



**NORTH CAROLINA**  
Department of Transportation

# NCDOT's Integrated Mobility Division (IMD)

## Multimodal Updates

May 25, 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

## Agenda

- **Clean Transportation Plan** – Heather Hildebrandt, Statewide Initiatives Group Supervisor, Transportation Planning Division
- **Comprehensive Safety Action Plans** – Brian Murphy, PE, Traffic Safety Systems Section Manager, Traffic Safety Unit
- **IMD Updates**
  - IMD's new Program and Project Management Branch
  - Grant programs – discretionary grants, paved trails feasibility studies, planning grants, microtransit feasibility studies, transportation demand management (TDM), transit facility feasibility studies
  - Guidance and planning studies – complete streets, S-Line TOD planning study, locally coordinated plan, micromobility strategic plan
  - Safety initiatives – SRTS, Bicycle Helmet Initiative, STIC ped safety countermeasures, Motorists and Bicyclists: Best Practices for Road Safety report
  - CASSI autonomous shuttle program
  - NC Nonmotorized Volume Data Program
  - Location Based Services





**NORTH CAROLINA**  
Department of Transportation

# North Carolina Clean Transportation Plan

## IMD Multimodal Updates

May 25, 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

# Origins

2018



## **E.O. 80**

Reduce economy wide emissions by **40% below 2005** levels by 2025

Increase total number of registered ZEVs to at least **80,000 by 2025**

Reduce energy consumption in state-owned buildings by **40% below 2002-2003 levels**

2022



## **E.O. 246**

Reduce economy wide emissions by **50% below 2005** levels by 2030 and achieve net-zero emissions no later than 2050

Increase total number of registered ZEVs to at least **1.25 million by 2030**

Increase the sales of passenger ZEVs so that **50% of in-state sales** are zero emission by 2030

2022



## **E.O. 271**

Propose a NC Advance Clean Truck rule by **May 2023**

Develop and prioritize statewide complementary strategies

Complete a **ZEV infrastructure needs assessment**

# The Clean Transportation Plan



## ADVANCE

Created to advance Governor Roy Cooper's **E.O. 246 goals**



## GUIDE

Acts as a roadmap with **strategies** and **actions** to guide continued activities that will achieve an equitable clean transportation system



## COORDINATE

Serves as a coordinated strategy co-created with a variety of stakeholders

# Project Timeline

**January 7, 2022**  
E.O. 246 Signed

**Apr 2022**  
Public Info  
Session #1

**Jun 2022**  
Public Info  
Session #2

**Dec 2022**  
Public Info  
Session #3

**Feb 2023**  
Public Info  
Session #4

**April 7, 2023**  
Final Report

**Mar 2022**  
Kick-off with  
Advisory  
Committee

**Apr - Oct 2022**  
Work Groups  
meet to  
contribute ideas  
for NCCTP (6)

**Nov 2022**  
Equity and  
Governance  
Subgroup  
Meetings

**Feb 2023**  
Last Advisory  
Committee  
Meeting (9)

**Mar 2023**  
Public Comment  
Period

# NCCTP Partners

Clean transportation practices and technologies change rapidly. To understand this, the NCCTP collaborated with a diverse group with a wide range of interests.



# Work Group Topic Areas



## Light Duty ZEV

Focus on light-duty vehicle **transition**, vehicle **availability**, **incentives**, and **affordability**



## Medium/ Heavy-Duty ZEV

Builds off the **multistate M/HD MOU**



## Fleet Transition

Includes **public** entities, **private** entities, and **school** buses



## Vehicle Miles Traveled

Builds off existing **VMT Task Force** and includes **non-vehicular modes**



## Infrastructure

Includes **charging** infrastructure, **alternative fuel** infrastructure, and identifying **gaps**



# Engagement



**30**  
Meetings



**220+**  
Participants



**3,300+**  
Ideas



# Focus Areas

## Governance

Governance activities include guidance that could occur at any level of government (local, regional, state or federal) including legislation, policy, codes, ordinances and mechanisms that promote equitable outcomes.

## Communications and Engagement

Methods to increase equitable engagement and empower public, private and non-profit effectiveness as well as methods to directly engage and involve stakeholders, the general public and traditionally underserved demographic cohorts.

## Partnerships

Bringing government, industry, advocates and the public together to advance clean transportation solutions.

## Infrastructure

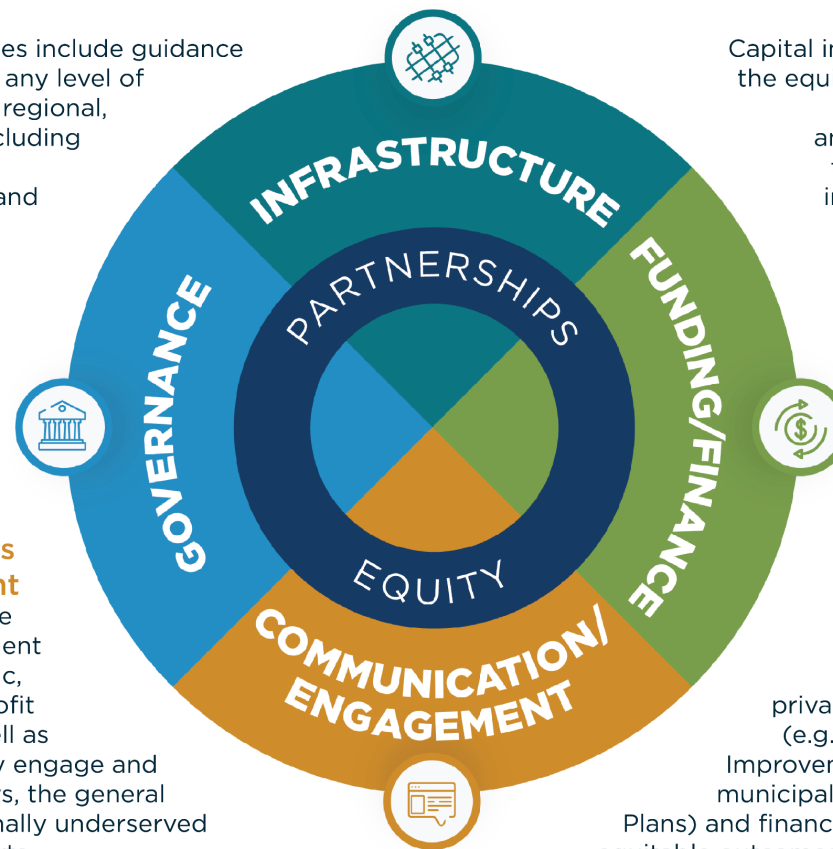
Capital investment resulting in the equitable implementation of increased capacity and connectivity of our transportation system including EV charging, modernization of the electric grid, active transportation and transit supportive infrastructure.

## Funding and Finance

These programs include financial resources (public and private), funding programs (e.g., State Transportation Improvement Program, grants, municipal Capital Improvement Plans) and financing tools that support equitable outcomes and implementation.

## Equity

Improving access to clean transportation and equitable outcomes for all with a focus on traditionally underserved populations.



# Key Recommendations

## Governance Activity

- Create a dedicated clean transportation team
- Align statewide policy through a Clean Transportation Interagency Task Force
- Increase equitable outcomes in transportation planning projects
- Ensure access and affordability to clean transportation
- Evaluate and update project prioritization programs
- Partner with utilities to promote clean transportation

## Funding and Finance Activity

- Maximize existing funding to support clean transportation outcomes
- Evaluate new funding that advances clean transportation outcomes

## Infrastructure Activity

- Evaluate and deploy clean transportation infrastructure to support all types of fleet vehicles and applications
- Expand transportation demand management strategies

## Communication and Engagement Activity

- Establish a coordinated clean transportation communication strategy

# Maintaining Momentum

The NCCTP work groups will transition their efforts beyond the plan's completion to become standing groups that will continue to advance the identified actions and strategies, while supporting the state to progress the key recommendations. The continuation of the work groups will be guided by the work group plans and supported by the NCDOT Clean Transportation Team.





# VMT Reduction Toolkit

The VMT Reduction Toolkit was developed to combine Information of various travel demand strategies with funding Opportunities.

