

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

FY 2023 USDOT Advanced Transportation Technology and Innovation Program



## VOLUME 1

Submitted by:



In partnership with:



# Table of Contents

<b>SECTION 01: COVER PAGE &amp; TABLE OF CONTENTS.....</b>	<b>ii</b>
Application Summary .....	iii
<b>SECTION 02: PROJECT NARRATIVE .....</b>	<b>1</b>
Project Summary .....	1
Project Purpose .....	3
Project Location .....	4
<i>What is Microtransit?</i> .....	6
Real-World Issues and Challenges Addressed .....	7
Project Technologies and Alignment with Program Goals, Administration’s Priorities, and DOT Focus Areas.....	9
Transportation Systems, Services, and Partners Included in the Project .....	19
Deployment Plan.....	20
Public Engagement .....	22
Deployment Phases .....	23
Potential Challenges .....	24
Project Schedule.....	25
<b>SECTION 03: MANAGEMENT STRUCTURE.....</b>	<b>26</b>
<b>SECTION 04: STAFFING DESCRIPTION.....</b>	<b>27</b>
<b>APPENDIX: RESUMES .....</b>	<b>A-1</b>
<b>EXHIBITS AND ATTACHMENTS.....</b>	<b>B-1</b>

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# SECTION 01: COVER PAGE & TABLE OF CONTENTS

Basic Project Information	
Project Name	Connected, Rural, Equitable, and Autonomous Transportation for Everyone (CREATE)
Eligible Entity Applying to Receive Federal Funding	North Carolina Department of Transportation
Project Costs	
Total Project Cost (from all sources)	\$10,327,588
ATTAIN Request	\$8,227,088
Are matching funds restricted to a specific project component? If so, which one?	Yes: A small portion (\$100,500) of matching funds are provided in the form of in-kind labor and equipment by May Mobility and Via for public engagement, marketing, pre-launch systems testing, driver training, and dispatcher training. See Budget Narrative (Volume II) for more information.
Project Location and Proposed Technologies	
State(s) in which the project is located	North Carolina
Is the project currently programmed in the: <ul style="list-style-type: none"> <li>• Transportation Improvement Program</li> <li>• Statewide Transportation Improvement Program</li> <li>• MPO Long Range Transportation Plan</li> <li>• State Long Range Transportation Plan</li> </ul>	Upon the award, NCDOT will program the Project into applicable transportation plans.
Technologies proposed to be deployed	<ul style="list-style-type: none"> <li>• Advanced traveler information systems</li> <li>• Advanced public transportation systems</li> <li>• Transportation system performance data collection, analysis, and dissemination systems</li> <li>• Advanced safety systems</li> <li>• Integration of transportation service payment systems</li> <li>• Advanced mobility and access technologies</li> <li>• Advanced transportation technologies</li> </ul>
Will the project use connected vehicle technologies? If so, which technologies will be used (i.e., DSRC/5.9 GHz spectrum, Cellular/4G/5G communications, Wi-Fi, Bluetooth, RFID, etc.)?	Cellular 4G/5G communications
Will the project use automated driving system technologies?	Yes
Rural Considerations a) Is the project serving a rural area(s)? b) If yes, how much ATTAIN funding is being requested to be put toward serving the rural area(s)?	a) Yes, Wilson is rural (located outside of a US Census-designated urbanized area with population <50,000) b) \$8,227,088 (100%)



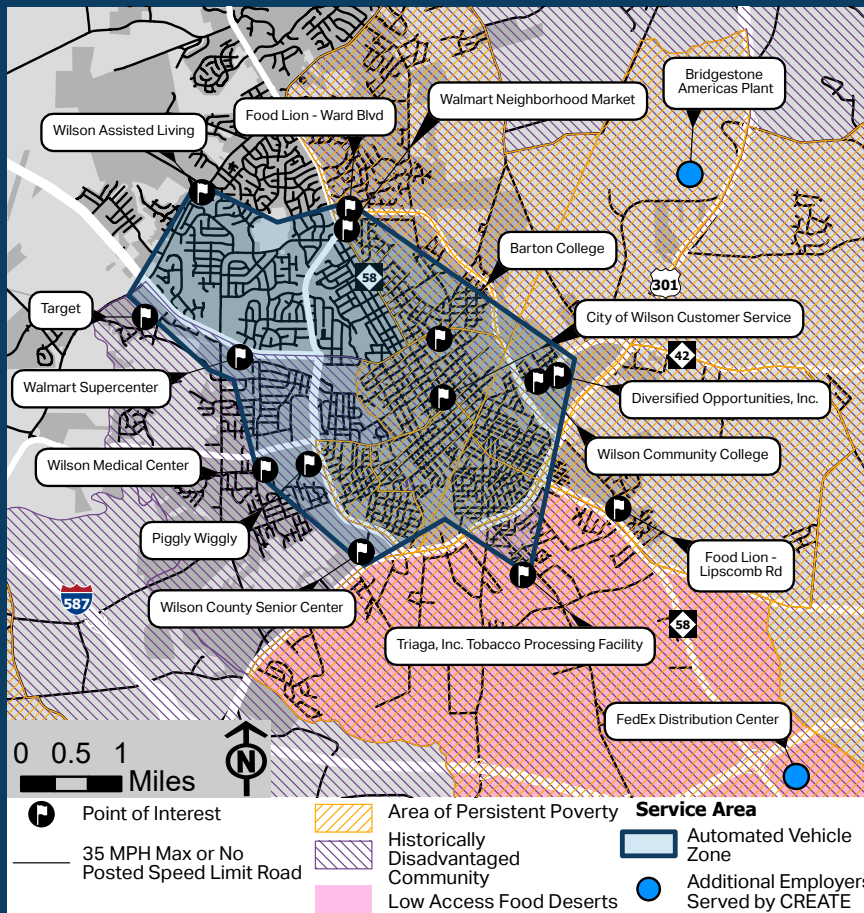
# FY 2023 USDOT ATTAIN Grant Application Summary

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

**CREATE** will pilot the future of advanced transportation technologies in an on-demand transit service (also known as "microtransit") by leveraging software and automated vehicles (AVs) to provide easier, more reliable, efficient, and equitable access for riders to reach key destinations in the City of Wilson, a rural community in North Carolina.

**CREATE** will build on Wilson's popular RIDE microtransit service and the recently awarded Mobility for Everyone, Everywhere in NC (MEE NC) project to fill in service gaps while also gathering data to understand rider preferences and behaviors related to AVs and on-demand transit services.

**CREATE** and its findings will inform a reproducible model and guidance for communities in North Carolina and beyond on how to best complement and strengthen their existing transit services using on-demand and automated vehicle technology.



US Census Blocks classified as Areas of Persistent Poverty or Historically Disadvantaged Communities are shown above in orange hatching and purple hatching, respectively.

### FUNDING

State and Private Match: \$2,100,500

ATTAIN Funding Request:  
\$8,227,088

Total budget: \$10,327,588

### SCHEDULE



DEPLOYMENT:  
3 YEARS OF SERVICE

### LOCATION

Wilson,  
North Carolina (Rural)



### READINESS & RISK

Leveraging NCDOT's extensive experience in managing federal funds, transit planning, and technical support, **CREATE** reduces risk and accelerates delivery while collaborating with transportation partners to meet unmet community needs.

### PURPOSE

**CREATE** will:

- Expand the existing microtransit service area to major employment centers with over 2,000 employees, including the Bridgestone Americas Plant, a new FedEx Distribution Center, and Triaga, Inc.
- Increase service hours to provide equitable access to employment for shift workers.
- Improve accessibility for riders with disabilities including those that work at Diversified Opportunities, Inc.
- Pilot a prescheduling option for rides to employment, medical appointments, and other preplanned trips.
- Deploy five (5) hybrid electric automated vehicles (AVs) and allow riders to select between an AV or conventional vehicle when booking their trip.
- Analyze qualitative and quantitative data and feedback to understand rider choices and AV performance as part of an on-demand transit service.



**CREATE** supports the following project outcomes and benefits:

**25,400\***

PEOPLE SERVED BY EXPANDED SERVICE AREA

**64%**

BLACK, INDIGENOUS, PEOPLE OF COLOR (BIPOC) ON AVERAGE IN CREATE SERVICE AREAS

**9**

HISTORICALLY DISADVANTAGED COMMUNITIES SERVED

\* including 9,000 people living below the poverty line



**Safety**

**CREATE** advances safe, efficient transportation by expanding on-demand mobility for populations that rely on transit to reach employment, healthcare, education, and other opportunities. The Project will also deploy five (5) AVs with onboard Autonomous Vehicle Operators (AVOs) that will educate riders on the technology, provide customer service, and assist riders using mobility devices. Public engagement will incorporate safety education and training for the public, first responders, AVOs, and other stakeholders. **CREATE** will provide a safer option for residents without access to vehicles who would have walked.



**Equity**

**CREATE** improves access to transit for populations with unique transportation needs, including zero-vehicle households, shift workers, low-income residents, and individuals with disabilities. **CREATE** will deploy accessible AVs with ADA-compliant wheelchair ramps for riders using mobility devices. The Project will also offer payment options for unbanked riders, booking options for those without internet access, and an option to preschedule trips, which can help individuals who require assistance when booking a ride.



**Climate Change and Sustainability**

**CREATE** reduces greenhouse gas emissions (GHG) emissions by deploying hybrid electric AVs that will maximize the pooling of trips and dynamically route riders to their destinations. The Project will reduce emissions associated with idling during traffic backups that can occur because of shift changes at employment hubs like the Bridgestone Americas Plant.



**Workforce Development, Job Quality, and Wealth Creation**

**CREATE** promotes workforce development and economic growth in Wilson through reliable, seamless, and affordable transit access to employment centers. The Project will expand coverage to reach new employers and extend service hours to accommodate those employees with work schedules outside of traditional hours. The AVs will also require in-vehicle AVOs, creating new employment opportunities.

**CREATE** combines the **proven usefulness of microtransit with AVs** to pilot and evaluate the **future of automated, on-demand shared mobility**.



**Useful**

- More dynamic, responsive service with shorter wait times
- Reaches underserved populations not served by existing transit options or unable to access a personal vehicle



**Inclusive & Safe**

- Public, subsidized form of rideshare with flexible service hours
- Accessible vehicles with ADA-compliant wheelchair ramps offer more personal freedom to seniors and individuals with disabilities



**Affordable**

- Decreases service and maintenance costs in low density areas
- Creates flexible and scalable service that complements existing transit options without requiring new infrastructure

**CREATE** is the result of a partnership that leverages the expertise and experience of government, non-profit, academic, and industry leaders to deliver the benefits of automated, on-demand transit service to the City of Wilson, a rural community in North Carolina.



# SECTION 02: PROJECT NARRATIVE

## Project Summary

**CREATE**, or “the Project,” will leverage advanced transportation technologies for employees at new job sites, riders with disabilities, and the general public in Wilson, North Carolina. The Project will enable riders to request and complete safe, affordable, and convenient trips to their desired destinations. The 3-year Project will build on the City of Wilson’s popular RIDE microtransit service and the recently awarded [Mobility for Everyone, Everywhere in NC \(MEE NC\)](#) initiative to address service gaps and unmet needs while also gathering data to understand rider preferences and behaviors related to automated vehicles (AVs) and on-demand transit services.

**CREATE** advances the North Carolina Department of Transportation (NCDOT) Integrated Mobility Division (IMD)’s vision and strategy to partner with transit, non-profit, academic, and industry leaders to deliver affordable, useful, inclusive, and safe transit services to community members with unmet needs in rural areas using advanced technology.

NCDOT IMD will partner with the City of Wilson, May Mobility, Via, the Community Transportation Association of America (CTAA), and North Carolina Agricultural and Technical State University (NC A&T) to deliver **CREATE** (see **Project Partners**).

The findings from **CREATE** will provide a reproducible model and guidance for communities in North Carolina to leverage advanced technologies in serving new employment centers, riders with disabilities, and prescheduled trips. The Project will also contribute to the greater body of research and inform innovative deployments across the country.



### Demonstrating Advanced and Integrated Transit Options for NC and the Nation

**CREATE** will:

1. Expand the existing microtransit service area to include major employment centers and other community hubs. The Project will deploy two (2) conventional vehicles to support the expanded coverage.
2. Pilot a new and innovative prescheduling option for riders to secure rides to work shifts, medical appointments, care centers, and for other preplanned trips.
3. Integrate five (5) hybrid electric AVs into the fleet. Riders will be able to select between a conventional vehicle and an AV to complete their trip. Qualitative and quantitative data will be collected and analyzed to better understand rider preferences, behaviors, and perceptions surrounding AVs, particularly as part of an on-demand transit service.
4. Leverage an Autonomous Driving Kit (ADK) and Multi-Policy Decision-Making (MPDM) system in each automated vehicle for safe navigation in diverse road and traffic environments. The AVs will feature onboard AVOs that will educate riders on the technology, provide customer service, and assist riders using mobility devices.



## Guiding Foundation for Success

- **Data Management Plan (DMP)** to address data collection, documentation, sharing, access, storage, and preservation.
- **Equity and Accessibility Plan (EAP)** to ensure the on-demand transit service is accessible and equitable for all.
- **Public Engagement Plan (PEP)** to build upon strong relationships and project partners in Wilson.

## Mobility for Everyone, Everywhere in North Carolina (MEE NC)

**CREATE** builds on [MEE NC](#), which was awarded through a MPDG grant in 2022, to test and study the incorporation of AVs into on-demand transit fleets as well as enhance technology to better serve riders with disabilities.

Both **CREATE** and MEE NC will advance more equitable mobility and improve access to healthcare, employment, education, and other services for transportation disadvantaged populations in rural areas.

**CREATE** will work in conjunction with MEE NC to ensure established goals in MEE NC are carried forward for Wilson, including:

- Expanding options for transportation to work and essential appointments
- Providing an on-demand transit option while also providing reliable service for scheduled trips
- Expanding service hours and service days based on community needs
- Integrating AVs into transit fleets to enhance service and reliability
- Ensuring accessibility for riders without access to smartphones, the internet, or bank accounts by providing alternate booking and ride options

## Steps for Reproducibility

1. **Learn lessons from peers that have engaged in similar projects, such as the City of Arlington, TX and the City of Grand Rapids, MN. Understand needs for further investigation that will be advanced through CREATE.**
2. **Establish and implement a Data Management Plan that is comprehensive and organized to promote open analysis and reproducibility by others.**
3. **Craft an Equity and Accessibility Plan and PEP to provide inclusive service, encourage engagement, and understand key elements for providing accessible on-demand transit services elsewhere.**
4. **Support independent evaluations by USDOT to analyze and report findings from CREATE.**
5. **Share data, results, and lessons learned openly through FHWA, FTA, and other resources.**

## Project Purpose

**CREATE** is designed to meet diverse rider needs, with an emphasis on connecting transit dependent populations to employment, education, healthcare, recreation, and other opportunities that contribute to a vibrant community and high quality of life. The Project will expand and enhance the RIDE microtransit service in Wilson, North Carolina to reach a greater number of riders, improve accessibility for riders with disabilities, and serve additional destinations.

With **CREATE**, riders will be able to access the Bridgestone Americas Plant, which employs over 1,800 people and is the single largest industrial employer in Wilson County. Riders will also be able to reach the FedEx Distribution Center, Triaga, Inc. tobacco processing plant, and Diversified Opportunities, Inc., a community rehabilitation program that supports professional development among individuals with disabilities.

Feedback on Wilson's existing RIDE service indicated that riders would like the option to preschedule rides to address the volatility in pickup times and remove the stress of on-demand transit for time-sensitive, preplanned trips such as work shifts or medical appointments. Some riders also require assistance to schedule a ride and would benefit from the ability to do so in advance. **The Project will offer this functionality and will be the first of its kind to pilot prescheduled rides within on-demand transit services operated by AVs.**

"Building on Wilson's foundational RIDE service and strengthened by the success of our FTA AIM and USDOT MPDG awards, **CREATE** demonstrates our commitment to plan for and invest in advanced technologies to meet transportation needs in partnership with our local communities."

- Brennon Fuqua, NCDOT IMD

### CREATE will:

- ✓ **Pilot automated vehicle technology developed by May Mobility on the Toyota Sienna Autonomous (S-AM) minivan.** The Federal Motor Vehicle Safety Standards (FMVSS)-compliant, hybrid electric vehicles will operate in mixed traffic on roadways with speed limits up to 35 miles per hour (mph) in SAE Level 4 autonomy with onboard AVOs. The accessible S-AM vehicles in the fleet have rear-loading, ADA-compliant wheelchair ramps.
- ✓ **Deploy automated vehicles alongside a robust and customized software platform that will collect data to inform key performance metrics and analytics related to the operation of the AVs and the on-demand transit service.** The data and information gathered will be used to better understand the impact of AVs within the transit context, including assessing the readiness of the state, the community, the technology, and FTA for automated driving. The community's understanding and acceptance of automated transit services will be assessed.
- ✓ **Enable riders to book rides, pay for trips, track vehicle locations, and provide feedback using an advanced software platform.** Call center assistance will be provided to allow residents who do not have access to a smartphone or the internet to book on-demand rides. Services will be accessible to riders with disabilities and unbanked or underbanked riders (riders who do not have or make little use of a bank account and require alternative payment options).
- ✓ **Create new jobs related to the operations and maintenance of the enhanced on-demand transit service and new vehicles, including the hiring of local AVOs to provide customer service onboard the AVs.** The AVOs are not required to hold a Commercial Driver's License (CDL).
- ✓ **Adhere to applicable Buy America requirements** (in accordance with 23 USC 313 and 23 CFR 635.410) and seek guidance from USDOT and FTA at time of award on the applicability of any needed waivers related to the procurement of vehicles and other project components.



