

Good morning. On behalf of Secretary of Transportation Leslie Richards, thank you for the opportunity to speak to you today about Senate Bill 1096 and House Bill 1958.

As you know, automated vehicle technology holds tremendous potential for improving safety and mobility on Pennsylvania roadways. However, we understand that some individuals may feel uneasy about this technology and its use, and this hearing is just one more example of the critical outreach to the citizens of the commonwealth to help develop an understanding of the technology, its potential benefits for the future and our mutually shared commitment to public safety. Unfortunately, due to news reports about crashes, most citizens think only about highly automated passenger vehicles, such as those operated by Waymo and Uber, when discussing automated vehicles. It is important not to lose sight of other uses, such as highly automated work zone vehicles, and lower levels of automation applications, such as commercial vehicle platooning. These low hanging fruit of automation offer potential day-one benefits to both the department and the citizens of Pennsylvania.

Highly Automated Work Zone Vehicles

Truck Mounted Attenuators (TMA) are safety vehicles designed to protect workers and decrease damage to work zone equipment by absorbing the impact of any vehicle that encroaches in a work zone. Truck Mounted Attenuators, by policy and national standards, are required to be in all mobile maintenance and construction operations such as pavement marking painting, crack/joint sealing, and pothole repairs. In in mobile operations, a PennDOT employee is required to be in the vehicle at all times. In 2017, 18 PennDOT-owned attenuators were impacted in work zones. Although the vehicles are engineered to minimize the impact on the operators, injuries can still occur, both physically and psychologically.

Upon passage of legislation, PennDOT plans to pilot an autonomous TMA in a mobile work zone application. Pennsylvania has had demonstrations regarding the technology and would like to evaluate the safety and potential efficiency benefits of removing an operator from a TMA and utilizing them elsewhere within the operation.

Platooning

Pennsylvania is a hub of freight activity, with a significant amount of interstate truck traffic using our highway system, specifically along the I-76, I-78, I-80, and I-81 corridors. As a result, freight movement is a significant economic engine for Pennsylvania. However, with the ever-growing expansion of the freight industry in Pennsylvania comes implications to our roadway network, including impacts to safety, mobility, and pavement condition. Several subject matter experts within the department believe that the aforementioned impacts may be alleviated through the use of platooning technology.

Truck platooning allows two or more commercial vehicles, using a combination of vehicle-to-vehicle

(V2V) communications systems and low-level automation, to control acceleration and braking and travel in close headway of approximately 40-60 feet apart. While a human driver requires roughly 1.5 seconds to perceive braking and an additional second for reaction time, vehicles connected in a platoon coordinate almost instantaneously, allowing the vehicles to travel closer together. This closely spaced operation reduces the aerodynamic drag of all the vehicles in the platoon, resulting in significant fuel savings and reduced emissions. In addition, this technology reduces excessive braking, lessening the impacts on pavement and potentially decreasing congestion.

The department recognizes that there are limitations of platooning technology. In general, platooning is limited to multi-lane, divided highways. Platooning may not be possible in locations with excessive inclines and declines in grade. Adverse weather conditions and communication connectivity issues may also impact operations. The oversight authority awarded to PennDOT in both SB 1096 and HB 1958 will allow the department to ensure every effort is made to address public safety and operational concerns, while being flexible enough to adjust for changes and advancements in the technology.

The commonwealth is poised to be a hub of automated vehicle innovation, and when you consider the potential that automated vehicle technology holds, we can't afford NOT to be proactive.

Thank you for the opportunity to discuss SB 1096 and HB 1958. We at PennDOT appreciate the Legislature's proactive approach in ensuring that automated vehicle testing is conducted with public safety as a top priority. We are happy to answer any questions.