

Building Roads for Transit: Construction, Funding, and Benefits of BRT Infrastructure

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NORTH CAROLINA
Department Of Transportation



Integrated Mobility Division

Agenda

1. Welcome and Introduction
2. Presentation by NCDOT
 - Overview of Bus Rapid Transit (BRT)
 - Planned BRT Projects Across North Carolina
3. Presentation by Regional Transportation Alliance (RTA)
 - Why and how the business community supports BRT in North Carolina
4. Q&A Session
5. Closing Remarks and Next Steps
6. Adjournment

What is BRT?

Bus rapid transit (BRT) is an integrated system of facilities, equipment, services, and amenities that improve the *speed*, *reliability*, and *identity* of bus service.



BRT BENEFITS

Faster Travel Times

Separation from traffic, signal priority, and smoother loading and unloading at stations help provide faster travel times.



Environmental Considerations

High-capacity transit helps provide efficient transportation with less emissions than individual vehicles. BRT systems also sometimes use low or zero emission electric or hybrid buses.

BRT BENEFITS

Economic Development

Areas around stations gain both access to jobs and businesses and opportunity for transit-oriented development, helping contribute to economic vibrancy along the route.

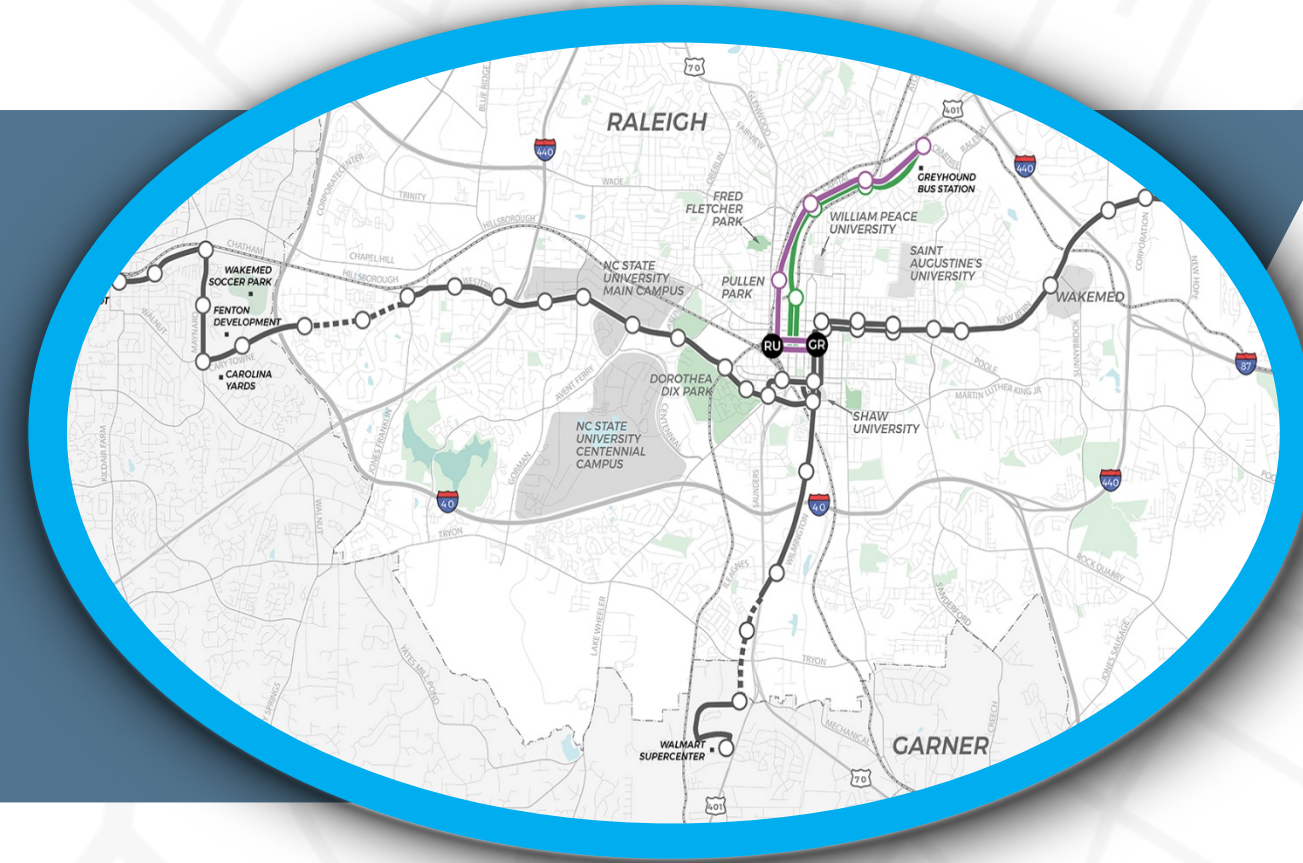


The Cleveland HealthLine delivered more than \$9.5 billion in economic development (\$190 gained over every dollar spent).

BRT BENEFITS

Improved Connectivity

With limited stops and rapid, frequent service, BRT can provide improved connectivity over longer distances, greatly increasing how far someone can travel by transit in a reasonable time and the jobs and residences accessible by transit.



Encourage Transit Usage

Premium vehicles, special branding, and well-lit stations with seating and rider amenities help make BRT an attractive transit choice for more people.



BRT BENEFITS

Capital Costs

BRT capital costs are generally lower than for rail transit projects, even when they can provide a rail-like experience to the riders. Factors that contribute to this are: type of running way, vehicle type, cost for operations, maintenance, etc.



Congestion Relief

BRT can help address congestion by providing an attractive and reliable transit alternative to driving that isn't constrained by traffic, helping take additional cars off the road.



FEATURES

Running Ways

While the type of lane sometimes varies, BRT generally has its own dedicated lanes that separate it from regular traffic. This helps keep the service from being impacted by traffic, improving reliability and allowing higher speeds.



FEATURES

Station Design: Accessible, Safe, Secure, and Attractive

BRT stations generally feature amenities like real time information, seating, shelter, lighting, clear signage and transit information, and emergency help buttons.



FEATURES

Level Boarding

Unlike local buses, where accessible boarding often requires the deploying of a ramp, BRT stations allow for level boarding right onto the bus from the platform, making it easier for people with wheelchairs, mobility devices, strollers, etc. to ride comfortably.



FEATURES

Identity and Branding

Branding a BRT would provide a distinctive identity, creates public recognition and enhances outreach efforts.



