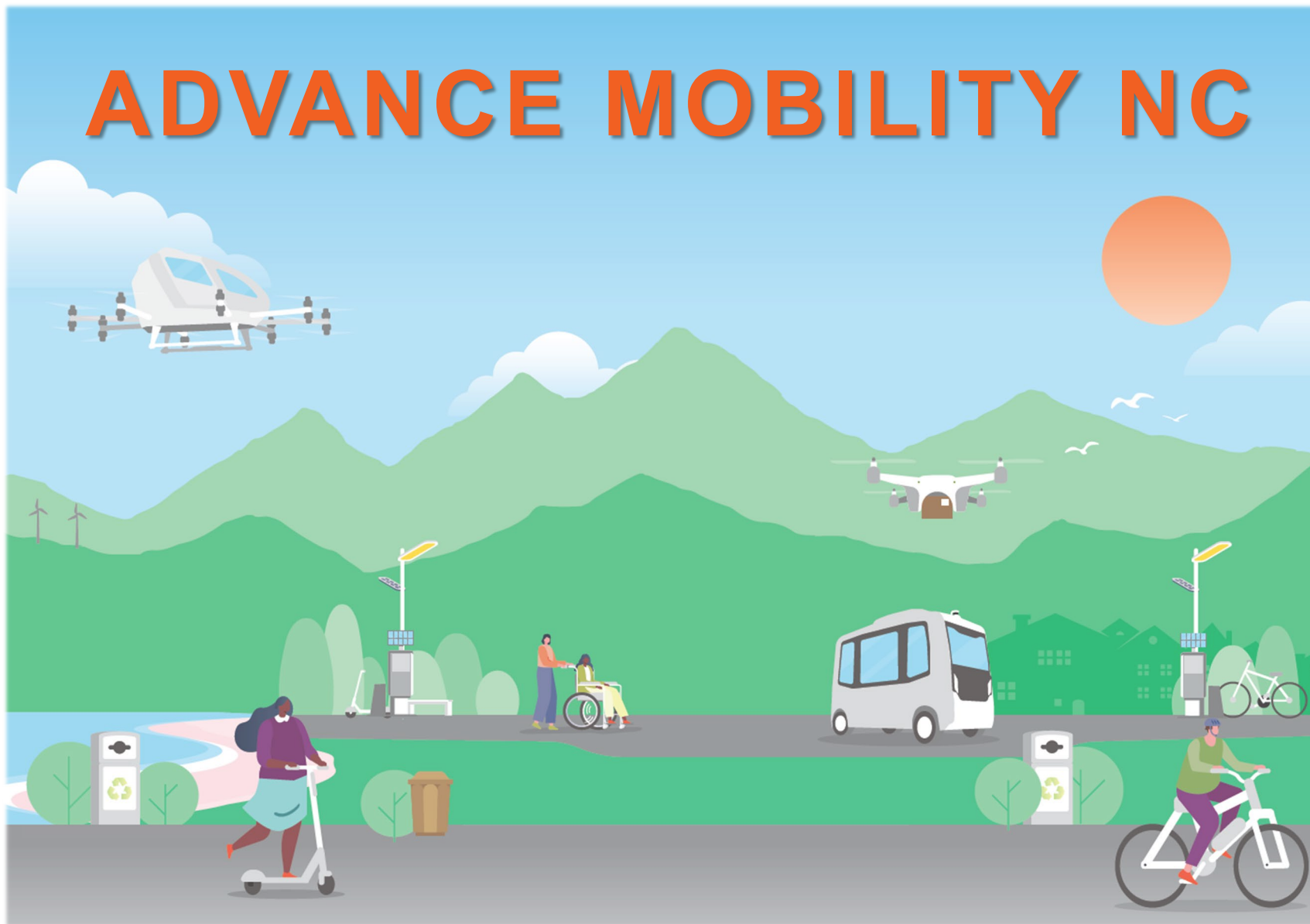


# ADVANCE MOBILITY NC



## ATM REFERS TO INNOVATIVE AND SOPHISTICATED METHODS OF TRANSPORTATION

that incorporate the latest technological advancements, new business models, and infrastructure designs to improve:



