

**Ohio Turnpike and Infrastructure Commission**  
**Remarks by Executive Director Randy Cole**  
**Before the**  
**Committee for a Study of the Future Interstate Highway System**  
**May 16, 12:15 p.m.**

Good afternoon. My name is Randy Cole and I serve as executive director of the Ohio Turnpike and Infrastructure Commission. It's a privilege to present my perspective on the anticipated evolution of freight (and passenger vehicle) movements along the Ohio Turnpike, a key east-west corridor in the nation's Interstate Highway System (IHS). Before I begin, I'd like to express my gratitude to this distinguished panel and to Dr. Monica Starnes for the invitation. Thank you.

Dr. Starnes asked me to share my perspective on the evolution towards implementing automation for freight movement along the interstate; what technology, infrastructure, as well as institutional changes I think need to be in place short, mid and long term for successful implementation and to provide some details of the work that the Ohio Turnpike is already doing in this area.

In preparing for today, I read several of the National Cooperative Highway Research Project (NCHRP) reports. "Strategic Issues Facing Transportation: Scenario Planning for Freight Transportation Infrastructure Investment" had an insightful passage right in the introduction. Page 3 described both the complexity of moving freight across multiple borders and jurisdictions and the difficulty in creating solutions to problems because of "silo-ing" within freight transportation. The report includes survey results that revealed 2/3 of responding shippers and carriers had never met with any government official at any level! I commend this study and you as a committee for reaching out to such a diverse set of presenters, especially in the area of freight.

In this period of emerging transportation technologies, it is so important to get outside perspectives and foster collaboration.

I once heard a former Turnpike Director compare his job to being mayor of a city a quarter mile wide and 241 miles long. When I became director, I put a statement across my whiteboard that read “We are separated by a fence, not a wall.” It’s a direct reference to the fact that no one lives on the Turnpike. Instead, we operate a safe, reliable and efficient transportation facility providing for the movement of people and goods across 13 counties and through 70 communities as part of a transportation network vital to the economy of Northern Ohio and the Eastern U.S.

And even that role is changing. At the annual meeting of a Metropolitan Planning Organization in Ohio, after challenging the audience to think differently about their work as we move into the emerging era of connected mobility, I was asked to describe the difference between being a “transportation agency” and a “mobility provider”—in one sentence. My response was, “A transportation agency is focused on infrastructure and vehicles, and a mobility provider is focused on how their organization or facility fits into a larger network and process of getting goods and people from point A to point B.”

From that perspective, the overarching theme for my comments today is that the three elements of technology, infrastructure and institutional change, which I will now refer to as “policy” have many intersecting points and can either create barriers or provide leverage points.

Let me briefly describe the Ohio Turnpike and our Freight Traffic. We feature some key advantages for additional testing and eventual deployment of platooning and self-driving and connected vehicles. Our 241-mile roadway, depicted in the map on the screen, features 160 miles of 3 lanes in both directions (in yellow—the longest continuous stretch in Ohio) and eight of our 31 interchanges (the orange squares) have about 28 total acres designated as Long-Combination Vehicle (LCV) lots.

Our mainline and interchanges have high quality and easily visible pavement markings, which exceed federal standards and are fully re-striped each year. Along our right of way, we continue to leverage and upgrade an existing 241 miles of fiber optic cable, which provides a unique asset that other corridors do not yet have.

Our roadway pavements are in generally good condition and our 30-year program (begun in 2011) to replace the original pavement from the 1950s is 16.5 percent complete. We also maintain 570 bridges with a current overall condition rating of 6.74 (on a 0 to 9 scale) and none are structurally deficient. Our capital improvement program is supported by toll revenue, which also supports a high level of additional services. Each of the features and characteristics I just described provide the proper setting for safe testing today of emerging technologies and their eventual adoption.

In 2016, the Ohio Turnpike set records for the number of vehicles traveling, with 54.9 million vehicle trips, with more than 12 million of those being trips taken by commercial vehicles. During those 12 million trips, which represented 22 percent of our traffic, commercial vehicles traveled more than one billion miles on the Turnpike. Unfortunately, there were 823 commercial-related crashes in 2016, with 522 of those being the fault of the commercial driver, according to the Ohio State Highway Patrol. Included in the total were three fatalities and 155 victims who were injured.