ITS Technology



Vehicle Technologies



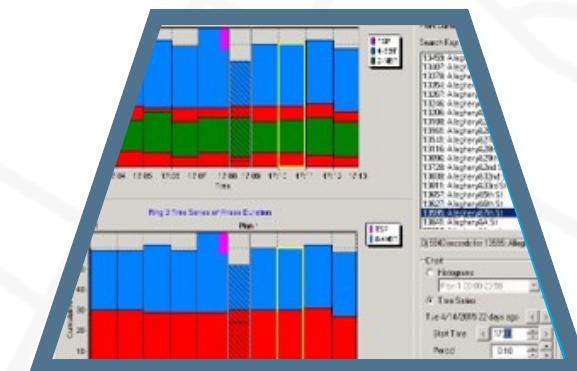
Fare Collection System



Passenger Information System



Precision Docking Systems



Transit Signal Priority

Planned BRT Projects in NC: Current and Future

Wake County

-  New Bern Avenue (*Construction start 2025*): Connects Downtown Raleigh to WakeMed and New Hope Road
-  Western (*Design*): Connects Downtown Raleigh to Downtown Cary
-  Southern (*Design*): Connects Downtown Raleigh to Garner
-  Northern (*Planning*): Connects Downtown Raleigh to Midtown Raleigh and Triangle Town Center

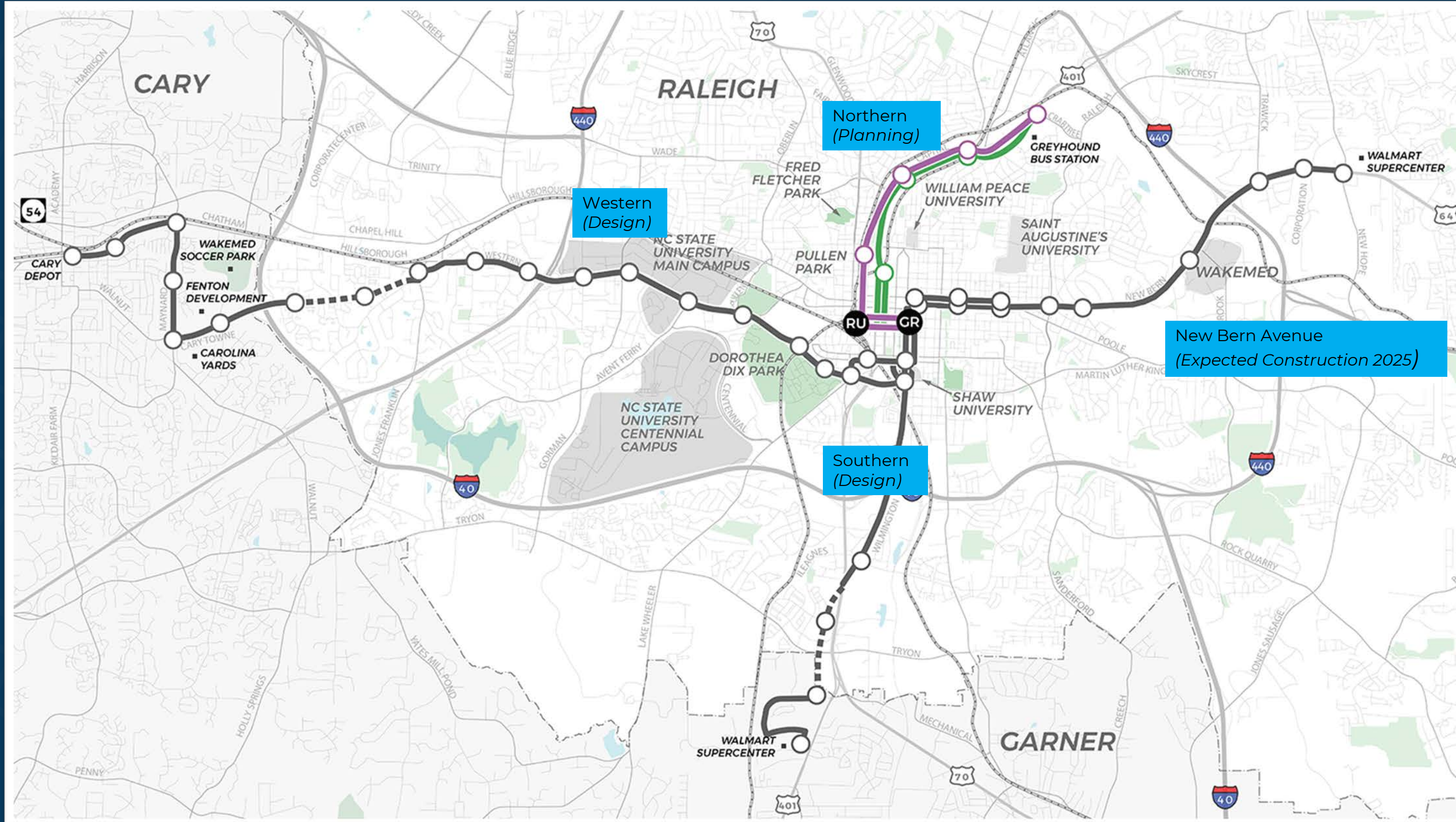
Chapel Hill

-  North/South (*Design*): Martin Luther King Boulevard Corridor

Charlotte

-  Red Line (*Planning*): Connects Uptown Charlotte to Mount Mourne in Iredell County

Planned BRT Projects in NC: Current and Future



FAST Transit Study: Partnership Between NCDOT, RTA, and GoTriangle

NCDOT, RTA, and local partners are working together to fully unlock the potential of our current and planned transit systems/investments. Shorter-term solutions are being deployed as planned BRT systems. Some longer-term solutions, which will come at a higher cost, are also being considered for future freeway investments.



I-40 from Future South Wilmington Street BRT to NC 54/Raleigh Road in South Durham



Future I-885/NC 147 from I-40 in RTP to Duke University



US 15-501 Freeway from Erwin Road area to US 15-501 Arterial



US 15-501 from future MLK/NC 86 BRT to 15-501 Freeway



Raleigh Road/NC 54 from Future MLK/NC 86 BRT to I-40



Main/Erwin/Holloway from US 15-501 Freeway Near Erwin Road to Holloway Street/Future I-885



