



NORTH CAROLINA

Department of Transportation



NCDOT's Integrated Mobility Division (IMD) – **Multimodal Updates**

November 10, 2022



Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

Agenda

- **IMD Updates**
 - Grant programs – discretionary grants, feasibility studies, planning grants, SRTS, bicycle helmets
 - Equity and complete streets
- **West Franklin St./East Main St. Road Diet (Chuck Edwards, P.E., District Engineer, Division 7)**
- **IMD updates (continued)**
 - CASSI
 - North Carolina Non-Motorized Volume Data Program (NC NMVDP)
 - Transit visioning workshops



Current Planning and Innovation Initiatives



Visioning Workshops

7 workshops across the state
 August 2022 – September 2022

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



Multimodal Planning Grants

Existing and new grants program
 Call for projects January 2023

Develops multimodal plans, bicycle plans, pedestrian plans, access to transit plans, and microtransit feasibility studies



Feasibility Studies

\$2.5M available
 Call for projects November 2022

Shared use paths and sidewalks – complements planning studies and supports local governments in the implementation of projects



Safe Routes to School

Non-Infrastructure Programs
 Call for projects December 2022

Supports programs and activities that focus on education, enforcement, encouragement and evaluation elements



Multimodal and Mobility Data

Bicycle, pedestrian, and transit data

Improve data warehousing and advance standards, specifications, governance, and interoperability for multimodal and mobility data – including for the statewide bicycle and pedestrian counting and transit data programs



Regional Transit Plans

Upper Coastal Plain + High Country + Land of Sky RPO
 Fall 2022 Pilot Projects

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



Discretionary Grants

IMD partners with locals to apply for USDOT grants

FY 2023 RAISE NOFO will be out soon – submit your ideas to IMD's RAISE survey.



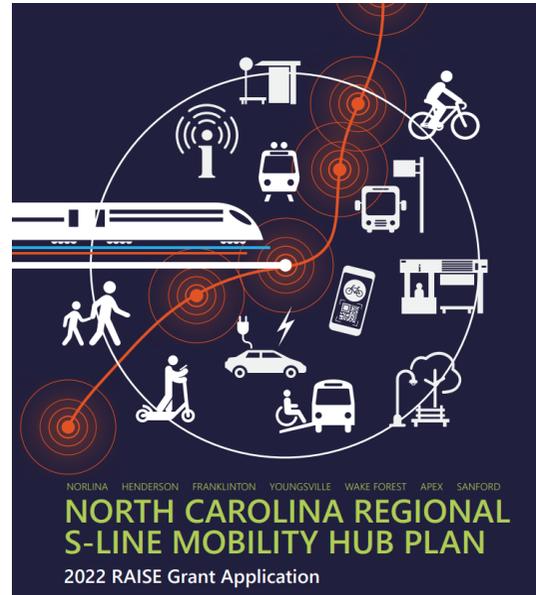
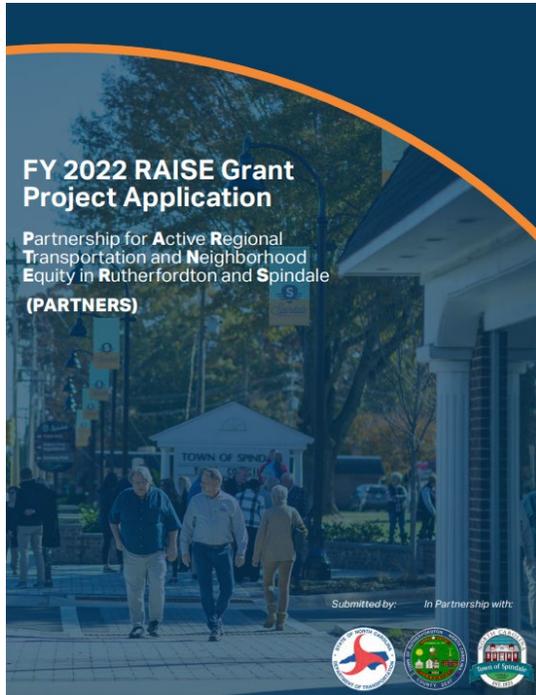
Bike Helmet Initiative

20K Helmets / 250 Groups in 2022
 Call for projects January 2023

Distributes helmets to underprivileged children by government and non-government agencies since 2007

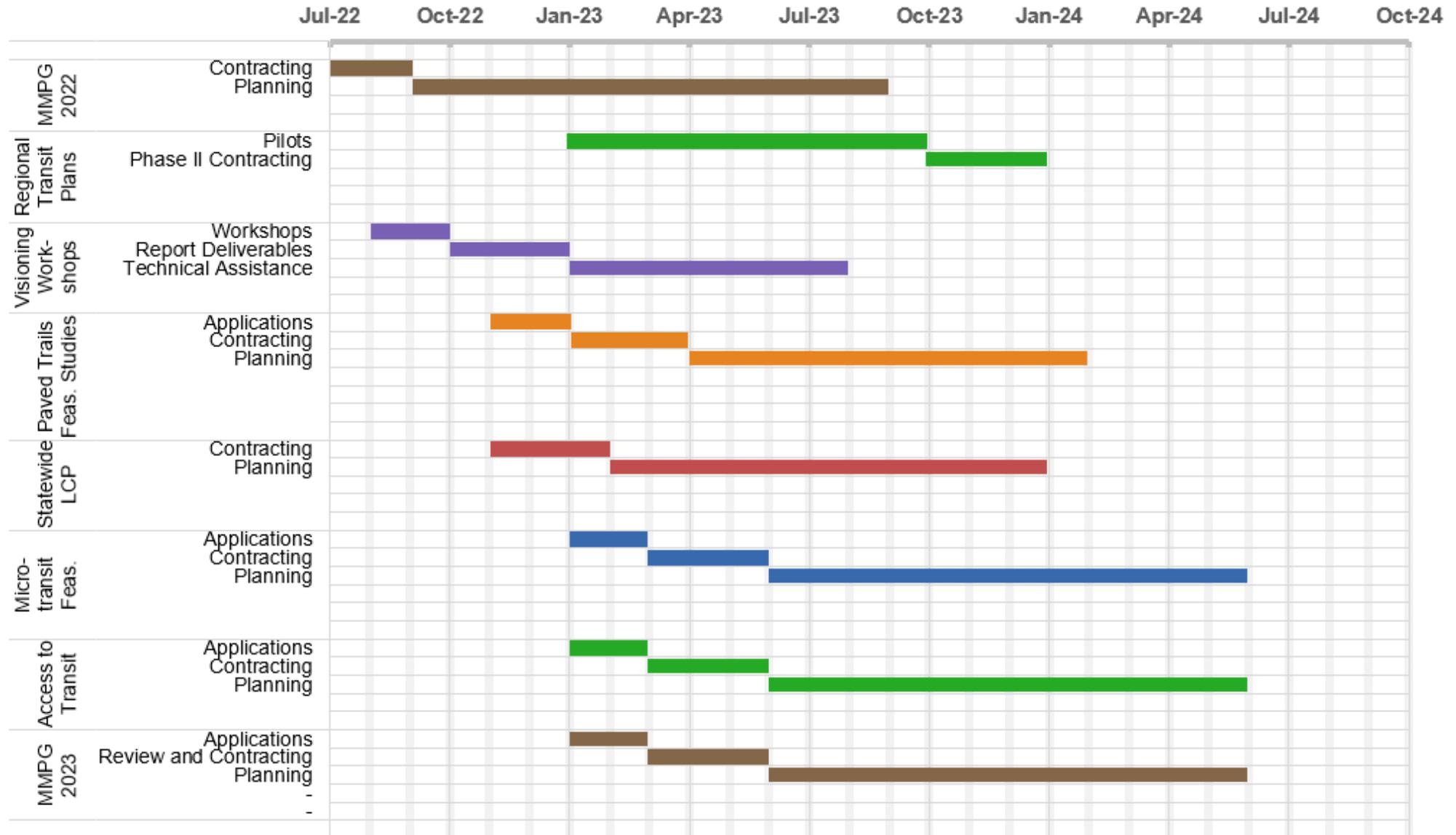
USDOT Discretionary Grants

In three years, IMD has won nine USDOT discretionary grants totaling over \$62 Million