As a member of the International Bridge, Tunnel and Turnpike Association, we are aware that the association has asked this body to recommend that Congress lift the prohibition on tolling interstate highways for the purpose of Interstate reconstruction. I would suggest that is a short-term recommendation that pays long-term dividends.

I would like to further point out that toll revenue not only allows us to maintain the infrastructure in the condition previously described, it also allows us to provide additional services and ensure travel time reliability.

For example, the Turnpike maintenance department has a goal of clearing the road of snow and ice within two hours of the start of an event—no matter the size of the storm. In addition to the revenue, there is flexibility and authority that is provided to Turnpikes and Toll roads to facilitate freight movement like allowing long-combination vehicles and providing additional facilities like LCV lots and service plazas. Our seven sets of modern service plazas (depicted in pink) feature 1,412 commercial vehicle parking spaces, fueling and services designed for commercial drivers, such as showers and laundry facilities.

In 2013, the Ohio Department of Transportation published a Statewide Freight Study. The study pointed out that New York State and the Ohio Turnpike both allow Long Combination Vehicles, however, there is an LCV gap on I-90 in Ohio. The study called for an LCV pilot program to extend LCV operations on interstates that connect with the Turnpike. The expansion of truck parking through Public-Private partnerships was recommended to improve safety and reduce congestion, however, federal law prohibits commercialization of interstate rest area facilities. This is just one example where current infrastructure doesn't support demand and current policy creates a barrier to efficiency.

As the committee is aware, The NCHRP December 2013 “Specifications for a National Study,” laid out four program components: 1) Preserving the Interstate Highway System; 2) Operating the IHS assets efficiently; 3) Growing the IHS; and 4) Harnessing Technology to improve the IHS. Stated goals within the components include reducing travel time, increasing travel time reliability, reducing fatalities, serious injuries and crashes, reducing time lost due to congestion and improving US economic performance and competitiveness.

The Ohio Turnpike's infrastructure and LCV program allow for staging and refueling without leaving our right of way, essentially serving as "one-stop shopping" for freight.

Just like the collaborative approach I described earlier helps reduce silo-ing, our service plazas and LCV program mitigate the significant challenge of dealing with multiple jurisdictions, which was detailed in the previously referenced strategic issues report. In Ohio, we have a patchwork of over 2,200 local governments in our state, so it can be cumbersome, to say the least.

At the Ohio Turnpike, the result of our policy, program and infrastructure is the enrollment of 24 major companies in our LCV program with more than 1,000 (1,035) registered tractor-trailers, which are averaging approximately 155,000 trips per year (2014-2016). The companies include recognizable names like Fed Ex, UPS, Walgreen and USF Holland. However, back to the challenge of multiple jurisdictions, one company, XPO, was recently faced with an operational issue when they were informed that triple permits authorized under CFR 23 USC 127 would not be renewed and they would not be permitted to travel onto connecting US Route 250.

Travel onto the connector is necessary for XPO drivers to reach their multi-million-dollar distribution facility just ½ mile from the Turnpike. In fact, ODOT was threatened with loss of federal funding if the permit was renewed. A similar problem exists at our exits 215 and 216 where it's affecting both XPO and Fedex. Two solutions have been recommended: The first is expansion of our LCV lots, which is a redundant expense and will still lead to congestion for additional shippers and operational inefficiencies for XPO (and Fedex). The second solution is congressional action to legislatively exempt these locations, as hundreds of other locations around the country have done.

Surely, developing a better process for federal, state and local coordination of LCV operations can still ensure the safety of motorists and the condition of the IHS without requiring an act of Congress.

I offer that at a point like this where infrastructure and policy intersect, the policy changes that I have described may be as important as system expansion in achieving many of the stated goals of this study. Now I want to provide more details on how we're preparing for the future. Self-driving truck technology and platooning have great potential to make the Interstate Highway System a safer place to travel.

For the Ohio Turnpike, it makes perfect sense to be working with innovators like Otto and Peloton, both independently and under the direction of Ohio Governor John Kasich, we are coordinating with The Ohio State University, the Ohio Department of Transportation, the Ohio Department of Public Safety and our economic development team at JobsOhio. Further, we are collaborating on an even broader scale through The Smart Belt Coalition, which is made up of transportation agencies, academic institutions and testing centers from Ohio, Pennsylvania and Michigan. This type of widescale collaboration is a significant way to break down silos and the jurisdictional issues that this study is trying to address.

Within our facility, we're leveraging our fiber optic line by working on a 60-mile long project with Dedicated Short Range Communications (DSRC). Installation of the technology in the form of roadside units will take place later this year on the mainline across Lorain, Cuyahoga, and Summit Counties and in 40 of our maintenance vehicles.

Connected vehicles can help share important traffic information with drivers, such as upcoming work zones and lane closures.

Alerting drivers ahead of time to the presence of construction workers and lane changes will improve work zone safety, reduce work zone congestion, and eliminate work zone conflicts between commercial vehicles and passenger cars.

Our proof-of-concept will equip approximately 40 vehicles with onboard units. Included will be our Incident Response Vehicles, which will send out basic safety messages to alert other vehicles with DSRC capability about nearby hazards or work zones. We'll also be able to measure and report other data useful to our snowplow drivers and managers, such as air and surface temperatures and the amount of material (salt and pre-treating liquids) applied to the roadway.

Short term, we're trying to gain immediate safety and efficiency benefits of the technology and we are training our employees in how to use it, run the software and analyze the data that's available and develop required policies. I like to use the term "operationalizing" the technologies. Priority applications we are pursuing include work zone notifications, freight platooning and alerts for truck parking capacity at our service plazas.

Mid-term, we hope to provide infrastructure and support for passenger and freight technology testing. In the long run, we fully believe that connected and self-driving vehicles can help improve conditions for the freight that moves along major highways in our region. They can save freight carriers time and fuel, while also making roads safer for all drivers.

In terms of moving freight and commerce in the future, we know that logistics models are changing. As you may know, the last leg of the supply chain is often less efficient and may comprise up to 28 percent of the total cost to move goods.

In the mid and long term, I firmly believe that the adoption of aspects of our operations like LCV lots and service plazas along the entire Interstate Highway System offer opportunities to separate traffic and significantly reduce vehicle miles traveled to allow for more efficient distribution. Government investment can be redirected because there will be more public-private partnership opportunities.

Thinking further down the road, rights of way may even be coordinated with private companies in order to provide safe airspace for drones to help solve the “last-mile problem.”

Chapter 6 of the NCHRP Future Options for the National System of Interstate Highways is titled: “Bottom line—Not your grandfather’s Interstate.”

As a former owner of an Oldsmobile, I can appreciate the paraphrased marketing line, however, as a father of five, I hope we’ll all be working together to develop our “grandchildren’s Interstate.”

The NCHRP Strategic Issues report introduction begins with the retelling of the innovation of containerization, which Malcolm McClean introduced in April of 1956. That single innovation disrupted the freight industry and greatly affected the national IHS. The emerging technologies being developed today may have an impact at least as disruptive as containerization of freight. Perhaps it’s much more.

In just the area of Unmanned Aerial Vehicles (UAV) and freight, Amazon, UPS, Walmart, Ford and others are working on a solution to the last-mile problem in order to drive down their costs, improve their earnings and meet customer expectations. Amazon, for example, has been testing its “Prime Air” program, in which packages are dropped from above by a drone. Ford’s vision for the future includes a fleet of self-driving vans with drones delivering goods to your doorstep.

I fully trust it will be valuable to coordinate efforts and policies with the FAA for potential use of the airspace above our right of way and/or for using LCV lots as staging areas for UAV.

Much of the research on freight stresses the need for multimodal linkages, however, the NCHRP report “Challenges to CV and AV applications in freight operations,” is the only TRB research document that I have referenced today, which included a mention of Unmanned Aerial Vehicles.

I hope that we can break down silos and use government policy and infrastructure investment in this area of emerging technology to collaborate with and leverage the efforts of industry, in lieu of making costly and potentially unnecessary system expansion plans.

What if we all work together to determine the opportunity for last-mile delivery by UAV from the existing infrastructure provided by every port, distribution or manufacturing facility, rail yard, airport, and LCV lot in the U.S?

How many of the goals of this study and identified challenges can be addressed at this intersection of infrastructure, technology and policy?

At the Ohio Turnpike, we believe each of these emerging technologies create opportunities to provide additional services, safety and reliability to our customers and they position the Ohio Turnpike for a very bright future.

I’ll be very interested in learning what technology and infrastructure will emerge over the next few decades, as well as what institutional and policy changes you think may need to be in place for successful implementation. I and many others, will look forward to your report.

Thank you for the opportunity to appear. I’m happy to answer any questions that you may have after the presentations by the other panelists.