**Mobility**



**Safety**

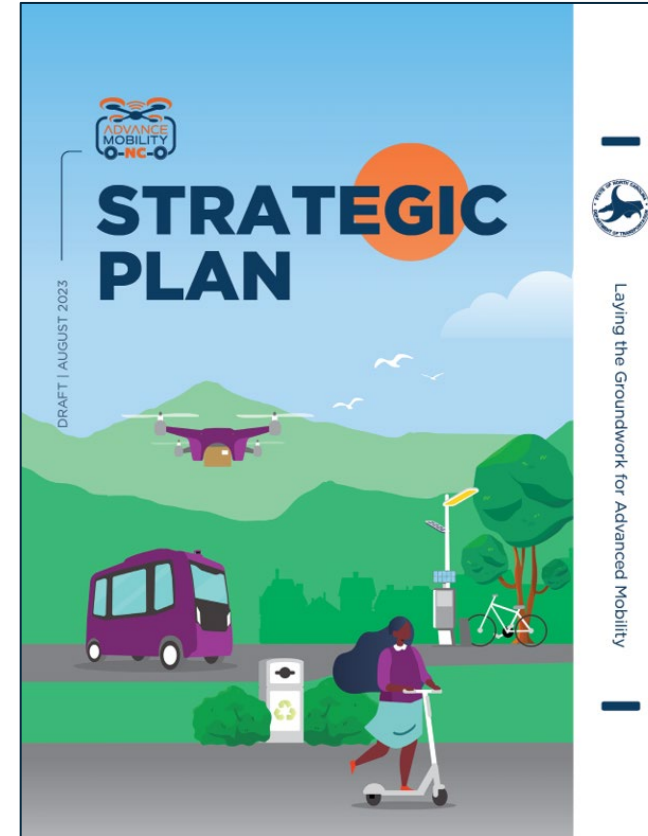


**Sustainability**



**Accessibility**

The transportation landscape is changing rapidly, and advanced mobility innovations have the potential to significantly improve transportation **safety, sustainability, and equity** in North Carolina.



# ADVANCE MOBILITY GOALS



## IMPROVE QUALITY OF LIFE

by leveraging advanced mobility technologies to address the transportation needs and inequities faced by North Carolina's businesses and residents.



## DEVELOP & LEVERAGE PARTNERSHIPS

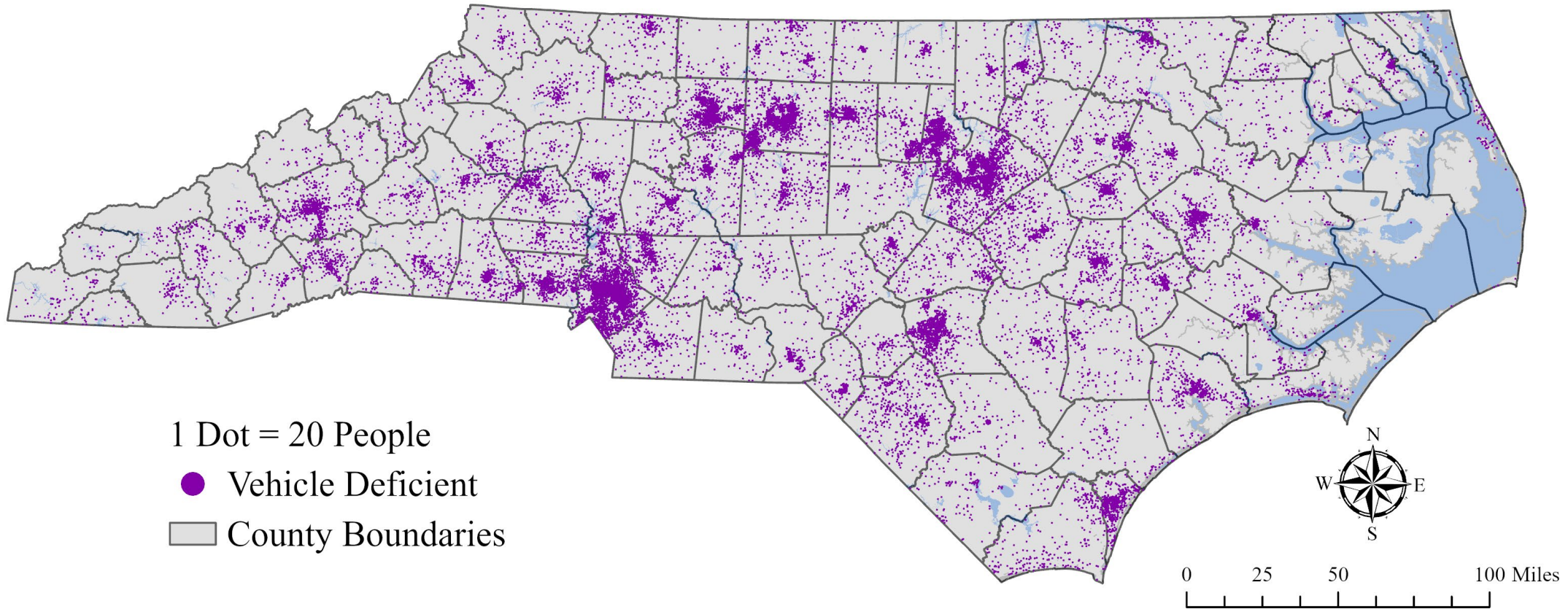
by fostering strategic relationships across sectors to attract innovative companies, encourage investment into novel transportation applications, and create economic opportunities.



