VERBAL STATEMENT OF

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The Research and Development Portfolio to Support the Priorities of the Department of Transportation

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Chairman Wu, Ranking Member Smith, and distinguished Members of the Subcommittee, I am honored to join you today to examine the role of research and development in supporting the priorities of the U.S. Department of Transportation.

My name is Ann Flemer, and I serve as Deputy Executive Director for Policy at the Metropolitan Transportation Commission. MTC is the MPO for the San Francisco Bay Area. With a combined population of over 7 million people residing in 101 cities and 9 counties, the Bay Area ranks as the 6th-largest metro area in the U.S.

I also serve as vice chair of the board at ITS America, an association which represents several hundred organizations including state and local transportation, transit and planning agencies, research institutions, and private sector technology leaders. This diverse coalition is brought together by a common vision for advancing the development and deployment of intelligent transportation systems to improve safety, mobility and the environment.

The Challenges

You are all very aware of the challenges facing our nation's transportation system. In past decades we focused on building infrastructure to alleviate the increasing traffic in our communities. But today, we need to utilize that infrastructure more effectively and make better use of smart technologies to actively manage our transportation system to reduce congestion and emissions, make our roads safer, and provide the traveling public with better transportation options. But this will not happen if we continue business as usual.

Research Priority # 1: Performance-Based Planning and Investment

At ITS America, we believe the key to a sustainable transportation future lies in transitioning to a more performance-based approach to managing our transportation investments, including better use of technology to measure and improve system performance. We also believe that national performance goals should be established to encourage states and MPOs to set short- and long-range, mode-neutral performance targets for transportation investments.

Our first recommendation is that the U.S. DOT identify a set of performance measures related to the four priority strategic goals of safety, livable communities, economic competitiveness, and environmental sustainability. This would include reaching consensus on appropriate national performance goals and an effective process for measuring progress toward these goals at the state and metropolitan level.

By way of example, I have included as Attachment A to my written testimony a list of specific performance measures and targets that my agency used in the development of the most recent update to our long range plan.

Research Priority #2: Cost-Effective Data Collection

Our second recommendation for the research agenda is to address the challenge of collecting the quality data needed to establish baseline performance levels, set meaningful performance targets, and measure changes in performance categories over time. Transportation technologies are already being used today to collect real-time data. But these technologies are not typically deployed consistently on a state-by-state and metro-by-metro basis, and there is no national program for gathering and disseminating this data. Such a system was authorized in Section 1201 of SAFETEA-LU, but has yet to be implemented.

A publicly-accessible database will not only unleash private sector innovation to meet the public's demand for better and more convenient information on traffic, transit and roadway conditions, but will also respond to the increasing demand for more accountability in short- and long-range planning and decisions affecting investment priorities.

Research Priority #3: Environmental Data and Technologies

A third priority for the US DOT research program should be to identify and, if possible, quantify the environmental benefits of developing and deploying transportation strategies and

technologies that can cost-effectively reduce GHG emissions. The Department should broadly disseminate research and data to state and local agencies on how to accurately measure emissions levels, and on the costs, benefits, challenges and best practices associated with deploying technologies to achieve an absolute reduction in emissions and fuel consumption.

Research Priority #4: Advance Existing and Next Generation Safety Technologies

A fourth recommendation is to implement a two-pronged research strategy that both encourages more rapid deployment of existing transportation technologies that can improve driver awareness, reduce the number and severity of traffic crashes, and improve emergency response, and accelerates efforts to advance the research and development of future safety solutions that are well within reach.

The U.S. DOT-sponsored *IntelliDrive*^{SM} program holds significant promise for reducing traffic accidents by providing high-speed wireless connectivity and sensing capability between moving vehicles, and between vehicles, intersections and other roadside sensors, to help prevent crashes before they happen. A significant co-benefit is that this smart network would provide traffic managers with real-time information to operate their transportation systems more efficiently, give state and local officials comprehensive data to measure system performance and enable innovative financing options like a VMT-based user fee that could vary by pricing zone, time of day or congestion level.

The ITS JPO has provided tremendous leadership in the development and testing of *IntelliDrive*^{SM} technologies, and now proposes to conduct the policy, institutional and operational research necessary to accelerate the deployment of an *IntelliDrive*^{SM} network. The federal research program should provide sufficient resources to complete this work.

Research Priority #5: Smart Cities and Communities Initiative

In order to advance the real-world deployment of transportation technologies and encourage more aggressive investment by the public and private sectors, we recommend a large-scale

operational testing and model deployment program that would deploy and provide real-world testing of smart infrastructure, connected vehicles, and other intelligent technologies in several model cities and communities. This Smart Cities and Communities Initiative would have the dual purpose of providing the public with tangible safety, mobility and environmental benefits while also generating real-world data on deployment costs, benefits, challenges, and lessons learned.

Each model City or Community would establish clear multi-modal performance objectives for reducing traffic accidents, congestion and emissions, and to provide real-time information to travelers for smarter travel decisions. They would also define performance measures, perform rigorous data collection and analysis, and report on deployment and operational costs, benefits, challenges and lessons learned, and recommendations for future research areas and deployment strategies.

I note that an approach similar to this has provided the foundation for the widespread implementation of 511 traveler information systems throughout the country.

Research Priority #6: Innovative Financing Options

In conjunction with the Smart Cities and Communities Initiative, at least one city or community should include a test of VMT-based pricing program that could vary rates by time of day, pricing zone, congestion levels and other factors; and that would be interoperable with other tolling, pricing, and transportation systems. The U.S. DOT should conduct a complementary research and development program to address challenges associated with deployment of a VMT-based user fee as a potential transportation financing mechanism. Additional recommendations regarding this program are included in my written testimony.

Conclusion

The combined challenges of implementing a performance-based system that addresses critical safety, mobility and environmental problems, and finding innovative financing mechanisms,

calls for strong a federal leadership role and a robust research agenda that will work to advance the deployment of transportation technologies and system management tools, improve the availability of quality data for performance measurement and investment decisions, and leverage private sector innovation to help state and local agencies solve critical challenges.

Thank you again for inviting me to join you today. I will be happy to answer any questions that you have regarding these recommendations.