US 70 from Future Downtown Raleigh BRT to Brier Creek/I-540

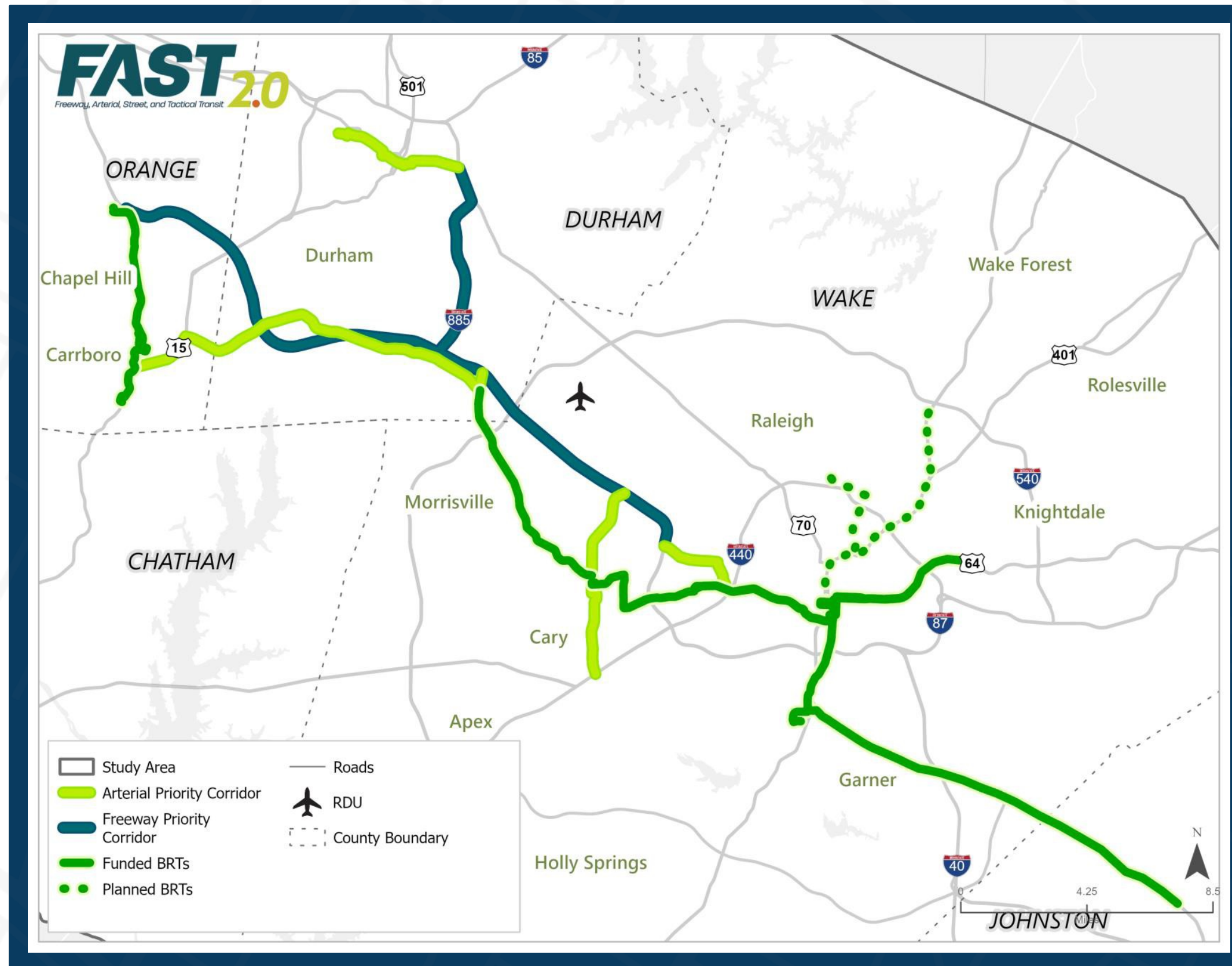


Six Forks Road from Future Capital Boulevard BRT to I-540

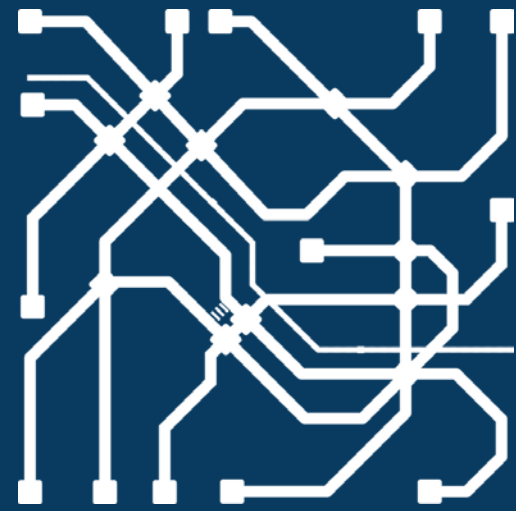


Capital Boulevard from Future Capital Boulevard BRT to I-540

FAST Transit Study: Partnership Between NCDOT, RTA, and Local Partners



NCDOT is Committed to BRT



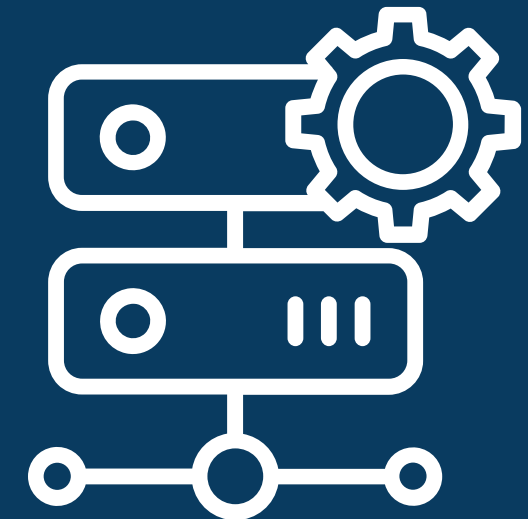
Complete Streets Policy

Recent revisions better integrate public transportation. The State Roadway Design Manual update will incorporate transit-supportive infrastructure features.



Funding

NCDOT provides several funding sources to support BRT deployment in addition to the available federal funds.



Technical Assistance

NCDOT provides technical assistance to support BRT deployment, including planning guidance, navigating regulations and funding, and facilitating data, training, and public outreach.

RTA REGIONAL
BUSINESS
LEADERSHIP

RTA has served as
the voice of the regional business community
on transportation in the metropolitan Triangle area
for more than two decades.

RTA Mission:

Deliver business leadership
to get our region moving *faster*.

Regional business focus on transit:

- The regional business community believes that an exceptional regional transit system will be transformational for our entire metropolitan area.
- It will expand accessibility, increase opportunity, and improve economic mobility and sustainability.

BRT is a time efficient, cost-effective, high quality, and inherently scalable regional rapid transit solution.

BRT is a way to build quality transit *faster*.

BRT = **B**us **R**apid **T**ransit

BRT = **B**uses **R**esembling **T**rains

BRT = **B**uilding **R**oads for **T**ransit

Benefit of BRT-based transit network

Build more transit

... for more people ...

... faster ...

... with more scalability, and less risk.

