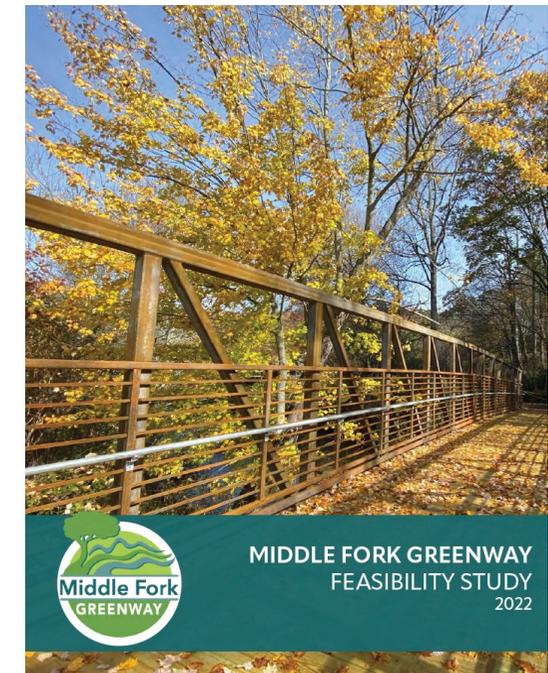
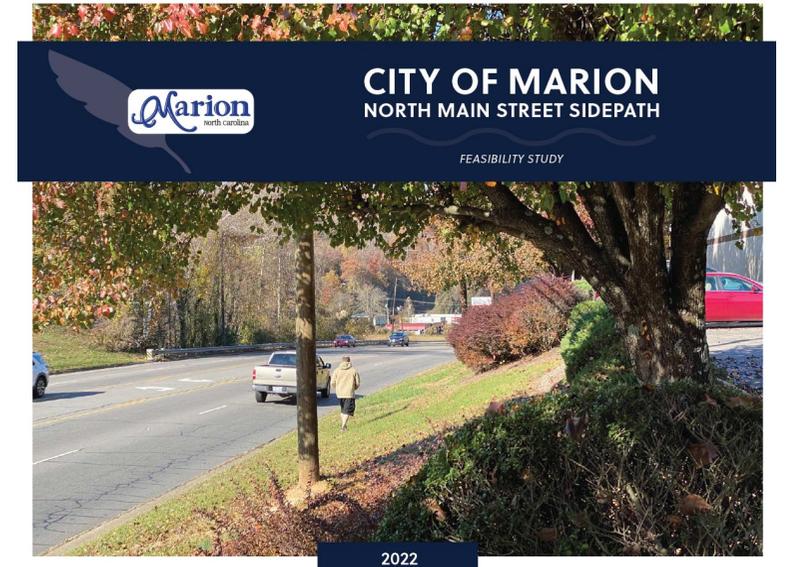
- The application period for USDOT's FY 2023 RAISE program will open this month
- Please complete IMD's RAISE interest survey to submit your project idea. [FY 2023 RAISE Grant Project Candidate Survey](#)
- IMD will lead application development for one project.

IMD Planning Calendar



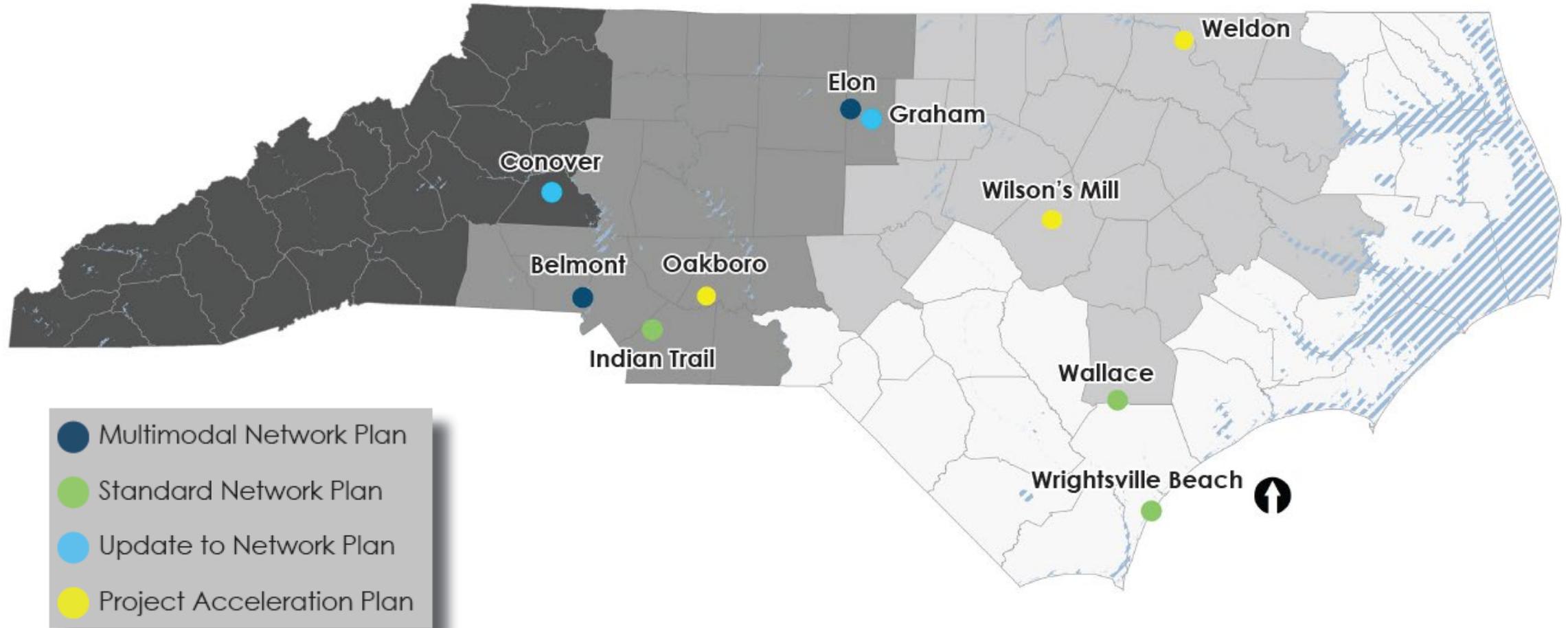
Feasibility Studies Grant Program

- Open for Applications: November 10, 2022 to January 9, 2023
- Types of projects – paved trails, greenways, sidepaths, sidewalks
- Supporting documents
 - Overview
 - FAQs
 - Content standards
 - Example feasibility studies
- No local match requirement
- Website:
<https://connect.ncdot.gov/municipalities/PlanningGrants/Pages/IMD-Feasibility-Studies-Program.aspx>



