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15th Annual I-40 Regional Partnership

SAS Headquarters, Cary

Tuesday, October 10, 2023

Welcome Remarks

Joe Milazzo II, RTA executive director

**Greetings from the Host of the
15th Annual Regional I-40 Partnership**
Chad Ruehle, RTA Leadership Team SAS

**Meeting Overview of the
I-40 Regional Partnership**

***Jennifer Portanova,
NCDOT Mobility and Safety***

I-40 Regional Partnership

The I-40 Regional Partnership is a cooperative initiative of the RTA business coalition and NCDOT in concert with other partners.

The I-40 Regional Partnership provides an ongoing focus on Interstate 40 in order to maintain and enhance its viability for travel and commerce, and to improve the travel experience on I-40 and core reliever/alternate routes.

I-40 Partnership – annual mtg. history

Oct. 10, 2023 – SAS, Cary

Oct. 13, 2022 – Joint Force Headquarters (JFHQ), Raleigh

Sep. 10, 2021 – *online meeting*

Aug. 11, 2020 – *online meeting*

Oct. 17, 2019 – SAS, Cary

Oct. 18, 2018 – Research Triangle Park Headquarters, RTP

Oct. 25, 2017 – Research Triangle Park Headquarters, RTP

Oct. 24, 2016 – Research Triangle Park Headquarters, RTP

June 18, 2015 – Joint Force Headquarters (JFHQ), Raleigh

June 12, 2014 – Joint Force Headquarters (JFHQ), Raleigh

June 4, 2013 – Joint Force Headquarters (JFHQ), Raleigh

Dec. 20, 2012 – Research Triangle Park Headquarters

June 28, 2012 – Research Triangle Park Headquarters

Dec. 6, 2011 – Fidelity Investments, Cary

Sep. 13, 2011 – Cisco Systems, Research Triangle Park

April 26, 2011 – NetApp, Research Triangle Park

Dec. 7, 2010 – Research Triangle Park Headquarters

Sep. 24, 2010 – Fidelity Investments, Durham

June 15, 2010 – NetApp, Research Triangle Park

June 16, 2009 – Research Triangle Park Headquarters



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**I-40 Widening to Johnston Co.
I-40 / Airport Boulevard interchange area**

Tracy Parrott, NCDOT Division 5



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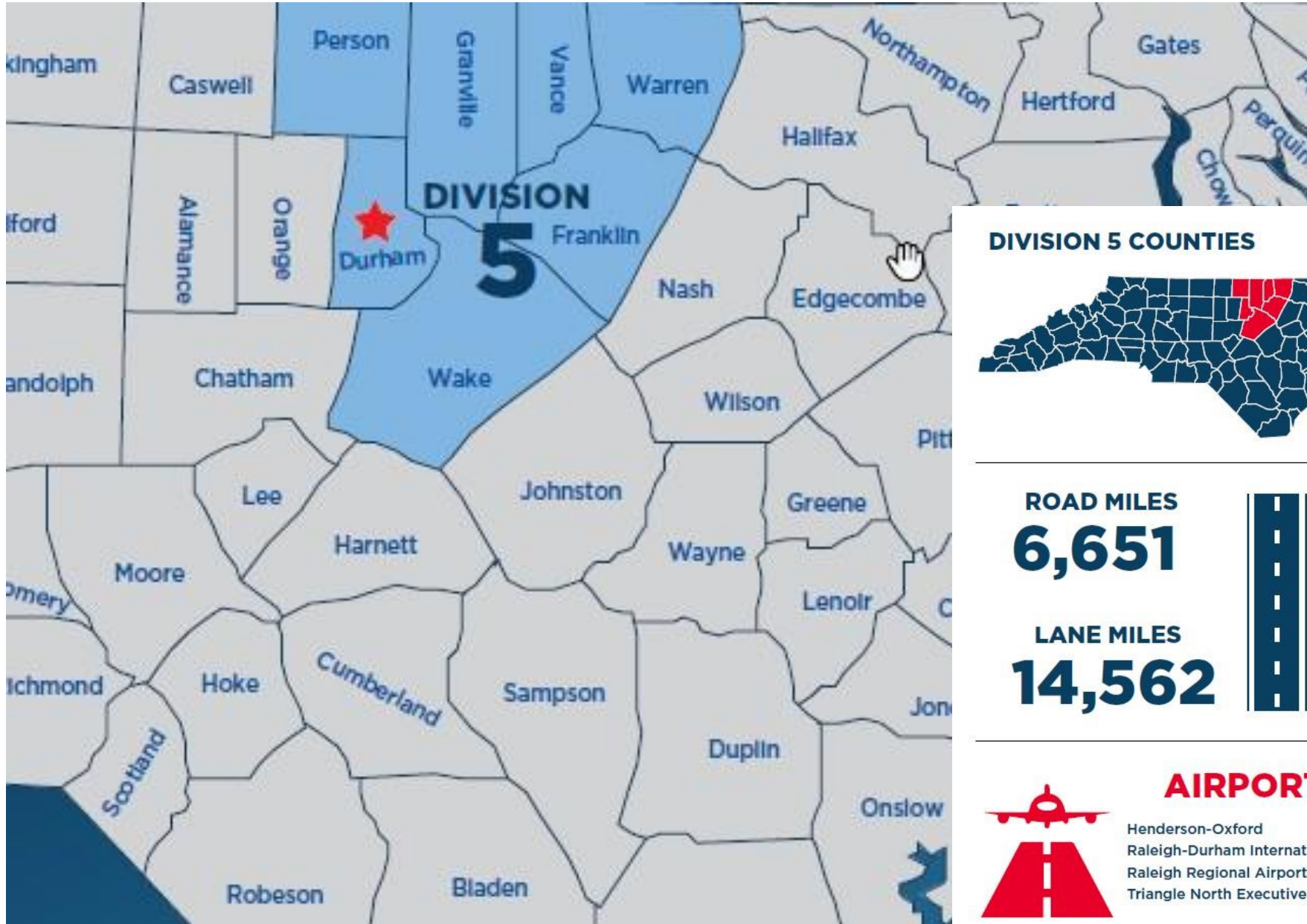
Department of Transportation



RTA I-40 Partnership Meeting

Division 5 Construction Project Update

Tracy Parrott, Deputy Division Five Engineer
October 10, 2023



DIVISION 5 COUNTIES



DURHAM
FRANKLIN
GRANVILLE
PERSON

VANCE
WAKE
WARREN

ROAD MILES

6,651

LANE MILES

14,562



**PASSENGER
RAIL STATIONS**



CARY
DURHAM
RALEIGH



AIRPORTS

Henderson-Oxford
 Raleigh-Durham International
 Raleigh Regional Airport at Person County
 Triangle North Executive, Louisburg