City of Richmond, GRTC Pulse BRT Red Pavement
Atlantic, Jonathan H. Oliver, N, Richmond, Virginia



METRO B Line Arterial BRT Design and Construction Administration Services

JoNette L. Kuhnau, Midwest, Minneapolis, Minnesota, N





METRO B Line Arterial BRT Design and Construction Administration Services

JoNette L. Kuhnau, Midwest, Minneapolis, Minnesota, N





RED transit lanes

R = Right turns

E = Emergency vehicles

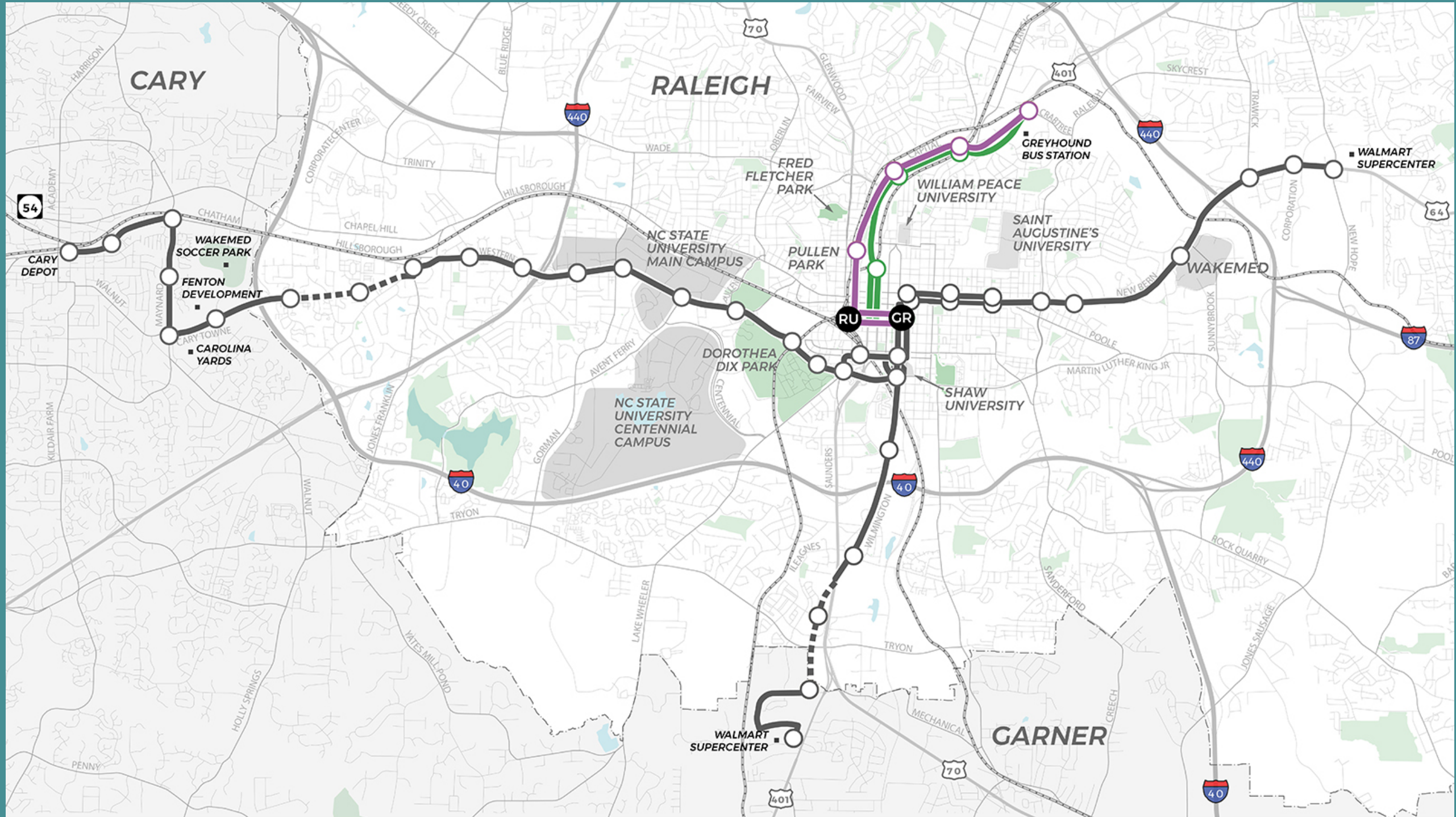
D = Driveway access



SANDAG, South Bay Bus Rapid Transit (BRT) East Palomar Street Segment
Final Design

