

RESEARCH TRIANGLE FOUNDATION OF NC

RTP Owners & Tenants Meeting

December 10, 2020



IN CONCERT WITH



Welcome

Scott Levitan, President and CEO
Research Triangle Foundation

Joe Milazzo II, Executive Director
Regional Transportation Alliance



RTA Regional Business Leadership Overview

Maeve Gardner, RTA Chair
Director of State Government Affairs
GlaxoSmithKline



RTA is the voice of the regional business community on transportation

Mission: RTA delivers business leadership to get our region moving faster

RTA business coalition at a glance

- Represents 100+ companies across Triangle region
- Provides business perspective; catalyzes action on freeways, streets, transit, RDU

RTA chair: Maeve Gardner, GSK; RTA chair-elect: Mike Schoenfeld, Duke University

Bus Rapid Transit (BRT)

Matt Cecil, Transit Development Manager
Town of Chapel Hill

Michael Moore, Director of Transportation
City of Raleigh

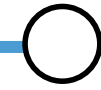


Chapel Hill
transit

Get on Board!

December 10, 2020

 **NORTH**
SOUTH BUS RAPID TRANSIT 



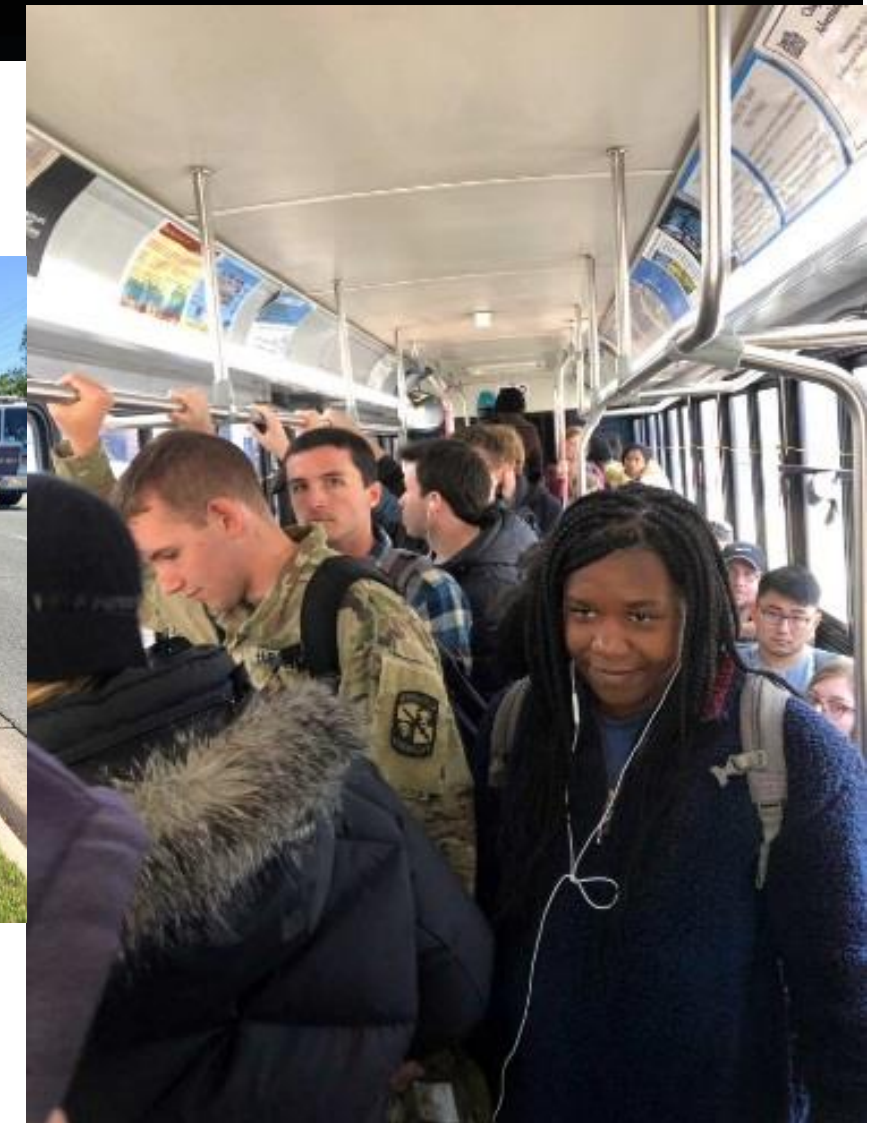
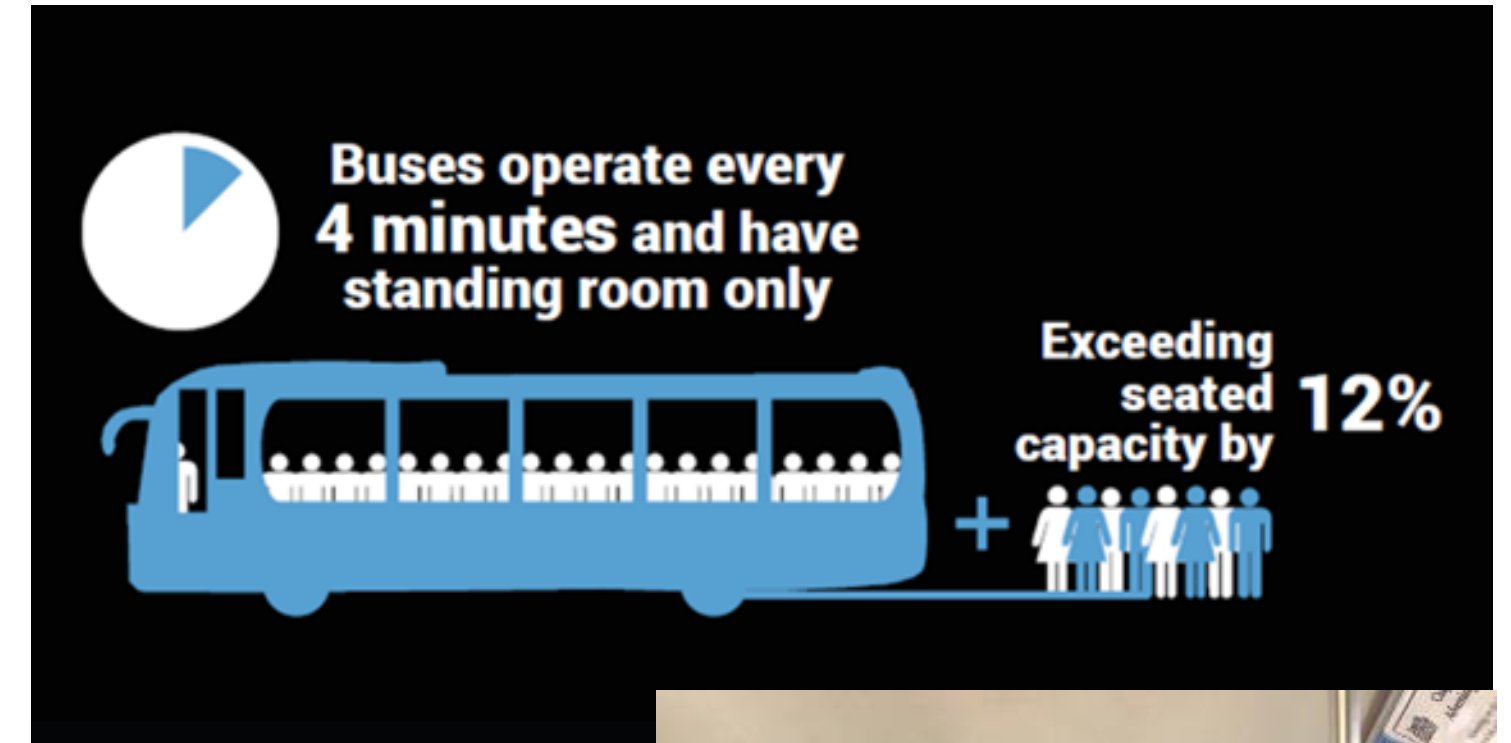
What is Bus Rapid Transit?

- High capacity bus
- Operates in a dedicated lane
- Limited stops corridor
 - Stops have enhanced amenities
- Utilize signal priority

Context and Vision

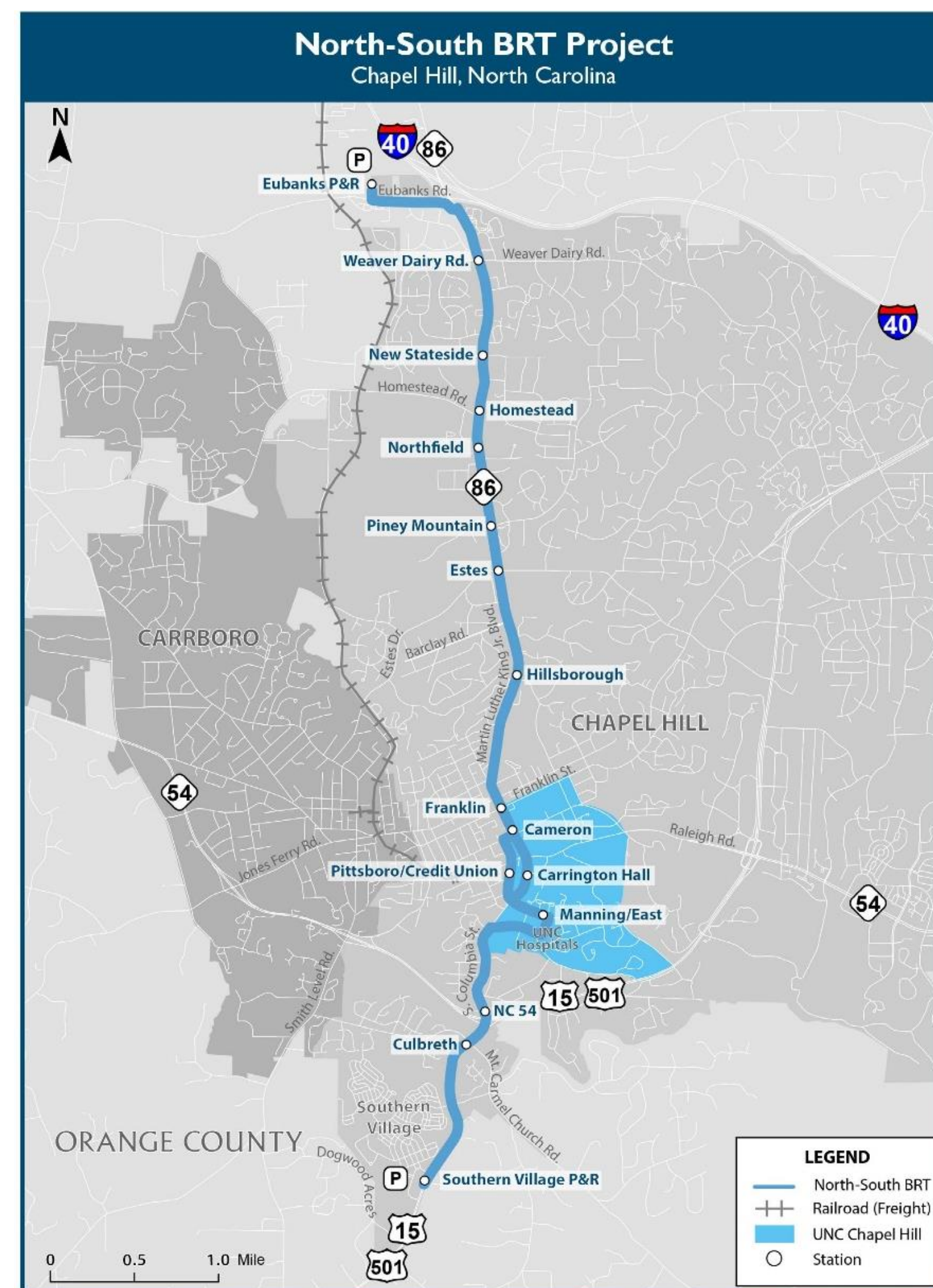
Prepares the Town to meet mobility demand as the region continues to grow:

- Current system operates close to maximum capacity
- Proposed system provides a long-term, scalable solution available to residents and visitors of the community
- Connects to regional transit options
- Supports current and planned development in the corridor with a multi-modal system that serves cyclists, pedestrians and other users



2020 LPA Recommendation

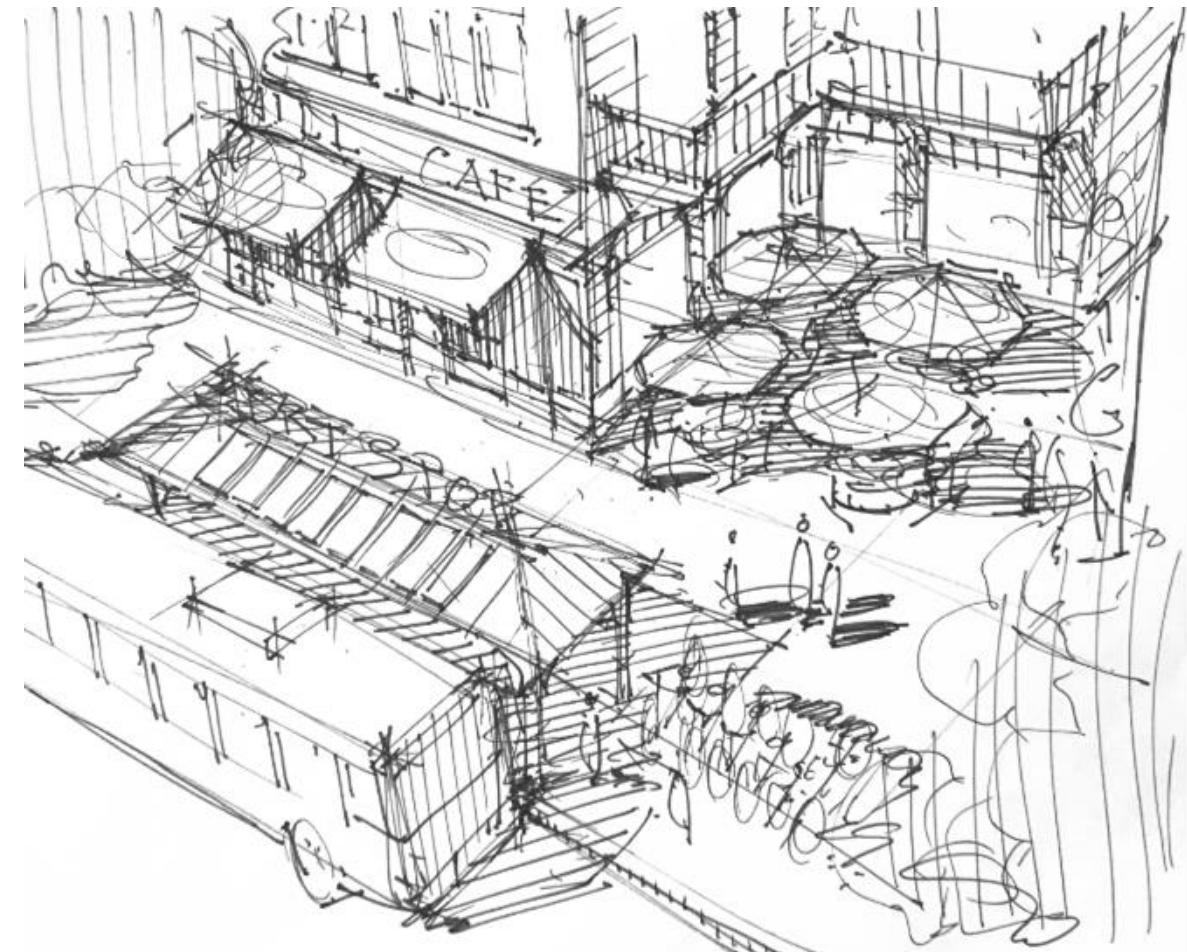
- BRT in Mixed Traffic on Eubanks Road
- Eubanks to Weaver Dairy Road
 - Construct dedicated curb lane
- Weaver Dairy Road to Westminster Drive
 - Convert dedicated curb lane
- Westminster Drive to Umstead Road/Hillsborough Street
 - Construct dedicated curb lane
- Umstead Road/Hillsborough Street to North Street
 - Convert dedicated curb lane
- Convert dedicated curb lane from North Street to Manning Dr.
- Operate in Mixed Traffic along Manning Drive to Hwy 54/15-501 interchange
- Construct dedicated curb lane from Hwy 54/15-501 to Southern Village





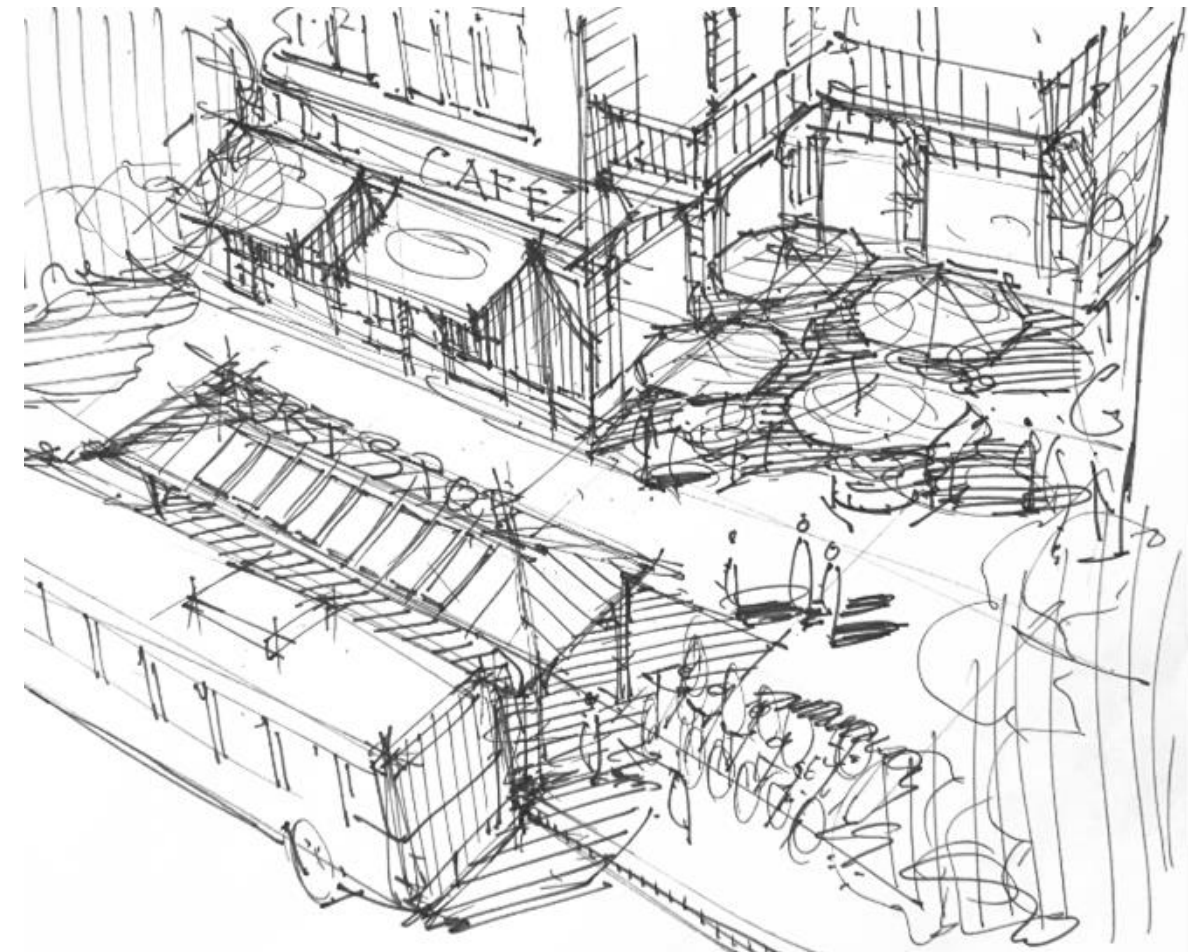
NSBRT Corridor

- 8.2 miles
- Eubanks P&R to Southern Village P&R
- Connections with:
 - UNC Hospital
 - UNC Campus
 - Downtown Chapel Hill
- Regional connections
 - GoTriangle
 - PART
- 33 minute travel time
- Opening 2025
- 7,500 daily riders opening year
- \$5.9M annual O&M



Operating Plans

- 27 stations
- NSBRT will operate 7 days a week
- 7.5 minute peak frequency
- 10 minute off-peak frequency
- 20 minute night and weekend frequency
- 60% dedicated guideway
- 82% pedestrian and bicycle facilities



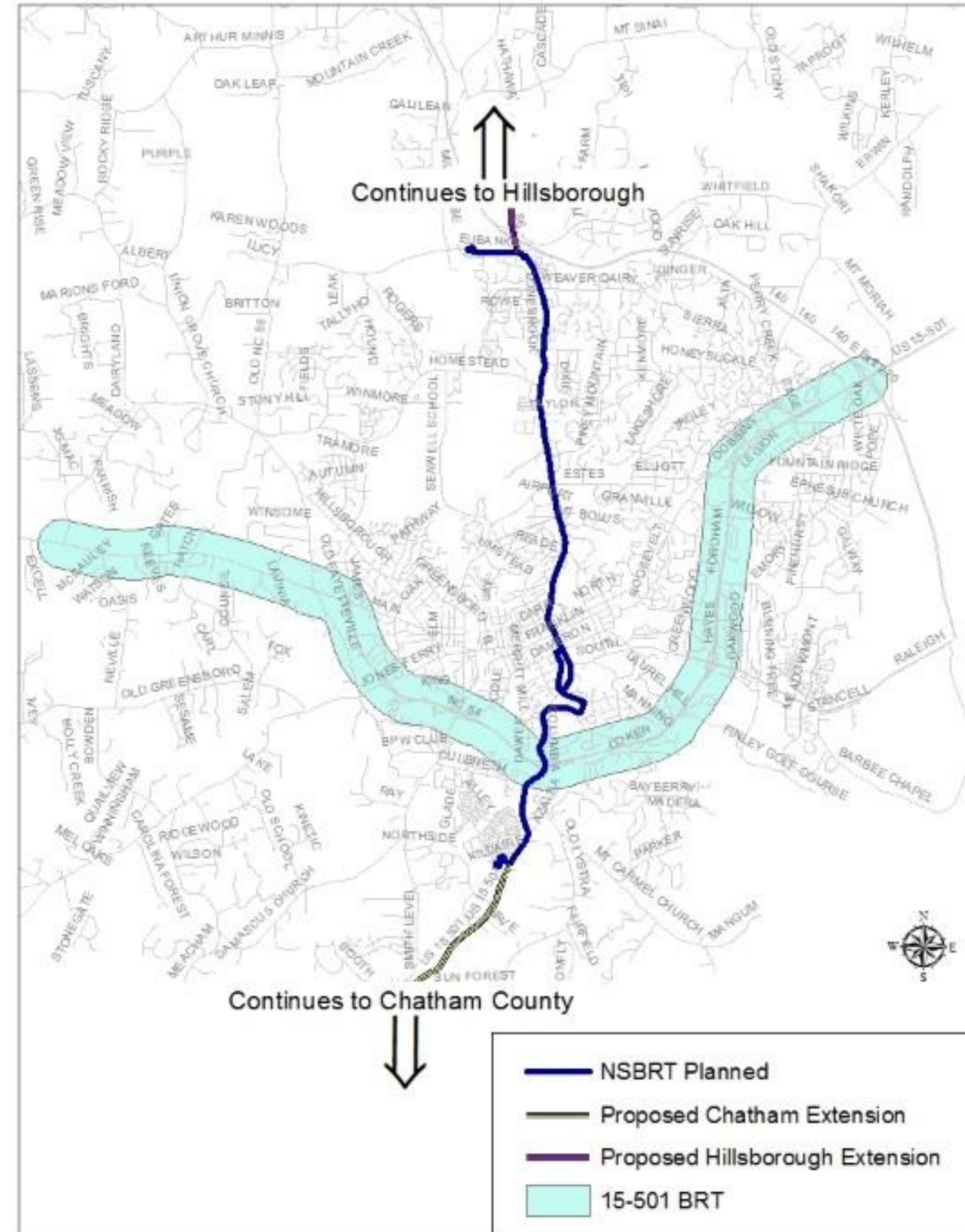


Funding

- Current financial plan assumes \$100M of project funding to come through Federal Sources, \$41M from non-federal sources
 - Currently we have \$14.1M of non-federal funds committed through the Orange County Transit Plan
 - Project will be submitted for \$35M in State funding in as part of the SPOT process.