- <https://www.ncdot.gov/initiatives-policies/environmental/climate-change/Documents/vehicle-miles-traveled-reduction-study-tool-kit.pdf>
- Strategies can be sorted by rural/urban



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION - NCDOT

## VEHICLE MILES TRAVELED (VMT) REDUCTION TOOLKIT

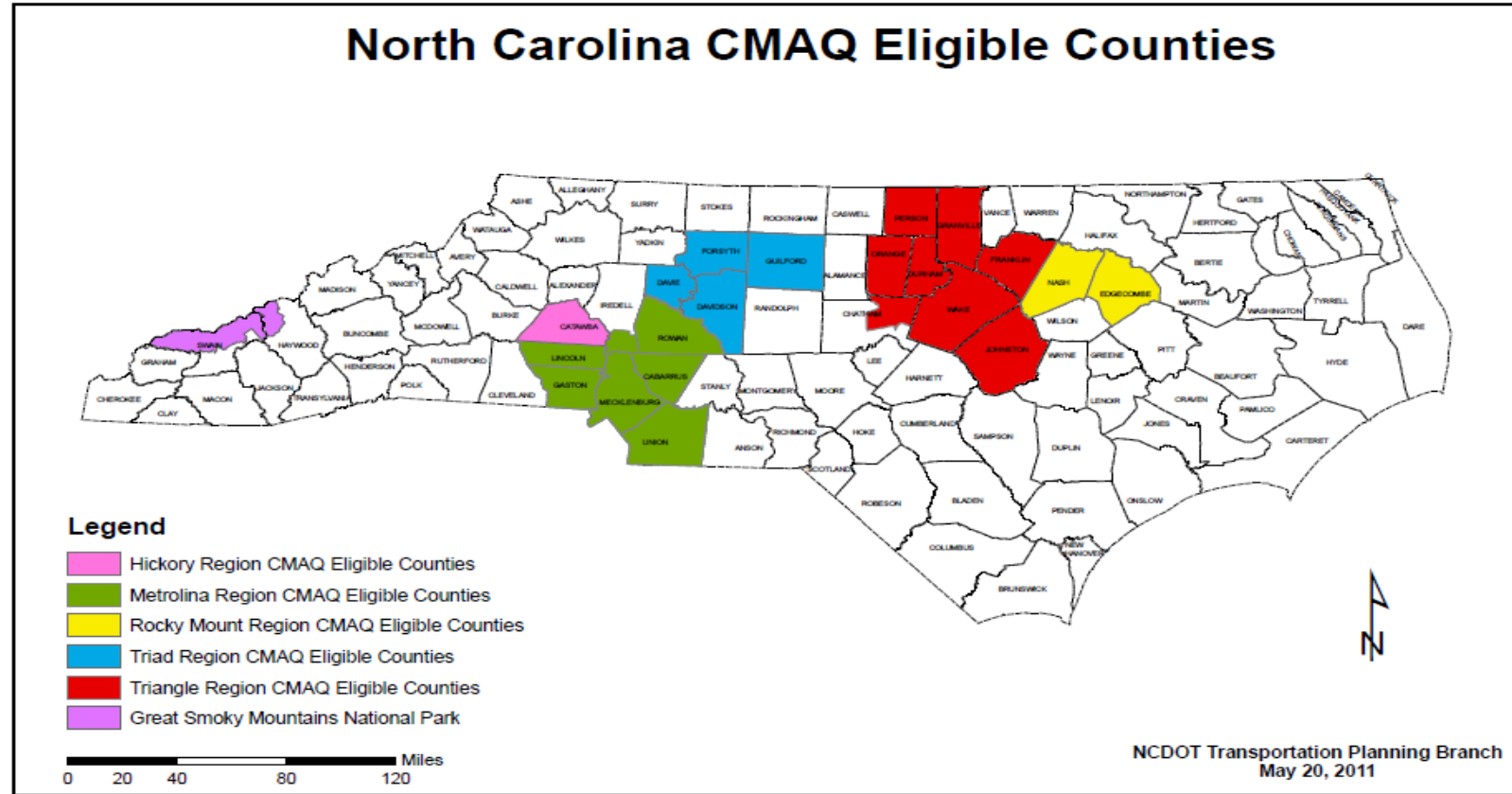
DECEMBER 2022



# CMAQ Program Overview

The Congestion Mitigation Air Quality funds transportation projects that improve air quality and reduce congestion with a focus on ozone (O<sub>3</sub>), carbon monoxide (CO) and particulate matter (PM 2.5) emissions

- NC receives ~\$50 million/year
  - \$22 million statewide
  - \$27 direct allocation to POs
- Common project types:
  - Transit
  - Bike/ped
  - Intersection Improvements
  - EVSE/ Alt Fuel Vehicles
  - Education/Outreach



# Carbon Reduction Program Overview

The Infrastructure Investment Jobs Act also known as the Bipartisan Infrastructure Law (BIL) establishes the Carbon Reduction Program (CRP)

- States to develop **Carbon Reduction Strategies**
- **\$6.4 Billion** in formula funding for Fiscal Years 2022 through Fiscal Years 2026
- Funding for **projects to support transportation emissions reductions (GHGs)**
- **CRP in NC will support E.O.s and the NC CTP**



*\*Transportation Emissions* means carbon dioxide emissions from on-road highway sources of those emissions within a State (23 U.S.C. 175(a)(2)).

# Contact Us

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**NORTH CAROLINA**  
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# Comprehensive Safety Action Plans Safe Streets For All (SS4A) Grant

