd to NC 210 | Widening | \$31,170,000 | Mid-Term |
| F46 | I-40 from NC 210 to NC 242 | Widening | \$41,890,000 | Mid-Term |
| Jhns2b | NC 42 from I-40 to US 70 Bypass | Widening | \$48,390,000 | Mid-Term |
| Jhns13b | NC 42 from US 70 Bypass to US 70 Business | Widening | \$28,680,000 | Mid-Term |
| SEAS4 | NC 50 from Timber Dr to Cleveland Rd | Widening | \$37,380,000 | Mid-Term |
| SEAS12 | Main St from Robertson Rd to Smith St | TSM | \$6,540,000 | Mid-Term |
| SEAS61 | Loop Rd from Bobbitt Rd to Covered Bridge Rd | New Location | \$22,410,000 | Mid-Term |
| SEAS62 | Ranch Rd from US 70 Bypass to Jack Rd | Widening | \$20,520,000 | Mid-Term |
| SEAS70 | US 301 from W. Goldsboro St to W. 7th St | TSM | \$9,160,000 | Mid-Term |
| SEAS73 | New roadway from Auburn Church Rd to Auburn-Knightdale Rd | New Location | \$8,830,000 | Mid-Term |
| SEAS190 | Curtiss Dr from W. Garner Rd to current end | New Location | \$1,860,000 | Mid-Term |
| SEAS191 | New Rand Rd from E. Garner Rd to Jones Sausage Rd | New Location | \$11,040,000 | Mid-Term |
| SEAS233 | New roadway from Whiffield Rd Extension to Wall Store Rd | New Location | \$20,580,000 | Mid-Term |
| SEAS252 | Cleveland Rd from NC 42 to Cornwallis Rd | Widening | \$40,980,000 | Mid-Term |
| SEAS253 | Cleveland Rd from Cornwallis Rd to Barber Mill Rd | TSM | \$24,030,000 | Mid-Term |
| SEAS271 | E Sanders St from N. Main St to Maple Ave | Modernization | \$340,000 | Mid-Term |
| SEAS278 | Glen Rd from Cleveland Rd to NC 42 | New Location | \$5,340,000 | Mid-Term |
| SEAS290 | NC 27 from Mingo Rd to Main St | Center Turn Lane | \$6,160,000 | Mid-Term |
| A137c | Old Stage Rd from Rock Service Station Rd to NC 42 | Widening | \$42,970,000 | Long-Term |
| A137d | Old Stage Rd from NC 42 to NC 210 | Widening | \$70,820,000 | Long-Term |
| A138a | Jones Sausage Rd from US 70 to Timber Dr Ext | New Location | \$15,160,000 | Long-Term |
| A138b | Jones Sausage Rd from Garner Rd to US 70 | New Location | \$31,960,000 | Long-Term |
| A138d | Escondido Farm Rd from White Oak Rd to Guy Rd | New Location | \$35,840,000 | Long-Term |
| A148c | Eagle Rock Rd; Buffalo Rd from Lake Myra Rd to Covered Bridge Rd | Widening | \$65,850,000 | Long-Term |
| A201b | Rock Quarry Rd from Battle Bridge Rd to E. Garner Rd | Widening | \$52,860,000 | Long-Term |
| A202 | Garner Rd from Rock Quarry Rd to Shotwell Rd | Widening | \$42,310,000 | Long-Term |
| A214 | Garner Rd from Tryon Rd to Rock Quarry Rd | Center Turn Lane | \$104,520,000 | Long-Term |
| A300 | US 70 Business from US 401 to I-40 | Widening | \$164,420,000 | Long-Term |

TSM = Transportation Systems Management

Roadway Projects by Tier (Continued)

| ID | Project Location | Improvement | Cost | Horizon |
|---------|---|-------------------|---------------|-----------|
| A400a | Ten Ten Rd from Bells Lake Rd to Old Stage Rd | Widening | \$67,010,000 | Long-Term |
| A407b2 | NC 42 from study area boundary to NC 50 | Widening | \$57,680,000 | Long-Term |
| A435 | Battle Bridge Rd from Rock Quarry Rd to Auburn-Knightdale Rd | Center Turn Lane | \$14,800,000 | Long-Term |
| A539 | Banks Rd from US 401 to Fanny Brown Rd | Center Turn Lane | \$22,630,000 | Long-Term |
| A540b | Rock Service Station Rd from NC 42 to Mt Pleasant Rd | Center Turn Lane | \$33,560,000 | Long-Term |
| A578 | Auburn Church Rd from Jones Sausage Rd to Garner Rd | Center Turn Lane | \$37,230,000 | Long-Term |
| A683b | Barwell Rd from Poole Rd to Berkely Lake Dr | Center Turn Lane | \$17,520,000 | Long-Term |
| A690 | Stotts Mill Rd from Buffalo Rd to Wendell Rd | Widening | \$35,960,000 | Long-Term |
| A691 | New roadway from Lake Glad Rd to Stotts Mill Rd | New Location | \$10,060,000 | Long-Term |
| A693 | S. Selma Rd from Old Wilson Rd to Stotts Mill Rd | Center Turn Lane | \$21,380,000 | Long-Term |
| A741 | Aversboro Rd from Timber Dr to Thompson Rd Extension | Center Turn Lane | \$14,600,000 | Long-Term |
| F14 | US 70 Bypass from I-40 to US-70 Business | Widening | \$180,660,000 | Long-Term |
| Hrnt3b | NC 210 from Old Stage Rd to NC 50 | Widening | \$85,420,000 | Long-Term |
| Hrnt3c2 | NC 210 from Raleigh Rd to Lassiter Pond Rd | Widening | \$67,010,000 | Long-Term |
| Jhns2a | NC 42 from US 70 Bypass to US 70 Business | Widening | \$40,520,000 | Long-Term |
| Jhns4b | Covered Bridge Rd from Shotwell Rd to N. O'Neil St | Widening | \$26,150,000 | Long-Term |
| Jhns7b | Guy Rd from Amelia Church Rd to NC 42 | Widening | \$14,340,000 | Long-Term |
| Jhns10a | Cleveland Rd from NC 50 to NC 42 | Widening | \$33,800,000 | Long-Term |
| Jhns14 | Clayton Northern Connector from N. O'Neil St to Covered Bridge Rd | New Location | \$1,850,000 | Long-Term |
| SEAS10 | Earpsboro Chamblee Rd; Earpsboro Rd from Morphus Bridge Rd to NC 39 | Widening | \$43,430,000 | Long-Term |
| SEAS19 | Swift Creek Rd from 0.5mi north of Airport Industrial Dr to Airport Industrial Dr | Center Turn Lane | \$2,700,000 | Long-Term |
| SEAS27 | New Pearl Rd from Barwell Rd to Auburn Church Rd | New Location | \$30,320,000 | Long-Term |
| SEAS30 | Beichler Rd from US 70 to Beichler Rd | New Location | \$1,570,000 | Long-Term |
| SEAS44 | Stotts Mill Rd from Buffalo Rd to Wendell Rd | Modernization | \$3,930,000 | Long-Term |
| SEAS65 | New roadway from Wall Store Rd to Auburn-Knightdale Rd | New Location | \$6,680,000 | Long-Term |
| SEAS69 | Fox Walk Pth from White Oak Rd to Timber Drive E. Extension | New Location | \$8,580,000 | Long-Term |
| SEAS71 | Cleveland Crossing Dr from Cleveland Crossing Dr to Cleveland Rd | New Location | \$8,310,000 | Long-Term |
| SEAS180 | Timber Dr from US 70 to Vandora Springs Rd | Access Management | \$24,010,000 | Long-Term |
| SEAS183 | Timber Dr from Vandora Springs Rd to Aversboro Rd | Access Management | \$23,010,000 | Long-Term |
| SEAS184 | Jewell St from current end to Wilmington Rd | New Location | \$3,070,000 | Long-Term |
| SEAS186 | New roadway from Longview St to Creech Rd | New Location | \$3,490,000 | Long-Term |
| SEAS187 | Cofield Aly from new roadway to Garner Rd | New Location | \$5,500,000 | Long-Term |
| SEAS189 | Quiet Refuge Ln from current end to new roadway | New Location | \$1,310,000 | Long-Term |
| SEAS192 | New roadway from Charles St Extension to E. Garner Rd | New Location | \$10,650,000 | Long-Term |
| SEAS197 | Skipping Rock Ln from current end to Ackerman Rd Ext | New Location | \$2,400,000 | Long-Term |
| SEAS209 | Roan Dr from Poplar Springs Church Rd to Vandora Springs Rd | New Location | \$7,220,000 | Long-Term |
| SEAS212 | Thompson Rd from current end to Aversboro Rd | New Location | \$3,360,000 | Long-Term |