Multimodal Planning Grant Program

Plans starting in December 2022



Multimodal Planning Grant Program

Grant Info

- Upcoming [Call for Applications](#) for multiple grant opportunities
- January 2023
- One application portal in EBS for all grants
- Consultant lead + IMD Regional Planner support
- Local match required for LGA-eligible plans, but not for transit agency-eligible plans

Plan Types

- Bicycle, Pedestrian, or Combined (Bike + Ped) Plan
- Project Acceleration Plans for small towns (< 10,000 population)
- Multimodal Network Plans for LGA's with existing fixed-route or deviated fixed-route transit service
- Existing Bike or Ped Plan Update
- Microtransit Feasibility Study for transit agencies
- Access to Transit Study for transit agencies

Multimodal Planning Grant Program

Grant Eligibility

	Municipal Population < 10,000	Municipal Population > 10,000
Existing transit service (fixed-route or deviated fixed-route)	Multimodal Network Plan Stand-alone Bicycle Plan Stand-alone Pedestrian Plan Combined Bicycle & Pedestrian Plan Plan Update Project Acceleration Plan	Multimodal Network Plan Stand-alone Bicycle Plan Stand-alone Pedestrian Plan Plan Update
No existing fixed-route / deviated fixed-route service	Stand-alone Bicycle Plan Stand-alone Pedestrian Plan Combined Bicycle & Pedestrian Plan Plan Update Project Acceleration Plan	Stand-alone Bicycle Plan Stand-alone Pedestrian Plan Plan Update

- Counties with Population < 100,00 population are eligible to apply for Stand-alone Bicycle or Pedestrian Plans, Plan Updates, or Multimodal Network Plans. Counties with populations > 100,00 are not eligible for the program.
- Transit Agencies eligible for Microtransit Feasibility Studies and Access to Transit Studies.

Safe Routes to School

- **December 2022** call for applications
- Non-infrastructure programs – funds local SRTS coordinators, materials for marketing and education, action plans, school events and more
- 11 partners from last cycle

Safe Routes to School (SRTS) is a program that enables and encourages children to walk and bicycle to school; makes walking and bicycling to school a safe and more appealing transportation option, and facilitates the planning, development and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of school.



Bicycle Helmet Initiative

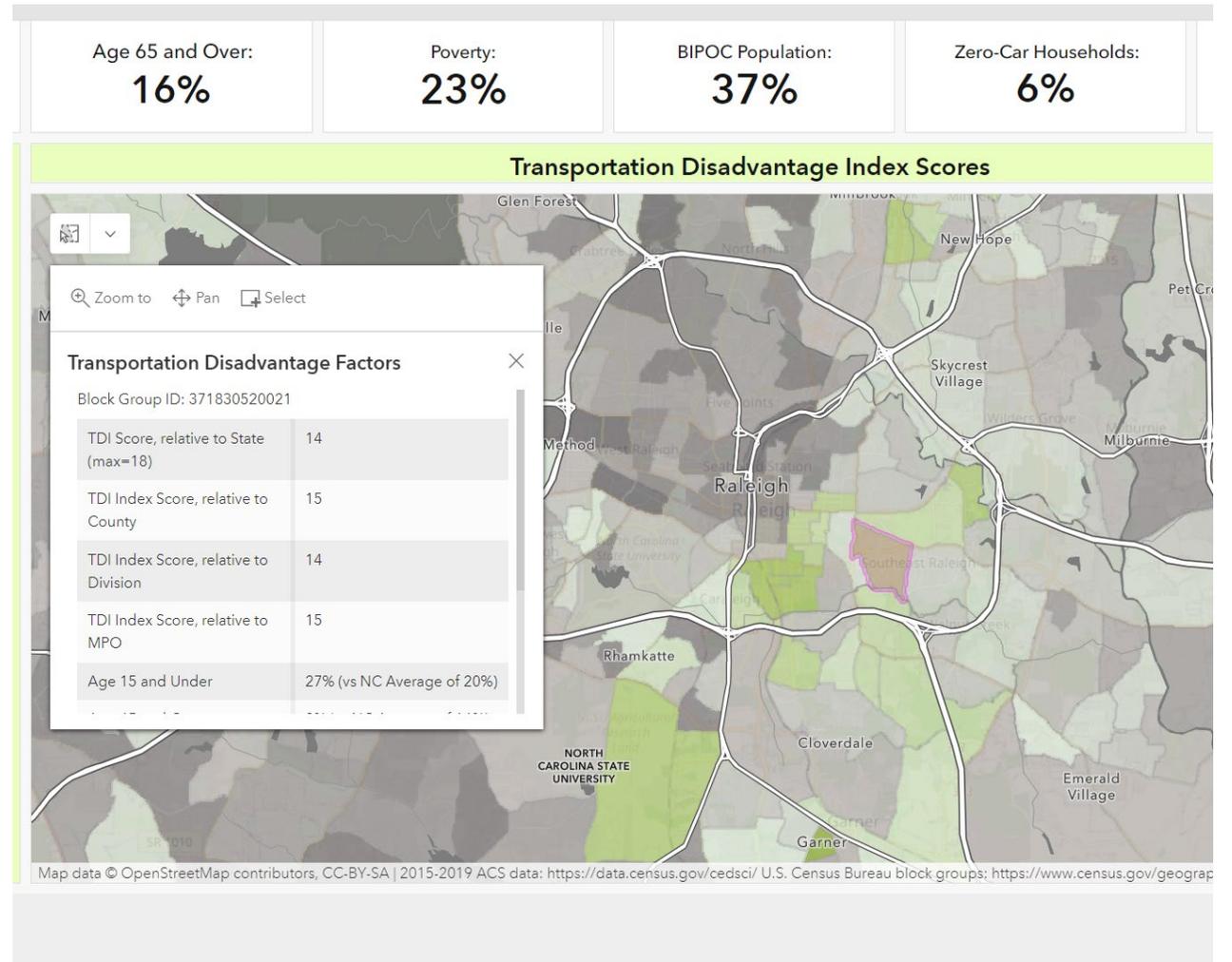
- **January 2023** call for applications
- To promote helmet usage, support local bicycle activities, distribute helmets to low-income children
- Applicants have the option of requesting 25, 50, 75, or 100 helmets in the application
- Partners: Local governments, police/fire departments, parks and recreation departments, health departments, community centers, churches, and non-governmental organizations
- 2022 - 262 applicants for 20,075 helmets /
2021 - 165 applicants for 11,925 helmets



Website: <https://connect.ncdot.gov/projects/BikePed/Pages/Bicycle-Helmet-Initiative.aspx>

Equity Map/Dashboard Updates

- Presentations / webinars
 - Training webinars held in August; recordings available on [Connect](#) page
 - NC Chapter of APBP webinar scheduled for December
 - IMD staff presentations available upon request
- GIS Shapefiles available for download
- All data and documentation updated to include 2020 ACS data
- Continuing to evaluate methodology and other proposed improvements



Complete Streets Implementation Updates

February '22 – Released updated and new guidance for Complete Streets Implementation

- Updated implementation guide
- New evaluation methodology

Ongoing Implementation Work:

- **Project Delivery** – ongoing workgroup for PDN updates, have made initial recommendations for updates reflected in most recent version of the PDN document.
- **Maintenance** – first workgroup held in July, several deliverables and more research is ongoing.
- **Cost** – first workgroup held in July, several deliverables and more research is ongoing.
- **CTP** – ongoing collaboration with TPD partners, have met every two weeks since March and will be finalizing recommendations in coming weeks.