**N.C. TURNPIKE
AUTHORITY**

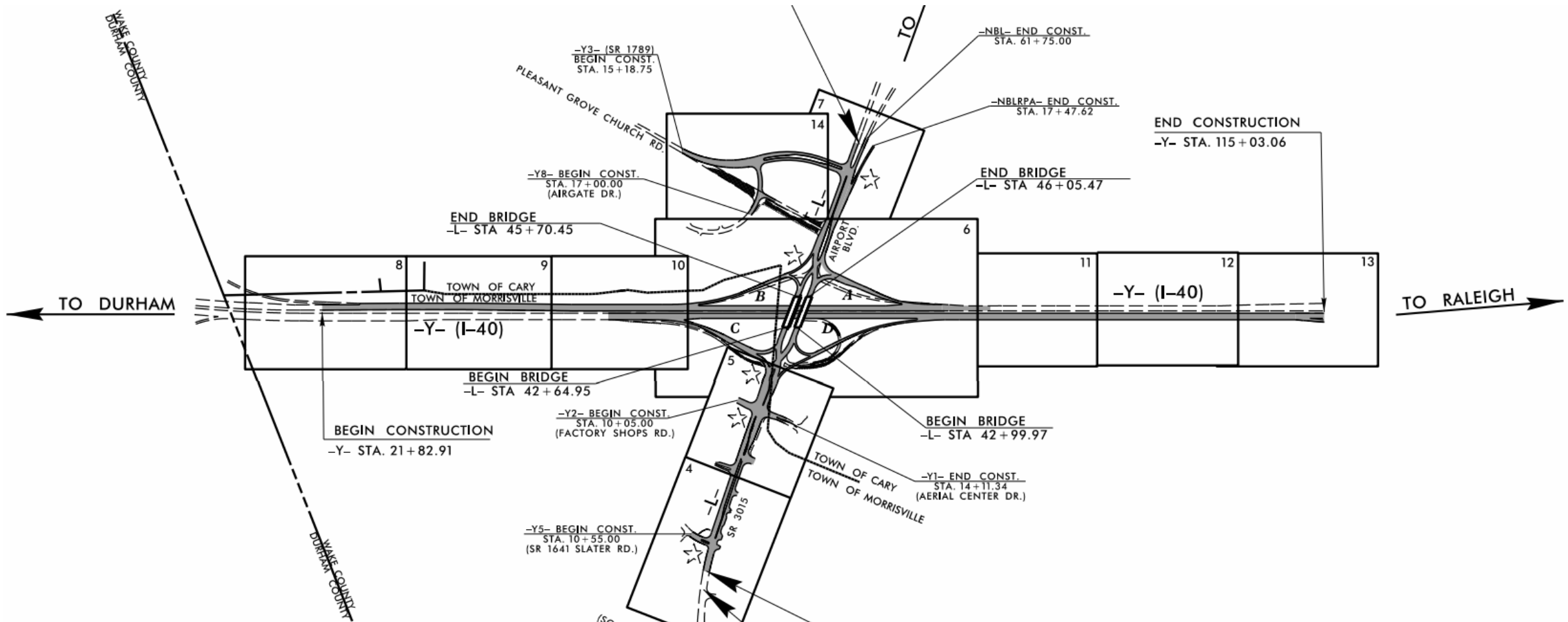


Triangle Expressway,
 Wake and Durham counties

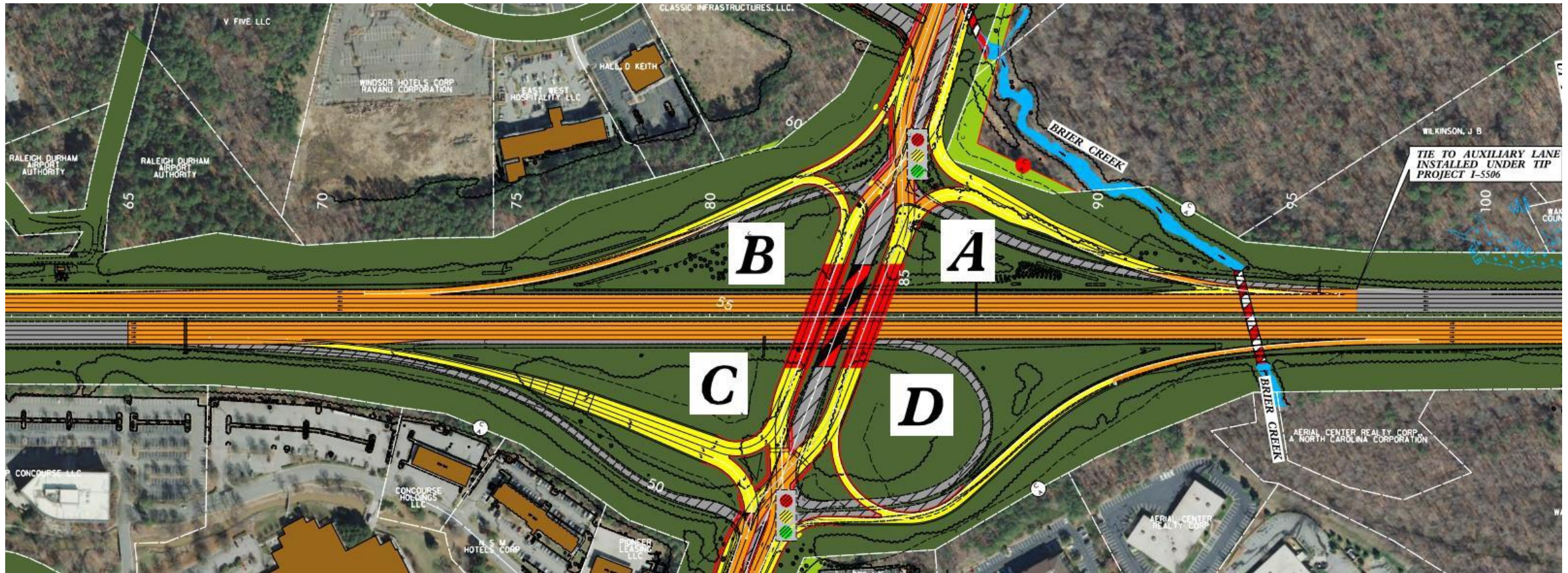
I-40 Project Updates

- Wake County:
 - I-5700: I-40 / Airport Boulevard Interchange
 - I-5943: Interstate Maintenance – Wade Ave to US 1/64
 - I-5111: I-40 Widening from I-440 to NC 42 (Div 4)

I-5700: I-40 and SR 3015 (Airport Blvd.) Interchange Improvement (DDI); I-40 Auxiliary Lanes



I-5700: I-40 and SR 3015 (Airport Blvd.) Interchange Improvement (DDI); I-40 Auxiliary Lanes



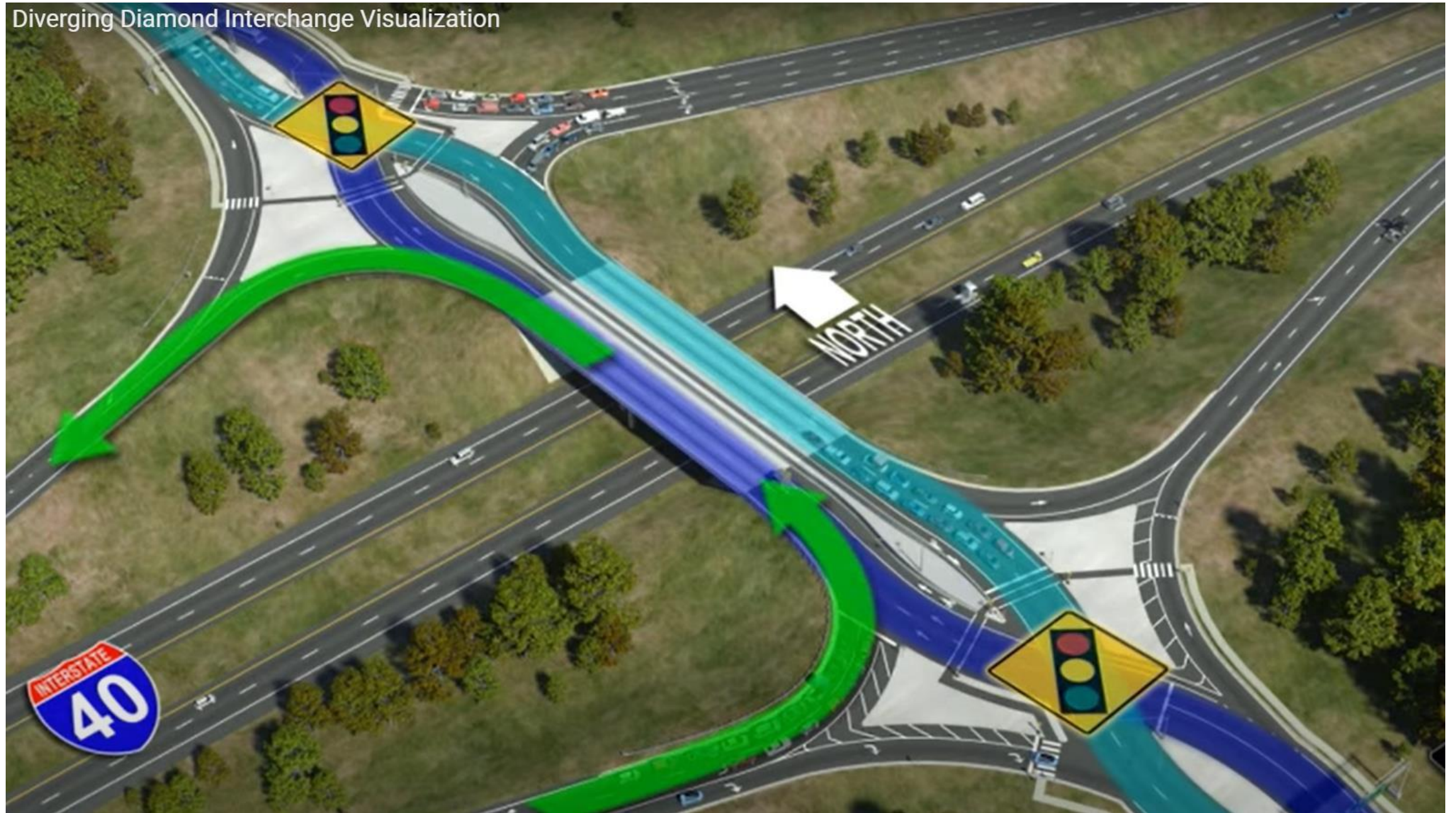
I-5700: I-40 and SR 3015 (Airport Blvd.) Interchange Improvement (DDI); I-40 Auxiliary Lanes