# Project Location

Enhancing and expanding the existing on-demand transit service in Wilson, North Carolina, the Project service area is tailored to meet Wilson’s unique mobility and socioeconomic needs. In addition to building on the RIDE service area, Project Partners identified roads and preliminary routes that would be safe and appropriate for SAE Level 4 AV operation. These are primarily roads with a speed limit of 35 mph or below where the AVs can safely operate with minimal intervention from the AVOs.

**CREATE** performed a GIS analysis to generate an initial service area that maximizes service between points of interest and transportation disadvantaged communities. The final service area will be determined following public engagement efforts in the community to ensure **CREATE** appropriately meet the community’s needs (see **Public Engagement Plan in Exhibits and Attachments**).

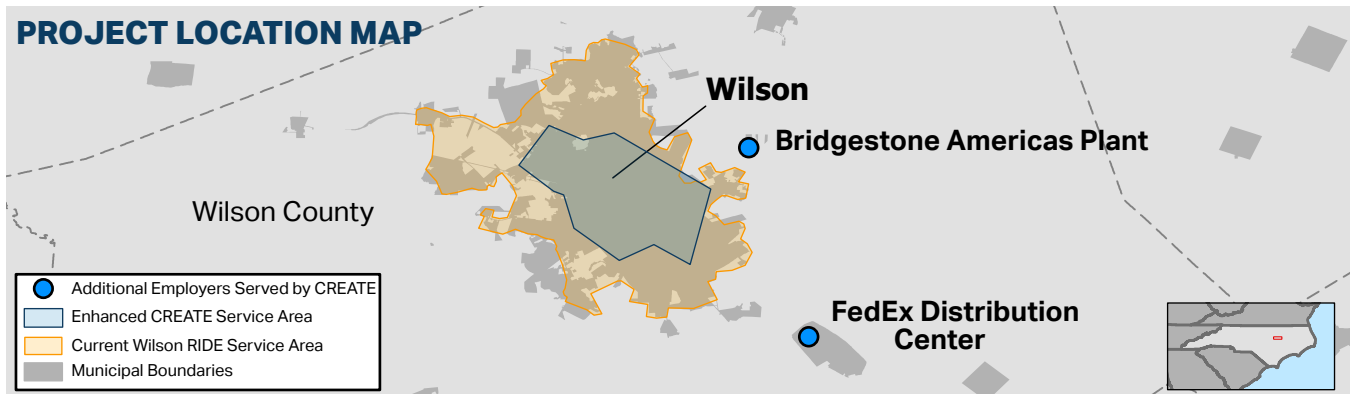
The service area will be continuously evaluated and revised based on feedback from the community and stakeholders during the project.

## RIDE On-demand Service in Wilson, NC

In a 2021 rider survey conducted as part of the RIDE pilot project, respondents indicated the following:

- 57% reported annual incomes below \$25,000
- 80% identified as minorities
- 86% did not have access to a personal vehicle
- 57% said affordability was their main reason for riding

[Transforming Public Transit with a Rural On-Demand Microtransit Project FTA Report](#)



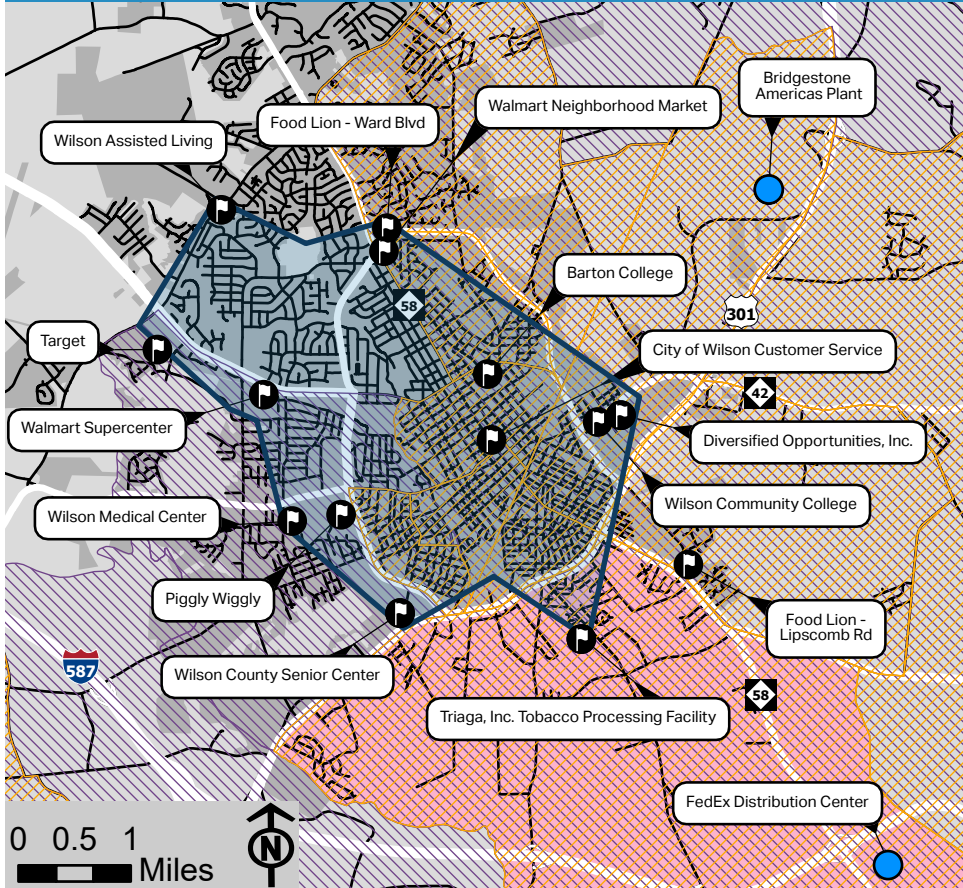
Opportunity Zones (OZs)	
<p>Percent of Service Area Census Block Groups with TDI Score &gt;12*</p> <p><b>65%</b></p>	<p>Black, Indigenous, People of Color (BIPOC)</p> <p><b>19</b> Block Groups</p> <p><b>2X</b> State Average of 76%</p>
<p>Areas of Persistent Poverty (APP)</p> <p><b>9</b></p>	<p>Poverty Rate</p> <p><b>12</b> Block Groups</p> <p><b>2X</b> State Average of 28%</p>
<p>Historically Disadvantaged Communities (HDCs)</p> <p><b>9</b></p>	<p>Zero-Vehicle Households</p> <p><b>14</b> Block Groups</p> <p><b>2X</b> State Average of 11%</p>

\*NCDOT’s [TDI Tool](#) scores Block Groups between 6 and 18, with 18 being the most impacted

# WILSON MICROTRANSIT SERVICE

**5 AVs** enhance existing microtransit service in a rural community

**25,400** people served



**Local Transit Partner**  
Wilson RIDE

## Other Service Area Key Destinations

AV connections to:

- Barton College
- Diversified Opportunities, Inc.
- Wilson Assisted Living
- Triaga, Inc. tobacco processing facility
- Wilson Community College
- Grocery stores

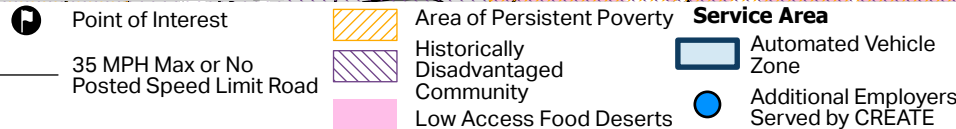
## Integration with Existing Service

Enhances existing microtransit service and allows riders to choose AVs or conventional vehicles for their trip. Provides an option to preschedule rides.

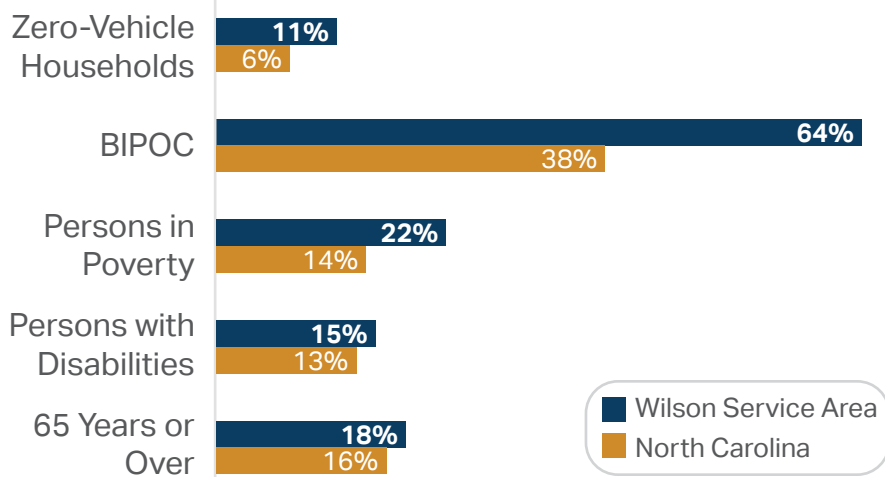
## Comparable Use Cases

[Grand Rapids, Minnesota GoMARTI](#)

[Arlington, Texas Rideshare Automation and Payment Integration Demonstration \(RAPID\)](#)



## CREATE is focused on meeting community needs:



"The **City of Wilson** is excited at the opportunity to supplement our great RIDE service with automated vehicles and to be on the cutting edge of innovation. Expanding access to the Bridgestone Americas Plant, the new FedEx Distribution Center, and Diversified Opportunities also means riders can reliably get to even more key destinations independently and safely."

– *Rodger Lentz, Assistant City Manager, City of Wilson*



## What is Microtransit?

On-demand microtransit is an emerging service option for public transit agencies utilizing an on-demand transportation solution that is flexible and responsive to the real-time needs of transit riders.

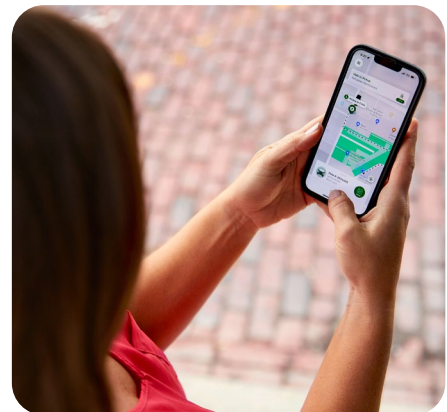
On-demand microtransit is similar to private on-demand services, rideshare allowing riders to book and pay for trips online, whether using personal computers or personal mobile devices connected to the internet. Riders are typically picked up at their preferred origin and taken to their preferred destination (curb-to-curb service). The ability to use transit for spontaneous trips similar to driving is fundamental to providing equitable mobility.

For additional information, including NCDOT IMD's On-Demand Microtransit Annual Report, please visit: [NCDOT: On-Demand Microtransit](#).



## What are SAE Level 4 AVs?

SAE Level 4 AVs are self-driving within a geofenced area on a predetermined route and under conditions that the vehicle's hardware and software are designed to handle. An AVO will be on board to take over driving tasks when operating outside of these conditions and is trained to assist passengers, including wheelchair users.



**CREATE will build on the existing Wilson RIDE on-demand service powered by conventional vehicles by deploying five (5) SAE Level 4 AVs to meet unmet needs.**

## Real-World Issues and Challenges Addressed

Transportation challenges in Wilson prevent underserved and transportation disadvantaged residents from accessing essential services; challenges are exacerbated by geographic, racial, and economic inequities. **CREATE** will address disparities in the availability of affordable, reliable, and useful public transportation in a rural context. The Project will remove barriers to opportunity by providing equitable access to education, healthcare, and employment through on-demand and prescheduled transit. Through a creative, adaptable, and responsive service, **CREATE** will enhance local economies and meaningfully improve quality of life while allowing the community to learn about, engage with, and provide feedback on how advanced transportation technologies can best meet their needs.

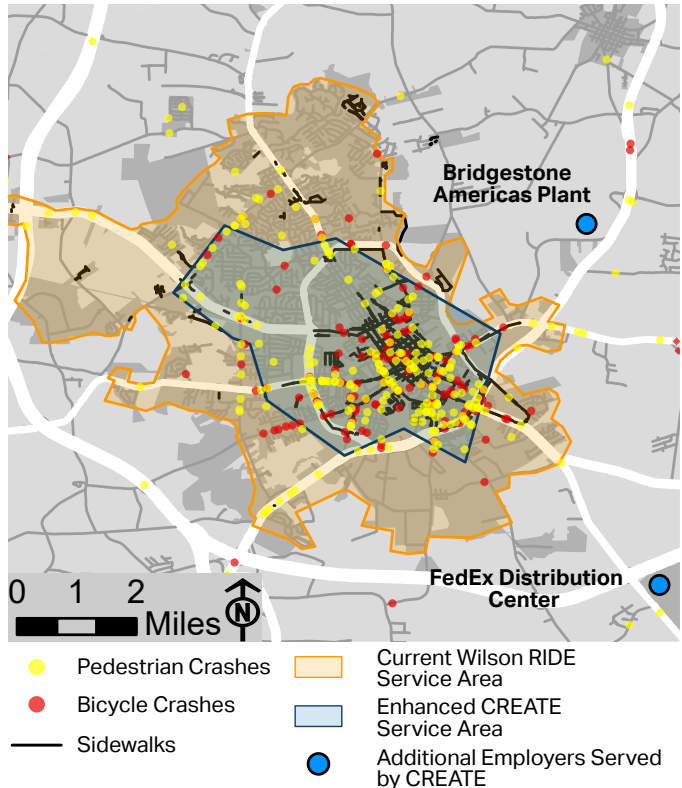
### Reduced Traffic-Related Fatalities and Injuries

[NCDOT data](#) indicates that the City of Wilson recorded 9,300 crashes between 2018 and 2022. **CREATE** will deploy five (5) AVs within a service area that encompasses many of the City's crash concentration areas. AVs have the potential to improve safety for transit riders and road users by removing the element of human error, which is the source of a majority of crashes (see **Project Alignment with Program Vision, Program Goals, the Administration's Priorities and DOT Focus Areas**). The AVs will have onboard AVOs that will serve as a safety fallback to the automated vehicle technology and will take over driving as needed.

According to [NCDOT data](#), between 2007 and 2022, the City of Wilson recorded 176 crashes involving a pedestrian and 107 crashes involving a bicyclist. Major destinations such as the Bridgestone Americas Plant, the FedEx Distribution Center, and the Triaga, Inc. tobacco processing facility are located along major roadways that do not have sidewalks. Approximately 60% of roadways within the on-demand service zone and along routes to Bridgestone and FedEx do not have sidewalks. Access to employment and other opportunities for zero-vehicle households can be limited or

dangerous without reliable, affordable, and convenient transportation alternatives. **CREATE** will reduce bicycle and pedestrian-related traffic fatalities and injuries by expanding the coverage, service hours, and the number of vehicles available to support populations that rely on transit to safely reach their destinations.

Bicycle and Pedestrian Crashes in Wilson, NC, 2007-2022



### Supporting Transit Riders with Disabilities

Transit is a critical form of transportation for individuals who are not able to drive due to a physical, developmental, or other form of disability. In the City of Wilson, 15% of the population reports a disability, and Wilson is home to [Diversified Opportunities, Inc.](#), an organization that supports individuals with disabilities by offering vocational training and day support (see **Demographic Snapshot Tool on the Project Webpage**).

Building on objectives and strategies in the Wilson RIDE EAP and MEE NC EAP, the Project will develop its own, tailored EAP to ensure individuals with a disability or who require



additional assistance are proactively considered and accommodated. Based on feedback from Wilson’s existing microtransit service, **CREATE** will offer a prescheduling option that would allow caretakers to assist in booking rides in advance. In addition, the Project will deploy accessible AVs with ADA-compliant wheelchair ramps and trained onboard AVOs to ensure riders can use the transit service conveniently, safely, and comfortably.

## Access to Transportation Alternatives

Transportation costs are the second highest annual expense for households in the United States. According to [2022 Bureau of Transportation Statistics data](#), transportation cost burden is highest for the lowest income households, and rural households often spend more on transportation given the longer distances traveled to reach destinations. Volatile fuel prices and maintenance costs can also make vehicle ownership a challenge. In Wilson, nearly 11% of households do not have access to a vehicle – a rate significantly higher than 6% within the state. Furthermore, a 2017 [American Public Transportation Association \(APTA\) report](#) indicates that nearly 70% of Americans who depend on transit made less than \$50,000 annually. The average median income in the City of Wilson falls below this threshold at \$46,146 (see **Demographic Snapshot on the [Project Webpage](#)**).

Access to reliable and affordable transportation alternatives is crucial to equitably connect community members to opportunities. **CREATE** will improve transit options for low-income residents and zero-vehicle households across Wilson by expanding the service area, service

hours, and will supplement the existing on-demand transit service with the functionality to preschedule trips for added convenience.

## Access to Employment and Essential Services

Transportation systems in North Carolina often struggle to provide adequate access to employment and economic opportunities. Oftentimes, existing transit options do not serve shift workers outside of regular work hours or those with unpredictable schedules. Employment centers may be within the transit service area, but employees often begin or end their shifts outside of the service’s hours of operation. Not only does this present a problem for the employee, but it also presents a problem for the employer since transportation limitations make it difficult to hire and retain employees for late and early shifts. In 2022, Stephen Feamster, Human Resource Manager at Wilson’s Bridgestone Americas Plant, reported seeing multiple employees lose their jobs because they were unable to find reliable transportation to their shift. **CREATE** will expand the service hours and introduce two (2) conventional vehicles to serve major employers like the Bridgestone Americas Plant and FedEx Distribution Center that are on high-speed roadways where AVs cannot currently operate.