Future Chapel Hill BRT

- NSBRT extension to Chatham County
- NSBRT extension to Hillsborough
- Cross town BRT connecting White Cross/NC 54 with Eastowne/15-501





Matt Cecil

Transit Development Manager

Chapel Hill Transit

(919) 969-4916

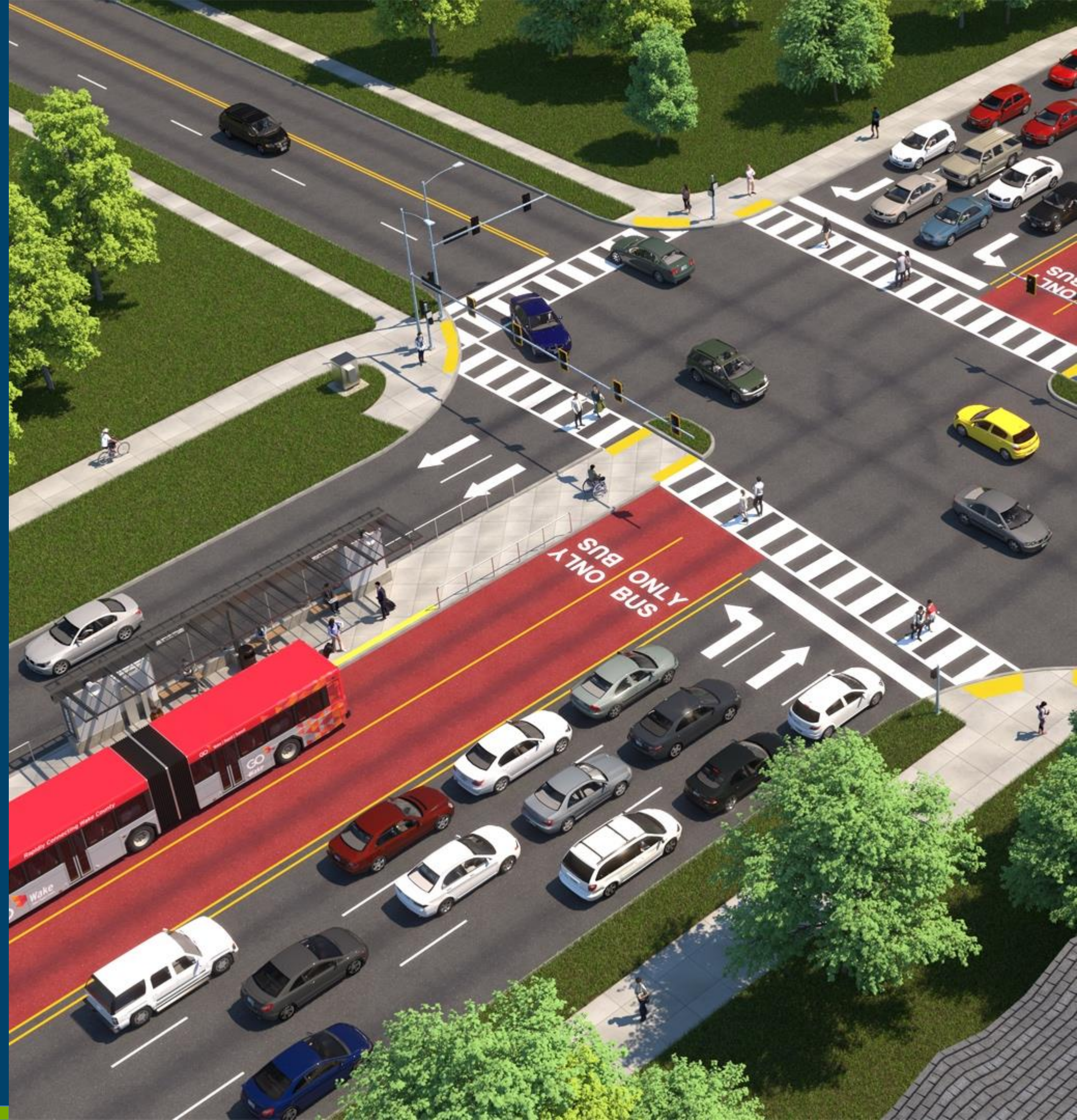
mcecil@townofchapelhill.org

To Learn More: <https://nsbrt.org/>

Regional Transportation Alliance
RTP Owners and Tenants

Wake Bus Rapid Transit Program Update

December 2020



What is Bus Rapid Transit?

Bus Rapid Transit (BRT) is a high - quality, bus based transit system that delivers fast, comfortable and cost - effective services at high capacities. BRT includes enhanced features that differ from local service.



Unique Branding



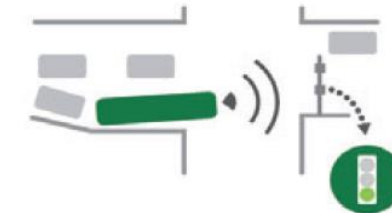
Enhanced Stations



Off – Board Fare Collection



Longer Span of Service Hours



Transit Signal Priority



Frequent On – time Service



Dedicated Lanes



Specialized Vehicles

Why do we need BRT?

Wake County has more than a million residents, and that number grows by more than 60 people per day.

Adding BRT to the existing network of public transportation will:

- allow the system to better meet transit demands
- take more cars off the road
- and get riders where they need to go faster.



Source: International Sustainability Institute

Benefits of BRT

Job Growth

Every \$1 billion invested in public transportation creates +50,000 jobs.

Better Access to Transit

With BRT, Wake County will have transit stops within walking distance of 54% of homes and 80% jobs.

Economic Growth

Every \$1 invested in public transit generates \$4 in economic returns.

Flexible and Cost Effective

BRT costs significantly less than light rail and can be adjusted as needed.



Source: The Vine BRT in Vancouver, WA

Wake BRT Program Update

Northern Corridor

STATUS: Pre – Planning Complete
NEXT STEPS: Route Selection (2021)

New Bern Ave Corridor

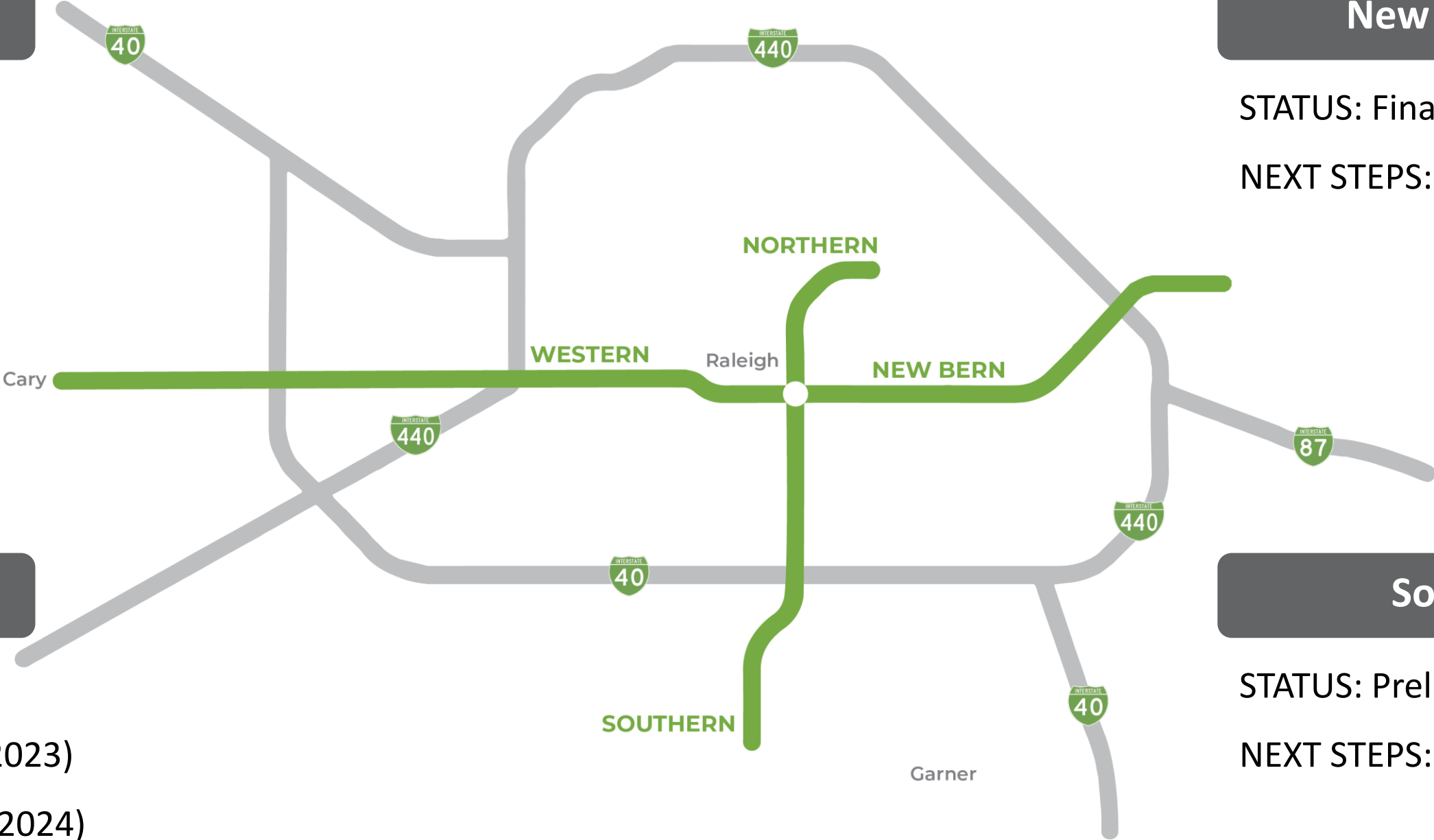
STATUS: Final Design
NEXT STEPS: Anticipated Construction (2022)
Anticipated Service (2023)

Western Corridor

STATUS: Preliminary Design
NEXT STEPS: Anticipated Final Design (2023)
Anticipated Construction (2024)
Anticipated Service (2027)

Southern Corridor

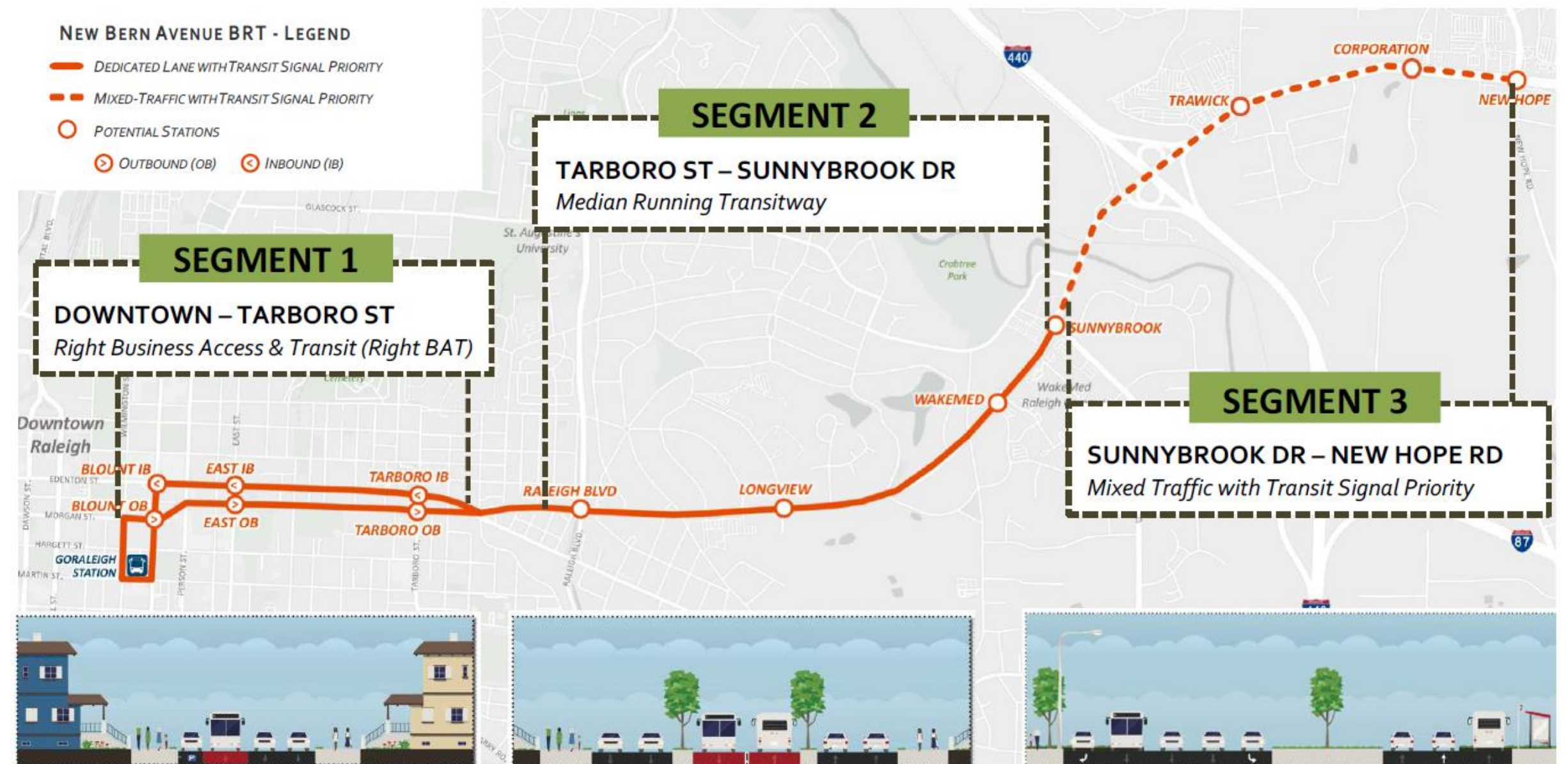
STATUS: Preliminary Design
NEXT STEPS: Anticipated Final Design (2023)
Anticipated Construction (2024)
Anticipated Service (2027)



Wake BRT: New Bern Avenue

Overview

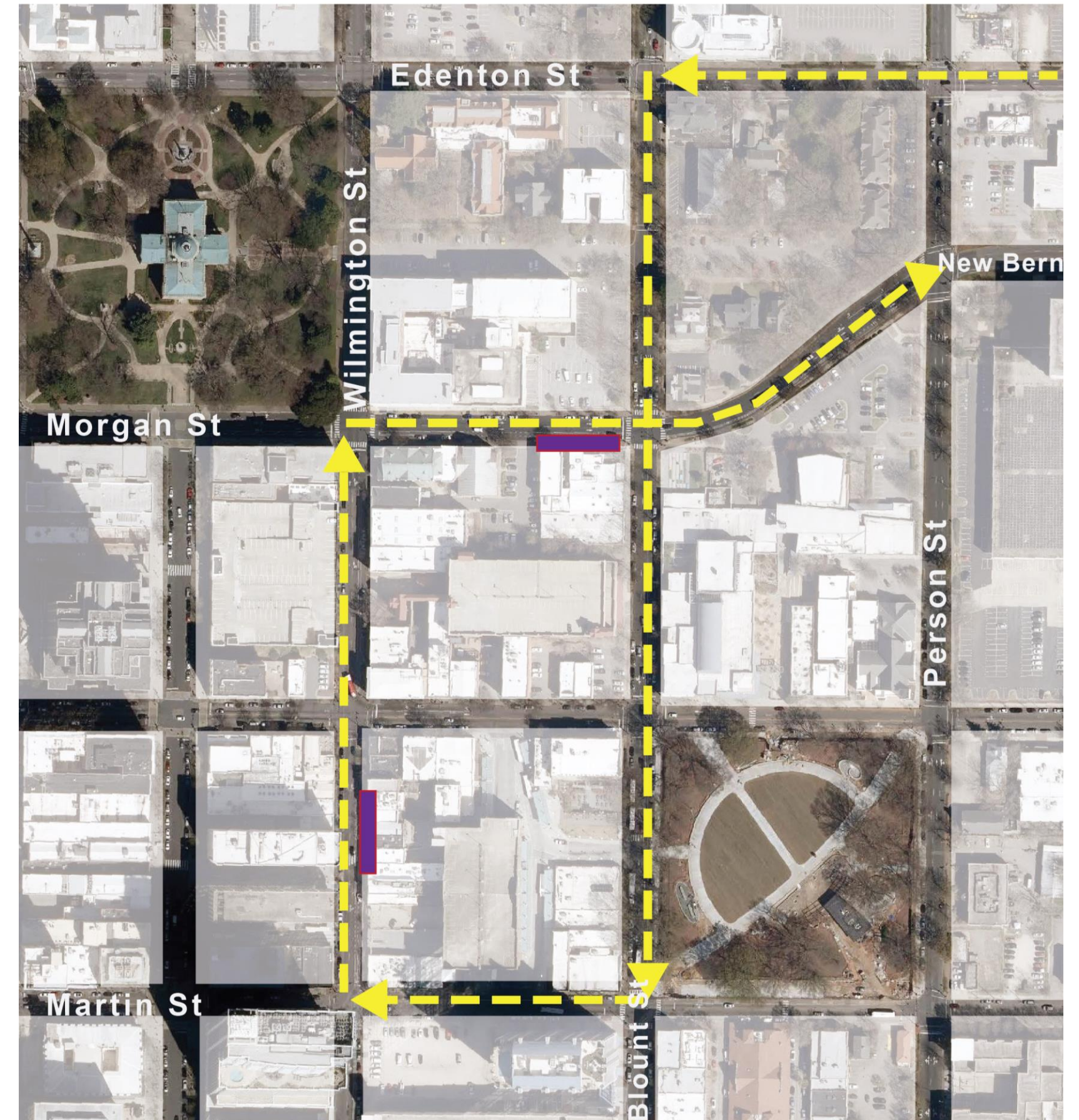
- First corridor out of four, to be designed & built
- 5.1 mile corridor from GoRaleigh Station to New Hope Road
- 3.3 miles of dedicated lanes
- Downtown routing to be determined as part of the final design for New Bern Avenue corridor



Wake BRT: New Bern Avenue

Timeline

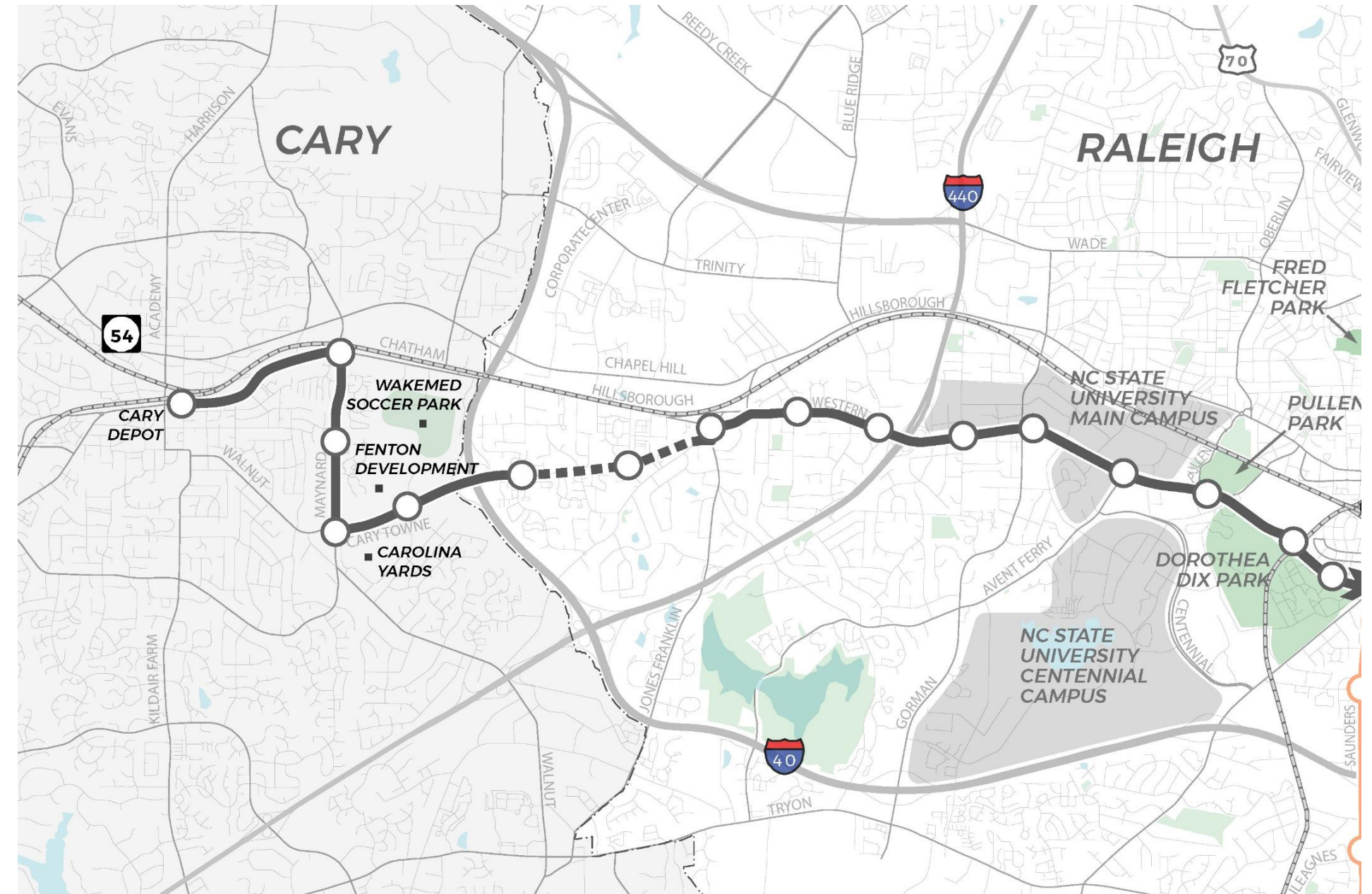
- Spring 2020 – 30% design plans completed
- Summer 2020 – HNTB chosen for final design team
- Summer/Fall 2020 – review of 30% design plans & begin 60% design plans
- January 2021 – complete 60% design plans
- 2021/2022– construction (contingent upon federal funding)