- Northbound DDI Bridge – Complete; interim traffic pattern
- Southbound DDI Bridge – Girders to be installed October, pending FAA approval
- Westbound Off-Ramp and Eastbound On-Ramp
 - Closed for reconstruction
 - Scheduled to reopen in November 2023.
- DDI configuration established – mid-2024
- Substantial Completion – late 2024





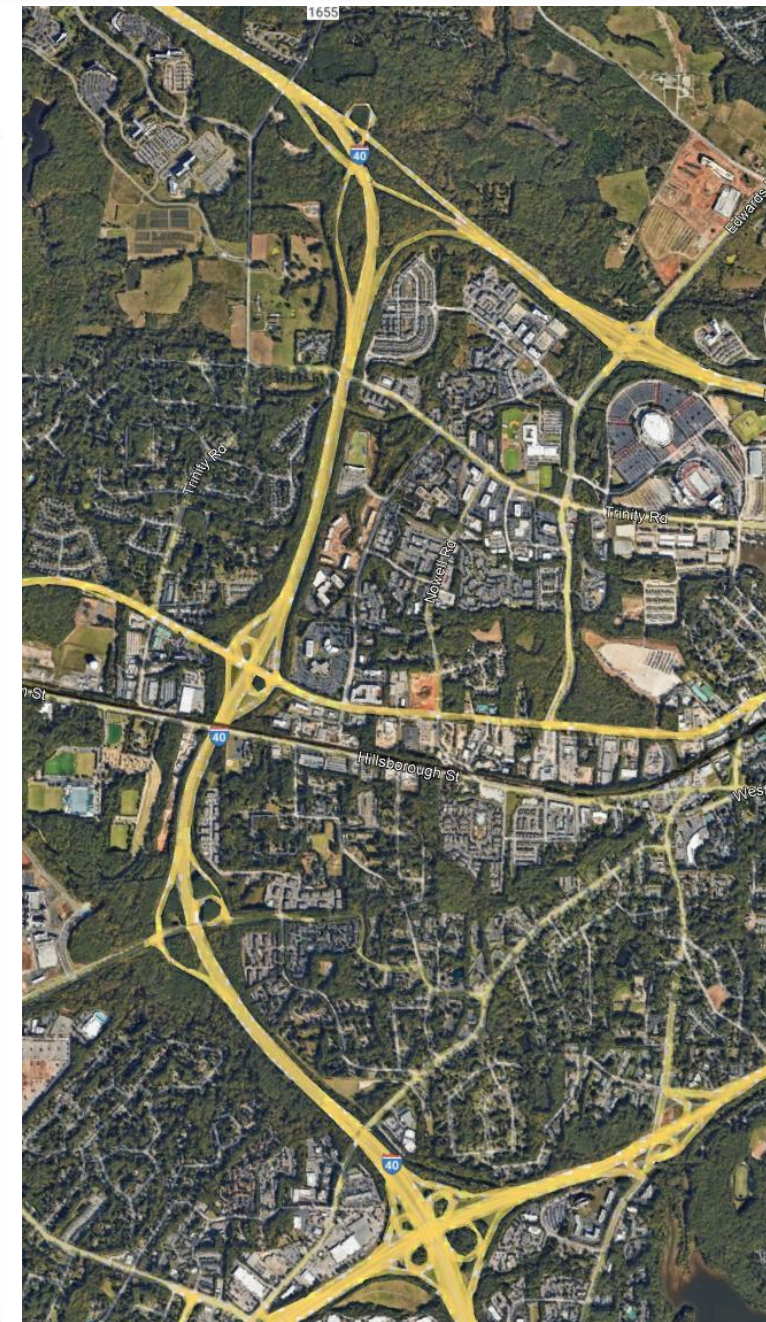
Diverging Diamond Interchange Visualization



I-5943: I-40 from Wade Ave to US 1/64

Interstate Maintenance

- Pavement Rehab
- Bridge Preservation
- Signing Replacement
- ITS Upgrades



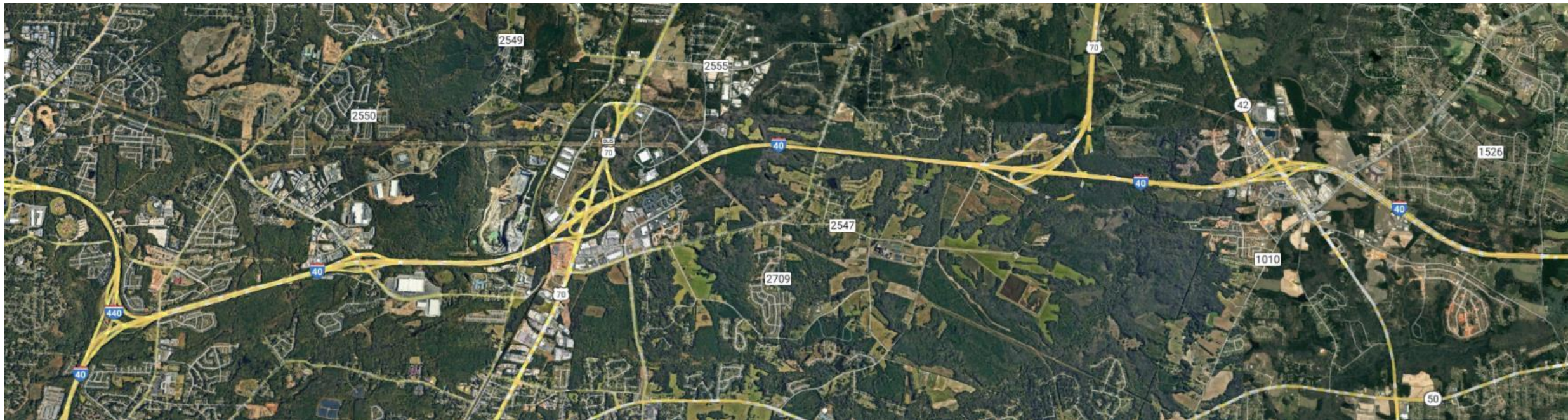
I-5943: I-40 from Wade Ave to US 1/64 Interstate Maintenance

- Eastbound I-40
 - Concrete pavement rehab and UTBWC complete
 - Temporary pavement markings
- Westbound I-40
 - Concrete pavement slab removal/replacement continuing
 - Joint and crack repairs continuing
 - UTBWC – May 2024 (due nighttime temp restrictions)
- Bridge Preservation complete
- Contract Completion Date – November 7, 2024