Fall Updates

- Finalizing a Complete Streets Guide for Maintenance Projects (HMIP)
- Developing supplemental guidance for design flexibility to facilitate impact reduction review
- Participating in Smart Growth America's Rural Complete Streets Peer Review Workgroup



NORTH CAROLINA
Department of Transportation



West Franklin St./East Main St. Road Diet

A Collaborative Journey

C.N. (Chuck) Edwards Jr., P.E. , District Engineer

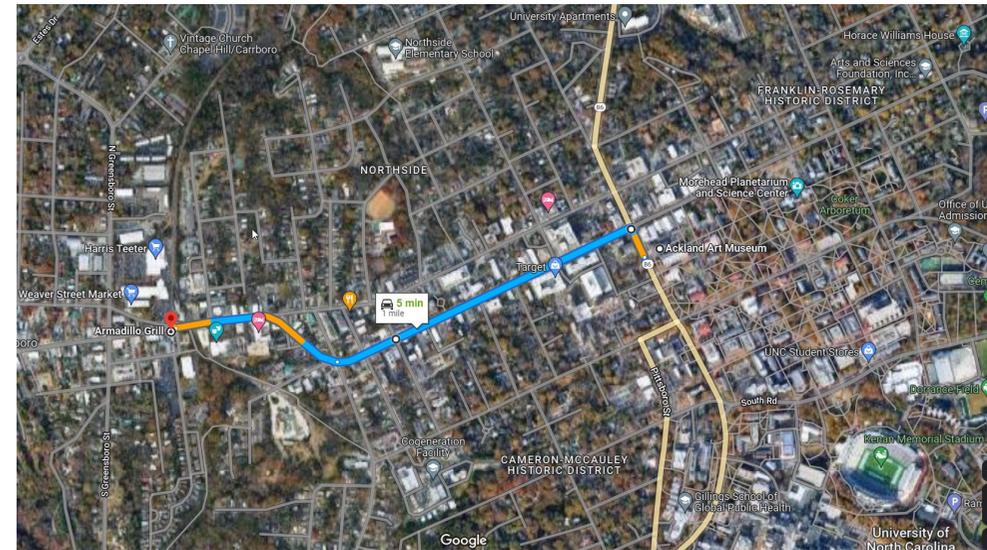
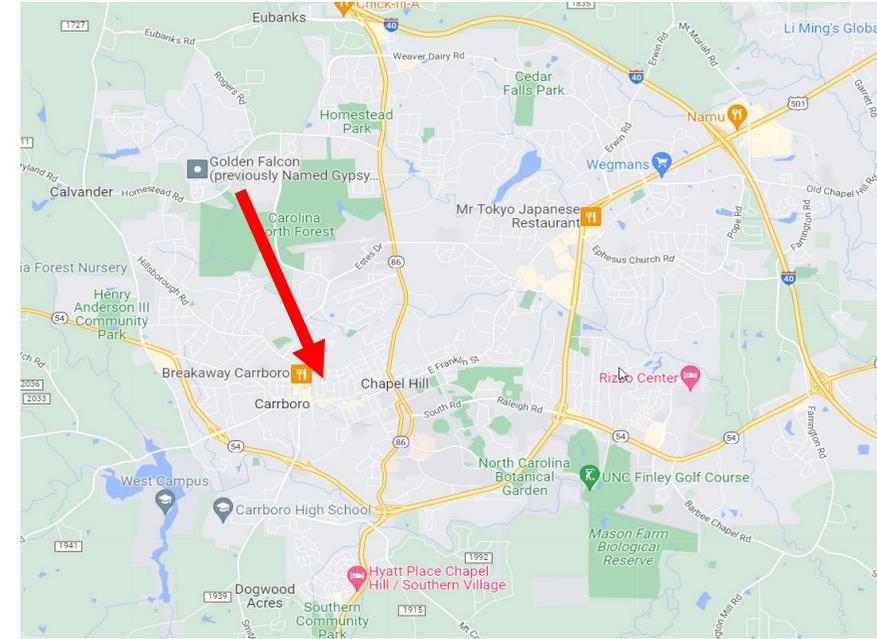
November 10, 2022

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

- In 2019, NCDOT notified the **Towns of Chapel Hill and Carrboro** that SR 1010, **West Franklin Street/East Main Street** was to be programmed for **resurfacing** in FY 2020/2021
- The municipalities requested that NCDOT consider incorporating a **road diet** to provide **dedicated bike lanes**.
- Per **NCDOT Complete Streets Policy**, NCDOT agreed to consider the road diet if:
 - **Towns perform all engineering and design**
 - **Towns perform all necessary work beyond the normal program scope**
- Thus began a **collaborative effort** between NCDOT, Chapel Hill and Carrboro
- Resulting in **successful delivery** of dedicated bike lanes on the corridor

THE CORRIDOR

- Urban Thoroughfare
 - Multi-lane undivided
 - 13,000-15,000 AADT
 - Posted speed limit 20 mph
 - Numerous driveways and intersections
 - On-street parking and loading zones
- Serves downtowns of Chapel Hill and Carrboro
- Gateway and front door to UNC-CH
- Mostly complete, but older sidewalk system
- Served by transit
- Freight rail spur
- **BUT.....No dedicated bicycle infrastructure**



THE CORRIDOR



West Franklin Street at Church Street, Chapel Hill

THE CORRIDOR



East Main Street at Lloyd Street, Carrboro

THE PARTICIPANTS

NCDOT

Division Engineer
Division Construction Engineer
Division Maintenance Engineer
Division Traffic Engineer
Resident Engineer
District Engineer
Integrated Mobility Division
Transportation Mobility and
Safety Division
NCDOT contractor

Municipalities

Elected officials
Advisory boards
Town Manager
Engineers
Planners
Public Works
Transit
Economic Development
Public information
Engineering consultants (3)
Contractors (4)

Community

General public
Road users
Business owners
Property owners
Advocacy groups
UNC-CH
Media

THE PROCESS

Identify Options

- Scope
- Purpose
- Need

Evaluate for Feasibility

- Traffic studies
- Preliminary designs
- Constructability /Affordability

Community Engagement

- Identify stakeholders
- Follow established local processes

Final Design

- Apply applicable standards
- NCDOT and local concurrence

Construction

- NCDOT resurfacing project
- Local responsibilities



IDENTIFY OPTIONS

- Chapel Hill proposed two options due to on-street parking:

A. Dedicated bike lane adjacent to travel lane

B. Dedicated bike lane adjacent to curb

- Carrboro side was simpler due to no on-street parking



- Functional designs and traffic studies prepared by municipal consultants per NCDOT guidelines
- Analysis indicates **acceptable operation** with reduction of one through lane in each direction (10 -year design life)
- Preliminary designs show that **design options are achievable** in the existing street section

Table 3. PM Peak Hour Intersection Performance Comparison

ID #	Intersection	Traffic Control	Vehicle Delay (Sec/Veh)*			LOS*		
			2020 Existing Conditions	Lane Reallocation		2020 Existing Conditions	Lane Reallocation	
				2020	2030		2020	2030
1	Franklin & Merritt Mill–Brewer	Signal	19.7	23.9	24.7	B	C	C
2	Franklin & Graham	Signal	6.7	15.3	17.8	A	B	B
3	Franklin & Roberson	TWSC	11.6	18.1	26.7	B	C	D
4	Franklin & Basknight	TWSC	2.5	6.6	7.0	A	A	A
5	Franklin & McDonald’s Pedestrian Crossing	TWSC – Ped Signal	15.9	26.8	28.1	C	D	D
6	Franklin & Kenan	TWSC	8.7	21.6	27.9	A	C	D
7	Franklin & Mallette	Signal	10.3	11.0	11.4	B	B	B
8	Franklin & Church	Signal	10.2	18.0	19.5	B	B	B
9	Franklin & East Driveway	TWSC	8.4	12.7	12.3	A	B	B
10	Franklin & Columbia	Signal	41.7	47.1	50.4	D	D	D