Kimley»Horn





RALEIGH BLVD



DEDICATED LANES

DEDICATED LANES

SOLAR PANELS

HIGH-VISIBILITY
CROSSWALK

MULTI-USE PATH

MEDICAL DISTRICT



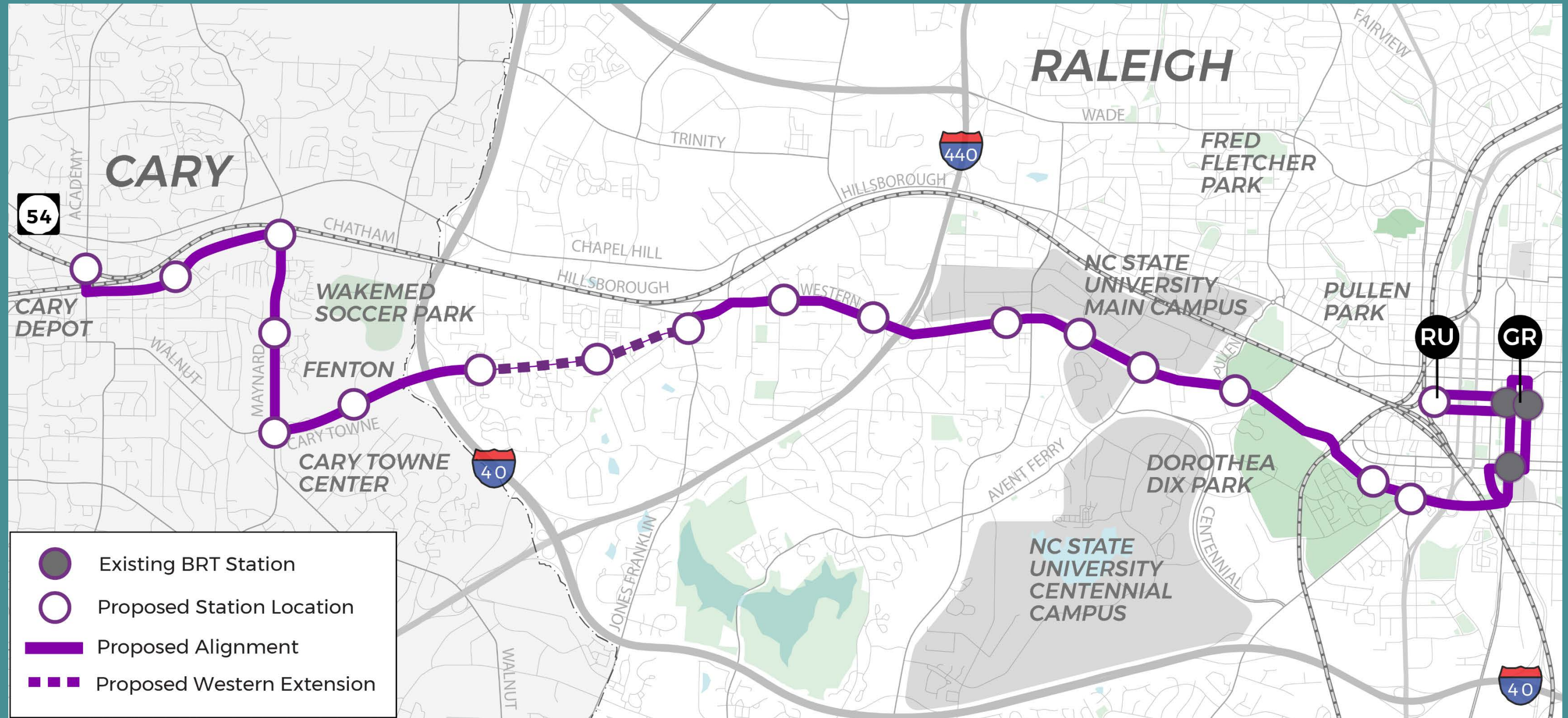
PYLON

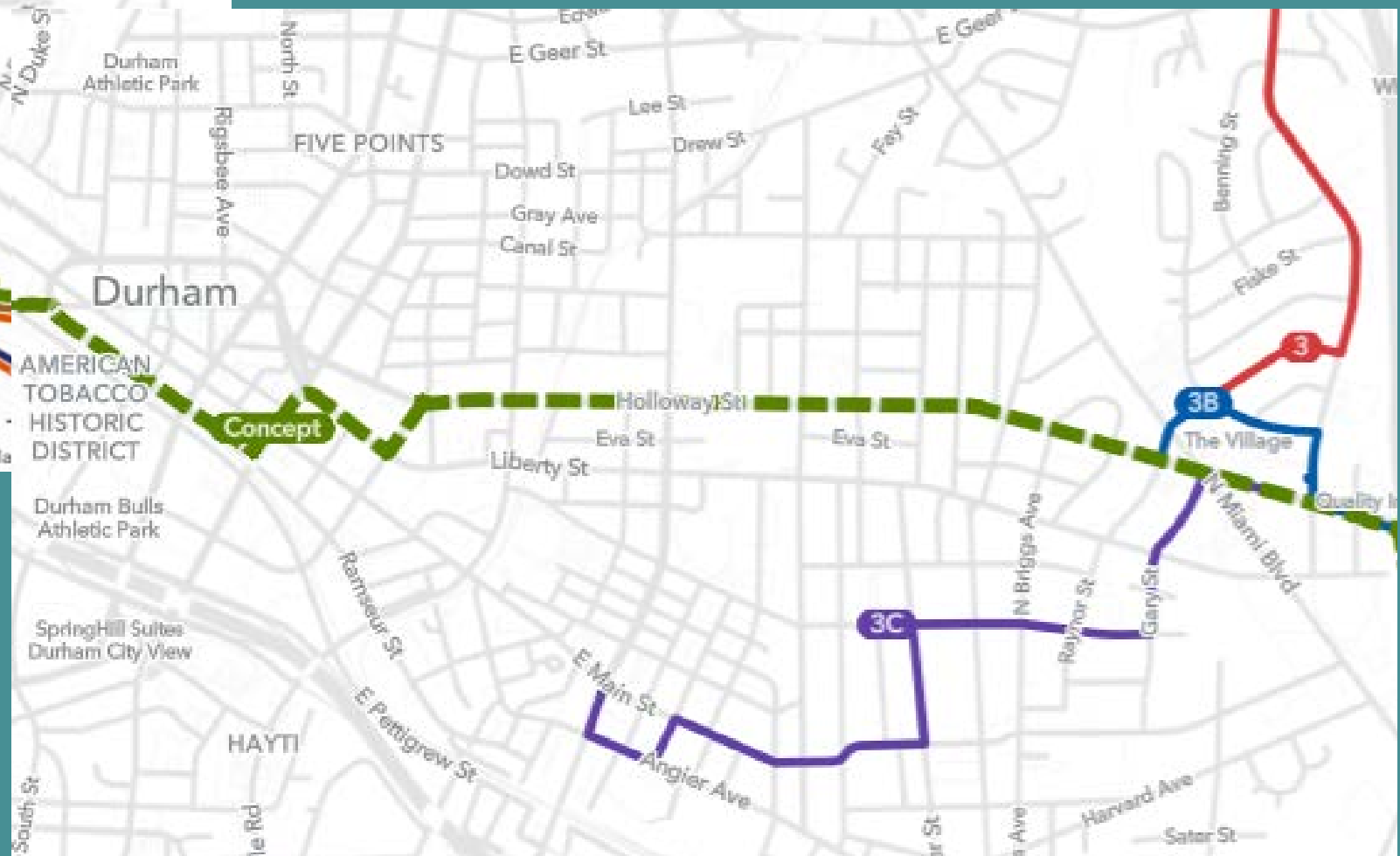
ART

ART

SIDEWALK

MULTI-USE PATH



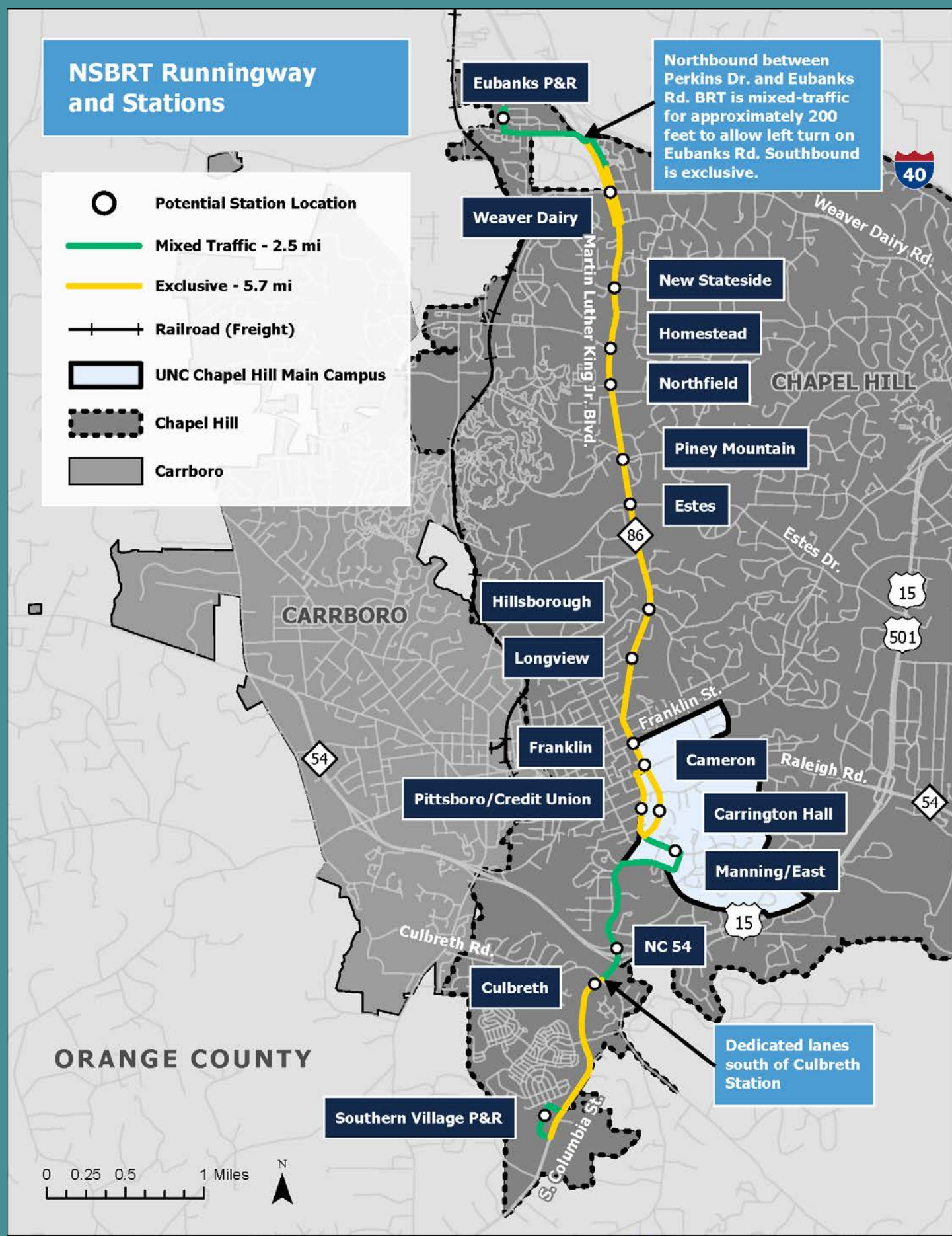


NSBRT Runningway and Stations

