As Prepared Remarks for Federal Highway Administrator
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Thank you, Dr. Schladover …. and thanks to all that you do.

U-S Transportation Secretary Elaine L. Chao asked me to share her greetings with you.

As the Federal Highway Administrator, I want to invite all of you to our booth – it's #301, but it is front-and-center as you enter the main hall. We'd love to talk with you about what we are working on. Our own Brian Cronin will be standing by to answer questions.

It's so interesting to me personally to be here as the FHWA Administrator. A decade ago, I was at the Department of Transportation where I served as the Administrator of the National Highway Traffic Safety Administration. While there, we had discussions regarding a new technology that many at NHTSA thought could change the way we travel, but the public's imagination had yet to be captured.

They are paying attention now.

Nearly 15 years later, the development is incredible to see, and one of the many reasons why it is such a joy to be part of the transportation community right now.

I was here in Florida last week to talk with the Floridians for Better Transportation conference, and we had a very productive discussion.

One of their primary concerns is congestion as traffic congestion in Florida remains among the nation's worst.

Fortunately, Florida is pioneering many new transportation innovations – including the research, testing and deployment of automated vehicles.

Last year, Transportation Secretary Chao was the keynote at this symposium in San Francisco and she said *"The autonomous revolution is coming. As government regulators, it is our responsibility to understand it and help prepare for it."*

She was correct and, since then, technology has continued to evolve and the USDOT does as well.

There is recognition that automated vehicles will coexist with conventional vehicles, and at some point, operate side-by-side with them on the highways.

To this point, I want to reaffirm the Department's position regarding the freedom of the open road. We want to protect the freedom of all Americans to make mobility choices that best serve their needs.

Just last October, Secretary Chao unveiled the USDOT's new automated vehicle guidance – "Preparing for the Future of Transportation: Automated Vehicles 3.0."

This guidance supports the safe, reliable and cost-effective integration of automation into all modes of American transportation.

"AV 3.0" addresses safety and innovation by focusing on three main areas. It provides guidance for automated vehicle development across all modes, and outlines our approach to managing safety risks along the path to A-V technology integration.

It clarifies roles to avoid a conflicting patchwork of regulations that hamper innovation, and provides best practices.

The Department of Transportation is also working to ensure there is enough bandwidth for widespread adoption of new A/V technologies. The radio spectrum's 5.9 gigahertz band is of critical importance to us in reducing crashes, injuries, fatalities, and overall traffic congestion. That's why it's called "The Safety Band."

This small slice of the spectrum is widely used by state and local DOTs for vehicle-to-vehicle and pedestrian-collision avoidance. It is also used for transit priority, traffic monitoring and congestion detection, traveler alerts, and snow plow and emergency vehicle traffic signal preemption.

The Safety Band is at the heart of our efforts to make these new A/V technologies interoperable. All these systems – from vehicle to traffic signal to first responder – must work seamlessly together.

That said, the Department is not interested in promoting one particular technology over another. We know consumers will do that for themselves, which is why we want the auto industry, wireless technology companies, and other innovators to keep developing multiple technologies… so long as they can use the Safety Band for transportation safety benefits.

At FHWA, we've been busy in preparing the nation's roadway infrastructure for automated vehicles.

We have been leading communication and outreach activities with highway stakeholders, including state DOT partners and other public agencies and industry groups, to improve understanding of the issues and needs related to automated vehicles.

We have a key role in administering the Manual on Uniform Traffic Control Devices. We are getting ready to make the first major update to it since 2009, and will be asking for public input later this year.

The updated version will reflect advances in technology over the past decade, and support the operation of A/Vs.

If you are interested, you really do need to comment. We really do read every comment.

Last year, FHWA initiated the National Dialogue on Highway Automation – a series of six workshops held in different cities to engage the transportation community in a conversation on how to safely integrate automated vehicles on to public roads. A diverse group of stakeholders provided input on key issues regarding automation.

The National Dialogue covered a multitude of topics, but safety was the main takeaway in all the workshops. It will be critical not only to ensure safety when A/Vs are fully deployed, but also while they are in the process of reaching full deployment, especially during testing and verification periods.