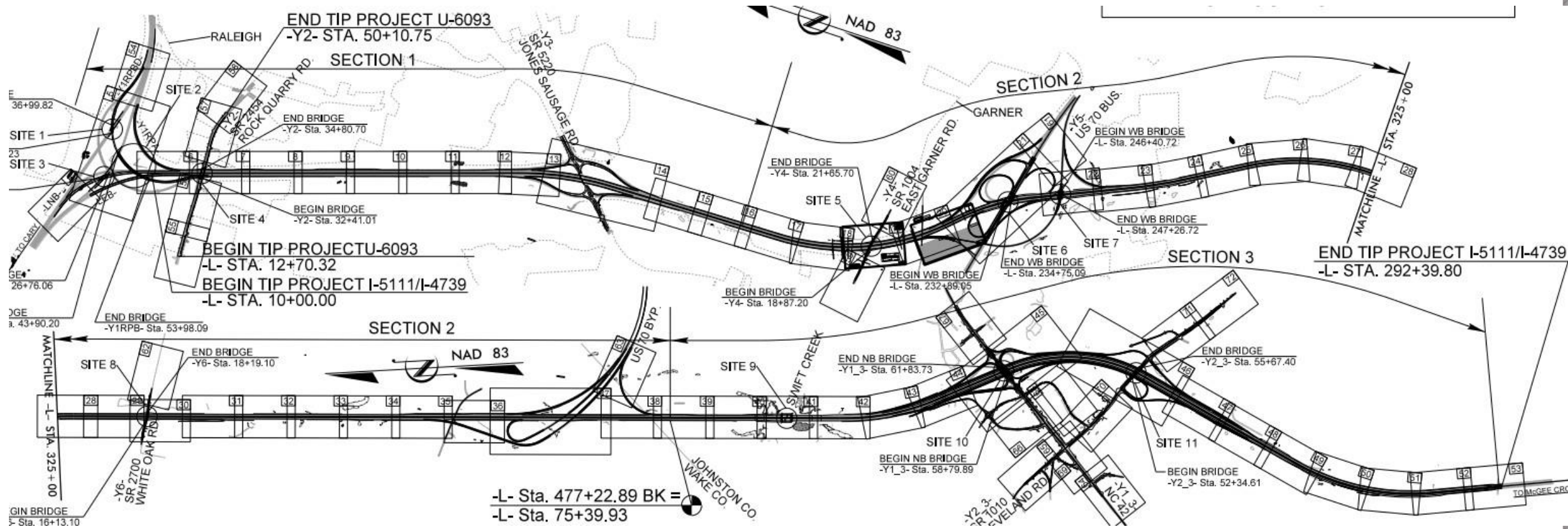


I-5111/I-4739: I-40 Widening from I-440 to Cornwallis Road, including interchange improvements to NC 42 and SR 1010 Cleveland Road



- U-6093 Rock Quarry Road (LAP project added by SA)
- Jones Sausage Road Interchange Conversion to DDI (added by SA)

I-5111/I-4739: I-40 Widening from I-440 to Cornwallis Road, including interchange improvements to NC 42 and SR 1010 Cleveland Road



I-5111/I-4739: I-40 Widening from I-440 to Cornwallis Road, including interchange improvements to NC 42 and SR 1010 Cleveland Road

- I-5111 bridge construction complete
- Final asphalt surface course – I-440 to MP 308
 - Eastbound – complete
 - Westbound – complete by Thanksgiving 2023
- US 70 Bus / White Oak Road – complete Thanksgiving 2023
- Jones Sausage Road
 - DDI pattern (single lane ea. direction) October 2023
 - Final DDI pattern December 2023

I-5111/I-4739: I-40 Widening from I-440 to Cornwallis Road, including interchange improvements to NC 42 and SR 1010 Cleveland Road

- Cleveland Road interchange opening Spring 2024
- Continuing NC 42 DDI and widening; final pattern Spring 2024
- Continuing Rock Quarry Road widening
- Project Completion – 8/21/2024









2024-2033 STIP: Committed I-40 Projects

- I-5993 Interstate Maintenance US 15/501 to I-885
 - Pavement Rehab, Structure Pres., Signing & ITS Upgrades
 - CON – 2026
- I-5995 Interstate Maintenance I-885 to Wade Ave.
 - Pavement Rehab, Structure Pres., Signing & ITS Upgrades
 - CON – 2026
- I-5707 WB Aux Lane from NC 55 to I-885
 - ROW / UTIL – 2025 CON – 2027

2024-2033 STIP: Committed I-40 Projects

- I-5703 / I-5701 Design Build
 - I-440 / US1 / US 64 Interchange Improvements
 - Aux Lanes from I-440/US1/US 64 to Lake Wheeler Road
 - ROW / UTIL – 2027 CON – 2027
- I-5966 Aux Lanes from Aviation Parkway to Wade Ave
 - ROW / UTIL – 2028 CON – 2031
- U-5774F NC 54 Interchange Improvements
 - ROW / UTIL – 2028 CON – 2031



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Questions?

The image features a large, bold, dark teal 'RTA' logo on the left. To its right, the words 'REGIONAL BUSINESS LEADERSHIP' are stacked vertically. 'REGIONAL' and 'LEADERSHIP' are in dark teal, while 'BUSINESS' is in orange. The background is a blurred night scene of a highway interchange with light trails from cars, overlaid with a diagonal split between light blue and light orange.

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**I-40 Widening in Orange Co.
Bojan Cvijetic, NCDOT Division 7**



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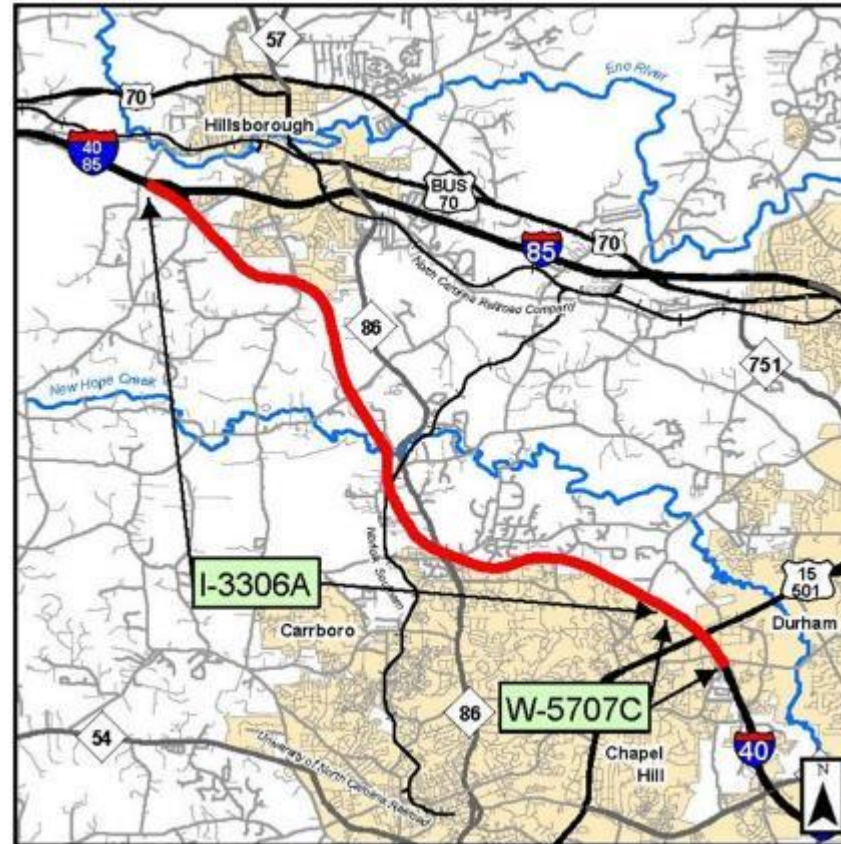
I-40 Orange Co. Widening Update