TSM = Transportation Systems Management

Roadway Projects by Tier (Continued)

| ID | Project Location | Improvement | Cost | Horizon |
|---------|---|------------------|--------------|-----------|
| SEAS214 | Crosspine Dr from Bentpine Dr to Maxwell Dr | New Location | \$2,340,000 | Long-Term |
| SEAS215 | Ackerman Rd from New Bethel Church Rd Extension to NC 50 | New Location | \$8,520,000 | Long-Term |
| SEAS216 | Wrenn Rd from current end to New Bethel Church Rd Extension | New Location | \$9,810,000 | Long-Term |
| SEAS219 | Creek Commons Ave from Muirfield Ridge Dr to Creech Rd | New Location | \$3,370,000 | Long-Term |
| SEAS220 | Timber Drive E. from Adeline Wy to White Oak Rd | New Location | \$26,090,000 | Long-Term |
| SEAS222 | Meadowbrook Dr from Weston Rd to Creech Rd | New Location | \$8,730,000 | Long-Term |
| SEAS223 | Tryon Rd from Cyrus St to Rivermist Dr | New Location | \$30,200,000 | Long-Term |
| SEAS226 | Johnson St from Creech Rd to Avery St | New Location | \$14,420,000 | Long-Term |
| SEAS244 | Vandora Springs Rd from US 401 to Old Stage Rd | New Location | \$21,420,000 | Long-Term |
| SEAS245 | Ackerman Rd from NC 50 to Anton Wy | New Location | \$6,490,000 | Long-Term |
| SEAS246 | Market St from Brightleaf Blvd to I-95 | TSM | \$13,160,000 | Long-Term |
| SEAS248 | New roadway from Mallard Rd to Hill Rd | New Location | \$18,710,000 | Long-Term |
| SEAS251 | Market St from NC 210 to Front St | TSM | \$3,650,000 | Long-Term |
| SEAS259 | US 301 from I-95 to Brogden Rd | Widening | \$68,010,000 | Long-Term |
| SEAS263 | Brogden Rd from S. Brightleaf Blvd to I-95 | Modernization | \$1,030,000 | Long-Term |
| SEAS264 | Buffalo Rd from US 70 to Old Beulah Rd | Modernization | \$2,600,000 | Long-Term |
| SEAS266 | Clayton Southern Connector from Little Creek Church Rd to NC 42 | New Location | \$34,460,000 | Long-Term |
| SEAS268 | Fire Dept Rd from Southerland Rd to Wilson's Mills Rd | Modernization | \$3,100,000 | Long-Term |
| SEAS272 | Covered Bridge Rd from Pritchard Rd to Clayton Northern Connector | Widening | \$37,230,000 | Long-Term |
| SEAS279 | Covered Bridge Rd from Pritchard Rd to Buffalo Rd | TSM | \$53,000,000 | Long-Term |
| SEAS281 | New roadway from Market St to College Rd | New Location | \$7,530,000 | Long-Term |
| SEAS282 | West Smithfield Connector from NC 210 to Market St | New Location | \$15,310,000 | Long-Term |
| SEAS283 | NC 39 from Little Devine Rd to US 301 | Modernization | \$7,650,000 | Long-Term |
| SEAS284 | NC 96 from Little Devine Rd to Poole Dr | Modernization | \$10,080,000 | Long-Term |
| SEAS288 | Benson Western Bypass from NC 50 to NC 50 | New Location | \$37,330,000 | Long-Term |
| SEAS289 | Benson Western Bypass from NC 50 to NC 50 | New Location | \$740,000 | Long-Term |
| SEAS292 | NC 242 from Tarheel Rd to N. Wall St | Widening | \$34,410,000 | Long-Term |
| SEAS294 | Cornwallis Rd from Old Drugstore Rd to NC 42 | TSM | \$54,000,000 | Long-Term |
| SEAS303 | Old Drug Store Rd from NC 42 to NC 50 | TSM | \$33,310,000 | Long-Term |
| SEAS304 | Wilmington Rd from Creech Rd to current end | New Location | \$16,910,000 | Long-Term |
| SEAS305 | Wilmington Rd from current end to Jones Sausage Rd | Widening | \$16,770,000 | Long-Term |
| A88 | New Rand Rd from US 70 Business to Benson Rd | Center Turn Lane | \$16,060,000 | Visionary |
| A144 | Garner Rd from US 70 to Timber Dr | Center Turn Lane | \$21,900,000 | Visionary |
| A148d | Buffalo Rd from Covered Bridge Rd to NC 42 | Widening | \$40,470,000 | Visionary |
| A169d1 | Eastern Wendell Bypass from Morphis Bridge Rd to NC 231 | New Location | \$26,590,000 | Visionary |
| A400b | Ten Ten Rd from Old Stage Rd to NC 50 | Widening | \$45,070,000 | Visionary |
| A540a | Rock Service Station Rd from Old Stage Rd to NC 42 | Center Turn Lane | \$48,780,000 | Visionary |
| A541 | Mt Pleasant Rd from NC 42 to NC 50 | Widening | \$76,380,000 | Visionary |
| A574 | Grovemont Rd from US 401 to Timber Dr | Center Turn Lane | \$14,610,000 | Visionary |