Wake BRT: Western Corridor

Overview

- Approximately 12 miles
- Up to 18 proposed BRT stations
- Locally Preferred Alternative (LPA) endorsed by Town of Cary – July 2020 and City of Raleigh – August 2020
- Currently working on preliminary design, 0 – 30%

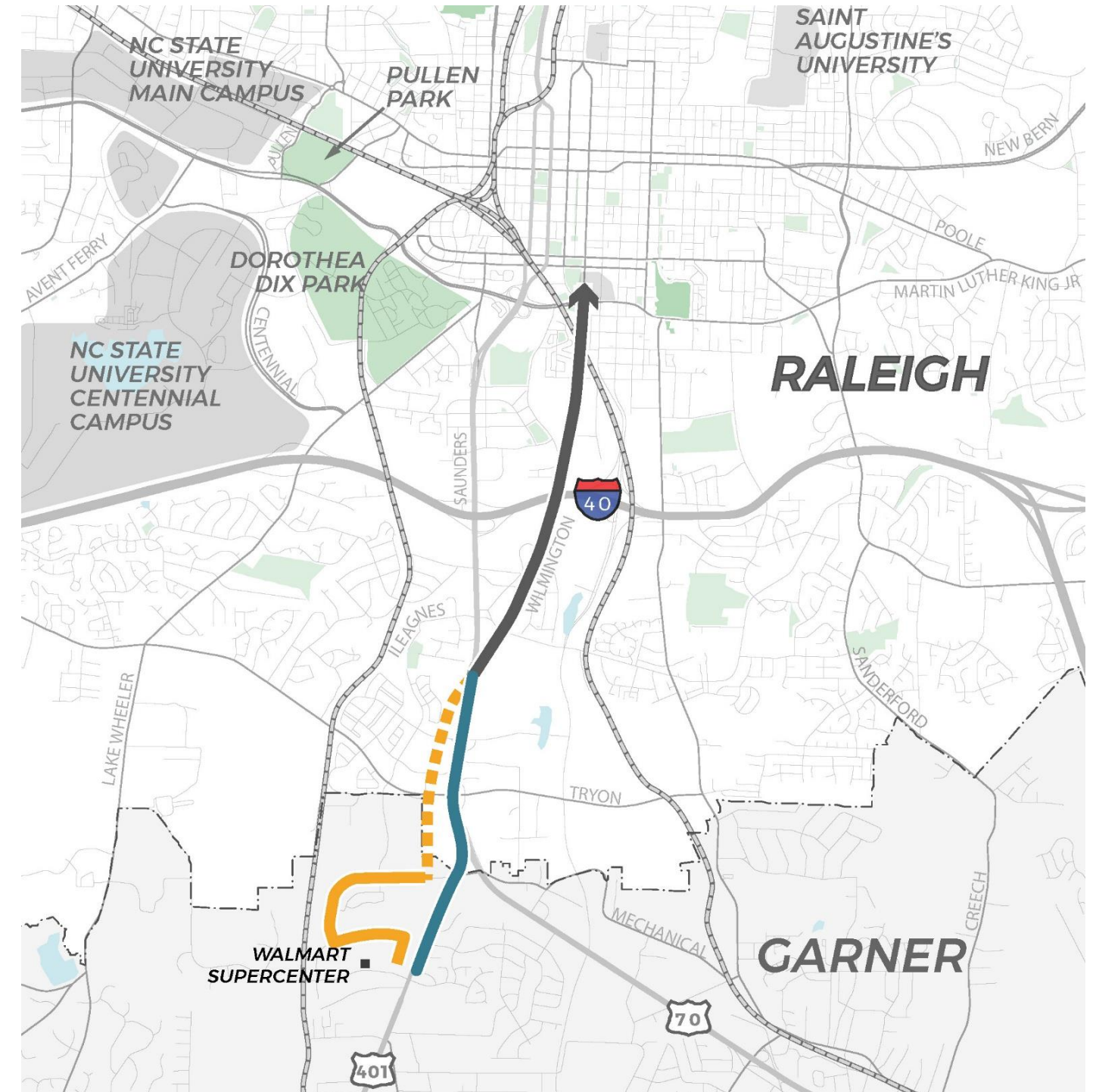


— Western Extension + Cary Towne Blvd + Maynard
Alternative Alignment

Wake BRT: Southern Corridor

Overview

- Approximately 5 miles
- S. Wilmington St was endorsed as the preferred northern route by City of Raleigh – October 2020
- Further evaluation and coordination needed to identify the preferred southern route
- Currently working on preliminary design, 0 – 30%



Wake BRT: Southern & Western Corridors

Preliminary Design Phase 30% will include:

- Reconfirming station locations & key destinations
- Developing runningway design options
- Assessing bicycle & pedestrian accommodations
- Extensive public outreach & engagement

*At right: **Pulse BRT** in Richmond, VA operating in a median running transitway*



Wake BRT: Branding



Columbus, OH



Kansas City, MO



Austin, TX



Albuquerque, NM

Branding Process is underway, with final branding concept is expected early 2021.

- ✓ Completed Peer Review
- ✓ Branding Survey – Public and Stakeholder
- ✓ 3 Stakeholder Listening Sessions

Emerging Themes:

- Create a brand with regional personality
- Develop a bold & inviting color palette; avoid pastels
- Don't include specific individuals or sports teams

Wake BRT: Station Design

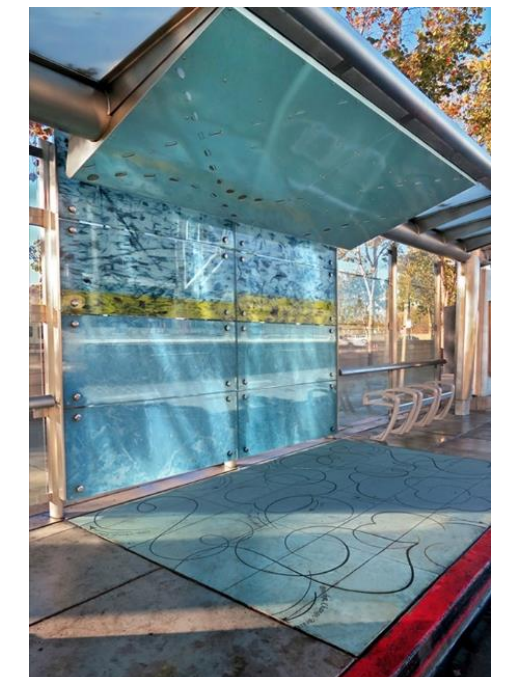
Station Design will include:

- Raised platforms for easy, accessible boarding
- Digital signage with real time arrival information
- Safety features, like emergency phones and cameras
- Enhanced station amenities



Next Steps:

- Visual Preference Survey (online and polling boards) closed November 30th
- Analyze survey results to help inform development of station design concepts



Wake BRT: Artist In Residence

- Dare Coulter chosen as the Artist In Residence, to assist with art integration into the Wake BRT program
- Along New Bern Avenue – work with community to create conceptual ideas and inspiration
- Currently meeting with residents & stakeholders to gather feedback and input



We need your feedback!

New Bern Ave Public Art Survey is [LIVE](#) ! What would art that represents your neighborhood and community look like?



Triangle “FAST” network

Julie White, Deputy Secretary
for Multi-modal Transportation
NC Department of Transportation





NORTH CAROLINA

Department of Transportation



Triangle “FAST” Network

Julie White

Deputy Secretary for Multi-Modal Transportation

December 10, 2020



FAST
Freeway And Street-based Transit network

Triangle “FAST” Network

Julie White, NCDOT
Deputy Secretary for Multi-modal Transportation



Freeway And Street-based Transit (FAST) approach

- **Quick, low-cost, scalable improvements** for roadways
- **Prioritize transit efficiency and reliability** while serving all users

Objectives of the FAST Network study

- **Identify example investments** to create “transit advantages” quickly
- **Connect all 5 BRT corridors**, link to future passenger rail in the Triangle
- **Institutionalize a “FAST” mindset and approach** that can serve as a model for metro areas across the state

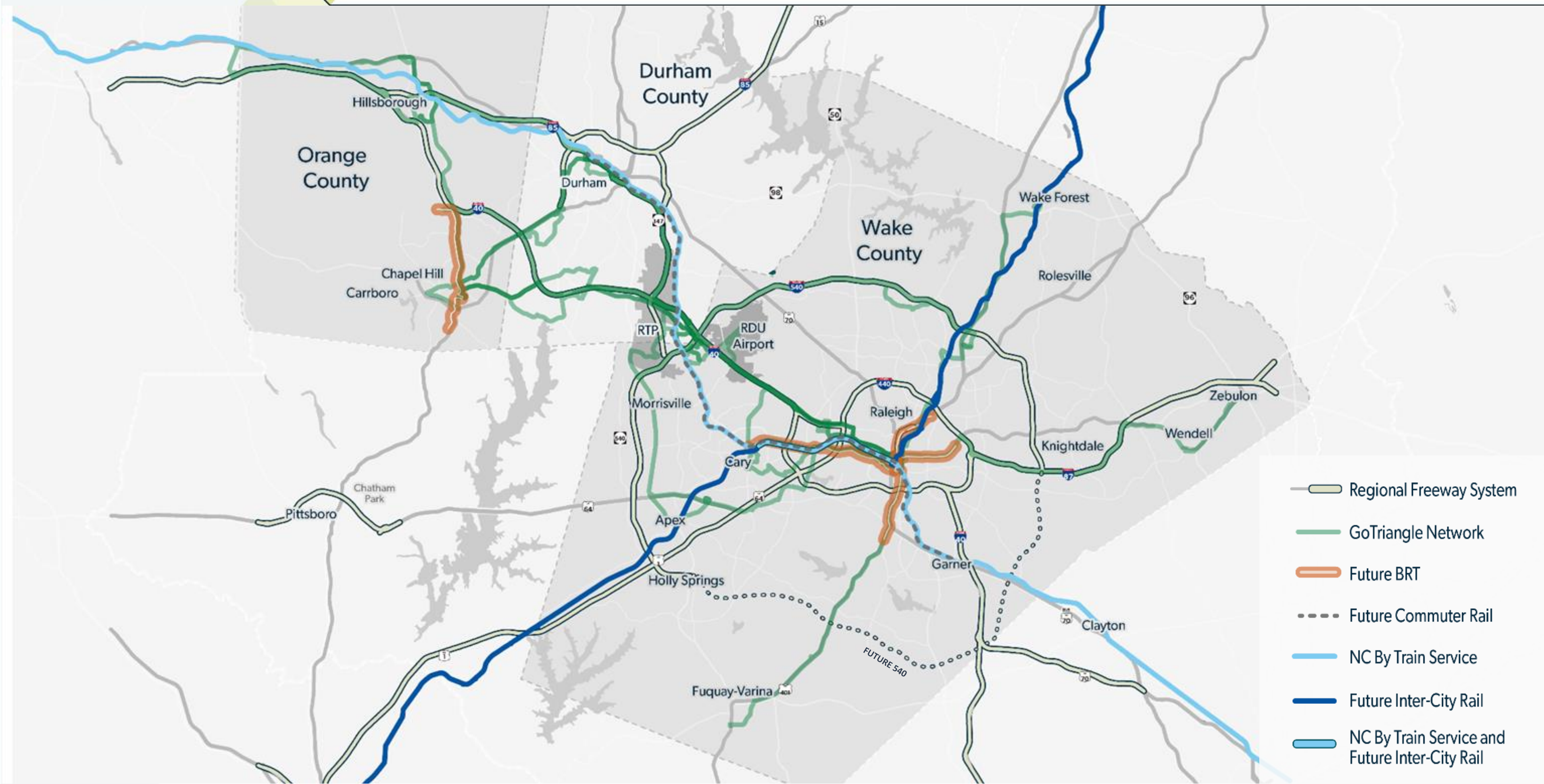
Mobility criteria

- Travel Demand
- Transit Performance
- Traffic Performance
- Context

Accessibility criteria

- Access Equity
- Planned Projects
- Missing Links

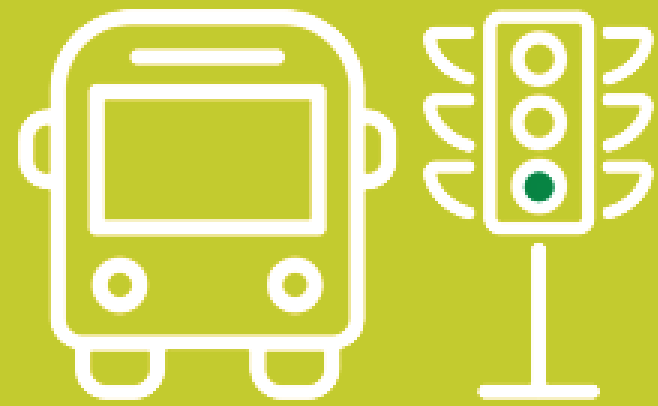
Existing and Planned Regional Transit System



Example “Transit Advantage” Investments



Dedicated Lanes



Signal Priority

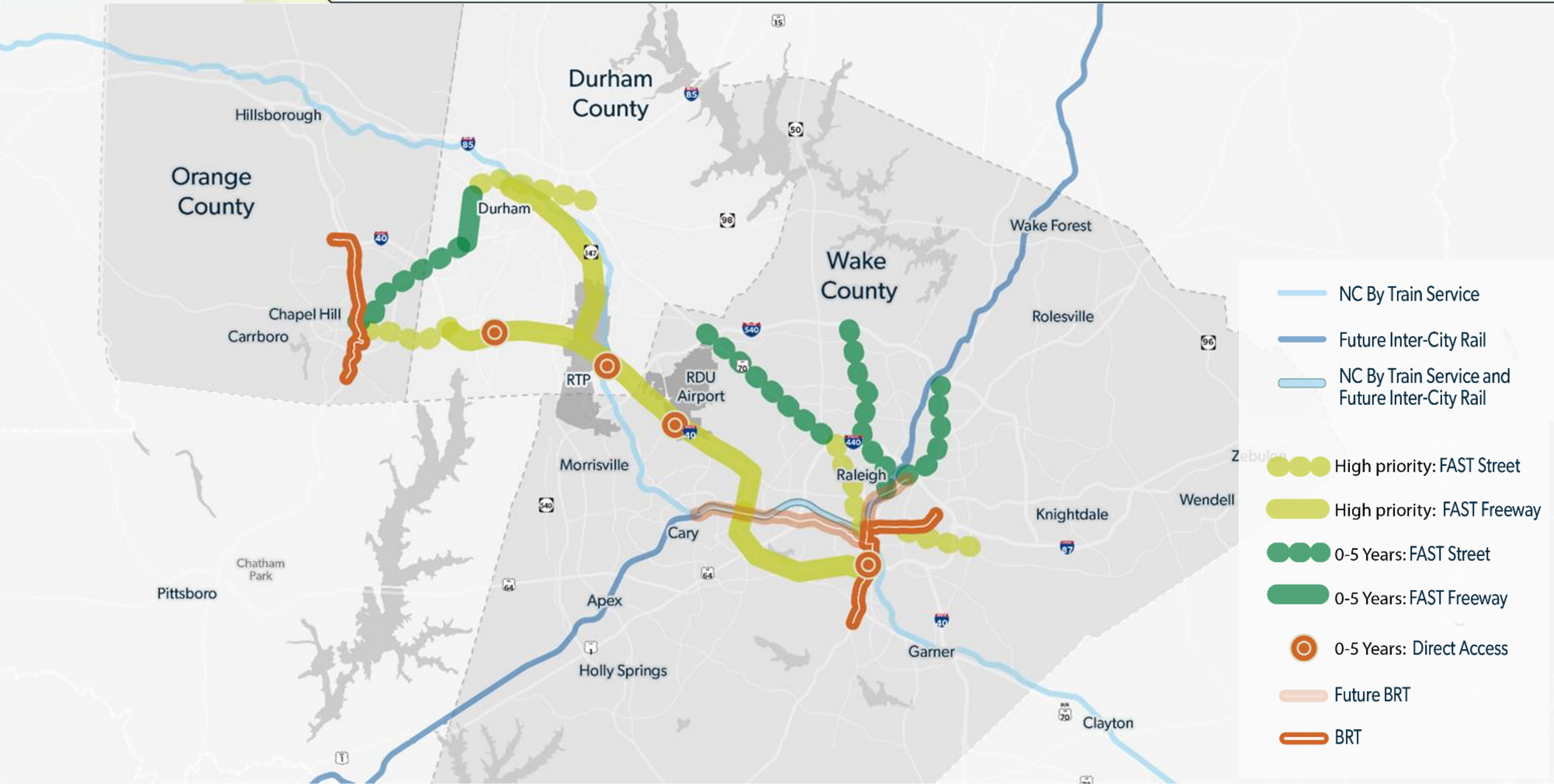


Level Boarding



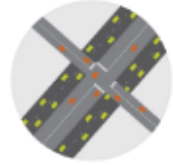
Queue Jump Lanes

0-5 Years Potential FAST Network



Immediate Freeway Corridors

South Durham



Direct Pedestrian Access

US 15/501



Bus On Shoulder System

I-40 & NC 147

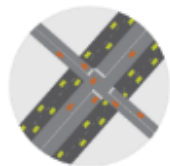


Bus On Shoulder Expansion



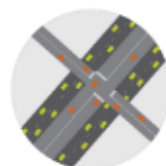
Increased Service Frequency & Span

RTP/Davis Drive



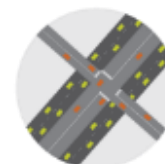
Direct Access Ramps

RDU



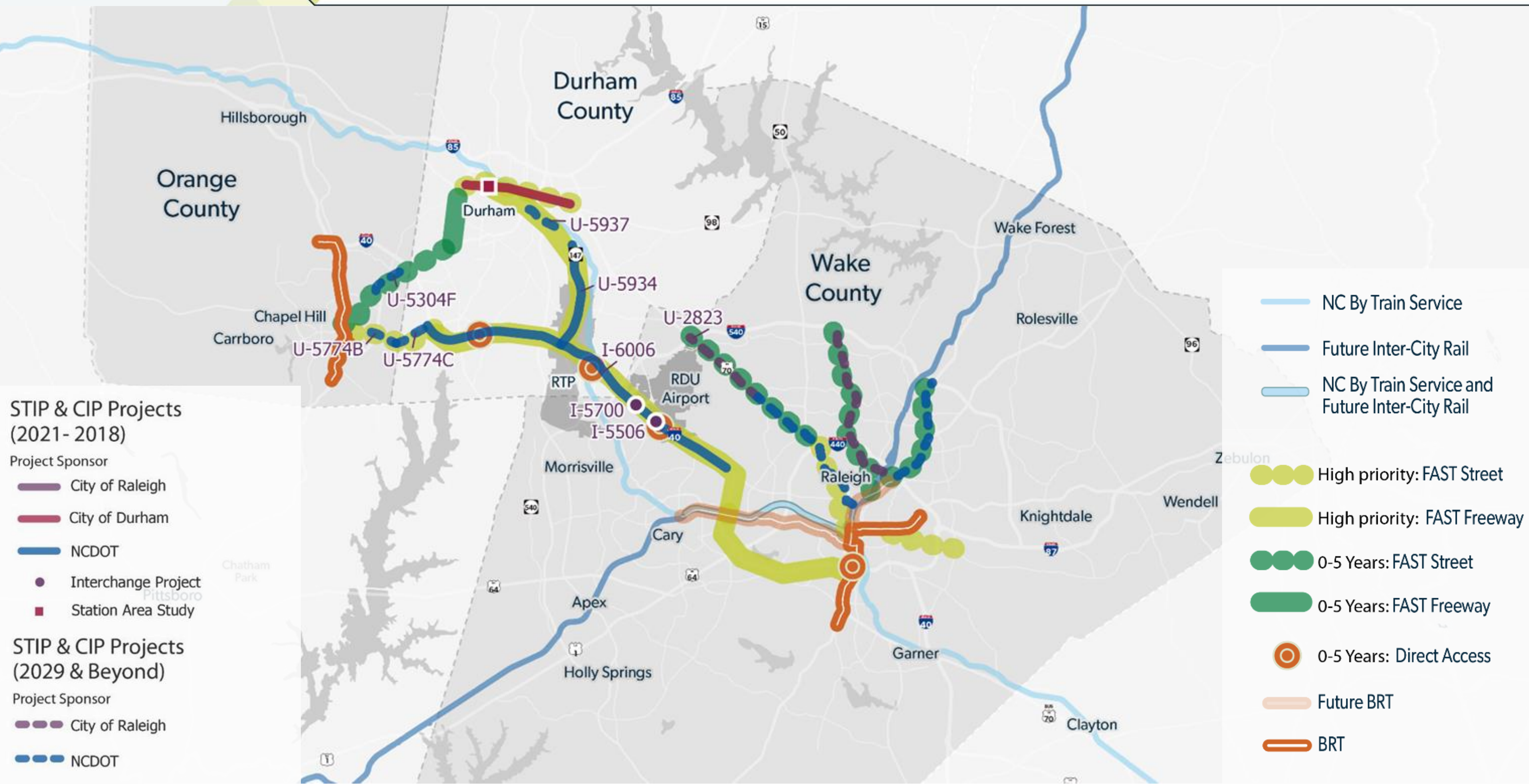
Direct Access Ramps

Wilmington St

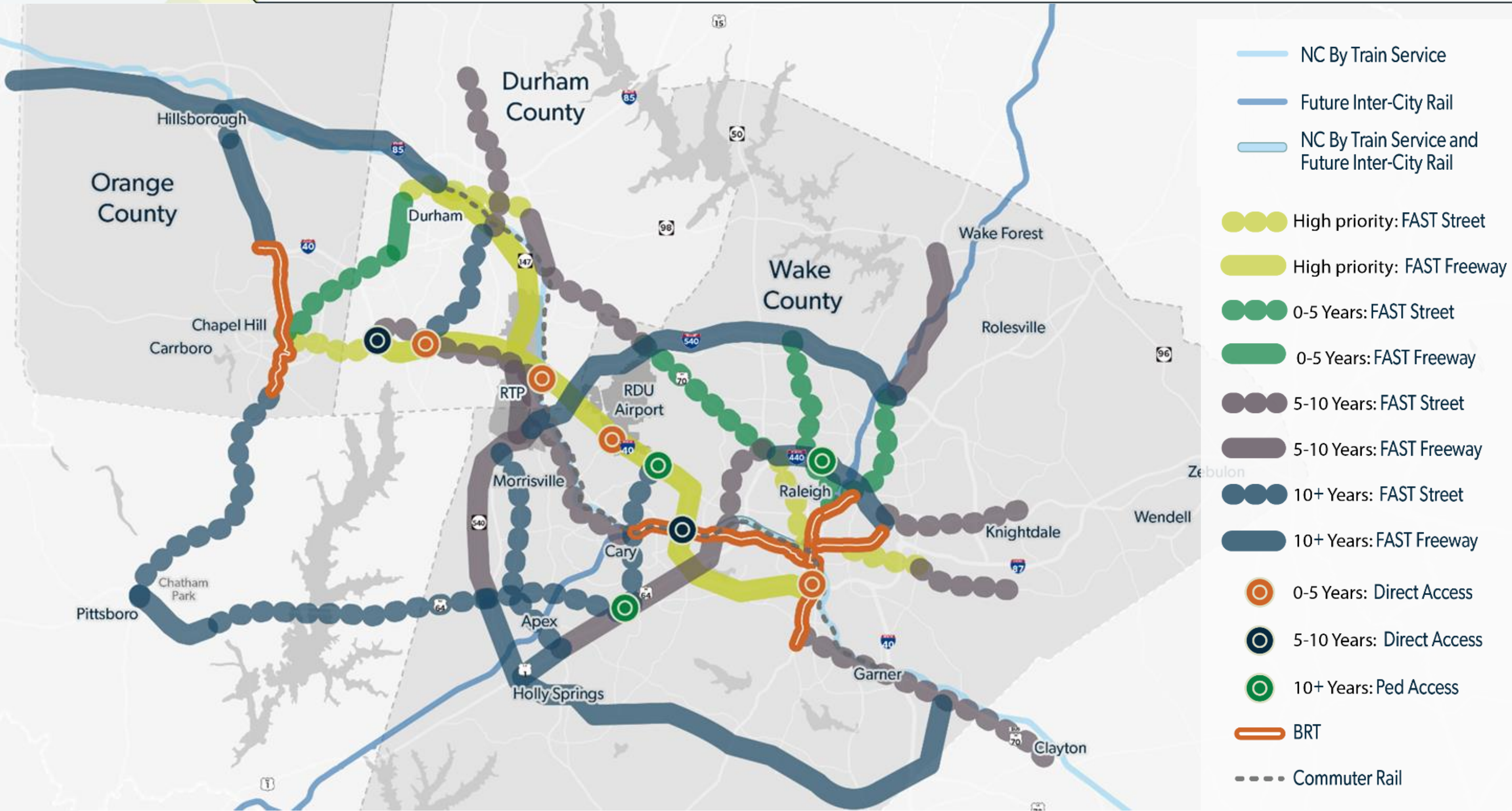


Direct Access Ramps

- NC By Train Service
- Future Inter-City Rail
- NC By Train Service and Future Inter-City Rail
- High priority: FAST Freeway
- 0-5 Years: FAST Freeway
- 0-5 Years: Direct Access
- Future BRT
- BRT



10+ Years Potential FAST Network



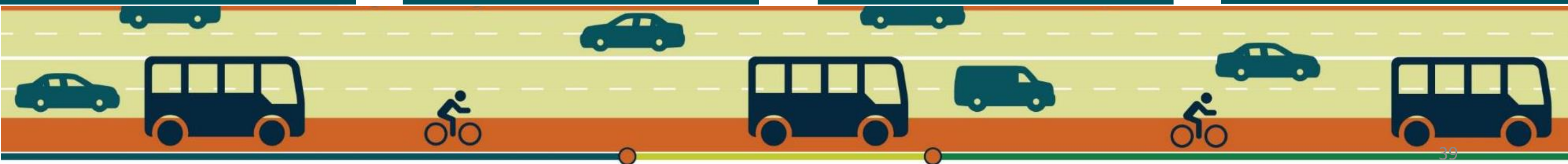
Implementing a FAST network in the Triangle

Seeking the expansion of transit facility coverage under the Complete Streets Policy

Incorporating transit advantage improvements in the NCDOT Roadway Design Manual

Support progress of 5 BRT corridors, and future passenger rail with FAST linkages between them

Seek quick wins with municipalities and NCDOT





NORTH CAROLINA

Department of Transportation



Triangle “FAST” Network

Julie White

Deputy Secretary for Multi-Modal Transportation

December 10, 2020

Commuter Rail study

Chuck Lattuca, CEO
GoTriangle



Greater Triangle Regional Commuter Rail Study Update

**Presentation to the Research Triangle Park Owners
and Tenants Meeting**

December 10, 2020

Charles Lattuca, President & CEO GoTriangle

www.goforwardnc.org/commuterrail

Why Study Commuter Rail?

- ▶ The Triangle Region has been very successful in attracting new business and people to the area
- ▶ Since 2000 the region has added more than more than 665,000 people
- ▶ More People + More Cars = More Traffic Congestion & Delay
- ▶ AND -- More people are on the way





600,000+

NEW RESIDENTS OVER THE NEXT 20 YEARS

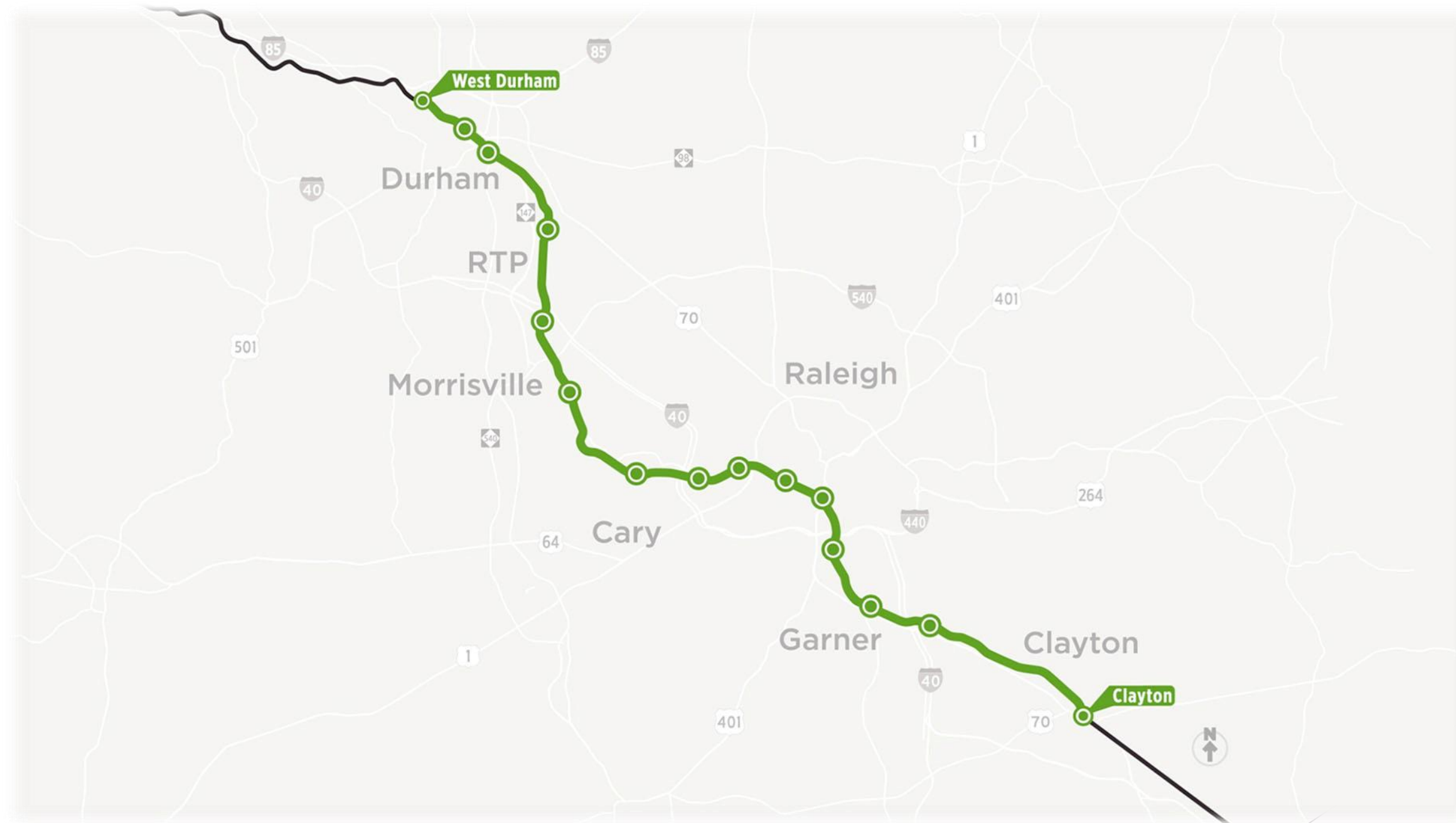
There is No Silver Bullet for Solving the Traffic Problem

- ▶ NCDOT is doing all they can to improve highway corridors
- ▶ **BUT**, we will not begin to make a dent in the problem without multilayered approach that embraces transit
- ▶ This includes:
 - ▶ Expanding Local Bus Service
 - ▶ Enhancing Bus On Shoulder for Highways
 - ▶ Building Bus Rapid Transit
 - ▶ **Creating Regional Commuter Rail Network to Serve as the Backbone for all of the Above**

NOTE: Of the top Combined Statistical Areas in the U.S., the Triangle is ranked #31. Only 3 of the larger CSAs do not have passenger rail service.

Commuter Rail Study Area

- ▶ GoTriangle is studying a 43-mile rail corridor from the City of Durham to Clayton in Johnston County and would include a stop at RTP
- ▶ The corridor is owned by the North Carolina Railroad Company (NCRR) and currently serves Amtrak, NCDOT's Piedmont Service and Norfolk Southern



Commuter Rail Study Update

- ▶ The study is expected to be completed by the end of 2021, during this time GoTriangle will:

- ▶ Engage the community to share information and get feedback

A survey completed last month showed 87% of more than 2,700 respondents had a favorable view of Commuter Rail

- ▶ Work with NCRR and operators to determine what infrastructure improvements would be needed to add more train traffic (20 round trips per day)
- ▶ Analyze design challenges and update the engineering & construction estimate
- ▶ Establish project benefits such related to development, land use and the environment

What Happens When the Study is Complete?

- ▶ The funding partners will decide if the costs and benefits are acceptable
- ▶ If acceptable, the project will advance into development for environmental review, final design and application for federal funding
- ▶ Construction could start as early as 2024 or 2025
- ▶ Service would start in the 2029/2030 timeframe

Study Partners

GoTriangle has many partners involved in the study, they include:

- Wake, Durham and Johnston counties
- Capital Area Metropolitan Planning Organization
- Durham-Chapel Hill-Carrboro Metropolitan Planning Organization
- NCDOT
- The North Carolina Railroad Company



The South Florida Commuter Rail Experience

Start Video





An aerial photograph of a multi-lane highway at dusk or dawn. The sky is a mix of orange, pink, and blue. The highway has several lanes with white lane markings. There are some vehicles visible on the road, though they are out of focus. The overall scene is dimly lit, with the primary light source being the low sun. The text 'READY FOR RAIL?' is superimposed in large, white, bold, sans-serif capital letters. The letters have a slight drop shadow, making them stand out against the darker background of the highway.

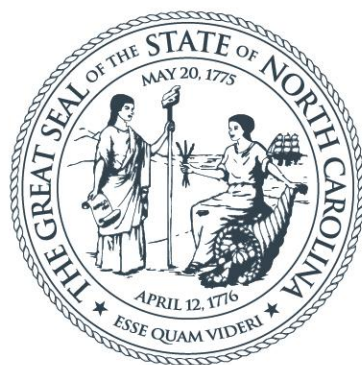
**READY FOR
RAIL?**

Multimodal Freeways

Joey Hopkins, Division 5 Engineer
NC Department of Transportation

Rodger Rochelle, Chief Engineer
NC Turnpike Authority





NORTH CAROLINA

Department of Transportation



RTP Owners and Tenants

Joey Hopkins, Division Engineer

December 2020

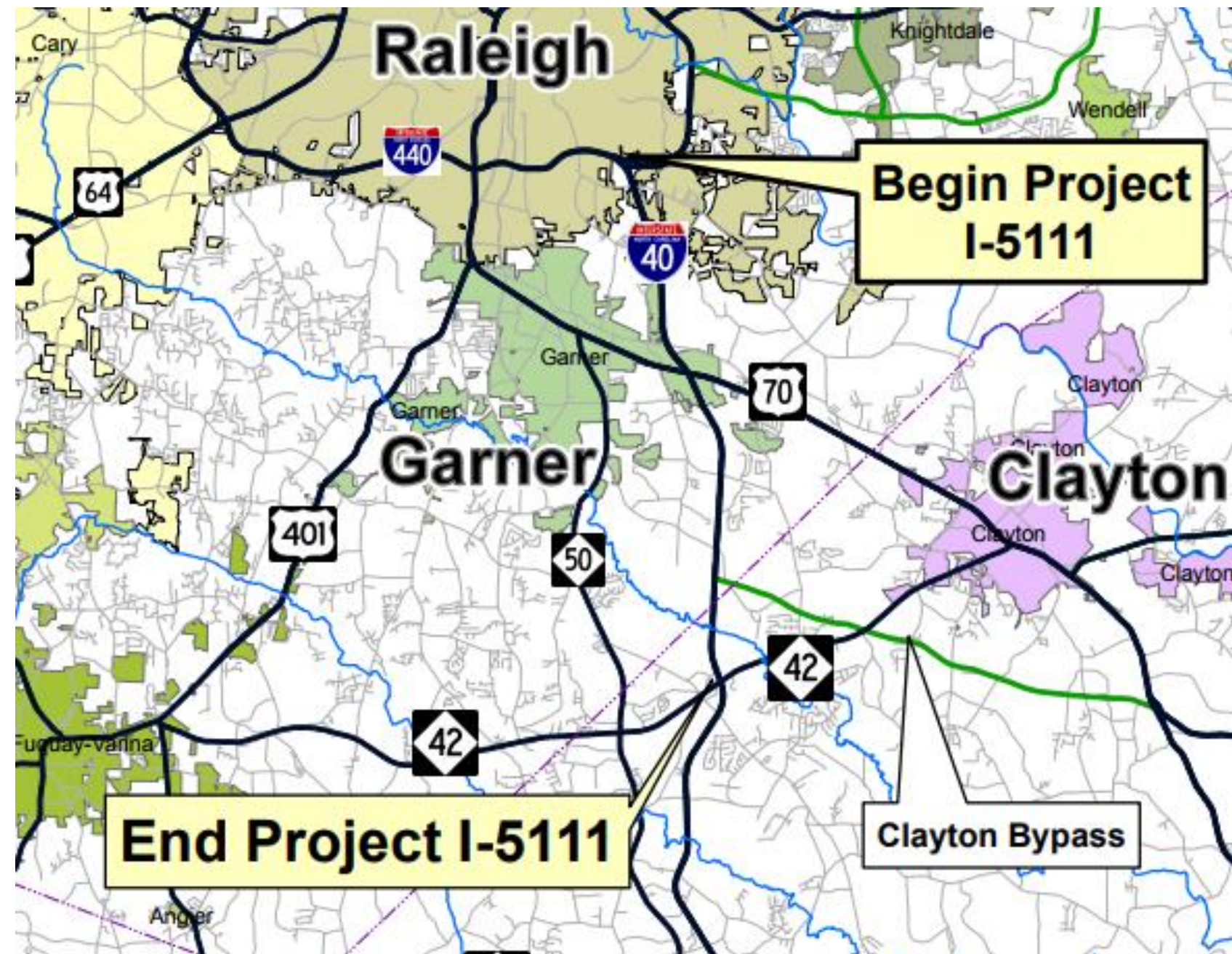
Division 5 Project Highlights

- I-40 Widening & Improvements
- I-40 at Aviation Parkway
- I-40 at Airport Boulevard
- Triangle Connector

I-40 Widening, I-440 to NC 42/Cleveland Rd

Project Description

- 440 Beltline to Cornwallis Rd
- Contract July 2018 / STW w/ RK&K
- Contract - \$360,175,000
- Modify Interchange at NC 42 / New Interchange at Cleveland Rd
- Collector Distributor Design at 42 and Cleveland Rd – reduces access points to I-40



I-40 Widening, I-440 to NC 42/Cleveland Rd

Project Description – Cont'd

- New Bridges - Rock Quarry, US 70 Business, E. Garner, White Oak, Swift Creek, NC 42 & Cleveland Rd
- Modify Interchange at NC 42 / New Interchange at Cleveland Rd
- Collector Distributor Design at 42 and Cleveland Rd – reduces access points to I-40
- All Lanes on I-40 by December 2021 (I-440 to US 70 Bypass)



I-40 Widening, I-440 to NC 42/Cleveland Rd

Shift traffic to temporary pattern on NC 42 Spring 2021



Open new December 2020



I-40 Widening, I-440 to NC 42/Cleveland Rd

Phased traffic shift including loop open to traffic



Shift traffic at Swift Creek Spring 2021



I-40 Widening, I-440 to NC 42/Cleveland Rd

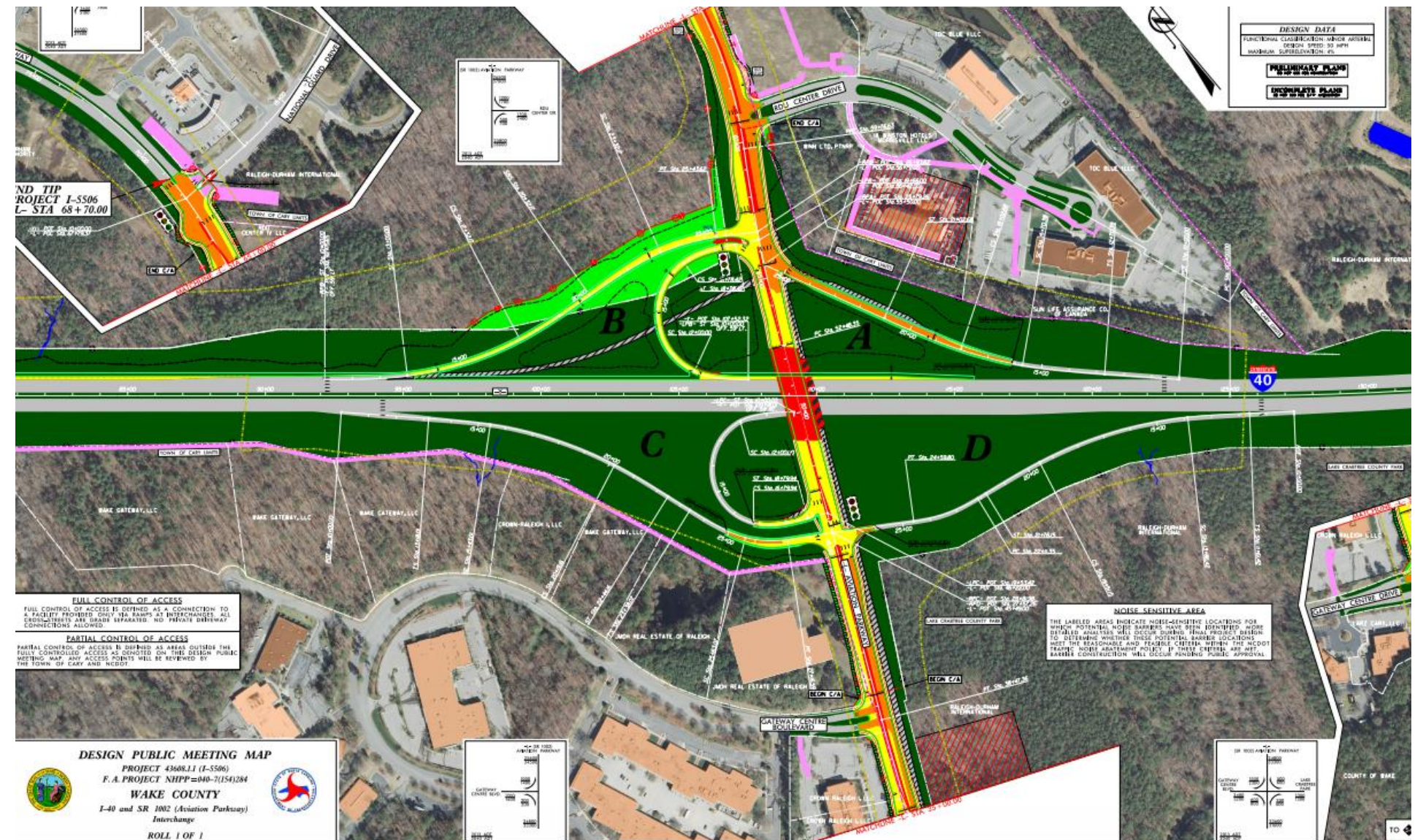
Innovations

- Median Access – I-40 to Swift Creek
- Ramp off existing East Garner Rd over I-40
- 21,375 loads of material delivered directly to median
- Conveyor installation Fall 2021



I-40/Aviation Parkway Interchange

- Contract - \$21.5 M
- February 2018 - Flatiron Construction
- Began April 2018 / Substantial Completion Spring 2021
- Replace Bridge Over I-40
- Add WB Loop for SB Aviation
- Widen Aviation to Divided Facility
- Add Auxiliary Lane on WB I-40 to Airport Blvd.