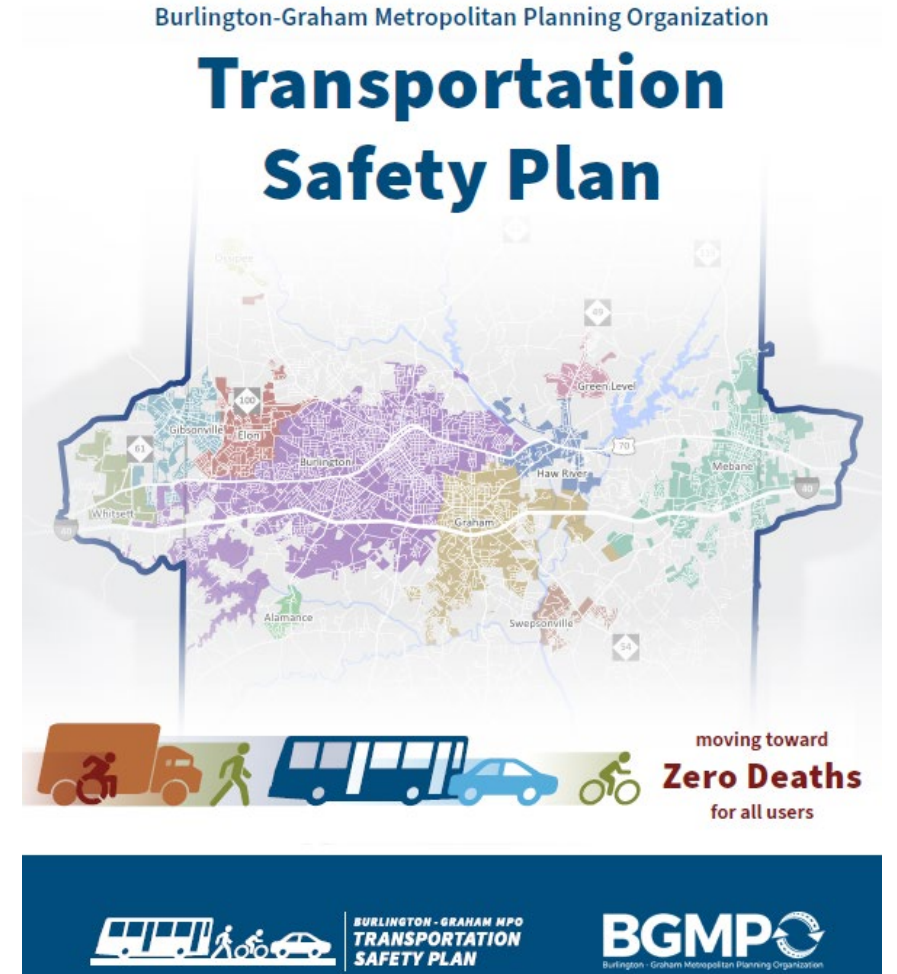
Brian Murphy. NCDOT Traffic Safety Unit

May 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

# Comprehensive Safety Action Plans

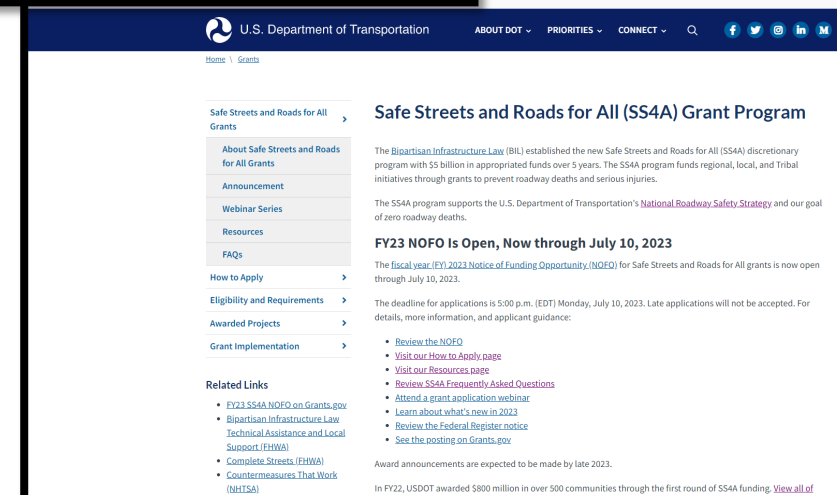
- Focused on enhancing the safety of all road users with the goal of eliminating fatalities and serious injuries
- Data Driven
  - Fatal and Serious Injury Crashes
  - Contributing Factors / Risk Factors
  - Goals and Metrics
- Local Engagement
  - Implementation Committees / Workgroups
- Outreach
- Equity Considerations
- Identify Local Priorities
- Identify Implementation Approaches
- Inform other plans



# Safe Streets For All (SS4A) Grant Opportunity

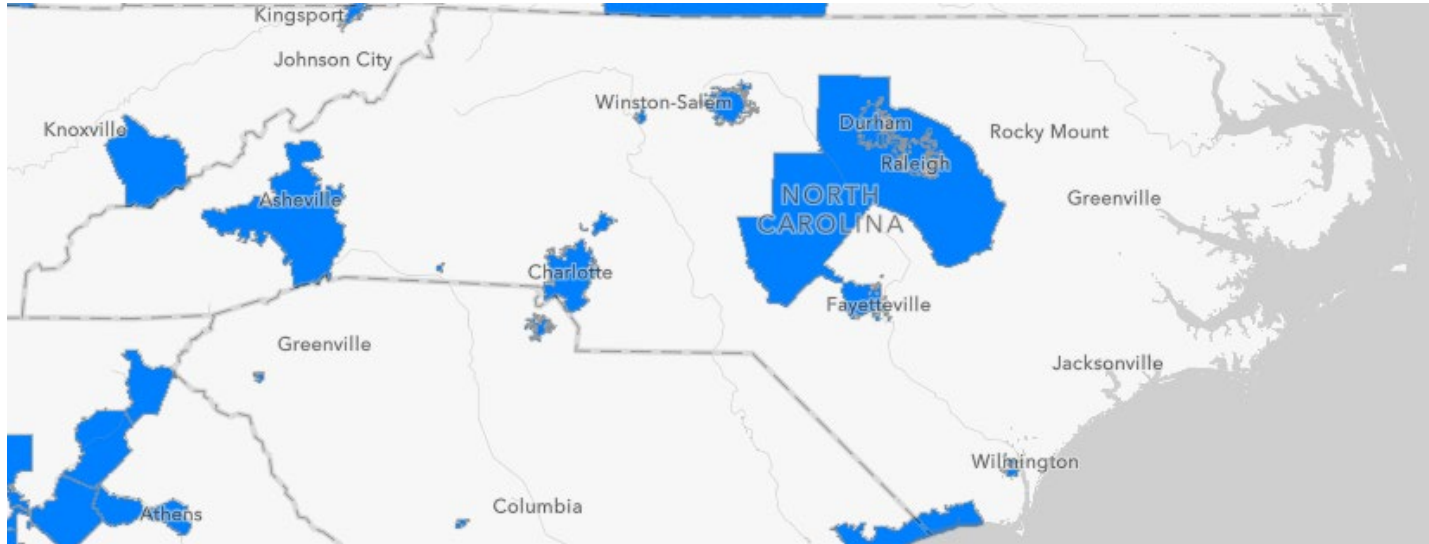
- \$5 Billion discretionary grant program
  - \$1 Billion / year , FY 22-26
- Eligible Activities
  - Develop a Comprehensive Safety Action Plan
  - Conduct planning, design, and development activities
  - Carry out projects and strategies identified in an Action Plan
- Eligible Recipients
  - Metropolitan planning organization (MPOs)
  - Political subdivision of a State
  - Federally recognized Tribal government
  - Multijurisdictional groups comprised of the entities above

■ **NOFO is Currently Open Through July 10, 2023**



# Safe Streets For All (SS4A) Grant Opportunity

- 2022 Grant Awards:



- Resources:

- NCDOT SS4A site: <https://www.ncdot.gov/initiatives-policies/safety/traffic-safety/Pages/safe-streets-grant-program.aspx>
- FHWA SS4A site: <https://www.transportation.gov/grants/SS4A>
- Burlington-Graham MPO Safety Action Plan: <https://bgmpotransportationsafetyplan.com/>

# Thank you!

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Brian Murphy, PE

Traffic Safety Systems Engineer

Traffic Safety Unit

North Carolina Department of Transportation

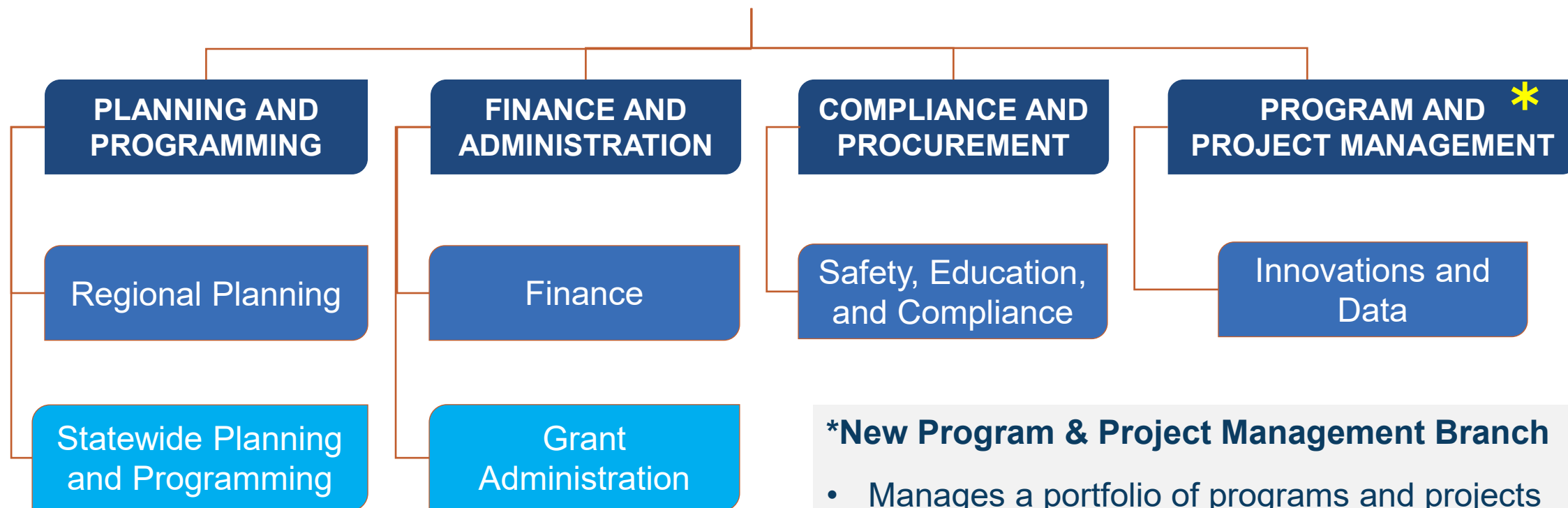
(919) 814-4948

[bgmurphy@ncdot.gov](mailto:bgmurphy@ncdot.gov)

# Division Updates

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# DIRECTOR



## \*New Program & Project Management Branch

- Manages a portfolio of programs and projects with focus on multimodal safety, infrastructure project development, shared mobility innovations, and multimodal data.
- Creates new opportunities to integrate Innovations and Data programs with other programs and projects in IMD.



