NORTH CAROLINA
Department of Transportation

# NCDOT's Integrated Mobility Division (IMD)

## Multimodal Updates

August 24, 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

Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

# Agenda

- Ecusta Rail Trail – A Story of Perseverance and Success – Matt Hayes, Vice President, Alta Planning + Design
- IMD Updates
  - Grants awarded – multimodal planning grants, microtransit feasibility studies, zero emission vehicle transition plans
  - Studies – S-Line TOD planning study and mobility hubs, locally coordinated plan, IMD strategic plan, micromobility strategic plan, Freeway, Arterial, Street and Tactical (FAST) transit study
- Evaluating the effectiveness of microtransit software deployments at rural transit agencies in North Carolina – Matthew Wigginton Bhagat-Conway, PhD, Assistant Professor, UNC-Chapel Hill
- IMD Updates (continued)
  - CASSI – deployment at the Town of Cary Bond Park and UNC-Charlotte
  - RFI - Automated bus technologies
  - North Carolina Non-Motorized Volume Data Program (NC NMVDP)
- NCDOT Pedestrian Bicycle Infrastructure Network (PBIN) Updates – Lauren Blackburn, Senior Project Planner, VHB

# Partnering with locals to seek discretionary grants can be an effective way to advance vision and goals.

## Since 2020, NCDOT IMD has assisted over twenty communities with over $107M in winning grant applications.

| Grant Name | Project Name/Description | Year Applied | Award Amount |
|---|---|---|---|
| Mobility for All | Technology & Transportation Partnership to Improve Rural Service for Underserved Populations Pilot | FY 2020 | $280,000 |
| Accelerating Innovative Mobility (AIM) Project | Transforming Public Transit in Wilson with Rural On-Demand Microtransit | FY 2020 | $250,000 |
| FY 2020 Helping Obtain Prosperity for Everyone (HOPE) | Mountains to Sea:  Electrifying North Carolina's Transit Fleets | FY 2020 | $122,048 |
| FY 2020 FTA Transit Oriented Development (TOD) Planning | Connecting Rural and Urban Triangle Communities Through Equitable Transit Oriented Development | FY 2020 | $900,000 |
| RAISE | High Point on the RISE | FY 2021 | $19,800,000 |
| RAISE | PARTNERS (Rutherfordton and Spindale) | FY 2022 | $20,040,000 |
| RAISE | S-Line Mobility Hub Planning (7 communities) | FY 2022 | $3,400,000 |
| Rural Surface Transportation | Mobility for Everyone, Everywhere in North Carolina (11 communities) | FY 2022 | $10,400,000 |
| RAISE | Ecusta Trail | FY 2023 | $24,600,000 |
| NSFLTP | Ecusta Trail | FY 2023 | $21,421,000 |
| 5339 Low-No/Bus and Bus Facilities | Facilities and buses for three communities | FY 2023 | $5,815,000 |
| | | | **$107,028,048** |

# Ecusta Rail Trail – A Story of Perseverance and Success

IMD Webinar – 8/24/23

Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

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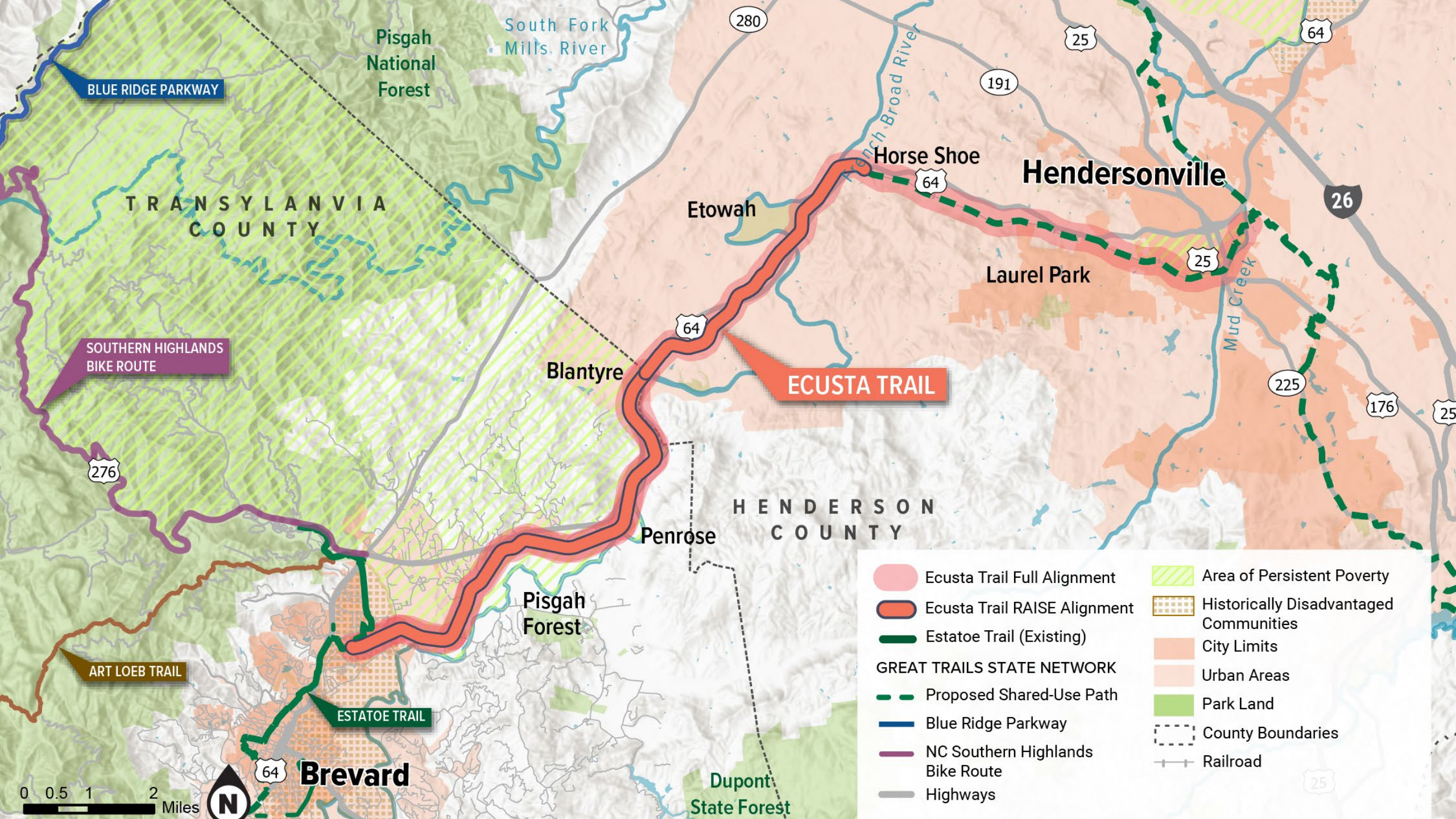
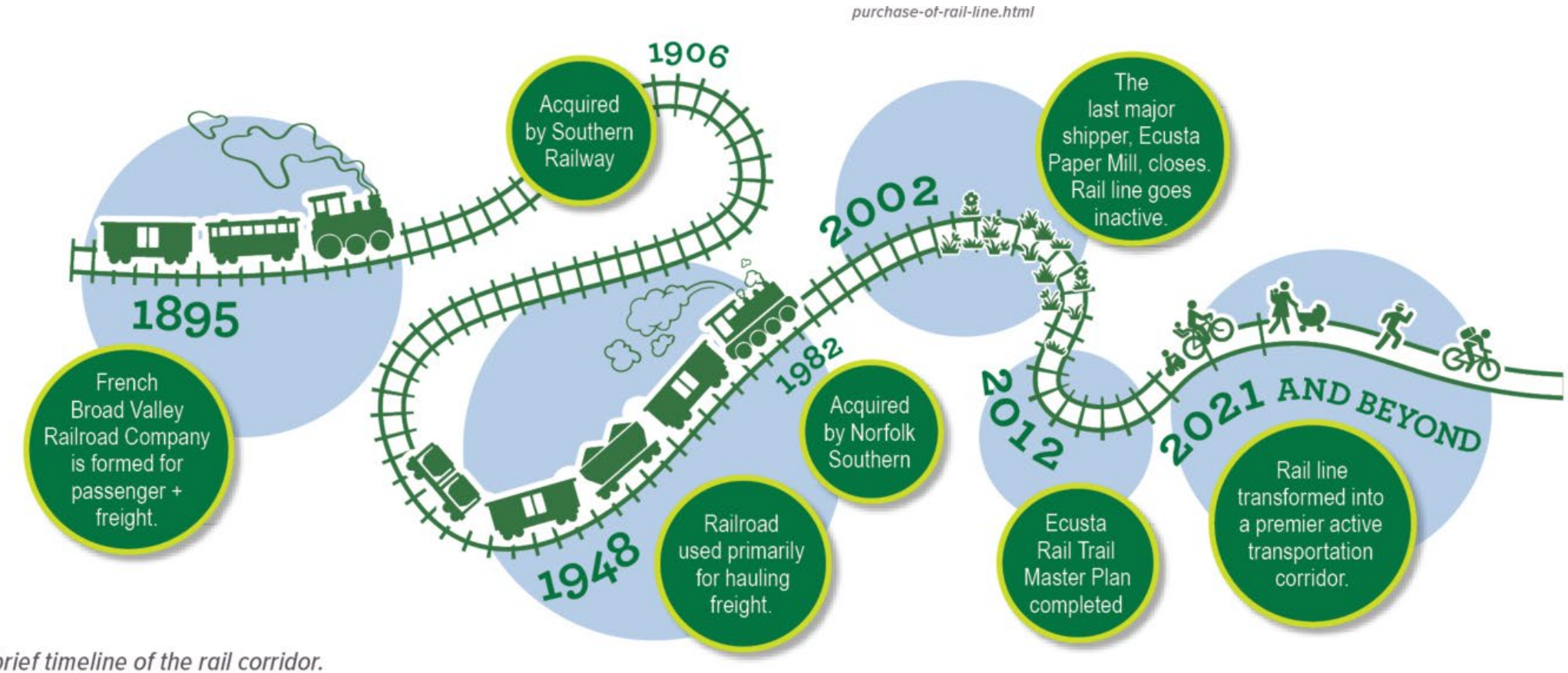