In addition, existing Wilson RIDE customers who rely on transit to access community college/ education, employment, medical appointments, and other time-sensitive, preplanned trips would like the option and security of scheduling rides in advance. The Project will also pilot new functionality for riders to preschedule trips, the first for an AV deployment.



# Project Technologies and Alignment with Program Goals, Administration’s Priorities, and DOT Focus Areas

## Proposed Technology

Technologies Implemented/Addressed by Application	
1. Advanced traveler information systems	✓
2. Advanced transportation management technologies	
3. Advanced transportation technologies to improve emergency evacuation and response by Federal, State, and local authorities	
4. Infrastructure maintenance, monitoring, and condition assessment	
5. Advanced public transportation systems	✓
6. Transportation system performance data collection, analysis, and dissemination systems	✓
7. Advanced safety systems, including V2V and V2I communications, technologies associated with automated vehicles, and other collision avoidance technologies, including systems using cellular technology	✓
8. Integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems	
9. Integrated corridor management systems	
10. Advanced parking reservation or variable pricing system or system to assist trucks in locating available truck parking	
11. Electronic pricing, toll collection, and payment systems	
12. Technology that enhances high occupancy vehicle toll lanes, cordon pricing, or congestion pricing	
13. Integration of transportation service payment systems	✓
14. Advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals	✓
15. Retrofitting DSRC technology deployed as part of an existing pilot program to C-V2X technology, subject to the condition that the retrofitted technology operates only within the existing spectrum allocations for connected vehicle systems	
16. Advanced transportation technologies, in accordance with the research areas described in section 6503 of Title 49	✓

**CREATE** addresses seven of the ATAIN technology areas. Technologies 2, 3, 4, 8, 9, 10, 11, 12, and 15 are not applicable to the Project.

### Advanced Traveler Information Systems (Technology #1):

**CREATE** will use Via’s software platform, which considers real-time factors such as weather, traffic conditions, and rider demand to support riders in making informed decisions on the best time and route to use to reach their destinations.

### Advanced Public Transportation Systems (Technology #5):

**CREATE** will support the City of Wilson in managing and optimizing the RIDE microtransit service by leveraging Via’s software platform to pool riders to maximize both AV and conventional vehicle utilization. The software platform will adjust routes and rider-assignment to minimize wait time, trip duration, and vehicle dwell time.

Via's software will also schedule rides, dispatch vehicles, and notify riders of service updates, allowing administrators to spend less time on labor-intensive manual tasks.

#### **Transportation System Performance Data Collection, Analysis, and Dissemination Systems (Technology #6):**

Via will provide the technology and software tools for managing the Project's on-demand and prescheduled transit services. Via's software platform includes comprehensive data capture, analytics, and reporting capabilities that will allow the Project Partners to track key metrics to continuously optimize its service. Comprehensive data reports, including streamlined National Transit Database (NTD) and Federal Transit Administration (FTA) reporting, can be queried and filtered for specific insights or monitored through a dashboard interface to review ongoing service performance. This web-based interface summarizes key performance metrics, including on-time performance, app downloads, ride requests, completed rides, active riders, rides per vehicle hour (utilization), and trip length/duration.

The platform also includes rider polling capabilities to enable NCDOT and Project Partners to better understand rider preferences, including attitudes and experience with automated vehicle technology. The platform's data generator provides more than a dozen raw data tables that can be used to conduct original analyses and more in-depth examinations of data for defined time periods. This robust platform will allow partners to make data-driven changes to service parameters and measure the efficacy of marketing campaigns and rider engagement strategies.

#### **Advanced Safety Systems (Technology #7):**

May Mobility's automated driving system, the Autonomous Driving Kit (ADK), will be installed in each Toyota Sienna Autono-MaaS (S-AM) vehicle. Each ADK will include a suite of sensors that combine LiDAR, radar, cameras, multi-band GPS, and inertial measurement units to create a 360-degree view around each vehicle. May Mobility's Multi-Policy Decision-Making (MPDM) system will support sensor data processing; MPDM uses emergent intelligence

and agent-based modeling strategies to provide a decision-making framework that allows AVs to safely handle the full breadth of circumstances that could be encountered on the road.

MPDM runs simulations of how all agents in the environment will react to different actions in milliseconds and directs vehicular behavior based on a quantitative analysis and scoring of potential outcomes.

#### **Integration of Transportation Service Payment Systems (Technology #13):**

The Project will be fare free; however, the Via application can integrate fare payment and has collection capabilities that will reduce boarding time, increase payment options, provide improved passenger experiences, and enhance data collection. Should the fare free option change, additional payment options will be provided for riders who do not have bank accounts and/or internet access. This practice would follow the Equity and Accessibility Plan (EAP) that is developed for the Project.

#### **Advanced Mobility and Access Technologies (Technology #14):**

**CREATE** will use advanced transit technology to support its dynamic ridesharing and information systems and support the needs of elderly and disabled individuals. Via's software platform includes algorithms that optimally assign routes and manage shared on-demand fleets. The platform includes a smartphone rider application that enables on-demand ride booking, tracking, driverless onboarding, fare payment and collection, and customer support within an easy-to-use and Web Content Accessibility Guidelines (WCAG)-compliant interface. The additional option for prescheduling trips as part of this Project will further enhance the service for the elderly and disabled, particularly in cases where riders require assistance in booking their trips. The Project EAP will identify any additional needs specific to elderly and disabled riders.

#### **Advanced Transportation Technology (Technology #16):**

**CREATE** will deploy May Mobility's S-AM minivan platform, a hybrid electric vehicle with innovative features that include:

- Speeds up to 30 mph in SAE Level 4



autonomy operating in mixed traffic. Vehicle mapping processes and operations do not require installation of specialized infrastructure or changes to the physical environment such as special lanes, new rights of way, or external sensors and data.

- The standard S-AM vehicle accommodates up to five ambulatory passengers. The accessible S-AM vehicle accommodates one wheelchair user plus two ambulatory passengers or four ambulatory passengers. All vehicles will include an onboard AVO

trained to assist riders, including wheelchair users and others with mobility limitations.

- Compliant with Federal Motor Vehicle Safety Standards (FMVSS) and applicable Federal Motor Carrier Safety Regulations (FMCSR). May Mobility's USDOT Number is 3214223. The vehicles have an automated driving system, Original Equipment Manufacturer-quality hardware, and purpose-built Drive-by-Wire (DbW) system designed for the future of autonomous transportation.

## Alignment with ATTAIN Program Goals

Program Goal Implemented/Addressed by Application	
1. Reduction in the number and severity of traffic crashes and an increase in driver, passenger, and pedestrian safety;	✓
2. Delivery of economic benefits by reducing delays, improving system performance and throughput, and providing for the efficient and reliable movement of people, goods, and services;	✓
3. Demonstration, quantification, and evaluation of the impact of these advanced technologies, strategies, and applications towards improved safety, efficiency, equity, and sustainable movement of people and goods;	✓
4. Improvement in the mobility of people and goods;	✓
5. Improvement in the durability and extension of the life of transportation infrastructure;	
6. Reduced costs and improved return on investments, including through the enhanced use of existing transportation capacity;	✓
7. Protection of the environment and delivery of environmental benefits that alleviate congestion and streamline traffic flow;	✓
8. Measurement and improvement of the operational performance of the applicable transportation networks;	✓
9. Collection, dissemination, and use of real-time transportation-related information including, but not limited to, work zone, weather, transit, and paratransit, to improve mobility, reduce congestion, and provide for more efficient and accessible, and integrated transportation, including access to safe, reliable, and affordable connections to employment, education, healthcare, freight facilities, and other services;	✓
10. Facilitating account-based payments for transportation access and services and integrating payment systems across modes;	✓
11. Monitoring transportation assets to improve infrastructure management, reduce maintenance costs, prioritize investment decisions, and ensure a state of good repair;	
12. Accelerated deployment of V2V, V2I, vehicle-to-pedestrian, and technologies associated with automated vehicle applications and other advanced technologies;	✓
13. Integration of advanced technologies into transportation system management and operations;	✓
14. Reproducibility of successful systems and services for technology and knowledge transfer to other locations facing similar challenges;	✓
15. Incentivizing travelers— (I) to share trips during periods in which travel demand exceeds system capacity; or (II) to shift trips to periods in which travel demand does not exceed system capacity.	✓

**CREATE** addresses or aligns with 13 ATTAIN program goals. Goals 5 and 11 are not applicable to the Project.

### Increased driver, passenger, and pedestrian safety (Goal #1):

[Human error contributes to 90%](#) of crashes, and [nearly half of all fatal crashes](#) occur on rural roads. **CREATE**'s AV deployment will improve safety for all road users in Wilson by lowering the potential for human factors such as fatigue and distraction that lead to crashes. A [2021 study](#) estimated that the replacement of conventional light vehicles with AVs would reduce fatal crashes by 56% and injury-related crashes by 46%. On-demand ridesharing has also been shown to improve safety for all users. A [2022 study](#) found that Via's on-demand service in Arlington, TX significantly reduced traffic crashes across the citywide service zone.

### Delivery of economic benefits (Goal #2):

**CREATE** will strengthen rural economies by bolstering their connections to employment opportunities, expanding service hours to better serve shift workers, reducing wait times, and improving travel time reliability. Specifically, the Project will expand coverage to the Bridgestone Americas Plant, which employs over 1,800 people, and to the new FedEx Distribution Center, which is expected to employ 200 workers when the facility opens in 2024. In addition, the Project will create will create 21 to 26 highly paid, technologically related jobs associated with the **CREATE** operation and maintenance activities.

### Demonstration, quantification, and evaluation of the impact of advanced technologies (Goal #3):

**CREATE** will deploy software tools that include comprehensive data capture, analytics, and reporting capabilities to track key performance metrics and service indicators. These tools will include rider survey capabilities to enable NCDOT and Project Partners to better understand rider preferences, including perceptions, attitudes, and experiences with AV technology. Robust data capture and reporting will facilitate meaningful comparative analyses before and after the deployment and to conventional vehicles.

### Improvement in the mobility of people (Goal #4):

**CREATE** will fill existing transit gaps, expand service coverage, increase service hours, reduce wait and travel times, and meet the needs of the local workforce and residents.

### Reduced costs and improved return on investments (Goal #6):

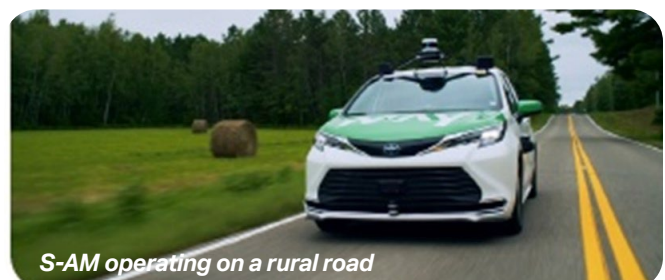
**CREATE** will optimize existing transportation capacity and reduce transportation costs by increasing service coverage, improving on-time performance, reducing wait times and trip durations, and reducing costs per hour compared to the existing microtransit service through an expanded and enhanced on-demand transit service that uses both AV and conventional vehicles. Costs from employees missing work and employers not being able to hire or retain staff due to transportation challenges will be reduced because of **CREATE**. The Project will leverage and build on successful investments in on-demand transit services in North Carolina, specifically Wilson RIDE.

### Protection of the environment (Goal #7):

**CREATE** will reduce greenhouse gas (GHG) emissions by encouraging pooled transit trips that would have otherwise been taken by single-occupancy vehicles (SOVs) and deploying hybrid electric AVs that reduce fuel consumption. **CREATE** will add five (5) hybrid electric AVs to Wilson's transit fleet.

### Measurement and improvement of the operational performance of the applicable transportation networks (Goal #8):

**CREATE** will allow transit system staff to better monitor and optimize the service in real time through the Via performance dashboard.



### Collection, dissemination, and use of real-time traffic-related information (Goal #9):

Vehicle technology and app-based features will help riders see the location of their requested vehicle and receive updates for pick-up and drop-off requests in real time. This improvement in transit reliability and reduction in trip planning and wait time will likely increase ridership, especially in off-peak periods. Additionally, May Mobility's technology provides real-time fleet data for researchers, for system operators, and administrators.

### Facilitating account-based payments for transportation access and services and integrating payment systems across modes (Goal #10):

**CREATE** will use Via's software platform, which would allow riders to pay for their rides, should a fare be charged in the future. Options for fare payment outside of the app would be made available for riders who do not have bank accounts and/or internet access.

### Accelerated deployment of technologies associated with automated vehicles (Goal #12):

**CREATE** will accelerate the deployment of AVs in North Carolina. The Project will demonstrate the S-AM, which is a FMVSS-compliant, hybrid electric minivan equipped with an Autonomous Driving Kit (ADK). The ADK includes LiDAR, sensors, and multi-policy decision making (MPDM) technology. MPDM allows for greater scenario planning and scalability across multiple locations. The S-AM will also be equipped with a purpose-built drive-by-wire (DbW) system that will support future attendant free operations in anticipation of fully driverless service as the technology improves.

### Integration of advanced technologies into transportation system management and operations (Goal #13):

**CREATE** introduces an improved and advanced ride-request system through Via's transit technology platform that includes web-based and smartphone applications tailored to the needs of riders, AVOs, service operators, and administrators. **CREATE** will add the ability for prescheduled trips in response to community feedback and needs.

### Reproducibility of successful systems and services (Goal #14):

Via and May Mobility have extensive experience delivering automated on-demand services. May Mobility has delivered over 350,000 public autonomous rides, and Via has deployed transit technology for 700 partners in 40 countries, providing 150 million rides. **CREATE** builds on the success and lessons learned from Via and May Mobility's automated, on-demand transit pilots in Fishers, IN, Arlington, TX, and Grand Rapids, MN. **CREATE** will produce reports and guidance highlighting challenges, successes, lessons learned, and indicators for AV readiness to support knowledge and technology transfer to other locations facing similar challenges.

### Incentivizing travelers (Goal #15):

**CREATE** will incentivize riders to share trips or shift trips to periods in which travel demand does not exceed system capacity by showing riders longer wait times through the app and offering discounts to the second rider of pooled trips. Via's algorithm dynamically adjusts pooling parameters to optimize trip distance, utilization, efficiency, and accounts for the likelihood of another trip where a rider will be dropped off.



Riders boarding May Mobility vehicle



## Alignment with the Administration's Priorities

Administration's Priorities Implemented/Addressed by Application	
1. Safety	✓
2. Climate Change and Sustainability	✓
3. Equity	✓
4. Workforce Development, Job Quality, and Wealth Creation	✓

**CREATE** addresses or aligns with all four of the Administration's priorities.



### Safety (Priority #1):

**CREATE** supports the Safer People, Safer Vehicles, Safer Roads, and Safer Speeds elements of USDOT's National Roadway Safety Strategy's (NRSS) Safe Systems Approach to provide holistic and comprehensive safety benefits for all users. The Project will incorporate May Mobility's automated driving system (known as an "Autonomous Driving Kit" or ADK) and Multi-Policy Decision-Making (MPDM) system in each AV. The ADK system will allow for a 360-degree view around each vehicle, and coupled with the MPDM decision-making framework, **CREATE** vehicles will be equipped to navigate diverse environments to protect drivers, riders, pedestrians, bicyclists, and other vulnerable road users in Wilson (see **Real-World Issues and Challenges Addressed**). Furthermore, the **CREATE** team will work with emergency management personnel to both educate them on automated vehicle operations and safety protocols, while also understanding the needs of first responders in rural environments.

transit service that encourages pooled trips, a lower carbon travel mode compared to single occupancy vehicle travel.

Additionally, **CREATE** will deploy five (5) hybrid electric AVs that will produce fewer GHG emissions compared to traditional fossil fuel vehicles and that operate more efficiently than conventional vehicles. Human driving behavior creates stop-and-go traffic through oscillations in braking and accelerating. A [Rutgers University study](#) found that AVs could decrease overall fuel consumption of all traffic by 40% by dissipating stop-and-go waves characteristic of human driving. **CREATE**'s deployment of AVs will reduce fuel consumption and subsequently further reduce GHG emissions.

Finally, employment centers like the Bridgestone Americas Plant operate on shift schedules, which creates congestion challenges at specific times during the day. Ridesharing will reduce the number of vehicles arriving for each shift, which will reduce travel times and decrease emissions associated with idling during traffic backups.



### Climate Change and Sustainability (Priority #2):

The transportation sector is responsible for the largest share of GHG emissions in the state, accounting for [35.9% of emissions between 2005 and 2018](#). GHG emissions degrade local air quality, exacerbate poor health outcomes, and drive global climate change processes. **CREATE** aligns with North Carolina Governor Roy Cooper's [Executive Order No. 246](#), which aims to reduce state GHG emissions to 50% below 2005 levels by 2030, by increasing the use of an on-demand

**CREATE** will support the federal Justice40 Initiative and its goals to implement clean transit projects that benefit disadvantaged populations. By reducing GHG emissions through the deployment of hybrid electric AVs and increasing fuel efficiency for all traffic, **CREATE** will improve local air quality within local environmental justice communities in Wilson and reduce the disproportionate, negative environmental impacts of transportation these populations experience (see **Project Location**).



### Equity (Priority #3):

**CREATE** will improve the RIDE transit service across Wilson and enhance the quality of life for people through safer, affordable, reliable, and convenient access to essential destinations and services. Through the deliberate and informed selection of the service area, the Project will distribute benefits equitably to communities that have been historically disadvantaged. **CREATE** will provide new and expanded on-demand transit services for 9 HDCs, 9 APPs, 2 OZs, and nearly 60,000 BIPOC residents across Wilson (see **Project Location**).

For many transit-dependent households, **CREATE** will improve equity and quality of life by expanding Wilson's existing microtransit service area to increase access to more employment opportunities and expand service hours to accommodate shift workers. The expanded

"I have central blindness in both eyes, right peripheral blindness in my right eye, and a nystagmus which means my eyes bounce involuntarily. While at my last visit, one of my medical doctors informed me that I would not be able to safely drive. As someone who is very independent, this was very hard for me to hear much less accept. I have never let my vision deter me from chasing my dreams. Currently, I am relying on my parents for transportation, but as they are also working professionals, I want a way to be independent and able to drive myself. I know that May Mobility is one of the leading companies in self-driving technology (and in making positive changes in the world as a whole) and I am hoping you can help me overcome my challenges of driving and reach my dream of making an impact on the world."

- Laine Herring,  
Miss Central North  
Carolina's Outstanding  
Teen 2017



service area will also provide better access to grocery stores, thereby improving access to healthy food for residents in Wilson's two [USDA designated](#) food deserts. Riders will also be able to reach educational opportunities at locations such as Wilson Community College and Barton College as well as healthcare facilities for those seeking non-emergency medical care.

**CREATE** will provide equitable transit access for riders who use mobility devices and require accessible vehicles. Wheelchair users and other riders who require special accommodations may have previously experienced challenges or delays while waiting for an accessible vehicle.

**CREATE** will provide accessible vehicles and trained AVOs to ensure that all riders can safely and comfortably reach their destinations.

**CREATE** will proactively engage with the disability community in Wilson from planning through deployment to ensure that riders with disabilities can learn about, provide feedback on, and best be served by the Project.

**CREATE** will support riders who require assistance in booking trips through a prescheduling option. Feedback from the existing RIDE service indicates that this functionality would allow caretakers to schedule trips on behalf of riders who require special assistance. The Project will include options for scheduling trips through a call center so community members without access to smartphones, computers, and/or the internet can still be connected to employment, healthcare, education, and social opportunities. These options will be further developed through the EAP. According to a survey of RIDE customers, a significant percentage (18%) scheduled rides through the call center. If fares are charged in the future, alternative payment options would be provided so that riders who are unbanked and underbanked may still access and enjoy the same benefits.

Residents will have opportunities to learn about and review the service throughout the different phases of public engagement (see **Public Engagement Plan** in [Exhibits and Attachments](#)).

**CREATE** protects the safety of travelers in Wilson by expanding and enhancing transit options in areas not adequately served by sidewalks and



bike lanes or paths. According to [NCDOT data](#) for crashes in Wilson that involved pedestrians and bicyclists in 2019, 64% of the pedestrians identified as BIPOC and 60% of bicyclists identified as BIPOC. These numbers highlight bicycle and pedestrian safety as an equity issue. Research, including [a study investigating disparities in pedestrian streetscape environments](#), shows that neighborhoods with higher concentrations of lower-income and BIPOC populations tend to have fewer or poorer quality sidewalks and bike lanes or paths. The Project will create a safer and more equitable multimodal transportation system by expanding Wilson’s existing microtransit service area, adding more service hours, and deploying AVs plus additional conventional vehicles. The Project will support a new transit option to previously unconnected key destinations that are challenging and dangerous to access by walking or biking.

Lastly, **CREATE** will continue to foster NCDOT’s research partnership with North Carolina Agricultural and Technical State University (NC A&T), the largest Historically Black Colleges and University (HBCU) in the United States. The Project will build on efforts like the NC-CAV (see **Project Partners**) to provide academic and professional development opportunities for students of color in Science, Technology, Engineering and Mathematics (STEM) and technology fields locally and nationally.



**Workforce Development, Job Quality, and Wealth Creation (Priority #4):**

**CREATE** will promote job creation and economic growth in Wilson by supporting the APPs, HDCs, and other transportation disadvantaged populations that exist through an enhanced on-demand transit service that improves connectivity and access to employment centers and creates 21 to 26 new jobs related to the Project’s operation.

**CREATE** will provide on-demand transit service to major employment centers that were previously not served or underserved by transit (see Real-World Issues and Challenges

Addressed). The Project will expand the service area to the Bridgestone Americas Plant and improve access to other employment hubs, such as the new FedEx Distribution Center and the Triaga, Inc. tobacco processing facility (see **Project Location**).

The Project will create new jobs related to day-to-day management and operations. Via will recruit drivers from within the community for independent contractor positions, which stimulates economic opportunity. Together, the team will identify promising recruitment sites and will leverage local job boards and social media to identify drivers. The Project will also create workforce opportunities by investing in driver and dispatcher onboarding, thus developing the local workforce’s long-term employability by fostering transferable skills. May Mobility will open a office in Wilson, which will be staffed locally to support the day-to-day operations of the on-demand transit services. Additionally, 15 AVOs and at least 2 drivers for the conventional vehicles will be hired to support deployment. In total, it is estimated that the Project will create 21 to 26 new jobs: 15 to 20 AVOs, 1 site manager, 2 site supervisors, 1 technician, and 2 conventional vehicle drivers. These positions will benefit from May Mobility’s **living wage commitment** (see [Exhibits and Attachments](#)).

**The Project will create:**





## Alignment with DOT Focus Areas

Administration's Priorities Implemented/Addressed by Application	
1. State of Good Repair	✓
2. Integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems	
3. Advanced public transportation systems	✓
4. Freight (or Port) Community Systems	
5. ROUTES Initiative	✓
6. Complete Trip Program	✓
7. Data Availability	✓

**CREATE** addresses or aligns with five DOT focus areas. Focus areas 2 and 4 are not applicable to the Project.

### State of Good Repair (Focus Area #1):

**CREATE** will modernize public transportation in Wilson, a rural community in North Carolina, lowering the average age of vehicle fleets and extending the useful life of trip planning software that allows for continuous updates to maintain a state of good repair.

### Advanced public transportation systems (Focus Area #3):

**CREATE** will integrate AVs and robust software platforms to optimize the provision of public transportation and mobility services. The software platform deployed in each community will provide dynamic, responsive transit services by allowing riders to request rides on demand instead of having to schedule trips days in advance, which is essential for providing equitable mobility that is responsive to community needs. The software platform will also assign and route vehicles based on real-time traffic conditions and rider demand to optimize fleet efficiency and quality of service.

### ROUTES Initiative (Focus Area #5):

**CREATE** addresses the unique challenge of providing public transportation in rural communities, improving reliable, convenient, and affordable mobility for transportation disadvantaged rural users and promoting economic vitality through improved access

to employment centers. The flexibility of on-demand transit allows Wilson to more easily provide the critical connections between residents and new employers as they continue to move to the region.

### Complete Trip Program (Focus Area #6):

**CREATE** will develop and deploy integrated and replicable mobility solutions for curb-to-curb trips to enable more efficient, affordable, and accessible transportation options for low-income travelers, rural travelers, and travelers with disabilities. **CREATE** will deploy accessible vehicles equipped with an ADA-compliant wheelchair ramp with interfaces designed to be fully accessible in accordance with WCAG standards. The vehicles can comfortably carry a person using a wheelchair, and AVOs are trained to assist wheelchair users and others with mobility limitations. May Mobility advanced this first-of-its-kind vehicle design through the Ann Arbor Automated Accessibility initiative as an [USDOT Inclusive Design Challenge semifinalist](#).

### Data Availability (Focus Area #7):

**CREATE** supports transparency and will analyze and publish its data, findings, and lessons learned for public and FHWA review. The USDOT-compliant DMP will detail the key components for data management: collection, documentation, sharing, access, storage, and preservation.

## Alignment with the Intelligent Transportation Systems (ITS) Joint Program Office's High-Priority Research Areas

**Automation:** CREATE is a partnership between NCDOT and the City of Wilson in the public sector, NC A&T in the academic sector, and May Mobility and Via in the private sector. The Project Partners will collaborate to pilot AVs in parallel with robust public engagement to gain community buy-in and trust around the technology. The Project outcomes will also be compared against the system's conventional vehicles to highlight the safety, environmental efficiency, and mobility benefits of the automated vehicles.

**Accelerating ITS Deployment:** CREATE will compare rider behaviors and preferences by piloting AVs alongside conventional vehicles in an on-demand transit service. The Project will also be the first of its kind to pilot prescheduled rides using AVs. The findings will provide best practices and lessons learned to accelerate the deployment of AVs across transit systems nationwide, particularly for paratransit riders.

**ITS4US:** CREATE will support the nearly 12% of zero-vehicle households in the rural community of Wilson by extending the RIDE microtransit service area to reach employment hubs, thereby promoting access to economic and wealth building opportunities.

**Data Access and Exchanges:** CREATE leverages Via's unique software system combined with a robust DMP for comprehensive data collection and reporting on rider behavior, preferences, and trip patterns. The Project will also pair the quantitative findings with qualitative feedback from rider surveys and additional community engagement. The resulting data will be shared with USDOT to inform future investment decisions, accelerating deployment of AVs and innovative ITS technologies.

The Project will pilot a prescheduling option with the deployment of accessible vehicles to support riders with disabilities who require additional assistance and accommodations to reach their destinations.

### Enabling and Emerging Technologies:

CREATE and the data that it produces will assist USDOT in developing implementation models that support system flexibility. CREATE will meaningfully contribute to USDOT's research efforts by partnering with NC A&T to analyze findings from the Project and distilling them to best practices so that state and local agencies can adopt and draw on next-generation technologies to improve their transit offerings.

The Project will be the first of its kind to pilot prescheduled rides using automated vehicles.



# Transportation Systems, Services, and Partners Included in the Project



## NCDOT

NCDOT will serve as the ATTAIN 2023 applicant and recipient responsible for administration of the grant if selected for award and will provide program management and oversight of project delivery. NCDOT will leverage its extensive experience completing successful TIGER, BUILD, RAISE, NSFLTP, and INFRA projects and administering federal transit and rail funding to reduce and mitigate risk. NCDOT will also leverage its expertise in automated vehicle pilots developed through the Connected Autonomous Shuttle Supporting Innovation ([CASSI](#)) program to ensure **CREATE** builds on the lessons learned while providing useful transit service that engages the public with new technologies and enables further testing and evaluation. NCDOT understands USDOT's requirements and maintains the records and accounting systems that will allow it to comply with the ATTAIN program's reporting and administration requirements. **CREATE** aligns closely with NCDOT's core goals to provide leadership for safe, affordable, and innovative multimodal transportation throughout North Carolina. To deliver **CREATE**, NCDOT will work closely with Wilson RIDE to improve mobility and system performance in the City of Wilson.



## May Mobility

May Mobility was founded in 2017 with a vision to transform communities through autonomous transportation solutions that create a safer, greener, more accessible world. May Mobility has deployed automated transit vehicles in 10 cities across the United States and provided more than 350,000 publicly available rides as of January 2024. To deliver **CREATE**, May Mobility will lead public education and engagement efforts and will work with the Project Partners to refine the proposed transit

service based on local input. May Mobility will collaborate closely with Via to develop software platforms and engage the public following the Public Education Plan (see **Public Engagement**). The AVs must be stored in a covered facility, and May Mobility has budgeted for and will coordinate their vehicle storage. May Mobility will also conduct preventative and emergency maintenance on the AVs, and Via will provide maintenance on the conventional vehicles.



Via is the world's leading provider of public mobility solutions, including on-demand transit. Via partners with cities and transit agencies across the globe, harnessing the power of data to optimize their networks that vary in size, population density, and service models. To deliver **CREATE**, Via will configure its system to meet the Project's goals while bringing global expertise to bear on local challenges. Leveraging their best-in-class transit technology platform, Via successfully designs, deploys, and operates AVs in on-demand transit services. Via is the only mobility company with direct experience deploying AVs across a variety of vehicle form factors, geographies, and transit use cases to provide tens of thousands of autonomy-enabled transit rides around the world on public roads in mixed-traffic settings. Via will develop software platforms for use in Wilson and collaborate closely with May Mobility on service marketing and rider engagement efforts, including the development of rider engagement strategies, creative assets, digital and print marketing, and public relations to promote the new transit options. Via will also provide on-demand service using conventional vehicles within Wilson, conduct app-based rider surveys, and collect data for analysis and review.







## North Carolina Agricultural & Technical State University (NC A&T)

NC A&T is the largest four-year HBCU in the country. NC A&T is currently partnering with NCDOT's Research and Development Unit to lead the North Carolina Transportation Center of Excellence in Connected and Autonomous Vehicle Technology (NC-CAV) and additional research projects focused on connected and automated vehicles. The goal of NC-CAV is to establish a multidisciplinary Center of Excellence in "Advanced Transportation Technologies" to investigate the adoption, utilization, and deployment of CAVs and their impacts on the transportation system in North Carolina and the nation. Through NC-CAV and their other NCDOT-supported research projects, NC A&T is developing shared autonomous vehicles and an innovative rural test track, and recently completed an automated shuttle pilot in Greensboro, NC. **CREATE** will build on this partnership by including NC A&T faculty and students to assist with data analysis and evaluation of the automated microtransit service including in comparison to service using conventional vehicles. NC A&T will also help develop the final report in Phases 2 and 3. NC A&T's involvement will provide valuable insight to improve future routes and services and an academic and professional development opportunity for students to build their portfolios. Some evaluation of **CREATE**'s AV fleet may occur on NC A&T's test track.



## Community Transportation Association of America (CTAA)

[CTAA](#) is a national advocacy organization that partners with transportation providers throughout the country to improve mobility. CTAA will serve in an advisory role for **CREATE**'s public engagement activities and leverage their extensive connections in the industry to promote the Project. With CTAA's national perspective, CTAA will advise on the creation of the DMP and implementation of the Project to promote its reproducibility in diverse communities.

## Deployment Plan

### Leveraging and Optimizing Existing Local and Regional Advanced Transportation Technology Investments

[NCDOT IMD's](#) mission is to provide leadership for safe, affordable, and innovative multimodal transportation throughout North Carolina.

**NCDOT IMD's core goals are to:**

**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.

These goals are reflected in the [Connected Autonomous Shuttle Supporting Innovation \(CASSI\)](#), North Carolina's flagship automated shuttle program. NCDOT launched the program in 2019 with an initial focus on testing and evaluating EasyMile's EZ10 vehicle, a fully electric, novel-design, low-speed AV. The vehicle was deployed for limited use cases in three communities, including at the Wright Brothers National Memorial for the first automated shuttle deployment at a [recreational public lands](#) site. CASSI's primary focus is to introduce new transportation technologies to the public, explore AVs as an option for first- and last-mile connections in public transit, and test connected vehicle technology at traffic signals and other infrastructure. After completing its projects with EasyMile, NCDOT partnered with Beep and Navya for [two projects in 2023](#). Navya's Autonomous vehicle was deployed with support from Beep at the Fred G. Bond Metro Park in Cary and at the University of North Carolina at Charlotte campus.

NCDOT is evolving the CASSI program to include the latest technological advancements.



NCDOT seeks to incrementally increase the complexity of future automated vehicle pilots by considering distinctly different use cases, vehicle form factors, automated driving system (ADS) technologies, and service designs and advancing the testing of connected vehicle features. NCDOT is exploring how ADS-equipped conventional vehicles can be tested and integrated into high quality, on-demand transit services that address transportation challenges. **CREATE**'s four-phase deployment plan aligns with NCDOT IMD's mission and core goals and plans for advancing automated vehicles in transit services to meet community needs.

**"NCDOT IMD**

recognizes the importance of having transit at the forefront of AV development. Otherwise, applications that focus on single-person trips will develop more quickly and leave those that rely on shared modes behind."

- Sarah Searcy, Senior Advisor for Innovation and CASSI Program Manager, NCDOT IMD



## Vision, Goals, and Objectives for Technology Deployment

Vision	Goal(s)	Objective(s)
All transportation users are accommodated safely.	Ensure safety.	<ul style="list-style-type: none"> <li>Leverage technology to improve safety and reduce crashes.</li> <li>Provide transportation alternatives to zero-vehicle households where safe pedestrian and bicyclist infrastructure is not present.</li> </ul>
No remaining transportation barriers or unmet needs with regards to time, convenience, cost, or safety.	Increase access. Reduce transportation costs.	<ul style="list-style-type: none"> <li>Promote alternate mode choice in ridesharing.</li> <li>Increase fleet size to serve more transit dependent riders.</li> <li>Lower transportation costs through fare-free public transit options.</li> <li>Provide options for riders without access to bank accounts and/or internet access.</li> </ul>
Deploy technologies leveraging innovative system integration strategies to create a more equitable and efficient transportation network that is also safer and more affordable.	Promote environmental justice and equity.	<ul style="list-style-type: none"> <li>Remove mobility barriers for individuals in disadvantaged communities.</li> <li>Utilize accessible vehicles and onboard operators who are trained to assist riders.</li> <li>Add prescheduling options, particularly for riders with disabilities who need assistance with booking.</li> </ul>
Access to employment, education, healthcare, and recreation by on-demand transit is comparable to access by personal vehicles, thereby providing economic and quality of life benefits.	Improve connectivity and resilience.	<ul style="list-style-type: none"> <li>Serve additional employers in the Wilson area.</li> <li>Offer the option for riders to choose between conventional and automated vehicles and view respective wait times through the Via platform.</li> </ul>
On-demand service is regularly evaluated, modified, and expanded based on robust quantitative and qualitative data.	Deliver high-quality service and encourage reproducibility.	<ul style="list-style-type: none"> <li>Develop a robust and comprehensive DMP.</li> <li>Share lessons learned through analysis and evaluation of service provision.</li> </ul>

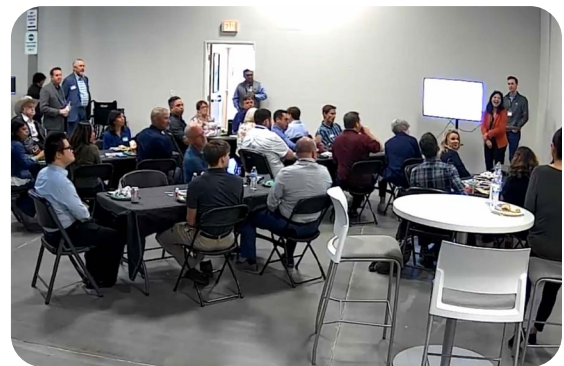
# Public Engagement

A detailed initial PEP was created for the Project to ensure extensive and equitable community engagement occurs in Wilson before, during, and following the lifecycle of the Project (see **Public Engagement Plan in Exhibits and Attachments**). The PEP will be revised and updated throughout the Project lifecycle as needed to incorporate community input and lessons learned.