Bojan Cvijetic, P.E.
NCDOT Division 7 Resident Engineer

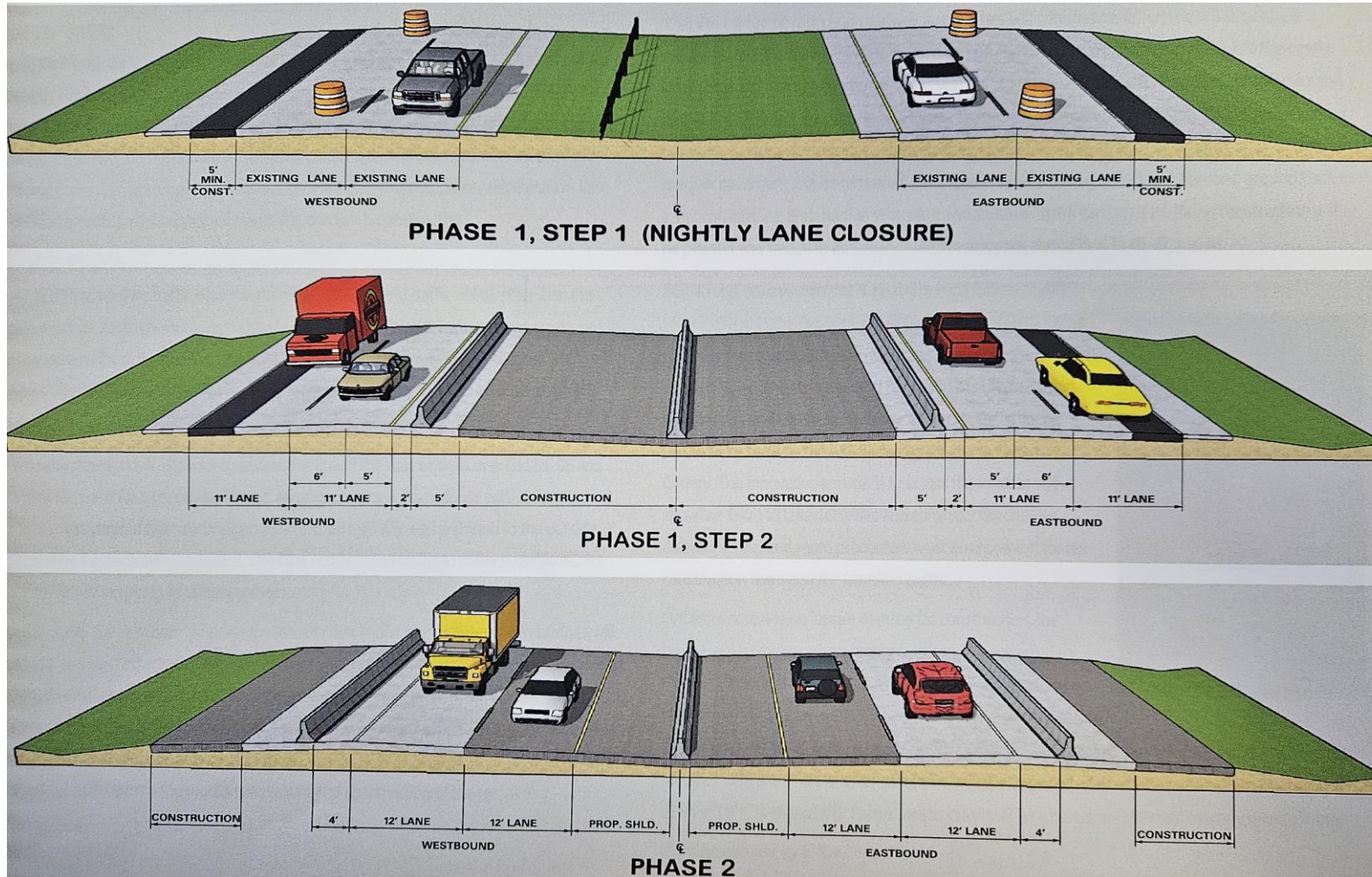
October 10, 2023

PROJECT OVERVIEW

- Location
 - I-40/I-85 Split to US-15/501
 - 13 Miles
- Work Started - September 2022
- Design-Build Team
 - HDR
 - Lane Construction
- Cost - \$237 Million



What are we doing



Project Update

Continuous installation of drainage pipe, drainage structures and Storm Drainage Pipe under I-40 using tunneling methods



Project Update

- Grading in the median throughout the entire length of the project
- ABC Stone is being placed as part of the subgrade in the median of I-40 between the I-40/I-85 split, and New Hope Church Rd



Project Update



Old NC-86 Bridge



New Hope Church Rd.



Concrete Recycling

- 41,165 SY (Inside Shoulder)
- 24,975 TN of Crushed Stone
- Future Location of Concrete Batch Plant



Upcoming Schedule

- Asphalt Paving start Winter of 2023 continue thru Spring of 2024
- Concrete Paving - Spring of 2024
- The Median Bridge at old NC 86 completed by January 2024.
 - WB Bridge at Old NC 86 will follow
- Bridge at Millhouse Rd - December of 2023.
- Jack and Bores in the median are scheduled to finish by the end of the year
- Median Drainage is scheduled to finish by Summer of 2024
- The Lighting Activities – New Hope Ch. Rd and NC-86 will start December
- The Overhead Signs foundations - Summer of 2024







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I-40 / RTP modernization express design

Andrew Bell, HNTB

I-40 Modernization Express Design Research Triangle Park



October 10, 2023

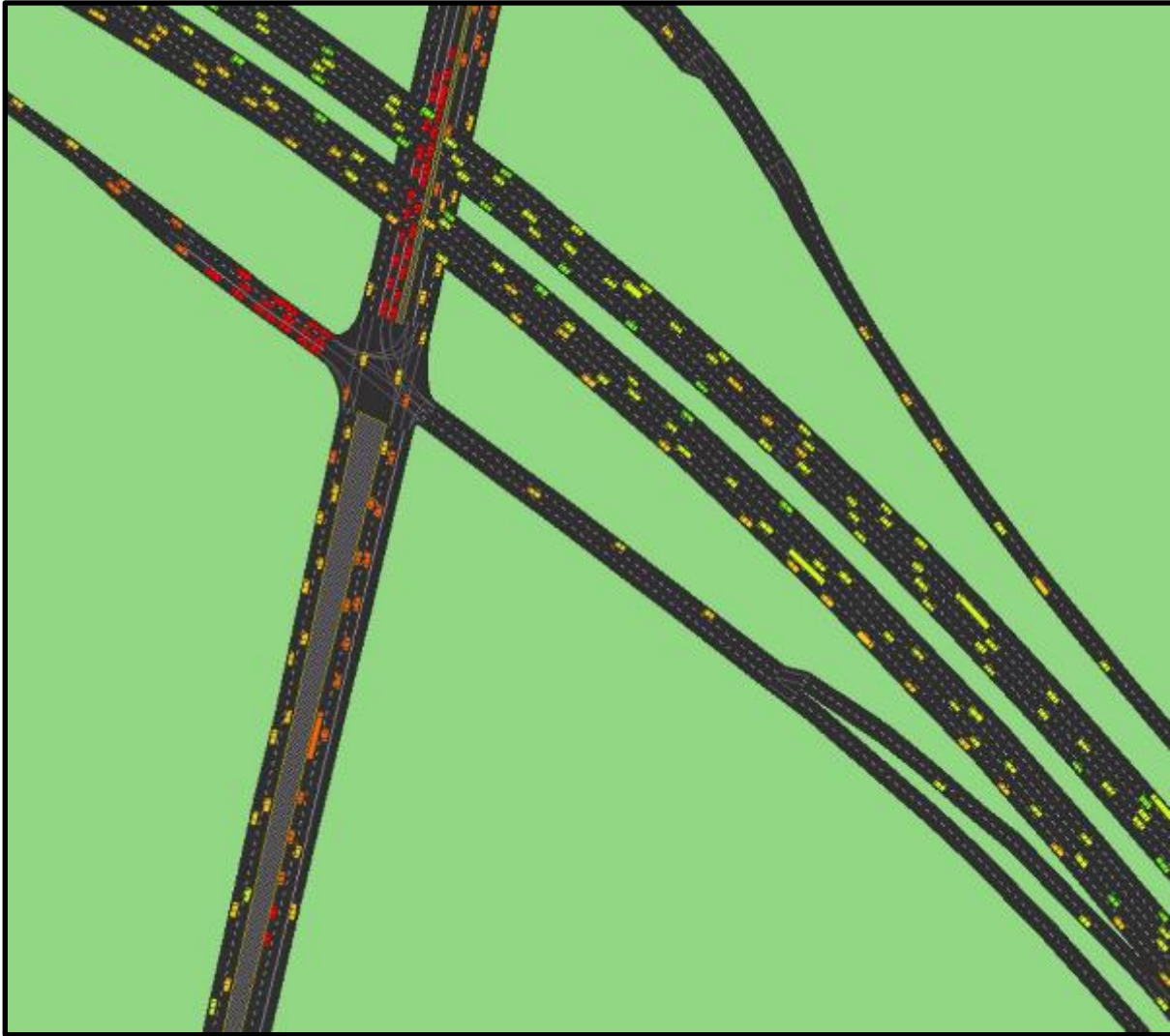
I-40 Modernization Express Design, Research Triangle Park