* - Overall Delay/LOS for Signalized Intersection, Critical Movement Delay/LOS for Unsignalized Intersection – All Data Represents a Simulation LOS Equivalent to HCM Methodologies



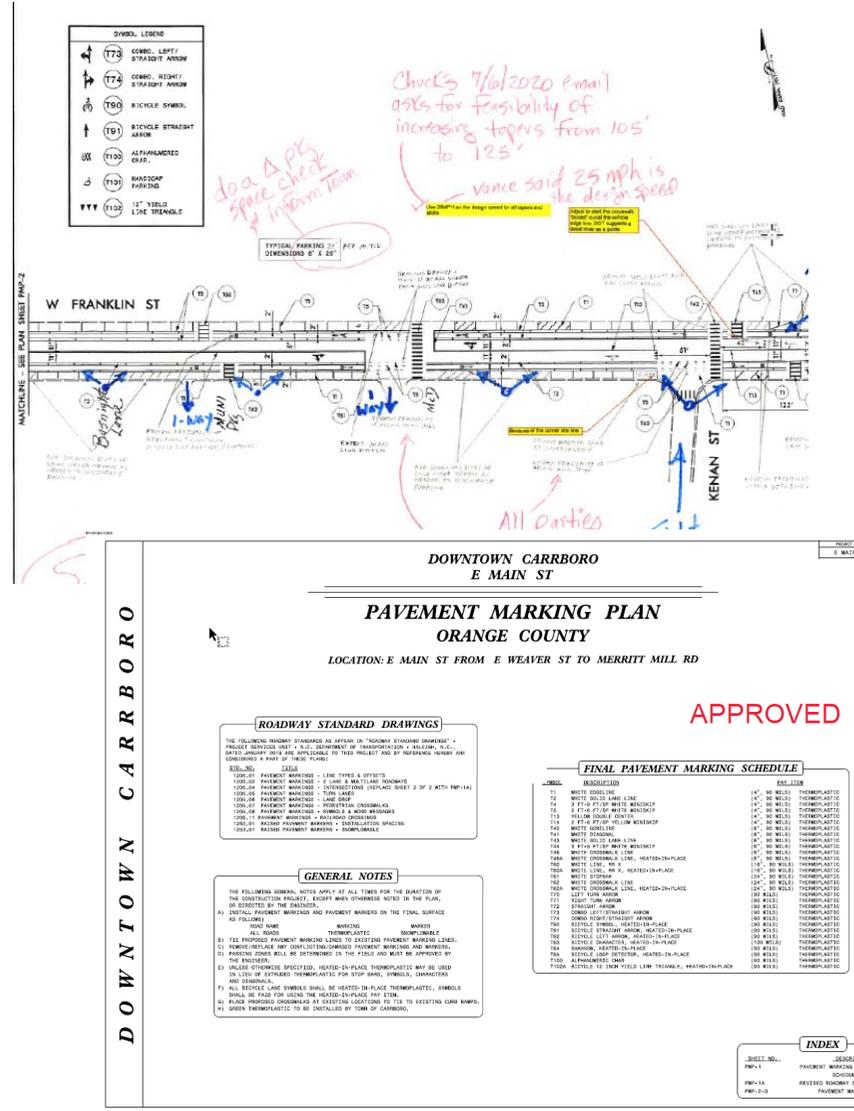
COMMUNITY ENGAGEMENT

- Facilitated by **municipalities** using **established processes**
- Provided information and opportunities for input throughout **all phases**
- Public meetings/Council presentations
- Municipal websites/social media
- Focus groups (ex. Business owners and bicycle advocates, UNC-CH)



FINAL DESIGN

- Plans prepared by **municipal consultants**
- Included **pavement markings and signs, traffic signal revisions, modifications to curb ramps, medians and bus stops**
- Applied established **design standards** with **adjustments** as needed
- Iterative and collaborative review process
- **Concurrence** by NCDOT, Carrboro and Chapel Hill



- Project delivered **Summer 2022**
- **NCDOT** installed new **pavement marking** design as part of resurfacing project
- **Municipalities** performed work to modify **traffic signals, median islands, bus stops and curb ramps**
- **Municipalities** installed **green colored pavement and flexible delineators** under encroachment agreement.
- Effective **collaboration and communication** was critical to success



BUMPS IN THE ROAD

- Project delayed two years:
- NCDOT budget issues 2020
- Emergency sewer replacement 2021
- Covid 2020- 2022
 - Need for social distancing/outdoor space for businesses
 - Temporary lane reallocation for pedestrian use
- Project design change 2022
 - Re-design to curb running per community and elected official input





West Franklin Street at Mallette Street, Chapel Hill



West Franklin Street near Kennan Street, Chapel Hill

RESULTS



PROJECT COST

(In round numbers)

NCDOT	Original Project	\$1,080,000
	Revised Road Diet Markings	<u>\$120,000</u>
	Total	\$1,200,000
Municipalities	Engineering	\$159,000
	Construction	<u>\$327,000</u>
	Total	\$486,000
Grand Total		\$1,686,000

Road Diet increased project cost by ~\$606,000 (56%)

- Communication, collaboration, cooperation
- Community/elected official engagement and buy-in
- Seek to adequately serve all road users
- Establish realistic and deliverable project scope
- Allow sufficient time for pre-construction process
- Use appropriate design standards/guidance
- Complete and incorporate project plans into resurfacing project **before** advertisement and award
- Consider additional programs/resources to supplement resurfacing funding (ex. Local funds)
- Above all; keep safety as the top priority

Contact Us

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 @NCDOT

 NCDOT

 NCDOTcommunications

 @NCDOT

 ncdotcom

 ncdot_comm

Thank you!



Connected Autonomous Shuttle
Supporting Innovation

Completed Projects (2020-2021)

Deployment 1:

NCDOT Transportation Summit
Raleigh Convention Center



Dates: Jan 8-9, 2020
Ridership: around 300
Length: 2,000 feet
Speed: 7-8 mph

Available for attendees

Deployment 2:

NCSU Centennial
Campus



Dates: Jan 21-Feb 25, 2020
Ridership: 260
Length: 0.8 mi
Speed: 10 mph

Open to public

Deployment 3:

Wright Brothers National
Memorial

First autonomous shuttle deployment at a National Parks site

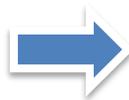


Dates: Apr 20-Jul 16, 2021
Ridership: 3,335
Length: 1.2 mi
Speed: 10-12 mph

Open to public



What's next?