## ESTABLISH NORTH CAROLINA AS A TRANSPORTATION TRAILBLAZER

to addressing transportation system safety, efficiency, resilience, and sustainability through innovation in advanced mobility. Leverage national and international thought leadership forums to amplify impact and bolster the state's position as a mobility innovator.

# MOBILITY CHALLENGES AND OPPORTUNITIES



- 1 Dot = 20 People
- Vehicle Deficient
- County Boundaries

Over 1 Million North Carolinians live in a house without a vehicle or have other barriers that limit vehicle availability.



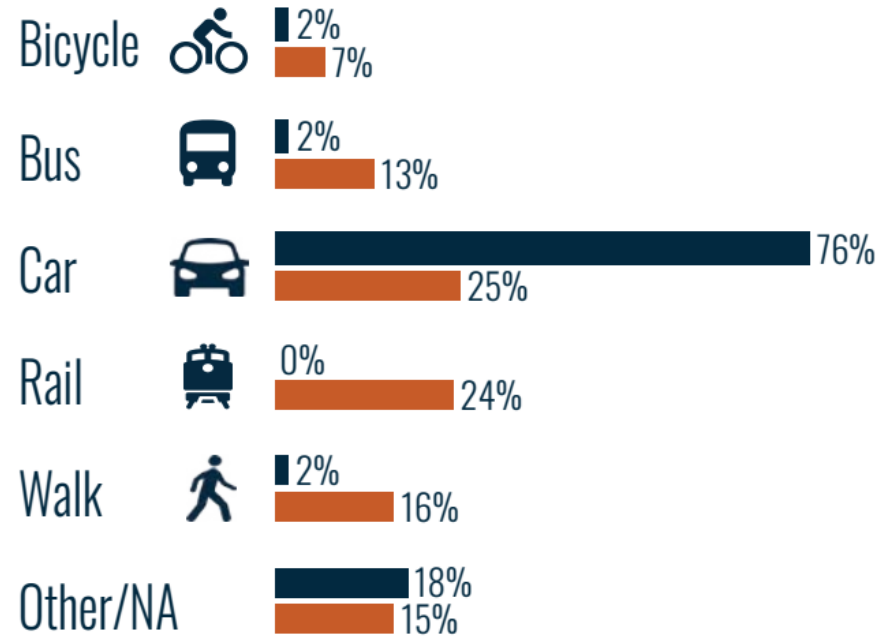
# MOBILITY CHALLENGES AND OPPORTUNITIES



## North Carolinians Want Multimodal Options NC Moves 2050 Survey Results

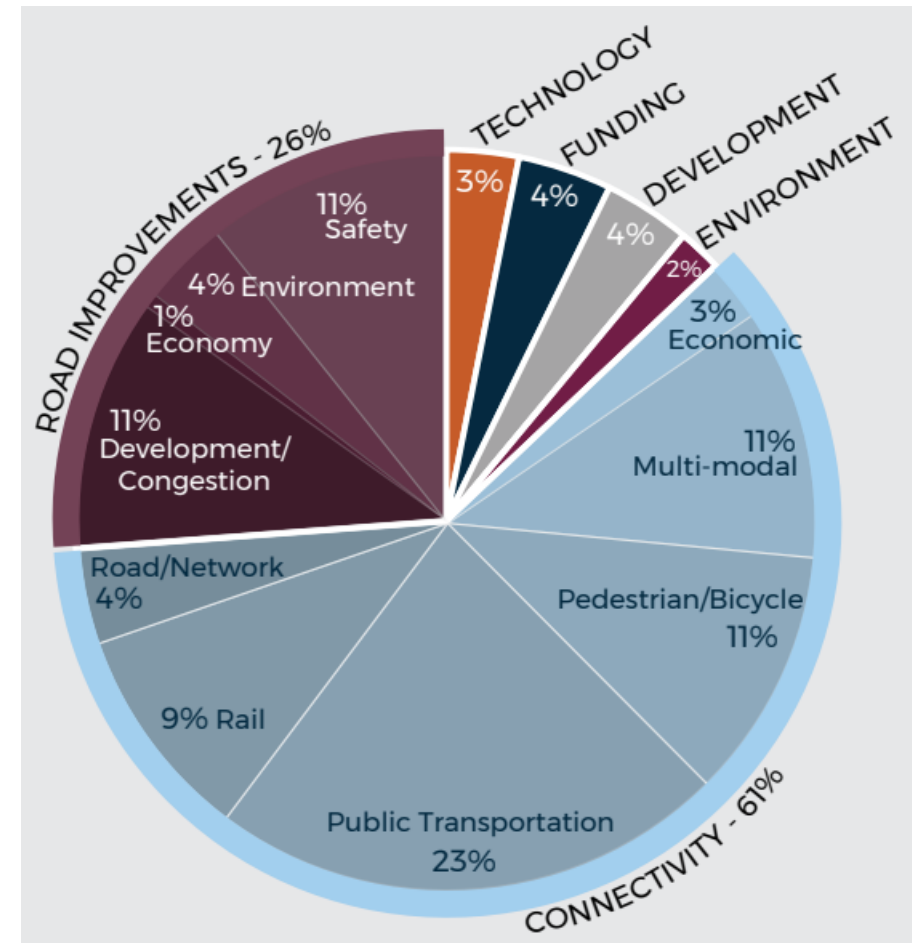
### HOW WE MOVE

Present Future

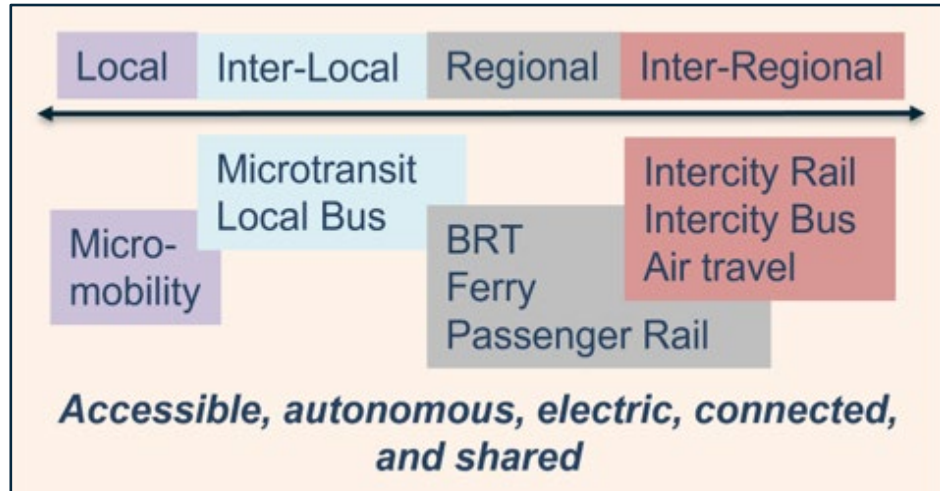


The importance of traveling by car in the future decreases by **51%↓**

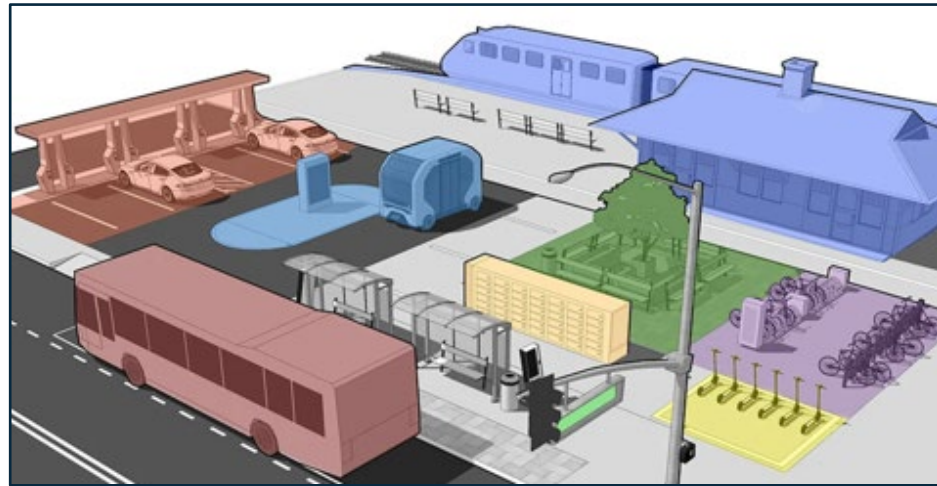
What should be the focus of transportation in your region for the future?