May Mobility will lead **CREATE**'s public engagement efforts in collaboration with NCDOT, CTAA, and Via. Together, the Project Partners have extensive experience conducting community outreach and soliciting feedback from community members.

Input on the proposed service in Wilson will be sought prior to the deployment of the services, and engagement activities will continue post-launch to promote long-term ridership and program success. Prior to deployment, the Project Partners will perform outreach at community events, large employers to be served by the Project (such as Bridgestone Americas, FedEx, etc.), and gathering places (such as senior centers and schools) to obtain input and educate each community on the Project. This outreach will include demo days to introduce the AVs and educate the public on their operation, set expectations, and generate excitement. Outreach efforts will engage emergency management services, transit agencies, local business owners, non-profits, and community advocates to reach a larger audience and create a dialog where community needs are heard and understood. Post-deployment engagement will include distribution of educational and marketing materials, continued participation in community events, social media interactions, and rider surveys and feedback through both the software platform and at community events.

Community engagement will emphasize equitable outreach to vulnerable rider populations, including seniors, low-income individuals, and individuals with disabilities. By providing educational opportunities in each community and working with trusted local leaders, non-profit organizations, and community advocates, **CREATE**'s public engagement efforts will capture the needs and opinions of underserved populations and inform the Project's deployment approach. During post-deployment engagement efforts, rider and community surveys will be available through the rider app, online, and in paper format at public and centrally located locations such as libraries and schools.



Public engagement and AV demonstration



# Deployment Phases

The Project's deployment has four phases: Phase 0-Planning Administration, Phase 1-Deployment, Phase 2-Data Analysis, and Phase 3-Final Reporting and Closeout. **CREATE**'s project tasks are outlined below by phase:

## Phase 0 – Planning and Administration

- Phase 0 occurs following the obligation of funds and includes the procurement and equipping of vehicles, AV testing and mapping, software platform development testing, local setup, and training for drivers and AVOs. It also includes the following ATTAIN-required activities: a project kick-off meeting, plans for systems engineering, a project evaluation plan, data management plan, and quarterly progress reports.
- First, AVs will be tested for functionality on a closed-course track. Then, they will be driven on local roads to develop detailed and highly accurate high-definition maps with appropriate safety. Lastly, on-road testing on the Operational Design Domain (ODD) will occur to prepare for deployment. Any potential issues discovered will be reported and repaired before retesting prior to deployment.
- Community engagement will begin with rider education, surveys and feedback opportunities, and the launch of a rider app.
- The Project Partners will leverage feedback from community engagement and reference lessons learned and best practices from on-demand transit and AV deployment projects across the country to establish robust performance metrics. These metrics will be compared against qualitative and quantitative data throughout the **CREATE** lifecycle to proactively adjust the service parameters to meet rider needs. They will also provide a baseline against which to compare final Project outcomes. Findings will be carried forward to improve Wilson's RIDE service, where possible.

## Phase 1 – Deployment

- This phase will launch the deployment of vehicles for the on-demand service. Mixed vehicle fleets containing both automated driving system (ADS)-equipped and conventional vehicles will be deployed in Wilson.
- Community engagement will continue with public meetings, participation in community events where May and Via can educate residents about the program, social media promotion, and assorted marketing activities. Community engagement will specifically target groups through events at locations such as the senior center, employment hubs, and programs that support community members with disabilities and connecting with trusted local leaders (see **Public Engagement Plan**).
- Grant reporting and ATTAIN-required activities will continue in this phase and include a report to the Secretary, quarterly reports, and the annual budget review and program plan reporting.

## Phase 2 – Data Collection and Analysis

- **CREATE**'s software platform will include a customized data dashboard to collect, evaluate, and visualize a variety of operational data including comparisons between AVs and conventional vehicles. In this phase of the Project, NCDOT, with assistance from NC A&T and other Project Partners, will analyze the data gathered during deployment to better understand key performance metrics and the impact of AVs within the transit context, including assessing the readiness of the state, the community, the technology, and FTA for automated driving. A performance and activity report that identifies service strengths and weaknesses for improvement will be developed.
- On-demand transit services will continue to operate in Wilson.
- Community engagement will continue outreach to riders through app-based surveys and polling, community surveys to measure the efficacy of marketing and education, and in-person events at easily accessible community locations using printed educational materials as well as printed and



## Phase 2 – Data Collection and Analysis *Continued...*

electronic surveys. Rider satisfaction surveys and polls will be pushed to users through Via's app. May Mobility will also conduct surveys and host public engagement events during community-wide events.

- Grant reporting and ATTAIN-required activities will continue in this phase and include reports to the Secretary, quarterly reports, and the annual budget review and program plan reporting.

## Phase 3 – Final Reporting and Closeout

- During this phase, the preliminary report developed in Phase 2 will be synthesized into a final report that summarizes the data analyses and shares insights and lessons learned during deployment. This guidance will assist USDOT and communities across the country to effectively deploy automated on-demand services.
- Community engagement will conclude when Project Partners visit the community to show them how their previous input has influenced the progress of the program and to encourage them to continue to submit additional feedback. This final engagement will demonstrate program accountability to its riders.
- In addition to delivering the final report, the remaining ATTAIN-required activities will continue in this phase and include a report to the Secretary, quarterly reports, and the annual budget review and program plan reporting.

## Potential Challenges

Potential challenges to the deployment of **CREATE** primarily surround managing public perception about AVs and accommodating rapidly evolving technology related to AVs and on-demand transit services. **There are no legislative or regulatory challenges anticipated during the deployment of CREATE.**

### Public Perception

Public opinion and preconceived notions about AVs could be a challenge to deployment. According to a [study](#) on public perception surrounding AVs, 42% of respondents said they would never ride in a fully automated vehicle due to safety concerns. **CREATE** will be sensitive to rider concerns and other human factors when deploying new technology and will create educational materials to help bolster confidence in the service. The AVs will also have trained AVOs on board to support riders with their needs, questions, or concerns. Few people in Wilson have seen AVs in person and even fewer have experience riding in them. Robust community engagement will educate riders on the potential safety, mobility, reliability, and environmental benefits of AVs. **CREATE's** engagement and education efforts will build on North Carolinians' existing familiarity with AVs through the CASSI program (see **Deployment Plan**).

### Regulatory and Legislative Environment

**No regulatory or legislative challenges are expected for this deployment.** The legislative environment in North Carolina is supportive of AV implementation. The state of North Carolina is ready for AV testing on public roadways following [House Bill 469](#) (S.L. 2017-166). North Carolina even prohibits cities and municipalities from banning or limiting the use of AVs within their boundaries ([N.C. G.S. §20-401](#)).

### Rapidly Evolving Technology

The rapidly evolving nature of AV technology means that specifications are likely to change during the life of the Project. NCDOT has created a deployment plan that is both ambitious and flexible. **CREATE's** schedule factors in potential delays and adjustments to anticipate evolving technology and deployment requirements. For example, it is anticipated that advancements in AV technology during the project duration may enable expansion of AV routes onto higher-speed roadways. If applicable, **CREATE** will accommodate these changes through its strong working relationships between the Project Partners and in cooperation and collaboration with the Wilson community.

# Project Schedule

Prior to the obligation of funds, NCDOT will hold a preliminary kick-off meeting, develop project plans, and draft a cooperative agreement. This assumes that the award occurs in Quarter 2 of 2024 and a cooperative agreement is fully executed in Quarter 4 of 2024. NCDOT is ready to move forward immediately and would request Advance Construction (AC) funds to move the project forward as quickly as possible.

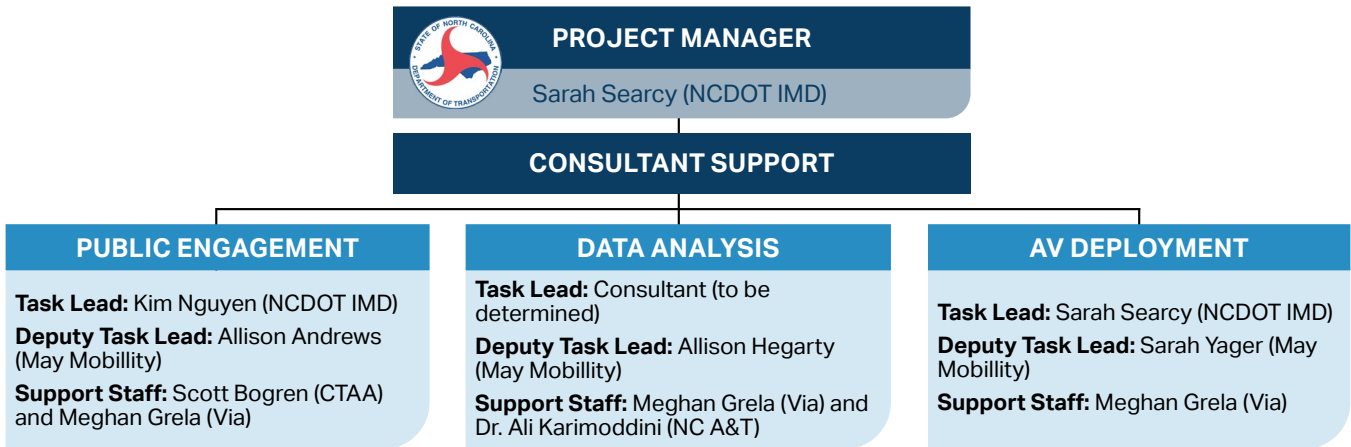
Project Component	PHASE 0				PHASE 1				PHASE 2				PHASE 3							
	2024				2025				2026				2027				2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Task 1: Grant Management &amp; Reporting (includes ATTAIN Requirements)</b>																				
Anticipated Award																				
Preliminary Kick-Off																				
Cooperative Agreement																				
Fully Executed Cooperative Agreement				★																
Kick-Off Meeting																				
Quarterly Progress Reports																				
Systems Engineering Review Form																				
Concept of Operations																				
Systems Engineering Management Plan																				
Project Evaluation Plan																				
Data Management Plan																				
Report to Secretary																				
Annual Budget Review & Program Plan																				
<b>Task 2: Public Engagement</b>																				
Public Engagement				●			●					●					●			
<b>Task 3: Deployment</b>																				
Procurement (Vehicles & Storage Facilities)																				
Planning/Design																				
Mapping																				
Employment																				
Testing																				
Deployment																				
Operations/Maintenance																				
<b>Task 4: Data Analysis</b>																				
Data Analysis																				
<b>Task 5: Final Report</b>																				
Final Report																				

★ Funding Obligation      ● Public Engagement Events



# SECTION 03: MANAGEMENT STRUCTURE

## PROJECT TEAM ORGANIZATIONAL STRUCTURE



NCDOT will serve as the ATTAIN FY 2023 applicant and recipient responsible for administering the grant if selected for award. NCDOT will leverage its extensive experience helping communities develop on-demand transit services and administering federal grant programs to reduce risk and accelerate delivery of new transit options across North Carolina. NCDOT will also leverage its expertise in automated vehicle pilots developed through the [CASSI](#) program to ensure **CREATE** builds on the lessons learned while providing useful transit service that engages the public with new technologies and enables further testing and evaluation. NCDOT IMD will provide program management and oversight, and will complete the Project Management Plan, Data Management Plan, Project Evaluation Plan, and the EAP. NCDOT IMD has experience developing USDOT-compliant DMPs and EAPs for the Accelerating Innovative Mobility and USDOT Rural Surface Transportation grants.

NCDOT IMD will contract with May Mobility (a contractor) to operate turnkey on-demand transit in Wilson. May Mobility will provide services to support **CREATE**'s public engagement, AV deployment, data collection, and analysis activities with oversight from NCDOT IMD. May Mobility will have a subcontract with Via for the development of the Project's software platform, the operation of the conventional vehicles, and rider survey data collection.

NCDOT IMD's ongoing partnership with NC A&T helped establish the North Carolina Transportation Center of Excellence in Connected and Autonomous Vehicle Technology (NC-CAV) and supports additional research projects related to connected and automated vehicles. The NC-CAV and supporting research projects' outcomes assist NCDOT in transportation policy and decision-making processes to better understand and plan for future developments. NCDOT IMD will contract with NC A&T for the provision of research and analysis tasks in Phases 2 and 3. NC A&T's participation in **CREATE** will advance the goals of NC-CAV and related work and provide professional development opportunities for students.

NCDOT IMD will also collaborate with CTAA, who will serve as advisors and advocates for **CREATE**'s public engagement activities and to promote its reproducibility in diverse communities. CTAA will leverage their extensive connections in the industry to promote the Project.

In addition, NCDOT IMD will engage a project consultant from its group of pre-approved on-call consultants to provide additional support for public engagement and preparation of the final report.

## SECTION 04: STAFFING DESCRIPTION

**CREATE** will be managed and implemented by highly qualified representatives from NCDOT IMD, May Mobility, NC A&T, and CTAA. The Project staff have a history of successful collaboration and delivery of innovative transportation solutions.

### CREATE's Task Lead for AV Deployment

As the primary point of contact, **Sarah Searcy, Senior Advisor for Innovation at NCDOT IMD**, will lead **CREATE** as Project Manager and serve as the task lead for AV Deployment.

#### **Sarah Searcy**

*Senior Advisor for Innovation*  
Integrated Mobility Division (IMD)  
North Carolina Department of Transportation

(919) 707-4694 (office)  
(252) 295-8040 (mobile)

sesearcy1@ncdot.gov

1 S Wilmington Street Raleigh,  
NC 27601-1550

Ms. Searcy has extensive experience as an applied research professional and program manager in academic and public sectors and is well qualified for the role of Project Manager. In her current role at NCDOT as Senior Advisor for Innovation, Ms. Searcy directs projects and programs that improve shared mobility options and promote transportation systems that work for everyone. Sarah manages the Connected Autonomous Shuttle Supporting Innovation (CASSI) program for NCDOT to pilot connected and automated vehicles (CAV) in partnership with communities across the state. Prior to joining NCDOT in 2021, Sarah was with the Institute for Transportation Research and Education

(ITRE) at North Carolina State University for over eight years, most recently as the Bicycle and Pedestrian Program Manager, where she led or served as key researcher on at least 35 multimodal transportation research and technical service projects for NCDOT, NC Governor's Highway Safety Program, USDOT, NHTSA, NCHRP, USACE, and other sponsors; managed the North Carolina Non-Motorized Volume Data Program (NC NMVDP) for NCDOT; and directed multiple large-scale data collection projects.

The task leads are key personnel and will oversee the on-going support and implementation of **CREATE**.

### CREATE's Task Lead for Public Involvement

In her role as a **Multimodal Regional Transportation Planner at NCDOT IMD**, **Kim Nguyen** manages multiple planning grants and supports rural communities in developing and implementing equitable plans and projects to improve safety, access, mobility, and quality of life. Ms. Nguyen works across NCDOT divisions, MPOs and RPOs, agencies, and local communities to facilitate partnerships and strengthen the planning process. With her management and outreach experience, Ms. Nguyen is well-equipped to serve as the task lead for public engagement.

### CREATE's Task Lead for Data Analysis

The data analysis will be led by the selected consultant team.

Task leads will be assisted by deputy task leads that have technical expertise to ensure the successful completion of the major project activities: public engagement, data analysis, and AV deployment. The table on the following page summarizes the key and supporting personnel.

## Key Personnel

Name	Title	Organization	Project Role	Work Time Committed (%)
<b>Task Leads</b>				
<b>Sarah Searcy</b>	Senior Advisor for Innovation	NCDOT IMD	Project Manager and Task Lead for AV Deployment	50%
<b>Consultant</b> (to be determined)			Task Lead for Data Analysis	35%
<b>Kim Nguyen</b>	Multimodal Regional Transportation Planner	NCDOT IMD	Task Lead for Public Engagement	35%
<b>Deputy Task Leads</b>				
<b>Sarah Yager</b>	Senior Business Development Manager	May Mobility	Deputy Task Lead for AV Deployment	35%
<b>Allison Andrews</b>	Community Relations Marketing Manager II	May Mobility	Deputy Task Lead for Public Engagement	35%
<b>Allison Hegarty</b>	Data Analysis	May Mobility	Deputy Task Lead for Data Analysis	35%

## Support Personnel

Name	Title	Organization	Project Role
<b>Scott Bogren</b>	Executive Director	CTAA	Support for Public Engagement
<b>Meghan Griela</b>	Associate Principal	Via	Support for Public Engagement, Data Analysis, and AV Deployment
<b>Dr. Ali Karimodini</b>	Director, NC-CAV	NC A&T	Support for Data Analysis



# APPENDIX: RESUMES

- Sarah Searcy, NCDOT IMD
- Kim Nguyen, NCDOT IMD
- Sarah Yager, May Mobility
- Allison Andrews, May Mobility
- Allison Hegarty, May Mobility



## **Sarah Searcy**

Senior Advisor for Innovation

North Carolina Department of Transportation (NCDOT)

Raleigh, NC 27601

**Email:** [sesearcy1@ncdot.gov](mailto:sesearcy1@ncdot.gov) **Tel:** 252/295-8040

### **Summary**

Sarah Searcy is an applied research professional and program manager with over twelve years of experience serving North Carolina to advance safe, equitable, and innovative multimodal transportation throughout the state. As the Senior Advisor for Innovation in the North Carolina Department of Transportation (NCDOT)'s Integrated Mobility Division (IMD), she directs projects and programs that improve shared mobility options and promote transportation systems that work for everyone. Sarah manages the Connected Autonomous Shuttle Supporting Innovation (CASSI) program for NCDOT to pilot connected and automated vehicles (CAV) in partnership with communities across the state.

Prior to joining NCDOT in 2021, Sarah was with the Institute for Transportation Research and Education (ITRE) at North Carolina State University for over eight years, most recently as the Bicycle and Pedestrian Program Manager. Sarah is a Fulbright award recipient and two-time East Carolina University alumna with a bachelor's degree in Art and Anthropology and a master's degree in Sociology.

### **Work Experience**

**Senior Advisor for Innovation**, North Carolina Department of Transportation (NCDOT), Raleigh, NC (4/2023 to present)

Direct projects and programs that improve shared mobility options and promote transportation systems that work for everyone, including management of consultants and contractors. Lead for the Integrated Mobility Division's research program.

Serve as the Program Manager for NCDOT's connected and automated vehicle (CAV) pilot program ([CASSI](#)). Direct market research; concept and strategy development; contracting, procurement, and agreements; regulatory compliance; site selection, route selection, community engagement, and operations support; and communications and media coordination for pilot projects in multiple communities across the state. Responsible for project management including planning, documentation, invoice review, progress tracking, reporting, issue resolution, meeting coordination, and stakeholder engagement.

Serve as chair for research projects in support of N.C. A&T State University's Connected Autonomous Vehicle (CAV) testbed, including the development of shared autonomous vehicles, an innovative rural test track, and an automated shuttle pilot between the university and downtown Greensboro ([Aggie Auto](#)). Serve as a Steering and Implementation Committee member for the NC Transportation Center of Excellence on Connected and Autonomous Vehicle Technology (NC-CAV). Engaged in the development of NCDOT's CAV

Strategic Plan and active participant in the Fully Autonomous Vehicle (FAV) Committee. Serve as Advisory Board Chair for the N.C. A&T State University-led Center for Regional and Rural Connected Communities ([CR2C2](#)) Region 4 UTC.

Serve as panel member for NCHRP 20-24(147): Peer Exchange and Research to Identify Best Practices for Testing, Monitoring and Deployment of Automated Transportation Solutions to Support Safety, Equity and Operational Efficiency. Serve as panel member for NCHRP 20-68D U.S. Domestic Scan 23-02: Recent Experiences in Advancing and Deploying of Automated Vehicle Technologies. Lead author on a CAV white paper in support of the NC Strategic Highway Safety Plan. Subject matter expert and contributor to NCDOT's [Advance Mobility NC initiative](#).

**Deputy Director for Innovations and Data**, North Carolina Department of Transportation (NCDOT), Raleigh, NC (11/2021 to 4/2023)

Directed and managed the Innovations and Data Branch – including its research activities, pilot and demonstration projects, and data programs – to advance the implementation of best practices in support of safe, affordable, and innovative multimodal transportation throughout the state. Managed the Connected Autonomous Shuttle Supporting Innovation (CASSI) program for NCDOT to pilot connected and automated vehicles (CAV) in partnership with communities across the state. Focus areas included CAV, Mobility-as-a-Service (MaaS), and multimodal data warehousing.

**Bicycle and Pedestrian Program Manager**, Institute for Transportation Research and Education (ITRE) at North Carolina State University, Raleigh, NC (8/2018 to 11/2021)

**Research Associate**, Institute for Transportation Research and Education (ITRE) at North Carolina State University, Raleigh, NC (7/2016 to 8/2018)

**Research Assistant**, Institute for Transportation Research and Education (ITRE) at North Carolina State University, Raleigh, NC (8/2014 to 7/2016)

Served as principal investigator/project manager or key researcher for over 35 research and technical services projects since 2014 (typically 7 to 10 projects on an annual basis). Project sponsors include North Carolina Department of Transportation (NCDOT), United States Department of Transportation (USDOT) [including Federal Highway Administration (FHWA) and Federal Railroad Administration (FRA)], North Carolina Governor's Highway Safety Program (NC GHSP), National Highway Traffic Safety Administration (NHTSA), National Cooperative Highway Research Program (NCHRP), and United States Army Corps of Engineers (USACE). Managed more than \$1M in total project funding with an 80% funding success rate. Directly supervised six full-time permanent staff and twelve students in a highly collaborative environment on cross-cutting research and technical services projects in the areas of bicycle and pedestrian transportation, public transit, highway systems, rail, port and ferry, and aviation.



## Education

- Certificate in Survey Science, Odum Institute for Research in Social Science, University of North Carolina at Chapel Hill, *completed graduate-level coursework in survey data collection methods, questionnaire design, cross-cultural surveys, weighting, and mixed methods*, May 2021
- Graduate Certificate in Geospatial Information Science (GIS), North Carolina State University, December 2016
- MA in Sociology, East Carolina University, May 2012
  - \* 4.0 GPA, *Academic Achievement Award*
  - \* 2-year *Graduate Scholar Award winner*
  - \* *Member of AKD, National Sociology Honors Society*
- BA in Anthropology and Art, East Carolina University, May 2009
  - \* *Graduated Summa Cum Laude with University Honors*
  - \* *Phi Kappa Phi Outstanding Senior Award/Senior of the Year: Anthropology Department*
  - \* 4-time *Undergraduate Research Assistantship recipient*
  - \* 2-time *Undergraduate Research and Creative Activities (URCA) grant recipient*

## Fellowships

- Fulbright-Nehru English Teaching Assistantship, United States-India Educational Foundation (USIEF), New Delhi, India, July 2009 to April 2010
- William R. Kenan Fellowship, Penland School of Crafts, Penland, NC, May 2007

# Kim Nguyen

1550 Mail Service Center, Raleigh, NC 27699-1550  
(919) 707-4676 – Kpnguyen1@ncdot.gov

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## Education

**North Carolina State University**, Raleigh, NC

December 2022

- Master of Public Administration

**East Carolina University College of Business**, Greenville, NC

May 2020

- Bachelor of Science in Business Administration – Management

## Work Experience

**North Carolina Department of Transportation**, Raleigh, NC

Multimodal Regional Transportation Planner – Coastal Plains region

February 2023 – Present

- Liaison between NCDOT and five metropolitan planning organizations (Fayetteville, Grand Strand, Jacksonville, New Bern, Wilmington), and five rural planning organizations (Albemarle, Cape Fear, Down East, Lumber River, Mid-Carolina).
  - Involvement includes making presentations, attending Technical Coordinating Committee meetings and Transportation Advisory Committee meetings, attending focus groups and subcommittee meetings, and reviewing planning documents produced by the regional planning agencies.
- Collaborate with internal NCDOT divisions (such as safety, transportation planning, divisional offices) and external partners (such as public health, advocates, and public transportation agencies) to facilitate better partnerships in the planning process.
- Program manager for multiple multimodal planning grants, a statewide initiative that helps smaller populations and rural communities create equitable multimodal plans with strong public support.
- Program manager for multiple zero emission fleet transition plans, an initiative that helps local transit directors establish a vision and assess the feasibility of converting their fleet to electric vehicles to align with the Governor’s initiatives for a more sustainable future.
- Manage the bicycle helmet initiative, a statewide initiative that grants organizations free helmets to distribute to low-income children in their communities to promote safety when riding a bicycle.
  - Involvement includes building the application, reviewing for applicant eligibility, coordinating with helmet vendors, NCDOT purchasing department, and awarding organizations on shipping and quantity, tracking reports from organizations, creating data charts/timelines and scripting press releases.

**The HomeMore Project**, San Francisco, CA

Government Affairs Intern

July 2022 – October 2022

- Maintained a detailed and updated grant schedule while tracking funding goals and monthly results, met deadlines for proposals and reporting, managed a small team of grant writers, and maintained accurate records for all gifts.
- Wrote and developed persuasive materials (impact reports, newsletter articles, blog posts) that inspired government entities to give and enhance HomeMore’s value within philanthropy.

## Other Projects

- Health Policy Disparity: Expanding Oral Health in Underserved Communities in North Carolina
- Budget Analysis: Social Equity and Educational Disparity in Asheville North Carolina

# Sarah Yager

[Sarah.yager@Maymobility.com](mailto:Sarah.yager@Maymobility.com) | 517-252-0381 | Ann Arbor, Michigan

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## Profile

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Forward thinking business development manager with a proven track record of success identifying new business growth opportunities, analyzing prospective markets, and developing strategic initiatives within evolving new industries. Experience managing and collaborating with internal and external teams to ensure successful and profitable project outcomes. Innovative and passionate about business and customer service with extensive background in alternative transportation and emerging vehicle technology.

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## Work Experience

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### **May Mobility - Autonomous Vehicle and Technology Company**

#### **Business Development Manager - US East Coast / MidWest 7/2022 - Present**

- Collaborate with city governments, state Departments of Transportation, Planning Companies and other stakeholders to create long term, On-Demand, Autonomous Vehicle Transportation solutions
- Build and develop sales pipeline in the B2G space
- Research, Source, and Manage RFP and Grant opportunities within region
- Attend industry specific seminars and organizational meetings, acting as a thought leader and growing May Mobility's contact network
- Work with field engineering team to create strategic route maps that meet equitable, sustainable, and accessible transportation needs for clients
- Negotiate and contract autonomous vehicle programs to foster company growth
- Develop and foster public private partnership relationships

### **Navya, Inc. - Manufacturer of Electric Autonomous Shuttles**

#### **Sales Manager – US East Coast and Canada**

**11/2020 – 7/2022**

- Develop and implement business strategies to promote product growth within the North American market
- Educate and encourage adoption of electric - autonomous vehicles
- Create and foster long term relationships with clients and project stakeholders
- Act as primary POC for strategic partners
- Ensure customer satisfaction for existing clients and new prospects
- Monitor regulatory updates to industry legislation at state and federal level
- Provide regulatory reporting to NHTSA for each shuttle deployment
- Act as Project Manager for all new customer deployments



- Utilize Salesforce as primary company CRM tool
- Review and respond to all EV/AV Requests for Proposal

**Business Development Manager / Analyst**

**9/2018 – 11/2020**

- Research, document, and communicate industry trends to executive, marketing, production, and sales teams
- Attend, participate, and present at marketing events, networking forums, and industry summits
- Collaborate with Marketing Director to create materials for sales team, client tools, and event distribution
- Create and implement the use of sales deck presentations for use with potential new clients
- Act as a host for international delegations in partnership with the MEDC for industry and company updates
- Attend and participate in industry seminars and webinars
- Provide guidance to prospective clients on infrastructure and technology upgrade requirements

**ENTERPRISE HOLDINGS INC.**

**Business Sales Executive/Mobility Consultant**

**9/2003 to 8/2018**

- Oversee all aspects of the Enterprise CarShare program within the State of Michigan as the sole representative handling prospecting, proposing, implementing, and marketing
- Manage relationships with new and existing business accounts to ensure a high level of continued growth and satisfaction
- Create effective presentations for high level executives that directly lead to increased business
- Negotiate and manage partner contracts with an emphasis on providing additional services to the customer as well as reviewing for volume compliance
- Train and develop all levels of employees within the region to: increase sales performance, educate clients and increase customer satisfaction
- Serve as an integral member of upper management that facilitates training courses, creates monthly and yearly goals, and develops strategies for the region and state
- Earned Regional Exceptional Achievement Award for 5 straight years 2009 - 2014
- Exceeded annual goals for renewed sales from existing customers since 2009 resulting in more than \$11 million in revenue



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## Education

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WESTERN MICHIGAN UNIVERSITY – MAY 1998  
Bachelor of Arts – Organizational Communication

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## Community Involvement

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Vice President – Addison Panther Booster Club 2014-Present  
President – Addison Elementary PTO 2010- 2012  
Trustee – Somerset Congregational Church 2010-2014  
Member – Exchange Club Jackson – 2018- 2019  
Member – BNI Follow The Leads - 2018  
Member - The Moose Lodge - 2022

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## Social Media

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Linked In - [linkedin.com/in/sarah-yager-13b18312](https://www.linkedin.com/in/sarah-yager-13b18312)  
Twitter - @YagerSarah

# ALLISON ANDREWS

## BRAND MARKETING MANAGER

### CONTACT

678-852-5172

allisonandrews16@gmail.com

Atlanta, GA

### EDUCATION

#### Master of Social Work

Georgia State University

2013-2015

Community Partnerships Concentration

#### Bachelor of Science in Childhood & Family Development

Georgia Southern University

2009-2013

Magna Cum Laude

### SKILLS

Brand strategy

Brand marketing

Project management

Event planning

Partnership development

Cause marketing

Product & market launches

Lead generation

Content creation

Corporate social responsibility

### REFERENCES

Available upon request

### WORK EXPERIENCE

#### Brand Manager, Event Activation & Community

Carvana 7/2022-Present

- Create and develop community partnerships and cause marketing campaigns
- Manage Brand Activation & Community Engagement teams
- Collaborate with CEO and Chief Brand Officer on the strategy of company's national social impact plans and diversity and inclusion initiatives

#### Brand Activation Team Lead, Community

Carvana 11/2021-7/2022

- Supported and evaluated internal and external programs to ensure alignment with the overall brand platform (Carvana Cares Video Series, Car Giveaways, Social Impact, Diversity & Inclusion Groups, etc.)
- Oversaw brand marketing team with a focus on community engagement and strategy
- Worked in partnership with Production, PR, Communications, Government Affairs, and various other teams to create and identify content sharing opportunities across various channels to build brand awareness and positive brand sentiment

#### Senior Brand Activation Specialist, Community

Carvana 12/2018-11/2021

- Led overall strategy, planning, budget, and execution of national events, sponsorships, partnerships, and community initiatives pertaining to social impact to create connections between the brand and community
- Assisted in hiring, training, and managing of brand ambassadors to successfully execute brand strategy and increase consumer engagement
- Collaborated across multiple departments to produce national marketing tours, build experiential marketing assets, and create internal community and volunteer programs

#### Ambassador of Community Engagement

Carvana 2/2016-2/2018

- Developed and activated on-site experiential field marketing events on a local and regional level while managing projects, timelines, budgets, strategy and results on brand execution to achieve marketing and business goals
- Evaluated community events and charitable efforts as they relate to the overall Carvana brand mission and engagement goals
- Built and fostered communication and connectivity between regional hubs, Carvana HQ, and the local communities to create corporate philanthropy and employee engagement opportunities

#### Field Marketing Specialist

Red Bull 7/2013-12/2015

- Worked as a product expert in a variety of sampling locations to drive product trial and give consumers a memorable experience with the brand
- Created and executed local sampling campaigns and strategies to support and increase sales
- Partnered with distributors, on and off premise managers, and student brand managers to provide feedback, insight, and data on consumers and consumption



## Allison Hegarty, May Mobility

### Personal Summary

Allison is a results-driven and customer oriented professional with over 10 years of customer service experience. Proven track record in resolving and reducing customer complaints with a decisive and action-oriented focus. Innovative thinking to meet goals and achieve profitable results with strong account management skills.

### Experience

Customer Success Manager, May Mobility; Ann Arbor, MI 2021 - Present

- Drive and strengthen key relationships with B2G and B2B partners while understanding their business goals and identifying the tactics, strategies, and best practices needed to achieve them
- Build customer roadmaps with the ultimate goal of driving value
- Drive renewal and expansion opportunities
- Onboard and educate partners to ensure overall satisfaction and success
- Collaborate with internal cross functional teams and channel feedback
- Lead and develop process improvements for Customer Success department to enhance team efficiency through automation

Client Success Consultant, Billhighway; Troy, MI 2018-2021

- Establish and deepen relationships with Association market clients
- Identify opportunities for potential revenue growth and create value story specific to opportunity
- Compile and maintain account information within Salesforce
- Responsible for tracking KPI's for clients and developing plan to address gaps
- Responsible for project management, driving internal contacts to ensure timely deliverables to client, manage day-to-day operational aspects of project including scope
- Lead contract renewal process, present to key decision makers

Client Service Manager – Large Accounts, Thomson Reuters; Ann Arbor, MI 2017 – 2018

- Manages 78 of the top Enterprise firms; 11.3M in revenue
- Ensuring all current customers have proper training and understanding of current and future product capabilities and best practices
- Maintaining and growing total territory value
- Drive continued value and set vision through preparing and presenting respective content (e.g. product roadmaps, product updates, etc.) to various audiences, ranging from executive decision makers to front line users

# Draft Public Engagement Plan



# EXHIBITS AND ATTACHMENTS

- CREATE Public Engagement Plan (PEP)
- May Mobility - Vehicle Compliance
- May Mobility's Living Wage Commitment



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

## Draft Public Engagement Plan



February 2024







# Introduction

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## Project Description

Connected, Rural, Equitable, and Autonomous Transportation for Everyone (CREATE, or “the Project”) will pilot the future of advanced transportation technologies in an on-demand transit service (also known as “microtransit”) by leveraging software and automated vehicles (AVs) to provide easier, more reliable, efficient, and equitable access for riders to reach key destinations in the city of Wilson, a rural community in North Carolina.