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Feasibility Studies Unit
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I-40 Modernization Express Design, Research Triangle Park



Project Objectives:

- Increase safety along I-40
- Improve mobility to and from I-885/NC-885, I-540/NC-540, Page Rd, Miami Blvd, and Davis Dr
- Reduce congestion along I-40 and its interchanges
- Enhance multi-modal options
- Coexist with Managed Freeways concept
- Build in flexibility for later changes and improvements

I-40 Modernization Express Design, Research Triangle Park

Major Project Elements:

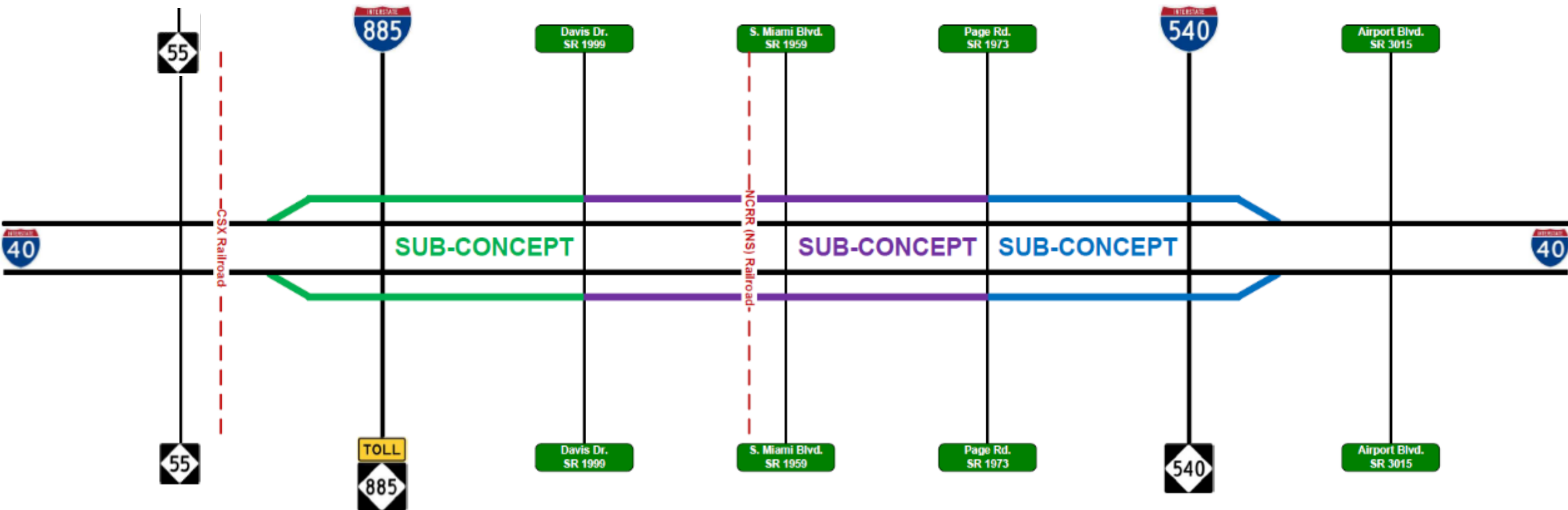
- One-Way Frontage Roads on each side of I-40
- Service Interchange Reconfiguration
- Slip Ramps between I-40 and Frontage Roads
- Free-Flow Frontage Road U-Turns
- Wide dynamic inside shoulder for flexible use
- Bus connectivity to transit hubs, bus stops along frontage roads
- Bike/ped accommodations, including connection to Triangle Bikeway
- Additional lanes on I-40 mainlanes limited to auxiliary lanes between ramps



I-40 Modernization Express Design, Research Triangle Park

Concept 1 – NC 55 to Airport Blvd

- Sub-Concept – Page Rd to Airport Blvd
- Sub-Concept – NC 55 to Davis Dr
- Sub-Concept – Davis Dr to Page Rd



NEXT STEPS:



Prioritization 7.0 Consideration

- Submittal deadline 10/27/2023
- Concept 1
 - Sub-Concept – Page Rd to Airport Blvd
 - Sub-Concept – NC 55 to Davis Dr
 - Sub-Concept – Davis Dr to Page Rd

I-40 Modernization Express Design, Research Triangle Park

Stakeholder/Partner Outreach:

- DCHCMPO and Durham City/County (MTP)
- GoTriangle (Bus Service and BRT)
- RTA (I-40 Partnership)
- RTP (The Hub, other developments)
- McAdams (Triangle Bikeway)
- WSP (Managed Freeways)
- NC Turnpike Authority
- Multiple NCDOT Units



Questions?

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I-40 SMART freeway project

Jennifer Hernandez, NCDOT Project Manager



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I-40 Managed Freeways Update

Jennifer Hernandez, PE, PMP

Project Management Unit

October 10, 2023

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

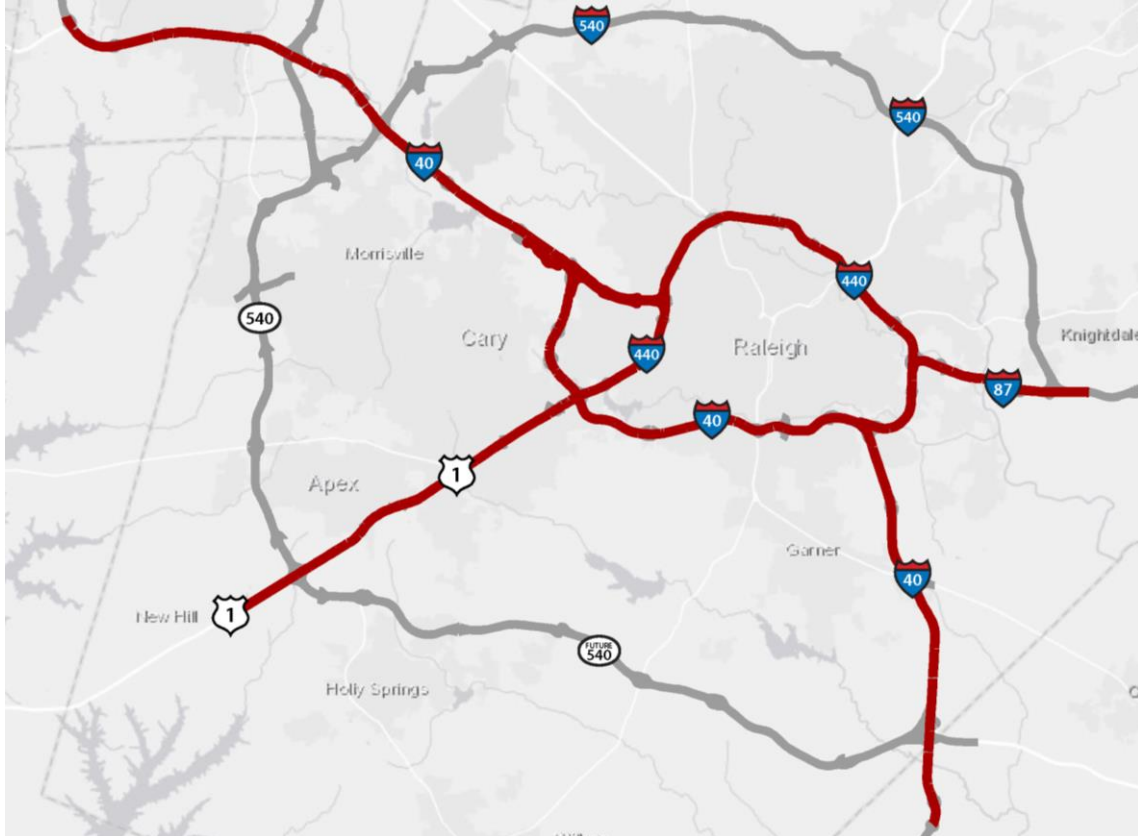
What is a managed freeway?