# ADVANCED GROUND MOBILITY



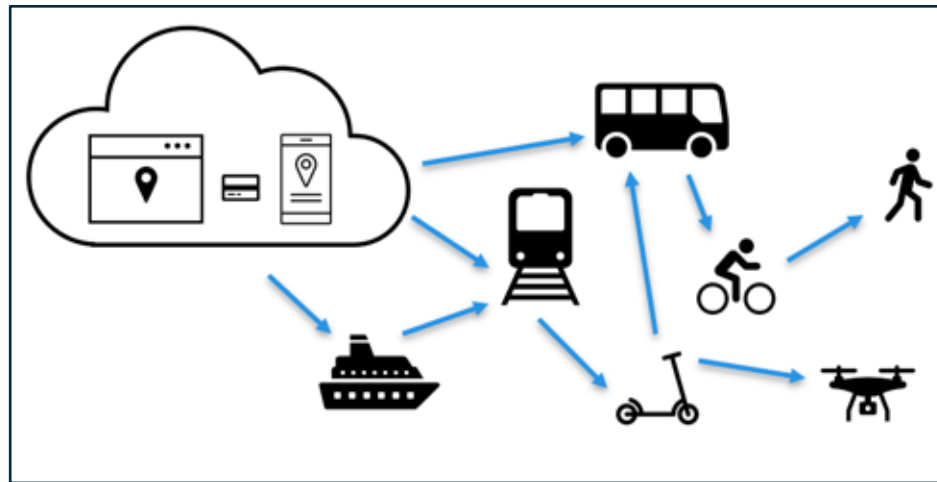
Layered Multimodal Services



Connected at Mobility Hubs



Connected by Complete Streets



Integrated by Mobility as a Service

# ADVANCED MOBILITY NC





# 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.

## Examples include:

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





# 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

**Pilot runs from 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





# CASSI AT UNC CHARLOTTE



# LATEST TECHNOLOGICAL ADVANCEMENTS



## Novel-design, low-speed automated vehicles



(3) Completed Projects  
2020-2021



NPS Report



USDOT Report



(1) Completed Project & (1) Active Project  
2023

## Autonomy-enabled conventional vehicles



### Connected, Rural, Equitable, and Autonomous Transportation for Everyone (CREATE)

FY 2022 USDOT Advanced Transportation Technology and Innovation Program Grant Application



Grant Application Information

## Connected Autonomous Vehicle (CAV) Testbed



NCDOT is supporting NC A&T State University to develop **shared autonomous vehicles, an innovative rural test track, and an autonomous shuttle pilot** between the university and downtown Greensboro.



Autonomy at A&T

**CASSI includes the continued demonstration of novel-design, low-speed autonomous shuttles and the testing and integration of autonomy-enabled conventional vehicles into high-quality, on-demand transit services.**

# DRIVING INTO THE FUTURE: AUTONOMY AT NC A&T





# UAS SUCCESS - NCDOT



Advance Mobility NC aims to continue building on North Carolina's aviation success.