TSM = Transportation Systems Management

Roadway Projects by Tier (Continued)

| ID | Project Location | Improvement | Cost | Horizon |
|---------|---|-------------------|--------------|-----------|
| A575 | Woodland Rd from Old Stage Rd to Vandora Springs Rd | Center Turn Lane | \$21,460,000 | Visionary |
| A582 | Bissette Rd/Lake Wendell Rd from Smithfield Rd to Medlin Rd | Center Turn Lane | \$36,440,000 | Visionary |
| A665 | Perry Curtis Rd/Wake County Line Rd from S. Arendale Av to NC 39 | Center Turn Lane | \$23,160,000 | Visionary |
| A798 | NC 96 from Green Grove Rd to Rice Rd | Widening | \$21,200,000 | Visionary |
| Jhns4a1 | Clayton Northern Connector from NC 42 to N. O'Neil St | New Location | \$20,060,000 | Visionary |
| Jhns4a2 | Clayton Northern Connector from N. O'Neil St to NC 42 | Widening | \$29,040,000 | Visionary |
| Jhns6 | Prichard Rd; Smithfield Rd from Wake County Line to Covered Bridge Rd | Widening | \$34,530,000 | Visionary |
| Jhns15 | NC 42 from Buffalo Rd to CAMPO Boundary | TSM | \$24,550,000 | Visionary |
| Jhns17 | Pony Farm Rd from Ranch Rd to Little Creek Church Rd | New Location | \$20,320,000 | Visionary |
| SEAS16 | Moss Rd from Morphus Bridge Rd to Earpsboro Chamblee Rd | New Location | \$67,780,000 | Visionary |
| SEAS29 | Aversboro Rd from US 70 to Timber Dr | TSM | \$27,580,000 | Visionary |
| SEAS54 | New roadway from Mallard Rd to US 70 Business | New Location | \$4,620,000 | Visionary |
| SEAS55 | New roadway from US 70 Business to new roadway | New Location | \$9,610,000 | Visionary |
| SEAS56 | New roadway from US 70 Business to Yelverton Grove Rd | New Location | \$9,700,000 | Visionary |
| SEAS60 | New roadway from new roadway to Yelverton Grove Rd | New Location | \$1,570,000 | Visionary |
| SEAS64 | Majestic Peak Dr from Bryan Rd to Alderbranch Ct | New Location | \$3,630,000 | Visionary |
| SEAS179 | Grovemont Rd from Fayetteville Rd to Old Stage Rd | New Location | \$1,950,000 | Visionary |
| SEAS181 | Fifth Ave from Vandora Springs Rd to Aversboro Rd | Access Management | \$3,140,000 | Visionary |
| SEAS182 | Timber Dr from Aversboro Rd to White Oak Rd | Access Management | \$26,010,000 | Visionary |
| SEAS193 | Wakeland Dr from Long Ave to White Oak Rd | New Location | \$9,720,000 | Visionary |
| SEAS194 | Poole Dr from Lawndale St to NC 50 | New Location | \$2,940,000 | Visionary |
| SEAS195 | Coffeeberry Ct from Fox Walk Pth Extension to Twinberry Ln | New Location | \$980,000 | Visionary |
| SEAS196 | Fox Walk Pth from Fox Trap Ct to White Oak Rd | New Location | \$11,260,000 | Visionary |
| SEAS200 | Bayberry Woods Dr from Fox Walk Pth to current end | New Location | \$3,740,000 | Visionary |
| SEAS201 | Banks Rd from Old Stage Rd to Holland Church Rd | New Location | \$10,560,000 | Visionary |
| SEAS202 | Landsburg Dr from Okamoto Dr to current end | New Location | \$5,340,000 | Visionary |
| SEAS203 | South Mountain Dr from Landsburg Dr Extension to current end | New Location | \$300,000 | Visionary |
| SEAS204 | Kanaskis Rd from current end to Ten Ten Rd | New Location | \$5,960,000 | Visionary |
| SEAS205 | Hurst Dr from Kanaskis Rd Extension to current end | New Location | \$2,190,000 | Visionary |
| SEAS207 | Legend Rd from Old Stage Rd to Lakeside Trail | New Location | \$3,230,000 | Visionary |
| SEAS210 | New roadway from new roadway to Hall Blvd | New Location | \$1,100,000 | Visionary |
| SEAS211 | New roadway from Old Stage Rd to new roadway | New Location | \$3,230,000 | Visionary |
| SEAS213 | Malibu Drive from current end to Vandora Springs Rd Extension | New Location | \$2,450,000 | Visionary |
| SEAS217 | Buffaloe Rd from Vandora Springs Rd to Garner Town Limits | Access Management | \$13,640,000 | Visionary |
| SEAS218 | Buffaloe Rd from Garner Town Limits to Garner Town Limits | Access Management | \$5,630,000 | Visionary |
| SEAS221 | Lake Wheeler Park from Lake Wheeler Park to US 401 | New Location | \$16,140,000 | Visionary |
| SEAS225 | Idlewood Village Dr from current end to Tryon Rd Extension | New Location | \$1,200,000 | Visionary |
| SEAS247 | New roadway from Brogden Rd to Mallard Rd | New Location | \$16,770,000 | Visionary |

TSM = Transportation Systems Management

Roadway Projects by Tier (Continued)