- Potential Station Location
- Mixed Traffic - 2.5 mi
- Exclusive - 5.7 mi
- Railroad (Freight)
- UNC Chapel Hill Main Campus
- Chapel Hill
- Carrboro

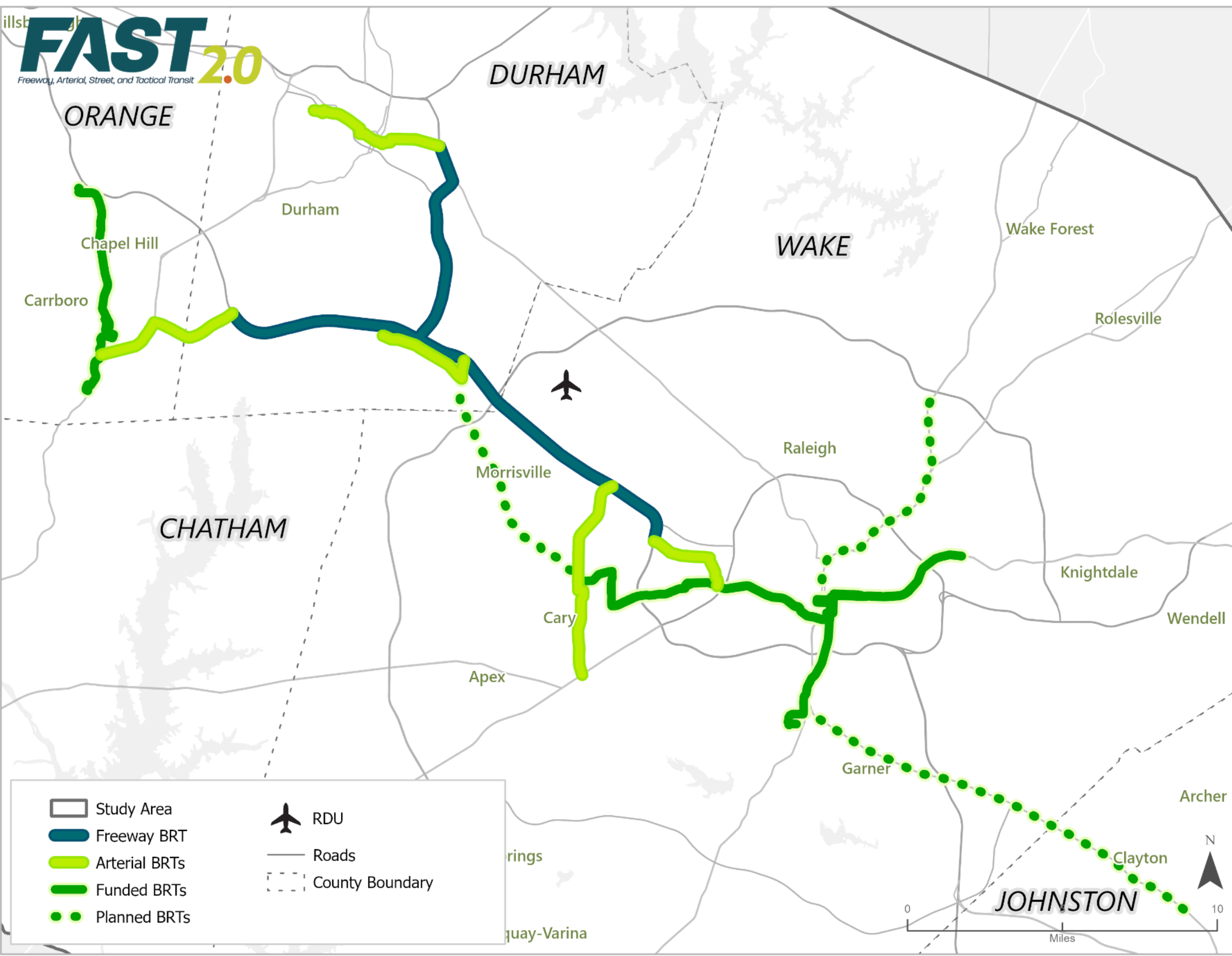
Northbound between Perkins Dr. and Eubanks Rd. BRT is mixed-traffic for approximately 200 feet to allow left turn on Eubanks Rd. Southbound is exclusive.