New vehicle types and use cases with a focus on **safe, reliable, and useful transit service**

North Carolina Non-Motorized Volume Data Program (NC NMVDP)

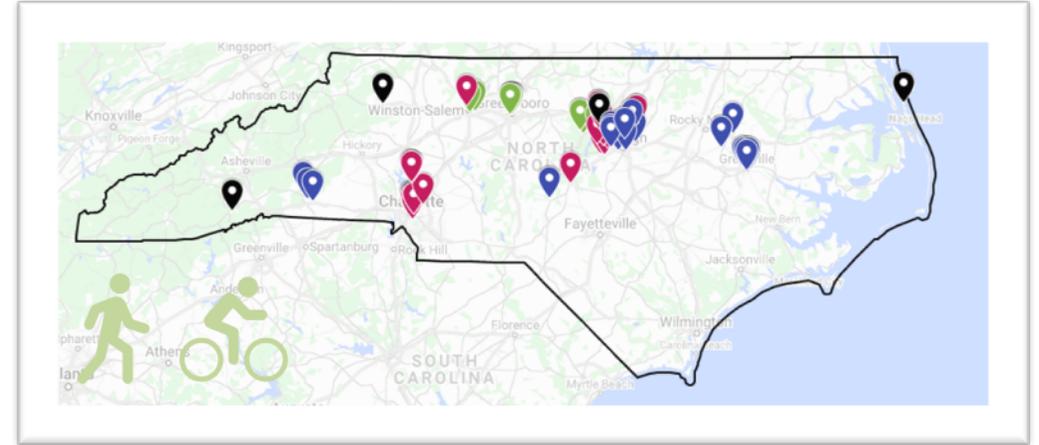
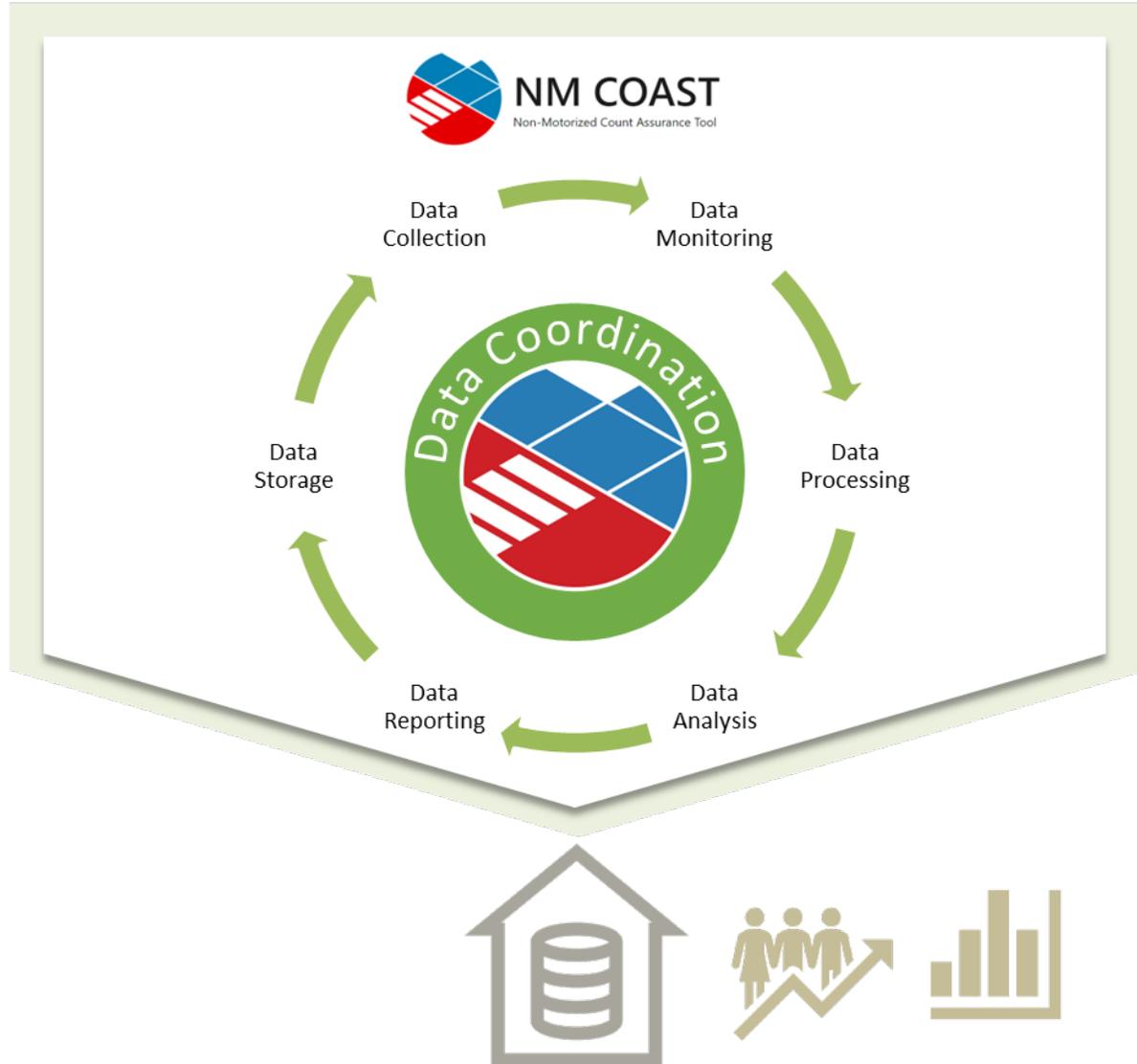
What's next?



- 2G/3G Sunset & 4G Upgrades to Eco-Counters
- Partnership with NCDOT Transportation Mobility & Safety
- Investigation of Short-Duration Count (SDC) Support



NC NMVDP – Upcoming Changes



Technology Transfer Project
T² Project – One Year



Partnership with NCDOT Transportation
Mobility and Safety (TM&S)
New Project – One Year



NC NMVDP – Quarterly and Annual Data Reports

NC STATE UNIVERSITY COVID-19 UPDATES RESOURCES search ncsu

Institute for Transportation Research and Education

About Focus Areas Research Training Technical Services Search ITR

North Carolina Non-Motorized Volume Data Program

About

ITRE manages the North Carolina Non-Motorized Volume Data Program (NC NMVDP) for the North Carolina Department of Transportation (NCDOT). The NC NMVDP began as a research project to test a bicycle and pedestrian count protocol for replication across the state. The program currently includes one of the most extensive statewide networks of continuous bicycle and pedestrian counting sensors and provides data management and reporting support for multiple local agency partners. The bicycle and pedestrian counting systems are installed on sidewalks, bike lanes, shared lanes, and shared use paths across the state. The program is a team effort that involves cooperation and collaboration between local agency partners (municipalities and regional planning agencies), NCDOT, ITRE, and our counting technology vendor, Eco-Counter.

The data produced from this program can be used to evaluate facility usage over time, inform the project prioritization process, provide quantifiable evidence to support multi-modal Complete Streets policies, and improve municipal and regional active transportation planning. The data can be used in planning tools to measure existing patterns and model future trends at the site, corridor, and regional levels.

COVID-19 Impacts on Bicyclist and Pedestrian Activity in North Carolina

ITRE examined the impact of the COVID-19 pandemic on bicyclist and pedestrian activity in North Carolina by analyzing count data from the NC NMVDP.

Results from these analyses were shared in a presentation at the *Another Way to Get from Here to There: NCDOT Integrated Mobility Division Innovation & Technology Webinar Series* ([video](#) and [slides](#)).

[The Bicycle and Pedestrian Explosion in Covid Novern...](#)

What we are seeing nationally?

- 3X increase in bicycle use
- 107% increase in pedestrian use
- 65% increase in bicycle use
- 217% increase in pedestrian use

Another Way to get from Here to There

Watch on YouTube

An [ArcGIS StoryMap](#) is also available that highlights daily user volumes and hour of day patterns on trails in North Carolina during the COVID-19 pandemic from March through September 2020 and compares these to user volumes in previous years.