CREATE will leverage advanced transportation technologies for employees at new job sites, riders with disabilities, and the general public. The Project will enable riders to request and complete safe, affordable, and convenient trips to their desired destinations. Throughout the Project duration, CREATE will build on the success of Wilson’s popular RIDE microtransit service by expanding the existing microtransit service area to include major employment centers and other community hubs, piloting a prescheduling option for riders to secure rides to work shifts, medical appointments, care centers, and for other preplanned trips, and integrating five hybrid electric AVs into the fleet. Riders will be able to select between a conventional vehicle and an AV to complete their trip. Qualitative and quantitative data will be collected and analyzed to better understand rider preferences, behaviors, and perceptions surrounding AVs, particularly as part of an on-demand transit service.

## Applicable Regulations & Legislative Context

*The Advanced Transportation Technology and Innovation (ATTAIN) Program application underscores the regulations and legislation framework governing the application process. As per 23 U.S.C § 503(c)(4), the Secretary of Transportation is empowered to [NS1] “award grants to eligible entities for the deployment, installation, and operation of advanced transportation technologies aimed at enhancing safety, mobility, and overall system performance, as well as fostering intermodal connectivity and maximizing infrastructure return on investment.”*

*No state regulatory or legislative challenges are expected for this deployment. The legislative environment in North Carolina is supportive of AV implementation. The state of North Carolina is ready for AV testing on public roadways following House Bill 469 (S.L. 2017-166). North Carolina even prohibits cities and municipalities from banning or limiting the use of AVs within their boundaries (N.C. G.S. §20-401).*



## Project Timeline

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The Project's deployment has four phases: Phase 0-Planning Administration, Phase 1-Deployment, Phase 2-Data Analysis, and Phase 3-Final Reporting and Closeout. Project tasks are detailed in the Scope of Work (see **Supplemental Materials**).

CREATE's phases are outlined below along with the tasks specific to community engagement.

### **Phase 0 – Planning and Administration**

- Community engagement will begin with rider education, surveys and feedback opportunities, and the launch of a rider app.

### **Phase 1 – Deployment**

- Community engagement will continue with public meetings, participation in community events where May and Via can educate residents about the program, social media promotion, and assorted marketing activities. Community engagement will specifically target groups through events at locations such as the senior center, employment hubs (including the Bridgestone Americas plant and future FedEx distribution center), and programs that support community members with disabilities and connecting with trusted local leaders. This engagement will aim to understand how the program can overcome the challenges and meet the needs of the elderly, shift workers, community members with disabilities, and those without access to a vehicle.

### **Phase 2 – Data Analysis**

- Community engagement will continue outreach to riders through app-based surveys and polling, community surveys to measure the efficacy of marketing and education, and in-person events at easily accessible community locations using printed educational materials as well as printed and electronic surveys. Rider satisfaction surveys and polls will be pushed to users through Via's app. May Mobility will also conduct surveys and host public engagement events during community-wide events.

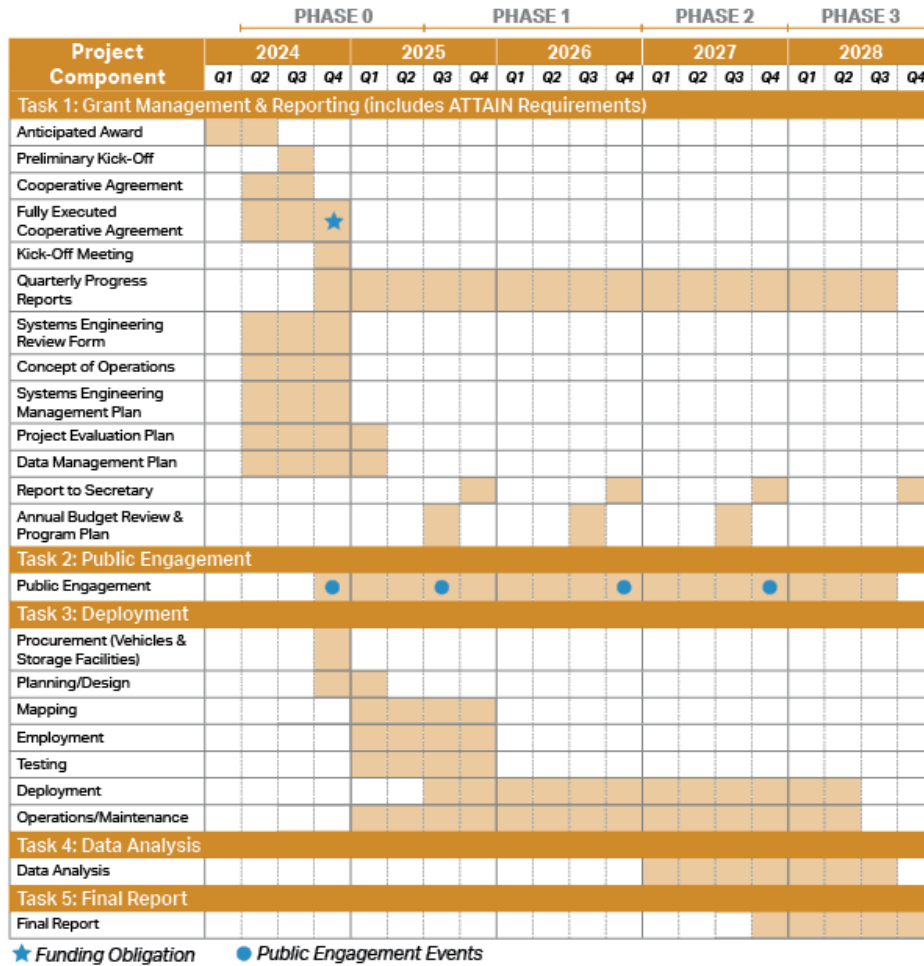
### **Phase 3 – Final Reporting and Closeout**

- Community engagement will conclude when Project Partners visit the community to show them how their previous input has influenced the progress of the program and to encourage them to continue to submit additional feedback. This final engagement will demonstrate program accountability to its riders

## Project Schedule

Prior to the obligation of funds, NCDOT will hold a preliminary kick-off meeting, develop project plans, and draft a cooperative agreement.

### PROJECT SCHEDULE



## Public Engagement Goals

As part of the Project, the Project team will seek the involvement of the public and key community stakeholders. The goals and objectives of the CREATE public engagement are to:

### Goals

- Educate the public on the benefits and constraints of AVs and their use in transit services to build understanding and support for the technology.
- Gather community and stakeholder feedback and input to help guide the planning, implementation, and evaluation of the Project.
- Provide materials and demonstrations on how the public can safely use the AV technology and service.



## Objectives

- Seek public participation from a representative sample of the community within the study area as well as key stakeholders with interest in CREATE, being certain to focus on reaching identified environmental justice and transportation disadvantaged communities.
- Raise awareness and interest in CREATE, including what an Automated Driving System (ADS) is; how it works and where it works best given the maturity level of the technology; and how automated vehicles can help link users to other transit services like Wilson's existing RIDE microtransit service and other regional carriers.
- Demonstrate the safety and ease of using automated vehicles together with transit technology that enables on-demand rides or pre-scheduled trips.
- Address questions and concerns the public may have regarding automated vehicles.
- Gain insight into public expectations and how the public might use automated vehicles in an on-demand transit service or for pre-scheduled trips.
- Document the public engagement process and evaluate the successes and challenges to carry forward to similar projects.

Note: The PEP is a living document that should be updated periodically throughout the program, adjusting to the needs of the community, and keeping notes of engagement completed.

## Key Stakeholders

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With an overall Project goal to connect transportation disadvantaged communities with desired destinations, conversations with entities that have a vested interest in the program are necessary. The Project team will curate an exhaustive list of key stakeholders to engage throughout the life of CREATE.

Key stakeholder groups will include, but are not limited to:

- Current riders: Members of the general public who are current RIDE or other regional transit riders.
- Potential riders: Members of the general and/or voting public who would be interested in riding transit if transit is improved.
- Never riders: Members of the general and/or voting public who are not interested in riding transit, even if the transit is high-quality, but they would support CREATE for its broader community benefits.
- Transportation advocacy groups: Active transportation and transit advocacy groups that have a heightened interest in the function of the entire system.
- General advocacy groups: Environmental, disability, and other community advocacy groups in the greater Wilson area.
- Development community: Members of the community who push for, construct, or manage new development projects across the study area.

- News media: Local and regional media outlets that educate and inform the general public. The Project team will provide information to the news media to support their print and broadcast plans, including connections to other stakeholders to speak as a voice for the Project when requested, and share suggestions/recommendations at scheduled intervals to promote major Project milestones.
- Elected officials: Elected officials, boards, development corporations, and commissions whose constituents will benefit from the Project.
- Business community: Local and regional business community whose employees and customers will benefit from the Project.
- Emergency services: Emergency service providers, including police, fire, and emergency medical services, that may interact with the Project’s vehicles, staff, and riders.

## Roles and Responsibilities

The Project’s consultant team is responsible for developing all logistics and outreach materials for the public and stakeholder involvement efforts as described below. The consultant team, in partnership with May Mobility, is responsible for ensuring that the branding and styling of the engagement aligns with the guidance of NCDOT. The consultant team will be responsible for any translation services required based on the study area demographics. Finally, the consultant team is responsible for developing and maintaining a schedule that allows for appropriate reviews of logistics and outreach materials by May Mobility and NCDOT.

The planned review process and duration is outlined below:

Activity	Responsible Party	Timeframe
<b>Production</b>	Consultant team	2-4 weeks (deliverable dependent)
<b>Review</b>	CREATE team	1 week
<b>Revisions (round 1)</b>	Consultant team	1 week
<b>Review</b>	CREATE team	1 week
<b>Revisions (round 2)</b>	Consultant team	1 week
<b>Review</b>	NCDOT team	1 week
<b>Revisions (round 3)</b>	Consultant team	1 week
- <b>508-compliance on final English materials</b>	Consultant team	1 week
- <b>Translation</b>		
- <b>508-compliance on final alternative language materials (if required)</b>	Consultant team	1 week
- <b>Build out / finalization of online component</b>		
- <b>Printing for in-person engagement</b>		
<b>TOTAL</b>		<b>2-3 months for significant engagement activities</b>

NCDOT is responsible for the development, distribution, and timely updates of templates, approved stock photography, preferred iconography, and style guides. NCDOT is also responsible for providing timely reviews and approval of logistics and outreach materials as described in this plan. Additionally, NCDOT is responsible for providing timely requests for information or materials from the CREATE team for use in programmatic communications efforts and for providing marketing collateral for use by the CREATE team.

## Community Description

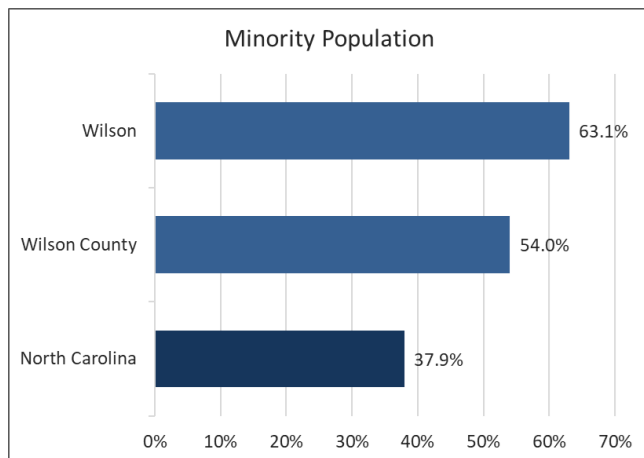
### Demographics Analysis and Findings

The Project’s public engagement will be sensitive to the City of Wilson’s minority, low-income, Limited English Proficiency (LEP), lower education level, lower internet access, lower vehicle access, younger, and older populations to design and implement transit services that meet defined transportation needs most effectively. All demographics presented below are from the US Census Bureau, American Community Survey 5-year Estimates (2017-2021).

#### 1. Minority

**Finding: A higher percentage of people identify as a traditional minority in the City of Wilson compared to Wilson County and the state.**

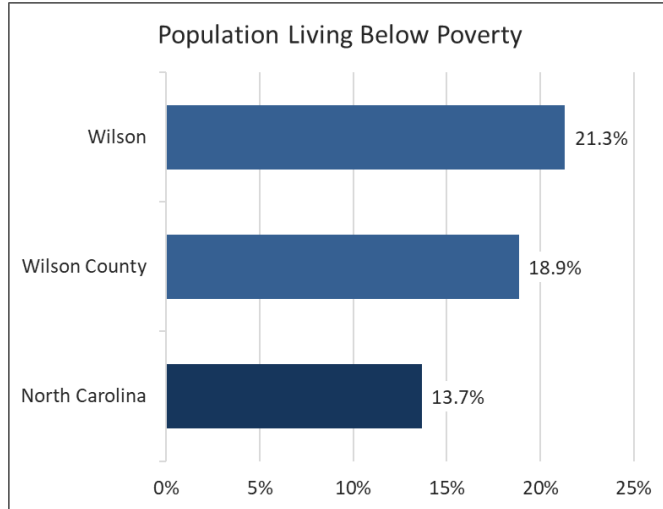
Most people living in the City of Wilson (63.1%) identify as a traditional minority (non-white and/or Hispanic). Only one third (36.9%) of the city’s population of 47,914 identifies as white and/or non-Hispanic. The city is more racially diverse than Wilson County and the state. Approximately half (54.0%) of the county’s population of 78,844 and over one third (37.9%) of the state’s population of 10,367,022 identifies as non-white and/or Hispanic.



2. Low Income

**Finding: A greater share of people live in poverty in the City of Wilson compared to Wilson County and the state.**

In the City of Wilson, nearly one quarter (21.3%) of people live below the poverty level, 10.8% live under 50% of the poverty threshold, and 16.3% live between 100% and 149% of the poverty level out of a population of 46,558. Less than one fifth (18.9%) of Wilson County's population of 77,448 live below the poverty level, while 8.9% live under 50% of the poverty threshold and 16.1% live between 100% and 149%

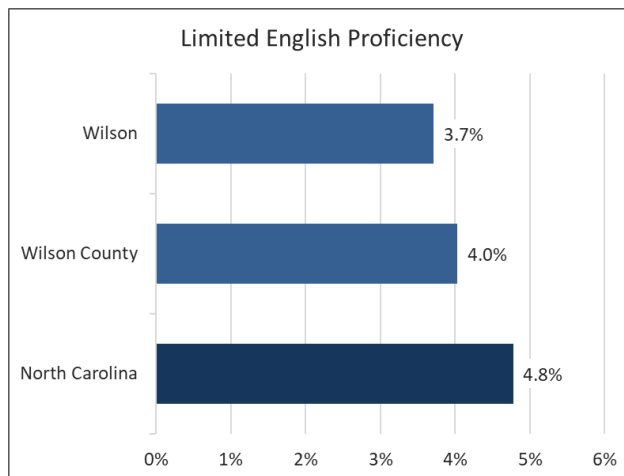


of the poverty level. Compared to the city and county, a smaller proportion of the state's population of 10,092,759 live below the poverty level (13.7%), under 50% of the poverty threshold (6.1%), or between 100% and 149% of the poverty level (9.3%).

3. Limited English Proficiency (LEP)

**Finding: Comparable to Wilson County and the state, a low percentage of the City of Wilson's adult population is Limited English Proficiency (LEP) and most speak Spanish as their primary language.**

Out of a total adult population of 36,510, 2.7% of people living in the city are LEP with Spanish as their primary language, 0.2% are LEP with other Indo-European languages as their primary language, 0.5% are LEP with Asian/Pacific languages as their primary language, and 0.3% are LEP with other languages as their primary language. In Wilson County, 3.3% of people are LEP with Spanish as their primary language, 0.1% are LEP with other Indo-European languages as their primary language, 0.4% are LEP with Asian/Pacific languages as their primary language, and 0.2% are LEP with other languages as their primary language out of a total adult population of 60,582. In the state, 3.3% of people are LEP with Spanish as their primary language, 0.5% are LEP with other Indo-European languages as their primary language, 0.8% are LEP with



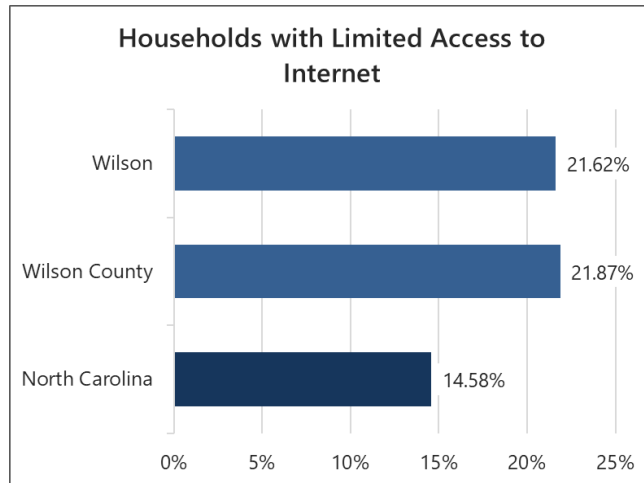


Asian/Pacific languages as their primary language, and 0.2% are LEP with other languages as their primary language out of a total adult population of 8,064,707.