Dedicated lanes south of Culbreth Station



FAST 2.0

Freeway, Arterial, Street, and Tactical Transit



Study Area	RDU
Freeway BRT	Roads
Arterial BRTs	County Boundary
Funded BRTs	
Planned BRTs	

0 10 Miles

Archer

Clayton

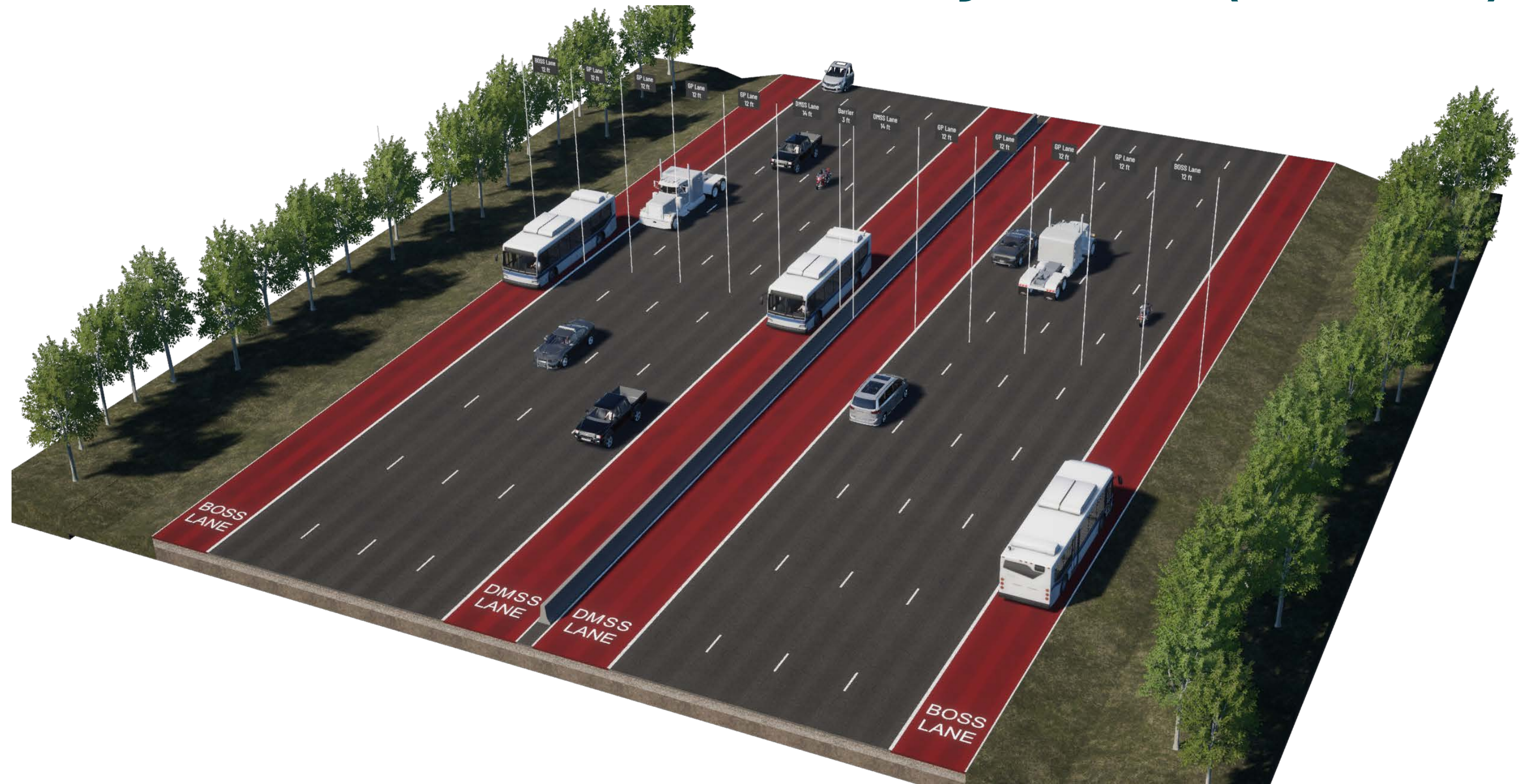
JOHNSTON

REGIONAL BRT NETWORK

10 Approved BRT Corridors

- **Raleigh – New Bern** *(Raleigh to E. Raleigh)*
- **Raleigh – Southern** *(Raleigh to Garner)*
- **Raleigh – Western** *(Raleigh to Cary)*
- **Raleigh – Northern** *(Raleigh to N. Raleigh)*
- **Cary – North-South** *(Harrison/Kildaire)*
- **Chapel Hill – N/S** *(MLK./S. Columbia)*
- **Durham – Central** *(Duke Univ./Holloway)*
- **Wake – S ext.** *(Raleigh/Garner to Clayton)*
- **Wake – W. ext.** *(Raleigh/Cary to Morrisville/RTP)*
- **I-40/I-885 regional** *(Chapel Hill/Durham/RTP/RDU/Cary/Raleigh)*

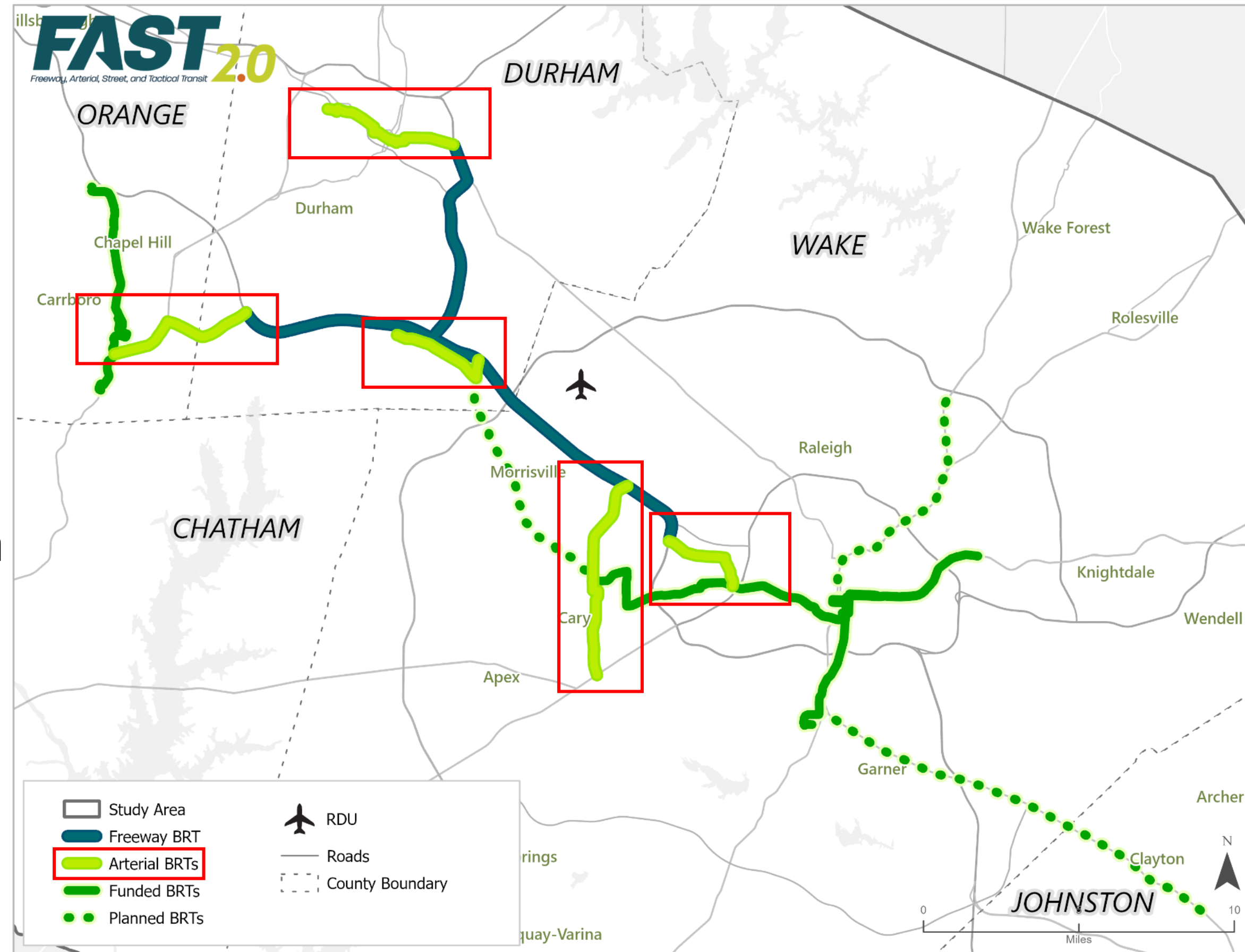
Bus on Shoulder System (BOSS) & Dynamic Median Shoulder System (DMSS)



Ex. Regional System

Arterials

- Durham: Central Durham
- Chapel Hill: NC 54
- RTP: Miami/NC 54
- Cary: Harrison/Kildaire Farm
- Raleigh: Trinity/Blue Ridge



Example Trinity to Western BRT T-Ramp



TSP, Gate Arms &
Dynamic Signage

Frequent Transit Area: Allowing More Housing Choice and Opportunity



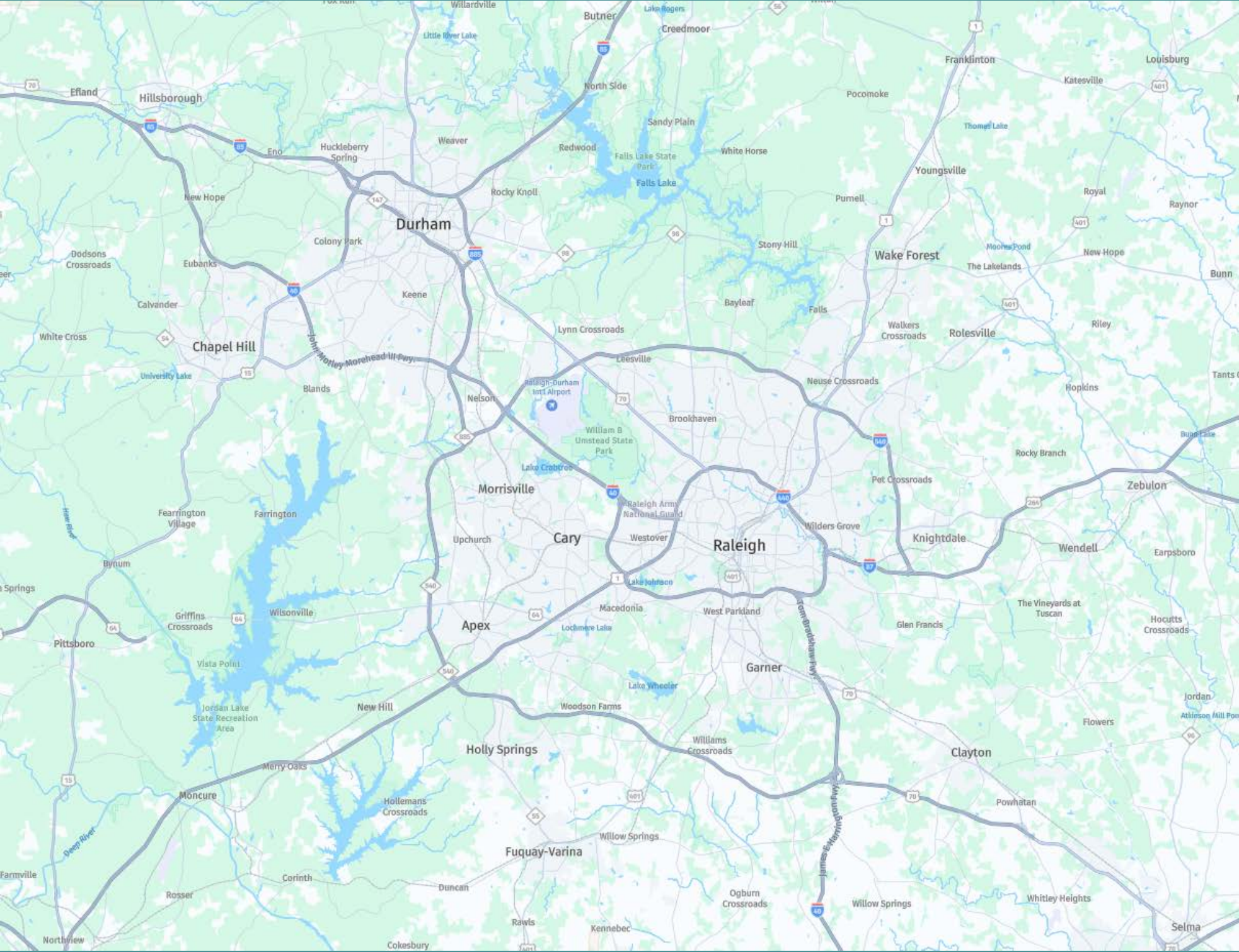


Metropolitan Triangle local option sales taxes dedicated to transit

Wake Co. (Raleigh, Cary, since 2016):	\$ 140m / yr
Durham Co. (Durham, since 2011):	\$ 44m / yr
Orange Co. (Chapel Hill, since 2012):	\$ 12m / yr
Total:	aprx. \$ 200m / yr

Business support for regional BRT network:

- Create travel options for associates
- Advance rapid, frequent, and reliable transit service across the Triangle
- Focus land use along key corridors





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