Analyses of bicyclist and pedestrian volumes between March and September 2020 showed that:

Resources for Local Agency Partners

Additional Resources



[2020 BikeWalk NC Summit: North Carolina Non-Motorized Volume Data Program \(NC NMVDP\) - An Update \[Link\]](#)



[2020 BikeWalk NC Summit: Accessing and Analyzing Public Count Data from NC's Pedestrian and Cyclist Counters \[Link\]](#)



[Conversations with Colleagues 02/23/19: Standardizing and Collecting Data with Local Partners \[Link\]](#)

Apex - Beaver Creek Greenway, Bicycles — NC NMVDP — OFFICIAL ANNUAL DATA REPORTING

Disclaimer for Annual Data Use

The annual data stored and accessed in Eco-Counter is verified and validated. These data have been subjected to the NC NMVDP's quality control, quality assurance, and validation procedures and meet the criteria and standards of official NC NMVDP data. Invalid data resulting from equipment malfunction or other sources of error have been removed and site-specific correction factors have been applied to adjust for undercounting or overcounting that may have occurred at a site. These data can be used for official reporting purposes.

Disclaimer for Public Dashboard Use

The data and visuals provided in this dashboard are publicly accessible. Please do not edit the layout or content. Please provide any questions, comments, or feedback to Sarah Seery at NC State University (seerys@ncsu.edu; 919-616-8702).

Location Diagram

The figure to the right represents the counting sensor configuration at this location. Stars & counting systems, red triangles & pedestrian detection zones, blue & yellow diamonds & bicycle detection zones.

Count Locations

Annual Data

Tabular Data

Time	Apex - Beaver Creek Greenway, Bicycles
Jun 23, 2018 8:00 AM	0
Jun 23, 2018 8:00 AM	2
Jun 23, 2018 7:00 AM	0
Jun 23, 2018 8:00 AM	6
Jun 23, 2018 9:00 AM	10
Jun 23, 2018 10:00 AM	7
Jun 23, 2018 11:00 AM	1
Jun 23, 2018 12:00 PM	2
Jun 23, 2018 1:00 PM	10

Average Volume by Hour of Day

Average Volume by Day of Week

Average Daily Volume by Month

Average Daily Total Volume

Daily Average: 84

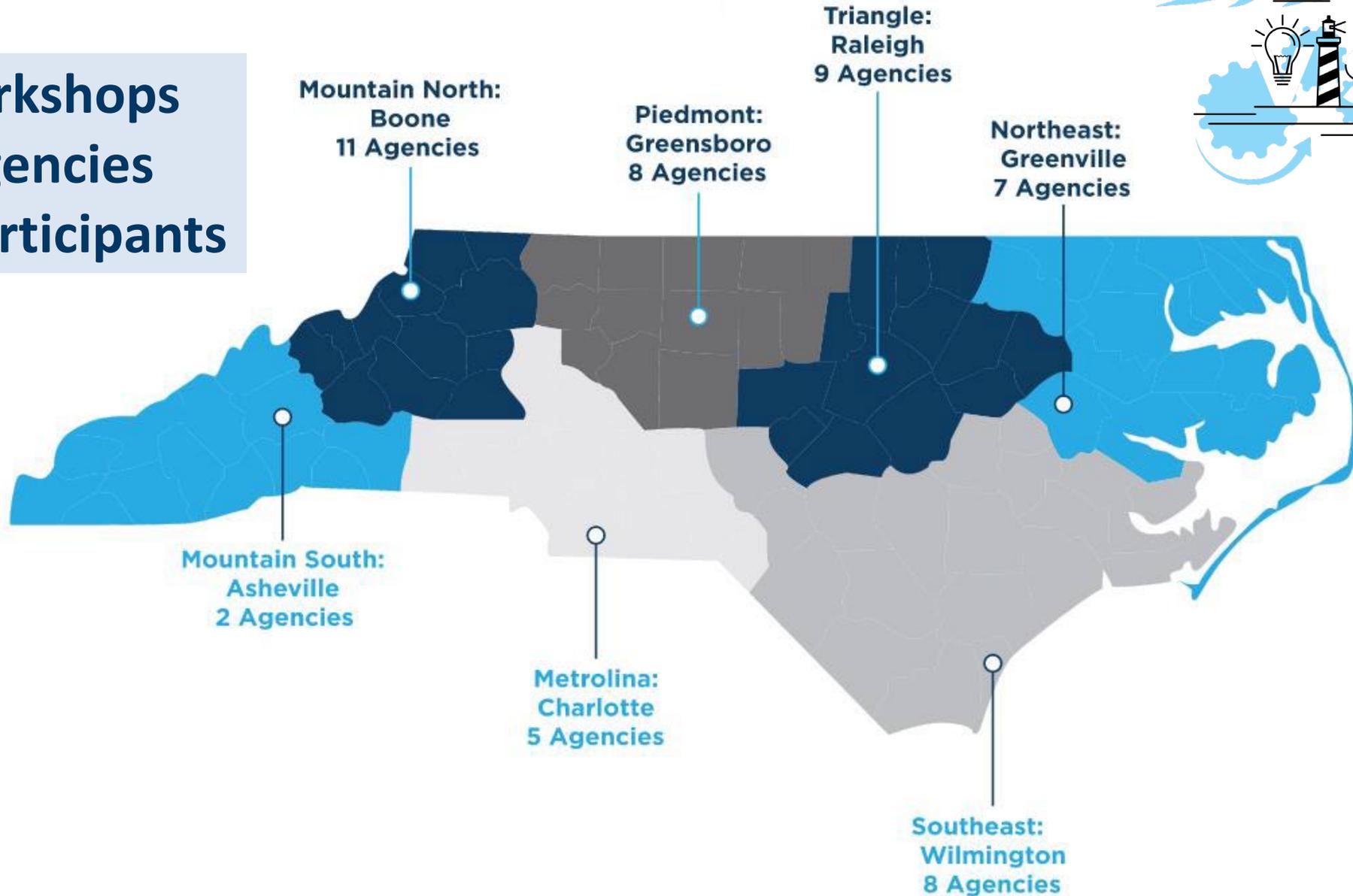
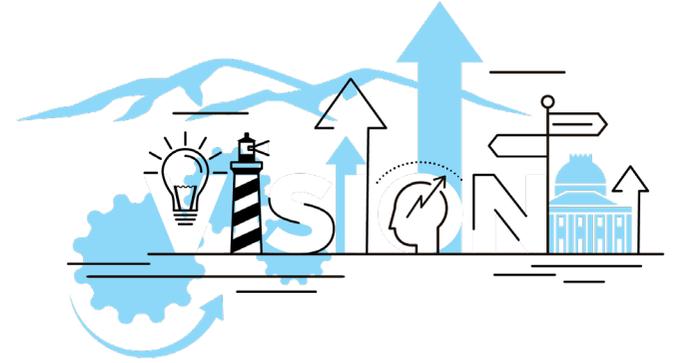
Access the quarterly and annual data reports from the NC NMVDP



go.ncsu.edu/nmvdp

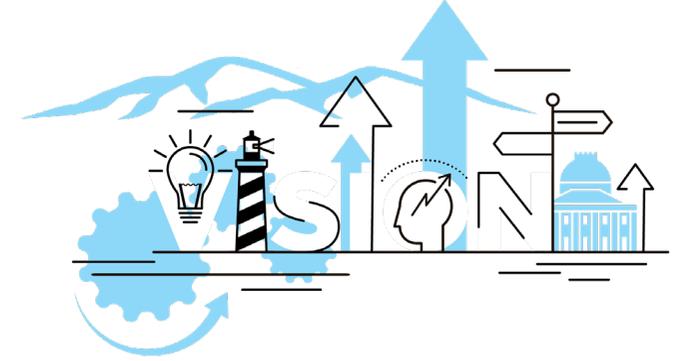
Transit Visioning Workshops

7 Workshops
50 Agencies
62 Participants



Transit Visioning Workshops

Agency Visions



“Go Triangle's vision is to be a mobility leader, advocating for safe public transportation choices and a sustainable future that meets the needs of our customers and the communities we serve.”