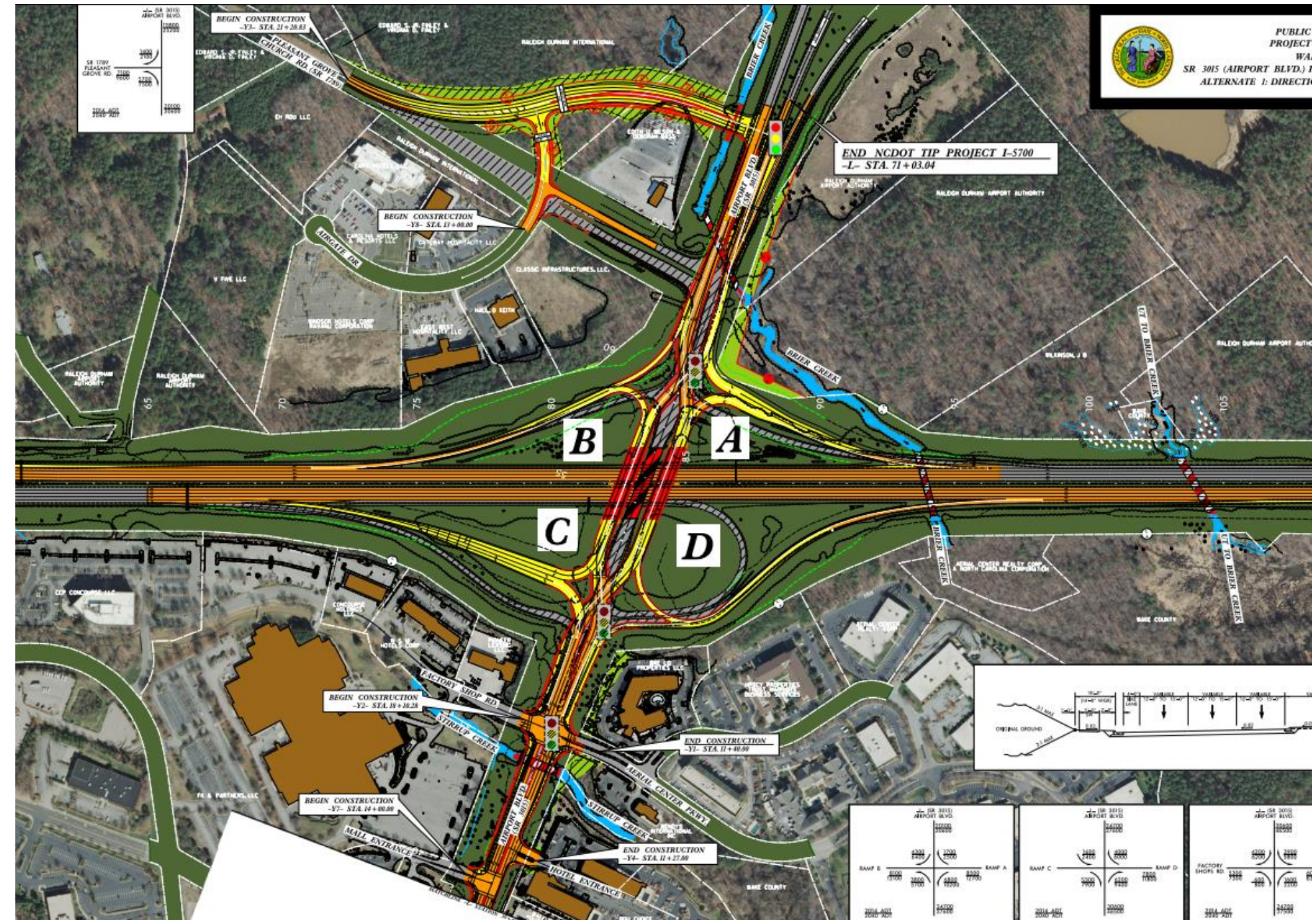
I-40/Aviation Parkway Interchange

- Began final phase in November
- Completion of median construction along Aviation Parkway
- Final lift of paving along I-40
- Anticipated Completion: Spring 2021



I-40/Airport Blvd Interchange

- Contract \$34.9 M
- November 2019 – Zachry Construction
- Began work Feb 2019 Substantial Completion Fall 2023
- Replace Existing Interchange with Diverging Diamond (DDI)
- Auxiliary Lanes (WB Airport to 540 & EB Airport to Aviation)



I-40/Airport Blvd Interchange

- On-going UBO Relocations
- Grading along Ramps and I-40 EB
- Culvert Construction along Airport Blvd
- I-40 traffic shifted to widened outside shoulder to facilitate interior bent bridge construction
- Bridge construction estimated to begin early 2021



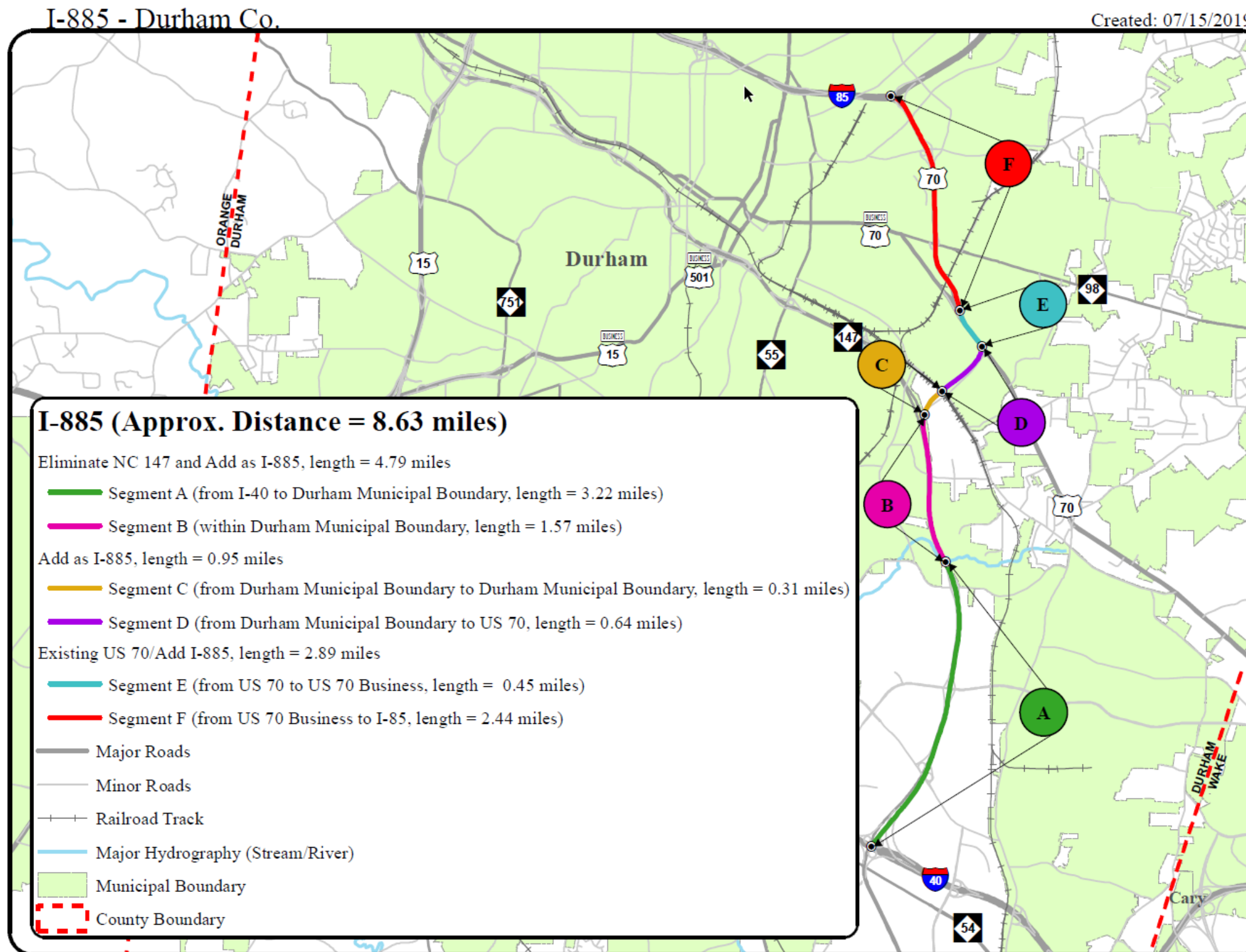
East End Connector (U-0071)

- New Location Freeway from NC 147 to US 70 North of NC 98



- 4 miles in length
- Contract Amount \$142 million
- Contractor – Dragados USA, Inc.
- June 2021 Substantial Completion (open in final pattern)

I-885/Triangle Connector



East End Connector (U-0071)

- Critical remaining work along US 70 corridor:

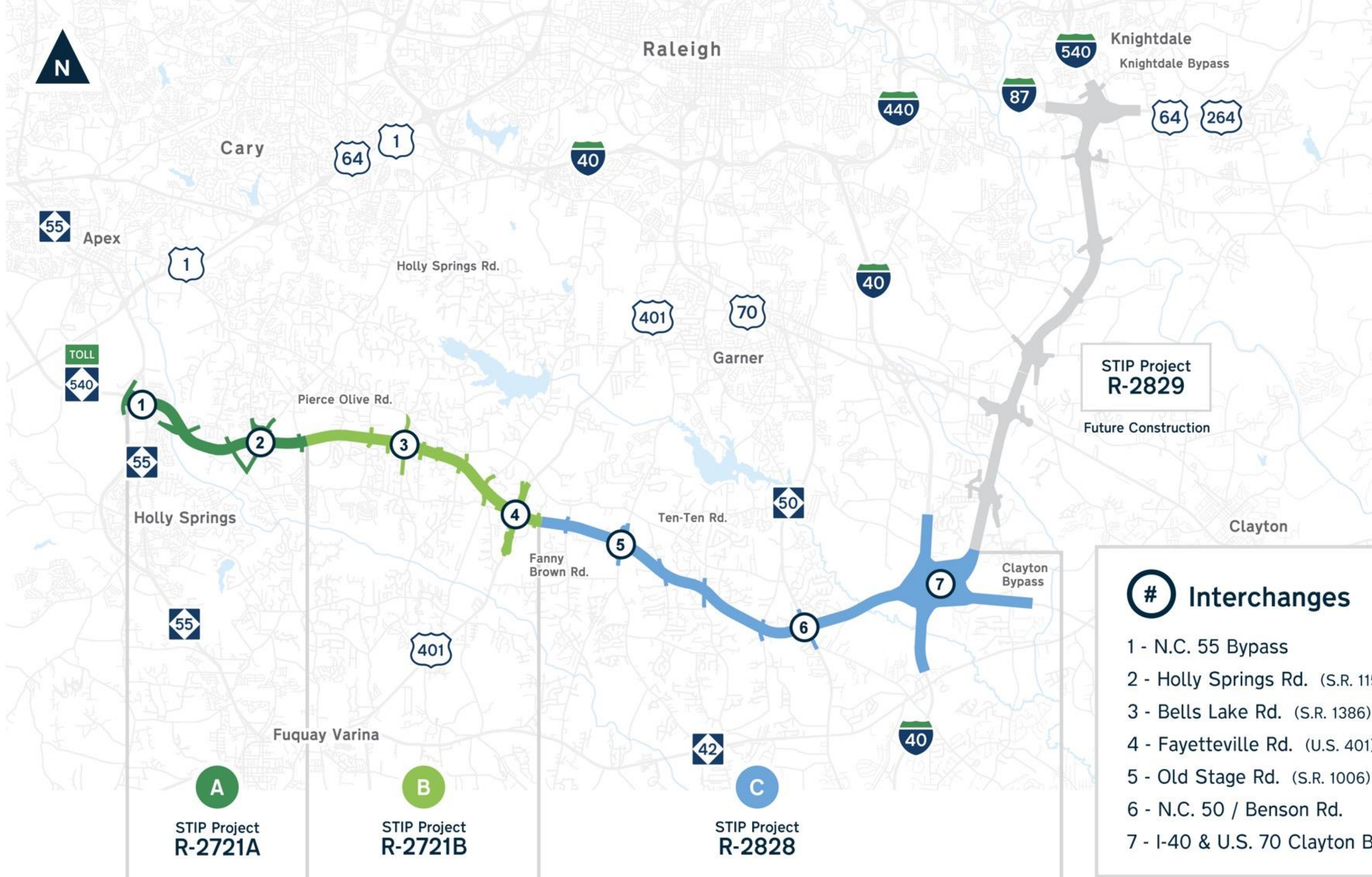


- NSRR and CSXRR Structures over US 70
- -Y- line alignment tie-ins to US 70 at Lynn Rd and Pleasant Dr

THANK YOU!!

Complete 540

Rodger Rochelle, P.E.



STIP Project
R-2829
Future Construction

Interchanges

- 1 - N.C. 55 Bypass
- 2 - Holly Springs Rd. (S.R. 1152)
- 3 - Bells Lake Rd. (S.R. 1386)
- 4 - Fayetteville Rd. (U.S. 401)
- 5 - Old Stage Rd. (S.R. 1006)
- 6 - N.C. 50 / Benson Rd.
- 7 - I-40 & U.S. 70 Clayton Bypass

A
STIP Project
R-2721A

B
STIP Project
R-2721B

C
STIP Project
R-2828

R-2721A

BRANCH CIVIL | FLATIRON | Gannett Fleming

A

88%

Plans for Construction

\$183.5M

Cost of Contract

205 Design Submittals

99%

Parcels with Access

R-2721B

BRANCH CIVIL | FLATIRON | HDR

B

94%

Plans for Construction

\$160.0M

Cost of Contract

198 Design Submittals

97%

Parcels with Access

R-2828

LANE | BLYTHE | WSP

C

99%

Plans for Construction

\$403.2M

Cost of Contract

438 Design Submittals

91%

Parcels with Access



Future Interchange

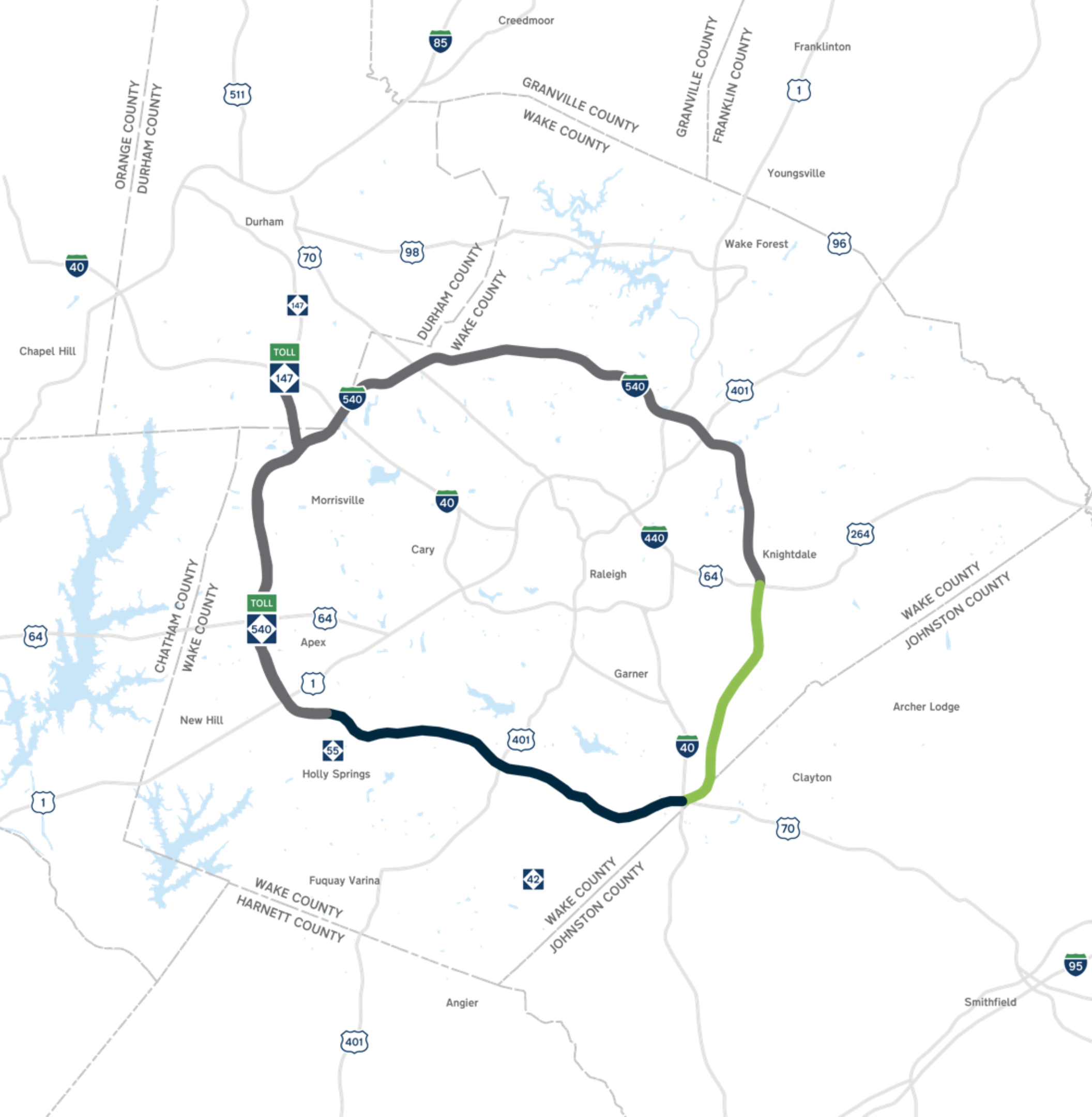
I-40 / U.S. 70











Open to traffic (42 miles)

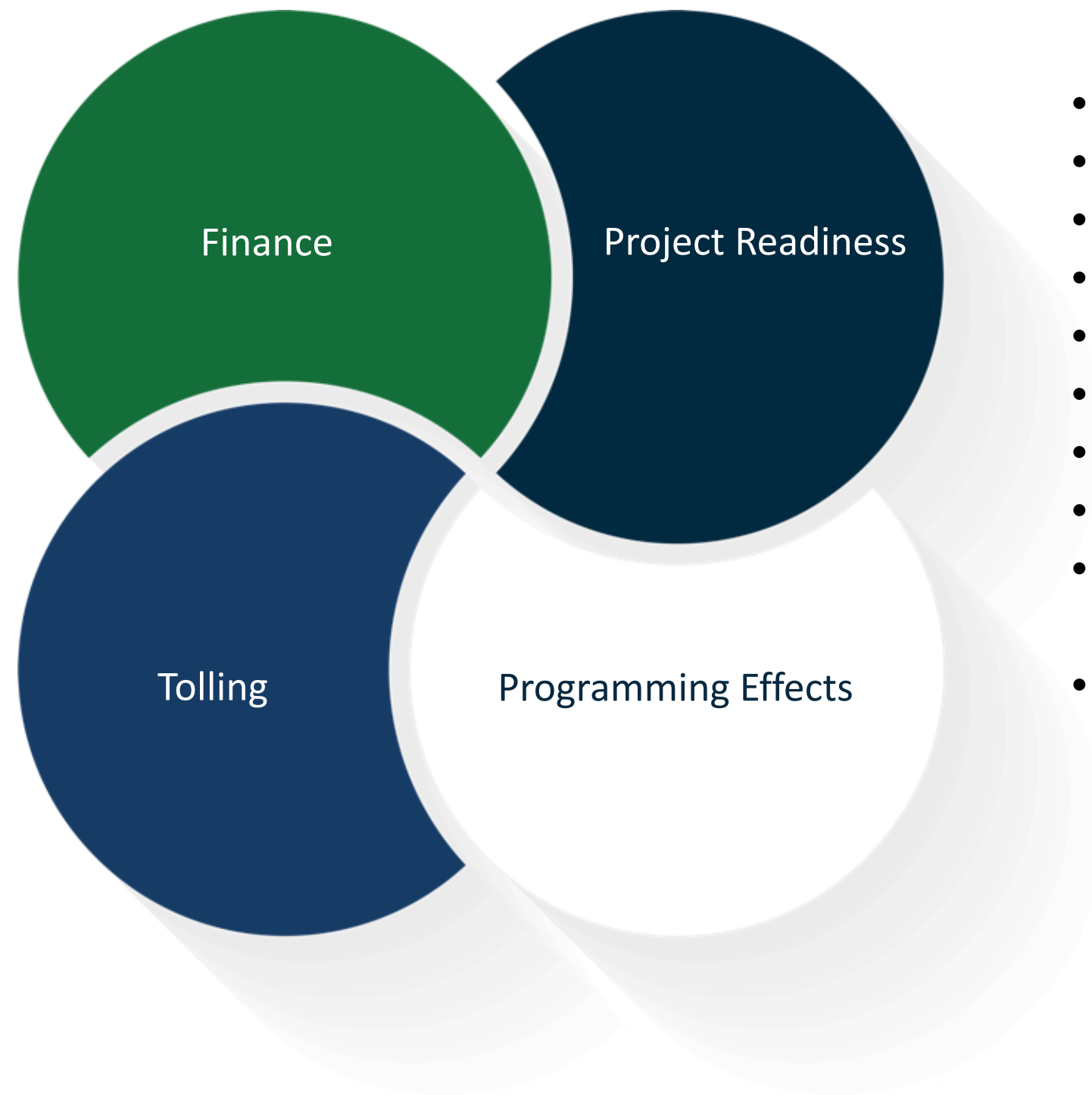
I-540 & Triangle Expressway

Under construction (18 miles)

Southern Wake Expressway (Phase I)

Missing link (11 miles)

Eastern Wake Expressway (Phase II)



- The Project is ready
- Completes the missing link
- Accelerates the systemwide benefits
- No impact on other projects
- Reduce overall cost and Trust Fund Allocation
- Unlock \$100M in Bonus Allocation
- Exploit historically low interest rates
- Reduced risk
- Synchronize tolling; remove tolling on the corridor ~10 years earlier
- Direct and indirect benefits to the local economy

Contact Us

 ncdot.gov/complete540

 complete540@ncdot.gov

 1-800-554-7849

 @NCTurnpike

@NC_QuickPass



Thank you!

Triangle Bikeway study

Kenneth Withrow, Senior Transportation Planner
Capital Area Metropolitan Planning Organization





TRIANGLE BIKEWAY STUDY

RTP Owners and Tenants Meeting

December 10, 2020





Agenda

Introduction

Case Studies

Public Input Summary

Survey Summary





**TRIANGLE
BIKEWAY
STUDY**

Study Area



Feasibility Study

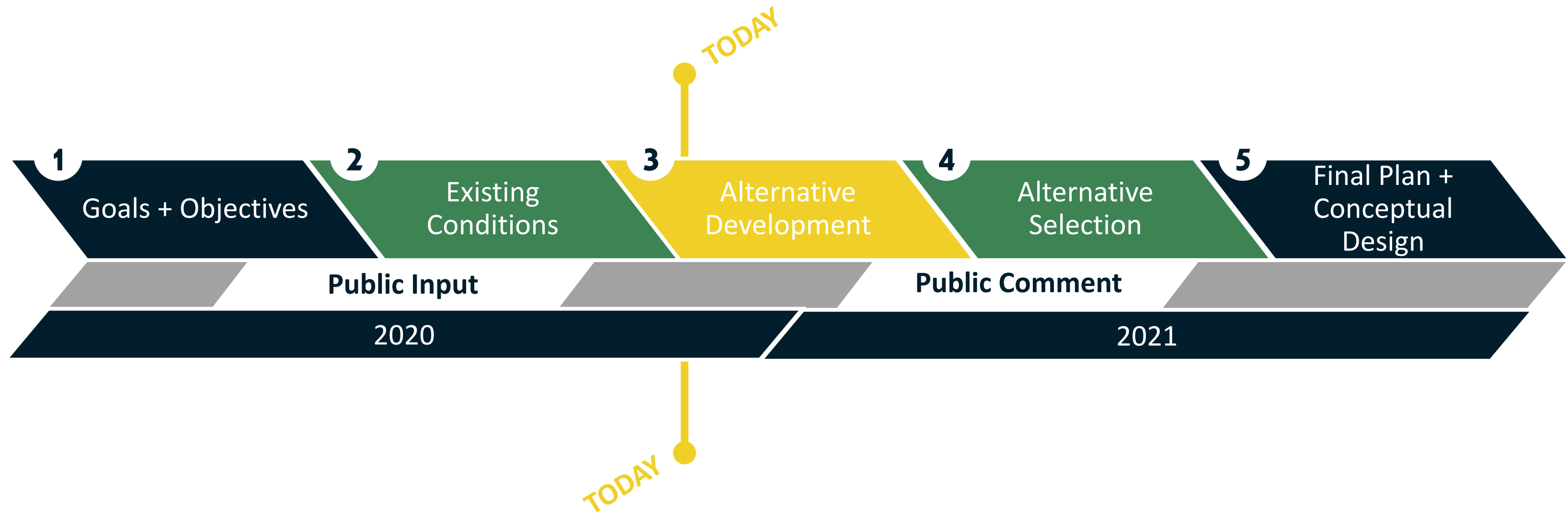


30% Design





Schedule





**TRIANGLE
BIKEWAY
STUDY**

www.trianglebikeway.com



TRIANGLE BIKEWAY STUDY

[NC CAMPO](#)



[DCHC MPO](#)



The Triangle Bikeway project will study the idea of a 17-mile bicycle path. The bikeway will link Raleigh, Research Triangle Park (RTP), Durham and Chapel Hill along I-40 and NC 54. The current planning effort includes design and construction recommendations between Raleigh and RTP, and a corridor assessment for the connection west to Durham and Chapel Hill. The bikeway will connect Triangle communities making both short and long bike trips for work, play and daily errands possible. Ideas from residents will shape the plan. Agencies across the region are working together in the planning process, which will take approximately 18 months.

EVENTS & RESOURCES

[VIRTUAL PUBLIC
WORKSHOPS & FOCUS
GROUPS](#)



HELP SHAPE THE PLAN

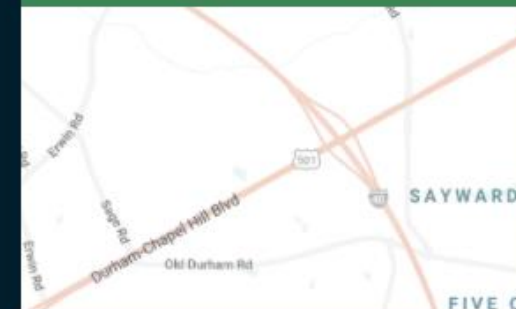
[TAKE THE METROQUEST
SURVEY!](#)



For accessibility needs to complete the survey,
please call 919-996-4403

SHARE YOUR KNOWLEDGE OF THE CORRIDOR

[PUBLIC COMMENT MAP](#)



EXPLORE OTHER BIKEWAYS IN THE U.S.

[CASE STUDIES](#)





TRIANGLE BIKEWAY STUDY

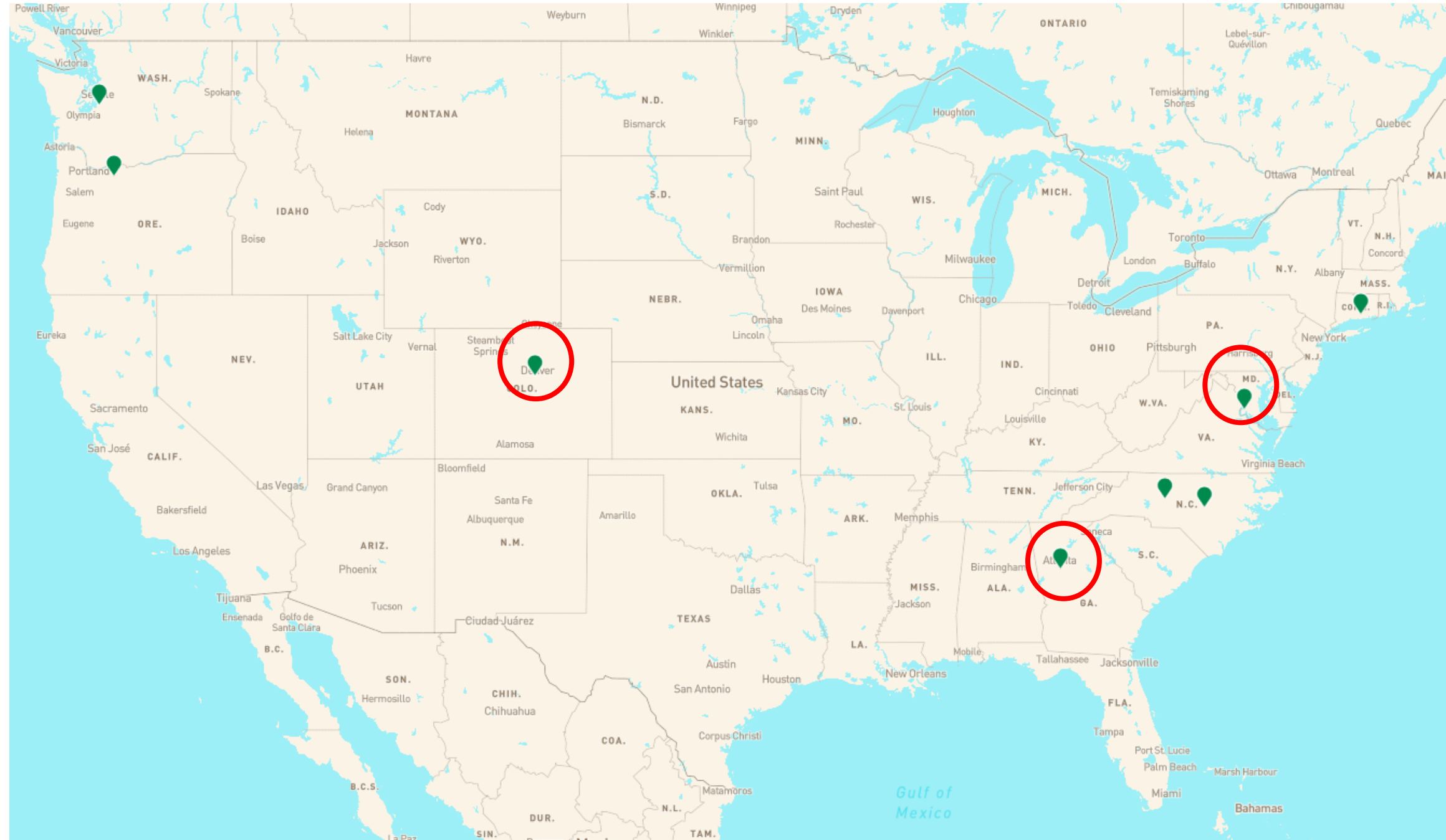
Case Studies



Case Studies

What we looked for:

- > Bike/ped facilities along interstate highways
- > Constructed projects
- > Interested in:
 - > Timelines
 - > Challenges
 - > Design solutions
 - > Funding sources
 - > Successful strategies
 - > Partnerships + coordination



TRIANGLE BIKEWAY CASE STUDIES

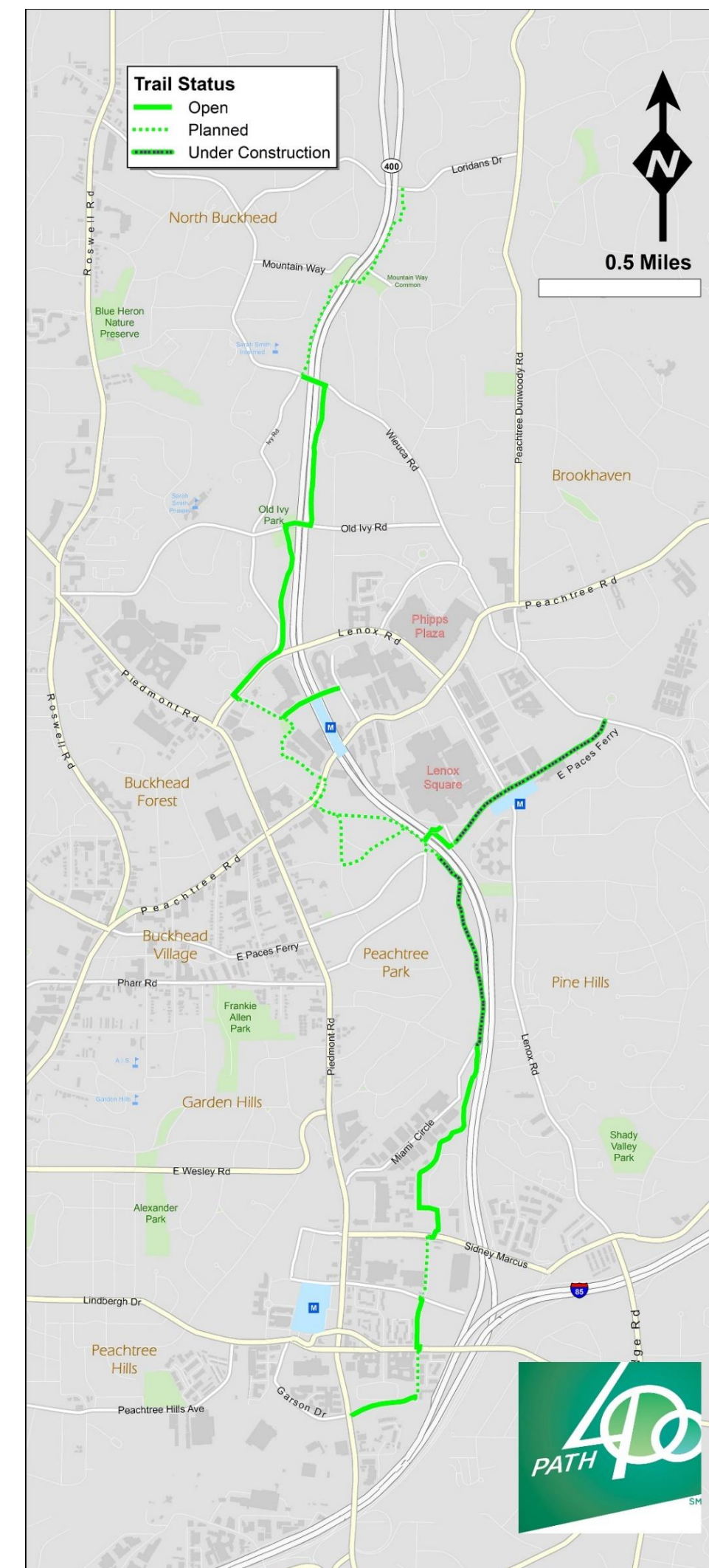
PATH 400 – Atlanta, GA

Summary

In 2011, public engagement, land acquisition, and data collection began. Key stakeholders include: Livable Buckhead, City of Atlanta, GDOT, Marta, and the PATH Foundation. Trail funding sources have included a local sales tax (TSPLOST), state funding and federal grants. The trail will soon extend north into Sandy Springs, connect to the Atlanta Beltline to the south and the Peachtree Creek Greenway to the southwest.

Key Points

- Atlanta, Ga
- Trail length: 5.2 miles
- Construction timeline: 2014-2020
- Right of way: 66% in GDOT ROW
- Total cost: \$28 million



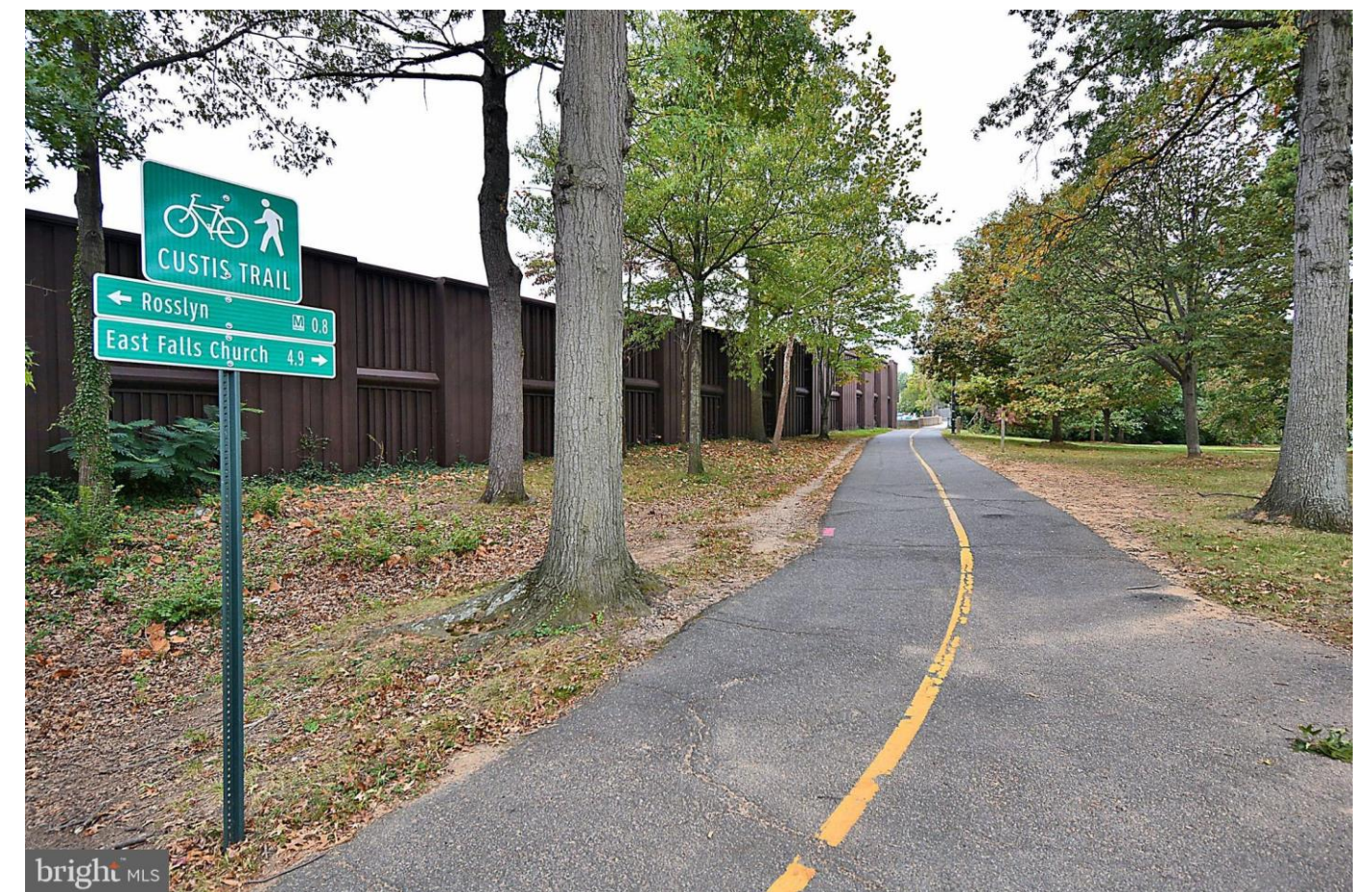
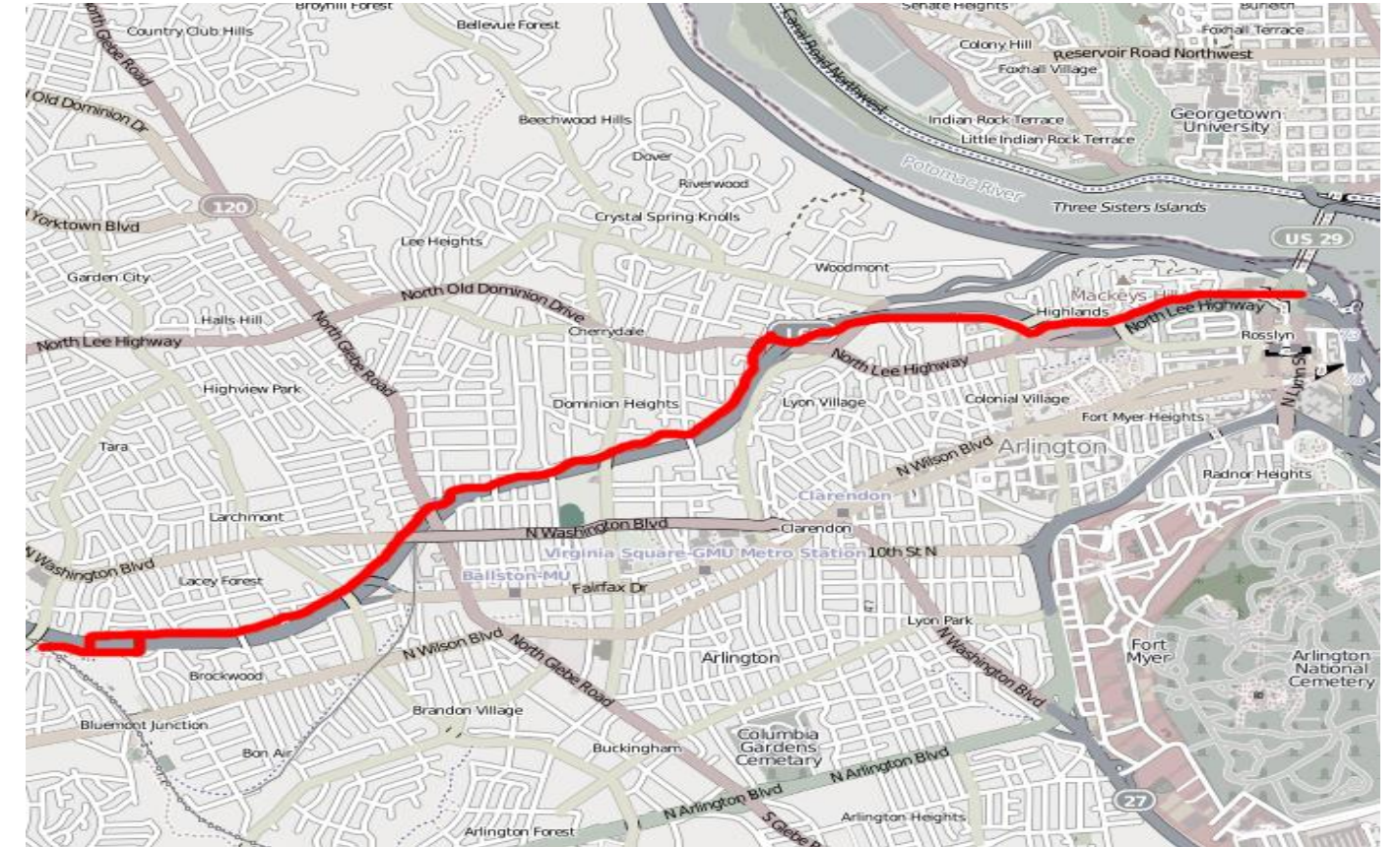
Custis Trail – Northern Virginia

Summary

The Custis Trail was included as part of original I-66 highway construction project, which helped secure federal funds. The trail is extremely popular for commuting (a daily average of 2,500) and includes lighting. It connects to the DC metro bike network, the Mount Vernon Trail, the C&O Canal Towpath and will soon be extended 11 miles into Fairfax and Prince William Counties as part of “Transform I-66 Outside the Beltway,” a major capital transportation project.

Key Points

- Arlington County, VA
- Trail length: 4.5 miles
- Construction timeline: 1978-1982
- Right of way: 100% in VDOT ROW
- Total cost: \$2.5 million



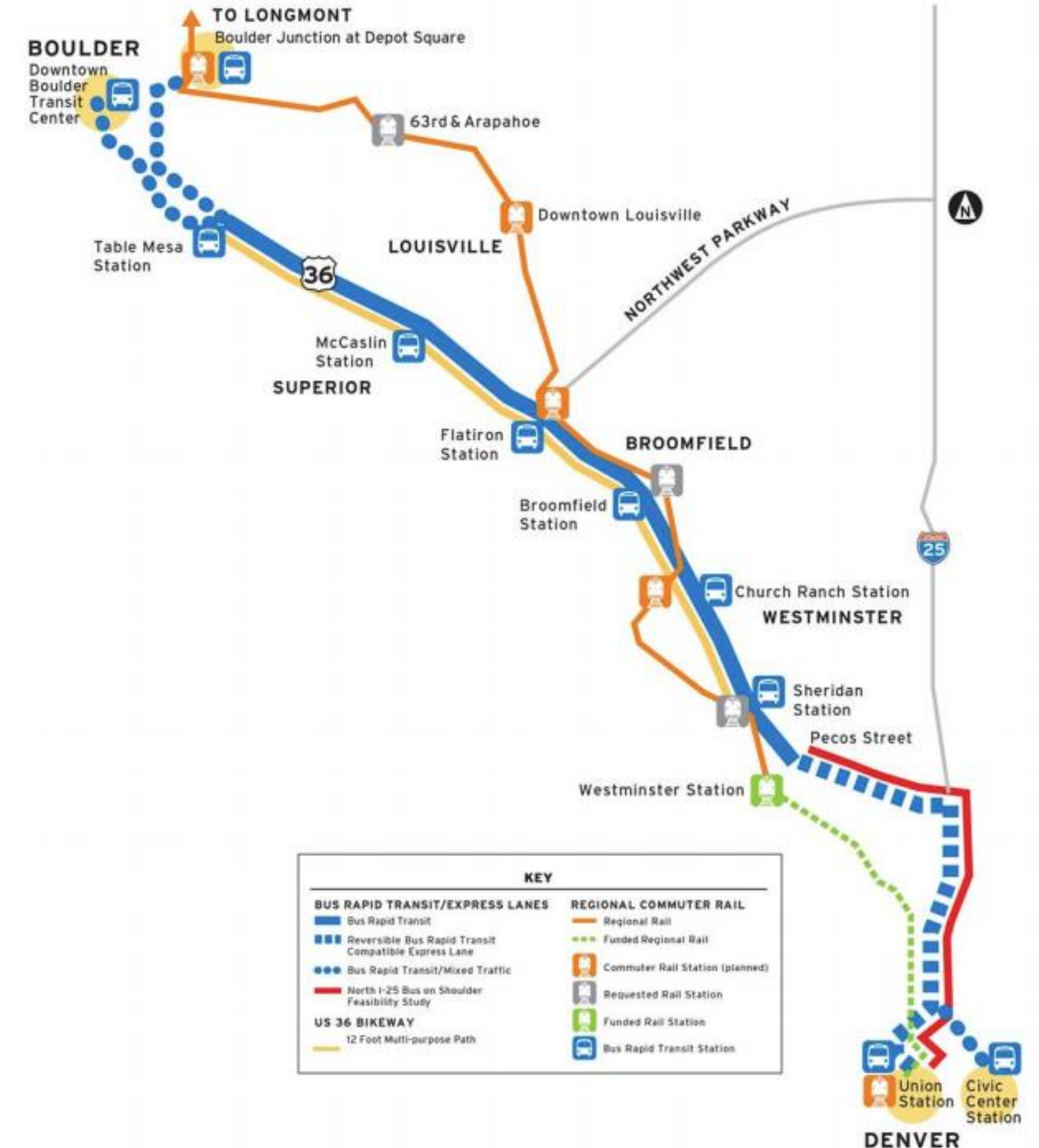
US 36 Bikeway - Denver to Boulder, CO

Summary

US 36 Bikeway was part of a larger CDOT project to create bus rapid transit (BRT) service and tolled express lanes along the busy US 36 corridor. These investments were part of FasTracks, a multibillion-dollar public transportation expansion throughout metropolitan Denver. Additional funding sources included CDOT, FHWA, and Regional Transportation District (RTD). US 36 Bikeway is well used (an estimated 500 daily users) for commuting to work, accessing activity centers, local businesses, transit stations, and to the greater bike network in Denver metro region.

Key Points

- Metro Denver, CO
- Trail length: 18 miles
- Construction timeline: 2015-2016
- Right of way: 100% in CDOT ROW
- Total cost: \$16.6 million



TRIANGLE BIKEWAY CASE STUDIES

US 36 Bikeway - Denver to Boulder, CO





TRIANGLE BIKEWAY STUDY

Public Input Summary



Meeting Update

> Interjurisdictional

- > Cary
- > Chapel Hill
- > Raleigh
- > Durham
- > Morrisville

> Elected Officials

- > Town Council – Morrisville
- > Mayor Weinbrecht
- > Mayor Baldwin + Council
- > Mayor Schewel
- > Mayor Hemminger

> NC Bike Walk Summit

> Stakeholders

- > RTP
- > NCDOT
- > USACE / NCWRC
- > Go Triangle
- > SAS*
- > Bandwidth*
- > State Parks
- > RDU
- > Duke Energy
- > CSX
- > NC Railroad

> MPO Boards

- > DCHC Board
- > CAMPO Board

> Employers

- > RTI
- > UNC REX Healthcare
- > RTA
- > BD
- > Shanska
- > BASF
- > NetApp
- > Valassis
- > Pedego Triangle
- > Cisco
- > IBM
- > Aledandria Real Estate Equities, Inc.
- > KDC
- > Biogen
- > UNC Health





TRIANGLE BIKEWAY STUDY

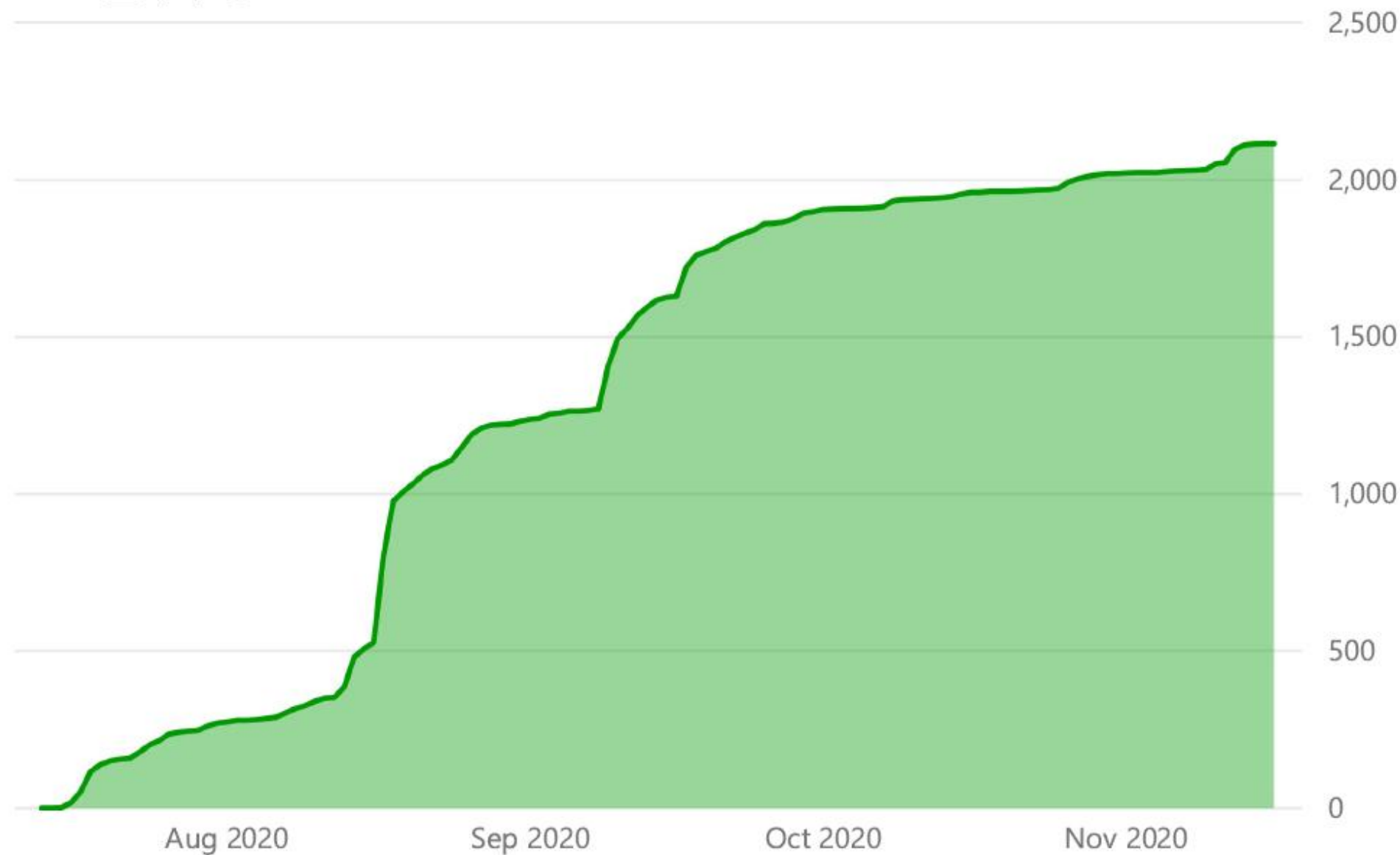
Survey Summary



Interim Survey Report

Participants

2116



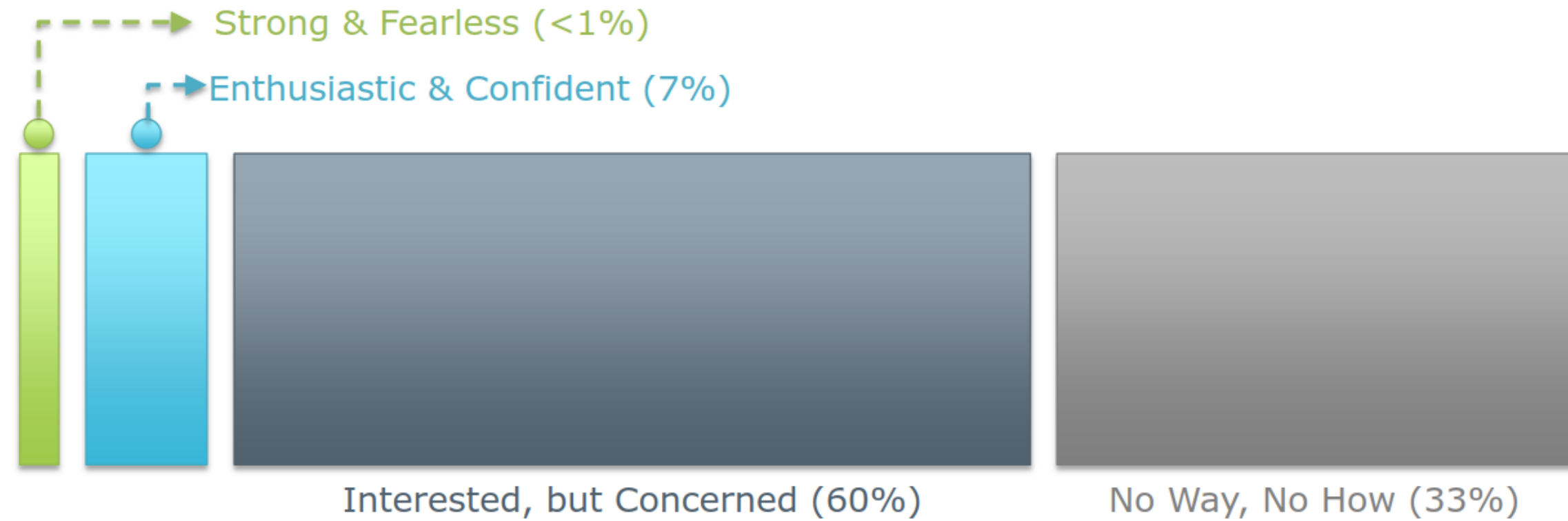
Key Takeaways

- > All corridor zip codes well represented
- > Good mix of live / work
- > Clear preference for separated facilities – greenways / protected bike lanes
- > 67% would use weekly
- > Need further input on proximity to I-40

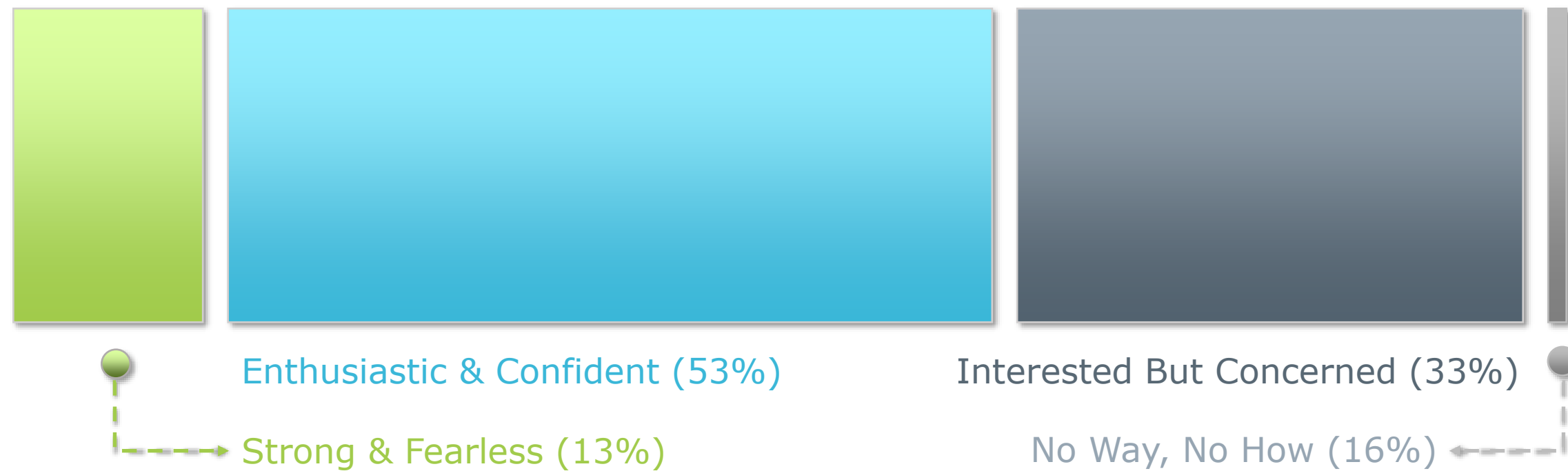


Survey Distribution

Portland Study

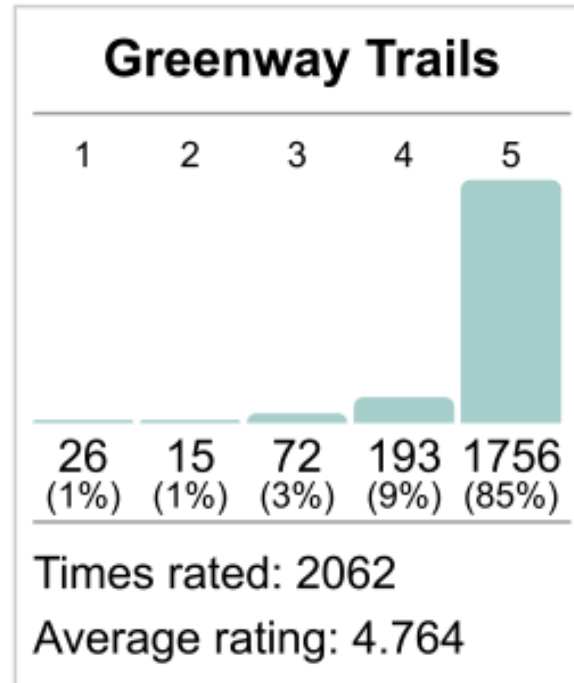
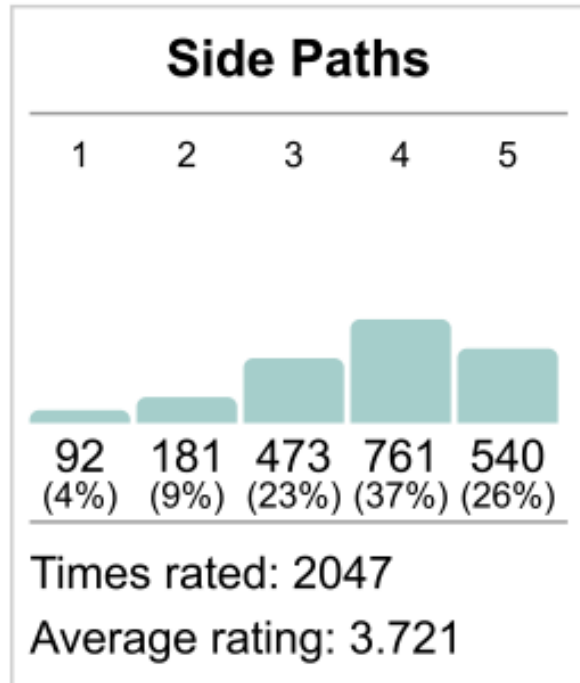


Triangle Bikeway Survey

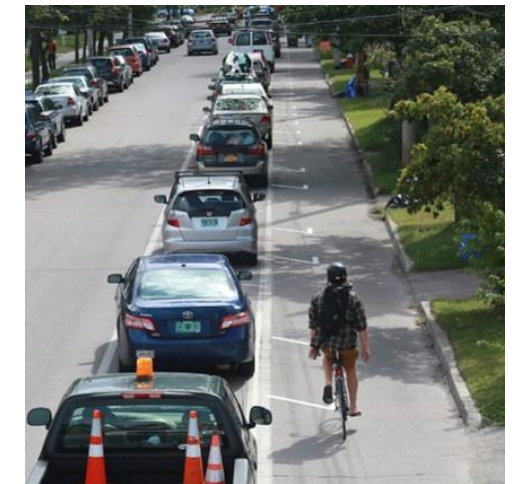
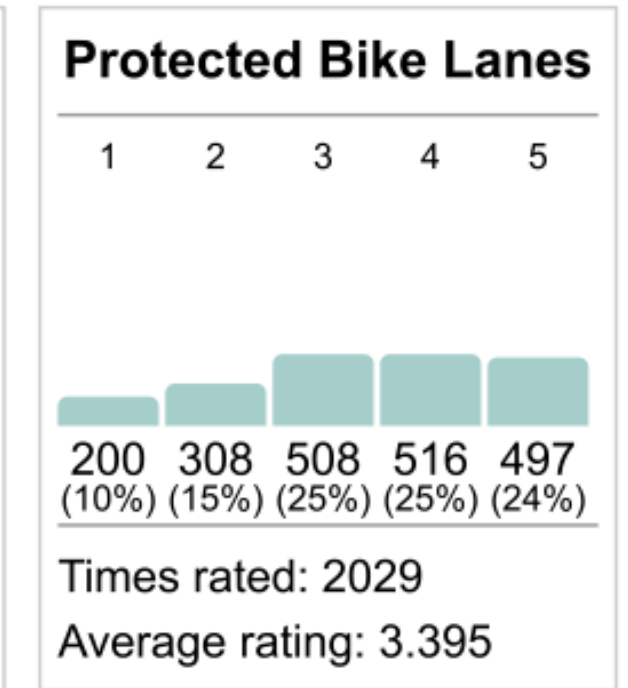
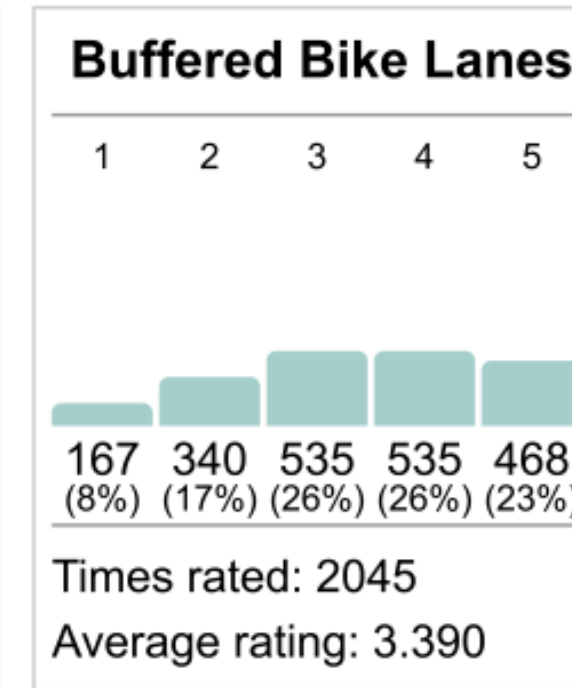
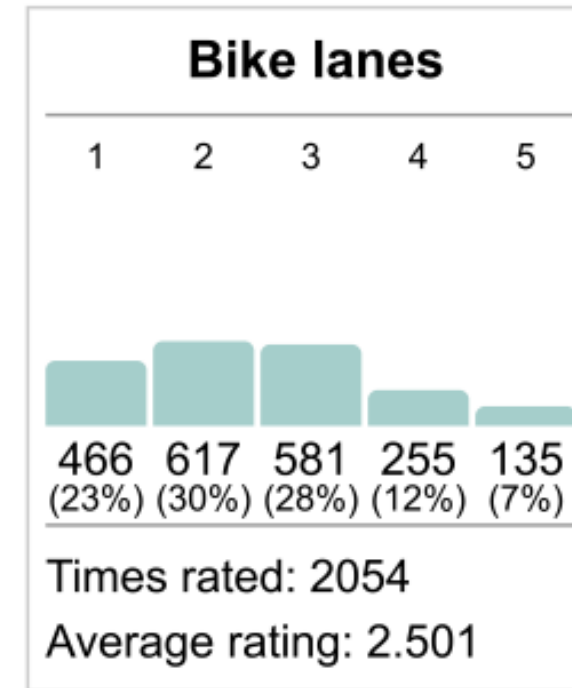
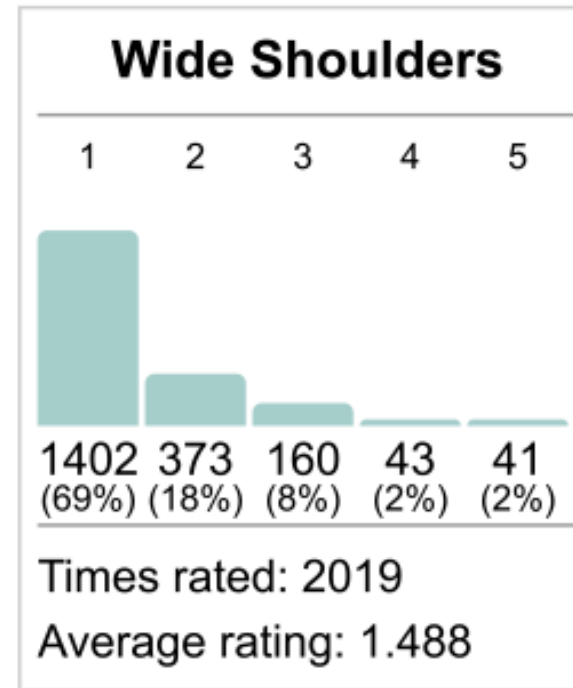


Facility Preference

OffRoad Facilities



OnRoad Facilities



Next Steps

Review and analyze survey results

Analyze all alternative alignments options

Review existing plans and planned projects

Complete remaining stakeholder engagement

Write draft public input chapter

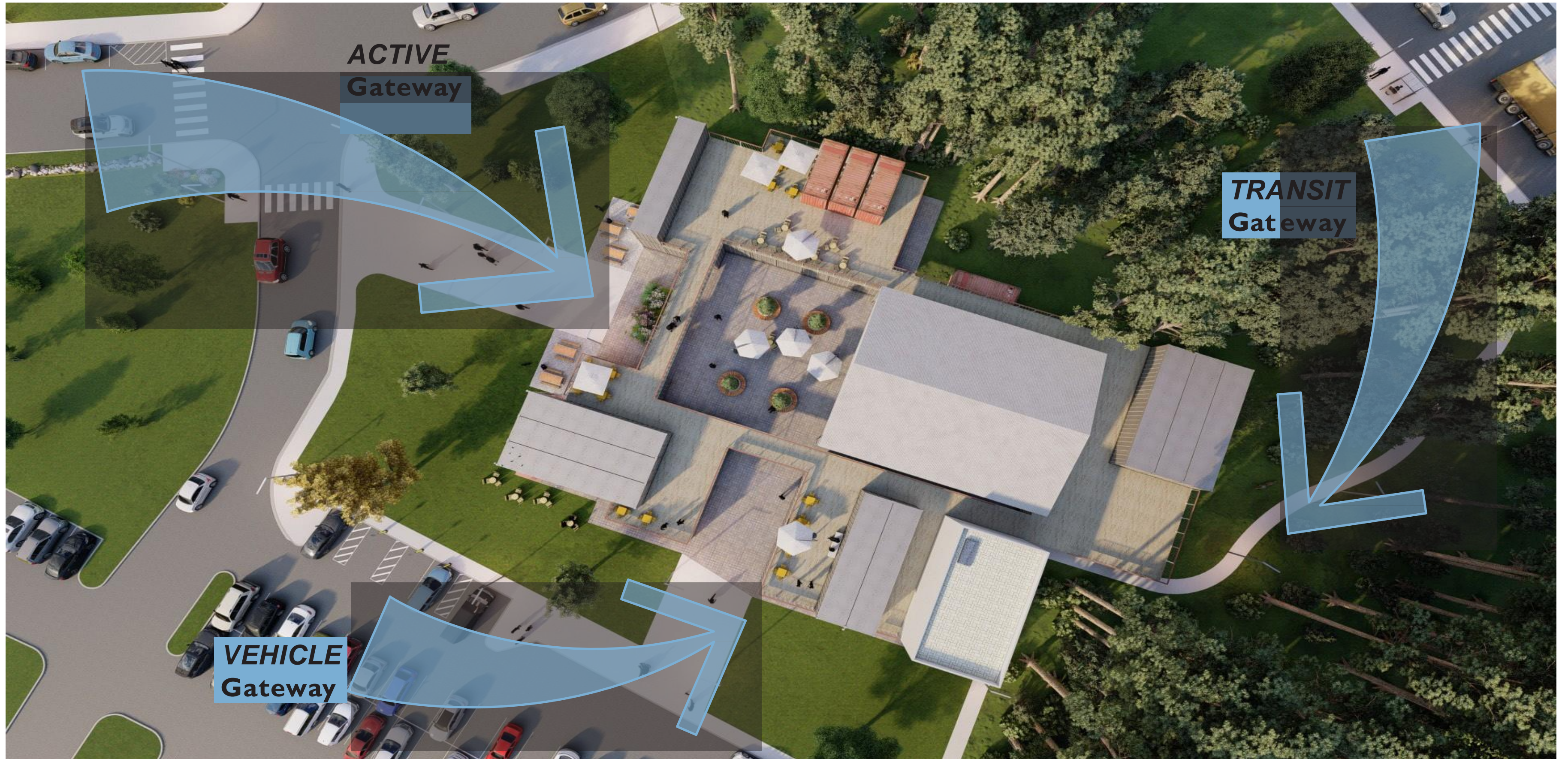


RTP Micromobility

Hank Graham, Planning Director
Research Triangle Foundation of NC



Boxyard



Boxyard Mobility Hub

At the center of RTP, the new Boxyard site is in a strategic location, to benefit from, and enhance the development and efficacy of an RTP mobility hub system. Key aspects of the site that lend itself well to mobility hub development include:

- Central location within RTP
- Proximity to the developing Hub site and future RTP residents and mixed use development
- Proximity to the Frontier site
- RTP Connect pick-up/drop off zone
- Proximity to NC 54 GoTriangle bus stop
- Proximity to the RTP-wide trail system
- General site layout that can allow for the prioritization of micromobility features

The point of view graphics on the following pages are built around the multiple access points to Boxyard.



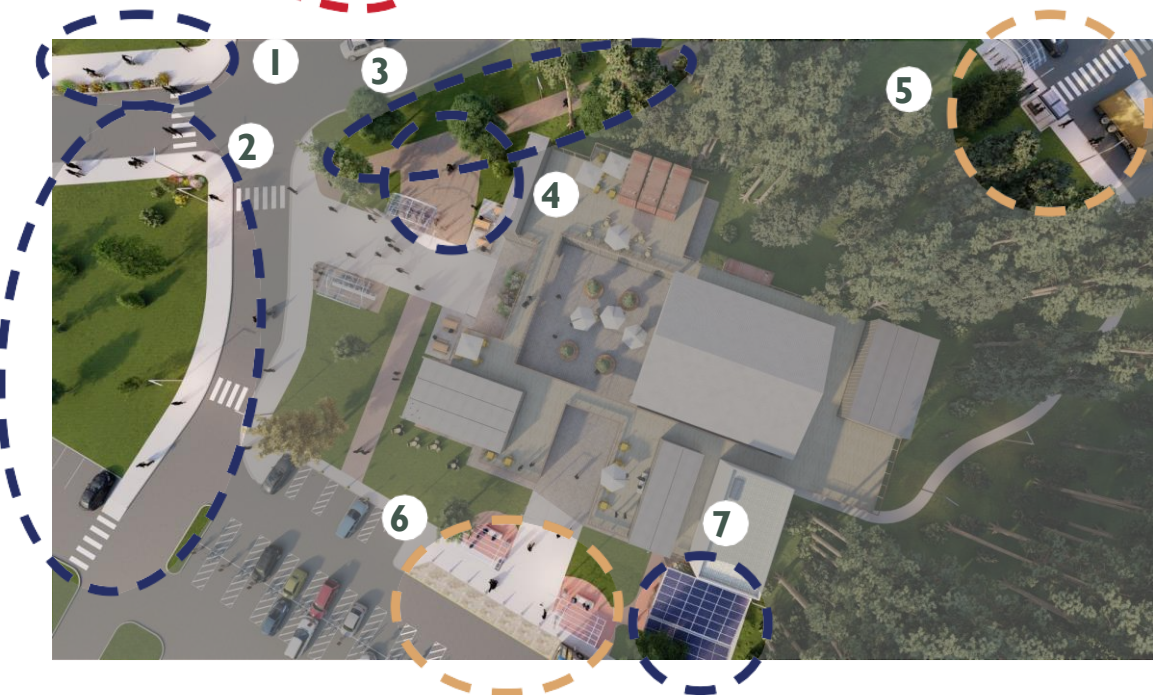
ENHANCED

1. Electric vehicle charging
2. Bike sharing system
3. Short-term Bicycle/scooter parking
4. Pedestrian features
5. Improved bus stop and features



FUTURE-PROOF

1. Covered bike share station
2. Covered short-term bicycle/scooter parking
3. Improved bus station
4. Priority parking spaces for electric vehicle charging, car and vanpool, and car sharing
5. Improved placemaking for ridehailing and shuttle pick-up/drop-off
6. Long-term bike parking/maintenance shed



WORLD-CLASS

1. Expanded shared use path with buffer
2. Sidewalk completed
3. Shared use path pulled away from street
4. More direct connection to Boxyard from path
5. Station enhancements and sidewalk widening
6. Further improvements and shuttle/transit service
7. Enhanced bike garage

Active Gateway

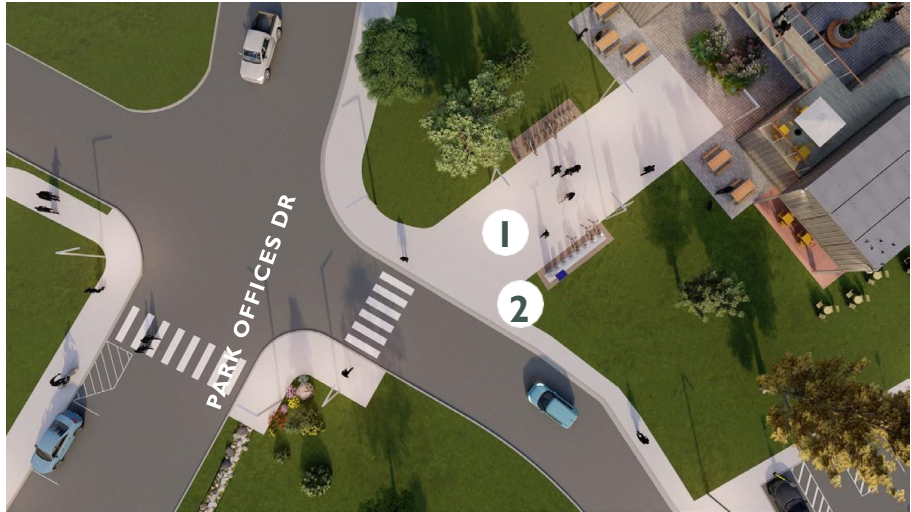
TYPICAL



ENHANCED

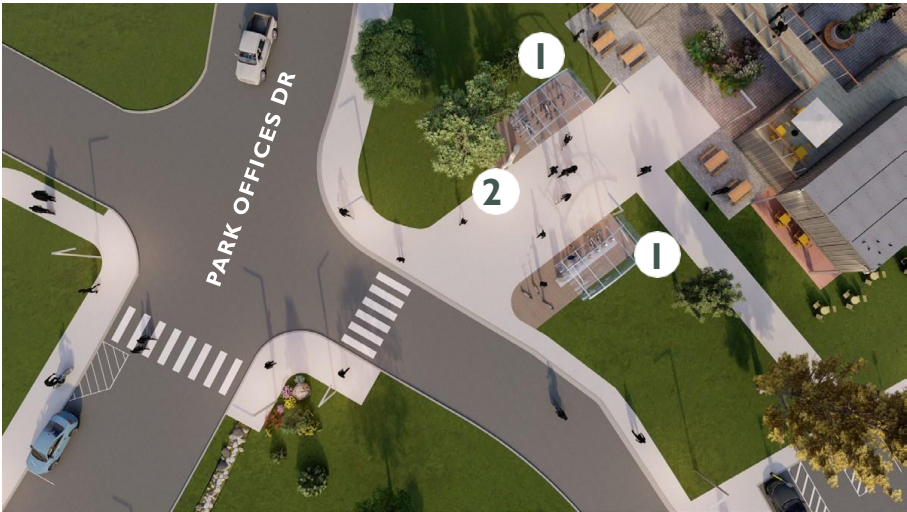


The east side entrance to the Boxyard Site is conducive to micromobility access, with its separation from the parking lot to the north and accessibility to the planned shared use path toward Frontier and Hub (and the RTP-wide trail system). This could be an inviting landing for residents, employees, and visitors wishing to reach Boxyard via the internal pathway system.



- 1. Short-term mobility device parking area
- 2. Bike share station (potential for e-bike)

FUTURE-PROOF



- 1. Covered light individual transportation parking area
- 2. Pedestrian features: wayfinding kiosk, emergency call station, Wi-Fi, waste receptacle, hydration station

WORLD-CLASS



- 1. Pull path from adjacent to Park Dr to create greenway link. Connect greenway to main entry plaza for convenient access
- 2. Expand sidewalk width
- 3. Expanded shared use path with buffer, as main thread to Frontier
- 4. Complete sidewalks along this corner to improve access to Frontier 700

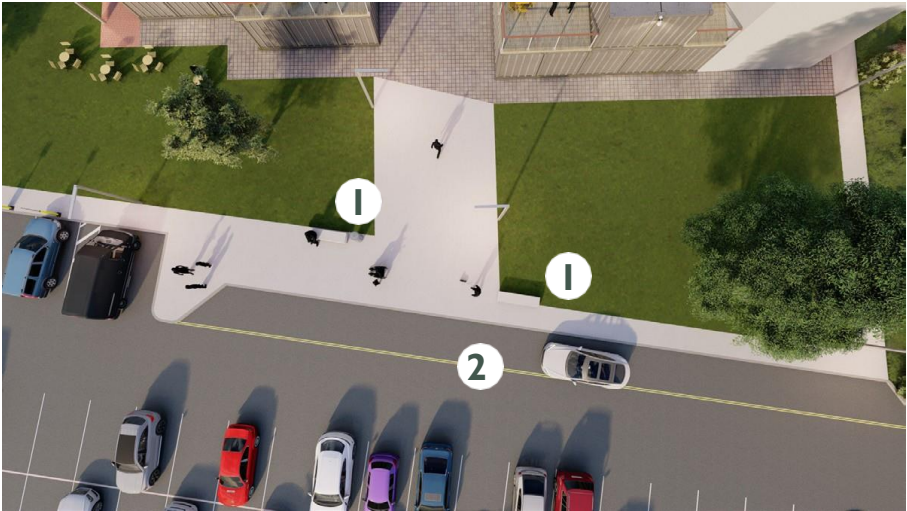
Vehicle Gateway

TYPICAL



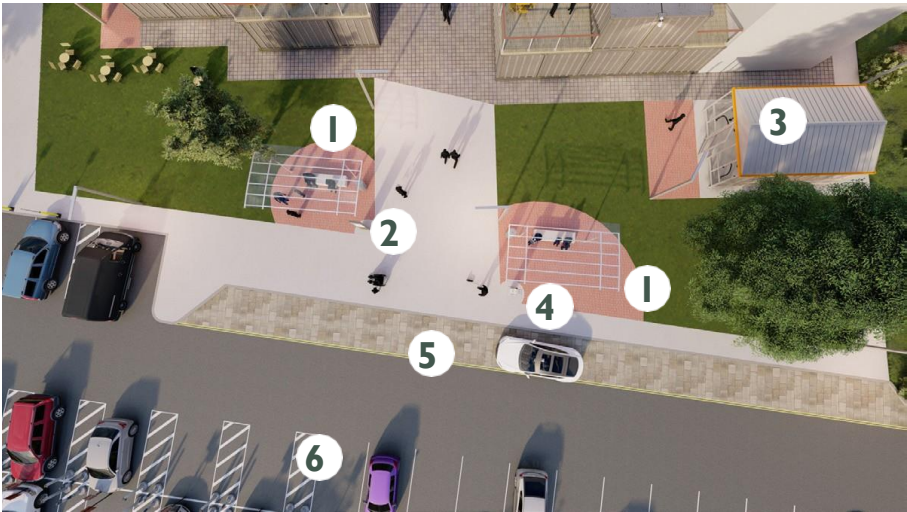
The north side of the Boxyard Site includes access to a large parking lot and faces Frontier 700. With ample parking, and space for pick-up/drop-off, this location is conducive for vehicular access. Electric Vehicle parking, car-share, ridehailing, and even transit can be coordinated here.

ENHANCED



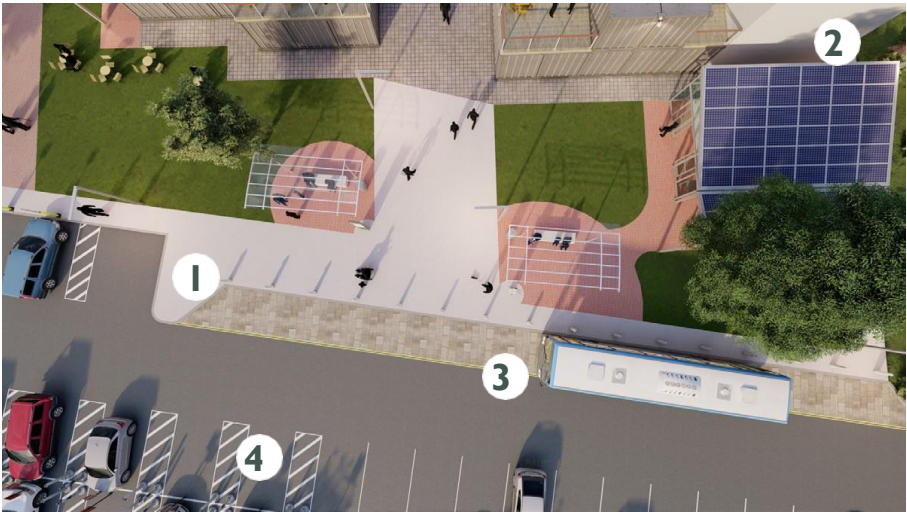
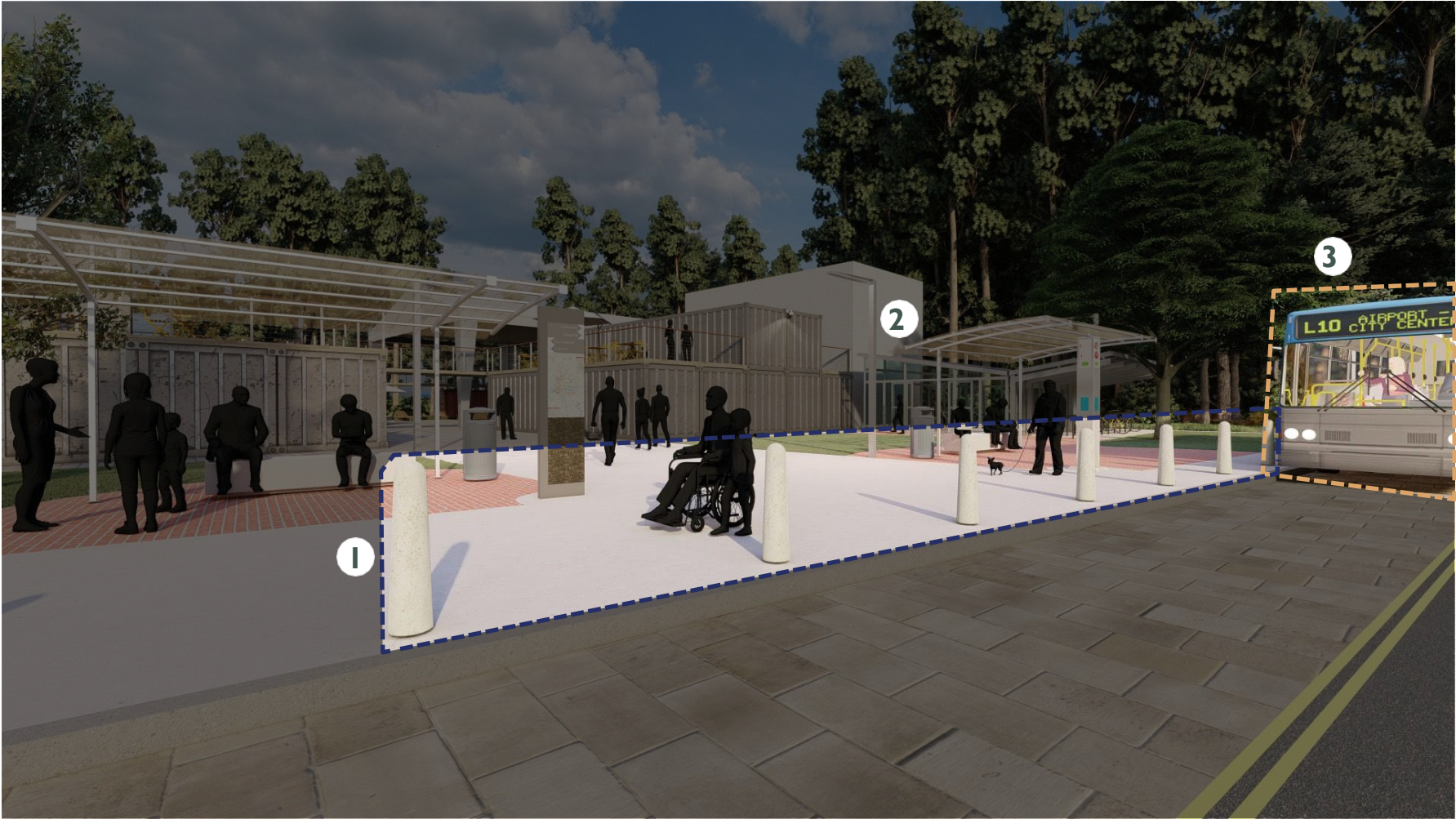
1. Minor pedestrian features like bench seating and waste receptacles
2. Pavement markings for pick-up/drop-off area for ridehailing services

FUTURE-PROOF



1. Covered benches and enhanced floor materials
2. Wayfinding kiosks
3. Bike parking garage
4. Public Wi-Fi and electronics charging station
5. Pick-up/Drop-off pad material upgrade
6. Priority parking spaces for carshare, car/van-pool, and electric vehicles

WORLD-CLASS



1. Bollards delineating pedestrian and vehicle spaces
2. Enhanced bike garage with solar panels and short-term and long-term parking options
3. Public transit or shuttle service
4. Expanded priority parking spaces for carshare, car/van-pool, and electric vehicles

Transit Gateway

TYPICAL



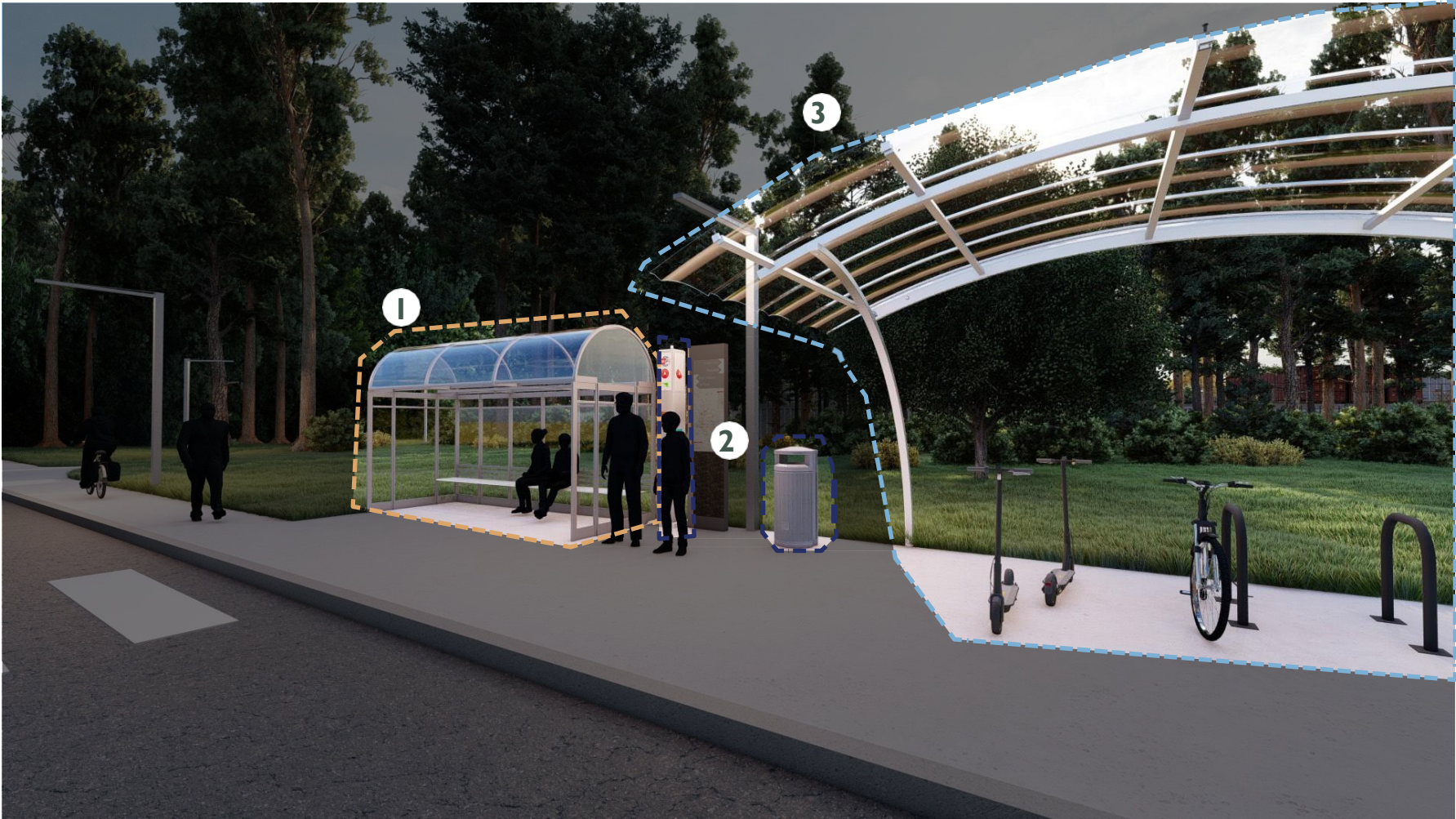
To the south, the NC 54 GoTriangle bus stop will be connected to both the west and east side of Boxyard by sidewalks. Expanding the comfort and convenience of the first mile/last mile connection will enable greater use of the mobility hub system.

ENHANCED



- 1 Improved bus stop seating area
- 2 Wayfinding and information kiosk
- 3 Shared mobility device parking

FUTURE-PROOF



- 1 Improved bus stop seating area
- 2 Pedestrian features such as emergency call station, waste receptacle, public Wi-Fi, and hydration station
- 3 Covered shared mobility device and bicycle parking

WORLD-CLASS



- 1 Expand sidewalk to shared use path
- 2 Add ancillary features to bus stop

Final Comments



RESEARCH TRIANGLE FOUNDATION OF NC

RTP Owners & Tenants Meeting

December 10, 2020



IN CONCERT WITH