BLUE RIDGE PARKWAY
Pisgah National Forest
South Fork Mills River
TRANSYLANVIA COUNTY
SOUTHERN HIGHLANDS BIKE ROUTE
276
ART LOEB TRAIL
ESTATOE TRAIL
64
Brevard
0 0.5 1 2 Miles
N
Blantyre
Penrose
Pisgah Forest
Dupont State Forest
ECUSTA TRAIL
HENDERSON COUNTY
280
French Broad River
191
Etowah
Horse Shoe
64
Hendersonville
25
26
Laurel Park
Mud Creek
225
176
Ecusta Trail Full Alignment
Ecusta Trail RAISE Alignment
Estatoe Trail (Existing)
GREAT TRAILS STATE NETWORK
Proposed Shared-Use Path
Blue Ridge Parkway
NC Southern Highlands Bike Route
Highways
Area of Persistent Poverty
Historically Disadvantaged Communities
City Limits
Urban Areas
Park Land
County Boundaries
Railroad

# A History of the Rail Corridor




*A brief timeline of the rail corridor.*

U.S. Department of Transportation
Federal Highway Administration

# Ecusta Rail Trail Planning Study & Economic Impact Analysis



March 2012


ECONSULT CORPORATION®
*Member of the Econsult/Fairmount Group*
SWA
alta GREENWAYS

# A History of the Rail Corridor

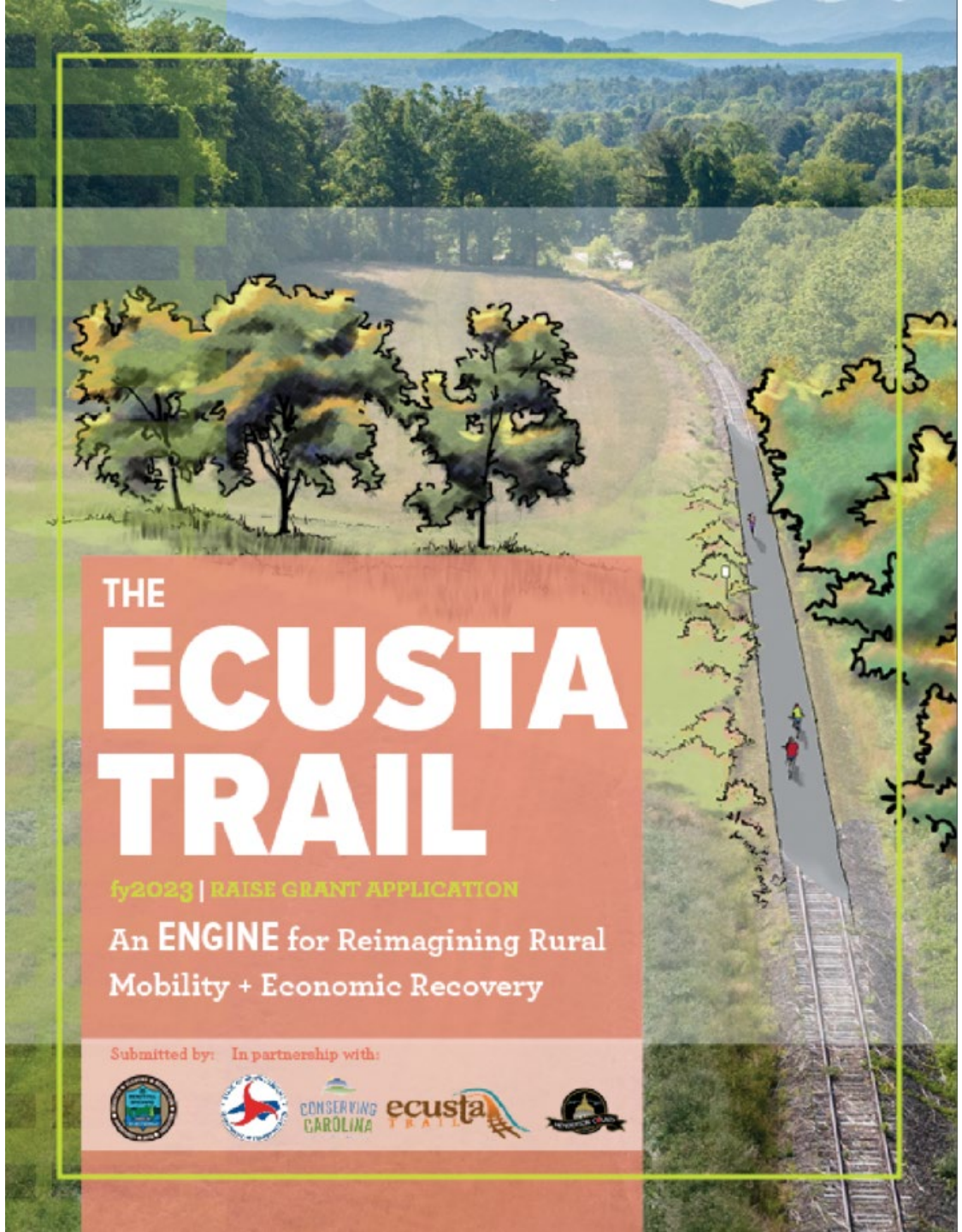
HENDERSON COUNTY, N.C. (WLOS) — The $7.8 million purchase of the 19-mile long Ecusta Trail is now complete. But Monday's official ribbon-cutting is far from the final step, though.

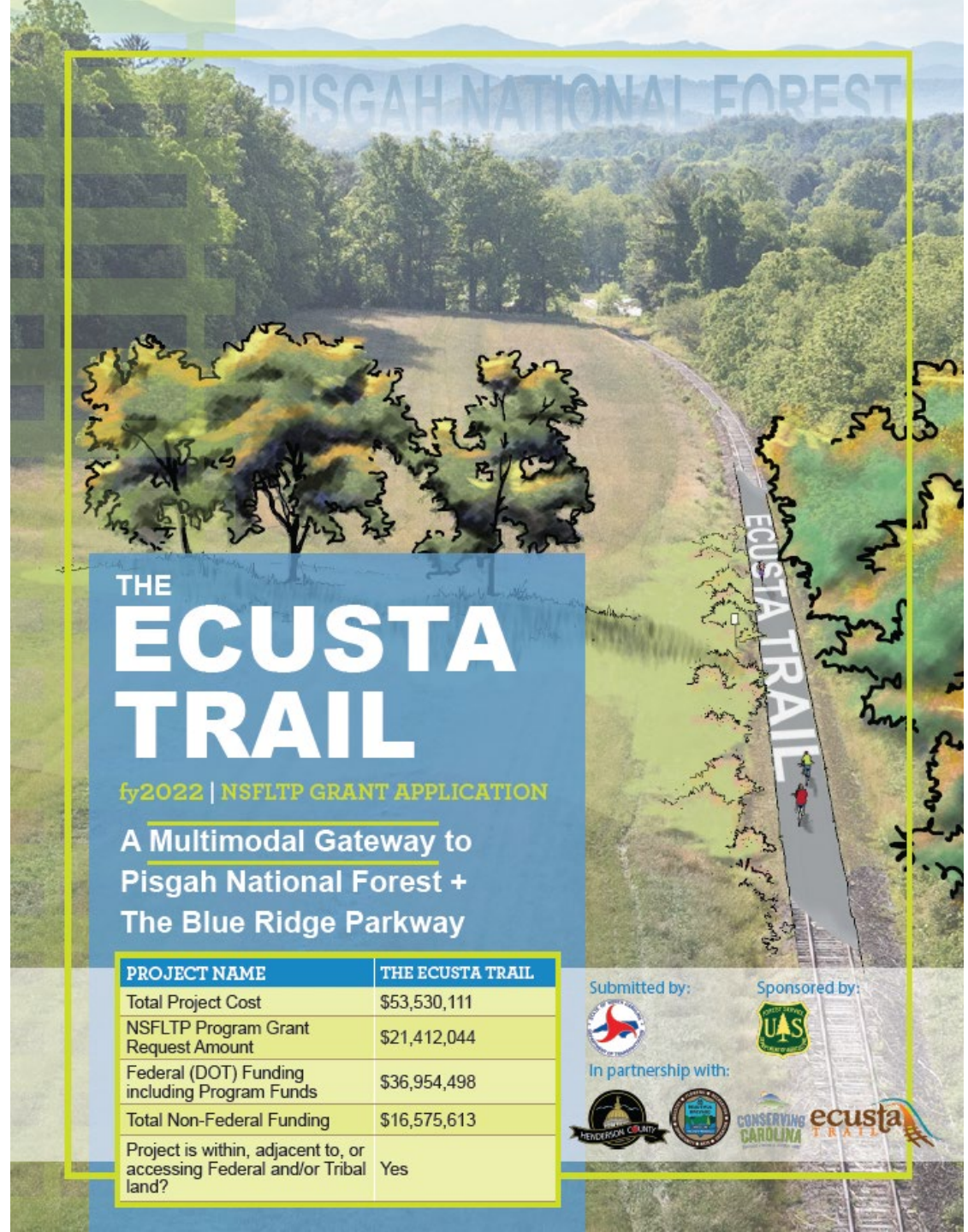
# Rail-to-Trail Progress

**Brevard** – FLAP grant for $1 million for design of Transylvania County

**Henderson County –** STBG-DA funds through MPO - $5.1 million for 3 phases; $10.4 million for remaining 2 phases; Design for 3 phases complete

**Friends of the Ecusta Trail –** $7.5 million from State of North Carolina




| PROJECT NAME | THE ECUSTA TRAIL |
|---|---|
| Total Project Cost | $53,530,111 |
| NSFLTP Program Grant Request Amount | $21,412,044 |
| Federal (DOT) Funding including Program Funds | $36,954,498 |
| Total Non-Federal Funding | $16,575,613 |
| Project is within, adjacent to, or accessing Federal and/or Tribal land? | Yes |

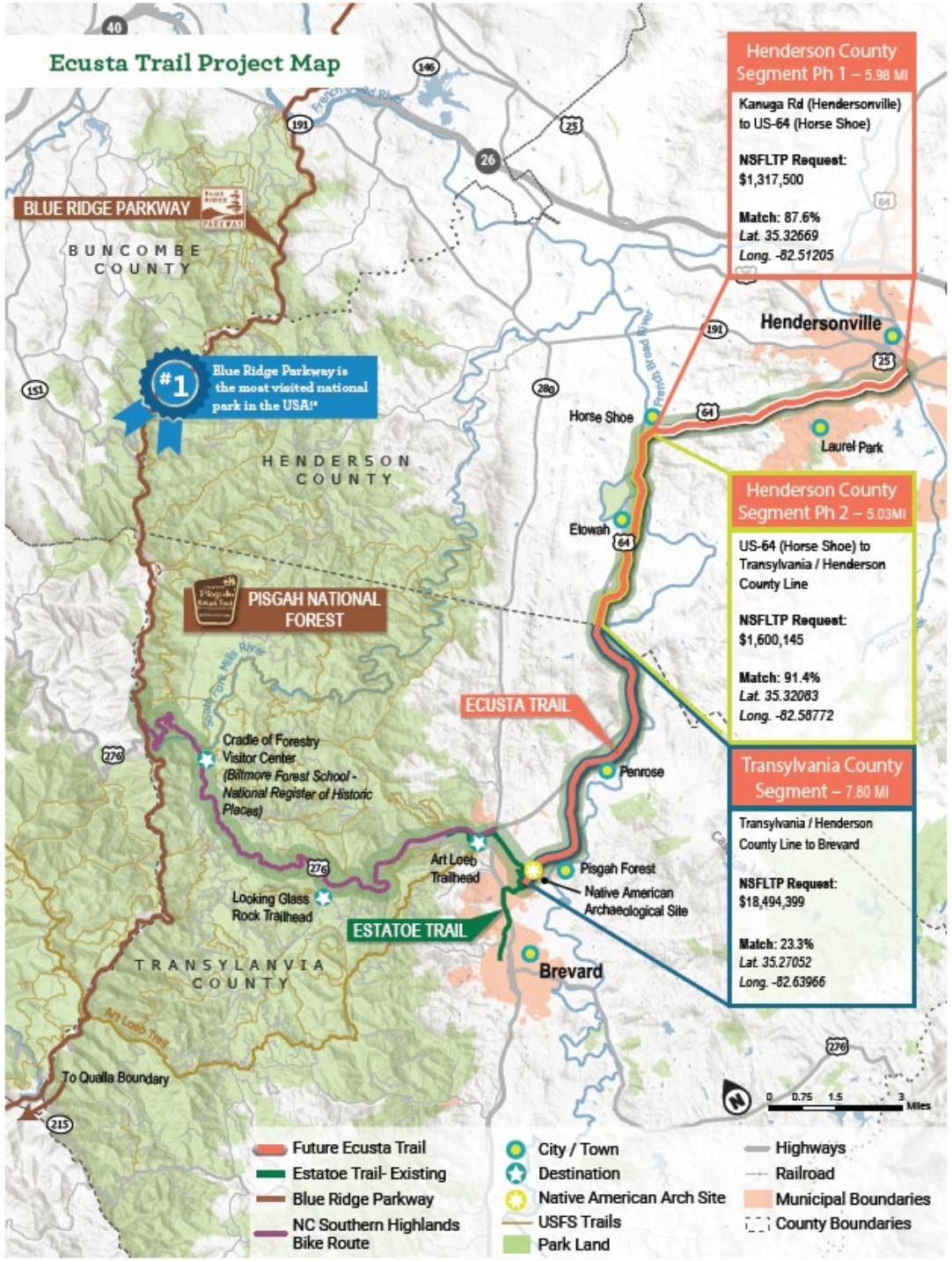
# RAISE and NSFLTP Grants

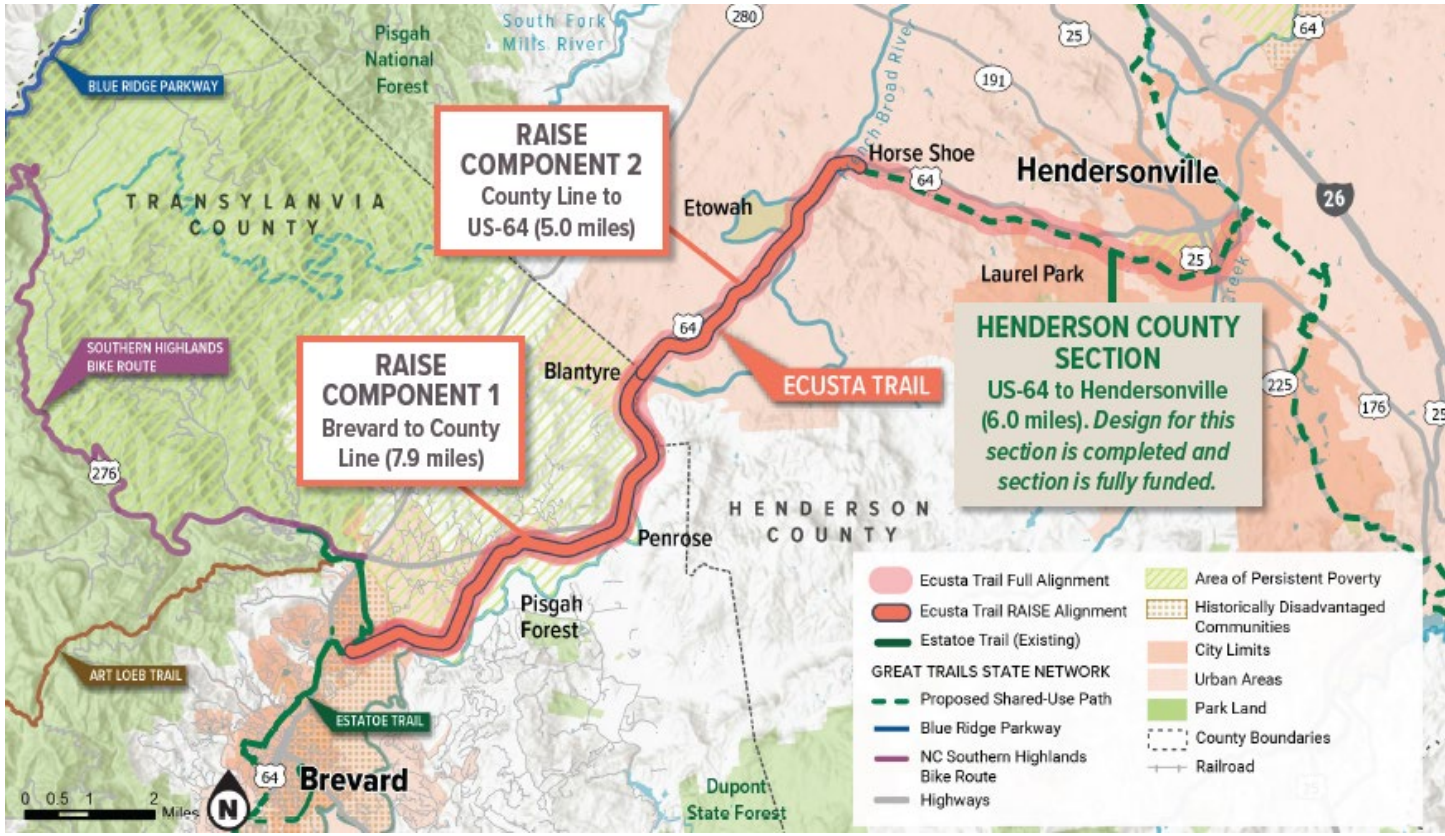
**Partnership**

- City of Brevard
- Henderson County
- NCDOT IMD
- French Broad River MPO
- Land of Sky RPO
- Friends of the Ecusta Trail
- Conserving Carolina


**RAISE - $24.5 million**


**NSFLTP - $21.4 million**


Ecusta Trail Project Map
Henderson County Segment Ph 1 – 5.98 MI
Kanuga Rd (Hendersonville) to US-64 (Horse Shoe)
NSFLTP Request: $1,317,500
Match: 87.6%
Lat. 35.32669
Long. -82.51205
Henderson County Segment Ph 2 – 5.03MI
US-64 (Horse Shoe) to Transylvania / Henderson County Line
NSFLTP Request: $1,600,145
Match: 91.4%
Lat. 35.32083
Long. -82.58772
Transylvania County Segment – 7.80 MI
Transylvania / Henderson County Line to Brevard
NSFLTP Request: $18,494,399
Match: 23.3%
Lat. 35.27052
Long. -82.63966
BLUE RIDGE PARKWAY
BUNCOMBE COUNTY
#1 Blue Ridge Parkway is the most visited national park in the USA!*
HENDERSON COUNTY
PISGAH NATIONAL FOREST
TRANSYLANVIA COUNTY
ECUSTA TRAIL
ESTATOE TRAIL
Hendersonville
Horse Shoe
Laurel Park
Etowah
Penrose
Brevard
Pisgah Forest
Native American Archaeological Site
Art Loeb Trailhead
Looking Glass Rock Trailhead
Cradle of Forestry Visitor Center (Biltmore Forest School - National Register of Historic Places)
To Qualla Boundary
Future Ecusta Trail
Estatoe Trail- Existing
Blue Ridge Parkway
NC Southern Highlands Bike Route
City / Town
Destination
Native American Arch Site
USFS Trails
Park Land
Highways
Railroad
Municipal Boundaries
County Boundaries
0 0.75 1.5 3 Miles


RAISE COMPONENT 2
County Line to US-64 (5.0 miles)
RAISE COMPONENT 1
Brevard to County Line (7.9 miles)
HENDERSON COUNTY SECTION
US-64 to Hendersonville (6.0 miles). Design for this section is completed and section is fully funded.
BLUE RIDGE PARKWAY
SOUTHERN HIGHLANDS BIKE ROUTE
ART LOEB TRAIL
ESTATOE TRAIL
ECUSTA TRAIL
TRANSYLANVIA COUNTY
HENDERSON COUNTY
Pisgah National Forest
South Fork Mills River
Horse Shoe
Hendersonville
Etowah
Laurel Park
Blantyre
Penrose
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Ecusta Trail Full Alignment
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Estatoe Trail (Existing)
GREAT TRAILS STATE NETWORK
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NC Southern Highlands Bike Route
Highways
Area of Persistent Poverty
Historically Disadvantaged Communities
City Limits
Urban Areas
Park Land
County Boundaries
Railroad
0 0.5 1 2 Miles


Ecusta Trail


STOP

# Next Steps

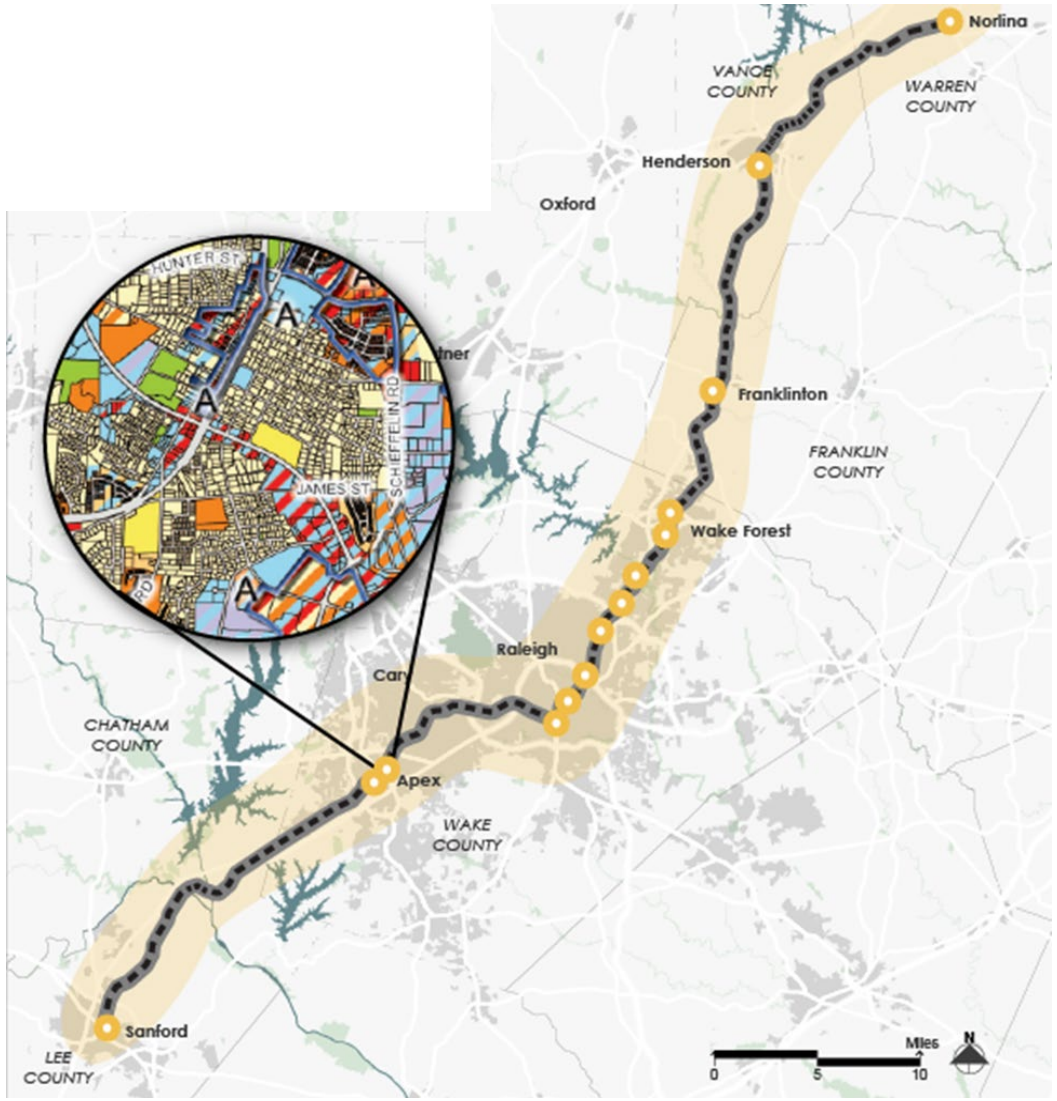
- Continued partnership
- Determining path forward with both grants awarded
- Grant agreements in place
- Fully built Ecusta Trail within five years is possible!

# Division Updates

N.C. Department of Transportation
S-LINE
TRANSIT-ORIENTED DEVELOPMENT STUDY

# S-Line TOD Planning Study

- Preparing communities for passenger rail
- FTA Grant Award ($900,000)
- Plan the “place” around transit
- Proactively plan context-driven TOD
- Corridor-wide Conversation
  - Vision & Goals
  - Funding / financing
  - Transit operations
- Local Implementation
  - Land use plans & zoning
  - Regulatory Policies
  - Infrastructure investments
  - Catalytic sites



N.C. Department of Transportation
S-LINE
TRANSIT-ORIENTED DEVELOPMENT STUDY

# Final Report Released July 2023

- Community Playbooks
  - Policy, Funding, and Infrastructure Priority Recommendations
  - Built Form and Development Recommendations
- 7 communities, 13 unique study areas
  - Sanford to Norlina
- For more information:

  https://www.ncdot.gov/divisions/integrated-mobility/innovation/s-line-study/Pages/default.aspx

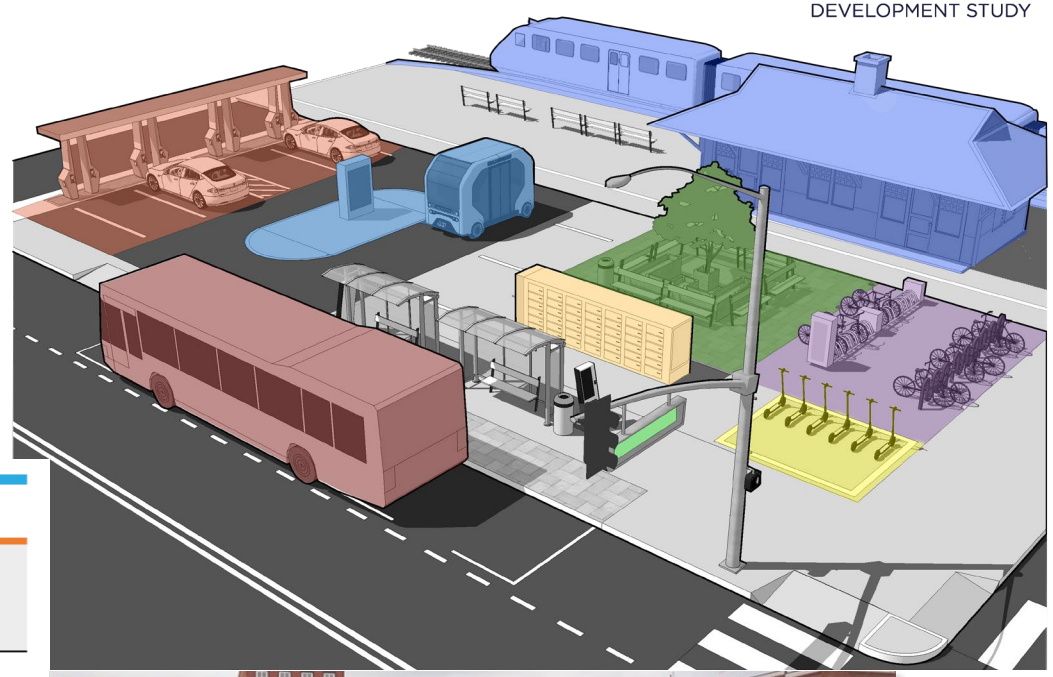
# Next Steps – Mobility Hub Plan

N.C. Department of Transportation
S-LINE
TRANSIT-ORIENTED DEVELOPMENT STUDY

## FY 2022 RAISE Grant Awarded

### North Carolina Regional S-Line Mobility Hub Plan

Plan will focus on defining the scope, physical location and potential hub layout. Whether built for intercity and/or commuter rail service, future stations will be ready for last-mile solutions



| Mobility Hub Location | Task | Cost | Total |
|---|---|---|---|
| Sanford* | Feasibility/Site Assessment<br>NEPA<br>Preliminary Engineering | $150K<br>$300K<br>$500K | $950K |
| Apex | Feasibility/Site Assessment | $150K | $150K |
| Wake Forest | Feasibility/Site Assessment<br>NEPA<br>Preliminary Engineering | $150K<br>$300K<br>$500K | $950K |
| Youngsville | Feasibility/Site Assessment | $150K | $150K |
| Franklinton* | Feasibility/Site Assessment | $150K | $150K |
| Henderson* | Feasibility/Site Assessment<br>NEPA<br>Preliminary Engineering | $150K<br>$300K<br>$500K | $950K |
| Norlina* | Feasibility/Site Assessment<br>NEPA<br>Preliminary Engineering | $150K<br>$300K<br>$500K | $950K |
| | Total | $4.25M | $4.25 |

*Rural area pursuant to the NOFO definition.

State & local leaders celebrate RAISE grant

# Microtransit Feasibility Studies

**Offering planning and analysis for transit agencies to explore microtransit options**

## Six transit agencies will commence planning this fall

- Wilson County Transportation
- Davidson County Transportation
- Onslow United Transit System
- Hoke County / Hoke Area Transit Service
- Robeson County / South East Area Transit System (SEATS)
- City of Greensboro / Greensboro Transit Agency (GTA)

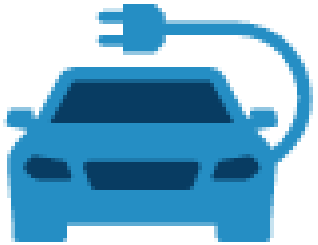
## Next Steps

- Firm assignments and draft scopes – August 2023
- NTP / Kickoff – September 2023

# Zero Emission Vehicle (ZEV) Transition Plans

## Purpose

- Inform and prepare transit agencies to transition fleet
- Requirements for Low to No Emissions Grant



## Partner Transit Agencies

- Buncombe County
- Wilson County
- Johnston County
- Duplin County
- *Wake County – to be determined

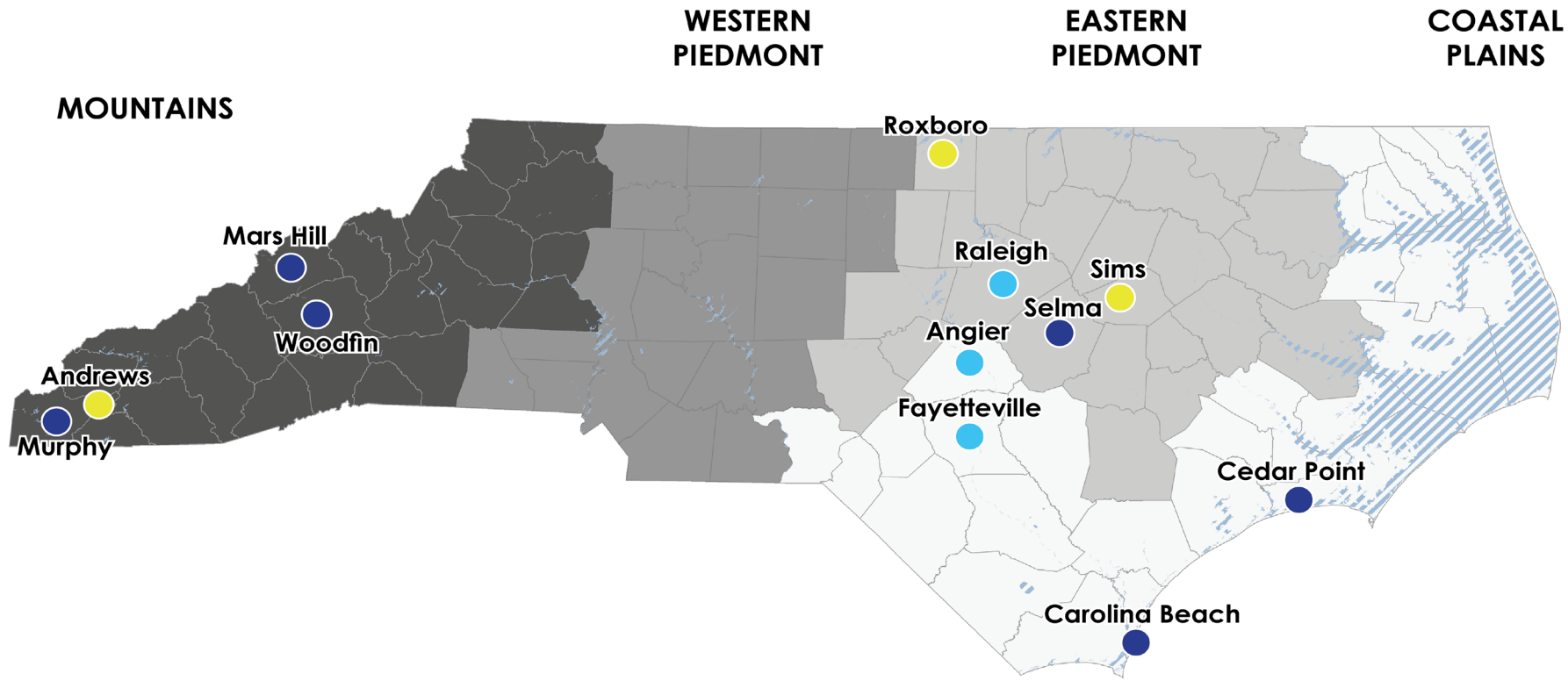
## Timeline

- August 2023 – April 2024

Low to No Emissions Grant

ncdot.gov

# 2023 Multimodal Planning Grant Recipients



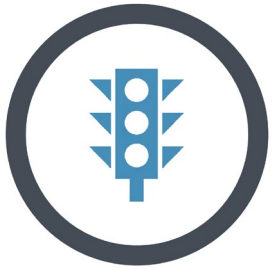
# Triangle Region Freeway, Arterial, Street & Tactical (FAST) Transit Priority Infrastructure Study

- Original study completed in 2021
- Partnership with local governments, the regional business community, regional planning bodies, and regional transit providers
- FAST 2.0 will look to:
  - Formulate a regional vision, goals and brand for transit and mobility
  - Have a primary focus on freeways/regional corridors
  - Evaluate potential BRT corridors & connections to RDU Airport
  - Advance SMART freeway corridors

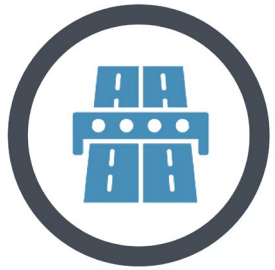
# FAST 2.0 Potential Focus Strategies

Bus station/ stop design & layout

Direct 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

# Statewide Locally Coordinated Plan (LCP) Update

## FTA 5310 and Rural Operating Assistance Program (ROAP)

- Virtual Public Meetings
  - September 7th, 4 pm Sign up here!
  - September 13th, 10 am Sign up here!
  - September 13th, 6 pm Sign up here!


Virtual Room: Project information, Materials

Public Survey: https://arcg.is/feiXK

*Visit the Virtual Room!*

*Take the Survey!*

Webpage - https://connect.ncdot.gov/business/Transit/Pages/LCP-Update.aspx

# Statewide Locally Coordinated Plan (LCP) Update

**We Need YOUR Help!!**

- Promote the Upcoming public meetings
- Share the Virtual Room link, Public Survey, and Flyer
- Share to listservs, social media and any other outlets
  - Public Meeting Flyer, Plan Factsheet, print surveys and other project information can be downloaded here:
- Collect printed surveys and scan in for those who cannot access the online survey
- For questions or to send print surveys, contact Hart Evans Jhevans1@ncdot.gov

# Statewide Locally Coordinated Plan (LCP) Update

## Stakeholder Survey Results

### Top 5 Challenges to Meet Mobility Needs

1. Limited Funding
2. Affordable Transportation
3. Accessibility
4. Efficiency
5. Service Spans

### Strategies to Improve the Effectiveness of §5310 funding

#### Top 5

1. Increased funding for expansion of transit services
2. Simplify funding process
3. Increased funding for administrative support
4. Increased ability to provide a range of services
5. Increased funding for reliable and accessible fleets within FTA useful life

#### Bottom 5

1. Contracting out transportation services
2. Expand service through private partnerships
3. Increased support for accessible infrastructure including benches and other amenities
4. Development of one-stop information and coordination centers for clients/customers
5. Procuring scheduling software

Next steps: Synthesize public workshop feedback with Stakeholder feedback to draft recommendations.

# Micromobility Strategy

- Study kicked off at the end of 2022
- Draft Final Report in review
- Draft Infographic Handout in review
- Anticipated completion Fall 2023

- Next Steps:
  - NCDOT's role in micromobility more refined
  - NCDOT statewide technical resource for micromobility planning and implementation
  - Incorporation of recommendations into IMD's strategic plan


Source: Link

# IMD Strategic Plan

- Strategic Plan Scoping – August/September 2023
- Kick-Off – October 2023
- 18-Month Process
- Proposed Phases of the Strategic Plan:
  - Existing needs for multimodal transportation
  - Input from partner agencies and IMD staff
  - IMD programs evaluation
  - Goals and objectives
  - IMD organizational structure
  - Implementation / action-oriented plan

Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

# Evaluating the effectiveness of microtransit software in North Carolina

Matt Bhagat-Conway and Luke Pullo

Department of City and Regional Planning

University of North Carolina at Chapel Hill

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

# Background

- Demand response transit is common in rural and small urban areas
- Agencies provide curb-to-curb service
- Generally scheduled 1-3 days in advance

# Automated scheduling software

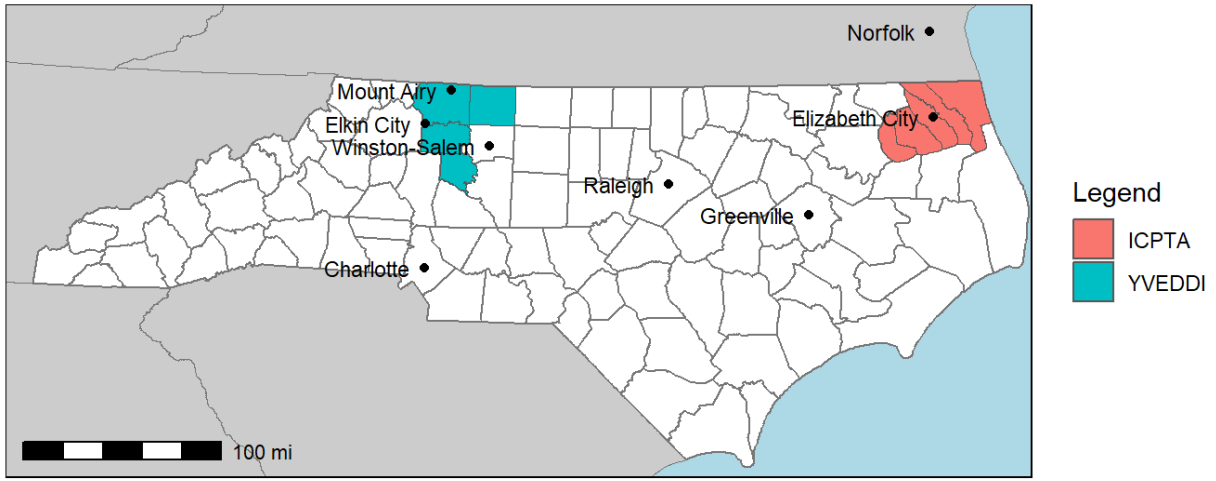
- Most agencies use some form of computer assisted scheduling
  - Most do not create schedules automatically
- Automated scheduling algorithms for demand response have been around a while
- Some new software promises automated scheduling for microtransit, adjusting schedules in real time

# The project

- Evaluate the software used for scheduling demand-response and microtransit service
- Examine why agencies are or are not using automated scheduling
- Mixed methods
  - Observation
  - Interviews
  - Trip data analysis

# Observation and interviews

- Visited two agencies, ICPTA and YVEDDI
- YVEDDI uses CTS TripMaster
- ICPTA uses Via
  - Microtransit-specific software
- 1.5 days of observation and debriefing with managers



## ICPTA

- Northeastern NC
- Based in Elizabeth City
- Many trips go to Norfolk
- Semi-structured schedules
- Formerly provided microtransit service, now mostly demand response
- Median trip: 4.3 mi
  - In service area: 4.3 mi
  - 99% of trips stay in service area

## YVEDDI

- Central NC
- Four offices that handle scheduling
- Many trips go to Winston-Salem
- Provides microtransit in several cities
- Median trip: 5.6 mi
  - In service area: 4.2 mi
  - 84% of trips stay in service area

# Software comparison

Via

- Focus on microtransit and same-day service
- Automated scheduling not optional
- Manual scheduling possible but secondary

CTS TripMaster

- No specific same-day focus
- Scheduling can be fully manual
- Can automate entire schedule
- or a single trip

# Software should meet identified agency need

- The YVEDDI office we visited did not use automated scheduling extensively
- Schedulers know the county well and didn’t see it as necessary
- They felt generally positive about the quality of automated scheduling

# Software should support agency service patterns

- ICPTA has a semi-structured service pattern
- Vehicles leave outlying counties at set times each day
- Via can constrain vehicles in space, but not time

# Human schedulers should have control

- Software often contains many business rules for scheduling
- Human schedulers are the experts on their region
- There will always be human factors the software does not account for
- Warnings for unexpected situations are helpful, but
- human schedulers should always be able to override software decisions

# Dispatching should allow for day-of-travel changes

- Most scheduling software also supports dispatching
- Operations rarely exactly follow the schedule
- Software should not assume they will

# Software should not rely on power/Internet connectivity on vehicles

- Both CTS and Via have in-vehicle tablet interfaces
- Drivers were generally happy with these interfaces
- But technology and network connectivity are not always reliable, especially in rural areas

# Invoicing and billing are important

- Scheduling and dispatching are the top-line features
- But invoicing is just as important
- Invoicing for demand response transit can be complex

# Smaller-scale automated scheduling

- Many software tools try to optimize the entire schedule
- CTS has an “auto-seat ride” feature that automatically schedules a single ride
  - Via has something similar
- There are many opportunities for automated scheduling to work on small portions of the schedule

# Acknowledgements


- Staff at the agencies we visited
- Sarah Searcy and NCDOT IMD
- Kai Monast and ITRE at NCSU
- Paul Mihas, Rocky Riviella, Katrina Marks at the Odum Institute

# Division Updates (continued)

# CASSI Advances Shared Autonomous Mobility Technologies in NC

NCDOT's **Connected Autonomous Shuttle Supporting Innovation (CASSI)** is a program (not a product) that **demonstrates the capability of shared autonomous vehicles** to prepare for the future of mobility and enhance public transportation services.

CASSI evaluates how autonomous vehicles can best be used by riders with different needs and in different environments.

<u>Examples include:</u>

- Transit applications such as first mile/last mile solutions
- Connected vehicle infrastructure

ncdot.gov

# CASSI in Cary's Bond Park

**NCDOT partnered with the Town of Cary to bring a novel-design, low-speed autonomous shuttle to Fred G. Bond Metro Park.**

- 13-week pilot from March 6-June 2, 2023
- Free and open to the public on weekdays, 10 a.m. to 4 p.m.
- 1.6-mile route with four stops



# CASSI in Cary's Bond Park

## Special features of the project included:

- Shared stop with GoCary Routes 4 and 8 at the Cary Senior Center
- Temporary traffic signal that demonstrated the shuttle's vehicle-to-infrastructure communication capabilities


# CASSI at UNC Charlotte

## July 12 through December 22, 2023

Compared to previous pilots under the CASSI program:

- Most signals (four total)
- Longest route (2.2 miles)
- Longest duration (6 months)
- Most complicated mixed traffic environment
    - Includes bicyclist, scooter, pedestrian, motor vehicle, and transit interactions and shared stops with the existing campus bus fleet



# Say Hello to CASSI at UNC Charlotte!

# More Opportunities to Partner with NCDOT

NCDOT is interested in **partnering with agencies to pilot automated transit technologies** through applications to the **USDOT Strengthening Mobility and Revolutionizing Transportation (SMART) discretionary grant program.**

*"The SMART Grants Program funds purpose-driven innovation to build data and technology capacity and expertise for State, local, and Tribal governments. Communities should target their real-world challenges where the use of new technologies and approaches can create benefits."*

NCDOT is interested in the following two use cases:

**Equity and Access** – Automated Wheelchair Securement Systems in Transit, Paratransit, or Local Mobility Vehicles

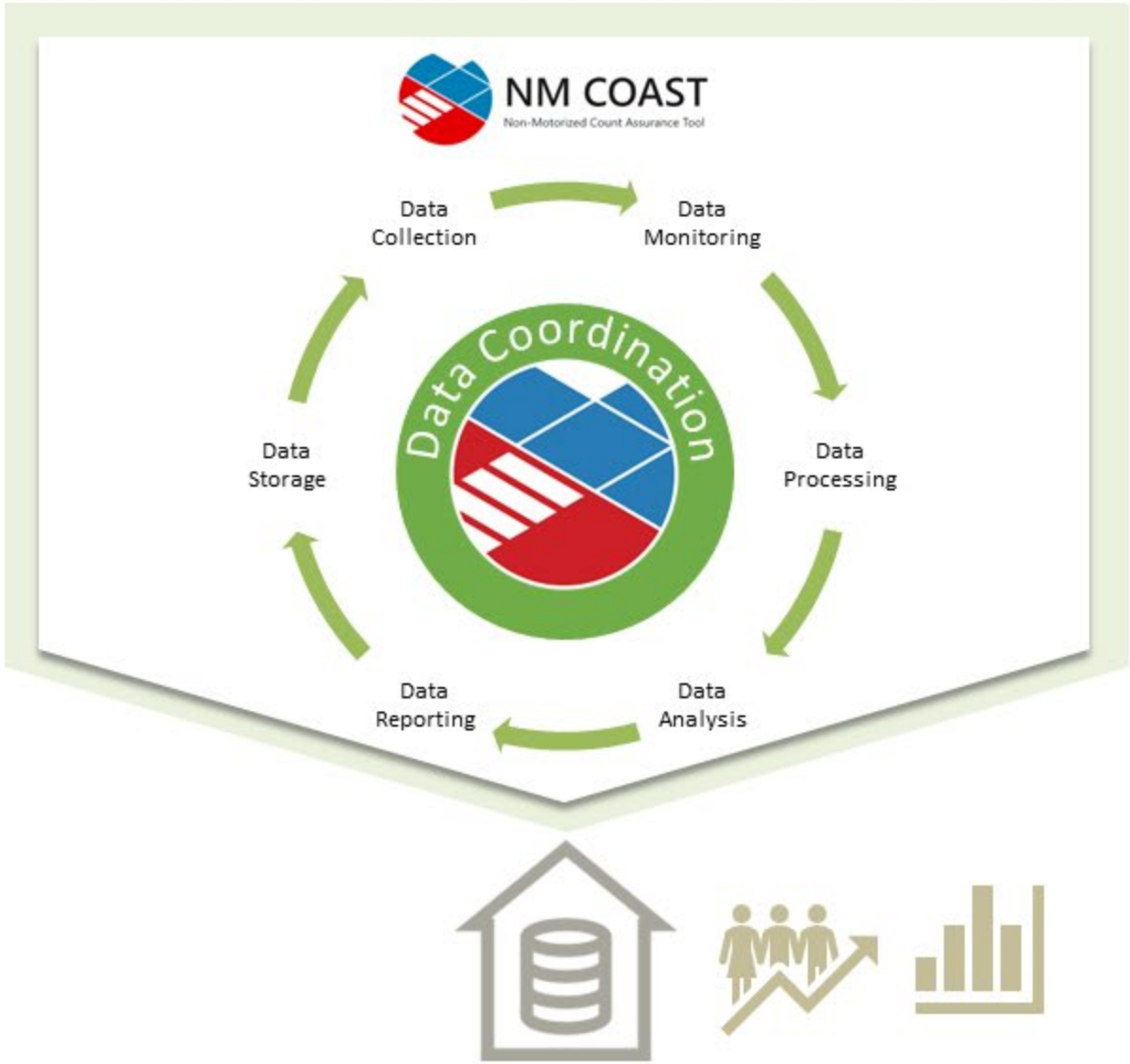
**Safety and Reliability** – Advanced Driver Assistance Systems (ADAS) and Automated Driving Systems (ADS) for Transit Vehicles

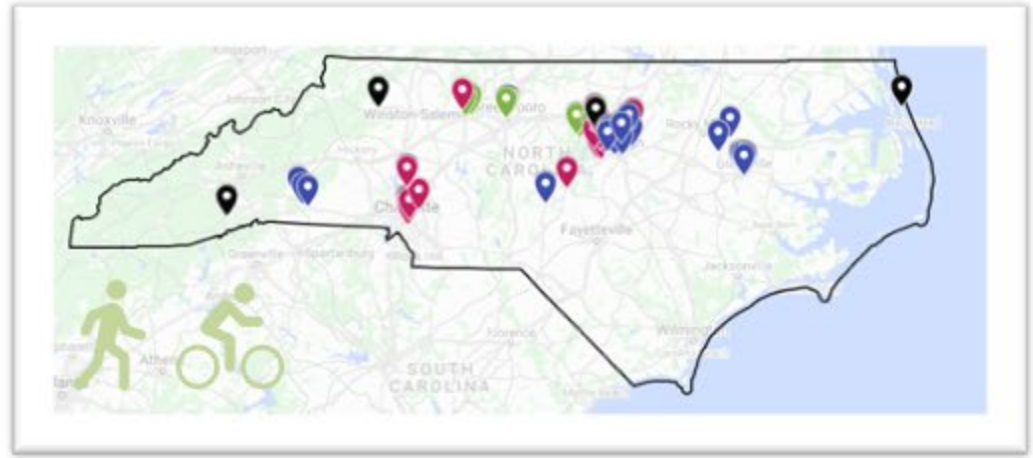
NCDOT will complete a **Request for Information (RFI) on automated bus technologies** including automated wheelchair securement systems.

Q'Straint Quantum autonomous wheelchair securement system


Scotland's CAVForth autonomous bus pilot

# NC NMVDP – Updates



Technology Transfer Project
**T² Project – One Year**

ITRE

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

ITRE

THE UNIVERSITY OF NORTH CAROLINA HIGHWAY SAFETY RESEARCH CENTER

ncdot.gov

# “NCDOT NC NMVDP and Safety Program Support” Project

## February 1, 2023-April 15, 2024

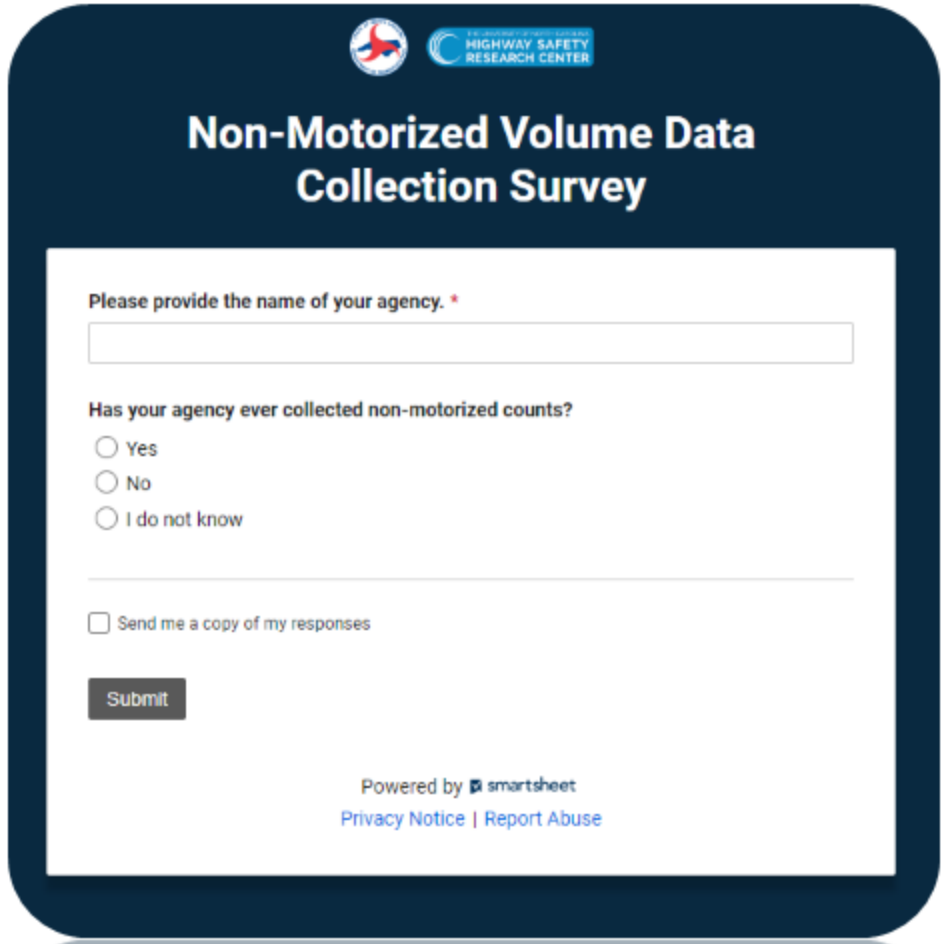
ITRE | THE UNIVERSITY OF NORTH CAROLINA HIGHWAY SAFETY RESEARCH CENTER

*In partnership with NCDOT Transportation Mobility and Safety Division*

**This project supports the evolution of the statewide bicycle and pedestrian counting program to create strategies to meet the following long-term goals:**

1. Creating a data warehouse that can accommodate bicycle and pedestrian counts collected with different technologies, at different durations, and in different files and formats by other entities in the state (not only the counts currently included in the NC NMVDP), and
2. Establishing standardized business processes and procedures for collecting and using the bicycle and pedestrian count data from the program to support the development of improved exposure models and safety analyses for vulnerable roadway users, including a pedestrian-specific volume sampling strategy.

**Has your agency ever collected non-motorized counts?**
Please take our survey!



# NCDOT Pedestrian Bicycle Infrastructure Network Updates (PBIN)

*Presented by*
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# What is PBIN?

- Pedestrian and Bicycle Infrastructure Network (PBIN)
  - Statewide Geographic Information System (GIS) inventory of pedestrian and bicycle facilities (both ***existing*** and ***planned***)
  - GIS data = Data with both tabular and spatial attributes (ex. each table row corresponds to a physical, spatial feature that can be represented on a map)
- ESRI file geodatabase format
  - Requires ArcGIS desktop software to open and access the database
- Contains six separate layer classes
  - Pedestrian Facilities (polyline and point data)
  - Bicycle Facilities (polyline and point data)
  - Shared Use Path Facilities (polyline and point data)

# PBIN Purpose(s)

## Project ATLAS – Inventory for NCDOT project scoping and development

- How does the existing network tie into the project?
- What is the planned bicycle and pedestrian network to be considered for Complete Streets projects?

## Future Network Planning and Analysis

- How many miles of [greenway, bike lanes, sidewalk….] are built and planned?
- What is the coverage of planned bicycle and pedestrian networks statewide?
- Where are the gaps in regional connectivity?

## SPOT / Prioritization

- How will the proposed project improve connectivity and access?
- How many proposed projects relate to high-risk (crash) locations?

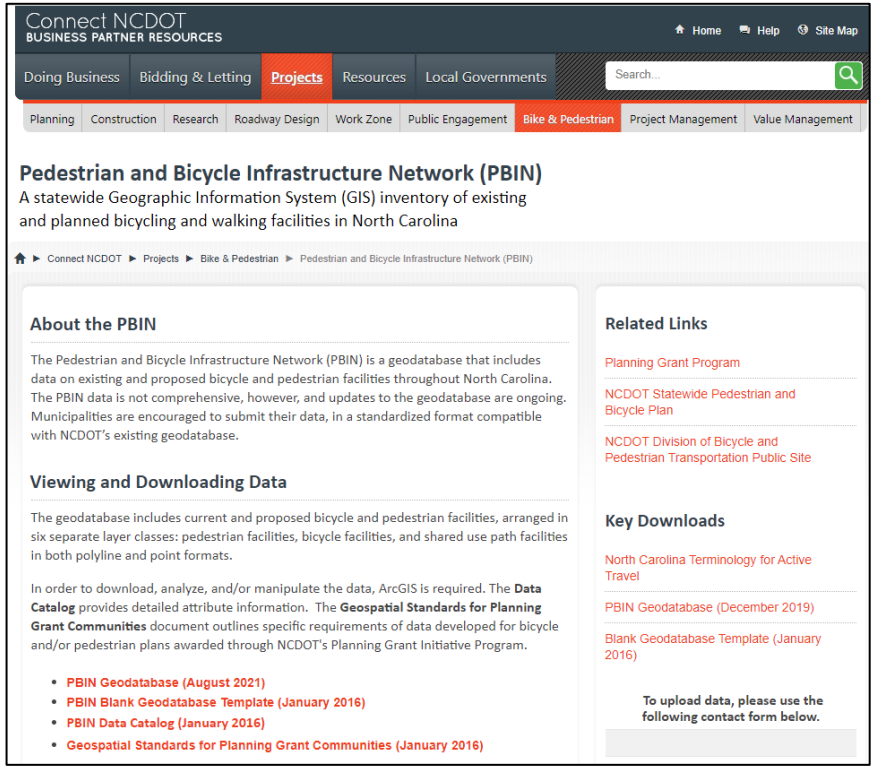
## Safety Review

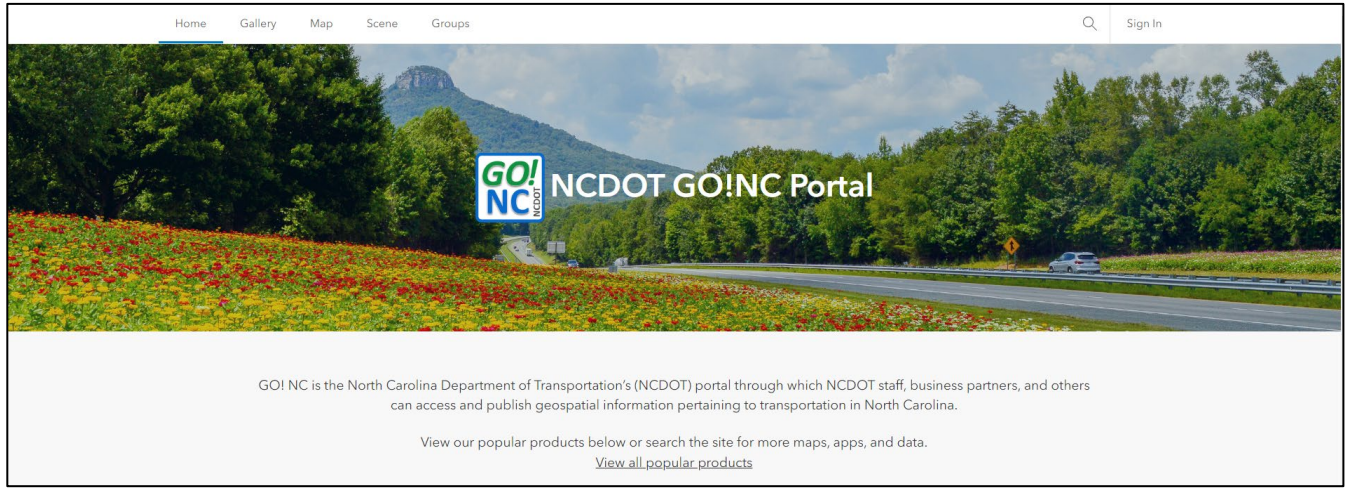
- Where does the existing network cross high-risk roads?
- Where do planned network (i.e., sidewalk and bikeway) projects connect with identified safety needs?

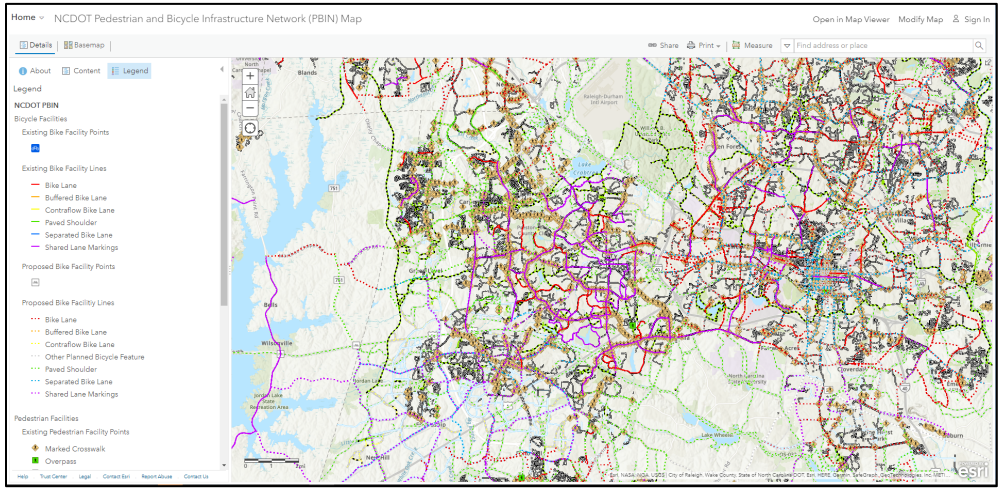
## Others…

# How to Access PBIN

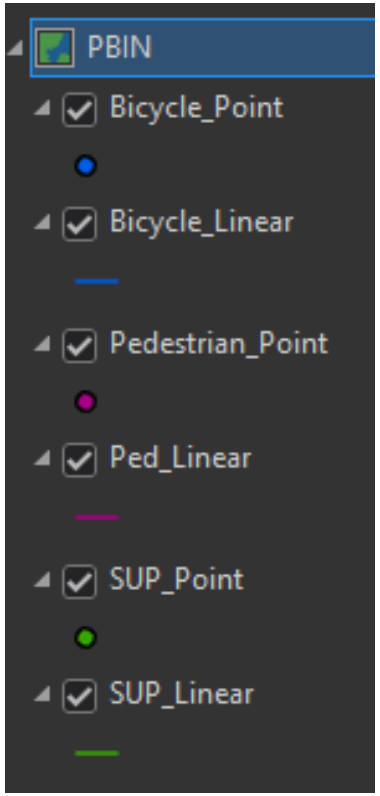
- Available to the public
- For download at Connect NCDOT Website
  - Download link available for the file geodatabase
- For viewing at NCDOT Go!NC Portal Website
  - Via ArcGIS Online Web Map interface

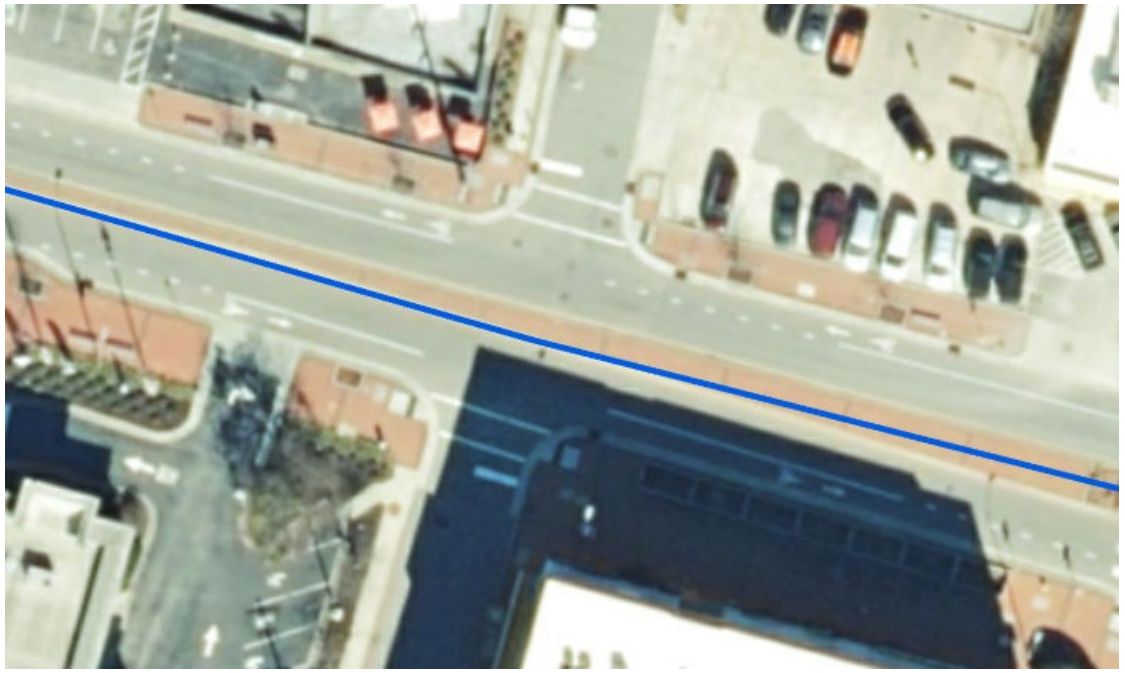


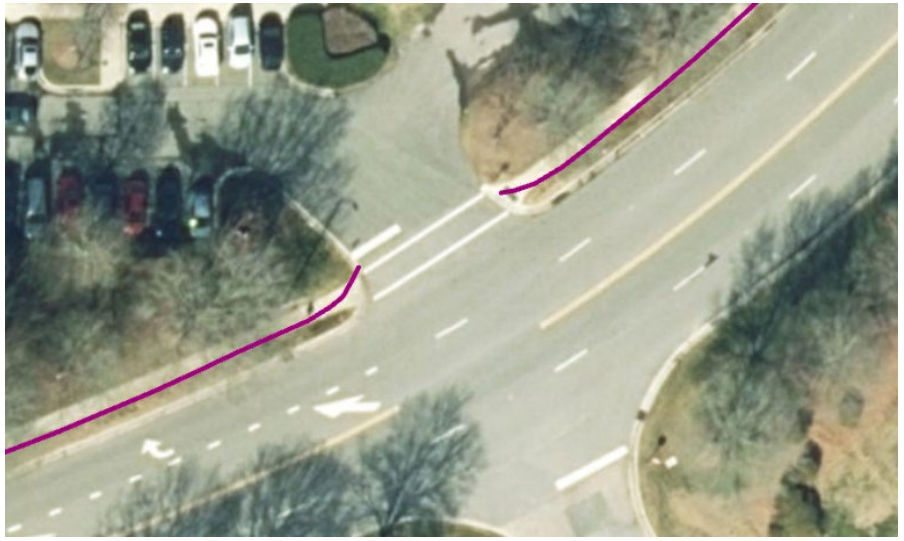



# Visual of PBIN Data





# Current Manual Digitization Process

- Existing features being digitized:
  - Sidewalks
  - Crosswalks

- General methods:
  - Use NCDOT on-system curb ramp inventory as leads to potential sidewalk and crosswalk locations
  - Search for GIS open data portals and ArcGIS Online pages for local agencies
  - Will pilot object detection and feature classification using machine learning

# Contribute to PBIN


- PBIN benefits from data submitted by local agencies
  - Improves coverage
  - Allows PBIN to stay current
  - Help answer questions for projects, plans and safety!

- Accepted Forms of Data
  - Shapefiles
  - File geodatabases containing GIS data layers
  - Spreadsheets containing spatially locatable features (coordinates, routes & mileposts, etc.)
  - Downloadable ESRI (ArcGIS) feature services and layers

**Any** data representing pedestrian and bicycle infrastructure, existing or planned, can be of potential value to PBIN

# Proposed Methods for Local Agency Data Upload

- Option 1: Upload to ArcGIS Online (AGOL)
- Option 2: Share via OneDrive or SharePoint
- Option 3: Share via other third-party file sharing system (i.e., Dropbox, Google, etc.)

# PBIN Contact Information

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# Thank you!