



TRANSPORTATION AND LOGISTICS ROUND TABLE .....

# PLANES, TRAINS AND AUTOMOBILES

**Beyond people getting to their jobs and activities safely, transportation is a fast-changing industry that requires more attention and careful planning than ever before. With the addition of autonomous and electric vehicles, updates in transportation logistics will ultimately affect every individual. State leaders gathered to discuss these changes in February and provide an update on the industry as a whole.**



The gathering was hosted by the Piedmont Triad Airport Authority and was sponsored by Martin Marietta, the Piedmont Triad Airport Authority and Guilford Technical Community College. The transcript was edited for brevity and clarity.

#### WHAT'S THE STATE OF THE INDUSTRY RIGHT NOW?

**FOX** We're certainly continuing to grow as a state. As former Secretary [Jim] Trogdon liked to say, by 2040, the state of Mississippi will have moved here because we're expecting another 4 million people. We've got to be prepared for that. We're one of the four fastest-growing states, along with Texas, Florida and Georgia.

Here in North Carolina, we know why. It's a great place to live; it's a great place to work. You've got the beaches; you've got the mountains; you've got great universities. There's a lot to like about North Carolina, but knowing that all those people are going to be coming here, it is incumbent upon us to be prepared for that so that growth can be beneficial instead of a burden.

The worst time to open a new transportation infrastructure facility is when it's already overloaded, so we need to get ahead of that and plan in all modes. I think we're a leader in the United States in a lot of transportation issues including unmanned aerial vehicles and drone technology.

**HODGES** It's also going to change the needs of the transportation system because for those things to work optimally in the world of true driverless vehicles, you've got to have smart roadways. It's not just cars talking; it's the roadways talking, and there's a huge cost to redesign and upfit all those things. The decision-makers have a limited knowledge about that, but the public really has a limited knowledge. They just think it's generations down the road, and it's not. We expect within 10 or 15 years, we'll be approaching fully automated vehicles on the road.

What I'd really like to see is us being the first state that starts to raise the

Panelists from left:

**Samuel Chinnis**, professor of global logistics at Guilford Technical Community College

**Michael S. Fox**, chairman of the North Carolina Board of Transportation

**Kevin J. Baker**, executive director of the Piedmont Triad Airport Authority

**Basil Yap**, Unmanned Aircraft Systems program manager for the N.C. Division of Aviation

**Charles Hodges**, executive director of NC Go!

**Marc Finlayson**, founder and CEO of Finlayson Consulting



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holistic things that are needed for a smart transportation system, because I think we can generate so much economic activity around saying we're not just the good rail state, we're the good transportation state.

We can be the leaders on this and bring the businesses and bring the jobs.

**FINLAYSON** We have to solve the revenue problem, because the gas tax is going to eventually go flat and decline. The technology that we've been talking about is not only going to strain the gas tax revenue stream; it's going to strain the highway-use tax, which is the sales tax on cars and trucks, and it's going to strain the [Division of Motor Vehicles] fees.

Let's say, for example, you buy a Tesla that's going to last a million miles instead of the 200,000-mile life of an internal-combustion engine car. That's four fewer cars over that period of time that you're going to be purchasing, and you don't have to do as much maintenance on those vehicles, either. There are fewer moving parts.

And if you're going to use ride-hailing and ride-sharing as your method of getting about, you don't need a driver's license anymore. Then there are the odd revenue streams that you don't think about that are going to be impacted, like municipalities that raise revenue from parking. If nobody's parking because they're not driving their own vehicle but they're getting dropped off by Uber and Lyft, that revenue stream is going away.

**BAKER** Airport parking is usually about a third of the overall airport's revenue, and we've been talking about this for two years because of Uber and Lyft and what that does.

I keep asking people this question: "How many hours a day is your car actually performing its function?" Most people answer that question and say about two hours: taking you from work to home and maybe a little bit of time out to the store or whatever.

So, you've got this incredibly



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**KEVIN J. BAKER**

Piedmont Triad Airport Authority

expensive asset — the cost to purchase, the cost to maintain, insure, etc. — that is unused for eleven-twelfths of the day. What a waste. You can deploy that cash to do so many other things and make more money, if you think about it.

**CHINNIS** When we talk about all the elements of supply chain, you talk about this accelerated movement of home delivery from everywhere. It impacts inventory. It impacts fulfill-

ment and distribution and transportation. But the public just doesn't see any of it, because the best logistics or supply chain organization is actually invisible.

One of our biggest challenges is recruiting students into the program. Again, the public doesn't understand what supply chain is. They think about transportation and distribution, which is just a piece of supply chain. They don't understand or see how much technology there is, how much overall data

usage there is, everything that's there and how broad those careers are.

**YAP** Do you think we're doing a good job with STEM or STEAM initiatives when it comes to getting folks just excited about science and engineering?

**CHINNIS** One of the things that I'm most excited about is a logistics center at one of the high schools here in Guilford County. That, in cooperation with this program called GAP — Guilford Apprenticeship Partners — is really getting these high schools starting people in their senior year working in the industry and then also going to school as they follow that career path.

The problem with the youth and the high school students is what they perceive as technology, which is what they use every day, is a small part of what we need for technology.

They know how to interface with an

app. They know how to network with technology, and that's great. But do they understand data? Do they understand turning data into information? How do you take a bunch of data and then say, "This is what it means?" That's what's critical in [the] industry, and that's what we need.