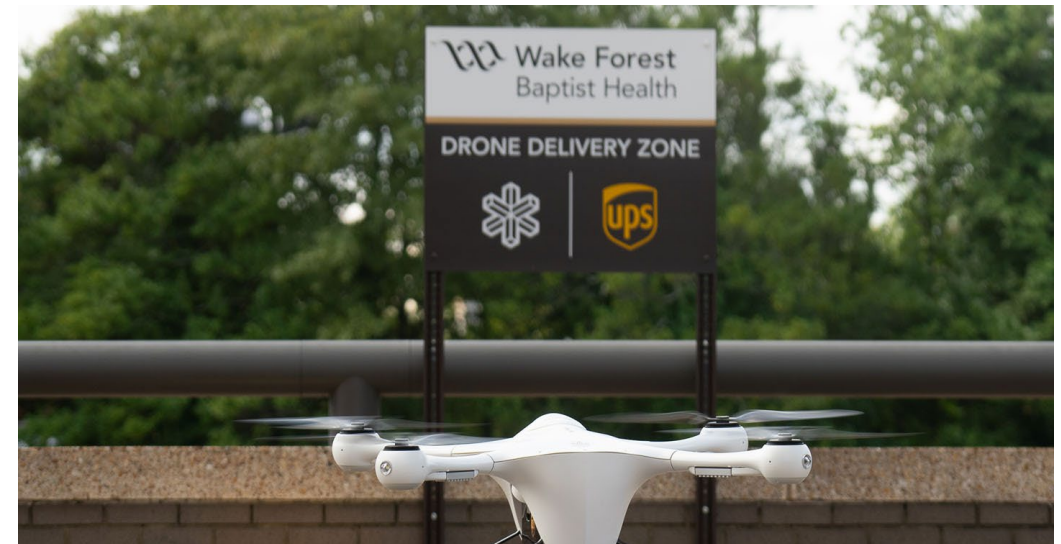
Herbicide Spraying



Visual Infrastructure Inspection



# KEY PARTNERSHIPS



# BEYOND PARTNERS ACHIEVE NATIONAL FIRSTS



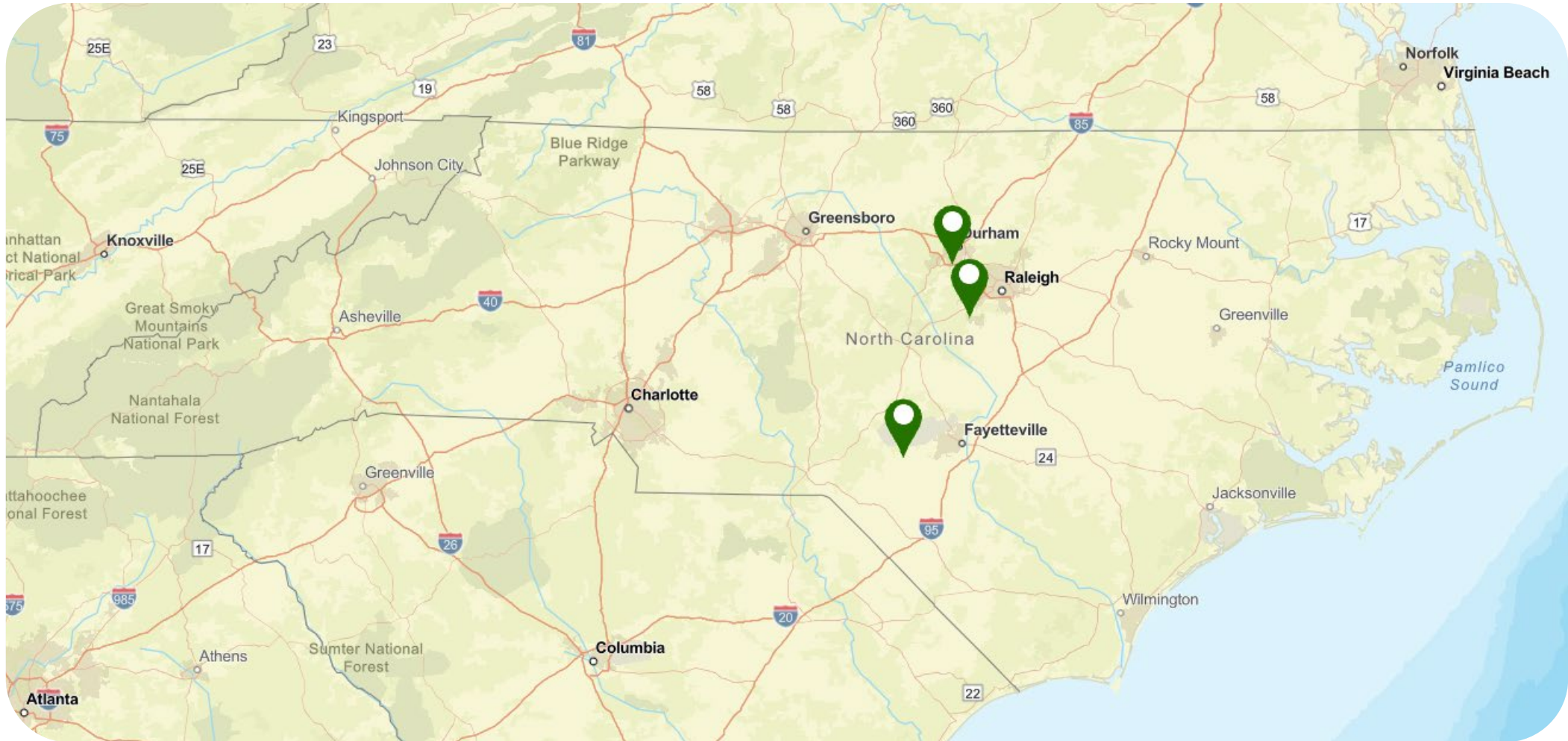
Medical Deliveries – First Routine Commercial Drone Delivery in the US