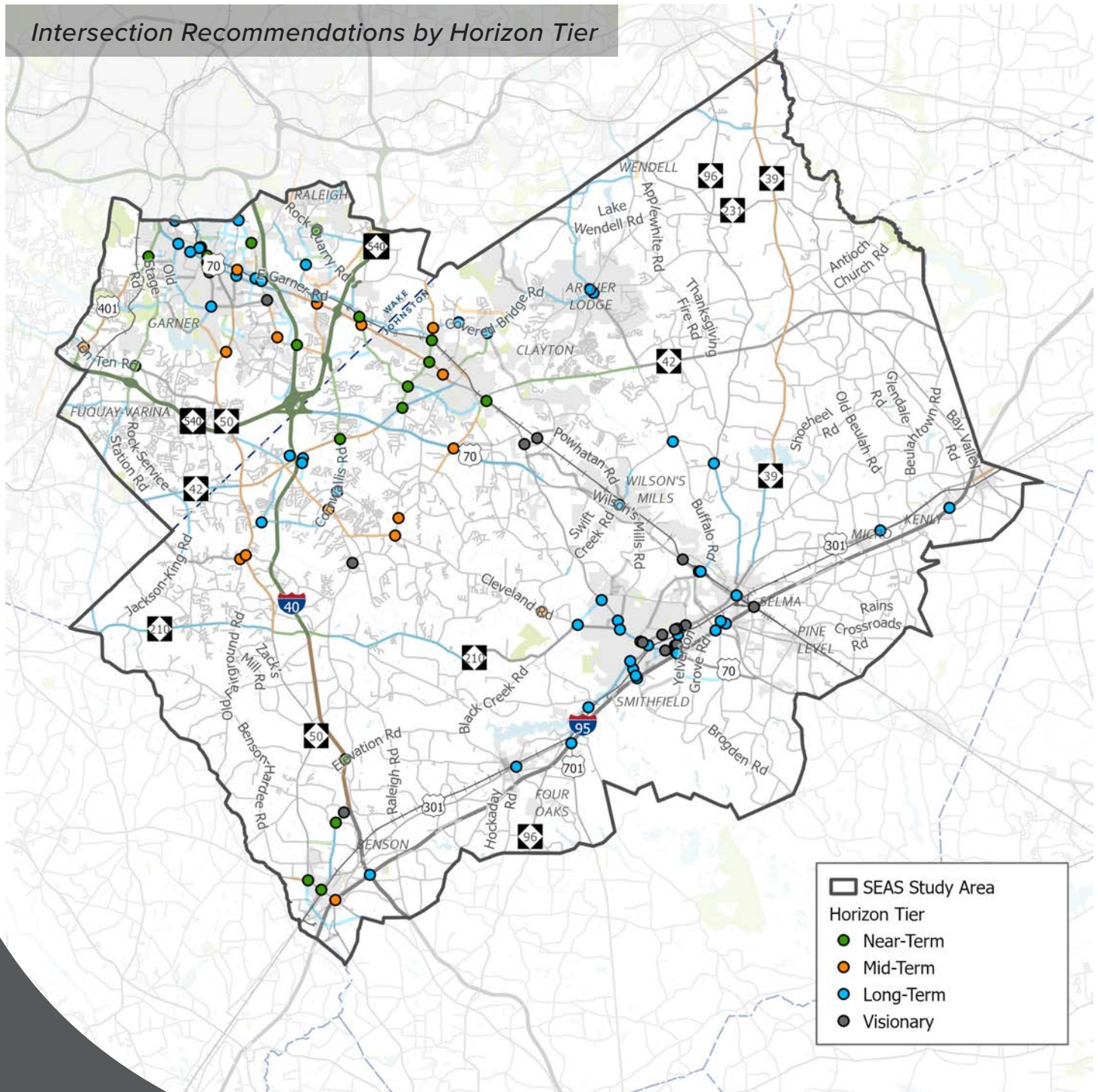
| ID | Project Location | Improvement | Cost | Horizon |
|---------|---|------------------|--------------|-----------|
| SEAS249 | Old Farm Rd from new roadway to current end | New Location | \$2,760,000 | Visionary |
| SEAS250 | Peedin Rd from Outlet Center Dr to Venture Dr | New Location | \$6,360,000 | Visionary |
| SEAS254 | Clayton Industrial Connector from NC 42 to GLP One Wy | New Location | \$18,690,000 | Visionary |
| SEAS255 | Brightleaf Blvd from Brogden Rd to Market St | TSM | \$10,520,000 | Visionary |
| SEAS256 | Pollock St from US 70 Bypass to NC 39 | TSM | \$29,620,000 | Visionary |
| SEAS257 | Brightleaf Blvd from Booker Dairy Rd to Ricks Rd | TSM | \$9,590,000 | Visionary |
| SEAS258 | Brightleaf Blvd from Market St to Booker Dairy Rd | TSM | \$18,210,000 | Visionary |
| SEAS260 | US 301 within Micro Town Limits | Modernization | \$1,080,000 | Visionary |
| SEAS261 | NC 210 from Lassiter Pond Rd to Market St | Modernization | \$10,340,000 | Visionary |
| SEAS262 | N. Baker St from E. Hatcher St to E. Wellons St | Modernization | \$670,000 | Visionary |
| SEAS265 | Buffalo Rd from US 70 to Hospital Rd | Modernization | \$6,030,000 | Visionary |
| SEAS267 | N. Church St from W. Hatcher St to W. Wellons St | Modernization | \$890,000 | Visionary |
| SEAS269 | Powhatan Rd from US 70 Business to Fire Dept Rd | Modernization | \$10,810,000 | Visionary |
| SEAS270 | W. Sanders St from N. Church St to N. Main St | Modernization | \$120,000 | Visionary |
| SEAS273 | Wilson's Mills Rd from Swift Creek Rd to US 70 | Modernization | \$2,140,000 | Visionary |
| SEAS274 | Wilson's Mills Rd from Gordon Rd to Swift Creek Rd | Modernization | \$2,220,000 | Visionary |
| SEAS275 | Gordon Rd from US 70 Business to Wilson's Mills Rd | Modernization | \$4,200,000 | Visionary |
| SEAS276 | Wilson's Mills Rd from M Durwood Stephenson Hwy to Market St | Center Turn Lane | \$13,100,000 | Visionary |
| SEAS277 | Barber Mill Rd from Cleveland Rd to Monroe Rd | New Location | \$7,560,000 | Visionary |
| SEAS280 | Jaguar Dr from Martin Luther King Jr Rd to Jaguar Rd | New Location | \$8,640,000 | Visionary |
| SEAS285 | N. Sumner St from W. Richardson St to Poole Dr | Modernization | \$430,000 | Visionary |
| SEAS286 | W. Richardson St from N. Sumner St to Pollock St | Modernization | \$230,000 | Visionary |
| SEAS293 | Ashley Rd/Massengill Farm Rd from Massengill Farm Rd to NC 242 | New Location | \$5,140,000 | Visionary |
| SEAS295 | Noble St from Buffalo Rd to Pollock St | Center Turn Lane | \$17,870,000 | Visionary |
| SEAS296 | US 70 Business from I-95 to US 70 | Center Turn Lane | \$41,250,000 | Visionary |
| SEAS297 | Booker Dairy Rd from Buffalo Rd to M Durwood Stephenson Pkwy | New Location | \$18,470,000 | Visionary |
| SEAS298 | New roadway from M Durwood Stephenson Pkwy to Lee Youngblood Rd | New Location | \$12,800,000 | Visionary |
| SEAS299 | New roadway from NC 210 to US 70 Business | New Location | \$6,910,000 | Visionary |
| SEAS300 | New roadway from Kellie Rd to Booker Dairy Rd Extension | New Location | \$8,700,000 | Visionary |
| SEAS301 | Bradford Rd from Buffalo Rd to current end | New Location | \$6,550,000 | Visionary |
| SEAS302 | Stephenson Dr from new roadway to current end | New Location | \$2,430,000 | Visionary |

TSM = Transportation Systems Management



Intersection Prioritization

The map below and the tables on the following pages show the SEAS Update intersection recommendations by their suggested phasing based on the congestion-based prioritization described at the beginning of this chapter.



Intersection Projects by Tier

| ID | Project Location | Improvement | Cost | Horizon |
|---------|---|--------------------------|--------------|-----------|
| A143a1 | I-40/White Oak Rd | Interchange | \$20,455,050 | Near-Term |
| A742 | Vandora Hills Rd/RR | Grade Separation | \$5,644,918 | Near-Term |
| Jhns13c | US 70 BUS/NC 42/Ranch Rd | Interchange | \$58,284,000 | Near-Term |
| SCI-1 | Guy Rd/RR | Grade Separation | \$6,320,000 | Near-Term |
| SCI-1 | Shotwell Rd/RR | Grade Separation | \$6,320,000 | Near-Term |
| SEAS7 | NC 42/Cornwallis Rd | Intersection Improvement | \$1,710,000 | Near-Term |
| SEAS15 | NC 50/W Main Street/Benson Western Bypass | Intersection Realignment | \$1,580,000 | Near-Term |
| SEAS20 | Ten Ten Rd/Old Stage Rd | Intersection Improvement | \$1,710,000 | Near-Term |
| SEAS21 | US 301/NC 50 | Intersection Improvement | \$1,710,000 | Near-Term |
| SEAS26 | Garner Rd/Yeargan Rd | Intersection Improvement | \$1,710,000 | Near-Term |
| SEAS39 | NC 242/Tarheel Rd | Intersection Improvement | \$100,000 | Near-Term |
| SEAS74 | Guy Rd/Amelia Church Rd | Intersection Improvement | \$1,710,000 | Near-Term |
| SEAS75 | I-40/Elevation Rd | Interchange | \$41,980,000 | Near-Term |
| SEAS78 | US 70 BUS/Shotwell Rd | Intersection Improvement | \$1,710,000 | Near-Term |
| SEAS120 | Rock Quarry Rd/Battle Bridge Rd | Intersection Improvement | \$100,000 | Near-Term |
| SEAS137 | Wilmington Rd/Charles St Ext | Intersection Realignment | \$970,000 | Near-Term |
| SEAS178 | NC 42/Amelia Church Rd | Intersection Improvement | \$1,710,000 | Near-Term |
| SEAS231 | Fayetteville Rd/Old Stage rd | Intersection Improvement | \$1,710,000 | Near-Term |
| A678 | US 401/Ten Ten Rd | Interchange | \$95,050,000 | Mid-Term |
| SCI-1 | New Rand Rd/RR | Grade Separation | \$7,510,000 | Mid-Term |
| SEAS4a | Cleveland Rd/Barber Mill Rd | Intersection Improvement | \$100,000 | Mid-Term |
| SEAS4b | Barber Mill Rd/Government Rd | Intersection Improvement | \$100,000 | Mid-Term |
| SEAS5 | Cleveland Rd/Cornwallis Rd | Intersection Improvement | \$1,710,000 | Mid-Term |
| SEAS23 | US 70/Guy Rd | Intersection Improvement | \$3,420,000 | Mid-Term |
| SEAS32 | Mount Pleasant Rd/Old Fairground Rd/Edmonson Dr | Intersection Improvement | \$4,100,000 | Mid-Term |
| SEAS33 | I-95/NC 50 | Interchange | \$20,140,000 | Mid-Term |
| SEAS50 | US 70/Raynor Rd | Intersection Improvement | \$1,710,000 | Mid-Term |
| SEAS52 | White Oak Rd/Hebron Church Rd/Ackerman Rd | Intersection Realignment | \$1,070,000 | Mid-Term |
| SEAS79 | NC 50/Mount Pleasant Rd/Sanders Rd | Intersection Improvement | \$1,710,000 | Mid-Term |
| SEAS82 | US 70/Ranch Road | Interchange | \$10,240,000 | Mid-Term |
| SEAS119 | US 70 BUS/Amelia Church Rd/Robertson St | Intersection Improvement | \$1,710,000 | Mid-Term |
| SEAS165 | Shotwell Rd/Covered Bridge Rd | Intersection Improvement | \$100,000 | Mid-Term |
| SEAS230 | Benson Rd/Buffalo Rd | Intersection Improvement | \$1,710,000 | Mid-Term |
| SEAS307 | Cleveland Rd/Swift Creek Rd | Intersection Improvement | \$2,097,595 | Mid-Term |
| A138b | Jones Sausage Rd/RR | Grade Separation | \$27,604,000 | Long-Term |
| A139 | US 70/Timber Dr | CFI | \$17,830,000 | Long-Term |
| SCI-1 | Auburn Knightdale Rd/RR | Grade Separation | \$7,510,000 | Long-Term |
| SCI-1 | Yeargan Rd/RR | Grade Separation | \$7,510,000 | Long-Term |
| SEAS1 | Timber Dr/Aversboro Rd | Intersection Improvement | \$1,710,000 | Long-Term |

CFI = Continuous Flow Intersection

Intersection Projects by Tier (Continued)