The public may not have been paying attention when I last started at the DOT in 2003, but they are now and any incident garners national attention, which is why testing and verification are so important.

The need for enhanced data systems was a recurring theme in the workshops. The world of automated vehicles will have a much greater dependence on data, with accuracy and timeliness as a top priority.

That is why the USDOT launched the "Data For Automated Vehicle Initiative" last year to address data exchange needs for A/V integration across the modes.

Since traffic incidents and work zones can pose challenges for automated vehicles, our initial focus has been on work zones. Data on work-zone activity can help Automated Driving Systems – and humans – safely and efficiently navigate changing traffic patterns.

Along with state, local and industry partners, the Department has developed a common language to exchange work-zone data and continue to collaborate on sharing and using the data. We encourage more partners to get involved!

FHWA is also leading efforts to identify research areas needed to support the future of U.S. roads.

These areas include the safety aspects of automated vehicles, operational efficiency and reliability, and overall infrastructure readiness.

We are developing a "concept of operations" that defines the elements needed to safely and effectively prepare the roadway system to support the integration of these new technologies.

And, as most of you already know, we're conducting interesting work in field-testing that involves vehicle and truck platooning.

Earlier this year, we awarded contracts to three teams to develop detailed proposals for a field test of truck platoons. These platoons will use real truck drivers, and haul real freight. We believe this will strengthen partnerships with public- and private-sector entities who are already committed to making truck-platooning work.

Previous research resulted in the development of truck platooning technology with only limited testing and demonstration in a real-world environment. The project will assess the various aspects of in-service truck platoons that are delivering commercial goods along their common delivery routes over an extended period.

We will collect the data related to the vehicles, environment and drivers to assess safety, efficiency and mobility impacts of truck platooning.

I must pause for a minute to recognize my colleague, Administrator of the Federal Motor Carrier Safety Administration, Ray Martinez. I truly appreciate our collaboration and his commitment to research and safety related to automated vehicles.

Our multimodal research program – known as "Cooperative Automation Research Mobility Application" (CARMA) – is trying to accelerate cooperative driving automation. We want automated vehicles to work together.

The CARMA Program developed two tools – CARMA Platform and CARMA Cloud.

CARMA Platform works with Automated Driving Systems to allow the vehicle to communicate with roadway infrastructure through CARMA Cloud.

Last fall, we made CARMA available as open-source software on GitHub to enable research, and today we are launching an updated version of it. The pre-release of the CARMA Platform is available today, which will blend communications technologies with A-V functionality.

CARMA's goal is to accelerate understanding of the benefits of cooperative automation by testing "shared maneuvers" such as vehicle platooning, speed harmonization, cooperative lane change and merge functions, and coordination of signalized intersections.

So far, there have been more than 200 downloads from GitHub.

This spirit of cooperation and collaboration is not just nice to see, it's critical. While proprietary information is still protected, competitors teaming up to solve problems together is the only way we will achieve success.

Collaboration was not as prevalent 15 years ago and I truly believe that teaming up to solve problems together is the only way we will achieve success.

Overall, the USDOT is committed to advancing innovation.

Having said all that, it is becoming very clear that some of these new technologies do not neatly fit into a single mode of transportation or the Department's existing regulatory structure.

A lack of clarity at the federal level could undermine the adoption of innovative and potentially life-saving transportation technology, so earlier this year, Secretary Chao created the Non-Traditional and Emerging Transportation Technology (NETT) Council.

It will help the Department identify and solve jurisdictional and regulatory issues that undermine new technologies. It will ensure coordination across the operating agencies for the deployment of cutting-edge technologies.

The NETT Council represents an important new effort to reduce regulatory burdens and pave the way for emerging technologies in the transportation industry.

Our goal is to create safer travel for drivers, and pedestrians, and bicyclists, and innovative new technologies like those you are all working on are key.

On behalf of Secretary Chao and everyone at the USDOT, I thank you for the impressive work you have already done and look forward to helping you do more of it.

Thank you.

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