Food Deliveries – First Backyard Food Delivery Service in the US



# BEYOND PARTNERS WORK TOWARD SCALABILITY



Available backyard food and retail delivery locations

# MOVING TOWARDS AAM



Through the Advance Mobility NC initiative, innovative technology and successful use cases will continue to be a priority for the Department.



eVTOL Demonstration – First in the US



AAM refers to the next generation of air transportation systems being developed to

**move people and goods more efficiently and sustainably.**



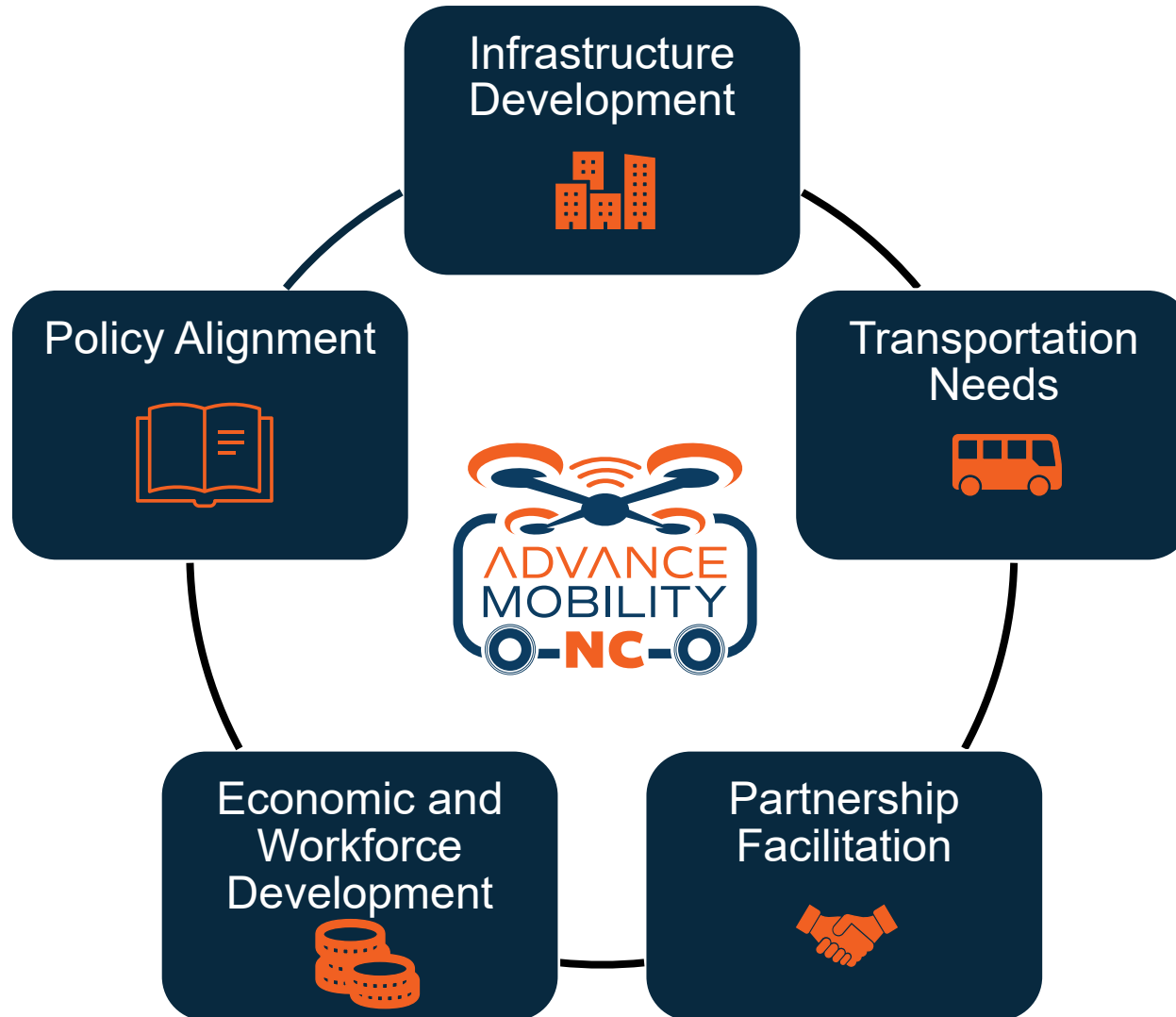