| ID | Project Location | Improvement | Cost | Horizon |
|---------|---|--------------------------|---------------|-----------|
| SEAS3 | Jones Sausage Rd/RR | Road Closure | \$31,960,000 | Long-Term |
| SEAS3a | Buffalo Rd/Noble St/Baugh Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS3b | Buffalo Rd/RR | Grade Separation | \$6,320,000 | Long-Term |
| SEAS6 | Cornwallis Rd/Josephine Rd | Intersection Improvement | \$100,000 | Long-Term |
| SEAS9 | Buffalo Rd/Covered Bridge Rd/Wendell Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS11 | US 301/Keen Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS13 | Market St/NC 210 | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS14 | Market St/Wilson's Mills Rd | Intersection Improvement | \$3,072,532 | Long-Term |
| SEAS17 | Covered Bridge Rd/O'Neil St | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS18 | US 70/Ricks Rd/Outlet Center Drive | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS22 | Market St/Brightleaf Blvd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS24 | I-95/US 70 | Interchange | \$25,940,000 | Long-Term |
| SEAS25 | US 70/New Rand Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS31 | Buffalo Rd/Archer Lodge Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS35 | NC 96/Live Oak Church Rd | Intersection Improvement | \$100,000 | Long-Term |
| SEAS38 | NC 210/Cleveland Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS45 | Hammond Rd/Tryon Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS47 | I-95/US 70 BYP | Interchange | \$35,000,000 | Long-Term |
| SEAS48 | Mechanical Blvd/Yeargan Rd | Intersection Improvement | \$100,000 | Long-Term |
| SEAS51 | I-40/I-95 | Interchange | \$219,770,000 | Long-Term |
| SEAS53 | I-95/Market St | Interchange | \$34,500,000 | Long-Term |
| SEAS66 | Auburn Church Rd/Wall Store Rd | Intersection Realignment | \$2,140,000 | Long-Term |
| SEAS68 | Cleveland Crossing Dr/Walmart access | Intersection Improvement | \$3,080,000 | Long-Term |
| SEAS72 | Cleveland Crossing Dr/Cleveland Crossing Dr Ext | Intersection Realignment | \$490,000 | Long-Term |
| SEAS77 | Brightleaf Blvd/Galilee Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS81 | Cornwallis Rd/Old Drug Store Rd | Intersection Realignment | \$680,000 | Long-Term |
| SEAS83 | Covered Bridge Rd/City Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS99 | Webb St/RR | Road Closure | \$115,000 | Long-Term |
| SEAS100 | Peedin Rd/RR | Grade Separation | \$7,510,000 | Long-Term |
| SEAS101 | Brogden Rd/RR | Grade Separation | \$7,510,000 | Long-Term |
| SEAS121 | US 70/Yeargan Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS151 | I-95/Brogden Rd/Wal-Pat Rd/MLK Jr Dr | Intersection Improvement | \$1,403,719 | Long-Term |
| SEAS164 | US 301/Oak Grove Inn Rd | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS227 | Creech Rd/Wilmington Rd | Intersection Realignment | \$1,180,000 | Long-Term |
| SEAS228 | US 70/Aversboro Rd/5th Ave | Intersection Realignment | \$250,000 | Long-Term |
| SEAS308 | Market St/M Durwood Stephenson Hwy | Intersection Improvement | \$3,072,532 | Long-Term |
| SEAS313 | Brightleaf Blvd/Brogden Rd/Third St | Intersection Improvement | \$1,710,000 | Long-Term |
| SEAS314 | Outlet Center Dr | Intersection Improvement | \$354,523 | Long-Term |
| SEAS315 | I-95/Brogden Rd | Interchange | \$59,300,000 | Long-Term |

Intersection Projects by Tier (Continued)

| ID | Project Location | Improvement | Cost | Horizon |
|---------|--|--------------------------|--------------|-----------|
| SEAS316 | I-95/Truck Stop Rd | Interchange | \$20,480,000 | Long-Term |
| SEAS317 | I-95/US 701/NC 96 | Interchange | \$64,120,000 | Long-Term |
| SEAS318 | Buffalo Rd/Fire Dept Rd/Little Divine Rd | Intersection Realignment | \$16,120,000 | Long-Term |
| SEAS320 | Wilson's Mills Rd/Fire Dept Rd | Intersection Realignment | \$4,610,000 | Long-Term |
| SEAS321 | Glen Rd/Technology Dr | Intersection Improvement | \$3,080,000 | Long-Term |
| SCI-1 | Powhatan Rd/RR | Grade Separation | \$6,320,000 | Visionary |
| SEAS36 | Market St/Fourth St | Intersection Improvement | \$2,363,487 | Visionary |
| SEAS37 | Market St/Fifth St | Intersection Improvement | \$1,710,000 | Visionary |
| SEAS41 | Polenta Rd/McLemore Rd | Intersection Improvement | \$1,710,000 | Visionary |
| SEAS76 | I-95/Selma-Pine Level Rd | Interchange | \$46,760,000 | Visionary |
| SEAS80 | US 70 BUS/Powhatan Rd | Intersection Improvement | \$1,710,000 | Visionary |
| SEAS118 | Timber Dr E/White Oak Rd | Intersection Improvement | \$1,710,000 | Visionary |
| SEAS173 | US 70/Oak St/RR | Road Closure | \$115,000 | Visionary |
| SEAS232 | Aversboro Rd/7th Ave/Vandora Ave | Intersection Improvement | \$1,710,000 | Visionary |
| SEAS306 | Market St/College Rd | Intersection Improvement | \$8,142,212 | Visionary |
| SEAS309 | Brightleaf Blvd/Booker Dairy Rd | Intersection Improvement | \$3,072,532 | Visionary |
| SEAS310 | Brightleaf Blvd/Peedin Rd | Intersection Improvement | \$3,072,532 | Visionary |
| SEAS311 | Brightleaf Blvd/Dail St | Intersection Improvement | \$3,072,532 | Visionary |
| SEAS312 | Brightleaf Blvd/Hospital Rd | Intersection Improvement | \$3,072,532 | Visionary |
| SEAS319 | NC 242/Woodall Dairy Rd/Federal Road Ext | Intersection Realignment | \$3,830,000 | Visionary |
| SEAS433 | Equity Dr/Peedin Rd Ext | Intersection Realignment | \$900,000 | Visionary |
| SEAS434 | Equity Dr/Peedin Rd Ext | Intersection Realignment | \$950,000 | Visionary |