“Our community needs an efficient and reliable transit system that is fully integrated into residential and commercial areas, as well as the sidewalk and bike/ped system and MPO.”

CONNECTING COMMUNITY

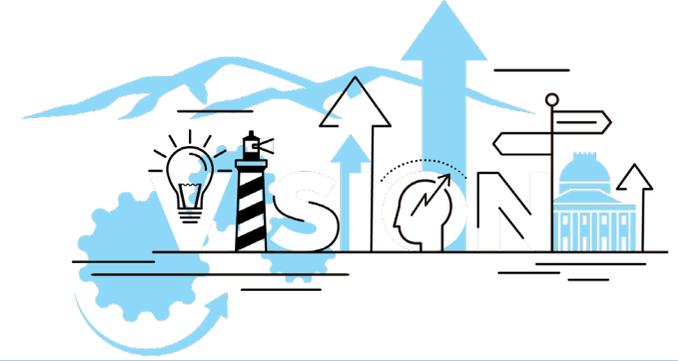


Concord Kannapolis Area Transit

“Provide efficient and convenient service to connect everyone to improve quality of life, provide equitable access, and improve economic opportunities utilizing creative and viable options.”

Transit Visioning Workshops

Themes



Goals

- Service Enhancements
- Enhance Transit Safety
- Fleet Sustainability
- Improve User Scheduling Experience
- Staffing
- New Facilities and Initiatives
- Seek Out New Funding Opportunities
- Lessen the Community's Digital Divide
- Restructure Demand Response Service
- Increase Community Multimodal Options
- Implement New Software

Challenges

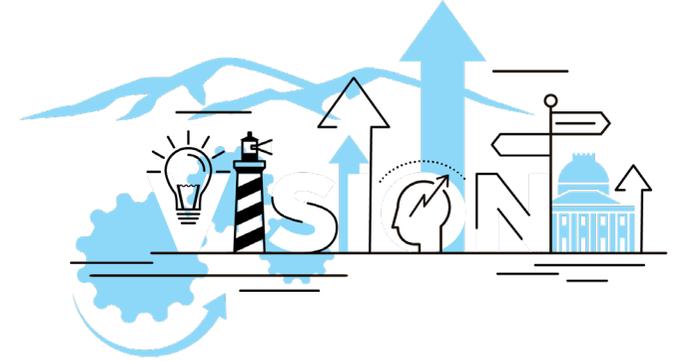
- Staffing and Training
- Funding
- Technology: Software, Communications, and Payment
- Community Outreach/Service Education
- Destination Infrastructure/Land Use
- Interfaces with Health Services
- Vehicle Fleet

Technical Assistance

- Trainings
- Technology Strategies/Feasibility
- Service Plans and Strategies
- Grant Writing and Training
- Community Engagement and Marketing Training
- Implementation and Phasing Plans
- Understanding Funding Opportunities
- Building Partnerships

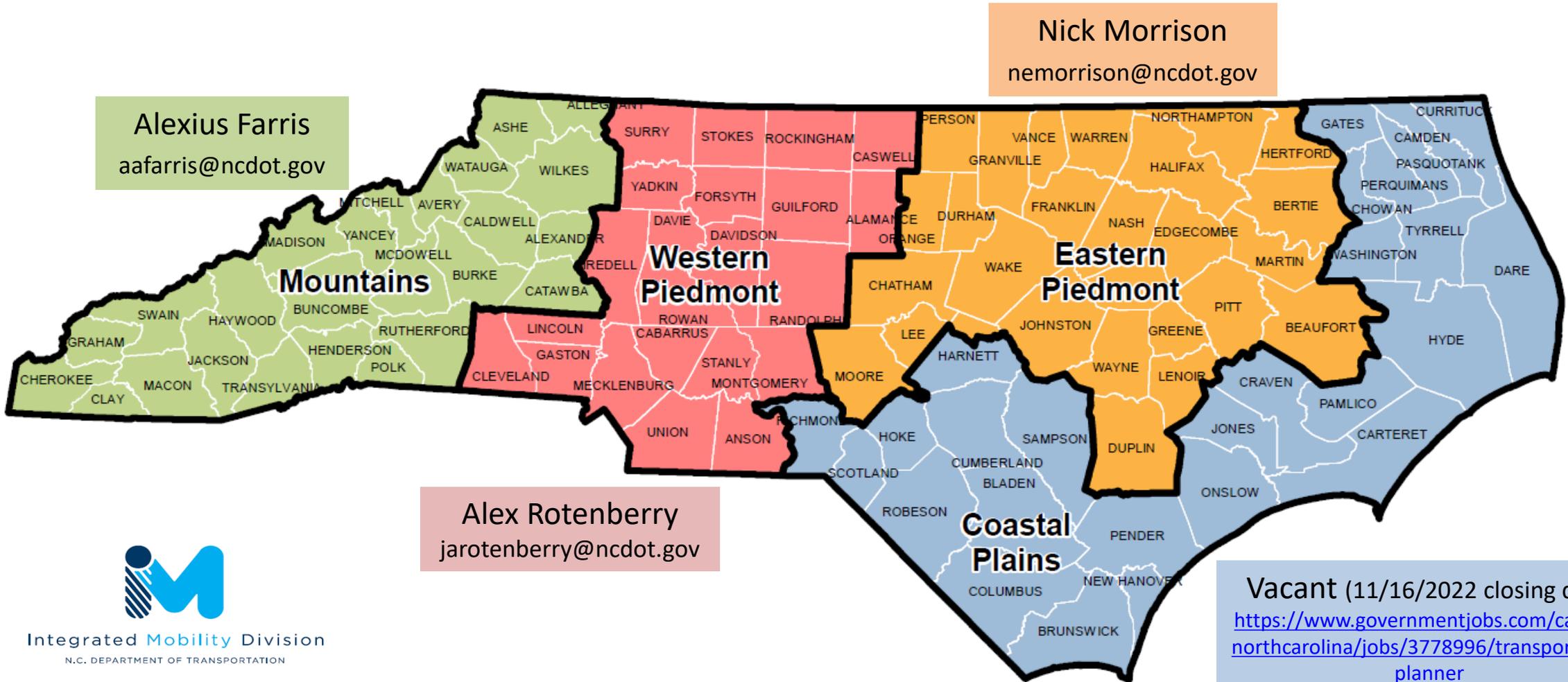
Transit Visioning Workshops

Next Steps



- Workshop Summary Report – December
- Agency Survey To Inform Technical Assistance Needs
- Technical Assistance Program to Start in January 2023

IMD Regional Planner Contacts



[Link for Regional Contact Information](#)

Vacant (11/16/2022 closing date)
<https://www.governmentjobs.com/careers/northcarolina/jobs/3778996/transportation-planner>



NORTH CAROLINA

Department of Transportation



Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION