Testimony of Ford Motor Company
Ohio General Assembly
House Committee on Transportation and Public Safety
Hearing on "Autonomous and Connected Vehicles Study"

November 1, 2017

Ford Motor Company appreciates the opportunity to provide written testimony to the Committee as it examines the potential benefits and challenges related to autonomous and connected vehicles testing and deployment, particularly as they may affect the State of Ohio.

Ford appreciates the thoughtful nature in which Ohio is approaching autonomous and connected vehicles. We commend the General Assembly for seeking to study the matter before moving to enact legislation or put in place regulations that could have unforeseen consequences in the future. In short, Ford believes it is best for states to examine what statutory and regulatory barriers exist to autonomous vehicle testing and deployment and seek to address them – where necessary – with the input of affected stakeholders. Ohio's study is a great step in that direction, and we are grateful for it.

As you know, Ford has traditionally manufactured vehicles meant to be driven by human beings. We have a significant presence in Ohio with roughly 6,800 employees across four manufacturing facilities. We purchase nearly $4 billion annually from over 475 suppliers located here in Ohio. However, we also see great potential in the future of mobility, especially where driverless vehicles are concerned. They may be able to expand transportation possibilities for underserved communities, like the blind, and make transportation more efficient in general.

Our vision is to deploy a Level 4-capable vehicle for ride hailing or goods delivery early next decade. And what does that mean exactly? Put simply, we will build and deploy a vehicle that can drive on its own in a predefined area, like an urban center.

So how does Ford plan to get there? Before answering that question, it's helpful to understand how a Level 4-capable autonomous vehicle will work. To replace the human driver, most autonomous vehicles – or AVs – will rely on a suite of sensor technologies, including cameras, radars, and something called Light Detection and Ranging (LiDAR) to perceive their surroundings. The vehicle's Virtual Driving System (VDS) compares this information to a high-definition three-dimensional onboard map of its predefined operational area, called an Operational Design Domain (ODD), and operates the vehicle appropriately based on computer algorithms that take into account traffic safety laws and other considerations. These algorithms are determined through real-world and simulated testing, which evaluates and determines how to react to pedestrian and other road user behavior, among other factors.

Ford has been hard at work developing these systems through internal product development and partnerships with other stakeholders. We have made appreciable investments in VDS and artificial intelligence developers, like Argo.AI of Pittsburgh, LiDAR manufacturers, and three-dimensional map providers. We are also working with universities, such as The Ohio State University, University of

Michigan, Stanford, and Virginia Tech, to test our AV concepts and evaluate how they are perceived and reacted to by the public. And to get a better understanding of the commercial use cases for AVs, we're working with companies like Domino's and Lyft. We recently completed a pilot program with Domino's to deliver pizza using AV's to understand the role that self-driving vehicles can play in the movement of goods. Finally, we're also making investments in the actual physical capital necessary to assemble these vehicles, which will take place at our Flat Rock, Michigan, facility.

All in all, Ford is investing billions of dollars and countless hours to realize its goal of becoming a mobility company. It's worth emphasizing that we're not the only players in this space. Our competitors – both traditional and non-traditional – are doing the same thing and, in the process, helping create new industries and jobs. All of this work and investment is grounded in an appreciation of the transformational potential of autonomous vehicles, and to succeed, we need the right public policy in place at the federal, state, and local levels.

Our view, again, is that states and cities should look at existing barriers to AV testing and deployment and seek to clear them in a manner that supports safe testing and deployment. Moreover, states and cities should avoid setting conflicting, onerous requirements that could lead to a patchwork of state regulations. This is particularly relevant when it comes to vehicle safety standards, which Ford feels very strongly should be set by the federal government, as they traditionally have been.

Ohio is taking good first steps to establish itself as a leader in autonomous and connected vehicle technology. The work being done in Columbus thanks to its federal Smart Cities grant will advance our real-world experience with these types of vehicles and connected infrastructure. More importantly, this Committee's work to explore appropriate public policy options is off to a great start. We respectfully ask that you take into account our views and know that we stand ready to work with you to find solutions.