#### HOW IMPORTANT IS TRANSPORTATION TO NORTH CAROLINA'S ECONOMIC DEVELOPMENT? HOW DO WE COMPARE WITH OTHER STATES?

**FOX** Any time you build a new road or you widen a road, it's going to create some economic development around it just by virtue of the construction jobs and everything that goes with a big job like that. But you also typically open up parts of a community that may not have had a lot of economic development before, like the Publix Distribution Center project in east Greensboro.

That's been more of a rural area, and the land values around there are going to go up; people are going to have other businesses there. If you have a thousand people going to work there every day, someone is going to say, "Well, gosh. Maybe I should have a restaurant there or a convenience store or something."

Our economy really depends on people being able to get to and from their workplaces, to and from school, to and from the doctor and their medical appointments and to all their recreational activities. Having an infrastructure where it's easy for people to do that improves your productivity, and it also is a real motivator for business owners wanting to come here and locate their companies.

**FINLAYSON** Well, I'm the rural guy, so I'm the token rural person. We can't build our way out of congestion. At

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some point, it's a fool's errand.

What I'd like to see is more investment across all of North Carolina, because our state is benefiting from having many smaller municipalities that can support businesses and populations. Maybe we can diffuse the population out of Charlotte and Raleigh and spread it around. If we can create the infrastructure — not only transportation but water and sewer, broadband internet, natural gas — we can create pockets of business growth and development all across North Carolina and share the wealth.

As somebody who has seen our region sort of lag behind, I'd like to see more investment and more opportunity in eastern North Carolina. We see some of that in the CSX project in Nash and Edgecombe counties near Rocky Mount. That's a great example. There's also the Triangle Tyre project near there as well.

Both those things are very positive. If we had more investment, I think we'd see more of those opportunities. People tell me all the time, "Well, you can't guarantee that if we build it, they will come." What I can guarantee, though, is if we don't build it, they won't come.

**BAKER** On the projects that we have pursued, like the route for the airport, I would go as far as to say that the road network is one of — if not the greatest — asset to us being able to win big projects. Especially businesses like FedEx, where they want to have uncongested roads. When companies come and say, "Look at four lanes of openness here that I can get on," it's hard for me to come up with a bigger asset that we have.

**HODGES** I think it's also important as we talk about how we connect these different parts of the state. We've got to remember that most of the job creation is still happening in the urban areas, so we can't just rely on the roads as a means to get more people from Craven or Wayne counties up to Raleigh.



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**MICHAEL S. FOX**

North Carolina Board of Transportation

One way to replicate some of the expansion and growth that's happened in Johnston County or maybe in Chatham County is we need to look at other things like commuter rail. We've already got a passenger rail, but expanding and adding commuter rail to serve eastern North Carolina so that folks have confidence that they can get to work, can get to jobs quickly, and not just have to do it by vehicle.

There are a lot of far-flung places around the state where seniors and folks that just choose to or cannot afford a vehicle are dependent upon

public transportation to get to jobs, to get to health care, to get to cultural and community activities. We've got to make sure we're continuing to invest in public transportation to make sure that everyone has access to these items.

**CAN YOU TELL US ABOUT THE DRONE PROGRAM AT NCDOT?**

**YAP** North Carolina was one of 10 selected sites for a program that was started with a presidential memorandum called the UAS Pilot Program. It's led by the Federal Aviation Adminis-



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tration and the Department of Transportation.

After we were awarded that participation, we immediately got hit by Hurricane Florence. We saw that there was this tremendous beneficial use in using drones to both help with supporting getting folks out of those impacted areas as well as helping first responders get into the impacted areas and monitoring the roads.

They didn't have cameras in a lot of these areas in rural North Carolina that [were] impacted by Hurricane Florence. What we were able to do is use a drone to fly and monitor traffic, livestream that back, and make really some great decisions on the different routes, ingress and egress.

After that, we started focusing on package delivery. We found that there was a great use case with medical-package delivery. It was high value, it was time sensitive, and, typically, it was between known points.

What that operation did was take a van off the road, which was a courier service picking up specimens and then dropping them off at their main lab. By removing that vehicle, we're able to reduce the time, because it was quicker to fly a drone. We had one less vehicle on the road. If we duplicate that over time, that will help with the congestion. We could get results quicker. We found that we could actually put high-value drugs in there, and it can be moved quicker.

The last thing I'll mention is the air taxi. We're finding there's a business case for moving people as well, and Uber and others are investing lots of money in that. We want to kind of be a leader in that infrastructure.

**BAKER** What kind of time frame would you put on air taxis? I'm not talking about going from here to Munich, but going from here to Eden or even to Raleigh.

**YAP** Recently, NASA commissioned two market studies, and they were looking at about a five- to 10-year time frame before we see, at least in selected urban areas, an air-taxi service.



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**SAMUEL CHINNIS**

Guilford Technical Community College

Now, we caveat. I think we've heard from autonomous vehicles [officials], "We're only five years away from fully autonomous vehicles" since 2000. We have to understand the hurdle is the regulatory structure and certifying those vehicles and then approving those types of operations, because they

ultimately would like to remove the pilot from those aircraft and have an autonomous flight. The federal Department of Transportation and the Federal Aviation Administration have a hard time wrapping their head around how we regulate that. We're seeing this on the autonomous vehicle side as well. ■



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