#### 4. Internet Access (broadband/mobile)

**Finding: A greater share of people in the City of Wilson have difficulty accessing the internet compared to Wilson County and the state.**

In the City of Wilson, there are a total of 19,535 households. 4,224 households (21.6%) face limited access to the internet, while 15,311 households (78.4%) have some form of broadband internet access. Additionally, 1,990 households (10.2%) solely rely on a cellular data plan for internet connectivity. In Wilson County, among 31,980 households, 6,993 (21.9%) have limited internet

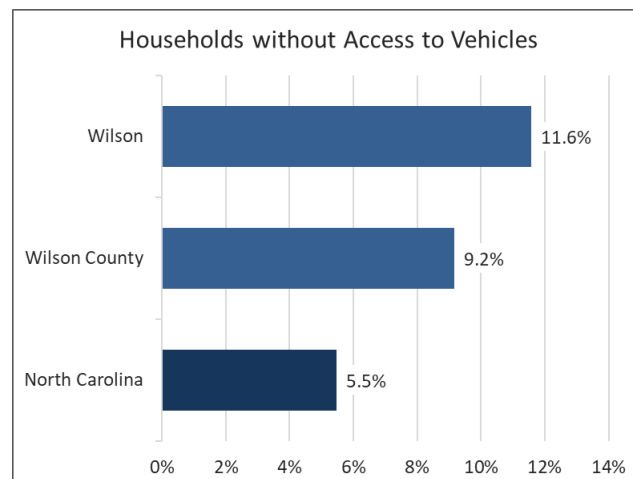


access, while 24,987 (78.1%) possess a broadband internet subscription. Moreover, 3,396 households (10.6%) solely depend on a cellular data plan for internet access. Comparatively, across North Carolina's 4,034,684 households, 588,064 households (14.6%) have limited internet access, while 3,446,620 households (85.4%) have some form of broadband internet subscription. Additionally, 416,578 households (10.3%) solely rely on a cellular data plan for their internet connectivity.

#### 5. Zero Vehicle Households

**Finding: A greater share of people in the City of Wilson and Wilson County have difficulty accessing a personal vehicle compared to the state.**

Among the 19,535 households in the City of Wilson, 11.6% report having no available vehicles, while 39.5% have one vehicle, and 49.0% have two or more vehicles. Among Wilson County's 31,980 households, 9.2% do not have access to a vehicle, 32.4% have one vehicle, and 58.4% have two or more vehicles. Considering North Carolina's broader context of 4,034,684 households, 5.5%

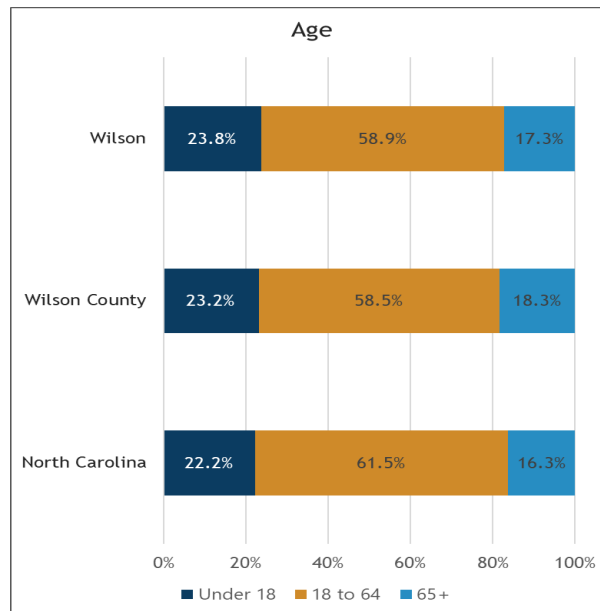


have no available vehicles, 31.3% have one vehicle, and 63.2% have two or more vehicles.

## 6. Age

**Finding: The City of has an age distribution comparable to Wilson County and the state.**

In the City of Wilson, out of a population of 47,914, 23.8% are under 18 years old, 58.9% are aged 18 to 64 years old, and 17.3% are 65 years or older. In Wilson County, out of a population of 78,844, 23.2% are under 18 years old, 58.8% are aged 18 to 64 years old, and 18.3% are 65 years or older. In the state, out of a population of 10,367,022, 22.2% are under 18 years old, 61.5% are aged 18 to 64 years old, and 16.3% are 65 years or older.



## Outreach and Engagement Tactics

Outreach for CREATE will be multifaceted during the planning and implementation phases. Engagement during these phases will be focused on public education on how the AV technology and service will work, how it will connect existing systems, and how potential riders can use the AV service safely and effectively. The Project team will gather feedback from the community and stakeholders to inform where the system needs to fill in existing gap to connect origins and destinations as well as what the community requires to feel comfortable using the system.

The multifaceted approach will be delivered in multiple ways. Below are select communication methods and meeting types that can be deployed to deliver high levels of engagement in ways that will reach the desired broad and targeted audiences.

Summaries of each outreach event will be provided post event. Each event will be documented in this public engagement plan.

## Marketing/Communication Materials

- FAQs
- How to Guides (use the service, download the app, etc.)
- Route Information
- Postcards
- Promotional Flyers
- Signage
- Ads

## Information Campaigns/ Communications Methods

**Communications Subcommittee:** With representation from all project partners, develop plans for branding, marketing, communications, outreach, and education for the project. This group should meet frequently to ensure timely decision-making and production of materials including, but not limited to:

**Social Media:** Leverage the social media accounts of Project partners and stakeholders to spread awareness of Project information and upcoming events. Leverage geofencing and geotargeting to reach desired audiences for information surveys and outreach opportunities.

**Media Relations:** Contact local media outlets to share Project information with the public. Traditional media outlets can reach people who do not have access to or do not frequently use the Internet. The Project team will keep a record of media pieces that reach the public.

**Project Website:** Develop a Project website or webpage to provide detailed, up-to-date Project information. The website should be a one-stop shop for the public and key stakeholders to learn about Project happenings as well as a place to leave comments, ask questions, download the app and take surveys. The Project team's contact information will be included on the website.

**Comment Collection Methods:** Comments collected during meetings, online, or via phone/email will be kept in a comment log that records who made the comment, the comment contents, and the Project team response given if a response is required. The comment log will live throughout the life of the Project.

**Limited English Translation:** When applicable, materials created for the project will be translated into the language identified as LEP.

**Project Videos:** Create Project videos that are short and educational to share with local media and on social media. Topics for these videos may include:

- What is an AV, how does it work, and what are the benefits and constraints of AVs when used for transit?
- How to book an AV ride
- Ride demonstration
- Ride safety

**Ambassador Program:** The Automated Vehicles (AV) Ambassador Program is an in-person user training program to help riders understand the safety and benefits of AVs while helping them access the vehicles properly. Much like with any new technology, new users need help trusting and safely handling it. The AV Ambassador Program will launch at the start of the CREATE service with one ambassador per AV along with one call center operator trained on helping riders of all abilities who may have questions before scheduling a ride. For the second year through the end of the pilot, the program will have only one ambassador who will assist new riders or answer questions and one call center representative. Each ambassador will be hourly paid staff managed by Wilson RIDE. These positions will be paid for through the local coordination budget and will focus on customer service and rider assistance. Each will wear a uniform that will easily identify them to riders and will be able to communicate with the agency operations staff along with emergency services as needed.

## Meeting/Workshop Methods

**Launch Event:** A Media Preview Day and Launch Event will be held within the Project service area to demonstrate the AVs. With assistance from Project partners and stakeholders, this event will be well advertised in the community. Media will be invited to the preview day and the launch event. The launch event will include various stations, including activities like helping people sign up for rides, safety demonstrations, test rides, etc. The event will also offer take home educational materials. The events and activities will be family friendly with food and games to encourage a wide demographic to attend. The event will be held soon after the service is launched so participants can engage with and provide feedback on the service.

Speaking Engagement	Date	Description
Launch Event	Phase 1- Q3 2025	<i>[Insert description once defined]</i>

**Interviews:** Individual interviews with Project partners, key stakeholders, and contacts at peer projects will be completed to gather feedback and inform how the Project may better integrate, connect, and serve the community.

Interview	Date	Description
Peer Program	Phase 0- Q4 2024	<i>[Insert description once defined]</i>
Transit Partner	Phase 0- Q4 2024	<i>[Insert description once defined]</i>
Advocacy Group	Phase 0- Q4 2024	<i>[Insert description once defined]</i>



**Emergency Services Workshop & Training:** Following the launch event, the Project team will compile a list of applicable emergency services groups to include in the First Responder training. The Project team will schedule a time for emergency services staff to engage with and learn about the vehicle (if applicable) or let them know the times they can engage with a vehicle while it is in service.

Emergency Services Workshop & Training	Date	Description
Workshop	Phase 1- Q3 2025	<i>[Insert description once defined]</i>

**Focus Groups:** Following the launch event, focus groups with different demographics (e.g., the elderly, people with disabilities, families, etc.) will be completed to inform the service or messaging adjustments.

Focus Group	Date	Description
Focus Group #1: Users with Disabilities	Phase 0- Prelaunch	<i>[Insert description once defined]</i>
Focus Group #2: Attendees of the Launch Event	Phase 1- Within two weeks after launch	<i>[Insert description once defined]</i>
Focus Group #3: Users (3 or more rides) of the service to measure impressions, usability, and capture any other comments	Phase 2- Six months after launch	<i>[Insert description once defined]</i>
Focus Group #4 (once a year after launch): Users that regularly use the AVs to inform evaluations of the service including its safety, accessibility, comfort, reliability, convenience, and affordability	Phase 2- One year after launch	<i>[Insert description once defined]</i>
Similar to Focus Group #4 with emphasis on comparing the AV service to the Wilson RIDE conventional vehicle service and capturing successes, challenges, and lessons learned	Phase 3- At project close	<i>[Insert description once defined]</i>

## As Needed Engagement

**Speakers' Bureaus/Presentations:** The speakers' bureau simply refers to staff who are trained and ready to go to community meetings to give speeches and present on a given topic. These events can be parent-teacher association (PTA) meetings, city/town councils, church meetings, and other community interest groups wanting to host a speaker. The speakers' bureau will be utilized to share information about CREATE, provide program demonstrations, and continue education on how the Project will be implemented.

**Community Surveys:** Surveys will be used to collect public input on how people currently travel versus how the use of this Project might change the way they travel. Surveys can also be used to offer input on the launch event or to inform what other community needs might be incorporated into the Project. Surveys can be administered online through the Project website or in-person in transit vehicles, at pop-up events, or through door-to-door outreach. Surveys will also continue post program launch through the program app to continue to engage riders and encourage their continued participation and feedback.

**Pop-up Events:** Pop-up events at major destinations or within neighborhoods most likely to use this service are an effective way to reach the audience of users that need this service most. Pop-up events allow for outreach to audiences that may not typically attend a traditional meeting. Pop-ups are a great opportunity to administer surveys and provide educational materials.

**Door-to-Door Outreach:** Door-to-door outreach can be employed in underserved or environmental justice communities to gather input or administer surveys. Door-to-door outreach is a great tool to ensure broad perspectives in the engagement approach. Educational materials can be left behind for people to read about the Project on their own time.

## Feedback and Engagement Evaluation

As noted in the section above, every outreach opportunity affords the public an opportunity to provide feedback on how the system currently works for them and how the program may better assist them to get to their desired destination. At the beginning of the Project, performance measures will be established for the engagement process, such as target populations that should be engaged, numbers of citizens that are anticipated to participate, and other key measures. After every outreach event, a summary will be prepared that notes who was invited, who attended, a summary of the event plan, a summary of the comments received, and any other data needed to track performance.

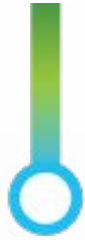
In alignment with the data management plan and the equity and accessibility plan, the analytics of who attended versus who was invited will be compared at each stage of the project. Based on the analysis of the performance measures, the project team may adjust the



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public engagement plan to improve performance results. An example may be to change the method of invitation or the types of outreach to ensure they reach a diverse audience of potential riders that match the demographics of the service area.

The feedback and comments received will be summarized, and, where applicable, will be used to adjust program elements as the project progresses. It will be key to outline clear expectations for how feedback can be used during specific phases of the program. It will be important for the project team to only ask for feedback that can directly affect the project and explain to the public how that feedback will be used. At the start of each phase, the project team will explain to participants how their feedback from the previous phase informed the current phase and what their current feedback will inform in the next phase. This setting of expectations and reporting back to the community builds trust and encourages the community to continue to share feedback throughout the program.



# Features

## Interior

- Seating for up to 4-5 passengers
- Easy ingress/egress - power sliding doors
- Open cabin feel - no front passenger seat
- Rear cargo space for small-large item storage
- Interior space for small item storage
- Wifi hotspot, USB charging
- Climate Controlled Cabin

## Accessibility

- ADA Compliant Rear Entry conversion
  - 44" x 32.5" ramp
  - 13° slope when deployed to ground level
- ADA Compliant 4-Point wheelchair securement system
- Audio chimes at key ride moments
- Shared overhead rider display

## Safety

- FMVSS Compliant Vehicle
- May Embedded Safety Control
- 8 Airbags
- Toyota Safety Sense 2.0

## Autonomous Driving Kit

- May MPDM, Emergent Intelligence
- 5 LIDAR
- 5 RADAR
- 7 Cameras
- Multi-band GPS
- Inertial Measurement Unit

## Vehicle Specs

- Hybrid Electric Vehicle
- Front Wheel Drive
- 35 mpg
- GVWR: 4,800 lbs
- 207" L x 91" W x 79" H
- Operating Temperature: -20°C to 40°C
- Ground Clearance: 6.37", 6.31"\*
- Passenger Volume: 159.7 cu. ft.
- Rear Cargo Space 33.5 cu. ft.





# Every AV has vision. But only May AVs have an imagination.

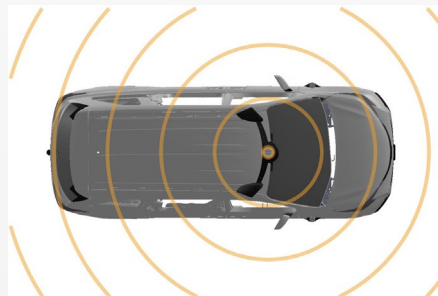
Every shuttle is equipped with a suite of redundant sensor technologies, combining LiDAR, radar, and cameras, accentuating the strengths of each to create a robust 360-degree view of the world around our shuttles.

But, what sets May apart, is what our software does with the inputs – Multi-policy-decision-making (MPDM), the core of May’s autonomous technology. It uses its “imagination” to deal with the complexity of real-life driving by simulating how all agents in the environment will react to different actions. Instead of a list of “if/then” rules, our shuttles literally imagine every possible scenario – every millisecond..

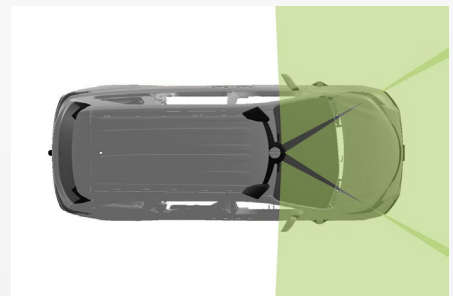
**RADAR**   **LIDAR**   **CAMERA**



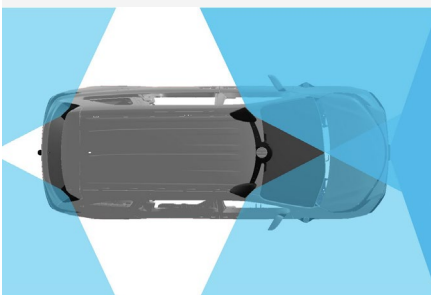
**SIDE LIDAR & CAMERA, TOP LIDAR**



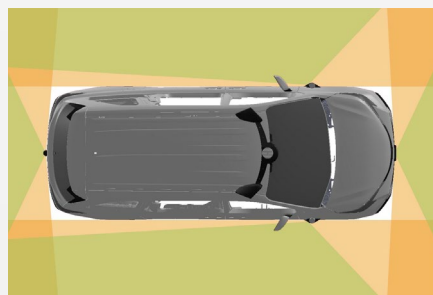
**TOP LIDAR**



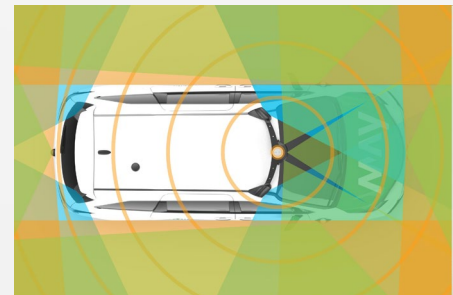
**TOP CAMERA**



**RADARS**



**FRONT, SIDE LIDAR, AND REAR LIDARS & CAMERAS**



**COMBINED EXTERIOR SENSORS**

## May Mobility's Living Wage Commitment



maymobility.com • 650 Avis Drive, Ann Arbor, MI 48108

**We hire locally:** We add an average of 15 part-time jobs and 4 full-time roles to a community with each new route we deploy.

**We train on skills for the future:** In our rigorous 2-week training program, we train our AVOs (Autonomous Vehicle Operators) to be safety operators, AV educators, and local ambassadors.

**We pay a living wage:** Our starting hourly wage for our safety operators is \$18.50 per hour, well over every state's minimum wage.

**We are part of a larger ecosystem:** We value bringing transit agencies, public safety, and local advocacy groups to the table as early as possible.

**We share our learnings:** We know we're not the only ones preparing for the future, and we are happy to share what we're learning from our employees and passengers.



# USDOT Advanced Transportation Technology and Innovation (ATTAIN)

FEBRUARY 2024

# CREATE

Connected, Rural,  
Equitable, and Autonomous  
Transportation for Everyone

*VOLUME 1*



**N.C. Department of Transportation**

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