# Grant Programs

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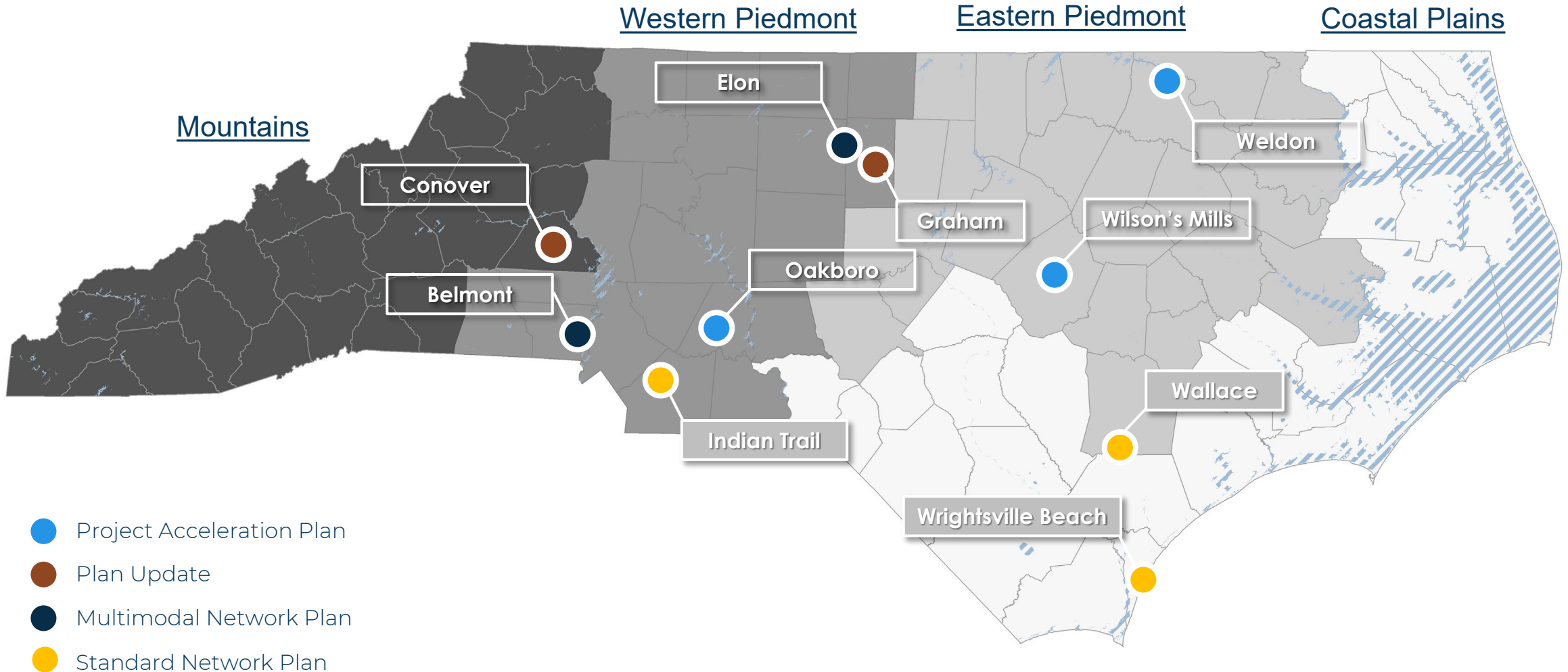
# Integrated Mobility Division (IMD) Grant Applications and Awards

- IMD has won ten grants totaling \$72M in grant funding since 2019.
- IMD leverages STIP projects to meet non-federal match requirements and make applications more competitive.
- Two previously awarded RAISE grants – “High Point on the RISE” and “PARTNERS” – leveraged STIP projects for match.
- Examples of upcoming USDOT key competitive grant opportunities include:

Opening Date	Grant Program	Operating Administration/Office	Closing Date (to be added for each program after the NOFO is issued)
1/27/2023	<u>Buses and Bus Facilities</u>	Federal Transit Administration	4/13/2023
1/27/2023	<u>Low or No Emission Vehicle</u>	Federal Transit Administration	4/13/2023
Winter/Spring 2023	<u>Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation (PROTECT) – Discretionary</u>	Federal Highway Administration	08/18/2023
Apr-23	<u>Safe Streets and Roads for All Grant Program</u>	Office of the Secretary	07/10/2023
May-23	<u>Transit-Oriented Development Pilot Program</u>	Federal Transit Administration	
Spring 2023	Multimodal Project Discretionary Grant Opportunity (Mega, INFRA, and Rural)	Office of the Secretary	
Late Spring 2023	<u>Reconnecting Communities Program and Neighborhood Access and Equity Grant Program</u>	Office of the Secretary/Federal Highway Administration	
Fall 2023	<u>Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program</u>	Office of the Secretary	

# Multimodal Planning Grant Program

## Active Plans



# Multimodal Planning Grant Program

## FY24 Applicants

- Applications closed April 10<sup>th</sup>
- 12 applications going to BOT for their June meeting (*project kick-off expected Dec 2023*)
  - 4 Mountains Region
  - 5 Eastern Piedmont
  - 3 Coastal Plains
- Continued interest from communities with pop. <10,000
- \$628,500 in requested funds
- Next grant cycle likely to open in Jan/Feb 2024
- Awards dependent on FY2024 funding allocations



Pop-up event at the Garner Night Market

## Microtransit Feasibility Studies (and Resources)

- New program developed to respond to high interest in microtransit
  - No local match required
  - Applications closed May 1<sup>st</sup>
  - 8 transit agencies seeking funding (*mostly rural communities*)
  - Funding sources, scopes of work & project budgets still to be determined but will build off Rocky Mount pilot study
- Resources
    - Research - [Public Microtransit Pilots in the State of North Carolina: Operational Characteristics, Costs, and Lessons Learned](#)
    - NC Overview - [On-Demand Microtransit](#)
    - Grants - [Microtransit Feasibility Study Grants](#)





## Regional Transit Plans

- 3 regional planning efforts happening across the state
  - Greater Rocky Mount, Greenville, & Wilson Area
  - Land of Sky
  - High Country
- Assist regional agencies in providing efficient and effective public transportation
- Provides for a 5-year implementation plan
- Recommendations could look at:
  - Transit services (i.e., changes to service hours, types of service)
  - Capital investments
  - Technology improvements
  - Policy recommendations

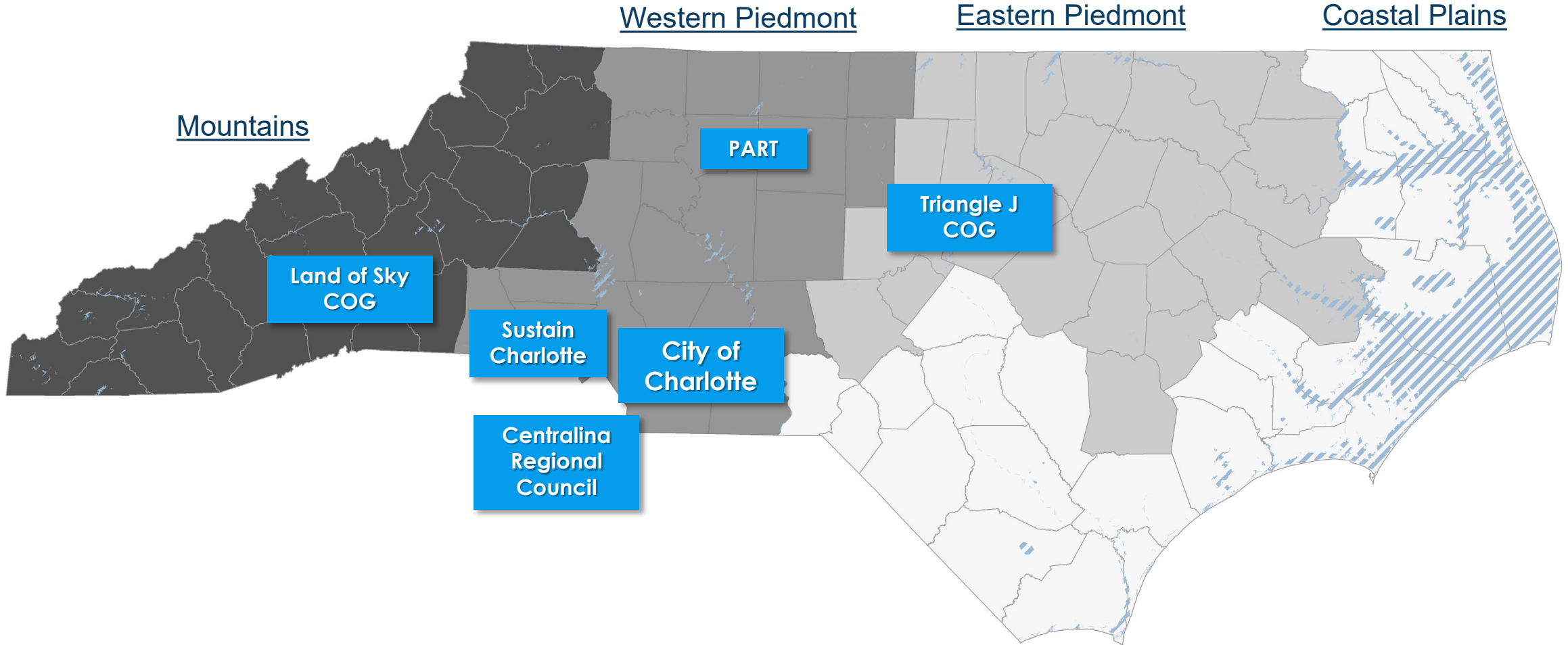


Image Source: Greenville Area Transit

# Transportation Demand Management

Approximately \$1.3 mil in allocated funds

FY 2024 Grant Recipients

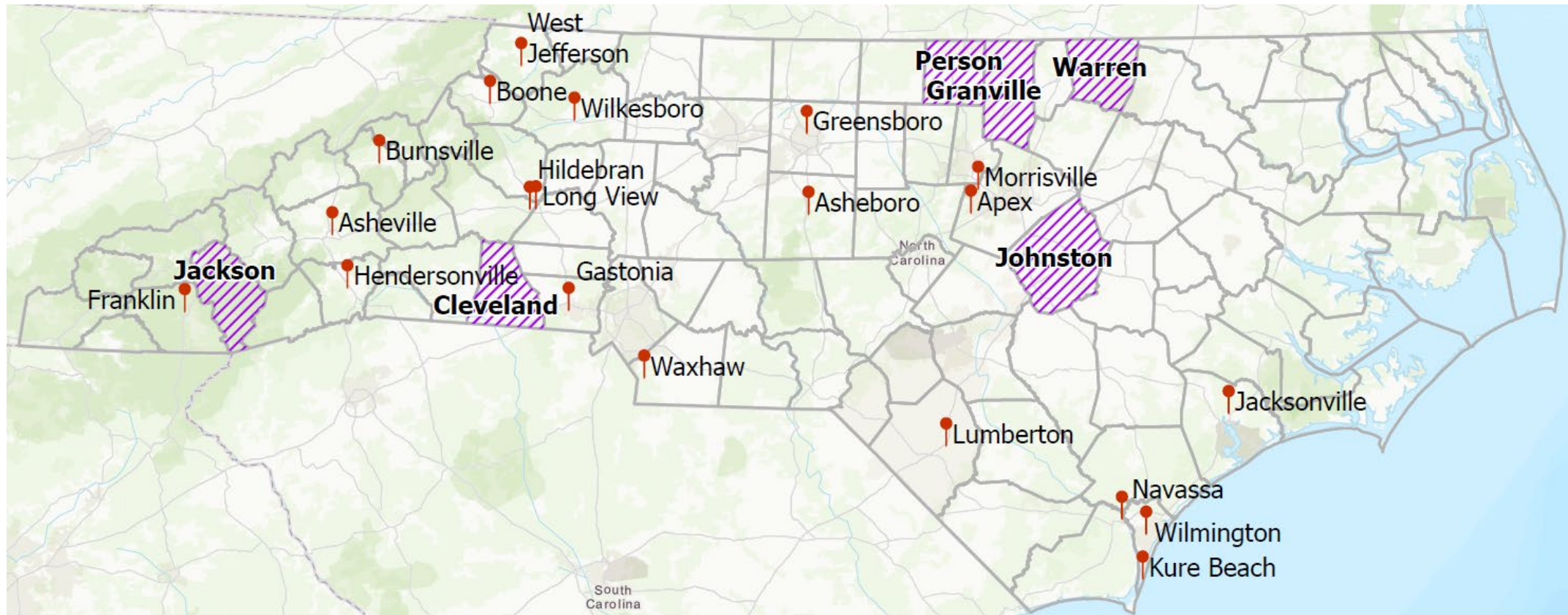




## Feasibility Studies

### Paved trails, greenways, sidepaths, sidewalks

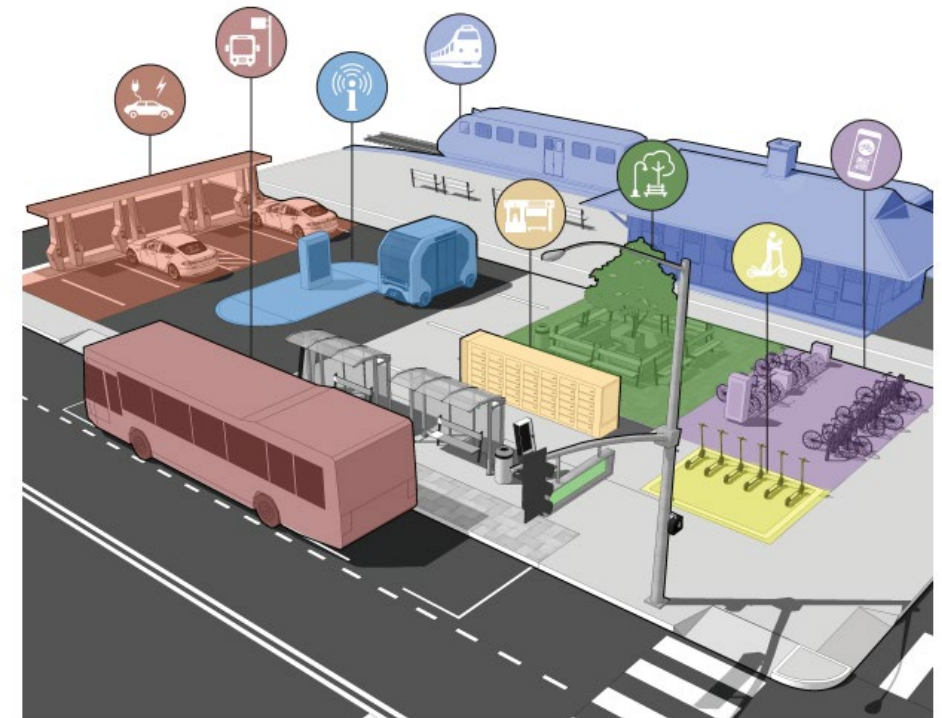
- Current status – scoping all 25 projects with kick-off expected in June
- 6-to-12-month study process to analyze opportunities/barriers, identify recommended alignment, and develop cost estimates



# Transit Facility / Mobility Hub Feasibility and Zero Emission Transition

## Transit Facility Needs – Survey received 23 responses from transit agencies

- Focus Areas:
  - Administration/Operations Facility – the location where the transit agency conducts operation for dispatch and administration.
  - Maintenance Facility – the location where transit vehicles and related infrastructure are inspected and maintained, and commonly stored.
  - Mobility Hub - a place where people can connect to many modes of transportation – transit, biking, walking, shared mobility, etc.
  - Electrification Infrastructure – infrastructure, such as charging stations, needed to maintain vehicle fleet.
  - Zero Emission Transition Study – a plan to map out conversion of a system’s transit vehicles to a low or zero emissions fleet.
- Feasibility studies template – multiple pilot projects
- Zero emission transition study – grant program (5 responses)





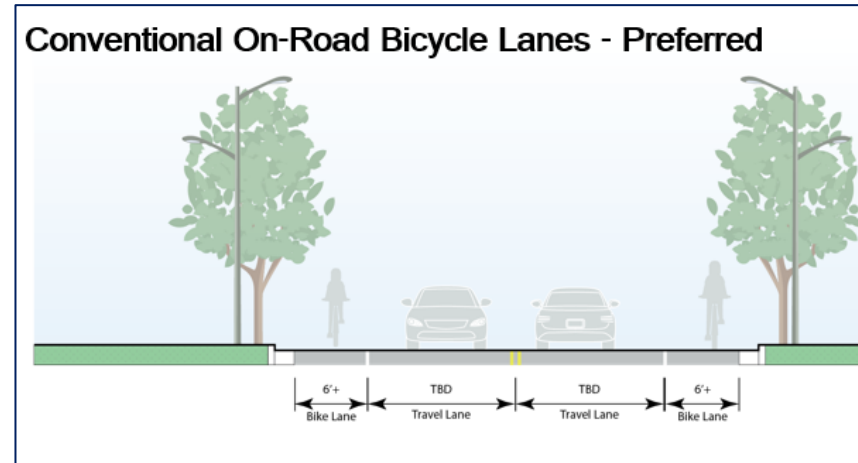
# Guidance and Planning Studies

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## Complete Streets Updates

- New guidance released in February 2022 established project review standards.
- Over 500 project reviews completed by over the past year.
- Workgroups met in 2022 to develop recommendations to address key issues.
- IMD is working on a design flexibility toolkit, guidance to incorporate complete streets on maintenance projects, and tweaks to the demand estimation map to incorporate intersection density when determining demand.

*Draft Maintenance Project Guidance Example*



*Draft Design Flexibility Toolkit Example*

# S-Line Transit Oriented Development Federal Planning Grant – \$900K

Sanford, Apex, Raleigh, Wake Forest, Franklinton, Henderson, Norlina

## Focus Areas

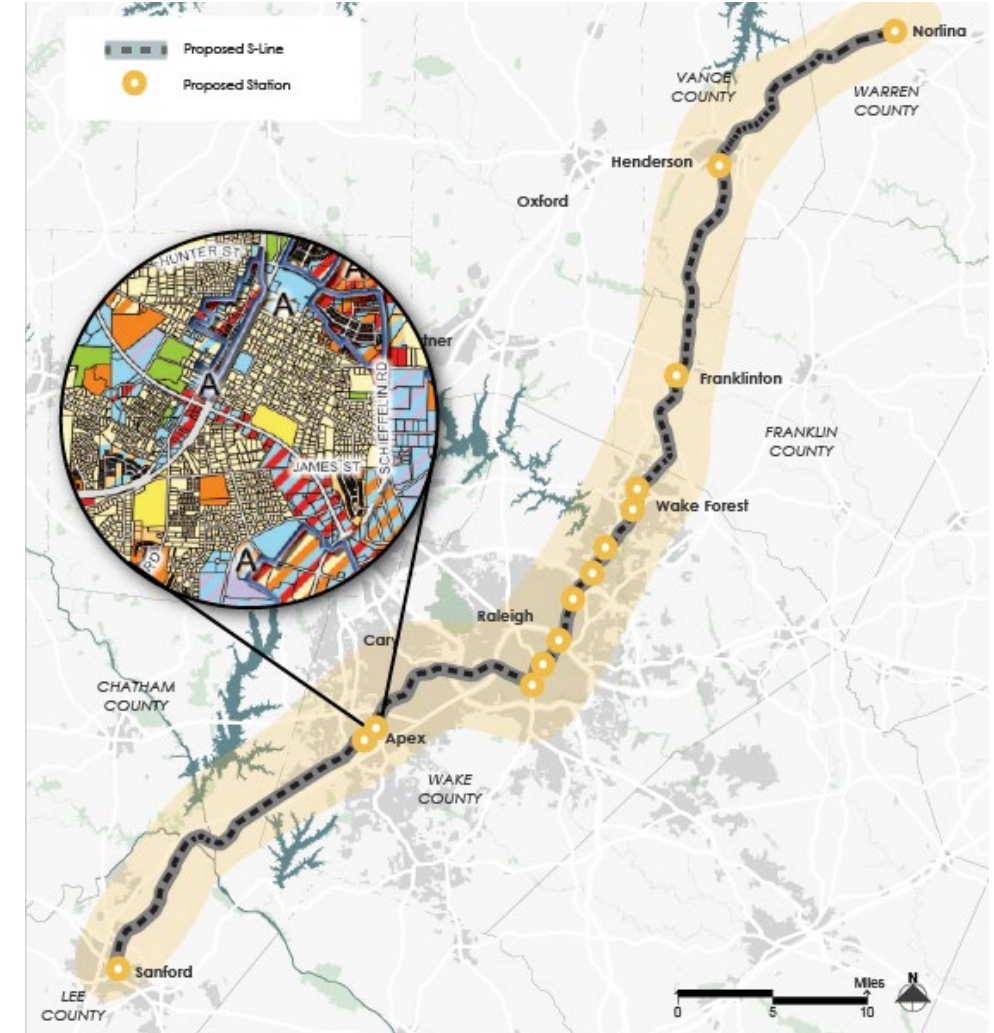
- Corridor/service vision and goals
- Station locations / station area concepts
- Market impact
- Housing assessment
- Transit operations

## Implementation

- Land use plans
- Zoning/Regulatory Policies
- Infrastructure investments
- Funding strategies/sources

## Community Engagement

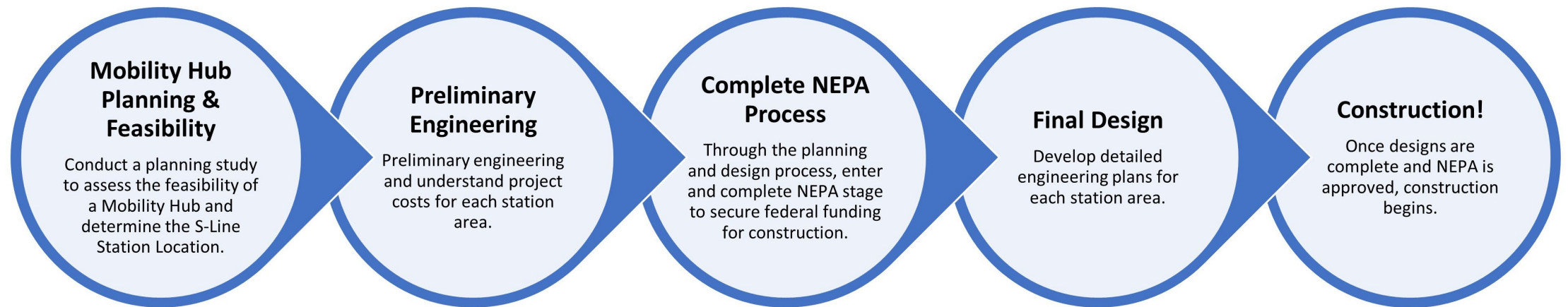
- Advisory/Technical Committees
- Public workshops



## S-Line Next Steps



- TOD Study Final Report to be released in June.
- Mobility Hub Planning begins Summer 2023.
- S-Line Coalition continues to meet to coordinate on all S-Line activities.
- Continue moving the S-Line Project forward to construction.



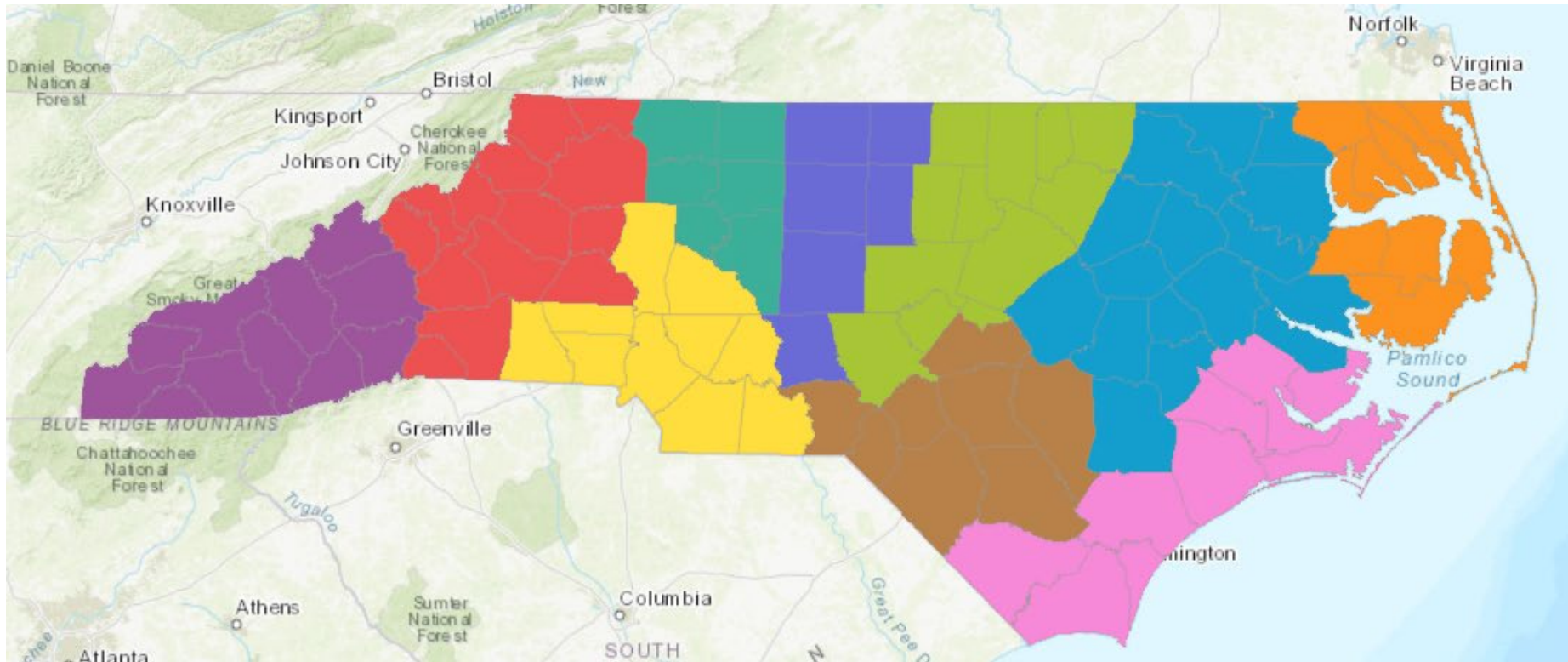
## Statewide Locally Coordinated Plan (LCP) Update

- NCDOT developed the first statewide LCP in 2018 to streamline process and reduce local burdens required for county and regional plans
- Plan will update existing LCP that is set to expire at the end of FY 2024. New plan will be for FY's 2025-2029.
- The Bipartisan Infrastructure Law continues to require a comprehensive planning process to identify and select projects eligible for 5310 funding.
- 10-month planning process
- 10 Locally Coordinated Areas identified based on RPO/MPO boundaries, transit plan boundaries, IMD Regions.
- 2 representatives (one RPO and one transit system) from each region will serve on the coordinating committee.



# Statewide Locally Coordinated Plan (LCP) Update

## Proposed Regions



2023 Proposed LCP Regions

- Northwestern
- Upper East
- Capital
- Southwestern
- North Coastal
- Rocky River
- South Coastal
- Southeastern

## Micromobility Strategy

- Study kicked off at the end of 2022
- IMD led research project with the purpose to:
  - Understand the current scale, practice and interest in micromobility services in North Carolina
  - Determine NCDOT's role with regards to policy, regulation, safety, data management, equity, funding and more
- Project Status:
  - Completed
    - Literature Review
    - Survey
    - Survey Synthesis Memo
  - Upcoming
    - Final Report
    - Infographic Handout



Source: [Link](#)

# Safety Initiatives

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## Safe Routes to School – Non-Infrastructure Grant Program

- Funds local SRTS coordinators, materials for marketing and education, action plans, school events and more
- 12 awardees announced in April 2023 totaling over \$3.1 million in grant funds
- Awarded applicants – local governments, school districts, regional governmental agencies, health agencies
- Next steps – funding obligation and contractual agreements



## Safe Routes to School – Non-Infrastructure Grant Program

- City of Greensboro
- Durham Public Schools
- Foothills Regional Commission
- Hoke County Health Department
- Kerr-Tar Regional Council of Governments
- Land of Sky Regional Council
- Mount Airy City Schools
- Town of Carrboro
- Town of Chapel Hill
- Town of Winterville
- Triangle J Council of Governments
- Wake County Health and Human Services



## Bicycle Helmet Initiative

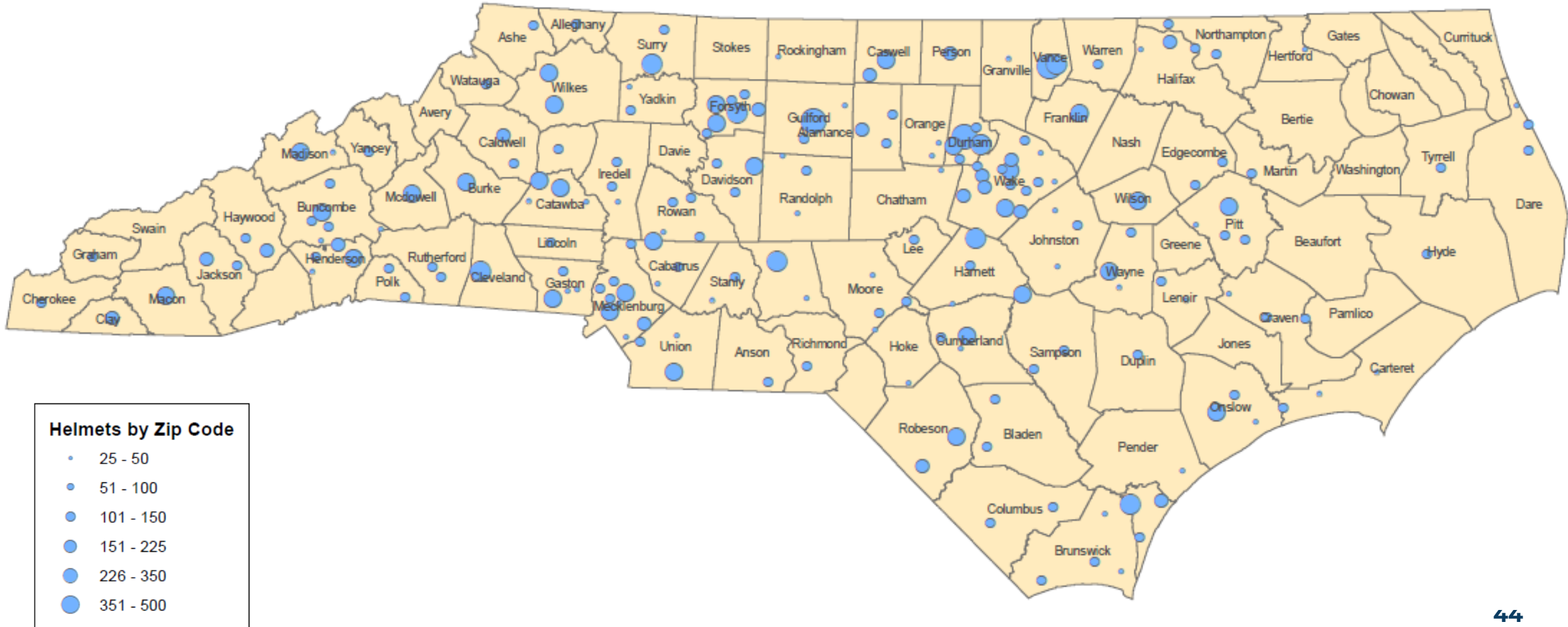
- Promotes helmet usage, supports local bicycle activities, distributes helmets to low-income children to reduce fatalities/injuries
- Awarded applicants – local governments, police/fire departments, parks and recreation departments, health departments, community centers, churches and non-governmental groups
- April/May – delivery of helmets
- New record of 290 applications submitted and over 23,000 helmets requested in the program
  - 2022 – 262 awardees and 20,075 helmets
  - 2021 – 165 awardees and 11,925 helmets





# Bicycle Helmet Initiative

2023 Awards



# Interim Design Safety Project (Tactical Urbanism)

## Selection Tool for Bike and Pedestrian Safety Countermeasures

- FHWA STIC project
- Interim design countermeasures to be evaluated - protected intersections, curb extensions and median refuge islands
- Coordination with Highway Divisions and Municipalities
- Materials and Installation
- Evaluation/Data Collection

Median Refuge Island



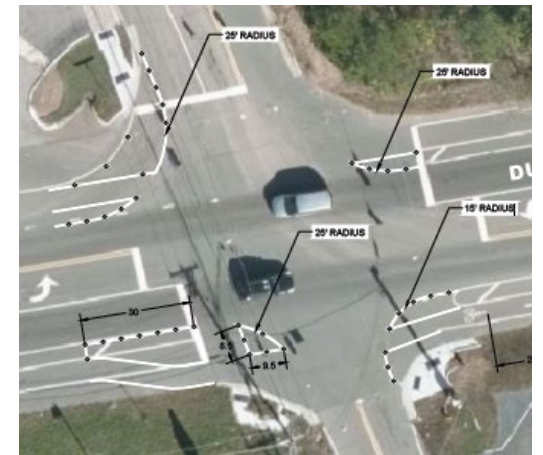
Fayetteville Rd and the ATT, Durham

Curb Extension



3<sup>rd</sup> and Market, Wilmington

Protected Intersection



Durham Chapel. Hill Blvd and James St. (proposed) **45**

# Motorists and Bicyclists: Best Practices for Road Safety

<https://www.ncdot.gov/divisions/integrated-mobility/safety/Pages/cycling-safety.aspx>

The goal of the document is to identify best practices for all roadway users interacting with each other in different scenarios in and along North Carolina roadways.

- Starting off
- Traveling together in the roadway
- Bicycle lanes & paved shoulders
- Crosswalks
- Changing lanes
- Passing
- Turning
- Intersections
- Riding in groups



### Turning

Bicyclists and motorists should signal at least 100 feet in advance of a turn and wait for an appropriate gap in traffic before executing a turn.



### Changing Lanes

Bicyclists and motorists should be clear with their intentions and be aware of their surroundings when executing a lane change.



### Passing

Motorists should shift completely into the other lane when passing a bicyclist and ensure they have plenty of space to safely pass.

# Innovation and Data Initiatives

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## CASSI in Cary's Bond Park

Ends on June 2, 2023

Weekdays from 10 a.m. to 4 p.m. on four-stop route

*Open to the public on Memorial Day  
(as weather permits)*

[townofcary.org/cassi](http://townofcary.org/cassi)



[ncdot.gov/cassi](http://ncdot.gov/cassi)



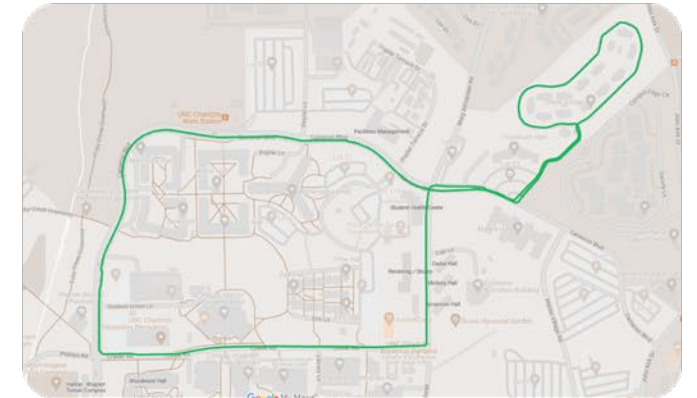
## CASSI moves to UNC Charlotte this summer

Launching late June through December, 2023

**The novel-design, low-speed autonomous shuttle will move to the University of North Carolina at Charlotte (UNC Charlotte) campus for the next pilot.**

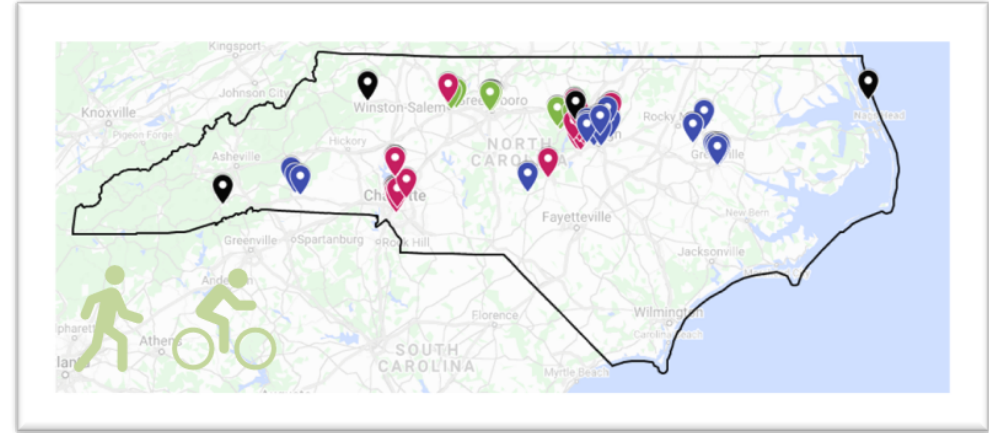
The project has the most signals (four total), longest route (2.2 miles), longest duration (6 months), and most intense mixed traffic environment that includes bicyclist, scooter, pedestrian, motor vehicle, and transit interactions and shared stops with the existing campus bus fleet compared to previous pilots under the CASSI program.

The project advances NCDOT's goal of incrementally increasing the complexity of projects based on prior successes and lessons learned. NCDOT is collaborating with faculty, staff, and students across the UNC Charlotte campus to research and evaluate the pilot.



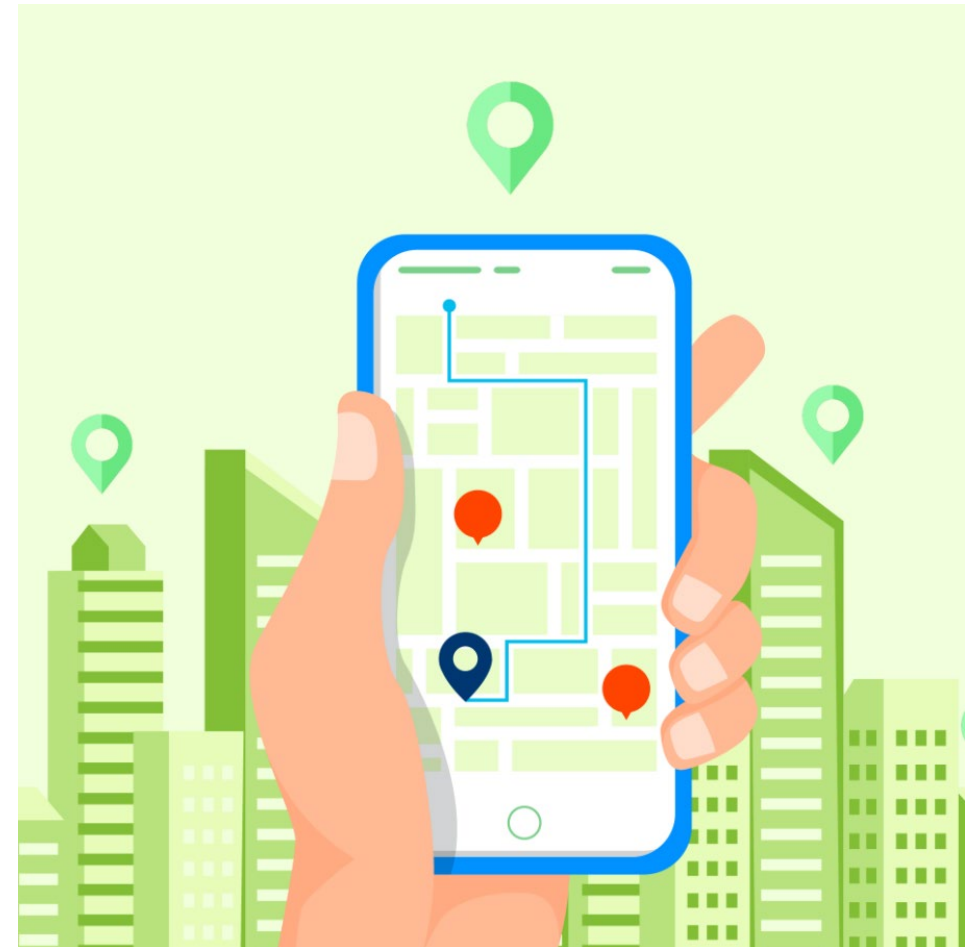


# NC NMVDP – Upcoming Changes



## Location-Based Services RFI

- NCDOT IMD is interested in gaining a better understanding of data sources that can assist in bicycle and pedestrian analysis
- One of these data sources includes Location-Based Services.
  - NCDOT IMD recently put out an RFI for location-based services
  - Recently went through product demonstrations with companies
  - This RFI will inform NCDOT of ways to supplement the count data



Source: [Link](#)

**Thank you!**