Managed Freeways

- New concept that pulls together Active Traffic Management strategies that coordinate together and are managed in response to changing conditions
- Goals
 - Reduce congestion
 - Improve travel times
 - Improve reliability
 - Improved merging and safety
 - Postpone major infrastructure changes



CAMPO Long-term Vision



- Potential for managed freeways across the major corridors in Wake County
- Integrated system
- STIP Projects
 - I-6006 (I-40 From NC 54 to Wade Ave)
 - U-6101 (I-40/87/440/US 1/US 64 JOHNSTON & WAKE COUNTIES FROM I-40 FROM SR 1728 (WADE AVENUE) TO NC 42, I-440, I-87 FROM I-40 TO I-540, US 1 FROM NC I-540 TO I-40)

What are ATM/ITS components?

Active Traffic Management

- Ramp Metering
- Queue Warning
- Dynamic speed control
- Dynamic lane Use



SOURCE: OREGON DEPARTMENT OF TRANSPORTATION



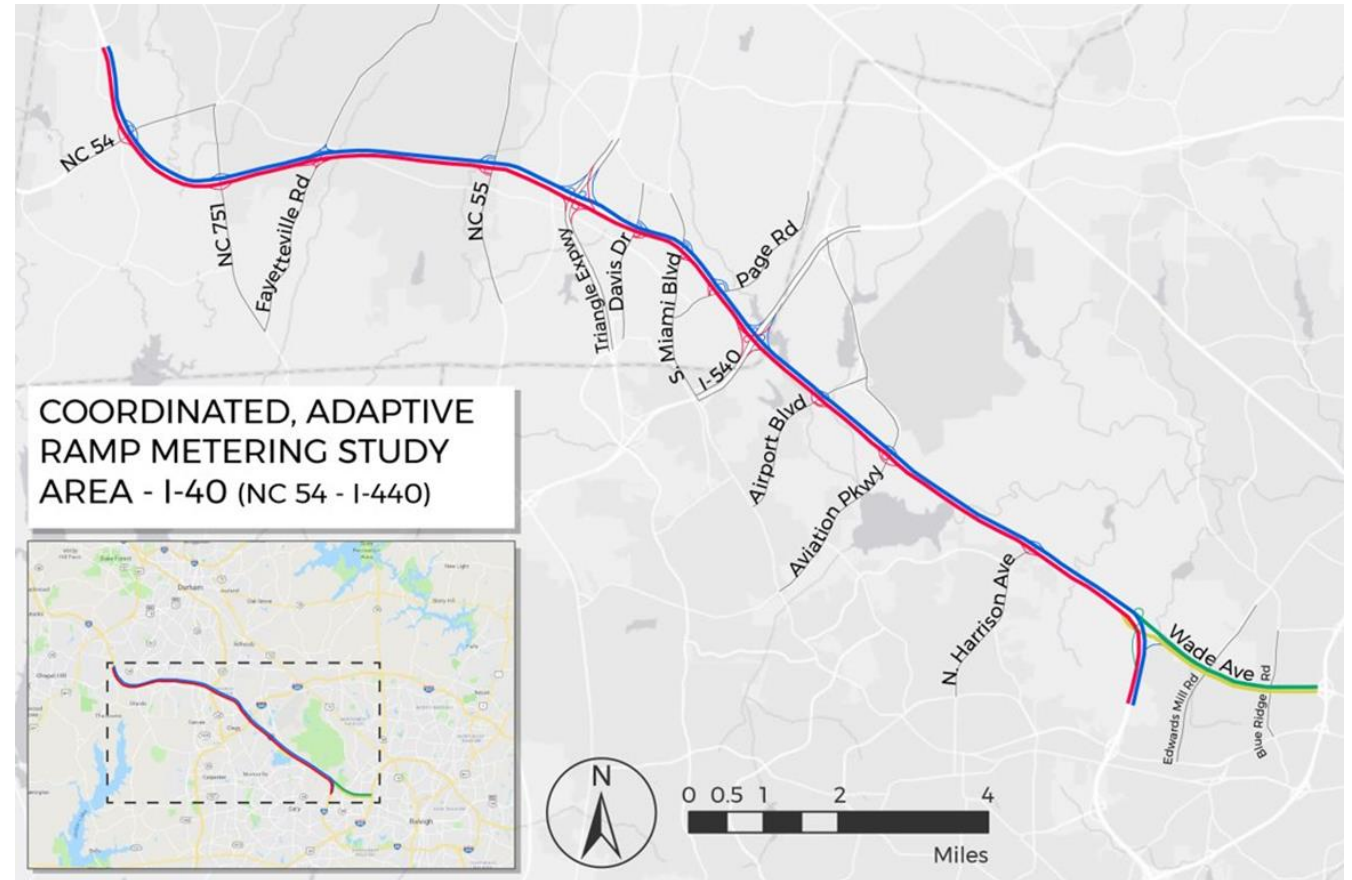
SOURCE: WASHINGTON STATE DEPARTMENT OF TRANSPORTATION



I-6006

I-6006

- STIP Description: “Convert facility to a managed freeway with ramp metering and other ATM/ITS components”
- Currently funded for Preliminary Engineering only
- Concept of Operations (ConOps) completed in June 2023



I-6006

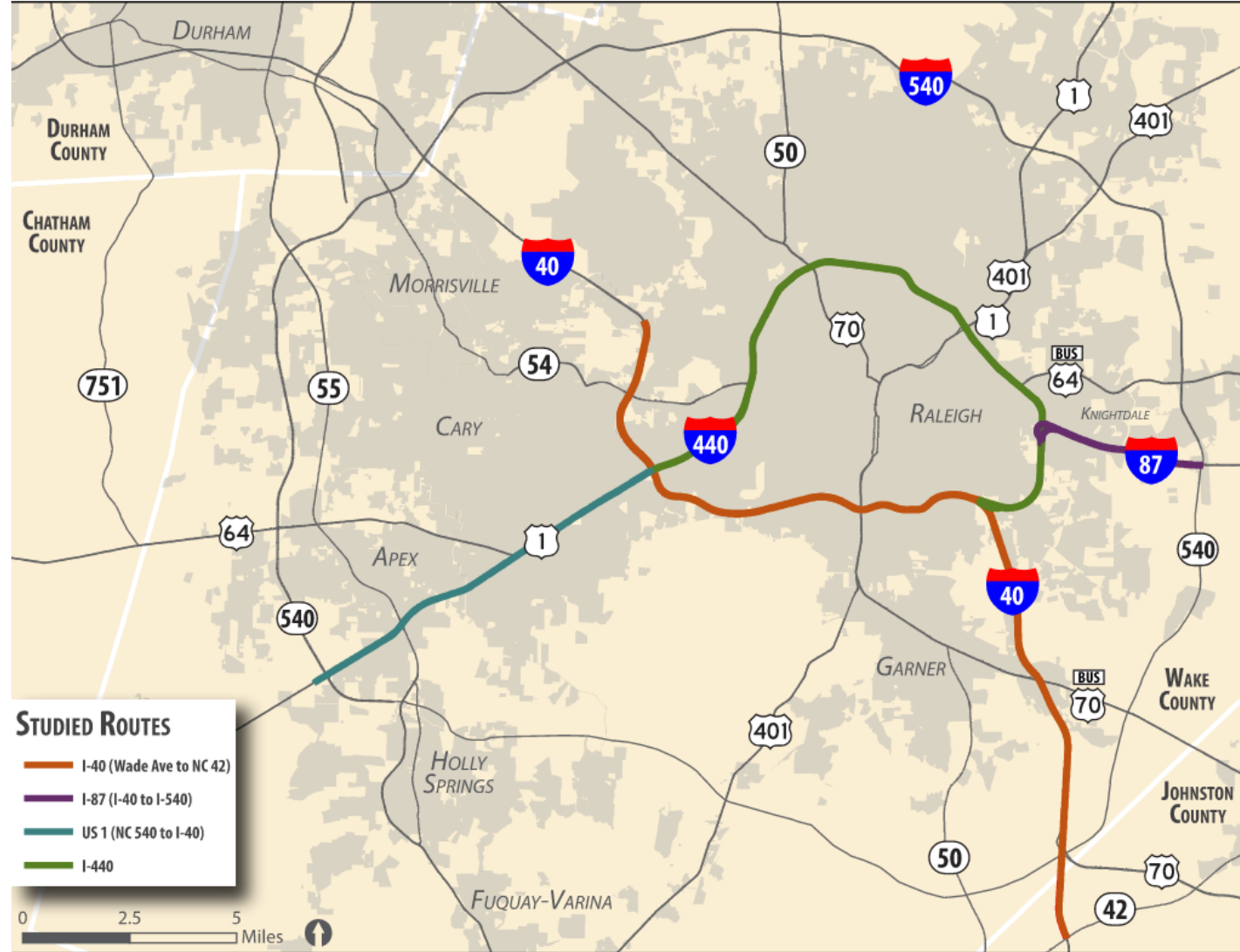
Past Activities

- Feasibility Study Initiated (1/2020)
 - Developed an understanding of needed improvements
 - Model specifically included traffic metering rates
 - Conceptual Improvements Identified
- ConOps completed (6/2023)
 - Defines various stakeholders
 - Describes how the concept will function, description of system and intended operation
 - Documents operational needs (staffing, equipment, software)
 - Detailed description of system and intended operation
 - Proposed scenarios of function

