

**Testimony before the PA Senate Transportation Committee**

**Senate Bill 1096 (Browne) and House Bill 1958 (Rothman)**

**Benefits, Challenges and Opportunities**

**by**

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Good Morning Chairman Rafferty, Vice Chairman Sabatina and members of the committee. Thank you for the opportunity to comment on Senate Bill 1096 and its companion in the PA House, House Bill 1958.

My name is Tim Scanlon and I serve as the Director of Traffic Engineering and Operations for the Pennsylvania Turnpike Commission. I have been involved in the traffic operations of our roadway for the past 30 years and in that time the watch words for our traffic operation have been:

***Safety, innovation and customer service***

These watch words have propelled the Pennsylvania Turnpike into becoming a leader in the transportation industry. The development of several initiatives such as the turnpike's Innovation Council, the Work Zone Safety Subcommittee and the Customer Assistance and Solutions Team have furthered our efforts to truly live by these words. As our industry continues to progress into the 21<sup>st</sup> century, it is our commitment to facilitate and encourage the advancement of technological innovations that not only improve our driver's experiences, but to enhance both the driver's and worker's safety on all roadways throughout the Commonwealth.

Our team is dedicated to identifying ways to reduce the deaths, injuries, and property damage that result from motor vehicle crashes. As part of our commitment to be leaders in the future of transportation technology, we have partnered with a coalition of state agencies and academic institutions to create

the Smart Belt Coalition, an organization for insight and best practices supporting research and testing for automated and connected vehicle initiatives.

The Smart Belt Coalition currently includes five state agencies and seven academic institutions within Michigan, Ohio and Pennsylvania. Together, these systems span 173,858 lane miles and support 362.5 billion annual vehicle trips. The coalition seeks to deploy innovative and strategic technology that boosts safety, mobility, economic competitiveness and overall quality of life.

Member entities are collaborating to support testing of various automated and connected vehicles at the region's testing facilities and on varying terrain during a full range of weather conditions and across diverse urban and rural roadways. Recently, the coalition prepared and approved a strategic plan that focuses on connected and automated applications in work zones, traffic incident management and commercial freight.

Pennsylvania, the Keystone State, serves the freight industry as the crucial transportation network link from the northeast to the rest of the country. The ever-increasing commercial needs of Pennsylvania's transportation network is coupled with economic expansion and decreased mobility. Approximately 43% of the Turnpikes' current revenue is generated by commercial vehicles, a number that is anticipated to increase to nearly 50% over the next 30 years. Providing our commercial vehicle customers with the premium service the Turnpike offers requires us to consistently maintain an advantage over our neighboring freeways and expressways. Although, improving our roadway with additional traffic lanes

and better facilities may provide current customers with a better experience, it will not be enough to attract the future of commercial haulers. Truck platooning offers to be one of the most beneficial, and game-changing innovations for the future of the transportation industry. Combining the uses of connected and autonomous technologies, truck platooning allows commercial vehicles to travel along high-speed roadways with relatively minimal distance between vehicles. The effects are dramatic; including lower fuel consumption, reduced emissions, optimized transportation systems, and reduced congestion. In Pittsburgh last month, the Smart Belt Coalition targeted October 2018 for a truck platooning demonstration from Michigan to Pennsylvania. Passage of Senate Bill 1096 or its companion House Bill 1958 is an important step in advancing any pilot platooning initiative in Pennsylvania as it would specifically exempt the nonlead vehicle in a platoon from provisions of the Vehicle Code relating to following too closely. The approval of this bill allows for the Commonwealth to continue its leadership efforts within the industry by providing an avenue for the commercial industry leaders to use Pennsylvania as a test bed for platooning technology.

While, Pennsylvania has taken a leading role to lay the groundwork for Highly Automated Vehicles (HAV). The Pennsylvania Turnpike is also preparing its foundation for the future. We are advancing a P3 project to install fiber across the entire system to support connected and automated vehicles, as well as cashless tolling. Additionally, we are planning to make our roadways smarter by deploying edge computing solutions that will allow the cars of the future to communicate safety and mobility alerts with the Turnpike.

In addition to authorizing automated vehicle platooning, Senate Bill 1096 and House Bill 1958 would allow PennDOT and the Turnpike Commission to pilot the use of autonomous Truck Mounted Attenuator (TMA) trucks, referred to in the legislation as “Highly automated work zone vehicle”.

Many work zones are required to have a ‘buffer’ vehicle located between the work area and the approaching traffic. The purpose of the ‘buffer’ vehicle is to provide protection to the workers in the work area in the case of a vehicle intrusion. The ‘buffer’ vehicle has a truck mounted attenuator (TMA) on the back of the vehicle to absorb the impact of an errant vehicle. To perform its function, the ‘buffer’ vehicle is located in the most vulnerable and exposed position within the work zone. The vehicle’s exposure to high-speed traffic presents a serious risk to the safety of the on-board operator of the vehicle. Unfortunately, since the beginning of 2015 we have experienced over 90 TMA crashes along the Turnpike. This is a startling increase due mostly to distracted driving. The Turnpike has recently streamlined work zones to be uniform in deployment as a part of a concerted effort to improve work zone safety, and as a result has observed an overall downward trend of work zone crashes. However, the number of ‘buffer’ truck mounted attenuator crashes has not followed this same downward trend.

Please see the chart on the next page.

## Truck Mounted Attenuator Hits - PA Turnpike



\* INCLUDES THROUGH MAY 31, 2018

Each one of the TMA hits since 2015 has had an operator, either a Turnpike employee or Contractor, within the vehicle during the impact. It is tough for me to sit behind a desk and ask my co-workers to continuously risk their own wellbeing within one of these vehicles. However, a solution to protect workers is through the use of an Automated Truck Mounted Attenuator (ATMA). This technology removes the driver from the 'buffer' vehicle designed to be struck by errant vehicles.

The autonomous TMA truck functions like a connected vehicle, acting as a follower. This leader/follower configuration uses a radio link between in-line vehicles to communicate via GPS the velocity, heading and position of the leader vehicle to the follower vehicle with a crash cushion. Additionally, a control unit within the leader vehicle is constantly monitored by trained personnel capable of taking control of the follower vehicle and, if necessary, stop the vehicle. Currently there are two known providers of the technology: Royal Trucking and Southwest

Research Institute. These vehicles could be deployed in mobile patterns, such as pavement marking painting, sweeping and setting traffic control patterns.

Our work is wholly supported by those at this table. We all believe that vehicle occupants deserve to be protected from unnecessary injury risks in the event of a crash. Rather than merely removing regulatory hurdles, the PA Turnpike recommends that we consider how automated driving technology can be used to improve upon the current state of vehicle safety, and even contemplate new regulations to compel this improvement.

In summary, SB 1096 and HB 1958 holds tremendous potential to improve the safety of our roadway for our workers and customers. In turn this should lead to significant improvements in the standardization and the way in which monitor and regulate this evolving technology.

In the short term it will save lives and reduce injuries, in the long term it will begin to standardize the way in which these technologies are used.

Again, as I started I will end – the PA Turnpike ***values safety, innovation and customer service***. This bill addresses all three of those important touch points.

I work from behind a desk to try to develop improvements to the equipment and processes. With me today is Mike Kates who works every day on the turnpike and would like to share his real-world experiences working on the Turnpike and TMAs in particular.

Thank you. After you hear from Mr. Kates, I am happy to take questions.

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