Bicycle and Pedestrian Prioritization

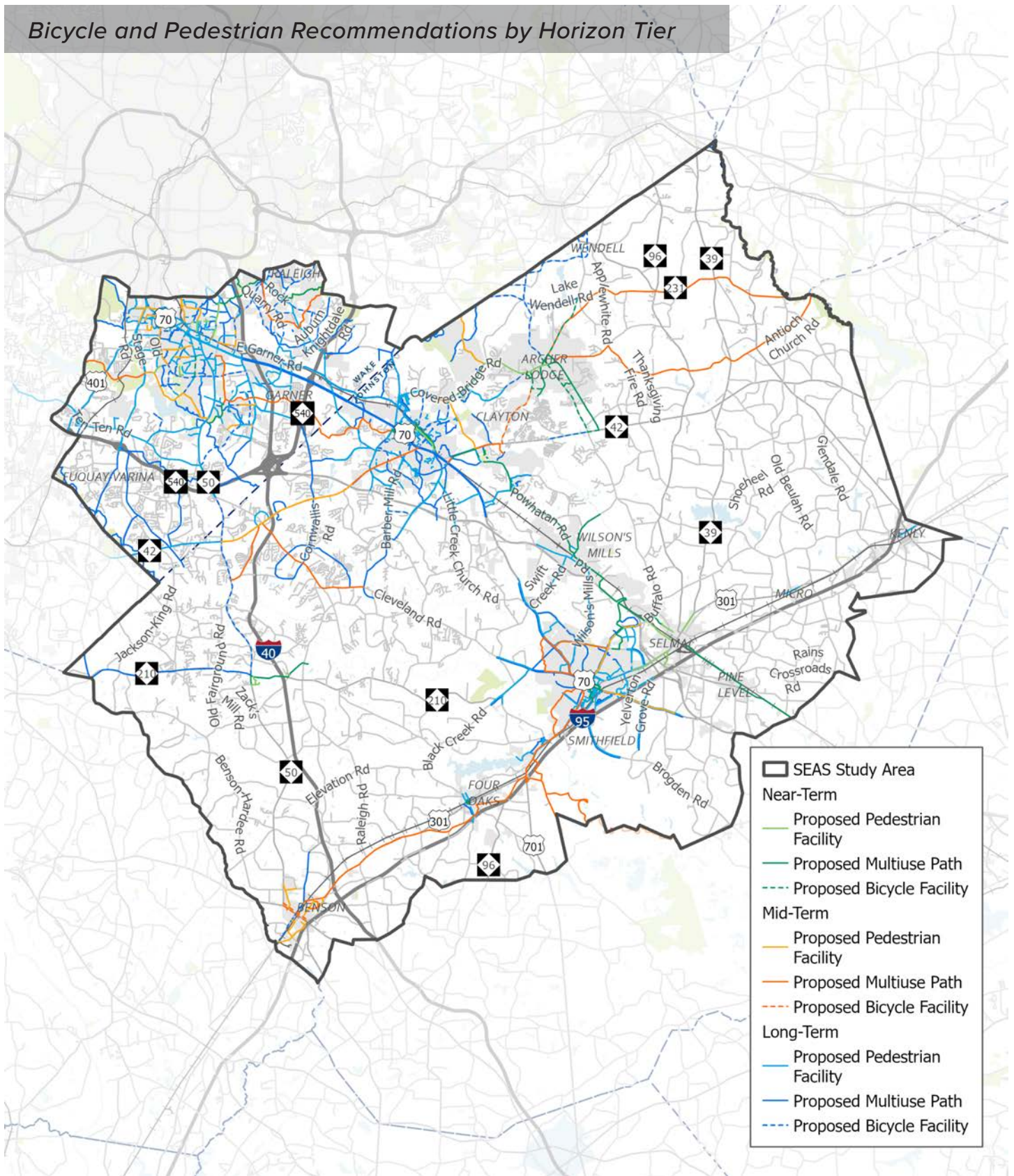
The bicycle and pedestrian recommendations are generally prioritized by the location and purpose of a facility. Near-Term priorities are projects that would fill in gaps in the network, particularly those internal to municipalities, Mid-Term recommendations are meant to connect towns and recreational resources, and Long-Term priorities are intended to complete the regional multimodal system.

As Southeast Area communities implement local bicycle and pedestrian priority projects incrementally across their communities, new multi-jurisdictional opportunities also become increasingly available. Below are important elements of building out a regionally connected bicycle and pedestrian network:

- **Local Planning** - Most jurisdictions have identified priorities in local planning processes that can serve as key building blocks for regional connectivity. Each jurisdiction should have an up-to-date comprehensive bicycle and pedestrian plan.
- **Regional Trail Systems** - Regional systems such as the Wake County Greenway System Plan, the Great Trails State Network, the Mountains-to-Sea trail, the East Coast Greenway, and North Carolina's State Bike Route System can serve as bicycle and pedestrian spines of connectivity for SEAS jurisdictions.
- **Complete Streets** - New development and major roadway projects such as widenings (e.g. NC 42 through Clayton, NC 210 through McGee's Crossroads, etc.) are critical opportunities to implement bicycle and pedestrian facilities that are physically separated from the roadway.
- **'All Ages and Abilities'** - Local planning and design efforts should reference the 'all ages and abilities' guidance provided in Appendix F for bikeway facility selection when planning and designing for bicycle facilities.
- **Multi-jurisdictional Collaboration** - Further regional connectivity analysis is needed to identify key gaps between local bicycle and pedestrian networks. This will also require improved bicycle and pedestrian data at both the local and regional level.

The map on the following page shows the SEAS Update recommendations for walking and biking infrastructure by their suggested phasing.

Bicycle and Pedestrian Recommendations by Horizon Tier



Transit Prioritization

Near-Term transit projects are those providing key high-demand regional connections and routes through areas that have, or are projected to have, transit supportive land use in the near future. In areas that may warrant transit service in the future but that may not be able to support it now, microtransit was recommended as a supplement to fixed-route service that traverses longer distances. Mid- to Long-Term considerations for transit include areas that are projected to grow and eventually support transit in the future.

Near-Term Recommendations

Near-Term transit recommendations, by corridor, include:

- US-70: Garner – Clayton Circulator, and Clayton – Selma Connector
- US-401: New GoRaleigh 40X stops
- NC-50: Garner – West Johnston Circulator
- US-301: Selma – Smithfield Circulator, Benson – Selma Connector, Kenly – Selma Connector

Additionally, transit transfer facilities (TTF) and other supporting infrastructure should be pursued in the Near-Term, promoting a positive rider experience as new transit services are implemented.

