"It's about moving people." A Conversation with Ryan Brumfield of NCDOT's Integrated Mobility Division

Interview conducted by Lisa Riegel

As the population of North Carolina ages, the state Department of Transportation is increasing its focus on safe and equitable mobility. Lisa Riegel of AARP North Carolina, guest editor of this issue of the *North Carolina Medical Journal,* interviewed NCDOT Integrated Mobility Division Director Ryan Brumfield about this work.

Introduction

North Carolina's population of residents over age 65 is expected to increase by 52% between 2020 and 2040, and the state's share of residents over age 85 is expected to rise by 116% [1]. As people live longer, they are outliving their ability to safely drive by up to 10 years [2], but still need access to efficient, reliable, and affordable transportation. Emerging technologies like on-demand public transportation and mobility-as-a-service (MaaS) offer some promise for addressing this challenge.

Ryan Brumfield is the director of the Integrated Mobility Division (IMD) at the North Carolina Department of Transportation (NCDOT). This division was created in 2019, merging the Bicycle and Pedestrian division and the Public Transportation division for a more holistic focus on door-to-door transportation. IMD administers state and federal funds for public transportation and bicycle and pedestrian programs. It also provides subject matter expertise related to multimodal transportation planning, innovation, technology, and emerging mobility trends. The division provides funding to all 98 public transit systems in North Carolina. Eighty of the transit systems are in rural counties and the majority provide services to elderly and disabled populations as a primary audience. IMD also manages the Complete Streets program, which requires all transportation projects in the state to be evaluated for bicycle and pedestrian needs [3].

"While it will always be important to invest in road infrastructure to move vehicles and freight, we recognize the need to also invest in multimodal systems that improve access and mobility for the elderly, disabled, those without a vehicle, and other transportation-disadvantaged populations in our state," Brumfield said in an interview with this issue's guest editor, AARP North Carolina Advocacy and Communications Manager Lisa Riegel. "NCDOT is working to improve our processes to better plan and design our transportation system so it meets the needs of all users."

Lisa Riegel: What are you looking at doing to help our aging population in North Carolina continue to be mobile?

Ryan Brumfield: *It really is rooted in the need to provide a transportation system that serves everyone well. A system where not having a car or having the inability to use a car is not a barrier, and those individuals can get to the same places as easily as someone with a car or with the ability to use one. There are a few concepts that we are focusing on and working toward. The first and most important is expanding and layering high-quality multimodal services. We have 98 transit systems in the state with differing quality of service. To have an equitable system, you need layers of on-demand services to complement fixed-route and pre-scheduled services, with the ability to plan and book services on a smartphone or by dialing a landline number. We also need to connect our bus systems to our expanding rail service and micromobility offerings (bikeshare, scootershare) with complete streets that are safe. If there's any segment of the journey that's unsafe, it's a barrier for the entire journey. Having mobility hubs where people can connect to multiple modes and also use community services in the same location makes it as easy as possible for people to transfer between modes and use transit to get to key destinations. That's a concept that we are piloting and hope to expand in the future.*

Lastly, the complete multimodal journey should be facilitated by mobility-as-a-service: the ability to have a single ticket across modes and across jurisdictions, where you don't have to

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plan days in advance and pay a considerable cost to make those transfers happen.

Lisa Riegel: How do on-demand mobility and mobility-as-a-service play into each other, and how are they different?

Ryan Brumfield: *On-demand, at a basic level, is the ability to spontaneously use transit, to be able to schedule a trip or service immediately instead of having to pre-plan hours or days ahead. Having to schedule ahead two days for your trip to work or to go to the grocery store for a gallon of milk is not feasible or realistic for a large percentage of the population. Mobility-as-a-service is how you layer in on-demand services with fixed-route services, with other services in the community, so you can schedule complete trips easily at the same time. It's all integrated into one system. Just as I can get in my car and drive anywhere in the state with little planning, those without a car should be able to make their trip just as easily. The best way to achieve that is through mobility-as-a-service, where we connect all the systems that are needed to get someone to their destination. And they can easily use the system to plan, schedule, and pay for trips from door to door.*

Lisa Riegel: People aged 50-plus are also walking and biking. How can we better prepare our systems to reduce fatality rates from those modes of mobility?

Ryan Brumfield: *The Transportation Mobility and Safety Division at NCDOT includes the Traffic Safety Unit and the Governor's Highway Safety Program. They are doing a lot in this space. They manage the Highway Safety Improvement program and the Strategic Highway Safety Plan for the state. They have an expanded focus on vulnerable road user safety. That was also a focus of the federal bipartisan infrastructure law that now requires states to do a vulnerable road user safety assessment [4]. Certainly, the Integrated Mobility Division has a role to play in helping with guidance and strategy development, and we work closely with the Traffic Safety Unit. We think the Complete Streets program will have a big impact on this over time. It will help us design every facility to be inclusive of vulnerable road-user needs, to make sure we have adequate separation from vehicles and safe crossings. Complete Streets also is inclusive of small things like leading pedestrian intervals at traffic signals where pedestrians have a head start on vehicles. Complete Streets also reduces conflicts between vehicles and pedestrians, incorporates better lighting at crossings, and adds more defined crossing areas for pedestrians.*

Ultimately, we hope to see a cultural shift over time, for drivers to be more aware and considerate of pedestrians and cyclists. This happens naturally as you have more exposure to those individuals and more facilities for those individuals to use. But most importantly, we need to design our road network to be more considerate of the needs of vulnerable road users so that we are reducing their risks, particularly when there are high vehicle speeds in the same environment.

Lisa Riegel: Would mobility be easier and more efficient if everyone used technology, smartphones, a computer? And do you see any progress in that direction?

Ryan Brumfield: *Certainly, we see advancements, and mobility-as-a-service will help with that. So much of the challenge exists because many new technologies are data intensive. The problem now is that we have 98 transit systems using different software and systems, and they have data in different formats. What we need eventually are standardized data formats and a way for the data to speak to each other. We recently signed on to the Mobility Data Interoperability Principles—a national set of principles where state transportation and transit agencies agree to eventually have standards around how systems and software speak to each other to exchange and make use of transit data [6]. That will eventually give us the ability to have an application or a website where all of your travel options and the menu of transit services are available in one place for planning, scheduling, and paying. I expect that to happen; it's just a matter of how long it will take, because of the complexities of modernizing how we collect and manage data. That's going to be a pretty big change from what we've done historically.*

Lisa Riegel: Do you feel hopeful about the future of mobility in our state?

Ryan Brumfield: *Yes, I'm very hopeful about our future. During the COVID-19 pandemic, we were the first state in the country to partner with the public health community to provide funding across the state to pay for trips to vaccination locations [5]. That worked because we have this foundation in our state of statewide transit coverage. The vaccine trips during that program were mostly pre-scheduled trips, but what we're shifting to and seeing more of is on-demand trips. These are more instantaneous or spontaneous requested trips, and the transit agency fits you in immediately. The model will be different in our most rural areas. The on-demand service in Wilson, for example, serves a fairly dense area, and is more effective than it would be to put that same model in Graham County, for example, which is more spread out. We have to be nimble and change the model depending on the circumstances.*

The challenge is that we would expect transit service to cost more as more people are attracted to using a higher-quality service. But, in general, the principle of being able to schedule a trip on-demand without pre-scheduled advanced notice. That principle is one that we hope will expand across the state eventually. NCMJ

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