

Ohio Turnpike and Infrastructure Commission

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Ohio House Transportation and Public Safety Committee

Wednesday, January 31, 2018



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Ohio Turnpike and Infrastructure Commission
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Hearing on “Autonomous and Connected Vehicles Study”

January 31, 2018

Good morning, Chairman Green, Vice Chairman Greenspan, Ranking Member Sheehy, and members of the House Transportation and Public Safety Committee. I’m pleased to appear here today on behalf of the Ohio Turnpike to share an update on our efforts related to smart mobility.

I’d like to frame the issue of Connected and Autonomous Vehicles (CAV) in terms of safety, economic benefits, and quality of life, which are all important factors that led Governor John Kasich to form DriveOhio, which Jim Barna will provide information about in more detail.

Let’s start with safety. According to the World Health Organization (WHO) the leading cause of death for the age group 15 to 29 is traffic crashes. In 2016, 64,000 Americans died from overdoses and the majority of those were opioid-related. That same year, there were 16,000 homicides in the U.S.; but did you know there were 40,200 traffic fatalities that same year? The Center for Disease Control (CDC) dedicates a whole section of their website to the issue. In fact, they refer to traffic crashes as “a global problem.” A New York Times Op-Ed last week presented similar facts. It’s safe to say the data confirms the most dangerous weapon in our society is the motor vehicle.

At the Turnpike, we take extraordinary efforts in education, enforcement, engineering and communications to help ensure safe travel. In 2017, a record 55.2 million vehicles travelled over 3 billion miles on our road. Even with a record number of vehicles, we were free from traffic backups 99.84 percent of the time. Counter to the trend nationally, we were fortunate that fatalities from traffic crashes declined from 12 in 2016 to only six in 2017. But we’re getting diminished returns from our efforts. We fully anticipate the next safety improvements are going to come from technology.

Most immediately, the Ohio Turnpike is modernizing its fleet and installing sensors on the roadside that can receive and broadcast messages along 60 miles in Lorain, Cuyahoga, Summit and Portage Counties. Roadside prep work is underway and equipment installation will be complete soon. Software and data exchange will begin in the next few months.

The sensors will collect and transmit real-time travel information and weather data to vehicles that already have the technology to receive it. The software will create advisories for road weather warnings, traffic incidents, curve speed warnings and the presence of work zones, all with the goal of keeping our customers and employees safe from drivers who are increasingly engaged in distracted and dangerous driving behaviors.

Fifteen (15) Dedicated Short-Range Communication (DSRC) roadside units (RSU) are being installed at Toll Plazas, Service Plazas, Maintenance Facilities and at the Administration Building. They’ll be connected to existing switches that hook up to our 241-mile fiber optic network. Meanwhile, on-board DSRC equipment is being installed in thirty-eight (38) Commission vehicles. Snowplow trucks will transmit speed, salt spread rate, and even whether the plows are up or down so that we can become more efficient with our material costs and labor.

In one word, we want to “operationalize” the technology so that our employees in our Communications Center become proactive instead of reactive. Our goal is to monitor systems and analyze data to act *before* something tragic happens, instead of reacting to citizen phone calls or Trooper radio transmissions *after* a crash. Our

maintenance supervisors will have the ability to monitor road conditions and fleet operations in real time. We'll also learn valuable lessons on the use and transmission of data and its security—with our own fleet—before we start providing this service to our customers.

In addition to safety benefits, we expect immediate efficiency gains from this technology. Our annual Snow and Ice costs are between \$5 to \$8 million for labor and between \$3.5 to \$4.5 million for materials. If we can be more precise with our time and our materials, there's a significant opportunity for savings.

Despite the great safety numbers I presented earlier, we still have 2,300 to 2,400 crashes a year. On the Turnpike, we spend over \$1 million in labor and materials replacing guardrail and repairing property damage due to crashes. Property damage due to crashes is the most frequent change order I sign on construction projects.

We'll spend less than \$2 million dollars on this DSRC project. By comparison, we'll spend almost \$130 million on operations and a similar amount on capital projects to maintain the Turnpike this year. So, the \$2 million is less than one percent of our budget. I believe our expenditures, as well as ODOT's and our other DriveOhio partners, are modest and necessary to make our infrastructure safer and our economy stronger.

None of us has a crystal ball on how quickly these technologies will be adopted. Yet I'm confident that just like that day in 1903, when Ohio's own Wright brothers took that first flight on a beach; and just like that day in 1908, when the first Model T rolled off the assembly line, our world is changing and there's no turning back.

I'd like to point out that in 1903 there were no airports, and in 1908, there were fewer than 200,000 miles of "surfaced roads." Yet in 1909, the first airport opened. Today, there are 5,500 public airports and there are 2.6 million miles of paved roads.