AAM Emergency Response

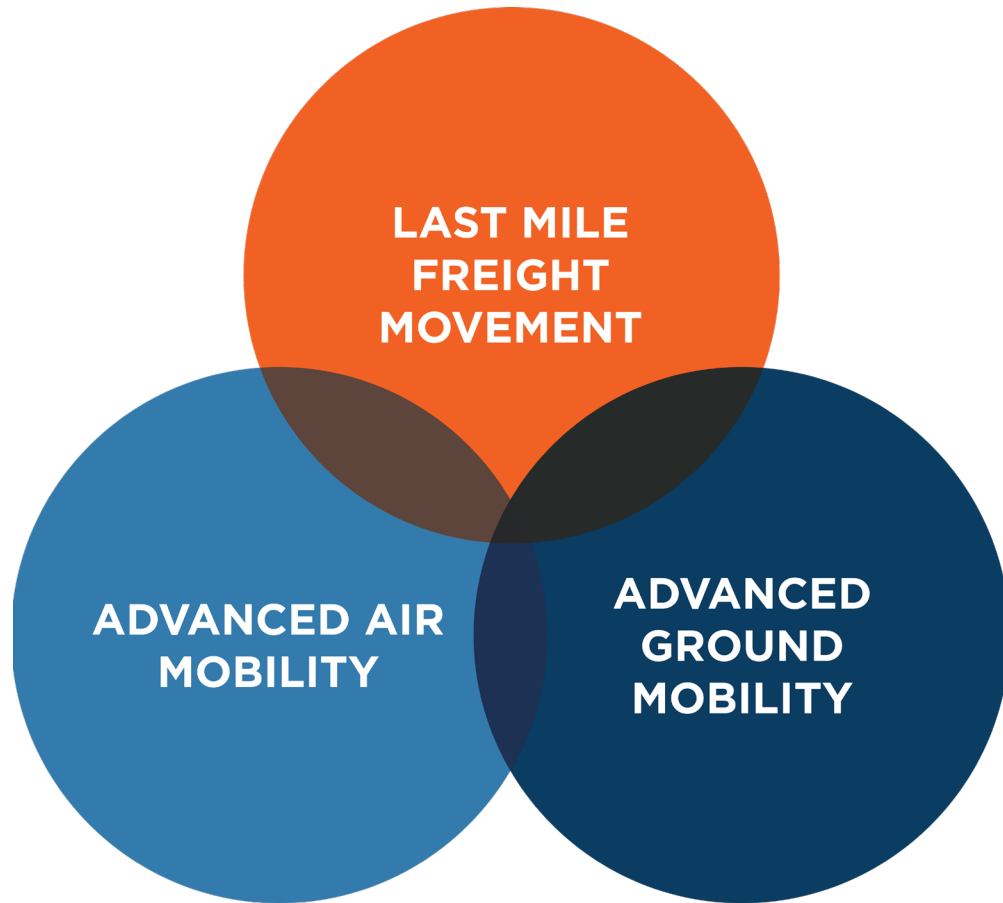
*Credit: NASA Graphics/Kyle Jenkins*



Advanced Mobility  
Technologies in the Air  
Transportation Ecosystem

# AAM - KEY CONSIDERATIONS





We are building a **foundational strategy** intended to develop an innovative linkage between new ground and air transportation modes to optimize mobility throughout the state.

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Scan the QR code to learn more