U-6101

U-6101

- STIP Description: "CONVERT FACILITIES TO MANAGED FREEWAYS , TO INCLUDE RAMP METERING. "
- Currently not funded for preliminary engineering
- Currently updating estimates for P7.0



Looking Ahead

Looking Ahead

- Managed freeways research project to measure benefits and provide guidance for future implementation of managed freeways
 - Develop before and after analysis framework to analyze managed freeway impacts on mobility and safety performance measures.
 - Benefit and cost analysis study to enable NCDOT to assess the economic impacts and incorporate the impact of available technologies for managed freeways.
 - Recommendations for ideal location identification for deployment of managed freeways
- Possible additional managed freeway submittals in P7 prioritization.

I-6006

- Data collection
- Develop System requirements
- Project Scoping Report Package

U-6101

- Prioritization – to be scored in P7

Thank you!



Contact Us

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FAST Transit Study

Nick Morrison, NCDOT



NORTH CAROLINA
Department of Transportation

Freeway, Arterial, Street & Tactical (FAST) Transit Priority Infrastructure Study

October 10th, 2023

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

IMD GOALS



Increase Access

Eliminate transportation barriers and ensure all North Carolinians have equal access to opportunities and services.



Enhance Quality of Life

Offer a convenient network of multimodal choices to enhance the quality of life for North Carolinians.



Ensure Safety

Ensure all road users can travel safely by building complete streets and proactively correcting areas susceptible to crashes involving vulnerable road users.



MISSION

Provide leadership for safe, affordable, and innovative multimodal transportation throughout North Carolina



IMD Planning Initiatives



Visioning Workshops

7 workshops across the state and technical assistance

Prepares agencies to leverage IIJA funding and provides resources for visioning, prioritizing goals, and ongoing support for implementation



Multimodal Planning Grants

266 grants + \$8.7M

Develops comprehensive bicycle plans and pedestrian plans with an added transit component



Microtransit

Feasibility Studies / Research / Grants

Assesses the feasibility of introducing microtransit to complement or replace fixed-route and demand response services throughout the state



MaaS Feasibility Study

Mobility as a Service (MaaS)

Seamlessly plan-book-pay for travel across all modes

Assesses the availability and feasibility of MaaS services for a statewide platform



Regional Transit Plans

Upper Coastal Plain + High Country + Land of Sky RPO

Promotes coordinated regional planning across agency boundaries, consolidating requirements for state and federal funding programs



Freeway And Street-based Transit

Makes recommendations and provides techniques for improving North Carolina roads for buses so people can rely on public transportation to get to work, education, shopping and recreational activities.

Triangle Region Freeway, Arterial, Street & Tactical (FAST) Transit Priority Infrastructure Study (2021)

- Original study completed in 2021
- Partnership with local governments, the regional business community, regional planning bodies, and regional transit providers
- FAST (1.0) Objectives:
 - Develop and illustrate an example regional FAST network
 - Create a guidance framework for quickly implementing transit advantages for communities
 - Help institutionalize transit priority measures in the statewide planning and development process.



FAST 2.0 Overview

- Formulate a regional vision, goals and brand for transit and mobility
- Accelerate the implementation of Freeway, Arterial, Street, and Tactical (FAST) transit priority infrastructure – Make our freeways and regional boulevards “transit ready.”
- Evaluate potential BRT corridors & connections to RDU Airport
- Advance SMART (Systematic Management of Adaptable Roadways through Technology) freeway corridors

Freeway, Arterial, Street, and Tactical (FAST) transit is a scalable approach for quickly integrating “transit advantage” infrastructure along the roadway system to support enhanced transit service. The “FAST” approach prioritizes transit efficiency and reliability while improving mobility for all users.

FAST 2.0 Potential Focus Strategies



Bus station/
stop design &
layout

Direct BRT
linkages to RDU

Transit signal
prioritization
standardization

Express lanes,
expanded BOSS,
dynamic shoulders

Bicycle &
pedestrian access
improvements

Mobility-as-a-
service & single
digital ticketing
solutions

Mobility
hubs,
complete
streets, &
micro-
mobility
solutions

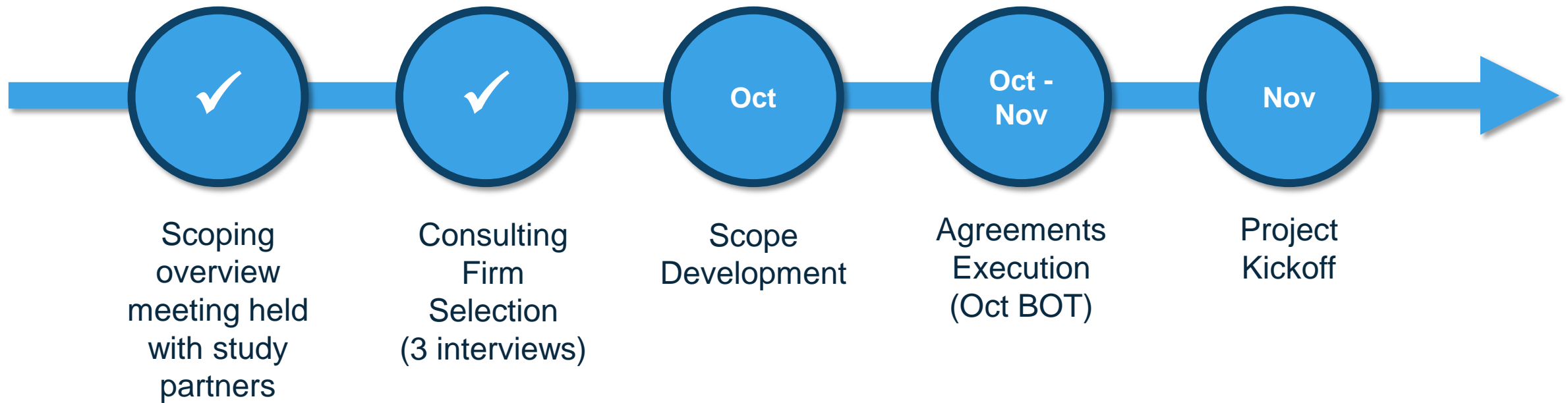


FAST 2.0 Deliverables

- Vision and brand for multimodal transportation in the Triangle Region
- Actionable materials for planners and other transit and transportation professionals
- Accessible marketing materials for the public to gain understanding and support for FAST transit network, particularly along SMART freeway and arterial corridors
- Improvements that will benefit all users, not just transit



Next Steps



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Urban freeway management

Battle Whitley, NCDOT Division 5



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Complete 540

Dennis Jernigan, NC Turnpike Authority

Complete 540

Triangle Expressway Southeast Extension

Dennis Jernigan, P.E.

Interchanges and Road Crossings



Turbine-Style Interchange



Asphalt Paving & Noise Walls



Concrete Paving & Noise Walls



Concrete Paving





Anticipated Openings

Contact Us



ncdot.gov/complete540



complete540@ncdot.gov



1-800-554-7849



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[@NC_QuickPass](https://twitter.com/NC_QuickPass)



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2023 legislative update / funding implications

Joe Milazzo, RTA



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Potential next steps / action items

Jennifer Portanova

Joe Milazzo II



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