Government made significant investments in infrastructure to support these new transportation technologies. The result was the birth of the middle class, over 100 years of economic growth and prosperity and an improved quality of life for generations. As Kristi Tanner discussed, Ohio is well positioned to lead in this current transformative time.

We are not alone in recognizing this new reality. Each of the DriveOhio partners is also collaborating with our neighbors in Michigan and Pennsylvania. We have formed a multi-state collaborative called the "Smart Belt Coalition." All of the leading academic institutions and transportation agencies across all three states are aligning policy, process and teaming up to position the Midwest as a leader in this emerging industry.

The combination of DriveOhio and the Smart Belt Coalition has silicon valley companies like Peloton, which specializes in truck platooning, and our current freight customers, extremely excited. We also have interest from Indiana, New York, New Jersey and Ontario to join our coalition. In addition, as a part of my involvement as a board member of the International Bridge Tunnel and Turnpike Association (IBTTA), we have a leadership role in an international CAV working group.

Quality of life is where I would like to conclude today.

There are almost 8 million drivers in Ohio. There are also 274,000 blind Ohioans. The National Federation for the Blind has spent millions of dollars pursuing assistive technologies and self-driving cars. In fact, Steve Mahan, who is blind, was the first person to "drive" alone in the Google car in October of 2015.

Speaking of potentially improving their quality of life: Did you know there are 1.2 million Ohioans (under the age of 65) with cognitive or physical disabilities that may prevent them from driving? My 9-year-old daughter, who was diagnosed with Williams Syndrome, may very likely be one of them.

I specified “under 65” because there are also 1.2 million Ohioans over 65. Researchers and policymakers say there’s a “Silver Tsunami” coming that will increase that number drastically in our state. That wave is projected to put a huge strain on our social welfare system and increase urban sprawl as new senior living space is built. But perhaps there’s another way to address the growing demand.

With each of these populations, the lack of independent mobility reduces opportunities for employment, social engagement, independent living, access to medical care and overall quality of life. A report released last year by the Ruderman Family Foundation analyzed the potential impact of self-driving vehicles on people with disabilities.

It found that 40 percent of people with disabilities leave their home less than 3 or 4 days a week. Meanwhile, 85 percent of people *without* disabilities leave their home 5 to 7 days per week. The Ruderman study concludes that self-driving vehicles could open 2 million employment opportunities for people with disabilities.

Despite the efforts of so many great people providing services to those in need, the fundamental barrier that many of us take for granted is independent mobility. These changes in technology show great promise to remove that barrier.

It’s one of the reasons that a new company, Voyage, is operating self-driving vehicles in two different senior communities, for 4,000 residents in The Villages in San Jose, California and for 125,000 residents in The Villages in Florida. I appreciated the story of one resident, 88-year-old Nancy Green. She’s still driving, but she won’t attend social events or grocery shop if she isn’t able to land a handicapped parking spot. She would just turn around and go home. Now, she just lets the self-driving car drop her off.

Personally, I know how hard it was for my Dad and his siblings to have “the talk” with my grandfather and take his keys away when he was 96. And I surely don’t want to have “the talk” with my daughter in six years when her friends are getting their “temps.” I’m also not interested in reliving the anxiety my wife and I had when our oldest son turned 16 and we had to trust that he and ALL of his friends would exercise good judgment behind the wheel.

I’d like to address one more population. There are 1.7 million Ohioans (comprised of 314,000 families) who live at or below the poverty line. Unfortunately, I believe there is a fundamental public misperception that everyone has to be able to afford an \$87,000 Tesla to benefit from CAV.

Today, AAA estimates that it costs \$8,469 a year to own an average new car in America. For a family living near the federal poverty level of \$24,000 that cost puts independent mobility through car ownership out of reach. Ride-sharing and self-driving vehicles will provide better access to jobs, health care, and important contributors to quality of life like grocery shopping, recreation and parks.

Rep. Howse, I am particularly motivated by a Cuyahoga County Board of Health analysis that revealed the life expectancy of an adult male in the Hough neighborhood is 64 years, but just 8 ½ miles away in Lyndhurst it’s 88.5 years.

The county’s analysis showed that one quarter to one half of Hough residents don’t own a vehicle and are greatly limited to all those essentials I just mentioned. Technologies like self-driving vehicles and services like ride-sharing can help improve the quality of life for all of our citizens. In fact, Smart Columbus has made reducing infant mortality of the goals of its program.

I know one other point that frequently gets mentioned is rural access to CAV. The state of Minnesota is already completing significant research on the rural benefits of these technologies. No region of Ohio should be left behind. I'd also like to mention that I don't think self-driving technology necessarily competes with existing public transit. It should complement it by making it more efficient and reliable. Self-driving vehicles will solve first-mile and last-mile transportation issues and increase access to services that will improve quality of life for those who need it most.

Thank you for your time. I will be happy to answer any questions the committee may have after Mr. Barna completes his remarks.