



**Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515**

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SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Highways and Transit
FROM: Staff, Subcommittee on Highways and Transit
RE: Subcommittee Hearing on “Innovation in Surface Transportation”

PURPOSE

The Subcommittee on Highways and Transit will meet on Wednesday, September 5, 2018 at 10:00 a.m. in 2167 Rayburn House Office Building to receive testimony related to “Innovation in Surface Transportation”. The purpose of this hearing is to receive updates from non-federal partners regarding the various kinds of innovations used in surface transportation. The Subcommittee will hear from DriveOhio, ITS America, a representative from the Community Transportation Association of America, and Contra Costa Transportation Authority.

BACKGROUND

FAST Act

On December 4, 2015, the President signed H.R. 22, the *Fixing America’s Surface Transportation Act* (FAST Act, P.L. 114-94) into law. The FAST Act reauthorizes the federal surface transportation programs of the U.S. Department of Transportation through fiscal year 2020. The FAST Act improves the Nation’s infrastructure, reforms federal surface transportation programs, refocuses those programs on addressing national priorities, and encourages innovation to make the surface transportation system safer and more efficient.

In order to encourage innovation and support the use of transportation technologies, the FAST Act includes specific policies across federal surface transportation programs. Examples of those policies include:

- Establishing the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Program, which is a competitive grant program to deploy large scale installation and operation of advanced transportation technologies. ATCMTD

requires the Secretary of Transportation to develop criteria that encourages return on investments, reduce traffic crashes, and collect real-time data, among others.

- Providing eligibility for the installation of vehicle-to-infrastructure communications equipment to reduce congestion and improve safety.
- Establishing a National Highway Freight Program, which includes eligibilities for intelligent transportation systems and other technologies; traffic signal optimization; and real-time traffic, truck parking, roadway condition, and multimodal transportation information systems to improve the flow of freight.
- Allowing for utilization of public transit research funding for the integration of mobility on demand projects that utilize tools such as smart phone applications.
- Establishing a pilot program for innovative projects that improve the coordination of transportation services and non-emergency transportation services for those who are transportation disadvantaged.

The Future of Surface Transportation

Over the next 30 years, the Nation's transportation infrastructure will need to keep pace with anticipated increases in population and demand for freight transportation. Forecasts predict that America's population will grow from 319 million in 2014 to approximately 400 million in 2051.¹ The movement of freight is expected to increase by 40 percent over the next 30 years.² U.S. trade volume is expected to double by the year 2021, and double again by the year 2030.³ In terms of highway usage, vehicle miles traveled are projected to increase by nearly 20 percent by 2035.⁴

As the transportation needs of communities change, state and local entities are continuing to look at innovative ways at how to address those transportation demands. A number of emerging transportation technologies are currently being utilized or explored. These technologies have the potential to improve the safety and productivity of the surface transportation system. While not an exhaustive list, below are some of the technologies and developments that are relevant to this hearing.

Autonomous Vehicle (AV)

AVs are motor vehicles capable of operating without any direct human input or control over a vehicle's safety-critical functions, such as steering, acceleration, and braking. These vehicles generally work by using a combination of three systems:

- A global positioning system (GPS) or other mapping system that defines the starting and ending point of the drive;
- A sensor system composed of cameras, lasers, radar, or lidar (a technology that measures distance using laser light) that detects dynamic and variable roadway conditions; and

¹ U.S. Census Bureau, *Projections of the Size and Composition of the U.S. Population: 2014 to 2060*, 2015.

² U.S. Department of Transportation, Bureau of Transportation Statistics, *DOT Releases 30-Year Freight Projections*, 2016.

³ Federal Highway Administration, *FHWA Forecasts of Vehicle Miles Traveled (VMT): Spring 2016*, 2016.

⁴ *Id.*

- A computer system that can turn the information from the mapping system and sensor systems into a driving action, which is typically executed by the vehicle's internal electronic network.⁵

Connected Vehicle

Connected vehicle technologies enable cars, buses, trucks, trains, roads, infrastructure, bicyclists, and pedestrians to communicate through wireless technology.⁶ Connected vehicle technologies, which allow vehicles to “talk” with each other (as well as other modes of transportation and surrounding infrastructure), can prevent crashes by detecting when another vehicle's speed and location present a dangerous situation. For instance, if two connected vehicles approaching an intersection appear to be on a collision course, the vehicle may alert its respective driver of the hazard, and could do so even before the driver would normally be able to assess the situation.

Intelligent Transportation Systems (ITS)

ITS integrate advanced transportation technologies into transportation infrastructure and vehicles. ITS can improve safety, mobility and efficiency of the transportation system. Some examples of ITS technologies currently used include electronic toll collection, traffic signal coordination, transit signal priority, and traveler information systems.⁷

Mobility on Demand (MOD)

MOD refers to the use of emerging mobility services that utilize a multi-modal network (i.e. bikeshare, carpooling, public transit, etc.) which is available to all travelers and users of the transportation system. An example of utilizing MOD is when a public transit agency partners with an on-demand transportation network company, such as Uber or Lyft, to provide first and last mile solutions.⁸

⁵ U.S. Department of Transportation, National Highway Traffic Safety Administration, Automated Vehicles Safety.

⁶ U.S. Department of Transportation, Federal Highway Administration, Truck Platooning “Partially-Automated Truck Platooning Demo Frequently Asked Questions (and Answers)”.

⁷ U.S. Department of Transportation, Intelligent Transportation Systems Joint Program Office, “ITS Research Fact Sheets - Benefits of Intelligent Transportation Systems”.

⁸ U.S. Department of Transportation, Intelligent Transportation Systems Joint Program Office, “Mobility on Demand (MOD) Fact Sheet: *Transform the Way Society Moves*”.

WITNESS LIST

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