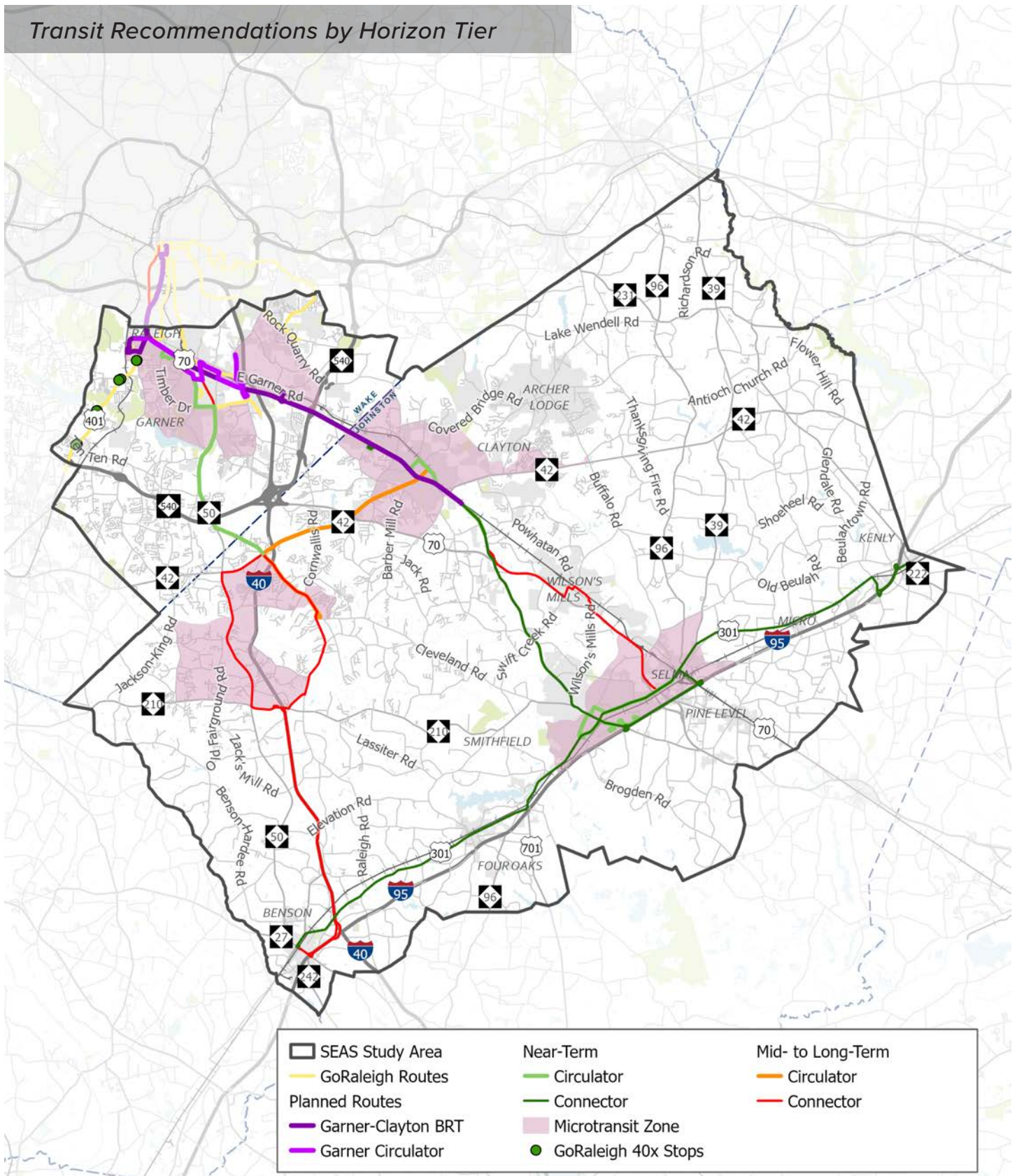
Mid- to Long- Term Considerations

Based on public feedback, ridership data, and analyses of new development and subsequent changes in regional population trends, future considerations for transit include:

- Clayton – Willow Springs Circulator,
- Selma – Raleigh Connector, and
- Benson – Garner Connector.

The map on the following page shows the SEAS Update recommendations for transit routes and microtransit zones by their suggested phasing. These recommendations are contingent upon the continued development of transit-supportive land uses along these corridors.

Transit Recommendations by Horizon Tier



Unified Approach

The Southeast Area Study Update has resulted in the development of a series of land use and transportation strategies that will serve its member jurisdictions in both CAMPO and UCPRPO. The transportation recommendations detailed in Chapter 5 will become the bedrock of CAMPO's Comprehensive Transportation Plan for this region, and will also inform the creation of CAMPO's Metropolitan Transportation Plan. While the UCPRPO area is not subject to the development of a Metropolitan Transportation Plan, these transportation recommendations can be incorporated into the area's Comprehensive Transportation Plan. Perhaps most importantly, the SEAS Update transportation recommendations were created with a combined effort of stakeholders from the CAMPO and UCPRPO areas. Each area will benefit from the enhanced knowledge of the types of improvements that are important to the region.

While serving as a framework for transportation and land use decision-making, the SEAS Update also seeks to provide tools for implementation:

Land Use Implementation Toolkit — The SEAS Update is built upon an understanding of the interrelationship of transportation and land use decision-making. An analysis of land use is essential to produce an effective and implementable transportation study. Transportation issues facing the region such as congestion, safety, connectivity, and multimodal linkages cannot be fully addressed with the resources available. To close the gap, changes in land use policies and strategies can make the largest positive impact. This toolkit, detailed in Chapter 4, explores the current conditions and future needs and strategies for each of the jurisdictions within the study area. Following a plan and policy review, a series of recommended land use priority strategies were developed for each jurisdiction. These priority strategies are explored in detail along with steps for implementation.

Benefits of Compact Development Video — The Benefits of Compact Development video should be used as an educational tool to help inform the public, planners, and decision makers of the ongoing negative consequences of the existing development patterns in Wake and Johnston counties that allow sprawl. The video delivers a persuasive, action-oriented message that is meant to encourage the implementation of the recommendations in the Land Use Implementation Toolkit. This video can be viewed here: <http://www.youtube.com/@nccapitalareampo2526>

Near-Term Projects — CAMPO and UCPRPO will work with NCDOT to determine how projects recommended in the Southeast Area Study advance into funding and completion. To aid in this process, a series of Near-Term roadway projects were identified that help respond to existing and future congestion needs while also considering public and committee feedback. These projects can function as a starting point for recommendations that should be considered for inclusion in the NCDOT Strategic Transportation Investments (STI) process. This is particularly beneficial for the UCPRPO area, which does not have the benefit of a financially constrained Metropolitan Transportation Plan to help identify the best candidate projects to be considered and scored through the STI process.

Hot Spot Study — Chapter 5 and Appendix E explore the US 70/NC 42/Future Ranch Road intersection as a complex location in need of a long-term transportation solution. The hot spot study resulted in two alternative interchange concept-designs with estimated opinions of probable construction costs (OPCC) to be used for future consideration of the project. The hot spot study provided the outcomes needed to ready this location for the next phase of project development.

Multimodal ICE Toolkit — This Intersection Control Evaluation (ICE) toolkit expands on the typical ICE guidelines to include design elements that improve safety across all modes of transportation and enhance the experience for active transportation users. This booklet and accompanying short-form pamphlet should be leveraged by planners, engineers, developers, and decision makers when during project development and design.

Call to Action and Conclusion

Achieving the full vision of the SEAS Update will require decades of investment, continued commitment from CAMPO, UCPRPO, NCDOT, and support from local and regional partners. The return on investment for these groups will be a more cohesive and unified area, sharing prosperity among the member jurisdictions, and making the Southeast Area more competitive and attractive among its regional peers. The full implementation of the Southeast Area Study will incorporate planned growth and result in improved multimodal access, while accommodating the trips that are being made in the area both today and into the future.

